Catalogue 31



www.fascinating-future.com

FRIEDHELM LOH GROUP

RITTAL®

We look to the future









Rittal is already working enthusiastically on the solutions of the future. This is our tradition, and is the key to our **innovativeness** in the field of technology packaging. Experience the future of **communications technology and automation** with Rittal, trendsetters in holistic solutions. Setting trends means understanding customers, creating future-safe solutions, and being very forward-thinking. Industrial Ethernet, nano-spray-finishing and Rittal Liquid Cooling Systems are just some of the examples which impressively underscore our commitment to this principle.

With **fascinating future,** progress becomes possible – this is our mission.

The Rittal corporate principle
We are aware of our responsibility to the environment and the world in which we live. We want to help structure and improve them!

RITTAL®

It is only through **intelligent production techniques** that pioneering ideas acquire a clear added value. Mindful of this fact, Rittal has always chosen innovative paths and produced modern products in superb quality, whilst exploiting the cost benefits of mass production.

We produce the future

For example, the patented section in the TS 8 frame is **16-fold profiled** in a special technique. All 12 frame parts are linked together in a combined **seam and welding robot system.** Exceptionally smooth enclosure seams are achieved with the **powder plasma welding technique.** In order to achieve highly practical paint structures and enhanced corrosion protection, Rittal uses **electrophoretic dipcoat-priming** developed for the automotive industry, as an outstanding feature of Rittal surface quality! In addition, the techniques of **zinc phosphating** and **aluminization** ensure exceptional longevity and resistance. A state-of-the-art powder coating technique enables us to realise **customised colour changes in next to no time.** In this way, we produce a decisive, lasting added value for your application.





The Rittal corporate principle

We concentrate all our efforts on perfect, cost-effective production of our products, professional marketing, and reliable delivery!





RITTAL®

We offer forward-thinking information

Rittal offers product selection support from a number of information platforms which systematically complement one another: Our comprehensive Catalogue, the compact CD-ROM with useful links, and the Rittal website, which is always up-to-date. This enables you to compile your own individual system solution very easily, selectively and quickly.

Navigation through the Catalogue is now even easier, because it is structured into three parts:

– **Range overview (A)** with the relevant product group at a glance,

– **Order information (B)** containing full details, and

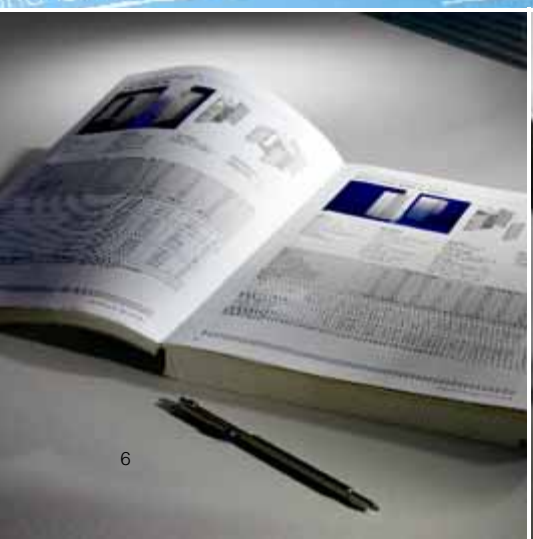
– **The technical part (C)** containing detailed dimensional drawings.

The CD-ROM features cross-references to take you, for example, straight to the matching system accessories at the click of a mouse, while Model Numbers offer direct links to the Internet for standardised CAD files, precise assembly instructions, and up-to-date approvals.

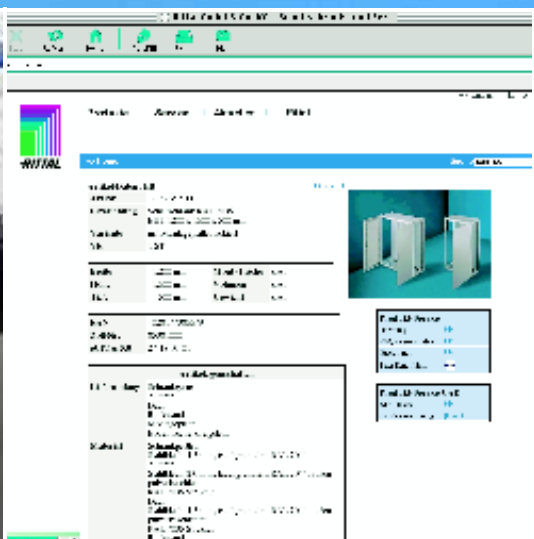
We call it the **Triple C:**

Complete,
Compact,
Comfortable.

All three information platforms from Rittal – Catalogue, CD-ROM and Internet – will guide you swiftly to the appropriate solution for your particular task. In this way, you benefit from forward-thinking information and navigation.







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The Rittal corporate principle

We view our customers as partners who determine the success of our company:

- We must find solutions to our customers' requests and problems, because our customers are our livelihood and our safeguard for the future!
- Our products must offer clear benefits and advantages for the customer, particularly in terms of quality, technical execution, product selection and deliverability.



Dialogue with us offers exciting prospects

Your application demands solutions for specific tasks. As such, **dialogue with our customers** is always our primary source of information when devising new products and services. To this end, we utilise all the major platforms to forge long lasting relationships with our customers – national and international trade fairs, competence days, and the new media.
We continue this dialogue throughout every phase of the process, from the initial idea, to development of a solution, through to the use of our products.

Pre-sales service: Information, advice, planning aids, analyses.

Sales service: Online shops, project planning, prototype construction, tests, assembly, warehousing and delivery service.

After-sales service: Training, commissioning, maintenance, repair and spare parts service.

Constructive dialogue creates shared prospects for all of us.



RITTAL®

There is a demand for the **holistic solutions** of modern technology packaging **in all segments of industry.**

All areas of the system, such as enclosures, climate control, power distribution, racks and monitoring, are expertly coordinated with one another. Synergies are utilised to perfection. Rittal provides you with intelligent product packaging when technologies become merged, such as **communications technology** and **automation.**

The provision of cross-industry, complete solutions, e.g. for industrial automation, mechanical engineering, electronics, networks and servers, fixed network and mobile communications, transport technology and facility management, is our mission.

Thanks to perfect interplay between the many different facets, solutions become complete.







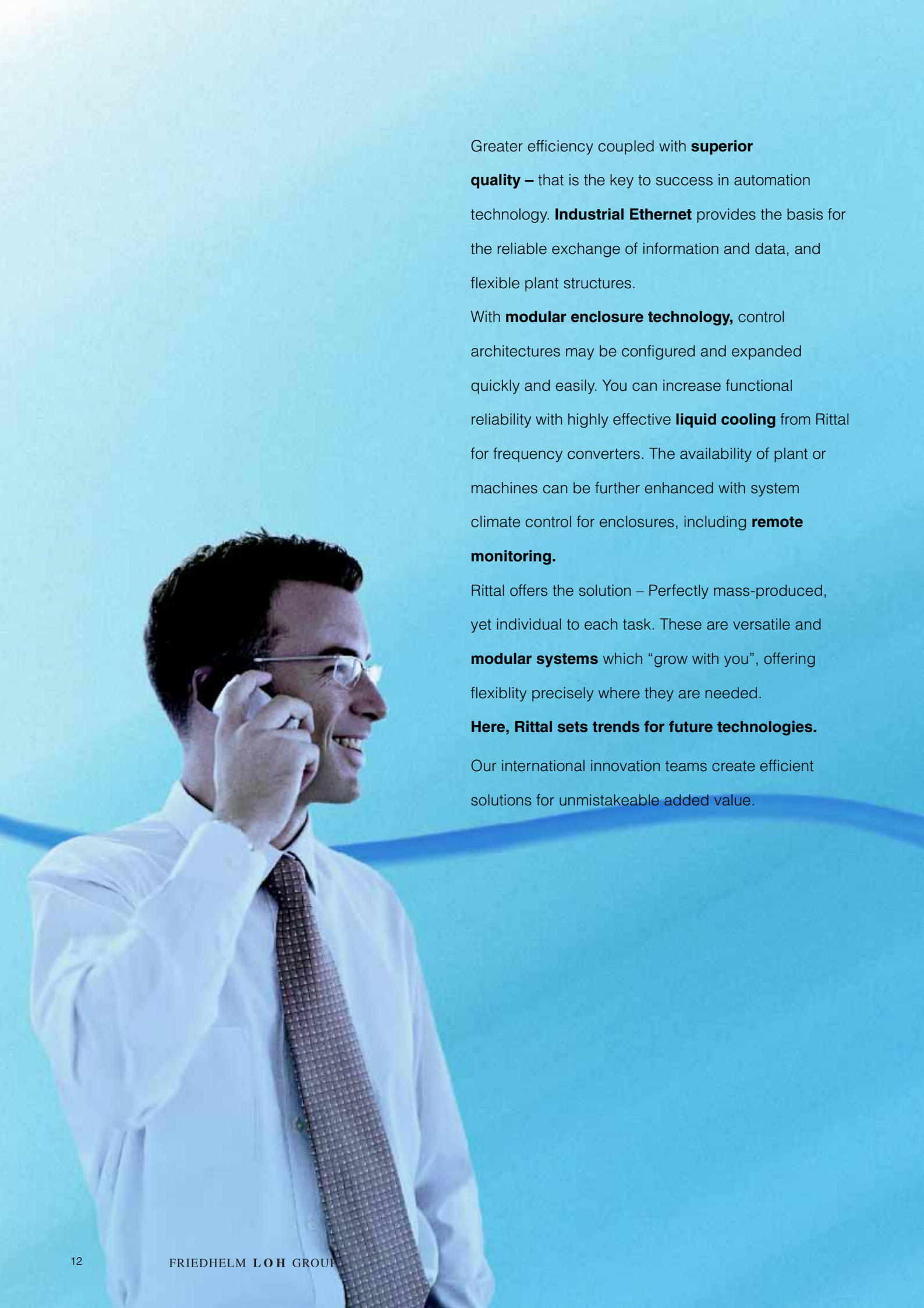
We say, “Complete is better!”



The Rittal corporate principle

Perfect mastery of our day-to-day business safeguards our existence and enables us to master the requirements of the future!

RITTAL®



Greater efficiency coupled with **superior quality –** that is the key to success in automation technology. **Industrial Ethernet** provides the basis for the reliable exchange of information and data, and flexible plant structures.

With **modular enclosure technology,** control architectures may be configured and expanded quickly and easily. You can increase functional reliability with highly effective **liquid cooling** from Rittal for frequency converters. The availability of plant or machines can be further enhanced with system climate control for enclosures, including **remote monitoring.**

Rittal offers the solution – Perfectly mass-produced, yet individual to each task. These are versatile and **modular systems** which “grow with you”, offering flexiblity precisely where they are needed.

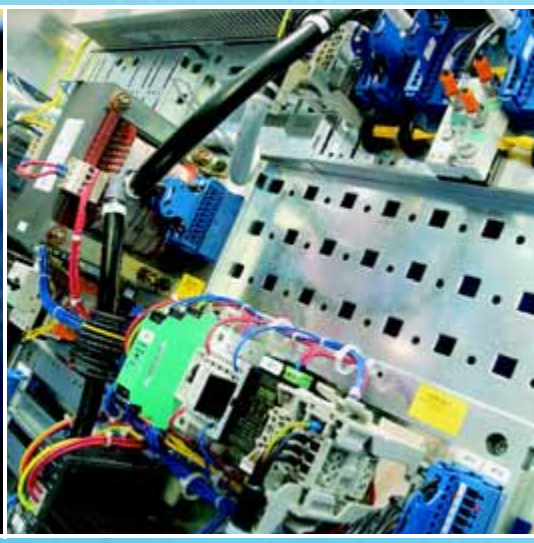
Here, Rittal sets trends for future technologies.

Our international innovation teams create efficient solutions for unmistakeable added value.

We safeguard efficiency







The Rittal corporate principle
We need to be faster and better than the competition.
We must prove this competitive lead to our customers on a daily basis.

We open up new horizons full of opportunities

Innovative information technologies with an **extremely high data throughput** – in the mobile communications, network and server sectors, as well as in biotechnology and medical engineering – demand holistic enclosure solutions. Rittal offers enclosures with a modern layout, **integral power modules, effective cooling** and **super-fast backplanes.** AdvancedTCA Shelves from Rittal are one such example.

Our dynamic **Liquid Cooling technology** facilitates maximum blade server performance – with a flexible choice of several cooling systems. With Rittal, you can always be sure of getting the right solution, from a matching 482.6 mm (19″) rack, to an efficient IT rack, through to modular components for the modern IT infrastructure. Take advantage of **Rittal's expertise as a complete provider** for packaging tasks in information technology and automation – including a comprehensive service concept. We offer expert advice, planning support and test services in accredited Rittal laboratories, through to CFD analyses – take advantage of our know-how, and ensure maximum availability in all areas.

High technological demands reveal new opportunities, which are transformed into solutions with clear benefits.









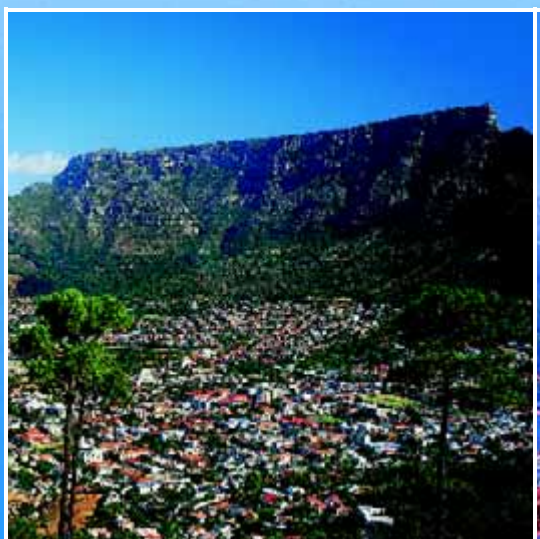
The Rittal corporate principle

We are aware of the correlation between qualification, motivation and company success; in other words, we encourage our employees to participate in training, and involve them in our overall success.



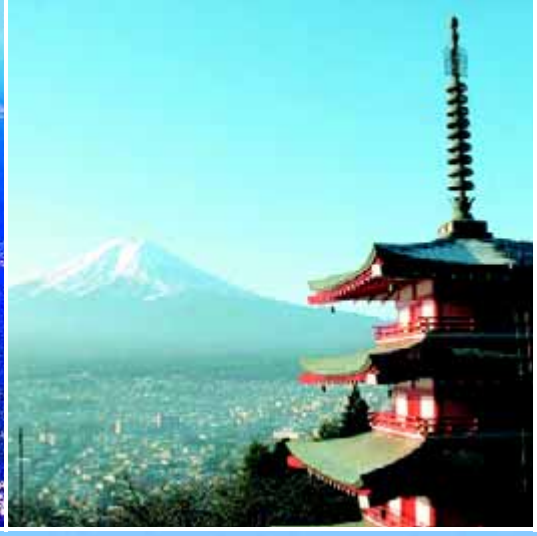
The Rittal corporate principle

Our aim is to establish long-term partnerships with our suppliers; the pre-requisite for this is to remain competitive in terms of quality, delivery service and price, and optimum problem-solving!













Worldwide, we are on your doorstep

Customer proximity is a key Rittal philosophy:

With global solutions, with local advisors, and with **100 % availability** of our products and services.

19 production sites, 50 subsidiaries, 70 agents and 150 distribution and logistic centres – around the globe – are testimony to our consistent customer orientation.

When it comes to technical applications, quality and reliability, Rittal is your first choice.

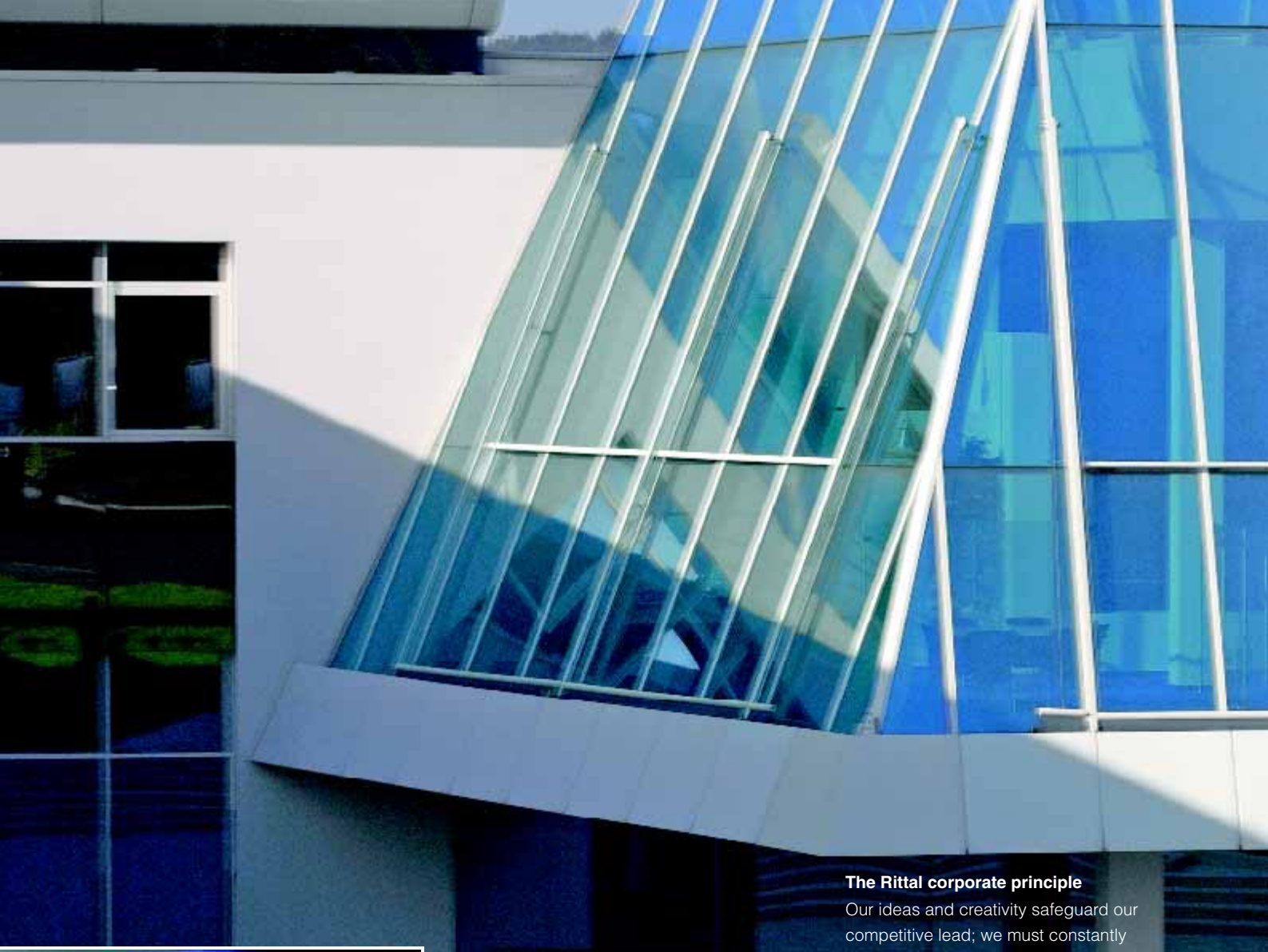
All our products meet the very latest technical findings, globally recognised quality standards with certifications, and **internationally valid approvals.**

Our comprehensive Total Quality Management system ensures consistently high product quality worldwide.

We meet all your requirements, globally and locally, in close partnership with our customers – our advantage, your value-added benefit.



RITTAL®



The Rittal corporate principle
Our ideas and creativity safeguard our competitive lead; we must constantly search for new inspiration and ideas, and implement these in a consistent and professional manner!







In the IT sector, transport technology, automation industry and beyond, **Rittal solves all tasks for a wide variety of application areas – always with an eye on the future.**

Over 8,000 employees worldwide are thinking and acting on your behalf, with precise knowledge of the industry, practical expertise, curiosity and far-sightedness.

Progress is possible – with Rittal, in all sectors and for all applications.

Over 8,000 employees committed to a fascinating future










For experts and beginners alike, the product overview facilitates **fast selection of individual product groups within the range.**

For example, the appropriate dimensions of an enclosure or the correct cooling output of a climate control component are easily ascertained.

For all Rittal components of technology packaging, power supply, climate control and monitoring technology, a comprehensive pre-selection is provided.

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Industrial Enclosures



Industrial enclosures – reap the benefits of the extensive Rittal enclosure range:
Perfect, cost-effective solutions to suit every application. All in all, the wide range of sizes, the application-oriented choice of materials, the tailoring to specific application areas, the modular range of system accessories and compatibility with all other Rittal lines gives Rittal customers a competitive lead from a single source.

Holistic solutions to perfection:
- Small enclosures
- Compact enclosures
- Compact system enclosures
- Large enclosures
- Industrial workstations
- PC enclosure systems
- Console systems

Detailled information may be found on Catalogue pages 96 – 295 and on our website at www.rittal.com





1.1 Polycarbonate enclosures PK

Dimensions mm			Model No. PK		Page
Width	Height	Depth	Cover grey	Cover transp.	
50	52	35	**9530.000**[1)]	–	100
50	65	35	**9531.000**[1)]	–	100
65	65	57	**9500.000**	–	100
65	65	81	**9501.000**	–	100
94	65	57	**9502.000**	–	100
94	65	81	**9503.000**	–	100
94	94	57	**9504.000**	**9504.100**	100
94	94	81	**9505.000**	–	100
110	110	66	**9506.000**	**9506.100**	100
110	110	90	**9507.000**	**9507.100**	100
130	94	57	**9508.000**	**9508.100**	100
130	94	81	**9509.000**	**9509.100**	100
130	130	75	**9510.000**	**9510.100**	100
130	130	99	**9511.000**	**9511.100**	100

[1)] With cable gland

Dimensions mm			Model No. PK		Page
Width	Height	Depth	Cover grey	Cover transp.	
180	94	57	**9512.000**	**9512.100**	100
180	94	81	**9513.000**	**9513.100**	100
180	110	90	**9514.000**	**9514.100**	101
180	110	111	**9515.000**	**9515.100**	101
180	110	165	**9516.000**	**9516.100**	101
182	180	90	**9517.000**	**9517.100**	101
182	180	111	**9518.000**	**9518.100**	101
182	180	165	**9519.000**	**9519.100**	101
254	180	90	**9520.000**	**9520.100**	101
254	180	111	**9521.000**	**9521.100**	101
254	180	165	**9522.000**	**9522.100**	101
360	254	111	**9523.000**	**9523.100**	101
360	254	165	**9524.000**	**9524.100**	101

Approvals:
- Bureau Veritas



1.1 Cast aluminium enclosures GA

Dimensions mm			Model No. GA	Page
Width	Height	Depth		
50	45	30	**9100.210**	104
58	64	36	**9101.210**	104
75	80	57	**9104.210**	104
98	64	36	**9102.210**	104
125	80	57	**9105.210**	104
122	120	80	**9108.210**	104
150	64	36	**9103.210**	104
160	160	90	**9112.210**	104
175	80	57	**9106.210**	104
200	230	110	**9116.210**	104

Dimensions mm			Model No. GA	Page
Width	Height	Depth		
220	120	90	**9110.210**	104
250	80	57	**9107.210**	104
260	160	90	**9113.210**	104
280	230	110	**9117.210**	104
330	230	110	**9118.210**	104
330	230	180	**9119.210**	104
360	122	80	**9111.210**	104
360	160	90	**9114.210**	104





1.1 Terminal boxes KL

Dimensions mm			Model No. KL				Model No. KL	
			Sheet steel				Stainless steel	
Width	Height	Depth	**with gland plate**	Page	**without gland plate**	Page	**without gland plate**	Page
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150	150	120	–		**1500.510**	108	–	
200	150	80	–		**1528.510**	107	–	
200	150	120	–		**1529.510**	108	–	
200	200	80	–		**1516.510**	107	**1523.010**	270
200	200	120	–		**1502.510**	108	–	
300	150	80	–		**1515.510**	107	**1522.010**	270
300	150	120	**1530.510**	109	**1501.510**	108	–	
300	200	80	–		**1517.510**	107	**1524.010**	270
300	200	120	**1531.510**	109	**1503.510**	108	–	
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500	200	120	**1533.510**	109	**1505.510**	108	–	
500	300	120	**1537.510**	109	**1509.510**	108	–	
600	200	80	–		**1519.510**	107	–	
600	200	120	**1534.510**	109	**1506.510**	108	–	
600	300	120	**1538.510**	109	**1510.510**	108	–	
600	400	120	**1540.510**	109	**1512.510**	108	–	
800	200	120	**1542.510**	109	**1527.510**	108	–	
800	400	120	**1541.510**	109	**1513.510**	108	–	

Approvals:
- UL
- CSA
- TÜV
- Germanischer Lloyd
- Norske Veritas
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- Bureau Veritas
- VDE



1.1 E-Box EB

Dimensions mm			Model No. EB	Page
Width	Height	Depth		
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200	200	80	**1546.500**	110
200	200	120	**1549.500**	110
200	300	80	**1552.500**	110
200	300	120	**1554.500**	110

Dimensions mm			Model No. EB	Page
Width	Height	Depth		
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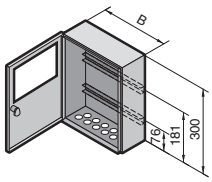
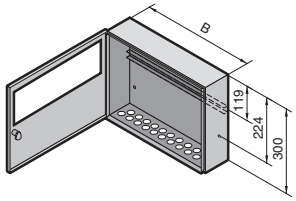
200	400	120	**1550.500**	110
200	500	120	**1557.500**	110
300	300	120	**1555.500**	110
300	400	120	**1556.500**	110
300	400	155	**1577.500**	110
300	600	155	**1578.500**	110
300	800	155	**1579.500**	110

Approvals:
- UL
- CSA
- TÜV
- Germanischer Lloyd
- Norske Veritas
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- Bureau Veritas
- VDE

1.1 Bus enclosures BG





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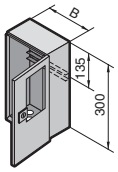
400	300	80	**1585.510**	111	**1585.520**	111
500	300	80	**1586.510**	111	**1586.520**	111

Approvals:
- TÜV
- Lloyds Register of Shipping
- VDE
- UL
- C-UL



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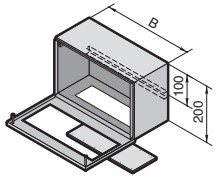
400	300	120	–	2	9	1	**1606.510**	112	–	2	9	1	**1606.520**	112

Approvals:
- TÜV
- Lloyds Register of Shipping
- VDE
- UL
- C-UL



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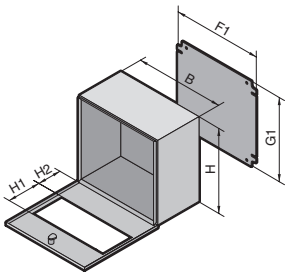
600	200	125	**1559.510**	112

Approvals:
- TÜV
- Lloyds Register of Shipping
- VDE
- UL
- C-UL



1.1 Bus enclosures BG

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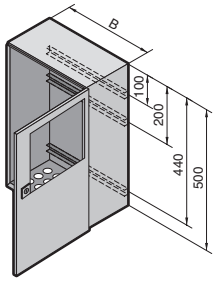
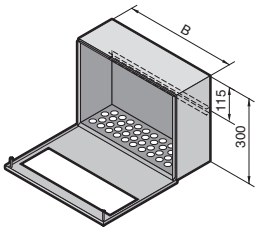
600	300	155	**1578.500**	113
800	300	155	**1579.500**	113

Approvals:
- TÜV
- Lloyds Register of Shipping
- VDE
- UL
- C-UL



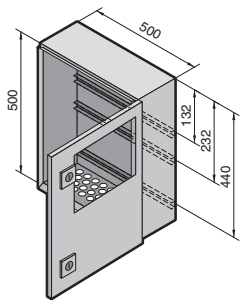
Dimensions mm			Model No. BG	Page
Width	Height	Depth		
400	500	160	**1611.510**	113

Approvals:
- TÜV
- Lloyds Register of Shipping
- VDE
- UL
- C-UL



Dimensions mm			Model No. BG	Page
Width	Height	Depth		
500	300	120	**1609.510**	114

Approvals:
- TÜV
- Lloyds Register of Shipping
- VDE
- UL
- C-UL



Dimensions mm			Model No. BG	Page
Width	Height	Depth		
500	500	210	**1050.900**	114

Approvals:
- TÜV
- Lloyds Register of Shipping
- VDE
- UL
- C-UL





1.2 Compact enclosures AE

Dimensions mm			Model No. AE	Page	Model No. AE	Page
Width	Height	Depth	Sheet steel		Stainless steel	
Single-door						
200	300	120	**1032.500**	118	–	
200	300	155	**1035.500**	118	**1002.600**	273
300	300	210	**1033.500**	118	–	
300	380	210	–		**1005.600**	273
300	400	210	**1034.500**	118	–	
380	300	155	**1030.500**	118	**1004.600**	273
380	300	210	**1031.500**	118	–	
380	380	210	**1380.500**	118	**1006.600**	273
380	600	210	**1038.500**	119	**1008.600**	273
380	600	350	**1338.500**	119	–	
400	500	210	**1045.500**	119	–	
500	500	210	**1050.500**	119	**1007.600**	273
500	500	300	**1350.500**	119	**1013.600**	273
500	700	250	**1057.500**	119	–	
600	380	210	**1039.500**	118	**1009.600**	273
600	380	350	**1339.500**	118	–	
600	600	210	**1060.500**	119	**1010.600**	273
600	600	350	**1360.500**	119	–	
600	760	210	**1076.500**	119	**1012.600**	273
600	760	350	**1376.500**	119	–	
600	800	250	**1058.500**	119	–	
600	1000	250	**1090.500**	119	–	
600	1200	300	**1260.500**	120	–	
760	760	210	**1077.500**	119	–	
760	760	300	**1073.500**	119	**1014.600**	273
800	1000	300	**1180.500**	119	**1016.600**	273
800	1200	300	**1280.500**	120	**1017.600**	273
Double-door						
1000	760	210	**1100.500**	120	–	
1000	760	300	**1130.500**	120	–	
1000	1000	300	**1110.500**	120	**1018.600**	273
1000	1200	300	**1213.500**	120	**1019.600**	273
1000	1400	300	**1114.500**	120	–	

Approvals:
- UL
- CSA
- TÜV
- Germanischer Lloyd
- Norske Veritas
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- Bureau Veritas
- VDE



Compact enclosures AE, protection category IP 69K

Dimensions mm			Model No. AE	Page
Width	Height	Depth		
Single-door				
230	330	155	**1101.010**	121
400	400	250	**1101.020**	121
400	650	250	**1101.030**	121
650	650	250	**1101.040**	121



1.2 Compact enclosures AK

Dimensions mm			Model No. AK	Page
Width	Height	Depth		
Single-door				
600	1200	400	**1646.500**	122
800	1200	400	**1648.500**	122

Dimensions mm			Model No. AK	Page
Width	Height	Depth		
Double-door				
1000	1200	400	**1650.500**	122
1000	1400	400	**1647.500**	122
1200	1200	400	**1652.500**	122

Approvals:
- UL
- CSA
- TÜV
- Germanischer Lloyd
- Norske Veritas
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- Bureau Veritas
- VDE



1.2 Plastic enclosures KS

Dimensions mm			Door(s)	Model No. KS		Page
Width	Height	Depth		Viewing window		
				without	with	
200	300	150	1	**1423.600**	–	123
250	350	150	1	**1432.600**	–	123
300	400	200	1	**1434.600**	–	123
400	400	200	1	**1444.600**	**1448.600**	123
400	600	200	1	**1446.600**	**1449.600**	123
500	500	300	1	**1453.600**	**1454.600**	123
600	600	200	1	**1466.600**	**1467.600**	123
600	800	300	1	**1468.600**	**1469.600**	124
800	1000	300	1	**1480.600**	**1479.600**	124
1000	1000	300	2	**1400.600**	–	124

Approvals:
- UL (without viewing window)
- CSA (without viewing window)
- TÜV
- Germanischer Lloyd
- Norske Veritas
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- Bureau Veritas
- VDE



1.3 Compact system enclosures Rittal CM

Dimensions mm			Model No. CM	Page
Width	Height	Depth		
Single-door				
600	800	400	**5110.500**	128
600	1000	400	**5111.500**	128
600	1200	300	**5112.500**	128
600	1200	400	**5113.500**	128
800	1000	300	**5114.500**	128
800	1000	400	**5115.500**	128
800	1200	300	**5116.500**	128
800	1200	400	**5117.500**	129

Dimensions mm			Model No. CM	Page
Width	Height	Depth		
Double-door				
1000	1000	300	**5118.500**	129
1000	1200	300	**5119.500**	129
1000	1200	400	**5120.500**	129
1000	1400	300	**5121.500**	129
1000	1400	400	**5122.500**	129
1200	1200	400	**5123.500**	129



1.3 Compact system enclosures Rittal CL

Dimensions mm			Model No. CL	Page
Width	Height	Depth		
Single-door				
600	1600	500	**5150.500**	130
600	1800	400	**5151.500**	130
600	2000	500	**5152.500**	130
800	1600	500	**5153.500**	130
800	1800	400	**5154.500**	130
800	2000	500	**5155.500**	130
1000	1800	400	**5156.500**	130

Dimensions mm			Model No. CL	Page
Width	Height	Depth		
Double-door				
1000	1800	400	**5157.500**	131
1200	1600	500	**5158.500**	131
1200	1800	400	**5159.500**	131
1200	2000	500	**5160.500**	131





1.4 Free-standing enclosure ES 5000

Dimensions mm			Model No. ES	Page	Model No. ES	Page
Width	Height	Depth	Sheet steel		Stainless steel	
Single-door						
600	1600	400	–		**5450.600**	285
600	1600	500	**5665.500**	136	–	
600	1800	400	**5684.500**	136	–	
600	1800	500	–		**5451.600**	285
600	2000	500	**5605.500**	136	–	
800	1600	500	**5865.500**	136	–	
800	1800	400	**5884.500**	136	–	
800	1800	500	–		**5452.600**	285
800	2000	500	**5805.500**	136	–	
800	2000	600	–		**5453.600**	285
1000	1800	400	**5084.500**	136	**5454.600**	285
Double-door						
1000	1800	400	**5080.500**	136	–	
1200	1600	500	**5265.500**	137	–	
1200	1800	400	**5284.500**	137	–	
1200	2000	500	**5205.500**	137	**5455.600**	285
1600	1800	400	**5784.500**	137	–	
1800	2000	500	**5905.500**	137	–	

Approvals:
- UL
- CSA
- TÜV
- Germanischer Lloyd
- Norske Veritas
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- Bureau Veritas
- VDE





1.4 Baying system TS 8

Dimensions mm			Model No. TS	Page	Model No. TS	Page
Width	Height	Depth	Sheet steel		Stainless steel	
Single-door						
400	1800	500	**8485.510**[1)]	141	–	
400	1800	600	**8486.510**[1)]	142	–	
400	2000	500	**8405.510**[1)]	144	–	
400	2000	600	**8406.510**[1)]	145	–	
600	1400	500	**8645.500**	138	–	
600	1600	500	**8665.500**	139	–	
600	1800	400	**8684.500**	140	–	
600	1800	500	**8685.500**	141	**8457.600**	284
600	1800	600	**8686.500**	142	–	
600	2000	400	**8604.500**	143	–	
600	2000	500	**8605.500**	144	–	
600	2000	600	**8606.500**	145	**8452.600**	284
600	2000	800	**8608.500**	146	–	
600	2200	600	**8626.500**	147	–	
800	1400	500	**8845.500**	138	–	
800	1600	500	**8865.500**	139	–	
800	1800	400	**8884.500**	140	**8454.600**	284
800	1800	500	**8885.500**	141	**8455.600**	284
800	1800	600	**8886.500**	142	–	
800	2000	400	**8804.500**	143	–	
800	2000	500	**8805.500**	144	–	
800	2000	600	**8806.500**	145	**8450.600**	284
800	2000	800	**8808.500**	146	–	
800	2200	600	**8826.500**	147	–	
1000	1800	400	**8084.500**	140	–	
Double-door						
800	1800	500	**8880.500**	141	–	
800	1800	600	**8881.500**	142	–	
1000	1800	400	**8080.500**	140	–	
1000	2000	500	**8005.500**	144	–	
1000	2000	600	**8006.500**	145	–	
1200	1400	500	**8245.500**	138	–	
1200	1600	500	**8265.500**	139	–	
1200	1800	400	**8284.500**	140	**8456.600**	284
1200	1800	500	**8285.500**	141	**8453.600**	284
1200	1800	600	**8286.500**	142	–	
1200	2000	400	**8204.500**	143	–	
1200	2000	500	**8205.500**	144	–	
1200	2000	600	**8206.500**	145	**8451.600**	284
1200	2000	800	**8208.500**	146	–	
1200	2200	600	**8226.500**	147	–	

[1)] Without tubular door frame, mounting plate and gland plates.

Approvals:
- UL
- CSA
- TÜV
- Russian Maritime Register of Shipping
- TÜV Mark
- Lloyds Register of Shipping
- Bureau Veritas
- VDE
- Germanischer Lloyd



1.4 Baying system TS 8

Electronic enclosure

Dimensions mm			Model No. TS	Page
Width	Height	Depth	Enclosure	
600	1600	600	**8410.510**	148
600	1600	800	**8418.510**	148
600	2000	600	**8430.510**	148
600	2000	800	**8438.510**	148

Approvals:
- UL
- C-UL



For modular front design

Dimensions mm			Model No. TS	Page
Width	Height	Depth	Enclosure	
600	2000	600	**8606.512**	149
800	2000	600	**8806.512**	149



For isolator door locking

Dimensions mm			Model No. TS	Page
Width	Height	Depth	Enclosure	
800	1800	400	**8984.500**	150
800	1800	500	**8985.500**	150
800	2000	500	**8905.500**	150
800	2000	600	**8906.500**	150

Approvals:
- UL
- C-UL



IP 65/NEMA 4x, NEMA 4

Dimensions mm			Model No. TS	Page
Width	Height	Depth	Enclosure	
NEMA 4x, stainless steel				
600	1800	600	**8458.640**	151
800	1800	600	**8459.640**	151
600	2000	600	**8452.640**	151
800	2000	600	**8450.640**	151
NEMA 4, sheet steel				
600	1800	600	**8686.540**	151
800	1800	600	**8886.540**	151
600	2000	600	**8606.540**	151
800	2000	600	**8806.540**	151

Approvals:
- UL
- C-UL



1.4 Baying system TS 8

prepared for EX pressurisation

Dimensions mm			Model No. TS	Page	Model No. TS	Page
Width	Height	Depth	Sheet steel		Stainless steel	
600	1400	500	**8645.560**	152	–	
800	1400	500	**8845.560**	152	–	
600	1600	500	**8665.560**	152	–	
800	1600	500	**8865.560**	152	–	
600	1800	400	**8684.560**	152	–	
800	1800	400	**8884.560**	152	**8454.660**	152
1000	1800	400	**8084.560**	152	**8461.660**	152
600	1800	500	**8685.560**	152	**8457.660**	152
800	1800	500	**8885.560**	152	**8455.660**	152
600	1800	600	**8686.560**	152	**8458.660**	152
800	1800	600	**8886.560**	152	–	
600	2000	400	**8604.560**	152	–	
800	2000	400	**8804.560**	152	–	
600	2000	500	**8605.560**	152	–	
800	2000	500	**8805.560**	152	–	
600	2000	600	**8606.560**	152	**8452.660**	152
800	2000	600	**8806.560**	152	**8450.660**	152
600	2000	800	**8608.560**	152	–	
800	2000	800	**8808.560**	152	**8460.660**	152
600	2200	600	**8626.560**	152	–	
800	2200	600	**8826.560**	152	–	



1.5 VIP 6000

Selection of operating/keyboard housings see page 154 – 169.

Approvals:
- UL
- CSA
- TÜV
- DNV
- Lloyds Register of Shipping
- BV
- VDE



1.5 Optipanel

Selection of operating/keyboard housings see page 170 – 177.



1.5 Optipanel

Standard sizes

To fit front panels mm	To fit TFT monitor Model No. SM	Dimensions mm			Model No. CP	Page	Rear panel, hinged		Support arm connection
		Width	Height	Depth			Quick-release fastener for screwdriver	Cam with double-bit insert	
270 x 234	–	314	278	60	**6380.100**	178	–	■	CP-S VESA 75
482.6 x 310.3	–	527	354	110	**6380.000**	178	–	■	CP-L[1)]
430 x 343	6450.010/.030	475	387	60	**6380.010**	178	■	–	CP-L[1)] , rear
430 x 343	6450.010/.030	475	387	110	**6380.020**	178	–	■	CP-L[1)]
482.6 x 354.8	6450.020/.040	527	399	60	**6380.030**	178	■	–	CP-L[1)] , rear
482.6 x 354.8	6450.020/.040	527	399	110	**6380.040**	178	–	■	CP-L[1)]

[1)] ▭ 120 x 65 mm



1.5 Compact Panel

Dimensions mm			To fit		Model No. CP			Page
Width	Height	Depth	Front panel width mm	Front panel height mm	with support arm connection CP-S	with support arm connection CP-L[1)]	without support arm connection	
241	238	87	178	200	**6340.000**	**6340.010**	**6340.020**	183
241	388	87	178	350	**6340.100**	**6340.110**	**6340.120**	183
241	521	87	178/4 U	482.6/19″	**6340.200**	**6340.210**	**6340.220**	183
315	238	87	252	200	**6340.300**	**6340.310**	**6340.320**	183
315	388	87	252	350	**6340.400**	**6340.410**	**6340.420**	183

[1)] ▭ 120 x 65 mm





1.5 Command panel housing with door

based on AE

Dimensions mm			Model No. CP	Page	Model No. CP	Page
Width	Height	Depth	Sheet steel		Stainless steel	
300	200	180	**6534.000**	184	–	
300	300	150	–		**6535.010**	276
300	300	180	**6535.000**	184	–	
300	400	180	**6537.000**	184	–	
400	300	150	–		**6536.010**	276
400	300	180	**6536.000**	184	–	
400	400	150	–		**6538.010**	276
400	400	180	**6538.000**	184	–	
500	500	180	**6544.000**	184	–	
600	400	150	–		**6539.010**	276

Approvals:
- UL
- C-UL



1.5 Operating housing

based on AE

Dimensions mm			Model No. CP	Page
Width	Height	Depth		
300	200	155	**6540.200**	185
380	300	210	**6531.200**	185
380	380	210	**6530.200**	185
500	500	210	**6532.200**	185
600	380	210	**6533.200**	185

Approvals:
- UL
- C-UL



1.5 Operating housing

based on AE with display panel front

Dimensions mm			Model No. CP	Page
Width	Height	Depth		
380	380	249	**6442.500**	186
380	600	249	**6462.500**	186
500	500	249	**6552.500**	186
600	600	249	**6662.500**	186

Operating housing based on AE with wide VIP 6000 frame see page 187.

Approvals:
- UL
- C-UL



1.5 Support arm systems

Fast selection of CP-S see page 191.

Fast selection of CP-L see page 200.

Fast selection of CP-XL see page 218.

Support arm system CP-S, stainless steel see page 277.



1.5 Stand systems

Selection see from page 228.



1.5 Industrial workstations

Fast selection see page 240.

Approvals,
may be found on our website: www.rittal.com





1.5 PC enclosure systems

Dimensions mm			Model No. PC	Page	Model No. PC	Page	Model No. PC	Page	Model No. PC	Page	Model No. PC	Page
Width	Height	Depth	with keyboard drawer, glazed door, top		with keyboard drawer, glazed door, top, mounting compartment, small		with keyboard drawer, mounting compartment, large		with folding keyboard, glazed door, top		with desk section, glazed door, top	
Based on TS 8												
600	1600	636	**8366.000**	257	**8366.300**	257	**8366.400**	257	**8366.100**	258	**8366.200**	258
600	1600	836	**8368.000**	257	–		–		**8368.100**	258	–	
Based on ES												
600	1600	650	**4603.703**	259	**4603.913**	259	**4603.603**	259	**4603.920**	260	**4603.704**	260
600	1600	850	**4609.703**	259	–		–		**4609.920**	260	–	
Stainless steel												
600	1600	620	**4650.000**	283	–		–		–		**4650.704**	283

Approvals:
- UL
- CSA
- TÜV
- Germanischer Lloyd
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- VDE



1.5 Console systems AP

Combination options of the modules

see page 262.

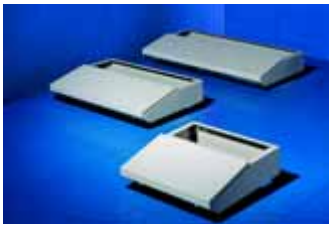
Approvals:

- UL
- CSA
- TÜV
- Germanischer Lloyd
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- VDE



1.5 Consoles

Dimensions mm			Model No. AP	Page
Width	Height	Depth		
Cover, front				
800	430	400	**2612.500**	264
1200	430	400	**2642.500**	264
1600	430	400	**2652.500**	264
Cover, front and rear				
800	430	500	**2614.500**	264
1200	430	500	**2644.500**	264
1600	430	500	**2654.500**	264
800	630	500	**2647.500**	264
1200	630	500	**2648.500**	264
1600	630	500	**2649.500**	264



1.5 Desk units

Dimensions mm			Model No. AP	Page
Width	Height	Depth		
For depth 400 mm (consoles)				
800	200	850	**2611.500**	264
1200	200	850	**2641.500**	264
1600	200	850	**2651.500**	264

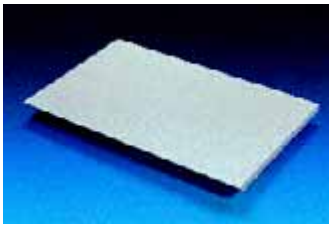
Dimensions mm			Model No. AP	Page
Width	Height	Depth		
For depth 500 mm (consoles)				
800	200	950	**2613.500**	264
1200	200	950	**2643.500**	264
1600	200	950	**2653.500**	264



1.5 Pedestals

Dimensions mm			Model No. AP	Page
Width	Height	Depth		
Door(s) front				
800	670	400	**2600.500**	265
1200	670	400	**2620.500**	265
1600	670	400	**2630.500**	265

Dimensions mm			Model No. AP	Page
Width	Height	Depth		
Door(s) front and rear				
800	670	500	**2610.500**	265
1200	670	500	**2640.500**	265
1600	670	500	**2650.500**	265



1.5 Trim panel

For console, desk unit and pedestal

To fit		Model No. AP	Page
Width mm	Depth mm		
800	400	**2615.500**	265
1200	400	**2645.500**	265
1600	400	**2655.500**	265
800	500	**2616.500**	265
1200	500	**2646.500**	265
1600	500	**2656.500**	265





1.5 One-piece consoles AP

Dimensions mm			Model No. AP	Page	Model No. AP	Page
Width	Height	Depth	Sheet steel		Stainless steel	
Single-door						
600	960	400/480	**2666.500**	266	**2683.600**	282
800	960	400/480	**2668.500**	266	**2684.600**	282
Double-door						
1000	960	400/480	**2670.500**	266	**2685.600**	282
1200	960	400/480	**2672.500**	266	**2686.600**	282

Approvals:
- UL
- CSA
- TÜV
- Germanischer Lloyd
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- VDE



1.5 Universal consoles AP

Dimensions mm			Model No. AP	Page
Width	Height	Depth		
with short front door				
600	1300	500	**2694.500**	267
with tall front door				
600	1300	500	**2695.500**	267

Approvals:
- UL
- CSA
- TÜV
- Germanischer Lloyd
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- VDE





1.6 Stainless steel

Terminal boxes KL see page 23
Compact enclosures AE see page 26
Command panel housing with door see page 32
Support arm system CP-S see page 277
Stand systems see page 281
One-piece consoles AP see page 36
PC enclosure systems see page 34
Baying systems TS 8 see page 29
Free-standing enclosure ES 5000 see page 28



1.6 Premium Line KL, protection category IP 69K, stainless steel

Dimensions mm			Model No. KL	Page
Width	Height	Depth		
150	150	80	**1024.010**	271
150	150	120	**1024.020**	271
300	200	120	**1024.030**	271
400	300	120	**1024.040**	271



1.6 Bus enclosures BG, stainless steel

Dimensions mm			Model No. BG	Page
Width	Height	Depth		
200	300	80	**1583.010**	272
300	300	80	**1584.010**	272
400	300	80	**1585.010**	272
400	200	123	**1558.010**	272
600	200	123	**1559.010**	272

Approvals:
- TÜV
- Lloyds Register of Shipping
- VDE
- UL
- C-UL



1.6 Premium Panel, protection category IP 69K, stainless steel

Dimensions mm								Support arm connection	Model No. CP	Page
Width	Height		Depth	For installation panel W x H		Installation depth:				
	Operating housing	Keyboard housing	Operating housing	Operating housing	Keyboard housing	Operating housing	Keyboard housing			
With keyboard housing										
530	460	200	120	482.6 mm (19″) x 354.8 mm (8 U)	482.6 mm (19″) x 177 mm (4 U)	115	front 58 rear 63	top	**6680.000**	274
530	460	200	120			115	front 58 rear 63	bottom	**6680.010**	274
530	460	200	220			215	front 58 rear 63	top	**6680.100**	274
530	460	200	220			215	front 58 rear 63	bottom	**6680.110**	274
Without keyboard housing										
530	360	–	120	482.6 mm (19″) x 310 mm (7 U)	–	115	–	top, or bottom by rotating the enclosure	**6681.000**	274
530	360	–	220			215	–		**6681.100**	274



1.6 Operating housing, stainless steel

Dimensions mm			Model No. CP	Page
Width	Height	Depth		
320	240	160	**6670.000**	275
400	320	160	**6672.000**	275

Approvals:
- CSA
- UL
- C-UL



1.7 Ex enclosures, stainless steel

with screw fastened lid

Dimensions mm			Model No. KEL	Page
Width	Height	Depth		
150	150	80	**9301.000**	287
200	200	80	**9303.000**	287
300	150	80	**9302.000**	287
300	200	80	**9304.000**	287
300	300	120	**9306.000**	287
400	200	120	**9305.000**	287

with hinged door

Dimensions mm			Number of fasteners	Model No. KEL	Page
Width	Height	Depth			
200	300	155	1	**9401.600**	287
300	380	210	1	**9409.600**	287
380	300	155	1	**9402.600**	287
380	380	210	1	**9403.600**	287
380	600	210	2	**9404.600**	287
600	600	210	2	**9405.600**	287
600	760	210	2	**9406.600**	287
760	760	300	2	**9407.600**	287
800	1000	300	2	**9408.600**	287

Approvals:
- PTB



1.7 Ex enclosures, plastic

Dimensions mm			Model No. KEL	Page
Width	Height	Depth		
200	300	150	**9201.600**	288
250	350	150	**9202.600**	288
300	400	200	**9203.600**	288
400	400	200	**9204.600**	288
400	600	200	**9205.600**	288
500	500	300	**9207.600**	288
600	600	200	**9206.600**	288
600	800	300	**9208.600**	288
800	1000	300	**9209.600**	288

Approvals:
- PTB

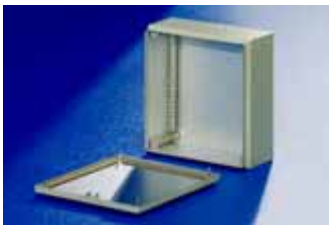


1.8 EMC enclosures

EMC baying systems TS 8 see page 291

EMC E-Box EB see page 290

EMC free-standing enclosure ES 5000 see page 291



1.8 EMC terminal boxes KL

Dimensions mm			Model No. KL	Page
Width	Height	Depth		
300	300	120	**1507.710**	290

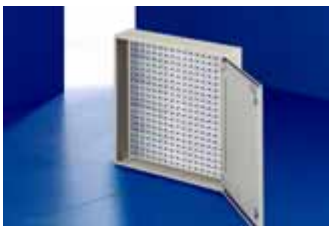
Approvals:
- UL
- CSA
- TÜV
- Norske Veritas
- Lloyds Register of Shipping
- VDE



1.8 EMC compact enclosures AE

Dimensions mm			Model No. AE	Page
Width	Height	Depth		
380	380	210	**1380.700**	290
600	380	210	**1039.700**	290
600	600	210	**1060.700**	290
800	1000	300	**1180.700**	290

Approvals:
- UL
- CSA
- TÜV
- Norske Veritas
- Lloyds Register of Shipping
- VDE



1.9 Modular enclosure technology

Compact enclosures AE (mounting plate with modular pitch pattern of holes) see page 295

Approvals:
- UL
- CSA
- TÜV
- Germanischer Lloyd
- Norske Veritas
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- Bureau Veritas
- VDE



1.9 Modular enclosure technology

Baying systems TS 8 (mounting plate with modular pitch pattern of holes) see page 295

Approvals:
- UL
- CSA
- TÜV
- Russian Maritime Register of Shipping
- TÜV Mark
- Lloyds Register of Shipping
- Bureau Veritas
- VDE
- Germanischer Lloyd



Power distribution – the benefit lies in the system
Modern power distribution systems are becoming ever more powerful. For this reason, users demand the security of internationally recognised and approved power distribution components.
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- SV connection systems
- SV bus-mounting fuse bases
- NH bus-mounting on-load isolators
- NH fused isolators
- SV component adaptors
- SV-TS 8 and Maxi-PLS
- ISV distribution enclosures

Detailed information may be found on Catalogue pages 298 – 420 or refer to our website: www.rittal.com

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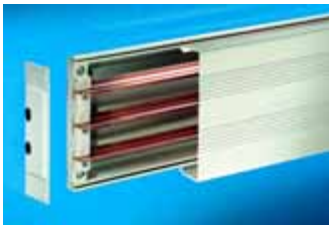


2.1 Busbar systems up to 250 A (40 mm)

Rittal Mini-PLS

Description	Length mm	Packs of	**Model No. SV**	Page
Mini-PLS busbar supports up to 250 A, 690 V~, 3-pole, 40 mm bar centre distance	–	4	**9600.000**	302
Mini-PLS end cover	–	2	**9610.000**	302
Mini-PLS special busbars E-Cu 250 A, 120 mm²	500	3	**9601.000**	302
	700	3	**9602.000**	302
	1100	3	**9603.000**	302
	1500	3	**9624.000**	302
Mini-PLS busbar connectors	–	3	**9611.000**	302
Mini-PLS base tray sections	250	1	**9604.000**	302
	500	1	**9605.000**	302
	700	1	**9606.000**	302
	1100	1	**9607.000**	302
Mini-PLS cover sections	250	1	**9608.000**	302
	500	1	**9609.000**	302



Mini-PLS busbar connection adaptor

Version	Packs of	**Model No. SV**	Page
63 A, 690 V~, connection top/bottom for round conductors 1.5 – 35 mm² and for laminated copper bars, clamping area 10 x 8 mm	1	**9613.000**	303
250 A, 690 V~, connection top/bottom for round conductors 10 – 120 mm² and for laminated copper bars, clamping area 17 x 15 mm	1	**9612.000**	303





2.1 Busbar systems up to 250 A (40 mm)

Mini-PLS component adaptor
Cable outlet at the top

Construction width mm	Rated current up to	Rated operating voltage	Connection cables[1)]	Support rails		Packs of	**Model No. SV**	Page
				Height mm	Number			
45	12 A	690 V~	AWG 14	7.5	1	1	**9614.110**	304
45	25 A	690 V~	AWG 12	7.5	1	1	**9614.100**	304
45	25 A	690 V~	AWG 12	15	1	1	**9615.100**	304
54	25 A	690 V~	AWG 12	7.5	1	1	**9614.000**	304
54	25 A	690 V~	AWG 12	15	1	1	**9615.000**	304
72	25 A	690 V~	AWG 12	7.5	1	1	**9625.000**	304
72	25 A	690 V~	AWG 12	15	1	1	**9626.000**	304
90	25 A	690 V~	AWG 12	7.5	1	1	**9629.010**	304
99	25 A	690 V~	AWG 12	15	1	1	**9629.020**	304
108	25 A	690 V~	AWG 12	7.5	1	1	**9629.030**	304
54	40 A	690 V~	AWG 10	7.5	1	1	**9616.000**	306
54	40 A	690 V~	AWG 10	15	1	1	**9617.000**	306
72	40 A	690 V~	AWG 10	7.5	1	1	**9627.000**	306
72	40 A	690 V~	AWG 10	15	1	1	**9628.000**	306
90	100 A	690 V~	35 mm²	Mounting plate		1	**9629.000**	306

[1)] AWG = American Wire Gauges
AWG 14 = 2.08 mm² ≙ 2.5 mm²
AWG 12 = 3.31 mm² ≙ 4 mm²
AWG 10 = 5.26 mm² ≙ 6 mm²

Note:
For allocation of “power circuit-breakers/starter combinations”,
see page 1128/1129.



Mini-PLS quick-fit component adaptor

Construction width mm	Rated current up to[1)]	Rated operating voltage	For power circuit-breakers	Packs of	**Model No. SV**	Page
54	25 A (32 A)	690 V~	AEG, General Electric, Schiele	1	**9618.000**	305
54	25 A (32 A)	690 V~	Moeller Electric	1	**9619.000**	305
54	25 A (32 A)	690 V~	Allen Bradley, Moeller	1	**9620.000**	305
54	25 A (32 A)	690 V~	Telemecanique	1	**9621.000**	305
54	25 A (32 A)	690 V~	ABB, Siemens, Telemecanique	1	**9622.000**	305

[1)] Rated current 25 A at 35°C and 32 A at 25°C ambient temperature

Note:
For allocation of “power circuit-breakers/starter combinations”,
see page 1128.

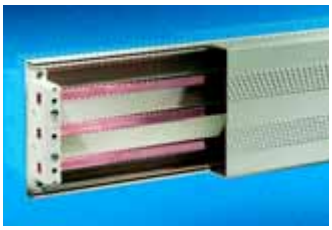


Mini-PLS bus-mounting fuse base

Version	Packs of	**Model No. SV**	Page
D 02-E 18, 63 A, 400 V~, terminal for round conductors 1.5 – 16 mm²	1	**9630.000**	307

NH on-load isolators

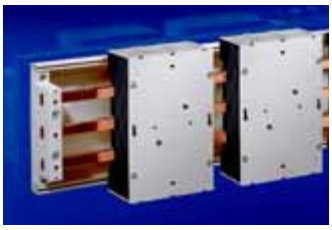
Version	Packs of	**Model No. SV**	Page
Size 000, 100 A, 690 V~, cable outlet top/bottom, terminal up to 50 mm²	1	**3431.000**	307
Mini-PLS busbar adaptor for SV 3431.000	1	**9629.100**	307



2.1 Busbar systems up to 360 A (40 mm)

System components

Description		Dimensions mm	Length mm	Packs of	Model No. SV	Page
Busbar support up to 360 A, 690 V~, 3-pole, 40 mm bar centre distance, for E-Cu busbars 12 x 5 mm to 15 x 10 mm		–	–	4	**9350.000**	308
End cover		–	–	2	**9610.000**	308
Busbars E-Cu		12 x 5	2400	6	**3580.000**	308
		12 x 10	2400	6	**3580.100**	308
		15 x 5	2400	6	**3581.000**	308
		15 x 10	2400	6	**3581.100**	308
Base tray sections		–	250	1	**9604.000**	309
		–	500	1	**9605.000**	309
		–	700	1	**9606.000**	309
		–	1100	1	**9607.000**	309
Cover sections		–	250	1	**9608.000**	309
		–	500	1	**9609.000**	309
Busbar cover sections for busbars	12/15 x 5 mm	–	1000	4	**9350.010**	309
	12/15 x 10 mm	–	1000	4	**9350.060**	309
Busbar connectors		–	–	3	**9350.070**	309



Busbar connection adaptor

Version	For busbars mm	Packs of	Model No. SV	Page
360 A, 690 V AC, for round conductors 10 – 120 mm² (max. 250 A) and laminated copper bars (max. 360 A), clamping area 17 x 15 mm	12 x 5/10	1	**9350.020**	310
	15 x 5/10	1	**9350.030**	310



Bus-mounting fuse base

Version	For busbars mm	Packs of	Model No. SV	Page
D 02-E 18, 63 A, 400 V~, terminal for round conductors 1.5 – 16 mm²	12 x 5/10	1	**9350.050**	311
	15 x 5/10	1	**9350.500**	311

NH on-load isolators

Version	For busbars mm	Packs of	Model No. SV	Page
Size 000, 100 A, 690 V~, cable outlet top/bottom, terminal up to 50 mm²	–	1	**3431.000**	311
Busbar adaptor for SV 3431.000	12 x 5/10	1	**9350.400**	311
	15 x 5/10	1	**9350.410**	311





2.1 Busbar systems up to 360 A (40 mm)

Multi-functional component adaptor

Con-struc-tion width mm	Rated current up to	Rated operating voltage	Connec-tion cables[1)]	Connection of round conductors up to	Cable outlet	Support rails		For bar thickness mm	Packs of	**Model No. SV**	Page
						Height mm	Number				
45	12 A	690 V~	AWG 14	–	top	10	1	5	1	**9350.080**	312
45	12 A	690 V~	AWG 14	–	top	10	1	10	1	**9350.090**	312
45	25 A	690 V~	AWG 12	–	top	10	1	5	1	**9350.100**	312
45	25 A	690 V~	AWG 12	–	top	10	1	10	1	**9350.110**	312
45	25 A	690 V~	AWG 12	–	top	10	2	5	1	**9350.120**	312
45	25 A	690 V~	AWG 12	–	top	10	2	10	1	**9350.130**	312
45	25 A	690 V~	AWG 12	–	top	10	2	5	1	**9350.260**	312
45	25 A	690 V~	AWG 12	–	top	10	2	10	1	**9350.270**	312
45	25 A	690 V~	AWG 12	–	top	10	2 (1 var.)	5	1	**9350.140**	312
45	25 A	690 V~	AWG 12	–	top	10	2 (1 var.)	10	1	**9350.150**	312
90	25 A	690 V~	AWG 12	–	top	10	1	5	1	**9350.280**	313
90	25 A	690 V~	AWG 12	–	top	10	1	10	1	**9350.290**	313
99	25 A	690 V~	AWG 12	–	top	10	2	5	1	**9350.300**	313
99	25 A	690 V~	AWG 12	–	top	10	2	10	1	**9350.310**	313
108	25 A	690 V~	AWG 12	–	top	10	2	5	1	**9350.320**	313
108	25 A	690 V~	AWG 12	–	top	10	2	10	1	**9350.330**	313
45	25 A	690 V~	–	16 mm²	top	10	2 (1 var.)	5	1	**9350.160**	314
45	25 A	690 V~	–	16 mm²	top	10	2 (1 var.)	10	1	**9350.170**	314
45	25 A	690 V~	–	16 mm²	top/bottom	10	2	5	1	**9350.180**	314
45	25 A	690 V~	–	16 mm²	top/bottom	10	2	10	1	**9350.190**	314
54	40 A	690 V~	–	16 mm²	top	10	2	5	1	**9350.220**	314
54	40 A	690 V~	–	16 mm²	top	10	2	10	1	**9350.230**	314
54	40 A	690 V~	–	16 mm²	top/bottom	10	2	5	1	**9350.240**	314
54	40 A	690 V~	–	16 mm²	top/bottom	10	2	10	1	**9350.250**	314
54	40 A	690 V~	AWG 10	–	top	10	2	5	1	**9350.200**	315
54	40 A	690 V~	AWG 10	–	top	10	2	10	1	**9350.210**	315
54	40 A	690 V~	AWG 10	–	top	15	1	5	1	**9350.340**	315
54	40 A	690 V~	AWG 10	–	top	15	1	10	1	**9350.350**	315

[1)] AWG = American Wire Gauges
AWG 14 = 2.08 mm² ≙ 2.5 mm²
AWG 12 = 3.31 mm² ≙ 4 mm²
AWG 10 = 5.26 mm² ≙ 6 mm²

Note:
For allocation of “power circuit-breakers/starter combinations”,
see page 1129/1130.



Component adaptor

Version	For busbars mm	Packs of	**Model No. SV**	Page
100 A, 690 V~, construction width 90 mm, connection cables 35 mm², cable outlet at the top	12 x 5/10	1	**9350.420**	315
	15 x 5/10	1	**9350.430**	315

Note:
For allocation of “power circuit-breakers/starter combinations”,
see page 1130.



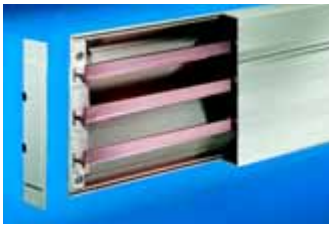


2.2 Busbar systems up to 800 A (60 mm)

System components

Description	Number of poles	Bar centre distance mm	For busbars mm	Packs of	**Model No. SV**	Page
Busbar supports up to 800 A, 1000 V~	3-pole	60	12 x 5 – 30 x 10[1)]	4	**3000.000**	318
	2-pole	60	12 x 5 – 30 x 10[1)]	4	**3050.000**	318
	1-pole	–	12 x 5 – 30 x 10[1)]	4	**3078.000**	318
	4-pole	60	12 x 5 – 30 x 10[1)]	3	**3064.000**	318
Busbar supports up to 450 A, 1000 V~	3-pole	60	30 x 5	4	**3066.000**	318
Inserts for SV 3000.000 SV 3050.000 SV 3064.000 SV 3078.000	–	–	12 x 5	12	**3009.000**	319
	–	–	12 x 10	24	**3008.000**	319
	–	–	15 x 5	12	**3007.000**	319
	–	–	20 x 5	12	**3004.000**	319
	–	–	20 x 10	24	**3003.000**	319
	–	–	25 x 5	12	**3002.000**	319
	–	–	30 x 5	12	**3001.000**	319
End covers						319
Support cover						319
Busbars of E-Cu						319
Busbar cover sections						319

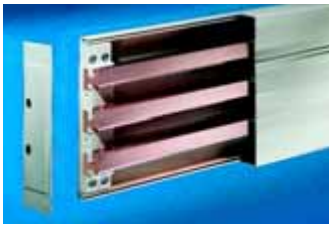
[1)] Max. busbar accommodation without inserts 30 x 10 mm



2.2 Busbar systems up to 800 A/1600 A (60 mm)

Rittal PLS

Description	Rated current up to	For PLS bar cross-section (bar thickness)	Packs of	**Model No. SV**	Page
PLS busbar supports, 3-pole, 60 mm bar centre distance, rated operating voltage 1000 V~.	800 A	300 mm² (5 mm)	4	**3500.000**	320
	1600 A	900 mm² (10 mm)	4	**3510.000**	320



Description	Length mm	For enclosure width mm	Packs of	**Model No. SV**		Page
				for PLS 800 A	for PLS 1600 A	
PLS end covers	–	–	2	**3501.000**	**3511.000**	320
PLS special busbars E-Cu[1)]	2400	variable	1	**3509.000**	**3516.000**	320
	495	600	3	**3524.000**	**3527.000**	320
	695	800	3	**3525.000**	**3528.000**	320
	1095	1200	3	**3526.000**	**3529.000**	320
PLS base tray sections	500	–	2	**3502.000**	**3512.000**	321
	700	–	1	**3503.000**	**3513.000**	321
	1100	–	1	**3518.000**	**3519.000**	321
PLS cover sections	250	–	2	**3506.000**	**3506.000**	321
	500	–	2	**3507.000**	**3507.000**	321
	700	–	1	**3508.000**	**3508.000**	321

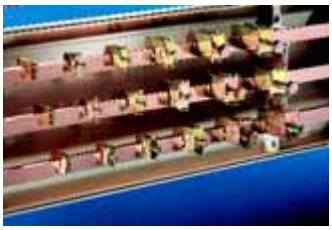
[1)] Bar cross-section (bar thickness)
PLS 800 A: 300 mm² (5 mm)
PLS 1600 A: 900 mm² (10 mm)



Busbar connection adaptor

Rated current up to	Rated operating voltage	Connection	Connection of round conductors up to	Clamping area for laminated copper bars mm	Packs of	**Model No. SV**	Page
63 A	690 V~	bottom	10 mm²/2 x 6 mm²	–	1	**3443.000**	322
125 A	690 V~	bottom	35 mm²	11 x 14	1	**3444.000**	322
250 A	690 V~	bottom	70 mm²	16 x 15	1	**3442.000**	322
400 A	690 V~	bottom	150 mm²	–	1	**3440.000**	322
600 A	690 V~	top/bottom	35 to 240 mm²	24 x 21	1 set	**3439.010**	323
800 A	690 V~	bottom	185 mm²	30 x 25	1	**3441.000**	322
800 A	690 V~	top/bottom	–	34 x 21 (16)	1 set	**3439.000**	323
1600 A	690 V~	top/bottom	–	65 x 21	1 set	**3517.000[1)]**	323

[1)] Only suitable for Rittal PLS 1600 A



2.2 Busbar systems up to 800 A/1600 A (60 mm)

Connection clamps/system covers

Description	Page
Conductor connection clamps	324
Plate clamp	324
System covers	324





Multi-functional component adaptor

Construction width mm	Rated current up to	Rated operating voltage	Connection cables[1)]	Connection of round conductors up to	Cable outlet	Support rails		For bar thickness mm	Packs of	**Model No. SV**	Page
						Height mm	Number				
45	12 A	690 V~	AWG 14	–	top	10	1	5	1	**9320.160**	325
45	12 A	690 V~	AWG 14	–	top	10	1	10	1	**9320.170**	325
45	25 A	690 V~	AWG 12	–	top	10	1	5	1	**9320.180**	325
45	25 A	690 V~	AWG 12	–	top	10	1	10	1	**9320.190**	325
45	25 A	690 V~	AWG 12	–	top	10	2	5	1	**9320.200**	325
45	25 A	690 V~	AWG 12	–	top	10	2	10	1	**9320.210**	325
45	25 A	690 V~	AWG 12	–	top	10	2	5	1	**9320.440**	325
45	25 A	690 V~	AWG 12	–	top	10	2	10	1	**9320.450**	325
45	25 A	690 V~	AWG 12	–	top	10	2 (1 var.)	5	1	**9320.220**	325
45	25 A	690 V~	AWG 12	–	top	10	2 (1 var.)	10	1	**9320.230**	325
45	25 A	690 V~	AWG 12	–	bottom	10	2	5	1	**9320.240**	325
45	25 A	690 V~	AWG 12	–	bottom	10	2	10	1	**9320.250**	325
90	25 A	690 V~	AWG 12	–	top	10	2	5	1	**9320.380**	326
90	25 A	690 V~	AWG 12	–	top	10	2	10	1	**9320.390**	326
99	25 A	690 V~	AWG 12	–	top	10	2	5	1	**9320.400**	326
99	25 A	690 V~	AWG 12	–	top	10	2	10	1	**9320.410**	326
108	25 A	690 V~	AWG 12	–	top	10	2	5	1	**9320.420**	326
108	25 A	690 V~	AWG 12	–	top	10	2	10	1	**9320.430**	326
45	25 A	690 V~	–	16 mm²	top	10	2 (1 var.)	5	1	**9320.260**	326
45	25 A	690 V~	–	16 mm²	top	10	2 (1 var.)	10	1	**9320.270**	326
45	25 A	690 V~	–	16 mm²	top/bottom	10	2	5	1	**9320.280**	326
45	25 A	690 V~	–	16 mm²	top/bottom	10	2	10	1	**9320.290**	326
54	40 A	690 V~	AWG 10	–	top	10	2	5	1	**9320.300**	327
54	40 A	690 V~	AWG 10	–	top	10	2	10	1	**9320.310**	327
54	40 A	690 V~	AWG 10	–	top	15	1	5	1	**9320.460**	327
54	40 A	690 V~	AWG 10	–	top	15	1	10	1	**9320.470**	327
54	40 A	690 V~	AWG 10	–	bottom	10	2	5	1	**9320.320**	327
54	40 A	690 V~	AWG 10	–	bottom	10	2	10	1	**9320.330**	327
54	40 A	690 V~	–	16 mm²	top	10	2	5	1	**9320.340**	327
54	40 A	690 V~	–	16 mm²	top	10	2	10	1	**9320.350**	327
54	40 A	690 V~	–	16 mm²	top/bottom	10	2	5	1	**9320.360**	327
54	40 A	690 V~	–	16 mm²	top/bottom	10	2	10	1	**9320.370**	327

[1)] AWG = American Wire Gauges
AWG 14 = 2.08 mm² ≙ 2.5 mm²
AWG 12 = 3.31 mm² ≙ 4 mm²
AWG 10 = 5.26 mm² ≙ 6 mm²

Note:
For allocation of “power circuit-breakers/starter combinations”,
see page 1130/1131.





2.2 Busbar systems up to 800 A/1600 A (60 mm)

Component adaptor
Cable outlet at the top

Construction width mm	Rated current up to	Rated operating voltage	Connection cables[1]	Connection of round conductors mm²	Support rails		For bar thickness mm	Packs of	**Model No. SV**	Page
					Height mm	Number				
54	50 A	690 V~	AWG 10 (32 A)	1.5 – 10	7.5	1	5	1	**3540.000**	328
54	50 A	690 V~	AWG 10 (32 A)	1.5 – 10	7.5	1	10	1	**3541.000**	328
54	50 A	690 V~	AWG 10 (32 A)	1.5 – 10	7.5	2	5	1	**3040.000**	328
54	50 A	690 V~	AWG 10 (32 A)	1.5 – 10	7.5	2	10	1	**3041.000**	328
72	50 A	690 V~	AWG 10 (32 A)	1.5 – 10	7.5	1	5	1	**3544.000**	328
72	50 A	690 V~	AWG 10 (32 A)	1.5 – 10	7.5	1	10	1	**3545.000**	328
108	50 A	690 V~	AWG 10 (32 A)	1.5 – 10	7.5	2	5	1	**3042.000**	329
108	50 A	690 V~	AWG 10 (32 A)	1.5 – 10	7.5	2	10	1	**3043.000**	329
126	50 A	690 V~	AWG 10 (32 A)	1.5 – 10	7.5	2	5	1	**3069.000**	329
126	50 A	690 V~	AWG 10 (32 A)	1.5 – 10	7.5	2	10	1	**3070.000**	329
144	50 A	690 V~	AWG 10 (32 A)	1.5 – 10	15	2	5	1	**3044.000**	329
144	50 A	690 V~	AWG 10 (32 A)	1.5 – 10	15	2	10	1	**3045.000**	329
54	63 A	690 V~	AWG 8	1.5 – 10	7.5	1	5	1	**3036.000**	330
54	63 A	690 V~	AWG 8	1.5 – 10	7.5	1	10	1	**3037.000**	330
72	63 A	690 V~	AWG 8	1.5 – 10	7.5	2	5	1	**3038.000**	330
72	63 A	690 V~	AWG 8	1.5 – 10	7.5	2	10	1	**3039.000**	330
72	63 A	690 V~	AWG 8	1.5 – 10	15	1	5	1	**3067.000**	330
72	63 A	690 V~	AWG 8	1.5 – 10	15	1	10	1	**3068.000**	330
72	63 A	690 V~	AWG 8	1.5 – 10	15	2	5	1	**3046.000**	330
72	63 A	690 V~	AWG 8	1.5 – 10	15	2	10	1	**3047.000**	330
144	63 A	690 V~	AWG 8	1.5 – 10	15	2	5	1	**3048.000**	330
144	63 A	690 V~	AWG 8	1.5 – 10	15	2	10	1	**3049.000**	330
54	63 A	690 V~	AWG 10	1.5 – 10	7.5	1	5 – 10	1	**3445.000**	331
54	63 A	400 V~	–	1.5 – 16	7.5	1	5 – 10	1	**3446.000**[2]	331
90	100 A	690 V~	35 mm²	–	Mounting plate		5	1	**9320.000**	332
90	100 A	690 V~	35 mm²	–	Mounting plate		10	1	**9320.010**	332
110	160 A	690 V~	–	6 – 70	Mounting plate		5 – 10	1	**3438.000**	332
110	160 A	690 V~	–	6 – 70	Mounting plate		5 – 10	1	**3539.000**	332
110	250 A	690 V~	–	50 – 120	–		5 – 10	1	**3437.000**	333
110	250 A	690 V~	–	50 – 120	–		5 – 10	1	**3437.010**	333

[1] AWG = American Wire Gauges
AWG 10 = 5.26 mm² ≙ 6 mm²
AWG 8 = 8.37 mm² ≙ 10 mm²
[2] with pre-fuse unit D 02-E 18

Note:
For allocation of “power circuit-breakers/starter combinations”,
see page 1131.



Component support (without contact system)

Construction width mm	Support rails		For bar thickness mm	Packs of	**Model No. SV**	Page
	Height mm	Number				
54	7.5	1	5	1	**3542.000**	333
54	7.5	1	10	1	**3543.000**	333
72	7.5	1	5	1	**3546.000**	333
72	7.5	1	10	1	**3547.000**	333



2.2 Busbar systems up to 800 A/1600 A (60 mm)

Bus-mounting fuse bases

Type	Rated current	Rated operating voltage	For bar thickness mm	Packs of	Model No. SV				Page
					Bus-mounting fuse base	Contact hazard protection cover	End caps	Side cover	
For clamping screw attachment									
D 02-E 18[1)]	63 A	400 V~	5 – 10	10	**3418.000**	**3419.000**	**3420.000**	**3093.000**	334
D II-E 27[2)]	25 A	500 V~	5 – 10	10	**3427.000**	**3428.000**	**3429.000**	**3093.000**	334
D III-E 33[2)]	63 A	690 V~	5 – 10	10	**3433.000**	**3434.000**	**3435.000**	**3093.000**	334
For snap-on mounting									
D 02-E 18[1)]	63 A	400 V~	5	10	**3422.000**	**3424.000**	**3425.000**	**3093.000**	335
D 02-E 18[1)]	63 A	400 V~	10	10	**3423.000**	**3424.000**	**3425.000**	**3093.000**	335
D II-E 27[3)]	25 A	500 V~	5	10	**3520.000**	**3522.000**	**3429.000**	**3093.000**	335
D II-E 27[3)]	25 A	500 V~	10	10	**3521.000**	**3522.000**	**3429.000**	**3093.000**	335
D III-E 33[3)]	63 A	690 V~	5	10	**3530.000**	**3532.000**	**3435.000**	**3093.000**	335
D III-E 33[3)]	63 A	690 V~	10	10	**3531.000**	**3532.000**	**3435.000**	**3093.000**	335

[1)] Adaptor sleeve
[2)] Adaptor screw
[3)] Gauge ring



NH fused isolators/NH on-load isolators

Description	Cable outlet	Type of connection	For bar thickness mm	Packs of	Model No. SV	Page
NH fused isolators size 00 160 A, 690 V~	top	Screw M8	5 – 10	1	**3591.020**	336
	bottom	Screw M8	5 – 10	1	**3591.030**	336
NH on-load isolators size 000 100 A, 690 V~	top/bottom	Terminal up to 50 mm²	–	1	**3431.000**	337
Busbar adaptor for SV 3431.000	–	–	5	1	**9320.040**	337
	–	–	10	1	**9320.050**	337



NH bus-mounting on-load isolator

Version	Cable outlet	Type of connection	Packs of	Model No. SV	with fuse monitoring		Page
					Model No. SV[1)]	Model No. SV[2)]	
Size 00, 160 A, 690 V~	top	Screw M8 up to 95 mm²	1	**3400.000**	**3490.000**	**3490.210**	338
Size 00, 160 A, 690 V~	bottom	Screw M8 up to 95 mm²	1	**3401.000**	**3491.000**	**3491.210**	338
Size 00, 160 A, 690 V~	top	Clamp-type terminal connection up to 70 mm²	1	**3402.000**	**3492.000**	**3492.210**	338
Size 00, 160 A, 690 V~	bottom	Clamp-type terminal connection up to 70 mm²	1	**3403.000**	**3493.000**	**3493.210**	338
Size 1, 250 A, 690 V~	top	Screw M10 up to 150 mm²	1	**3411.000**	**3495.000**	**3495.210**	339
Size 1, 250 A, 690 V~	bottom	Screw M10 up to 150 mm²	1	**3410.000**	**3494.000**	**3494.210**	339
Size 2, 400 A, 690 V~	top	Screw M10 up to 240 mm²	1	**3415.020**	**3415.120**	**3415.210**	340
Size 2, 400 A, 690 V~	bottom	Screw M10 up to 240 mm²	1	**3415.030**	**3415.130**	**3415.230**	340
Size 3, 630 A, 690 V~	top	Screw M10 up to 240 mm²	1	**3095.020**	**3095.120**	**3095.210**	341
Size 3, 630 A, 690 V~	bottom	Screw M10 up to 240 mm²	1	**3095.030**	**3095.130**	**3095.230**	341

[1)] Electromechanical fuse monitoring
[2)] Electronic fuse monitoring and LED display



2.3 Busbar systems up to 1250 A (100 mm)

System components

Description	For busbars mm	Packs of	Model No. SV	Page
Busbar supports up to 1250 A, 1000 V~, 3-pole, 100 mm bar centre distance	–	4	**3073.000**	343
Inserts for SV 3073.000	30 x 10	24	**3074.000**	343
	40 x 10	24	**3075.000**	343
	50 x 10	24	**3076.000**	343
Busbars E-Cu				343
End cover	–	10	**3083.000**	343
Busbar cover sections				343



Connection clamps/system covers

Description	Page
Plate clamps	344
Conductor connection clamps	344
System covers	344



NH bus-mounting on-load isolator

Version	Cable outlet	Type of connection	Packs of	Model No. SV	with fuse monitoring		Page
					Model No. SV[1]	Model No. SV[2]	
Size 00, 160 A, 690 V~	top	Screw M8 up to 95 mm²	1	**3400.000**	**3490.000**	**3490.210**	345
Size 00, 160 A, 690 V~	bottom	Screw M8 up to 95 mm²	1	**3401.000**	**3491.000**	**3491.210**	345
Size 00, 160 A, 690 V~	top	Clamp-type terminal connection up to 70 mm²	1	**3402.000**	**3492.000**	**3492.210**	345
Size 00, 160 A, 690 V~	bottom	Clamp-type terminal connection up to 70 mm²	1	**3403.000**	**3493.000**	**3493.210**	345
Size 1, 250 A, 690 V~	top	Screw M10 up to 150 mm²	1	**3411.000**	**3495.000**	**3495.210**	346
Size 1, 250 A, 690 V~	bottom	Screw M10 up to 150 mm²	1	**3410.000**	**3494.000**	**3494.210**	346
Size 2, 400 A, 690 V~	top/bottom	Screw M10 up to 240 mm²	1	**3415.010**	**3415.110**	**3415.310**	347
Size 3, 630 A, 690 V~	top/bottom	Screw M10 up to 240 mm²	1	**3095.010**	**3095.110**	**3095.310**	348
Busbar adaptor for NH isolators		Size 00, Size 1	1	**3412.000**			345
		Size 2	1	**3499.020**			347
		Size 3	1	**3499.030**			348

[1] Electromechanical fuse monitoring
[2] Electronic fuse monitoring and LED display

NH fused isolator

Version	Cable outlet	Type of connection	Packs of	Model No. SV	Page
Size 00, 160 A, 690 V~	top/bottom	Screw M8	1	**3591.010**	349

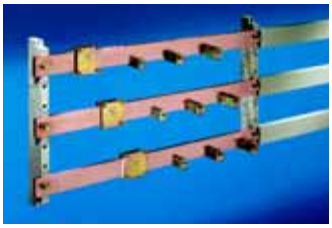


2.4 Busbar systems up to 1600 A (185 mm)

System components

Description	For busbars mm	Packs of	Model No. SV	Page
Busbar supports up to 1600 A, 1000 V~, 3-pole, 185 mm bar centre distance	50 – 80 x 10[1]	2	**3052.000**	351
Inserts for SV 3052.000	50 x 10	24	**3074.000**	351
	60 x 10	24	**3075.000**	351
Busbars E-Cu				351
Busbar cover sections				351

[1] Max. busbar accommodation without inserts 80 x 10 mm.
The base component of the busbar support may also be used as a single-pole support.



2.4 Busbar systems up to 1600 A (185 mm)

Connection clamps

Description	Page
Plate clamps	352
Conductor connection clamps	352



NH fused isolators

Version	Cable outlet	Type of connection	Packs of	**Model No. SV**	Page
Size 00, 160 A, 690 V~	top/bottom	Screw M8	1	**3591.040**[1)]	353
			2	**3591.050**[2)]	353
Size 1, 250 A, 690 V~	top/bottom	Screw M12	1	**3485.000**	353
Size 2, 400 A, 690 V~	top/bottom	Screw M12	1	**3486.000**	353
Size 3, 630 A, 690 V~	top/bottom	Screw M12	1	**3487.000**	353

[1)] Including busbar adaptor
[2)] Including busbar adaptor (double adaptor)



2.5 Busbar systems up to 2500 A/3000 A (150 mm)

System components

Description	Rated current up to	Max. bar accommodation without spacing pieces	Packs of	**Model No. SV**	Page
Busbar support, 3-pole, 150 mm bar centre distance, rated operating voltage 1000 V~	2500 A	2 x 80 x 10 mm	2	**3055.000**	355
	3000 A	2 x 100 x 10 mm	2	**3057.000**	355
Spacing pieces			12	**3056.000**	355
Busbars E-Cu					355
Connection plates					356
Bar insulation					356





2.6 Mounting plate assembly

NH on-load isolators

Version	Cable outlet	Type of connection	Packs of	**Model No. SV**	with fuse monitoring		Page
					Model No. SV[1)]	**Model No. SV**[2)]	
Size 000, 100 A, 690 V~	top/bottom	Terminal up to 50 mm²	1	**3431.000**	–	–	358
Size 00, 160 A, 690 V~	top/bottom	Screw M8 up to 95 mm²	1	**3488.000**	–	–	358
Size 00, 160 A, 690 V~	bottom	Screw M8 up to 95 mm²	1	–	–	**3488.310**	358
Size 00, 160 A, 690 V~	top/bottom	Clamp-type terminal up to 70 mm²	1	**3489.000**	–	–	358
Size 00, 160 A, 690 V~	bottom	Clamp-type terminal up to 70 mm²	1	–	–	**3489.310**	358
Size 1, 250 A, 690 V~	top/bottom	Screw M10 up to 150 mm²	1	**3409.000**	–	–	358
Size 1, 250 A, 690 V~	bottom	Screw M10 up to 150 mm²	1	–	–	**3409.310**	358
Size 2, 400 A, 690 V~	top/bottom	Screw M10 up to 240 mm²	1	**3415.010**	–	–	359
Size 2, 400 A, 690 V~	top/bottom	Screw M10 up to 240 mm²	1	–	**3415.110**	–	359
Size 2, 400 A, 690 V~	bottom	Screw M10 up to 240 mm²	1	–	–	**3415.310**	359
Size 3, 630 A, 690 V~	top/bottom	Screw M10 up to 240 mm²	1	**3095.010**	–	–	359
Size 3, 630 A, 690 V~	top/bottom	Screw M10 up to 240 mm²	1	–	**3095.110**	–	359
Size 3, 630 A, 690 V~	bottom	Screw M10 up to 240 mm²	1	–	–	**3095.310**	359

[1)] Electromechanical fuse monitoring
[2)] Electronic fuse monitoring and LED display



2.8 Rittal Maxi-PLS up to 2000 A/3200 A

Description	up to 2000 A page	up to 3200 A page
Connection kits (3-pole)	368 – 369	378 – 381
Connection kits for coupling sets (3-pole)	370 – 371	382 – 383
Connection kits for rear section (3-pole)	372 – 373	384 – 387
Connection kits for coupling sets – rear section (3-pole)	374 – 375	388 – 389
System components		
Busbar support	376	390
Busbar support, suitable for top mounting	376	390
End supports	376	390
System attachment	376	390
Maxi-PLS busbars, E-Cu 57	376	390
Cover section	376	390
Longitudinal connector E-Cu	376	390
End cover	376	390
Stabiliser	–	390
Connection components		
Connection bracket E-Cu	377	391
Isolator chassis	377	391
U contact maker E-Cu	377	391
Connection clamp	377	391
Connection plates	377	391
Terminal studs	377	391
Sliding blocks	377	391
Sliding nuts	377	391
Threaded bolts	377	391



2.8 Rittal Maxi-PLS SV-TS 8 enclosures

for incoming/outgoing

Dimensions mm			Model No. SV		Model No. TS					Page
						Base/plinth Packs of 1 set				
						Components front and rear		Trim panels sides		
Width	Height	Depth	For Maxi-PLS	Enclosure	Side panels Packs of 2	100 mm	200 mm	100 mm	200 mm	
3-pole										
600	2000	600	2000 A	**9660.665**[1]	8106.235	8601.600	8602.600	8601.060	8602.060	392
600	2000	600	2000 A	**9660.675**[2]	8106.512	8601.600	8602.600	8601.060	8602.060	392
800	2000	600	3200 A	**9660.865**[1]	8106.235	8601.800	8602.800	8601.060	8602.060	392
800	2000	600	3200 A	**9660.875**[2]	8106.512	8601.800	8602.800	8601.060	8602.060	392
4-pole										
800	2000	600	2000 A	**9649.625**[1]	8106.235	8601.800	8602.800	8601.060	8602.060	393
800	2000	600	2000 A	**9649.635**[2]	8106.512	8601.800	8602.800	8601.060	8602.060	393
800	2000	800	3200 A	**9659.625**[1]	8108.235	8601.800	8602.800	8601.080	8602.080	393
800	2000	800	3200 A	**9659.635**[2]	8108.512	8601.800	8602.800	8601.080	8602.080	393

[1] 1-door
[2] 3-door



2.8 Rittal Maxi-PLS SV-TS 8 enclosures

for Rittal NH fused isolators

Dimensions mm			Model No. TS						Page
Width	Height	Depth	Enclosure[1]	Side panels Packs of 2	Base/plinth Packs of 1 set				
					Components front and rear		Trim panels sides		
					100 mm	200 mm	100 mm	200 mm	
3-pole/4-pole (2000 A/3200 A)									
600	2000	500	**9660.505**[2]	8105.235	8601.600	8602.600	8601.050	8602.050	394
600	2000	600	**9660.605**[2]	8106.235	8601.600	8602.600	8601.060	8602.060	394
600	2000	800	**9660.805**[2]	8108.235	8601.600	8602.600	8601.080	8602.080	394
800	2000	500	**9660.535**[2]	8105.235	8601.800	8602.800	8601.050	8602.050	394
800	2000	600	**9660.635**[2]	8106.235	8601.800	8602.800	8601.060	8602.060	394
800	2000	800	**9660.835**[2]	8108.235	8601.800	8602.800	8601.080	8602.080	394
1000	2000	500	**9660.595**[3]	8105.235	8601.000	8602.000	8601.050	8602.050	395
1000	2000	600	**9660.695**[3]	8106.235	8601.000	8602.000	8601.060	8602.060	395
1200	2000	500	**9660.555**[3]	8105.235	8601.200	8602.200	8601.050	8602.050	395
1200	2000	600	**9660.655**[3]	8106.235	8601.200	8602.200	8601.060	8602.060	395
1200	2000	800	**9660.855**[3]	8108.235	8601.200	8602.200	8601.080	8602.080	395

[1] Without mounting plate
[2] 1-door
[3] 2-door



for NH fused isolators

Dimensions mm			Model No. SV	Model No. TS					Page
Width	Height	Depth	Enclosure 1-door	Side panels Packs of 2	Base/plinth Packs of 1 set				
					Components front and rear		Trim panels sides		
					100 mm	200 mm	100 mm	200 mm	
3-pole (2000 A/3200 A)									
1000	2000	600	**9660.515**[1]	8106.512	8601.000	8602.000	8601.060	8602.060	396
1200	2000	600	**9660.545**[1]	8106.512	8601.200	8602.200	8601.060	8602.060	396
1000	2000	600	**9660.415**[2]	8106.512	8601.000	8602.000	8601.060	8602.060	396
1200	2000	600	**9660.445**[2]	8106.512	8601.200	8602.200	8601.060	8602.060	396
4-pole (2000 A)									
1000	2000	600	**9649.665**[1]	8106.512	8601.000	8602.000	8601.060	8602.060	397
1200	2000	600	**9649.675**[1]	8106.512	8601.200	8602.200	8601.060	8602.060	397
1000	2000	600	**9649.645**[2]	8106.512	8601.000	8602.000	8601.060	8602.060	397
1200	2000	600	**9649.655**[2]	8106.512	8601.200	8602.200	8601.060	8602.060	397
4-pole (3200 A)									
1000	2000	800	**9659.665**[1]	8108.512	8601.000	8602.000	8601.080	8602.080	397
1200	2000	800	**9659.675**[1]	8108.512	8601.200	8602.200	8601.080	8602.080	397
1000	2000	800	**9659.645**[2]	8108.512	8601.000	8602.000	8601.080	8602.080	397
1200	2000	800	**9659.655**[2]	8108.512	8601.200	8602.200	8601.080	8602.080	397

[1] For NH fused isolators, brand ABB SlimLine
[2] For NH fused isolators, brand Jean Müller SASIL



System components for NH fused isolator panels

For NH fused isolator brands ABB SlimLine/Jean Müller SASIL

Description	Page
T-bar support 800 A/1600 A	398
T-busbars E-Cu 800 A/1600 A	398
T-connector kits 800 A/1600 A	398



2.8 Rittal Maxi-PLS SV-TS 8 enclosures

for coupling sets

Dimensions mm			Model No. SV		Model No. TS					Page
						Base/plinth Packs of 1 set				
						Components front and rear		Trim panels sides		
Width	Height	Depth	For Maxi-PLS	Enclosure	Side panels Packs of 2	100 mm	200 mm	100 mm	200 mm	
3-pole										
800	2000	600	2000 A	**9660.305**	8106.512	8601.800	8602.800	8601.060	8602.060	399
1000	2000	600	3200 A	**9660.355**	8106.512	8601.000	8602.000	8601.060	8602.060	399
4-pole										
1000	2000	600	2000 A	**9649.685**	8106.512	8601.000	8602.000	8601.060	8602.060	399
1000	2000	800	3200 A	**9659.695**	8108.512	8601.000	8602.000	8601.080	8602.080	399



System components for coupling sets

Description	Page
Coupling sets, vertical	400
System attachment for vertical coupling set	400



2.9 ISV distribution enclosures

ISV-TS 8 enclosures for distribution enclosures up to 630 A

Dimensions mm			Model No. SV	Model No. TS					Page
					Base/plinth Packs of 1 set				
					Components front and rear		Trim panels sides		
Width	Height	Depth	Enclosure	Side panels Packs of 2	100 mm	200 mm	100 mm	200 mm	
600	2000	400	**9665.945**[1)]	8104.235	8601.600	8602.600	8601.040	8602.040	409
600	2000	600	**9665.905**[1)]	8106.235	8601.600	8602.600	8601.060	8602.060	409
850	2000	400	**9665.955**[1)]	8104.235	8601.850	8602.850	8601.040	8602.040	409
850	2000	600	**9665.915**[1)]	8106.235	8601.850	8602.850	8601.060	8602.060	409
1100	2000	400	**9665.965**[2)]	8104.235	8601.300	8602.100	8601.040	8602.040	409
1100	2000	600	**9665.925**[2)]	8106.235	8601.300	8602.100	8601.060	8602.060	409

[1)] 1-door
[2)] 2-door



ISV-TS 8 enclosures for distribution enclosures up to 1600 A

Dimensions mm			Model No. SV	Model No. TS					Page
					Base/plinth Packs of 1 set				
					Components front and rear		Trim panels sides		
Width	Height	Depth	Enclosure	Side panels Packs of 2	100 mm	200 mm	100 mm	200 mm	
600	2000	600	**9665.975**[1)]	8106.235	8601.600	8602.600	8601.060	8602.060	410
850	2000	600	**9665.985**[1)]	8106.235	8601.850	8602.850	8601.060	8602.060	410

[1)] 1-door



2.9 ISV distribution enclosures

Installation modules

Description	Page
Contact hazard protection modules	411
Mounting plate modules	411
Support rail modules	412
Support modules	412
Connection modules	413
DIN rail mounted device modules	413
NH on-load isolator modules	414
Power circuit-breaker modules	414
Busbar support	415
Contact hazard protection cover for conductor connection clamps and plate clamps	416/418
Contact hazard protection covers for bus-mounting fuse bases	416
Contact hazard protection covers for NH bus-mounting on-load isolator size 00	416
NH fused isolator modules	417
Contact hazard protection covers for NH fused isolator size 00	417
Busbar modules, 2-pole	418
Meter mounting board module	418



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3.1 ATCA

AdvancedTCA Shelf VA-1 (Rittal ShMC connectable from rear)

U	Slots	Backplane	IPMI	Rittal ShMC[1)]	Switch slots	PC	PEM	PEM-Amp	RiCool-2	Model No. RP	Page
13	14	Dual Star	bussed	2 x kernels	centre	2 x	2 x	90 A each	4 x 48 V-IPMI	**3688.306**	426
13	14	Dual Star	bussed	2 x kernels	centre	2 x	4 x	50 A each	4 x 48 V-IPMI	**On request**	426
13	14	Full Mesh	bussed	2 x kernels	1 + 2	2 x	2 x	90 A each	4 x 48 V-IPMI	**3688.305**	426
13	14	Full Mesh	bussed	2 x kernels	1 + 2	2 x	4 x	50 A each	4 x 48 V-IPMI	**3688.463**	426

[1)] ShMC not included with the supply.



AdvancedTCA Shelf VB-1 (Intel ShMC connectable from front)

U	Slots	Backplane	IPMI	Intel ShMC[1)]	Switch slots	PC	PEM[2)]	PEM-Amp	RiCool-2	Model No. RP	Page
13	14	Dual Star	radial	2 x CMM	centre	2 x	2 x	90 A each	4 x 48 V-IPMI	**3688.303**	427
13	14	Dual Star	radial	2 x CMM	centre	2 x	4 x	50 A each	4 x 48 V-IPMI	**On request**	427
13	14	Full Mesh	radial	2 x CMM	1 + 2	2 x	2 x	90 A each	4 x 48 V-IPMI	**3688.301**	427
13	14	Full Mesh	radial	2 x CMM	1 + 2	2 x	4 x	50 A each	4 x 48 V-IPMI	**3688.466**	427

[1)] ShMC not included with the supply.
[2)] PEM-IPMI included with the supply.

AdvancedTCA Shelf version VB-2 (Pigeon Point ShMC connectable from front)

U	Slots	Backplane	IPMI	Pigeon Point ShMC[1)]	Switch slots	PC	PEM[2)]	PEM-Amp	RiCool-2	Model No. RP	Page
13	14	Dual Star	bussed	2 x CMM	centre	2 x	2 x	90 A each	4 x 48 V-IPMI	**3688.304**	427
13	14	Dual Star	bussed	2 x CMM	centre	2 x	4 x	50 A each	4 x 48 V-IPMI	**3688.469**	427
13	14	Full Mesh	bussed	2 x CMM	1 + 2	2 x	2 x	90 A each	4 x 48 V-IPMI	**3688.302**	427
13	14	Full Mesh	bussed	2 x CMM	1 + 2	2 x	4 x	50 A each	4 x 48 V-IPMI	**3688.470**	427

[1)] ShMC not included with the supply.
[2)] PEM-IPMI included with the supply.



3.2 CPCI

Rack-mount systems, Slim-Box

U	Depth mm	Installation space for		Model No. RP			Page
		Boards mm	Rear I/O boards mm	with CPCI backplane and power supply	with CPCI backplane without power supply	without backplane with power supply	
1	300	160	80	**9907.475**	**3689.177**	**9907.479**	433
1	300	160	–	**9907.471**	**–**	**–**	433
2	300	160	80	**9907.476**	**3689.178**	**9907.480**	433
2	300	160	–	**9907.472**	**–**	**–**	433
3	300	160	80	**9907.477**	**3689.179**	**9907.481**	433
3	300	160	–	**9907.473**	**–**	**–**	433
4	300	160	80	**9907.478**	**3689.180**	**9907.482**	433
4	300	160	–	**9907.474**	**–**	**–**	433



Rack-mount systems, Ripac

Slots (version)	U	Depth mm	Wiring space depth mm	For PCB	Model No. RP	Page
					MPS system	
5 horizontal	3	405	210	6 U x 160 mm	**3687.717**	434
7 horizontal	4	405	210	6 U x 160 mm	**3687.718**	434
8	4 (3 + 1)	405	210	3 U/6 U x 160 mm	**3687.719**	435
8	7 (6 + 1)	405	210	3 U/6 U x 160 mm	**3687.720**	435
8	7 (6 + 2 x $^1/_2$)	405	210	6 x U 160 mm	**3687.721**	436
8 (with radial fan)	9 (6 + 2 x $1^1/_2$)	290.5	85.5	6 U x 160 mm	**3687.723**	437

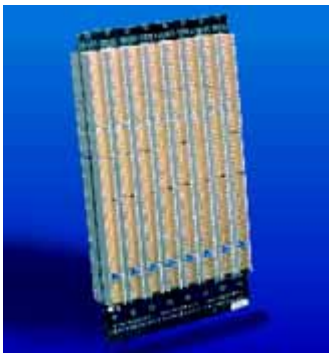


3.2 CPCI

Backplanes 3.5 U

Slots	Version	Model No. RP		Page
		32-bit	64-bit	
2	SE	**–**	**3687.864**	440
3	SBE	**3687.865**	**3686.578**	440
4	SBE	**3687.863**	**3686.576**	440
5	SBE	**3687.862**	**3686.575**	440
6	SBME	**3687.861**	**3686.548**	440
7	SBE	**3687.860**	**3686.547**	440
8	S	**3687.859**	**3686.546**	440

S = Stand alone
B = Beginning segment
M = Middle segment
E = Ending segment

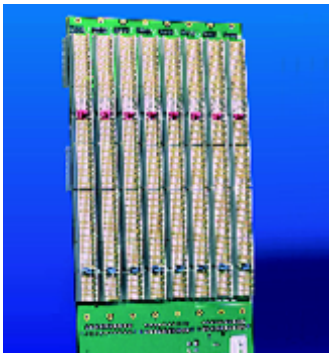


3.2 CPCI

Backplanes 6.5 U

Slots	Version	Model No. RP		Page
		32-bit	64-bit	
Backplanes[1)]				
2	SBE	–	**3686.581**	440
3	SBE	**3687.871**	**3686.580**	440
4	SBE	**3687.870**	**3686.579**	440
5	SBE	**3687.869**	**3686.552**	440
6	SBME	**3687.868**	**3686.551**	440
7	SBE	**3687.867**	**3686.550**	440
8	S	**3687.866**	**3686.549**	440
Backplanes for low profile bridge[2)]				
3	SBE	–	**3689.209**	440
4	SBE	–	**3689.208**	440
5	SBE	–	**3689.207**	440
6	SBME	–	**3689.206**	440
7	SBE	–	**3689.205**	440

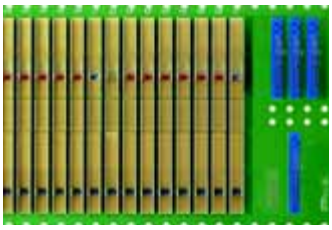
[1)] Cannot be used when rear connection of 80 mm boards is required.
[2)] May be used when rear connection of 80 mm boards is required.
S = Stand alone
B = Beginning segment
M = Middle segment
E = Ending segment



Backplanes 7 U with H.110

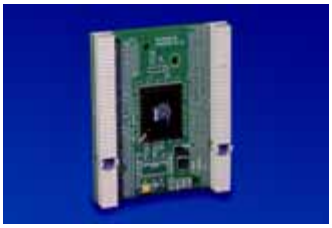
Slots	Version	Model No. RP		Page
		H.110 connected to system slot	H.110 not connected to system slot	
3	S	**3688.508[1)]**	–	441
4	SE	**3688.507[2)]**	–	441
5	SB	**3687.875[2)]**	**3688.506[2)]**	441
6	SBME	**3687.874[2)]**	**3688.505[2)]**	441
7	SBE	**3687.873[2)]**	**3688.504[2)]**	441
8	S	**3687.877**	**9805.494**	441

[1)] Extendible with low profile bridges
[2)] Extendible with bridges RP 3686.571
S = Stand alone
B = Beginning segment
M = Middle segment
E = Ending segment



Backplanes 7 U, Switch Fabric to PICMG 2.16

Width	Number of slots	Description of slots	Model No. RP	Page
32 HP	8	1 fabric slot 6 node slots with CPCI and H.110 1 host slot	**3689.188**	442
32 HP	8	see RP 3689.188, but without H.110	**3686.414**	442
84 HP	16	1 fabric slot 6 node slots with CPCI and H.110 1 host slot 1 fabric slot 6 node slots with CPCI and H.110 1 host slot 3 slots for power supplies	**3686.396**	442
84 HP	16	see RP 3686.396, but without H.110	**3689.186**	442
84 HP	21	7 node slots with CPCI and H.110 1 host slot 1 node slot with H.110, without CPCI 1 fabric slot 7 node slots with CPCI and H.110 1 host slot 1 node slot with H.110, without CPCI 1 fabric slot 1 alarm slot	**3686.397**	442
84 HP	21	see RP 3686.397, but without H.110	**3689.190**	442
84 HP	21	see RP 3686.397, but without CPCI	**3689.191**	442



3.2 CPCI

Modular CPCI bridge

Description	Model No. RP	Page
64-bit CPCI bridge	**3686.571**	443



Modular low profile bridge

Version	Bits	Model No. RP	Page
left-right	32	**3689.210**	443
right-left	32	**3689.211**	443
left-right	64	**9810.637**	443
right-left	64	**9812.625**	443

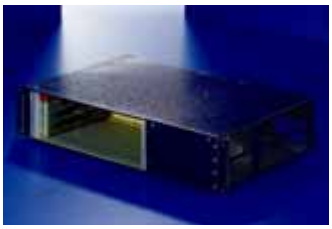
Only suitable for use in conjunction with low profile backplanes.



Power supply board

Description	Model No. RP	Page
3.5 U, 16 HP		
Board for pluggable power supply with Positronic connector, 47 pin	**3688.603**	444
ATX (12″) cable harness	**9810.337**	444
ATX (16″) cable harness	**3686.570**	444
ATX (20″) cable harness	**9810.338**	444
6.5 U, 8 HP[1)]		
Board for pluggable power supply with Positronic connector, 47 pin	**3688.607**	445
ATX (12″) cable harness	**9810.337**	445
ATX (16″) cable harness	**3686.570**	445
ATX (20″) cable harness	**9810.338**	445
6.5 U, 16 HP[1)]		
Board for 2 x pluggable power supplies with Positronic connector, 47 pin	**3688.608**	446
ATX (12″) cable harness	**9810.337**	446
ATX (16″) cable harness	**3686.570**	446
ATX (20″) cable harness	**9810.338**	446

[1)] Extended delivery times.



3.2 VME

Rack-mount systems, Slim-Box

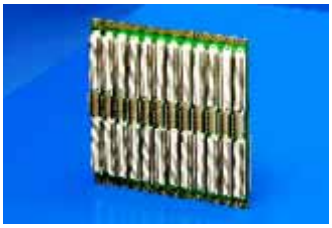
U	Depth mm	Installation space for		Model No. RP		Page
		Boards mm	Rear I/O boards mm	with VME backplane and power supply	without backplane with power supply	
1	300	160	80	–	**9907.479**	447
1	360	160	160	**9907.467**	–	447
1	300	160	–	**9907.463**	–	447
2	300	160	80	–	**9907.480**	447
2	360	160	160	**9907.468**	–	447
2	300	160	–	**9907.464**	–	447
3	300	160	80	–	**9907.481**	447
3	360	160	160	**9907.469**	–	447
3	300	160	–	**9907.465**	–	447
4	300	160	80	–	**9907.482**	447
4	360	160	160	**9907.470**	–	447
4	300	160	–	**9907.466**	–	447



3.2 VME/VME64x

Rack-mount systems, Ripac

Slots (version)	U	For	Depth mm	Wiring space depth mm	For PCB	Model No. RP MPS system	Page
5 horizontal	3	VME	405	210	6 U x 160 mm	**3687.698**	448
5 horizontal	3	VME64x	405	210	6 U x 160 mm	**3687.699**	448
7 horizontal	4	VME	405	210	6 U x 160 mm	**3687.700**	448
7 horizontal	4	VME64x	405	210	6 U x 160 mm	**3687.696**	448
12	4 (3 + 1)	VME	405	210	3 U x 160 mm	**3687.702**	449
12	7 (6 + 1)	VME	405	210	3/6 U x 160 mm	**3687.703**	449
12	7 (6 + 1)	VME64x	405	210	3/6 U x 160 mm	**3687.704**	449
12	7 (6 + 2 x 1/2)	VME	405	210	6 U x 160 mm	**3687.705**	450
12	7 (6 + 2 x 1/2)	VME64x	405	210	6 U x 160 mm	**3687.706**	450
12 (with radial fan)	9 (6 + 2 x 1 1/2)	VME64x	290.5	85.5	6 U x 160 mm	**3687.708**	451

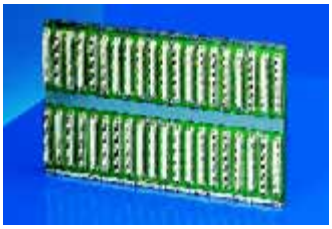


3.2 VME

Backplanes VME64x

Slots	Dimensions in mm Width	Height	Model No. RP without P0 connector	with P0 connector	Page
6 U					
5	100	261.6	**3687.608**	**3687.609**	454
7	161.5	261.6	**3687.610**	**3687.611**	454
9	181.5	261.6	**9904.930**	**9904.932**	454
10	202	261.6	**9904.931**	**9904.933**	454
12	242.5	261.6	**3686.634**	**3686.473**	454
21	425.5	261.6	**3686.635**	**3686.474**	454

Slots	Dimensions in mm Width	Height	Model No. RP without P0 connector	with P0 connector	Page
6.5 U					
5	100	283.7	**9910.012**	**9910.007**	454
7	161.5	283.7	**9910.013**	**9910.008**	454
9	181.5	283.7	**9910.014**	**9910.009**	454
10	202	283.7	**9904.928**	**9904.929**	454
12	242.5	283.7	**9910.015**	**9910.010**	454
21	425.5	283.7	**9910.016**	**9910.011**	454



Backplanes VME J1/J2 Monolithic

Slots	Dimensions in mm Width	Height	Model No. RP passive	active	Page
2	39.5	261.7	**3686.475**	**3686.495**	455
3	59.5	261.7	**3686.476**	**3686.496**	455
4	80	261.7	**3686.477**	**3686.497**	455
5	100	261.7	**3686.478**	**3686.498**	455
6	120.5	261.7	**3686.479**	**3686.499**	455
7	141	261.7	**3686.480**	**3686.500**	455
8	161.5	261.7	**3686.481**	**3686.501**	455
9	181.5	261.7	**3686.482**	**3686.502**	455
10	202	261.7	**3686.483**	**3686.503**	455
11	222.5	261.7	**3686.484**	**3686.504**	455

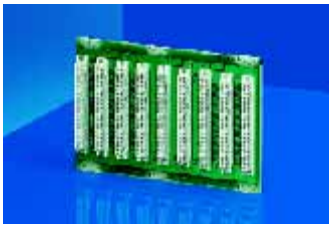
Slots	Dimensions in mm Width	Height	Model No. RP passive	active	Page
12	242.5	261.7	**3686.485**	**3686.505**	455
13	263	261.7	**3686.486**	**3686.506**	455
14	283	261.7	**3686.487**	**3686.507**	455
15	303.5	261.7	**3686.488**	**3686.508**	455
16	324	261.7	**3686.489**	**3686.509**	455
17	344	261.7	**3686.490**	**3686.510**	455
18	364.5	261.7	**3686.491**	**3686.511**	455
19	385	261.7	**3686.492**	**3686.512**	455
20	405	261.7	**3686.493**	**3686.513**	455
21	425.5	261.7	**3686.494**	**3686.514**	455



Backplanes VME J1 system bus

Slots	Dimensions in mm Width	Height	Model No. RP	Page
3	59.5	128.4	**3686.555**	456
4	80	128.4	**3686.556**	456
5	100	128.4	**3686.557**	456
6	120.5	128.4	**3686.558**	456
7	141	128.4	**3686.559**	456
8	161.5	128.4	**3686.560**	456
9	181.5	128.4	**3686.561**	456
10	202	128.4	**3686.562**	456

Slots	Dimensions in mm Width	Height	Model No. RP	Page
12	242.5	128.4	**3686.563**	456
13	263	128.4	**3686.564**	456
14	283	128.4	**3686.565**	456
15	303.5	128.4	**3686.566**	456
18	364.5	128.4	**3686.567**	456
20	405	128.4	**3686.568**	456
21	425.5	128.4	**3686.569**	456



3.2 VME

Backplanes VME J2 expansion bus

Slots	Dimensions in mm		Model No. RP	Page
	Width	Height		
3	59.5	128.4	**3686.585**	456
4	80	128.4	**3686.586**	456
5	100	128.4	**3686.587**	456
6	120.5	128.4	**3686.588**	456
7	161.5	128.4	**3686.589**	456
8	161.5	128.4	**3686.590**	456
9	181.5	128.4	**3686.591**	456
10	202	128.4	**3686.592**	456

Slots	Dimensions in mm		Model No. RP	Page
	Width	Height		
12	242.5	128.4	**3686.593**	456
13	263	128.4	**3686.594**	456
14	283	128.4	**3686.595**	456
15	303.5	128.4	**3686.596**	456
18	364.5	128.4	**3686.597**	456
20	405	128.4	**3686.598**	456
21	425.5	128.4	**3686.599**	456

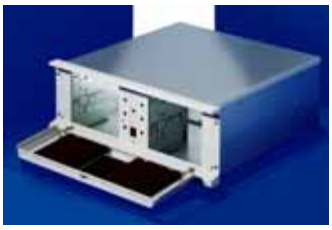






3.3 Rack-mount systems for industrial PCs

U	Dimensions in mm			Packs of	Model No. RP	Page
	Width	Height Flanges/ Side panels	Depth			
ATX Ripac 4 U, aluminium						
4	482.6 (19″)	177	440	1	**3659.000**	462
ATX 1, 2 and 4 U, sheet steel						
1	482.6 (19″)	44	532.5/530	1	**3659.500**	463
2	482.6 (19″)	88	532.5/530	1	**3659.600**	464
4	482.6 (19″)	177/174	442.5/440	1	**3659.900**	465
ATX Economy with front door 4 U, sheet steel						
4	482.6 (19″)	177/174	430/415	1	**3659.100**	466
Modular system AT/ATX Vario Economy with front door, 4 U, sheet steel Expansion for AT/ATX power pack (PS/2) or redundant power pack (PS/2), ATX/AT 8 + 4 slots/AT 14 slots. Basic enclosure individually upgradable for AT or ATX applications.						
4	482.6 (19″)	177/174	430	1	**3659.400**	467
ATX with front connections for 482.6 mm (19″) installation, 4 U						
4	482.6 (19″)	177/174	442.5/440	1	**3659.700**	468
ATX with front connections for wall mounting						
	380	330	292.5/290	1	**3659.710**	469
ATX for PICMG backplane, 4 U, sheet steel						
4	482.6 (19″)	177/174	442.5/440	1	**3659.650**	470
ATX with alternative accommodation, 2 U, sheet steel						
2	482.6 (19″)	88	532/530	1	**3659.640**	471



3.3 Rack-mount systems for storage devices

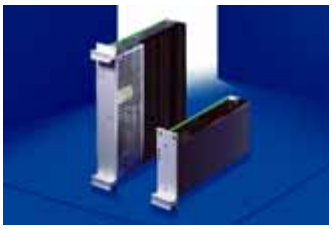
Version	Dimensions in mm			Packs of	Model No. RP	Page
	Width	Height Flanges/ Side panels	Depth			
19″ RAID subrack	482.6 (19″)	177 (4 U)	455/440	1	**3659.300**	472
19″ ATX RAID subrack, 6-drive	482.6 (19″)	177/174 (4 U)	450/435	1	**3659.420**	473
19″ ATX RAID subrack, 9-drive	482.6 (19″)	177 (4 U)	692.5/690	1	**3659.430**	474



3.4 Power supplies

Ripac power supplies – Open Frame

Watts	Output voltage/output current			Model No. RP				Page
	Output 1	Output 2	Output 3	35 A	60 A	85 A	110 A	
250	5 V/35 A	+12 V/8 A	–12 V/8 A	**3686.622**	–	–	–	479
400	5 V/60 A, 85 A	+12 V/8 A	–12 V/8 A	–	**3686.623**	**3686.629**	–	479
600	5 V/85 A	+12 V/8 A	–12 V/8 A	–	–	**3686.624**	–	479
1000	5 V/110 A	+12 V/16 A	–12 V/8 A	–	–	–	**3686.625**	479



Ripac power supplies, plug-in

Watts	Width (HP)	Height (U)	Output voltage/output current			Model No. RP		Page
			Output 1	Output 2	Output 3	Power supply	Font panel	
130	10	3	5 V/14 A	+12 V/5 A	–12 V/2 A	**3686.469**	**3685.304**	480
160	12	3	5 V/20 A	+12 V/5 A	–12 V/2 A	**3686.470**	**3685.305**	480
160	8	6	5 V/20 A	+12 V/5 A	–12 V/2 A	**3686.471**	**3686.472**	480
270	12	6	5 V/35 A	+12 V/6 A	–12 V/2 A	**3685.306**	**3685.307**	480



Ripac power supplies for CPCI, plug-in

Watts	Width (HP)	Height (U)	Output voltage/output current				Output current Output 1 + 2	Model No. RP		Page
			Output 1	Output 2	Output 3	Output 4		Power supply AC	Power supply DC	
175	8	3	5 V/25 A	3.3 V/20 A	12 V/5 A	–12 V/0.5 A	30 A max.	**3688.534**	**3688.537**	481
200	8	3	5 V/30 A	3.3 V/25 A	12 V/5 A	–12 V/0.5 A	38 A max.	**3688.694**	**3688.655**	481
250	8	3	5 V/33 A	3.3 V/33 A	12 V/6 A	–12 V/1.5 A	38 A max.	**3688.695**	**3688.696**	481
350	8	6	5 V/40 A	3.3 V/40 A	12 V/9 A	–12 V/1 A	80 A max.	**3688.528**	**3688.530**	481



CPCI open frame power supply

Watts	Dimensions in mm			Model No. RP	Page
	Height	Width	Depth		
400	126	63	279	**3687.695**	482



CPCI power supply, plug-in

Watts	Height (U)	Width (HP)	Model No. RP		Page
			Power supply	Front panel for power supply	
180	3	12	**3686.682**	**3685.330**	482



3.4 Power supplies

AT/ATX power supply

Version	Watts	PFC	Packs of	Model No. RP	Page
ATX power supply for external switch					
ATX	300	passive	1	**3687.793**	483
AT/ATX power supply					
AT	300	passive	1	**3688.118**	483
AT for RAID	300	passive	1	**3688.119**	483
ATX	300	passive	1	**3688.121**	483
ATX	250	active	1	**3688.127**	483
ATX	300	active	1	**3688.129**	483
ATX	400	active	1	**3688.128**	483
ATX power supply unit 1 U					
ATX	200	active	1	**3688.130**	484



Front panel for ATX power supply

U	HP	Model No. RP		Page
		EMC	Non-EMC	
3	42	**3685.331**	**3685.328**	483
6	21	**3685.332**	**3685.329**	483



Redundant power supply

Version	Watts	PFC	Packs of	Model No. RP	Page
for RAID					
RAID version	2 x 300	active	1	**3688.125**	484
Power pack module (spare)			1	**3688.126**	484
for ATX					
ATX version (1 connector)	2 x 300	active	1	**3688.123**	484
Power pack module (spare)			1	**3688.124**	484
ATX version (2 connector)	2 x 300	active	1	**3688.120**	485
Power pack module (spare)			1	**3688.122**	485



Uninterruptible power supply

Power	Input/output voltage	Input frequency	Output frequency	Model No. RP	Page
300 VA/180 W	220, 230, 240 V AC ±15 %	50 Hz ±5 %	50 Hz ±1 %	**3659.080**	482



3.5 Subrack

Ripac ECO 3 U, 6 U, sheet steel

Side panel depth mm	Maximum board depth mm	Model No. RP		Page
		3 U	6 U	
175	160	**3688.114**	**3688.116**	488
235	220	**3688.115**	**3688.117**	488



3.5 Subrack

Ripac Vario

3 U, 6 U, 9 U

Side panel depth mm	Max. card depth mm	Model No. RP						Page
		3 U		6 U		9 U		
		For backplane	For connector IEC 60 603-2	For backplane	For connector IEC 60 603-2	For backplane	For connector IEC 60 603-2	
185	160	**3684.020**	**3684.034**	**3684.043**	**3684.056**	–	–	489
225	160	**3684.021**	**3684.035**	**3684.044**	**3684.057**	–	–	489
245	220	**3684.022**	**3684.036**	**3684.045**	**3684.058**	–	–	489
285	220	**3684.023**	**3685.281**	**3684.046**	–	–	–	489
305	280	**3685.231**	**3685.233**	**3685.238**	**3685.240**	–	–	489
345	280	**3684.024**	–	**3684.047**	–	**3684.051**	**3684.059**	489
365	340	**3685.232**	**3685.234**	**3685.239**	–	–	–	489
405	340	**3684.025**	–	**3684.048**	–	**3684.052**	**3684.060**	489
465	400	**3684.026**	–	**3684.049**	–	**3684.053**	**3684.061**	489
525	400	**3684.027**	–	**3684.050**	–	**3684.054**	–	489
585	400	–	–	–	–	**3684.055**	–	489

4 U, 7 U

Side panel depth mm	Max. card depth mm	Model No. RP						Page
		4 U (3 + 1)		4 U (3 + 2 x 1/2)		7 U (6 + 1)	7 U (6 + 2 x 1/2)	
		For backplane	For connector IEC 60 603-2	For backplane	For connector IEC 60 603-2	For backplane	For backplane	
245	220	**3685.235**	–	–	–	–	–	490
285	220	**3684.028**	**3684.037**	**3684.031**	**3684.040**	–	–	490
305	280	**3685.236**	–	–	–	–	–	490
345	280	**3684.029**	**3684.038**	**3684.032**	**3684.041**	–	–	490
365	340	**3685.237**	–	–	–	–	–	490
405	340	**3684.030**	**3684.039**	**3684.033**	**3684.042**	**3684.064**	**3684.062**	490
465	400	–	–	–	–	**3684.065**	**3684.063**	490



Ripac Vario EMC

3 U, 6 U, 9 U

Side panel depth mm	Max. card depth mm	Model No. RP						Page
		3 U		6 U		9 U		
		For backplane	For backplane[1)]	For backplane	For backplane[1)]	For backplane	For backplane[1)]	
245	160	**3684.128**	**3684.142**	**3684.156**	**3684.169**	–	–	491
285	220	**3684.129**	**3684.143**	**3684.157**	**3684.170**	–	–	491
305	220	**3685.241**	**3685.243**	**3685.242**	**3685.244**	–	–	491
345	280	**3684.130**	**3684.144**	**3684.158**	**3684.171**	**3684.162**	**3684.175**	491
405	340	**3684.131**	**3684.145**	**3684.159**	**3684.172**	**3684.163**	**3684.176**	491
465	400	**3684.132**	**3684.146**	**3684.160**	**3684.173**	**3684.164**	**3684.177**	491
525	400	**3684.133**	**3684.147**	**3684.161**	**3684.174**	**3684.165**	**3684.178**	491
585	400	–	–	–	–	**3684.166**	**3684.179**	491

4 U

Side panel depth mm	Max. card depth mm	Model No. RP				Page
		4 U (3 + 1)		4 U (3 + 2 x 1/2)		
		For backplane	For backplane[1)]	For backplane	For backplane[1)]	
285	220	**3684.134**	**3684.148**	**3684.137**	**3684.151**	492
345	280	**3684.135**	**3684.149**	**3684.138**	**3684.152**	492
405	340	**3684.136**	**3684.150**	**3684.139**	**3684.153**	492

7 U

Side panel depth mm	Max. card depth mm	Model No. RP				Page
		7 U (6 + 1)		7 U (6 + 2 x 1/2)		
		For backplane	For backplane[1)]	For backplane	For backplane[1)]	
285	220	**3684.187**	**3684.192**	–	–	492
345	280	**3684.188**	**3684.193**	**3684.189**	**3684.196**	492
405	340	**3684.180**	**3684.194**	**3684.190**	**3684.197**	492
465	400	**3684.181**	**3684.195**	**3684.191**	**3684.198**	492

[1)] Front horizontal rails with 10 mm extension for injector/extractor handles.



3.5 Subrack

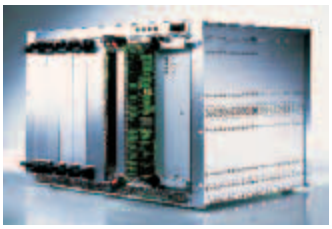
Ripac Compact 3 U, 6 U

Side panel depth mm	Max. PCB depth mm	Model No. RP					Page
		3 U				6 U	
		21 HP		42 HP		42 HP	
		Top hat rail	Mounting plate	Top hat rail	Mounting plate	Mounting plate	
For backplane							
225	160	**3687.667**	**3687.669**	**3687.671**	**3687.673**	**3687.680**	493
285	220	**3687.668**	**3687.670**	**3687.672**	**3687.674**	**3687.681**	493
For backplane – EMC version							
225	160	**3687.682**	**3687.684**	**3687.686**	**3687.688**	**3687.690**	493
285	220	**3687.683**	**3687.685**	**3687.687**	**3687.689**	**3687.691**	493



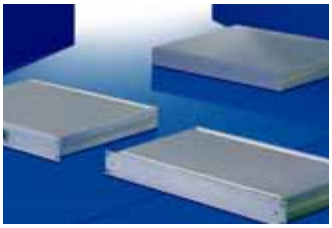
Ripac Vario Mobil 3 U, 6 U, for mobile use

Side panel depth mm	Max. card depth mm	Model No. RP						Page
		3 U			6 U			
		For backplane	For connector IEC 60 603-2	For backplane – EMC Version	For backplane	For connector IEC 60 603-2	For backplane – EMC Version	
245	220	**3687.782**	**3687.780**	**3687.784**	**3687.783**	**3687.781**	**3687.785**	494



Accessories for subracks

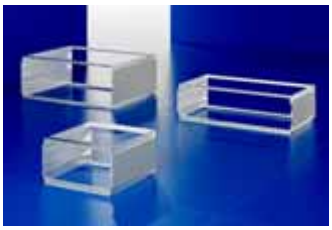
	Page
Subracks, individual components	
Side panels and flanges	495 – 497
Horizontal rails	498 – 505
Subrack, climate control	519 – 524
Subrack, accessories	
Components for EMC installation	506 – 507
Internal mounting kits	508 – 509
Guide rails	509 – 513
Keying/card ejectors	514
Top and bottom covers	515 – 518
Front panels, handles	525 – 540
Ripac box-type plug-in units – Type I	541
Ripac box type plug-in units – individual components	542 – 543
Ripac box-type plug-in units for drives	544
Ripac box-type plug-in units, covers and guides	545
Connectors	546 – 551
Assembly parts	576 – 577



3.6 Instrument cases/system enclosures

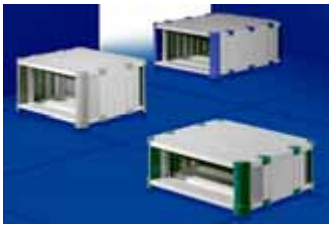
RiBox system enclosures 1 U

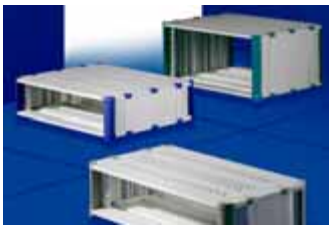
Dimensions in mm		Model No. RP	Page
Width	Depth		
Rack-mounted			
19″ (482.6)	150	**3687.814**	554
19″ (482.6)	200	**3687.815**	554
19″ (482.6)	250	**3687.816**	554
19″ (482.6)	300	**3687.817**	554
19″ (482.6)	350	**3687.818**	554
Rack mount including assembly kit for double Euroboards			
19″ (482.6)	250	**3684.072**	554
19″ (482.6)	350	**3684.073**	554
Instrument cases			
447	150	**3687.819**	554
447	200	**3687.820**	554
447	250	**3687.821**	554
447	300	**3687.822**	554
447	350	**3687.823**	554



Ripac Vario-Module, system enclosures

U	Installation width (HP)	Depth mm	Packs of	Model No. VM			
				Basic enclosure	Page	EMC basic enclosure	Page
3	42	250.4	1	**3982.040**	555	**3983.040**	556
3	42	310.4	1	**3982.070**	555	**3983.070**	556
3	63	250.4	1	**3982.050**	555	**3983.050**	556
3	63	310.4	1	**3982.080**	555	**3983.080**	556
3	84	250.4	1	**3982.060**	555	**3983.060**	556
3	84	310.4	1	**3982.090**	555	**3983.090**	556
3	84	370.4	1	**3982.100**	555	**3983.100**	556
4 (3 + 1)	84	250.4	1	**3982.110**	555	**3983.110**	556
4 (3 + 1)	84	310.4	1	**3982.120**	555	**3983.120**	556
4 (3 + 1)	84	370.4	1	**3982.130**	555	**3983.130**	556
6	84	310.4	1	**3982.140**	557	**3983.140**	558
6	84	370.4	1	**3982.150**	557	**3983.150**	558
6	84	430.4	1	**3982.160**	557	**3983.160**	558
7 (6 + 1)	84	310.4	1	**3982.170**	557	**3983.170**	558
7 (6 + 1)	84	430.4	1	**3982.190**	557	**3983.190**	558



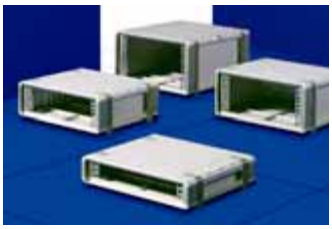


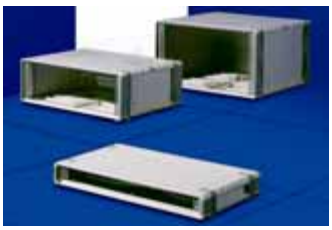
3.6 Instrument cases/system enclosures

Rittal RiCase, instrument case

U	Depth mm		Model No. RC						Page
	Vented	Unvented	Vented RAL 5018[1]	Unvented RAL 5018[1]	Vented RAL 5012[1]	Unvented RAL 5012[1]	Vented RAL 7030	Unvented RAL 7030	
Rittal RiCase 269.2 mm (1/2 19″)									
1	420	300	**3750.110**	**3750.100**	**3750.112**	**3750.102**	**3750.114**	**3750.104**	562
2	540	300	**3750.220**	**3750.200**	**3750.222**	**3750.202**	**3750.224**	**3750.204**	562
3	420	300	**3750.350**	**3750.210**	**3750.352**	**3750.212**	**3750.354**	**3750.214**	562
3	540	420	**3750.360**	**3750.300**	**3750.362**	**3750.302**	**3750.364**	**3750.304**	562
4	540	420	**3750.450**	**3750.400**	**3750.452**	**3750.402**	**3750.454**	**3750.404**	562
Rittal RiCase 482.6 mm (19″)									
3	300	300	**3750.330**	**3750.310**	**3750.332**	**3750.312**	**3750.334**	**3750.314**	563
3	420	420	**3750.340**	**3750.320**	**3750.342**	**3750.322**	**3750.344**	**3750.324**	563
4	300	300	**3750.430**	**3750.410**	**3750.432**	**3750.412**	**3750.434**	**3750.414**	563
4	420	420	**3750.440**	**3750.420**	**3750.442**	**3750.422**	**3750.444**	**3750.424**	563
6	300	300	**3750.630**	**3750.600**	**3750.632**	**3750.602**	**3750.634**	**3750.604**	563
6	420	420	**3750.640**	**3750.610**	**3750.642**	**3750.612**	**3750.644**	**3750.614**	563
6	540	540	**3750.650**	**3750.620**	**3750.652**	**3750.622**	**3750.654**	**3750.624**	563
7	420	420	**3750.720**	**3750.700**	**3750.722**	**3750.702**	**3750.724**	**3750.704**	563
7	540	540	**3750.730**	**3750.710**	**3750.732**	**3750.712**	**3750.734**	**3750.714**	563
9	420	420	**3750.920**	**3750.900**	**3750.922**	**3750.902**	**3750.924**	**3750.904**	563
9	540	540	**3750.930**	**3750.910**	**3750.932**	**3750.912**	**3750.934**	**3750.914**	563
12	540	540	**3750.030**	**3750.000**	**3750.032**	**3750.002**	**3750.034**	**3750.0004**	563

[1] Extended delivery times.
Packs of 1





Rittal Vario-Case iS, instrument case

U	Depth	Packs of	Model No. VC		Page
			without vent slots	with vent slots	
Rittal Vario-Case iS, 269.2 mm (1/2 19″)					
1	300	1	**3710.000**	–	569
2	300	1	**3720.000**	–	569
3	300	1	**3730.000**	–	569
3	400	1	**3731.000**	–	569
4	300	1	**3740.000**	–	569
4	400	1	**3741.000**	–	569
Rittal Vario-Case iS, 482.6 mm (19″)					
1	300	1	**3713.000[1]**	**3713.200[1]**	570
1	400	1	**3714.000**	**3714.200**	570
4	300	1	**3743.000[2]**	**3743.200**	570
4	400	1	**3744.000**	**3744.200**	570
4	500	1	**3745.000[1]**	**3745.200[1]**	570
7	400	1	**3774.000[2]**	**3774.200**	570
7	500	1	**3775.000**	**3775.200**	570
3	300	1	**3733.000[2]**	**3733.200**	571
3	400	1	**3734.000[2]**	**3734.200**	571
3	500	1	**3735.000**	**3735.200**	571
6	300	1	**3763.000**	**3763.200**	571
6	400	1	**3764.000[2]**	**3764.200**	571
6	500	1	**3765.000[2]**	**3765.200**	571
9	400	1	**3794.000**	**3794.200**	571
9	500	1	**3795.000[2]**	**3795.200**	571

[1] Extended delivery times.
[2] To order EMC version, please add extension .700 to the Model No.



System climate control creates the correct ambient conditions for every application, particularly for sensitive electronics.
A broad selection of cooling units, recooling systems, heat exchangers, fan-and-filter units and enclosure heaters protects against adverse physical and thermal influences.
This is supplemented by a versatile range of accessory components.

With a full advisory service and its PC software package Rittal Therm, Rittal will help you to select the correct climate control unit to suit your precise requirements.

Enhanced operational reliability and a longer service life for electronics

- Climate controlled enclosure systems
- Cooling units
- Recooling systems
- Heat exchangers
- Fan-and-filter units
- Roof-mounted fans
- Rack-mounted climate control
- Enclosure heaters
- Cooling

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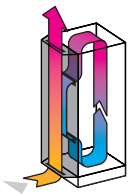
The current status of approvals may be found on our website: www.rittal.com



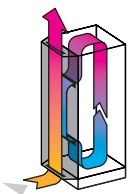


4.1 Climate controlled enclosures

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals UL	CUL	DIN	GS	Page
1100 W	600 x 1800 x 600	230, 50/60	**8687.100**	■	■		■	582
	600 x 2000 x 600		**8607.100**	■	■		■	582
	600 x 1800 x 600	400, 2~, 50/60	**8687.840**	■	■		■	582
	600 x 2000 x 600		**8607.840**	■	■		■	582
1500 W	800 x 1800 x 600	230, 50/60	**8887.150**	■	■	■	■	582
	800 x 2000 x 600		**8807.100**	■	■	■	■	582
	800 x 1800 x 600	400, 2~, 50/60	**8887.140**	■	■	■	■	582
	800 x 2000 x 600		**8807.140**	■	■	■	■	582
2000 W	1200 x 1800 x 600	230, 50/60	**8287.170**	■	■			583
			8807.180	■	■			583
	1200 x 2000 x 600		**8207.170**	■	■			583
			8207.180	■	■			583
2500 W	1200 x 1800 x 600	400, 3~, 50/60	**8807.260**					583
	1200 x 2000 x 600		**8807.250**					583

Delivery times available on request.





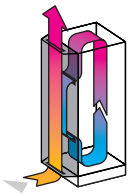
4.1 Climate control doors

for single-door TS 8 enclosures with thermostat

Useful cooling output	For enclosure dimensions W x H mm	Voltage V, Hz	Model No. SK	Approvals UL	CUL	DIN	GS	Page
1100 W	600 x 1800	230, 50/60	**3306.880**[1)]	■	■		■	584
	600 x 2000		**3306.800**[1)]	■	■		■	584
	600 x 1800	400, 2~, 50/60	**3306.884**[1)]	■	■		■	584
	600 x 2000		**3306.840**[1)]	■	■		■	584
1500 W	600 x 1800	230, 50/60	**3307.880**[1)]					584
	600 x 2000		**3307.800**[1)]					584
	600 x 1800	400, 2~, 50/60	**3307.890**[1)]					584
	600 x 2000		**3307.840**					584
	800 x 1800	230, 50/60	**3308.880**[1)]	■	■	■	■	585
	800 x 2000		**3308.800**[1)]	■	■	■	■	585
	800 x 1800	400, 2~, 50/60	**3308.884**[1)]	■	■	■	■	585
	800 x 2000		**3308.840**[1)]	■	■	■	■	585
2000 W	600 x 1800	230, 50/60	**3309.880**[1)]	■	■			586
	600 x 2000		**3309.800**	■	■			586
	600 x 1800	400, 2~, 50/60	**3309.884**[1)]	■	■			586
	600 x 2000		**3309.840**[1)]	■	■			586
2500 W	600 x 1800	400, 3~, 50/60	**3310.880**[1)]					586
	600 x 2000		**3310.800**					586

[1)] Delivery times available on request.





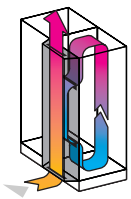
4.1 Climate control doors

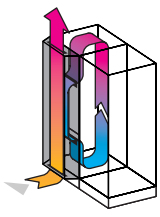
for single-door TS 8 enclosures with microcontroller

Useful cooling output	For enclosure dimensions W x H mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
1100 W	600 x 1800	230, 50/60	**3306.580**[1)]	■	■			584
	600 x 2000		**3306.500**[1)]	■	■			584
	600 x 1800	400, 2~, 50/60	**3306.590**[1)]	■	■			584
	600 x 2000		**3306.540**[1)]	■	■			584
1500 W	600 x 1800	230, 50/60	**3307.580**[1)]					584
	600 x 2000		**3307.500**[1)]					584
	600 x 1800	400, 2~, 50/60	**3307.590**[1)]					584
	600 x 2000		**3307.540**[1)]					584
	800 x 1800	230, 50/60	**3308.580**[1)]	■	■			585
	800 x 2000		**3308.500**	■	■			585
	800 x 1800	400, 2~, 50/60	**3308.590**[1)]	■	■			585
	800 x 2000		**3308.540**	■	■			585
2000 W	600 x 1800	230, 50/60	**3309.580**[1)]	■	■			586
	600 x 2000		**3309.500**	■	■			586
	600 x 1800	400, 2~, 50/60	**3309.590**[1)]					586
	600 x 2000		**3309.540**					586
2500 W	600 x 1800	400, 3~, 50/60	**3310.580**[1)]					586
	600 x 2000		**3310.500**[1)]					586

[1)] Delivery times available on request.







for two-door TS 8 enclosures

Useful cooling output	For enclosure dimensions W x H mm	Voltage V, Hz	Device position	Model No. SK		Approvals				Page
				with thermostat	with micro-controller	UL	CUL	DIN	GS	
1100 W	1200 x 1800	230, 50/60	right	**3306.250**	**3306.550**	■	■			587
		400, 2~, 50/60		**3306.450**	**3306.650**	■	■			587
	1200 x 2000	230, 50/60		**3306.210**	**3306.510**	■	■			587
		400, 2~, 50/60		**3306.410**	**3306.610**	■	■			587
	1200 x 1800	230, 50/60	left	**3306.270**	**3306.570**	■	■			587
		400, 2~, 50/60		**3306.470**	**3306.670**	■	■			587
	1200 x 2000	230, 50/60		**3306.230**	**3306.530**	■	■			587
		400, 2~, 50/60		**3306.430**	**3306.630**	■	■			587
1500 W	1200 x 1800	230, 50/60	right	**3307.250**	**3307.550**					587
		400, 2~, 50/60		**3307.450**	**3307.650**					587
	1200 x 2000	230, 50/60		**3307.210**	**3307.510**					587
		400, 2~, 50/60		**3307.410**	**3307.610**					587
	1200 x 1800	230, 50/60	left	**3307.270**	**3307.570**					587
		400, 2~, 50/60		**3307.470**	**3307.670**					587
	1200 x 2000	230, 50/60		**3307.230**	**3307.530**					587
		400, 2~, 50/60		**3307.430**	**3307.630**					587
2000 W	1200 x 1800	230, 50/60	right	**3309.170**	**3309.570**	■	■			588
		400, 2~, 50/60		**3309.470**	**3309.670**					588
	1200 x 2000	230, 50/60		**3309.120**	**3309.520**	■	■			588
		400, 2~, 50/60		**3309.420**	**3309.620**					588
	1200 x 1800	230, 50/60	left	**3309.210**	**3309.510**	■	■			588
		400, 2~, 50/60		**3309.410**	**3309.610**					588
	1200 x 2000	230, 50/60		**3309.140**	**3309.530**	■	■			588
		400, 2~, 50/60		**3309.440**	**3309.640**					588
2500 W	1200 x 1800	400, 3~, 50/60	right	**3310.250**	**3310.650**					588
	1200 x 2000			**3310.230**	**3310.630**					588
	1200 x 1800	400, 3~, 50/60	left	**3310.150**	**3310.550**					588
	1200 x 2000			**3310.130**	**3310.530**					588

Delivery times available on request.

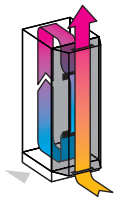


4.1 Climate control side panels

for TS 8 enclosures

Useful cooling output	For enclosure dimensions W x H mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
1100 W	1800 x 600	230, 50/60	**3331.116**					589
	2000 x 600		**3331.316**					589
	1800 x 600	400, 2~, 50/60	**3331.140**[1)]					589
	2000 x 600		**3331.340**[1)]					589
1400 W	1800 x 600	230, 50/60	**3331.216**[1)]					589
	2000 x 600		**3331.416**					589
	1800 x 600	400, 2~, 50/60	**3331.240**[1)]					589
	2000 x 600		**3331.440**[1)]					589

[1)] Delivery times available on request.





4.1 TopTherm roof-mounted cooling units

Useful cooling output	For enclosure dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals				Page
			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	
500 W	597 x 415 x 375	230, 50/60	**3382.100**	**3382.500**	■	■			590
		115, 50/60	**3382.110**	**3382.510**	■	■			590
750 W	597 x 415 x 375	230, 50/60	**3359.100**	**3359.500**	■	■			590
		115, 50/60	**3359.110**	**3359.510**	■	■			590
		400, 2~, 50/60	**3359.140**	**3359.540**	■	■			590
1000 W	597 x 415 x 475	230, 50/60	**3383.100**	**3383.500**	■	■			591
		115, 50/60	**3383.110**	**3383.510**	■	■			591
		400, 2~, 50/60	**3383.140**	**3383.540**	■	■			591
1500 W	597 x 415 x 475	230, 50/60	**3384.100**	**3384.500**	■	■			593
		115, 50/60	**3384.110**	**3384.510**	■	■			593
		400, 2~, 50/60	**3384.140**	**3384.540**	■	■			593
2000 W	597 x 415 x 475	230, 50/60	**3385.100**	**3385.500**	■	■			593
		115, 50/60	**3385.110**	**3385.510**	■	■			593
		400, 2~, 50/60	**3385.140**	**3385.540**	■	■			593
3000 W	796 x 470 x 580	400, 3~, 50 460, 3~, 60	**3386.140**	**3386.540**	■	■			594
4000 W	796 x 470 x 580	400, 3~, 50 460, 3~, 60	**3387.140**	**3387.540**	■	■			594

Roof-mounted cooling units in stainless steel version, see page 69.

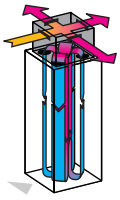


4.1 TopTherm roof-mounted cooling units

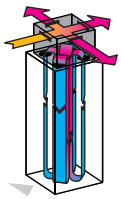
for the office sector

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
1100 W	597 x 415 x 510	115, 50/60	**3273.515**[1)]					592
		230, 50/60	**3273.500**					592

[1)] Delivery times available on request.







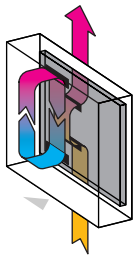
4.1 TopTherm roof-mounted cooling units

Stainless steel

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals				Page
			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	
500 W	597 x 415 x 375	230, 50/60	**3382.200**	**3382.600**	■	■			590
		115, 50/60	**3382.210**	**3382.610**	■	■			590
750 W	597 x 415 x 375	230, 50/60	**3359.200**	**3359.600**					590
		115, 50/60	**3359.210**	**3359.610**					590
		400, 2~, 50/60	**3359.240**	**3359.640**					590
1000 W	597 x 415 x 475	230, 50/60	**3383.200**	**3383.600**	■	■			591
		115, 50/60	**3383.210**	**3383.610**	■	■			591
		400, 2~, 50/60	**3383.240**	**3383.640**	■	■			591
1500 W	597 x 415 x 475	230, 50/60	**3384.200**	**3384.600**	■	■			593
		115, 50/60	**3384.210**	**3384.610**	■	■			593
		400, 2~, 50/60	**3384.240**	**3384.640**	■	■			593
2000 W	597 x 415 x 475	230, 50/60	**3385.200**	**3385.600**	■	■			593
		115, 50/60	**3385.210**	**3385.610**	■	■			593
		400, 2~, 50/60	**3385.240**	**3385.640**	■	■			593
3000 W	796 x 470 x 580	400, 3~, 50 460, 3~, 60	**3386.240**	**3386.640**	■	■			594
4000 W	796 x 470 x 580	400, 3~, 50 460, 3~, 60	**3387.240**	**3387.640**	■	■			594

Delivery times available on request.





4.1 Wall-mounted cooling units

VIP small cooling units

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Condenser design	Model No. SK	Approvals				Page
					UL	CUL	DIN	GS	
225 W	526 x 353.5 x 105	230, 50/60	left	**3201.100**	■	■			595
			right	**3202.100**	■	■			595



4.1 TopTherm wall-mounted cooling units

Mini cooling unit, in horizontal format

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
300 W	525 x 340 x 153	230, 50/60	**3302.300**			■		596
		115, 60	**3302.310**			■		596

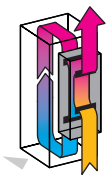




4.1 TopTherm wall-mounted cooling units

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals				Page
			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	
300 W	280 x 550 x 140	230, 50/60	**3302.100**	–	■	■			597
		115, 60	**3302.110**	–	■	■			597
500 W	280 x 550 x 200	230, 50/60	**3303.100**	**3303.500**	■	■			597
		115, 60	**3303.110**	**3303.510**	■	■			597
750 W	280 x 550 x 280	230, 50/60	**3361.100**	**3361.500**					598
		115, 60	**3361.110**	**3361.510**					598
		400, 2~, 50/60	**3361.140**	**3361.540**					598
1000 W	400 x 950 x 260	230, 50/60	**3304.100**	**3304.500**	■	■			599
		115, 50/60	**3304.110**	**3304.510**	■	■			599
		400, 3~, 50 460, 3~, 60	**3304.140**	**3304.540**	■	■			599
1500 W	400 x 950 x 260	230, 50/60	**3305.100**	**3305.500**	■	■			599
		115, 50/60	**3305.110**	**3305.510**	■	■			599
		400, 3~, 50 460, 3~, 60	**3305.140**	**3305.540**	■	■			599
2000 W	400 x 1580 x 290	230, 50/60	**3328.100**	**3328.500**	■	■			600
		115, 50/60	**3328.110**	**3328.510**	■	■			600
		400, 3~, 50 460, 3~, 60	**3328.140**	**3328.540**	■	■			600
2500 W	400 x 1580 x 290	230, 50/60	**3329.100**	**3329.500**	■	■			600
		115, 50/60	**3329.110**	**3329.510**	■	■			600
		400, 3~, 50 460, 3~, 60	**3329.140**	**3329.540**	■	■			600
4000 W	500 x 1580 x 340	400, 3~, 50 460, 3~, 60	**3332.140**	**3332.540**	■	■			601





Stainless steel

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals				Page
			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	
300 W	280 x 550 x 140	230, 50/60	**3302.200**	–	■	■			597
		115, 60	**3302.210**	–	■	■			597
500 W	280 x 550 x 200	230, 50/60	**3303.200**	**3303.600**	■	■			597
		115, 60	**3303.210**	**3303.610**	■	■			597
750 W	280 x 550 x 280	230, 50/60	**3361.200**	**3361.600**					598
		115, 60	**3361.210**	**3361.610**					598
		400, 2~, 50/60	**3361.240**	**3361.640**					598
1000 W	400 x 950 x 260	230, 50/60	**3304.200**	**3304.600**	■	■			599
		115, 50/60	**3304.210**	**3304.610**	■	■			599
		400, 3~, 50 460, 3~, 60	**3304.240**	**3304.640**	■	■			599
1500 W	400 x 950 x 260	230, 50/60	**3305.200**	**3305.600**	■	■			599
		115, 50/60	**3305.210**	**3305.610**	■	■			599
		400, 3~, 50 460, 3~, 60	**3305.240**	**3305.640**	■	■			599
2000 W	400 x 1580 x 290	230, 50/60	**3328.200**	**3328.600**	■	■			600
		115, 50/60	**3328.210**	**3328.610**	■	■			600
		400, 3~, 50 460, 3~, 60	**3328.240**	**3328.640**	■	■			600
2500 W	400 x 1580 x 290	230, 50/60	**3329.200**	**3329.600**	■	■			600
		115, 50/60	**3329.210**	**3329.610**	■	■			600
		400, 3~, 50 460, 3~, 60	**3329.240**	**3329.640**	■	■			600
4000 W	500 x 1580 x 340	400, 3~, 50 460, 3~, 60	**3332.240**	**3332.640**	■	■			601

Delivery times available on request.



4.1 TopTherm wall-mounted cooling units

Slimline

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals				Page
			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	
1500 W	450 x 1580 x 165	230, 50/60	**3377.100**[1)]	**3377.500**[1)]					602
		115, 50/60	**3377.110**[1)]	**3377.510**[1)]					602
		400/460, 3~, 50/60	**3377.140**[1)]	**3377.540**[1)]					602
1500 W	450 x 1580 x 195	230, 50/60	**3366.100**	**3366.500**					602
		115, 50/60	**3366.110**	**3366.510**					602
		400/460, 3~, 50/60	**3366.140**	**3366.540**					602

[1)] Delivery times available on request.



Slimline, stainless steel

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals				Page
			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	
1500 W	450 x 1580 x 165	230, 50/60	**3377.200**	**3377.600**					602
		115, 50/60	**3377.210**	**3377.610**					602
		400/460, 3~, 50/60	**3377.240**	**3377.640**					602
1500 W	450 x 1580 x 195	230, 50/60	**3366.200**	**3366.600**					602
		115, 50/60	**3366.210**	**3366.610**					602
		400/460, 3~, 50/60	**3366.240**	**3366.640**					602

Delivery times available on request.





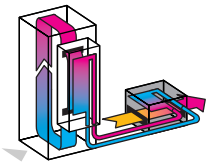
4.1 TopTherm wall-mounted cooling units

NEMA 4x version

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals				Page
			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	
500 W	280 x 550 x 200	230, 50/60	**3303.104**	**3303.504**	■	■			603
		115, 50/60	**3303.114**	**3303.514**	■	■			603
1000 W	400 x 950 x 260	230, 50/60	**3304.104**	**3304.504**	■	■			603
		115, 50/60	**3304.114**	**3304.514**	■	■			603
		400, 3~, 50 460, 3~, 60	**3304.144**	**3304.544**	■	■			603
1500 W	400 x 950 x 260	230, 50/60	**3305.104**	**3305.504**	■	■			603
		115, 50/60	**3305.114**	**3305.514**	■	■			603
		400, 3~, 50 460, 3~, 60	**3305.144**	**3305.544**	■	■			603
2000 W	400 x 1580 x 290	230, 50/60	**3328.104**	**3328.504**	■	■			604
		115, 50/60	**3328.114**	**3328.514**	■	■			604
		400, 3~, 50 460, 3~, 60	**3328.144**	**3328.544**	■	■			604
2500 W	400 x 1580 x 290	230, 50/60	**3329.104**	**3329.504**	■	■			604
		115, 50/60	**3329.114**	**3329.514**	■	■			604
		400, 3~, 50 460, 3~, 60	**3329.144**	**3329.544**	■	■			604

Delivery times available on request.



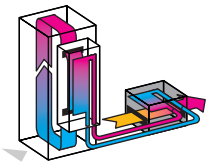


4.2 Recooling systems

Mini

Cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals				Page
			Roof mounting	Wall mounting	UL	CUL	DIN	GS	
1000 W	400 x 950 x 310	400, 3~, 50/60/ 460, 3~, 60	–	**3360.100**					610
2500 W	400 x 1580 x 290	400, 3~, 50/60/ 460, 3~, 60	–	**3360.250**					610
4000 W	500 x 1580 x 340	400, 3~, 50/60/ 460, 3~, 60	–	**3360.400**					610
960 W	600 x 400 x 430	230, 50/60	**3318.600**	–					608
			3318.610	–					608
1490 W	600 x 400 x 430	230, 50/60	**3319.600**	–					608
			3319.610	–					608
3000 W	600 x 680 x 625	400, 3~, 50/60/ 460, 3~, 60	**3320.600**	–					609
4500 W	600 x 680 x 625	400, 3~, 50/60/ 460, 3~, 60	**3334.600**	–					609



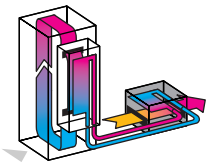


In a floor standing enclosure

Cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
2100 W	470 x 725 x 540	400, 3~, 50	**3336.100**					611
2580 W	485 x 965 x 650	400, 3~, 50	**3336.200**					611
3360 W	485 x 965 x 650	400, 3~, 50	**3336.300**					611
5040 W	595 x 1180 x 800	400, 3~, 50	**3336.500**					611
6160 W	595 x 1180 x 800	400, 3~, 50	**3336.600**					611
7700 W	595 x 1180 x 800	400, 3~, 50	**3336.650**					611
10000 W	615 x 1178 x 1160	400, 3~, 50 460, 3~, 60	**3336.700**					612
14350 W	615 x 1178 x 1160	400, 3~, 50 460, 3~, 60	**3336.710**					612
16300 W	615 x 1178 x 1160	400, 3~, 50 460, 3~, 60	**3336.720**					612
18500 W	715 x 1178 x 1360	400, 3~, 50 460, 3~, 60	**3336.730**					612
20900 W	715 x 1178 x 1360	400, 3~, 50 460, 3~, 60	**3336.740**					612
25200 W	715 x 1178 x 1360	400, 3~, 50 460, 3~, 60	**3336.750**					612

Delivery times available on request.





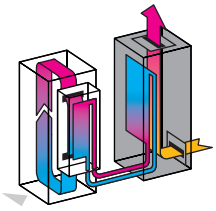
4.2 Recooling systems

In a floor standing enclosure for oil

Cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
2550 W	485 x 965 x 650	400, 3~, 50	**3337.200**					613
3400 W	485 x 965 x 650	400, 3~, 50	**3337.300**					613
5150 W	595 x 1180 x 800	400, 3~, 50	**3337.500**					613
6700 W	595 x 1180 x 800	400, 3~, 50	**3337.600**					613
7900 W	595 x 1180 x 800	400, 3~, 50	**3337.650**					613
10600 W	615 x 1178 x 1160	400, 3~, 50 460, 3~, 60	**3337.700**					614
15150 W	615 x 1178 x 1160	400, 3~, 50 460, 3~, 60	**3337.710**					614
17200 W	615 x 1178 x 1160	400, 3~, 50 460, 3~, 60	**3337.720**					614
19250 W	715 x 1178 x 1360	400, 3~, 50 460, 3~, 60	**3337.730**					614
21600 W	715 x 1178 x 1360	400, 3~, 50 460, 3~, 60	**3337.740**					614
26100 W	715 x 1178 x 1360	400, 3~, 50 460, 3~, 60	**3337.750**					614

Delivery times available on request.





In the TS 8 Top enclosure system

Cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
6000 W	600 x 2000 x 600	400, 3~, 50	**3335.060**					615
7500 W	600 x 2000 x 600	400, 3~, 50	**3335.075**					615
10000 W	800 x 2000 x 600	400, 3~, 50	**3335.100**					616
12000 W	800 x 2000 x 600	400, 3~, 50	**3335.120**					616
15000 W	800 x 2000 x 600	400, 3~, 50	**3335.150**					616
20000 W	1200 x 2000 x 600	400, 3~, 50	**3335.200**					616
25000 W	1200 x 2000 x 600	400, 3~, 50	**3335.250**					616

Delivery times available on request.

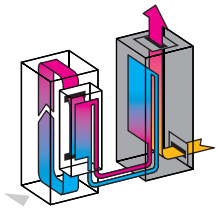


4.2 Recooling systems

In an industrial enclosure

Cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
32025 W	815 x 1400 x 1560	400, 3~, 50 460, 3~, 60	**3339.100**					617
36225 W	815 x 1400 x 1560	400, 3~, 50 460, 3~, 60	**3339.200**					617
66700 W	1550 x 2000 x 2500	400, 3~, 50	**3339.300**					617
75900 W	1550 x 2000 x 2500	400, 3~, 50	**3339.400**					617
172200 W	1630 x 2200 x 3400	400, 3~, 50	**3339.500**					617

Delivery times available on request.





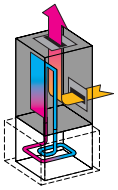
4.2 Immersible recooling systems

for oil

Cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
2400 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.020**					618
3200 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.040**					618
4600 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.060**					618
5600 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.080**					618
8500 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.100**					619
10500 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.120**					619
12000 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.140**					619
13600 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.160**					619
15300 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.180**					619
17300 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.200**					619
20700 W	785 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.220**					620
30800 W	785 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.240**					620
34900 W	785 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.260**					620
44500 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.280**					620
48600 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.300**					620
60600 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.320**					620
72600 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.340**					620
77900 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.360**					620

Delivery times available on request.





4.2 Immersible recooling systems

for emulsion

Cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
2400 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.500**					621
3200 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.520**					621
4600 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.540**					621
5600 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.560**					621
8500 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.580**					622
10500 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.600**					622
12000 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.620**					622
13600 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.640**					622
15300 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.660**					622
17300 W	785 x 1650 x 785	400, 3~, 50 460, 3~, 60	**3338.680**					622
20700 W	785 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.700**					623
30800 W	785 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.720**					623
34900 W	785 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.740**					623
44500 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.760**					623
48600 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.780**					623
60600 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.800**					623
72600 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.820**					623
77900 W	1830 x 1650 x 1830	400, 3~, 50 460, 3~, 60	**3338.840**					623

Delivery times available on request.



4.3 Air/water heat exchangers

Micro, for wall mounting

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
300 W	150 x 300 x 85	230, 50/60	**3212.230**					626
		115, 50/60	**3212.115**[1)]					626
		24 V (DC)	**3212.024**					626

[1)] Delivery times available on request.

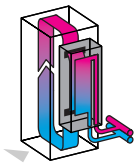


4.3 Air/water heat exchanger

Wall-mounted

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
			Wall mounting	UL	CUL	DIN	GS	
600 W	200 x 500 x 100	230, 50/60	**3214.100**					627
1000 W	298 x 520 x 135	230, 50/60	**3217.100**	■	■			627
1250 W	200 x 950 x 100	230, 50/60	**3215.100**					628
1540 W	380 x 825 x 105	230, 50/60	**3247.000**	■	■			628
2250 W	400 x 950 x 200	230, 50/60	**3218.104**[1)]					629
3000 W	400 x 950 x 200	230, 50/60	**3218.100**	■	■			629
4500 W	450 x 1400 x 250	230, 50/60	**3216.100**	■	■			629

[1)] Delivery times available on request.





4.3 TopTherm air/water heat exchanger

Roof-mounted

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK		Approvals				Page
			with Basic controller	with Comfort controller	UL	CUL	DIN	GS	
1875 W	597 x 415 x 475	230, 50/60	**3209.104**[1)]	**3209.504**[1)]					630
		115, 50/60	**3209.114**[1)]	**3209.514**[1)]					630
		400, 2~, 50/60	**3209.144**[1)]	**3209.544**[1)]					630
2500 W	597 x 415 x 475	230, 50/60	**3209.100**	**3209.500**					630
		115, 50/60	**3209.110**	**3209.510**					630
		400, 2~, 50/60	**3209.140**[1)]	**3209.540**[1)]					630
3000 W	597 x 415 x 475	230, 50/60	**3210.104**[1)]	**3210.504**[1)]					631
		115, 50/60	**3210.114**[1)]	**3210.514**[1)]					631
		400, 2~, 50/60	**3210.144**[1)]	**3210.544**[1)]					631
4000 W	597 x 415 x 475	230, 50/60	**3210.100**	**3210.500**					631
		115, 50/60	**3210.110**	**3210.510**					631
		400, 2~, 50/60	**3210.140**[1)]	**3210.540**[1)]					631

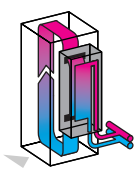
[1)] Delivery times available on request.



4.3 Air/water heat exchanger

As a side panel for TS 8 enclosures

Useful cooling output	To fit enclosures H x D mm	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
					UL	CUL	DIN	GS	
700 W	1800 x 600	600 x 1800 x 95	230, 50/60	**3316.180**					632
700 W	2000 x 600	600 x 2000 x 95	230, 50/60	**3316.200**					632

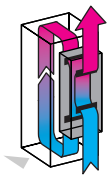




4.3 TopTherm air/air heat exchanger

Wall mounting

Specific thermal output	Dimensions W x H x D mm	Voltage V, Hz	**Model No. SK**	Approvals				Page
				UL	CUL	DIN	GS	
17.5 W/K	280 x 550 x 150	230, 50/60	**3126.100**	■	■			633
30.0 W/K	400 x 950 x 205	230, 50/60	**3127.100**	■	■			633
45.0 W/K	400 x 950 x 225	230, 50/60	**3128.100**	■	■			633
60.0 W/K	400 x 950 x 225	230, 50/60	**3129.100**	■	■			633
90.0 W/K	400 x 1580 x 215	230, 50/60	**3130.100**	■	■			634



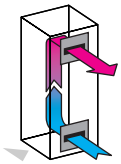


4.4 Fan-and-filter unit

Air throughput, unimpeded air flow	Voltage V, Hz	**Model No. SK** RAL 7035	Approvals					Page
			UL	CUL	DIN	GS	CSA	
20/25 m³/h	230, 50/60	**3321.107**	■	■				636
	115, 50/60	**3321.117**	■	■				636
20 m³/h	24 (DC)	**3321.027**	■	■				636
	48 (DC)	**3321.047**[1)]	■	■				636
55/66 m³/h	230, 50/60	**3322.107**	■	■			■	636
	115, 50/60	**3322.117**	■	■			■	636
55 m³/h	24 (DC)	**3322.027**	■	■				636
	48 (DC)	**3322.047**[1)]	■	■				636
105/120 m³/h	230, 50/60	**3323.107**	■	■			■	637
	115, 50/60	**3323.117**	■	■			■	637
105 m³/h	24 (DC)	**3323.027**	■	■			■	637
	48 (DC)	**3323.047**[1)]	■	■				637
180/160 m³/h	230, 50/60	**3324.107**	■	■			■	637
	115, 50/60	**3324.117**	■	■			■	637
180 m³/h	24 (DC)	**3324.027**	■	■			■	637
	48 (DC)	**3324.047**[1)]	■	■				637
230/265 m³/h	230, 50/60	**3325.107**	■	■			■	638
	115, 50/60	**3325.117**	■	■			■	638
230 m³/h	24 (DC)	**3325.027**	■	■			■	638
	48 (DC)	**3325.047**[1)]	■	■				638
550/600 m³/h	230, 50/60	**3326.107**	■	■			■	639
	115, 50/60	**3326.117**	■	■			■	639
700/720 m³/h	230, 50/60	**3327.107**	■	■				639
	115, 50/60	**3327.117**	■	■				639
	400/460, 3~, 50/60	**3327.147**	■	■				639

[1)] Delivery times available on request.



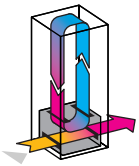


4.4 Fan-and-filter unit – EMC

Air throughput, unimpeded air flow	Voltage V, Hz	**Model No. SK** RAL 7035	Approvals					Page
			UL	CUL	DIN	GS	CSA	
20/25 m³/h	230, 50/60	**3321.607**	■	■				640
	115, 50/60	**3321.617**[1)]	■	■				640
55/66 m³/h	230, 50/60	**3322.607**	■	■				640
	115, 50/60	**3322.617**[1)]	■	■				640
105/120 m³/h	230, 50/60	**3323.607**	■	■				640
	115, 50/60	**3323.617**[1)]	■	■				640
180/160 m³/h	230, 50/60	**3324.607**	■	■				641
	115, 50/60	**3324.617**[1)]	■	■				641
230/265 m³/h	230, 50/60	**3325.607**	■	■				641
	115, 50/60	**3325.617**	■	■				641
550/600 m³/h	230, 50/60	**3326.607**	■	■				641
	115, 50/60	**3326.617**[1)]	■	■				641
700/720 m³/h	230, 50/60	**3327.607**	■	■				641
	115, 50/60	**3327.617**[1)]	■	■				641

[1)] Delivery times available on request.



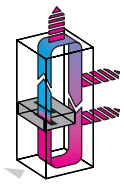


4.5 Rack-mounted cooling units

Useful cooling output	Dimensions W x H x D mm	Voltage V, Hz	**Model No. SK**	Approvals				Page
				UL	CUL	DIN	GS	
1000 W	445 x 265.9 x 542	115, 50/60	**3278.134**[1)]					644
		230, 50/60	**3292.134**					644

[1)] Delivery times available on request.



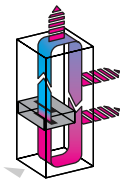


4.5 Rack-mounted fan

Air throughput, unimpeded air flow	No. of fans	Distance between axes mm	Voltage V, Hz	**Model No. SK**	Approvals					Page
					UL	CUL	DIN	GS	VDE	
250 m³/h	3	85	36 (DC) – 72 (DC)	**9769.002**[1)]						645
320 m³/h	2	85	24 (DC)	**3340.024**[1)]	■	■			■	645
	2	85	115 (AC), 50/60	**3340.115**[1)]	■	■			■	645
	2	85	230 (AC), 50/60	**3340.230**	■	■			■	645
480 m³/h	3	85	24 (DC)	**3341.024**[1)]	■	■			■	645
	3	105	24 (DC)	**3342.024**	■	■			■	645
	3	85	115 (AC), 50/60	**3341.115**	■	■			■	645
	3	105	115 (AC), 50/60	**3342.115**[1)]	■	■			■	645
	3	85	230 (AC), 50/60	**3341.230**	■	■			■	645
	3	105	230 (AC), 50/60	**3342.230**	■	■			■	645
	3	105	24 (DC) 115 – 230 (AC), 50/60	**3342.500**	■	■			■	645

[1)] Delivery times available on request.



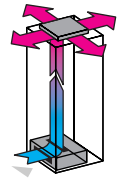


4.5 Vario rack-mounted fan

Air throughput, unimpeded air flow	No. of fans	Distance between axes mm	Voltage V, Hz	Model No. SK	Approvals					Page
					UL	CUL	DIN	GS	VDE	
320 m³/h	2	85	24 (DC)	**3350.024**[1)]	■	■			■	645
	2	85	115 (AC), 50/60	**3350.115**[1)]	■	■			■	645
	2	85	230 (AC), 50/60	**3350.230**	■	■			■	645
480 m³/h	3	85	24 (DC)	**3351.024**[1)]	■	■			■	645
	3	105	24 (DC)	**3352.024**[1)]	■	■			■	645
	3	85	115 (AC), 50/60	**3351.115**[1)]	■	■			■	645
	3	105	115 (AC), 50/60	**3352.115**[1)]	■	■			■	645
	3	85	230 (AC), 50/60	**3351.230**	■	■			■	645
	3	105	230 (AC), 50/60	**3352.230**	■	■			■	645
	3	105	24 (DC) 115 – 230 (AC), 50/60	**3352.500**[1)]	■	■			■	645

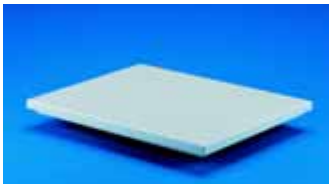
[1)] Delivery times available on request.





4.5 Centrifugal fan

Air throughput, unimpeded air flow	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
320 m³/h	482.6 x 87.2 x 158	115, 50/60	**3145.000**					646
		230, 50/60	**3144.000**					646



4.5 Roof-mounted fan and vent attachment

For TS 8

Air throughput, unimpeded air flow	Voltage V, Hz	Required mounting cutout W x D mm	Model No. SK	Approvals					Page
				UL	CUL	DIN	GS	CSA	
400 m³/h	115, 50/60	475 x 260	**3149.410**						647
	230, 50/60	475 x 260	**3149.420**						647
	400, 3~, 50/60 460, 3~, 60	475 x 260	**3149.440**						647
800 m³/h	115, 50/60	475 x 260	**3149.810**						647
	230, 50/60	475 x 260	**3149.820**						647
	400, 3~, 50/60 460, 3~, 60	475 x 260	**3149.840**						647
Without motor		490 x 390	**8801.380**						647



4.5 Roof-mounted fans

Air throughput, unimpeded air flow	Voltage V, Hz	Required mounting cutout W x D mm	Model No. SK	Approvals					Page
				UL	CUL	DIN	GS	CSA	
360 m³/h	230, 50/60	345 x 265	**3149.007**						647
	115, 50/60	345 x 265	**3169.007**						647
Without fan motor		345 x 265	**3148.007**						647



4.5 Roof-mounted fans

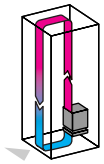
for TS/FR(i) for the office sector

Air throughput, unimpeded air flow	Voltage V, Hz	Version		Dimensions W x H x D mm	Model No. SK	Approvals					Page
		with roof plate	without roof plate			UL	CUL	DIN	GS	CSA	
1,500 m^3/h	115, 50/60	■		800 x 240 x 800	**3164.610**						648
	230, 50/60	■		800 x 240 x 800	**3164.620**						648
1,500 m^3/h	115, 50/60	■		800 x 240 x 900	**3164.810**						648
	230, 50/60	■		800 x 240 x 900	**3164.820**						648
1,500 m^3/h	115, 50/60		■	511 x 227 x 511	**3164.115**						648
	230, 50/60		■	511 x 227 x 511	**3164.230**						648



4.6 Enclosure heaters

Continuous thermal output for T_u = 20°C	Voltage V, Hz	Model No. SK	Approvals					Page
			UL	CUL	DIN	GS	VDE	
10 W	110 – 240 (AC/DC)	**3105.000**	■	■			■	655
20 W	110 – 240 (AC/DC)	**3106.000**	■	■			■	655
30 W	110 – 240 (AC/DC)	**3115.000**	■	■			■	655
50 W	110 – 240 (AC/DC)	**3116.000**	■	■			■	655
130 W	110 – 240 (AC/DC)	**3107.000 + 3108.000**	■	■			■	655
300 W	230, 50/60	**3102.000 (incl. fan)**	■	■			■	655

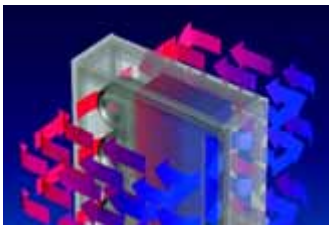




4.6 Enclosure heaters

for CS outdoor enclosures

Continuous thermal output for T_u = 20°C	Voltage V, Hz	Installation		Dimensions W x H x D mm	Model No. CS	Approvals					Page
		in the enclosure	19″ mounting angles			UL	CUL	DIN	GS	VDE	
1000 W	230, 50/60	■	–	325 x 82 x 220	**9769.015**	■	■				656
600 W	230, 50/60	–	■	482.6 x 87.2 x 236	**9769.023**						656



4.8 Liquid Cooling Package

Cooling output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
Enclosure + 3 modules								
4000 W	300 x 2000 x 1000	230, 50/60	**3301.230**					672
4000 W	300 x 2000 x 1000	115, 50/60	**3301.210**					672
Cooling module, single								
4000 W	250 x 550 x 950	230, 50/60	**3301.250**					672



4.8 Rack-mounted recooling system

Specific thermal output	Dimensions W x H x D mm	Voltage V, Hz	Model No. SK	Approvals				Page
				UL	CUL	DIN	GS	
1000 W	442 x 175 x 751	230, 50/60	**3301.260**					673

Delivery times available on request.



IT solutions – the perfect, customised solution
With emerging technologies, network technology places ever increasing demands on the infrastructure at the "information hub", and hence on competent system suppliers.
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- Monitoring
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Detailed information may be found on catalogue pages 676 – 811 or refer to our website: www.rittal.com The latest status of approvals may be found on the Internet at: www.rittal.com



5.1 Networking

Network enclosures based on TE 7000

Dimensions in mm				U	Model No. TE, RAL 7035		Page
Width	Height	Depth	19″ distance between levels as delivered Depth		Side panels with	Side panels without	
600	600	600	495	12	**7000.390**	–	682
600	600	800	495	12	**7000.410**	–	682
600	1200	600	495	24	**7000.430**	–	682
600	1200	800	495	24	**7000.440**	–	682
600	2000	600	495	42	**7000.500**[2)]	**7000.502**	682
600	2000	800	495	42	**7000.510**[3)]	–	682
600	2200	600	495	47	**7000.560**	**7000.562**	682
600	2200	800	495	47	**7000.570**	–	682
800	1200	600	495	24	**7000.450**	–	685
800	1200	800	495	24	**7000.460**[1)]	–	685
800	2000	600	495	42	**7000.520**[4)]	–	685
800	2000	800	495	42	**7000.530**[1) 5)]	**7000.532**[1)]	685
800	2200	600	495	47	**7000.580**	–	685
800	2200	800	495	47	**7000.590**	**7000.592**	685

[1)] Model No. TE preconfigured with base/plinth, earthing and accessory kit: Height 1200 mm: 7000.840, Height 2000 mm: wih side panel 7000.850, without side panel 7000.852
[2)] Model No. TE in RAL 9005: 7000.505 [3)] Model No. TE in RAL 9005: 7000.515
[4)] Model No. TE in RAL 9005: 7000.525 [5)] Model No. TE in RAL 9005: 7000.535



Network enclosures based on Rittal TS 8, pre-configured

Dimensions mm			U	Model No. DK		Page
Width	Height	Depth		Side panels with	Side panels without	
Enclosure type V1						
600	1200 + 100	600	24	**7830.100**	–	687
Enclolsure type V2						
800	1800 + 100	800	38	**7830.800**	**7830.850**	687
800	2000 + 100	800	42	**7830.200**	**7830.250**	687
800	2200 + 100	800	47	**7830.220**	**7830.270**	687
Enclosure type V3						
800	1200 + 100	900	24	**7830.120**	–	689
800	2000 + 100	900	42	**7830.300**	**7830.350**	689
800	2000 + 100	1000	42	**7830.330**	**7830.335**	689
800	2200 + 100	900	47	**7830.320**	**7830.370**	689
800	2200 + 100	1000	47	**7830.340**	**7830.380**	689
Enclosure type V4						
800	2000 + 100	800	42	**7830.400**	–	691
Enclosure type V5						
800	2000 + 100 + 25	800	42	**7830.500**	**7830.550**	691
Enclosure type V6						
800	2000 + 100 + 25	800	40	**7830.660**	**7830.670**	691



5.1 Networking

Network enclosures, based on Rittal TS 8, types 1 and 2

Dimensions mm			U	Model No. DK		Page
Width	Height	Depth		Type 1	Type 2	
600	800	600	15	**7820.100**	**7821.100**	693
600	1000	600	20	**7820.200**	**7821.200**	693
800	1000	600	20	**7820.240**	**7821.240**	693
600	1200	600	24	**7820.300**	**7821.300**	693
800	1200	600	24	**7820.340**	**7821.340**	693
800	1200	800	24	**7820.350**	**–**	693
800	1200	900	24	**7820.355**	**7821.355**	693
800	1200	1000	24	**7820.360**	**–**	693
600	1400	600	29	**7820.400**	**7821.400**	693
600	1400	800	29	**7820.410**	**7821.410**	693
800	1400	600	29	**7820.440**	**7821.440**	693
600	1600	600	33	**7820.500**	**7821.500**	693
600	1600	800	33	**7820.510**	**7821.510**	693
800	1600	600	33	**7820.540**	**7821.540**	693
600	1800	600	38	**7820.600**	**7821.600**	693
600	1800	800	38	**7820.610**	**7821.610**	693
600	1800	900	38	**7820.620**	**7821.620**	694
800	1800	600	38	**7820.640**	**7821.640**	694
800	1800	800	38	**7820.650**	**7821.650**	694
800	1800	1000	38	**7820.670**	**7821.670**	694
600	2000	600	42	**7820.700**	**7821.700**	694
600	2000	800	42	**7820.710**	**7821.710**	694
800	2000	600	42	**7820.740**	**7821.740**	694
800	2000	800	42	**7820.750**	**7821.750**	694
800	2000	900	42	**7820.760**	**7821.760**	694
800	2000	1000	42	**7820.770**	**7821.770**	694
600	2200	600	47	**7820.800**	**7821.800**	694
600	2200	800	47	**7820.810**	**7821.810**	694
800	2200	600	47	**7820.840**	**7821.840**	694
800	2200	800	47	**7820.850**	**7821.850**	694
800	2200	900	47	**7820.860**	**7821.860**	694
800	2200	1000	47	**7820.870**	**7821.870**	694

Approvals:
- UL
- C-UL



Network enclosures based on Rittal flexRack(i), pre-configured

Dimensions mm			U	Model No. FR(i)		Page
Width	Height	Depth[1)]		Side panels		
				with	without	
600	600	805	11	**7855.480**	**–**	703
600	600	1005	11	**7855.500**	**–**	703
600	1200	1005	25	**7855.510**	**–**	703
800	2000 + 100	805	42	**7855.550**	**7855.540**	703
800	2000 + 100	1005	42	**7855.570**	**7855.560**	703

[1)] Nominal size excluding lock system.



5.1 Networking

Network enclosures based on Rittal flexRack(i)

Dimensions mm			U	Model No. FR(i)	Page
Width	Height	Depth[1)]			
600	600	605	11	**7855.610**	705
600	600	1005	11	**7855.620**	705
600	1200	605	24	**7855.630**	705
600	1200	1005	24	**7855.640**	705
600	1800	605	38	**7855.650**	705
600	2000	605	42	**7855.660**	705
600	2000	1005	42	**7855.670**	705
600	2200	1005	47	**7855.680**	705
800	1200	805	24	**7855.690**	705
800	1800	805	38	**7855.700**	705
800	2000	805	42	**7855.710**	705
800	2000	1005	42	**7855.720**	705
800	2200	805	47	**7855.730**	705
800	2200	1005	47	**7855.740**	705

[1)] Nominal size excluding lock systems.



Distributor racks based on Rittal Data Rack

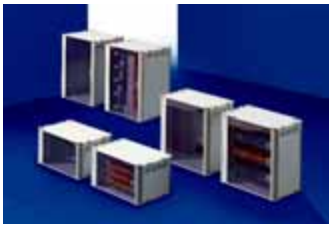
Dimensions mm			U	Model No. DK	Page
Width	Height	Depth			
550	1499.5	750	31	**7391.000**	708
550	1721.8	750	36	**7396.000**	708
550	1899.5	750	40	**7400.000**	708
550	2121.8	750	45	**7445.000**	708



Mobile workstation, Rittal RiLab

Dimensions mm			Model No. DK	Page
Width	Height	Depth		
Type 1				
714	820	625	**7600.100**	711
Type 2				
714	1108	625	**7600.200**	711
Type 3				
714	1428	625	**7600.300**	711

Approvals:
- TÜV tested safety



5.2 Networking

RNC enclosure

Dimensions mm			U	Mounting position	Model No. DK		Page
Width	Height	Depth			Single	Bulk pack	
342	255	280	4	horizontal	**7870.100**	**7870.500**	716
342	390	280	8	horizontal	**7870.200**	**7870.510**	716
342	490	400	6	vertical	**7870.300**	**7870.520**	716



RNC universal enclosure

Dimensions mm			U ½ 19″	U 19″	Model No. DK		Page
Width	Height	Depth			Single	Bulk pack	
350	500	350	10	5	**7870.350**	**7870.530**	717



Wall-mounted enclosure, based on Rittal QuickBox, 6 – 21 U

Dimensions mm			U/SU	Model No. DK		Page
Width	Height	Depth		With glazed door	With sheet steel door	
600	362	300	6/10	**7502.013**	–	718
600	362	400	6/10	**7502.014**	**7502.114**	718
600	362	600	6/10	**7502.016**	–	718
600	495	300	9/15	**7502.023**	**7502.123**	718
600	495	400	9/15	**7502.024**	**7502.124**	718
600	495	600	9/15	**7502.026**	**7502.126**	718
600	628	400	12/20	**7502.034**	**7502.134**	718
600	628	500	12/20	**7502.035**	–	718
600	628	600	12/20	**7502.036**	**7502.126**	718
600	762	400	15/26	**7502.044**	**7502.144**	719
600	762	500	15/26	**7502.045**	–	719
600	762	600	15/26	**7502.046**	**7502.146**	719
600	895	400	18/31	**7502.054**	–	719
600	895	500	18/31	**7502.055**	–	719
600	895	600	18/31	**7502.056**	–	719
600	1028	400	21/36	**7502.064**	–	719
600	1028	600	21/36	**7502.066**	**7502.166**	719



5.2 Networking

Wall-mounted enclosure, based on Rittal QuickBox with vertical 482.6 mm (19″) level

Dimensions mm			U vertical	Model No. DK	Page
Width	Height	Depth			
600	631	210	3	**7502.630**	720
600	631	360	6	**7502.660**	720



Wall-mounted enclosure, based on Rittal AE, with pull-out frame

Dimensions mm			U sides, vertical	U front	Model No. DK	Page
Width	Height	Depth				
600	600	350	4	10	**7644.000**	721



Wall-mounted enclosure, based on Rittal AE

Dimensions mm			U	Model No. DK	Page
Width	Height	Depth			
600	380	350	8	**7641.000**	722
600	600	350	13	**7643.000**	722
600	760	350	16	**7645.000**	722

Approvals:
- UL
- CSA
- Lloyds Register of Shipping



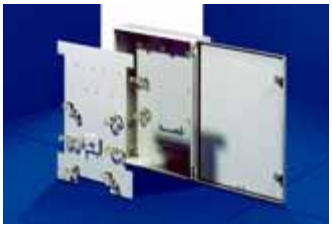
Office distributor, 2 and 4 U, for fibre-optic and copper cables

Dimensions mm			U	Model No. DK	Page
Width	Height	Depth			
400	504	106	2	**7245.000**	723
400	504	195	4	**7245.400**	723



Small fibre-optic distributors

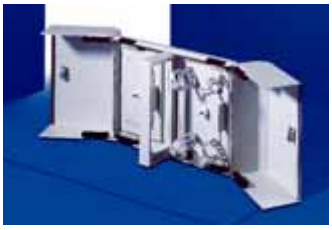
Dimensions mm			Number of fibres	Model No. DK	Page
Width	Height	Depth			
500	500	120	1 – 48	**7452.035**	724
500	900	120	1 – 96	**7453.035**	724



5.2 Networking

Small fibre-optic distributors, based on Rittal AE

Dimensions mm			Number of fibres	Model No. DK	Page
Width	Height	Depth			
400	500	155	1 – 48	**7454.000**	725



Fibre-optic marshalling enclosure

Dimensions mm			Number of fibres	Model No. DK	Page
Width	Height	Depth			
400	250	120	1 – 24	**7247.000**	726



Small fibre-optic distributor, polycarbonate

Dimensions mm			Number of fibres	Model No. DK	Page
Width	Height	Depth			
180	254	90	1 – 24	**7451.000**	727



Wall-mounted enclosure, based on Rittal EL, 3-part, pre-configured, depth 573

Dimensions mm			U	Model No. DK		Page
Width	Height	Depth		With glazed door	With slotted metal door[1)]	
600	478	572.5	9	**7709.735**	**7709.835**	728
600	746	572.5	15	**7715.735**	**7715.835**	728
600	1012	572.5	21	**7721.735**	**7721.835**	728

[1)] Extended delivery times.

Additional features of the pre-configured wall-mounted enclosure:
Earth rail with star earthing, one outlet filter on both the left and right, 4 wall mounting brackets.

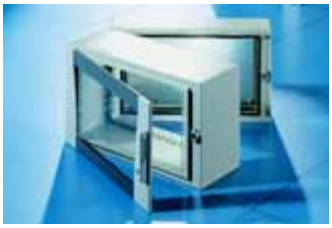
Approvals (for glazed doors only)
- UL
- C-UL



Wall-mounted enclosure, based on Rittal EL, 3-part, with punched rails, depth 473

Dimensions mm			U	Model No. DK	Page
Width	Height	Depth			
600	345	472.5	6	**7706.135**	729
600	478	472.5	9	**7709.135**	729
600	612	472.5	12	**7712.135**	729
600	746	472.5	15	**7715.135**	729
600	878	472.5	18	**7718.135**	729
600	1012	472.5	21	**7721.135**	729

Approvals:
- UL
- C-UL

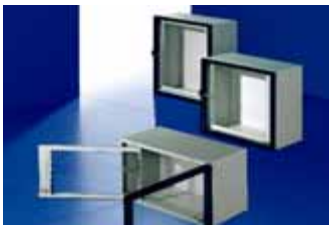


5.2 Networking

Wall-mounted enclosure, based on Rittal EL, 3-part, with mounting plate, depth 373 and 473

Dimensions mm		U	Model No. DK	Page	Model No. DK	Page
Width	Height		Depth 373 mm		Depth 473 mm	
600	212	3	**2243.605**	730	**2253.605**	731
600	345	6	**2246.605**	730	**2256.605**	731
600	478	9	**2249.605**	730	**2259.605**	731
600	612	12	**2252.605**	730	**2262.605**	731
600	746	15	**2255.605**	730	**2265.605**	731
600	878	18	**2258.605**	730	**2268.605**	731
600	1012	21	**2261.605**	730	**2271.605**	731

Approvals:
- UL
- C-UL



Wall-mounted enclosure, based on Rittal EL, 2-part, depth 369

Dimensions mm			U	Model No. EL	Page
Width	Height	Depth			
600	380	369	6	**1919.500**	732
600	600	369	11	**1920.500**	732
600	760	369	14	**1926.500**	732

Approvals:
- TÜV
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- VDE



5.3 Server racks

Based on Rittal TS 8, pre-configured

Dimensions mm			U	Model No. DK		Page
Width	Height	Depth		RAL 7035	RAL 9005	
600	1200	900	24	**7831.431**	**7831.432**	737
600	1200	1000	24	**7831.433**	**7831.434**	737
600	2000	900	42	**7831.436**	**7831.437**	737
600	2000	1000	42	**7831.438**	**7831.439**	737
600	2200	900	47	**7831.440**	**7831.441**	737
600	2200	1000	47	**7831.442**	**7831.443**	737
800	2000	1000	42	**7831.446**	–	737



Based on Rittal TS 8, pre-configured, multi-door

Dimensions mm			U	SU	Number of front and rear doors	Model No. DK		Page
Width	Height	Depth				RAL 7035	RAL 9005	
600	2200	900	2 x 21	2 x 37	2	**7831.450**	**7831.451**	737
600	2200	900	2 x 21	2 x 37	2 (vertically divided)	**7831.457**	**7831.458**	737
600	2200	900	4 x 10	4 x 17	4	**7831.460**	**7831.461**	737



5.3 Server racks

Based on Rittal flexRack(i), pre-configured

Dimensions mm			U	Model No. FR(i)	Page
Width	Height	Depth[1)]			
600	1200	1000	24	**7855.310**	738
600	2000	1000	42	**7855.330**	738
600	1200	1200	24	**7855.312**	738
600	2000	1200	42	**7855.332**	738

[1)] **Nominal size** excluding lock systems.



5.3 Server racks

Based on Rittal TE 7000

Dimensions mm			U	Model No. TE		Page
Width	Height	Depth		RAL 7035	RAL 9005	
600	2000	1000	42	**7000.882**	**–**	736
600	2000	1000	42	**–**	**7000.885**	736
800	2000	1000	42	**7000.892**	**–**	736
800	2000	1000	42	**–**	**7000.895**	736



Monitor/keyboard unit, 1 U

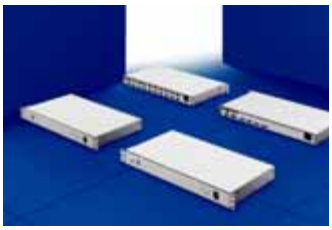
		15″		17″		Page
		RAL 7035/ RAL 9006	RAL 9005/ RAL 9006	RAL 7035/ RAL 9006	RAL 9005/ RAL 9006	
Touchpad	German	**9050.100**	**9050.200**	**9050.300**	**9050.400[1)]**	739
	English	**9050.102**	**9050.202**	**9050.302[1)]**	**9050.402[1)]**	739
	French	**9050.103[1)]**	**9050.203[1)]**	**9050.303[1)]**	**9050.403[1)]**	739
Trackball	German	**9050.150**	**9050.250**	**9050.350**	**9050.450**	739
	International	**9050.151[2)]**	**9050.251[2)]**	**9050.351[2)]**	**9050.451[2)]**	739

[1)] Extended delivery times.
[2)] International version only available with trackball, without number pad.



Rittal SSC view 8/SSC view 32 Cat for monitor/keyboard unit, 1 U

Dimensions			No. of channels	Connections Video	Video resolution, maximum (depending on distance)	Bandwidth	Model No. DK	Page
Width	Height	Depth						
482.5 mm (19″)	1 U	140 mm	8	VGA/HD15	1280 x 1024 @ 85 Hz	200 MHz	**7552.000**	740
482.5 mm (19″)	1 U	140 mm	32	Cat 5	1920 x 1044 @ 75 Hz	250 MHz	**7552.100**	740



Rittal SSCmini/SSCmulti

Rittal Server Switch Control SSC	No. of computers in stand-alone mode	Number of local operator consoles	Video resolution, maximum (depending on distance) at 85 Hz	Bandwidth	Model No. DK	Page
SSCmini 4	4	1	1600 x 1200	250 MHz	**7551.000**	741
SSCmulti 4	4	1	1600 x 1200	250 MHz	**7551.010**	741
SSCmulti 8	8	1	1600 x 1200	250 MHz	**7551.020**	741
SSCmuti 16	16	1	1600 x 1200	250 MHz	**7551.030**	741



5.4 Power

	Page
Power Distribution Rack PDR	743
Power Distribution Module PDM	743
Power System Module PSM	744
Connection cable	745
Voltage supply	746



5.4 UPS systems

UPS, single-phase	U	Power kVA	**Model No. DK**	Page
UPS for 482.6 mm (19″) racks with integral battery	2	1	**7857.401**	753
UPS for 482.6 mm (19″) racks with integral battery	2	1.5	**7857.402**	753
UPS control unit for 482.6 mm (19″) racks (matching battery pack 2/3 kVA is always needed)	2 2	2	**7857.403** **7857.408**	753
UPS control unit for 482.6 mm (19″) racks (matching battery pack 2/3 kVA is always needed)	2 2	3	**7857.404** **7857.408**	753
UPS floor standing enclosure with integral battery	–	6	**7857.405**	753





5.6 Monitoring

Computer Multi Control Top Concept CMC-TC

CMC-TC main products	Packs of	**Model No. DK**	Page
CMC-TC monitoring system master	1	**7320.000**	769
CMC-TC monitoring system processing unit	1	**7320.100**	766
CMC-TC sensor unit I/O unit	1	**7320.210**	764
CMC-TC sensor unit access unit	1	**7320.220**	765
CMC-TC sensor unit climate unit	1	**7320.230**	765
CMC-TC display unit	1	**7320.490**	767
CMC-TC GSM unit	1	**7320.820**	767
CMC-TC ISDN unit	1	**7320.830**	768
CMC extension unit 3 x voltage 100 – 230 V AC	1	**7200.520**	776
Fan Control System FCS	1	**7320.810**	786
Fan Alarm System FAS	1	**7320.811**	787

Sensor unit	I/O unit	Access unit	Climate unit	Packs of	**Model No. DK**	Page
Sensors/actuators:						
Temperature sensor	■		■	1	**7320.500**	773
Smoke alarm	■		■	1	**7320.560**	773
Humidity sensor	■			1	**7320.510**	773
Airflow monitor	■		■	1	**7320.550**	774
Voltage monitor	■		■	1	**7320.600**	774
Voltage monitor with switch output	■			1	**7320.610**	774
Voltage monitor 48 V DC	■		■	1	**7320.620**	775
Vandalism sensor	■			1	**7320.540**	777
Access sensor (max. 5 sensors in series supported)	■	■	■	2	**7320.530**	777
CMC-TC motion detector	■		■	1	**7320.570**	778
Leakage sensor	■			1	**7320.630**	778
Analog sensor input module “4 – 20 mA”	■			1	**7320.520**	779
Digital sensor input module	■	■	■	1	**7320.580**	779
Digital relay output module	■			1	**7320.590**	779
Lock/reader:						
Electro-magnetic TS 8 handle with master key function		■		1	**7320.721**	781
Electro-magnetic Ergoform-S FR/PS/TC and TE		■		1	**7320.700**	781
Electro-magnetic Ergoform-S QR		■		1	**7320.710**	781
Smart card reader		■		1	**7320.750**	782
Magnetic card reader		■		1	**7320.760**	782
Coded lock		■		1	**7320.770**	782
Universal lock		■		1	**7320.730**	783
Relay output module for room door		■		1	**7320.740**	780
Lock FR(i)		■		1	**7320.900/.910/.920/.930**	783



5.7 Kiosks

ITS Arc-Line II

TFT display, 17″		Dimensions of kiosk enclosures approx. mm			Contact sensor (touchscreen) including controller	Keyboard recess for use of ITS keyboards	Model No. ITS	Page
		Width	Height	Depth				
Basic (sheet steel)	Rear door	550	1180	700	■	–	**9012.100**	792
		550	1180	700	–	■	**9012.110**	792
	Front door	550	1180	700	■	–	**9012.200**	792
		550	1180	700	–	■	**9012.210**	792
Classic (stainless steel)	Rear door	550	1180	700	■	–	**9012.300**	792
		550	1180	700	–	■	**9012.310**	792
	Front door	550	1180	700	■	–	**9012.400**	792
		550	1180	700	–	■	**9012.410**	792

Accessories see page 800.



ITS Opti-Line II

TFT display	Dimensions of kiosk enclosures approx. mm			Contact sensor (touchscreen) including controller	Keyboard support for use of ITS keyboards	Model No. ITS	Page
	Width	Height	Depth				
15″	560	1500	510	■	–	**9006.505**	793
15″	560	1500	580	–	■	**9006.605**	793
17″	560	1500	510	■	–	**9006.705**	793
17″	560	1500	580	–	■	**9006.805**	793

Accessories see page 800.



ITS Opti-Desk

TFT display	Dimensions approx. mm						Model No. ITS		Page
	With worktop			Base enclosure only with front door			Door and worktop curved inwards	Door and worktop curved outwards	
	Width	Height	Depth	Width	Height	Depth			
15″	1000	1500	800	435	1000	530	**9021.250**	**9021.255**	794
17″	1000	1500	800	435	1000	530	**9021.270**	**9021.275**	794

Accessories see page 800.



ITS Opti-Wall

TFT display	Enclosure dimensions approx. mm			Contact sensor (touchscreen) including controller	Keyboard support for use of ITS keyboards	Model No. ITS	Page
	Width	Height	Depth				
15″	560	1000	200	■	–	**9020.150**	795
15″	560	1000	400	–	■	**9020.250**	795
17″	560	1000	200	■	–	**9020.170**	795
17″	560	1000	400	–	■	**9020.270**	795

Accessories see page 800.



5.7 Kiosks

ITS Alpha-Line

	Dimensions including base plate and viewing guard approx. mm			TFT display 15″	Model No. ITS	Page
	Width	Height	Depth			
Touchscreen	580	1300	540	■	**9007.105**	796
Prepared for keyboard	580	1300	640	■	**9007.205**	796

Accessories see page 800.



ITS Out-Line Wall

	Enclosure dimensions approx. mm						TFT display (high brightness for outdoor applications)	Model No. ITS[1)]	Page
	Body			Including all projecting parts					
	Width	Height	Depth	Width	Height 2	Depth			
Touchscreen	480	1100	305	600	1360	305	15″	**9023.150**	797
	480	1100	305	600	1360	305	17″	**9023.170**	797
Prepared for keyboard	480	1100	365	600	1360	365	15″	**9023.250**	797
	480	1100	365	600	1360	365	17″	**9023.270**	797

Accessories see page 800.
[1)] Climate control needed.



ITS Out-Line Pro

TFT display (suitable for outdoor use with increased luminosity)	Dimensions approx. mm						Contact sensor (touchscreen) including controller	Keyboard support for use of ITS keyboards	Model No. ITS[1)]	Page
	Kiosk enclosures			Kiosk including roof						
	Width	Height	Depth	Width	Height	Depth				
15″	650	2000	400	1000	2400	1000	■	–	**9022.150**	798
15″	650	2000	400	1000	2400	1000	–	■	**9022.250**	798
17″	650	2000	400	1000	2400	1000	■	–	**9022.170**	798
17″	650	2000	400	1000	2400	1000	–	■	**9022.270**	798

Accessories see page 800.
[1)] Climate control needed.



ITS PC systems,
see page 799.

Keyboards,
see page 800/801.



5.8 Telecom

Rack system, based on Rittal TC-Rack

Dimensions mm			U	SU	Model No. DK	Page
Width	Height	Depth				
600	2200	300	46	82	**7723.035**	803
600	2200	600	46	82	**7726.035**	803



Small FM distributors

Dimensions mm			FM systems	Paired wires	Model No. DK	Page
Width	Height	Depth				
300	500	120	–	100	**7052.035**	806
500	500	120	–	200	**7053.035**	806
500	700	120	–	400	**7054.035**	806
900	700	120	–	800	**7055.035**	806



Modular FM wall-mounted distributor

Dimensions mm			FM systems	Paired wires	Model No. DK	Page
Width	Height	Depth				
600	600	350	2 sets	max. 340	**7011.535**	807
760	760	300	2 sets	max. 500	**7012.535**	807
800	1000	300	3 sets	max. 990	**7013.535**	807
800	1200	300	3 sets	max. 1170	**7014.535**	807

Approvals:
- UL
- CSA
- TÜV
- Lloyds Register of Shipping
- VDE



Modular FM distributor racks

Dimensions mm			FM systems	Paired wires	Model No. DK	Page
Width	Height	Depth				
600	2000	400	2	max. 1300	**7834.060**	808
800	2000	400	3	max. 1950	**7834.080**	808
1200	2000	400	5	max. 3250	**7834.120**	808

Approvals:
- UL
- CSA
- TÜV
- Lloyds Register of Shipping
- VDE



Communication Systems – Perfect protection for all weathers
Rittal's expertise in the fields of enclosure technology, climate control, security management and system integration is combined in standard solutions and customised outdoor systems. The specific requirements of mobile communications, IT technology, environmental technology and power distribution are accommodated on a project-specific basis.
High-quality materials such as aluminium and zinc-plated sheet steel combine corrosion resistance and protection from vandalism with UV stability and a high level of RF attenuation.

Individual complete solutions using mass-produced modules:
- CS Toptec (twin-walled)
- CS wall-mounted enclosure (enclosure within an enclosure)
- CS compact enclosure (single-walled)
- CS basic enclosure (single-walled)
- CS modular enclosure (twin-walled)
- CS Indoor Racks
- CS Outdoor climate control

Detailed information may be found on catalogue pages 812 – 831 or refer to our website: www.rittal.com



6.1 CS Toptec

Dimensions mm			Model No. CS		Page
Width	Height	Depth			
Without climate control module					
650	1200	650	**9774.100**		817
800	1200	650	**9774.200**		817
650	1600	650	**9774.300**		817
800	1600	650	**9774.400**		817
With heat exchanger			85 W/K	135 W/K	
800	1200	650	**9774.210**	**9774.230**[1)]	817
800	1600	650	**9774.410**	**9774.430**[1)]	817
With cooling unit			1000 W	1500 W	
800	1200	650	**9774.250**	**9774.270**[1)]	817
800	1600	650	**9774.450**	**9774.470**[1)]	817

[1)] Delivery times available on request.



6.1 CS wall-mounted enclosures

Dimensions external/internal mm			Model No. CS	Page
Width	Height	Depth		
370/300	522.5/400	210/170	**9791.015**	818
420/350	560.5/440	210/170	**9791.025**	818
530/460	700/565	265/220	**9791.035**	818
630/580	780/580	380/333	**9791.045**	818
with rotating frame, 5 U, instead of mounting plate				
630/580	780/580	380/333	**9791.145**	818



6.1 CS compact enclosures

Dimensions mm			Enclosure	Model No. CS	Page
Width	Height	Depth			
Aluminium AlMg3					
800	1100	320	single-door	**9771.115**	819
1100	1100	320	double-door	**9772.115**	819
Sheet steel, zinc-plated, passivated					
800	1100	320	single-door	**9771.111**	819
1100	1100	320	double-door	**9772.111**	819



6.1 Compact enclosures, Outdoor

Dimensions mm			Model No.		Page
Width	Height	Depth	Sheet steel	Stainless steel	
800	1200	350	**1620.000**	**1620.100**	820
1200	800	350	**1621.000**	**1621.100**	820
1200	1200	350	**1622.000**	**1622.100**	820





6.1 CS basic enclosures

Dimensions mm			Model No. CS		Page
Width	Height	Depth	without centre bar	with centre bar	
single-door					
600	800	400	**9783.040**	–	821
600	1200	400	**9783.050**	–	821
600	1400	400	**9783.060**	–	821
600	1200	500	**9783.030**	–	821
800	800	400	**9783.010**	–	821
800	1200	400	**9783.020**	–	821
800	1400	400	**9783.120**	–	821
800	1200	500	**9783.110**	–	821
double-door					
1200	800	400	**9784.110**	**9784.010**	822
1200	1200	400	**9784.120**	**9784.020**	822
1200	1200	500	**9784.140**	**9784.040**	822
1200	1400	400	**9784.130**	**9784.030**	822



6.1 CS modular enclosures

Dimensions mm			Model No. CS	Page
Width	Height	Depth		
600	1200	600	**9751.125**	823
800	1200	500	**9751.145**	823
800	1600	600	**9751.165**	823
1200	1200	600	**9752.125**	823

Other modules and size variants may be found on page 824.



6.1 CS Indoor Racks

Dimensions mm			Mounting angles	Model No. CS	Page
Width	Height	Depth			
600	2200	300	19″	**9790.042**	825
600	2200	300	Metric	**9790.043**	825





6.2 Heat exchanger for CS modular enclosures/ compact enclosures

Dimensions mm			Mounting situation	**Specific thermal output**	Heater[2)]	Rated operating voltage	**Model No. CS**	Page
Width	Height	Depth						
470	158	380	Roof mounting	**30 W/K**	without	48 V DC	**9764.040**	827
535	390	400	Roof mounting	**60 W/K**	400 W	48 V DC	**9764.012**	827
515	1170	151.5	Wall mounting	**60 W/K**	400 W	48 V DC	**9763.012**	827
480	1005	110	Door mounting	**40 W/K**	400 W	48 V DC	**9768.032**	828
510	1005	150	Door mounting	**60 W/K**	400 W	48 V DC	**9768.012**	828
445	1050	150	Door mounting	**85 W/K**	without	48 V DC	**9768.042**	828
575	1050	195	Door mounting	**120 W/K**	without	48 V DC	**9768.062**	828
855	95	240	Roof mounting[1)]	**15 W/K**	without	48 V DC	**9767.012**	828

[1)] For compact enclosures
[2)] Rated operating voltage 230 V AC, 50/60 Hz

Note:
Enclosure heaters for CS outdoor enclosures,
see page 80, 656.





6.2 Cooling units for CS modular enclosures

Dimensions mm			Mounting situation	**Useful cooling output EN 814**		Rated operating voltage	**Model No. CS**	Page
Width	Height	Depth		**L35 L35**	**L35 L50**			
535	390	400	Roof mounting	**900 W**	**750 W**	230 V AC, 50/60 Hz	**9762.012**	829
430	1170	210	Door mounting	**900 W**	**650 W**	230 V AC, 50/60 Hz	**9768.100**	829
515	1070	151.5	Wall mounting	**900 W**	**750 W**	230 V AC, 50/60 Hz	**9761.012**	829
695	1132	151.5	Wall mounting	**1400 W**	**1050 W**	230 V AC, 50/60 Hz	**9761.032**	829
776	1100	250	Wall mounting	**2500 W**	**2000 W**	230 V AC, 50/60 Hz	**9761.042**	829
400	1050	310	Universal built-in	**1500 W**	**1250 W**	230 V AC, 50/60 Hz	**9768.150**	829

Approvals CS 9761.032:
- UL
- C-UL



6.2 Climate control units for CS Toptec

Dimensions mm			Mounting situation	**Useful cooling output EN 814**		**Specific thermal output**	Rated operating voltage	**Model No. CS**	Page
Width	Height	Depth		**L35 L35**	**L35 L50**				
Heat exchanger									
500	1000	150	Universal built-in	–	–	**85 W/K**	48 V DC	**9776.100**	830
500	1000	260	Universal built-in	–	–	**135 W/K**	48 V DC	**9776.150**	830
Cooling unit									
500	1000	150	Universal built-in	**1000 W**	**680 W**	–	230 V AC, 50/60 Hz	**9776.500**	830
500	1000	260	Universal built-in	**1500 W**	**1150 W**	–	230 V AC, 50/60 Hz	**9776.550**	830



Rittal has all the elements of **packaging technology for the factory of the future,** even in the toughest ambient conditions. Current examples include: Compact, secure technologies for **Industrial Ethernet,** enabling simple modifications to production procedures.

Modular enclosure technology is advantageous in terms of the rapid assembly and adaptation of controllers.

At the human/machine interface, your ergonomic requirements are precisely realised with the **Command Panel and Industrial Workstations**.

High-quality products + matching accessories + modular assembly

= perfect solutions at an inexpensive price.

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Small enclosures

Features



This is application-oriented diversity:

6 enclosure types in 4 materials and more than 100 sizes.

With

- Fibreglass-reinforced polycarbonate
- Cast aluminium
- Sheet steel with high-quality coating
- Stainless steel

every aspect of your requirements is met.

It goes without saying that all this is achieved in Rittal's familiar high quality, and to suit every security requirement.

And for special requirements:

Stainless steel enclosures, see page 268 – 272.

Ex enclosures, see page 286 – 288.

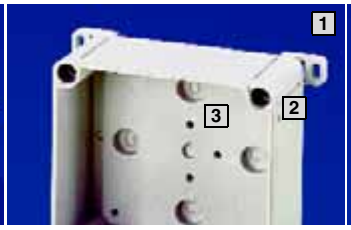
EMC enclosures, see page 289 – 290.



Polycarbonate enclosures



Hinges available as accessories. Cover screw prepared for a lead seal.



3 attachment options:

1 Wall mounting brackets
2 Below the cover screws
3 Knockouts in the enclosure



Enclosures with knockouts for metric screw fastening and assembly are available on request.



Cast aluminium enclosures



Some holes tapped for the attachment of support rails, mounting plates or earthing systems.



Cover with captive screws.
Wall mounting optionally
- below the cover
- via wall mounting bracket (available as an accessory).



Hole drilling and assembly of the cable glands (see page 972) available on request.

Features



Terminal boxes KL with and without gland plate



NEW: Cover may be opened and securely locked in a flash, with the new quick-action screw. $^1/_4$ turn instead of thread ensures correct contact pressure of the seal.



Support rail TS 35/7.5 for better use of the depth, optionally attached at the bottom or via the profile strips on both sides with self-tapping screws.



Electrophoretic dipcoat priming and powder coating – reliable surface protection thanks to even coating in all the corners and edges.



E-Box



The “E-Box” supplied as standard with mounting plate, 180° hinge and double-bit lock system.



Lock insert exchangeable or prepared for a lead seal with lock cover as an accessory – see page 890.



The highly elastic foamed-in PU seal guarantees perfect sealing. High protection category IP 66 to EN 60 529/10.91.



Bus enclosure



Door hinged at the bottom or side. Hinges with 180° opening angle, may be unscrewed from the inside.



Viewing window made from Macrolon with recess set flush into the metal.

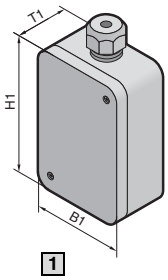


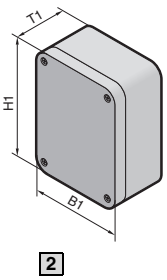
Bus modules of virtually all makes may be attached via the built-in support rails. Upon request also with fitted cable glands, see page 972.

Polycarbonate enclosures PK









Material:
Grey enclosure and cover (version .000) from fibreglass-reinforced polycarbonate, transparent cover (version .100) from polycarbonate,
cover screws from polyamide,
insulating bungs from polyethylene.

Colour:
RAL 7035

Protection category:
IP 66 to EN 60 529/10.91

Supply includes:
Enclosure and cover,
cover screws,
insulating bung for wall mounting screws (not with 9530.000 and 9531.000),
all-round foamed-in PU seal.

Approvals,
see page 22.

Detailed drawing,
see page 1079.

Width (B1) in mm		50	50	65	65	94	94	94	94	Page
Height (H1) in mm		52	65	65	65	65	65	94	94	
Depth (T1) in mm		35	35	57	81	57	81	57	81	
1 **Model No. PK with cable gland**		**9530.000**	**9531.000**	**–**	**–**	**–**	**–**	**–**	**–**	
2 **Model No. PK with grey cover**		**–**	**–**	**9500.000**	**9501.000**	**9502.000**	**9503.000**	**9504.000**	**9505.000**	
Model No. PK with transparent cover		**–**	**–**	**–**	**–**	**–**	**–**	**9504.100**	**–**	
Packs of		10	10	12	12	8	8	6	6	
Accessories										
Mounting plate		9551.000	9552.000	9540.000		9541.000		9542.000		102
Packs of		10	10	12		12		12		
Support rail (Packs of 12)										
TS 15/5.5	Installation in the width	–	–	9560.000		9561.000		9561.000		103
	Installation in the height	–	–	–		9560.000		9561.000		103
TS 35/7.5	Installation in the width	–	–	–		–		9564.000		103
	Installation in the height	–	–	–		–		9564.000		103

Width (B1) in mm		110	110	130	130	130	130	180	180	Page
Height (H1) in mm		110	110	94	94	130	130	94	94	
Depth (T1) in mm		66	90	57	81	75	99	57	81	
2 **Model No. PK with grey cover**		**9506.000**	**9507.000**	**9508.000**	**9509.000**	**9510.000**	**9511.000**	**9512.000**	**9513.000**	
Model No. PK with transparent lid		**9506.100**	**9507.100**	**9508.100**	**9509.100**	**9510.100**	**9511.100**	**9512.100**	**9513.100**	
Packs of		6	6	4	4	4	4	2	2	
Accessories										
Mounting plate		9543.000		9544.000		9545.000		9546.000		102
Packs of		12		12		10		10		
Support rail (Packs of 12)										
TS 15/5.5	Installation in the width	9562.000		9563.000		9563.000		–		103
	Installation in the height	9562.000		9561.000		9563.000		9561.000		103
TS 35/7.5	Installation in the width	9564.000		9565.000		9565.000		9566.000		103
	Installation in the height	9564.000		9564.000		9565.000		9564.000		103



Cable gland, polyamide,
Model No. see page 972.

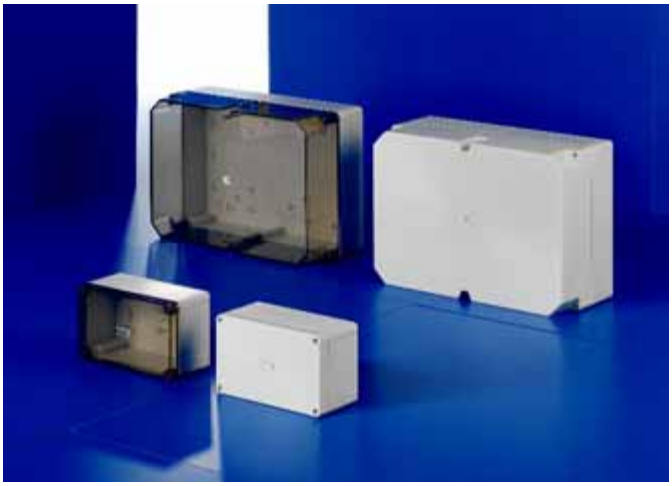


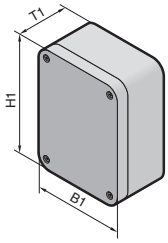


Wall mounting bracket,
Model No. see page 103.

External mounting bracket,
Model No. see page 102.

Accessories Page 832





Material:
Grey enclosure and cover (version .000) from fibreglass-reinforced polycarbonate, transparent cover (version .100) from polycarbonate, cover screws from polyamide, insulating bungs from polyethylene.

Colour:
RAL 7035

Protection category:
IP 66 to EN 60 529/10.91

Supply includes:
Enclosure and cover,
cover screws,
insulating bungs for wall mounting screws,
all-round foamed-in PU seal.

Approvals,
see page 22.

Detailed drawing,
see page 1079.

Width (B1) in mm	180	180	180	182	182	182	Page
Height (H1) in mm	110	110	110	180	180	180	
Depth (T1) in mm	90	111	165	90	111	165	
Model No. PK with grey cover	**9514.000**	**9515.000**	**9516.000**	**9517.000**	**9518.000**	**9519.000**	
Model No. PK with transparent cover	**9514.100**	**9515.100**	**9516.100**	**9517.100**	**9518.100**	**9519.100**	
Packs of	2	2	2	1	1	1	
Accessories							
Mounting plate	9547.000			9548.000			102
Packs of	10			10			
Support rail TS 35/7.5 (Packs of 12)							
Installation in the width	9566.000			9566.000			103
Installation in the height	9564.000			9566.000			103

Width (B1) in mm	254	254	254	360	360	Page
Height (H1) in mm	180	180	180	254	254	
Depth (T1) in mm	90	111	165	111	165	
Model No. PK with grey cover	**9520.000**	**9521.000**	**9522.000**	**9523.000**	**9524.000**	
Model No. PK with transparent cover	**9520.100**	**9521.100**	**9522.100**	**9523.100**	**9524.100**	
Packs of	1	1	1	1	1	
Accessories						
Mounting plate	9549.000			9550.000		102
Packs of	8			4		
Support rail TS 35/7.5 (Packs of 12)						
Installation in the width	9567.000			9568.000		103
Installation in the height	9566.000			9567.000		103



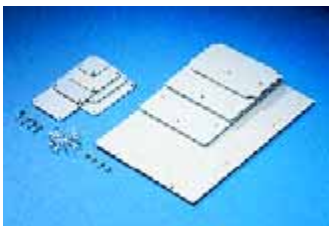
Hinges,
Model No. see page 102.



Turn-lock fastener,
Model No. see page 102.

Accessories Page 832

Accessories



Mounting plate

For individual configuration of the enclosure interior, the mounting plate offers a stable, secure and flexible design option.

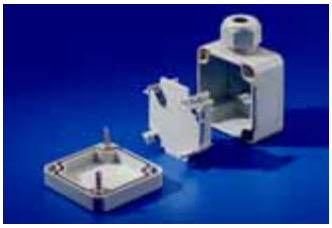
Design:
Melamine phenol-coated laminated paper, 2.5 mm thick.

Colour:
RAL 7035

Supply includes:
Self-tapping assembly screws.

To fit	Width mm	Height mm	Packs of	Model No. PK
PK 9500.000/PK 9501.000	45	45	12	**9540.000**[1)]
PK 9502.000/PK 9503.000	74	45	12	**9541.000**[1)]
PK 9504.000/PK 9505.000	74	74	12	**9542.000**[1)]
PK 9506.000/PK 9507.000	90	90	12	**9543.000**[1)]
PK 9508.000/PK 9509.000	110	74	12	**9544.000**[1)]
PK 9510.000/PK 9511.000	110	110	10	**9545.000**
PK 9512.000/PK 9513.000	160	74	10	**9546.000**
PK 9514.000/PK 9515.000/PK 9516.000	150	90	10	**9547.000**
PK 9517.000/PK 9518.000/PK 9519.000	150	150	10	**9548.000**
PK 9520.000/PK 9521.000/PK 9522.000	220	150	8	**9549.000**
PK 9523.000/PK 9524.000	331	220	4	**9550.000**

[1)] with spacers



Mounting plate

for polycarbonate enclosures
- PK 9530.000
- PK 9531.000

Via a 3-way depth-adjustable assembly component, the mounting plate may also be used as an inner cover for installed equipment.

Material:
Polycarbonate

For enclosure	Packs of	Model No. PK
9530.000	10	**9551.000**
9531.000	10	**9552.000**

Supply includes:
Assembly parts.



Turn-lock fastener

A quick, convenient screw fastening aid is obtained by clipping into the head of the lid screw.

Material:
Polyamide

Supply includes:
1 pack

	Packs of	Model No. PK
For all enclosures	100	**9582.000**



Hinges

For hinged attachment of lids.
The supplied drilling template ensures problem-free assembly.

Supply includes:
1 set =
2 hinges,
4 assembly screws,
3 polyethylene sealing bungs,
1 drilling template.

For enclosure	Material	Packs of	Model No. PK
PK 9500.000 – PK 9513.000	Polycarbonate	10 sets	**9580.000**
PK 9514.000 – PK 9524.000	Polystyrene	10 sets	**9581.000**



External mounting bracket

To fit enclosure
- PK 9530.000
- PK 9531.000

With moulded lug for cable tie.

Material:
Polyamide

Supply includes:
Assembly parts.

Packs of	Model No. PK
10	**9553.000**



Wall mounting brackets

The enclosure can be screwed to the wall using four wall mounting brackets. The bracket is securely attached to the enclosure by means of pins.

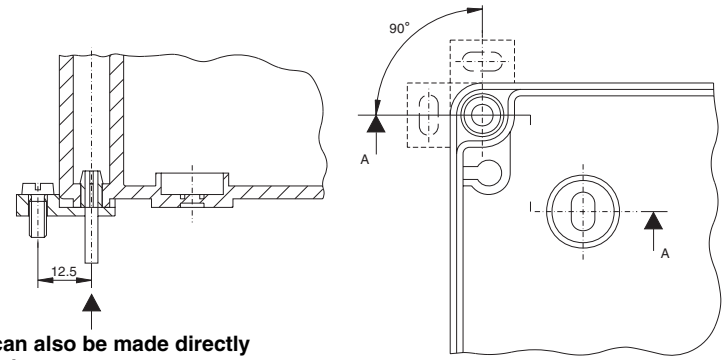
Material:
Polyamide, grey

Supply includes:
1 pack

	Packs of	Model No. PK
For all enclosures	40	**9583.000**

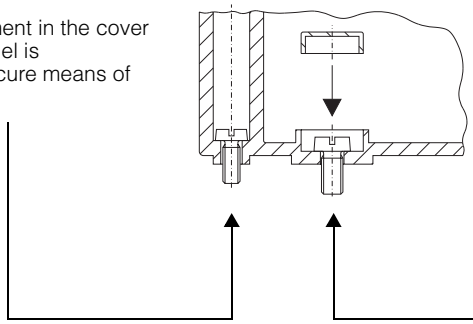
The assembly screw is located in the wall mounting bracket, making it accessible at all times.

The wall mounting bracket may be fitted to the side or top.



Wall attachment can also be made directly without the bracket:

Variant 1
Wall attachment in the cover screw channel is a simple, secure means of attachment.



Variant 2
By knocking out the hole in the enclosure base, mounting in the enclosure interior is also possible.
The screws must be concealed using the sealing bungs supplied with the enclosure. The spacing between the attachment holes is marked on the rear panel of the enclosure.





Support rail

The two support rail sections provide good flexibility for accommodating terminal blocks and installed components.

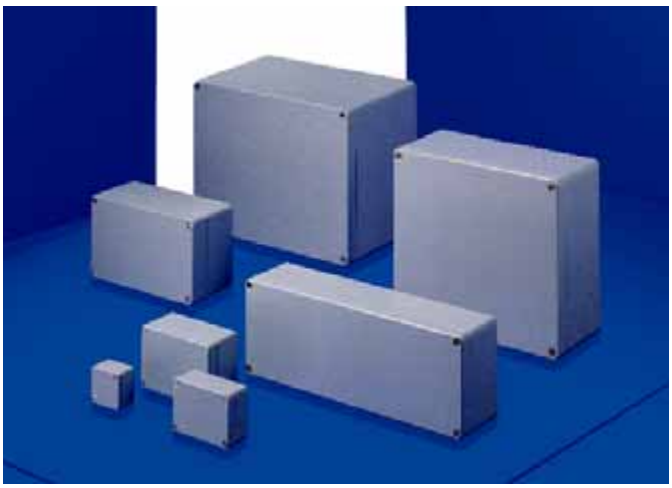
Design:
The support rails are designed in accordance with EN 50 045 (TS 15/5.5) or EN 50 022 (TS 35/7.5); the surface finish is zinc-plated.

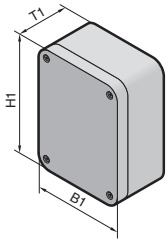
Supply includes:
Two self-tapping assembly screws.

Rail	Maximum number of terminals with the following terminal sizes			Bar length mm	Packs of	Model No. PK
	2.5 mm²	4 mm²	10 mm²			
TS 15/5.5	5	5	4	49.5	12	**9560.000**
	11	11	8	80	12	**9561.000**
	14	14	10	92	12	**9562.000**
	18	18	13	111	12	**9563.000**
TS 35/7.5	12	9	5	81	12	**9564.000**
	17	13	8	106	12	**9565.000**
	24	20	11	144	12	**9566.000**
	38	32	19	216	12	**9567.000**
	61	50	30	336	12	**9568.000**

Calculation of the maximum number of terminals is based on two end holders and a cover.

Cast aluminium enclosures GA





Material:
Enclosure and lid made from cast aluminium, lid with neoprene cord seal.

Surface finish:
Smooth spray finish similar to RAL 7001

Protection category:
IP 67 to EN 60 529/10.91, complies with NEMA 4.

Supply includes:
2 or 4 cover screws, captive mounted
2 or 4 screws for the attachment of support rails, mounting plates etc.
1 screw for connection of the PE conductor.

Rittal service:

Individual standard solutions for enclosures and covers
- Hole drilling
- Thread tapping
- Milling
- Screen printing
- Engraving
- Choice of RAL colours and other surface finishes available on request.

Detailed drawing,
see page 1080.

Width (B1) in mm		50	58	98	150	75	125	175	250	122	Page
Height (H1) in mm		45	64	64	64	80	80	80	80	120	
Depth (T1) in mm		30	36	36	36	57	57	57	57	80	
Model No. GA		**9100.210**	**9101.210**	**9102.210**	**9103.210**	**9104.210**	**9105.210**	**9106.210**	**9107.210**	**9108.210**	
Packs of		6	5	3	2	1	1	1	1	1	
Accessories											
Mounting plate		–	–	–	–	–	9105.700	9106.700	9107.700	9108.700	105
Packs of		–	–	–	–	–	10	10	5	2	
Support rail[1)]	TS 15/5.5 (Packs of 10)	–	–	–	–	–	9105.150	9106.150	9107.150	–	105
	TS 35/7.5 (Packs of 5)	–	–	–	–	–	–	–	–	9108.350	105
Wall mounting brackets (Packs of 2)		–	–	–	–	–	–	–	–	9121.122	106
Exterior hinge (Packs of 2)		–	–	–	–	–	9123.100	9123.100	9123.100	9123.000	106

Width (B1) in mm		220	360	160	260	360	200	280	330	330	Page
Height (H1) in mm		120	122	160	160	160	230	230	230	230	
Depth (T1) in mm		90	80	90	90	90	110	110	110	180	
Model No. GA		**9110.210**	**9111.210**	**9112.210**	**9113.210**	**9114.210**	**9116.210**	**9117.210**	**9118.210**	**9119.210**	
Packs of		1	1	1	1	1	1	1	1	1	
Accessories											
Mounting plate		9110.700	9111.700	9112.700	9113.700	9114.700	9116.700	9117.700	9118.700	9119.700	105
Packs of		2	2	2	2	1	1	1	1	1	
Support rail[1)]	TS 35/7.5 (Packs of 5)	9110.350	9111.350	9112.350	9113.350	9111.350	9116.350	9117.350	9118.350	9118.350	105
Wall mounting brackets (Packs of 2)		9121.122	9121.122	9121.160	9121.160	9121.160	9121.230	9121.230	9121.230	9121.230	106
Exterior hinge (Packs of 2)		9123.000	9123.000	9123.000	9123.000	9123.000	9123.000	9123.000	9123.000	9123.000	106

[1)] Installation in the width

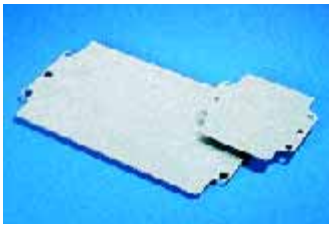


Cable gland, brass,
Model No. see page 972.



Cover screws prepared for a lead seal,
Model No. see page 106.

Accessories Page 832



Mounting plate

for universal interior installation.

Material:
Sheet steel, zinc-plated, passivated, with attachment holes.

Exterior dimensions (mm)		For enclosure	Packs of	**Model No. GA**
Width	Height			
114	69	GA 9105.210	10	**9105.700**
164	69	GA 9106.210	10	**9106.700**
239	69	GA 9107.210	5	**9107.700**
109	107	GA 9108.210	2	**9108.700**
207	107	GA 9110.210	2	**9110.700**
347	107	GA 9111.210	2	**9111.700**
144	142	GA 9112.210	2	**9112.700**
245	142	GA 9113.210	2	**9113.700**
346	142	GA 9114.210	1	**9114.700**
183	214	GA 9116.210	1	**9116.700**
264	214	GA 9117.210	1	**9117.700**
314	214	GA 9118.210/GA 9119.210	1	**9118.700**



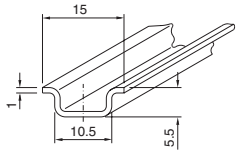
Support rail

To accommodate terminal blocks or other installed equipment.

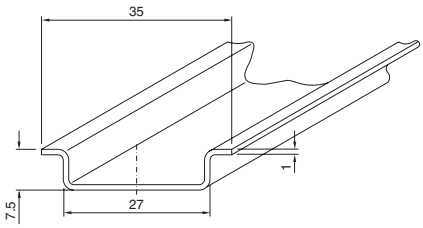
Material:
Sheet steel, zinc-plated, passivated, with attachment holes.

Rail	Maximum number of terminals with the following terminal sizes			Rail length available for population mm	For enclosure width mm	Packs of	**Model No. GA**
	2.5 mm²	4 mm²	10 mm²				
TS 15/5.5 to EN 50 045	15	15	12	95	125	10	**9105.150**
	27	22	19	145	175	10	**9106.150**
	42	35	29	220	250	10	**9107.150**
TS 35/7.5 to EN 50 022	12	12	9	80	122	5	**9108.350**
	18	18	14	115	160	5	**9112.350**
	25	25	18	155	200	5	**9116.350**
	29	29	21	180	220	5	**9110.350**
	34	34	26	215	260	5	**9113.350**
	37	37	28	230	280	5	**9117.350**
	46	46	35	290	330	5	**9118.350**
	51	51	39	320	360	5	**9111.350**

TS 15/5.5



TS 35/7.5



Accessories



Wall mounting bracket

For external mounting to surfaces – no need to dismantle the lid if pre-assembled.

Material:
Sheet steel, zinc-plated, passivated

For enclosure	Packs of	Model No. GA
GA 9108.210/ GA 9110.210/ GA 9111.210	2	**9121.122**
GA 9112.210/ GA 9113.210/ GA 9114.210	2	**9121.160**
GA 9116.210/ GA 9117.210/ GA 9118.210/ GA 9119.210	2	**9121.230**





Hinge, exterior

For fastening the lid to the enclosure base, complete with drilling template.

Material:
Die-cast aluminium

Colour:
RAL 7001

For enclosure	Packs of	Model No. GA
GA 9105.210/ GA 9106.210/ GA 9107.210	2 + 8 screws	**9123.100**
GA 9108.210/ GA 9110.210/ GA 9111.210/ GA 9112.210/ GA 9113.210/ GA 9114.210/ GA 9116.210/ GA 9117.210/ GA 9118.210/ GA 9119.210	2 + 8 screws	**9123.000**





Cover screws, prepared for lead seal

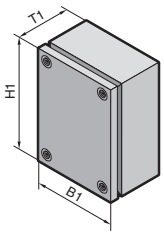
to protect against unauthorised opening.
Two per cover are required.

Material:
Stainless steel

For enclosure	Packs of	Model No. GA
GA 9104.210/ GA 9105.210/ GA 9106.210/ GA 9107.210	6	**9122.424**

without gland plate, depth: 80





Material:
Enclosure: Sheet steel 1.25 mm
Cover: Sheet steel 1.25 mm

Surface finish:
Case and cover:
Dipcoat-primed,
powder-coated on the outside
in textured RAL 7035

Protection category:
IP 66 to EN 60 529/10.91,
Complies with NEMA 4.

Supply includes:
Enclosure, cover with all-round foamed-in PU seal and cover screws, including plastic bushes.

Approvals,
see page 23.

Detailed drawing,
see page 1081.

Width (B1) in mm	Packs of	150	200	200	300	300	400	600	Page
Height (H1) in mm		150	150	200	150	200	200	200	
Depth (T1) in mm		80	80	80	80	80	80	80	
Model No. KL	1	**1514.510**	**1528.510**	**1516.510**	**1515.510**	**1517.510**	**1518.510**	**1519.510**	
Weight (kg)		1.4	1.6	1.9	2.1	2.6	3.2	4.6	
Accessories									
Mounting plate	1	1560.700	1575.700	1562.700	1561.700	1563.700	1564.700	1566.700	909
Support rail TS 35/7.5	10	2314.000	2315.000	2315.000	2316.000	2316.000	2317.000	–	927
Support rail TS 35/15	10	–	–	–	–	–	–	2319.000	927
Cover retainer	3 pairs	1591.000	1591.000	1591.000	1591.000	1591.000	1591.000	1591.000	–
Cover hinge	6	1592.000	1592.000	1592.000	1592.000	1592.000	1592.000	1592.000	894

To order terminal boxes in textured RAL 7032 please add extension .210 to the Model No., and for primed terminal boxes use extension .310.
Delivery times available on request.





Double-membrane gland, stepped collar for cable entry, Model No. see page 973.



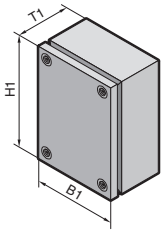
Cover retainer
The cover retainer KL 1591.000 is easily fitted without drilling, and allows the covers to be opened upwards, even when the terminal box below is bayed.

Accessories Page 832 **KL stainless steel** Page 270 **KL Premium Line stainless steel** Page 271 **KL EMC-shielded** Page 290 **KL Ex-proof** Page 287

Terminal boxes KL

without gland plate, depth: 120





Material:
Enclosure: Sheet steel 1.25 mm; 1.38 mm for KL 1507.510 to KL 1513.510
Cover: Sheet steel 1.25 mm

Surface finish:
Case and cover: Dipcoat-primed, powder-coated on the outside in textured RAL 7035

Protection category:
IP 66 to EN 60 529/10.91, Complies with NEMA 4.

Supply includes:
Enclosure, cover with all-round foamed-in PU seal and cover screws, including plastic bushes.

Approvals,
see page 23.

Detailed drawing,
see page 1081.

Width (B1) in mm	Packs of	150	200	200	300	300	300	400	400	400	400	Page
Height (H1) in mm		150	150	200	150	200	300	150	200	300	400	
Depth (T1) in mm		120	120	120	120	120	120	120	120	120	120	
Model No. KL	1	**1500.510**	**1529.510**	**1502.510**	**1501.510**	**1503.510**	**1507.510**	**1589.510**	**1504.510**	**1508.510**	**1511.510**	
Weight (kg)		1.6	1.8	2.3	2.6	3.0	4.0	3.2	3.6	4.8	6.2	
Accessories												
Mounting plate	1	1560.700	1575.700	1562.700	1561.700	1563.700	1567.700	1576.700	1564.700	1568.700	1571.700	909
Support rail TS 35/7.5	10	2314.000	2315.000	2315.000	2316.000	2316.000	2316.000	2317.000	2317.000	2317.000	2317.000	927

Width (B1) in mm	Packs of	500	500	600	600	600	800	800	Page
Height (H1) in mm		200	300	200	300	400	200	400	
Depth (T1) in mm		120	120	120	120	120	120	120	
Model No. KL	1	**1505.510**	**1509.510**	**1506.510**	**1510.510**	**1512.510**	**1527.510**	**1513.510**	
Weight (kg)		4.4	5.8	5.7	6.8	8.4	6.8	11.0	
Accessories									
Mounting plate	1	1565.700	1569.700	1566.700	1570.700	1572.700	1574.700	1573.700	909
Support rail TS 35/15	10	2318.000	2318.000	2319.000	2319.000	2319.000	–	–	927
Cover retainer	3 pairs	1591.000	1591.000	1591.000	1591.000	1591.000	1591.000	1591.000	107
Cover hinge	6	1592.000	1592.000	1592.000	1592.000	1592.000	1592.000	1592.000	894

To order terminal boxes in textured RAL 7032 please add extension .210 to the Model No., and for primed terminal boxes use extension .310.
Delivery times available on request.



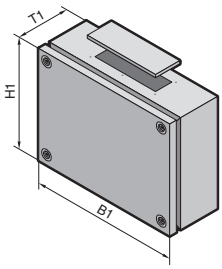


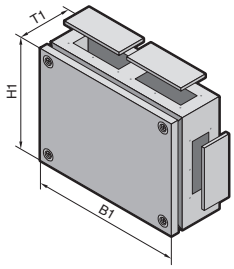
Cable gland and multi-seal inserts,
Model No. see page 972 – 973.

Accessories Page 832 **KL stainless steel** Page 270 **KL Premium Line stainless steel** Page 271 **KL EMC-shielded** Page 290 **KL Ex-proof** Page 287

with gland plate, depth 120







Material:
Enclosure: Sheet steel 1.38 mm; 1.25 mm for KL 1530.510 to KL 1534.510 and KL 1542.510
Cover: Sheet steel 1.25 mm

Surface finish:
Case and cover: Dipcoat-primed, powder-coated on the outside in in textured RAL 7035

Protection category:
IP 55 to EN 60 529/10.91, Complies with NEMA 12.

Supply includes:
Enclosures with gland apertures, cover with foamed-in special seal and cover screws including plastic bushes, sheet steel gland plates with seals and assembly parts.

Approvals,
see page 23.

Detailed drawing,
see page 1081.

Width (B1) in mm	Packs of	300	300	300	400	400	400	Page
Height (H1) in mm		150	200	300	200	300	400	
Depth (T1) in mm		120	120	120	120	120	120	
Model No. KL	1	**1530.510**	**1531.510**	**1535.510**	**1532.510**	**1536.510**	**1539.510**	
Weight (kg)		2.7	3.3	4.5	4.0	5.2	6.7	
Accessories								
Mounting plate	1	1561.700	1563.700	1567.700	1564.700	1568.700	1571.700	909
Gland plate (top + bottom)		1 + 1	1 + 1	1 + 1	1 + 1	1 + 1	1 + 1	
Gland plate (left + right)		–	–	1 + 1	–	1 + 1	1 + 1	
Support rail TS 35/7.5	10	2316.000	2316.000	2316.000	2317.000	2317.000	2317.000	927

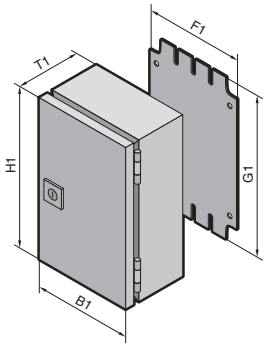
Width (B1) in mm	Packs of	500	500	600	600	600	800	800	Page
Height (H1) in mm		200	300	200	300	400	200	400	
Depth (T1) in mm		120	120	120	120	120	120	120	
Model No. KL	1	**1533.510**	**1537.510**	**1534.510**	**1538.510**	**1540.510**	**1542.510**	**1541.510**	
Weight (kg)		4.9	5.2	5.9	7.7	9.0	7.2	12.0	
Accessories									
Mounting plate	1	1565.700	1569.700	1566.700	1570.700	1572.700	1574.700	1573.700	909
Gland plate (top + bottom)		2 + 2	2 + 2	2 + 2	2 + 2	2 + 2	3 + 3	3 + 3	
Gland plate (left + right)		–	1 + 1	–	1 + 1	1 + 1	–	1 + 1	
Support rail TS 35/15	10	2318.000	2318.000	2319.000	2319.000	2319.000	–	–	927
Cover retainer	3 pairs	1591.000	1591.000	1591.000	1591.000	1591.000	1591.000	1591.000	107
Cover hinge	6	1592.000	1592.000	1592.000	1592.000	1592.000	1592.000	1592.000	894

To order terminal boxes in textured RAL 7032 please add extension .210 to the Model No., and for primed terminal boxes use extension .310.
Delivery times available on request.

Accessories Page 832 **KL stainless steel** Page 270 **KL Premium Line stainless steel** Page 271 **KL EMC-shielded** Page 290 **KL Ex-proof** Page 287

E-Box EB





Material:
Sheet steel
Enclosure: 1.25 mm
1.38 mm for
EB 1555.500, EB 1556.500,
EB 1577.500 to EB 1579.500

Surface finish:
Enclosure and door:
Dipcoat-primed,
powder-coated on the outside in
textured RAL 7035
Mounting plate: Zinc-plated

Protection category:
IP 66 to EN 60 529/10.91

Supply includes:
Enclosure with mounting plate, door including 180° hinges and cam lock with double-bit insert.

Approvals,
see page 23.

Detailed drawing,
see page 1082.

Depth 80 mm

Width (B1) in mm	Packs of	150	150	200	200	200
Height (H1) in mm		150	300	200	300	400
Depth (T1) in mm		80	80	80	80	80
Mounting plate width (F1) in mm		125	125	175	175	175
Mounting plate height (G1) in mm		135	285	185	285	385
Model No. EB	1	**1551.500**	**1545.500**	**1546.500**	**1552.500**	**1547.500**
Weight (kg)		1.7	2.6	2.4	3.2	4.4

Depth 120 mm

Width (B1) in mm	Packs of	150	150	200	200	200	300	300	200
Height (H1) in mm		150	300	200	300	400	300	400	500
Depth (T1) in mm		120	120	120	120	120	120	120	120
Mounting plate width (F1) in mm		125	125	175	175	175	275	275	175
Mounting plate height (G1) in mm		135	285	185	285	385	285	385	485
Model No. EB	1	**1553.500**	**1548.500**	**1549.500**	**1554.500**	**1550.500**	**1555.500**	**1556.500**	**1557.500**
Weight (kg)		2.0	3.0	2.8	3.6	5.0	5.0	6.4	6.2

Depth 155 mm

Width (B1) in mm	Packs of	300	300	300
Height (H1) in mm		400	600	800
Depth (T1) in mm		155	155	155
Mounting plate width (F1) in mm		275	275	275
Mounting plate height (G1) in mm		385	585	785
Model No. EB	1	**1577.500**	**1578.500**	**1579.500**
Weight (kg)		7.1	11.0	13.2

Lock systems

Standard double-bit lock insert may be exchanged for lock inserts, type A, see page 888,
lock cylinder inserts, plastic handles and T handles, type B, see page 886 – 889.

To order terminal boxes in textured RAL 7032 please add extension .600 to the Model No., and for primed terminal boxes use extension .310.
Delivery times available on request.

Accessories Page 832 **E-Box, EMC-shielded** Page 290



Bus enclosure

Material:
Sheet steel
Enclosure: 1.38 mm
Door: 1.5 mm
Viewing window made from polycarbonate, 4 mm

Surface finish:
Enclosure and door:
powder-coated in textured RAL 7035

Protection category:
IP 65 to EN 60 529/10.91

Supply includes:
Door hinged on the left,
1 cam lock with double-bit insert,
2 (1) support rail(s) TS 35/7.5 (for BG 1586.510).
Drilled holes for cable glands in the base.

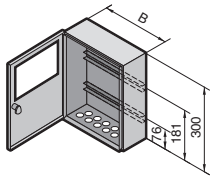
Approvals,
see page 24.

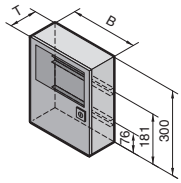
Dimensions mm			PG version						Metric version			
			Number of PG holes					Model No. BG	Number of metric holes			Model No. BG
W	H	D	9	11	13.5	16	21		M12	M20	M25	
200	300	80	1	8	–	1	1	**1583.510**	9	–	2	**1583.520**
300	300	80	1	14	–	1	1	**1584.510**	15	–	2	**1584.520**
400	300	80	1	18	–	1	2	**1585.510**	19	–	3	**1585.520**
500	300	80	3	–	24	–	–	**1586.510**	3	24	–	**1586.520**

Lock systems

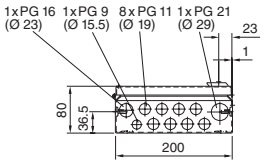
Standard double-bit lock insert may be exchanged for lock inserts, type A, see page 888 and plastic handles, type B, see page 886.

To order enclosures in RAL 7032, please add the extension .210 or .220 to the Model No.
Delivery times available on request.

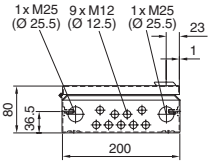


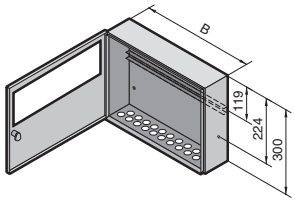


PG
BG 1583.510

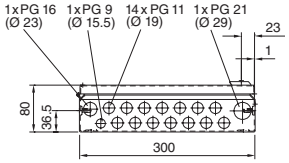


Metric
BG 1583.520

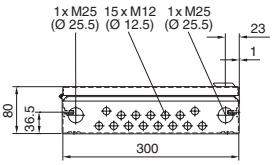


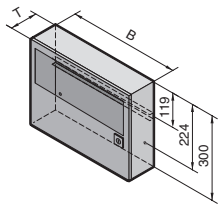


BG 1584.510

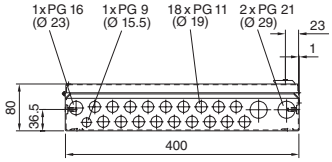


BG 1584.520

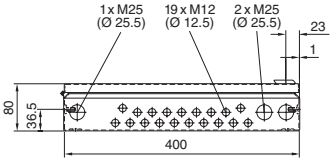




BG 1585.510

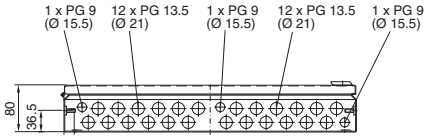


BG 1585.520

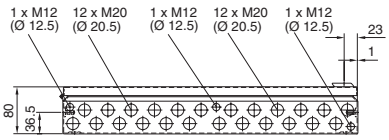


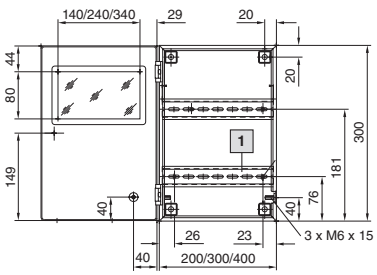
B = Width
T = Depth

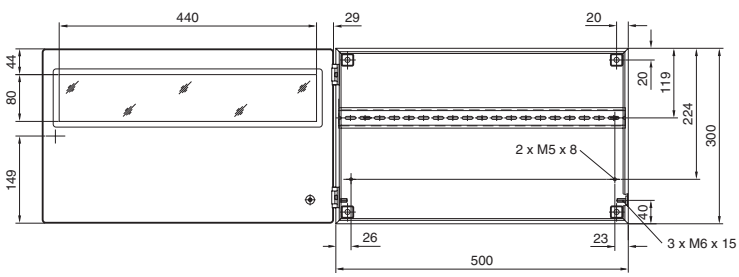
BG 1586.510



BG 1586.520







1 Not applicable to BG1586.510



Bus enclosure

Material:
Sheet steel
Enclosure: 1.38 mm
Door: 1.5 mm
Viewing window made from polycarbonate, 4 mm

Surface finish:
Enclosure and door:
Powder-coated in textured RAL 7035

Protection category:
IP 65 to EN 60 529/10.91

Supply includes:
Door with r/h hinge,
1 cam lock with double-bit insert,
1 support rail TS 35/7.5.
Drilled holes for cable glands in the base.

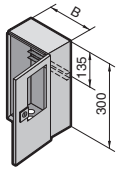
Approvals,
see page 24.

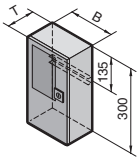
Dimensions mm			PG version					Metric version				
			Number of PG holes				Model No. BG	Number of metric holes				Model No. BG
W	H	D	9	13.5	29	36		M12	M20	M32	M50	
200	300	120	2	–	5	–	**1605.510**	2	–	5	–	**1605.520**
400	300	120	–	2	9	1	**1606.510**	–	2	9	1	**1606.520**

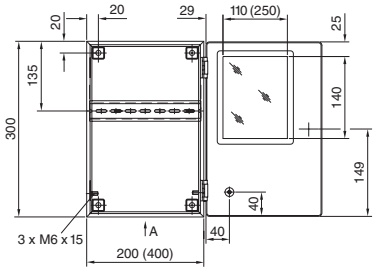
Lock systems

Standard double-bit lock insert may be exchanged for lock inserts, type A, see page 888 and plastic handles, type B, see page 886.

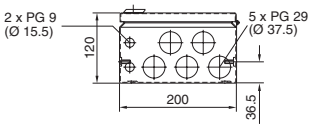
To order enclosures in RAL 7032, please add the extension .210 or .220 to the Model No.
Delivery times available on request.



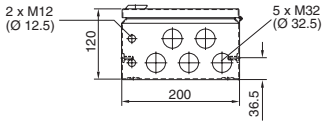




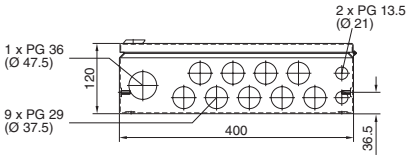
BG 1605.510



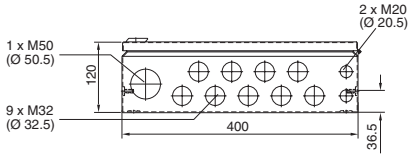
BG 1605.520



BG 1606.510



BG 1606.520



B = Width
T = Depth



Bus enclosure

Material:
Sheet steel
Enclosure: 1.38 mm
Door: 1.5 mm
Viewing window made from polycarbonate, 4 mm

Surface finish:
Enclosure and door:
Dipcoat-primed, powder-coated in textured RAL 7035

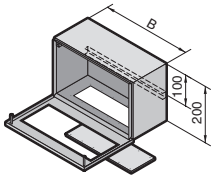
Protection category:
IP 65 to EN 60 529/10.91

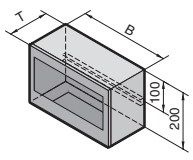
Dimensions in mm			Model No. BG
W	H	D	
400	200	125	**1558.510**
600	200	125	**1559.510**

To order enclosures in RAL 7032, please add the extension .210 to the Model No.
Delivery times available on request.

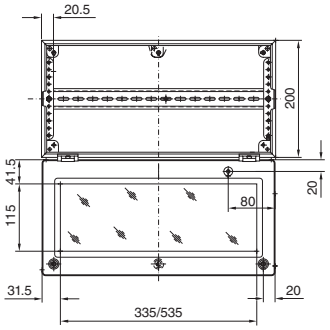
Supply includes:
Door with bottom hinge,
2 (3) quick-release fasteners for screwdrivers (with BG 1559.510),
1 support rail TS 35/7.5,
1 gland plate at bottom.
Holes for cable glands in the gland plate or directly in the enclosure available on request.

Approvals,
see page 24.

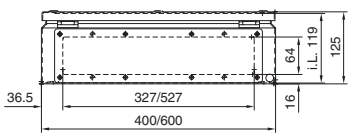




B = Width
T = Depth



i.L. = Clearance width





Bus enclosure

Material:
Sheet steel
Enclosure: 1.38 mm
Door: 1.5 mm
Polycarbonate viewing window
Zinc-plated mounting plate

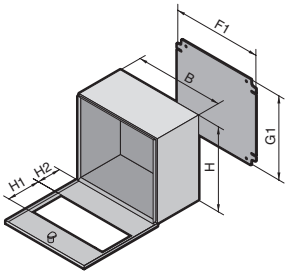
Surface finish:
Enclosure and door:
Powder-coated in textured RAL 7035

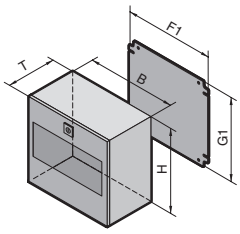
Supply includes:
Door with bottom hinge,
cam lock with double-bit insert
may be exchanged for lock inserts,
type A, page 888 and plastic handles, type B,
page 886.

Approvals,
see page 24.

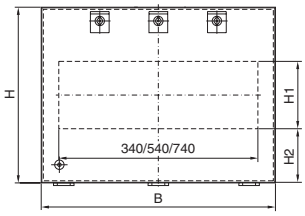
Dimensions in mm					Cam lock	Model No. BG
Enclosure			Mounting plate			
W	H	D	F1	G1		
400	300	155	385	275	1	**1577.500**
600	300	155	585	275	2	**1578.500**
800	300	155	785	275	2	**1579.500**

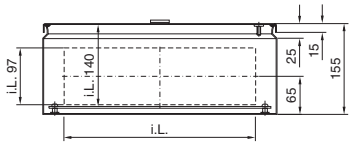
To order enclosures in RAL 7032, please add extension .600 to the Model No.
Delivery times available on request.





B = Width
T = Depth
i.L. = Clearance width



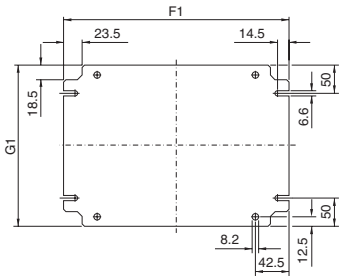


Bus enclosure modifications

Viewing window and gland plates – see table.

Height of viewing window mm		Gland plate cutout[2] at bottom (clearance width) mm	Model No. BG	
H1	H2		Basic	Extension
		327 x 97	**1577.**	
		527 x 97	**1578.**	
		2 off 327 x 97	**1579.**	
115	92	–		**.520[1]**
190	42	–		**.530[1]**
115	92	■		**.550[1]**
190	42	■		**.560[1]**
155	92	–		**.450[1]**

[1] Extended delivery times.
[2] Gland plates 14 mm larger all-round.





Bus enclosure

Material:
Sheet steel
Enclosure: 1.38 mm
Door: 1.5 mm
Viewing window made from polycarbonate, 4 mm

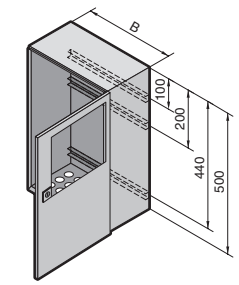
Surface finish:
Enclosure and door:
Powder-coated in textured RAL 7035

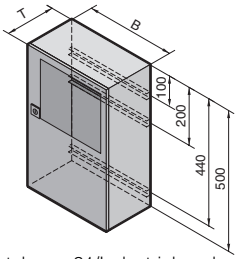
Approvals,
see page 24.

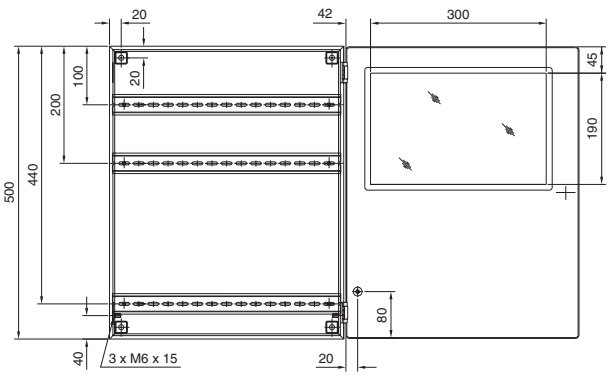
Dimensions in mm			Number of holes for PG 13.5 or M20	Model No. BG
W	H	D		
400	500	160	33	**1611.510**

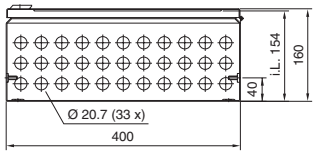
To order enclosures in RAL 7032, please add the extension .210 to the Model No.
Delivery times available on request.

Supply includes:
Door with r/h hinge,
1 cam lock with 3 mm double-bit insert, may be exchanged for type A lock inserts, page 888 and type B plastic handles, page 886.
3 support rails TS 35/7.5.
Drilled holes for cable glands in the base.









B = Width
T = Depth
i.L. = Clearance width



Bus enclosure

Material:
Sheet steel
Enclosure: 1.38 mm
Door: 1.5 mm
Viewing window made from polycarbonate, 4 mm

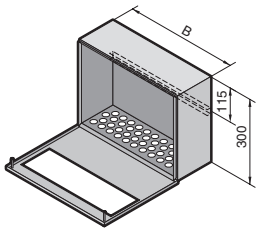
Surface finish:
Enclosure and door:
Powder-coated in textured RAL 7035

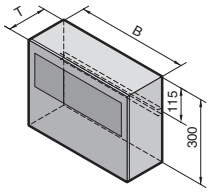
Approvals,
see page 24.

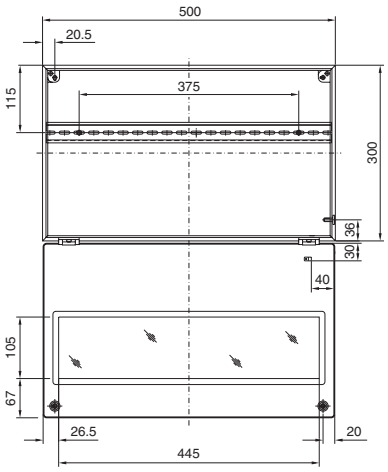
Dimensions in mm			Number of holes for PG 13.5 or M20	Model No. BG
W	H	D		
500	300	120	48	**1609.510**

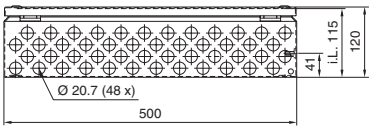
To order enclosures in RAL 7032, please add the extension .210 to the Model No.
Delivery times available on request.

Supply includes:
Door with bottom hinge,
2 quick-release fasteners for screwdrivers,
1 support rail TS 35/7.5.
Drilled holes for cable glands in the base.









B = Width
T = Depth
i.L. = Clearance width



Bus enclosure

for modular cable entry

Material:
Sheet steel
Enclosure: 1.38 mm
Door: 1.5 mm
Viewing window made from polycarbonate, 4 mm

Surface finish:
Enclosure and door:
Powder-coated in textured RAL 7035

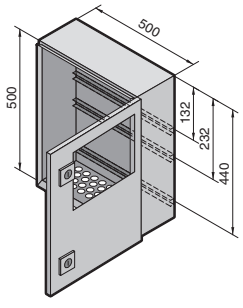
Protection category:
IP 55 to EN 60 529/10.91
(in conjunction with module plates)

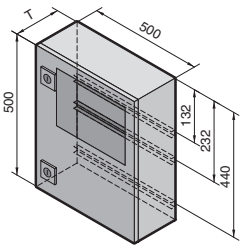
Approvals,
see page 24.

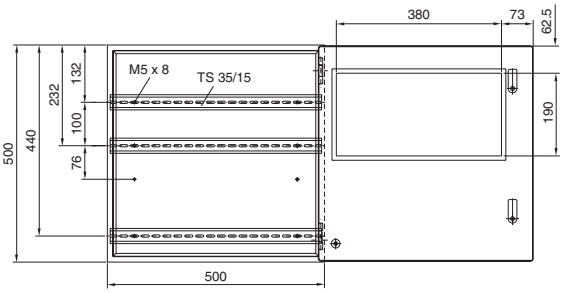
Width mm	Height mm	Depth mm	Model No. BG
500	500	210	**1050.900**

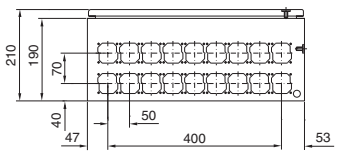
Supply includes:
18 cutouts in the base for module plates,
Pre-configured top-hat rail for bus systems (I/O modules, motor starters) and terminal blocks.
Door with viewing panel for visual monitoring of the installed components.

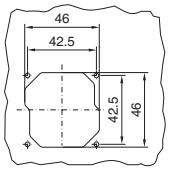
Also required:
Module plates,
see page 969.











B = Width
T = Depth

Compact enclosures

Features



The major success of Rittal compact enclosures is based on three key advantages:

1. Rittal mass-produced quality with triple surface treatment (phosphating, electrophoretic dipcoat-priming and powder coating).

2. Materials, sizes and variants are tailored to all major requirement profiles.

3. Superior value for money and virtually unlimited solution diversity thanks to Rittal system accessories.

Simply outstanding – everything fits for years to come: Rittal CM and Rittal CL compact system enclosures – compact-class enclosures which are fully compatible with the TS 8 range of system accessories.

For exceptional requirements:

Stainless steel compact enclosures, see page 273.

Ex enclosures, see page 286 – 288.

EMC enclosures, see page 289 – 290.



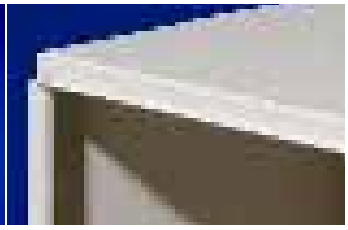
Compact enclosures AE



Perforated mounting strips in the door for fast attachment of support strips, cable conduit holders and covers.



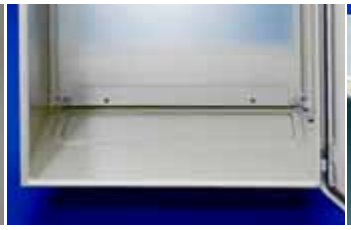
Rear panel with holes, prepared for wall mounting bracket or direct wall mounting.



Multi-folded **enclosure protection channel** prevents the ingress of dirt and water when the door is opened.



PE conductor connection facilities on the enclosure, door and mounting plate. See system accessories.



Gland plates made from sheet steel for self-assembly may be exchanged for prepunched plates or plastic plates with membranes.



Triple surface treatment: Phosphating, electrophoretic dipcoat priming, powder coating.



Compact enclosures AE IP 69K







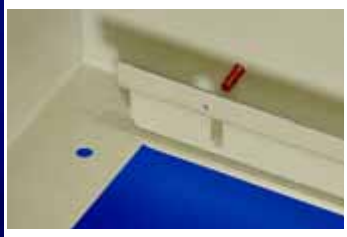
Ideal for **mounting on vehicles:** Lock, hinges and mounting plate are all secured in a vibration-resistant manner.

Resistant to high-pressure cleaning
The silicone seal is protected from direct hosed water by the labyrinth seal of the door and enclosure return edge.

Secure, sealed **wall mounting** from the outside via press-fitted M8 nuts, either directly or using wall mounting brackets 1594.000 and 2433.000, see page 905.



Compact enclosures, Outdoor







Mounting plates
The enclosure is prepared for the installation of an MDF or sheet steel mounting plate. The MDF version is mounted via the mounting brackets.

Roof plate screw-fastened at the correct distance for permanent air circulation. The bonded insulating plate additionally helps to prevent the formation of drips.

Plastic **handle**, prepared for the installation of semi-cylinders 40 or 45 mm to DIN 18 254.



Compact system enclosures Rittal CM and Rittal CL

Compact Medium Rittal CM
The alternative to large enclosures in the AE series, and a replacement for the AK series. See page 128 – 129.

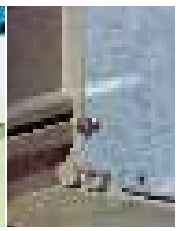
Compact Large Rittal CL
The economical variant of free-standing enclosures ES 5000. See page 130 – 131.



Plastic enclosures KS







C-sections for infinitely variable mounting plate depth adjustment, and to create several mounting levels.

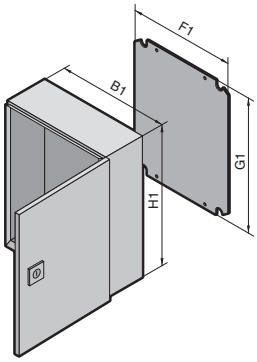
Twin seal on the top and bottom edges of the door in all enclosures, thanks to the integral rain protection strip.

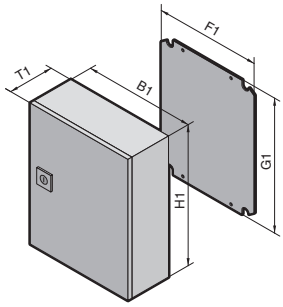
Mounting inserts for threaded inserts in the door and in the rear panel of the enclosure, for simple installation.

Compact enclosures AE

Width: 200 – 600, height: 300 – 400







Material:
Sheet steel

Surface finish:
Enclosure and door:
Dipcoat-primed,
powder-coated on the outside in textured RAL 7035
Mounting plate: Zinc-plated

Protection category:
IP 66 to EN 60 529/10.91,
Complies with NEMA 12
(AE 1032.500, AE 1035.500),
Complies with NEMA 4
(AE 1030.500, AE 1031.500, AE 1380.500, AE 1039.500, AE 1339.500).

Supply includes:
Enclosure of all-round solid construction, single door,
1 gland plate in the enclosure base,
r/h door hinge, may be swapped to opposite side (except with AE 1032.500 and AE 1035.600),
with one cam lock,
foamed-in door seal, mounting plate.

Approvals,
see page 26.

Detailed drawing,
see page 1083.

Width (B1) in mm	Packs of	200	200	300	300	380	380	380	600	600
Height (H1) in mm		300	300	300	400	300	300	380	380	380
Depth (T1) in mm		120	155	210	210	155	210	210	210	350
Mounting plate width (F1) in mm		162	162	254	254	334	334	334	549	549
Mounting plate height (G1) in mm		275	275	275	375	275	275	355	355	355
Mounting plate thickness in mm		2.0	2.0	2.0	2.0	2,.0	2.0	2.0	2.5	2.5
Model No. AE	1	**1032.500**	**1035.500**	**1033.500**	**1034.500**	**1030.500**	**1031.500**	**1380.500**	**1039.500**	**1339.500**
Weight (kg)		4.0	4.5	7.0	8.8	7.4	7.5	9.8	15.4	20.0

Lock systems

Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 888, lock cylinder, plastic handles and T handles, type B, see page 886 – 889.

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Cable glands
made from polyamide, brass, and multi-seal inserts,
Model No. see page 972/973.

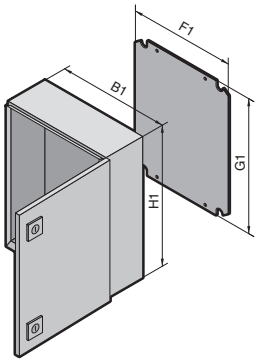


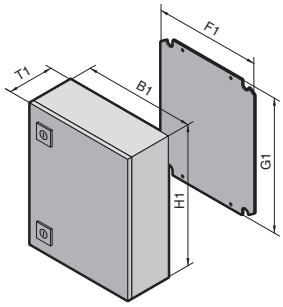
Dust guard trim
for the gap between the door and the enclosure,
Model No. see page 899.

Accessories Page 832 **AE stainless steel** Page 273 **AE IP 69K** Page 121 **AE EMC shielded** Page 290 **AE Ex-proof** Page 287

Width: 380 – 800, height: 500 – 1000







Material:
Sheet steel

Surface finish:
Enclosure and door:
Dipcoat-primed,
powder-coated on the outside in textured RAL 7035
Mounting plate: Zinc-plated

Protection category:
to EN 60 529/10.91:
IP 56,
IP 66 for AE 1038.500, AE 1338.500, AE 1045.500, AE 1050.500, AE 1350.500, AE 1060.500, AE 1360.500,
Complies with NEMA 4.

Supply includes:
Enclosure of all-round solid construction, single door,
1 gland plate in the enclosure base,
r/h door hinge,
may be swapped to opposite side,
with 2 cam locks,
foamed-in door seal,
zinc-plated mounting plate.

Approvals,
see page 26.

Detailed drawing,
see page 1083.

Width (B1) in mm	Packs of	380	380	400	500	500	500	600	600
Height (H1) in mm		600	600	500	500	500	700	600	600
Depth (T1) in mm		210	350	210	210	300	250	210	350
Mounting plate width (F1) in mm		334	334	354	449	449	449	549	549
Mounting plate height (G1) in mm		570	570	475	470	470	670	570	570
Mounting plate thickness in mm		2.5	2.5	2.0	2.5	2.5	3.0	2.5	2.5
Model No. AE	1	**1038.500**	**1338.500**	**1045.500**	**1050.500**	**1350.500**	**1057.500**	**1060.500**	**1360.500**
Weight (kg)		15.6	19.4	13.0	16.8	19.6	31.2	22.8	28.4

Width (B1) in mm	Packs of	600	600	600	600	760	760	800
Height (H1) in mm		760	760	800	1000	760	760	1000
Depth (T1) in mm		210	350	250	250	210	300	300
Mounting plate width (F1) in mm		549	549	549	539	704	704	739
Mounting plate height (G1) in mm		730	730	770	955	730	730	955
Mounting plate thickness in mm		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Model No. AE	1	**1076.500**	**1376.500**	**1058.500**	**1090.500**	**1077.500**	**1073.500**	**1180.500**
Weight (kg)		32.1	36.0	34.2	50.5	40.0	44.5	57.0

Lock systems

Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 888, lock cylinder, plastic handles and T handles, type B, see page 886 – 889.

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Metal gland plates,
pre-punched,
Model No. see page 968.



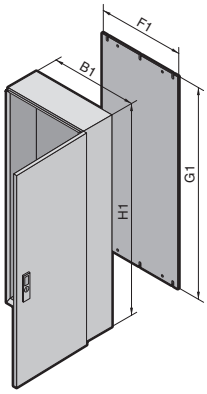
Plastic wiring plan pocket,
screw-fastened,
Model No. see page 897.

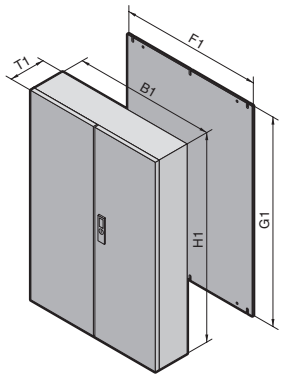
Accessories Page 832 **AE IP 69K** Page 121 **AE stainless steel** Page 273 **AE EMC-shielded** Page 290 **AE Ex-proof** Page 287

Compact enclosures AE

Width: 600 – 1000, height: 760 – 1400







Material:
Sheet steel
Enclosure: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure and door:
Dipcoat-primed,
powder-coated on the outside in textured RAL 7035
Mounting plate: Zinc-plated

Protection category:
IP 55 to EN 60 529/10.91,
Complies with NEMA 12.
IP 56 to EN 60 529/10.91 for AE 1260.500 and AE 1280.500.

Supply includes:
Enclosure of all-round solid construction, single door:
1 gland plate,
twin-door: 2 gland plates in the enclosure base,
3-point lock system,
prepared for use of the Ergoform-S lock system,
2 cam locks for 1100.500, 1130.500, 1110.500, foamed-in door seal, zinc-plated mounting plate.

Approvals,
see page 26.

Detailed drawing,
see page 1084.

Possible alternative:
Compact system enclosures Rittal CM, see page 128 – 129.

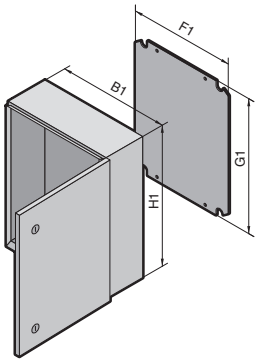
Width (B1) in mm		Packs of	600	800	1000	1000	1000	1000	1000	Page
Height (H1) in mm			1200	1200	760	760	1000	1200	1400	
Depth (T1) in mm			300	300	210	300	300	300	300	
Mounting plate width (F1) in mm			540	740	944	944	939	940	940	
Mounting plate height (G1) in mm			1155	1155	730	730	955	1155	1355	
Model No. AE		1	**1260.500**	**1280.500**	**1100.500**	**1130.500**	**1110.500**	**1213.500**	**1114.500**	
Door(s)			1	1	2	2	2	2	2	
Weight (kg)			55.0	70.0	52.0	56.0	71.0	85.0	97.0	
Accessories										
Self-tapping screws		300	2487.000							937
Base/plinth	Height 100 mm	1	2816.200	2818.200	–	–	2801.200	2801.200	2801.200	843
	Height 200 mm	1	2826.200	2828.200	–	–	2802.200	2802.200	2802.200	843
Stainless steel rain canopy		1	–	2475.000	–	2363.000	2363.000	2363.000	2363.000	899
Plastic cable gland plate		5	2563.000	2563.000	2562.000	2562.000	2562.000	2562.000	2562.000	966
Eyebolts		4	2509.000	2509.000	–	–	–	2509.000	2509.000	904
Lock systems										
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 888 and Ergoform-S lock system (not for 1100.500, 1130.500, 1110.500), see page 885.										

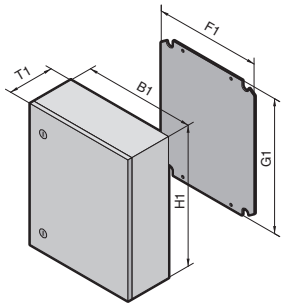
To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.

Accessories Page 832 **AE IP 69K** Page 121 **AE stainless steel** Page 273 **AE EMC-shielded** Page 290 **AE Ex-proof** Page 287

Protection category IP 69K







Perfect protection in a tough environment
The compact enclosure AE in IP 69K is the ideal solution when a high protection category and corrosion resistance are needed.

- Resistant to high-pressure cleaning (protection category IP 69K). The interior seal is protected against direct hosed water.
- Ideal for mounting on vehicles: Lock, hinges and mounting plate are all vibration resistant.
- The enclosure and door have an aluminium zinc coating for a high level of corrosion protection.
- Foamed-in silicone seal, water-impermeable, with high resistance to temperature and chemicals.
- Prepared to accommodate the door stay 1101.800 and the interior door.
- Wall mounting

Material:
Sheet steel

Surface finish:
Enclosure and door:
Aluminium zinc coating, powder-coated in textured RAL 7035
Mounting plate: Zinc-plated

Protection category:
IP 69K to DIN 40 050-9/5.93

Supply includes:
Enclosure of all-round solid construction, single door,
door hinge may be swapped to opposite side by rotating the enclosure,
cam lock with double-bit insert, other inserts available on request.

Rittal service:
Other sizes available on request. Cutouts and drilled holes to your specifications.

Detailed drawing,
see page 1086.

Width (B1) in mm	Packs of	230	400	400	650	Page
Height (H1) in mm		330	400	650	650	
Depth (T1) in mm		155	250	250	250	
Mounting plate width (F1) in mm		–	334	334	549	
Mounting plate height (G1) in mm		–	355	570	570	
Mounting plate thickness in mm		2	2	2,5	2,5	
Model No. AE	1	**1101.010**	**1101.020**	**1101.030**	**1101.040**	
Weight (kg)		6.6	13.8	20	29.6	
Locks		1	2	2	2	
Accessories						
Interior door	1	1101.910	1101.920	1101.930	1101.940	873
Door stay	1	1101.800	1101.800	1101.800	1101.800	898



Interior door
with 4 (2 for 1101.010) studs for the installation of punched rails 23 x 23 (may be cut to required length) and universal installation accessories.



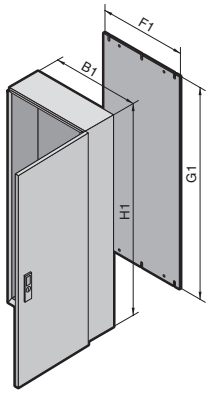
Wall mounting
directly from the rear via M8 nut or with wall mounting bracket, see page 905.

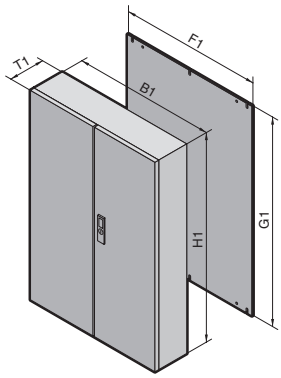
Accessories Page 832 **AE stainless steel** Page 273 **AE EMC-shielded** Page 290 **AE Ex-proof** Page 287

Compact enclosures AK

Depth: 400







Material:
Sheet steel
Enclosure: 1.5 mm
Door(s): 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure and door(s):
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate: Zinc-plated

Protection category:
IP 55 to EN 60 529/10.91,
Complies with NEMA 12.

Supply includes:
Enclosure of all-round solid construction,
r/h door hinge, may be swapped to opposite side, AK 1652.500, AK 1650.500, AK 1647.500:
Lockable door on right, foamed-in door seal, holes provided for eyebolts, mounting plate, two-part gland plates.

Approvals,
see page 27.

Detailed drawing,
see page 1086.

Possible alternative:
Compact system enclosures Rittal CL, see page 130 – 131.

NOTE: Discontinued item, please do not use for new designs.

Width (B1) in mm		Packs of	600	800	1000	1000	1200	Page
Height (H1) in mm			1200	1200	1200	1400	1200	
Depth (T1) in mm			400	400	400	400	400	
Mounting plate width (F1) in mm			514	714	914	914	1114	
Mounting plate height (G1) in mm			1125	1125	1125	1325	1125	
Model No. AK		1	**1646.500**	**1648.500**	**1650.500**	**1647.500**	**1652.500**	
Door(s)			1	1	2	2	2	
Weight (kg)			60.0	75.0	88.5	103.5	108.0	
Accessories								
Base/plinth	Height 100 mm	1	2911.200	2901.200	2891.200	2891.200	2921.200	843
	Height 200 mm	1	2912.200	2902.200	2892.200	2892.200	2922.200	843
Lock systems								
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 888, and Ergoform-S lock system, see page 885.								

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Cable gland
made from polyamide/brass, and multi-seal inserts,
Model No. see page 972/973.

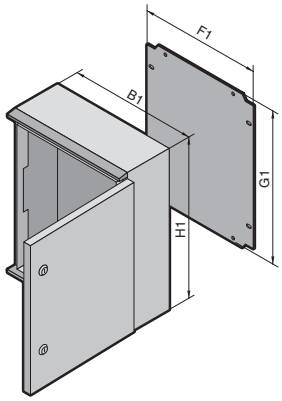


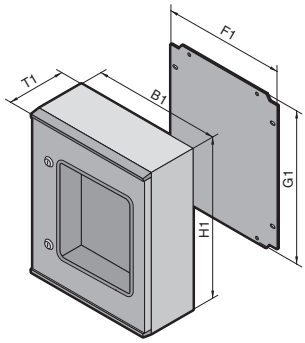
Signal pillar LED compact,
Model No. see page 1041.

Accessories Page 832 **Console systems** Page 261

Width: 200 – 600, height: 300 – 600







Material:
Enclosure and door:
Fibreglass-reinforced unsaturated polyester
Mounting plate:
Sheet steel
For KS with viewing window:
Impact resistant glazed acrylic, 3.0 mm with all-round rubber cable clamp strip

Surface finish:
Enclosure and door:
No after-treatment,
dyed plastic,
similar to RAL 7032
Mounting plate: Zinc-plated

Protection category:
KS without viewing window:
IP 66 to EN 60 529/10.91, complies with NEMA 4x.
KS with viewing window:
IP 56 to EN 60 529/10.91, complies with NEMA 12.

Supply includes:
Enclosure of solid all-round construction,
r/h door hinge,
door hinge may be swapped to opposite site by rotating the enclosure,
mounting plate,
all-round foamed-in PU seal in the door,
twin seal on the top and bottom edges of the door (integral rain protection strip), press-fitted
C sections at the sides for infinitely variable mounting plate depth adjustment.

Note:
Under the influence of long-term UV radiation (sunlight) in conjunction with wind and rain, the surface finish may become visually impaired.
In other words, the fibreglass portions become visible on unprotected surfaces. This does not impair the protection of the installed electrical components in any way. All other surface finishes are likewise impaired by ultraviolet radiation.
If the enclosures cannot be protected from radiation, e.g. via a sun canopy, we recommend that they should be painted with a PUR paint. Older enclosures where the surface finish already reveals visible fibreglass portions can likewise be treated in this way after thorough cleaning.
Of course, all enclosures can also be supplied spray-finished in RAL colours. For outdoor siting, we recommend pale shades.

Approvals,
see page 27.

Detailed drawing,
see page 1087.

	Packs of	Without viewing window							With viewing window			
Width (B1) in mm		200	250	300	400	400	500	600	400	400	500	600
Height (H1) in mm		300	350	400	400	600	500	600	400	600	500	600
Depth (T1) in mm		150	150	200	200	200	300	200	200	200	300	200
Mounting plate width (F1) in mm		145	195	245	345	345	417	545	345	345	417	545
Mounting plate height (G1) in mm		250	300	350	350	550	450	550	350	550	450	550
Mounting plate thickness in mm		2.0	2.0	2.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Model No. KS	1	**1423.600**	**1432.600**	**1434.600**	**1444.600**	**1446.600**	**1453.600**	**1466.600**	**1448.600**	**1449.600**	**1454.600**	**1467.600**
Door(s)		1	1	1	1	1	1	1	1	1	1	1
Weight (kg)		3.0	4.1	6.0	7.9	11.5	12.9	15.9	8.0	11.5	13.4	15.9

Lock systems

Standard double-bit lock insert may be exchanged for lock inserts, type A, see page 888,
and plastic handle, type E, KS 1484.000, see page 886.



Cable gland, polyamide,
Model No. see page 972.



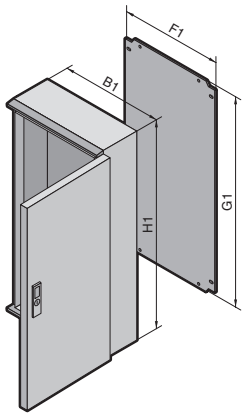
Double-membrane gland and stepped collar for cable entry,
Model No. see page 973.

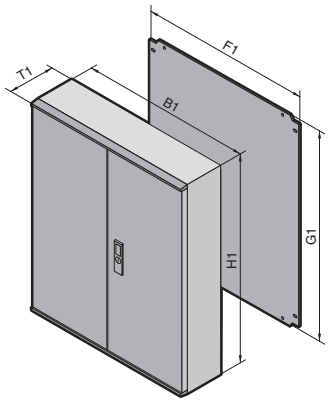
Accessories Page 832 **KS Ex-proof** Page 288

Plastic enclosures KS

Width: 600 – 1000, height: 800 – 1000







Material:
Enclosure and door:
Fibreglass-reinforced unsaturated polyester
Mounting plate:
Sheet steel
For KS with viewing window:
Impact resistant glazed acrylic, 3.0 mm with all-round rubber cable clamp strip

Surface finish:
Enclosure and door:
No after-treatment,
dyed plastic,
Similar to RAL 7032
Mounting plate: Zinc-plated

Protection category:
IP 56
IP 66 for KS 1468.600

Supply includes:
Enclosure of solid all-round construction,
r/h door hinge, may be swapped to opposite side by rotating the enclosure (only with single-door models), mounting plate,
all-round foamed-in PU seal in the door,
twin seal on the top and bottom edges of the door (integral rain protection strip),
press-fitted C sections at the sides for infinitely variable mounting plate depth adjustment.
KS 1400.600 additionally with removable centre bar in the enclosure.

Note:
Under the influence of long-term UV radiation (sunlight) in conjunction with wind and rain, the surface finish may become visually impaired.
In other words, the fibreglass portions become visible on unprotected surfaces. This does not impair the protection of the installed electrical components in any way. All other surface finishes are likewise impaired by ultraviolet radiation.
If the enclosures cannot be protected from radiation, e.g. via a sun canopy, we recommend that they should be painted with a PUR paint. Older enclosures where the surface finish already reveals visible fibreglass portions can likewise be treated in this way after thorough cleaning.
Of course, all enclosures can also be supplied spray-finished in RAL colours. For outdoor siting, we recommend pale shades.

Approvals,
see page 27.

Detailed drawing,
see page 1088.

	Packs of	Without viewing window			With viewing window	
Width (B1) in mm		600	800	1000	600	800
Height (H1) in mm		800	1000	1000	800	1000
Depth (T1) in mm		300	300	300	300	300
Mounting plate width (F1) in mm		517	717	917	517	717
Mounting plate height (G1) in mm		750	950	950	750	950
Mounting plate thickness in mm		3.0	3.0	3.0	3.0	3.0
Model No. KS	1	**1468.600**	**1480.600**	**1400.600**	**1469.600**	**1479.600**
Door(s)		1	1	2	1	1
Weight (kg)		26.0	39.0	50.0	25.5	33.0

Lock systems

Standard double-bit lock insert may be exchanged for lock inserts, type A, see page 888,
and Ergoform-S lock system, KS 1490.000, see page 885.



Cable ducts,
Model No. see page 978.

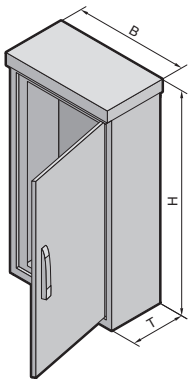


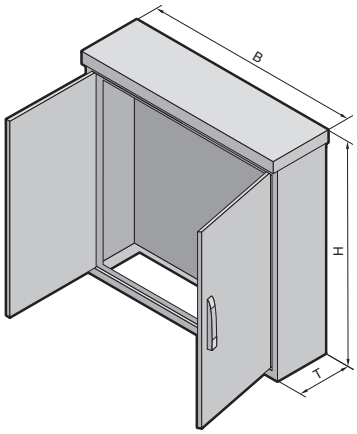
Signal pillar LED compact,
in protection category IP 65,
Model No. see page 1041.

Accessories Page 832 **KS Ex-proof** Page 288

Width: 800 – 1200, height: 800 – 1200







Material:
Optionally
Sheet steel, zinc-plated,
or
Stainless steel 1.4301

Colour:
RAL 7035

Supply includes:
Enclosure, closed back and sides,
interior door(s):
Swing handle prepared for semi-cylinder 40 or 45 mm, overall length to DIN 18 254.

Roof plate:
With bonded insulating plate to prevent the formation of drips, screw-fastened at a distance to prevent condensation.

Protection category:
IP 44 to 60 529/10.91

Detailed drawing,
see page 1185.

Width (B) in mm	Packs of	800	1200	1200	Page
Height (H) in mm		1200	800	1200	
Depth (T) in mm		350	350	350	
Model No. Sheet steel	1	**1620.000**	**1621.000**	**1622.000**	
Model No. Stainless steel	1	**1620.100**	**1621.100**	**1622.100**	
Doors		1	2	2	
Accessories					
Mounting plate sheet steel, 3 mm, zinc-plated, passivated	1	1616.200	1616.210	1616.220	916
Mounting plate MDF, 15 mm	1	1616.230	1616.230	1616.240	916
Concrete base/plinth	1	1616.300[1)]	1616.310[1)]	1616.310[1)]	842
Wiring plan pocket	1	4116.000	4115.000	4115.000	898
Door stay	1	1616.110	1616.110	1616.110	898

[1)] Delivery times available on request.

Accessories Page 832

Compact system enclosures

Features



Rittal CM and Rittal CL – the new compact class for the configuration of compact enclosures with a diverse range of opportunities for interior installation and cable entry.

Rittal Compact Medium, the alternative to large enclosures in the AE series and the replacement for the AK series. **Rittal Compact Large,** the economic variant of free-standing enclosures ES 5000.

Compatibility with TS 8 mounting components and Rittal system accessories make these enclosures the “unbeatable heroes” of your applications.



Key features of Rittal CM and Rittal CL



Solid sides with studs on the inside for the installation of adaptor rails for interior configuration with TS 8 accessories.



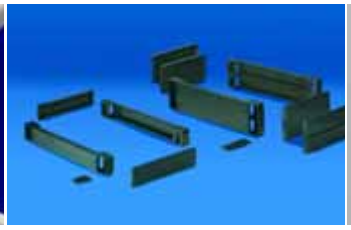
Automatic potential equalisation via earthing inserts on the attachments of the gland plates.



Earthing bolts with paint-free, corrosion-proof contact discs, on the hinge side of the enclosure at the bottom.



More space, greater stability, and more opportunities for cable entry, thanks to a large opening and a wide range of gland plate combinations,
see page 132.



Fewer parts, more opportunities, plus lower purchasing, storage and assembly costs – the formula for the new modular base/plinth system TS 8 – now also for Rittal CM and Rittal CL.



Enclosure slotted for interchangeable door hinge.



Roof with holes and bungs, prepared for the mounting of eyebolts.



The triple surface finish:
1. Phosphating,
2. Electrophoretic dipcoat priming,
3. Powder coating.

Corrosion protection and resistance to lubricants, machining products and cleaning agents.

Features



Compact Medium Rittal CM



Lock insert is protected from contamination by the inserted trim panel. There is space for your company logo behind the top plexiglass cover.



Enclosure top and bottom, with stud at front for installation of an adaptor rail for fast assembly of system light, door operated switch, door stay or covers.



Doors right and left with spot welded perforated mounting strips (25 mm pitch pattern) for universal interior installation.



Fast attachment: The mounting plate (folded over at the side) is inserted at the bottom, and secured at the top with clips.



Perfect seal, thanks to the twin edge of the enclosure and optimum compression of the foamed-in seal.



Fold rather than turn – this handle facilitates optimum use of the door space for internal and external mounting.



Compact Large Rittal CL



Mounting plate (identical to the TS 8) – with grid pattern print on the right and left for easy positioning of mounted equipment – depth-variable.



Enclosure perforated on a 25 mm pitch pattern at the front top for the installation of a system light, door operated switch, door stay etc.



Adjacent door with additional centre protection with a bar at the top, with interconnecting rods and handle at the bottom.



Doors (identical to TS 8) with square frame, perforations on a 25 mm pitch pattern.



The rods of the lock are locked from top to bottom. This is safe for transportation, and vibration-proof.

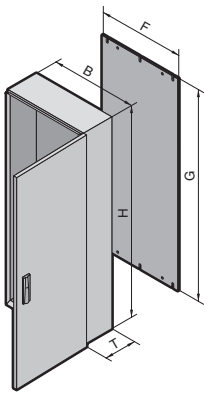


The welded rear panel facilitates direct screw fastening to a machine or wall.

Compact system enclosures Rittal CM

Width: 600 – 800, height: 800 – 1200





Material:
Sheet steel
Enclosure: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure and door:
Dipcoat-primed,
powder-coated on the outside in textured RAL 7035
Mounting plate: Zinc-plated

Protection category:
IP 55 with selection of the appropriate gland plates,
see page 132.

Supply includes:
Enclosure with one door, r/h door hinge, may be swapped to opposite side, mounting plate, open base for individual cable entry,
see page 132.

Available from October 2005.

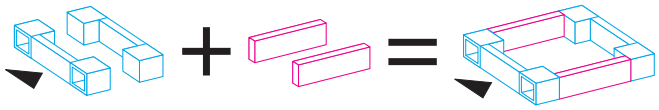
Width (B) in mm		Packs of	600	600	600	600	800	800	800	800	Page
Height (H) in mm			800	1000	1200	1200	1000	1000	1200	1200	
Depth (T) in mm			400	400	300	400	300	400	300	400	
Mounting plate width (F) in mm			540	540	540	540	740	740	740	740	
Mounting plate height (G) in mm			755	955	1155	1155	955	955	1155	1155	
Model No. CM		1	**5110.500**	**5111.500**	**5112.500**	**5113.500**	**5114.500**	**5115.500**	**5116.500**	**5117.500**	
Door			1	1	1	1	1	1	1	1	
Base/plinth											
Components front and rear	Height 100 mm	1 set	8601.600	8601.600	8601.600	8601.600	8601.800	8601.800	8601.800	8601.800	835
	Height 200 mm	1 set	8602.600	8602.600	8602.600	8602.600	8602.800	8602.800	8602.800	8602.800	835
Trim panels (sides)	Height 100 mm	1 set	8601.040	8601.040	8601.030	8601.040	8601.030	8601.040	8601.030	8601.030	835
	Height 200 mm	1 set	8602.040	8602.040	8602.030	8602.040	8602.030	8602.040	8602.030	8602.030	835
Accessories											
Rail for interior installation	for height	4	5001.051	5001.052	5001.053	5001.053	5001.052	5001.052	5001.053	5001.053	133
	for width	4	5001.050	5001.050	5001.050	5001.050	5001.051	5001.051	5001.051	5001.051	133
Matching punched section with mounting flange	in depth	4	8612.140	8612.140	8612.130	8612.140	8612.130	8612.140	8612.130	8612.140	921
	in width	4	8612.060	8612.060	8612.060	8612.060	8612.080	8612.080	8612.080	8612.080	921
Support strips for door		20	4596.000	4596.000	4596.000	4596.000	4598.000	4598.000	4598.000	4598.000	895
Wiring plan pocket, sheet steel		1	4116.000	4116.000	4116.000	4116.000	4118.000	4118.000	4118.000	4118.000	898
Lock systems											
Standard double-bit lock insert may be exchanged for lock inserts, type A, see page 888, and folding lever handle, see page 133.											

To order primed enclosures, please add extension .800 to the Model No. Delivery times available on request.



Cable entry plates and grommets,
suitable for integration into the modular gland plate concept,
see page 964/965.

Base/plinth,
Model No. see page 835.



One Model No. for the **base/plinth components** front and rear.

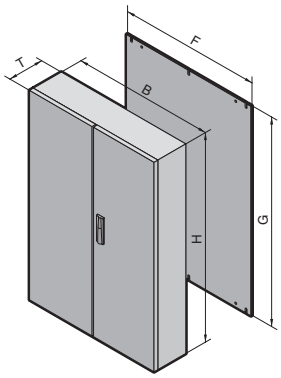
One Model No. for the **base/plinth trim panels** at the sides.

One complete **base/plinth.**

Accessories Page 832

Width: 1000 – 1200, height: 1000 – 1400





Material:
Sheet steel
Enclosure: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure and door:
Dipcoat-primed,
powder-coated on the outside in textured RAL 7035
Mounting plate: Zinc-plated

Protection category:
IP 55 with selection of the appropriate gland plates,
see page 132.

Supply includes:
Enclosure with two doors, r/h door lockable, may be swapped to opposite side, mounting plate, open base for individual cable entry,
see page 132.

Available from October 2005.

Width (B) in mm		Packs of	1000	1000	1000	1000	1000	1200	Page
Height (H) in mm			1000	1200	1200	1400	1400	1200	
Depth (T) in mm			300	300	400	300	400	400	
Mounting plate width (F) in mm			940	940	940	940	940	1140	
Mounting plate height (G) in mm			955	1155	1155	1355	1355	1155	
Model No. CM		1	**5118.500**	**5119.500**	**5120.500**	**5121.500**	**5122.500**	**5123.500**	
Doors			2	2	2	2	2	2	
Base/plinth									
Components front and rear	Height 100 mm	1 set	8601.000	8601.000	8601.000	8601.000	8601.000	8601.200	835
	Height 200 mm	1 set	8602.000	8602.000	8602.000	8602.000	8602.000	8602.200	835
Trim panels (sides)	Height 100 mm	1 set	8601.030	8601.030	8601.040	8601.030	8601.040	8601.040	835
	Height 200 mm	1 set	8602.030	8602.030	8602.040	8602.030	8602.040	8602.040	835
Accessories									
Rail for interior installation	for height	4	5001.052	5001.053	5001.053	5001.054	5001.054	5001.053	133
	for width	4	5001.052	5001.052	5001.052	5001.052	5001.052	5001.053	133
Matching punched section with mounting flange	in depth	4	8612.130	8612.130	8612.140	8612.130	8612.140	8612.140	921
	in width	4	8612.000	8612.000	8612.000	8612.000	8612.000	8612.020	921
Support strips for door		20	4309.000	4309.000	4309.000	4309.000	4309.000	4596.000	895
Wiring plan pocket, sheet steel		1	4115.000	4115.000	4115.000	4115.000	4115.000	4116.000	898
Lock systems									
Standard double-bit lock insert may be exchanged for lock inserts, type A, see page 888, and folding lever handle, see page 133.									

To order primed enclosures, please add extension .800 to the Model No. Delivery times available on request.



Sections for cable entry,
suitable for integration into the modular gland plate concept,
see page 965.



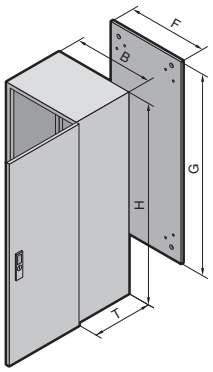
Punched section with mounting flange, 17 x 73 mm
Model No. see page 921.

Accessories Page 832

Compact system enclosures Rittal CL

Width: 600 – 1000, height: 1600 – 2000





Material:
Sheet steel
Enclosure: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure and door:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate: Zinc-plated

Protection category:
IP 55 with selection of the appropriate gland plates,
see page 132.

Supply includes:
Enclosure with one door, r/h door hinge, may be swapped to opposite side,
mounting plate, open base for individual cable entry,
see page 132.

Available from the 2nd quarter 2006 on.

Width (B) in mm		Packs of	600	600	600	800	800	800	1000	Page
Height (H) in mm			1600	1800	2000	1600	1800	2000	1800	
Depth (T) in mm			500	400	500	500	400	500	400	
Mounting plate width (F) in mm			499	499	499	699	699	699	899	
Mounting plate height (G) in mm			1496	1696	1896	1496	1696	1896	1696	
Model No. CL		1	**5150.500**	**5151.500**	**5152.500**	**5153.500**	**5154.500**	**5155.500**	**5156.500**	
Door			1	1	1	1	1	1	1	
Base/plinth										
Components front and rear	Height 100 mm	1 set	8601.600	8601.600	8601.600	8601.800	8601.800	8601.800	8601.000	835
	Height 200 mm	1 set	8602.600	8602.600	8602.600	8602.800	8602.800	8602.800	8602.000	835
Trim panels (sides)	Height 100 mm	1 set	8601.050	8601.040	8601.050	8601.050	8601.040	8601.050	8601.040	835
	Height 200 mm	1 set	8602.050	8602.040	8602.050	8602.050	8602.040	8602.050	8602.040	835
Accessories										
Rail for interior installation	for height	4	5001.055	5001.056	5001.057	5001.055	5001.056	5001.057	5001.056	133
Matching punched section with mounting flange	in depth	4	8612.150	8612.140	8612.150	8612.150	8612.140	8612.150	8612.140	921
	in width	4	8612.060	8612.060	8612.060	8612.080	8612.080	8612.080	8612.000	921
Support strips for door		20	4596.000	4596.000	4596.000	4598.000	4598.000	4598.000	4599.000	895
Wiring plan pocket, sheet steel		1	4116.000	4116.000	4116.000	4118.000	4118.000	4118.000	4124.000	898
Lock systems										
Standard double-bit lock insert may be exchanged for other lock inserts and comfort handle, see page 881/888.										

To order primed enclosures, please add extension .800 to the Model No. Delivery times available on request.



Cable entry plates,
suitable for integration into the modular gland plate concept,
see page 964.



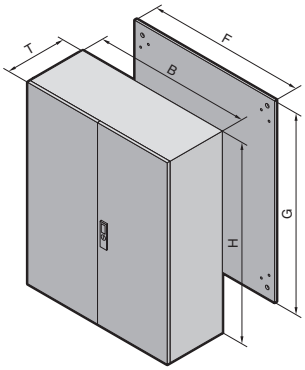


Transport handles for mounting plates and doors,
Model No. see page 912/898.

Accessories Page 832

Width: 1000 – 1200, height: 1600 – 2000





Material:
Sheet steel
Enclosure: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure and door:
Dipcoat-primed,
powder-coated in textured
RAL 7035 on the outside
Mounting plate: Zinc-plated

Protection category:
IP 55 with selection of the appropriate gland plates,
see page 132.

Supply includes:
Enclosure with two doors,
Lockable door on r/h side,
mounting plate,
open base for individual cable entry,
see page 132.

Available from the 2nd quarter 2006 on.

Width (B) in mm		Packs of	1000	1200	1200	1200	Page
Height (H) in mm			1800	1600	1800	2000	
Depth (T) in mm			400	500	400	500	
Mounting plate width (F) in mm			899	1099	1099	1099	
Mounting plate height (G) in mm			1696	1496	1696	1896	
Model No. CL		1	**5157.500**	**5158.500**	**5159.500**	**5160.500**	
Doors			2	2	2	2	
Base/plinth							
Components front and rear	Height 100 mm	1 set	8601.000	8601.200	8601.200	8601.200	835
	Height 200 mm	1 set	8602.000	8602.200	8602.200	8602.200	835
Trim panels (sides)	Height 100 mm	1 set	8601.040	8601.050	8601.040	8601.050	835
	Height 200 mm	1 set	8602.040	8602.050	8602.040	8602.050	835
Accessories							
Rail for interior installation	for height	4	5001.056	5001.055	5001.056	5001.057	133
Matching punched section with mounting flange	in depth	4	8612.140	8612.150	8612.140	8612.150	921
	in width	4	8612.000	8612.200	8612.200	8612.000	921
Support strips for door		20	4309.000	4596.000	4596.000	4596.000	895
Wiring plan pocket, sheet steel		1	4115.000	4116.000	4116.000	4116.000	898
Lock systems							
Standard double-bit lock insert may be exchanged for other lock inserts and comfort handle, see page 881/888.							

To order primed enclosures, please add extension .800 to the Model No. Delivery times available on request.



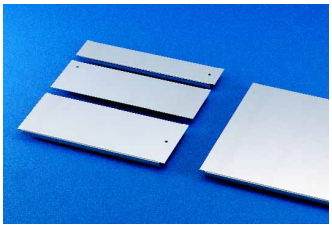
Cable duct, horizontal,
sized to the width of the mounting plate or in a fixed length of 2000 mm,
Model No. see page 978.



EMC gland plates,
suitable for integration into the modular gland plate concept,
see page 958.

Accessories Page 832

Accessories



Gland plates

Select suitable gland plates depending on the application. The following examples illustrate how individually cable entry may be organised. Potential equalisation is provided via assembly components and earthing points.

Design	For enclosure width mm			
	600	800	1000	1200
	Model No.			
1	5001.210	5001.211	5001.212	5001.213
2	5001.214	5001.215	5001.216	5001.217
3	5001.218	5001.219	5001.220	5001.221
4	5001.222	5001.223	5001.224	5001.225
6	5001.226[1)]	5001.227[1)]	5001.228[1)]	5001.229[1)]

[1)] Cable entry grommets, see Cat. 31, page 964 - 965
Packs of 1

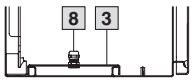
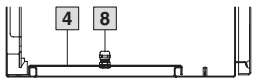
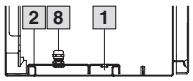
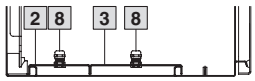
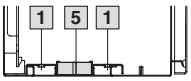
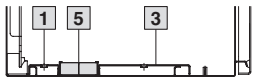
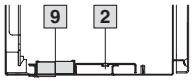
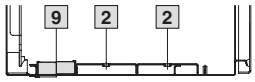
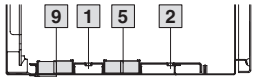
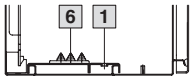
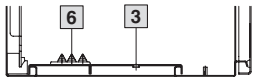
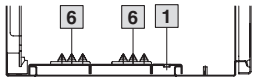
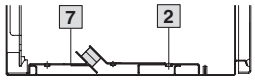
Material:
Sheet steel, zinc-plated, passivated

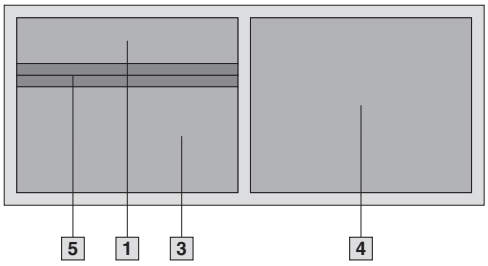
Supply includes:
Assembly parts.

Note:
For greater stability and universal cable entry, the base opening is divided in the width for 1000 and 1200 mm wide enclosures, and can be populated differently.

Order example:
CM 5120.500 (W/H/D 1000 x 1200 x 400 mm)
– On left, gland plates divided into two with cable clamp strip
– On right, one-piece gland plate

Combination options:

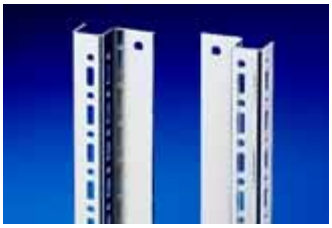
	Depth 300 mm	Depth 400 mm
One-piece/ Cable glands		
Divided/cable glands		
Divided/ Cable clamp strip, centre		
Divided/ Cable clamp strip, rear		
Divided/ Cable clamp strip on centre and rear		
Divided/ 1 grommet		
Divided/ 2 grommets		
EMC		



You will need:

- 5 2 sections for cable entry, centre, TS 8802.100, see Cat. 31, page 965 (Packs of 4)
- 1 1 gland plate, depth 50 mm, 5001.212
- 3 1 gland plate, depth 150 mm, 5001.220
- 4 1 gland plate, depth 250 mm, 5001.224

- 1 Gland plate, depth 50 mm
- 2 Gland plate, depth 100 mm
- 3 Gland plate, depth 150 mm
- 4 Gland plate, depth 250 mm
- 5 Section for cable entry, centre, see Catalogue 31, page 965.
- 6 Cable entry plates, 100 mm deep, see above, Grommets, see Catalogue 31, page 965.
- 7 EMC gland plate, see Catalogue 31, page 958.
- 8 Cable glands, see page 13.
- 9 Section for cable entry, rear, see page 9.





Rails for interior installation

For mounting in:
- Rittal CM
- Rittal CL

on the threaded bolts provided in the enclosure.

With TS system punchings for mounting:
- TS punched section with mounting flange, 17 x 73 mm
  – in the depth for outer mounting level,
  – in the width for inner mounting level
- TS punched rail 18 x 38 mm
- TS mounting bars for outer mounting level
- PS punched rail 23 x 23 mm, in conjunction with TS mounting bracket
- PS punched section without mounting flange, 23 x 73 mm, in conjunction with support bracket TS

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure height mm	Packs of	Model No. SZ
600	4	**5001.050**
800	4	**5001.051**
1000	4	**5001.052**
1200	4	**5001.053**
1400	4	**5001.054**
1600	4	**5001.055**
1800	4	**5001.056**
2000	4	**5001.057**

Available from the 2nd quarter 2006 on.

Accessories:

TS punched section with mounting flange, 17 x 73 mm, see page 921.
TS punched rail 18 x 38 mm, see page 923.
TS support strips, see page 924.
PS punched rail 23 x 23 mm, see page 925.
PS punched section without mounting flange, 23 x 73 mm, see page 925.
TS mounting bracket, see page 932.
TS support bracket, see page 933.



Folding lever handle

Because the handle does not take up any swing space, due to its folding mechanism, the door surface area may be maximised to install equipment.

Prepared for the installation of:
- Semi-cylinders with an overall length of 40 or 45 mm (to DIN 18 254)
- All lock inserts
- As well as SZ lock and push-button inserts

Available from the 2nd quarter 2006 on.

Version	Model No. CM
Dark grey with light handle	**5001.060**

Accessories:

Lock inserts, see page 881.
SZ lock and push-button inserts, see page 882.

With security lock insert E1.
Only for applications in the VW, Audi, SEAT, Skoda Auto sector.
Supplied without key.
Other locks available on request.

Version	Model No. CM
Dark grey with light handle	**5001.061**

Enclosure systems

Features



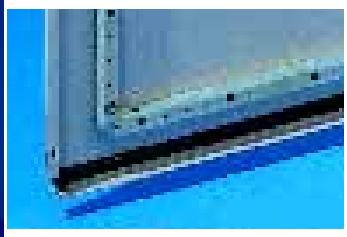
ES, the free-standing enclosure with firmly linked side panels.

TS 8, the Top enclosure system, a system platform for individual tasks.

Every enclosure, with all-round accessibility, is a specialist – however particular the task in hand.



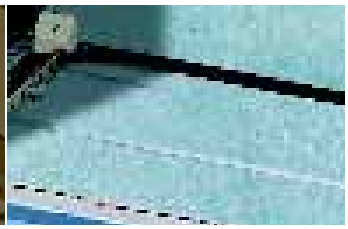
ES free-standing enclosures



Door frame with slots on a 25 mm pitch pattern for the mounting of ducts, utility lectern, cable harnesses, wiring plan pockets etc.



Enclosure, **with system slots** on a 25 mm pitch pattern all round, for interior installation with PS accessories.



Three-piece, interchangeable, movable **gland plates** for easier cable entry and machining.



Compact system enclosures

New:
Compact Large Rittal CL,
the cost-effective alternative.

Monobloc construction.

Doors, mounting plates and interior installation compatible with TS 8.

See page 130 – 131.



Baying systems TS 8

The system platform for

- Electronic enclosures, see page 148.
- Modular front design, see page 149.
- Isolator door locking, see page 150.
- Corner enclosures, see page 868.
- Climate controlled enclosures, see page 582 – 583.
- Ex pressurisation, see page 152.
- Higher protection categories, see page 151.
- Stainless steel enclosure systems, see page 284.
- EMC enclosures, see page 291.



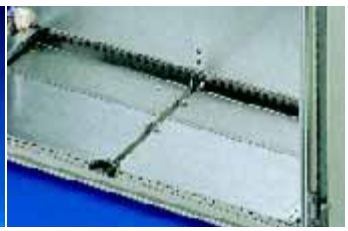
Baying systems TS 8



Door frame with punchings on a 25 mm pitch pattern, for the attachment of ducts, utility lecterns, cable harnesses, wiring plan pockets etc.



Mounting plate, zinc-plated, with C-fold at the side, **depth-variable** on a 25 mm pitch pattern. After installation, the slide rails may be used as mounting rails for the interior installation.



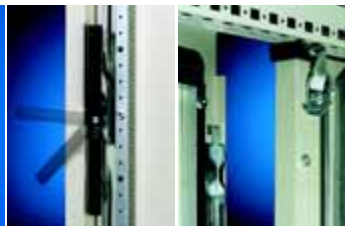
Maximum space for cable entry, thanks to multi-divided gland plates and accessory modules. With a square base area, cable entry may be installed rotated through 90°.



Universal interior installation: Frame sections, slotted on a 25 mm pitch pattern, with two mounting levels vertically with a TS hole pattern, and horizontally with a PS pitch pattern.



The roof plate is secured with **removable eyebolts.** The **all-round rain channel** prevents dirt and moisture from lying in contact with the seal.



Adjacent door locked into position by bars top and bottom with interconnecting rods and handle.



It couldn't be any faster: With the gland plates, side panels, rear panel and cover, **potential equalisation occurs automatically via earthing points** during assembly.



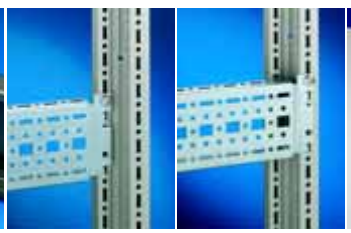
Between bayed enclosures, the **cover** affords additional protection for the seal.
Cover see page 867.



Fastening of the rods on all lock pieces is **from top to bottom.** This means that the lock cannot be opened during transportation or as a result of vibrations.



Base/plinth components (front and rear) combined with **trim panels** (side) or used to link two base/plinths.



Two symmetrical levels for **maximum space utilisation** in the width and depth.

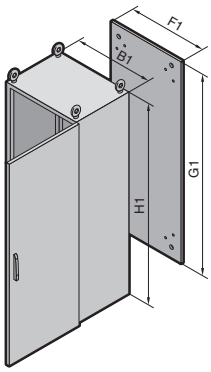


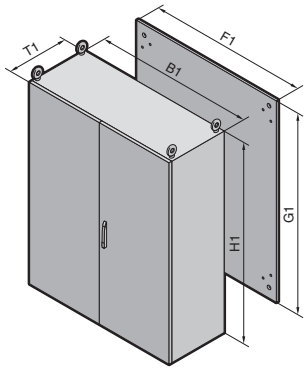
Potential equalisation is not necessary on the lock, because the lockable door latches onto the adjacent door outside of the sealing zone.

Free-standing enclosure ES 5000

Width: 600 – 1000







Material:
Sheet steel
Enclosure: 1.8 mm
Door: 2.0 mm
Rear panel and gland plates: 1.5 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure, door and rear panel: Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate and gland plates: Zinc-plated

Protection category:
IP 56 to EN 60 529/10.91,
IP 55 to EN 60 529/10.91 for ES 5080.500,
Complies with NEMA 12.

Supply includes:
Enclosure with door(s), r/h door hinge, can be changed to opposite side (except 5080.500), mounting plate, gland plates and rear panel, detachable, 2 eyebolts, not fitted (ES 5080.500, ES 5084.500: 4 eyebolts, fitted).

Approvals,
see page 28.

Detailed drawing/ nominal dimensions,
see page 1089 – 1090.

Possible alternative:
Compact system enclosure Rittal CL, see page 130 – 131.

Width (B1) in mm		Packs of	600	800	600	800	1000	1000	600	800	Page
Height (H1) in mm			1600	1600	1800	1800	1800	1800	2000	2000	
Depth (T1) in mm			500	500	400	400	400	400	500	500	
Mounting plate width (F1) in mm			499	699	499	699	899	899	499	699	
Mounting plate height (G1) in mm			1496	1496	1696	1696	1696	1696	1896	1896	
Model No. ES		1	**5665.500**	**5865.500**	**5684.500**	**5884.500**	**5084.500**	**5080.500**	**5605.500**	**5805.500**	
Door(s)			1	1	1	1	1	2	1	1	
Weight (kg)			102.5	124.5	104.5	125.0	147.0	148.0	124.0	151.5	
Accessories											
Base/plinth	Height 100 mm	1	2807.200	2829.200	2804.200	2823.200	2909.200	2909.200	2807.200	2829.200	843
	Height 200 mm	1	2808.200	2830.200	2805.200	2824.200	2910.200	2910.200	2808.200	2830.200	843

Lock systems

Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 888 and Ergoform-S lock system, see page 885.

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Fold-out tray for keyboard and mouse,
Model No. see page 1049.



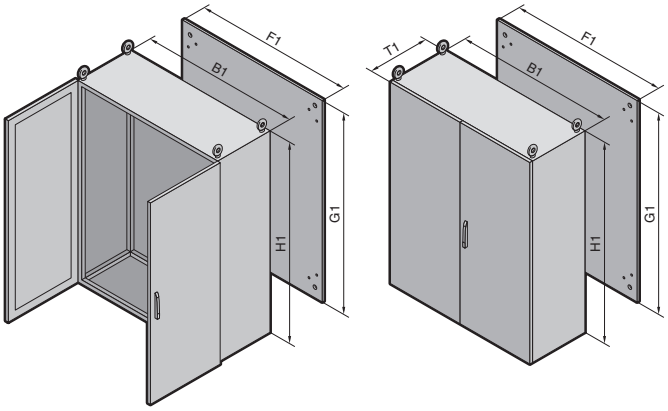


Transport handles for mounting plates and doors,
Model No. see page 912/898.

Accessories Page 832 **ES 5000 stainless steel** Page 285 **ES 5000 EMC-shielded** Page 291

Width: 1200 – 1800





Material:
Sheet steel
Enclosure: 1.8 mm
Double door: 2.0 mm
Rear panel and gland plates: 1.5 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure, double door and rear panel: Dipcoat-primed, powder-coated on the outside in textured RAL 7035
Mounting plate and gland plates: Zinc-plated

Protection category:
IP 55 to EN 60 529/10.91, Complies with NEMA 12.

Supply includes:
Enclosure with doors, mounting plate, gland plates and rear panel (ES 5784.500, ES 5905.500 two-piece), detachable, 4 eyebolts, fitted.

Approvals,
see page 28.

Detailed drawing/ nominal dimensions,
see page 1089 – 1090.

Possible alternative:
Compact system enclosure Rittal CL, see page 130 – 131.

Width (B1) in mm		Packs of	1200	1200	1600	1200	1800	Page
Height (H1) in mm			1600	1800	1800	2000	2000	
Depth (T1) in mm			500	400	400	500	500	
Mounting plate width (F1) in mm			1099	1099	1499	1099	1699	
Mounting plate height (G1) in mm			1496	1696	1696	1896	1896	
Model No. ES		1	**5265.500**	**5284.500**	**5784.500**	**5205.500**	**5905.500**	
Doors			2	2	2	2	2	
Weight (kg)			175.5	180.0	222.0	210.0	300.0	
Accessories								
Base/plinth	Height 100 mm	1	2839.200	2836.200	2905.200	2839.200	2903.200	843
	Height 200 mm	1	2840.200	2837.200	2906.200	2840.200	2904.200	843

Lock systems

Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 888 and Ergoform-S lock system, see page 885.

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Cable duct, horizontal,
Model No. see page 978.



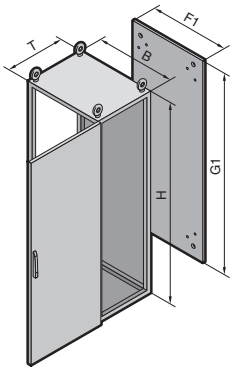
Viewing window
to protect against unauthorised access and preserve the protection category,
Model No. see page 878.

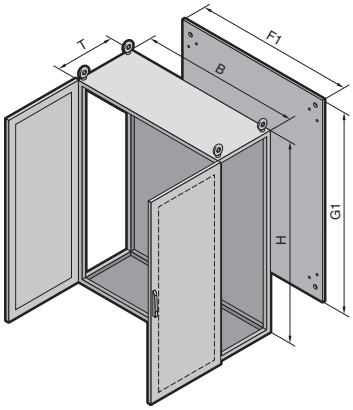
Accessories Page 832 **ES 5000 stainless steel** Page 285 **ES 5000 EMC-shielded** Page 291

Baying systems TS 8

Height: 1400, depth: 500







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate and gland plates: Zinc-plated

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel and roof plate

Protection category:
IP 55 to EN 60 529,
Complies with NEMA 12.

Approvals,
see page 29.

Detailed drawing/ nominal dimensions,
see page 1091 – 1092.

Width (B) in mm		Packs of	600	800	1200	Page
Height (H) in mm			1400	1400	1400	
Depth (T) in mm			500	500	500	
Mounting plate width (F1) in mm			499	699	1099	
Mounting plate height (G1) in mm			1296	1296	1296	
Model No. TS		1	**8645.500**	**8845.500**	**8245.500**	
Door(s)			1	1	2	
Weight (kg)			86.0	107.5	163.5	
Walls						
Side panels		2	8145.235	8145.235	8145.235	853
Divider panel		1	8609.450	8609.450	8609.450	857
Divider panel for module plates		1	8609.180	8609.180	8609.180	858
Base/plinth						
Components front and rear	Height 100 mm	1 set	8601.600	8601.800	8601.200	835
	Height 200 mm	1 set	8602.600	8602.800	8602.200	835
Trim panels (sides)	Height 100 mm	1 set	8601.050	8601.050	8601.050	835
	Height 200 mm	1 set	8602.050	8602.050	8602.050	835
Accessories						
Cable clamp rails for cable clamps		2	4191.000	4192.000	4196.000	979
Cable clamp rails (C section) for cable clamps		6	4944.000	4945.000	4947.000	928
Support strips for door		20	4596.000	4598.000	4596.000	895
Wiring plan pocket, sheet steel		1	4116.000	4118.000	4116.000	898
Lock systems						
Standard double-bit lock insert may be exchanged for other lock inserts and comfort handle, see page 881 – 889.						

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Signal pillar LED compact,
Model No. see page 1041.

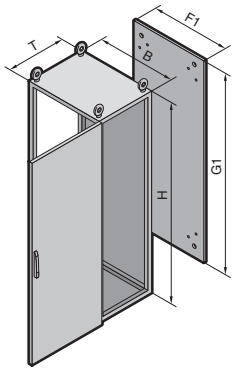


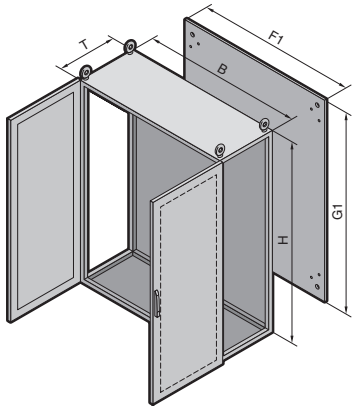
Baying cover,
Model No. see page 867.

Accessories Page 832 **TS 8 stainless steel** Page 284 **TS 8 EMC-shielded** Page 291 **TS 8 climate controlled enclosure** Page 582 – 583
TS 8 climate control doors Page 584 – 588

Height: 1600, depth: 500







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate and gland plates: Zinc-plated

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel and roof plate

Protection category:
IP 55 to EN 60 529,
Complies with NEMA 12.

Approvals,
see page 29.

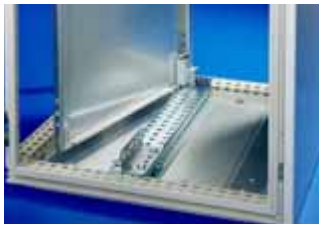
Detailed drawing/ nominal dimensions,
see page 1091 – 1092.

Width (B) in mm		Packs of	600	800	1200	Page
Height (H) in mm			1600	1600	1600	
Depth (T) in mm			500	500	500	
Mounting plate width (F1) in mm			499	699	1099	
Mounting plate height (G1) in mm			1496	1496	1496	
Model No. TS		1	**8665.500**	**8865.500**	**8265.500**	
Door(s)			1	1	2	
Weight (kg)			100.0	103.0	159.3	
Walls						
Side panels		2	8165.235	8165.235	8165.235	853
Divider panel		1	8609.650	8609.650	8609.650	857
Divider panel for module plates		1	8609.165	8609.165	8609.165	858
Base/plinth						
Components front and rear	Height 100 mm	1 set	8601.600	8601.800	8601.200	835
	Height 200 mm	1 set	8602.600	8602.800	8602.200	835
Trim panels (sides)	Height 100 mm	1 set	8601.050	8601.050	8601.050	835
	Height 200 mm	1 set	8602.050	8602.050	8602.050	835
Accessories						
Cable clamp rails for cable clamps		2	4191.000	4192.000	4196.000	979
Cable clamp rails (C section) for cable clamps		6	4944.000	4945.000	4947.000	928
Support strips for door		20	4596.000	4598.000	4596.000	895
Wiring plan pocket, sheet steel		1	4116.000	4118.000	4116.000	898
Lock systems						
Standard double-bit lock insert may be exchanged for other lock inserts and comfort handle, see page 881 – 889.						

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Connector gland
for connecting a keyboard, mouse or scanner,
Model No. see page 975.



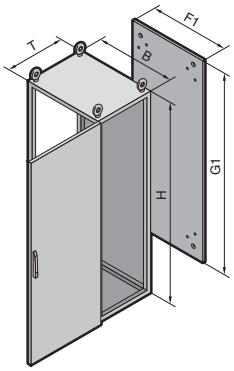
Hinge attachment
for partial mounting plates,
Model No. see page 911.

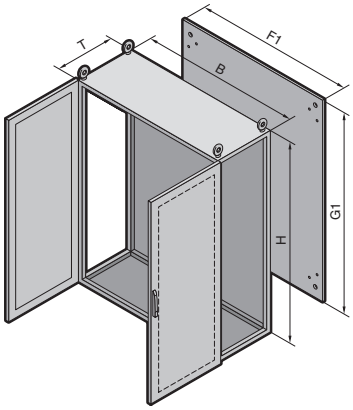
Accessories Page 832 **TS 8 stainless steel** Page 284 **TS 8 EMC-shielded** Page 291 **TS 8 climate controlled enclosure** Page 582 – 583
TS 8 climate control doors Page 584 – 588

Baying systems TS 8

Height: 1800, depth: 400







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate and gland plates: Zinc-plated

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel and roof plate.

Protection category:
IP 55 to EN 60 529,
Complies with NEMA 12.

Approvals,
see page 29.

Detailed drawing/ nominal dimensions,
see page 1091 – 1092.

Accessories:
Corner enclosures,
see page 868.

Possible alternative:
A matching climate control door instead of the door or rear panel, see page 584 – 588.

Width (B) in mm		Packs of	600	800	1000	1000	1200	Page
Height (H) in mm			1800	1800	1800	1800	1800	
Depth (T) in mm			400	400	400	400	400	
Mounting plate width (F1) in mm			499	699	899	899	1099	
Mounting plate height (G1) in mm			1696	1696	1696	1696	1696	
Model No. TS		1	**8684.500**	**8884.500**	**8084.500**	**8080.500**	**8284.500**	
Door(s)			1	1	1	2	2	
Weight (kg)			91.3	113.5	136.4	140.0	170.6	
Walls								
Side panels		2	8184.235	8184.235	8184.235	8184.235	8184.235	853
Divider panel		1	8609.840	8609.840	8609.840	8609.840	8609.840	857
Base/plinth								
Components front and rear	Height 100 mm	1 set	8601.600	8601.800	8601.000	8601.000	8601.200	835
	Height 200 mm	1 set	8602.600	8602.800	8602.000	8602.000	8602.200	835
Trim panels (sides)	Height 100 mm	1 set	8601.040	8601.040	8601.040	8601.040	8601.040	835
	Height 200 mm	1 set	8602.040	8602.040	8602.040	8602.040	8602.040	835
Accessories								
Cable clamp rails for cable clamps		2	4191.000	4192.000	4336.000	4336.000	4196.000	979
Cable clamp rails (C section) for cable clamps		6	4944.000	4945.000	4946.000	4946.000	4947.000	928
Support strips for door		20	4596.000	4598.000	4599.000	4309.000	4596.000	895
Wiring plan pocket, sheet steel		1	4116.000	4118.000	4124.000	4115.000	4116.000	898
Lock systems								
Standard double-bit lock insert may be exchanged for other lock inserts and comfort handle, see page 881 – 889.								

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Snap-on nut
for screw-fastening to the vertical section with a thread,
Model No. see page 931.

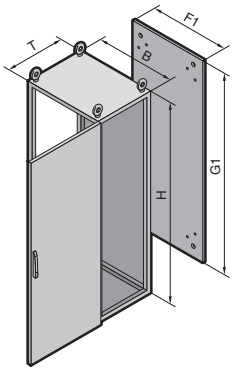


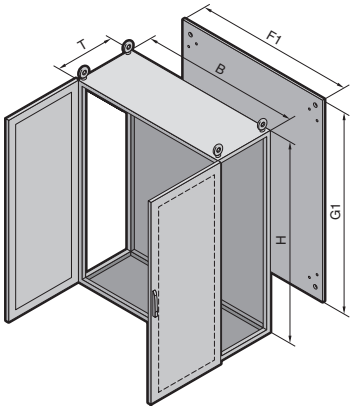
System windows
to protect against unauthorised access and preserve the protection category,
Model No. see page 877.

Accessories Page 832 **TS 8 stainless steel** Page 284 **TS 8 EMC-shielded** Page 291 **TS 8 climate controlled enclosure** Page 582 – 583
TS 8 climate control doors Page 584 – 588

Height: 1800, depth: 500







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate and gland plates: Zinc-plated

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel and roof plate.

Protection category:
IP 55 to EN 60 529,
Complies with NEMA 12 (apart from TS 8485.510).

Approvals,
see page 29.

Detailed drawing/ nominal dimensions,
see page 1091 – 1092.

Accessories:
Corner enclosures, see page 868.

Possible alternative:
A matching climate control door instead of the door or rear panel, see page 584 – 588.

Width (B) in mm		Packs of	400	600	800	800	1200	Page
Height (H) in mm			1800	1800	1800	1800	1800	
Depth (T) in mm			500	500	500	500	500	
Mounting plate width (F1) in mm			–	499	699	699	1099	
Mounting plate height (G1) in mm			–	1696	1696	1696	1696	
Model No. TS		1	**8485.510**[1)]	**8685.500**	**8885.500**	**8880.500**	**8285.500**	
Door(s)			1	1	1	2	2	
Weight (kg)			49.2	93.8	115.8	122.5	173.3	
Walls								
Side panels		2	8185.235	8185.235	8185.235	8185.235	8185.235	853
Divider panel		1	8609.850	8609.850	8609.850	8609.850	8609.850	857
Divider panel for module plates		1	8609.100	8609.100	8609.100	8609.100	8609.100	858
Base/plinth								
Components front and rear	Height 100 mm	1 set	8601.400	8601.600	8601.800	8601.800	8601.200	835
	Height 200 mm	1 set	8602.400	8602.600	8602.800	8602.800	8602.200	835
Trim panels (sides)	Height 100 mm	1 set	8601.050	8601.050	8601.050	8601.050	8601.050	835
	Height 200 mm	1 set	8602.050	8602.050	8602.050	8602.050	8602.050	835
Accessories								
Cable clamp rails for cable clamps		2	4193.000	4191.000	4192.000	4192.000	4196.000	979
Cable clamp rails (C section) for cable clamps		6	–	4944.000	4945.000	4945.000	4947.000	928
Support strips for door		20	–	4596.000	4598.000	4594.000	4596.000	895
Wiring plan pocket, sheet steel		1	–	4116.000	4118.000	4114.000	4116.000	898
Lock systems								
Standard double-bit lock insert may be exchanged for other lock inserts and comfort handle, see page 881 – 889.								

[1)] Without tubular door frame, mounting plate and gland plates.
To order enclosures in textured RAL 7032 please add extension .600 or .610 to the Model No., and for primed enclosures use extension .800 or .810. Delivery times available on request.



Interface flap
for the secure, lockable accommodation of sockets, ports or drives,
Model No. see page 1059.



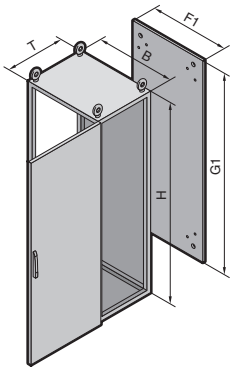
Keyboard, pull-out
with integral trackball,
Model No. see page 1048.

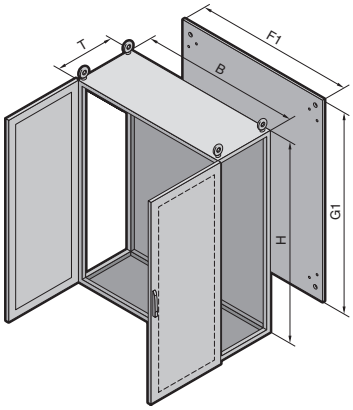
Accessories Page 832 **TS 8 stainless steel** Page 284 **TS 8 EMC-shielded** Page 291 **TS 8 climate controlled enclosure** Page 582 – 583
TS 8 climate control doors Page 584 – 588

Baying systems TS 8

Height: 1800, depth: 600







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate and gland plates: Zinc-plated

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel, roof plate and 2 support strips (TS 4696.000, see page 924), fitted in the enclosure depth.

Protection category:
IP 55 to EN 60 529,
Complies with NEMA 12 (apart from TS 8486.510).

Accessories:

Corner enclosures, see page 868.
Climate controlled enclosure KTS single-door/two-door, see page 582 – 583.

Approvals, see page 29.

Detailed drawing/ nominal dimensions, see page 1091 – 1092.

Width (B) in mm		Packs of	400	600	800	800	1200	Page
Height (H) in mm			1800	1800	1800	1800	1800	
Depth (T) in mm			600	600	600	600	600	
Mounting plate width (F1) in mm			–	499	699	699	1099	
Mounting plate height (G1) in mm			–	1696	1696	1696	1696	
Model No. TS		1	**8486.510**[1)]	**8686.500**	**8886.500**	**8881.500**	**8286.500**	
Door(s)			1	1	1	2	2	
Weight (kg)			51.7	96.8	120.3	125.8	179.9	
Walls								
Side panels		2	8186.235	8186.235	8186.235	8186.235	8186.235	853
Divider panel		1	8609.860	8609.860	8609.860	8609.860	8609.860	857
Divider panel for module plates		1	8609.110	8609.110	8609.110	8609.110	8609.110	858
Climate control side panel		1	3331.XXX	3331.XXX	3331.XXX	3331.XXX	3331.XXX	589
Base/plinth								
Components front and rear	Height 100 mm	1 set	8601.400	8601.600	8601.800	8601.800	8601.200	835
	Height 200 mm	1 set	8602.400	8602.600	8602.800	8602.800	8602.200	835
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.060	8601.060	8601.060	835
	Height 200 mm	1 set	8602.060	8602.060	8602.060	8602.060	8602.060	835
Accessories								
Cable clamp rails for cable clamps		2	4193.000	4191.000	4192.000	4192.000	4196.000	979
Cable clamp rails (C section) for cable clamps		6	–	4944.000	4945.000	4945.000	4947.000	928
Support strips for door		20	–	4596.000	4598.000	4594.000	4596.000	895
Wiring plan pocket, sheet steel		1	–	4116.000	4118.000	4114.000	4116.000	898
Lock systems								
Standard double-bit lock insert may be exchanged for other lock inserts and comfort handle, see page 881 – 889.								

[1)] Without tubular door frame, mounting plate and gland plates.
To order enclosures in textured RAL 7032 please add extension .600 or .610 to the Model No., and for primed enclosures use extension .800 or .810. Delivery times available on request.



Enclosure surface connector and support for keyboards,
Model No. see page 1034/1048.

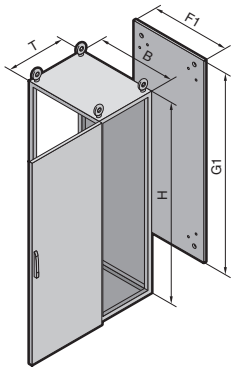


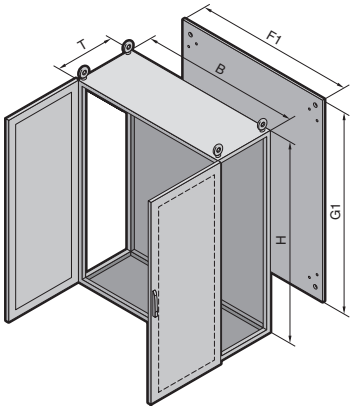
Cross-brace for door
to stabilise an externally mounted keyboard housing,
Model No. see page 895.

Accessories Page 832 **TS 8 stainless steel** Page 284 **TS 8 EMC-shielded** Page 291 **TS 8 climate controlled enclosure** Page 582 – 583
TS 8 climate control doors Page 584 – 588

Height: 2000, depth: 400







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate and gland plates: Zinc-plated

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel and roof plate.

Protection category:
IP 55 to EN 60 529,
Complies with NEMA 12.

Accessories:
Corner enclosures,
see page 868.
Climate controlled enclosure KTS single-door/two-door,
see page 582 – 583.

Approvals,
see page 29.

Detailed drawing/ nominal dimensions,
see page 1091 – 1092.

Width (B) in mm		Packs of	600	800	1200	Page
Height (H) in mm			2000	2000	2000	
Depth (T) in mm			400	400	400	
Mounting plate width (F1) in mm			499	699	1099	
Mounting plate height (G1) in mm			1896	1896	1896	
Model No. TS		1	**8604.500**	**8804.500**	**8204.500**	
Door(s)			1	1	2	
Weight (kg)			99.0	124.0	184.5	
Walls						
Side panels		2	8104.235	8104.235	8104.235	853
Divider panel		1	8609.040	8609.040	8609.040	857
Climate control side panel		1	3331.XXX	3331.XXX	3331.XXX	589
Side panel with air/water heat exchangers		1	3316.200	3316.200	3316.200	632
Base/plinth						
Components front and rear	Height 100 mm	1 set	8601.600	8601.800	8601.200	835
	Height 200 mm	1 set	8602.600	8602.800	8602.200	835
Trim panels (sides)	Height 100 mm	1 set	8601.040	8601.040	8601.040	835
	Height 200 mm	1 set	8602.040	8602.040	8602.040	835
Accessories						
Cable clamp rails for cable clamps		2	4191.000	4192.000	4196.000	979
Cable clamp rails (C section) for cable clamps		6	4944.000	4945.000	4947.000	928
Support strips for door		20	4596.000	4598.000	4596.000	895
Wiring plan pocket, sheet steel		1	4116.000	4118.000	4116.000	898
Lock systems						
Standard double-bit lock insert may be exchanged for other lock inserts and comfort handle, see page 881 – 889.						

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Vertical cable trunking,
sized to the section and horizontally on the mounting plate,
Model No. see page 977 – 978.



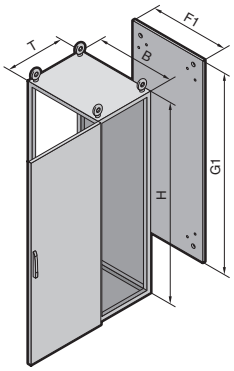
Bar
for EMC shielding brackets and cable clamps,
Model No. see page 957.

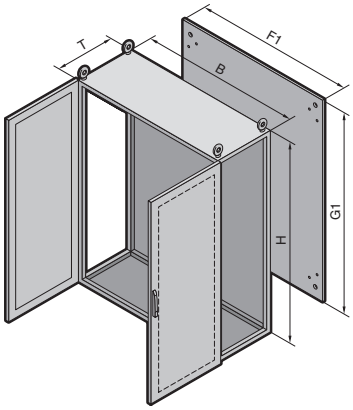
Accessories Page 832 **TS 8 stainless steel** Page 284 **TS 8 EMC-shielded** Page 291 **TS 8 climate controlled enclosure** Page 582 – 583
TS 8 climate control doors Page 584 – 588

Baying systems TS 8

Height: 2000, depth: 500







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame, door, roof and rear panel: RAL 7044
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate and gland plates: Zinc-plated

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel and roof plate.

Protection category:
IP 55 to EN 60 529,
Complies with NEMA 12 (apart from TS 8405.510).

Possible alternative:
A matching climate control door instead of the door or rear panel, see page 584 – 588.

Accessories:
Corner enclosures, see p. 868.
Climate controlled enclosure KTS single-door/two-door, see page 582 – 583.

Approvals,
see page 29.

Detailed drawing/ nominal dimensions,
see page 1091 – 1092.

Width (B) in mm		Packs of	400	600	800	1000	1200	Page
Height (H) in mm			2000	2000	2000	2000	2000	
Depth (T) in mm			500	500	500	500	500	
Mounting plate width (F1) in mm			–	499	699	899	1099	
Mounting plate height (G1) in mm			–	1896	1896	1896	1896	
Model No. TS		1	**8405.510**[1)]	**8605.500**	**8805.500**	**8005.500**	**8205.500**	
Door(s)			1	1	1	2	2	
Weight (kg)			60.7	101.3	126.3	157.1	190.6	
Walls								
Side panels		2	8105.235	8105.235	8105.235	8105.235	8105.235	853
Divider panel		1	8609.050	8609.050	8609.050	8609.050	8609.050	857
Divider panel for module plates		1	8609.120	8609.120	8609.120	8609.120	8609.120	858
Base/plinth								
Components front and rear	Height 100 mm	1 set	8601.400	8601.600	8601.800	8601.000	8601.200	835
	Height 200 mm	1 set	8602.400	8602.600	8602.800	8602.000	8602.200	835
Trim panels (sides)	Height 100 mm	1 set	8601.050	8601.050	8601.050	8601.050	8601.050	835
	Height 200 mm	1 set	8602.050	8602.050	8602.050	8602.050	8602.050	835
Accessories								
Cable clamp rails for cable clamps		2	4193.000	4191.000	4192.000	4336.000	4196.000	979
Cable clamp rails (C section) for cable clamps		6	–	4944.000	4945.000	4946.000	4947.000	928
Support strips for door		20	–	4596.000	4598.000	4309.000	4596.000	895
Wiring plan pocket, sheet steel		1	–	4116.000	4118.000	4115.000	4116.000	898
Lock systems								
Standard double-bit lock insert may be exchanged for other lock inserts and comfort handle, see page 881 – 889.								

[1)] Without tubular door frame, mounting plate and gland plates.
To order enclosures in textured RAL 7032 please add extension .600 or .610 to the Model No., and for primed enclosures use extension .800 or .810. Delivery times available on request.



Cable glands
made from polyamide or brass,
Model No. see page 972.

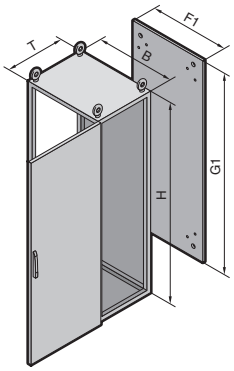


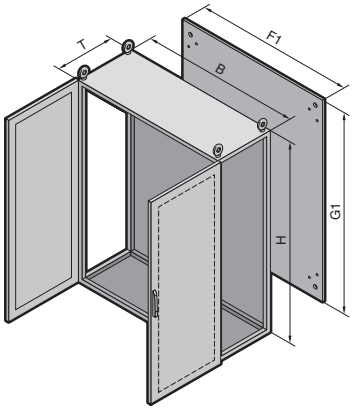
Fold-out tray for keyboard and mouse,
Model No. see page 1049.

Accessories Page 832 **TS 8 stainless steel** Page 284 **TS 8 EMC-shielded** Page 291 **TS 8 climate controlled enclosure** Page 582 – 583
TS 8 climate control doors Page 584 – 588

Height: 2000, depth: 600







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate and gland plates: Zinc-plated

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel, roof plate and 2 support strips (TS 4696.000, see page 924), fitted in the enclosure depth.

Protection category:
IP 55 to EN 60 529,
Complies with NEMA 12 (apart from TS 8406.510).

Accessories:

Corner enclosures,
see page 868.
Climate controlled enclosure KTS single-door/two-door,
see page 582 – 583.

Approvals,
see page 29.

Detailed drawing/ nominal dimensions,
see page 1091 – 1092.

Width (B) in mm		Packs of	400	600	800	1000	1200	Page
Height (H) in mm			2000	2000	2000	2000	2000	
Depth (T) in mm			600	600	600	600	600	
Mounting plate width (F1) in mm			–	499	699	899	1099	
Mounting plate height (G1) in mm			–	1896	1896	1896	1896	
Model No. TS		1	**8406.510**[1)]	**8606.500**	**8806.500**	**8006.500**	**8206.500**	
Door(s)			1	1	1	2	2	
Weight (kg)			55.7	104.0	130.5	161.2	194.6	
Walls								
Side panels		2	8106.235	8106.235	8106.235	8106.235	8106.235	853
Divider panel		1	8609.060	8609.060	8609.060	8609.060	8609.060	857
Divider panel for module plates		1	8609.130	8609.130	8609.130	8609.130	8609.130	858
Climate control side panel		1	3331.XXX	3331.XXX	3331.XXX	3331.XXX	3331.XXX	589
Base/plinth								
Components front and rear	Height 100 mm	1 set	8601.400	8601.600	8601.800	8601.000	8601.200	835
	Height 200 mm	1 set	8602.400	8602.600	8602.800	8602.000	8602.200	835
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.060	8601.060	8601.060	835
	Height 200 mm	1 set	8602.060	8602.060	8602.060	8602.060	8602.060	835
Accessories								
Cable clamp rails for cable clamps		2	4193.000	4191.000	4192.000	4336.000	4196.000	979
Cable clamp rails (C section) for cable clamps		6	–	4944.000	4945.000	4946.000	4947.000	928
Support strips for door		20	–	4596.000	4598.000	4309.000	4596.000	895
Wiring plan pocket, sheet steel		1	–	4116.000	4118.000	4115.000	4116.000	898
Lock systems								
Standard double-bit lock insert may be exchanged for other lock inserts and comfort handle, see page 881 – 889.								

[1)] Without tubular door frame, mounting plate and gland plates.
To order enclosures in textured RAL 7032 please add extension .600 or .610 to the Model No., and for primed enclosures use extension .800 or .810. Delivery times available on request.



Section for cable entry
for top mounting on gland plates with routing of the cable clamp strip,
Model No. see page 965.



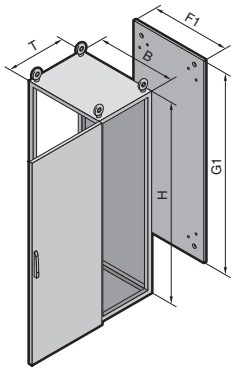
Module panel
for cable entry in divider panel,
Model No. see page 859.

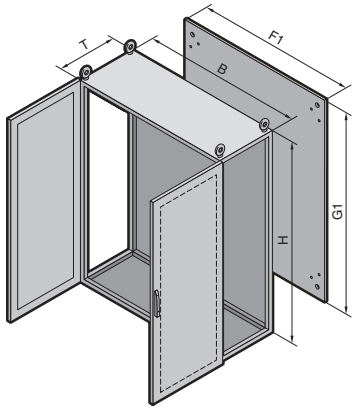
Accessories Page 832 **TS 8 stainless steel** Page 284 **TS 8 EMC-shielded** Page 291 **TS 8 climate controlled enclosure** Page 582 – 583
TS 8 climate control doors Page 584 – 588

Baying systems TS 8

Height: 2000, depth: 800







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate and gland plates: Zinc-plated

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel and roof plate.

Protection category:
IP 55 to EN 60 529,
Complies with NEMA 12.

Possible alternative:
A matching climate control door instead of the door or rear panel, see page 584 – 588.

Accessories:
Climate controlled enclosure KTS single-door/two-door, see page 582 – 583.

Approvals,
see page 29.

Detailed drawing/ nominal dimensions,
see page 1091 – 1092.

Width (B) in mm		Packs of	600	800	1200	Page
Height (H) in mm			2000	2000	2000	
Depth (T) in mm			800	800	800	
Mounting plate width (F1) in mm			499	699	1099	
Mounting plate height (G1) in mm			1896	1896	1896	
Model No. TS		1	**8608.500**	**8808.500**	**8208.500**	
Door(s)			1	1	2	
Weight (kg)			111.3	137.0	203.0	
Walls						
Side panels		2	8108.235	8108.235	8108.235	853
Divider panel		1	8609.080	8609.080	8609.080	857
TS 8 internal fan mounting panel		1	3348.200	3348.200	3348.200	653
Base/plinth						
Components front and rear	Height 100 mm	1 set	8601.600	8601.800	8601.200	835
	Height 200 mm	1 set	8602.600	8602.800	8602.200	835
Trim panels (sides)	Height 100 mm	1 set	8601.080	8601.080	8601.080	835
	Height 200 mm	1 set	8602.080	8602.080	8602.080	835
Accessories						
Cable clamp rails for cable clamps		2	4191.000	4192.000	4196.000	979
Cable clamp rails (C section) for cable clamps		6	4944.000	4945.000	4947.000	928
Support strips for door		20	4596.000	4598.000	4596.000	895
Wiring plan pocket, sheet steel		1	4116.000	4118.000	4116.000	898
Lock systems						
Standard double-bit lock insert may be exchanged for other lock inserts and comfort handle, see page 881 – 889.						

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Punched section without mounting flange 45 x 88 mm
The universal installation solution with 11 rows of holes for heavy mounted equipment and for screw-fastening to the machine,
Model No. see page 922.

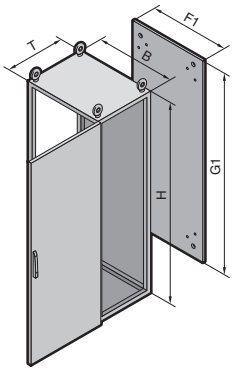


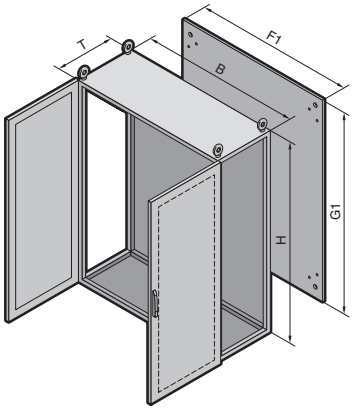
Mounting plate attachment
in conjunction with a mounting plate infill,
Model No.
see page 910.

Accessories Page 832 **TS 8 stainless steel** Page 284 **TS 8 EMC-shielded** Page 291 **TS 8 climate controlled enclosure** Page 582 – 583
TS 8 climate control doors Page 584 – 588

Height: 2200, depth: 600







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Mounting plate and gland plates: Zinc-plated

Supply includes:
Enclosure frame with doors, mounting plate, gland plates, rear panel and roof plate.

Protection category:
IP 55 to EN 60 529,
Complies with NEMA 12.

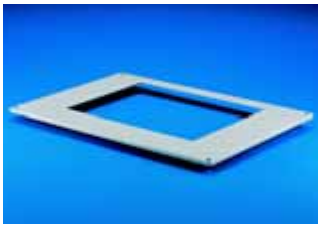
Accessories:
Corner enclosures,
see page 868.

Approvals,
see page 29.

Detailed drawing/ nominal dimensions,
see page 1091 – 1092.

Width (B) in mm		Packs of	600	800	1200	Page
Height (H) in mm			2200	2200	2200	
Depth (T) in mm			600	600	600	
Mounting plate width (F1) in mm			499	699	1099	
Mounting plate height (G1) in mm			2096	2096	2096	
Model No. TS		1	**8626.500**	**8826.500**	**8226.500**	
Door(s)			1	1	2	
Weight (kg)			113.1	139.3	208.0	
Walls						
Side panels		2	8126.235	8126.235	8126.235	853
Divider panel		1	8609.260	8609.260	8609.260	857
Base/plinth						
Components front and rear	Height 100 mm	1 set	8601.600	8601.800	8601.200	835
	Height 200 mm	1 set	8602.600	8602.800	8602.200	835
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.060	835
	Height 200 mm	1 set	8602.060	8602.060	8602.060	835
Accessories						
Cable clamp rails for cable clamps		2	4191.000	4192.000	4196.000	979
Cable clamp rails (C section) for cable clamps		6	4944.000	4945.000	4947.000	928
Support strips for door		20	4596.000	4598.000	4596.000	895
Wiring plan pocket, sheet steel		1	4116.000	4118.000	4116.000	898
Lock systems						
Standard double-bit lock insert may be exchanged for other lock inserts and comfort handle, see page 881 – 889.						

To order enclosures in textured RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Roof plates
with cutout for cooling units,
Model No. see page 664.

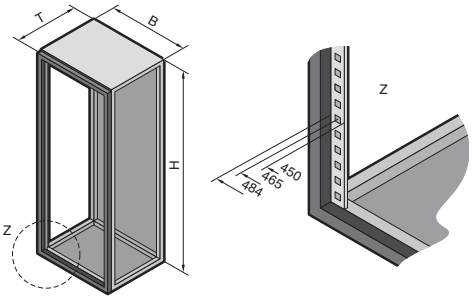


Utility shelves
for external mounting on surfaces as a support e.g. for scanners or tools,
Model No. see page 1039.

Accessories Page 832 **TS 8 stainless steel** Page 284 **TS 8 EMC-shielded** Page 291 **TS 8 climate controlled enclosure** Page 582 – 583
TS 8 climate control doors Page 584 – 588

Electronic enclosure





Material:
Enclosure frame:
1.5 mm sheet steel
Front frame:
Extruded aluminium sections with die-cast corner pieces
Rear door: Sheet steel 2 mm
Roof and gland plates:
1.5 mm sheet steel
Adaptor sections: Aluminium

Surface finish:
Enclosure frame:
Dipcoat-primed
Front frame, rear door and roof:
Powder-coated in RAL 7035
Adaptor sections:
Conductive, corrosion-resistant coating
Gland plates: Zinc-plated

Supply includes:
Enclosure frame, front frame (r/h hinge, opening angle 130°, held via mechanical snap fasteners on left), rear door (r/h hinge, may be swapped to opposite side), roof, adaptor sections and gland plates.

Approvals,
see page 30.

Detailed drawing/nominal dimensions,
see page 1094.

U		Packs of	33	33	42	42	Page
Width (B) in mm			600	600	600	600	
Height (H) in mm			1600	1600	2000	2000	
Depth (T) in mm			600	800	600	800	
Model No. TS		1	**8410.510**	**8418.510**	**8430.510**	**8438.510**	
Door(s)			1	1	1	1	
Base/plinth							
Components front and rear	Height 100 mm	1 set	8601.600	8601.600	8601.600	8601.600	835
	Height 200 mm	1 set	8602.600	8602.600	8602.600	8602.600	835
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.080	8601.060	8601.080	835
	Height 200 mm	1 set	8602.060	8602.080	8602.060	8602.080	835
Accessories							
Side panels		2	8166.235	8168.235	8106.235	8108.235	853
Cable clamp rails for cable clamps		2	4191.000	4191.000	4191.000	4191.000	979
Cable clamp rails (C section) for cable clamps		6	4944.000	4944.000	4944.000	4944.000	928
Lock systems							
Standard double-bit lock insert (in rear door) may be exchanged for other lock inserts and comfort handle, see page 881 – 889.							

For primed enclosures, please add extension .810 to the Model No. Delivery times available on request.



Signal pillar LED compact,
Model No. see page 1041.

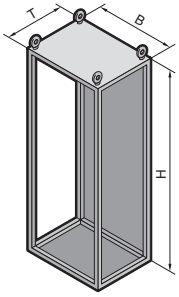


Earthing plate,
the central earthing point for up to eight flat-pin connectors.
Model No. see page 961.

Accessories Page 832 **482.6 mm (19″) mounting accessories** From page 993 **Subrack systems** Page 486 **482.6 mm (19″) climate control** Page 644 – 646

for modular front design





The basic enclosures without
- Mounting plate
  for universal interior installation with
  – Partial mounting plates
  – Component shelves and drawers
  – Punched sections and rails
- Doors
  Frame for the installation of
  – Partial doors with and without viewing panels
  – Completely glazed doors
  – Drawers and desk sections
  – Profile blanking frame
  – Vertically divided doors
  – Trim panels hinged at the top

Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door and rear panel:
Dipcoat-primed
Powder-coated on the outside in Textured RAL 7035
Gland plates: Zinc-plated

Supply includes:
Enclosure frame, roof, rear panel, gland plates, three-piece.

Detailed drawing (TS basic enclosures without door),
see page 1094.

Width (B) in mm		Packs of	600	800	Page
Height (H) in mm			2000	2000	
Depth (T) in mm			600	600	
Model No. TS		1	**8606.512**	**8806.512**	
Weight (kg)			52.5	63.0	
Walls					
Side panels		2	8106.512	8106.512	876
Divider panel		1	8609.060	8609.060	857
Divider panel for module plates		1	8609.130	8609.130	858
Base/plinth					
Components front and rear	Height 100 mm	1 set	8601.600	8601.800	835
	Height 200 mm	1 set	8602.600	8602.800	835
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	835
	Height 200 mm	1 set	8602.060	8602.060	835

To order enclosures in textured RAL 7032 please add extension .612 to the Model No., and for primed enclosures use extension .812.
Delivery times available on request.



Trim panels TS
For height trim at the top and bottom,
Model No. see page 875.



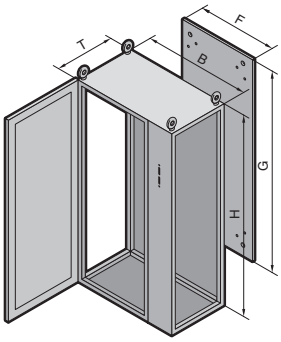
Drawer tray
pull-out,
Model No. see page 942.

Accessories Page 832 **Partial doors** Page 875 **Partial mounting plates** Page 913

Baying systems TS 8

For isolator door locking





Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates:
1.5 mm
Door and trim panel: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, trim panel, roof and rear panel:
Dipcoat-primed
Powder-coated on the outside in textured RAL 7035
Mounting plate and gland plates: Zinc-plated

Protection category:
IP 55 to EN 60 529/10.91,
Complies with NEMA 12
(with fitted/sealed isolator switch actuation)

Supply includes:
Enclosure frame, door (l/h hinge), trim panel (r/h hinge, with a swing lever at the top and bottom, with cutout for isolator switch actuation), roof, rear panel, mounting plate, three-piece gland plates.

Approvals,
see page 30.

Detailed drawing/nominal dimensions,
see page 1093.

Width (B) in mm		Packs of	800	800	800	800	Page
Height (H) in mm			1800	1800	2000	2000	
Depth (T) in mm			400	500	500	600	
Mounting plate width (F) in mm			699	699	699	699	
Mounting plate height (G) in mm			1696	1696	1896	1896	
Model No. TS		1	**8984.500**	**8985.500**	**8905.500**	**8906.500**	
Door(s)			1	1	1	1	
Weight (kg)			113.5	115.8	126.3	130.5	
Base/plinth							
Components front and rear	Height 100 mm	1 set	8601.800	8601.800	8601.800	8601.800	835
	Height 200 mm	1 set	8602.800	8602.800	8602.800	8602.800	835
Trim panels (sides)	Height 100 mm	1 set	8601.040	8601.050	8601.050	8601.060	835
	Height 200 mm	1 set	8602.040	8602.050	8602.050	8602.060	835
Also required							
Latch for bayed suites							892
Accessories							
Isolator door locking (USA version)		1	8611.310	8611.310	8611.310	8611.310	892
Lock systems							
Standard double-bit lock insert may be exchanged for other lock inserts and comfort handle, see page 881 – 889.							

To order enclosures in RAL 7032 please add extension .600 to the Model No., and for primed enclosures use extension .800.
Delivery times available on request.



Cable gland
made from polyamide or brass,
Model No. see page 972.

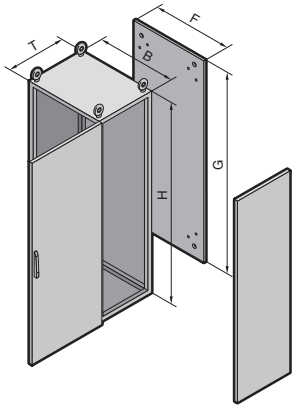


Snap-on nut
for screw-fastening to the vertical section,
Model No. see page 931.

Accessories Page 832 **Adjacent cubicle latch mechanism** Page 883

IP 65/NEMA 4x, NEMA 4





Material:
NEMA 4x:
Stainless steel 1.4301

NEMA 4:
Sheet steel, spray-finished

Enclosure frame, roof, base/ plinth, rear panel, side panels: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm (sheet steel)

Surface finish:
NEMA 4x:
Enclosure frame: Bare
Door, roof, base, rear panel, side panels: Brushed on the outside, grain size 240
Mounting plate: Zinc-plated

NEMA 4:
Enclosure frame:
Dipcoat-primed
Door, roof, base, rear panel, side panels:
Dipcoat-primed
and powder-coated
Textured RAL 7035
Mounting plate: Zinc-plated

Protection category:
IP 65 to EN 60 529/10.91
(NEMA 4x or NEMA 4 is met)

Supply includes:
NEMA 4x/NEMA 4:
Enclosure frame with door, roof/base plate, rear panel, side panels, mounting plate.

Approvals,
see page 30.

Detailed drawing (TS basic enclosures),
see page 1091.

		Packs of	NEMA 4x, stainless steel				NEMA 4, sheet steel				Page
Width (B) in mm			600	800	600	800	600	800	600	800	
Height (H) in mm			1800	1800	2000	2000	1800	1800	2000	2000	
Depth (T) in mm			600	600	600	600	600	600	600	600	
Mounting plate width (F) in mm			499	699	499	699	499	699	499	699	
Mounting plate height (G) in mm			1696	1696	1896	1896	1696	1696	1896	1896	
Model No. TS		1	**8458.640**	**8459.640**	**8452.640**	**8450.640**	**8686.540**	**8886.540**	**8606.540**	**8806.540**	
Door(s)			1	1	1	1	1	1	1	1	
Base/plinth											
Components front and rear	Height 100 mm	1 set	8701.600	8701.800	8701.600	8701.800	8601.600	8601.800	8601.600	8601.800	841/835
	Height 200 mm	1 set	8702.600	8702.800	8702.600	8702.800	8602.600	8602.800	8602.600	8602.800	841/835
Trim panels (sides)	Height 100 mm	1 set	8701.060	8701.060	8701.060	8701.060	8601.060	8601.060	8601.060	8601.060	841/835
	Height 200 mm	1 set	8702.060	8702.060	8702.060	8702.060	8602.060	8602.060	8602.060	8602.060	841/835
Base/plinth trim, modular SO		4	2913.000	2913.000	2913.000	2913.000	–	–	–	–	841
Accessories											
Cable clamp rails		2	4191.000	4192.000	4191.000	4192.000	4191.000	4192.000	4191.000	4192.000	979
System support rails		2	4361.000	4362.000	4361.000	4362.000	4361.000	4362.000	4361.000	4362.000	926
Support strips for door		20	4596.000	4598.000	4596.000	4598.000	4596.000	4598.000	4596.000	4598.000	895
Wiring plan pocket, sheet steel		1	4116.000	4118.000	4116.000	4118.000	4116.000	4118.000	4116.000	4118.000	898
Lock systems											
Standard double-bit lock insert may be exchanged for other lock inserts and comfort handle, see page 881 – 889.											

Delivery times available on request.



Cable glands IP 68
in polyamide and brass,
Model No. see page 972.



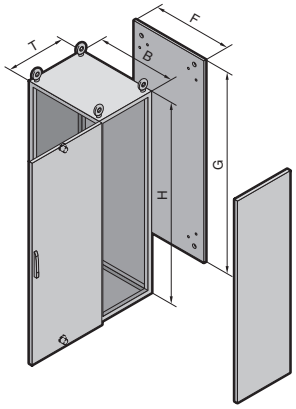
Punched rail
25 x 38 mm,
Model No. see page 923.

Accessories Page 832 **Cable entry** From page 964

Baying systems TS 8

prepared for EX pressurisation





In conjunction with an EX overpressure control, e.g. from Stahl (not included with the supply), conventional operating equipment may be used in explosion hazard areas. To this end, a permanent overpressure is applied to the enclosure which prevents the ingress of potentially explosive atmospheres. Economical operation is guaranteed, thanks to a minimal leakage rate of less than 20 l/min, at 2 mbar test pressure.

Design:
- Base as for roof
- Door with additional cams top and bottom, r/h hinge (l/h hinge on request)
- Side panels fitted

Surface finish:
Sheet steel:
Enclosure frame:
Dipcoat-primed door, roof, base, side panels and rear panel:
Dipcoat-primed, powder-coated on the outside
Textured RAL 7035
Mounting plate: Zinc-plated

Stainless steel:
Enclosure frame: Bare
Door, side panels, roof, base/plinth, and rear panel:
Brushed, grain 240
Mounting plate: Zinc-plated

Protection category:
IP 65 to EN 60 529/10.91

Supply includes:
Enclosure frame with door (with additional cam top and bottom), roof/base plate, rear panel, side panels, mounting plate.

Note:
According to ATEX an EExp empty enclosure cannot be certified.

Width (B) in mm	600	800	600	800	600	800	1000	600	800	600	–
Height (H) in mm	1400	1400	1600	1600	1800	1800	1800	1800	1800	1800	–
Depth (T) in mm	500	500	500	500	400	400	400	500	500	600	–
Mounting plate width (F) in mm	499	699	499	699	499	699	899	499	699	499	–
Mounting plate height (G) in mm	1296	1296	1496	1496	1696	1696	1696	1696	1696	1696	–
Model No. TS sheet steel	**8645.560**	**8845.560**	**8665.560**	**8865.560**	**8684.560**	**8884.560**	**8084.560**	**8685.560**	**8885.560**	**8686.560**	–

Width (B) in mm	800	600	800	600	800	600	800	600	800	600	800
Height (H) in mm	1800	2000	2000	2000	2000	2000	2000	2000	2000	2200	2200
Depth (T) in mm	600	400	400	500	500	600	600	800	800	600	600
Mounting plate width (F) in mm	699	499	699	499	699	499	699	499	699	499	699
Mounting plate height (G) in mm	1696	1896	1896	1896	1896	1896	1896	1896	1896	2096	2096
Model No. TS sheet steel	**8886.560**	**8604.560**	**8804.560**	**8605.560**	**8805.560**	**8606.560**	**8806.560**	**8608.560**	**8808.560**	**8626.560**	**8826.560**

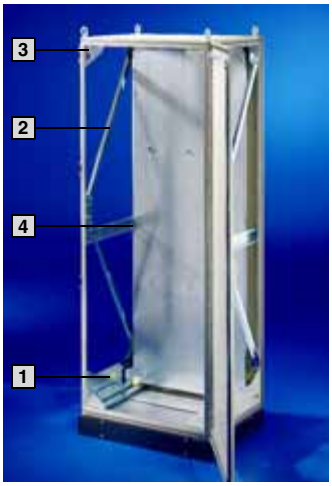
Width (B) in mm	800	1000	600	800	600	600	800	800	–	–	–
Height (H) in mm	1800	1800	1800	1800	1800	2000	2000	2000	–	–	–
Depth (T) in mm	400	400	500	500	600	600	600	800	–	–	–
Mounting plate width (F) in mm	699	899	499	699	499	499	699	699	–	–	–
Mounting plate height (G) in mm	1696	1696	1696	1696	1696	1896	1896	1896	–	–	–
Model No. TS stainless steel	**8454.660**	**8461.660**	**8457.660**	**8455.660**	**8458.660**	**8452.660**	**8450.660**	**8460.660**	–	–	–

Delivery times available on request.

Accessories Page 832 **Cable entry** From page 964

For areas at risk from earthquakes





TS 8 for earthquake zone 1, 2 and 3 to Bellcore
TS 8806.500:
W x H x D 800 x 2000 x 600 mm

With base/plinth (base/plinth components front and rear and base/plinth trim, side, see page 835), 100 mm high, with weight load of 125 kg distributed evenly over the mounting plate.

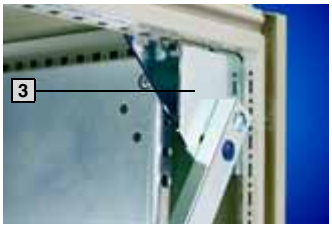
Note:
These versions have been tested and meet the requirements to Telcordia GR 63-CORE. They should be seen as a comparative variable to the customer's own plant, since the certification of empty enclosures is not possible.

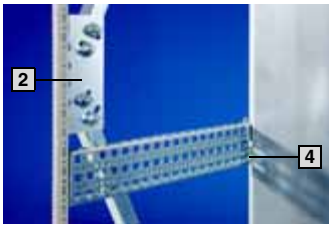
TS 8 for earthquake zone 4 to Bellcore
TS 8806.500:
W x H x D 800 x 2000 x 600 mm

Fitted with:
- Earthquake kit and
- Base/plinth, complete see page 153,

with weight load of 450 kg distributed evenly over the mounting plate.

Rittal service:
- Mounting on the enclosure available on request.





Earthquake kit

for TS 8806.500

Material:
Sheet steel

Surface finish:
Zinc-plated, passivated

Supply includes:

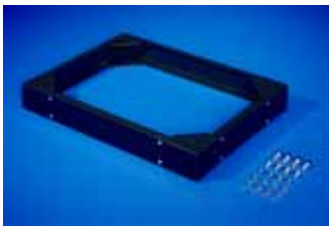
1 2 side reinforcements, bottom

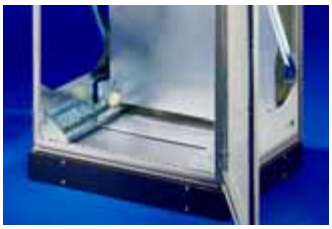
2 2 bracing struts each, sides

3 8 gusset plates

4 Mounting plate attachment and reinforcement including assembly parts

Packs of	Model No. TS
1 set	**8613.860**





Base/plinth, complete

for TS 8806.500

Material:
Sheet steel.
Corner pieces 5 mm
Trim panels 2 mm

Surface finish:
Powder-coated in RAL 7022

Supply includes:
1 set =
- 4 corner pieces
- 2 depth stays
- 1 trim panel each front and rear

fully assembled.

Base/plinth height	Packs of	Model No. TS
100 mm	1 set	**8601.860**

Accessories Page 832 **Base/plinth** Page 834

Command Panel VIP 6000

Diversity: Frame and front design



The VIP 6000 offers exceptionally diverse opportunities.

Each of the three frames conveys its own design line with special functions.

Each enclosure is manufactured to order and covers every conceivable requirement. Every operator panel is assembled quickly and precisely.

Should you have any queries, please contact your specialist Rittal advisor.

As we have said, there's always a solution!

Protective rights for frames:
German patent
No. 195 25 876
German patent
Nr. P 41 09 695
European patent no. 0 505 681
with validity for CH, FR, GB, IT
European patent no. 0 839 299
with validity for FR, GB, IT
Jap. patent no. 3199745
Jap. patent no. 3221506
South Korean patent
No. 97-70 77 12
US patent no. 5,921,050

German registered design
No. M 94 08 533
IR Reg. Des. No. DM/032 843
with validity for BE, CH, ES, FR, IT, NL
Austral. Reg. Des. No. 125352
Japan. registered design
No. 983 783
Austrian Registered Design
No. 17467
Swedish Registered Design
No. 58 996

South Korean Reg. Des.
No. 191148
UK Reg. Des. No. 2047055
US Design Patent No.
Des. 375,726
Brazilian design pattern
No. DI 5500 709-0

Approvals,
see page 31.

Three customised design lines

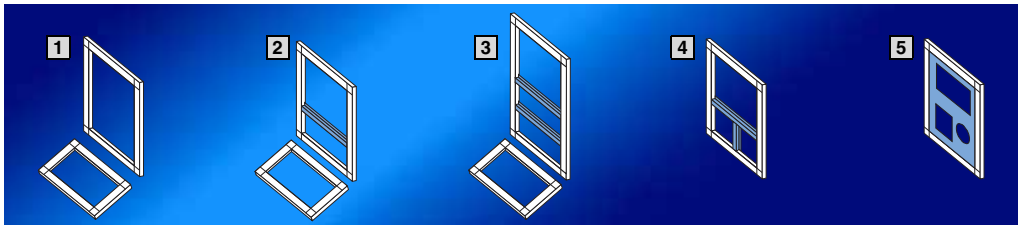


Wide frame
A frame and handle in one; the ideal choice where enclosures with fins all round are used for better heat dissipation.

Narrow frame
An eye-catching design with its stylish lines, particularly for small enclosures.

Combined handle
The soft-coated frame at the sides is particularly sympathetic to the touch. This is also suitable for use with enclosures with fins at the sides.

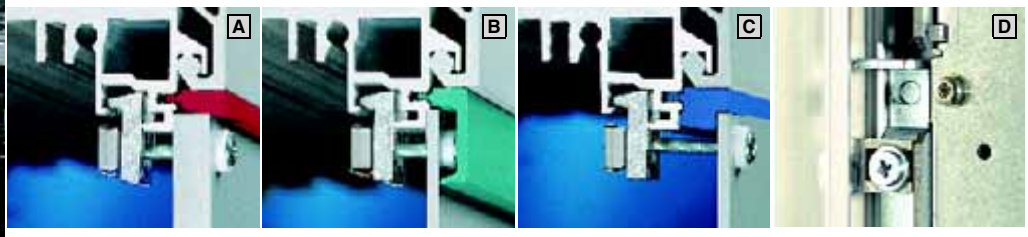
Individual front design



1 Without subdivision
2 With cross member or sealing bar
3 With two cross members or sealing bars, including combinations
4 Combined with horizontal/vertical cross member or sealing bar
5 Adaptor plate with individual cutouts

Attachment/trim

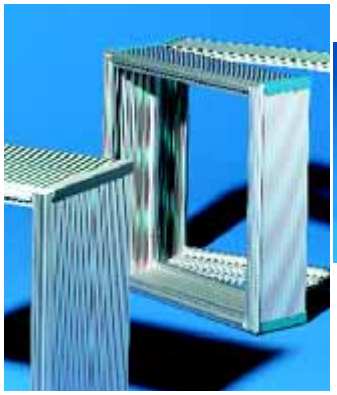




Each attachment point all round is achieved with sliding retaining claws.

The screw heads disappear stylishly beneath the cover trim (A).
Front panels with threaded bolts may also be combined with the end trim (B) or spacer trim (C).
Panels with screw clamp (D) are mounted with the end trim.

Diversity: Enclosures, rear panels, heat dissipation



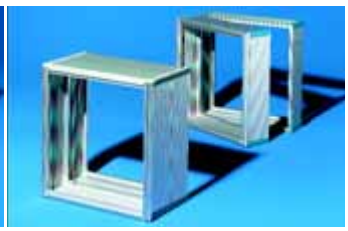
Tailor-made operating housings



There is a choice of five installation depths (155, 185, 295, 328 and 438 mm) available. Either screw-fastened or hinged, depending on requirements.



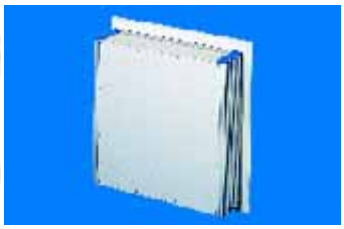
They provide space e.g. for: industrial PCs, machine control panels, flat screens and monitors, keyboard drawers, drives, bus modules and every other conceivable application.



Versatile configuration is individual and easy, thanks to the internal screw channels.



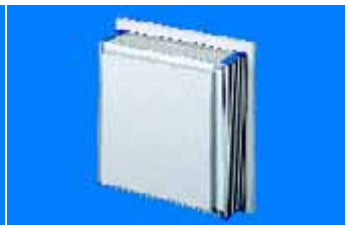
Rear panels to order



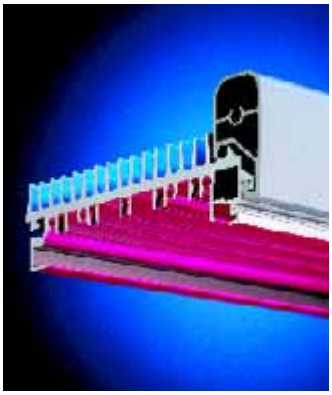
Screw-fastened/vertically or horizontally hinged –



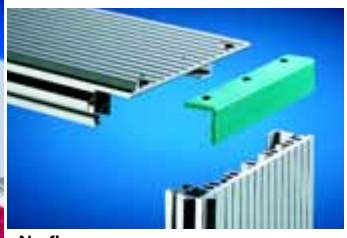
choose the rear panel according to your servicing requirements.



A depth extension of 45 or 245 mm can also be achieved using special rear panels.

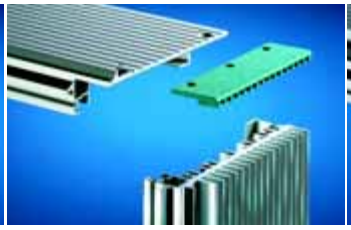


Effective heat dissipation



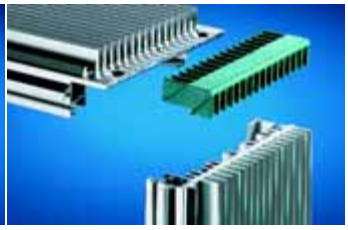
No fins

Because it is equipped with cooling fins, the VIP 6000 solution often eliminates the need for active cooling components. Even the VIP 6000 enclosure version without fins boasts excellent heat loss dissipation.



Fins at sides

For an installation depth of 155 mm, with all-round cooling fins the dissipatable heat loss is increased by approximately 30%. With air circulation inside the enclosure, the dissipatable heat loss is increased by up to



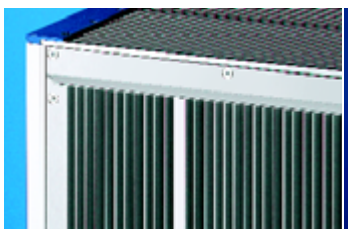
Fins all round

a further 15%. A further significant increase in heat dissipation can be achieved with the modular cooling rear panel.

Dissipatable heat loss[1)]				
Installation depth 155 mm	19″/ 7 U	Rear cooling panel, modular	19″/ 7 + 3.5 U	Rear cooling panel, modular
No fins	80 W	88 W	100 W	110 W
Fins at sides	95 W	105 W	115 W	127 W
Fins all round	110 W	121 W	130 W	148 W

[1)] P_v (W) at ΔT = 20 K

Enclosures with installation depth 185 mm and 328 mm are directly behind the front frame at a depth of 44 mm, without fins.



Cooling fins on the rear cooling panel considerably increase the dissipatable heat loss.



VIP SK small cooling unit
This cooling unit provides added peace of mind when cooling fins are not enough.

Command Panel VIP 6000

Diversity: Keyboard housing and ergonomics

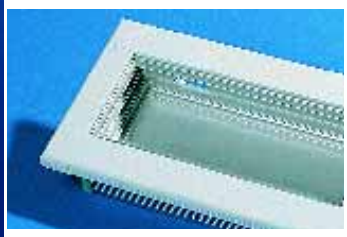


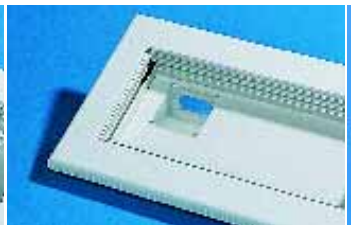
Further diversity from the modular system:

Keyboard housing in three different depths.



The matching keyboard housing







For all three frame types, keyboard housings are available in the installation depths 105 and 44 mm. For the wide frame, a depth of 27 mm is additionally available in two variants. The width of the keyboard and operating housing is identical with the wide VIP 6000 frame. With narrow and combined VIP 6000 frames, different widths of keyboard and operating housings may also be used.



Keyboard housing connectors for wide frames and . . .



Wide frame



Combined frame



Narrow frame

Depending on the chosen VIP 6000 frame, rigid and adjustable connections between the operating housing and the keyboard housing are available.

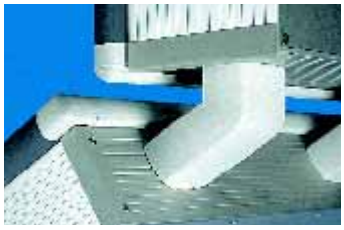


Frame connector and cable tube, rigid
Tilting angle 120°.



Frame connector, adjustable and cable tube, flexible
Tilting angle adjustable from 75° – 120° in 7.5° increments.

. . . for narrow and combined frames



Enclosure duct connector
Tilting angle 120°, rigid, with integral cable tube, for enclosure installation depth 105 mm.



Enclosure bar connector
Tilting angle 120°, rigid, for enclosure installation depth 44 mm.



Hinged frame connector
Tilting angle 75° – 120° infinitely adjustable.

Diversity: Keyboard housing and ergonomics



Precisely the right position







Different viewing angles of the machine, whether the operating staff are tall or short, sitting or standing – with Rittal support arm systems, the command panel is always in the optimum position. Depending on the system configuration, jib length and enclosure weight, support arm systems CP-L or CP-XL are used. If you want to combine a high load capacity with a stylish look, system combinations provide the ideal solution.



Always within reach









Tailored precisely to the operator's requirements, various handle sets may be fitted in accordance with ergonomic requirements. "Steering" the enclosure becomes child's play.



Stationary or mobile







Floor-standing systems in a variety of designs – even height-adjustable – round off the application diversity of the VIP 6000 Command Panel.

Diversity: Configuration examples

Nothing's impossible . . .

A kaleidoscope of incredible solution diversity. Configure your perfect enclosure.

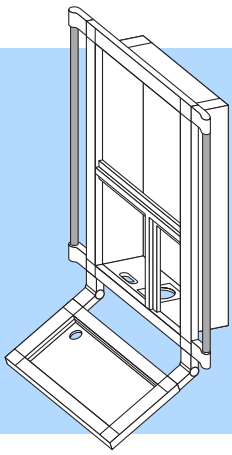
Allow yourself to be inspired by these examples: e.g. by the front divisions, the handle arrangements, the enclosure depths, and much more besides.



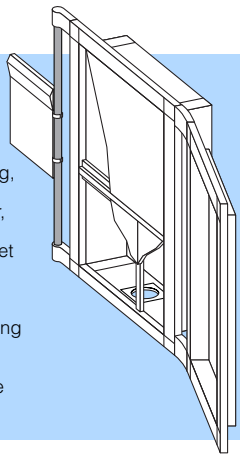
. . . with wide frame.

A small selection from the wide range of opportunities available.
For enclosures with cooling fins, the wide frame is important.

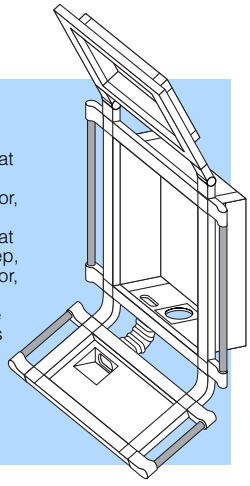
Example A
- Operating housing, 155 mm deep
- Keyboard housing, 27 mm deep, with cable entry grommet
- Frame connector, adjustable
- Vertical handle set
- With vertical and horizontal cross member
- Support arm connection at bottom



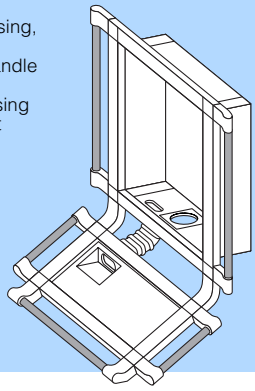
Example B
- Operating housing, 155 mm deep
- Side keyboard housing, 44 mm deep
- Frame connector, rigid
- Vertical handle set with clipboard
- With horizontal cross member and vertical sealing bar
- Support arm connection at the bottom



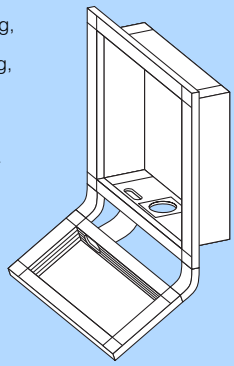
Example C
- Command panel, 155 mm deep
- Keyboard housing at top, 44 mm deep, with frame connector, adjustable
- Keyboard housing at bottom, 44 mm deep, with frame connector, rigid
- Cable tube, flexible
- Vertical handle sets
- Support arm connection bottom



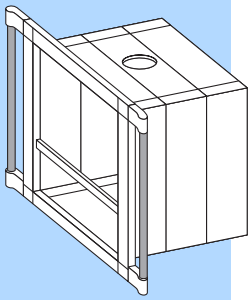
Example D
- Operating housing, 155 mm deep, with vertical handle set
- Keyboard housing with handle set horizontal and vertical
- Cable tube, flexible
- Support arm connection at bottom



Example E
- Operating housing, 155 mm deep
- Keyboard housing, 105 mm deep
- Frame connector and cable tube, rigid
- Support arm connection at bottom



Example F
- Operating housing, 438 mm deep, e.g. for colour screen
- With handle set vertical
- With horizontal sealing bar
- Support arm connection top

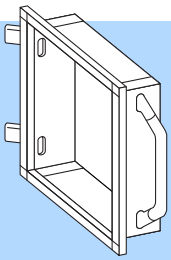


Diversity: Configuration examples

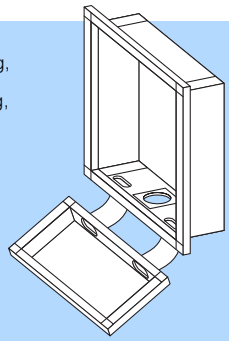
. . . with narrow frame.

Stylish lines for small enclosures and those without fins.

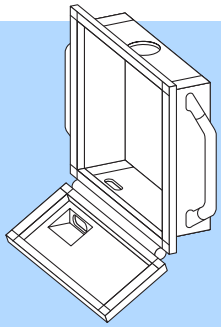
Example G
- Operating housing, 155 mm deep
- With U handle, vertical
- Enclosure connector, adjustable, on l/h side for vertically hinged wall mounting



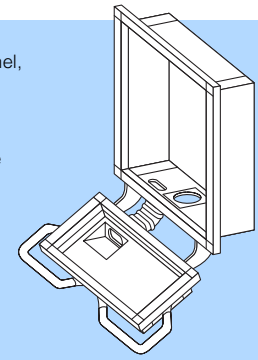
Example H
- Operating housing, 155 mm deep
- Keyboard housing, 105 mm deep
- Enclosure duct connector
- Support arm connection at the bottom



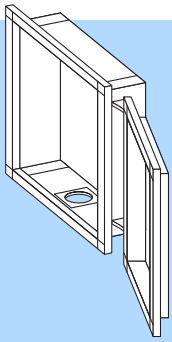
Example I
- Operating housing, 155 mm deep
- Keyboard housing, 44 mm deep
- Hinged frame connector
- U handles, vertical
- Cable tube, flexible
- Support arm connection, top



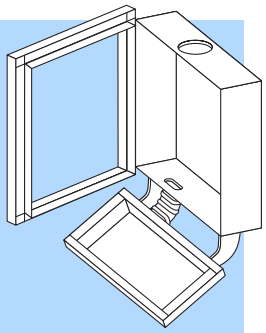
Example J
- Command panel, 155 mm deep
- Keyboard housing, 44 mm deep
- With enclosure bar connector
- With corner handles
- Cable tube, flexible
- Support arm connection at bottom



Example K
- Operating housing, 155 mm deep
- Keyboard housing, 44 mm deep
- Enclosure bar connector
- Support arm connection at bottom



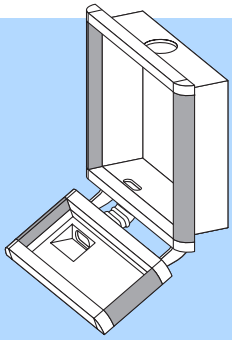
Example L
- Operating housing, 185 mm deep, hinged
- Keyboard housing, 44 mm deep
- Enclosure bar connector
- Cable tube, flexible
- Support arm connection top



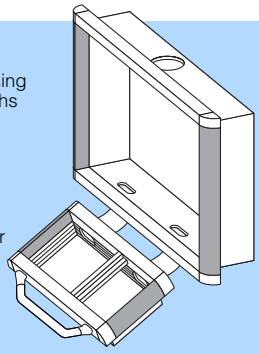
. . . with combined frame.

The soft-coated frame at the sides is particularly sympathetic to the touch.

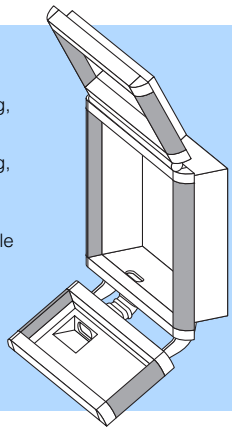
Example M
- Operating housing, 155 mm deep
- Keyboard housing, 44 mm deep
- Enclosure bar connector
- Cable tube, flexible
- Support arm connection top



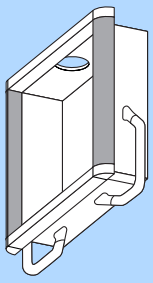
Example N
- Operating and keyboard housing in various widths
- Keyboard housing, 105 mm deep, with cross member
- Enclosure duct connector
- U handle horizontal
- Support arm connection top



Example O
- Command panel, 155 mm deep
- Keyboard housing, top, with hinged frame connector
- Keyboard housing, bottom, with enclosure bar connector
- Cable tube, flexible
- Support arm connection, top



Example P
- Operating housing, 155 mm deep
- Corner handles
- Support arm connection, top





Selection: Operating housing/keyboard housing

We need the following information in order to deal with your enquiry/order:
- Model No. front frame: CP 6392.X09
- The dimensions and number of panels/front panels to be installed in the operating/keyboard housing
- Design code number for the operating/keyboard housing

Protection category:
IP 65 (if the opening in the enclosure is covered or sealed in accordance with the protection category).

Order form, available on the Internet.

1. Front frame

Select the frame to match your requirements. It is used automatically for a keyboard housing as well.

Model No. CP Command panel

6	3	9	2	.		0	9

Model No. CP Keyboard housing

6	3	5	1	.		0	9



.009



Wide frame 0
Extruded aluminium section

Die-cast zinc corner pieces

Colour: RAL 7035[1]
finely textured



.109



Combined frame[2] 1
Extruded aluminium section

Soft-coated frame similar to RAL 7024 (sides), vertical

Die-cast zinc corner pieces

Note:
For visual reasons only enclosures without fins or with fins on the side should be mounted here.

.209





Narrow frame[2] 2
Extruded aluminium section

Die-cast zinc corner pieces

Note:
For visual reasons only enclosures without fins should be mounted here.

[1] Other RAL colours available on request.
[2] For keyboard housing depth 27 mm not possible (see selection 4.1).

2. Panel dimensions

2.1 For operating housings CP 6392.X09 and
2.2 For keyboard housings CP 6351.X09
On the order form, please state the width (B) x height (H) x depth (T) of the control components and the manufacturer/model, with due regard for the installation criteria (see below).

Checking the installation criteria

Please check whether your operator panel is installed directly into the VIP 6000. Otherwise, an adaptor panel is needed – cf. 3.2, design code number **6**, page 162.
The dimensions of the operating panel and keyboard housing are derived from the dimensions of your panel and the number of cross members.

1 **7 to 13 mm edge spacing** of the mounting hole or bolt.

2 **Front panel projection** on sides with mounting holes or bolts **at least 17 mm,** on sides without mounting holes at least 6 mm.

3 **Front panel thickness** depending on the type of trim section variable, see page 163, version 3.4.

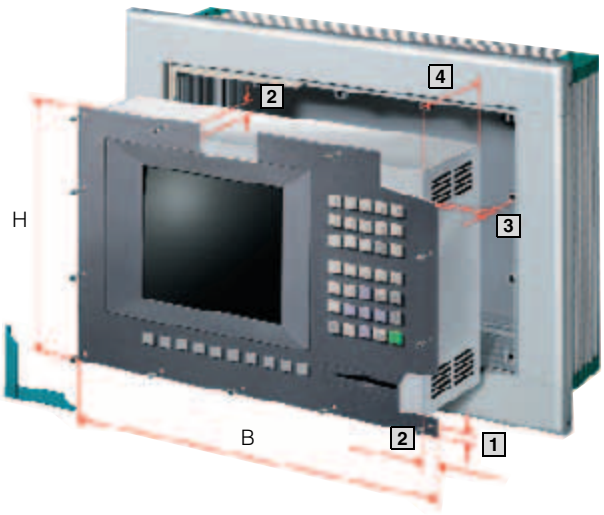
4 **Installation depths:**
Operating housing = 155 mm, 185 mm[1], 295 mm[1], 328 mm[1], 438 mm[1].
Command panel **with 45 mm deep rear panel**[2] = 200 mm, 230 mm[1], 340 mm[1], 373 mm[1], 483 mm[1].
Command panel **with 245 mm deep rear panel**[2] = 400 mm, 430 mm[1], 540 mm[1], 573 mm[1], 683 mm[1].

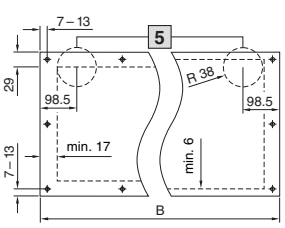
5 For versions with a hinged rear panel, the maximum installation depth is reduced by 27 mm in the vicinity of the lock.

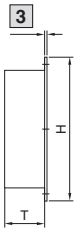
[1] Enclosure without fins with a 60 mm deeper rear section available on request.

[2] Other depths available on request.

Note:
Load information for installed equipment, see page 1186.







3.1 Installation depth

Material:
Enclosure:
Extruded aluminium section
Corner protectors:
Plastic, self-extinguishing

Surface finish:
Enclosure: Natural anodised

Note:
Support arm connection see 3.6.
Drawing view from above.
R/h hinge is also possible.

Detailed drawing,
see page 1095/1096.





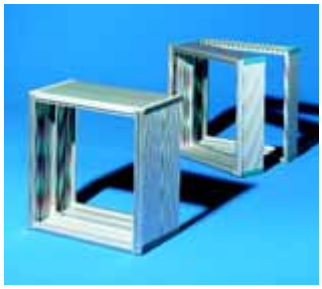




Installation depth 155 mm



Installation depth 185 mm[1)]

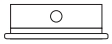


Installation depth 295 mm[1)]

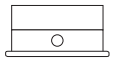
Support arm system CP-L	prepared	prepared	prepared
Support arm system CP-XL	with adaptor CP 6528.500	with adaptor CP 6528.500	with adaptor CP 6528.500



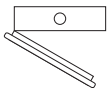
screw-fastened — 3.1 1



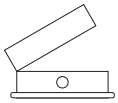
screw-fastened — 3.1 2



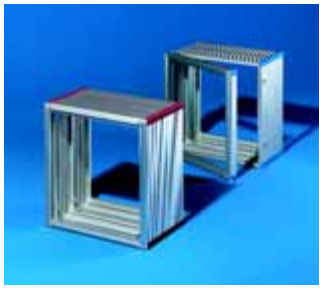
screw-fastened — 3.1 4



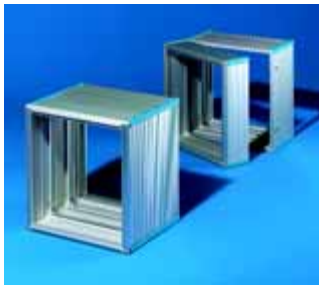
hinged[2)] — 3.1 3



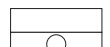
hinged[2)] — 3.1 5



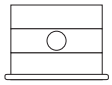
Installation depth 328 mm[1)]



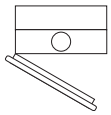
Installation depth 438 mm[1)]



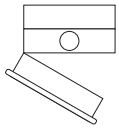
screw-fastened — 3.1 6



screw-fastened — 3.1 8

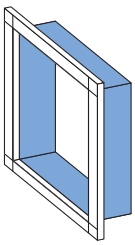


hinged[2)] — 3.1 7



hinged[2)] — 3.1 9

Support arm system CP-L		with adaptor CP 6528.000[3)]	with adaptor CP 6528.000[3)]
Support arm system CP-XL		prepared	prepared



3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8

[1)] Enclosure without fins with a 60 mm deeper rear section available on request.

[2)] Cam lock with double-bit lock insert, may be exchanged for 41 mm lock inserts, type C, see page 888.

[3)] Provided the admissible load capacity of the support arm system is adequate, see page 188.

Selection: Operating housings

3.2 Front design

Cross member
For horizontal and/or vertical division. With channel on both sides for mounting kits, see page 1037.

Material:
Extruded aluminium section, RAL 7035

Sealing bar
For horizontal and/or vertical division. The “slot-free” division produces a height gain of 28 mm.

Material:
Extruded aluminium section 8 x 20 mm, natural anodised

Adaptor plate

Material thickness:
3 mm aluminium, natural anodised.

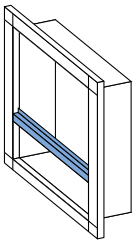
Please specify the dimensions for the front panel and the desired holes and cutouts.

Spacing and built-in trim panel
For additional space for cable entry and for installing switches/ indicator lights, emergency off/ key switches, CD-ROM drives, interfaces etc. With channel on one side for mounting kits, see page 1037.

Material:
Extruded aluminium section, natural anodised.

Detailed drawing,
see page 1038.

Also required:
Mounting kit for the installation of front panels, operating panels and keyboards in command panels and keyboard housings, see page 1037.



3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8

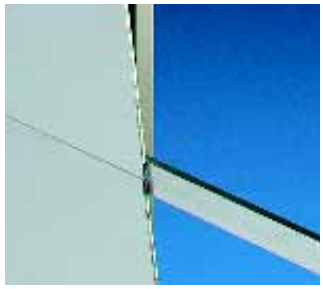




Without cross member 3.2 0



With one cross member 3.2 1



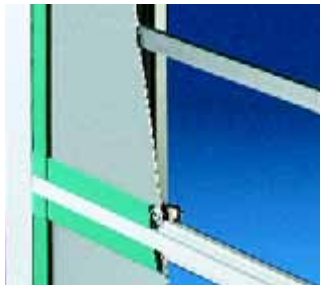
With one sealing bar[1)] 3.2 2



With two cross members 3.2 3



With two sealing bars[1)] 3.2 4



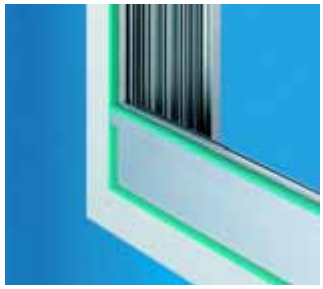
With one cross member and one sealing bar[1) 2)] 3.2 5



With one adaptor plate (to specifications) 3.2 6



With spacing and built-in trim panel at the top[3)] 3.2 7



With spacing and built-in trim panel at the bottom[3)] 3.2 8



With front panel hinged[4)] 3.2 9
If, for example, a disk drive built into the operator panel needs this free access.

Standard design
- Screw-fastened from the outside
- R/h hinge

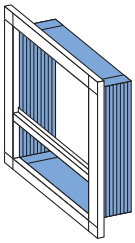
[1)] Not possible with spacer trim (cf. 3.4).

[2)] Unless otherwise specified: Sealing bar at the top, cross member at the bottom.

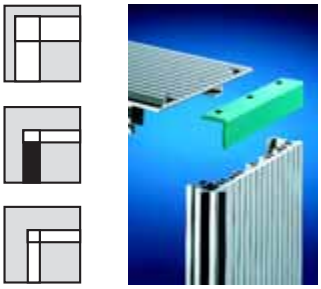
[3)] Only for use in conjunction with end trim.

[4)] Screw-fastened from the inside, with cam or l/h hinge on request.

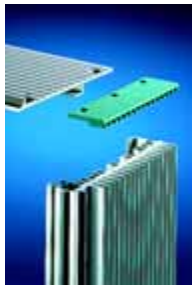
3.3 Cooling fins



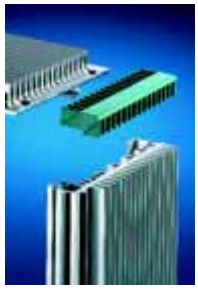
3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8
		■					



No fins 3.3 1



Fins at sides 3.3 2



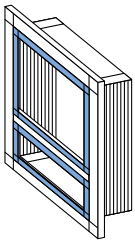
Fins all round 3.3 3

Fins are selected according to the heat loss to be dissipated, see page 155.

Enclosures in installation depth 185 mm and 328 mm are directly behind the front frame at a depth of 44 mm, without fins. The colour of the corner protectors matches the trim colour selected under 3.5.

3.4 Trim types

Detailed drawing, see page 1097.



3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8
			■				



Cover trim 3.4 1
To conceal the front panel assembly screws. For front panel thickness up to 3.5 mm.

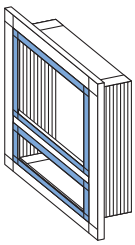


End trim 3.4 2
Attractively finishes off the space between the front panel and the frame section. For all front panel thicknesses.
Only this trim may be selected when installing drawers.



Spacer trim 3.4 3
For installed equipment flush with the frame section.
For front panel thickness approx. 3.5 mm.

3.5 Trim colours



3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8
				■			



Turqoise (similar to RAL 5018) 3.5 1

Bright blue (similar to RAL 5005) 3.5 2

Bright red (similar to RAL 3001) 3.5 3

Pebble grey (similar to RAL 7030) 3.5 5

Graphite grey (similar to RAL 7024) 3.5 6

Note:
Enclosure corner protectors are likewise supplied in the chosen colour.
Other colours available on request with larger orders.

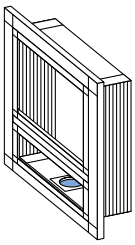
Selection: Operating housings

3.6 Support arm/ wall and pedestal connection

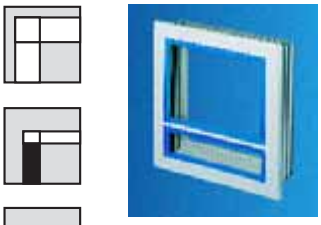
3 different support arm systems, see page 188 and various floor-standing systems, see page 228 are available.

Note:
Support arm connection CP-S for small enclosures with an installation depth of 155 mm are selected by adding an “S” after the design code number.

Detailed drawing,
see page 1102.



3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8



Without connection 3.6 0



Connection top 3.6 1



Wall connection rigid,
see page 1035



Connection bottom 3.6 2



Connection top and bottom,
one cover plate included
3.6 3

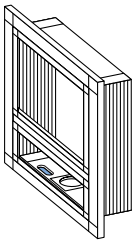


Wall connection vertically hinged,
see page 907

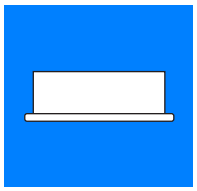
Examples showing the versatility for mounting on surfaces.

3.7 Preparation for mounting keyboard housings

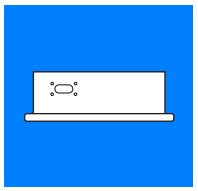
Detailed drawing,
see page 1098.



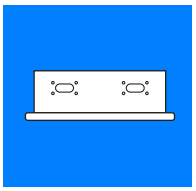
3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8



Without connection to the keyboard housing 3.7 0

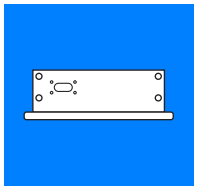


Connection with hinged frame connector, rigid or adjustable 3.7 1

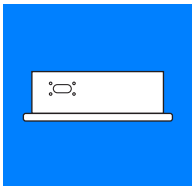


Connection with enclosure duct connector 3.7 2

To fit keyboard housing depth:	–	105	105
	–	44	–
	–	27	–
Connection of operating housing to keyboard housing: (Selection 4.4, page 168)	–	Frame connector, rigid/adjustable	Enclosure duct connector
Cable tube: (Selection 4.5, page 169)	–	rigid/flexible	Enclosure duct connector



Connection with enclosure bar connector 3.7 3



Connection with hinged frame connector 3.7 4

To fit keyboard housing depth:	–	44	105 44
Connection of operating housing to keyboard housing: (Selection 4.4, page 168)	–	Enclosure bar connector	Hinged frame connector
Cable tube: (Selection 4.5, page 169)	–	flexible	flexible

3.8 Rear panels



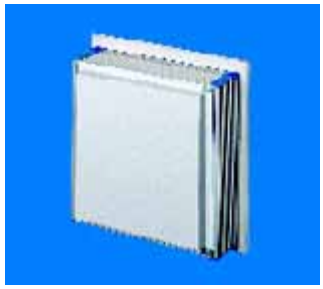
Screw-fastened 3.8 1

Material:
Aluminium,
natural anodised



Hinged[1] 3.8 2
For rapid
service access

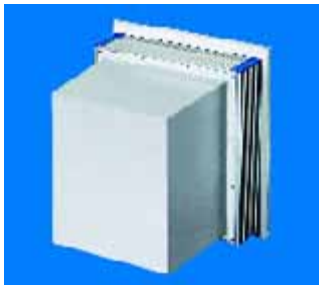
Material:
Aluminium,
natural anodised



Depth plus 45 mm 3.8 3
Hinged,
screw fastener

Material:
Sheet steel, RAL 7035

[1] On the longest side (right/bottom), cam with double-bit insert, may be exchanged for lock inserts 41 mm, type C, see page 888, plastic handles and T handles, type C, see page 886/887.



Depth plus 245 mm,
square[2], screw-fastened 3.8 4

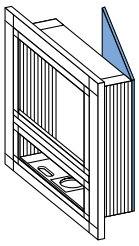
Material:
Sheet steel, RAL 7035

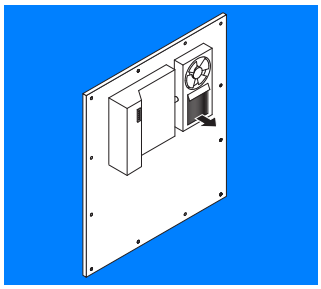
[2] For 482.6 mm (19″)/7 U concave



Hinged[1] 3.8 5
for heavy installed
equipment

Material:
Aluminium,
natural anodised

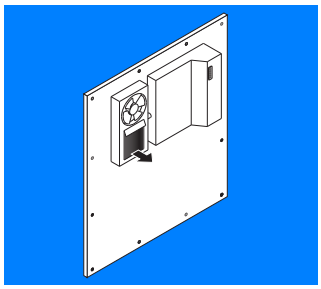




Screw-fastened with built-in VIP SK small cooling unit, condenser mounting top left 3.8 6
Recommendation for command panel design
(see 3.1 Installation depth, 3, 5, 7, 9)

Material:
Aluminium,
natural anodised

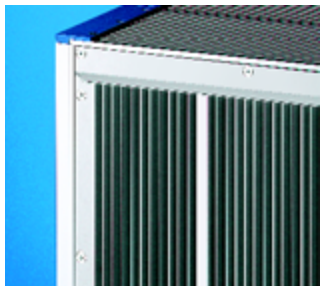
Detailed drawing,
see page 595.



Screw-fastened with built-in VIP SK small cooling unit, condenser mounting top right 3.8 7
Recommendation for command panel design
(see 3.1 Installation depth, 3, 5, 7, 9)

Material:
Aluminium,
natural anodised

Detailed drawing,
see page 595.



Rear cooling panel modular[3] 3.8 8
Significantly increases heat dissipation from the enclosure!

Material:
Extruded aluminium section, natural anodised

Detailed drawing and arrangement of the sections,
see page 1103.

3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8

[3] When installing the pull-out keyboard CP 6002.100 (see page 1048) in VIP 6000, design variant 3.1, no. 1, the 11 mm cooling fins protruding into the enclosure and screw channels in this area may be milled off.
Please state the installation position when ordering.

Selection: Keyboard housings

4.1 Keyboard housing

Without fins.

For installing or positioning keyboards on top (with a depth of 27 mm).

All keyboard housings are custom-produced to your dimensions. Where the wide front frame is selected, the width of the keyboard housing is dependent on the operating housing.

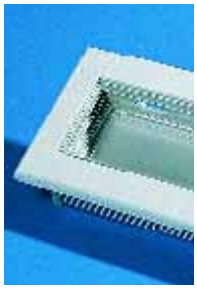
Material:
Extruded aluminium section

Detailed drawing,
see page 1098 – 1100.

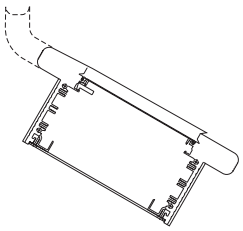
Also required:

Mounting kit for installing front panels, operating panels and keyboards in command panels and keyboards housings,
see page 1037.





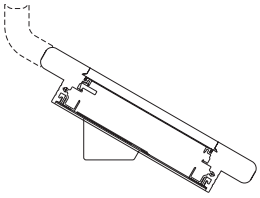
Installation depth 105 mm for built-in keyboards 4.1 1

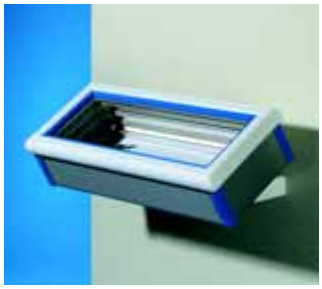






Installation depth 44 mm for built-in keyboards 4.1 2





Example of the versatility of the keyboard housing: External mounting on doors
With all keyboard housings, on request the rear panel may be supplied prepared for external mounting on surfaces.

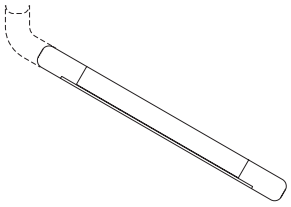
Also required:

Enclosure duct connector CP 6006.000, see page 1035.
For mounting and cable entry.
Cross-brace for door TS 8800.960/TS 8800.980, see page 895,
when mounting on 600/800 mm wide doors TS, CM, CL, ES.

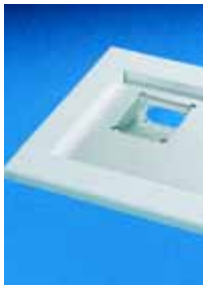




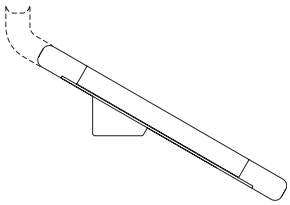
Depth 27 mm with cable entry grommet, for desktop enclosures 4.1 3

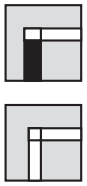






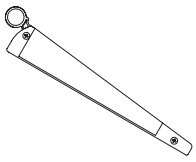
Depth 27 mm with cable tube, flexible, for desktop enclosures 4.1 4

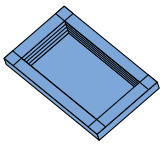






Support for keyboards with cable entry grommet[1] 4.1 5





4.1	4.2	4.3	4.4	4.5

[1] Only for use in conjunction with hinged frame connector, see 4.4 design code number **5.**

4.2 Trim types[1)]

Detailed drawing,
see page 1097.





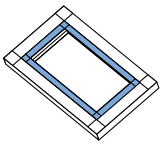
Cover trim 4.2 1
To conceal the front panel assembly screws. For front panel thickness up to 3.5 mm.



End trim 4.2 2
Attractively finishes off the space between the front panel and the frame section. For all front panel thicknesses.



Spacer trim 4.2 3
For installed equipment flush with the frame section.
For front panel thickness approx. 3.5 mm.



4.1	4.2	4.3	4.4	4.5

[1)] Cannot be selected with keyboard housing depth 27 mm or support for keyboards. In such cases, please enter an **X.**

4.3 Trim colours[1)]

Note:
Enclosure corner protectors are likewise supplied in the chosen colour.
For larger orders, other colours are available on request.



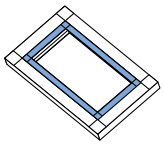
Turqoise (similar to RAL 5018) 4.3 1

Bright blue (similar to RAL 5005) 4.3 2

Bright red (similar to RAL 3001) 4.3 3

Pebble grey (similar to RAL 7030) 4.3 5

Graphite grey (similar to RAL 7024) 4.3 6



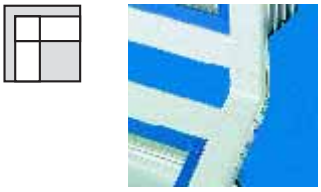
4.1	4.2	4.3	4.4	4.5

[1)] Cannot be selected with keyboard housing depth 27 mm or support for keyboards. In such cases, please enter an **X.**

Selection: Keyboard housings

4.4 Keyboard housing connector

With keyboard housing, supplied loose to connect operating and keyboard housings.



Frame connector (rigid) 4.4 1



Frame connector (adjustable) 4.4 2



Enclosure duct connector 4.4 3

	Frame connector (rigid)	Frame connector (adjustable)	Enclosure duct connector
Keyboard housing depth:	105	105	105
	44	44	–
	27	27	–
Tilt angle:	120°, rigid	75 – 120°, adjustable in 7.5° increments	120°, rigid
Cable tube:	See 4.5	See 4.5	Integral
	To fit operating and keyboard housings with a wide frame in the same width.	To fit operating and keyboard housings with a wide frame in the same width.	To fit operating housings with keyboard housings 105 mm deep, also available in different widths.
	Material: Die-cast zinc, RAL 7035	**Material:** Die-cast zinc, RAL 7035	**Material:** Aluminium, RAL 7035

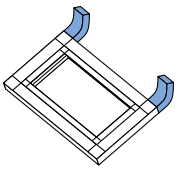


Enclosure bar connector 4.4 4



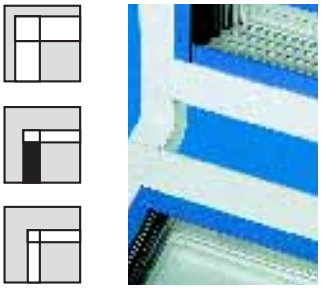
Hinged frame connector 4.4 5

	Enclosure bar connector	Hinged frame connector
Keyboard housing depth:	–	105
	44	44
Tilt angle:	120°, rigid	75 – 120°, infinitely adjustable
Cable tube:	See 4.5	See 4.5
	To fit operating housings with keyboard housings 44 mm deep, also available in different widths.	To fit operating housings with keyboard housings 105, 44 mm deep and support for keyboards, also available in different widths.
	Material: Sheet steel, RAL 7035	**Material:** Aluminium, RAL 7035



4.1	4.2	4.3	4.4	4.5

4.5 Cable tube



Without cable tube 4.5 0



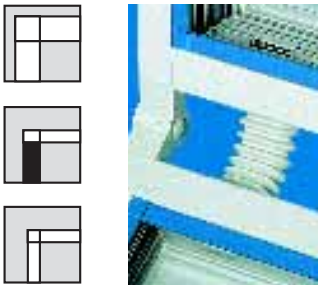
Cable tube, rigid 4.5 1

Suitable for cable entry when using the rigid frame connector (for wide frames) and keyboard housing with 105 mm installation depth.

Material:
Aluminium, RAL 7035

Note:
Not possible with:
3.1 Operating housing, design code numbers 3 and 7.

4.4 Keyboard housing connector, design code number 2.

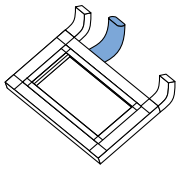


Cable tube, flexible 4.5 2

Suitable for cable entry when using the frame connector, adjustable, hinged frame connector or enclosure bar connector. Mounting on keyboard housings with 105, 44 or 27 mm deep.

Material:
Plastic, RAL 7035

Note:
Not possible with:
4.1 Keyboard housing, design code numbers 3 and 5.



4.1	4.2	4.3	4.4	4.5

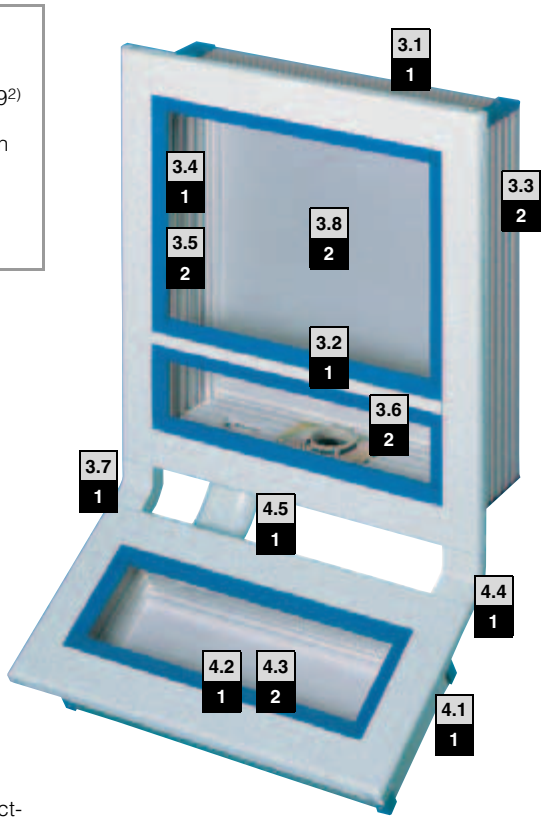
Examples

The picture opposite shows the solution we have chosen, together with its corresponding design code number.
The following key explains how the code number in our example is made up.

In order to deal with your enquiry/ order we will need the following information:

- Model No. front frame: CP 6392.X09[2)]
- The dimensions and number of panels/front panels to be installed in the operating/keyboard housing
- Design code number operating/keyboard housing

Order form, available on the Internet.



Operating housing

Model No.: CP 6392.009

Design code number:

3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8
1	1	2	1	2	2	1	2

- 3.1 1 Command panel, installation depth 155 mm
- 3.2 1 1 cross member
- 3.3 2 Cooling fins (sides)
- 3.4 1 Cover trim
- 3.5 2 Trim colour: bright blue
- 3.6 2 Support arm connection at the bottom
- 3.7 1 Connection with frame connector, rigid
- 3.8 2 Rear panel, hinged with double-bit fastener

Keyboard housing

Model No.: CP 6351.009

Design code number:

4.1	4.2	4.3	4.4	4.5
1	1	2	1	1

- 4.1 1 Keyboard housing, installation depth 105 mm
- 4.2 1 Cover trim
- 4.3 2 Trim colour: bright blue
- 4.4 1 Frame connector, rigid
- 4.5 1 Cable tube, rigid

[2)] Replace X with the number after selecting the front frame.

Note:
If the design code number does not cover your requirements, please enter an X here and enclose a written explanation.

Diversity: Enclosure, front design, attachment



The stylish, customised solution.

Three installation depths: 50 mm, 100 mm, 150 mm.

Hinged rear panels offer easy servicing.

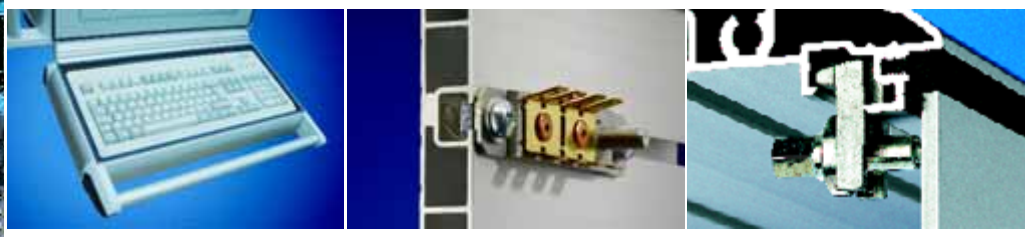
Customised to order or in standard sizes

off the shelf.

Property rights:
German patent No. 41 09 695
European patent no. 0 505 681
with validity for CH, FR, GB, IT
Jap. patent no. 3221506
German patent
No. 199 02 174
German patent
No. 100 13 283
German registered design
no. 400 02 955
IR Reg. Design no. DM/053 168
with validity for CH, FR, IT
US Design Patent No. D 456,403



Always within reach



Tailored precisely to the operator's requirements, various handle sets may be fitted in accordance with ergonomic requirements. "Steering" the enclosure becomes child's play.

All-round spring groove channels for flexible interior installation and for mounting accessories.

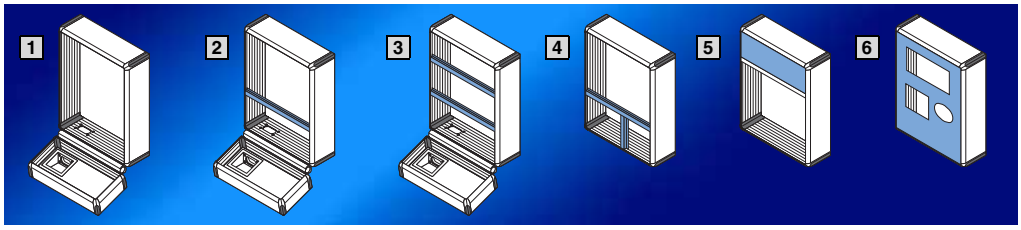
Superior seal helps to achieve protection category IP 65. For installations flush with the frame section with a front panel thickness of approx. 3.5 mm.

Individual front design

Subdivison of the operating level with Rittal standard modules covers every conceivable requirement. Individual cutouts may be achieved e.g. via the adaptor plate.

Should you have any queries, please contact your Rittal specialist advisor.

As we have said, there's always a solution!



1 Without subdivision
2 With cross member or sealing bar
3 With two cross members or sealing bars, including combinations
4 With combined horizontal/vertical cross member or sealing bar
5 With spacing panel and built-in trim panel. May be positioned at the top, bottom or side.
6 Adaptor plate with individual cutouts



All-round attachment



Every attachment point is accessible on all sides!

Movable retaining claws create sufficient play to accommodate virtually all hole spacings (distance from the panel's outer edge 7 – 13 mm). Panels with screw fastening from the front, with studs or screw clamps, may be used.

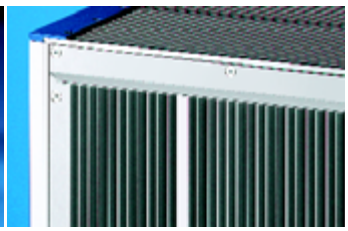
Diversity: Rear panels, keyboard housings, ergonomics



Rear panels to order







Choose the rear panel according to your servicing requirements:
- screw fastened
- hinged with cam fastener and double-bit insert
- hinged with quick-release fasteners

The modular rear cooling panel significantly increases dissipation of the heat loss from the enclosure!

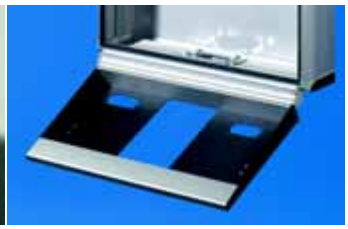
This is achieved thanks to a combination of cooling fins on the outside and screw channels on the inside, which ensure optimum heat absorption and dissipation.



Keyboard housing







Select the most suitable keyboard housing, tailored to your requirements. Two installation depths are available. The keyboard housing with an installation depth of 50 or 100 mm and the keyboard support may be attached directly to the command panel or to the enclosure door.



Precisely the right position







Different viewing angles of the machine, whether the operating staff are tall or short, sitting or standing – with Rittal support arm systems, the Optipanel is always in the optimum position. All system components for rotating, tilting, swivelling, raising and lowering are combined with one another to create incredible diversity.
Depending on the system configuration, jib length and enclosure weight, support arm systems CP-S or CP-L are used.
If you want to combine a high load capacity with a stylish look, system combinations provide the ideal solution.



Stationary or mobile







Stand systems in a variety of designs – even height-adjustable – round off the application diversity of the Optipanel.

Selection: Operating housing/keyboard housing



It's so easy!

We need the following three pieces of information in order to deal with your enquiry/order:

- Model No.: CP 6382.009
- The dimensions and number of panels/front panels to be installed in the keyboard/operating housing
- Design code number

Order form,
available on the Internet.



Operating/keyboard housing

Model No. CP

6	3	8	2	.	0	0	9

Material:
Enclosure: Extruded aluminium section
Corner pieces: Die-cast zinc
Corner protectors:
Plastic, self-extinguishing
Sealing trim: Flexible plastic section

Surface finish:
Enclosure: Natural anodised
Corner pieces: Powder-coated in finely textured RAL 7035
Corner protectors and sealing trims:
Dyed similar to RAL 7024

For larger orders, other colours similar to RAL

- 5018 (turquoise)
- 5005 (bright blue)
- 3001 (bright red)
- 7030 (pebble grey)

are available.

Protection category:
IP 65 to EN 60 529
(if the openings in the enclosure are covered or sealed in accordance with the protection category).

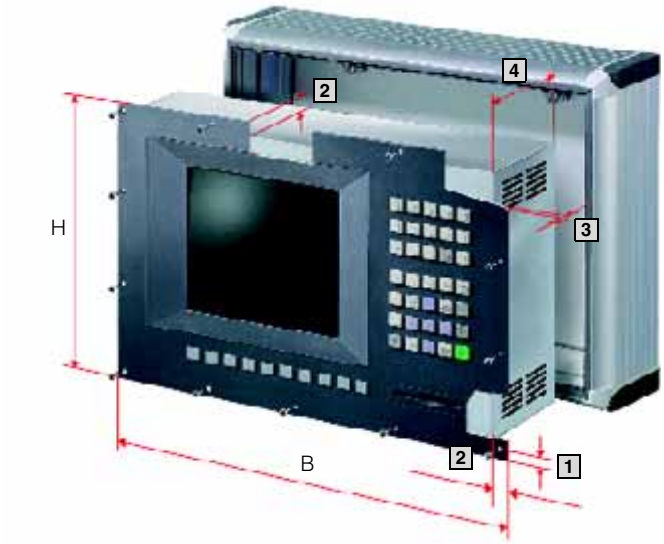
1. Panel dimensions

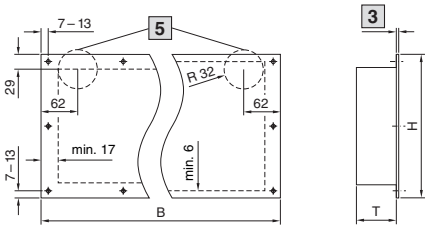
1.1 For operating housings and
1.2 For keyboard housings
On the order form, please state the width (B) x height (H) x depth (T) of the control components and the manufacturer/model.
(See installation criteria).

Checking the installation criteria

Please check whether your operator panel may be installed directly into the Optipanel. Otherwise, an adaptor panel is needed – cf. 2.2, design code number 2.
The dimensions of the operating and keyboard housing are derived from the dimensions of your panel and the number of cross members.

Note:
Different widths of operating and keyboard housings are possible (whereby only the keyboard housing may be wider than the operating housing).
For minimum size, refer to minimum front panel width under "Technical Details", page 1103.





1 **7 to 13 mm edge spacing** of the mounting hole or bolt.

2 **Front panel projection** on sides with mounting holes and bolts at least 17 mm, on sides without attachments at least 6 mm.

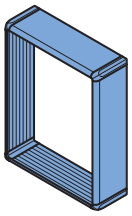
3 **Front panels up to 5 mm.** With a thickness of approximately 3.5 mm the front panel is flush with the sealing trim and the enclosure front.

4 **Installation depths:** Operating housing = 50 mm, 100 mm, 150 mm. Keyboard housing = 50 mm, 100 mm.

5 For versions with a hinged rear panel with cam fastener, the maximum installation depth is reduced by 25 mm in the vicinity of the lock.

2.1 Installation depth

Detailed drawing,
see page 1101.



2.1	2.2	2.3	2.4	2.5



50 mm 2.1 / 1



100 mm 2.1 / 2



150 mm 2.1 / 3

Note:
Installation depth > 150 mm over recessed rear panel on request (like VIP 6000, design variant 3.8, no. 3 and 4, see page 165).

2.2 Front design

Also required:

Mounting kit for installing front panels, operating panels and keyboards in command panels and keyboard housings,
see page 1037.

Detailed drawing,
see page 1101.

[1] Suitable quantity for sealing the individual separation points. Example: 3 front panels in operating housing = 2 separation points = 2 cross members/sealing bars included with the supply. Other combinations available on request.

[2] Screw-fastened from the inside, with cam or l/h hinge on request.

[3] **Detailed drawing,**
see page 1038.



Without cross member 2.2 0



With cross member[1] 2.2 1
For horizontal and/or vertical subdivision of the operating housing front.
With mounting channel on both sides to accommodate mounting kits,
see page 1037.

Material:
Extruded aluminium section, natural anodised



With an adaptor plate 2.2 2
(to specifications)

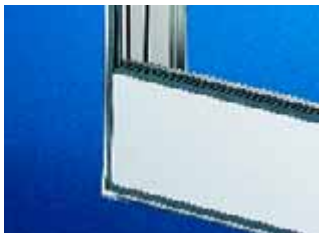
Material thickness:
3 mm aluminium, natural anodised.

Please specify the dimensions for the front panel and the desired holes and cutouts.



With spacing and built-in trim panel[3], top 2.2 3
For additional space for cable entry and for installing switches/indicator lights, emergency off/key switches, CD-ROM/disk drives, interfaces etc.

Material:
Extruded aluminium section, natural anodised



With spacing and built-in trim panel[3], bottom 2.2 4
For additional space for cable entry and for installing switches/indicator lights, emergency off/key switches, CD-ROM/disk drives, interfaces etc.

Material:
Extruded aluminium section, natural anodised



With sealing bar[1] 2.2 5
For horizontal and/or vertical subdivision of operating housings.
The “slot-free” division produces a height gain of 22 mm.

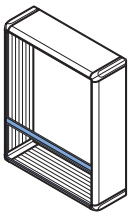
Material:
Extruded aluminium section 8 x 20 mm, natural anodised



With front panel, hinged[2] 2.2 6
For example, if a disk drive built into the operator panel needs this free access,
see page 1036.

Standard design:
- Screw-fastened from the outside
- R/h hinge

Material:
Front panel: 3 mm aluminium, natural anodised.
Extruded aluminium section: Natural anodised



2.1	2.2	2.3	2.4	2.5

2.3 Support arm wall and pedestal connection

Accessories:

Support arm components for connection of the Optipanel to the support arm system CP-S[1], CP-L see page 188 onwards. Pillars, see page 228 onwards.

Detailed drawing, see page 1102.



Without connection 2.3 0



Connection top 2.3 1



Connection bottom 2.3 2



Connection top and bottom[2)] 2.3 3

CP-L ▭ 120 x 65 mm for
Housing coupling CP 6525.1X0,
Enclosure attachment CP 6525.6X0,
Housing coupling CP-S, CP 6501.130
only applies to installation depth 100 and 150 mm



Connection top[1)] 2.3 4



Connection bottom[1)] 2.3 5



Connection top and bottom[1)2)] 2.3 6

CP-L, Ø 130 mm for
Housing coupling CP 6525.0X0,
Enclosure attachment CP 6525.5X0,
Angle coupling CP 6526.0X0
only applies to installation depth 150 mm

[1)] For support arm system CP-S, steel, for installation depth 50, 100 and 150 mm please add an **S** after the design code number.

[2)] Including a cover plate for sealing the unused section.

[3)] Unless otherwise specified, will be supplied in RAL 7024.



Note:
Wall mounting possible: hinged with CP 6016.200, see page 907.

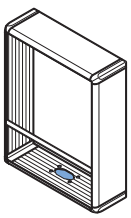


Connection at rear, top[3)] 2.3 7



Connection at rear, bottom[3)] 2.3 8

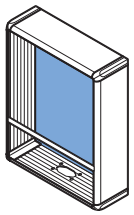
CP-L ▭ 120 x 65 mm for
Housing coupling CP 6525.1X0,
Enclosure attachment CP 6525.6X0,
Enclosure attachment, tilting CP 6902.640/.670,
Housing coupling CP-S, CP 6501.130

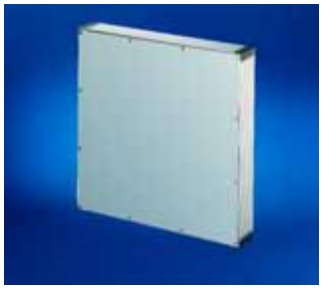


2.1	2.2	2.3	2.4	2.5

Selection: Operating housings

2.4 Rear panels





Rear panel screw-fastened

2.4 | 1



Rear panel hinged on longest side
Viewed from rear, hinged on the right or at the bottom[1) 2) 3) 4)].

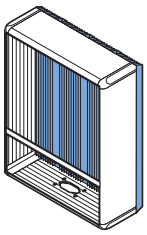
2.4 | 2



Example of the versatility of the enclosure:
External mounting on doors
With all operating/keyboard housings, on request the rear panel may be supplied prepared for external mounting on flat surfaces.

! Also required:

Enclosure duct connector CP 6006.000, see page 1035. For mounting and cable entry.
Cross-brace for door TS 8800.960/TS 8800.980, see page 895, when mounting on 600/800 mm wide doors TS, CM, CL, ES.





Rear cooling panel, modular
Increases the dissipation of heat loss from the enclosure by approx. 10%.

2.4 | 3

Material:
Extruded aluminium section

Note:
When installing the pull-out keyboard CP 6002.100 (see page 1048) in an Optipanel, design variant 2.1, no. 3, the 11 mm cooling fins and screw channels protruding into the enclosure may be milled off in this area – please specify when ordering.

Detailed drawing,
see page 1103.



Rear panel hinged with quick-release fasteners[1)]

2.4 | 4

2.1	2.2	2.3	2.4	2.5

Note:
[1)] With a support arm connection at the rear, only possible on the side opposite the support arm connection.
[2)] Not for operating housings with an installation depth of 50 mm with keyboard housings.
[3)] Standard double-bit lock insert may be exchanged for 41 mm lock inserts, type C, see page 888, plastic handles and T handles, type C, see page 886/887.
[4)] With a hinged rear panel, the maximum installation depth in the vicinity of the lock is reduced by 25 mm (see page 173, drawing point **5**).

[1)]

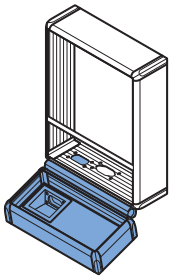

2.5 Keyboard housing

Width independent of operating housing.
The swivel bracket is infinitely adjustable from 80° to 155°.

Also required:

[1] Mounting kit for installing front panels, operating panels and keyboards in operating and keyboard housings, see page 1037.

Detailed drawing, see page 1102.



2.1	2.2	2.3	2.4	2.5



Without keyboard housing 2.5 0



With keyboard housing Installation depth 50 mm[1] 2.5 1



With keyboard housing Installation depth 100 mm[1] 2.5 2



With support for keyboards 2.5 3



Utility bars, vertically hinged with cable entry grommet[2] 2.5 4

[2] With a support bar connection at the bottom, from depth 150 mm, only in conjunction with: enclosure attachment CP-S (CP 6501.070), enclosure attachment CP-L for support arm connection ▭ 120 x 65 mm (CP 6525.6X0)

When mounting beneath surfaces, the bars may alternatively be pushed towards the rear.

Examples

The picture opposite shows the solution we have chosen, together with its corresponding design code number. The following key explains how the code number in our example is made up.

Operating/keyboard housing

Model No.: CP 6382.009

Design code number:

2.1	2.2	2.3	2.4	2.5
2	1	2	1	1

2.1 2 Command panel, installation depth 100 mm

2.2 1 With cross member

2.3 2 Support arm connection CP-L ▭ 120 x 65 mm, bottom

2.4 1 Rear panel, screw-fastened

2.5 1 With keyboard housing, installation depth 50 mm

We need the following three pieces of information in order to deal with your enquiry/order:

- Model No.: CP 6382.009
- The dimensions and number of panels/front panels to be installed in the keyboard/operating housing
- Design code number

Order form, available on the Internet.

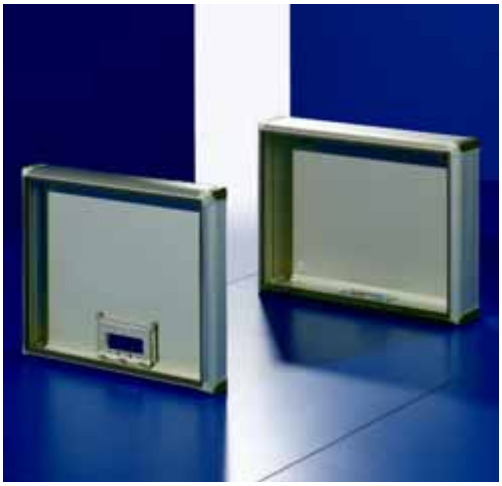
Note:
If the design code number does not cover your requirements, please enter an X here and enclose a written explanation.

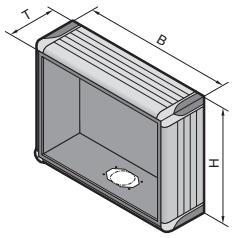


Optipanel

Standard sizes







Material:
Enclosure:
Extruded aluminium section
Corner pieces:
Die-cast zinc
Corner protectors:
Plastic, self-extinguishing
Sealing trim:
Flexible plastic section

Surface finish:
Enclosure:
Natural anodised
Corner pieces:
Powder-coated in finely textured RAL 7035
Corner protectors and sealing trims:
Dyed similar to RAL 7024

Protection category:
IP 65 to EN 60 529/10.91
(if the openings in the enclosure are covered or sealed in accordance with the protection category).

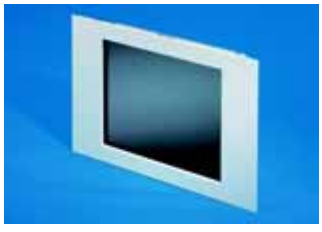
Detailed drawing,
see page 1104.

To fit front panels[1] Width x height mm		Packs of	270 x 234	482.6 x 310.3	430 x 343	430 x 343	482.6 x 354.8	482.6 x 354.8	Page
To fit TFT monitor[2]			–	–	SM 6450.010/ .030	SM 6450.010/ .030	SM 6450.020/ 0.040	SM 6450.020/ 0.040	1046
Width (B) in mm			314	527	475	475	527	527	
Height (H) in mm			278	354	387	387	399	399	
Depth (T) in mm			60	110	60	110	60	110	
Model No. CP		1	**6380.100**	**6380.000**	**6380.010[3]**	**6380.020**	**6380.030[3]**	**6380.040**	
Rear panel, hinged	Quick-release fastener for screwdriver				■		■		
	Cam with double-bit insert[3]		■	■		■		■	
Support arm connection[4]			CP-S VESA 75[5]	CP-L ▭ 120 x 65 mm	CP-L ▭ 120 x 65 mm, rear	CP-L ▭ 120 x 65 mm	CP-L ▭ 120 x 65 mm, rear	CP-L ▭ 120 x 65 mm	
Weight (kg)			2.8	6.2	4.08	5.28	4.41	4.86	

[1] Installation criteria required for direct mounting of the panels, see page 173.
[2] For depth 60 mm the power pack must be mounted externally for reasons of space, e.g. in IW Station.
[3] Standard double-bit lock insert may be exchanged for 41 mm lock inserts, type C, see page 888, plastic handles and T handles, type C, see page 886/887.
[4] Support arm connection at the top or bottom, by rotating the enclosure.
[5] Additional marked points for drilling holes, for the external mounting of:
Assembly components with drilling pattern to VESA 75 = Enclosure attachment, tilting IW 6902.670
Support arm system CP-L, ▭ 120 x 65 mm
Support arm system CP-S.



Utility bars, vertically hinged,
Model No. see page 1049.



TFT monitor,
Model No. see page 1046.

Accessories Page 832 **Industrial Workstations IW** Page 238 **Support arm systems** Page 188 **Stand systems** Page 228

Operating housings

Features



Modern, flexible production technology demands solutions which precisely meet the required standards of ergonomics, user-friendliness, hygiene or corrosion protection at the operating interface. The Rittal operating housing range is tailored to these requirements. Supplemented by a support arm or pedestal system, system accessories or system climate control, an enclosure becomes a complete solution. All this is achieved quickly and practically on your behalf.



Compact Panel, aluminium



Front panels are inserted from the rear and secured with a screw clamp.



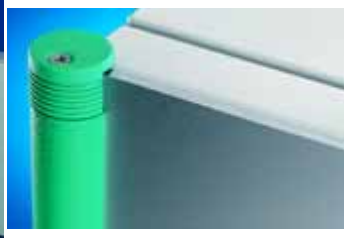
Rear door hinged optionally on the right or left by loosening the screws.



Mounting optionally on support arm system CP-S or directly with the wall attachment, vertically hinged, see page 908.



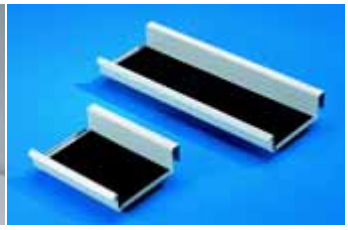
Command panel housing with door, with handle strips



For additional front panels of aluminium, the handle strips may be set forward by up to 5 mm.



Rear panel with welded nuts for the attachment of mounting plate or support rails.



Space for tools, measuring instruments or scanners with the utility shelf, screw connection, see page 1039.



Operating housing with handle strips



Interior installation of the enclosure via side mounting angles with system punchings.



Additional installation space is created by the perforated mounting strips on both sides in the rear door.



For external mounting of a terminal box as an additional keyboard housing, connectors CP 6005.100 may be used, see page 1034.



Operating housing with display panel front



For installation or servicing, the hinged display panel front may be opened from the inside by loosening the screws.



Interior installation of the enclosure via side mounting angles with system punchings.



For the support of keyboards. For programming and servicing work, the vertically hinged utility bars, CP 6514.200, may be externally mounted,
see page 1049.



Operating housing with wide VIP 6000 frame



External mounting of VIP keyboard housings via frame connectors, rigid or adjustable,
see page 168.



Interior installation of the enclosure via side mounting angles with system punchings.



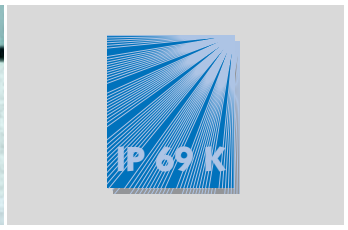
The interface flap SZ 2482.200 ensures secure accommodation of sockets, ports or drives,
see page 1059.



Premium Panel, stainless steel



Exceptionally hygienic, thanks to easy-to-clean, external, highly resistant silicone seal.



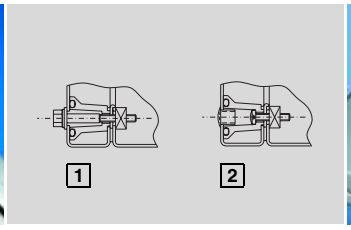
Pressure washer-resistant (protection category IP 69K) and high EMC shielding effect thanks to ideal shaping of the seal and all-round metallic contact between the enclosure and the rear panel.



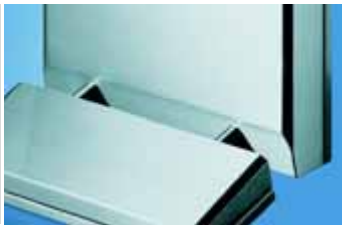
Suitable for use in clean rooms to meet the most demanding requirements, certified by the Fraunhofer-Institut IPA.



Clear hygiene benefits compared with external hinges, rear panel bracket CP 6682.000,
see page 893.



Screw fastening of the rear panel optionally via external hex screws **1** or internal screws, concealed with plastic stoppers **2.**



Protected cable routing from the operating housing to the keyboard housing via a robust duct connector.

Features



Command panel housing with door, stainless steel



Rear panel with welded studs for the attachment of mounting plate or support rails.



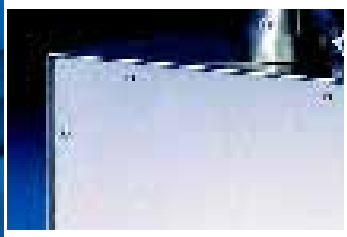
Simple mounting on the support arm system CP-S stainless steel by locating the pre-assembled screw in the cutout.



Safe handling when swivelling, thanks to side handle strips.



Operating housing, stainless steel



Perfect protection of keys or signal lamps thanks to internal front panel.

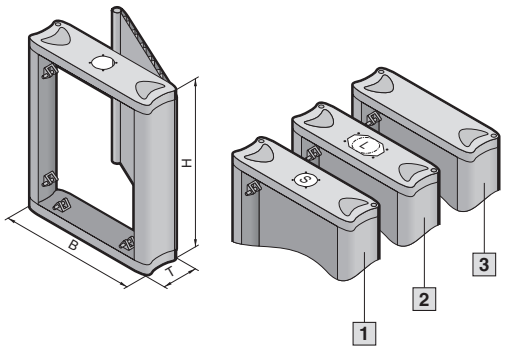


The operator panels and other command and indicator devices may also be fitted in the rotated enclosure.
In such cases, the front panel becomes a screw-fastened rear panel.



Simple mounting on the support arm system CP-S stainless steel by locating the pre-assembled screw in the cutout.





For small operating units built into front panels. The front panel is inserted from the rear and secured from the inside with screw clamps. Special front panels with a material thickness of between 2 and 6 mm are possible. Rear panel optionally hinged on the left or right.

Material:
Roof tray, base tray, rear panel:
Aluminium
Side parts:
Extruded aluminium section
Screw cover:
Plastic

Surface finish and colour:
Roof tray, base tray, side parts:
Powder-coated, RAL 7024
Rear panel: Natural anodised
Screw cover:
Similar to RAL 7024

Protection category:
IP 65 to EN 60 529

Supply includes:
Roof tray, base tray, rear panel, side parts, screw cover, including seal and screw clamp.

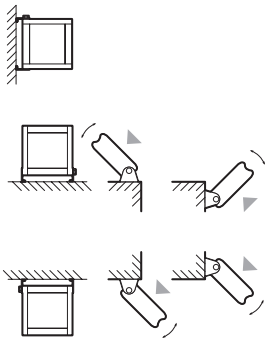
Rittal service:

- Other RAL colours
- Holes and cutouts in the roof and base tray

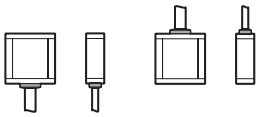
Detailed drawing,
see page 1105.

Property rights:
German patent
No. 102 16 448
German patent
No. 102 16 366

Assembly examples:
with wall mounting bracket



with support arm connection



Width (B) in mm		Packs of	241	241	241	315	315	Page
Height (H) in mm			238	388	521	238	388	
Depth (T) in mm			87	87	87	87	87	
To fit	Front panel width mm		178	178	178/4U	252	252	
	Front panel height mm		200	350	482.6/19″	200	350	
1 **Model No. CP** (with support arm connection CP-S)		1	**6340.000**	**6340.100**	**6340.200**	**6340.300**	**6340.400**	
2 **Model No. CP**[1)] (with support arm connection CP-L, ▭ 120 x 65 mm)		1	**6340.010**	**6340.110**	**6340.210**	**6340.310**	**6340.410**	
3 **Model No. CP**[1)] (without support arm connection)		1	**6340.020**	**6340.120**	**6340.220**	**6340.320**	**6340.420**	
Weight (kg)			2.8	3.8	4.5	3.4	4.5	
Accessories								
Front panel, 3.0 mm aluminium, natural anodised		1	6028.500	6028.510	6028.520	6028.530	6028.540	1036
Wall mounting bracket, vertically hinged		1 set	6341.000	6341.000	6341.000	6341.000	6341.000	908
Cover plate for support arm connection CP-S		1	6505.200	6505.200	6505.200	6505.200	6505.200	1040
Spring nut M5		50	6108.000	6108.000	6108.000	6108.000	6108.000	937

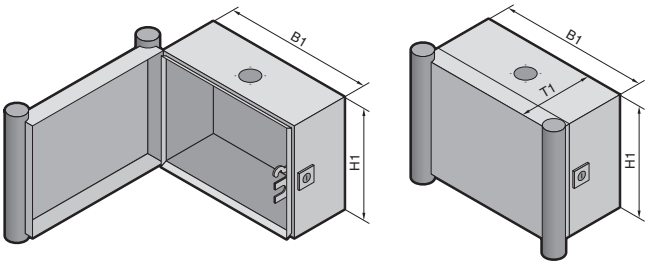
[1)] Extended delivery times.
To order different heights for front panel width:
– 178 mm use Model No.: CP 6342.109
– 252 mm use Model No.: CP 6342.209
and additionally specify the front panel height. Extended delivery times.

Accessories Page 832 **Support arm systems** Page 188

Command panel housing with door

based on AE





Material and surface finish:
Enclosure and door:
Sheet steel, dipcoat-primed and powder-coated in textured RAL 7035
Handle strips:
Aluminium, powder-coated in RAL 5018
Cover caps:
Plastic, RAL 5018

Protection category:
IP 55 to EN 60 529

Supply includes:
Enclosure with cutout and reinforcement for support arm system CP-L[1], Ø 130 mm, with seal.
Door with sealing frame, side handle strips and end caps.

Note:
The support arm connection and door hinge may be swapped over by rotating the enclosure.

Rittal service:

- Other sizes
- Other RAL colours
- Modified support arm cutout or door hinge
- Holes and cutouts for key pads and operator panels
- Aluminium front panels (up to 5 mm thick may be placed between the side handle strips and door on the enclosure front)

available on request.

Detailed drawing,
see page 1105.

Approvals,
see page 32.

Width (B1) in mm		Packs of	300	300	300	400	400	500	Page
Height (H1) in mm			200	300	400	300	400	500	
Depth (T1) in mm			180	180	180	180	180	180	
Model No. CP[1)]		1	**6534.000**	**6535.000**	**6537.000**	**6536.000**	**6538.000**	**6544.000**	
Weight (kg)			5.5	7.1	8.4	8.4	10.6	14.5	
Accessories									
Matching mounting plate	AE type		1032.500	1033.500	1034.500	1030.500	1380.500	1050.500	118/119
	Model No.[3)]		0271.324	0271.926	0271.927	0274.131	0271.548	0271.333	
Support rails[2)]	Model No.	10	2316.000	2316.000	2316.000	2317.000	2317.000	2318.000	927
Lock systems									
Standard double-bit lock insert may be exchanged for 41 mm lock inserts, plastic handle and T handle, type C, see page 886 – 888.									

[1)] To order a command panel housing with door with mounting cutout CP-S, please use the extension number .080. Delivery times available on request.
[2)] Only with vertical attachment of punched rail 23 x 23 mm, see page 925.
[3)] Delivery times available on request.



Signal pillar LED compact.
Model No. see page 1041.

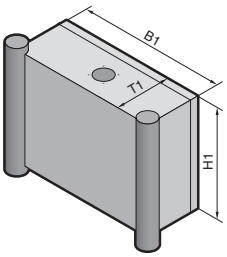


Utility bars, vertically hinged
for keyboards.
Model No. see page 1049.

Accessories Page 832 **Stand systems** Page 228 **Support arm systems** Page 188

based on AE





Material and surface finish:
Enclosure and door:
Sheet steel, dipcoat-primed and powder-coated in textured RAL 7035
Handle strips:
Aluminium in RAL 7030
Cover caps:
Plastic, RAL 7030

Protection category:
IP 55 to EN 60 529

Supply includes:
Enclosure with cutout and reinforcement for support arm system CP-L, Ø 130 mm and with mounting angles spot welded at the sides.
Front with maximum cutout, covered with easily machinable 3 mm aluminium front panel and side handle strips with end caps.
Rear with door.

Note:
The support arm connection and door hinge may be swapped over by rotating the enclosure.

Rittal service:
- Other sizes
- Other RAL colours
- Modified support arm cutout or door hinge
- Holes and cutouts for key pads and operator panels

available on request.

Property rights:
German patent no. 44 13 543
French Patent no. 95 04769
GB patent no. 2 288 971
Ital. patent no. 01273518
Jap. patent no. 2 820 637
US patent no. 5,662,397
German registered design no. M 94 03 156
IR reg. design no. DM/031 020 with validity for BE, DE, ES, FR, IT, LU, NL
U.K. reg. des. no. 2 042 639
Jap. reg. des. No. 955 950
US Design Patent no. Des 375,938

Detailed drawing,
see page 1106.

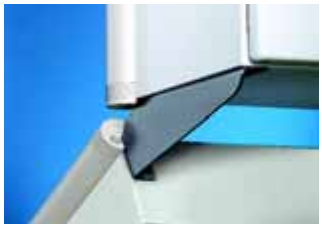
Approvals,
see page 33.

Width (B1) in mm	Packs of	300	380	380	500	600	Page
Height (H1) in mm		200	300	380	500	380	
Depth (T1) in mm		155	210	210	210	210	
Model No. CP	1	**6540.200**[1)]	**6531.200**	**6530.200**	**6532.200**	**6533.200**	
Weight (kg)		4.9	9.3	10.2	15.4	14.6	
Accessories							
Support strips for attaching to the mounting angles on the sides	20	–	–	4594.000	4309.000	4594.000	895
Lock systems							
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, plastic handles, T handles, type B, and lock cylinders, see page 886 – 888.							

[1)] Support arm connection and door hinge at the bottom.



Support arm bracket 90° CP-L
for the configuration of compact support arm systems.
Model No. see page 204.



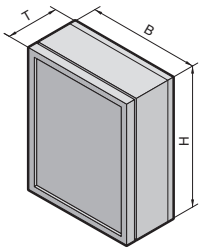
Connector for compact enclosures.
Model No. see page 1034.

Accessories Page 832 **Stand systems** Page 228 **Support arm systems** Page 188

Command panel

based on AE with display panel front





Material and surface finish:
Enclosure and door:
Sheet steel, dipcoat-primed and powder-coated in textured RAL 7035
Frame and front panel:
Aluminium, natural anodised.

Protection category:
IP 54 to EN 60 529

Supply includes:
Enclosure without support arm connection with mounting angles spot-welded at the sides. With maximum cutout at the front and fitted, easily machinable 3 mm front panel with aluminium frame, with r/h hinge, screw-fastened from the inside.
Rear door with r/h hinge, with two cam locks (for CP 6442.500 one lock).

Rittal service:

- Other sizes
- Other RAL colours
- With support arm cutout
- Holes and cutouts for key pads and operator panels

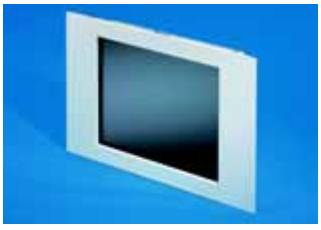
available on request.

Detailed drawing,
see page 1106.

Approvals,
see page 33.

Width (B) in mm	Packs of	380	380	500	600	Page
Height (H) in mm		380	600	500	600	
Depth (T) in mm		249	249	249	249	
Model No. CP	1	**6442.500**	**6462.500**	**6552.500**	**6662.500**	
Weight (kg)		9.5	13.4	18.0	19.6	
Accessories						
Reinforcement plate with support arm cutout CP-L	1	6143.210	6143.210	6143.210	6503.000	237
Lock systems						
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, lock cylinder, plastic handles and T handles, type B, see page 886 – 888.						

To order command panels in RAL 7032, please add extension .200 to the Model No. Delivery times available on request.



TFT monitor
for industrial use.
Model No. see page 1046.

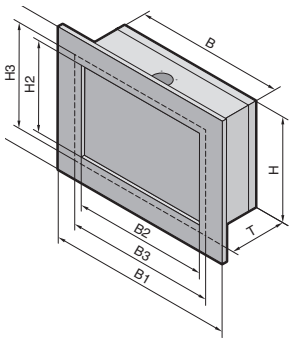


Support for keyboards.
Model No. see page 1048.

Accessories Page 832 **Stand systems** Page 228 **Support arm systems** Page 188

based on AE with wide VIP 6000 frame





Width dimensions:
B = Enclosure width
B1 = B + 79 mm, overall width
B2 = B – 42 mm, clearance between the front frames
B3 = B – 5 mm, front panel width

Height dimensions:
H = Enclosure height
H1 + 79 mm, overall height
H2 = H – 42 mm, clearance between the front frames
H3 = H – 5 mm, front panel height

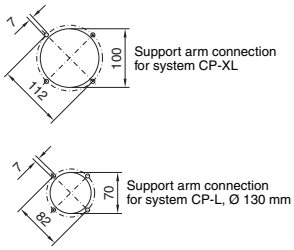
Depth dimensions:
T = Enclosure depth

The right frame, even for deeper operator panels.
On request, the compact enclosure AE can be equipped with a stylish VIP 6000 frame mounted on the rear panel. The large AE door provides easy access for servicing.

Material and surface finish:
Enclosure and door:
Sheet steel, dipcoat-primed and powder-coated in textured RAL 7035
Front panel:
3 mm aluminium, natural anodised
Frame section:
Aluminium, powder-coated in RAL 7035
Frame corner pieces:
Die-cast zinc, powder-coated in RAL 7035

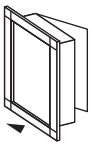
Protection category:
IP 56 to EN 60 529,
Complies with NEMA 12.

Supply includes:
Enclosure with integral roof or base reinforcement and connection for support arm system CP-L or CP-XL. Aluminium front panel and front frame supplied loose, rear door.



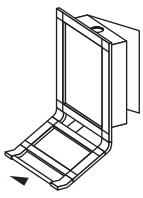
Command panel with wide VIP 6000 frame in the dimensions of compact enclosures AE or in individual sizes	Basic Model No. CP	Design code number		
	6541.009			
Support arm connection for support arm system				
without	6541.009	**0**		
CP-XL, top	6541.009	**1**		
CP-XL, bottom	6541.009	**2**		
CP-L, Ø 130 mm, top	6541.009	**3**		
CP-L, Ø 130 mm, bottom	6541.009	**4**		
Cable tube connection				
without	6541.009	X	**0**	
bottom	6541.009	X	**1**	
Dimensions				
Individual sizes mm	6541.009	X	X	W x H x D:
Like compact enclosure AE (see page 118)	6541.009	X	X	Model No. AE:
Lock systems				
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, lock cylinder, plastic handles and T handles, type B, see page 886 – 888.				

Order example	6541.009	**4**	**1**	W x H x D: 537 x 352 x 350 mm (or e.g AE 1050.600)



Order example

Model No. CP 6541.009
Design code numbers:
- **Support arm connection CP-L, Ø 130 mm, bottom (4)**
- **Cable tube connection at the bottom (1)**
- **Individual dimensions: W x H x D: 537 x 352 x 350 mm**



Additional mounting of a VIP 6000 keyboard housing is possible via the design code number (see page 166).
The front panel width refers to an enclosure width B – 54 mm and is achieved via a frame connector, which is included with the supply of the keyboard housing.

Accessories Page 832 **Stand systems** Page 228 **Support arm systems** Page 188 **VIP 6000 keyboard housing** Page 166

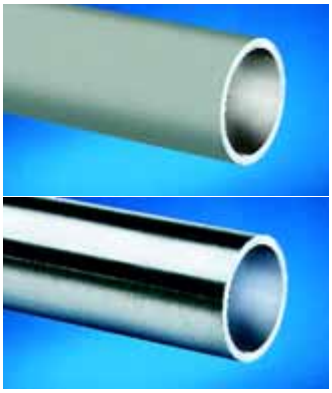
Support arm systems

Features

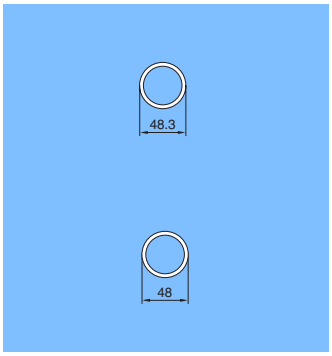


Different viewing angles of the machine, tall or short operating staff, sitting or standing – with the support arm systems from Rittal, the interaction between monitoring and operating is achieved to perfection.

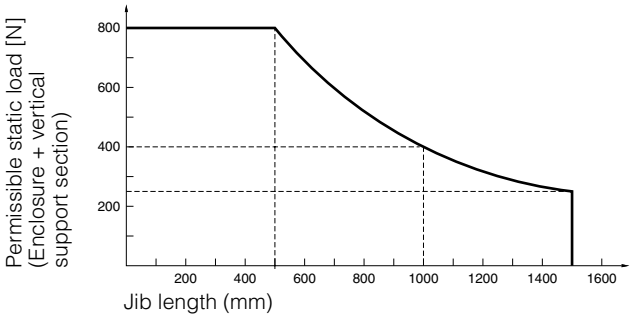
Three different systems are used, depending on the system configuration, jib length and enclosure weight.



Load capacity CP-S steel/stainless steel

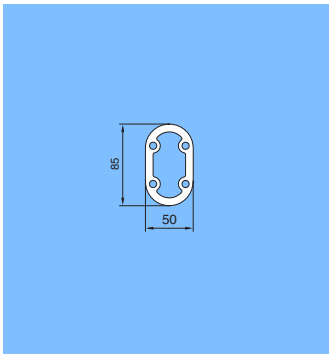


For use of CP-S in conjunction with CP-L (in the horizontal run of the system), the CP-L load diagram applies.

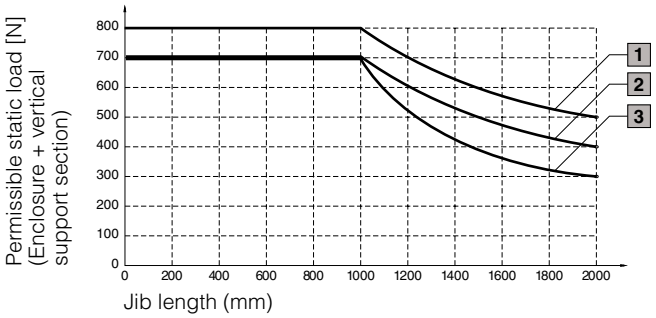




Load capacity CP-L



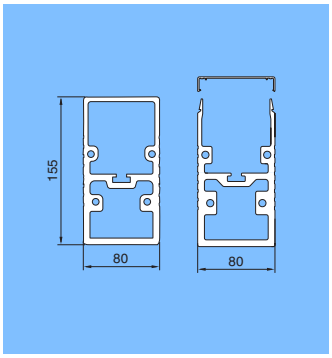
Permissible load depending on system assembly
Intermediate hinge CP 6523.0X0 should only be used once per system!



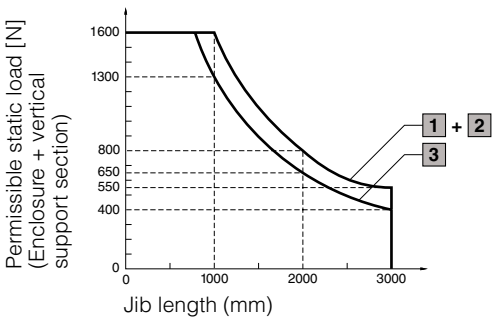
1 System assembly without joint
2 System assembly with one joint
3 System assembly with two joints



Load capacity CP-XL

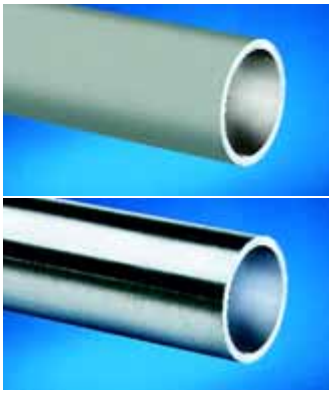


Permissible load depending on system assembly
Intermediate hinge CP 6120.000 should only be used once per system!

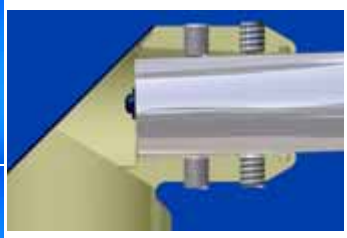


1 Open and solid support section
2 Solid support section with one joint
3 Open support section with one joint

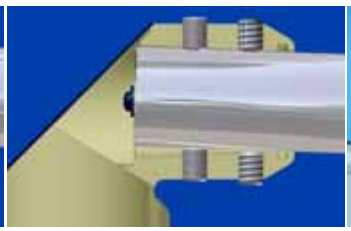
Features



CP-S steel and stainless steel



The angle coupling and angle piece, wall-mounted and top-mounted joint of the system from steel have an integral adjustment facility.



This means that deviations in the horizontal of ±2.5° may be balanced out in a flash.



The enclosures are easily located on the enclosure coupling of the stainless steel system with a pre-assembled screw.



Angle adaptor 90°
The ideal connection from a small to a medium-sized system.

Due to the differing requirements and slightly deviating attachment types, the support arm and enclosure should be made from the same material (steel or stainless steel).



CP-L aluminium



The alternative for the configuration of compact systems – the 90° support arm bracket.



Signal pillars may be mounted on many connecting elements of the systems using the mounting component,
see page 1045.



The height-adjustable support arm offers even better ergonomics.



Angle adaptor 90°
The ideal connection from a medium-sized to a large system.



CP-XL aluminium



With quadruple screw-fastening, the system offers a particularly high level of safety.



Two ducts allow the control cable and supply voltage to be separated.



A stable base point for the system – the custom-produced pillar,
see page 236.

Support arm systems

Getting from the enclosure to the matching support arm components

The diagrams show how the connection points of the Rittal enclosures may be continued with support arm systems, either directly or via adaptors.
There is a choice of four support arm systems, depending on your design, load and cabling requirements.

tiltable or rotatable components

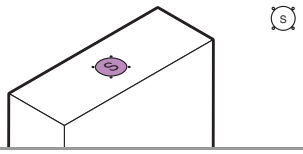
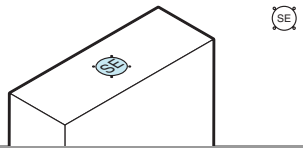
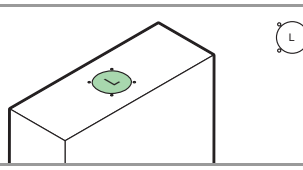
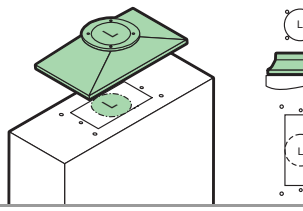
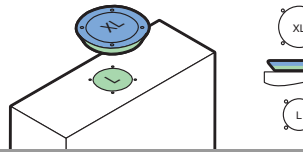
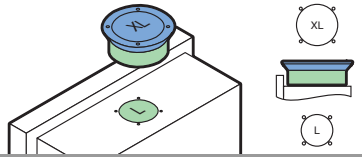
system end

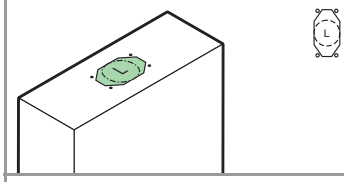
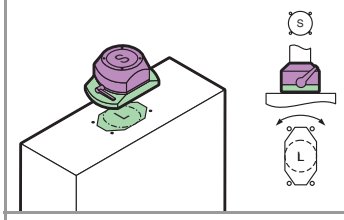
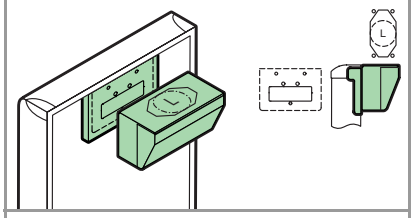
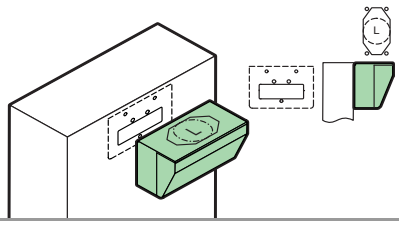
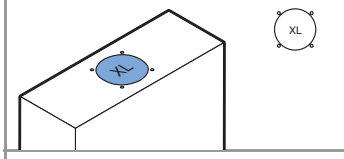
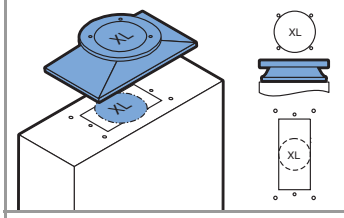
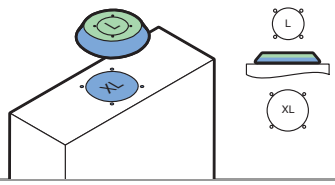
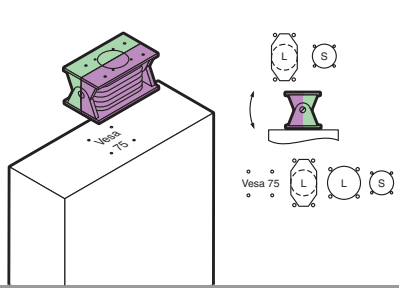
CP-S steel
For small and lightweight enclosures.

CP-S stainless steel
For use where there are special requirements in terms of corrosion and hygiene.

CP-L
The system for average command panel weights, stylish lines, and outstanding solution diversity.

CP-XL
The system for extreme loads. Also with open cable duct for super-easy cable entry.

	Enclosure	Continued with support arm system
CP-S steel		**CP-S steel: 1.1** see page 191 **CP-L: 1.6** see page 200
CP-S stainless steel		**CP-S stainless steel: 1.1** see page 277 – 280
CP-L Ø 130 mm		**CP-L: 1.1** see page 200
		**CP-L: 1.2** see page 200
		**CP-XL: 1.3 1.4** see page 218
		

	Enclosure	Continued with support arm system
CP-L ▭ 120 x 65 mm		**CP-L: 1.4** see page 200
		**CP-S steel: 1.2** see page 191
		
		
CP-XL		**CP-XL: 1.1** see page 218
		**CP-XL: 1.2** see page 218
		**CP-L: 1.3 1.4** see page 200
VESA 75		**CP-S: 1.3** see page 192 **CP-L Ø 130 mm: 1.6** see page 200 **CP-L ▭ 120 x 65 mm: 1.6** see page 200

Fast selection

Make a simple sketch showing the basic form of the support arm.
Next, select the corresponding support arm components.
Start with **1** system start by selecting the appopriate enclosure situation.

Continue with CP-S according to the item numbers.

System changes are indicated by the colour.
Green = CP-L

System continuation/system end:
all directions

vertical

horizontal

angled

tiltable or

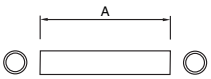
rotatable components

From position **3** enclosure attachments, a support section is required between each component (minimum length approx. 100 mm, for wall/floor mounting approx. 160 mm).

T Support sections

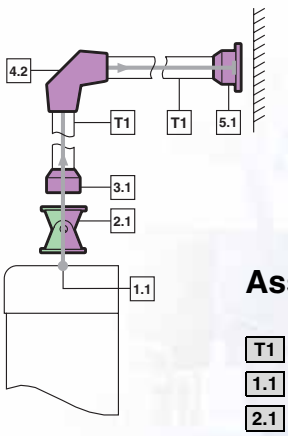
T1 Support section CP-S

$A_{min.}$ = 100 mm
$A_{max.}$ = 2000 mm



A mm	RAL 9006 **Model No. CP**
500	6501.010
1000	6501.030
To specifications	6501.340[1)]

see page 193.
[1)] Delivery times available on request.



Assembly example:

- T1 Support section CP-S
- 1.1 Mounting cutout CP-S
- 2.1 Tilting enclosure attachment, top mounting
- 3.1 Enclosure attachment CP-S
- 4.2 Angle piece 90° CP-S
- 5.1 Wall/base mounting CP-S

Note:
After any given support section, the 90° angle adaptor CP-L to CP-S may be used as a transition to the CP-L system.
Load diagram,
see page 188.

Support arm system CP-S steel

Fast selection

1 System start

Enclosure with mounting cutout

1.1 Mounting cutout CP-S

see page 190



▶ 2.1 3.1 3.2 3.4

1.2 Mounting cutout CP-L, ▭ 120 x 65 mm

see page 190



▶ 2.1 3.3

1.3 Mounting cutout VESA 75

see page 190



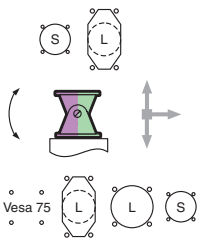
▶ 2.1

2 Tilting adaptor

2.1 Enclosure attachment, tilting, top mounting[1)]

IW 6902.670 (RAL 7024)

see page 193



▶ 3.1 3.2 3.4
▶ CP-L 2.4 see p. 201

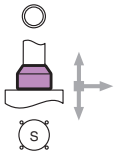
[1)] May also be used rotated through 180°, e.g. from CP-L ▭ 120 x 65 mm or CP-S to CP-L Ø 130 mm.

3 Enclosure attachments

3.1 Attachment CP-S

CP 6501.070 (RAL 7024)

see page 194

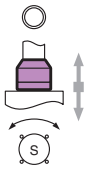


▶ 4.1 4.2 5.1 5.2 5.3

3.2 Housing coupling, round CP-S

CP 6501.050 (RAL 7024)

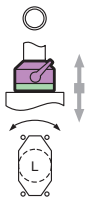
see page 195



3.3 Housing coupling, for support arm connection CP-L ▭ 120 x 65 mm

CP 6501.130 (RAL 7024)

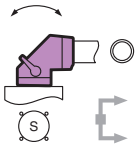
see page 195



3.4 Angle coupling 90° CP-S

CP 6501.120 (RAL 7024)

see page 196



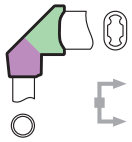
▶ 5.1 5.2 5.3

4 Angle components

4.1 Angle adaptor 90° CP-L to CP-S

CP 6501.090 (RAL 7024)

see page 214

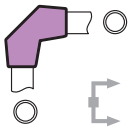


▶ CP-L cf. p. 200

4.2 Angle piece 90° CP-S

CP 6501.140 (RAL 7024)

see page 197



▶ 5.1 5.2 5.3

5 System end

5.1 Wall/base mounting CP-S

CP 6501.110 (RAL 7024)

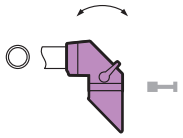
see page 198



5.2 Wall mounted hinge CP-S

CP 6501.150 (RAL 7024)

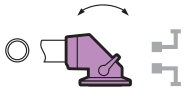
see page 199



5.3 Top mounted joint CP-S

CP 6501.160 (RAL 7024)

see page 198





Support section CP-S

Attachment to the connecting components with 2 clamping screws.

Size:
External diameter: 48.3 mm
Wall thickness: 4.0 mm

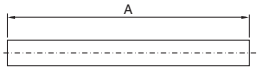
Material:
Steel conduit, powder-coated

Colour:
RAL 9006

Note:
Bent support sections available on request.

A mm	Weight kg	Model No. CP
500	2.1	**6501.010**
1000	4.2	**6501.030**
To specifications A =	4.2 kg/m	**6501.340**[1)]

[1)] Delivery times available on request.



$A_{min.}$ = 100 mm
$A_{max.}$ = 2000 mm





Enclosure attachment, tilting, top mounting

For mounting on:
- IW worktop, prepared for enclosure attachment CP-L, Ø 130 mm, see page 249
- Surfaces
- Enclosure attachment/coupling CP-L ▭ 120 x 65 mm, see page 210/212
- Attachment/housing coupling CP-S (may also be used as tilting adaptor +100°/–60° for CP-S), see page 194/195.

To fit enclosures up to 20 kg with support arm connection:
- CP-S
- CP-L ▭ 120 x 65 mm
- CP-L Ø 130 mm
- VESA Standard 75

With cable tube for protected cable entry.

Tilt angle:
+100°/–60°, adjustable in 7.2° increments via clamping lever and may be limited to +100°/–15° using the stop screw supplied loose.

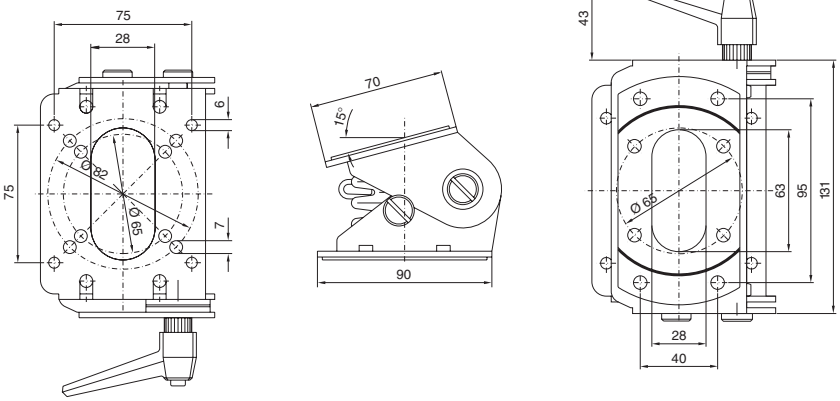
Colour RAL	Weight kg	Model No. IW
7024	0.8	**6902.670**

Material:
Sheet steel, spray-finished

Supply includes:
Assembly parts and plastic concertina section.

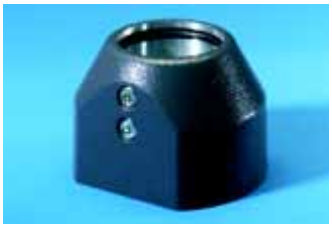
Accessories:

IW worktops prepared for enclosure attachment, see page 249.



Support arm system CP-S

Steel





CP-S attachment

For rigid attachment of the
- enclosure to the support section,
- support arm to flat surfaces, rear[1].

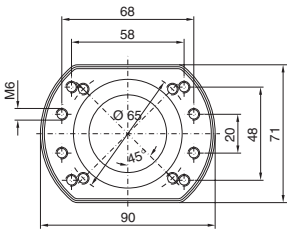
With two drilling patterns for
a) Rittal Command Panel
b) Complete Control Panel.

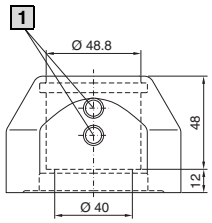
Material:
Die-cast zinc

Supply includes:
Seal and 2 clamping screws for support section CP-S.

Colour RAL	Weight kg	Model No. CP
7024	1.0	**6501.070**

[1] Maximum load 400 N.

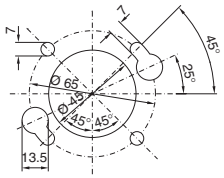




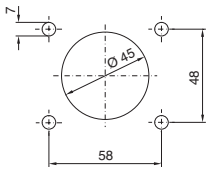
1 Clamping screw

Mounting cutouts

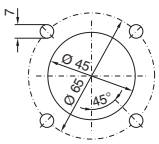
a)



b)



Like cutout a), but without lock holes







Enclosure coupling CP-S

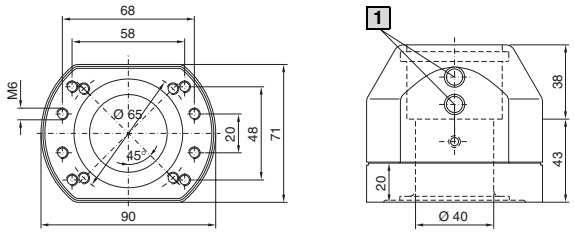
for support arm connection CP-S, round
For swivel mounting of the enclosure on the vertical section of the support arm system.
With two drilling patterns for
a) Rittal Command Panel
b) Complete Control Panel.

Rotation range:
Approx. 305°, lockable via clamping lever.
By inserting additional pins 4 x 16 mm to ISO 8752 the rotation range may be limited to ± 7°, 44°, 104°, 142°.

Colour RAL	Weight kg	Model No. CP
7024	1.1	**6501.050**

Material:
Die-cast zinc

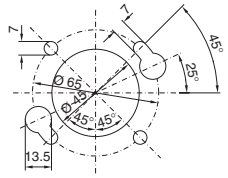
Supply includes:
Seal, 2 clamping screws for support section CP-S and clamping lever.



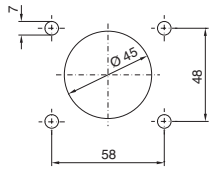
1 Clamping screw

Mounting cutouts

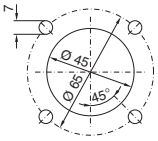
a)

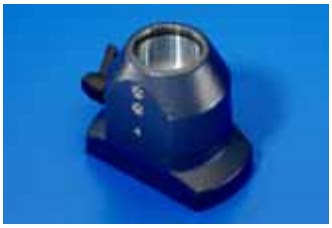


b)



Like cutout a), but without lock holes







Enclosure coupling CP-S

for support arm connection CP-L,
▭ 120 x 65 mm
For swivel mounting of the enclosure on the vertical section of the support arm system.

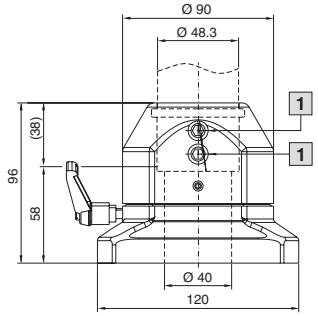
For mounting on:
- Optipanel to fit TFT monitors CP 6380.010 – .040 (see page 178)
- Optipanel W x H x D = 19″ x 7 U x 100 mm CP 6380.000 (see page 178)
- Optipanel installation depth 50 mm, with rear support arm connection.

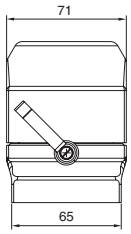
Rotation range:
Approx. 305°, lockable via clamping lever.
By inserting additional pins 4 x 16 mm to ISO 8752 the rotation range may be limited to ± 7°, 44°, 104°, 142°.

Colour RAL	Weight kg	Model No. CP
7024	1.5	**6501.130**

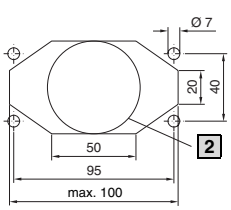
Material:
Die-cast zinc

Supply includes:
Seals, 2 locking screws.





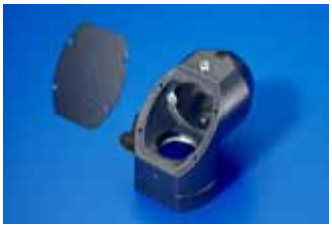
Mounting cutout, enclosure



1 Locking screw

2 alternative max. Ø 55 mm

Steel





Angle coupling 90° CP-S

For swivel fastening of the enclosure to the horizontal support arm system.

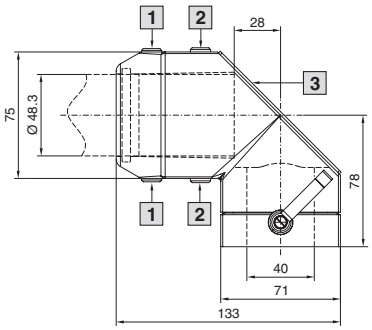
- Enclosure top-mounted or suspended
- Adjustment facility for the support arm system (see page 189)
- Removable panel for problem-free cable entry

Rotation range:
Approx. 305°, lockable via clamping lever.
By inserting additional pins 4 x 16 mm to ISO 8752 the rotation range may be limited to ± 7°, 44°, 104°, 142°.

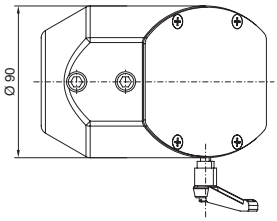
Colour RAL	Weight kg	Model No. CP
7024	1.6	**6501.120**

Material:
Cast aluminium/die-cast zinc

Supply includes:
Seals, 2 locking screws and 2 adjusting screws.

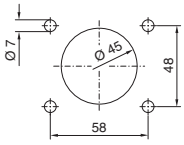


1 Locking screw
2 Adjusting screw
3 Removable plate

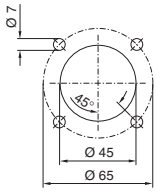


Possible mounting cutouts of enclosures

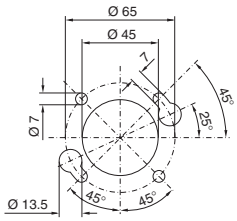
a)



b)



c)



Version c) for quick/one-man assembly



Angle adaptor 90° CP-L to CP-S

see page 214.





Angle piece 90° CP-S

For connecting horizontal and vertical support arm components.

- Adjustment facility for the support arm system (see page 189)
- Removable panel for problem-free cable entry

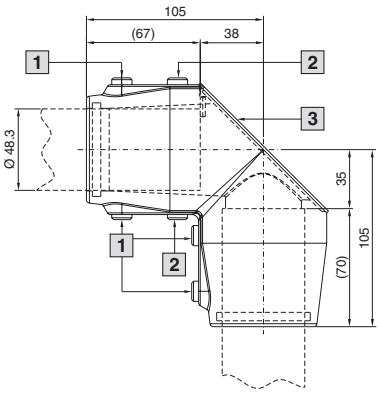
Material:
Cast aluminium

Supply includes:
Seals, 4 locking screws and 2 adjusting screws.

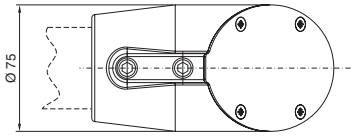
Colour RAL	Weight kg	Model No. CP
7024	1.1	**6501.140**

Accessories:

Mounting component for signal pillars (SZ 2375.030), see page 1045.



1 Locking screw
2 Adjusting screw
3 Removable plate





Mounting component CP-S

for signal pillars
For mounting a signal pillar with connection component for tube mounting on the angle piece 90° CP-S, see page 1045.

Support arm system CP-S

Steel





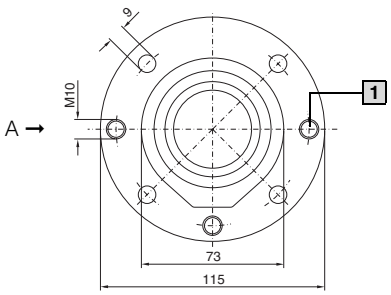
Wall/base mounting CP-S

For rigid attachment of the support section to surfaces. With flange for front mounting.

Material:
Cast aluminium

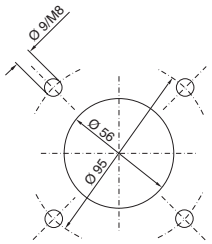
Supply includes:
Seal, 2 clamping screws for support section CP-S and 3 pre-fitted adjusting screws.

Colour RAL	Weight kg	Model No. CP
7024	0.7	**6501.110**

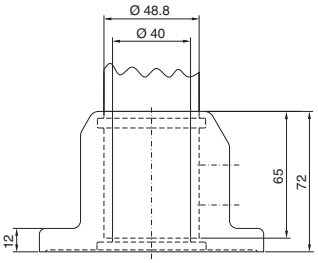


1 Adjusting screw

Mounting cutout



View A







Top mounted joint CP-S

For swivel mounting of the support arm system to horizontal surfaces.

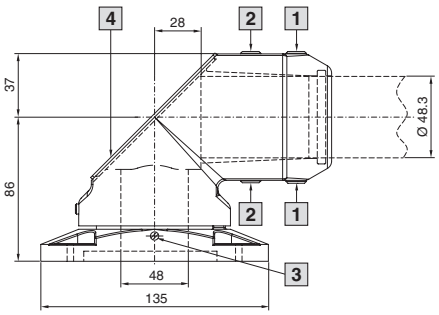
- Enclosure top-mounted or suspended
- Adjustment facility for the support arm system (see page 189)
- Removable panel for problem-free cable entry

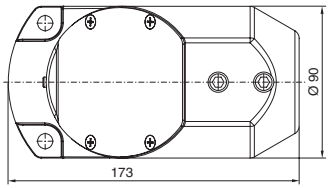
Rotation range:
Approx. 300°. By inserting additional pins 6 x 20 mm to ISO 8752 the rotation range may be limited to ± 6°, 51°, 96°. To lock the joint, the screw may be exchanged for standard clamping lever M6 x 25 mm.

Colour RAL	Weight kg	Model No. CP
7024	1.8	**6501.160**

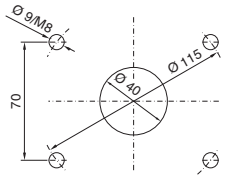
Material:
Cast aluminium

Supply includes:
Seals, 2 locking screws and 2 adjusting screws.





Mounting cutout



1 Locking screw
2 Adjusting screw
3 Screw for adjusting rotatability
4 Removable plate





Wall mounted hinge CP-S

For vertically hinged mounting of the support arm on vertical surfaces.

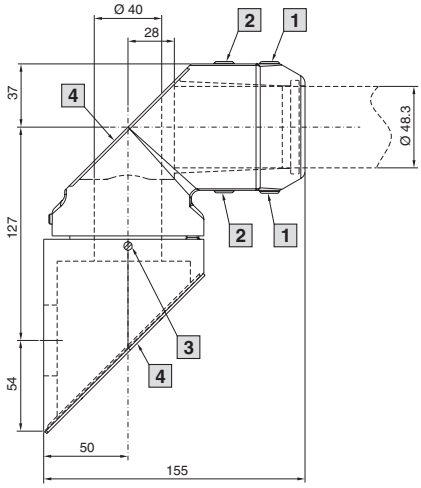
- Machined keyhole as mirror image for support arm outlet at the top or bottom for easy one-man assembly.
  – Pre-mount the screws on a vertical surface
  – Locate the wall-mounted hinge (support arm system pre-mounted)
  – Tighten the screws
- Adjustment facility for the support arm system (see page 189)
- Removable panel for problem-free cable entry

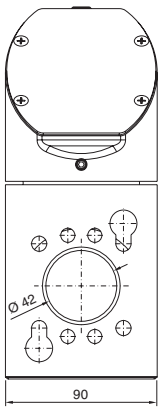
Rotation range:
Approx. 300°. By inserting additional pins 6 x 20 mm to ISO 8752 the rotation range may be limited to ± 6°, 51°, 96°. To lock the joint, the screw may be exchanged for standard clamping lever M6 x 25 mm.

Colour RAL	Weight kg	Model No. CP
7024	2.2	**6501.150**

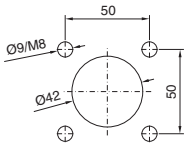
Material:
Cast aluminium

Supply includes:
Seals, 2 locking screws and 2 adjusting screws.





Mounting cutout 90°



1 Locking screw
2 Adjusting screw
3 Screw for adjusting rotatability
4 Removable plate

Support arm system CP-L

Fast selection

Make a simple sketch showing the basic form of the support arm.
Next, select the corresponding support arm components.
Start with **1** system start by selecting the appopriate enclosure situation.

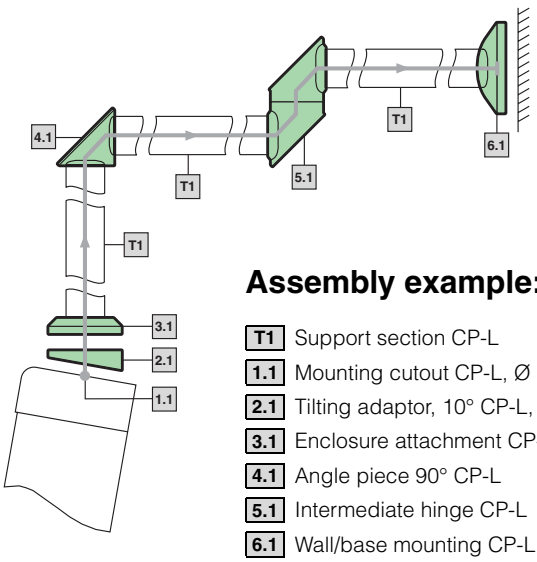
Continue with CP-L according to the item numbers.

System changes are indicated by the colour.
Violet = CP-S
Blue = CP-XL

System continuation/system end:
all directions
vertical
horizontal
angled
tiltable or
rotatable components

From position **3** enclosure attachments, a support section is required between each component (minimum length approx. 100 mm, for wall/floor mounting approx. 160 mm).
The cross-sections indicate the installation position(s).

X = 0 (RAL 7030)
X = 1 (RAL 7024)

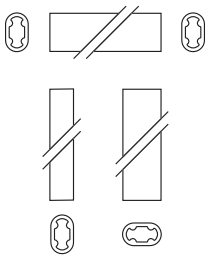


Assembly example:

- **T1** Support section CP-L
- **1.1** Mounting cutout CP-L, Ø 130 mm
- **2.1** Tilting adaptor, 10° CP-L, Ø 130 mm
- **3.1** Enclosure attachment CP-L, Ø 130 mm
- **4.1** Angle piece 90° CP-L
- **5.1** Intermediate hinge CP-L
- **6.1** Wall/base mounting CP-L

T Support sections

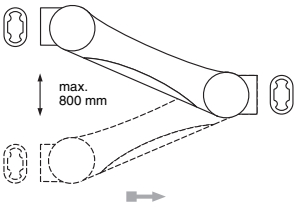
T1 Support section CP-L



Length mm	Colour RAL	**Model No. CP**
250	7035	6509.000
500	7035	6511.000
1000	7035	6513.000
2000	7035	6515.000
250	9006	6509.010
500	9006	6511.010
1000	9006	6513.010
2000	9006	6515.010

See page 204

T2 Support arm CP-L, height-adjustable

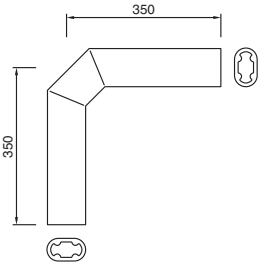


Colour: RAL 7024/9006

Weight range kg	Length mm	**Model No. CP**
10 – 20	962	6510.210
19 – 30	958	6510.310

See page 202

T3 Support arm bracket 90°, CP-L



Colour RAL	**Model No. CP**
7035	6519.000
9006	6519.010

See page 204

1 System start

Enclosure with mounting cutout

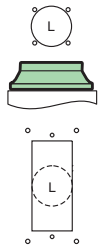
1.1 Mounting cutout CP-L, Ø 130 mm



→ **2.1 2.2 2.4 3.1 3.2 3.3**

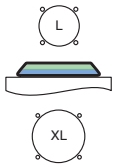
1.2 Connection plate for support arm CP-L

CP 6528.2X0, see page 209



1.3 Connection adaptor CP-L to CP-XL

CP 6528.000, see page 208



1.4 Mounting cutout CP-L, ▭ 120 x 65 mm



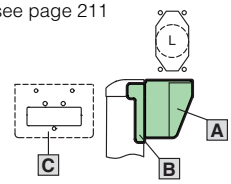
→ **2.3 2.4 3.4 3.5 3.6**
→ **CP-S 3.3** cf. p. 192

1.5 Connection console CP-L ▭ 120 x 65 mm A

CP 6508.0X0 on Optipanel support plate **B**
CP 6508.100

Other enclosures with mounting cutout **C** for connection console

see page 211



→ **2.3 2.4 3.4 3.5 3.6**
→ **CP-S 3.3** cf. p. 192

1.6 Mounting cutout VESA 75

see page 190

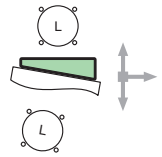


→ **2.4**

2 Tilting adaptor

2.1 Tilting adaptor 10° CP-L, Ø 130 mm

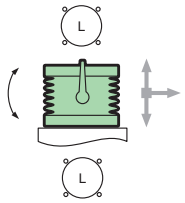
CP 6527.0X0, see page 205



3.1 3.2 3.3

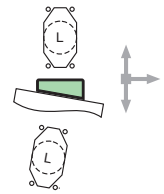
2.2 Tilting adaptor +/– 45° CP-L, Ø 130 mm

CP 6529.0X0, see page 205



2.3 Tilting adaptor 10° CP-L, ▭ 120 x 65 mm

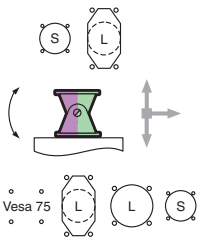
CP 6527.1X0, see page 206



3.4 3.5 3.6

2.4 Enclosure attachment tilting, top mounting[1)]

CP 6902.670 (RAL 7024), see page 193



3.4 3.5

▶ **CP-S** cf. p. 191/192

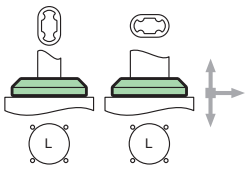
[1)] May also be used rotated through 180°, e.g. from CP-L ▭ 120 x 65 mm or CP-S to CP-L Ø 130 mm.

[2)] Via T3 support arm bracket 90° CP-L.

3 Enclosure attachments

3.1 Enclosure attachment CP-L, Ø 130 mm

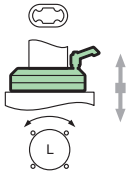
CP 6525.5X0, see page 206



4.1 4.2 4.3 6.1 6.2 6.3 6.4

3.2 Housing coupling CP-L, Ø 130 mm

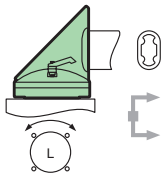
CP 6525.0X0, see page 212



4.1 4.3 6.1 6.2 6.3[2)] 6.4[2)]

3.3 Angle coupling 90° CP-L, Ø 130 mm

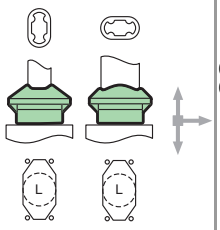
CP 6526.0X0, see page 213



4.1 5.1 6.1 6.2 6.3 6.4

3.4 Enclosure attachment CP-L, ▭ 120 x 65 mm

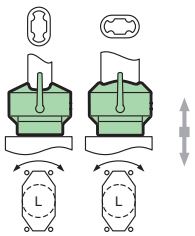
CP 6525.6X0, see page 207



4.1 4.2 4.3 6.1 6.2 6.3[2)] 6.4[2)]

3.5 Housing coupling CP-L, ▭ 120 x 65 mm

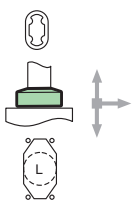
CP 6525.1X0, see page 212



4.1 4.3 6.1 6.2 6.3[2)] 6.4[2)]

3.6 Enclosure attachment CP-L, ▭ 120 x 65 mm, locatable

CP 6525.2X0, see page 210

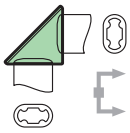


4.1 4.2 4.3 6.1 6.2

4 Angle components

4.1 Angle piece 90° CP-L

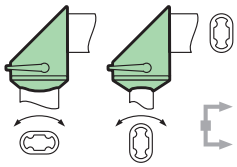
CP 6524.0X0, see page 213



5.1 6.1 6.2 6.3 6.4

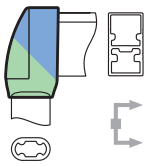
4.2 Angle joint 90° CP-L

CP 6524.2X0, see page 214



4.3 Angle adaptor 90° CP-L to CP-XL

CP 6528.100, see page 214



▶ **CP-XL** see p. 218

Notes:

Re T2
Support arm, height adjustable should always be inserted as the first horizontal component after the enclosure.

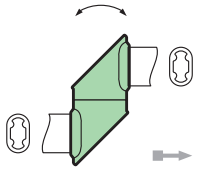
Re 5.1 / 6.3 / 6.4
It is always expedient to use only one intermediate hinge or one wall mounted hinge. Two joints will restrict load capacity and make positioning the command panel more difficult.
Load diagram,
see page 188.

Re 4.1
Two angle pieces may also be used one after the other.

5 Intermediate hinge

5.1 Intermediate hinge CP-L

CP 6523.0X0, see page 215



4.1 6.1 6.2

6 System end

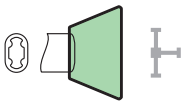
6.1 Wall/base mounting, small, CP-L

CP 6520.5X0, see page 215



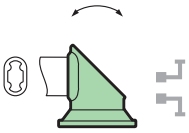
6.2 Wall/base mounting, large, CP-L

CP 6520.0X0, see page 216



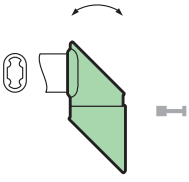
6.3 Top mounted joint CP-L

CP 6522.0X0, see page 216



6.4 Wall mounted hinge CP-L

CP 6521.0X0, see page 217



Support arm, height adjustable







Support arm, height adjustable CP-L

Offers enhanced ergonomics thanks to:

- Adjustment range
  – for tall and short operators
  – for seated and standing work
  adjustable to up to 800 mm as required via an adjusting screw at the front of the support arm.
- Precise coordination of the compression spring to the enclosure weight via an adjusting screw at the rear of the support arm.
- Complete functional reliabilty – if the compression spring breaks, the arm will remain in position.
- Plastic casing clips off for access to the integral U-section cable tray.
- Tilting angle of the mounted enclosure is identical in every height position.

Material:
Steel

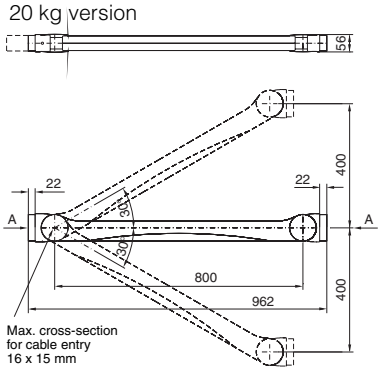
Supply includes:
Round tube with compression spring relief and U-section cable tray, 2 threaded connectors, plastic casing, including assembly parts.

Note:
Connection pieces for other support arms available on request.

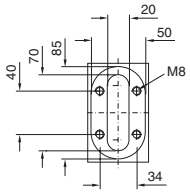
Overall length mm	Colour RAL	Weight range kg[1)]	**Model No. CP**
962	9006	10 – 20	**6510.210**
958	9006	19 – 30	**6510.310**

[1)] For configured enclosure and vertical support section

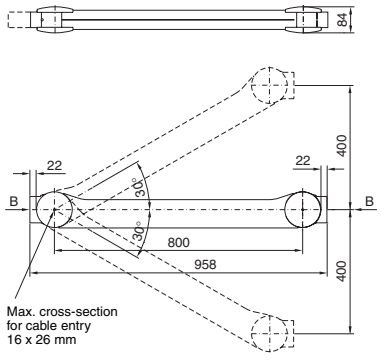
20 kg version



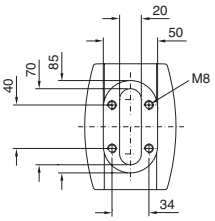
View A



30 kg version

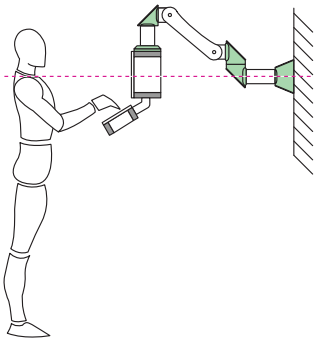


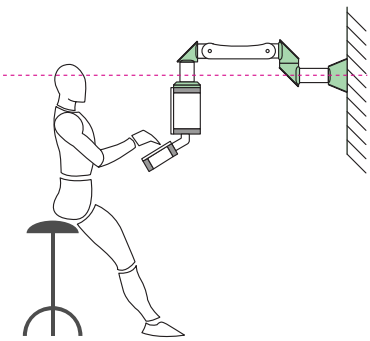
View B

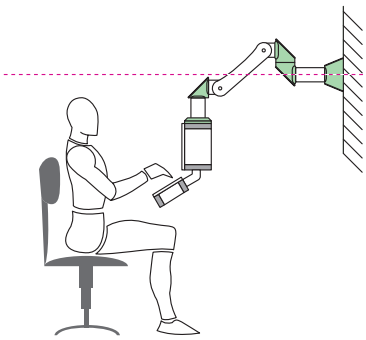


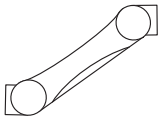
Support arm, height adjustable

The versatile combination options with horizontal mounting are illustrated in this diagram.

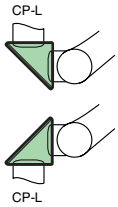




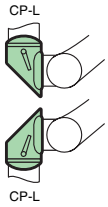




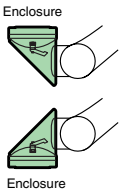
Enclosure side



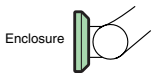
Angle piece 90° CP-L
Model No. 6524.0X0[1)],
see page 213.



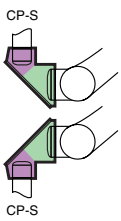
Articulated joint 90° CP-L
Model No. 6524.2X0[1)],
see page 214.



Angle coupling 90° CP-L
for support arm connection
Ø 130 mm
Model No. 6526.0X0[1)],
see page 213.

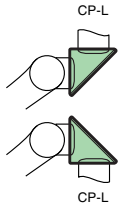


Enclosure attachment CP-L for support arm connection Ø 130 mm
Model No. 6525.5X0[1)],
enclosure attachment CP-L
for support arm connection
▭ 120 x 65 mm
Model No. 6525.6X0,
see page 206/207.
Enclosure with rear support arm cutout/reinforcement available on request.

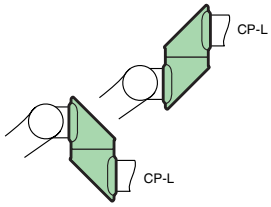


Angle adaptor 90°
CP-L to CP-S
Model No. 6501.090 (RAL 7024),
see page 214.

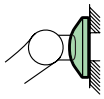
Attachment side



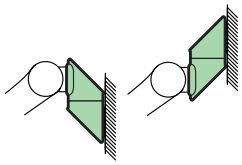
Angle piece 90° CP-L
Model No. 6524.0X0[1)],
see page 213.



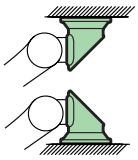
Intermediate hinge CP-L
Model No. 6523.0X0[1)],
see page 215.



Wall/base mounting, small, CP-L
Model No. 6520.5X0[1)],
see page 215.



Wall mounted hinge CP-L
Model No. 6521.0X0[1)],
see page 217.



Top mounted joint CP-L
Model No. 6522.0X0[1)],
see page 216.

[1)] Key:
X = 0 RAL 7030
X = 1 RAL 7024

Support arm system CP-L

Aluminium



Support section CP-L

Attachment to the connection components with 4 self-tapping screws in a screw channel, may be cut to any required length.

Size:
50 x 85 mm

Wall thickness:
8 mm

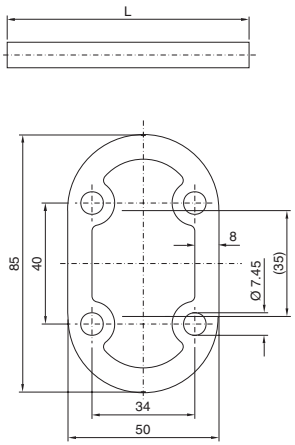
Material:
Extruded aluminium section

Note:
Load information,
see page 188.

German patent no. 43 31 124
French patent no. 94 10 806
Ital. patent no. 01275022
Jap. patent no. 2730621
US patent no. 5,460,894

Length (L)[1] mm	Weight kg	RAL 7035 Model No. CP	RAL 9006 Model No. CP
250	1.3	**6509.000**	**6509.010**
500	2.6	**6511.000**	**6511.010**
1000	5.1	**6513.000**	**6513.010**
2000	10.2	**6515.000**	**6515.010**

[1] L min = 135 mm





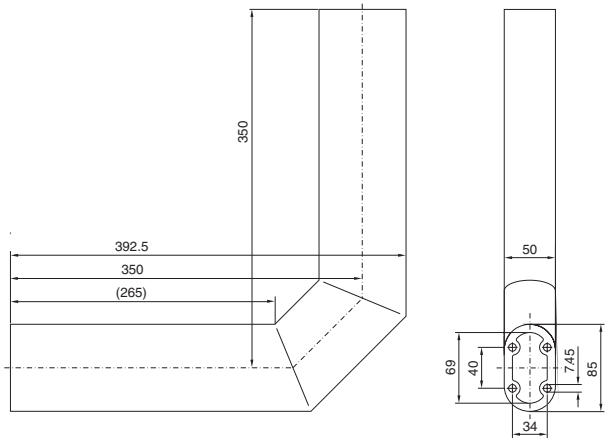


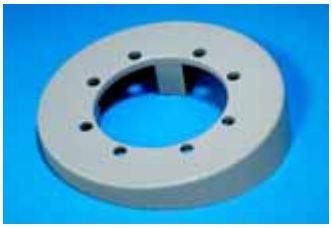
Support arm bracket 90° CP-L

The compact, firmly linked alternative.

Material:
Extruded aluminium section

Colour RAL	Weight kg	Model No. CP
7035	3.4	**6519.000**
9006	3.4	**6519.010**







Tilting adaptor, 10° CP-L

for support arm connection Ø 130 mm
For mounting between:
- Housing coupling CP-L (CP 6525.0X0)

or
- Enclosure attachment CP-L (CP 6525.0X0)

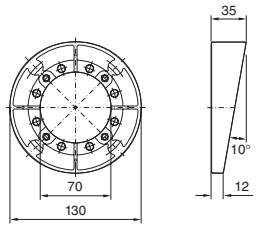
or
- Angle coupling 90° CP-L (CP 6526.0X0)

and the command panel.

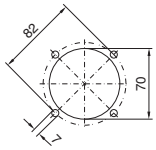
Material:
Die-cast zinc

Supply includes:
Seal and assembly parts.

Colour RAL	Weight kg	**Model No. CP**
7030	0.6	**6527.000**
7024	0.6	**6527.010**



Mounting cutout
Enclosure CP-L, Ø 130 mm







Tilting adaptor, ± 45° CP-L

for support arm connection Ø 130 mm
For mounting between:
- Housing coupling CP-L (CP 6525.0X0)

or
- Enclosure attachment CP-L (CP 6525.0X0)

or
- Angle coupling 90° CP-L (CP 6526.0X0)

and the command panel.

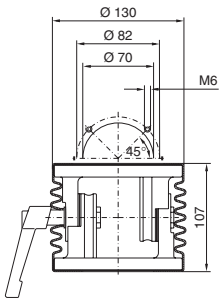
Tilting angle:
Adjustable in 7.5° increments

Material:
Cast aluminium

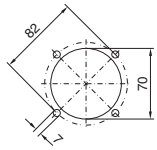
Supply includes:
Seal, plastic concertina section and assembly parts.

German patent no. 195 40 298
US patent no. 5,911,393

Colour RAL	Weight kg	**Model No. CP**
7030	1.3	**6529.000**
7024	1.3	**6529.010**



Mounting cutout
Enclosure CP-L, Ø 130 mm



Support arm system CP-L

Aluminium





Tilting adaptor, 10° CP-L

for support arm connection ▭ 120 x 65 mm
For mounting between:
- Housing coupling CP-L (CP 6525.1X0)

or
- Enclosure attachment CP-L (CP 6525.6X0)

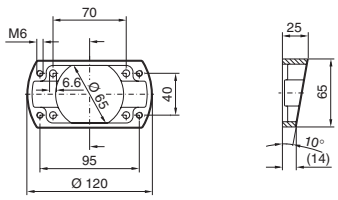
or
- Housing coupling CP-S (CP 6501.130)

and the command panel.

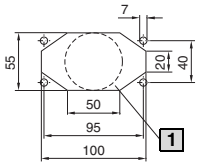
Material:
Die-cast zinc

Supply includes:
Seal and assembly parts.

Colour RAL	Weight kg	**Model No. CP**
7030	0.4	**6527.100**
7024	0.4	**6527.110**



Mounting cutout
Enclosure CP-L ▭ 120 x 65 mm



1 Alternative max. Ø 55 mm



Enclosure attachment, tilting

see page 193.





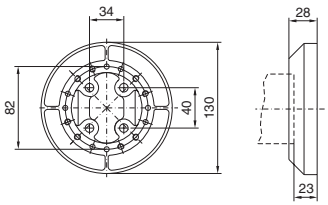
Enclosure attachment CP-L

for support arm connection Ø 130 mm
For rigid fastening of the enclosure to the support arm system.

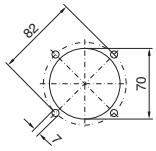
Material:
Die-cast zinc

Supply includes:
Seals and self-tapping screws for CP-L support section attachment.

Colour RAL	Weight kg	**Model No. CP**
7030	1.0	**6525.500**
7024	1.0	**6525.510**



Mounting cutout
Enclosure CP-L, Ø 130 mm







Enclosure attachment CP-L

for support arm connection ▭ 120 x 65 mm
For rigid fastening of the enclosure to the support arm system.

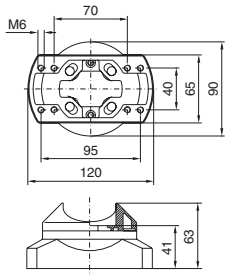
Material:
Die-cast zinc

Supply includes:
Seals and self-tapping screws for CP-L support section attachment.

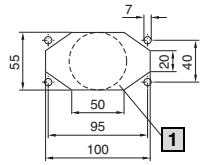
Colour RAL	Weight kg	Model No. CP
7030	1.0	**6525.600**
7024	1.0	**6525.610**

Accessories:

Connection console CP-L,
see page 211.



Mounting cutout
Enclosure CP-L, ▭ 120 x 65 mm



1 Alternative max. Ø 55 mm







Enclosure attachment, tilting, base mounting

CP-L ▭ 120 x 65 mm
For mounting beneath:
- IW worktop with pedestal
- Sufficiently large surfaces

Fits enclosures with mounting cutout:
- CP-L ▭ 120 x 65 mm (e.g. Optipanel), see page 175.

With mounting cutout for connector grommet for sealed cable entry.

Tilt angle:
+40°/–40°, lockable via clamping lever

Material:
Sheet steel, spray-finished

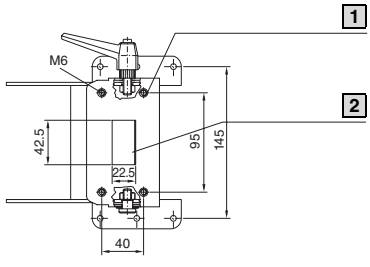
Supply includes:
Assembly parts

Colour RAL	Weight kg	Model No. IW
7024	1.6	**6902.640**

Note:
The enclosure attachment can be mounted either on the support arm connection of the Optipanel enclosure or on the underside or rear of any enclosure.

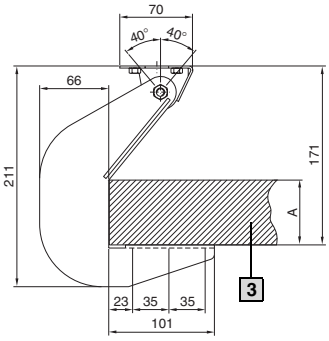
Accessories:

Connector grommet,
see page 975.
IW worktop,
see page 249.
Pedestal,
see page 232.



1 Prepared for enclosure with connection CP-L/CP-S, ▭ 120 x 65 mm or connection console CP-L CP 6508.0X0

2 Prepared for connector gland SZ 2400.300/SZ 2400.500



A = max. 62 mm

3 Worktop, e.g. IW 6902.310/ IW 6902.320

Support arm system CP-L

Aluminium







Connection adaptor CP-L to CP-XL

For mounting between:
- Enclosure with support arm connection CP-L and
- Support arm system CP-XL.

May also be used for the attachment of command panels with cutout for CP-L directly to machines and systems without a support arm.
Assembly sequence:
- Mount the connection adaptor on the supporting structure
- Mount the enclosure and tighten the screws

The seal to the supporting structure is available on request, if required.

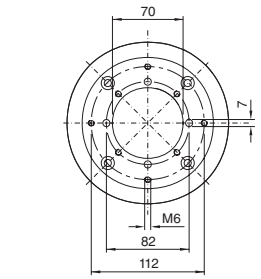
Material:
Cast aluminium

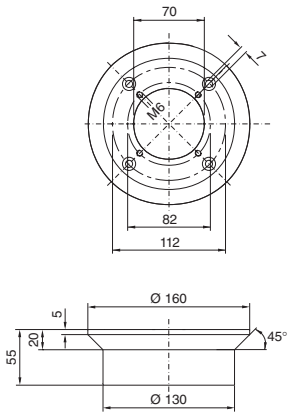
Supply includes:
Seal and assembly parts.

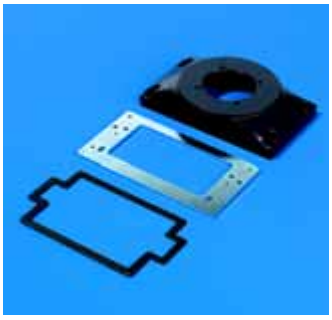
Height mm	Colour RAL	Weight kg	**Model No. CP**
20[1)]	7030	0.6	**6528.000**
55[2)]	7030	0.7	**6528.500**

[1)] Provided the load permits, may also be mounted between enclosure with support arm connection CP-XL and support arm system CP-L Ø 130 mm.

[2)] For command panel VIP 6000, see page 161, 3.1. Operating housing, design code number 1 to 5.











Connection plate

with reinforcement plate

- For easy location of the command panel onto the support arm or pedestal.
- After drilling 4 holes Ø 7 mm, simply screw-fasten from the outside.
- More space for cable entry plus clamping bracket.

For assembling:

- VIP 6000[1)]
- Optipanel[2)]
- Sheet steel command panel[3)]

to:

Support arm system components	CP-L	CP-XL
Enclosure attachment	CP 6525.5X0	CP 6130.600
Housing coupling	CP 6525.0X0	CP 6130.000
Angle coupling	CP 6526.0X0	CP 6040.000
Tilting adaptor 10°	CP 6527.0X0	–
Tilting adaptor +/– 45°	CP 6529.0X0	–

1 Pre-install screws, locate the enclosure, tighten the screws, and voila!

With support arm connection	Colour RAL	Weight kg	Model No. CP
CP-XL	7030	0.8	**6528.300**
CP-L	7030	0.7	**6528.200**
CP-L	7024	0.7	**6528.210**

Note:
The square support arm cutout can be prepared on request.

Material:
Connection plate: Cast aluminium
Reinforcement plate: Sheet steel 6 mm

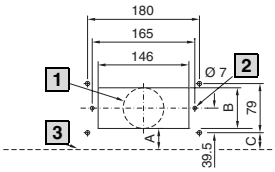
Supply includes:
Seals and assembly parts.

[1)] From a front panel width of 265 mm.
The CP-XL version cannot be used in conjunction with installation depth 155 mm and 295 mm.

[2)] From a front panel width of 220 mm and installation depth of 150 mm.

[3)] Mounting surface area, minimum W x D = 300 mm x 135 mm (e.g. command panel housing with door).

Mounting cutout CP-L/CP-XL



1 Alternative Ø B

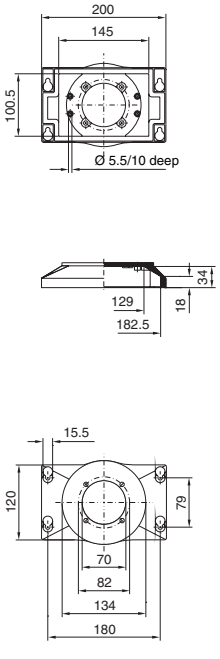
2 Ø 6 mm only with metal enclosures for securing the reinforcement plate

3 Enclosure outer edge rear

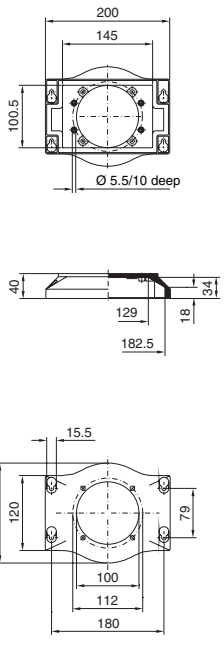
	Installation depth mm	A	B	C
VIP 6000	155 – 185	32	81	30.5
	295 – 438	174.5	81	173
Opti-panel	150	34	65.5	28
Metal enclo-sure	–	1)	86	1)

[1)] Drill the holes/cutout in the centre of the reinforcement plate of the enclosure.

CP-L



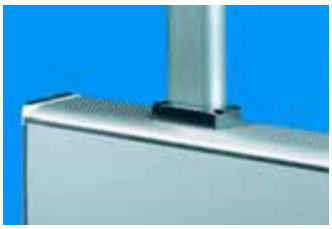
CP-XL



Support arm system CP-L

Aluminium





Enclosure attachment, locatable CP-L

for support arm connection ▭ 120 x 65 mm
For rigid fastening of the enclosure to the support section.
With “machined keyholes” for easy, secure mounting by just one person:

- Screw the enclosure attachment to the support arm.
- Secure the supporting plate to the inside of the enclosure and pre-fit two screws from the outside.
- Locate the enclosure and tighten the screws.

For enclosures from a depth of 70 mm. More space for entry of cables with connectors.

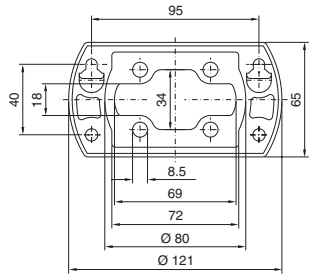
Material:
Enclosure attachment: Die-cast zinc
Support plate: Sheet steel

Supply includes:
Seal, support plate and assembly parts.

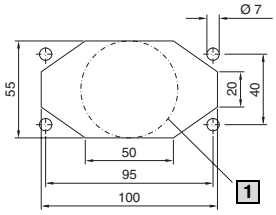
Colour RAL	Weight kg	**Model No. CP**
7030	0.4	**6525.200**
7024	0.4	**6525.210**

Also required:

90° articulated joint CP-L,
see page 214.



Mounting cutout
Enclosure ▭ 120 x 65 mm



1 Alternative max. Ø 55 mm





1. Optipanel



2. General

Connection console CP-L

For rear connection of slimline operating housings. Removable lid for simple cable entry.

Material:
Cast aluminium

Supply includes:
Seals and assembly parts for mounting on the enclosure and 2 cable ties.

Mounting options:

1. Optipanel
Retro-fitting:
- Cutout in rear panel/door
- With support plate CP 6508.100 (see page 212) directly screw-fastened to extrusion (see Fig. A)

Selection via design code number
(see page 175, item 2.3, selection 7 or 8):
Connection console and support plate are fitted.

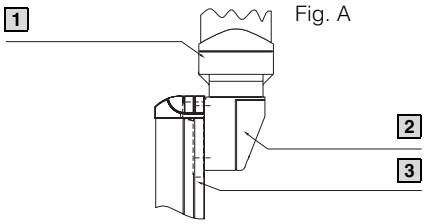


Fig. A

2. General
e.g.
- Terminal boxes (see page 107),
- Cast aluminium enclosures (see page 104)

the connection console may be mounted
a) directly, flush with enclosure edge (see Fig. B top),
b) in the centre with spacer plate CP 6508.200 (on request) (see Fig. B below),
on the rear wall of the enclosure. Additional reinforcement of the rear panel should be checked in individual cases.

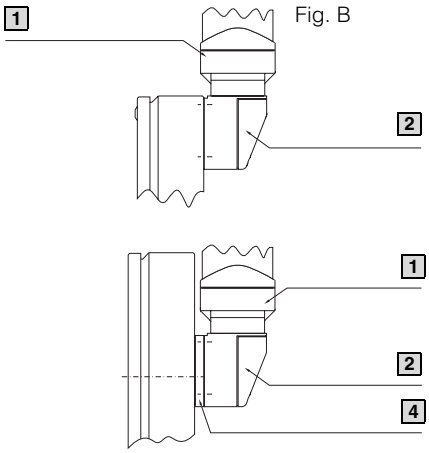


Fig. B

Colour RAL	Weight kg	**Model No. CP**
7030	0.7	**6508.000**
7024	0.7	**6508.010**

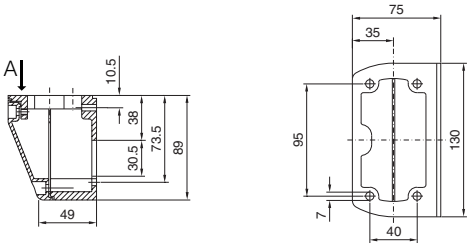
Also required:

Enclosure attachment CP 6525.6X0),
see page 207.
Housing coupling (CP 6525.1X0),
see page 212.
Tilting adaptor 10° (CP 6527.1X0),
see page 206.
Housing coupling CP-S (CP 6501.130),
see page 195.

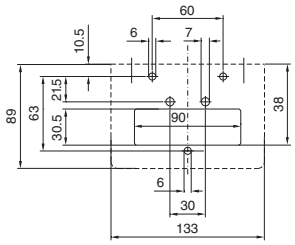
Accessories:

Spacer plate (CP 6508.200), available on request.
Support plate Optipanel CP 6508.100,
see page 212.

View A



Mounting cutout



1 Support arm component CP-L
□ 120 x 65 mm
2 Connection console CP-L
3 Support plate (inside)
4 Spacer plate

Support arm system CP-L

Aluminium



Optipanel support plate

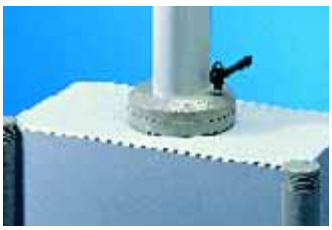
For mounting on the enclosure section.
The rear panel or door are recessed in this area, thereby ensuring easy access in case of servicing.

Material:
Cast aluminium

Supply includes:
Seals and assembly parts.

Weight kg	Model No. CP
0.2	**6508.100**





Housing coupling CP-L

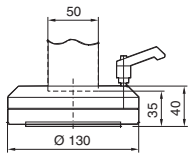
for support arm connection Ø 130 mm
For swivel mounting of the enclosure on the vertical section of the support arm system.

Rotation range:
Approx. 310°, lockable via clamping lever.
By inserting additional pins 5 x 18 mm to ISO 8752, the rotation range may be limited to ±5°, 65°, 95° and 155°.

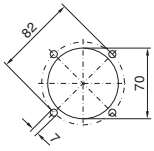
Material:
Die-cast zinc

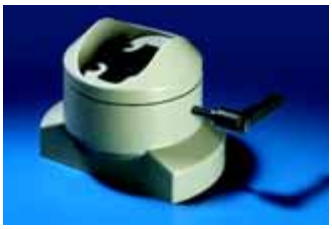
Supply includes:
Seals and self-tapping screws for CP-L support section attachment.

Colour RAL	Weight kg	Model No. CP
7030	1.7	**6525.000**
7024	1.7	**6525.010**



Mounting cutout
Enclosure CP-L, Ø 130 mm







Housing coupling CP-L

for support arm connection ▭ 120 x 65 mm
For swivel mounting of the enclosure on the vertical section of the support arm system.

Rotation range:
Approx. 350°, lockable via clamping lever.
By inserting additional pins 6 x 20 mm to ISO 8752, the rotation range may be limited to ±5° and ±100°.

Material:
Die-cast zinc

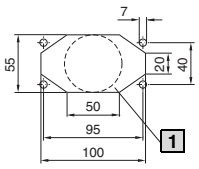
Supply includes:
Seals and self-tapping screws for CP-L support section attachment.

Colour RAL	Weight kg	Model No. CP
7030	1.4	**6525.100**
7024	1.4	**6525.110**

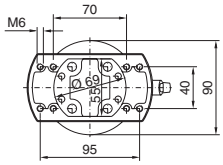
Accessories:

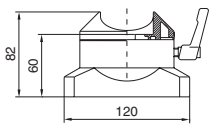
Connection console CP-L (CP 6508.0X0), see page 211.

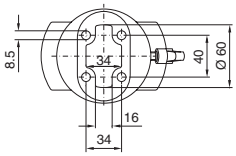
Mounting cutout
Enclosure CP-L, ▭ 120 x 65 mm

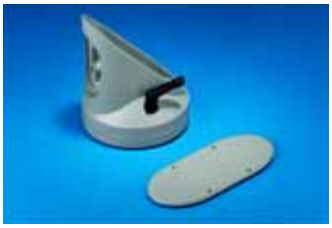


1 Alternative max. Ø 55 mm











Angle coupling 90° CP-L

for support arm connection Ø 130 mm
For swivel mounting of the enclosure on the horizontal part of the support arm system. Enclosure may be suspended or top-mounted.
The removable plate enables problem-free cable entry.

Rotation range:
Approx. 310°.
By inserting additional pins 5 x 18 mm to ISO 8752, the rotation range may be limited to ±5°, 65°, 95° and 155°.

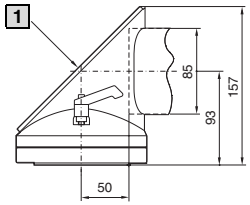
Material:
Cast aluminium/die-cast zinc

Supply includes:
Seals, adjustment set and self-tapping screws for CP-L support section attachment.

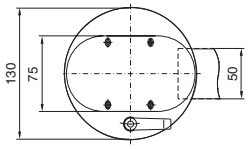
Colour RAL	Weight kg	**Model No. CP**
7030	1.9	**6526.000**
7024	1.9	**6526.010**

Accessories:

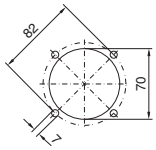
Mounting component for signal pillars (SZ 2375.000), see page 1045.



1 Removable plate



Mounting cutout
Enclosure CP-L Ø 130 mm







Angle piece 90° CP-L

For connecting horizontal and vertical support arm components. The removable plate ensures easier cable entry.

Material:
Die-cast zinc

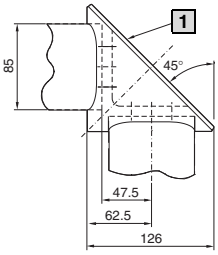
Supply includes:
Seals, adjustment set and self-tapping screws for CP-L support section attachment.

German patent no. 43 31 125
French patent no. 94 10901
Italian patent no. 012 74 738
Japanese patent no. 2 809 993
US patent no. 5,533,763

Colour RAL	Weight kg	**Model No. CP**
7030	1.4	**6524.000**
7024	1.4	**6524.010**

Accessories:

Mounting component for signal pillars (SZ 2375.000), see page 1045.



1 Removable plate
75 x 174 mm

Support arm system CP-L

Aluminium





Articulated joint 90° CP-L

The swivel connection between horizontal and vertical support sections.
With very slimline enclosures, there is no need for the deep housing coupling. With the shallow enclosure attachment (CP 6525.2X0), the support section may also be attached with its wide side.

Rotation range:
Approx. 325°.
Option of limiting the rotation range via the use of additional pins 5 x 18 mm to ISO 8752 to ±54° and ±98°.

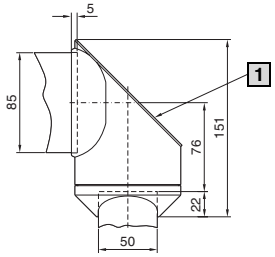
Material:
Cast aluminium/die-cast zinc

Supply includes:
Seals, self-tapping screws for support section attachment and adjustment set.

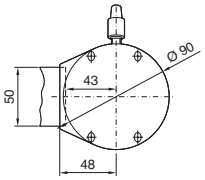
Colour RAL	Weight kg	**Model No. CP**
7030	1.2	**6524.200**
7024	1.2	**6524.210**

Also required:

Enclosure attachment, locatable CP-L for support arm connection ▭ 120 x 65 mm (CP 6525.2X0), see page 210,
or enclosure attachment CP-L for support arm connection ▭ 120 x 65 mm (CP 6525.6X0), see page 207.



1 Removable plate











Angle adaptor 90°

Connection component between:
- small and larger support arm systems.

Outlet optionally at the top or bottom if this configuration is chosen for static or visual reasons.
The removable cover ensures easier cable entry.

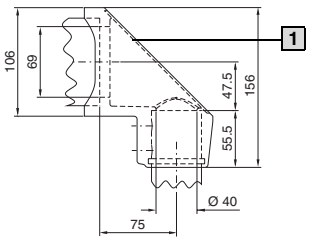
Material:
Cast aluminium

Supply includes:
Seal for support section attachment.

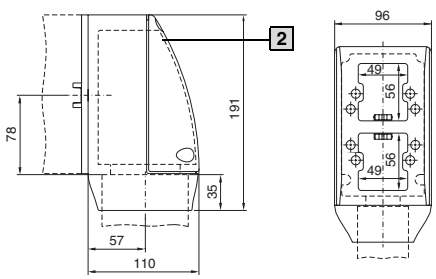
Note:
Mounting component for signal pillar available on request.

	Colour RAL	Weight kg	**Model No. CP**
CP-L to CP-S	7024	1.0	**6501.090**
CP-XL to CP-L	7030	1.7	**6528.100**

CP 6501.090

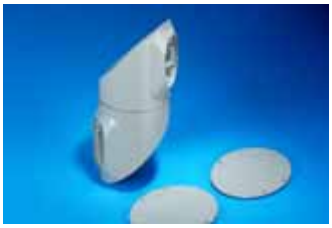


CP 6528.100



1 Removable plate 71 x 149 mm

2 Removable cover







Intermediate hinge CP-L

For vertically hinged connection of horizontal support sections within the support arm system. The removable plates allow simple cable entry.

Rotation range:
Approx. 315°.
With the option of restricting the rotation range in 60° increments using the screws supplied.

Material:
Cast aluminium

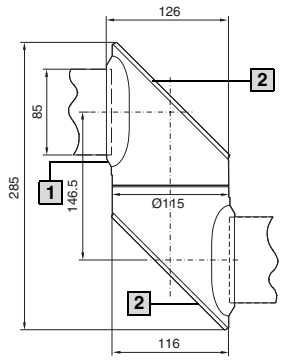
Supply includes:
Seals, adjustment set and self-tapping screws for CP-L support section attachment.

German patent no. 44 03 593
French patent no. 94 10902
Ital. patent no. 01274751
Japanese patent no. 2 675 264
US patent no. 5,522,118

Colour RAL	Weight kg	**Model No. CP**
7030	3.2	**6523.000**
7024	3.2	**6523.010**

Accessories:

Mounting component for signal pillars (SZ 2375.020),
see page 1045.



1 Screw for adjusting rotatability
2 Removable plate





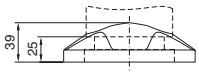
Wall/base mounting, small CP-L

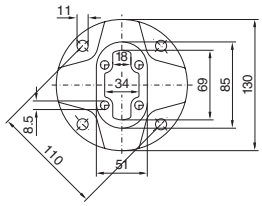
For rigid attachment of the support arm system to vertical or horizontal surfaces.
Particularly suitable for the configuration of compact support arm systems with cable infeed from the inside.

Material:
Cast aluminium

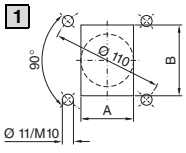
Supply includes:
Seals, adjustment set for support section and self-tapping screws for CP-L support section attachment.

Colour RAL	Weight kg	**Model No. CP**
7030	0.6	**6520.500**
7024	0.6	**6520.510**





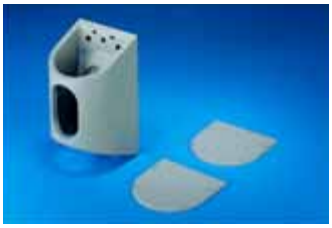
Mounting cutout



1 Alternative Ø 52
A = max. 52
B = max. 70

Support arm system CP-L

Aluminium





Wall/base mounting, large CP-L

For rigid attachment of the support arm system to vertical or horizontal surfaces with cable infeed from the inside.

Material:
Cast aluminium

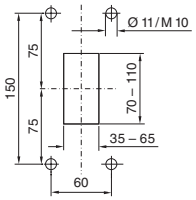
Supply includes:
Seals, opportunity for adjustment with grub screws and self-tapping screws supplied loose for CP-L support section attachment.

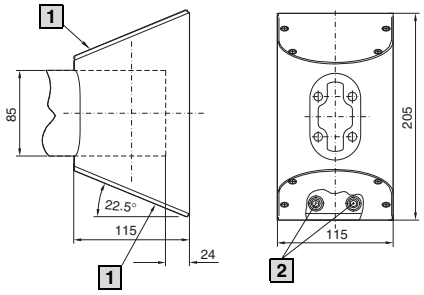
Colour RAL	Weight kg	Model No. CP
7030	1.9	**6520.000**
7024	1.9	**6520.010**

Accessories:

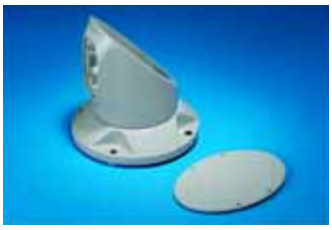
Pillar,
see page 236.

Mounting cutout





1 Removable plate
2 Adjusting screws





Top mounted joint CP-L

For swivel mounting of the support arm system on horizontal surfaces – also suitable for suspending from the ceiling. The removable plate allows easier cable entry.

Rotation range:
Approx. 315°.
Option of restricting the rotation range in 60° increments and adjusting the mobility of the joint with the screws supplied loose. To lock the joint, the screw may be exchanged for a standard commercially available clamping lever M8 x 16.

Material:
Cast aluminium

Supply includes:
Seals, adjustment set and self-tapping screws for CP-L support section attachment.

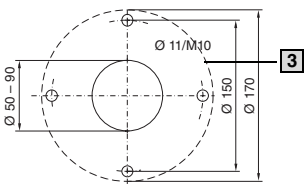
Note:
Not suitable for the suspension of enclosures.

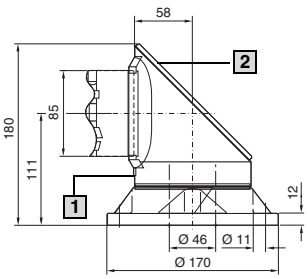
Colour RAL	Weight kg	Model No. CP
7030	3.0	**6522.000**
7024	3.0	**6522.010**

Accessories:

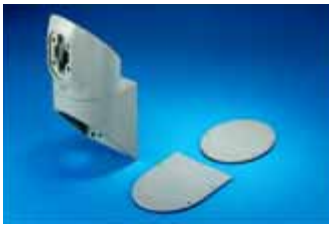
Pillar,
see page 236.
Mounting component for signal pillars (SZ 2375.020),
see page 1045.

Mounting cutout





1 Screw for adjusting rotatability
2 Removable plate
3 Mounting surface







Wall mounted hinge CP-L

For vertically hinged mounting of the support arm on vertical surfaces. The removable plates facilitate problem-free cable routing and cable entry.

Rotation range:
Approx. 315°.
Option of restricting the rotation range in 60° increments and adjusting the mobility of the joint with the screws supplied loose. To lock the joint, the screw may be exchanged for a standard commercially available clamping lever M8 x 16 to adjust rotatability.

Material:
Cast aluminium

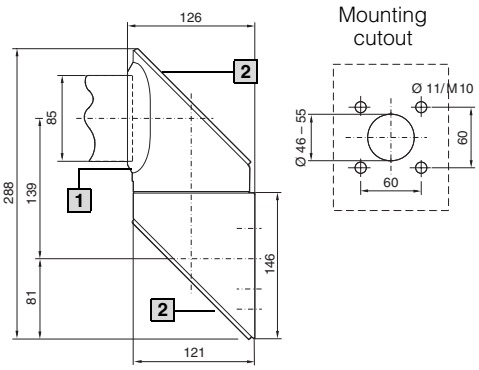
Supply includes:
Seals, adjustment via grub screws and self-tapping screws for CP-L support section attachment.

German patent no. 44 03 593
French patent no. 94 10902
Ital. patent no. 01274751
Japanese patent no. 2 675 264
US patent no. 5,522,118

Colour RAL	Weight kg	**Model No. CP**
7030	3.2	**6521.000**
7024	3.2	**6521.010**

Accessories:

Pillar, see page 236.
Mounting component for signal pillars (SZ 2375.020), see page 1045.



1 Screw for adjusting rotatability
2 Removable plate





Mounting component CP-L

for signal pillars
For mounting a signal pillar with connection component for conduit mounting on support arm system CP-L, see page 1045.

Support arm system CP-XL

Fast selection

Make a simple sketch showing the basic form of the support arm. Next, select the corresponding support arm components. Start with **1** system start by selecting the appopriate enclosure situation.

Continue with CP-XL according to the item numbers.

System continuation/system end:

all directions

vertical

horizontal

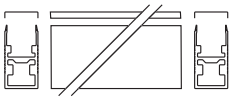
angled

rotatable components

From position **3** enclosure attachments, a support section is required between each component (minimum length approx. 100 mm, for wall/floor mounting approx. 160 mm).
The cross-sections indicate the installation position(s).

T Support sections

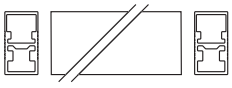
T1 Support section CP-XL, open



Length mm	Colour RAL	**Model No. CP**
500	7035	6050.000
1000	7035	6100.000
2000	7035	6200.000

See page 220

T2 Support arm CP-XL, solid



Length mm	Colour RAL	**Model No. CP**
500	7035	6050.500
1000	7035	6100.500
2000	7035	6200.500

See page 220

1 System start

Enclosure with mounting cutout

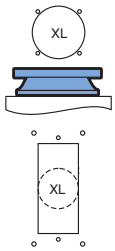
1.1 Mounting cutout CP-XL



1.2 Connection plate CP-XL

CP 6528.300 (RAL 7030)

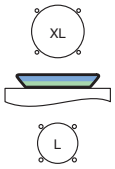
see page 209



1.3 Connection adaptor CP-L to CP-XL

CP 6528.000 (RAL 7030)

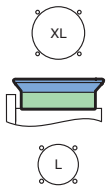
see page 208



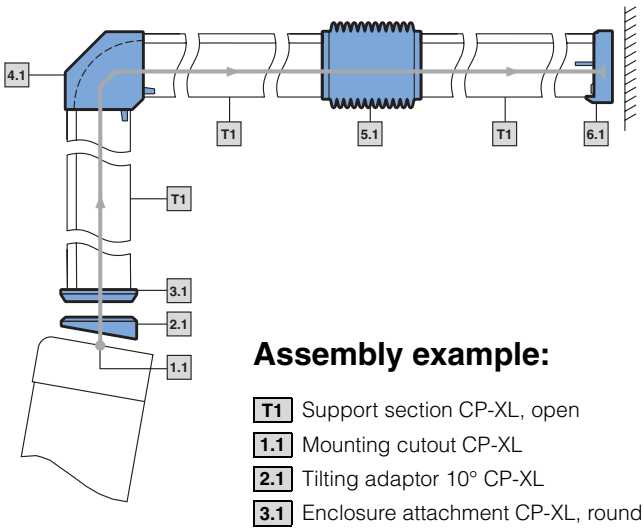
1.4 Connection adaptor CP-L to CP-XL
for VIP 6000 enclosure in installation depths 155, 185 and 295 mm

CP 6528.500 (RAL 7030)

see page 208



2.1
2.2
3.1
3.2
3.3
3.4



Assembly example:

- T1 Support section CP-XL, open
- 1.1 Mounting cutout CP-XL
- 2.1 Tilting adaptor 10° CP-XL
- 3.1 Enclosure attachment CP-XL, round
- 4.1 Angle piece 90° CP-XL, outlet at bottom
- 5.1 Intermediate hinge CP-XL
- 6.1 Wall/base mounting CP-XL

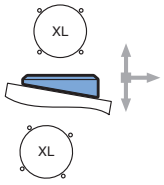
Note:

- Only insert one intermediate hinge
- Two angle pieces may also be used one after the other
- With angle pieces, take care to ensure correct positioning of the support section cable duct
- **Load diagram,** see page 188.

Fast selection

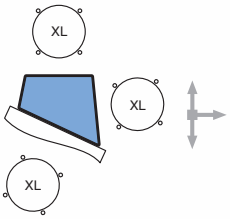
2 Tilting adaptor

2.1 Tilting adaptor 10° CP-XL
CP 6023.000 (RAL 7030)
see page 221



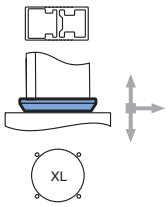
→ 3.1 3.3 3.4

2.2 Tilting adaptor 25°/60° CP-XL
CP 6150.000 (RAL 7030)
see page 222



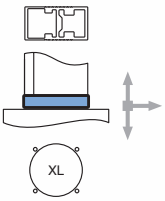
3 Enclosure attachments

3.1 Enclosure attachment CP-XL, round
CP 6130.600 (RAL 7030)
see page 222

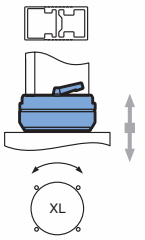


→ 4.1 4.2 5.1 6.1 6.2 6.3

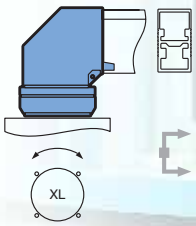
3.2 Enclosure attachment CP-XL, rectangular
CP 6130.500 (RAL 7030)
see page 223



3.3 Housing coupling CP-XL
CP 6130.000 (RAL 7030)
see page 223

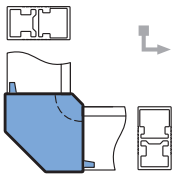


3.4 Angle coupling 90° CP-XL
CP 6040.000 (RAL 7030)
see page 224



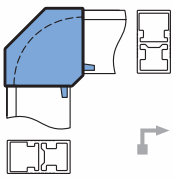
4 Angle components

4.1 Angle piece 90° CP-XL, outlet at bottom
CP 6140.000 (RAL 7030)
see page 225



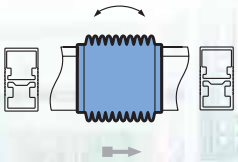
→ 5.1 6.1 6.2 6.3

4.2 Angle piece 90° CP-XL, outlet at top
CP 6180.000 (RAL 7030)
see page 225



5 Intermediate hinge

5.1 Intermediate hinge CP-XL
CP 6120.000 (RAL 7030)
see page 225



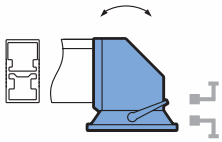
→ 4.1 4.2 6.2 6.3

6 System end

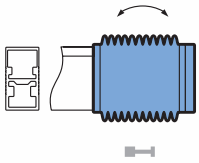
6.1 Wall/base mounting CP-XL
CP 6160.000 (RAL 7030)
see page 227



6.2 Top mounted joint CP-XL
CP 6170.000 (RAL 7030)
see page 227

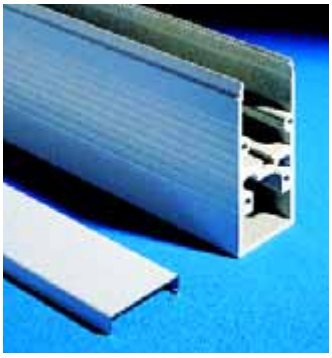


6.3 Wall mounted hinge CP-XL
CP 6110.000 (RAL 7030)
see page 226



Support arm system CP-XL

Aluminium



Support section CP-XL, open

Attachment to the connecting components with 4 self-tapping screws in the screw channel, may be cut to any required length.
With open cable duct, for easy servicing access and for pre-assembled cables with connectors; easily locked via clip-in lid.

Size:
80 x 155 mm

Material:
Extruded aluminium section

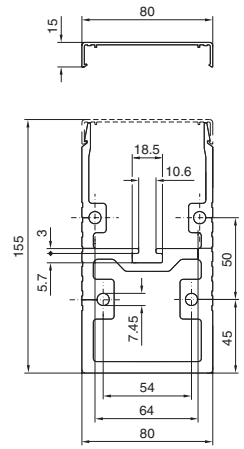
Supply includes:
Clip-in lid

Length mm	Colour RAL	Weight kg	Model No. CP
500	7035	4.9	**6050.000**
1000	7035	9.8	**6100.000**
2000	7035	19.6	**6200.000**

Note:
Load information, see page 188.

Accessories:

Adjustment set for support section, see page 221.





Support section CP-XL, solid

The alternative solution for higher loads and torsion compared with the CP-L support section, open.

Size:
80 x 155 mm

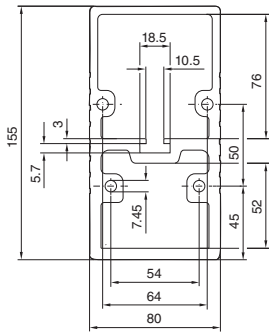
Material:
Extruded aluminium section

Length mm	Colour RAL	Weight kg	Model No. CP
500	7035	5.5	**6050.500**
1000	7035	11.0	**6100.500**
2000	7035	22.0	**6200.500**

Note:
Load information, see page 188.

Accessories:

Adjustment set for support section, see page 221.





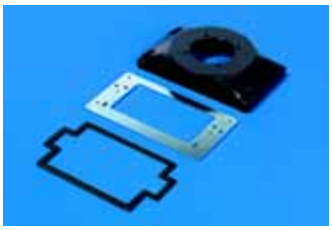


Adjustment set for support section CP-XL

The adjustment set permits retrospective alignment of the CP support section.

Material:
Sheet steel 1.0 mm, zinc-plated, passivated.

Packs of	Model No. CP
10	**6205.000**



Connection plate

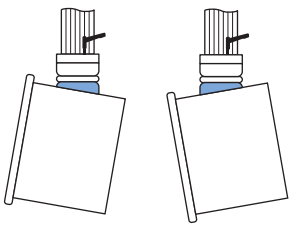
with reinforcement plate
see page 209.



Connection adaptor CP-L to CP-XL

see page 208.





Tilting adaptor 10° CP-XL

For mounting between:
- Housing coupling (CP 6130.000)

or
- Enclosure attachment (CP 6130.600)

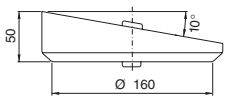
or
- Angle coupling (CP 6040.000)

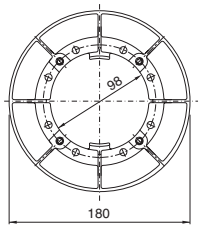
and the command panel.

Material:
Die-cast zinc

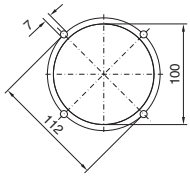
Supply includes:
Seals and assembly parts.

Colour RAL	Weight kg	Model No. CP
7030	1.4	**6023.000**





Mounting cutout
Enclosure CP-XL



Support arm system CP-XL

Aluminium



Tilting adaptor 25°/60° CP-XL

For mounting between:
- Housing coupling (CP 6130.000)

or
- Enclosure attachment (CP 6130.600)

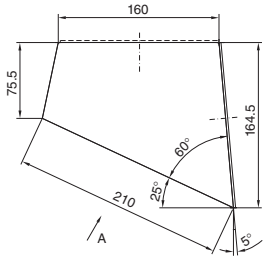
or
- Angle coupling (CP 6040.000)

and the command panel.

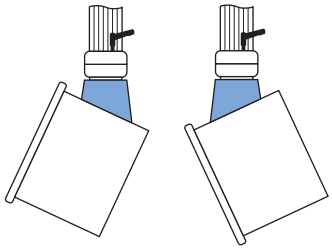
Material:
Cast aluminium

Supply includes:
Seals, plastic cover and assembly parts.

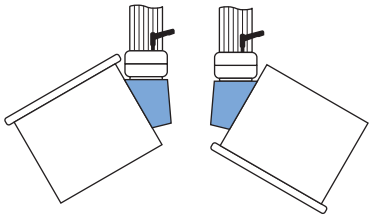
Colour RAL	Weight kg	**Model No. CP**
7030	1.7	**6150.000**

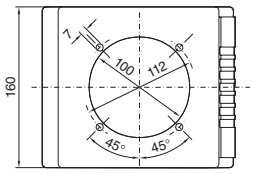


Tilt 25°

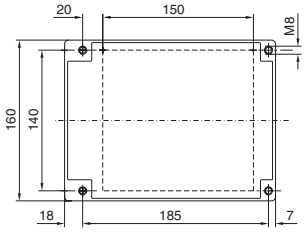


Tilt 60°





View A





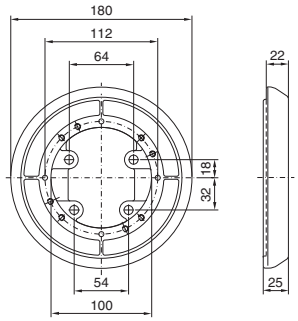
Enclosure attachment CP-XL, round

For rigid external mounting of enclosures to:
- Support section
- Tilting adaptor 10° (CP 6023.000)
- Tilting adaptor 25°/60° (CP 6150.000)

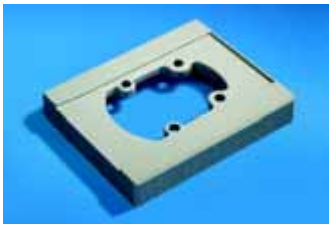
Material:
Die-cast zinc

Supply includes:
Seals and self-tapping screws for CP-XL support section attachment.

Colour RAL	Weight kg	**Model No. CP**
7030	1.6	**6130.600**



Aluminium



Enclosure attachment CP-XL, rectangular

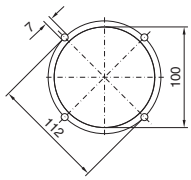
For rigid external mounting on the enclosure.

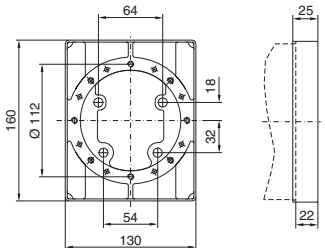
Material:
Die-cast zinc

Supply includes:
Seal and self-tapping screws for CP-XL support section attachment.

Colour RAL	Weight kg	Model No. CP
7030	1.2	**6130.500**

Mounting cutout enclosure CP-XL









Housing coupling CP-XL

For swivel mounting of the enclosure on the vertical section of the support arm system.

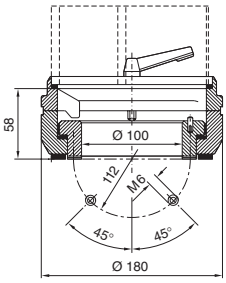
Rotation range:
Approx. 350°

Material:
Die-cast zinc

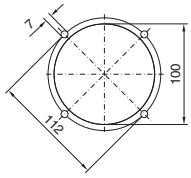
Supply includes:
Seals and self-tapping screws for CP-XL support section attachment.

Note:
By inserting pins 5 x 12 to DIN EN ISO 8741, the rotation range may be limited in 90° increments.

Colour RAL	Weight kg	Model No. CP
7030	6.8	**6130.000**



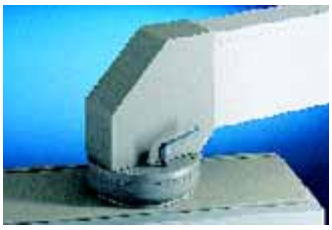
Mounting cutout
Enclosure CP-XL



Support arm system CP-XL

Aluminium





Angle coupling 90° CP-XL

For swivel mounting of the enclosure on the horizontal part of the support arm system. Enclosure may be suspended or top-mounted.

Rotation range:
Approx. 350°

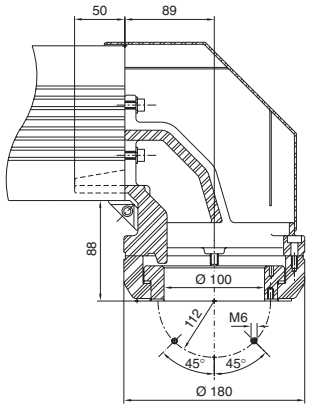
Material:
Spheroidal-graphite cast iron and die-cast zinc

Supply includes:
Seals, plastic casing and self-tapping screws for CP-XL support section attachment.

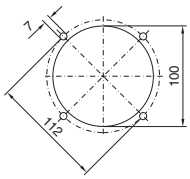
Note:
By inserting pins 5 x 12 to DIN EN ISO 8741, the rotation range may be limited in 90° increments.

German patent no. 4033747
Italian patent no. 1252120

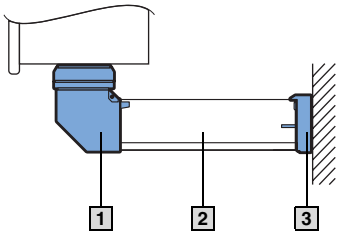
Colour RAL	Weight kg	Model No. CP
7030	6.2	**6040.000**



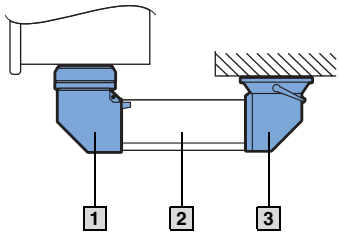
Mounting cutout
Enclosure CP-XL



Top-mounting is only possible as shown in the diagrams below (without intermediate hinge).



1 Angle coupling (CP 6040.000)
2 Support section CP-XL 6050.500
3 Wall/base mounting bracket 6160.000

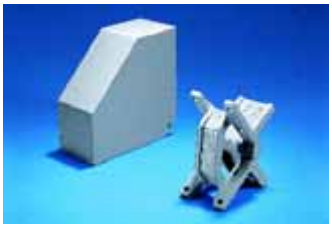


1 Angle coupling (CP 6040.000)
2 Support section CP-XL 6050.500
3 Top mounted joint 6170.000

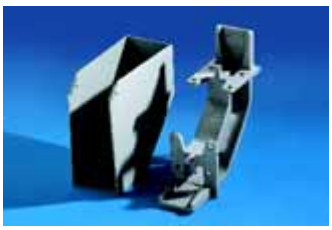


Angle adaptor 90° CP-XL to CP-L

see page 214.









Angle piece 90° CP-XL

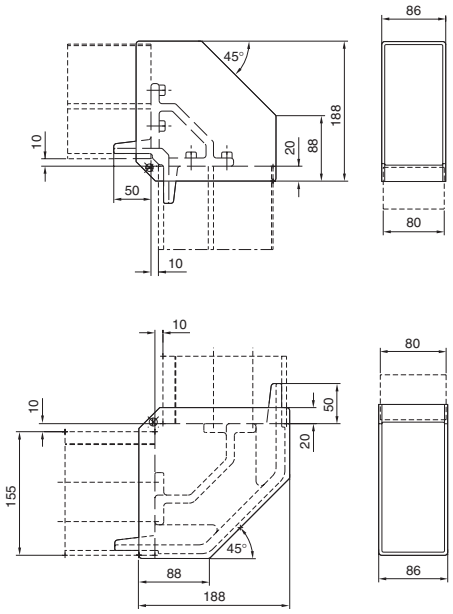
For connecting horizontal and vertical support arm components.

Material:
Spheroidal-graphite cast iron

Supply includes:
Seals, plastic casing and self-tapping screws for CP-XL support section attachment.

German patent no. 58901106
European patent no. 0330027
with validity for IT

Outlet	Colour RAL	Weight kg	Model No. CP
Bottom	7030	2.4	**6140.000**
Top	7030	3.6	**6180.000**







Intermediate hinge CP-XL

For vertically hinged connection of horizontal support sections within the support arm system.

Rotation range:
Approx. 180°

Material:
Spheroidal-graphite cast iron

Supply includes:
Self-tapping screws for CP-XL support section attachment and divided concertina section with zip for uninhibited access to the cable duct.

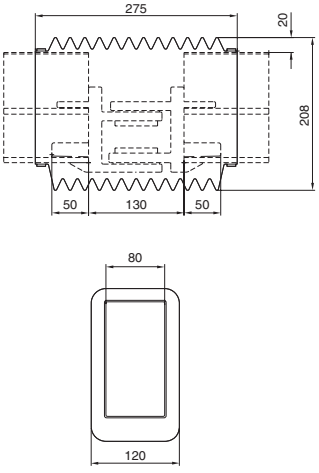
Note:
Rotation range may be reduced with rotation range restrictor.

German patent no. 3805424
European patent no. 0330029
with validity for IT

Colour RAL	Weight kg	Model No. CP
7030	6.5	**6120.000**

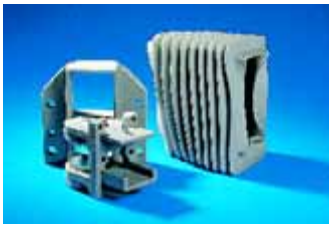
Accessories:

Rotation range restrictor CP-XL,
see page 226.



Support arm system CP-XL

Aluminium





Wall mounted hinge CP-XL

For vertically hinged mounting of the support arm on vertical surfaces.

Rotation range:
Approx. 180°

Material:
Spheroidal-graphite cast iron

Supply includes:
Seals, concertina section and assembly parts.

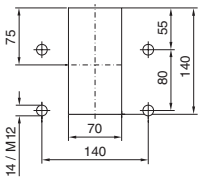
Note:
Rotation range may be reduced with rotation range restrictor CP-XL.

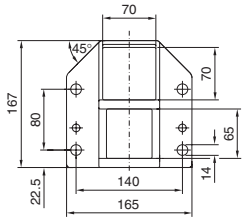
Colour RAL	Weight kg	Model No. CP
7030	8.5	**6110.000**

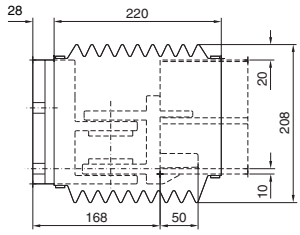
Accessories:

Pillar, see page 236.
Rotation range restrictor CP-XL, see page 226.

Mounting cutout











Rotation range restrictor CP-XL

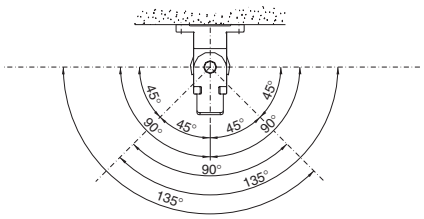
Suitable for:
- Wall-mounted hinge (CP 6110.000)
- Intermediate hinge (CP 6120.000).

Material:
Steel, zinc-plated, passivated

Supply includes:
2 steel disks, slotted, including 3 cheese-head screws for assembly.

Packs of	Weight kg	Model No. CP
1 set	0.6	**6110.100**

Adjustable swivel area:





Top mounted joint CP-XL

For swivel mounting of the support arm system on horizontal surfaces – also suitable for suspending from the ceiling.

Rotation range:
Approx. 350°, lockable.

Material:
Steel and cast parts

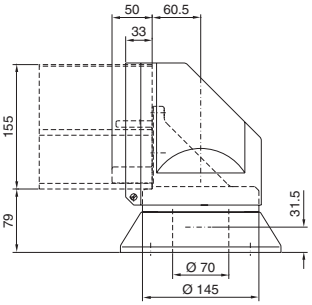
Supply includes:
Seals and plastic casing, self-tapping screws for CP-XL support section attachment.

Note:
Safety end stop as anti-twist protection.

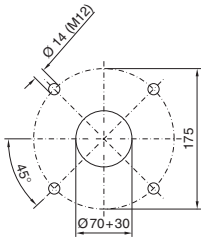
Colour RAL	Weight kg	Model No. CP
7030	11.9	**6170.000**

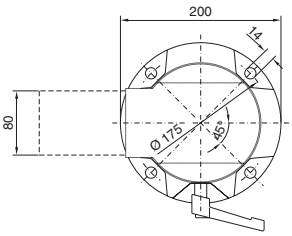
Accessories:

Pillar, see page 236.



Mounting cutout







Wall/base mounting CP-XL

For rigid attachment of the support arm system to vertical or horizontal surfaces.

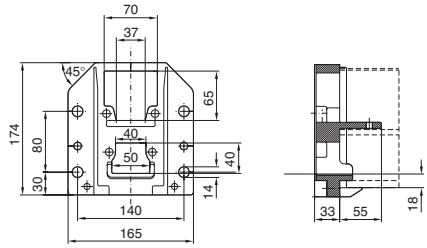
Material:
Spheroidal-graphite cast iron

Supply includes:
Seals and self-tapping screws for CP-XL support section attachment.

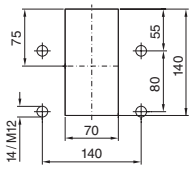
Colour RAL	Weight kg	Model No. CP
7030	4.1	**6160.000**

Accessories:

Pillar, see page 236.



Mounting cutout



Stand systems

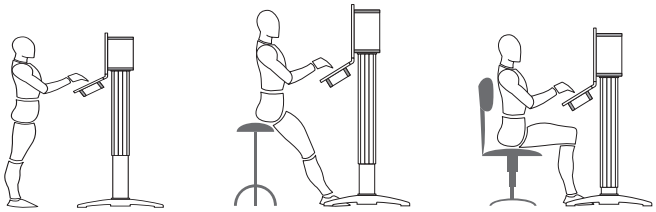
Features



Bringing movement to Rittal stand systems, to meet all your ergonomic and technical requirements.

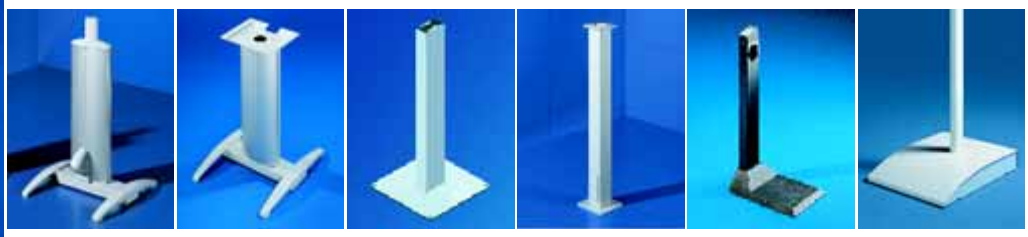
For every enclosure type, height variability, mobile use, and accommodation of cables.

Our extensive solution diversity meets every conceivable requirement.





Powerful pillars with numerous options – fixed …



Pedestal for Command Panel
with support section CP-L

Pedestal for IW worktops

Pillar, small
For compact assemblies

Pillar, large
The robust base point for heavy assemblies.

Pedestal for operating housing
Suitable for side mounting of operating housings.

Pedestal base plate, large

… and with variable height



Lifting pillar, electric
Height adjustment (from 670 to 1140 mm), spindle drive secured against unintentional dropping.

Support section, height-adjustable
Adjustment range from 732 to 1122 mm. Inner section for external mounting of operating housings.

Pedestal, modular, small
for the configuration of compact operating stations. Height of support section may be shortened by sawing to the required length.

Pedestals in every variant – fixed or mobile



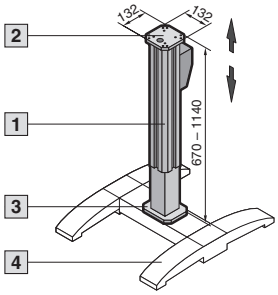
Pedestal base plate, large
Fitted with: Cutout for concealed mounting of cable conduit adaptors and PG segments.

Cross member with cast feet
Steel cross member with mounting holes for lifting pillar.

Pedestal, mobile
for changing locations.

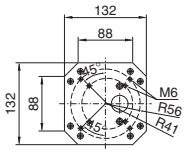
Pedestal, height-adjustable



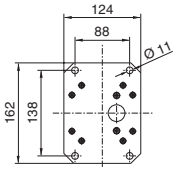


May be compiled from the following modules:	Model No. CP	Page
1 Lifting pillar, electric	**6142.000**	see below
Control unit for: – Manual operation – External mounting on surfaces/enclosures	**6142.010** **6142.020**	
4 Cross member with cast feet	**6142.100**	233

Mounting surface Head plate



Mounting surface Base plate





1 Lifting pillar, electric

Height adjustment 470 mm (from 670 to 1140 mm), spindle drive locked against unintentional dropping.
With electronic overload cutout to protect the drive.
Adjusting unit made from extruded aluminium section with groove on all sides for individual mounting using accessory attachment CP 6142.030.

2 Head plate

- For direct mounting of worktop attachment IW, enclosures with support arm connection
  – CP-L, Ø 130 mm
  – CP-XL
- For swivel mounting of enclosures, including those with keyboard support via wall/base mounting bracket, small CP-L CP 6520.510, in conjunction with support arm system CP-L, see page 200.

3 Base plate

For external mounting on the cross member or a sub-structure provided by the customer.

Weight kg	Packs of	Model No. CP
13.8	1	**6142.000**

Technical specifications:
Permissible load: max. 80 kg
Duty cycle: max. 6 min/h w. continuous operation
Ambient temperature: +5°C to +40°C
Mains connection: 230 V/50 Hz
Transformer: 24 V DC

Protection category:
IP 65 to EN 60 529
(for electrical components).

Supply includes:
Adjusting drive with transformer, head and base plate.

Also required:

Control unit, see page 229.

Accessories:

Cross member with cast feet CP 6142.100, see page 233.
Worktop attachment 6902.780, see page 1040.
Wall/base mounting bracket, small, CP-L, CP 6520.5X0, see page 215.





Control unit

for height adjustment of the lifting pillar. Design ready for connection with spiral cable and connector.

For manual operation:
With hooks for location e.g. on the enclosure handle set.

For external mounting:
With mounting brackets for screw fastening.

Version	Protection category	Model No. CP
Manual operation	IP 65	**6142.010**
Mounting on surfaces/enclosures	IP 30	**6142.020**



Accessory attachment

for lifting pillar
Simply slide into the groove of the lifting pillar and secure at any chosen height using the existing screws.
With M10 thread for mounting tools or your own components, such as utility trays.

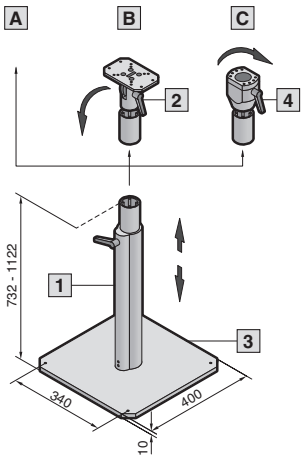
Packs of	Model No. CP
1 set	**6142.030**

VIP 6000 Page 154 **Optipanel** Page 170 **Compact Panel** Page 183 **Support arm system CP-L** Page 200

Pedestal, modular, CP-S







For small panels and keyboard housings up to 20 kg

May be compiled from the following modules:	Model No. CP	Page
1 Support section, height-adjustable	**6146.200**	230
2 Tilt adjustment	**6146.300**	231
3 Pedestal base plate	**6146.100**	231
4 CP-S attachment	**6501.070**	194
or enclosure coupling CP-S	**6501.050**	195

External mounting of operating housings or other devices:

A Direct screw-fastening

B With tilt adjuster 2

C With attachment 6501.070 or housing coupling 6501.050 CP-S, see page 194/195.



Support arm section

height-adjustable

Adjustment range from 732 to 1122 mm.
Inner section for external mounting of operating housings.
External section with:

- Clamping screws at the rear for external mounting on pedestal base plate CP 6146.100
- Clamping lever for height fixing
- Surface for external cable routing.

Material:
Extruded aluminium section, natural anodised

Supply includes:
Inner and outer section including locking lever and assembly parts for external mounting on the base plate and enclosure.

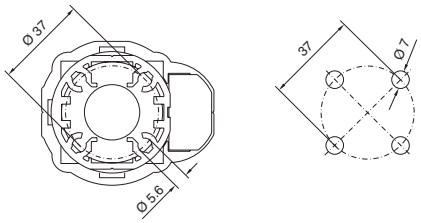
Weight kg	Packs of	Model No. CP
3.0	1	**6146.200**

Accessories:

Tilt adjustment CP 6146.300, see page 231.
Pedestal base plate CP 6146.100, see page 231.
Attachment CP-S CP 6501.070, see page 194.
Housing coupling CP-S CP 6501.050, see page 195.

Rittal service:

Other heights available on request.





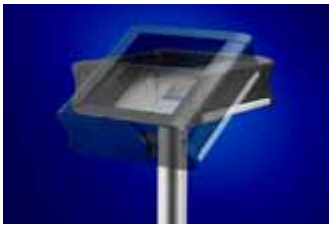
Gas pressurised spring

- For relief with height adjustment
- Optional installation
- Internal mounting
- Load capacity 15 kg
- Length 490/885 mm

Supply includes:
Assembly parts for installing in the support section, height-adjustable.

Packs of	Model No. CP
1	**6146.400**

Optipanel Page 170 **Compact Panel** Page 183





Tilt adjustment

For direct top-mounting on enclosures with mounting cutout:
- CP-S
- CP-L, ▭ 120 x 65 mm
- CP-L, Ø 130 mm

Cannot be combined with enclosure attachment or coupling.

Adjustment range:
± 30°

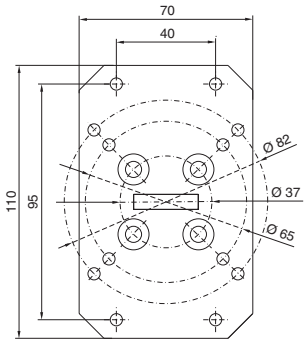
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Locking lever and assembly parts for height-adjustable mounting on the support section.

Packs of	Model No. CP
1	**6146.300**

Rittal service:

As tilt adjustment for support arm system CP-S on request.







Pedestal base plate

With large surface for stability and welded tube connectors (Ø 48.3 mm) to accommodate the external profile of the support section, height-adjustable.

Material:
Sheet steel, powder-coated

Colour RAL	Packs of	Model No. CP
7024	1	**6146.100**

Accessories:

Twin castors CP 6148.000,
see page 848.
Base mount (from the outside using screws up to M10).

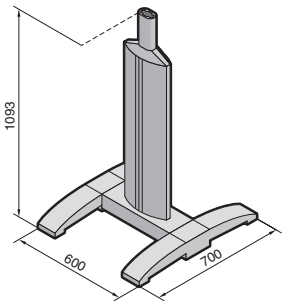
Optipanel Page 170 **Compact Panel** Page 183

Stand systems

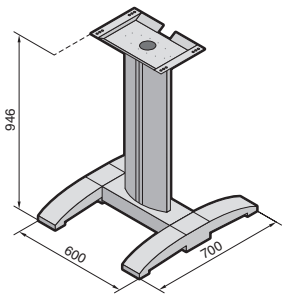
Pedestals







1 + 2



3

Detailed drawing,
see page 1107.



1



2



3

Pedestal

One oval panel is permanently screw-fastened, whilst the other can be opened by "spreading" with a screwdriver for easy laying of cables.
In order to ensure opening of the front panels, we recommend that the adjustable frame connector or hinged frame connector be used with the Command Panel and VIP 6000 with keyboard housing (see page 907).

Material:
Feet: Cast aluminium
Cross member, vertical support tubes: Steel
Panels: Aluminium section

Supply includes:
for Command Panel:
2 cast aluminium feet,
1 cross member made of steel,
2 steel support tubes welded to cross member,
2 oval panels made from aluminium section,
1 top cover made from cast aluminium with support section CP-L,
partially pre-assembled.

for IW worktops:
2 cast aluminium feet,
1 cross member made of steel,
2 steel support tubes welded to cross member,
2 oval panels made from aluminium section,
1 worktop attachment of sheet steel.

	for Command Panel		for IW worktops	
Version	1 with drilled hole for cable entry in cross member	2 with cable conduit adaptor and drilled hole for cable entry in cross member	3 with drilled hole for cable entry in cross member	Page
W x H x D mm[1)]	600 x 1093 x 700	600 x 1093 x 700	600 x 946 x 700	
Model No.	**6141.000**	**6141.100**	**6141.200**	
Weight kg	34.9	35.1	33.7	
Colour RAL	7035/ natural anodised	7035/ natural anodised	7035/ natural anodised	
Accessories				
Twin castors	6148.000, 4611.000, 4634.500	6148.000, 4611.000, 4634.500	6148.000, 4611.000, 4634.500	848
Levelling feet	4612.000	4612.000	4612.000	848
Base mount	6147.000	6147.000	6147.000	233
Foot rest	6145.100	6145.100	6145.100	233
Trim panel	6144.100	6144.100	6144.100	233
Enclosure attachment CP-L, Ø 130 mm	6525.500	6525.500	–	206
Enclosure attachment CP-L, ▭ 120 x 65 mm	6525.600	6525.600	–	207
Housing coupling CP-L, Ø 130 mm	6525.000	6525.000	–	212
Housing coupling CP-L, ▭ 120 x 65 mm	6525.100	6525.100	–	212
Enclosure attachment CP-L, ▭ 120 x 65 mm, locatable	6525.2X0	6525.2X0	–	210
Enclosure attachment, tilting	–	–	6902.640	207
Worktop without handle (W x H x D 950 x 38 x 600 mm)	–	–	6902.310	249
Worktop with handle (W x H x D 950 x 38 x 658 mm)	–	–	6902.320	249

[1)] Other widths and heights and support tubes available on request.

VIP 6000 Page 154 **Optipanel** Page 170 **IW worktops** Page 247



Cross member

with cast feet
Steel cross member with mounting holes for lifting pillar or other individual assemblies, including 2 cast aluminium feet.

Colour RAL	Weight kg	Model No. CP
7035	5.8	**6142.100**

Accessories:

Foot rest CP 6145.100,
Trim panel CP 6144.100,
Base mount CP 6147.000,
see page 233.
Twin castors,
see page 848.

Detailed drawing,
see page 1108.



Base mount

Brackets for screw-fastening from below to the cast feet with posidrive raised countersunk screws M12.
Optionally with projection at the front, interior or sides, with Ø 11 mm hole for screw-fastening to the base.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Posidrive raised countersunk screws M12

Packs of	Model No. CP
4	**6147.000**

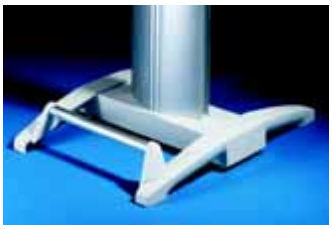


Trim panel

Material:
Cast aluminium

Supply includes:
Assembly parts for screw-fastening between the cast feet at the front or rear.

Colour RAL	Model No. CP
7035 textured	**6144.100**



Foot rest

Material:
Connector pieces: Cast aluminium
Round tube section: Aluminium

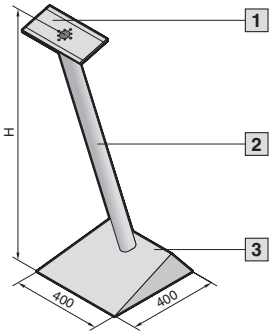
Supply includes:
Assembly parts.

Colour RAL	Weight kg	Model No. CP
7035 textured/natural anodised	0.6	**6145.100**

VIP 6000 Page 154 **Optipanel** Page 170 **IW worktops** Page 247

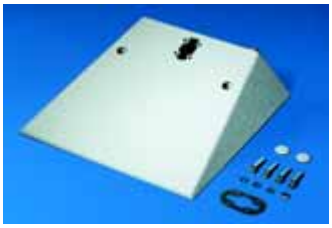
Pedestals





Pedestal
modular, CP-L

May be compiled from the following modules:	Model No. CP	Page
1 Enclosure reinforcement	**6143.210**	237
2 Support section, straight (may be shortened to required length by sawing)		
500 mm	**6511.000**	204
1000 mm (H + 65 mm)	**6513.000**	204
2000 mm	**6515.000**	204
3 Pedestal base plate, small	**6143.200**	234



Pedestal base plate
small

- With one hole at the rear for commercially available cable conduit gland M20.
- With two holes at the top (including sealing bung) for floor attachment.
- Prepared on the inside for a cable clamp for strain relief.

Material:
Sheet steel, 2.5 mm

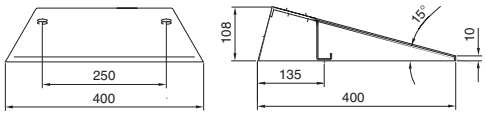
Supply includes:
Assembly parts.

Note:
Commercially available screws up to M8 may be used for floor attachment.

Weight kg	Colour RAL	Model No. CP
6.3	7035	**6143.200**

Accessories:

Cable clamp DK 7077.000 or DK 7078.000, see page 981.





Pedestal base plate
large

- Cutout for concealed mounting of cable conduit adaptor M50
- Cutout for PG segments (EL 2235.010 to EL 2235.080) or cable conduit adaptor up to Ø 70 mm
- Integral cable clamping bracket.

Material:
Sheet steel, powder-coated

Supply includes:
Integral reinforcement and mounting cutout for support section CP-L or CP-XL, including assembly parts for mounting the support section.

For support arm section	Colour RAL	Weight kg	Model No. CP
CP-L	7035	12.4	**6137.535**
CP-XL	7035	13.1	**6137.035**

Also required:

Support section
CP-L, see page 204,
CP-XL, see page 220.

Accessories:

CP enclosure or worktops according to choice.
Twin castors,
see page 848.
Levelling feet,
see page 848.
Wall mounting bracket KL 1580.000 or KL 1590.000 for base attachment,
see page 905.

Detailed drawing,
see page 1108.

Command panel housing with door Page 184 **Operating housing** Page 185 **Terminal boxes KL** Page 107





Pedestal

mobile

Consisting of:
2 sheet steel axles, each with
2 die-cast zinc roller bearings with plastic coating,
4 twin castors, 2 x with, 2 x without locks,
1 cross-brace, screw fastened, of sheet steel with integral cable clamping bracket,
1 support section of aluminium (for CP 6136.000 with clip-in lid).

Material:
Powder-coated in RAL 7035,
Roller bearings RAL 7030,
Partially pre-assembled.

Pedestal, mobile with support section	Model No. CP
CP-L (see page 204)	**6136.500**
CP-XL (see page 220)	**6136.000**

Accessories:

Enclosure attachment for	Model No. CP	Page
6136.500 CP-L	6525.5X0 6525.6X0	206/207
6136.000 CP-XL	6130.600 6130.500	222/223

Detailed drawing,
see page 1107.



Pedestal

for operating housing

For side mounting.

Consisting of:
- Pedestal plate, on castors
- Support section
- End cap with recessed handle.

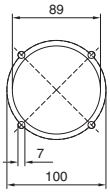
Supply includes:
Assembly parts.

Size:
W x H x D:
360 x 500 x 995 mm

Note:
Up to a maximum enclosure width of 380 mm.

Colour RAL	Weight kg	Model No. CP
9011	23.6	**6135.000**

Mounting cutout





Pillar

small

For heavy assemblies, connection plates at the top for support arm components CP-XL.
- With cutout for 24-pole connectors for cable entry at the bottom rear
- Height: 1,150 mm.

Material:
Steel

Design:
Base plate cross-section 500 x 500 mm,
12 mm thick, with 4 mounting holes.
Pedestal tube cross-section 160 x 80 mm,
wall thickness 3.2 mm) welded to base plate.

Colour RAL	Model No. CP
7035	**6214.500**

Accessories:

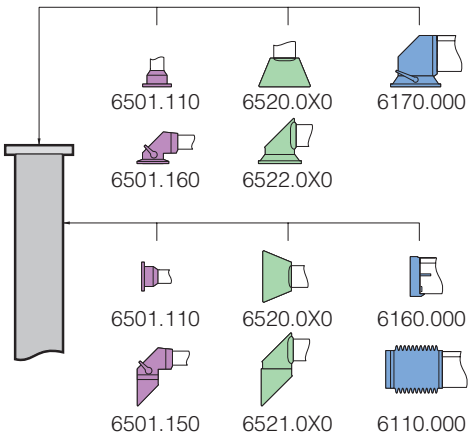
Enclosure coupling CP-XL,
see page 223.
Enclosure attachment CP-XL,
see page 222.

Detailed drawing,
see page 1107.

Command panel housing with door Page 184 **Operating housing** Page 185 **VIP 6000** Page 154 **Optipanel** Page 170

Pillars





Detailed drawing,
see page 1108.



Pillar

The stable base point for the support arm system. The attachment of additional enclosures, e.g. for security systems, is also possible.
There is a choice of 2 cross-sections:
- 140 x 140 mm
- 200 x 200 mm

Design:
Base plate 15 mm thick, with four mounting holes, cutout in the base plate according to the cross-section for cable entry from below. Pedestal tube (wall thickness 5 mm) welded to the base plate, with connection facilities for support arm systems as per the selection table.

Delivery time:
Extended delivery times

Material:
Steel, spray-finished

Colour:
RAL 7035

Supply includes:
Assembly parts for support arm system according to selection.

Note:
Customer-specific designs, such as:
- Other RAL colours
- Drilling patterns
- Heights
- Consoles for additional enclosures

available on request.

Accessories:

Support arm system
CP-S, see page 191,
CP-L, see page 200,
CP-XL, see page 218,
Metal gland plates,
see page 969.

Supply includes					**Model No. CP**				Page
Cross-section 140 x 140 mm, height 2000 mm					**6214.**	**X**	**X**	**0**	
Cross-section 200 x 200 mm, height 2000 mm					**6220.**	**X**	**X**	**0**	
Cutout for cable entry									
Without cutout in pillar						**0**			
Cutout on the front						**1**			
Cutout at rear						**2**			
Cutout on the left						**3**			
Cutout on the right						**4**			
Support arm connection									
	For								
	Wall/base mounting		Wall mounted hinge	Top mounted joint					
	Front	Top	Front	Top					
without							**0**		–
CP-S	6501.110						**6**		198
CP-S		6501.110					**7**		198
CP-S			6501.150				**8**		199
CP-S				6501.160			**9**		198
CP-L	6520.0X0						**2**		216
CP-L			6521.0X0				**3**		217
CP-L				6522.0X0			**4**		216
CP-XL	6160.000		6110.000				**1**		227/226
CP-XL				6170.000			**5**		227

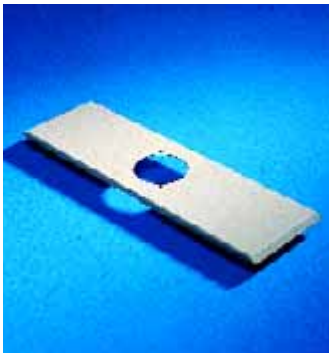
Support arm system CP-S Page 191 **Support arm system CP-L** Page 200 **Support arm system CP-XL** Page 218



CP 6143.310



CP 6143.210



CP 6503.000

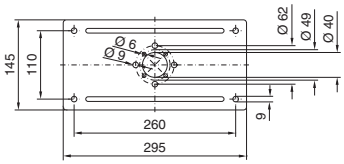
Enclosure reinforcement

For external or internal reinforcement of enclosures of a corresponding size.
Smaller enclosures may also be mounted directly without enclosure reinforcement.

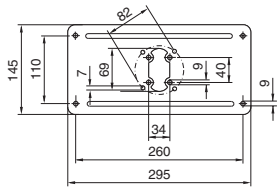
Supply includes:
Assembly parts for the enclosure and support section plus 2 seals.

For enclosure	Support arm connection	Material	Weight kg	**Model No. CP**
B1 ≥ 300 mm, T1 ≥ 150 mm	CP-S	Stainless steel 1.4301	0.9	**6143.310**
B1 ≥ 300 mm, T1 ≥ 150 mm	CP-L	Sheet steel	0.9	**6143.210**
CP 6662.000 or AE (B1 = 600 mm, T1 ≥ 210 mm)	CP-XL	Sheet steel	2.2	**6503.000**

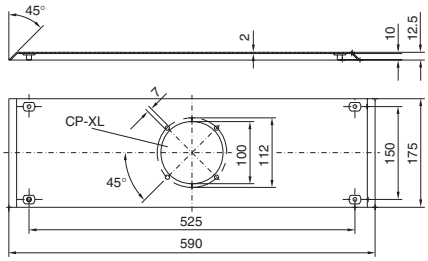
CP 6143.310



CP 6143.210



CP 6503.000



Support arm system CP-S Page 191 **Support arm system CP-L** Page 200 **Support arm system CP-XL** Page 218

Industrial workstations

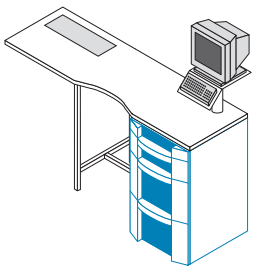
Features



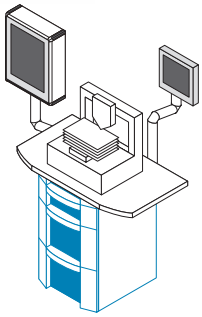
For Rittal, industrial workstations means the ability to create professional workstations for virtually any application from a comprehensive modular system.

In conjunction with operating housings, support arm systems, PC enclosures and the diverse range of system accessories, there are virtually no limits to your creativity.

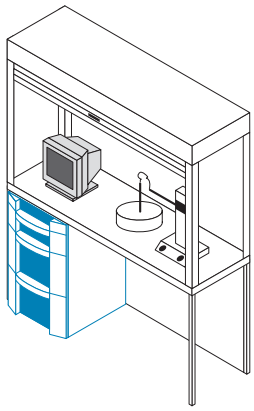
Here are few examples:



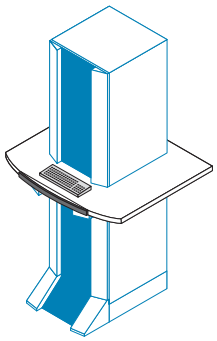
Workbench/assembly bench
consisting of:
- IW enclosure
- IW pedestal
- Individual worktop



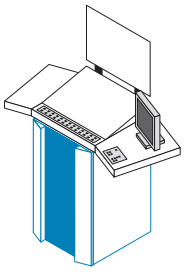
Laboratory equipment and **small machinery** consisting of:
- IW enclosure
- Worktop
- Support arm system
- Operating housings



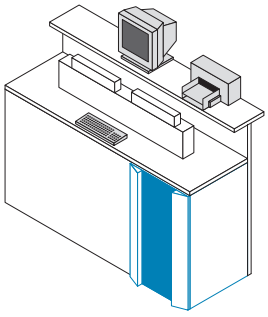
Protective cabinets:
with lockable roller blind on request.



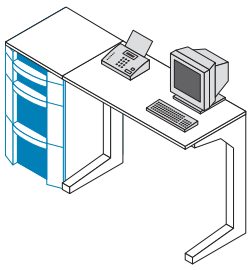
Measurement/control systems:
"More space" with the enclosure on top of the worktop.



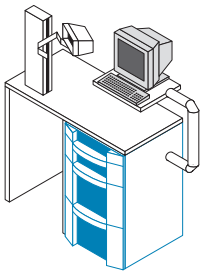
Control desks e.g. for printing presses consisting of:
- IW enclosure
- Individual worktop and assemblies



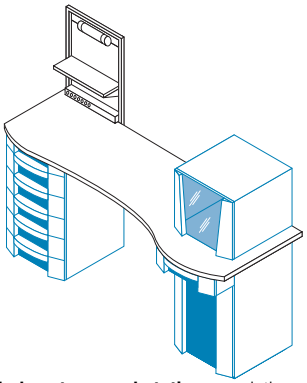
Workbench consisting of:
- IW enclosure for tools etc.
- Individual worktop with shelf for monitor, printer etc.



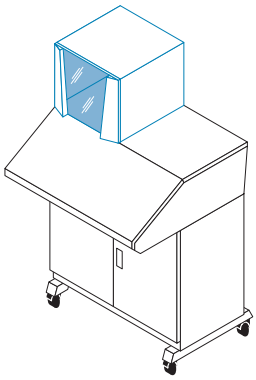
Calibration/measuring station
consisting of:
- IW enclosure
- IW pedestal
- Worktop



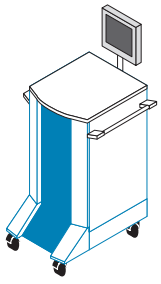
Programming station:
Ergonomically adaptable via the support arm system.



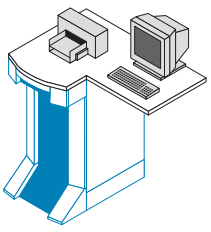
Laboratory workstation consisting of:
- IW enclosures
- Worktop
- Monitor housing
- Shelf system
- Socket strip, light



Process visualisation:
e.g. on production line via swivel-mounted IW monitor housing on AP console system.



Mobile workstation/workshop trolley consisting of:
- Base/plinth with castors
- IW enclosure
- Worktop
- Handle system
- Operating housing



Scanner/PC station consisting of:
- IW enclosure
- Individual worktop

Features



IW Quality Point



The integration of a TFT monitor creates space on the work surface.



The rotatable printer shelf and the paper tray are a perfect duo for the secure accommodation of printers in an industrial environment.



Optimum glare-free illumination of the workplace with the integral workstation light.



IW enclosure



In two standard heights, optionally with designer door or glazed door. Offers plenty of storage space.



With drawer front for an orderly filing system.
A pull-out lock which prevents the simultaneous opening of several drawers is integrated to increase operational safety.



If no enclosure is needed to accommodate documents or equipment, the IW pedestal may be used instead. By combining with a worktop, a large work surface is created.



IW monitor housing



In two sizes for monitors up to 17″ and 21″ screen diagonal respectively. In conjunction with a turntable, the monitor can be viewed from all angles.



TFT monitors are increasingly being used in industrial environments. Thanks to the large number of standardised system components, TFTs may be easily integrated into the workstation.



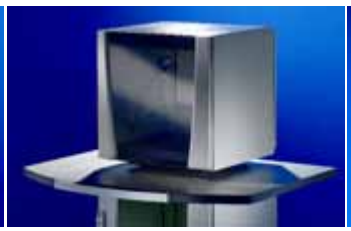
Mounting of a TFT monitor without reducing the work space. With the aid of the enclosure attachment, the angle of the display is ideally adapted to suit the user.



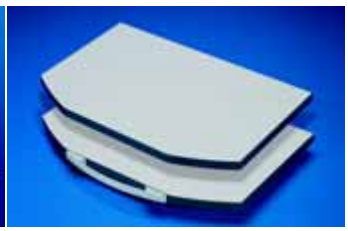
IW worktops



14 different worktops in 7 different sizes accommodate virtually all requirements.



Monitor housings may be mounted either rigidly or swivel-mounted on worktops prepared for a turntable.



Worktops with or without a handle – both variants are available off the shelf.

Fast selection

Choose the appropriate IW components according to your requirements.

► Continue with system assembly using the item numbers shown beneath the arrow.

⊢ System assembly can be completed here.



1 Pre-configured complete solutions

1.1 Quality Point L
Width 1000 mm
Height 2000 mm
IW 6920.100
Quality Point XL
Width 2000 mm
Height 2000 mm
IW 6920.200
see page 243
► **11.1**



1.2 Enclosure with worktop
Height 1000 mm
IW 6901.100[1)]
see page 246
► **11.1 11.2 11.6**
⊢



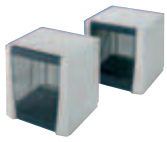
1.3 Enclosure with roof
Height 1000 mm
IW 6901.200[1)]
see page 246



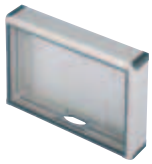
[1)] The assembled versions IW 6901.100 (with worktop) and IW 6901.200 (with roof) are also available with other worktops on request.

2 Monitor housing and add-ons

2.1 Monitor housing 17″
IW 6902.510
Monitor housing 21″
IW 6902.500
see page 250
► **3.1 3.2**



2.2 Optipanel
For TFT monitors or other display and input units
see page 172
For 15″ TFT
CP 6380.010
For 17″ TFT
CP 6380.030
see page 178
TFT monitor 15″
SM 6450.010
TFT monitor 17″
SM 6450.020
see page 1046
► **3.4 3.5 3.6**



2.3 Quality Point attachment L
Width 1000 mm
Height 960 mm
IW 6920.110
Quality Point attachment XL
Width 2000 mm
Height 960 mm
IW 6920.210
see page 250
► **4.3 4.4 5 6 4.5 4.6**



Assembly example:

- 2.2 Optipanel
- 3.4 Support arm system CP-L
- 6.1 Worktop, prepared for enclosure attachment
- 9.1 Enclosure with drawer section
- 11.1 Base/plinth, stationary
- 11.6 Twin castors

3 Mounting components

f. monitor a. operating housings

3.1 Feet for monitor housing

IW 6902.610

see page 251



3.2 Spacer plate for monitor housing

IW 6902.630

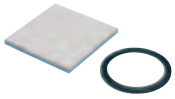
rotatable in conjunction with:

Turntable

for spacer and support plate

IW 6902.620

see page 252/253



3.3 Support plate for individual equipment

IW 6902.650

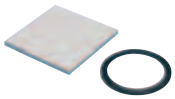
rotatable in conjunction with:

Turntable

for spacer and support plate

IW 6902.620

see page 252/253



3.4 Support arm system CP-L

for rotatable, swivel and height-adjustable positioning of the Optipanel command panel

see page 200



3.5 Enclosure attachment tilting, top mounting[1)]

IW 6902.670

see page 193



3.6 Enclosure attachment tilting, bottom mounting

IW 6902.640

see page 207



[1)] May also be used rotated through 180°.

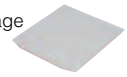
4 Worktops

Solid

4.1 Cover solid
Width 600 mm
Depth 640 mm

IW 6902.400

see page 247

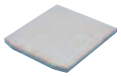


8.1 8.2 8.3 8.4 9.3

4.2 Without handle
Width 610 mm
Depth 645 mm

IW 6902.300

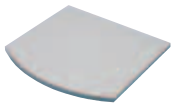
see page 248



4.3 Without handle
Width 1000 mm
Depth 895 mm

IW 6902.100

see page 248

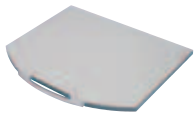


8.1 8.2 8.3 8.4 9 10.1

4.4 With handle
Width 1200 mm
Depth 950 mm

IW 6902.000

see page 248

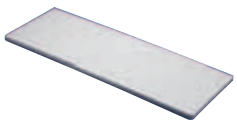


8.1 8.2 8.3 8.4 9.3 10.1

4.5 Without handle
Width 2000 mm
Depth 685 mm

IW 6902.200

see page 248



8.1 8.2 8.3 8.4 10.1

4.6 Without handle
Width 2000 mm
Depth 685/900 mm

IW 6902.210

Width 2000 mm
Depth 900/685 mm

IW 6902.220

see page 248



8.1 8.2 8.3 8.4 9 10.1

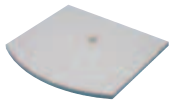
5 Worktops

for turntable
see 3.2/3.3

5.1 Without handle
Width 1000 mm
Depth 895 mm

IW 6902.110

see page 248

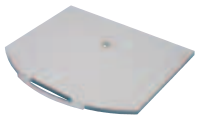


8.1 8.2 8.3 8.4 9 10.1

5.2 With handle
Width 1200 mm
Depth 950 mm

IW 6902.010

see page 248



8.1 8.2 8.3 8.4 9.3 10.1

6 Worktops

prepared for enclosure attachment CP-L, Ø 130 mm
see 3.4/3.5

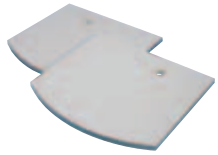
6.1 Without handle, prepared on l/h side
Width 1000 mm
Depth 895 mm

IW 6902.120[1)]

Without handle, prepared on r/h side
Width 1000 mm
Depth 895 mm

IW 6902.130[1)]

see page 249



8.1 8.2 8.3 8.4 9 10.1

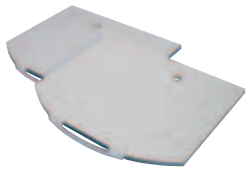
6.2 With handle, prepared on l/h side
Width 1200 mm
Depth 950 mm

IW 6902.020[1)]

With handle, prepared on r/h side
Width 1200 mm
Depth 950 mm

IW 6902.030[1)]

see page 249



8.1 8.2 8.3 8.4 9.3 10.1

[1)] Hole may be used in conjunction with the adaptor plate for connector entry IW 6902.660 (see page 975) for cable entry.

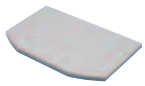
7 Worktops

for pedestal/enclosure
for tower PC
See 3.6

7.1 Without handle
Width 950 mm
Depth 600 mm

IW 6902.310

see page 249

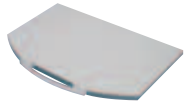


8.5 10.2

7.2 With handle
Width 950 mm
Depth 658 mm

IW 6902.320

see page 249



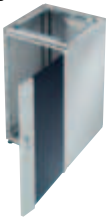
Industrial workstations

Fast selection

8 Enclosure
with doors

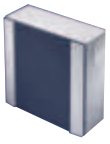
8.1 Designer door, rear panel screw-fastened from the inside
Height 900 mm
IW 6900.000
see page 245

11.1 11.2 11.6

8.2 Designer door, rear panel screw-fastened from the outside
Height 1000 mm
IW 6901.000
see page 245


8.3 Designer door, rear door
Height 900 mm
IW 6900.100
see page 245


8.4 Glazed door, rear door
Height 900 mm
IW 6900.200
see page 245


8.5 Enclosure for tower PC
Width 760 mm
Height 760 mm
IW 6900.300
see page 244

10.3

9 Enclosure
with drawers

9.1 Drawer section, designer door, rear door
Height 900 mm
IW 6900.400
see page 246

11.1 11.2 11.6

9.2 Drawer section for keyboard and mouse, designer door, rear door
Height 900 mm
IW 6900.410
see page 246


9.3 Drawer front, rear panel, screw fastened from the inside
Height 900 mm
IW 6900.600
see page 246


Note:
Component shelf, see page 942,
Drawer tray, see page 942.

10 Pedestals

10.1 Worktop base
Height 702 mm
IW 6900.500
Height 902 mm
IW 6900.510
Prepared for attachment of the:
Cable duct
IW 6903.700
see page 251

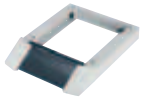
11.6

10.2 Pedestal
IW 6141.200
see page 232


10.3 Cast feet for tower PC
IW 6902.920
see page 845

11.6

11 Base/plinth components

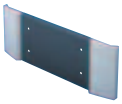
11.1 Base/plinth, stationary
PC 8800.920
see page 840

11.4

11.2 Base/plinth components, front and rear for TS, sealed
Height 100 mm
TS 8601.600 (RAL 7022)
Height 200 mm
TS 8602.600 (RAL 7022)
see page 835

11.3 11.4 11.6 11.5

11.3 Base/plinth trim panels, side, for TS
Height 100 mm
TS 8601.060 (RAL 7022)
Height 200 mm
TS 8602.060 (RAL 7022)
see page 835

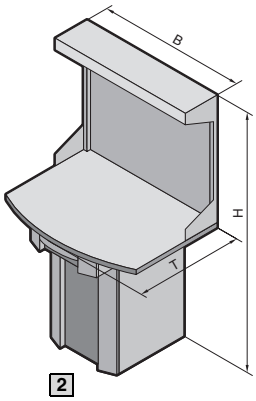

11.4 Base/plinth trim panels, with brush strip
Height 100 mm
TS 8601.610 (RAL 7022)
see page 839

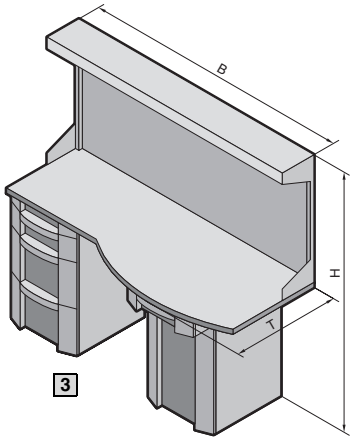

11.5 Base/plinth trim panel PC
Height 200 mm
PC 8360.920
see page 839


11.6 Twin castors
PC 4634.500
see page 848


Quality Point L and XL







The complete system for use as a testing station in industrial environments (e.g. directly at the machine) where testing needs to be carried out and data processed electronically. An individual PC system is integrated to perfection.

Benefits:
- Plenty of space to accommodate test equipment
- Easy integration of PCs, monitors, printers etc.
- Integral lighting
- Theft protection

Colour:
RAL 7015/7035/9006

Supply includes Quality Point L:
Enclosure with keyboard drawer section IW 6900.410, see page 246, worktop W/H/D: 1000 x 38 x 895 mm, Quality Point attachment with side system punchings on a 25 mm pitch pattern for the attachment of system accessories (e.g. punched sections), workstation light IW, 2 x 36 W, 230 V, 50 Hz.

Supply includes Quality Point XL:
Enclosure with drawer front (left), IW 6900.600, see page 246, enclosure with keyboard drawer section (right) IW 6900.410, see page 246, worktop W/H/D: 2000 x 38 x 895 mm, Quality Point attachment with side system punchings on a 25 mm pitch pattern for the attachment of system accessories (e.g. punched sections), workstation light IW (quantity: 2), 2 x 36 W, 230 V, 50 Hz.

1 Assembly example
2 Quality Point L
3 Quality Point XL

Material:
Enclosure, see page 246, Quality Point attachment, see page 250, Worktop, see page 248.

Detailed drawing,
see page 1110.



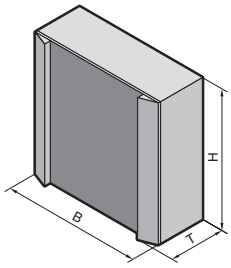


	Quality Point L	Quality Point XL	Page
Width (B) in mm	1000	2000	
Height (H) in mm	2000	2000	
Depth (T) in mm	895	895	
Model No. IW	**6920.100**	**6920.200**	
Weight (kg)	139	276	
Accessories			
Vertical section	–	6903.010	253
Bracket, locatable for shelves	6902.690	6902.690	951
Paper tray	6903.000	6903.000	1058
Cable duct	–	6903.700	251
Mounting plate	8614.675	8614.675	913
Component shelf, fixed installation	8800.900	8800.900	942
Component shelf, pull-out	6902.960	6902.960	942
Drawer tray	6902.700	6902.700	942
Lock systems			
Standard double-bit lock insert may be exchanged for lock inserts, lock cylinder inserts type B or comfort handle, see from page 881, With the designer door at the front, only in conjunction with handle adaptor PC 8611.300, see page 869.			

Accessories Page 832 **Optipanel** Page 170 **TFT monitor** Page 1046

Enclosure for tower PC





Compact enclosure, ready to connect. Standard commercially available tower PCs, up to W/H/D: 250 x 530 x 600 mm (max. 20 kg) may be attached securely to the base screw fastened to the door using the retaining strap supplied loose. The rear interfaces of the PC are readily accessible with the door open. Because the socket strip and fan-and-filter unit are already pre-installed, the enclosure is ready for immediate use.

Roof prepared for mounting
- of worktop IW 6902.310/IW 6902.320
- beneath surfaces

Base prepared for mounting
- of cast feet IW 6902.920
- on surfaces

Material:
Enclosure:
Sheet steel, powder-coated in textured RAL 7035
Door:
Sheet steel, spray-finished in RAL 7015 with fitted design strips of aluminium in RAL 7035.

Protection category:
IP 54 to EN 60 529 (in conjunction with connector gland SZ 2400.300/.500 supplied loose)

Supply includes:
Enclosure of all-round solid construction,
door hinged on r/h side, with base screw-fastened to the inside of the tubular door frame to accommodate a tower PC, lock with fitted cam lock at the side.

Rear panel with two cutouts for use of the connector gland SZ 2400.300 and .500 supplied loose,
connector for power supply,
retaining strap for securing the tower PC to the base,
side panel, left, with fitted outlet filter SK 3322.200,

Side panel, right, fitted with:
- Fan-and-filter unit SK 3322.107, technical description see page 636, with door operated switch PS 4315.500
- Supply socket for 230 V power supply
- Socket strip with 3 sockets and overvoltage protection.

1 Assembly example

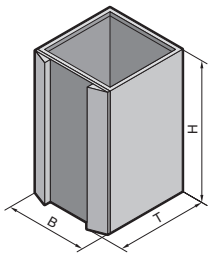


	Enclosure for tower PC	Page
Width (B) in mm	760	
Height (H) in mm	760	
Depth (T) in mm	300	
Model No. IW	**6900.300**	
Weight (kg)	55	
Accessories		
Cast feet	6902.920	845
Twin castors	4634.500	848
Worktop without handle	6902.310	249
Worktop with handle	6902.320	249
Enclosure attachment, tilting, base mounting	6902.640	207
Optipanel for TFT monitor 17″	6380.030	178
TFT monitor 17″ with safety glass screen	6450.020	1046
Desktop keyboard IP 65	6446.000	1047
IP 67 mouse	6445.000	1054
Mousepad IP 67 – PS/2 interface	6444.500	1054
Lock systems		
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, Lock cylinder, plastic handles and T handles, type B, see page 886 – 889.		

Accessories Page 832 **Optipanel** Page 170 **TFT monitor** Page 1046

Enclosure with doors





Material:
Enclosure, designer door, rear panel,
Rear door: Sheet steel, RAL 7035
Glazed door: Plastic to UL 94-V0, RAL 7035, safety glass 4.0 mm

Note:
- Other enclosure depths or heights variable on a 25 mm pitch pattern,
- All IW components as well as system accessories available fully assembled ex works

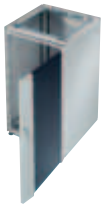
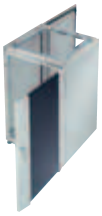
are available upon request.

1 Assembly example

For detailed supply scope,
see page 1109.

Detailed drawing,
see page 1110.

Property rights:
German patent
No. 100 13 034
German registered design
No. 400 02 953
US patent no. 6,538,876
US design patent no. D 487,730
UK reg. design no. 2 094 499
Japan. Reg. Design
no. 113 95 92
IR Reg. Design no. DM/053 554
with validity for FR, IT

					
Version	Designer door, rear panel screw-fastened from the inside	Designer door, rear panel screw-fastened from the outside	Designer door, rear door	Glazed door, rear door	Page
Width (B) in mm	600	600	600	600	
Height (H) in mm	900	1000	900	900	
Depth (T) in mm	600	600	600	600	
Model No. IW	**6900.000**	**6901.000**	**6900.100**	**6900.200**	
Weight (kg)	54.9	59.8	59.9	60.6	
Accessories					
Base/plinth, stationary	8800.920	8800.920	8800.920	8800.920	840
Cross member, adjustable	8601.680	8601.680	8601.680	8601.680	845
Twin castors	4634.500	4634.500	4634.500	4634.500	848
Mounting plate for enclosure width 600 mm	8614.675	8614.675	8614.675	8614.675	913
Component shelf, fixed installation	8800.900	8800.900	8800.900	8800.900	942
Component shelf, pull-out	6902.960	6902.960	6902.960	6902.960	942
Drawer tray	6902.700	6902.700	6902.700	6902.700	942
Drawer extension lock	6902.730	6902.740	6902.730	6902.730	952
Mobile workstation	4641.000	4641.000	4641.000	4641.000	1057
Adaptor section 482.6 mm (19″)	8613.070	8613.070	8613.070	8613.070	1003
Lock systems					

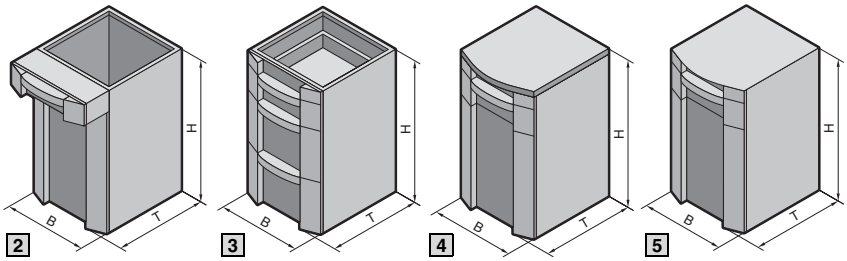
Standard double-bit lock insert may be exchanged for lock inserts, lock cylinder inserts type B, or comfort handle,
see from page 881, with the designer door and glazed door only in conjunction with handle adaptor PC 8611.300, see page 869.

Accessories Page 832 **Optipanel** Page 170 **TFT monitor** Page 1046

Industrial workstations

Enclosure with drawers, worktop or roof





Material:
Enclosure, roof, drawer tray, designer door and rear door:
Sheet steel, RAL 7035
Worktop:
Chipboard, plastic-laminated on both sides, similar to RAL 7035, with tough plastic edging, similar to RAL 7015
Drawer trim panel:
Plastic, RAL 7035/7015/9006.

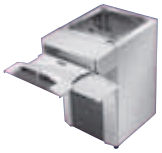
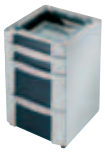
Note:
- Other enclosure depths or heights, variable on a 25 mm pitch pattern,
- All IW components as well as system accessories available fully assembled ex works,
- Other drawer combinations,
- The fitted versions IW 6901.100 (with worktop) and IW 6901.200 (with roof) also available with other worktops, see page 248,

are available upon request.

1 Assembly example

For detailed supply scope, see page 1109.

Detailed drawing, see page 1110.

	 2	 2	 3	 4	 5	
Version	Drawer section for documents, designer door, rear door	Drawer section for keyboard and mouse, designer door, rear door	Drawer front, rear panel	Enclosure with worktop	Enclosure with roof	Page
Width (B) in mm	600	600	600	600	600	
Height (H) in mm	900	900	900	1000	1000	
Depth (T) in mm	600 (890)	600 (890)	600	645	645	
Model No. IW	**6900.400**	**6900.410**	**6900.600**	**6901.100**	**6901.200**	
Weight (kg)	73	73	78	91	86	
Accessories						
Base/plinth, stationary	8800.920	8800.920	8800.920	8800.920	8800.920	840
Cross member, adjustable	8601.680	8601.680	8601.680	–	–	845
Twin castors	4634.500	4634.500	4634.500	4634.500	4634.500	848
Paper tray	6903.000	6903.000	–	6903.000	6903.000	1058
Cable gland	6902.770	6902.770	–	6902.770	6902.770	976
Mounting plate	8614.675	8614.675	–	8614.675	8614.675	913
Component shelf, fixed installation	8800.900	8800.900	–	8800.900	8800.900	942
Component shelf, pull-out	6902.960	6902.960	–	6902.960	6902.960	942
Drawer tray	6902.700	6902.700	–	6902.700	6902.700	942
Drawer extension lock	6902.730	6902.730	■[1)]	–	–	952
Mobile workstation	4641.000	4641.000	–	–	–	1057
Adaptor section 482.6 mm (19″)	8613.070	8613.070	–	–	–	1003
Lock systems						
Standard double-bit lock insert may be exchanged for lock inserts, type B cylinder inserts, or comfort handle, see from page 881, with the designer door only in conjunction with handle adaptor PC 8611.300, see page 869.						

[1)] Included with the supply.

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Roof, worktops



Note:
- Keyboard and front panels for keys integrated into the worktop,
- Worktops in modified sizes,
- All IW components as well as system accessories available fully assembled ex works,

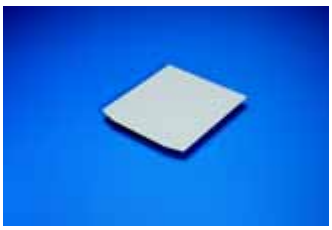
are available upon request.

Detailed drawing,
see page 1111.

Combination options for enclosures/worktops

Width in mm		600	600	600	600	600	600	600
Height in mm		900	900	900	900	900	900	1000
Depth in mm		600	600	600	600 (890)	600 (890)	600	600
Enclosure Model No. IW		6900.000	6900.100	6900.200	6900.400	6900.410	6900.600	6901.000
Worktop	Page							
6902.000	248	■	■	■	–	–	■	■
6902.010	248	■	■	■	–	–	■	■
6902.020 6902.030	249	■	■	■	–	–	■	■
6902.100	248	■	■	■	–	–	■	■
6902.110	248	■	■	■	■	■	■	■
6902.120 6902.130	249	■	■	■	■	■	■	■
6902.200	248	■	■	■	–	–	■	■
6902.210	248	■	■	■	■	■	■	■
6902.220	248	■	■	■	■	■	■	■
6902.300	248	■	■	■	–	–	■	■
Roof								
6902.400	247	■	■	■	–	–	■	■

To order worktops in the ESD version, please add the extension .XX8 to the Model No. Delivery times available on request.



Cover

Folded all-round, with brackets for screw-fastening to the enclosure from the inside.

Material:
1.5 mm sheet steel

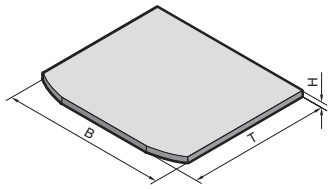
Surface finish:
Spray-finished in textured RAL 7035

Width (B) in mm	600
Height (H) in mm	13
Depth (T) in mm	640
Weight (kg)	7.4
Model No. IW	**6902.400**

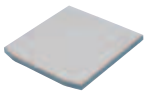
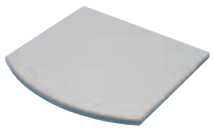
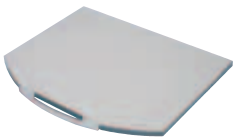
Accessories Page 832 **Optipanel** Page 170 **TFT monitor** Page 1046

Worktops

Material and surface finish:
Chipboard, plastic-laminated on both sides, similar to RAL 7035, with tough plastic edging, similar to RAL 7015
Handle made from aluminium, powder-coated in RAL 9006.



Solid

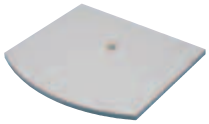
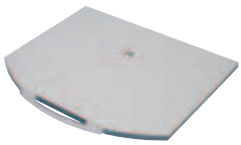
Version	Without handle for enclosure	Without handle for enclosure/worktop base	With handle for enclosure
Width (B) in mm	610	1000	1200
Height (H) in mm	38	38	38
Depth (T) in mm	645	895	950
Model No. IW	**6902.300**	**6902.100**	**6902.000**
Weight (kg)	11.6	24	34

Solid




Version	Without handle for enclosure/worktop base	Without handle for enclosure/worktop base	Without handle for enclosure/worktop base
Width (B) in mm	2000	2000	2000
Height (H) in mm	38	38	38
Depth (T) in mm	685	685/900	900/685
Model No. IW	**6902.200**	**6902.210**	**6902.220**
Weight (kg)	37	45	45

Prepared for turntable

Version	Without handle	With handle	Page
Width (B) in mm	1000	1200	
Height (H) in mm	38	38	
Depth (T) in mm	895	950	
Model No. IW	**6902.110**	**6902.010**	
Weight (kg)	23	33	
Accessories			
Turntable	6902.620	6902.620	253
Spacer plate for monitor housing	6902.630	6902.630	252
Support plate for screen	6902.650	6902.650	252

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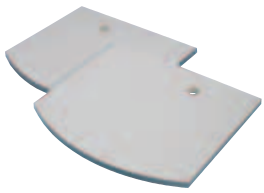
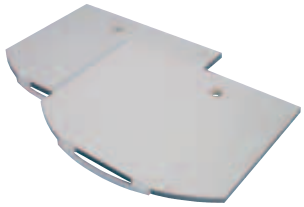
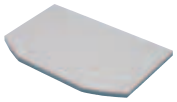
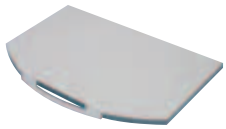
Roof, worktops

Prepared for enclosure attachment CP-L, Ø 130 mm[1]				
Version	Without handle prepared on l/h side	Without handle, prepared on r/h side	With handle prepared on l/h side	With handle prepared on r/h side
Width (B) in mm	1000	1000	1200	1200
Height (H) in mm	38	38	38	38
Depth (T) in mm	895	895	950	950
Model No. IW	**6902.120**	**6902.130**	**6902.020**	**6902.030**
Weight (kg)	23	23	33	33

[1] Hole may be used in conjunction with the adaptor plate for connector grommet IW 6902.660 (see page 975) for cable entry.

Prepared for mounting on **– Pedestal IW** **– Enclosure for tower PC** **– Worktop attachment**		
Version	Without handle for pedestsal	With handle for pedestsal
Width (B) in mm	950	950
Height (H) in mm	38	38
Depth (T) in mm	600	658
Model No. IW	**6902.310**	**6902.320**
Weight (kg)	16	18



Cable glands.
Model No. see page 976.



For tiltable attachment of operating housings.
Model No. see page 207.

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Attachments and monitor housings





Quality Point attachment

Existing IW solutions may be upgraded to a complete testing station. Side punched profile on a 25 mm pitch pattern for the attachment of system accessories (e.g. TS punched section with mounting flange 17 x 73 mm for inner mounting level, see page 921). Projection with integral glare shield prepared for mounting of workstation light 6903.080 (1 x for IW 6920.110/ 2 x for IW 6920.210).

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

Supply includes:
Assembly parts for mounting on worktops (see page 248).

Note:
The Quality Point attachment may be mounted directly on the wall if necessary.
Shelf to finish off at the bottom available on request.

	Quality Point attachment L	Quality Point attachment XL	Page
Width (B) in mm	1000	2000	
Height (H) in mm	960	960	
Model No. IW	**6920.110**	**6920.210**	
Accessories			
Workstation light	6903.080	6903.080	255
Vertical section	–	6903.010	253
Display board with wall bracket	6013.100	6013.100	1030
Utility shelf 220 mm wide	6514.110	6514.110	1039
Utility shelf 450 mm wide	6514.100	6514.100	1039
Mounting plates, locatable	8612.400	8612.400	929
Hexagon socket screws BZ 5.5 x 13 mm	2486.500	2486.500	937
Bracket, locatable, for shelves	6902.690	6902.690	951



Monitor housing

For protected accomodation of monitors up to 17″ or 21″ screen diagonal.

Material:
Enclosure, rear door and component shelf: 1.5 mm sheet steel
Designer door: Vertical plastic decorative trim panels to UL 94-V0
Glass pane: Safety glass 4.0 mm

Surface finish:
Enclosure and rear door: Textured RAL 7035.
Designer door: Decorative trim panels RAL 7035, screen printed mask on pane RAL 7015
Component shelf: RAL 7015

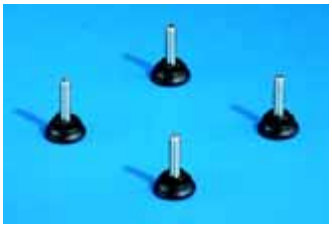
Supply includes:
Front designer door with internal lock, unlatched behind the rear door via a lever with Bowden cable.
Rear door with standard double-bit lock insert, may be exchanged for 27 mm lock inserts, type A or lock cylinder inserts, type B, see page 888/889, and Ergoform S lock system, see page 885.
Enclosure with cutout and reinforcement at the bottom for mounting
– on worktops, prepared for turntable, see page 248,
– on spacer plate for monitor housing, see page 252.
Base prepared for the mounting of feet for desktop use IW 6902.610.
Fitted component shelf, slotted, height-adjustable on a 25 mm pitch pattern, prepared for mounting fan extension kit DK 7980.000, see page 649, and a socket strip, 482.6 mm (19″) long, see page 746.

	Monitor housing for screen 17″	Monitor housing for screen 21″
Width (B) in mm	600	600
Height (H) in mm	600	600
Depth (T) in mm	500	600
Model No. IW	**6902.510**	**6902.500**
Weight (kg)	38.5	42.5

Accessories:

Feet for desktop use, see page 251.
Spacer plate for monitor housing, see page 252.
Turntable for spacer plate, see page 253.

Detailed drawing,
see page 1110.



Feet

for monitor housing
Thread length 29 mm.

Max. static load per foot:
300 kg

Thread	Packs of	Model No. IW
M8	4	**6902.610**



Worktop base

For mounting instead of an IW enclosure when using a wide worktop. Prepared for attachment of cable duct IW 6903.700.

Material:
Steel, spray-finished

Colour:
RAL 7035

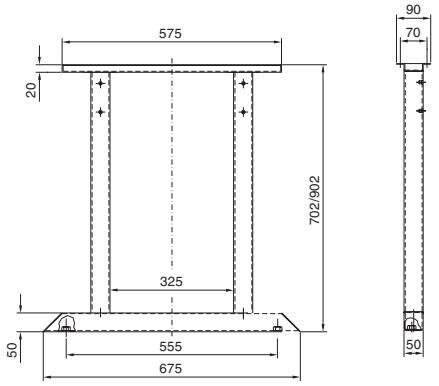
Supply includes:
Levelling feet and screws for the attachment of a worktop.

Note:
For reasons of stability, the worktop base should always be fitted in conjunction with cable duct IW 6903.700 or other suitable cross-braces.

Height mm	Packs of	Model No. IW
702	1	**6900.500**
902	1	**6900.510**

Accessories:

Cable duct,
see page 251.
Worktops,
see page 248.





Cable duct

With punchings for the attachment of cable ties and prepared for the installation of a socket strip. Extension to any length may be achieved by baying several cable ducts together.

Installation:
- Beneath worktops IW
- Beneath surfaces
- Between IW enclosures
- Between IW worktop bases

Material:
Sheet steel, spray-finished

Colour:
Textured RAL 7035

Length mm	Packs of	Model No. IW
760	1	**6903.700**

Accessories:

Cable tie for quick assembly SZ 2597.000,
see page 982.
Socket strip,
see page 746.



Adaptor plate

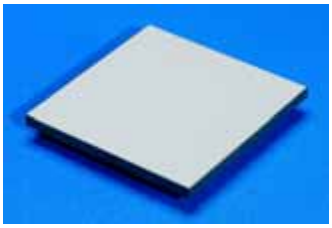
for connector entry,
see page 975.

Accessories



Cable gland

for IW worktops,
see page 976.



Support plate

for screen
Rotatable in conjunction with turntable IW 6902.620.

Material:
Chipboard, plastic laminated on both sides, similar to RAL 7035, with tough plastic edging, similar to RAL 7015.

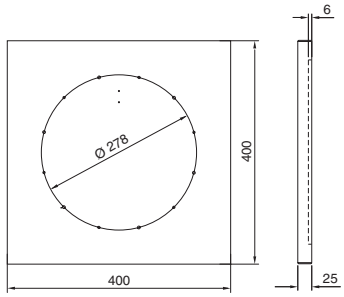
Note:
- Other sizes
- With drilled holes

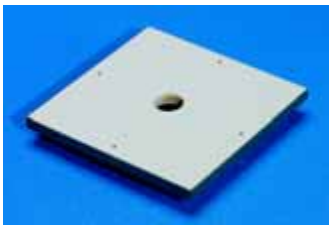
available upon request.

Width mm	Depth mm	Height mm	Model No. IW
400	400	25	**6902.650**

Accessories:

Turntable,
see page 253.





Spacer plate

for monitor housing
Creates distance from the worktop to prevent damage to the mouse and keyboard.

Material:
Chipboard, plastic laminated on both sides, similar to RAL 7035, with tough plastic edging, similar to RAL 7015.

Note:
If a wider gap is required, 2 spacer plates may also be screw-fastened on top of one another.

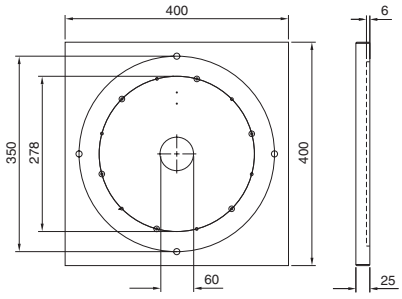
- Other sizes
- Other drilled holes

available upon request.

Width mm	Depth mm	Height mm	Model No. IW
400	400	25	**6902.630**

Accessories:

Turntable,
see page 253.





Turntable

for spacer plate IW 6902.630 and support plate IW 6902.650.
Diameter: 328 mm
Height: 14 mm
Load capacity: 300 kg, vertical

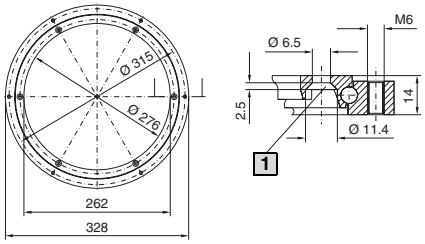
Rotation range:
350°, may be limited to 90°, 180° and 270° by 3 end stops.

Material:
Cast aluminium, powder-coated

Colour:
Black

Supply includes:
Assembly parts for screw-fastening on both sides.

Packs of	Model No. IW
1	6902.620



1 For csk screw M6



Optipanel

A stylish enclosure of extruded aluminium section. In installation depths 50, 100 and 150 mm the width and height are sized to the panel supplied by the customer.

For TFT monitors 15″ and 17″ with safety glass or touch screen, see page 1046, standard sizes are available off the shelf.

Full details of the Optipanel from page 170.

Support arm system CP-L

Using support section CP-L, operating housings may be positioned in a rotatable and swivelling configuration depending on the respective ergonomic conditions, see from page 200.



Compact Panel

For slimlline and compact panels, or as a visually appealing switch housing.
Thanks to the tiltable enclosure attachment IW 6902.670, see page 193, may also be fitted via support arm system CP-L on worktops prepared for enclosure attachment CP-L, Ø 130 mm, see page 206.

Full details of the Compact Panel from page 183.





Vertical section

For subdividing the vertical surface of the Quality Point XL. By locating e.g. TS punched sections with mounting flanges (17 x 73 mm) into the TS punched profile, the simple mounting of system accessories (e.g. utility shelves CP) is supported.
Length: 950 mm

Material:
Sheet steel, 1.5 mm

Colour:
RAL 7035

Supply includes:
Assembly parts.

Packs of	Model No. IW
1	6903.010

Accessories:

TS punched section with mounting flange, 17 x 73 mm, see page 921,
Utility shelves CP, see page 1039.
Snap-on nuts, see page 931.

Accessories



Worktop mat

To protect against damage, and as an anti-slip mat.

Material:
Rubber

Colour:
Black

To fit IW	Width mm	Depth mm	Packs of	Model No. IW
6902.300 6902.400	600	640	1	**6903.100**
6902.310 6902.320	950	600	1	**6903.110**
6902.100	1000	895	1	**6903.120**
6902.000	1200	950	1	**6903.130**
6902.200	2000	845	1	**6903.140**
6902.210	2000	685/900	1	**6903.150**
6902.220	2000	900/685	1	**6903.160**





Drawer

for documents

Under-mounting

For mounting beneath
- Worktop
- Sufficiently large surfaces

For test equipment, pens, production documents etc. Lockable, lock cylinder insert, lock no. 3524 E.

Material:
Drawer housing: Sheet steel
Front: Plastic to UL 94-V0

Colour:
RAL 7035,
front surface RAL 7015,
handle strip RAL 9006.

Protection category:
IP 55 to EN 60 529/10.91
Complies with NEMA 12.

Packs of	Model No. IW
1	**6902.900**

Delivery times available on request.

Accessories:

Cross members for drawer tray,
see page 943.





Drawer

for keyboard and mouse

Bottom-mounting

For mounting beneath
- Worktop
- Sufficiently large surfaces

With mouspad support, pulls out on the left or right, and hinged cable support for secure, pinch-free cable routing.
Sealed cable entry for 3 cables (up to Ø 6 mm).

Material:
Drawer housing: Sheet steel
Front: Plastic to UL 94-V0

Colour:
RAL 7035,
front surface RAL 7015,
handle strip RAL 9006.

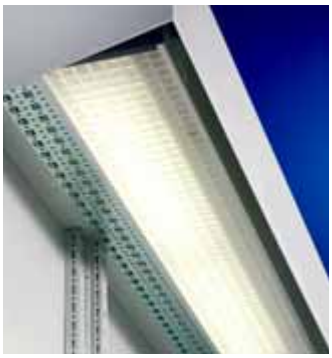
Protection category:
IP 55 to EN 60 529/10.91
Complies with NEMA 12.

Packs of	Model No. IW
1	**6902.910**

Accessories:

Mouse, mousepad IP 67,
see page 1054.





Workstation light

for IW

For mounting on the IW Quality Point attachment. The workstation light ensures optimum, glare-free illumination of the workstation.

Technical specifications:

2 compact fluorescent lamps (36 W, 230 V, 50 Hz) TC-L 36, cap 2 GL. With switch, sockets and connectors for power infeed and through-wiring.

Supply includes:

Assembly parts

Width mm	Height mm	Depth mm	**Model No. IW**
900	135	60	**6903.080**

Also required:

Connection accessories
see page 956.

PC enclosure systems

Features



Housing all your computer equipment, from the monitor, computer system, printer and keyboard to the mouse, becomes child's play with Rittal's PC enclosure systems.

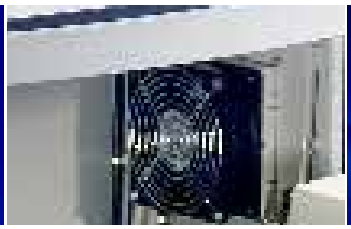
The result is perfect protection from humidity and dirt, temperature fluctuations and unauthorised access. What is more, when it comes to ergonomics, design and accessory diversity, these systems will exceed your expectations.



IW enclosure for tower PC



Enclosure ready for connection to accommodate a standard tower PC in the door.



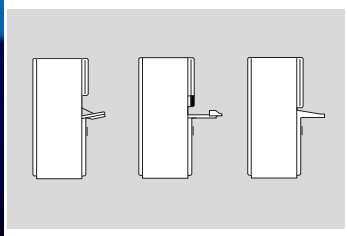
The fan-and-filter unit integrated as standard ensures optimum climate control at protection category IP 54.



The cast feet with twin castors ensure optimum stability and mobility.



PC enclosure systems based on TS 8, bayable







Operated via:
- Folding keyboard
- Keyboard drawer
- Desk section

Monitored with:
- Mounting compartment, large, or
- Glazed door, large, or
- Combination of small glazed door and small mounting compartment



PC enclosure systems based on ES



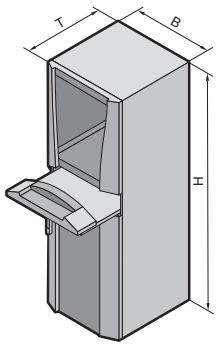


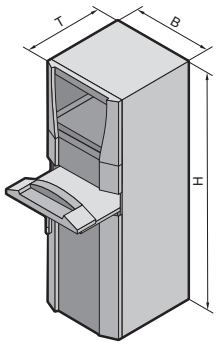
Operated via:
- Folding keyboard
- Keyboard drawer
- Desk section

Monitored with:
- Mounting compartment, large, or
- Glazed door, large, or
- Combination of small glazed door and small mounting compartment

Based on TS 8, with keyboard drawer







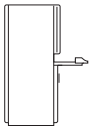
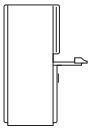
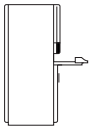
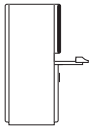
Material:
see page 1112.

Protection category:
IP 55 to EN 60 529,
complies with NEMA 12.

Supply includes,
see page 1112.

Detailed drawing,
see page 1112.

Approvals,
see page 34.

Version		Packs of	 with keyboard drawer, glazed door, top	 with keyboard drawer, glazed door, top	 with keyboard drawer, glazed door, top mounting compartment, small	 with keyboard drawer, mounting compartment, large	Page
Width (B) in mm			600	600	600	600	
Height (H) in mm			1600	1600	1600	1600	
Depth (T) in mm			636	836	636	636	
Model No. PC		1	**8366.000**	**8368.000**	**8366.300**	**8366.400**	
Maximum keyboard dimensions in mm	Width		480	480	480	480	
	Height		70	70	70	70	
	Depth		260	260	260	260	
Weight (kg)			118	133	118	117	
Accessories							
Base/plinth, stationary		1	8800.920	8800.920	8800.920	8800.920	840
Base/plinth components front and rear	Height 100 mm	1	8601.600	8601.600	8601.600	8601.600	835
	Height 200 mm	1	8602.600	8602.600	8602.600	8602.600	835
Base/plinth trim, front	Height 200 mm	1	8360.920	8360.920	8360.920	8360.920	839
Base/plinth trim, side	Height 100 mm	1	8601.060	8601.060	8601.060	8601.060	835
	Height 200 mm	1	8602.060	8602.060	8602.060	8602.060	835
Cross member, adjustable	Height 70 mm	2	8601.680	8601.680	8601.680	8601.680	845
Partial mounting plate	Height 775 mm	1	8614.675	8614.675	8614.675	8614.675	913
Lock systems							
Standard lock insert, may be exchanged for rear door: TS lock inserts, see page 881, comfort handle, see page 881. Designer door, front: TS lock inserts, see page 881, comfort handle, see page 881 (via handle adaptor PC 8611.300, see page 869). Keyboard drawer/fold-out tray: Lock inserts, 27 mm, version A, see page 888.							



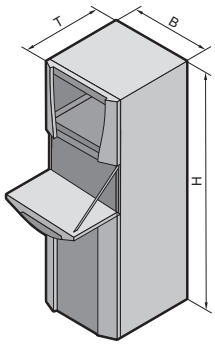
Handle set.
Model No. see page 1030.

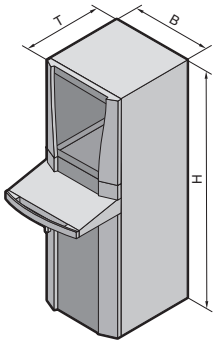
Accessories Page 832 **Component shelves** Page 939 **Monitors, keyboards** Page 1046 **Climate control** Page 578

PC enclosure systems

Based on TS 8, with folding keyboard or desk section







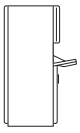
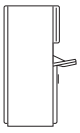
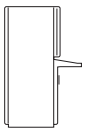
Material:
see page 1113.

Protection category:
IP 55 to EN 60 529,
complies with NEMA 12.

Supply includes,
see page 1113.

Detailed drawing,
see page 1113.

Approvals,
see page 34.

									
Version			Packs of	with fold-out keyboard tray, glazed door, top		with fold-out keyboard tray, glazed door, top		with desk section, glazed door, top	Page
Width (B) in mm				600		600		600	
Height (H) in mm				1600		1600		1600	
Depth (T) in mm				636		836		636	
Model No. PC			1	**8366.100**		**8368.100**		**8366.200**	
Maximum keyboard dimensions in mm		Width		475		475		540	
		Height		60	50	60	50	40	
		Depth		200	250	200	250	175	
Weight (kg)				118		124		108	
Accessories									
Base/plinth, stationary			1	8800.920		8800.920		8800.920	840
Base/plinth components front and rear	Height 100 mm		1	8601.600		8601.600		8601.600	835
	Height 200 mm		1	8602.600		8602.600		8602.600	835
Base/plinth trim, front	Height 200 mm		1	8360.920		8360.920		8360.920	839
Base/plinth trim, side	Height 100 mm		1	8601.060		8601.060		8601.060	835
	Height 200 mm		1	8602.060		8602.060		8602.060	835
Cross member, adjustable	Height 70 mm		2	8601.680		8601.680		8601.680	845
Partial mounting plate	Height 775 mm		1	8614.675		8614.675		8614.675	913
Lock systems									
Standard lock insert, may be exchanged for rear door: TS lock inserts, see page 881, comfort handle, see page 881. Designer door, front: TS lock inserts, see page 881, comfort handle, see page 881 (via handle adaptor PC 8611.300, see page 869). Keyboard drawer/fold-out tray: Lock inserts, 27 mm, version A, see page 888.									

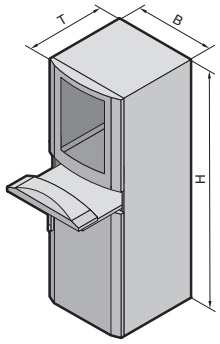


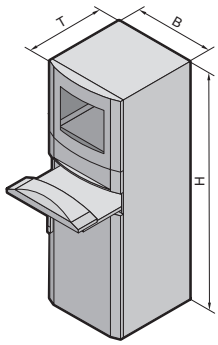
Base/plinth trim PC
200 mm high.
Model No. see page 839.

Accessories Page 832 **Component shelves** Page 939 **Monitors, keyboards** Page 1046 **Climate control** Page 578

Based on TS 8, with keyboard drawer







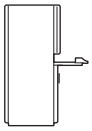
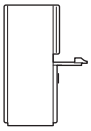
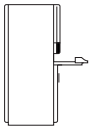
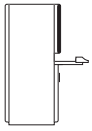
Material:
see page 1114.

Protection category:
IP 55 to EN 60 529,
complies with NEMA 12.

Supply includes,
see page 1114.

Detailed drawing,
see page 1114.

Approvals,
see page 34.

Version			Packs of	 with keyboard drawer, glazed door, top	 with keyboard drawer, glazed door, top	 with keyboard drawer, glazed door, top mounting compartment, small	 with keyboard drawer, mounting compartment, large	Page
Width (B) in mm				600	600	600	600	
Height (H) in mm				1600	1600	1600	1600	
Depth (T) in mm				650	850	650	650	
Model No. PC			1	**4603.703**	**4609.703**	**4603.913**	**4603.603**	
Maximum keyboard dimensions in mm		Width		480	480	480	480	
		Height		55[1]/40[2]	55[1]/40[2]	55[1]/40[2]	55[1]/40[2]	
		Depth		250	250	250	250	
Weight (kg)				106	121	107	106	
Accessories								
Base/plinth, complete		Height 100 mm	1	2813.200	2846.200	2813.200	2813.200	843
		Height 200 mm	1	2814.200	2847.200	2814.200	2814.200	843
Cross member, adjustable			2	8601.680	8601.680	8601.680	8601.680	845
Twin castors			1	4634.500	4634.500	4634.500	4634.500	848
Mousepad, passive			1	4614.000	4614.000	4614.000	4614.000	1055
Lock systems								
Standard lock insert, may be exchanged for rear door/designer door, front: Lock inserts, 27 mm, version A, see page 888. Ergoform-S lock system, see page 885. Keyboard drawer/fold-out tray: Lock inserts, 27 mm, version A, see page 888.								

[1] Without mousepad
[2] With mousepad



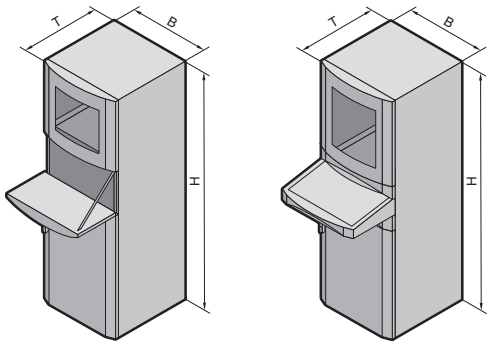
Cross member, adjustable.
Model No. see page 845.

Accessories Page 832 **Component shelves** Page 939 **Monitors, keyboards** Page 1046 **Climate control** Page 578

PC enclosure systems

Based on ES with fold-out keyboard tray or desk section





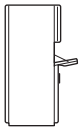
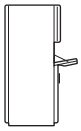
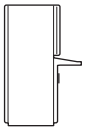
Material:
see page 1115.

Protection category:
IP 55 to EN 60 529,
complies with NEMA 12.

Supply includes,
see page 1115.

Detailed drawing,
see page 1115.

Approvals,
see page 34.

Version		Packs of	 with fold-out keyboard tray, glazed door, top	 with fold-out keyboard tray, glazed door, top	 with desk section, glazed door, top	Page
Width (B) in mm			600	600	600	
Height (H) in mm			1600	1600	1600	
Depth (T) in mm			650	850	650	
Model No. PC		1	**4603.920**	**4609.920**	**4603.704**	
Maximum keyboard dimensions in mm	Width		480	480	462	
	Height		69[1]/62[2]	69[1]/62[2]	40	
	Depth		230	230	208	
Weight (kg)			101	114	102	
Accessories						
Base/plinth, complete	Height 100 mm	1	2813.200	2846.200	2813.200	843
	Height 200 mm	1	2814.200	2847.200	2814.200	843
Cross member, adjustable		2	8601.680	8601.680	8601.680	845
Twin castors		1	4634.500	4634.500	4634.500	848
Mousepad, passive		1	4613.000	4613.000	–	1055
Lock systems						

Standard lock insert, may be exchanged for rear door/designer door, front: Lock inserts, 27 mm, version A, see page 888.
Ergoform-S lock system, see page 885.
Keyboard drawer/fold-out tray: Lock inserts, 27 mm, version A, see page 888.

[1] Without mousepad
[2] With mousepad



Mobile workstation.
Model No. see page 1057.

Accessories Page 832 **Component shelves** Page 939 **Monitors, keyboards** Page 1046 **Climate control** Page 578

Features



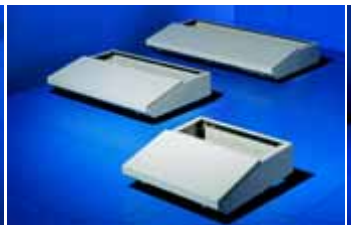
Function and variability are key features of all Rittal console systems. Perfect designs offer added benefits in terms of assembly, security and operation.

The performance capability of a machine or plant is decided at the console and operating unit. Only optimum packaging of today's sensitive controls combined with optimum ergonomic conditions for operating staff can create the pre-requisites for cost-effective plant operation.

Console systems AP









Consoles
with mounting plate, in two heights and three depths for virtually any installation situation.

Desk units
in two depths with perforated strips in the base and cover for easy installation.

Pedestals
with mounting plate, in two depths, also suitable for use as consoles.

One-piece consoles AP









Cover
including perforated strips for cable routing. Safety lid stay may be unlatched with two-handed operation.

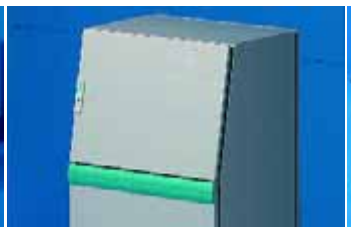
Door hinge
may be swapped from right to left by simply unscrewing the hinges.

Variable installation depth in the cover area
and cable entry from the rear via a mounting plate, height-adjustable by 2 x 40 mm.

Universal consoles AP









Optionally with short or tall door.
Short door offers free field for mounting desk section or keyboard drawer.

High stability and protection category
thanks to a body which is manufactured more or less from a single piece.

Universal interior installation
with partial mounting plates, component shelves, punched sections and rails.

Combination options for the modules

Easy selection of your required combination
The elements of the AP console system in depths 400 mm (blue) and 500 mm (green) may be combined in numerous user-specific variants, as shown in the diagram.
The table opposite allows you to find the order number for your selection immediately.

Modern, slimline HMI (human/machine interfaces) or displays may also be used.

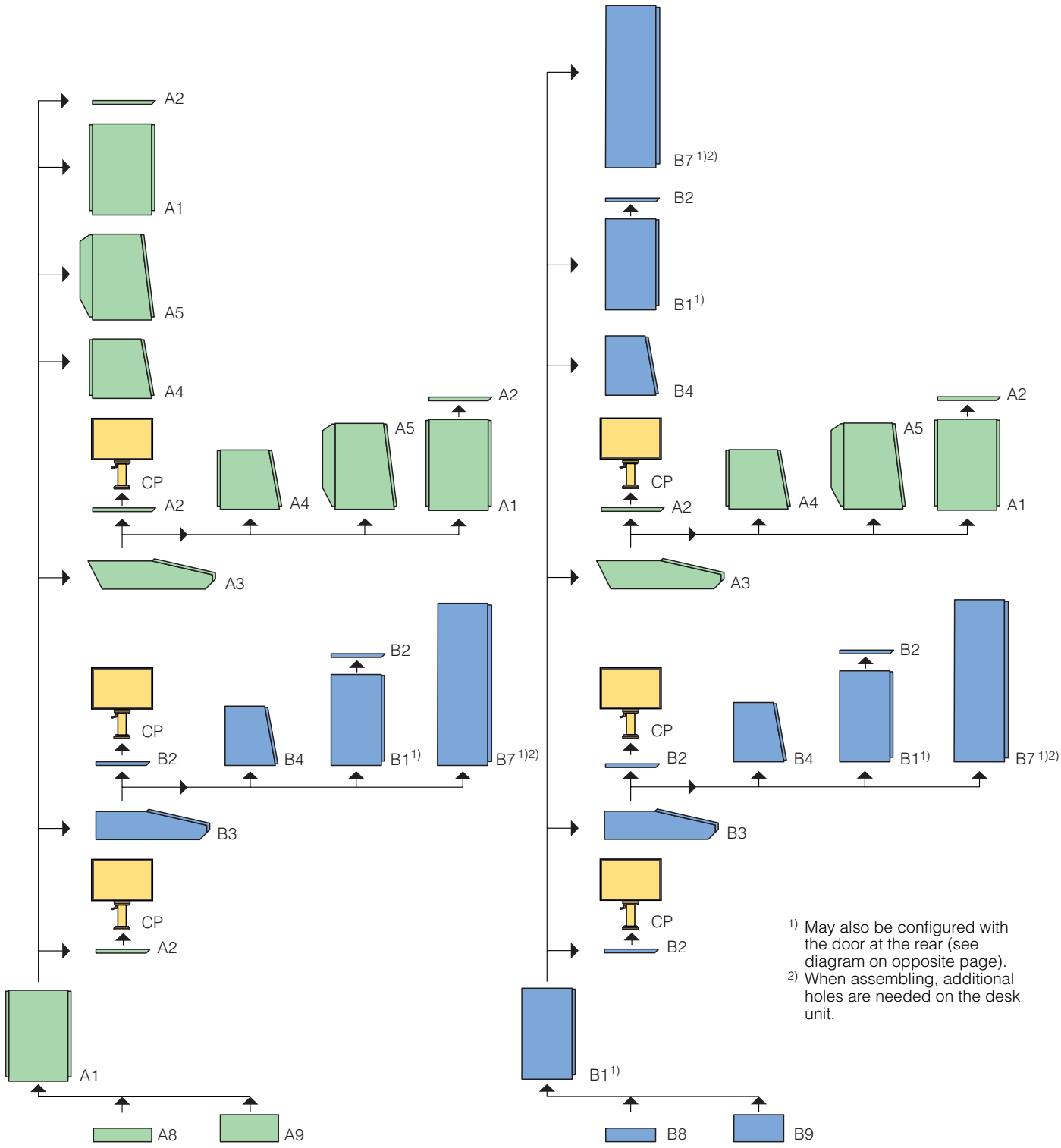


Integrated into the stylish, tailor-made command panel systems VIP 6000, Optipanel and Compact Panel (yellow), this produces a wide range of modern extension options for the classic AP console systems.

- VIP 6000, see page 154.
- Optipanel, see page 170.
- Compact Panel, see page 183.
- Support arm systems, see page 188.

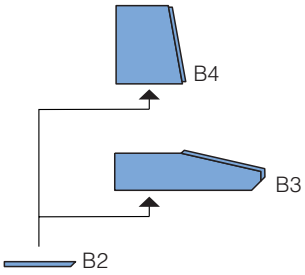
Trim plate (A2/B2) with reinforcement and cutout for support arm systems available on request.

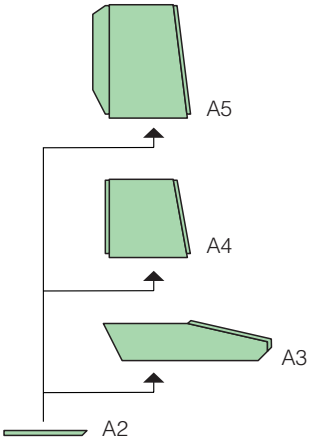
Please specify the dimensions for positioning on the end plate and the Model No. of the enclosure attachment.

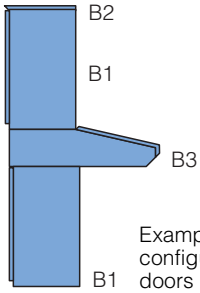


1) May also be configured with the door at the rear (see diagram on opposite page).
2) When assembling, additional holes are needed on the desk unit.

Combination options for the modules







Example of configuration with doors at rear

Further information,
see page 264 – 265.

Technical details,
see page 1116 – 1117.

Approvals,
see page 35.

D = 500 mm				Height mm	D = 400 mm			
Width	800	1200	1600		Width	800	1200	1600
	Model No.	**Model No.**	**Model No.**			**Model No.**	**Model No.**	**Model No.**
AK enclosure								
				1200	 B7	**1648.500**	**1652.500**	
Console								
 A5	**2647.500**	**2648.500**	**2649.500**	630 with deep rear door				
Console								
 A4	**2614.500**	**2644.500**	**2654.500**	430	 B4	**2612.500**	**2642.500**	**2652.500**
Desk unit								
 A3	**2613.500**	**2643.500**	**2653.500**	200	 B3	**2611.500**	**2641.500**	**2651.500**
Trim panel								
A2	**2616.500**	**2646.500**	**2656.500**	28	B2	**2615.500**	**2645.500**	**2655.500**
Pedestal								
 A1	**2610.500**	**2640.500**	**2650.500**	670	 B1	**2600.500**	**2620.500**	**2630.500**
Base/plinth								
 A9	**2842.200**	**2852.200**	**2864.200**	200	 B9	**2902.200**	**2922.000**	**2962.200**
A8	**2841.200**	**2851.200**	**2863.200**	100	B8	**2901.200**	**2921.200**	**2961.200**

Modules



Consoles

Material:
Sheet steel
Enclosure: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Dipcoat-primed,
powder-coated on the outside
Mounting plate: Zinc-plated

Colour:
Textured RAL 7035

Supply includes:
Enclosure, open at the bottom, door(s) hinged at the bottom with retaining cords at the front, for depth 500 mm with door(s) at the rear,
mounting plate for depth 500 mm, adjustable on a 25 mm pitch pattern.

Detailed drawing,
see page 1117.

Width in mm	Packs of	800	1200	1600	800	1200	1600	800	1200	1600
Height in mm		430						630		
Depth in mm		400			500			500 (with deep rear door)		
Model No. AP	1	**2612.500**	**2642.500**	**2652.500**	**2614.500**	**2644.500**	**2654.500**	**2647.500**	**2648.500**	**2649.500**
Number of lids		1	1	1	2	2	2	2	2	2
Weight (kg)		22.5	40.0	52.5	30.6	48.0	62.4	47.8	64.4	86.8
Lock systems										
Standard double-bit lock insert may be exchanged for 47 mm lock inserts, type D, see page 888.										

To order consoles in textured RAL 7032 please add extension .600 to the Model No., and for primed consoles use extension .800.
Delivery times available on request.



Desk units

Material:
Sheet steel
Enclosure: 1.5 mm
Console lid: 2.0 mm

Surface finish:
Dipcoat-primed,
powder-coated on the outside

Colour:
Textured RAL 7035

Supply includes:
Enclosure, open at the top and bottom, console lid with cam and support stand.

Detailed drawing,
see page 1117.

Width in mm	Packs of	800	1200	1600	800	1200	1600	Page
Height in mm		200						
Depth in mm		850 (for depth 400)			950 (for depth 500)			
Model No. AP	1	**2611.500**	**2641.500**	**2651.500**	**2613.500**	**2643.500**	**2653.500**	
Weight (kg)		25.5	35.5	44.0	30.6	42.6	52.8	
Accessories								
Aluminium strips	3	2678.000	2682.000	–	2678.000	2682.000	–	1040
Lock systems								
Standard double-bit lock insert may be exchanged for 47 mm lock inserts, type D, see page 888.								

To order desk units in textured RAL 7032 please add extension .200 to the Model No., and for primed desk units use extension .300.
Delivery times available on request.

Accessories Page 832 **Monitors, keyboards** Page 1046 **Climate control** Page 578



Pedestals

Material:
Sheet steel
Enclosures and gland plates: 1.5 mm
Door: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Dipcoat-primed, powder-coated on the outside
Gland plates and mounting plate: Zinc-plated.

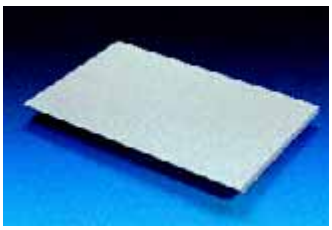
Colour:
Textured RAL 7035

Supply includes:
Enclosure, open at the top, door or double door with locking rod (with depth 400 mm at the front, with depth 500 mm at the front and rear),
two-part gland plates,
mounting plate, with depth 500 mm: infinitely adjustable.

Detailed drawing,
see page 1116.

Width in mm		Packs of	800	1200	1600	800	1200	1600	Page
Height in mm			670						
Depth in mm			400			500			
Model No. AP		1	**2600.500**	**2620.500**	**2630.500**	**2610.500**	**2640.500**	**2650.500**	
Door(s)			1	2	2	1/1	2/2	2/2	
Weight (kg)			43.5	62.3	80.0	52.2	75.0	96.0	
Accessories									
Base/plinth	Height 100 mm	1	2901.200	2921.200	2961.200	2841.200	2851.200	2863.200	843
	Height 200 mm	1	2902.200	2922.200	2962.200	2842.200	2852.200	2864.200	843
Cross member, adjustable		2	2697.450						845
Swing frame 11 U		1	2027.200	2027.200[1)]		2027.200	2027.200[1)]		1002
Lock systems									
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 888 and Ergoform-S lock system, see page 885.									

[1)] Two swing frames may be installed
To order pedestals in textured RAL 7032 please add extension .600 to the Model No., and for primed pedestals use extension .800.
Delivery times available on request.



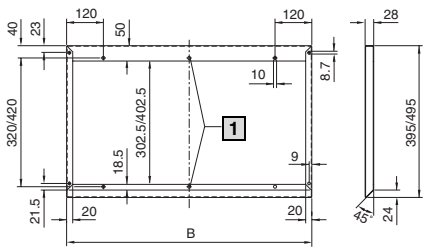


Trim panel

To finish off pedestals, desk units or consoles.

Material:
Sheet steel, spray-finished, 1.5 mm

Colour:
Textured RAL 7035



1 Not applicable to console width 800 mm

To fit		Model No. AP
Width mm	Depth mm	
800	400	**2615.500**
1200		**2645.500**
1600		**2655.500**
800	500	**2616.500**
1200		**2646.500**
1600		**2656.500**

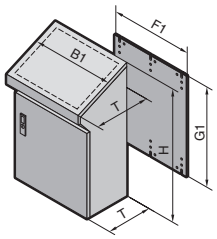
To order trim panels in textured RAL 7032 please add extension .200 to the Model No., and for primed versions use extension .300.
Delivery times available on request.

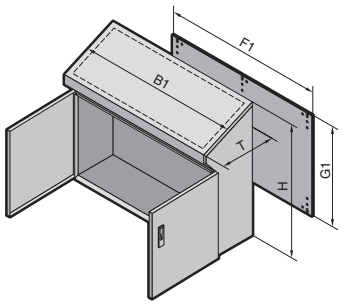
Accessories Page 832 **Monitors, keyboards** Page 1046 **Climate control** Page 578

One-piece consoles AP

Sheet steel







Material:
Sheet steel
Enclosure: 1.5 mm
Door and console lid: 2.0 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure, door and console lid: Dipcoat-primed, powder-coated on the outside
Mounting plate and gland plates: Zinc-plated

Colour:
Textured RAL 7035

Protection category:
IP 55 to EN 60 529/10.91, complies with NEMA 12.

Supply includes:
Enclosure, closed back and sides,
door or double door at front,
console lid with lid stay,
two-piece gland plate,
mounting plate.

Detailed drawing,
see page 1118.

Approvals,
see page 36.

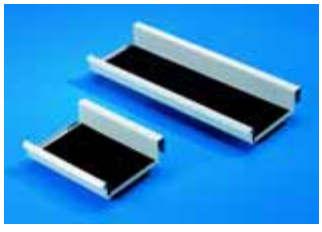
Width (B1) in mm		Packs of	600	800	1000	1200	Page
Height (H) in mm			960	960	960	960	
Depth (T) in mm			400/480	400/480	400/480	400/480	
Mounting plate width (F1) in mm			530	730	930	1130	
Mounting plate height (G1) in mm			780	780	780	780	
Model No. AP		1	**2666.500**	**2668.500**	**2670.500**	**2672.500**	
Door(s)			1	1	2	2	
Weight (kg)			52.0	65.2	79.5	90.3	
Accessories							
Base/plinth	Height 100 mm	1	2911.200	2901.200	2891.200	2921.200	843
	Height 200 mm	1	2912.200	2902.200	2892.200	2922.200	843
Cross member, adjustable		2	2697.450	2697.450	2697.450	2697.450	845
Aluminium strips		3	2676.000	2678.000	2682.000[1)]	2682.000	1040
Swing frame		1	–	2027.200	2027.200	2027.200	1002
Lock systems							
Console lid: Standard double-bit lock insert may be exchanged for 47 mm lock inserts, type D, see page 888. Door: Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 888, and Ergoform-S lock system, see page 885.							

[1)] To be shortened by 200 mm.

To order consoles in textured RAL 7032 please add extension .600 to the Model No., and for primed versions use extension .800.
Delivery times available on request.



Cross member, adjustable
Model No. see page 845.

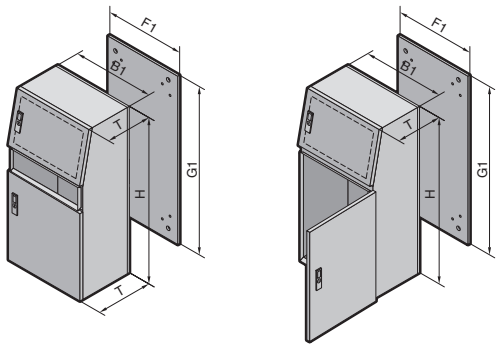


Utility shelf, screw-fastened
for measuring instruments, mouse or scanner.
Model No. see page 1039.

Accessories Page 832 **Monitors, keyboards** Page 1046 **Climate control** Page 578

Sheet steel





Material:
Sheet steel
Enclosure, gland plates: 1.5 mm
doors: 2.0 mm
Mounting plate: 3.0 mm
Design strips (AP 2695.500):
Aluminium section

Surface finish:
Enclosure:
Dipcoat-primed, powder-coated on the outside
Mounting plate and gland plates: Zinc-plated

Colour:
Enclosure: textured RAL 7035.
Design strips (AP 2695.500):
RAL 5018

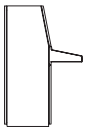
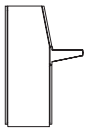
Protection category:
IP 55 to EN 60 529/10.91, complies with NEMA 12.
With a short door at the bottom (AP 2694.500), in order to preserve the protection category, a drawer or desk section (see page 1052/1039) should be fitted.

Supply includes:
Enclosure with doors,
mounting plate,
gland plates,
design strips (AP 2695.500).

Note:
Top door with studs left and right for installing vertical perforated mounting strips SZ 2310.038 and horizontal support strips SZ 2325.000 to be mounted on top (see page 896/895).
AP universal consoles are equivalent to free-standing enclosure ES 5000 in terms of interior installation – in other words, the accessory components will fit.

Detailed drawing,
see page 1118.

Approvals,
see page 36.

							
		Packs of	with short front door			with tall front door	Page
Width (B1) in mm			600			600	
Height (H) in mm			1300			1300	
Depth (T) in mm			500/417.5			500/417.5	
Mounting plate width (F1) in mm			499			499	
Mounting plate height (G1) in mm			1196			1196	
Model No. AP		1	**2694.500**			**2695.500**	
Weight (kg)			77.0			80.0	
Also required							
Desk section			2696.500	2696.500	–	–	1039
Drawer for keyboard			–	–	4757.500[1)]	–	1052
Accessories							
Base/plinth	Height 100 mm	1	2807.200			2807.200	843
	Height 200 mm	1	2808.200			2808.200	843
Cross member, adjustable		2	2697.450			2697.450	845
Cable clamp rail		1	4191.000			4191.000	979
Lock systems							
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 888 and Ergoform-S lock system, see page 885.							

[1)] Only suitable for installation without a mounting plate.
To order in textured RAL 7032, please add extension .600 to the Model No. Delivery times available on request.

Accessories Page 832 **Monitors, keyboards** Page 1046 **Climate control** Page 578

Stainless steel

Features



Be it automation, communications or power supply technology, Rittal offers the correct enclosures and cabinets to suit virtually all requirement profiles in modern industrial technology. Of course, these are also available in stainless steel for extremely high standards of hygiene and corrosion protection. Cleverly thought-out system platforms in conjunction with an extensive selection of system accessories provide the basis for the outstanding solution diversity of the Rittal stainless steel range. Why not arrange a consultation? We will tailor a solution to suit your specific requirements.



Resistant to high-pressure cleaning, suitable for use in clean rooms



The compact enclosures **Premium Line KL** and the command panels **Premium Panel** offer a high level of EMC shielding and are resistant to high-pressure cleaning and suitable for use in clean rooms.

Resistant to high-pressure cleaning
The new gap-free sealing concept facilitates the high protection category of IP 69K.

Suitable for clean room use
For the highest standards in the food and hygiene sector (certified by the Fraunhofer-Institut IPA).



Compact enclosures







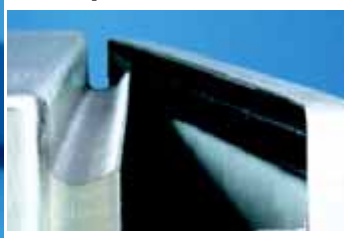
Terminal boxes with screw-fastened lid and profile strips with mounting holes on both sides for the installation of cross rails or mounting plate.

Bus enclosure with 180° hinges and built-in support rail.

Premium Line KL
Resistant to high-pressure cleaning, IP 69K and high level of EMC shielding thanks to the sealing system and metallic contact between the enclosure and rear panel.



Compact enclosures







Enclosure protection channel prevents the ingress of dirt and water when the door is opened.

To dismantle the door, the **hinge pin** is simply pulled out of the compact enclosures AE.

Rain canopies for AE offer additional protection.

Features



Command panel



Premium Panel
First-class in terms of sealing, protection, hygiene and design, with or without keyboard housing.



Operating housings
Front panel may optionally be used either for the installation of operating and display components, or as a rear panel.



Command panel housing with door
with handle strips and rear panel with welded studs for the attachment of a mounting plate or support rails.



Consoles



The lid stay of the one-piece consoles is locked against unintentional closure.



Maximum space for cable entry with divided gland plates.



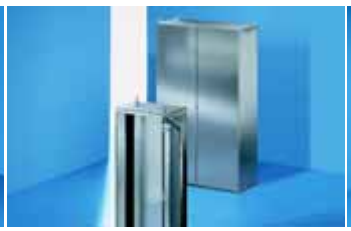
The mounting plate is height-adjustable by 2 x 40 mm, e.g. with deep installed equipment in the lid or cable entry from the rear.



Enclosure systems



PC enclosure systems with keyboard drawer or with desk section.



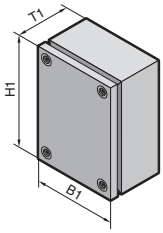
Free-standing enclosures ES 5000 with profiled enclosure formed from a single piece (roof + side panel).



Baying systems TS 8 – infinite options for interior installation.

Terminal boxes KL





Material:
Stainless steel 1.4301
Enclosure: 1.25 mm
Cover: 1.25 mm

Surface finish:
Case and cover:
Brushed, grain 180

Protection category:
IP 66 to EN 60 529/10.91, complies with NEMA 4x.

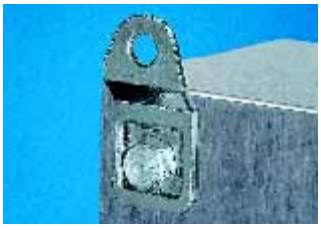
Supply includes:
Enclosure, cover with all-round foamed-in PU seal and cover screws, including plastic bushes.

Approvals,
see page 23.

Detailed drawing,
see page 1119.

Width (B1) in mm	Packs of	150	300	200	300	400	300	Page
Height (H1) in mm		150	150	200	200	200	300	
Depth (T1) in mm		80	80	80	80	120	120	
Model No. KL	1	**1521.010**	**1522.010**	**1523.010**	**1524.010**	**1525.010**	**1526.010**	
Weight (kg)		1.3	1.8	1.8	2.4	3.6	3.9	
Cover screws		4	4	4	4	4	4	
Accessories								
Mounting plate	1	1560.700	1561.700	1562.700	1563.700	1564.700	1567.700	909
Wall mounting bracket	4	1594.000	1594.000	1594.000	1594.000	1594.000	1594.000	905
Wall angle	1	2583.000	2583.000	2583.000	2583.000	2583.000	2583.000	906
Pole clamp	1	2584.000	2584.000	2584.000	2584.000	2584.000	2584.000	906
Support rails TS 35/7.5	10	2314.000	2316.000	2315.000	2316.000	2317.000	2316.000	927

To order terminal boxes in 1.4404 (AISI 316L), please add extension .510 the the Model No. Delivery times available on request.



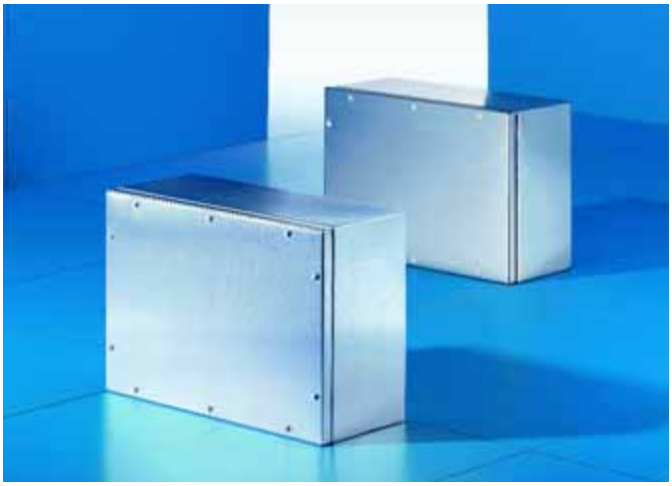
Wall mounting bracket
for secure attachment to the wall.
Model No. see page 905.

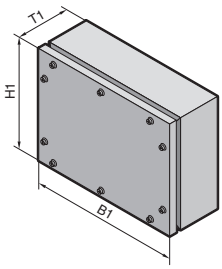


Housing coupling
for attaching the 120 mm deep KL to the support arm system.
Model No. see page 278.

Accessories Page 832 **Terminal boxes KL sheet steel** Page 107 **Terminal boxes KL Ex-proof** Page 287

Premium Line KL, protection category IP 69K





A new design, a new concept for the seal and lock

- **Resistant to high-pressure cleaning** (protection category IP 69K). The seal lies between two surfaces and is ideally compressed by the screw fastening (see detailed drawing, page 1119).
- **Suitable for clean room use.** Optional screw fastening to comply with high standards in the food and hygiene sectors: 1 external with hex screws, 2 internal with plastic stoppers.
- **Optimum EMC conditions.** The labyrinthine seal achieves a particularly high level of RF shielding of the enclosure.
- **Accessibility.** Internal rear panel bracket. This solution is clearly superior to external hinges from a hygiene point of view.
- Wall mounting can be implemented directly from the rear using M8 pull-in nuts, or from the front using wall mounting brackets.

Material:
Stainless steel 1.4301, 1.5 mm

Surface finish:
Brushed, grain 240

Protection category:
IP 69K to DIN 40 050-9/5.93

Rittal service:

Other sizes and other enclosures with this sealing concept are available on request. Cutouts and drilled holes to your specifications.

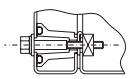
Detailed drawing,
see page 1119.

Width (B1) in mm	Packs of	150	150	300	400	Page
Height (H1) in mm		150	150	200	300	
Depth (T1) in mm		80	120	120	120	
Model No. KL	1	**1024.010**	**1024.020**	**1024.030**	**1024.040**	
Number of lid screws		4	4	6	10	
Accessories						
Mounting plate	1	1024.910	1024.910	1024.920	1024.930	909
Wall mounting bracket	4	1594.000	1594.000	1594.000	1594.000	905
Wall angle	1	2583.000	2583.000	2583.000	2583.000	906
Rear panel bracket	2	6682.000	6682.000	6682.000	6682.000	893
Mounting brackets	1 set	1024.810	1024.810	1024.820	1024.830	909
Support rail TS 35/7.5	10	2314.000	2314.000	2316.000	2317.000	927

To order Premium Line KL in 1.4404 (AISI 316L), please add extension .5X0 to the Model No. Delivery times available on request.



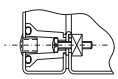
1



Depending on customer requirements, screw head on the outside . . .



2

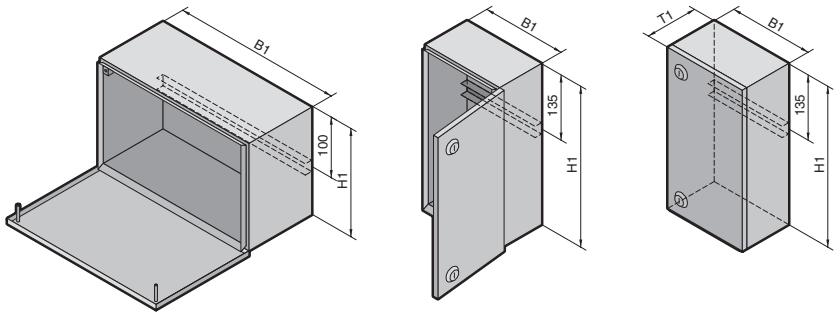


. . . or plastic stoppers on the outside with concealed screws (included in the supply).

Accessories Page 832

Bus enclosure BG





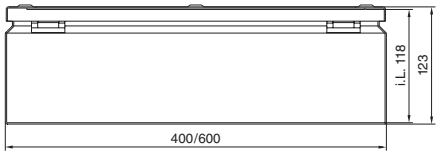
Material:
Stainless steel 1.4301
Enclosure: 1.25 mm
Cover: 1.25 mm
Hinges: Die-cast zinc

Surface finish:
Case and cover:
Brushed, grain 180
Hinges: Plated

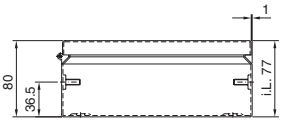
Protection category:
IP 66 to EN 60 529/10.91, complies with NEMA 4x.

Supply includes:
Enclosure with 1 support rail TS 35/7.5
Cover with foamed-in seal
180° hinges
with quick-release fasteners.

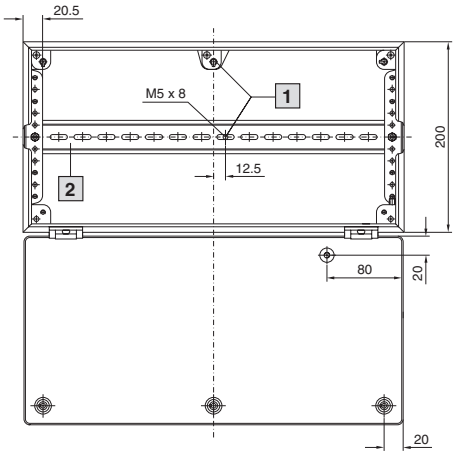
BG 1558.010, BG 1559.010

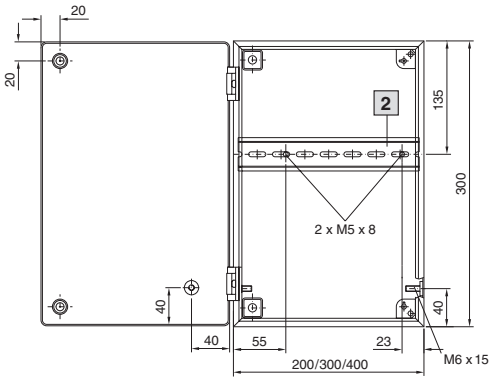


BG 1583.010, BG 1584.010, BG 1585.010



i.L. = Clearance width





1 Only for BG 1559.010
2 Support rail TS 35/7.5

Width (B1) in mm	Packs of	200	300	400	400	600	Page
Height (H1) in mm		300	300	300	200	200	
Depth (T1) in mm		80	80	80	123	123	
Model No. BG	1	**1583.010**[1)]	**1584.010**[1)]	**1585.010**[1)]	**1558.010**[2)]	**1559.010**[2)]	
Weight (kg)		2.8	3.7	4.5	4.5	6.0	
Accessories							
Wall mounting bracket	4	1594.000	1594.000	1594.000	1594.000	1594.000	905
Pole clamp	1	2584.000	2584.000	2584.000	2584.000	2584.000	906
Condensate discharge	6	2459.000	2459.000	2459.000	2459.000	2459.000	852

To order bus enclosures in 1.4404 (AISI 316L), please add extension .500 the the Model No. Delivery times available on request.
[1)] Support rail attached to studs
[2)] Support rail adjustable on profile strip



Wall mounting bracket
For secure attachment of enclosures.
Model No. see page 905.

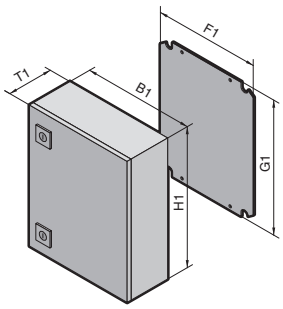


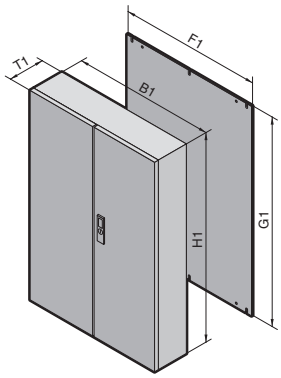
EMC cable glands
with contact spring for optimum all-round contact.
Model No. see page 958.

Accessories Page 832 **Bus enclosures, sheet steel** Page 111

Compact enclosures AE







Material:
Stainless steel 1.4301
Enclosure and door:
Stainless steel
Mounting plate: Sheet steel
Cam lock: Die-cast zinc, nickel-plated

Surface finish:
Enclosure and door:
Brushed, grain 180
Mounting plate: Zinc-plated

Protection category:
IP 66 to EN 60 529/10.91 for AE 1002.600 – AE 1017.600, complies with NEMA 4x.
IP 55 to EN 60 529/10.91 for AE 1018.600/AE 1019.600, complies with NEMA 12.

Supply includes:
Enclosure, door(s) with foamed-in PU seal, mounting plate.

Approvals,
see page 26.

Detailed drawing,
see page 1120.

Width (B1) in mm	Packs of	200	380	300	380	500	500	380	Page
Height (H1) in mm		300	300	380	380	500	500	600	
Depth (T1) in mm		155	155	210	210	210	300	210	
Mounting plate width (F1) in mm		–	334	334	334	449	449	334	
Mounting plate height (G1) in mm		–	275	275	355	470	470	570	
Model No. AE	1	**1002.600**	**1004.600**	**1005.600**	**1006.600**	**1007.600**	**1013.600**	**1008.600**	
Door(s)		1	1	1	1	1	1	1	
Weight (kg)		4.5	8.8	8.7	12.0	18.4	18.9	17.0	
Accessories									
Rain canopy	1	2470.000	2471.000	2361.000	2472.000	2362.000	–	2472.000	899
Wall mounting bracket	4	2433.000	2433.000	2433.000	2433.000	2433.000	2433.000	2433.000	905
Wall angle	1	2583.000	2583.000	2583.000	2583.000	2583.000	2583.000	2583.000	906
Pole clamp	1	2584.000	2584.000	2584.000	2584.000	2584.000	2584.000	2584.000	906
Cam lock made from 1.4301	1	2304.000	2304.000	2304.000	2304.000	2304.000	2304.000	2304.000	887

Width (B1) in mm	Packs of	600	600	600	760	800	800	1000	1000	Page
Height (H1) in mm		380	600	760	760	1000	1200	1000	1200	
Depth (T1) in mm		210	210	210	300	300	300	300	300	
Mounting plate width (F1) in mm		549	549	549	704	739	–	939	–	
Mounting plate height (G1) in mm		355	570	730	730	955	–	955	–	
Model No. AE	1	**1009.600**	**1010.600**	**1012.600**	**1014.600**	**1016.600**	**1017.600**	**1018.600**	**1019.600**	
Door(s)		1	1	1	1	1	1	2	2	
Weight (kg)		17.0	25.0	31.7	42.5	52.9	70.0	71.0	85.0	
Accessories										
Rain canopy	1	2473.000	2473.000	2473.000	2474.000	2475.000	2475.000	2363.000	2363.000	899
Wall mounting bracket	4	2433.000	2433.000	2433.000	2433.000	2433.000	2433.000	2433.000	2433.000	905
Wall angle	1	2583.000	2583.000	2583.000	2583.000	2583.000	2583.000	2583.000	2583.000	906
Pole clamp	1	2584.000	2584.000	2584.000	–	–	–	–	–	906
Cam lock made from 1.4301	1	2304.000	2304.000	2304.000	2304.000	2304.000	–	–	–	887

Lock systems

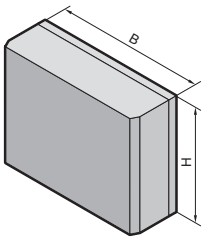
Standard double-bit lock insert may be exchanged in enclosures with cam (except AE 1018.600/AE 1019.600) for lock inserts 41 mm, lock cylinder insert, plastic handles, T-handles, type C, see page 886 – 889.
With AE 1018.600, may only be exchanged for 41 mm lock inserts, see page 888.
For enclosures with locking rod, may be exchanged for 27 mm lock inserts, type A, see page 888 and Ergoform-S lock system, see page 885.

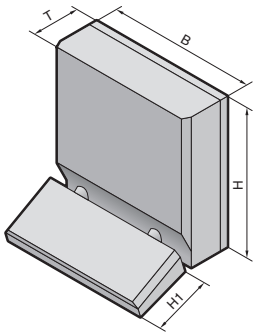
To order compact enclosures in 1.4404 (AISI 316L), please add extension .500 to the Model No. Delivery times available on request.

Accessories Page 832 **Compact enclosures AE sheet steel** Page 118 **Compact enclosures AE, IP 69K** Page 121

Premium Panel, protection category IP 69K







A new design, a new concept for the seal and lock

- **Resistant to high-pressure cleaning** (protection category IP 69K). The seal lies between two surfaces and is ideally compressed by the screw fastening (see detailed drawing).
- **Suitable for clean room use.** Screw fastening to meet high standards in the food and hygiene sectors. With plastic stoppers on the inside or hex screws on the outside.
- **Optimum EMC conditions.** The labyrinthine seal achieves a particularly high level of RF shielding of the enclosure.
- **Accessibility.** Internal rear panel bracket. This solution is clearly superior to external hinges from a hygiene point of view.
- **Handling.** Two duct connectors between the enclosures.

Material:
Stainless steel 1.4301

Surface finish:
Brushed, grain 240

Protection category:
IP 69K to DIN 40 050-9/5.93

Property rights:
German patent
No. 102 16 430

Detailed drawing,
see page 1121.

		Packs of	Premium Panel					
			With keyboard housing				Without keyboard housing	
Model No. CP		1	**6680.000**	**6680.010**	**6680.100**	**6680.110**	**6681.000**	**6681.100**
Width (B) in mm			530	530	530	530	530	530
Height in mm	Operating housing (H)		460	460	460	460	360	360
	Keyboard housing (H1)		200	200	200	200	–	–
Depth in mm	Operating housing (T)		120	120	220	220	120	220
For installation panel W x H	Operating housing		482.6 mm (19″) x 354.8 mm (8 U)				482.6 mm (19″) x 310 mm (7 U)	
	Keyboard housing		482.6 mm (19″) x 177 mm (4 U)				–	–
Installation depth mm	Operating housing		115	115	215	215	115	215
	Keyboard housing		front 58 rear 63	front 58 rear 63	front 58 rear 63	front 58 rear 63	–	–
Support arm connection			top	bottom	top	bottom	top, bottom by rotating the enclosure	
Accessories								
Rear panel bracket		2	6682.000	6682.000	6682.000	6682.000	6682.000	6682.000

To order the Premium Panel in stainless steel 1.4404 (AISI 316L), use Model No. CP XX5X.XXX. Delivery times available on request.



The **rear panel bracket** holds the rear panel in an open position.
Model No. see page 893.

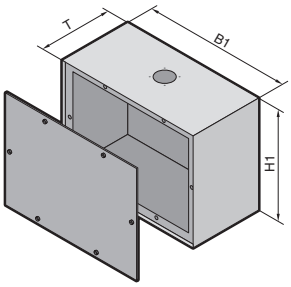


Premium Panel
with 17″ TFT.
Model No. see page 1046.

Accessories Page 832 **Premium Panel with 17″ TFT** Page 1046 **Support arm system CP-S stainless steel** Page 277

Command panel





Two configuration options:
- Front panel screw-fastened at the front, recessed front panel installation for a high level of mechanical protection for the top-mounted equipment.
- Front panel as rear panel, additional handle strips from plastic approved for use with foodstuffs similar to RAL 5002 (ultramarine blue) available on request.

Material:
Stainless steel 1.4301
Enclosure: 1.25 mm
Front panel: 2.0 mm

Surface finish:
Brushed, grain 240

Protection category:
IP 65 to EN 60 529/10.91

Supply includes:
Enclosure with cutout and reinforcement for support arm system (see page 277), front panel or rear panel with seal and assembly parts.

Approvals,
see page 38.

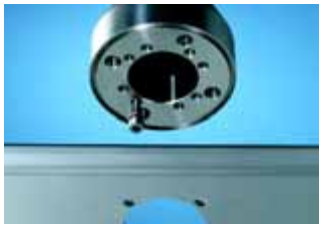
Detailed drawing,
see page 1122.

Width (B1) in mm	Packs of	320	400	Page
Height (H1) in mm		240	320	
Depth (T) in mm		160	160	
Model No. CP	1	**6670.000**	**6672.000**	
Weight (kg)		5	8	
Accessories				
Mounting plate	1	1563.700	1567.700	909
Mounting plate	4	4532.000	4532.000	929
Mounting brackets	4	4597.000	4597.000	930
Support rail TS 35/7.5 SZ	10	2316.000	2316.000	927

To order the operating housing in stainless steel 1.4404 (AISI 316L), please add extension .500 to the Model No. Delivery times available on request.



Handle strips
made from plastic approved for use with food, RAL 5002, on request.

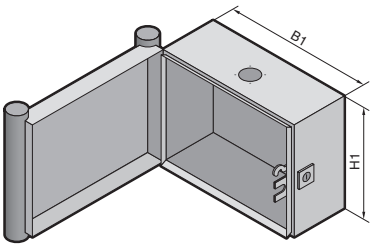


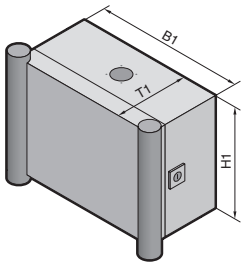
Enclosure attachment CP-S, stainless steel
with prefitted screw for location. Model No. see page 278.

Accessories Page 832 **Support arm system CP-S stainless steel** Page 277

Command panel housing with door







Material:
Enclosure and door:
Stainless steel 1.4301
Handle strips: Plastic approved for use with foodstuffs, similar to RAL 5002 (ultramarine blue).

Surface finish:
Brushed, grain 240

Protection category:
IP 66 to EN 60 529/10.91

Supply includes:
Enclosure of all-round solid construction, with cutout and reinforcement for support arm system,
fastener with guide plate.
Door with sealing frame and side handle strips.
The support arm connection and door hinge may be swapped over by rotating the enclosure.

Rittal service:
Separate keyboard housing, other sizes,
modified support arm cutout or door hinge,
holes and cutouts for switches and operator panels
available on request.

Approvals,
see page 32.

Detailed drawing,
see page 1122.

Width (B1) in mm	Packs of	300	400	400	600	Page
Height (H1) in mm		300	300	400	400	
Depth (T1) in mm		150	150	150	150	
Model No. CP	1	**6535.010**	**6536.010**	**6538.010**	**6539.010**	
Weight (kg)		6.3	7.5	8.8	12.1	
Accessories						
Matching mounting plate from AE		1033.500	1030.500	1380.500	1039.500	118
ID no.		271926	274131	271548	271351	
Support rails[1] SZ **Model No. SZ**	10	2316.000	2317.000	2317.000	2319.000	927
Lock systems						
Standard double-bit lock insert may be exchanged for 41 mm lock inserts, plastic handle and T handle, type C, see page 886 – 888.						

To order the command panel housing with door in stainless steel 1.4404 (AISI 316L), please add extension .510 to the Model No.
Delivery times available on request.
[1] Only with vertical attachment of punched rail 23 x 23 mm, see page 925.



Semi-cylinder lock
for retro-fitting to all stainless steel enclosures with cam lock.
Model No. see page 889.

Accessories Page 832 **Support arm system CP-S stainless steel** Page 277



Support arm system CP-S, stainless steel

In conjunction with stainless steel command panels, terminal boxes 120 mm deep and compact enclosures AE from stainless steel, this support arm system is particularly well-suited for meeting high standards of corrosion protection and hygiene.
The tilting adaptor and enclosure coupling may optionally be mounted on the top or bottom of the enclosure. **They are not suitable for use as the base point of a system.** For this purpose, we recommend wall/base mountings, or with larger heights and widths, an additional pillar made of steel tubing or stainless steel (available on request).

Material:
Stainless steel 1.4305

Protection category:
IP 69K to DIN 40 050-9/5.93
(resistant to high-pressure cleaning)

Load information:
see page 188.





Support section CP-S, stainless steel

Attachment to the connecting components with 2 clamping screws.

Dimensions:
External diameter: 48.3 mm
Wall thickness: 3.6 mm

Material:
Stainless steel 1.4301

Surface finish:
Brushed, grain 240

Other sizes possible on request according to specifications.

Order example:
U-shaped = CP 6660.200
Dimension A = 300 mm
Dimension B = 800 mm
Dimension C = 240 mm

The minimum dimensions must be adhered to, because of the bending radius and insertion depth of the enclosure attachment, housing coupling and wall/base mountings.

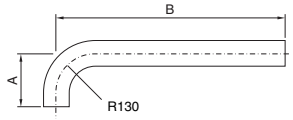
Straight
$A_{min.}$ = 100 mm,
A_{max} = 2000 mm



A mm	Weight kg	Model No. CP
500	2.0	**6660.050**
1000	3.9	**6660.010**
2000	7.8	**6660.020**
To specifications A =	3.9 kg/m	**6660.000**[1)]

[1)] Extended delivery times.

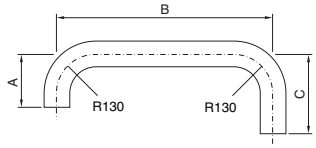
L-shaped
$A_{min.}$ = $B_{min.}$ = 240 mm,
$B_{max.}$ = 1500 mm



A mm	B mm	Weight kg	Model No. CP
240	500	2.6	**6660.110**
500	1000	5.5	**6660.120**
To specifications A =	To specifications B =	3.9 kg/m	**6660.100**[1)]

[1)] Extended delivery times.

U-shaped
$A_{min.}$ = $C_{min.}$ = 240 mm,
$B_{min.}$ = 410 mm,
$B_{max.}$=1500 mm



A mm	B mm	C mm	Weight kg	Model No. CP
240	800	800	6.6	**6660.210**
240	500	500	4.3	**6660.220**
To specifications A =	To specifications B =	To specifications C =	3.9 kg/m	**6660.200**[1)]

[1)] Extended delivery times.

Support arm system CP-S



Tilting adaptor, 10° CP-S stainless steel

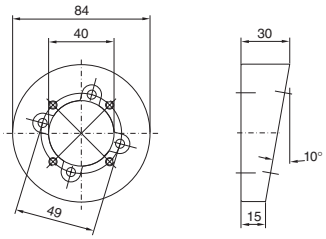
For mounting between the command panel and
- Enclosure attachment CP 6664.500
  or
- Housing coupling CP 6664.000

Material:
Stainless steel 1.4305

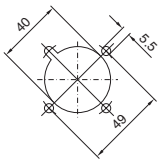
Weight kg	Model No. CP
0.7	**6664.100**

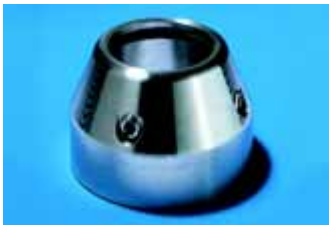
Supply includes:
Seal and assembly parts.





Mounting cutout
Enclosure





Enclosure attachment CP-S stainless steel

For rigid fastening of the enclosure to the support section.

Material:
Stainless steel 1.4305

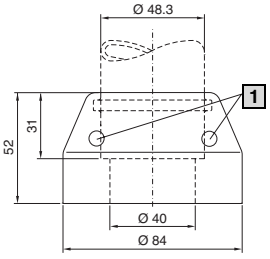
Supply includes:
Seals and 2 clamping screws for support section CP-S, stainless steel.

Note:
For assembly of a pedestal, modular, see page 281, 2 pieces are required.

Weight kg	Model No. CP
1.3	**6664.500**

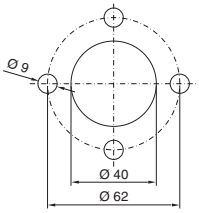
Accessories:

Enclosure reinforcement, see page 281.

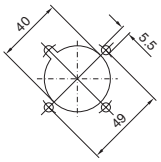


1 Clamping screw

Mounting cutout
for pedestal, bottom



Mounting cutout
enclosure





Housing coupling CP-S stainless steel

For mounting on the vertical part of the support arm system.

Rotation range:
Approx. 350°, lockable via knurled screw.

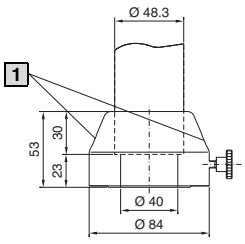
Material:
Stainless steel 1.4305

Supply includes:
Seals and 2 clamping screws for support section CP-S, stainless steel.

Weight kg	Model No. CP
1.1	**6664.000**

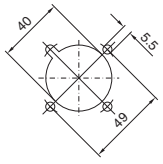
Accessories:

Enclosure reinforcement, see page 281.



1 Clamping screw

Mounting cutout
enclosure







Wall/base mounting, rigid, CP-S stainless steel

For attaching the support arm system to vertical or horizontal surfaces.

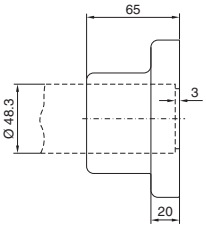
Material:
Stainless steel 1.4305

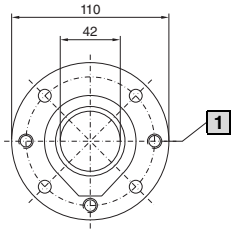
Supply includes:
Seals, 3 adjusting screws to compensate for any irregularities, and 2 clamping screws for support section CP-S, stainless steel.

Weight kg	Model No. CP
1.7	**6663.000**

Accessories:

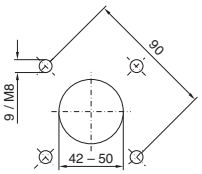
Wall consoles,
see page 280.





1 Adjusting screw

Mounting cutout





1



1



2



2

Swivel base mount, CP-S stainless steel

For external mounting on
- Horizontal surfaces (suspended or top-mounted)
- Wall console (CP 6663.500 only)

Rotation range:
Approx. 350°, lockable via knurled screw.

Material:
Stainless steel 1.4305

Supply includes:
Seals and 2 clamping screws for support section CP-S, stainless steel.

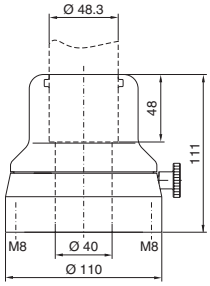
Note:
Rotation range may be limited in 60° increments using a limit plate, supplied loose.

Attachment	Weight kg	Model No. CP
1 rear, M8 thread	3.9	**6663.500**
2 front, hole Ø 9 mm	4.5	**6663.400**

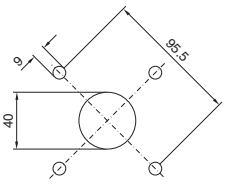
Accessories:

Wall consoles for base attachment CP 6663.500,
see page 280.

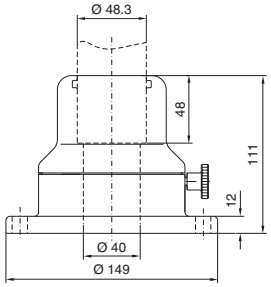
1 Rear attachment CP 6663.500



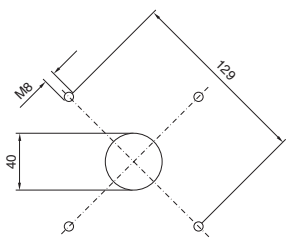
Mounting cutout



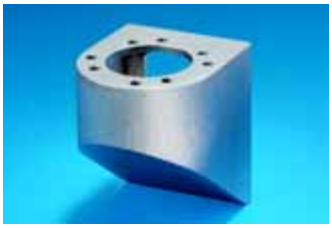
2 Front attachment CP 6663.400



Mounting cutout



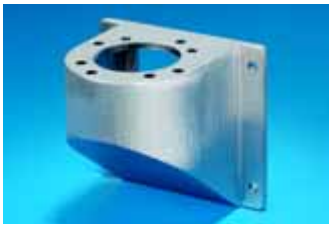
Support arm system CP-S



1



1



2



2

Wall console CP-S stainless steel

With holes for mounting

- Base mount, swivel, CP-S (CP 6663.500), with 4 screws
- Wall/base mount, rigid, CP-S (CP 6663.000), with 4 screws and nuts

Material:
Stainless steel 1.4301

Surface finish:
Brushed, grain 240

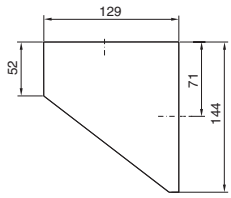
Supply includes:
Seals and assembly parts.

1 Rear attachment, M8 thread

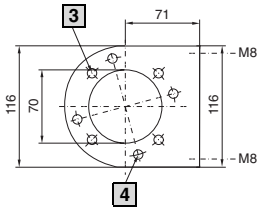
2 Front, hole Ø 9 mm

Attachment	Weight kg	Model No. CP
rear, M8 thread	1.5	**6665.000**
front, hole Ø 9 mm	1.8	**6665.500**

Rear fastening



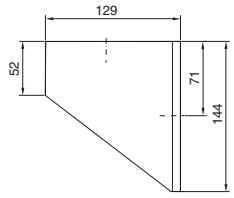
Mounting cutout



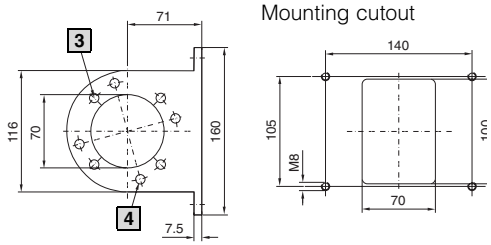
3 Hole for PG 6663.000

4 Hole for PG 6663.500

Front fastening



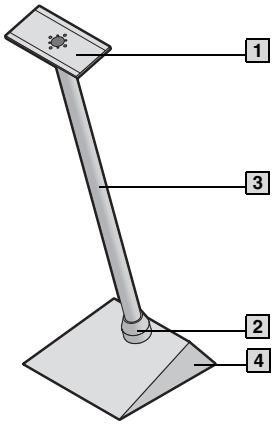
Mounting cutout



3 Hole for PG 6663.000

4 Hole for PG 6663.500



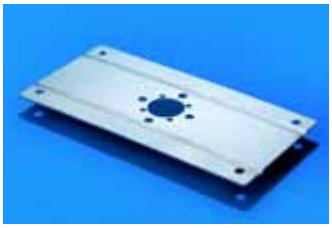


Pedestal, modular, CP-S stainless steel

For the configuration of compact operating stations.

May be compiled from the following modules:	Model No. CP	Page
1 Enclosure reinforcement	**6143.310**	281
2 2 enclosure attachments top/bottom	**6664.500**	278
3 Support section, straight (may be shortened to required length by sawing)		
500 mm	**6660.050**	277
1000 mm	**6660.010**	277
2000 mm	**6660.020**	277
4 Pedestal base plate, small	**6143.300**	281

Detailed drawing,
see page 1123.



Enclosure reinforcement CP-S stainless steel

For external or internal reinforcement of stainless steel enclosures of a corresponding size. Smaller enclosures may also be mounted directly without a flange.

For use with
- Enclosure attachment CP 6664.500
- Housing coupling CP 6664.000

Material:
Stainless steel 1.4301

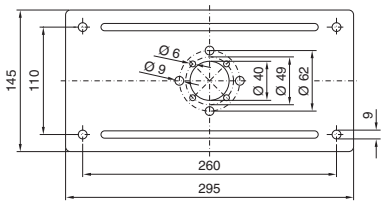
Surface finish:
Brushed

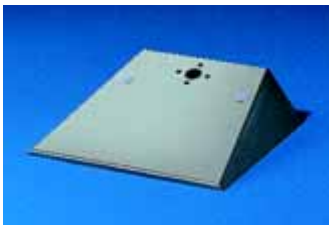
Supply includes:
Assembly parts for the enclosure and support section plus 2 seals.

Packs of	Model No. CP
1	**6143.310**

Accessories:

Enclosure attachment CP 6664.500,
see page 278.
Housing coupling CP 6664.000,
see page 278.





Pedestal base plate, small

With reinforcement bracket for assembling a support section via an enclosure attachment.

- With one hole at the rear for commercially available cable conduit gland M20.
- With two holes at the top (including sealing bung) for lower base attachment cross member.
- Prepared on the inside for a cable clamp DK 7077.000 or DK 7078.000 for strain relief.

Material:
Stainless steel 1.4301

Surface finish:
Brushed

Packs of	Model No. CP
1	**6143.300**

Supply includes:
Assembly parts for enclosure attachment plus seal.

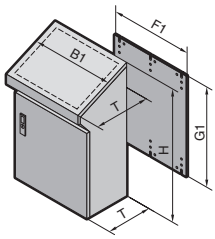
Note:
Commercially available screws up to M8 may be used for floor attachment.

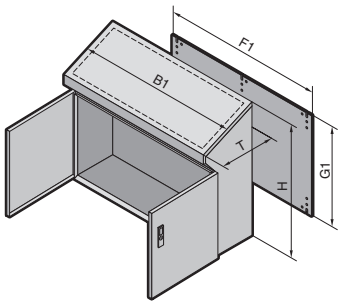
Accessories:

Cable clamp DK 7077.000 or DK 7078.000,
see page 981.

One-piece consoles AP







Material:
Stainless steel 1.4301
Enclosure: 1.5 mm
Door or double door and console lid: 2.0 mm
Mounting plate:
3.0 mm sheet steel

Surface finish:
Enclosure, door and console lid:
Brushed, grain 120
Mounting plate: Zinc-plated

Protection category:
IP 55 to EN 60 529/10.91, complies with NEMA 12.

Supply includes:
Enclosure, solid rear and sides, door or double door at front, with locking rod,
console lid with lid stay and stainless steel cam latched in the enclosure,
two-piece gland plate,
mounting plate, zinc-plated, passivated.

Approvals,
see page 36.

Detailed drawing,
see page 1118.

Width (B1) in mm		Packs of	600	800	1000	1200	Page
Height (H) in mm			960	960	960	960	
Depth (T) in mm			400/480	400/480	400/480	400/480	
Mounting plate width (F1) in mm			530	730	930	1130	
Mounting plate height (G1) in mm			780	780	780	780	
Model No. AP		1	**2683.600**	**2684.600**	**2685.600**	**2686.600**	
Door(s)			1	1	2	2	
Weight (kg)			52.0	65.2	79.5	90.3	
Accessories							
Base/plinth	Height 100 mm	1	2865.000	2869.000	2867.000	2870.000	844
	Height 200 mm	1	2875.000	2878.000	2885.000	2886.000	844
Lock systems							
Standard double-bit lock insert of the locking rod may be exchanged for 27 mm lock inserts, type A, see page 888 and Ergoform-S lock system, see page 885.							

To order one-piece consoles in stainless steel 1.4404 (AISI 316L), please add extension .500 to the Model No. Delivery times available on request.



Wall console, stainless steel
mounted on the rear panel for an additional operating housing.
Model No. see page 280.

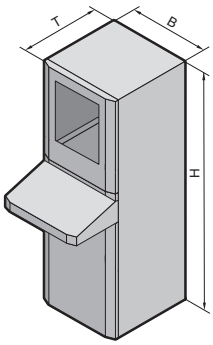


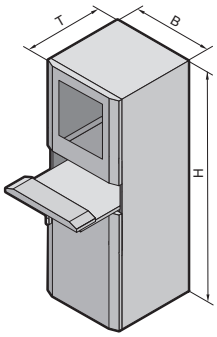
Cable gland, brass.
Model No. see page 972.

Accessories Page 832 **Monitors, keyboards** Page 1046 **Climate control** Page 578

PC enclosure systems







PC 4650.000
with keyboard drawer
- Lock insert, lock no. 3524 E
- Swing-down front for handrest
- Mousepad support (also suitable for IP 67 mouse), may optionally be used on the left or right
- Hinged cable support

PC 4650.704
with desk section
- Cover plate top and bottom
- Designer strip made from plastic approved for use with foodstuffs

Material:
Stainless steel 1.4301
Enclosure:
10-fold profiled, 1.8 mm
Rear door: 2.0 mm
Gland plates: 1.5 mm
Monitor field with single-panel safety glass for screen diagonal 482.6 mm (19″).

Surface finish:
Brushed, grain 240

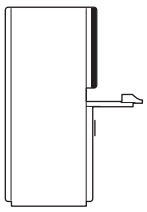
Protection category:
IP 55 to EN 60 529, complies with NEMA 12.

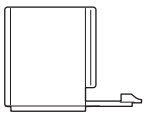
Supply includes:
see page 1123.

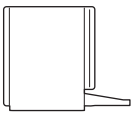
Available on request:
- PC enclosure system with mounting compartment, large and drawer
- PC enclosure system with drawer
- PC enclosure system with desk section

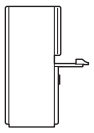
Approvals,
see page 34.

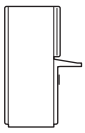
Detailed drawing,
see page 1123.











Version		Packs of	1 With keyboard drawer	2 With desk section	Page
Width (B) in mm			600	600	
Height (H) in mm			1600	1600	
Depth (T) in mm			620	620	
Model No. PC		1	**4650.000**	**4650.704**	
Weight (kg)			115	123	
Accessories					
Base/plinth	Height 100 mm	1	2855.000	2855.000	844
	Height 200 mm	1	2877.000	2877.000	844
Levelling feet, 100 mm high		1 set	2859.000	2859.000	848
Base/plinth trim, modular		4	2913.000	2913.000	841
Adaptor sections 482.6 mm (19″)		4	4632.000	4632.000	1003
Adaptor pieces 482.6 mm (19″)		8	4547.000	4547.000	1004
Lock systems					

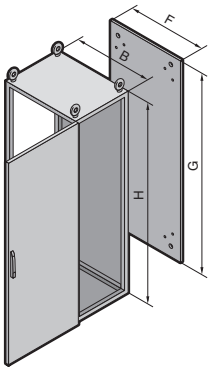
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 888, or lock cylinder inserts, type B, see page 889.
Lower and rear door prepared for installation of the Ergoform-S lock system, see page 885.

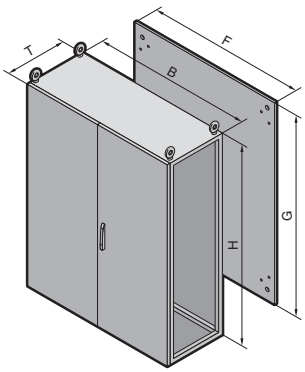
To order enclosures in stainless steel 1.4404 (AISI 316L), please add extension .50X the the Model No. Delivery times available on request.

Accessories Page 832 **PC enclosure systems, sheet steel** Page 256 **Stainless steel keyboard 482.6 mm (19″)/4 U** Page 1047

Baying systems TS 8







Material:
Stainless steel 1.4301:
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door(s): 2.0 mm
Mounting plate:
Sheet steel, 3.0 mm

Surface finish:
Enclosure frame and gland plates: Bare
Door, roof and rear panel: Brushed on the outside, grain size 240
Mounting plate: Zinc-plated

Protection category:
IP 55 to EN 60 529/10.91, complies with NEMA 12.

Supply includes:
Enclosure frame with door(s), mounting plate, gland plates, rear panel and roof, 2 support strips fitted in the enclosure depth (only with depth 600 mm).

Note:
Due to the hardness of the material, we recommend using metal hexagon socket screw SZ 2486.300, see page 937, for the interior installation.

Approvals,
see page 29.

Detailed drawing,
see page 1091.

Rittal service:

TS stainless steel (1.4301) available in protection category NEMA 4x on request – please add extension .640 to the Model No.

Width (B) in mm		Packs of	800	1200	600	800	1200	600	800	1200	Page
Height (H) in mm			1800	1800	1800	1800	1800	2000	2000	2000	
Depth (T) in mm			400	400	500	500	500	600	600	600	
Mounting plate width (F) in mm			699	1099	499	699	1099	499	699	1099	
Mounting plate height (G) in mm			1696	1696	1696	1696	1696	1896	1896	1896	
Model No. TS		1	**8454.600**	**8456.600**	**8457.600**	**8455.600**	**8453.600**	**8452.600**	**8450.600**	**8451.600**	
Door(s)			1	2	1	1	2	1	1	2	
Weight (kg)			112.9	170.4	92.5	116.3	174.9	104.4	129.7	194.7	
Walls											
Side panels		2	8700.840	8700.840	8700.850	8700.850	8700.850	8700.060	8700.060	8700.060	853
Divider panel		1	8609.840	8609.840	8609.850	8609.850	8609.850	8609.060	8609.060	8609.060	857
Divider panel for module plates		1	–	–	8609.100	8609.100	8609.100	8609.130	8609.130	8609.130	858
Base/plinth											
Components front and rear	Height 100 mm	1 set	8701.800	8701.200	8701.600	8701.800	8701.200	8701.600	8701.800	8701.200	841
	Height 200 mm	1 set	8702.800	8702.200	8702.600	8702.800	8702.200	8702.600	8702.800	8702.200	841
Trim panels (sides)	Height 100 mm	1 set	8701.040	8701.040	8701.050	8701.050	8701.050	8701.060	8701.060	8701.060	841
	Height 200 mm	1 set	8702.040	8702.040	8702.050	8702.050	8702.050	8702.060	8702.060	8702.060	841
Base/plinth trim, modular		4	2907.000	2907.000	2908.000	2908.000	2908.000	2913.000	2913.000	2913.000	841
Accessories											
Cable clamp rails		2	4192.000	4196.000	4191.000	4192.000	4196.000	4191.000	4192.000	4196.000	979
Cable entry plates		2	8700.800	8700.120[1)]	8700.600	8700.800	8700.120[1)]	8700.600	8700.800	8700.120[1)]	964
Wiring plan pocket, sheet steel		1	4118.000	4116.000	4116.000	4118.000	4116.000	4116.000	4118.000	4116.000	898
Lock systems											
Standard double-bit lock insert may be exchanged for other inserts and comfort handle, see page 881/888.											

To order enclosures in stainless steel 1.4404 (AISI 316L), please add extension .500 to the Model No. Delivery times available on request.
[1)] Packs of 4



Snap-on nut
for screw-fastening to the vertical section with a thread.
Model No. see page 931.

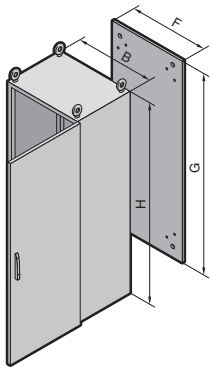


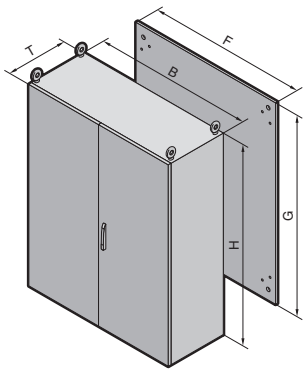
Cable trunking, vertical,
sized to the section and horizontally on the mounting plate.
Model No. see page 977.

Accessories Page 832 **Baying systems TS 8, sheet steel** Page 138 **Baying systems TS 8 EMC-shielded** Page 291

Free-standing enclosures ES 5000







Material:
Stainless steel 1.4301
Enclosure: 1.8 mm
Door(s): 2.0 mm
Rear panel: 1.5 mm
Mounting plate:
3.0 mm sheet steel

Surface finish:
Enclosure, rear panel and doors:
Brushed, grain 240
Mounting plate: Zinc-plated

Protection category:
IP 56 to EN 60 529/10.91 (single-door ES),
IP 55 to EN 60 529/10.91 (double-door ES),
complies with NEMA 12.

Supply includes:
Enclosure, solid top and sides, removable rear panel,
r/h door hinge,
may be swapped to opposite side, except ES 5455.600;
130° hinges,
mounting plate,
three-piece gland plates.

Note:
Due to the hardness of the material, we recommend using metal hexagon socket screw SZ 2486.300 for the interior installation, see page 937.

Approvals,
see page 28.

Detailed drawing,
see page 1089.

Width (B) in mm		Packs of	600	600	800	800	1000	1200	Page
Height (H) in mm			1600	1800	1800	2000	1800	2000	
Depth (T) in mm			400	500	500	600	400	500	
Mounting plate width (F) in mm			499	499	699	699	899	1099	
Mounting plate height (G) in mm			1496	1696	1696	1896	1696	1896	
Model No. ES		1	**5450.600**	**5451.600**	**5452.600**	**5453.600**	**5454.600**	**5455.600**	
Door(s)			1	1	1	1	1	2	
Eyebolts			2	2	2	2	4	4	
Weight (kg)			92.5	169.6	131.8	154.0	146.9	205.4	
Accessories									
Base/plinth	Height 100 mm	1	2865.000	2868.000	2866.000	2856.000	2867.000	2860.000	844
	Height 200 mm	1	2875.000	2876.000	2879.000	2880.000	2885.000	2887.000	844
Base/plinth trim, modular		4	2907.000	2908.000	2908.000	2913.000	2907.000	2908.000	841
System support rails		2	4361.000	4361.000	4362.000	4362.000	4347.000	4363.000	926
Cable clamp rails		2	4191.000	4191.000	4192.000	4192.000	4336.000	4196.000	979
Mounting bars		20	4596.000	4596.000	4598.000	4598.000	4599.000	4596.000	895
Utility lectern		1	4638.600	4638.600	4638.800	4638.800	–	4638.600	896
Wiring plan pockets		1	4116.000	4116.000	4118.000	4118.000	4124.000	4116.000	898
Lock systems									
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 888, and Ergoform-S lock system, see page 885.									

To order enclosures in stainless steel 1.4404 (AISI 316L), please add extension .500 to the Model No. Delivery times available on request.



Cable gland, brass,
nickel-plated in IP 68 (5 bar, 30 min),
Model No. see page 972.



Signal pillar LED compact,
Model No. see page 1041.

Accessories Page 832 **ES 5000 sheet steel** Page 136 **ES 5000 EMC-shielded** Page 291

Ex enclosures

Features



Under ATEX, the requirements placed on Ex enclosures for use in explosion hazard atmospheres are high. For this reason, Rittal refuses to compromise in this area. Enclosure concepts proven a million times over are tailored to the specific Ex requirements. The results is a series of empty enclosures providing ideal conditions for applications in the chemicals and petrochemicals industries, in the offshore sector and in the foods industry.

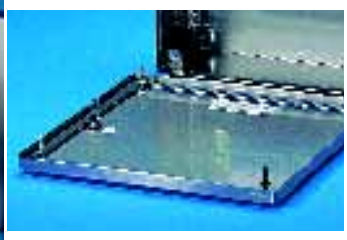
Baying systems TS 8 prepared for Ex pressurisation,

see page 152.

Rittal Ex enclosures — Individual Ex equipment — Signing-off by a test institute



Ex enclosures, stainless steel



Based on KL
with screw-fastened cover and profile strips with mounting holes on both sides of the enclosure for the attachment of support rails or mounting plate.



Based on AE
with hinged door, cam lock and mounting plate made from sheet steel, zinc-plated.



Blind threaded bushes M8 in the rear panel for wall mounting and side panel for **external connection of a PE conductor.**



Ex enclosures, plastic



Double seal on top and/or bottom edges of the door thanks to additional, integral rain protection strip.



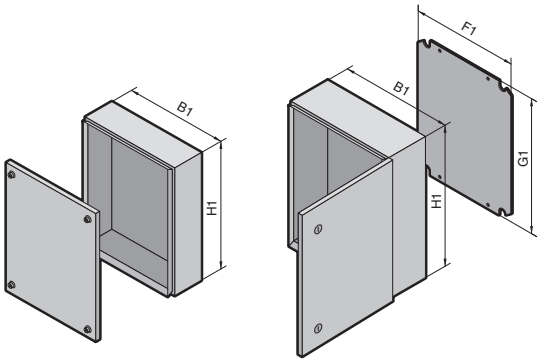
Attachment from the outside with **wall mounting bracket** 9266.000 into the threaded inserts M8 x 15.



Moulded **bosses** in the door for the attachment of cable routing.

Stainless steel





With screw-fastened lid

Material:
Stainless steel 1.4301

Surface finish:
Brushed, grain 240

Protection category:
IP 66 to EN 60 529/10.91

Supply includes:
Enclosure, lid with all-round foamed-in PU seal.

Certificates:
PTB 03 ATEX 1013U

With hinged door

Material:
Stainless steel 1.4301
Mounting plate: Sheet steel

Surface finish:
Brushed, grain 240
Mounting plate: Zinc-plated

Protection category:
IP 66 to EN 60 529/10.91

Supply includes:
Enclosure, door with all-round foamed-in PU seal, mounting plate.

Certificates:
PTB 02 ATEX 1082U

Approvals,
see page 38.

Detailed drawing,
see page 1119 – 1120.

With screw-fastened lid

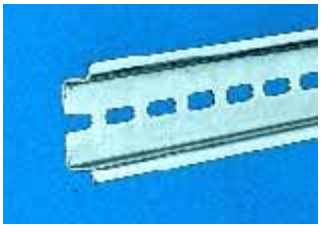
Width (B1) in mm	Packs of	150	200	300	300	300	400	Page
Height (H1) in mm		150	200	150	200	300	200	
Depth in mm		80	80	80	80	120	120	
Model No. KEL	1	**9301.000**	**9303.000**	**9302.000**	**9304.000**	**9306.000**	**9305.000**	
Weight (kg)		1.3	1.8	1.8	2.4	3.9	3.6	
Accessories								
Mounting plates		1560.700	1562.700	1561.700	1563.700	1567.700	1564.700	909

To order Ex enclosures in stainless steel 1.4404 (AISI 316L), please add extension .500 to the Model No. Delivery times available on request.

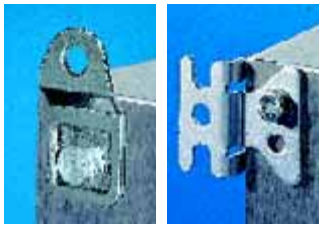
With hinged door

Width (B1) in mm	Packs of	200	300	380	380	380	600	600	760	800
Height (H1) in mm		300	380	300	380	600	600	760	760	1000
Depth in mm		155	210	155	210	210	210	210	300	300
Mounting plate width (F1) in mm		162	334	334	334	334	549	549	704	739
Mounting plate height (G1) in mm		275	275	275	355	570	570	730	730	955
Model No. KEL	1	**9401.600**	**9409.600**	**9402.600**	**9403.600**	**9404.600**	**9405.600**	**9406.600**	**9407.600**	**9408.600**
Number of fasteners		1	1	1	1	2	2	2	2	2
Weight (kg)		3.8	7.7	7.4	9.7	13.3	15.6	22.3	30.5	36.3

To order Ex enclosures in stainless steel 1.4404 (AISI 316L), please add extension .500 to the Model No. Delivery times available on request.



Support rails
in matching sizes,
Model No. see page 927.



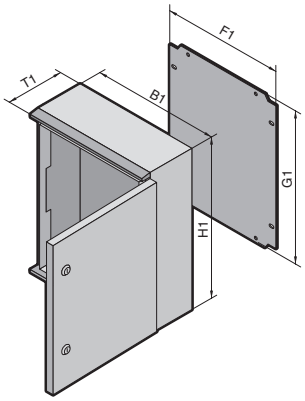
Wall mounting bracket,
Model No. see page 905.

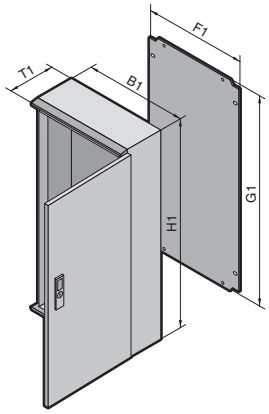
Accessories Page 832 **Cable entry** Page 964

Ex enclosures

Plastic







Material:
Enclosure: Fibreglass-reinforced unsaturated polyester.
Surface resistance: < 10^9 Ω
Mounting plate:
Sheet steel, zinc-plated, passivated

Colour:
RAL 9011

Protection category:
IP 66 to EN 60 529/10.91
KEL 9209.600:
IP 56 to EN 60 529/10.91

Supply includes:
Enclosure, door with all-round foamed-in PU seal, mounting plate.

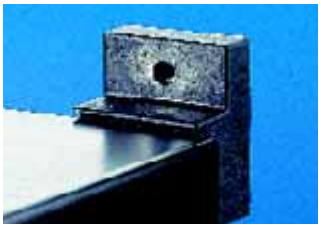
Certificates:
PTB 03 ATEX 1011U

Approvals,
see page 38.

Detailed drawing,
see page 1087 – 1088.

Width (B1) in mm	Packs of	200	250	300	400	400	500	600	600	800
Height (H1) in mm		300	350	400	400	600	500	600	800	1000
Depth (T1) in mm		150	150	200	200	200	300	200	300	300
Mounting plate width (F1) in mm		145	195	245	345	345	417	545	517	717
Mounting plate height (G1) in mm		250	300	350	350	550	450	550	750	950
Model No. KEL	1	**9201.600**	**9202.600**	**9203.600**	**9204.600**	**9205.600**	**9207.600**	**9206.600**	**9208.600**	**9209.600**
Number of cams		1	1	2	2	2	2	2	[1]	[1]
Weight (kg)		3.7	4.6	6.0	6.5	11.5	12.9	15.9	24.3	39.0

[1] 3-point lock system.



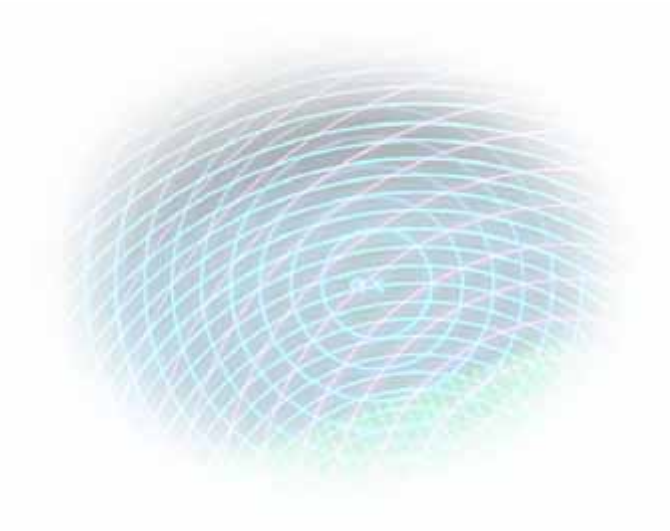
Wall mounting bracket,
Model No. see page 905.



Baying system TS 8,
prepared for EX pressurisation,
Model No. see page 152.

Accessories Page 832 **Cable entry** Page 964

Features

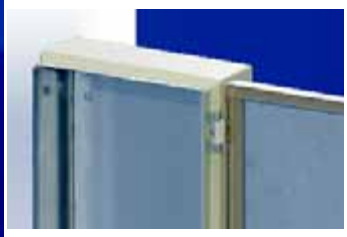


Forward-thinking EMC planning is crucial for the permanent functioning of sensitive electronics.

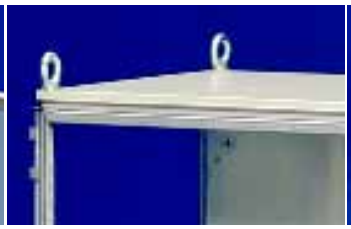
Electromagnetic compatibility is required of your product. For this reason, our EMC specialists will support you with expert assistance and advice. We can help you to effectively prevent both the inlet and outlet of interference fields into and from enclosures.



EMC enclosures and cases



EMC enclosures: Gland plates are deliberately omitted in order to achieve a high shielding effect.



EMC baying system: Frame made from sheet steel with an aluminium zinc surface finish. EMC/IP combination seals ensure slot-free all-round contact.



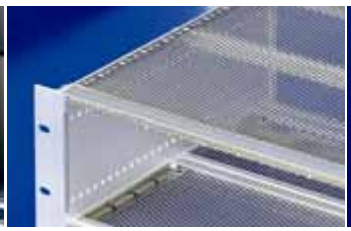
EMC free-standing enclosures: Solid top and sides. EMC/IP seals are attached to the door, rear panel and gland plate.



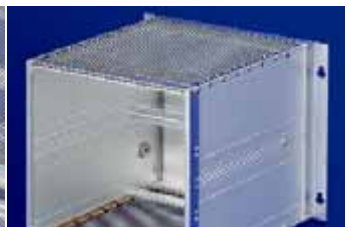
EMC subracks and systems



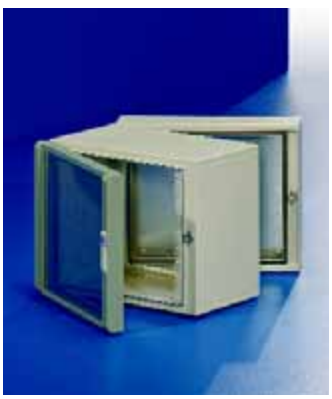
Ripac rack-mounted systems for CPCI and VMEbus, complete with power supply, backplane, climate control, EMC and ESD protection.



Ripac Vario EMC: Vibration and shock-tested subracks equipped for EMC-compatible installation.



Ripac Compact and Ripac Vario Mobil: The EMC specialists for mounting on top-hat rails, mounting plates, or for use in rail vehicles.



EMC electronic enlcosures



Electronic Kombi systems EL: Front door with EMC safety glass, hinged centre part, solid wall unit.



Low-resistance connection between the glazed door and conductive sealing edge ensures a high shielding effect.



Instrument case Vario-Case iS: The plastic base and cover tray are aluminium-coated.

The Rittal EMC concept

Rittal offers excellent pre-requisites for EMC enclosure configurations in the form of its standard sheet steel enclosures, EMC-shielded enclosures, and a practical range of EMC accessories.
Even the standard enclosures offer a good shielding effect against electrical fields which is sufficient for many applications.

Be it closely intermeshed potential equalisation in a standard enclosure to prevent line-bound interference, or extra shielding to protect against high-frequency electromagnetic fields – everything is possible, to suit the individual application.
The large enclosures in the TS 8 series offer "good" shielding, even in the standard version.

For Rittal EMC enclosures with a high level of shielding, excellent attenuation levels and attractive value-for-money products are achieved on the basis of zinc-plated metal surfaces in conjunction with low-resistance EMC shields.
According to EMC legislation, CE labelling is only compulsory for (active) equipment and systems.
Empty enclosures are not subject to the EMC Directive because these are passive components which cannot be furnished with a declaration of conformity with regard to EMC standards.



EMC terminal boxes KL

Material/surface finish:
Sheet steel with aluminium zinc coating, powder-coated on the outside in RAL 7035, interior surfaces conductive.

Protection category:
IP 55 to EN 60 529/10.91.
The EMC version ("high RF attenuation") has been certified by the VDE.

Supply includes:
Enclosure, cover with special seal and cover screws.

Width mm	Height mm	Depth mm	Model No. KL
300	300	120	**1507.750**

Other sizes available on request.

Approvals,
see page 39.

EMC diagram,
see page 293.



EMC E-Box EB

Material/surface finish:
Sheet steel with aluminium zinc coating, powder-coated on the outside in RAL 7035, interior surfaces conductive.

Protection category:
IP 55 to EN 60 529/10.91.
The EMC version ("high RF attenuation") has been certified by the VDE.

Supply includes:
Enclosure with mounting plate, door with special seal including 180° hinge and cam lock with double-bit insert.

Note:
All sizes available on request.

EMC diagram,
see page 293.



EMC compact enclosures AE

Material/surface finish:
Sheet steel with aluminium zinc coating, powder-coated on the outside in RAL 7035, interior surfaces conductive.

Protection category:
IP 55 to EN 60 529/10.91.
The EMC version ("high RF attenuation") has been certified by the VDE.

Supply includes:
Enclosure with mounting plate, door with special seal (130° hinge) including cam lock with double-bit insert.

Width mm	Height mm	Depth mm	Model No. AE
380	380	210	**1380.750**
600	380	210	**1039.750**
600	600	210	**1060.750**
800	1000	300	**1180.750**

Other sizes available on request.

Approvals,
see page 39.

EMC diagram,
see page 293.



EMC baying systems TS 8

Material:
Sheet steel with aluminium zinc coating
Door: 2.0 mm
Rear panel: 1.5 mm
Mounting plate: 3.0 mm

Surface finish:
Framework, door, rear panel and roof plate of sheet steel with an aluminium zinc coating, spray-finished on the outside in RAL 7035 and unpainted on the inside.

Protection category:
IP 55 to EN 60 529/10.91.
The EMC version ("high RF attenuation") has been certified by the VDE.

Supply includes:
Enclosure frame with door,
rear panel and roof plate removable,
r/h door hinge, may be swapped to opposite side,
4 eyebolts, fitted,
mounting plate,
three-piece gland plates.

Note:
All sizes and side panels available on request.

Property rights:
European patent no. 0 857 406
with validity for
CH, ES, FR, GB, IT, NL, SE
US patent no. 6,384,323
Japanese patent no. P 3 193 059

Also required:
EMC baying seal TS 8800.690,
see page 959, with bayed enclosure suites.

Approvals,
see page 293.

EMC diagram,
see page 293.



EMC free-standing enclosure ES 5000

Material:
Sheet steel with aluminium zinc coating
Enclosure body: 10-fold profiled
Door: 2.0 mm
Rear panel: 1.5 mm
Mounting plate: 3.0 mm

Surface finish:
Enclosure body, door and rear panel of sheet steel with aluminium zinc coating,
painted in RAL 7035 on the outside and unpainted on the inside.

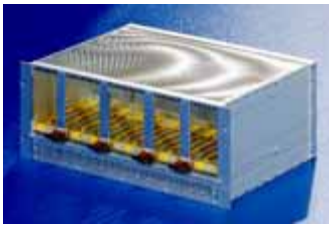
Protection category:
IP 55 to EN 60 529/10.91.
The EMC version ("high RF attenuation") has been certified by the VDE.

Supply includes:
Enclosure, solid top and sides, removable rear panel,
r/h door hinge, may be swapped to opposite side,
2 eyebolts, not fitted,
mounting plate,
three-piece gland plates.

Note:
All sizes available on request.

Approvals,
see page 293.

EMC diagram,
see page 293.



EMC subracks Ripac Vario

The Ripac Vario EMC subrack system was developed with consideration for EMC aspects. The subracks are equipped with a conductive surface finish and may be supplemented with additional EMC components such as springs and extrusions. This allows individual EMC requirements to be met, depending on the specific application in question.

Technical specifications:
Overall depth:
245, 285, 305, 345, 405, 465, 525, 585 mm
Installation width: 84 HP
Height: 3 U, 4 U, 6 U, 7 U, 9 U

Testing:
Vibration and shock-tested to:
IEC 600-68-2-6 test Fc
IEC 600-68-2-27 test Ea

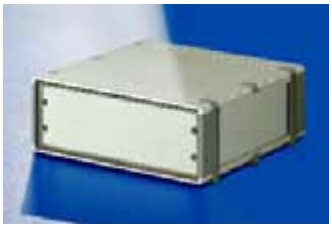
Standards:
Ripac Vario subracks are based on the system dimensions to IEC 60 297-3/-5.

Material:
Side panels: 2.5 mm aluminium
Gland plates and horizontal rails:
Extruded aluminium section
Cover plates: Aluminium

Surface finish:
Clear-chromated

Note:
For further information,
see page 491.

EMC diagram,
see page 293.



EMC instrument case Vario-Case iS

Instrument case for slide-in equipment, 482.6 mm (19″) and modular assemblies.
Width: 534 mm

Material:
Side panels:
Extruded aluminium section, chromated on the inside, painted on the outside
Cover trays:
Plastic to UL 94-V0 (self-extinguishing), with a conductive coating on the inside
Rear panel: 2 mm aluminium, clear-chromated
Front panel: 2 mm aluminium, clear-chromated

Surface finish:
Clear-chromated/spray-finished, RAL 7030/7035

Supply includes:
2 plastic cover trays,
8 enclosure feet (12 with 400 mm depth),
2 side panels,
1 rear panel,
1 front panel,
4 mounting flanges, 482.6 mm (19″),
4 tapped strips,
4 untapped strips,
assembly parts.

HP	U	Height mm	Depth mm	Model No. VC
84	4	208.10	300	**3743.700**
84	7	341.40	400	**3774.700**
84	3	163.65	300	**3733.700**
84	3	163.65	400	**3734.700**
84	6	297.00	400	**3764.700**
84	6	297.00	500	**3765.700**
84	9	430.50	500	**3795.700**

Delivery times available on request.

EMC diagram,
see page 293.



EMC electronic Kombi system EL, 3-part

Material:
Wall unit and centre part:
1.5 mm sheet steel, yellow-passivated on the inside
Mounting plate:
2.75 mm sheet steel
Front door:
Extruded aluminium section, die-cast aluminium corner connectors, 4 mm safety glass, with EMC mesh.

Surface finish:
Textured stove enamel,
enclosure RAL 7035,
interior surfaces zinc-plated and passivated,
door frame RAL 7033.

Protection category:
IP 55 to EN 60 529/10.91

Supply includes:
1 wall unit, solid,
2 gland plates, solid,
1 centre part, vertically hinged,
2 mounting angles, 482.6 mm (19″), fitted,
1 mounting plate, zinc-plated,
1 front door with EMC safety glass.

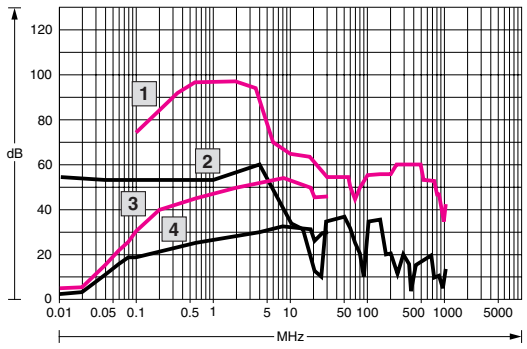
U	Width mm	Height mm	Depth mm	Model No. EL
3	600	212	415	**2243.705**
6	600	345	415	**2246.705**
9	600	478	415	**2249.705**
6	600	345	515	**2256.705**
9	600	478	515	**2259.705**
15	600	746	515	**2265.705**
21	600	1012	515	**2271.705**

Delivery times available on request.

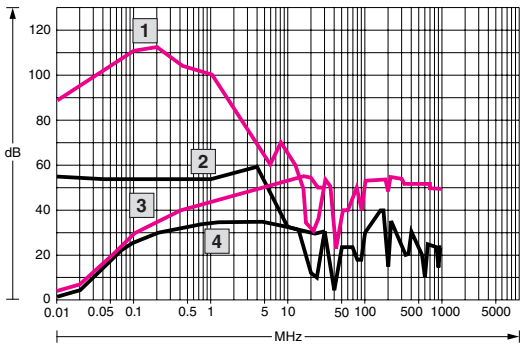
Approvals,
see page 293.

EMC diagram,
see page 293.

EMC terminal boxes KL Page 290



EMC free-standing enclosure ES 5000 Page 291



MHz = Frequency
dB = RF attenuation

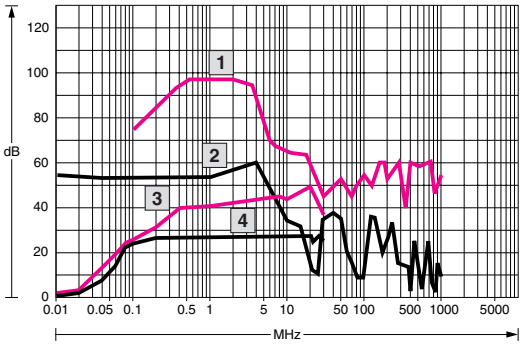
1 E field = Electrical field [V/m] EMC enclosures

2 E field standard enclosures

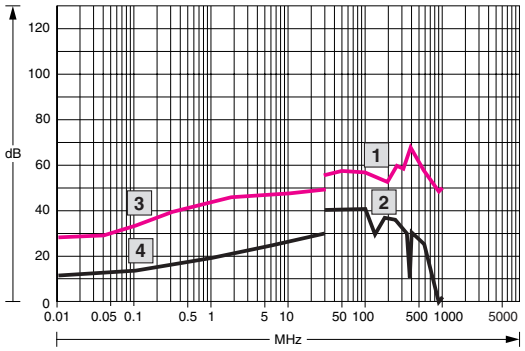
3 H field = Magnetic field [A/m] EMC enclosures

4 H field standard enclosures

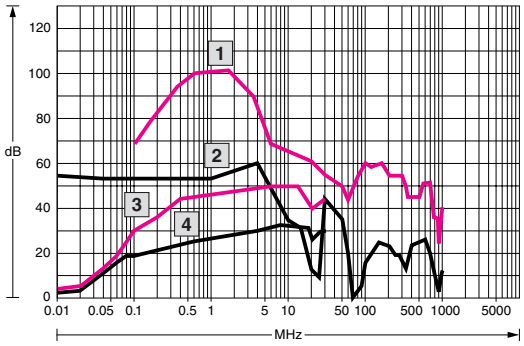
EMC E box EB Page 290



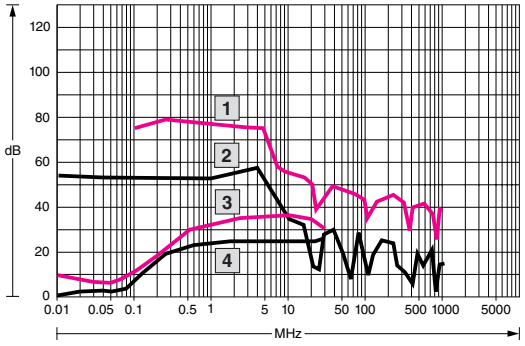
EMC subrack Ripac Vario Page 291



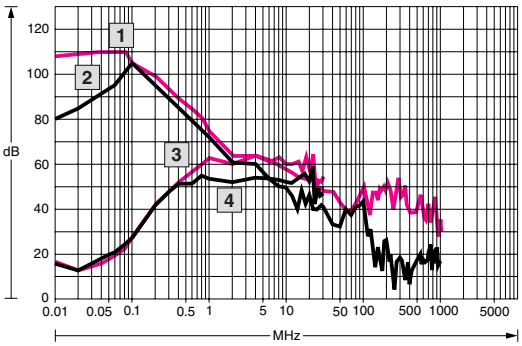
EMC compact enclosures AE Page 290



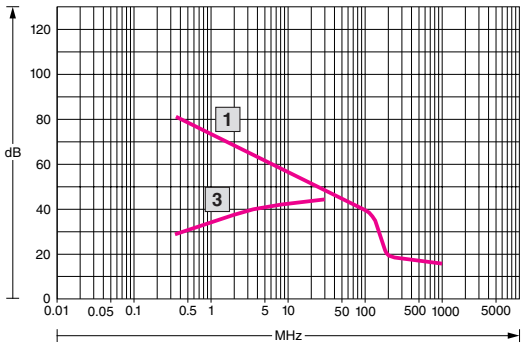
EMC electronic Kombi system EL, 3-part Page 292



EMC baying systems TS 8 Page 291



EMC instrument case Vario-Case iS Page 292



Approvals:

EMC terminal boxes KL
- UL
- CSA
- TÜV
- Norske Veritas
- Lloyds Register of Shipping
- VDE

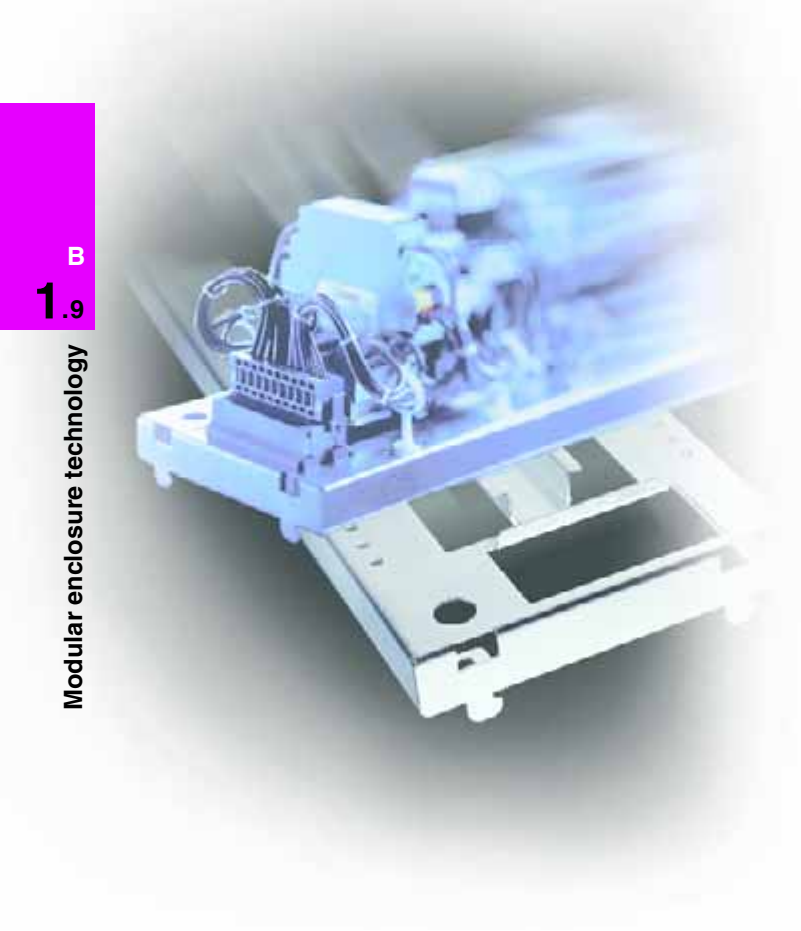
EMC baying systems TS 8
- UL – Underwriters Laboratories Inc. For USA and Canada

EMC free-standing enclosure ES 5000
- UL
- CSA

EMC electronic Kombi system EL, 3-part
- TÜV
- Norske Veritas
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- VDE
- UL – Underwriters Laboratories Inc. For USA and Canada

Modular enclosure technology

Features



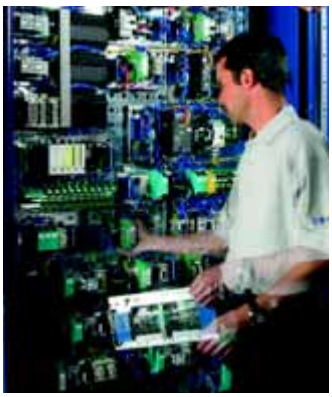
Trumpf, Phönix, Siemens and Rittal are collaborating on a new concept for mechanical and plant engineering.

Rittal supplies cases and enclosures with mounting plates that are specially perforated for module technology.

This helps to significantly reduce design, assembly and throughput times. The full range of modules is available from our partners. In addition, function modules for power supply and for the monitoring of climate control units are currently under development.

More rational, simpler and more secure is the outcome of this new, multi-functional modular system.

Please contact us for further information.



Modules



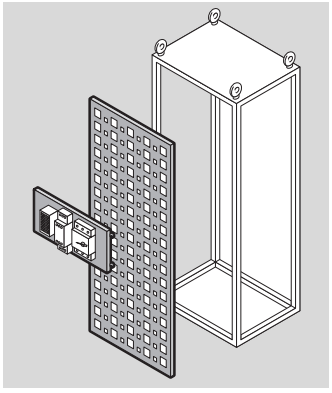
Function module, machine-neutral, standardised unit, pre-assembled on a module plate. In case of malfunctions, quickly replaced by the user.



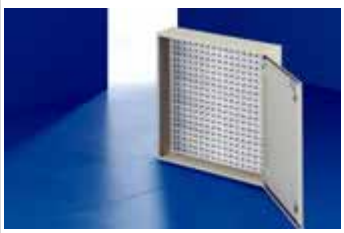
A standardised mechnical interface is provided by the module plate. It is simply located into the modular pitch pattern of holes of the mounting plate.



Standardised electrical interfaces are pre-configured, multi-pole bus cables. No need for time-consuming point-to-point wiring and cable ducts.



Enclosures and cases



Compact enclosures AE
Mounting plate with modular pitch pattern of holes.
Design, see page 295.

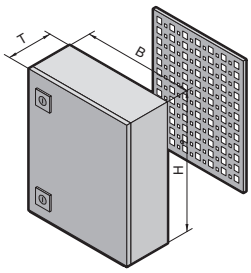


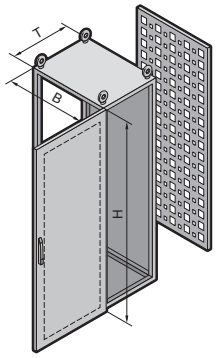
Baying systems TS 8
Mounting plate with modular pitch pattern of holes.
Design, see page 295.

Compact enclosures AE, baying systems TS 8









Material:
Sheet steel

Surface finish, protection category, supply scope and technical details for

Compact enclosures AE,
see from page 118.

Baying systems TS 8,
see from page 138.

Compact enclosures AE

Width (B) in mm	Packs of	380	380	380	400	500	500	500	600	600
Height (H) in mm		380	600	600	500	500	500	700	380	380
Depth (T) in mm		210	210	350	210	210	300	250	210	350
Model No. AE	1	**1380.100**	**1038.100**	**1338.100**	**1045.100**	**1050.100**	**1350.100**	**1057.100**	**1039.100**	**1339.100**

Width (B) in mm	Packs of	600	600	600	600	600	600	600	760	760
Height (H) in mm		600	600	760	760	800	1000	1200	760	760
Depth (T) in mm		210	350	210	350	250	250	300	210	300
Model No. AE	1	**1060.100**	**1360.100**	**1076.100**	**1376.100**	**1058.100**	**1090.100**	**1260.100**	**1077.100**	**1073.100**

Width (B) in mm	Packs of	800	800	1000	1000	1000	1000	1000		
Height (H) in mm		1000	1200	760	760	1000	1200	1400		
Depth (T) in mm		300	300	210	300	300	300	300		
Model No. AE	1	**1180.100**	**1280.100**	**1100.100**[1)]	**1130.100**[1)]	**1110.100**[1)]	**1213.100**[1)]	**1114.100**[1)]		

[1)] Two-door

Baying systems TS 8

Width (B) in mm	Packs of	600	800	1200	600	800	1200	600	800	1000
Height (H) in mm		1400	1400	1400	1600	1600	1600	1800	1800	1800
Depth (T) in mm		500	500	500	500	500	500	400	400	400
Door(s)		1	1	2	1	1	2	1	1	1
Model No. TS	1	**8645.100**	**8845.100**	**8245.100**	**8665.100**	**8865.100**	**8265.100**	**8684.100**	**8884.100**	**8084.100**

Width (B) in mm	Packs of	1000	1200	600	800	800	1200	600	800	800
Height (H) in mm		1800	1800	1800	1800	1800	1800	1800	1800	1800
Depth (T) in mm		400	400	500	500	500	500	600	600	600
Door(s)		2	2	1	2	1	2	1	1	2
Model No.	1	**8080.100**	**8284.100**	**8685.100**	**8880.100**	**8885.100**	**8285.100**	**8686.100**	**8886.100**	**8881.100**

Width (B) in mm	Packs of	1200	600	800	1200	600	800	1000	1200	600
Height (H) in mm		1800	2000	2000	2000	2000	2000	2000	2000	2000
Depth (T) in mm		600	400	400	400	500	500	500	500	600
Door(s)		2	1	1	2	1	1	2	2	1
Model No. TS	1	**8286.100**	**8604.100**	**8804.100**	**8204.100**	**8605.100**	**8805.100**	**8005.100**	**8205.100**	**8606.100**

Width (B) in mm	Packs of	800	1000	1200	600	800	1200	600	800	1200
Height (H) in mm		2000	2000	2000	2000	2000	2000	2200	2200	2200
Depth (T) in mm		600	600	600	800	800	800	600	600	600
Door(s)		1	2	2	1	1	2	1	1	2
Model No. TS	1	**8806.100**	**8006.100**	**8206.100**	**8608.100**	**8808.100**	**8208.100**	**8626.100**	**8826.100**	**8226.100**

Accessories Page 832 **AE stainless steel** Page 273 **AE EMC-shielded** Page 290 **AE Ex-proof** Page 287
TS 8 stainless steel Page 284 **TS 8 EMC-shielded** Page 291 **TS 8 climate controlled enclosure** Page 582 **TS 8 climate control doors** Page 584

Ethernet infrastructure for production buildings

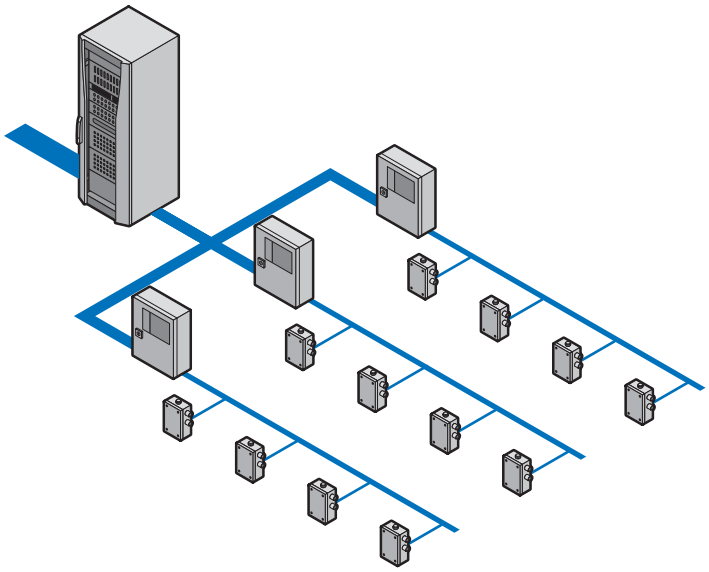
Building cabling to standard EN 50 173, based on the office sector model, is moving into the production halls. This standardisation of the Ethernet infrastructure simplifies plant modifications, integrates terminal workstations and employee information systems via a plug-in connection, connects machinery and plant to a central monitoring system, and much more besides . . . The successful concept: **Improved efficiency and superior reliability** through information exchange, process coordination and safety monitoring.



Fascinating future!

Ethernet goes factory! Cabling of industrial buildings to standard EN 50 173 (ISO/IEC 11801).

Ethernet infrastructure for production buildings



A concept with innovative enclosures and a comprehensive range of system accessories for outstanding implementation of industrial networks.



For the main distributor: Our extensive rack expertise from the office sector comes into play here.



For sub-distribution: Modified enclosures from the AE and KL series with a protection category tailored to industrial use, equipped with or without patch panel, cable routing supports and cable entry.



Terminal connection boxes: Made from die-cast aluminium in protection category IP 67.



When it comes to future-oriented solutions for modern low-voltage power distribution, you are most definitely on the right track with **Rittal busbar systems.**

Take this example showing the cross-section of a power circuit-breaker panel with main busbar system, cable connection system and connection kits. Achieved with Rittal Maxi-PLS, the modular system for optimum fast assembly.

Power distribution

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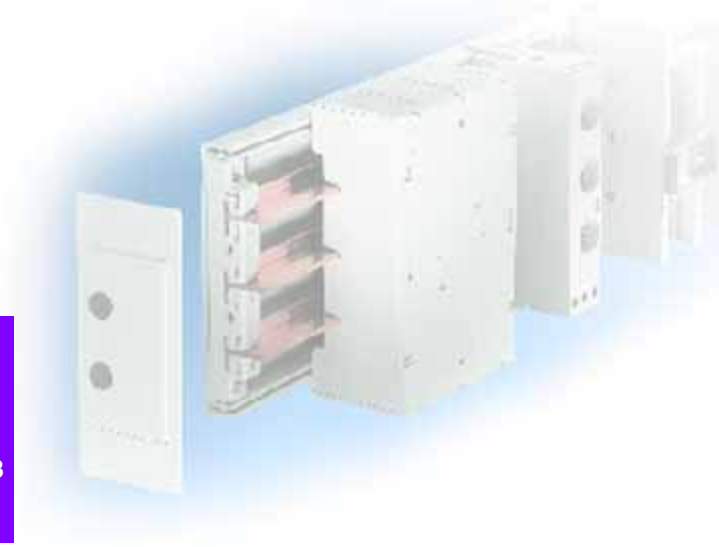
Busbar systems up to 250 A (40 mm)

Overview of Rittal Mini-PLS



The Rittal Mini-PLS busbar system with 40 mm bar centre distance is sure to impress, with its unique use of space and fast assembly.

- High static and thermal load capacity thanks to the T-support form of the special rail
- The components are simply plugged in from the front
- Busbar support suitable for top mounting
- Contact hazard protection thanks to all-round accommodation (end cover, base tray and cover section)



Compact

- The special busbars are simply pushed into the one-piece support and locked into position.
- Unrestricted top mounting of the busbar supports and busbar connector sets with top-mounting components.
- Precise-fit installation, because the build height (160 mm) matches the installation space requirement exactly.
- Simple component assembly via plug and lock action from the front.

System components

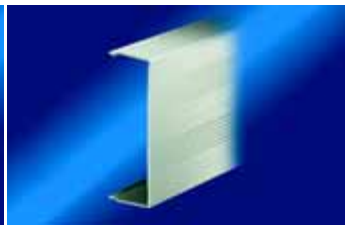


Mini-PLS end cover
Mini-PLS base tray section



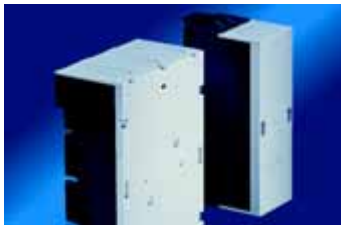


Mini-PLS busbar supports up to 250 A, 3-pole
Mini-PLS special busbars E-Cu 250 A, 120 mm²
Mini-PLS busbar connectors up to 250 A



Mini-PLS cover sections

Assembly components



Mini-PLS busbar connection adaptor up to 63 A and up to 250 A



Mini-PLS bus-mounting fuse base D 02-E 18

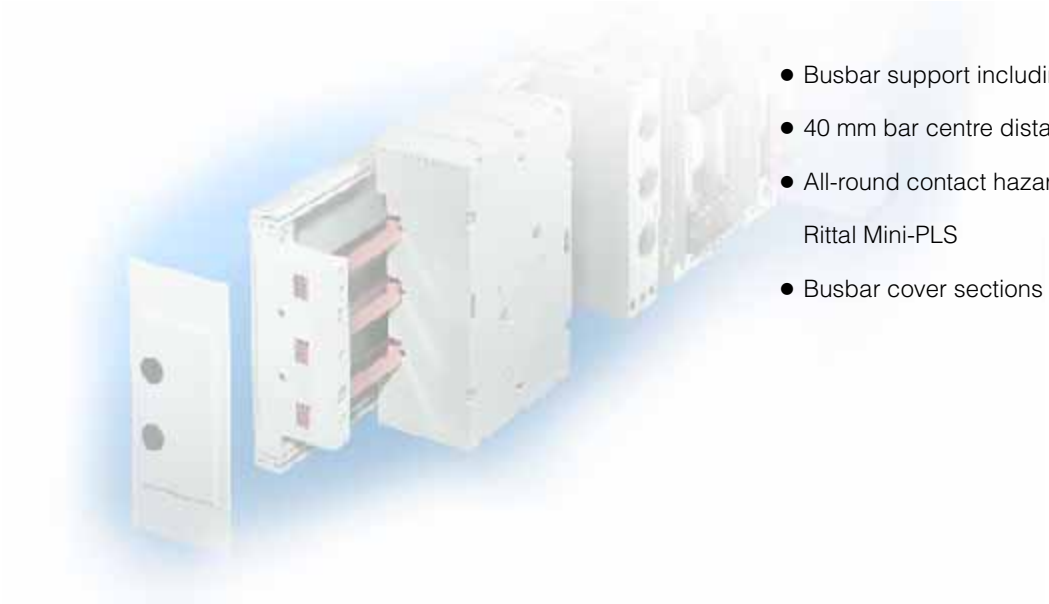


Mini-PLS component adaptor 12/25/40/100 A
Mini-PLS quick-fit component adaptor 25 A (32 A)



NH on-load isolators, size 000

Overview



- Busbar support including inserts for flat copper rails
- 40 mm bar centre distance
- All-round contact hazard protection identical to the Rittal Mini-PLS
- Busbar cover sections may be used as an alternative.



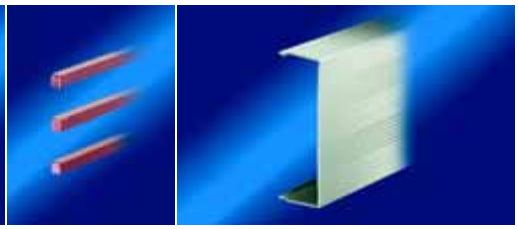
System components



End cover
Base tray sections



Busbar support
up to 360 A, 3-pole
Busbars of E-Cu



Busbar cover sections

Cost-effective

- The inserts pre-integrated into the busbar support facilitate the bar accommodation of 12 x 5, 12 x 10 and 15 x 5 mm. Without these inserts, the maximum bar cross-section of 15 x 10 mm is used.
- Simple component assembly via insertion and/or snap-mounting.
- End cover, base tray section and cover section are identical to the Mini-PLS contact hazard protection.

Assembly components



Cover sections



Connection adaptor
up to 360 A



Bus-mounting fuse base
D 02-E-18

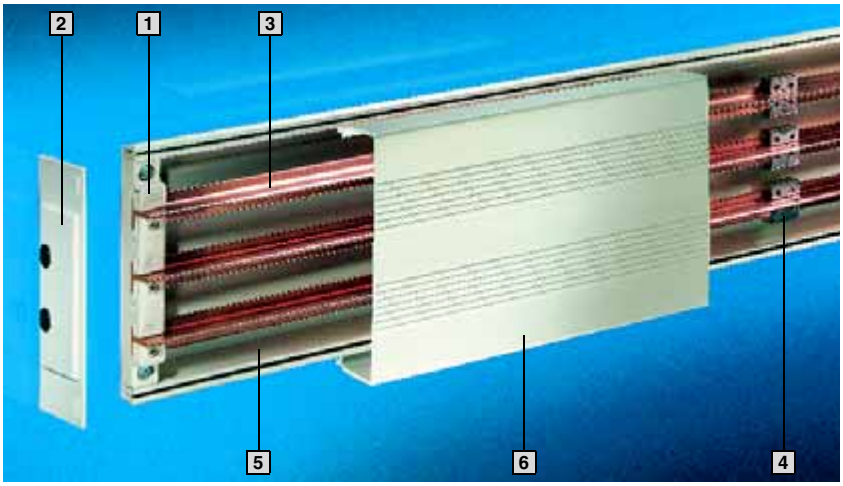


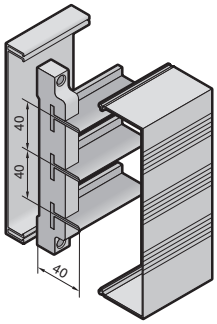
Multi-functional component adaptor 12/25/40 A
Component adaptor 100 A



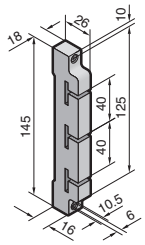
NH on-load isolators,
size 000

Rittal Mini-PLS





Planning software Rittal SV Plan/ Power Plan,
see page 1061.



1 Mini-PLS busbar support

Material:
Polyamide (PA 6.6), 30 % fibreglass-reinforced.
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

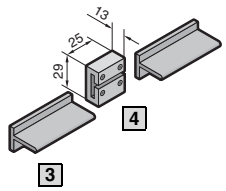
Short-circuit protection diagram,
see page 1124.

Rated current up to	250 A
Rated operating voltage up to	690 V~, 50/60 Hz to VDE 0660
Number of poles	3-pole
Bar centre distance	40 mm
Packs of	4
Model No. SV	**9600.000**

2 Mini-PLS end cover

For side contact hazard protection of the Mini-PLS assembly. For simple clip-on mounting on SV 9600.000.

Packs of	Model No. SV
2	**9610.000**



3 Mini-PLS special busbars

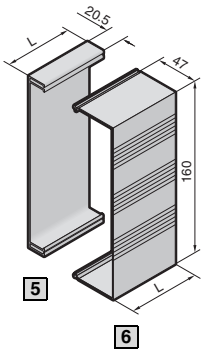
E-Cu 250 A, 120 mm²
3 mm bar thickness.

Length mm	Packs of	Model No. SV
500	3	**9601.000**
700	3	**9602.000**
1100	3	**9603.000**
1500	3	**9624.000**

4 Mini-PLS busbar connectors

up to 250 A
For connecting Mini-PLS special busbars; no drilling required.
Maximum tightening torque 2 Nm.

Packs of	Model No. SV
3	**9611.000**



5 Mini-PLS base tray sections

For rear contact hazard protection of the Mini-PLS assembly.

Length (L) mm	Packs of	Model No. SV
250	1	**9604.000**
500	1	**9605.000**
700	1	**9606.000**
1100	1	**9607.000**

6 Mini-PLS cover sections

May be cut to length individually; for clip-on mounting onto the Mini-PLS base tray section.

Length (L) mm	Packs of	Model No. SV
250	1	**9608.000**
500	1	**9609.000**

Material
Base tray and cover sections:
Thermally modified hard PVC.
Continuous operating temperature: max. 100°C.
Fire protection corresponding to UL 94-V0.

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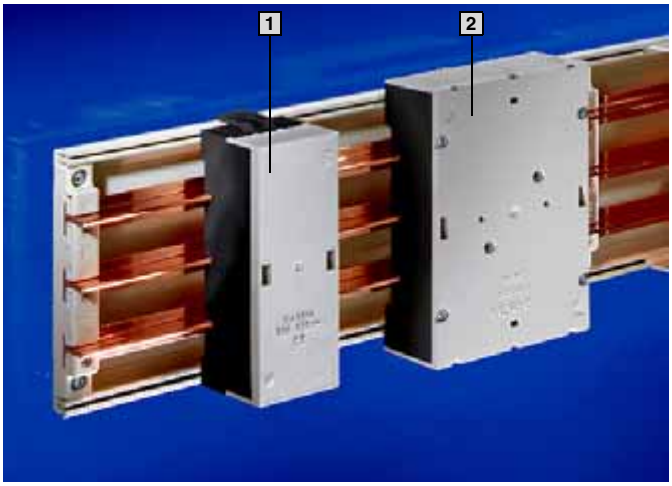
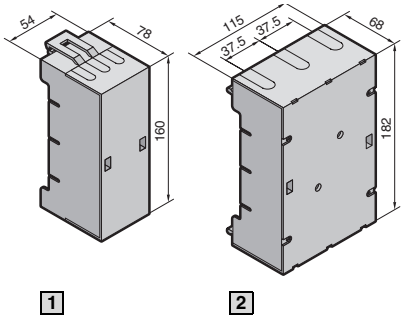
Mini-PLS busbar connection adaptor





Material:
Polyamide (PA 6.6),
30% fibreglass-reinforced.
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Supply includes:
Cover.

Version	1	2	Page
Rated current up to	63 A	250 A	
Rated operating voltage	690 V~	690 V~	
Connection	top/bottom	top/bottom	
Connection of round conductors[1)]	1.5 – 35 mm²	10 – 120 mm²	
Clamping area for laminated copper bars	10 x 8 mm	17 x 15 mm	
Tightening torque ● Terminal screw	2 – 3 Nm	4 – 6 Nm	
Packs of	1	1	
Model No. SV	**9613.000**	**9612.000**	
Accessories			
Laminated copper bars	■	■	361

[1)] Wire end ferrules should be used with fine wire conductors.

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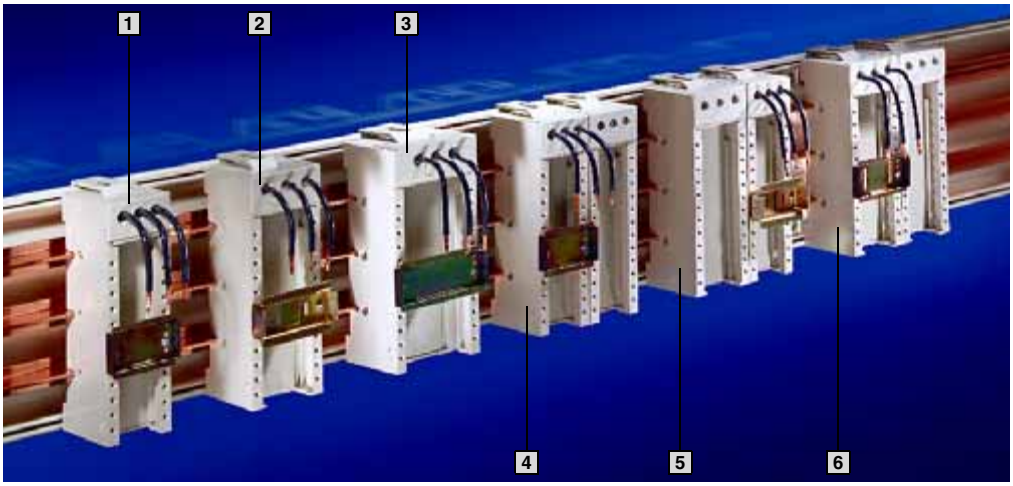
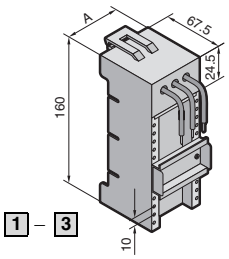
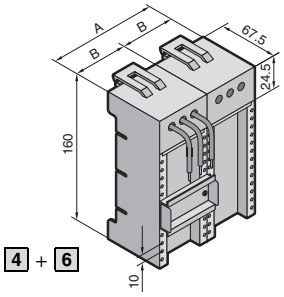
Busbar systems up to 250 A (40 mm)

Mini-PLS component adaptors 12 A/25 A

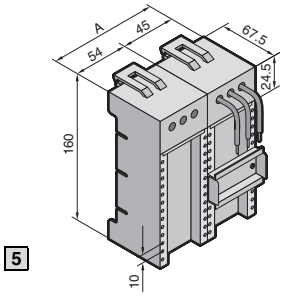




1 – 3



4 + 6



5

Material:
Polyamide (PA 6.6),
30 % fibreglass-reinforced.
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Note:
The current carrying capacity of the supply cables fitted as standard can be found on page 1128.

Version		1			2		3		4	5	6	Page
Construction width	A	45 mm			54 mm		72 mm		90 mm	99 mm	108 mm	
	B	–			–		–		45 mm	–	54 mm	
Rated current up to		12 A	25 A	25 A	25 A	25 A	25 A	25 A	25 A	25 A	25 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	
Cable outlet		top	top	top	top	top	top	top	top	top	top	
Connection cables[1)]		AWG 14	AWG 12	AWG 12	AWG 12	AWG 12	AWG 12	AWG 12	AWG 12	AWG 12	AWG 12	
Support rails	Quantity	1	1	1	1	1	1	1	1	1	1	
	Height	7.5 mm	7.5 mm	15 mm	7.5 mm	15 mm	7.5 mm	15 mm	7.5 mm	15 mm	7.5 mm	
Packs of		1	1	1	1	1	1	1	1	1	1	
Model No. SV		**9614.110**	**9614.100**	**9615.100**	**9614.000**	**9615.000**	**9625.000**	**9626.000**	**9629.010**	**9629.020**	**9629.030**	
For power circuit-breakers/starter combinations Make												
ABB		–	■	■	■	■	–	–	–	–	–	1128
AEG		–	■	■	■	■	–	–	–	–	–	
Allen Bradley		–	■	■	–	–	–	–	■	–	–	
Moeller Electric		–	■	■	–	■	■	■	■	–	■	
Siemens		■	■	■	–	■	–	–	■	■	–	
Telemecanique		–	■	■	–	–	–	■	■	–	■	
Universal application		■	■	■	■	■	■	■	■	■	■	
Accessories	Packs of											
Insert strip	2	9623.000	9623.000	9623.000	9623.000	9623.000	9623.000	9623.000	9623.000	9623.000	9623.000	362
Support rails, width 45 mm, height 7.5 mm	10	9320.150	9320.150	9320.150	–	–	–	–	9320.150	9320.150	–	362
Support rails, width 54 mm, height 7.5 mm	10	–	–	–	3548.000	3548.000	–	–	–	3548.000	3548.000	362
Support rails, width 72 mm, height 7.5 mm	10	–	–	–	–	–	3549.000	3549.000	–	–	–	362
Plug-in connector	1	9623.100	9623.100	9623.100	9623.100	9623.100	–	–	9623.100	9623.100	9623.100	362

[1)] AWG = American Wire Gauges
AWG 14 = 2.08 mm² ≙ 2.5 mm²
AWG 12 = 3.31 mm² ≙ 4 mm²

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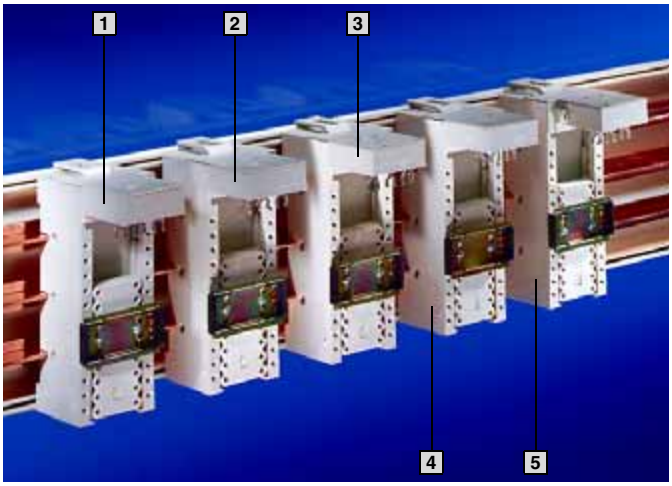
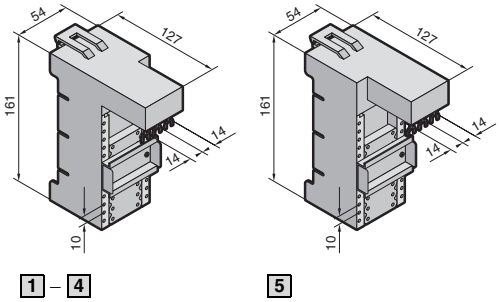
NH on-load isolator Page 307 **Accessories** Page 360

Mini-PLS quick-fit component adaptors 25 A (32 A)





Rapid DIN rail adjustment for component connection.

Material:
Polyamide (PA 6.6),
30 % fibreglass-reinforced.
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Version		1	2	3	4	5	Page
Construction width		54 mm	54 mm	54 mm	54 mm	54 mm	
Rated current up to		25 A at 35°C ambient temperature 32 A at 25°C ambient temperature					
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	690 V~	
Support rails	Quantity	1	1	1	1	1	
	Height	7.5 mm	7.5 mm	7.5 mm	7.5 mm	7.5 mm	
Packs of		1	1	1	1	1	
Model No. SV		**9618.000**	**9619.000**	**9620.000**	**9621.000**	**9622.000**	
For power circuit-breakers/starter combinations Make							
ABB		–	–	–	–	■	1128
AEG		■	–	–	–	–	
Allen Bradley		–	–	■	–	–	
General Electric		■	–	–	–	–	
Moeller Electric		–	■	■	–	–	
Siemens		–	–	–	–	■	
Schiele		■	–	–	–	–	
Telemecanique		–	–	–	■	■	
Universal application		■	■	■	■	■	
Accessories	Packs of						
Insert strip	2	9623.000	9623.000	9623.000	9623.000	9623.000	362

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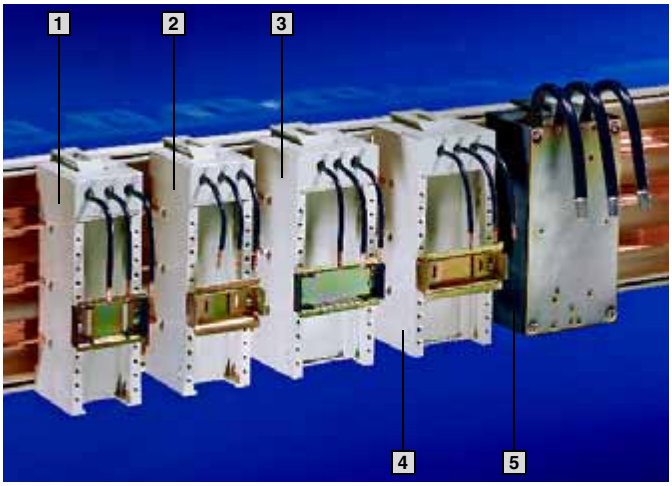
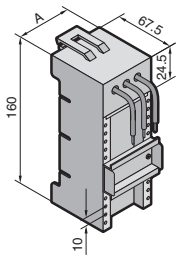
NH on-load isolator Page 307 **Accessories** Page 360

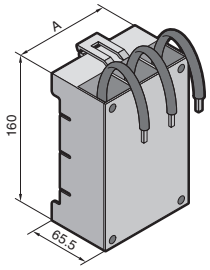
Busbar systems up to 250 A (40 mm)

Mini-PLS component adaptors 40 A/100 A





1 – 4



5

Material:
Polyamide (PA 6.6),
30 % fibreglass-reinforced.
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Note:
The current carrying capacity of the supply cables fitted as standard can be found on page 1128.

Version		1	2	3	4	5	Page
Construction width (A)		54 mm	54 mm	72 mm	72 mm	90 mm	
Rated current up to		40 A	40 A	40 A	40 A	100 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	690 V~	
Cable outlet		top	top	top	top	top	
Connection cables[1)]		AWG 10	AWG 10	AWG 10	AWG 10	35 mm²	
Support rails	Quantity	1	1	1	1	–	
	Height	7.5 mm	15 mm	7.5 mm	15 mm	–	
Packs of		1	1	1	1	1	
Model No. SV		**9616.000**	**9617.000**	**9627.000**	**9628.000**	**9629.000**	
For power circuit-breakers/starter combinations Make							
ABB		–	■	–	–	■	1129
AEG		–	–	–	–	■	
Allen Bradley		■	■	–	–	■	
Merlin Gerin		–	–	–	–	■	
Moeller Electric		–	■	■	■	■	
Siemens		–	■	–	–	■	
Telemecanique		–	–	–	■	■	
Universal application		■	■	■	■	■	
Accessories	Packs of						
Insert strip	2	9623.000	9623.000	9623.000	9623.000	–	362
Support rails width 54 mm, height 7.5 mm	10	3548.000	3548.000	–	–	–	362
Support rails width 72 mm, height 7.5 mm	10	–	–	3549.000	3549.000	–	362
Support rails width 72 mm, height 15 mm	5	–	–	–	–	9320.120	362
Plug-in connector	1	9623.100	9623.100	–	–	–	362

[1)] AWG = American Wire Gauges
AWG 10 = 5.26 mm² ≙ 6 mm²

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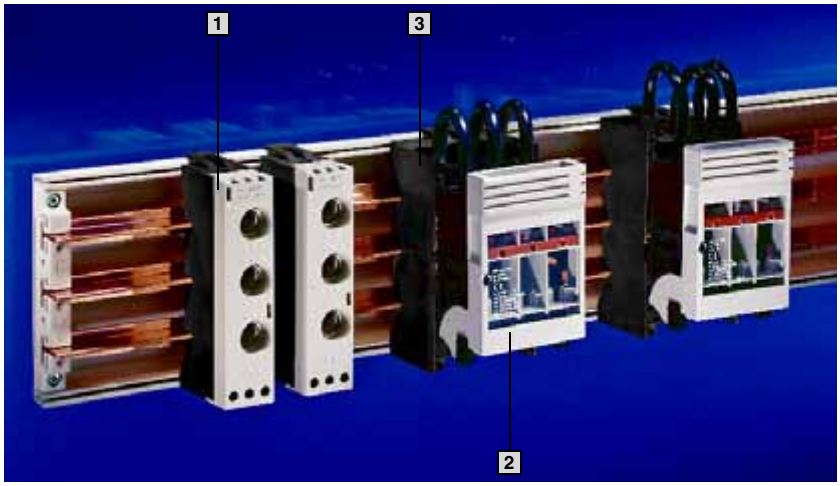
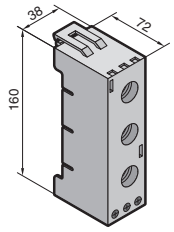
NH on-load isolator Page 307 **Accessories** Page 360

Mini-PLS bus-mounting fuse base/NH on-load isolator





1 Mini-PLS bus-mounting fuse base D 02-E 18

Material:
Polyamide (PA 6.6), 30 % fibreglass-reinforced.
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

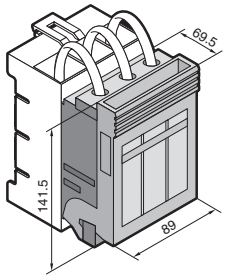
Supply includes:
Cover.

Rated current	63 A
Rated operating voltage	400 V~
Connection of round conductors[1)]	1.5 – 16 mm²
Tightening torque ● Terminal	2.5 Nm
Packs of	1
Model No. SV	**9630.000**

[1)] When using fine wire conductors, wire end ferrules should be used.

Accessories:

Identification labels SV 9320.080,
see page 363.



2 NH on-load isolators size 000

Material:
Isolator lid, contact hazard protection,
isolator chassis:
Fibreglass-reinforced polyamide
Contact tracks:
Silver-plated hard copper

Technical information,
see page 1132.

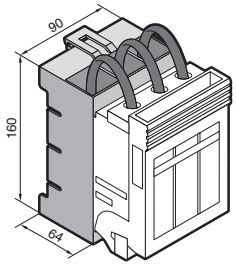
Size	000
Rated current	100 A
Rated operating voltage	690 V~
Cable outlet	top/bottom
Type of connection	Terminal up to 50 mm²
Tightening torque	3 Nm
Packs of	1
Model No. SV	**3431.000**

Also required:

Mini-PLS busbar adaptor,
see page 307.

Accessories:

Micro-switch SV 3071.000,
see page 363.



3 Mini-PLS busbar adaptor

For mounting SV 3431.000 on Rittal Mini-PLS.

Material:
Polyamide (PA 6.6), 30 % fibreglass-reinforced.
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Supply includes:
35 mm² connection cables fitted as standard.

Packs of	Model No. SV
1	**9629.100**

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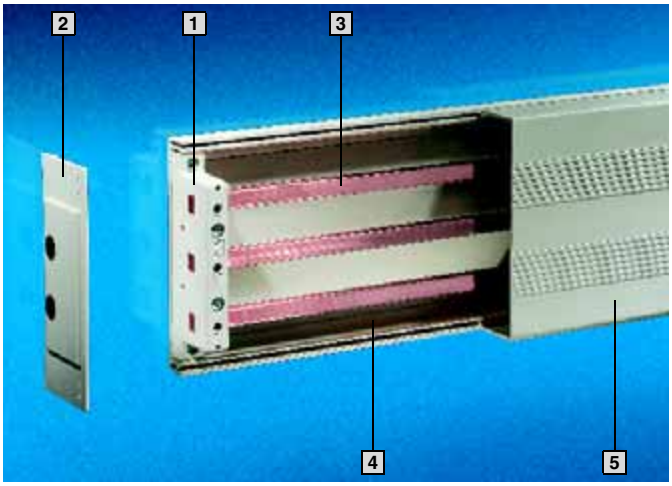
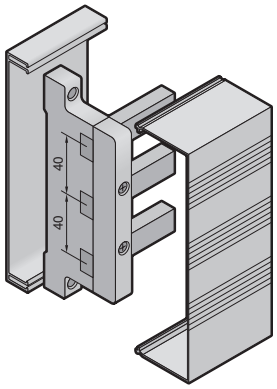
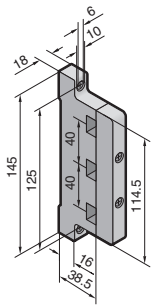
Busbar systems up to 360 A (40 mm)

System components





Planning software
Rittal SV Plan/
Power Plan,
see page 1061.



1 Busbar support

Material:
Fibreglass-reinforced, thermoplastic polyester (PBT). Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Supply includes:
Inserts for adaptation of bar sizes 12 x 5 – 15 x 5 mm.

Short-circuit protection diagram,
see page 1124.

Technical information
for the calculation of rated currents,
see page 1137.

Rated current up to	360 A
Rated operating voltage up to	690 V~, 50/60 Hz to VDE 0660
Number of poles	3-pole
Bar centre distance	40 mm
Bar accommodation	12 x 5 – 15 x 10 mm
Tightening torque ● Assembly screw ● Cover attachment	 3 – 5 Nm 1 – 3 Nm
Packs of	4
Model No. SV	**9350.000**

2 End cover

For side contact hazard protection of the busbar assembly.
Suitable for connection to SV 9350.000.

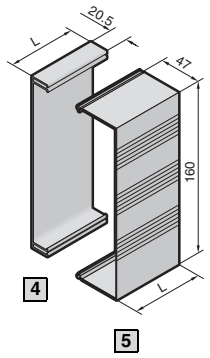
Packs of	Model No. SV
2	**9610.000**

3 Busbars

made from E-Cu
To DIN EN 13 601.
Length: 2400 mm/bar.

Dimensions mm	Packs of	Model No. SV
12 x 5	6	**3580.000**
12 x 10	6	**3580.100**
15 x 5	6	**3581.000**
15 x 10	6	**3581.100**

System overview Page 301 **Busbar connection adaptor** Page 310 **Bus-mounting fuse base** Page 311 **NH fused isolator** Page 311
Component adaptor Page 312 **Accessories** Page 360



4 Base tray sections

For rear contact hazard protection of the busbar assembly.

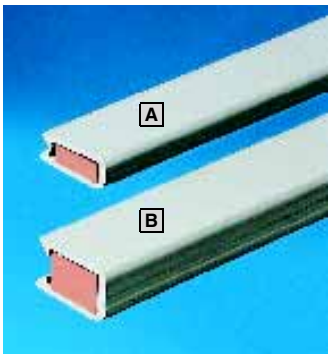
Length (L) mm	Packs of	Model No. SV
250	1	**9604.000**
500	1	**9605.000**
700	1	**9606.000**
1100	1	**9607.000**

5 Cover sections

May be cut to length as required; for clip-on mounting to the base tray section.

Length (L) mm	Packs of	Model No. SV
250	1	**9608.000**
500	1	**9609.000**

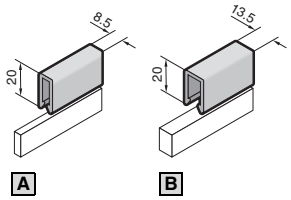
Material
Base tray and cover sections:
Thermally modified hard PVC.
Continuous operating temperature: max. 100°C.
Fire protection corresponding to UL 94-V0.



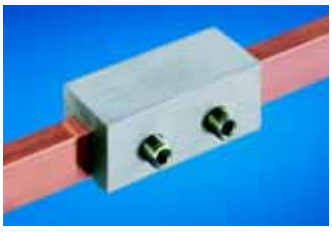
Busbar Cover sections

Contact hazard protection via covering of the busbars. May be cut to required length.
Length: 1000 mm/section.

Material:
Thermally modified hard PVC.
Continuous operating temperature: max. 100°C.
Fire protection corresponding to UL 94-V0.



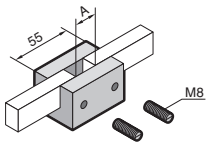
For busbars mm	Packs of	Model No. SV
A 12/15 x 5	4	**9350.010**
B 12/15 x 10	4	**9350.060**



Busbar connectors

For connecting SV busbars from 12 x 5 to 15 x 10 mm; no drilling required.
Tightening torque: 10 Nm.

Material:
Brass.
Nickel-plated surface finish.



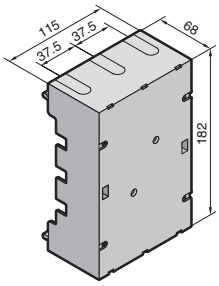
A = max. 10 mm

Packs of	Model No. SV
3	**9350.070**

System overview Page 301 **Busbar connection adaptor** Page 310 **Bus-mounting fuse base** Page 311 **NH fused isolator** Page 311
Component adaptor Page 312 **Accessories** Page 360

Busbar connection adaptor





Material:
Polyamide (PA 6.6),
30 % fibreglass-reinforced.
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Supply includes:
Cover.

Note:
Conductor connection clamps for the connection of round conductors 1 – 16 mm², see page 324.

Rated current up to	360 A		Page
Rated operating voltage	690 V~		
Connection	top/bottom		
Connection of round conductors[1)]	10 – 120 mm² (max. 250 A)		
Clamping area for laminated copper bars	17 x 15 mm (max. 360 A)		
Tightening torque ● Terminal screw	4 – 6 Nm		
For busbars	12 x 5/10 mm	15 x 5/10 mm	
Packs of	1	1	
Model No. SV	**9350.020**	**9350.030**	
Accessories			
Laminated copper bars	■	■	361

[1)] Wire end ferrules should be used with fine wire conductors.

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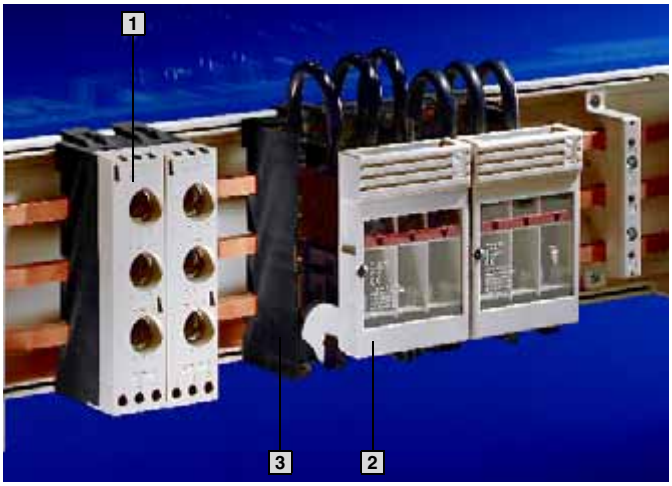
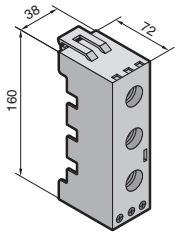
Component adaptor Page 312 **Accessories** Page 360

Bus-mounting fuse base/NH on-load isolator





1 Bus-mounting fuse base D 02-E 18

Material:
Polyamide (PA 6.6), 30 % fibreglass-reinforced.
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Supply includes:
Cover.

Accessories:

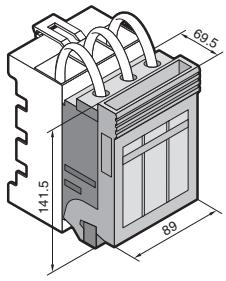
Identification labels SV 9320.080,
see page 363.

Rated current	63 A
Rated operating voltage	400 V~
Connection of round conductors[1)]	1.5 – 16 mm²
Tightening torque ● Terminal	2.5 Nm
Packs of	1
For busbars 12 x 5/10 mm **Model No. SV**	**9350.050**
For busbars 15 x 5/10 mm **Model No. SV**	**9350.500**

[1)] When using fine wire conductors, wire end ferrules should be used.

Also required:

Base tray section,
see page 309.



2 NH on-load isolators size 000

Material:
Isolator lid, contact hazard protection,
isolator chassis:
Fibreglass-reinforced polyamide
Contact tracks:
Silver-plated hard copper

Technical information,
see page 1132.

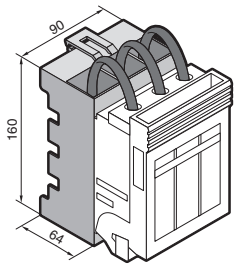
Accessories:

Micro-switch SV 3071.000,
see page 363.

Size	000
Rated current	100 A
Rated operating voltage	690 V~
Cable outlet	top/bottom
Type of connection	Terminal up to 50 mm²
Tightening torque	3 Nm
Packs of	1
Model No. SV	**3431.000**

Also required:

Busbar adaptor,
see page 311.



3 Busbar adaptor

For mounting SV 3431.000 on 40 mm busbar systems.

Material:
Polyamide (PA 6.6), 30 % fibreglass-reinforced.
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Supply includes:
35 mm² connection cables fitted as standard.

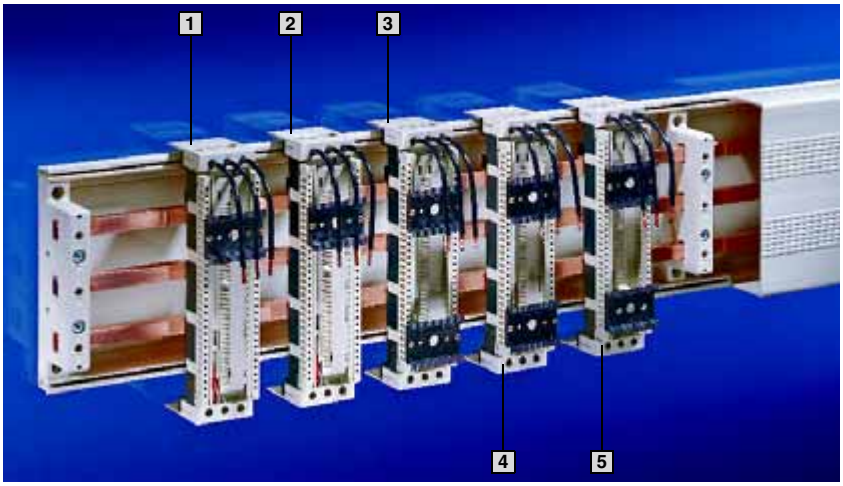
For busbars mm	Packs of	Model No. SV
12 x 5/10	1	**9350.400**
15 x 5/10	1	**9350.410**

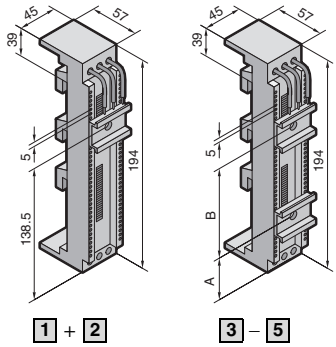
Also required:

Base tray section,
see page 309.

System overview Page 301 **Busbar system** Page 308 **Busbar connection adaptor** Page 310 **Component adaptor** Page 312 **Accessories** Page 360

Multi-functional component adaptor 25 A/40 A





Material:
Polyamide (PA 6.6),
30 % fibreglass-reinforced.
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Note:
The current carrying capacity of the supply cables fitted as standard can be found on page 1128.

For snap-on mounting		1	2	3	4	5	Page
Construction width		45 mm	45 mm	45 mm	45 mm	45 mm	
Rated current up to		12 A	25 A	25 A	25 A	25 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	690 V~	
Cable outlet		top	top	top	top	top	
Connection cables[1)]		AWG 14	AWG 12	AWG 12	AWG 12	AWG 12	
Support rails	Quantity	1	1	2	2	2 (1 variable)	
	Height	10 mm	10 mm	10 mm	10 mm	10 mm	
	A	–	–	38.5 mm	28 mm	variable	
	B	–	–	100 mm	125 mm	variable	
Packs of		1	1	1	1	1	
For 5 mm bar thickness **Model No. SV**		**9350.080**	**9350.100**	**9350.120**	**9350.260**	**9350.140**	
For 10 mm bar thickness **Model No. SV**		**9350.090**	**9350.110**	**9350.130**	**9350.270**	**9350.150**	
For power circuit-breakers/starter combinations Make							
AEG		–	■	–	–	–	1129
Allen Bradley		–	■	–	■	–	
Moeller Electric		–	■	–	–	–	
Siemens		■	■	–	–	–	
Telemecanique		–	■	–	■	–	
Universal application		■	■	■	■	■	
Accessories	Packs of						
Support rails width 45 mm, height 10 mm	5	9320.090	9320.090	9320.090	9320.090	9320.090	362
Plug-in connector	1	9320.110	9320.110	9320.110	9320.110	9320.110	362
Mounting clip	5	9320.140	9320.140	9320.140	9320.140	9320.140	363

[1)] AWG = American Wire Gauges
AWG 14 = 2.08 mm² ≙ 2.5 mm²
AWG 12 = 3.31 mm² ≙ 4 mm²

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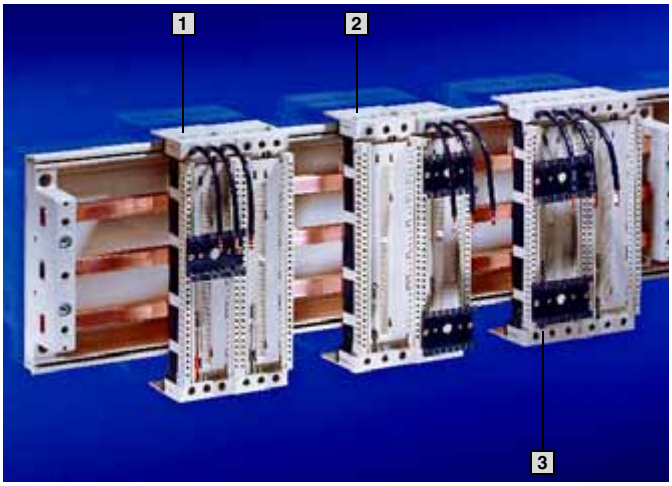
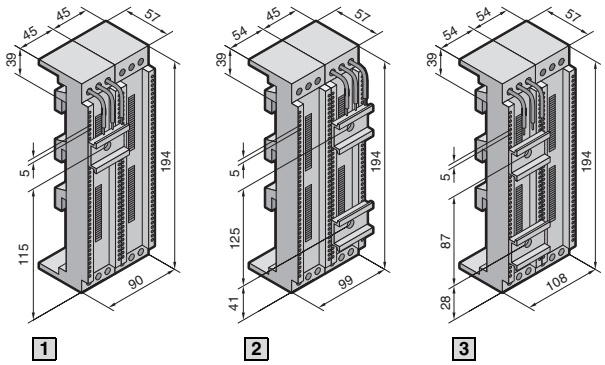
NH on-load isolator Page 311 **Accessories** Page 360

Multi-functional component adaptor 25 A





Material:
Polyamide (PA 6.6),
30 % fibreglass-reinforced.
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Note:
The current carrying capacity of the supply cables fitted as standard can be found on page 1128.

For snap-on mounting		1	2	3	Page
Construction width		90 mm	99 mm	108 mm	
Rated current up to		25 A	25 A	25 A	
Rated operating voltage		690 V~	690 V~	690 V~	
Cable outlet		top	top	top	
Connection cables[1)]		AWG 12	AWG 12	AWG 12	
Support rails	Quantity	1	2	2	
	Height	10 mm	10 mm	10 mm	
Packs of		1	1	1	
For 5 mm bar thickness **Model No. SV**		**9350.280**	**9350.300**	**9350.320**	
For 10 mm bar thickness **Model No. SV**		**9350.290**	**9350.310**	**9350.330**	
For power circuit-breakers/starter combinations Make					
Allen Bradley		■	–	–	1129
Moeller Electric		■	–	■	
Siemens		■	■	–	
Telemecanique		■	–	■	
Universal application		■	■	■	
Accessories	Packs of				
Support rails width 45 mm, height 10 mm	5	9320.090	9320.090	–	362
Support rails width 54 mm, height 10 mm	5	–	9320.100	9320.100	362
Mounting clip	5	9320.140	9320.140	–	363

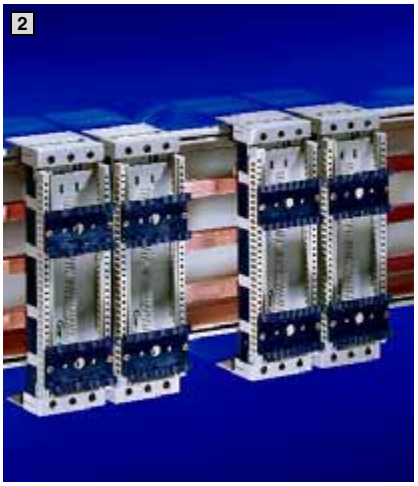
[1)] AWG = American Wire Gauges
AWG 12 = 3.31 mm² ≙ 4 mm²

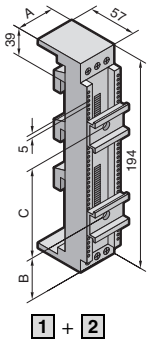
System overview Page 301 **Busbar system** Page 308 **Busbar connection adaptor** Page 310 **Bus-mounting fuse base** Page 311
NH on-load isolator Page 311 **Accessories** Page 360

Busbar systems up to 360 A (40 mm)

Multi-functional component adaptor 25 A/40 A







Material:
Polyamide (PA 6.6),
30 % fibreglass-reinforced.
Continuous operating
temperature: max. 140°C.
Fire protection corresponding to
UL 94-V0.

For snap-on mounting		1		2		Page
Construction width (A)		45 mm		54 mm		
Rated current up to		25 A	25 A	40 A	40 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	
Cable outlet		top	top/bottom	top	top/bottom	
Connection of round conductors up to		16 mm²	16 mm²	16 mm²	16 mm²	
Support rails	Quantity	2 (1 variable)	2	2	2	
	Height	10 mm	10 mm	10 mm	10 mm	
	B	variable	38.5 mm	38.5 mm	38.5 mm	
	C	variable	100 mm	100 mm	100 mm	
Packs of		1	1	1	1	
For 5 mm bar thickness **Model No. SV**		**9350.160**	**9350.180**	**9350.220**	**9350.240**	
For 10 mm bar thickness **Model No. SV**		**9350.170**	**9350.190**	**9350.230**	**9350.250**	
Accessories	Packs of					
Support rails width 45 mm, height 10 mm	5	9320.090	9320.090	–	–	362
Support rails width 54 mm, height 10 mm	5	–	–	9320.100	9320.100	362
Plug-in connector	1	9320.110	–	–	–	362
Mounting clip	5	9320.140	9320.140	–	–	363

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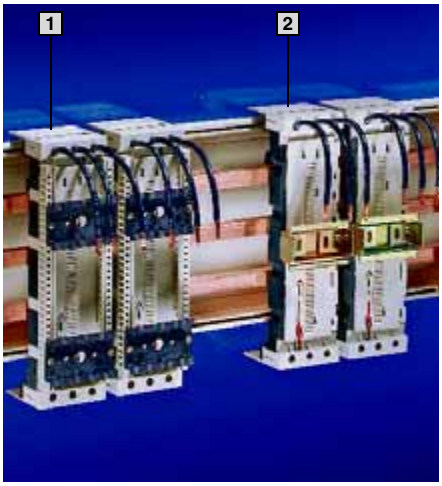
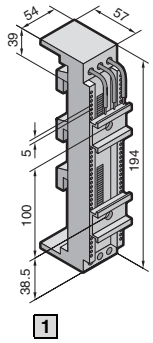
NH on-load isolator Page 311 **Accessories** Page 360

Multi-functional component adaptor 40 A/component adaptor 100 A







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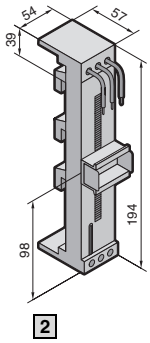

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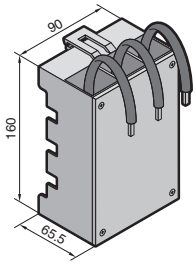

3

Material:
Polyamide (PA 6.6),
30 % fibreglass-reinforced.
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Note:
The current carrying capacity of the supply cables fitted as standard can be found on page 1128.

For snap-on mounting		1	2	3	3	Page
Construction width		54 mm	54 mm	90 mm	90 mm	
Rated current up to		40 A	40 A	100 A	100 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	
Cable outlet		top	top	top	top	
Connection cables		AWG 10[1)]	AWG 10[1)]	35 mm²	35 mm²	
Support rails	Quantity	2	1	–	–	
	Height	10 mm	15 mm	–	–	
For bar width		12/15 mm	12/15 mm	12 mm	15 mm	
Packs of		1	1	1	1	
For 5 mm bar thickness **Model No. SV**		**9350.200**	**9350.340**	**9350.420**	**9350.430**	
For 10 mm bar thickness **Model No. SV**		**9350.210**	**9350.350**			
For power circuit-breakers/starter combinations Make						
ABB		■	■	■	■	1130
AEG		■	–	■	■	
Allen Bradley		■	–	■	■	
Moeller Electric		–	■	■	■	
Siemens		–	■	■	■	
Merlin Gerin		–	–	■	■	
Telemecanique		–	–	■	■	
Universal application		■	■	■	■	
Also required						
Base tray section		–	–	■	■	309
Accessories	Packs of					
Support rails width 72 mm, height 15 mm	5	–	–	9320.120	9320.120	362

[1)] AWG = American Wire Gauges
AWG 10 = 5.26 mm² ≙ 6 mm²

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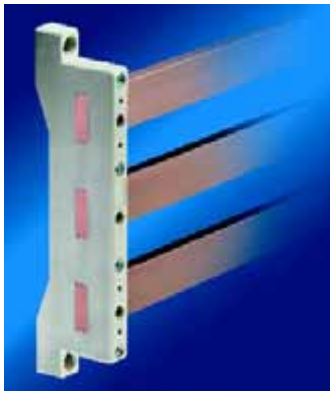
Busbar systems up to 800 A (60 mm)

Overview



- Busbar supports 1-pole, 2-pole, 3-pole, 4-pole and 5-pole (combination of 2-pole and 3-pole)
- 60 mm bar centre distance
- By using inserts, the maximum bar accommodation is reduced from 30 x 10 mm to 12 x 5 mm



System components



Busbar support, 1-pole
Busbar support, 2-pole
Busbar support, 3-pole
End cover
Support cover



Busbar support, 4-pole
End cover
Busbar support, 5-pole

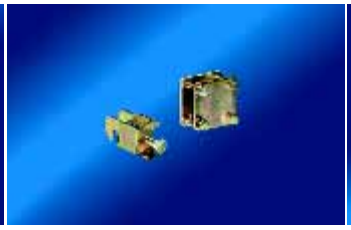


Inserts
Busbar cover sections
System covers

Assembly components



Busbar connection adaptor
63 A to 1600 A



Conductor connection clamps
Plate clamp



Bus-mounting fuse bases



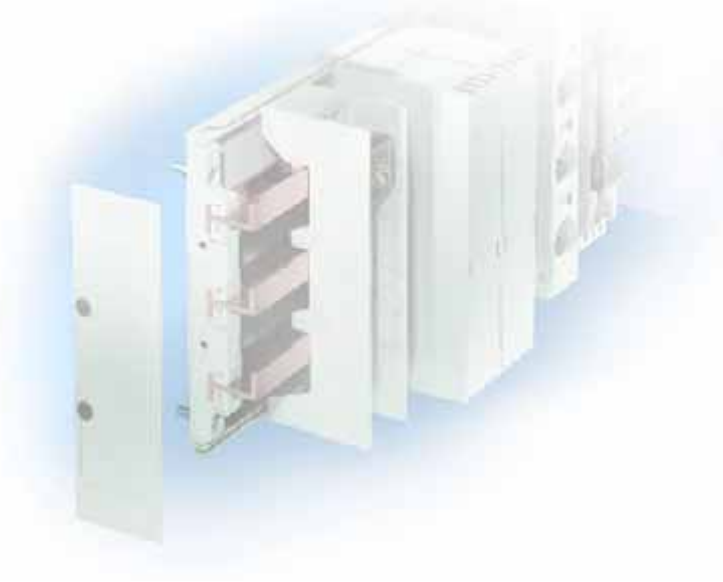
Multi-functional component
adaptor 12/25/40 A
Component adaptor
50/63/100/160/250 A
Component support



NH on-load isolators,
size 000
NH bus-mounting on-load
isolators, sizes 00, 1, 2 and 3



NH fused isolators,
size 00



Overview of Rittal PLS

The outstanding features of Rittal PLS include its consistent space utilisation, impressive safety back-up and contact hazard protection.

- Busbar support suitable for top mounting
- High static and thermal load capacity, thanks to the special styling of the profile
- Optimum heat dissipation, thanks to the large surface area of the special copper bars
- Contact hazard protection thanks to all-round encapsulation (end cover, base tray and cover section)



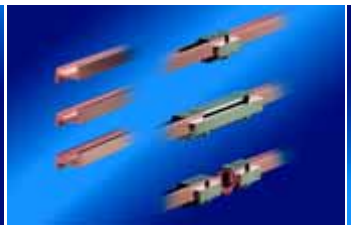
Performance in a confined space
Rittal PLS has two positive spatial advantages over flat copper bars:

- 60 mm bar centre distance with a load of up to 1600 A.
- The special busbars are simply pushed into the one-piece supports and locked into position.
- Unrestricted top-mounting of the PLS busbar support with power distribution components. In other words, free positioning of the support means easier planning, greater stability where required, and more effective space utilisation.

Rittal PLS up to 800 A



PLS end cover
PLS busbar supports up to 800 A, 3-pole
PLS base tray sections



PLS special busbars E-Cu 800 A, 300 mm^2
PLS busbar connectors
PLS expansion connectors

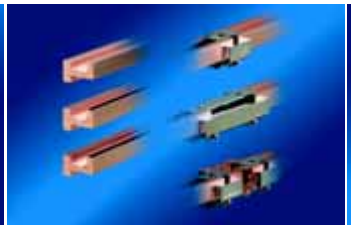


PLS cover sections

Rittal PLS up to 1600 A



PLS end cover
PLS busbar supports up to 1600 A, 3-pole
PLS base tray sections



PLS busbars E-Cu 1600 A, 900 mm^2
PLS busbar connectors
PLS expansion connectors

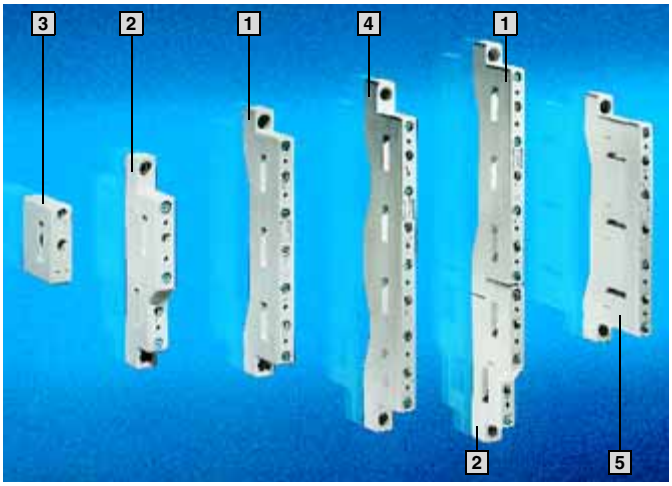


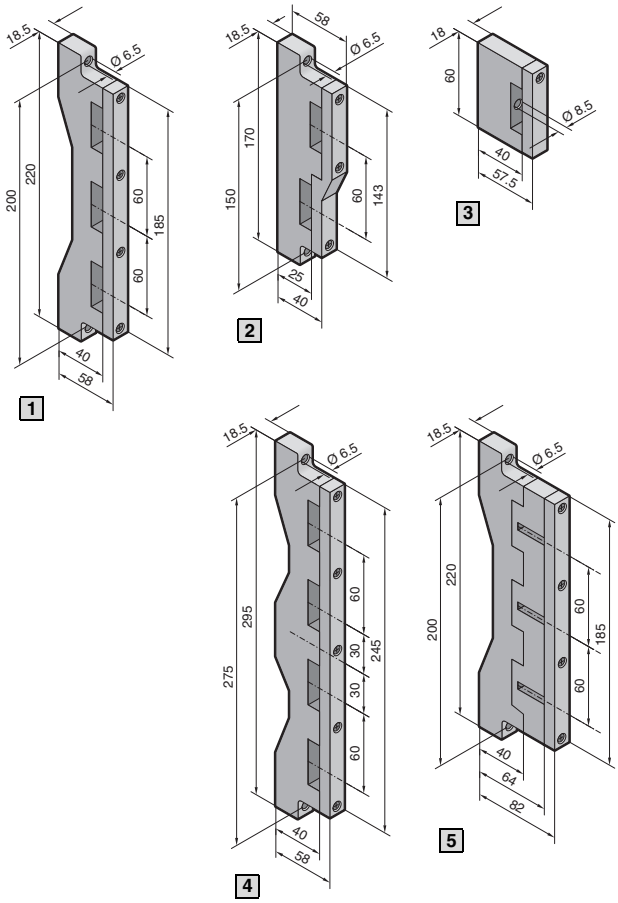
PLS cover sections



The top-mounting components used in the Rittal PLS are identical to the top-mounting components for the 60 mm flat copper busbar system.

Busbar support





Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Short-circuit protection diagrams,
see page 1124 and 1125.

Technical information
for the calculation of rated currents,
see page 1137.

Planning software Rittal SV Plan/ Power Plan,
see page 1061.

Version		1	2	3	4	5	Page
Rated current up to		800 A	800 A	800 A	800 A	450 A	
Rated operating voltage up to		1000 V~, 50/60 Hz to VDE 0660					
Number of poles		3-pole	2-pole	1-pole	4-pole	3-pole	
Bar centre distance		60 mm	60 mm	–	60 mm	60 mm	
Max. bar accommodation without inserts		30 x 10 mm	30 x 10 mm	30 x 10 mm	30 x 10 mm	30 x 5 mm	
Tightening torque ● Assembly screw ● Cover attachment		3 – 5 Nm 1 – 3 Nm	3 – 5 Nm 1 – 3 Nm	5 – 8 Nm 1 – 3 Nm	3 – 5 Nm 1 – 3 Nm	3 – 5 Nm 1 – 3 Nm	
Packs of		4	4	4	3	4	
Model No. SV		**3000.000**	**3050.000**[1)]	**3078.000**[2)]	**3064.000**	**3066.000**	
Also required							
Inserts for busbars smaller than 30 x 10 mm		■	■	■	■	–	319
Accessories	Packs of						
End covers	10	3080.000	–	–	3084.000	–	319
Support cover	4	3089.000	–	–	–	–	319

[1)] N/PE support
[2)] PEN/N/PE support

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Accessories Page 360



Inserts

for busbar supports SV 3000.000, SV 3050.000, SV 3064.000, SV 3078.000

For busbars mm	Rated current	Packs of	Model No. SV
30 x 5	447 A	12	**3001.000**
25 x 5	384 A	12	**3002.000**
20 x 10	497 A	24	**3003.000**
20 x 5	319 A	12	**3004.000**
16 x 8	397 A	12	**3005.000**
16 x 3/4/5	198/225/280 A	12	**3006.000**
15 x 3/4/5	187/210/260 A	12	**3007.000**
12 x 10	340 A	24	**3008.000**
12 x 5	210 A	12	**3009.000**

For busbars mm (inches)	Rated current	Packs of	Model No. SV
9.53 x 25.40 ($^3/_8$ x 1″)	599 A	24	**3012.000**
6.35 x 25.40 ($^1/_4$ x 1″)	449 A	12	**3013.000**
4.76 x 25.40 ($^3/_{16}$ x 1″)	349 A	12	**3014.000**
3.18 x 25.40 ($^1/_8$ x 1″)	299 A	12	**3015.000**
9.53 x 19.05 ($^3/_8$ x $^3/_4$″)	449 A	24	**3016.000**
6.35 x 12.70 ($^1/_4$ x $^1/_2$″)	249 A	12	**3017.000**



End covers

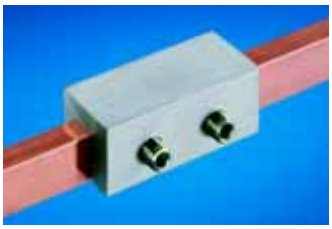
For side contact hazard protection on the busbar support. Simple clip-on mounting.

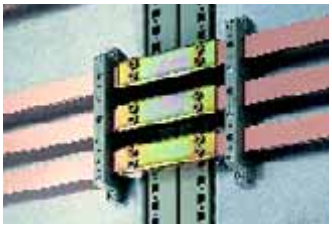
For busbar supports	Packs of	Model No. SV
SV 3000.000	10	**3080.000**
SV 3064.000	10	**3084.000**

Support cover

The support cover ensures side contact hazard protection from the assembled bus-mounting fuse bases. The build height is the same as the bus-mounting fuse bases, with contact hazard protection cover plate.

For busbar supports	Packs of	Model No. SV
SV 3000.000	4	**3089.000**





Busbars

made from E-Cu
To DIN EN 13 601.
Length: 2400 mm/bar.

Dimensions mm	Packs of	Model No. SV
30 x 10	6	**3586.000**
30 x 5	6	**3584.000**
25 x 5	6	**3583.000**
20 x 10	6	**3585.000**
20 x 5	6	**3582.000**
15 x 5	6	**3581.000**
12 x 10	6	**3580.100**
12 x 5	6	**3580.000**

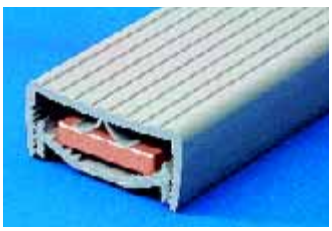
Busbar connectors

For connecting busbars, no drilling required.

For busbars mm	Application		Packs of	Model No. SV
	Single connection	Baying clamp[1]		
12 x 5 – 15 x 10	■	–	3	**9350.070**
20 x 5 – 30 x 10	■	–	3	**9320.020**
	–	■	3	**9320.030**

[1] From enclosure to enclosure

Note:
For technical data and material specifications, see page 360.

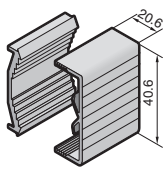


Busbar cover sections

Contact hazard protection via full encapsulation of the busbars. May be cut to required length.

Material:
Thermally modified hard PVC.
Continuous operating temperature: max. 100°C.
Fire protection corresponding to UL 94-V0.

For busbars mm	Packs of	Model No. SV
12 x 5 – 30 x 10	10 à 1 m	**3092.000**



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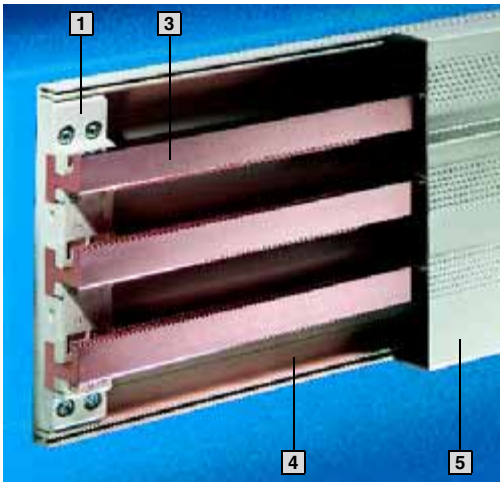
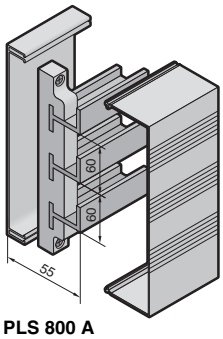
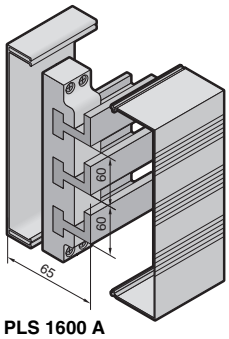
Rittal PLS





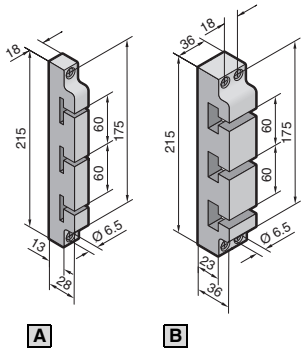


PLS 800 A



PLS 1600 A

Planing software Rittal SV Plan/ Power Plan,
see page 1061.



1 PLS busbar supports

Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Short-circuit protection diagrams,
see page 1125.

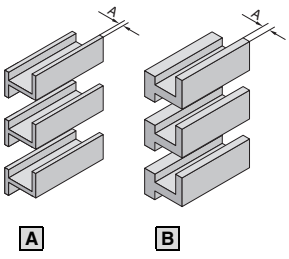
Technical information
for the calculation of rated currents,
see page 1137.

Rated current up to	A 800 A	B 1600 A
Rated operating voltage up to	1000 V~, 50/60 Hz to VDE 0660	
Number of poles	3-pole	
Bar centre distance	60 mm	
Packs of	4	4
Model No. SV	**3500.000**	**3510.000**

2 PLS end cover

For contact hazard protection of the PLS assembly on the sides. Simple clip-on mounting on the PLS busbar support.

For PLS busbar support	Packs of	Model No. SV
SV 3500.000	2	**3501.000**
SV 3510.000	2	**3511.000**



3 PLS special busbars

made from E-Cu

Rated current up to			A 800 A	B 1600 A
Cross-section mm²			300	900
Bar thickness (A) mm			5	10
Length mm	For enclosure width mm	Packs of	Model No. SV	
2400	variable	1	**3509.000**	**3516.000**
495	600[1)]	3	**3524.000**	**3527.000**
695	800[1)]	3	**3525.000**	**3528.000**
1095	1200[1)]	3	**3526.000**	**3529.000**

[1)] For Rittal TS 8/ES enclosure systems

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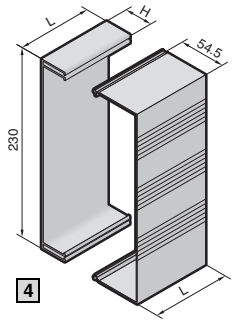


4

5

4 PLS base tray sections

For rear contact hazard protection of the PLS assembly.

Length (L) mm	Packs of	Model No. SV for PLS assembly	
		800 A	1600 A
500	2	**3502.000**	**3512.000**
700	1	**3503.000**	**3513.000**
1100	1	**3518.000**	**3519.000**
Height (H) mm		13.5	24.5

5 PLS cover sections

May be cut to length as required; for clip-on mounting to the PLS base tray section.

Length (L) mm	Packs of	Model No. SV for PLS assembly	
		800 A	1600 A
250	2	**3506.000**	
500	2	**3507.000**	
700	1	**3508.000**	

Material
Base tray and cover sections:
Thermally modified hard PVC.
Continuous operating temperature: max. 100°C.
Fire protection corresponding to UL 94-V0.



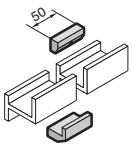
A



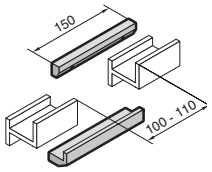
B

PLS busbar connectors

For connecting the PLS special busbars; no drilling required.



A



B

For	Packs of	Model No. SV for PLS assembly	
		800 A	1600 A
A Single connection	3	**3504.000**	**3514.000**
B Baying clamp[1)]	3	**3505.000**	**3515.000**
Tightening torque		10 – 15 Nm	15 – 20 Nm

[1)] From enclosure to enclosure (TS 8)



A

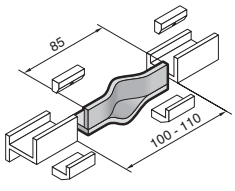


B

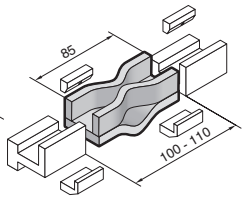
PLS expansion connectors

For thermal and mechanical compensation during connection of PLS special busbars from enclosure to enclosure (TS 8).

Material:
E-Cu



A



B

Packs of	Model No. SV for PLS assembly	
	A 800 A	B 1600 A
3	**9320.060**	**9320.070**
Also required		
PLS Busbar connectors[1)]	3504.000	3514.000

[1)] For mounting one expansion connector, two busbar connectors are required.

Note:
For a temperature increase of 30 K, the busbars are extended in length by around 0.5 mm/m. Consequently, the use of an expansion connector is recommended for busbar systems with lengths in excess of 3 m.



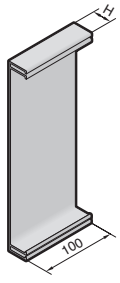
PLS base tray section infill

For rear contact hazard protection when connecting the PLS special busbars from enclosure to enclosure (TS 8).

Material:
Thermally modified hard PVC.
Continuous operating temperature: max. 100°C.
Fire protection corresponding to UL 94-V0.

Supply includes:
Assembly parts.

Packs of	Model No. SV for PLS assembly	
	800 A	1600 A
1	**3523.000**	**3533.000**
Height (H) mm	13.5	24.5



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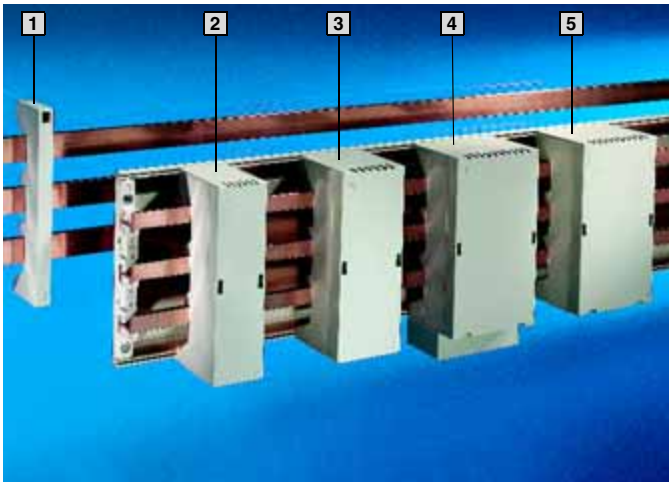
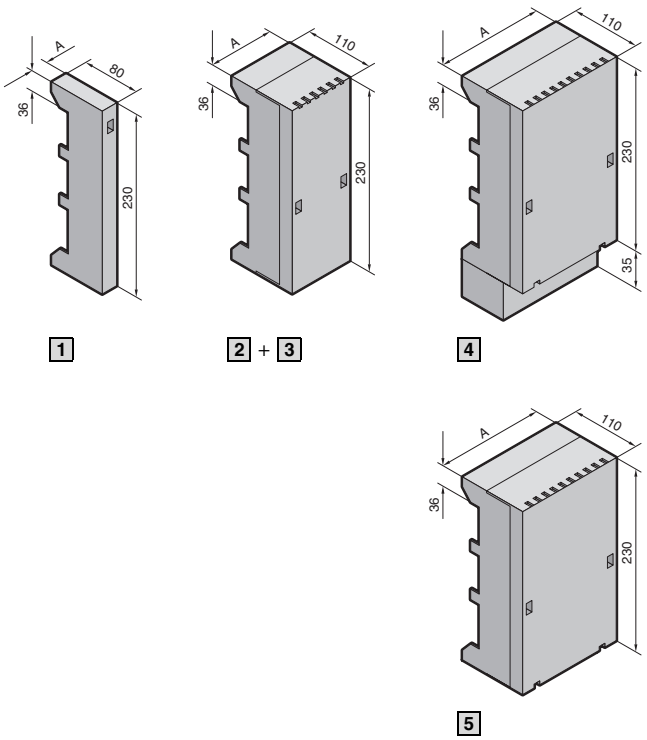
Busbar connection adaptor





Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Supply includes:
Cover.

Version	1	2	3	4	5	Page
Width (A)	17.5 mm	61 mm	85 mm	125 mm	125 mm	
Rated current up to	63 A	125 A	250 A	400 A	800 A	
Rated operating voltage	690 V~	690 V~	690 V~	690 V~	690 V~	
Connection	bottom	bottom	bottom	bottom	bottom	
Connection of round conductors up to	10 mm²/ 2 x 6 mm²	35 mm²	70 mm²	150 mm² 1)	185 mm² 2)	
Clamping area for laminated copper bars	–	11 x 14 mm	16 x 15 mm	–	30 x 25 mm	
Tightening torque ● Assembly screw ● Terminal screw	 2 Nm 2 Nm	 5 Nm 6 Nm	 6 Nm 10 Nm	 6 Nm 15 Nm	 6 Nm 12 Nm	
Packs of	1	1	1	1	1	
For 5 – 10 mm bar thickness **Model No. SV**	**3443.000**	**3444.000**	**3442.000**	**3440.000**	**3441.000**	
Accessories						
Laminated copper bars	–	■	■	–	■	361

1) With ring terminal M10
2) With neatly crimped wire end ferrule

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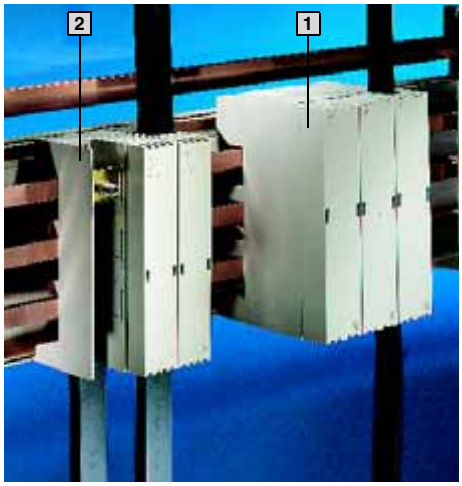
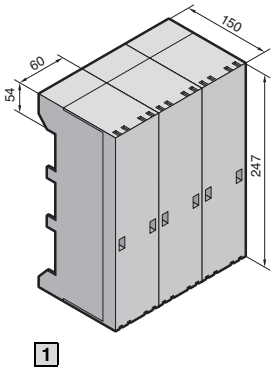
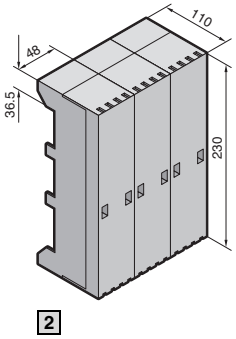
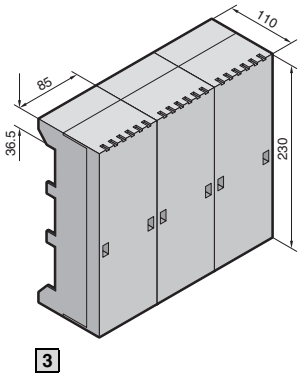
Busbar connection adaptor











Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Supply includes:
Cover.

Version	1	2	3	Page
Rated current up to	600 A	800 A	1600 A	
Rated operating voltage	690 V~	690 V~	690 V~	
Connection	top/bottom		top/bottom	
Connection of round conductors	35 – 240 mm² [1]	–	–	
Clamping area for laminated copper bars ● For 5 mm bar thickness ● For 10 mm bar thickness	 24 x 21 mm 24 x 21 mm	 34 x 21 mm 34 x 16 mm	 – 65 x 21 mm	
Tightening torque ● Assembly screw ● Terminal screw	 15 – 20 Nm 15 Nm	 – 10 – 12 Nm	 – 15 – 20 Nm	
Packs of	1 set (of 3)	1 set (of 3)	1 set (of 3)	
For 5 – 10 mm bar thickness **Model No. SV**	**3439.010**	**3439.000**	**–**	
For 10 mm bar thickness **Model No. SV**	**–**	**–**	**3517.000** [2]	
Accessories				
Laminated copper bars	■	■	■	361

[1] Connection of round conductors up to 300 mm² with ring terminal available on request.
[2] Only suitable for Rittal PLS 1600 A system.

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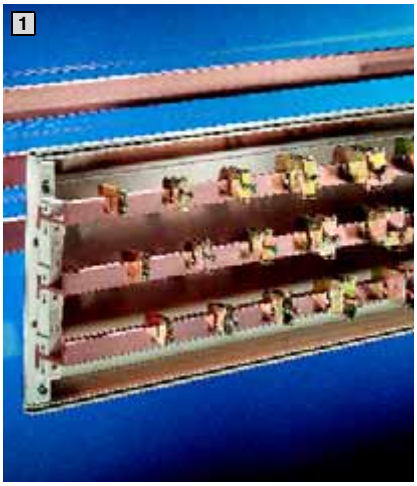
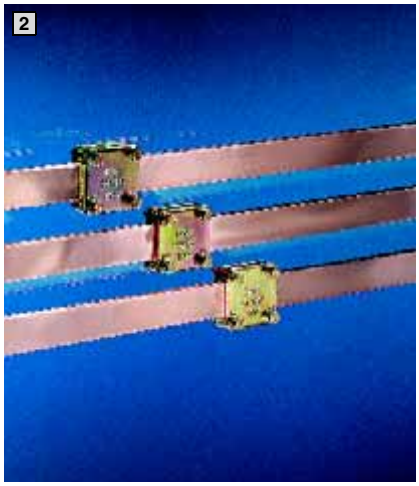
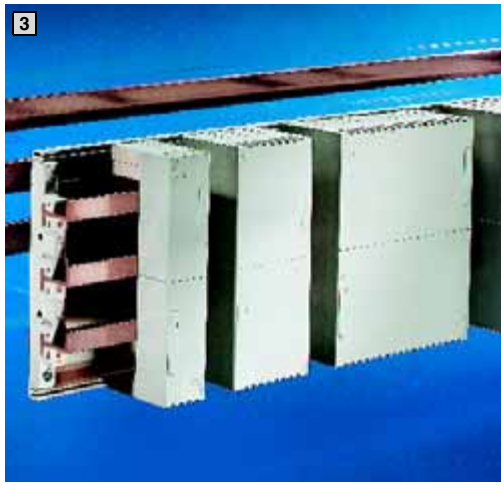
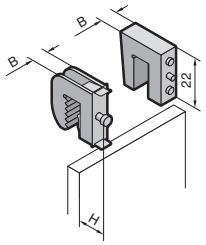
Connection clamps/system covers









1 Conductor connection clamps

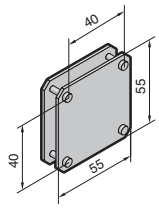
For bar thickness mm	Connection of round conductors[1] mm²	Clamping area for laminated copper bars mm	Tightening torque Nm	Width (B) mm	Height (H) mm min.	Height (H) mm max.	Packs of	Model No. SV
3 – 5	1 – 4	–	2	8.0	–	–	15	**3550.000**
5	1 – 4	–	2	11.0	17	23	15	**3450.500**
5	2.5 – 16	8 x 8	3	14.0	22	29	15	**3451.500**
5	16 – 50	10.5 x 11	6 – 8	18.5	26	39	15	**3452.500**
5	35 – 70	16.5 x 15	10 – 12	24.5	39	57	15	**3453.500**
5	70 – 185	22.5 x 20	12 – 15	30.5	44	66	15	**3454.500**
6 – 10	1 – 4	–	2	8.0	–	–	15	**3555.000**
10	1 – 4	–	2	11.0	17	23	15	**3455.500**
10	2.5 – 16	8 x 8	3	14.0	22	29	15	**3456.500**
10	16 – 50	10.5 x 11	6 – 8	18.5	26	39	15	**3457.500**
10	35 – 70	16.5 x 15	10 – 12	24.5	39	57	15	**3458.500**
10	70 – 185	22.5 x 20	12 – 15	30.5	44	66	15	**3459.500**

[1] Wire end ferrules should be used with fine wire conductors.

Material:
Sheet steel, zinc-plated, passivated
(SV 3450.500 – SV 3459.500),
brass
(SV 3550.000/SV 3555.000).

Accessories:

Laminated copper bars,
see page 361.



2 Plate clamp

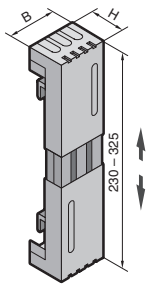
For busbars 12 x 5 – 30 x 10 mm.
Clamping area for laminated copper bars:
34 x 10 mm.
Tightening torque: 6 – 8 Nm.

Material:
Sheet steel, zinc-plated, passivated.

Packs of	Model No. SV
3	**3554.000**

Accessories:

Laminated copper bars,
see page 361.



3 System covers

For conductor connection clamps and plate clamps.

Material:
ABS.
Continuous operating temperature: max. 80°C.
Fire protection corresponding to UL 94-V0.

Width (B) mm	Height (H) mm	Packs of	Model No. SV
50	80	4	**3086.000**
100	80	4	**3087.000**
100	110	4	**3090.000**
200	80	4	**3088.000**
200	110	4	**3091.000**

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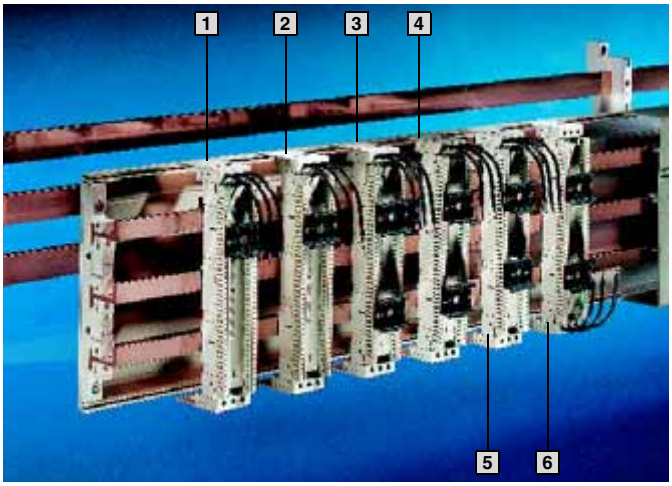
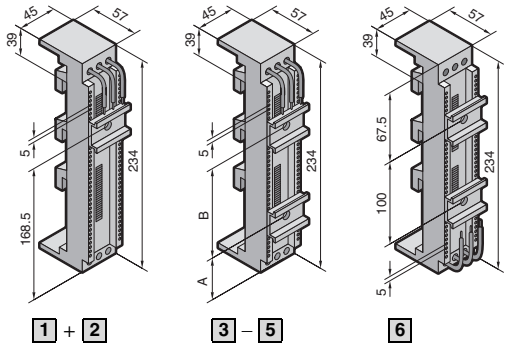
Multi-functional component adaptor 25 A/40 A





Material:
Polyamide (PA 6.6),
30 % fibreglass-reinforced.
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Note:
The current carrying capacity of the supply cables fitted as standard can be found on page 1128.

For snap-on mounting		1	2	3	4	5	6	Page
Construction width		45 mm	45 mm	45 mm	45 mm	45 mm	45 mm	
Rated current up to		12 A	25 A	25 A	25 A	25 A	25 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	690 V~	690 V~	
Cable outlet		top	top	top	top	top	bottom	
Connection cables[1)]		AWG 14	AWG 12	AWG 12	AWG 12	AWG 12	AWG 12	
Support rails	Quantity	1	1	2	2	2 (1 variable)	2	
	Height	10 mm	10 mm	10 mm	10 mm	10 mm	10 mm	
	A	–	–	68.5 mm	55 mm	variable	–	
	B	–	–	100 mm	125 mm	variable	–	
Packs of		1	1	1	1	1	1	
For 5 mm bar thickness **Model No. SV**		**9320.160**	**9320.180**	**9320.200**	**9320.440**	**9320.220**	**9320.240**	
For 10 mm bar thickness **Model No. SV**		**9320.170**	**9320.190**	**9320.210**	**9320.450**	**9320.230**	**9320.250**	
For power circuit-breakers/starter combinations Make								
AEG		–	■	–	–	–	–	1130
ABB		–	■	–	–	–	–	
Allen Bradley		–	■	–	■	–	–	
Moeller Electric		–	■	–	–	–	–	
Siemens		■	■	–	–	–	–	
Telemecanique		–	■	–	■	–	–	
Universal application		■	■	■	■	■	■	
Accessories	Packs of							
Support rails width 45 mm, height 10 mm	5	9320.090	9320.090	9320.090	9320.090	9320.090	9320.090	362
Plug-in connector	1	9320.110	9320.110	9320.110	9320.110	9320.110	–	362
Mounting clip	5	9320.140	9320.140	9320.140	9320.140	9320.140	9320.140	363

[1)] AWG = American Wire Gauges
AWG 14 = 2.08 mm² ≙ 2.5 mm²
AWG 12 = 3.31 mm² ≙ 4 mm²

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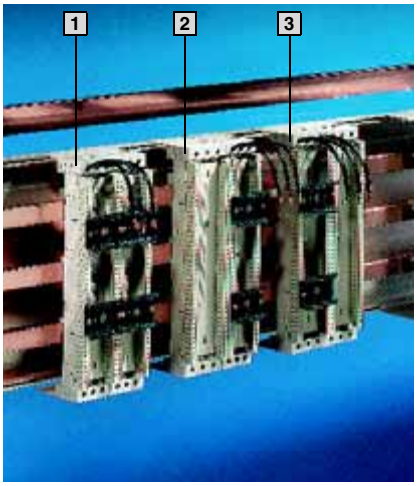
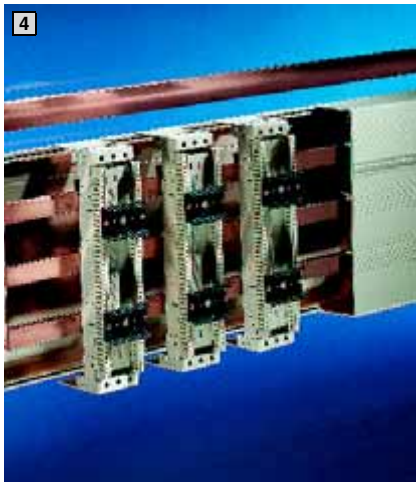
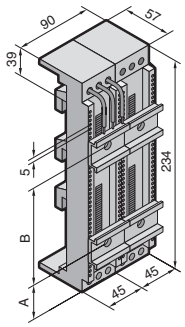
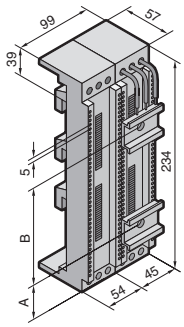
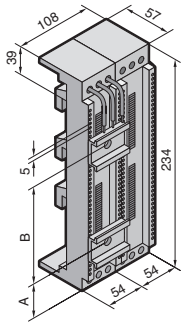
Multi-functional component adaptor 25 A

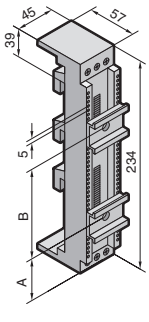












Material:
Polyamide (PA 6.6),
30 % fibreglass-reinforced.
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Note:
The current carrying capacity of the supply cables fitted as standard can be found on page 1128.

For snap-on mounting		1	2	3	4	4	Page
Construction width		90 mm	99 mm	108 mm	45 mm	45 mm	
Rated current up to		25 A	25 A	25 A	25 A	25 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	690 V~	
Cable outlet		top	top	top	top	top/bottom	
Connection cables[1)]		AWG 12	AWG 12	AWG 12	–	–	
Connection of round conductors up to		–	–	–	16 mm²	16 mm²	
Support rails	Quantity	2	2	2	2 (1 variable)	2	
	Height	10 mm	10 mm	10 mm	10 mm	10 mm	
	A	68.5 mm	43 mm	43 mm	variable	68.5 mm	
	B	100 mm	125 mm	90 mm	variable	100 mm	
Packs of		1	1	1	1	1	
For 5 mm bar thickness **Model No. SV**		**9320.380**	**9320.400**	**9320.420**	**9320.260**	**9320.280**	
For 10 mm bar thickness **Model No. SV**		**9320.390**	**9320.410**	**9320.430**	**9320.270**	**9320.290**	
For power circuit-breakers/starter combinations Make							
Allen Bradley		■	–	–	–	–	1130
Moeller Electric		■	–	■	–	–	
Siemens		■	■	–	–	–	
Telemecanique		■	–	■	–	–	
Universal application		■	■	■	■	■	
Accessories	Packs of						
Support rails width 45 mm, height 10 mm	5	9320.090	9320.090	–	9320.090	9320.090	362
Support rails width 54 mm, height 10 mm	5	–	9320.100	9320.100	–	–	362
Plug-in connector	1	–	–	–	9320.110	–	362
Mounting clip	5	9320.140	9320.140	–	9320.140	9320.140	363

[1)] AWG = American Wire Gauges
AWG 12 = 3.31 mm² ≙ 4 mm²

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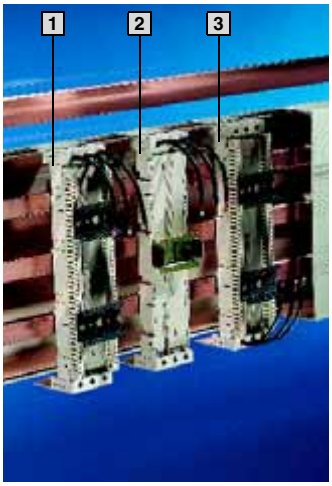
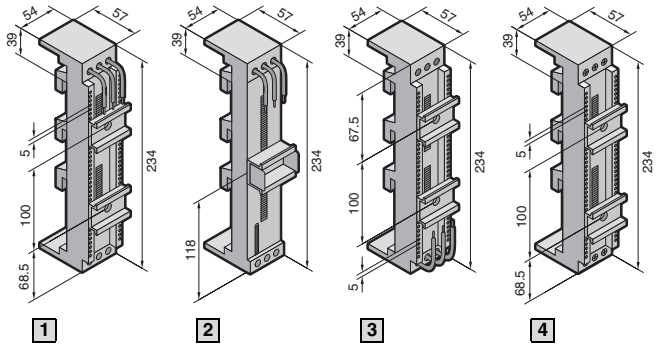
Multi-functional component adaptor 40 A







Material:
Polyamide (PA 6.6),
30 % fibreglass-reinforced.
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Note:
The current carrying capacity of the supply cables fitted as standard can be found on page 1128.

For snap-on mounting		1	2	3	4	4	Page
Construction width		54 mm	54 mm	54 mm	54 mm	54 mm	
Rated current up to		40 A	40 A	40 A	40 A	40 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	690 V~	
Cable outlet		top	top	bottom	top	top/bottom	
Connection cables[1)]		AWG 10	AWG 10	AWG 10	–	–	
Connection of round conductors up to		–	–	–	16 mm²	16 mm²	
Support rails	Quantity	2	1	2	2	2	
	Height	10 mm	15 mm	10 mm	10 mm	10 mm	
Packs of		1	1	1	1	1	
For 5 mm bar thickness **Model No. SV**		**9320.300**	**9320.460**	**9320.320**	**9320.340**	**9320.360**	
For 10 mm bar thickness **Model No. SV**		**9320.310**	**9320.470**	**9320.330**	**9320.350**	**9320.370**	
For power circuit-breakers/starter combinations Make							
ABB		■	■	–	–	–	1131
AEG		■	–	–	–	–	
Allen Bradley		■	–	–	–	–	
Moeller Electric		–	■	–	–	–	
Siemens		–	■	–	–	–	
Universal application		■	■	■	■	■	
Accessories	Packs of						
Support rails width 54 mm, height 10 mm	5	9320.100	–	9320.100	9320.100	9320.100	362

[1)] AWG = American Wire Gauges
AWG 10 = 5.26 mm² ≙ 6 mm²

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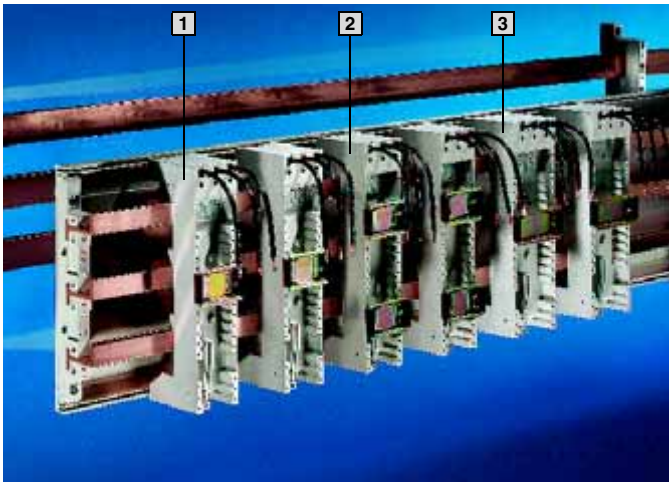
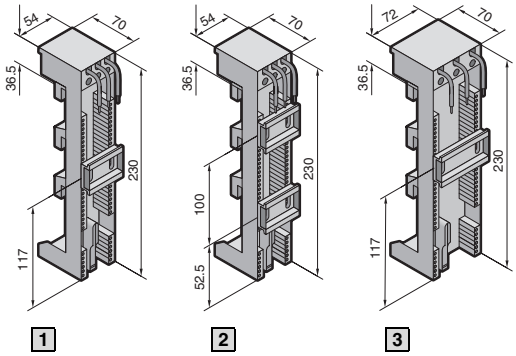
Component adaptor 50 A





Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Note:
The current carrying capacity of the supply cables fitted as standard can be found on page 1128.

For snap-on mounting, with additional terminals up to 10 mm²		1	2	3	Page
Construction width		54 mm	54 mm	72 mm	
Rated current up to		50 A	50 A	50 A	
Rated operating voltage		690 V~	690 V~	690 V~	
Cable outlet		top	top	top	
Connection cables[1)]		AWG 10 (32 A)	AWG 10 (32 A)	AWG 10 (32 A)	
Support rails	Quantity	1	2	1	
	Height	7.5 mm	7.5 mm	7.5 mm	
Packs of		1	1	1	
For 5 mm bar thickness **Model No. SV**		**3540.000**	**3040.000**	**3544.000**	
For 10 mm bar thickness **Model No. SV**		**3541.000**	**3041.000**	**3545.000**	
For power circuit-breakers/starter combinations Make					
ABB		■	–	–	1131
AEG		■	–	–	
Allen Bradley		■	–	–	
Moeller Electric		–	–	■	
Siemens		–	■	–	
Universal application		■	■	■	
Accessories	Packs of				
Insert strip	1	3538.000	3538.000	3538.000	362
Support rails width 54 mm, height 7.5 mm	10	3548.000	3548.000	–	362
Support rails width 72 mm, height 7.5 mm	10	–	–	3549.000	362
Cover strips, width 54 mm	20	3536.000	3536.000	–	363
Cover strips, width 72 mm	20	–	–	3537.000	363

[1)] AWG = American Wire Gauges
AWG 10 = 5.26 mm² ≙ 6 mm²

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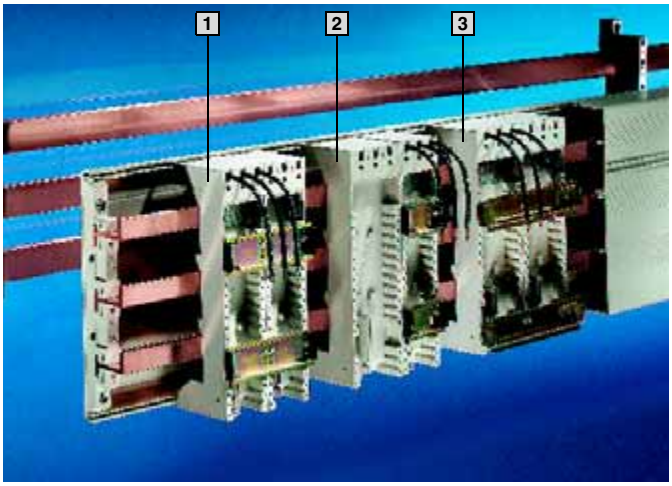
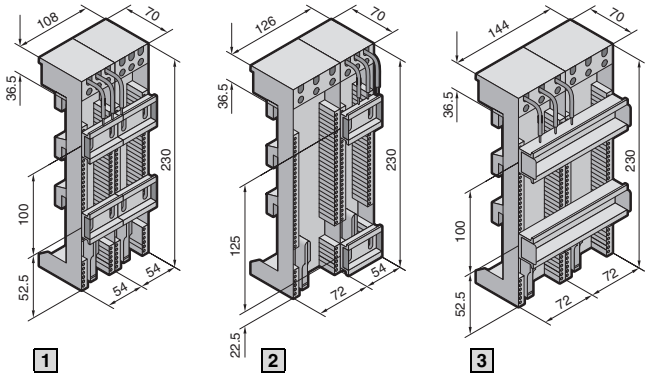
Component adaptor 50 A





Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Note:
The current carrying capacity of the supply cables fitted as standard can be found on page 1128.

For snap-on mounting, with additional terminals up to 10 mm²		1	2	3	Page
Construction width		108 mm	126 mm	144 mm	
Rated current up to		50 A	50 A	50 A	
Rated operating voltage		690 V~	690 V~	690 V~	
Cable outlet		top	top	top	
Connection cables[1)]		AWG 10 (32 A)	AWG 10 (32 A)	AWG 10 (32 A)	
Support rails	Quantity	2	2	2	
	Height	7.5 mm	7.5 mm	15 mm	
Packs of		1	1	1	
For 5 mm bar thickness **Model No. SV**		**3042.000**	**3069.000**	**3044.000**	
For 10 mm bar thickness **Model No. SV**		**3043.000**	**3070.000**	**3045.000**	
For power circuit-breakers/starter combinations Make					
Moeller Electric		■	–	–	1131
Siemens		–	■	–	
Telemecanique		■	–	–	
Universal application		■	■	■	
Accessories	Packs of				
Insert strip	1	3538.000	3538.000	3538.000	362
Support rails width 54 mm, height 7.5 mm	10	3548.000	3548.000	–	362
Support rails width 72 mm, height 7.5 mm	10	–	3549.000	3549.000	362
Cover strips, width 54 mm	20	3536.000	3536.000	–	363
Cover strips, width 72 mm	20	–	3537.000	3537.000	363

[1)] AWG = American Wire Gauges
AWG 10 = 5.26 mm² ≙ 6 mm²

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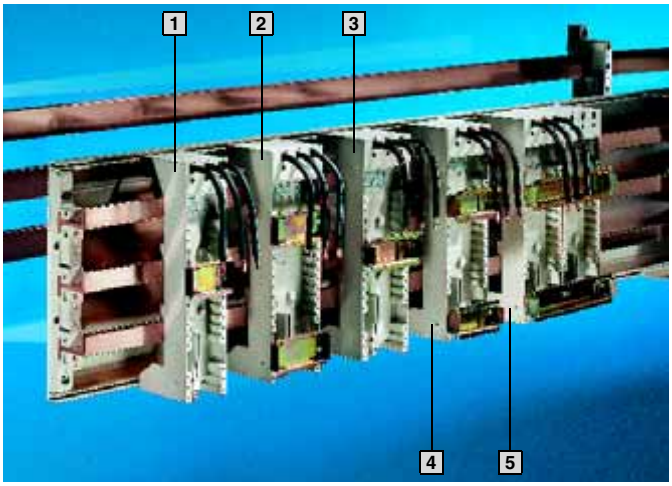
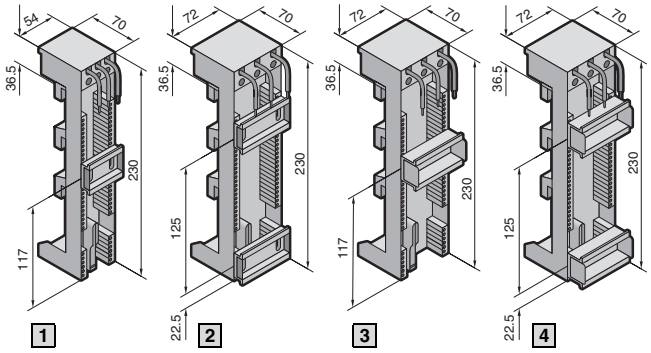
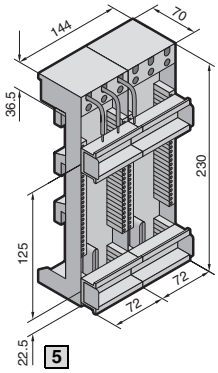
Component adaptor 63 A







Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Note:
The current carrying capacity of the supply cables fitted as standard can be found on page 1128.

For snap-on mounting, with additional terminals up to 10 mm²		1	2	3	4	5	Page
Construction width		54 mm	72 mm	72 mm	72 mm	144 mm	
Rated current up to		63 A	63 A	63 A	63 A	63 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	690 V~	
Cable outlet		top	top	top	top	top	
Connection cables[1)]		AWG 8	AWG 8	AWG 8	AWG 8	AWG 8	
Support rails	Quantity	1	2	1	2	2	
	Height	7.5 mm	7.5 mm	15 mm	15 mm	15 mm	
Packs of		1	1	1	1	1	
For 5 mm bar thickness **Model No. SV**		**3036.000**	**3038.000**	**3067.000**	**3046.000**	**3048.000**	
For 10 mm bar thickness **Model No. SV**		**3037.000**	**3039.000**	**3068.000**	**3047.000**	**3049.000**	
For power circuit-breakers/starter combinations Make							
ABB		■	–	■	–	–	1131
Moeller Electric		■	–	–	■	■	
Siemens		■	–	■	–	–	
Telemecanique		–	–	■	–	–	
Universal application		■	■	■	■	■	
Accessories	Packs of						
Insert strip	1	3538.000	3538.000	3538.000	3538.000	3538.000	362
Support rails width 54 mm, height 7.5 mm	10	3548.000	–	–	–	–	362
Support rails width 72 mm, height 7.5 mm	10	–	3549.000	3549.000	3549.000	3549.000	362
Cover strips, width 54 mm	20	3536.000	–	–	–	–	363
Cover strips, width 72 mm	20	–	3537.000	3537.000	3537.000	3537.000	363

[1)] AWG = American Wire Gauges
AWG 8 = 8.37 mm² ≙ 10 mm²

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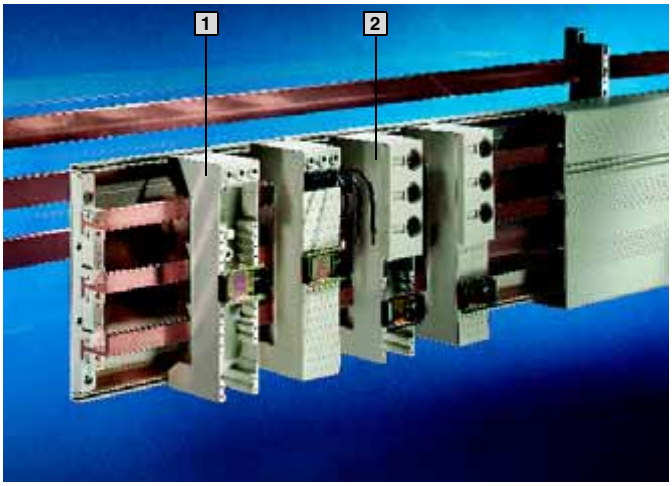
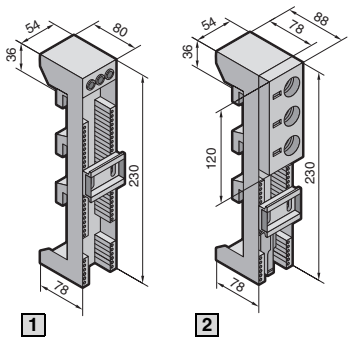
Component adaptor 63 A





Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Scope of supply SV 3445.000:
Including connection cables supplied loose (AWG 10 = 5.26 mm² ≙ 6 mm²) and cover strips.

Scope of supply SV 3446.000:
Including cover strips.

Note:
Current carrying capacity of connection cables, see page 1128.

For clamping screw attachment		1	2	Page
Construction width		54 mm	54 mm	
With pre-fuse unit		–	D 02-E 18	
Rated current up to		63 A	63 A	
Rated operating voltage		690 V~	400 V~	
Cable outlet		top	top	
Connection of round conductors		1.5 – 10 mm²	1.5 – 16 mm²	
Support rails	Quantity	1	1	
	Height	7.5 mm	7.5 mm	
Tightening torque ● Assembly screw ● Terminal screw		 2 Nm 2 Nm	 2 Nm 2 Nm	
Packs of		1	1	
For 5 – 10 mm bar thickness **Model No. SV**		**3445.000**	**3446.000**	
For power circuit-breakers/starter combinations **Make**				
ABB		■	■	1131
AEG		■	■	
Allen Bradley		■	■	
Moeller Electric		■	–	
Siemens		■	–	
Universal application		■	■	
Accessories	Packs of			
Insert strip	1	3448.000[1)]	3448.000[1)]	362
Support rails width 54 mm, height 7.5 mm	10	3447.000	3447.000	362
Support rails width 70 mm, height 7.5 mm	10	3496.000[2)]	3496.000[2)]	362

[1)] Including extended support rail and cover strips.
[2)] For component adaptor with adaptor extension piece SV 3448.000.

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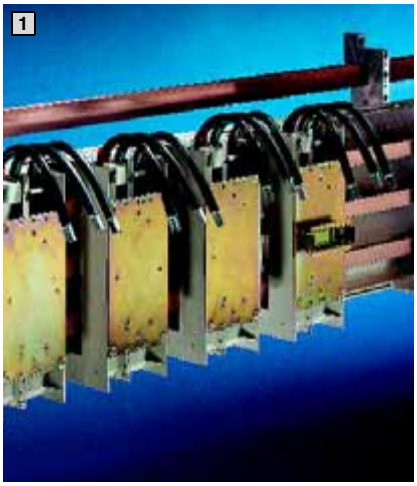
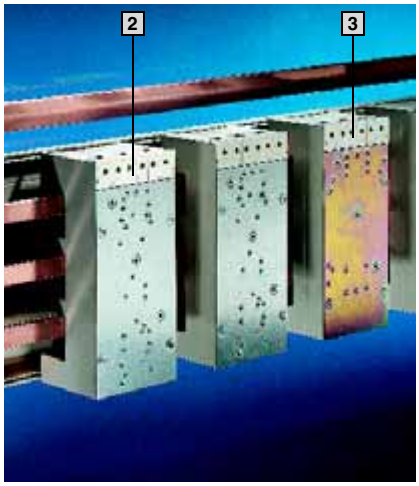
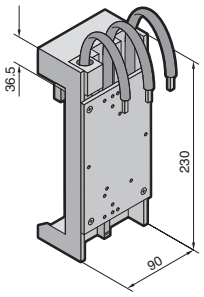
Component adaptor 100 A/160 A







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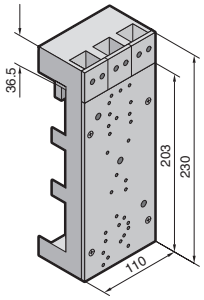

2 + 3

Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Note:
The current carrying capacity of the supply cables fitted as standard can be found on page 1128.

Component adaptor 100 A for snap-on mounting		**Component adaptor 160 A for clamping screw attachment**		Page
Version	1	2	3	
Construction width	90 mm	110 mm	110 mm	
Rated current up to	100 A	160 A	160 A	
Rated operating voltage	690 V~	690 V~	690 V~	
Connection cables	35 mm²	–	–	
Connection of round conductors up to	–	6 – 70 mm²	6 – 70 mm²	
Clamping area for laminated copper bars	–	13 x 10 mm	13 x 10 mm	
Tightening torque ● Assembly screw ● Terminal screw	 – –	 6 Nm 3 Nm	 6 Nm 3 Nm	
Packs of	1	1	1	
For 5 mm bar thickness **Model No. SV**	**9320.000**	**3438.000**	**3539.000**	
For 10 mm bar thickness **Model No. SV**	**9320.010**			
For power circuit-breakers Make				
ABB	LNA 32/63/100[1], Tmax (T1, T2)	S1/2/3, LNA 32/63/100	Tmax (T1, T2, T3)	
AEG	Mbs100[2]	MC 128/167/168	–	
Allen Bradley	140-CMN-...[2]	–	–	
Delta	–	Sizes E and F	–	
Merlin Gerin	Compact NS 80	Compact NS 80/100/160	Compact NS 80/100/160	
Moeller Electric	NZM 1, NZM 7	NZM 2	NZM 1/6/7	
Siemens	S3 (3RV104...)[2]	–	3VE4/5, 3VF3, 3VN4/5, 3VT4/5, 3VP5, Sentron VL 160 X (3VL1...)	
Telemecanique	GV3-M...[2], GK3-EF..[2]	–	–	
Vynckier	–	JF1/2, JS1/2/3, XF1/2, XH3, XS1/2/3	–	
Accessories	Packs of			
Laminated copper bars	–	■	■	361
Support rails width 72 mm, height 15 mm	5	9320.120	–	–	362

[1] Mounting of power circuit-breakers for fixed installation is only possible with ABB mounting bracket (Model No. UXAB 169264 R005).
[2] Mounting only possible with support rail.

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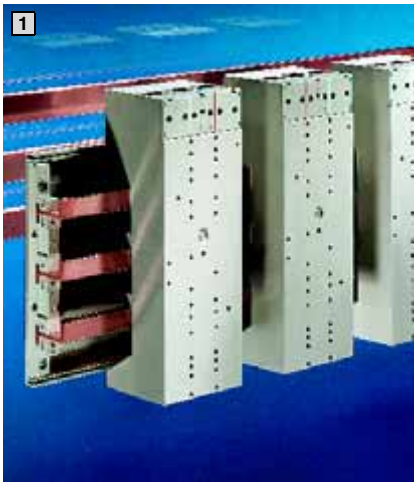
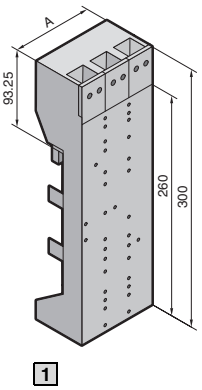
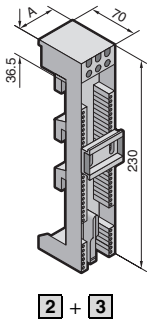
Component adaptor 250 A/component support









Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Component adaptor 250 A for clamping screw attachment					**Component support (without contact system) for snap-on mounting**		Page
Version			1	1	2	3	
Construction width (A)			110 mm	110 mm	54 mm	72 mm	
Rated current up to			250 A	250 A	–	–	
Rated operating voltage			690 V~	690 V~	–	–	
Connection of round conductors up to			50 – 120 mm²	50 – 120 mm²	–	–	
Clamping area for laminated copper bars			16 x 12 mm	16 x 12 mm	–		
Tightening torque ● Assembly screw ● Terminal screw			4 – 6 Nm 8 – 10 Nm	4 – 6 Nm 8 – 10 Nm	– –	– –	
Support rails		Quantity	–	–	1	1	
		Height	–	–	7.5 mm	7.5 mm	
Packs of			1	1	1	1	
For 5 mm bar thickness **Model No. SV**			**3437.000**	**3437.010**	**3542.000**	**3546.000**	
For 10 mm bar thickness **Model No. SV**					**3543.000**	**3547.000**	
For power circuit-breakers							
Make	**Type**						
ABB	S3, S4		■	–	–	–	
AEG	MC 168/257/258		■	–	–	–	
Delta	Size J		■	–	–	–	
Merlin Gerin	Compact NS 250		■	–	–	–	
Moeller Electric	NZM 6/7		■	–	–	–	
	NZM 2		–	■	–	–	
Siemens	3VF3/4		■	–	–	–	
Sprecher & Schuh	KTA 3-250S		■	–	–	–	
Also required		Packs of					
Mounting kit for power circuit breaker	Moeller, Siemens (3VF3)	1 set	**3018.000**	–	–	–	
	AEG, Delta, Sprecher & Schuh	1 set	**3019.000**	–	–	–	
	ABB, Merlin Gerin, Siemens (3VF4)	1 set	**3063.000**	–	–	–	
Accessories							
Insert strip		1	–	–	3538.000	3538.000	362
Support rails, width 54 mm, height 7.5 mm		10	–	–	3548.000	–	362
Support rails, width 72 mm, height 7.5 mm		10	–	–	–	3549.000	362
Cover strips, width 54 mm		20	–	–	3536.000	–	363
Cover strips, width 72 mm		20	–	–	–	3537.000	363
Laminated copper bars			■	■	–	–	361

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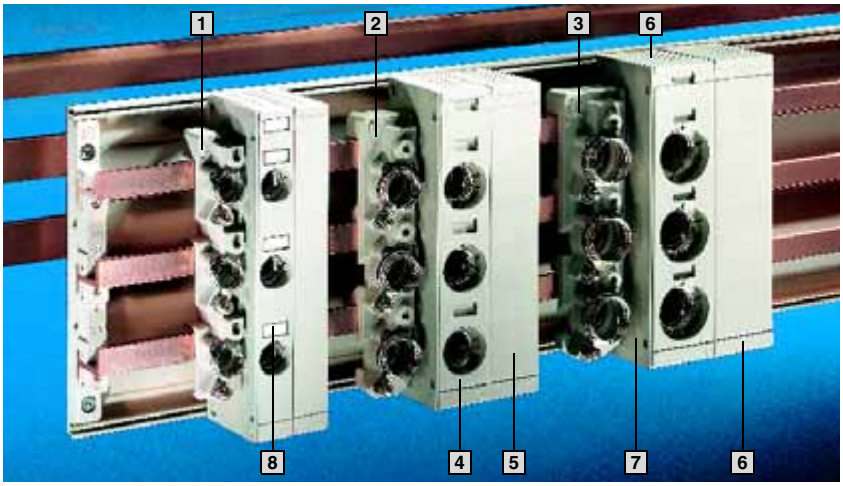
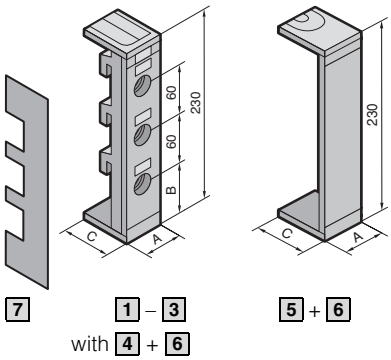
Bus-mounting fuse bases





7 | 1 – 3 with 4 + 6 | 5 + 6

Material:
Bus-mounting fuse base:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Contact hazard protection cover:
Talcum-reinforced polypropylene.
Continuous operating temperature max. 100°C.
Fire protection corresponding to UL 94-V0.

For clamping screw attachment		1	2	3
Type		D 02-E 18 (adaptor sleeve)	D II-E 27 (adaptor screw)	D III-E 33 (adaptor screw)
Width (A)		27 mm	42 mm	57 mm
Rated current		63 A	25 A	63 A
Rated operating voltage		400 V~	500 V~	690 V~
Terminal for round conductors[1)]		1.5 – 16 mm²	1.5 – 16 mm²	1.5 – 16 mm²
Tightening torque ● Assembly screw ● Terminal screw		 2 Nm 2.5 Nm	 2 Nm 2.5 Nm	 2 Nm 2.5 Nm
Packs of		10	10	10
For 5 – 10 mm bar thickness **Model No. SV**		**3418.000**	**3427.000**	**3433.000**
Accessories	Packs of			
4 **Contact hazard protection cover** **Model No. SV**	10	**3419.000**	**3428.000**	**3434.000**
5 **Extension cover** **Model No. SV**	10	**3421.000**	**3430.000**	**3436.000**
6 **End caps** **Model No. SV**	10	**3420.000**	**3429.000**	**3435.000**
7 **Side cover** **Model No. SV**	10	**3093.000**	**3093.000**	**3093.000**
8 **Identification labels** **Model No. SV**	100	**9320.080**	**9320.080**	**9320.080**
Width (A) mm		27	42	57
Spacing (B) mm		57	40	40
Depth (C) mm		67	71.5	71.5

[1)] Wire end ferrules should be used with fine wire conductors.

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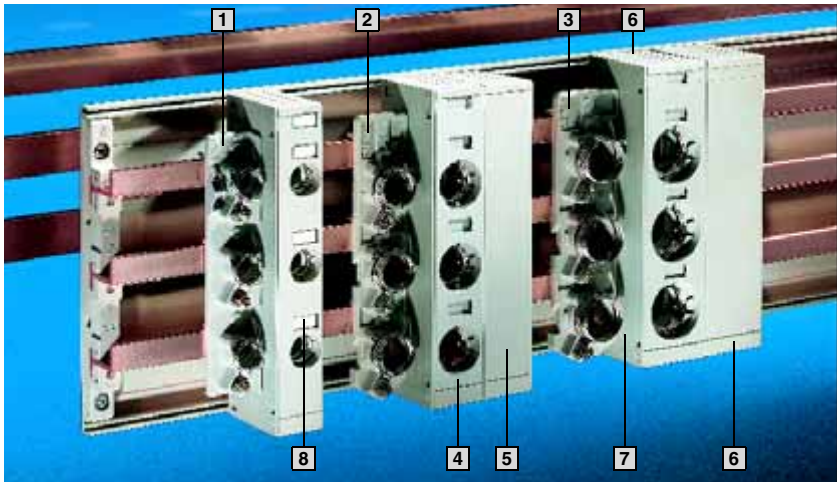
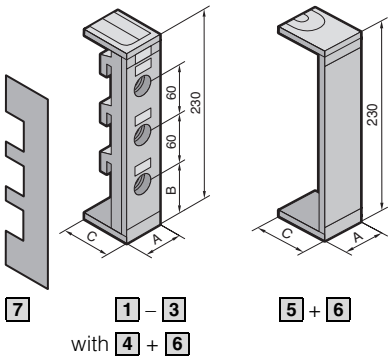
Bus-mounting fuse bases





7 1 – 3 with 4 + 6 5 + 6

Material:
Bus-mounting fuse base:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature max. 140°C.
Fire protection corresponding to UL 94-V0.

Contact hazard protection cover:
Talcum-reinforced polypropylene.
Continuous operating temperature max. 100°C.
Fire protection corresponding to UL 94-V0.

For snap-on mounting		1	2	3
Type		D 02-E 18 (adaptor sleeve)	D II-E 27 (gauge ring)	D III-E 33 (gauge ring)
Width (A)		36 mm	42 mm	57 mm
Rated current		63 A	25 A	63 A
Rated operating voltage		400 V~	500 V~	690 V~
Terminal for round conductors[1)]		1.5 – 16 mm²	1.5 – 16 mm²	1.5 – 16 mm²
Tightening torque ● Terminal screw		2.5 Nm	2.5 Nm	2.5 Nm
Packs of		10	10	10
For 5 mm bar thickness **Model No. SV**		**3422.000**	**3520.000**	**3530.000**
For 10 mm bar thickness **Model No. SV**		**3423.000**	**3521.000**	**3531.000**
Accessories	Packs of			
4 **Contact hazard protection cover** **Model No. SV**	10	**3424.000**	**3522.000**	**3532.000**
5 **Extension cover** **Model No. SV**	10	**–**	**3430.000**	**3436.000**
6 **End caps** **Model No. SV**	10	**3425.000**	**3429.000**	**3435.000**
7 **Side cover** **Model No. SV**	10	**3093.000**	**3093.000**	**3093.000**
8 **Identification labels** **Model No. SV**	100	**9320.080**	**9320.080**	**9320.080**
Width (A) mm		36	42	57
Spacing (B) mm		57	40	40
Depth (C) mm		67	71.5	71.5

[1)] Wire end ferrules should be used with fine wire conductors.

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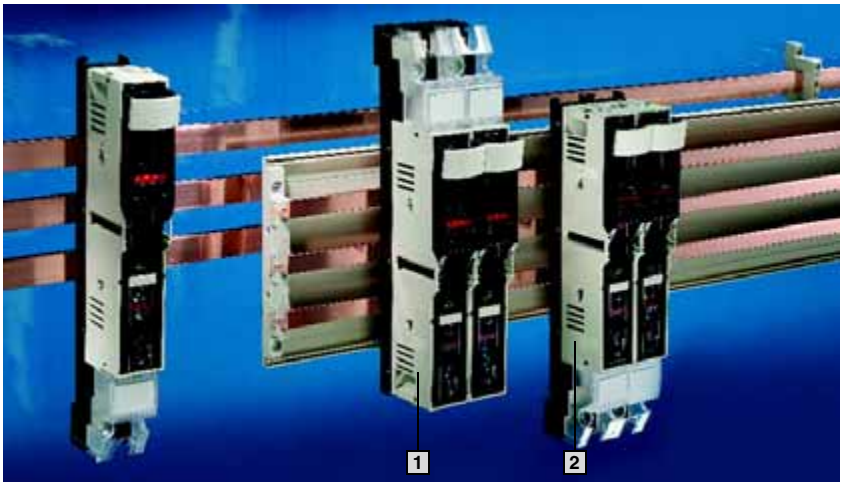
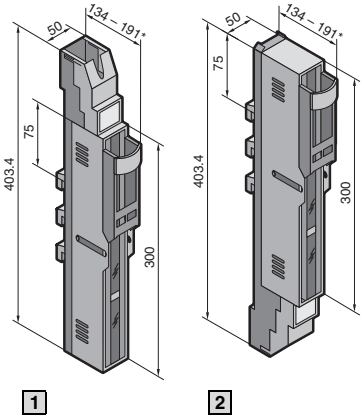
NH fused isolators, size 00





* Off-load position

Material:
Cover:
Fibreglass-reinforced polyamide
Strip chassis:
Duroplastic polyester
Contact tracks:
Silver-plated hard copper

Note:
When using gR fuse inserts (VDE 0636/23) in NH equipment, please observe the information on page 1134.

Technical information,
see page 1134.

Version		1	2	Page
Size		00	00	
Rated current		160 A	160 A	
Rated operating voltage		690 V~	690 V~	
Cable outlet		Top	Bottom	
Type of connection		Screw M8	Screw M8	
Tightening torque ● Assembly screw ● Terminal screw		 6 Nm 14 Nm	 6 Nm 14 Nm	
For bar thickness		5 – 10 mm	5 – 10 mm	
Packs of		1	1	
Model No. SV		**3591.020**	**3591.030**	
Accessories	Packs of			
Identification label support	6	3595.010	3595.010	363
Micro-switch	5	3071.000	3071.000	363
PLS cover	2	3499.070	3499.070	364
Lug terminal connection parts	1 set	3592.020	3592.020	365
Clamp-type terminal connection	1 set	3592.010	3592.010	365

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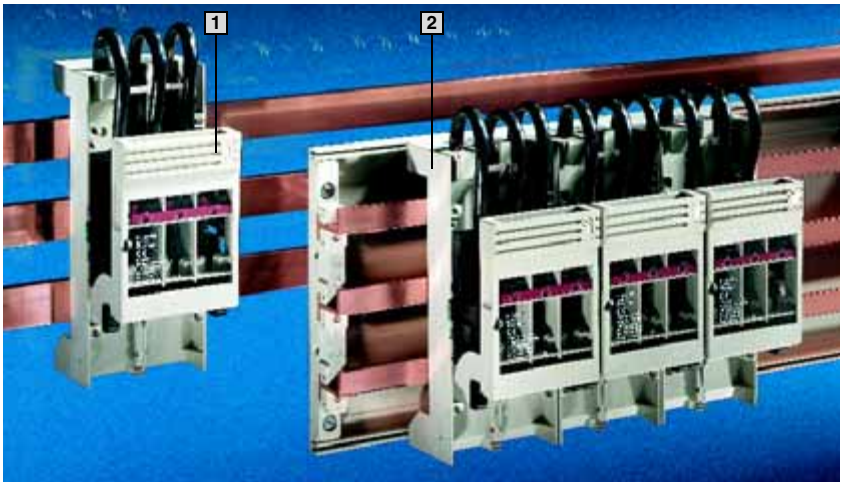
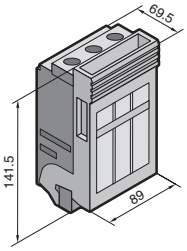
NH on-load isolators, size 000



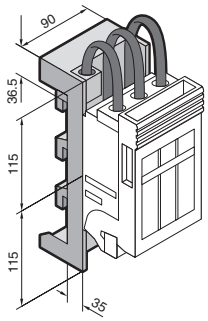


Material:
Isolator lid, contact hazard protection, isolator chassis:
Fibreglass-reinforced polyamide
Contact tracks:
Silver-plated hard copper

Technical information,
see page 1132.

Size		000	Page
Rated current		100 A (160 A)[1]	
Rated operating voltage		690 V~	
Cable outlet		top/bottom	
Type of connection		Terminal up to 50 mm²	
Tightening torque ● Terminal screw		3 Nm	
Packs of		1	
1 Model No. SV		**3431.000**	
Also required			
Busbar adaptor		see below	
Accessories	Packs of		
Micro-switch	5	3071.000	363

[1] 160 A at 95 mm² connection cross-section (95 mm² connector pieces available on request).



2 Busbar adaptor

For mounting SV 3431.000 on 60 mm busbar systems.

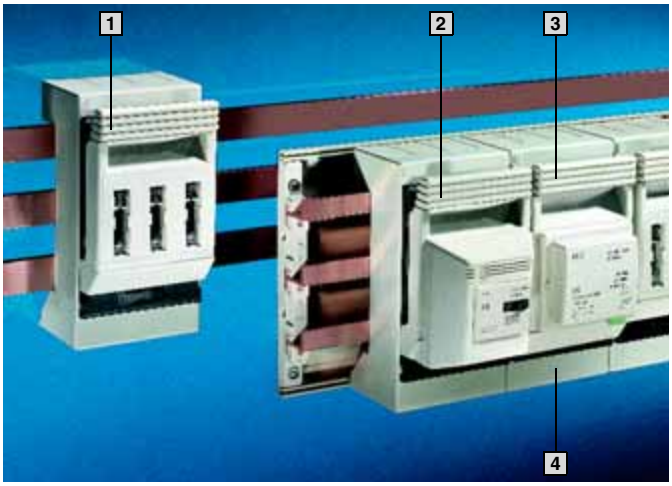
Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

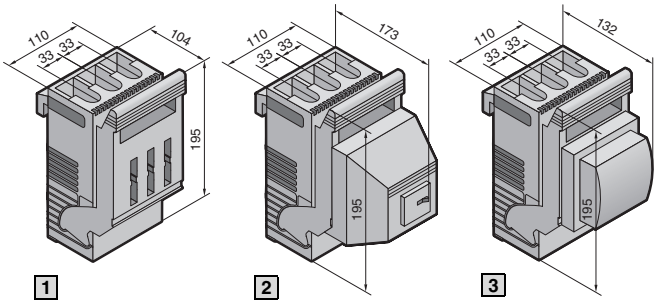
Supply includes:
35 mm² connection cables fitted as standard.

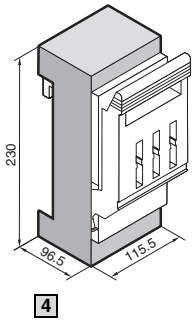
For bar thickness mm	Packs of	Model No. SV
5	1	**9320.040**
10	1	**9320.050**

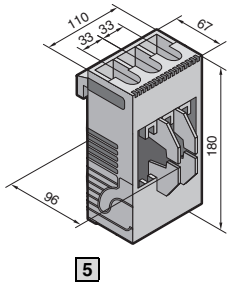
System overview Page 316 **Busbar system** Page 318 – 321 **Busbar connection adaptor** Page 322 **Connection clamps** Page 324
Component adaptor Page 325 **Component support** Page 333 **Bus-mounting fuse bases** Page 334 **NH fused isolators** Page 336
NH bus-mounting on-load isolators Page 338 **Accessories** Page 360

NH bus-mounting on-load isolator, size 00/NH bus-mounting fuse bases, size 00









Material:
Isolator lid, contact hazard protection, isolator chassis: Fibreglass-reinforced polyamide
Contact tracks:
Silver-plated hard copper

Note:
When using gR fuse inserts (VDE 0636/23) in NH equipment, please observe the information on page 1134.

The NH bus-mounting fuse base is not suitable for fitting with an isolator lid.

Technical information,
see page 1132.

NH bus-mounting on-load isolators						Page
Size		00		00		
Rated current		160 A		160 A		
Rated operating voltage		690 V~		690 V~		
Cable outlet		Top	Bottom	Top	Bottom	
Type of connection		Screw terminal M8 up to 95 mm²		Clamp-type terminal connection up to 70 mm²		
Tightening torque ● Assembly screw ● Terminal screw		5 – 6 Nm 10 – 15 Nm	5 – 6 Nm 10 – 15 Nm	5 – 6 Nm 2 – 3 Nm	5 – 6 Nm 2 – 3 Nm	
For bar thickness		5 – 10 mm	5 – 10 mm	5 – 10 mm	5 – 10 mm	
Packs of		1	1	1	1	
1 **Model No. SV**		**3400.000**	**3401.000**	**3402.000**	**3403.000**	
2 **with electromechanical fuse monitoring Model No. SV**		**3490.000**	**3491.000**	**3492.000**	**3493.000**	
3 **with electronic fuse monitoring and LED display Model No. SV**		**3490.210**	**3491.210**	**3492.210**	**3493.210**	
Accessories	Packs of					
Micro-switch	5	3071.000	3071.000	3071.000	3071.000	363
4 Contact hazard protection frame	1	3408.000	3408.000	3408.000	3408.000	364

NH bus-mounting fuse bases[1]				
Size	00		00	
Rated current	160 A		160 A	
Rated operating voltage	690 V~		690 V~	
Cable outlet	Top	Bottom	Top	Bottom
Type of connection	Screw terminal M8 up to 95 mm²		Clamp-type terminal connection up to 70 mm²	
Tightening torque ● Assembly screw ● Terminal screw	5 – 6 Nm 10 – 15 Nm	5 – 6 Nm 10 – 15 Nm	5 – 6 Nm 10 – 15 Nm	5 – 6 Nm 10 – 15 Nm
For bar thickness	5 – 10 mm	5 – 10 mm	5 – 10 mm	5 – 10 mm
Packs of	1	1	1	1
5 **Model No. SV**	**3406.000**	**3407.000**	**3404.000**	**3405.000**

[1] Component mounting with an isolator lid is not possible.

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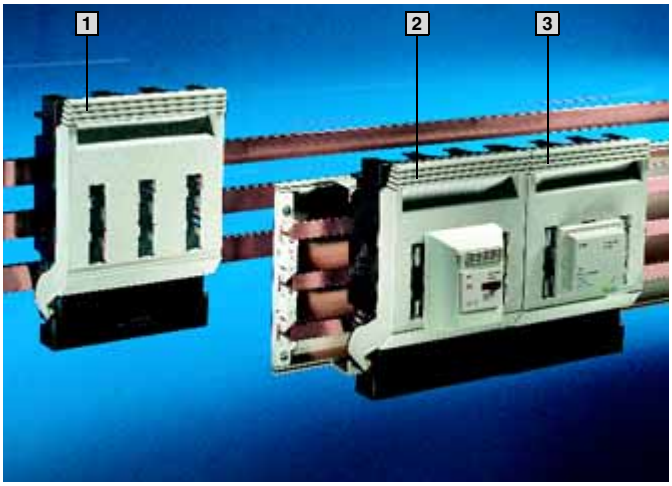
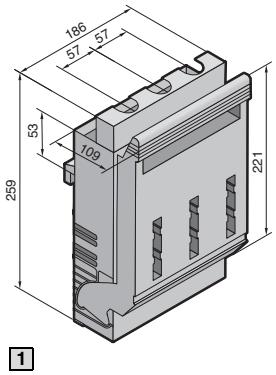
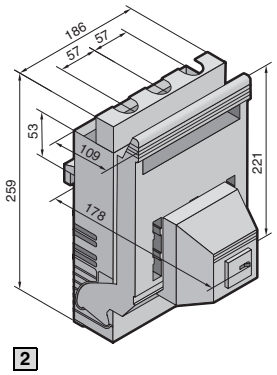
Component adaptor Page 325 **Component support** Page 333 **Bus-mounting fuse bases** Page 334 **NH fused isolators** Page 336 **Accessories** Page 360

NH bus-mounting on-load isolators, size 1

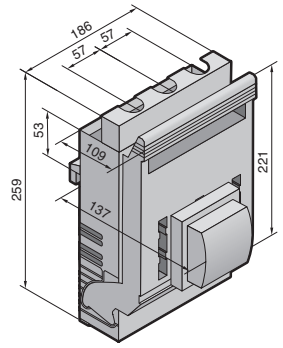




1



2



3

Material:
Isolator lid, contact hazard protection, isolator chassis: Fibreglass-reinforced polyamide
Contact tracks:
Silver-plated hard copper

Note:
When using gR fuse inserts (VDE 0636/23) in NH equipment, please observe the information on page 1134.

Technical information,
see page 1132.

Size		1		Page
Rated current		250 A		
Rated operating voltage		690 V~		
Cable outlet		Top	Bottom	
Type of connection		Screw terminal M10 up to 150 mm²	Screw terminal M10 up to 150 mm²	
Tightening torque ● Assembly screw ● Terminal screw		 8 – 10 Nm 15 – 20 Nm	 8 – 10 Nm 15 – 20 Nm	
For bar thickness		5 – 10 mm	5 – 10 mm	
Packs of		1	1	
1 **Model No. SV**		**3411.000**	**3410.000**	
2 **with electromechanical fuse monitoring Model No. SV**		**3495.000**	**3494.000**	
3 **with electronic fuse monitoring and LED display Model No. SV**		**3495.210**	**3494.210**	
Accessories	Packs of			
Micro-switch	5	3071.000	3071.000	363
PLS cover	2	3099.000	3099.000	364
Lug terminal connection parts	1 set	3414.000	3414.000	365

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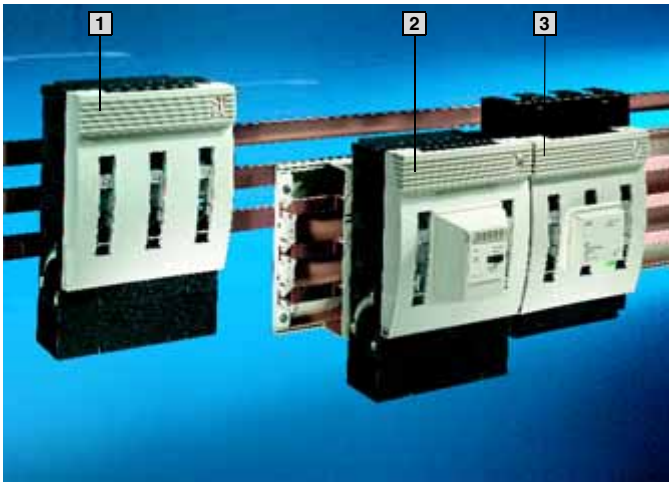
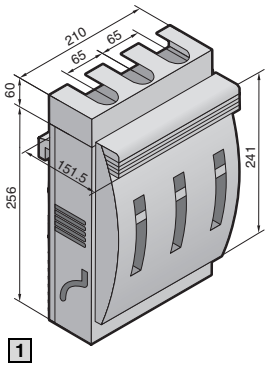
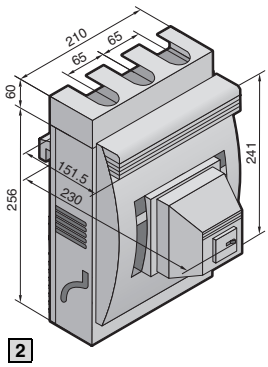
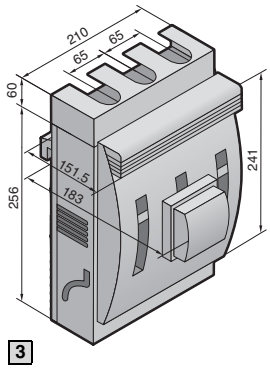
Component adaptor Page 325 **Component support** Page 333 **Bus-mounting fuse bases** Page 334 **NH fused isolators** Page 336 **Accessories** Page 360

NH bus-mounting on-load isolators, size 2









Material:
Isolator lid, contact hazard protection, isolator chassis: Fibreglass-reinforced polyamide
Contact tracks:
Silver-plated hard copper

Note:
When using gR fuse inserts (VDE 0636/23) in NH equipment, please observe the information on page 1134.

Technical information,
see page 1132.

Detailed drawing,
see page 1135.

Size		2		Page
Rated current		400 A		
Rated operating voltage		690 V~		
Cable outlet		Top	Bottom	
Type of connection		Screw terminal M10 up to 240 mm²	Screw terminal M10 up to 240 mm²	
Tightening torque ● Assembly screw ● Terminal screw		 14 Nm 32 Nm	 14 Nm 32 Nm	
For bar thickness		5 – 10 mm	5 – 10 mm	
Packs of		1	1	
1 **Model No. SV**		**3415.020**	**3415.030**	
2 **with electromechanical fuse monitoring Model No. SV**		**3415.120**	**3415.130**	
3 **with electronic fuse monitoring and LED display Model No. SV**		**3415.210**	**3415.230**	
Accessories	Packs of			
Micro-switch	5	3071.000	3071.000	363
PLS cover	1	3499.040	3499.040	364
Lug terminal connection parts	1 set	3499.000	3499.000	365
Clamp-type terminal connection	1 set	3499.010	3499.010	365

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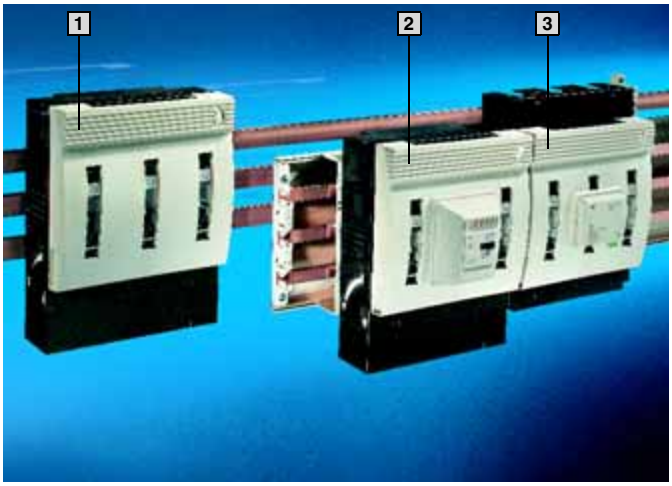
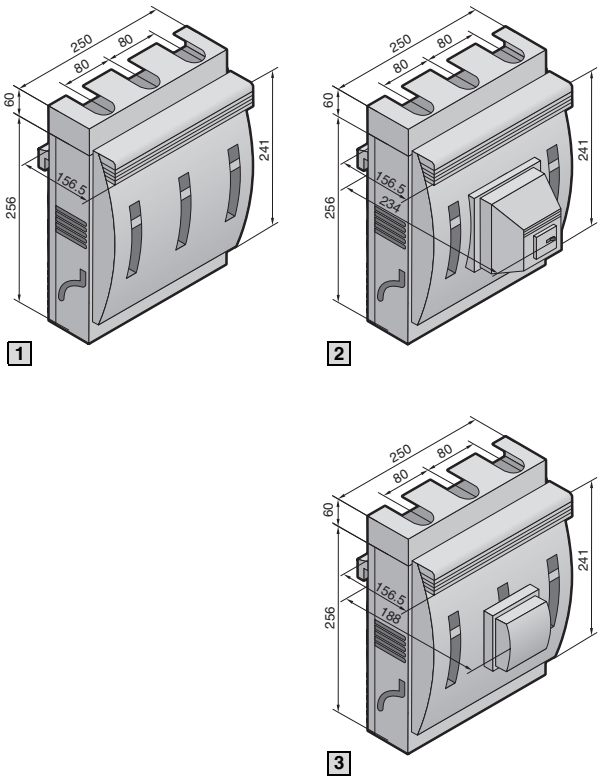
NH bus-mounting on-load isolators, size 3





Material:
Isolator lid, contact hazard protection, isolator chassis:
Fibreglass-reinforced polyamide
Contact tracks:
Silver-plated hard copper

Note:
When using gR fuse inserts (VDE 0636/23) in NH equipment, please observe the information on page 1134.

Technical information,
see page 1132.

Detailed drawing,
see page 1135.

Size		3		Page
Rated current		630 A		
Rated operating voltage		690 V~		
Cable outlet		Top	Bottom	
Type of connection		Screw terminal M10 up to 240 mm²	Screw terminal M10 up to 240 mm²	
Tightening torque ● Assembly screw ● Terminal screw		 14 Nm 32 Nm	 14 Nm 32 Nm	
For bar thickness		5 – 10 mm	5 – 10 mm	
Packs of		1	1	
1 **Model No. SV**		**3095.020**	**3095.030**	
2 **with electromechanical fuse monitoring Model No. SV**		**3095.120**	**3095.130**	
3 **with electronic fuse monitoring and LED display Model No. SV**		**3095.210**	**3095.230**	
Accessories	Packs of			
Micro-switch	5	3071.000	3071.000	363
PLS cover	1	3499.050	3499.050	364
Lug terminal connection parts	1 set	3499.000	3499.000	365
Clamp-type terminal connection	1 set	3499.010	3499.010	365

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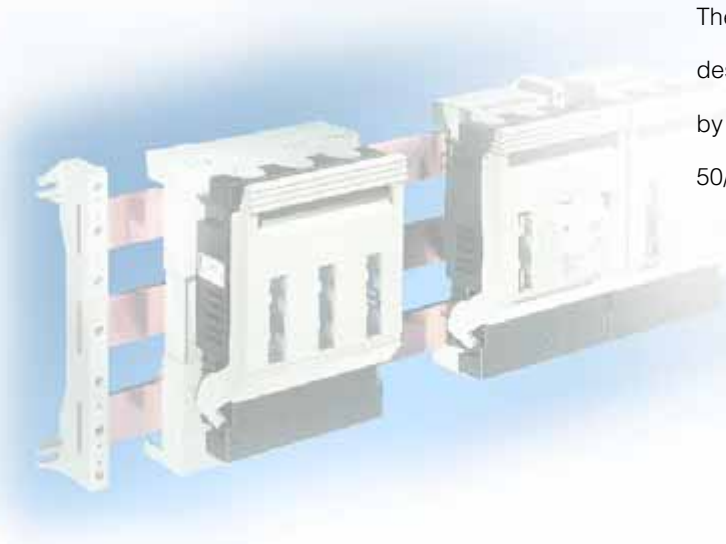
Busbar systems up to 1250 A (100 mm)

Overview



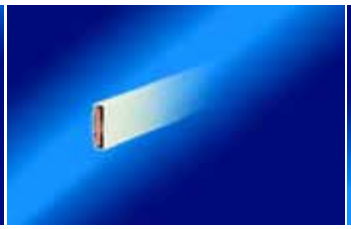
The busbar support with 100 mm bar centre distance is designed for the accommodation of bars 60 x 10 mm; by using inserts the cross-section may be reduced to 50/40/30 x 10 mm.



System components



End cover
Busbar support up to 1250 A, 3-pole
Inserts for busbar supports
Busbars E-Cu



Busbar cover sections

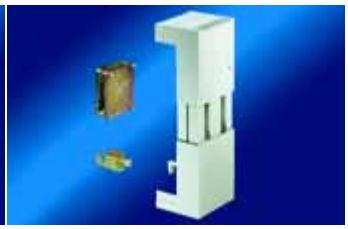


Plate clamps
Conductor connection clamps
System covers

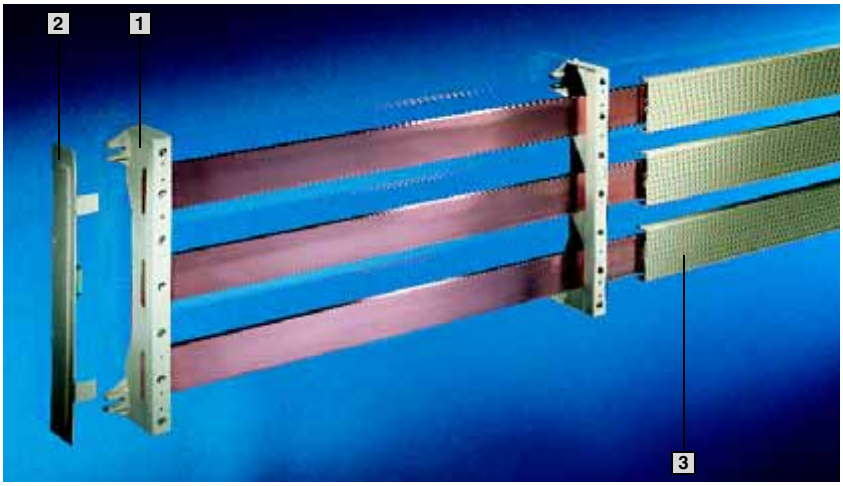


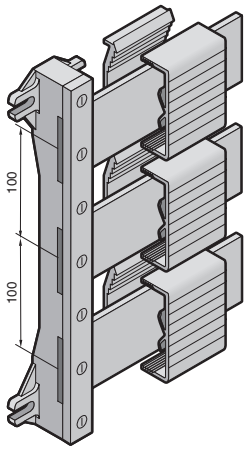
NH-bus-mounting on-load isolator size 00, size 1, size 2 and size 3



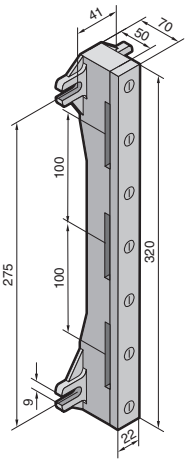
NH fused isolator, size 00

System components





Planning software Rittal SV Plan/ Power Plan,
see page 1061.



1 Busbar support

Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Short-circuit protection diagram,
see page 1126.

Technical information
for the calculation of rated currents,
see page 1137.

Rated current up to	1250 A
Rated operating voltage up to	1000 V~, 50/60 Hz to VDE 0660
Number of poles	3-pole
Bar centre distance	100 mm
Max. bar accommodation without inserts	60 x 10 mm
Tightening torque ● Assembly screw ● Cover attachment	 8 – 10 Nm 1 – 3 Nm
Packs of	4
Model No. SV	**3073.000**

Inserts

for SV 3073.000
To adapt bar dimensions
30 x 10 – 50 x 10 mm.

Busbars

made from E-Cu
To DIN EN 13 601.
Length: 2400 mm/bar.

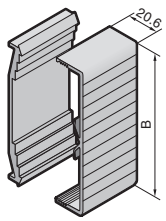
Rated current	Busbar dimensions mm	Inserts[1]	Busbars[2]
		Model No. SV	**Model No. SV**
800 A	30 x 10	**3074.000**	**3586.000[3]**
850 A	40 x 10	**3075.000**	**3587.000**
1000 A	50 x 10	**3076.000**	**3588.000**
1250 A	60 x 10	**–**	**3589.000**

Supply includes:
[1] Packs of 24
[2] Packs of 3
[3] Packs of 6

2 End cover

For side contact hazard protection of the busbar assembly. Simple clip-on mounting to SV 3073.000.

Packs of	**Model No. SV**
10	**3083.000**



3 Busbar covers

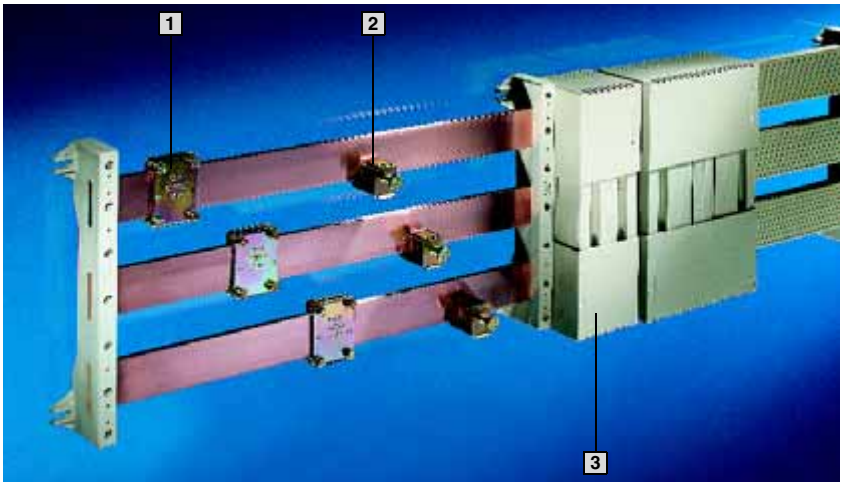
Contact hazard protection via full encapsulation of the busbars. May be cut to required length.

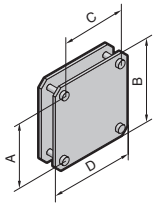
Material:
Thermally modified hard PVC.
Continuous operating temperature: max. 100°C.
Fire protection corresponding to UL 94-V0.

For busbars mm	Width (B) mm	Packs of	**Model No. SV**
12 x 5 – 30 x 10	40,6	10 à 1 m	**3092.000**
40 x 10 – 60 x 10	70,6	10 à 1 m	**3085.000**

System overview Page 342 **Connection clamps** Page 344 **NH bus-mounting on-load isolators** Page 345 **NH fused isolator** Page 349 **Accessories** Page 360

Connection clamps/system covers





1 Plate clamps

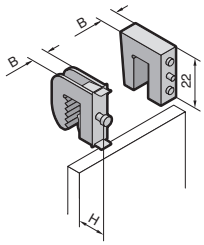
For connecting laminated copper bars; no drilling required.

Material:
Sheet steel, zinc-plated, passivated.

Accessories:

Laminated copper bars,
see page 361.

For busbars mm	Clamping area for laminated copper bars mm	Tightening torque Nm	A mm	B mm	C mm	D mm	Packs of	Model No. SV
30 x 10	34 x 10	6 – 8	40	55	40	55	3	**3554.000**
40 x 10	34 x 10	6 – 8	50	65	40	55	3	**3559.000**
50 x 10	34 x 10	6 – 8	60	75	40	55	3	**3560.000**
50 x 10	54 x 10	6 – 8	60	75	60	75	3	**3562.000**
60 x 10	34 x 10	6 – 8	70	85	40	55	3	**3561.000**
60 x 10	54 x 10	6 – 8	70	85	60	75	3	**3563.000**



2 Conductor connection clamps

For 10 mm bar thickness.

Material:
Sheet steel, zinc-plated, passivated (SV 3455.500 – SV 3459.500), brass (SV 3555.000).

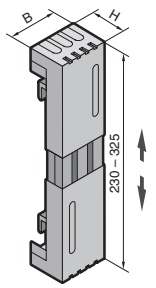
Note:
Conductor connection clamps for 5 mm bar thickness, see page 324.

Accessories:

Laminated copper bars,
see page 361.

Connection of round conductors[1] mm²	Clamping area for laminated copper bars mm	Tightening torque Nm	Width (B) mm	Height (H) mm min.	Height (H) mm max.	Packs of	Model No. SV
1 – 4	–	2	8	–	–	15	**3555.000**
1 – 4	–	2	11	17	23	15	**3455.500**
2.5 – 16	8 x 8	3	14	22	29	15	**3456.500**
16 – 50	10.5 x 11	6 – 8	18.5	26	39	15	**3457.500**
35 – 70	16.5 x 15	10 – 12	24.5	39	57	15	**3458.500**
70 – 185	22.5 x 20	12 – 15	30.5	44	66	15	**3459.500**

[1] Wire end ferrules should be used with fine wire conductors.



3 System covers

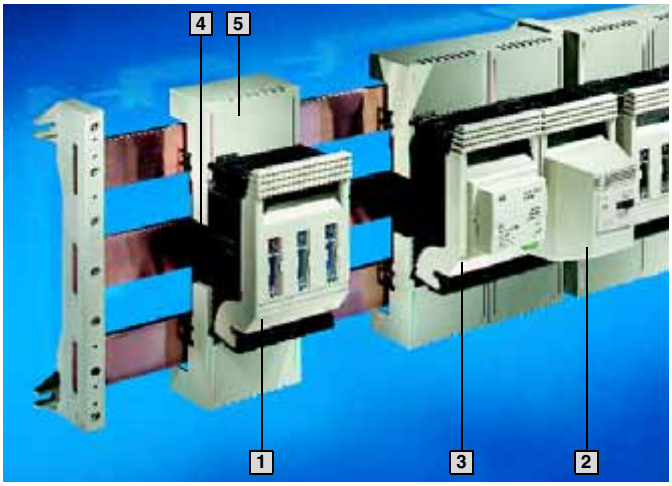
For conductor connection clamps and plate clamps.

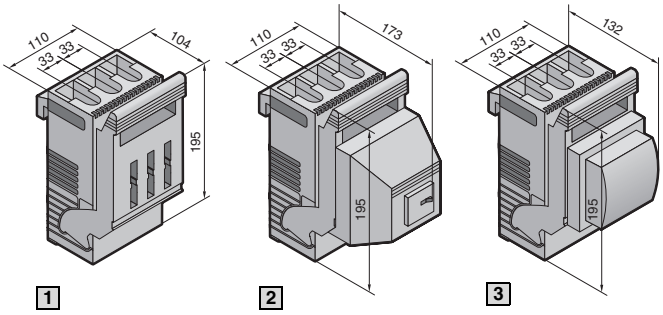
Material:
ABS.
Continuous operating temperature: max. 80°C.
Fire protection corresponding to UL 94-V0.

Width (B) mm	Height (H) mm	Packs of	Model No. SV
50	80	4	**3086.000**
100	80	4	**3087.000**
100	110	4	**3090.000**
200	80	4	**3088.000**
200	110	4	**3091.000**

System overview Page 342 **Busbar system** Page 343 **NH bus-mounting on-load isolator** Page 345 **NH fused isolator** Page 349
Accessories Page 360

NH bus-mounting on-load isolator, size 00



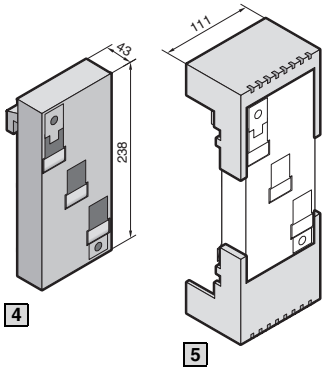


Material:
Isolator lid, contact hazard protection, isolator chassis: Fibreglass-reinforced polyamide
Contact tracks:
Silver-plated hard copper

Note:
When using gR fuse inserts (VDE 0636/23) in NH equipment, please observe the information on page 1134.

Technical information,
see page 1132.

Size		00		00		Page
Rated current		160 A		160 A		
Rated operating voltage		690 V~		690 V~		
Cable outlet		Top	Bottom	Top	Bottom	
Type of connection		Screw terminal M8 up to 95 mm²		Clamp-type terminal connection up to 70 mm²		
Tightening torque ● Assembly screw ● Terminal screw		5 – 6 Nm 10 – 15 Nm	5 – 6 Nm 10 – 15 Nm	5 – 6 Nm 2 – 3 Nm	5 – 6 Nm 2 – 3 Nm	
Packs of		1	1	1	1	
1 **Model No. SV**		**3400.000**	**3401.000**	**3402.000**	**3403.000**	
2 **with electromechanical fuse monitoring Model No. SV**		**3490.000**	**3491.000**	**3492.000**	**3493.000**	
3 **with electronic fuse monitoring and LED display Model No. SV**		**3490.210**	**3491.210**	**3492.210**	**3493.210**	
Also required						
4 Busbar adaptor		see below				
5 Cover		see below				
Accessories	Packs of					
Micro-switch	5	3071.000	3071.000	3071.000	3071.000	363



4 Busbar adaptor

For mounting SV 3400.000 – SV 3493.210 on 100 mm busbar systems.

Packs of	Model No. SV
1	**3412.000**

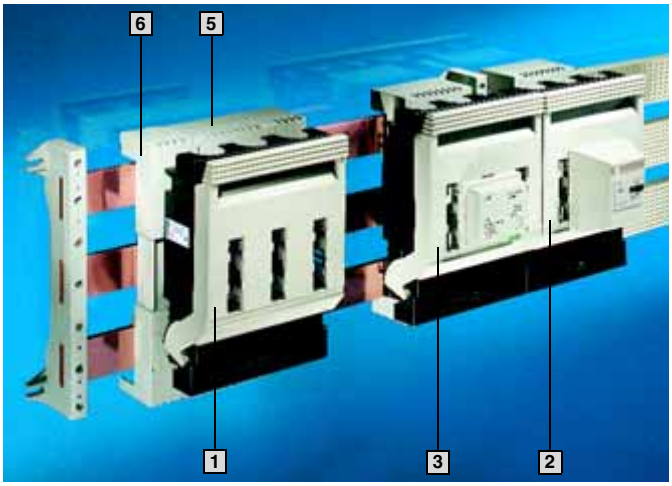
5 Cover

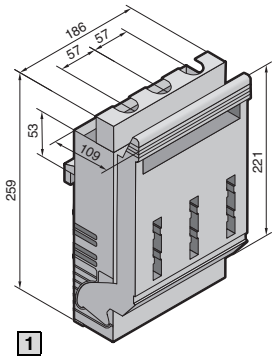
for SV 3412.000
To comply with contact hazard protection, plug-type.

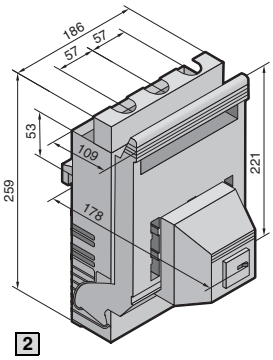
Packs of	Model No. SV
1 set	**3413.000**

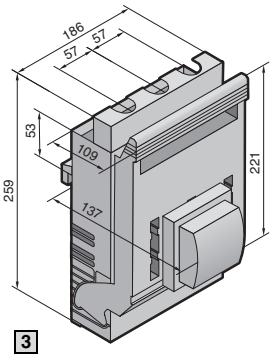
System overview Page 342 **Busbar system** Page 343 **Connection clamps** Page 344 **NH fused isolator** Page 349 **Accessories** Page 360

NH bus-mounting on-load isolators, size 1







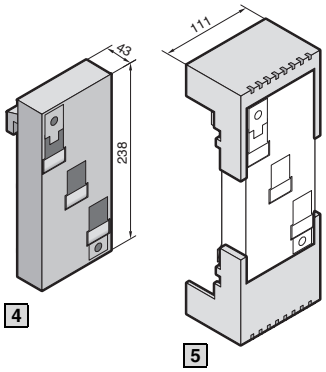


Material:
Isolator lid, contact hazard protection, isolator chassis: Fibreglass-reinforced polyamide
Contact tracks:
Silver-plated hard copper

Note:
When using gR fuse inserts (VDE 0636/23) in NH equipment, please observe the information on page 1134.

Technical information,
see page 1132.

Size		1		Page
Rated current		250 A		
Rated operating voltage		690 V~		
Cable outlet		Top	Bottom	
Type of connection		Screw terminal M10 up to 150 mm²		
Tightening torque ● Assembly screw ● Terminal screw		8 – 10 Nm 15 – 20 Nm	8 – 10 Nm 15 – 20 Nm	
Packs of		1	1	
1 **Model No. SV**		**3411.000**	**3410.000**	
2 **with electromechanical fuse monitoring Model No. SV**		**3495.000**	**3494.000**	
3 **with electronic fuse monitoring and LED display Model No. SV**		**3495.210**	**3494.210**	
Also required				
4 Busbar adaptor		see below		
5 Cover		see below		
6 System cover		see below		
Accessories	Packs of			
Micro-switch	5	3071.000	3071.000	363
Lug terminal connection parts	1 set	3414.000	3414.000	365



4 Busbar adaptor

For mounting SV 3410.000 – 3495.210 on 100 mm busbar systems.

Packs of	**Model No. SV**
1	**3412.000**

5 Cover

for SV 3412.000
To comply with contact hazard protection, plug-type.

Packs of	**Model No. SV**
1 set	**3413.000**

6 System cover

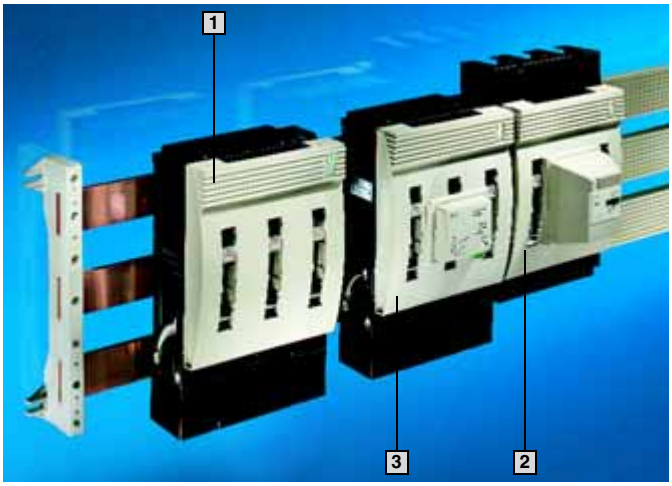
Width 50 mm, height 80 mm.

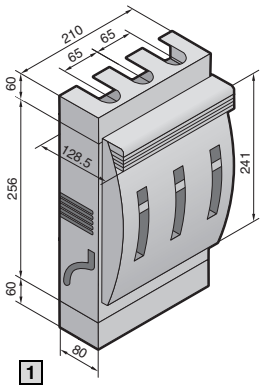
Further information,
see page 344.

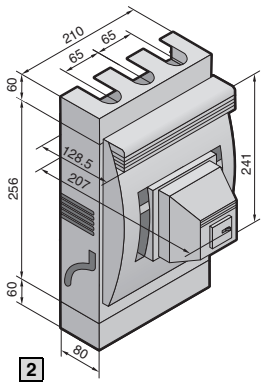
Packs of	**Model No. SV**
4	**3086.000**

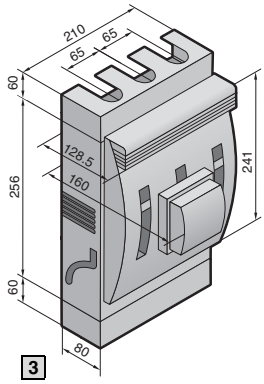
System overview Page 342 **Busbar system** Page 343 **Connection clamps** Page 344 **NH fused isolator** Page 349 **Accessories** Page 360

NH bus-mounting on-load isolators, size 2









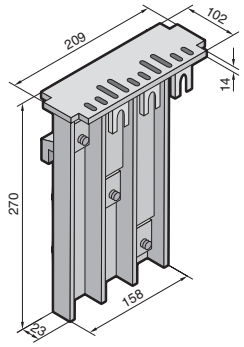
Material:
Isolator lid, contact hazard protection, isolator chassis: Fibreglass-reinforced polyamide
Contact tracks:
Silver-plated hard copper

Note:
When using gR fuse inserts (VDE 0636/23) in NH equipment, please observe the information on page 1134.

Technical information,
see page 1132.

Detailed drawing,
see page 1136.

Size		2	Page
Rated current		400 A	
Rated operating voltage		690 V~	
Cable outlet		top/bottom	
Type of connection		Screw terminal M10 up to 240 mm²	
Tightening torque ● Assembly screw ● Terminal screw		14 Nm 32 Nm	
Packs of		1	
1 **Model No. SV**		**3415.010**	
2 **with electromechanical fuse monitoring Model No. SV**		**3415.110**	
3 **with electronic fuse monitoring and LED display Model No. SV**		**3415.310**	
Also required			
Busbar adaptor		see below	
Accessories	Packs of		
Micro-switch	5	3071.000	363
Lug terminal connection parts	1 set	3499.000	365
Clamp-type terminal connection	1 set	3499.010	365



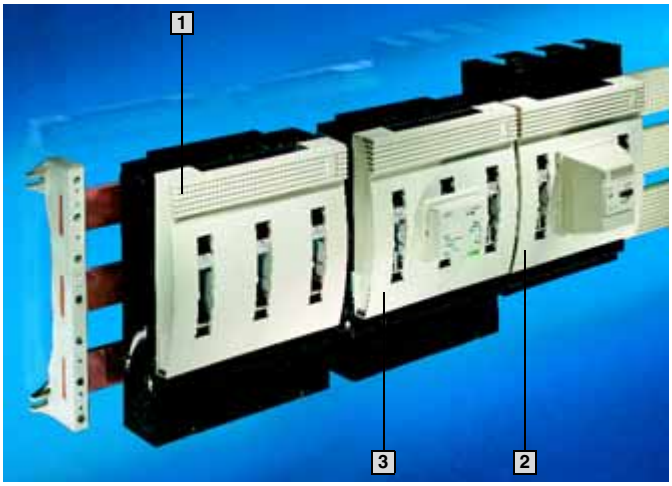
Busbar adaptor

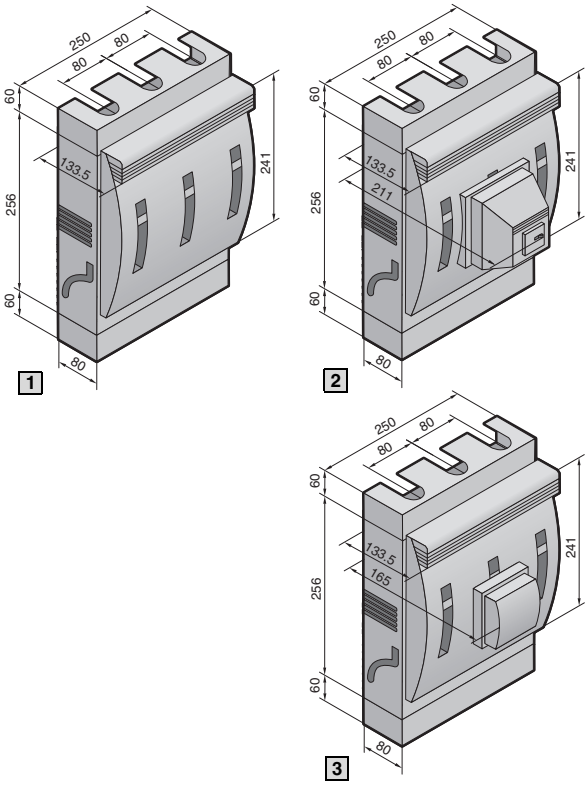
For mounting SV 3415.010 – SV 3415.310 on 100 mm busbar systems.
Outlet top/bottom.

Packs of	Model No. SV
1	**3499.020**

System overview Page 342 **Busbar system** Page 343 **Connection clamps** Page 344 **NH fused isolator** Page 349 **Accessories** Page 360

NH bus-mounting on-load isolators, size 3





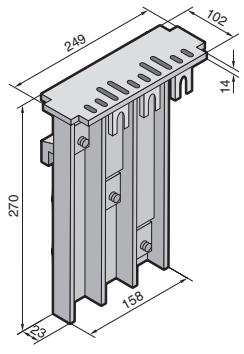
Material:
Isolator lid, contact hazard protection, isolator chassis: Fibreglass-reinforced polyamide
Contact tracks:
Silver-plated hard copper

Note:
When using gR fuse inserts (VDE 0636/23) in NH equipment, please observe the information on page 1134.

Technical information,
see page 1132.

Detailed drawing,
see page 1136.

Size		3	Page
Rated current		630 A	
Rated operating voltage		690 V~	
Cable outlet		top/bottom	
Type of connection		Screw terminal M10 up to 240 mm²	
Tightening torque ● Assembly screw ● Terminal screw		14 Nm 32 Nm	
Packs of		1	
1 **Model No. SV**		**3095.010**	
2 **with electromechanical fuse monitoring Model No. SV**		**3095.110**	
3 **with electronic fuse monitoring and LED display Model No. SV**		**3095.310**	
Also required			
Busbar adaptor		see below	
Accessories	Packs of		
Micro-switch	5	3071.000	363
Lug terminal connection parts	1 set	3499.000	365
Clamp-type terminal connection	1 set	3499.010	365



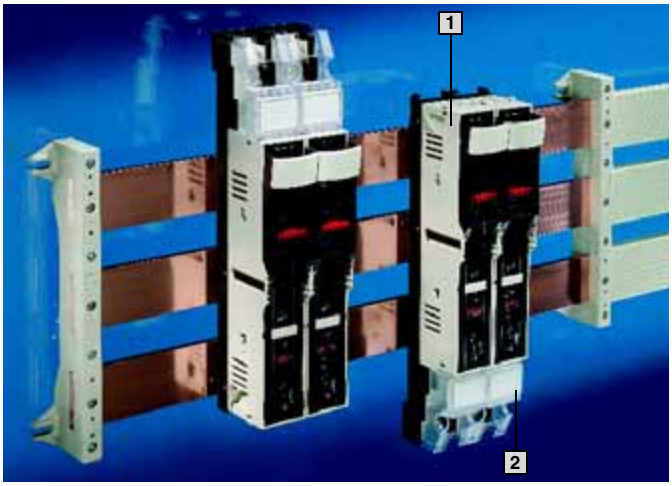
Busbar adaptor

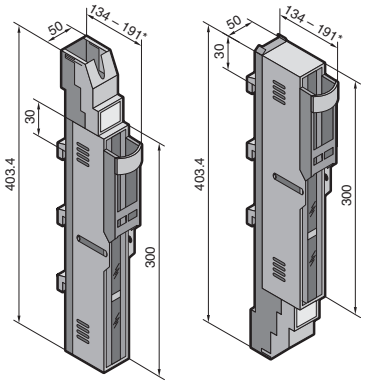
For mounting SV 3095.010 – SV 3095.310 on 100 mm busbar systems.
Outlet top/bottom.

Packs of	**Model No. SV**
1	**3499.030**

System overview Page 342 **Busbar system** Page 343 **Connection clamps** Page 344 **NH fused isolator** Page 349 **Accessories** Page 360

NH fused isolator, size 00





* Off-load position

Material:
Cover:
Fibreglass-reinforced polyamide
Strip chassis:
Duroplastic polyester
Contact tracks:
Silver-plated hard copper

Note:
When using gR fuse inserts (VDE 0636/23) in NH equipment, please observe the information on page 1134.

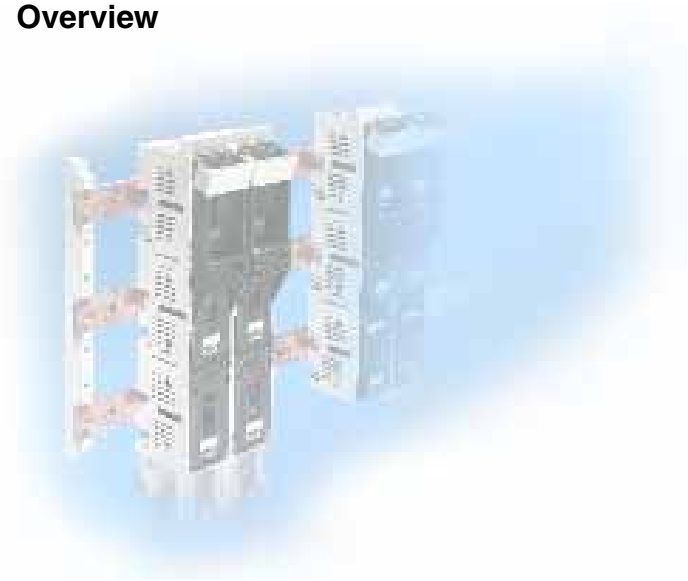
Technical information,
see page 1134.

Size		00	Page
Rated current		160 A	
Rated operating voltage		690 V~	
Cable outlet		top/bottom	
Type of connection		Screw M8	
Tightening torque ● Assembly screw ● Terminal screw		6 Nm 14 Nm	
Packs of		1	
1 Model No. SV		**3591.010**	
Accessories	Packs of		
2 Identification label support	6	3595.010	363
Micro-switch	5	3071.000	363
Lug terminal connection parts	1 set	3592.020	365
Clamp-type terminal connection	1 set	3592.010	365

System overview Page 342 **Busbar system** Page 343 **Connection clamps** Page 344 **NH bus-mounting on-load isolator** Page 345
Accessories Page 360

Busbar systems up to 1600 A (185 mm)

Overview

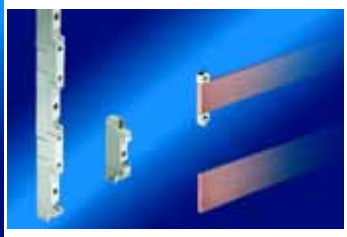


The busbar support with 185 mm bar centre distance is designed for the accommodation of bars 80 x 10 mm; by using inserts the cross-section may be reduced to 60/50 x 10 mm.



The special design of the busbar support facilitates seamless top mounting in the vicinity of the support. For this purpose, the isolator, bar and support are screwed together with a single screw.
In addition, the individual modules of the busbar support can also be used as single-pole supports.

System components



Busbar support
up to 1600 A, 3-pole

Inserts
for busbar supports

Busbars E-Cu



Busbar cover sections

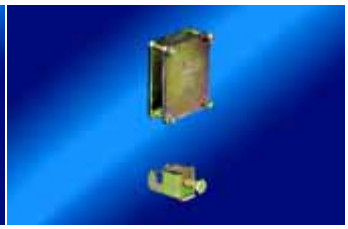


Plate clamps

Conductor connection clamps

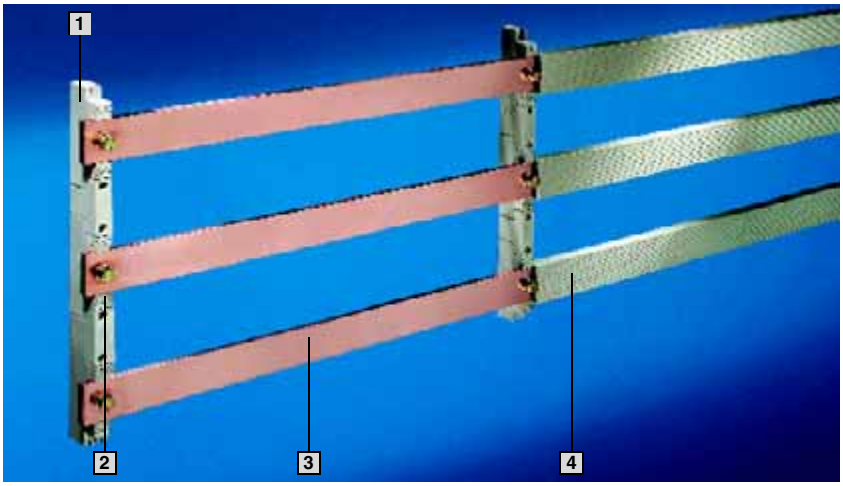


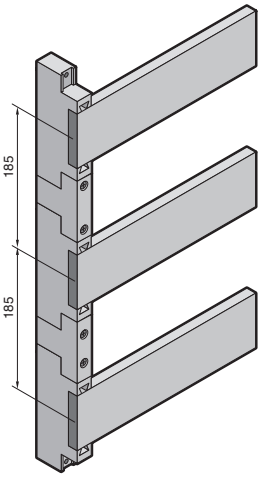
NH fused isolator, size 00
Included with the supply:
Single or double adaptor for mounting the NH strip on 185 mm bar systems



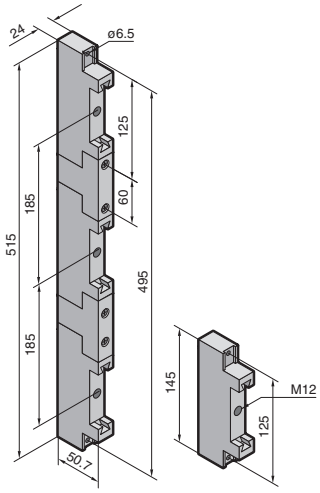
NH fused isolators, sizes 1 – 3
for direct mounting on 185 mm bar systems.

System components





Planning software Rittal SV Plan/ Power Plan,
see page 1061.



1 Busbar support

Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Note:
The base component of the busbar support may also be used as a single-pole support.

Short-circuit protection diagram,
see page 1126.

Technical information
for the calculation of rated currents,
see page 1137.

Rated current up to	1600 A
Rated operating voltage up to	1000 V~, 50/60 Hz to VDE 0660
Number of poles	3-pole
Bar centre distance	185 mm
Max. bar accommodation without inserts	80 x 10 mm
Tightening torque ● Assembly screw ● Bar attachment screw	 3 – 5 Nm 40 Nm
Packs of	2
Model No. SV	**3052.000**

2 Inserts

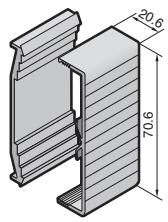
for SV 3052.000
To adapt bar dimensions 50 – 60 x 10 mm.

3 Busbars

made from E-Cu
To DIN EN 13 601.
Length: 2400 mm/bar.

Rated current	Busbar dimensions mm	Inserts[1]	Busbars[2]
		Model No. SV	**Model No. SV**
1000 A	50 x 10	**3074.000**	**3588.000**
1250 A	60 x 10	**3075.000**	**3589.000**
1600 A	80 x 10	**–**	**3590.000**

Supply includes:
[1] Packs of 24
[2] Packs of 3



4 Busbar covers

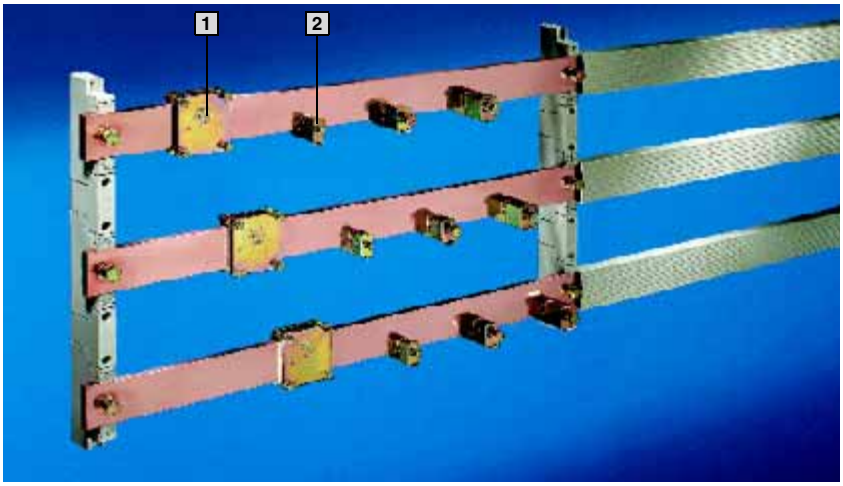
Contact hazard protection via full encapsulation of the busbars. May be cut to required length.

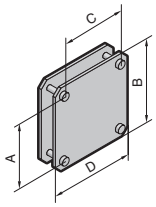
Material:
Thermally modified hard PVC.
Continuous operating temperature: max. 100°C.
Fire protection corresponding to UL 94-V0.

For busbars mm	Packs of	**Model No. SV**
40 – 60 x 10	10 à 1 m	**3085.000**

System overview Page 350 **Connection clamps** Page 352 **NH fused isolators** Page 353 **Accessories** Page 360

Connection clamps





1 Plate clamps

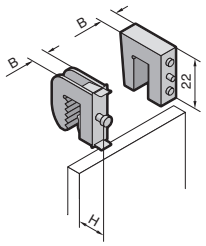
For connecting laminated copper bars; no drilling required.

Material:
Sheet steel, zinc-plated, passivated.

Accessories:

Laminated copper bars, see page 361.

For busbars mm	Clamping area for laminated copper bars mm	Tightening torque Nm	A mm	B mm	C mm	D mm	Packs of	Model No. SV
50 x 10	34 x 10	6 – 8	60	75	40	55	3	**3560.000**
50 x 10	54 x 10	6 – 8	60	75	60	75	3	**3562.000**
60 x 10	34 x 10	6 – 8	70	85	40	55	3	**3561.000**
60 x 10	54 x 10	6 – 8	70	85	60	75	3	**3563.000**
80 x 10	65 x 10	6 – 8	90	105	71	86	3	**3460.500**



2 Conductor connection clamps

For 10 mm bar thickness.

Material:
Sheet steel, zinc-plated, passivated (SV 3455.500 – SV 3459.500), brass (SV 3555.000).

Note:
Conductor connection clamps for 5 mm bar thickness, see page 324.

Accessories:

Laminated copper bars, see page 361.

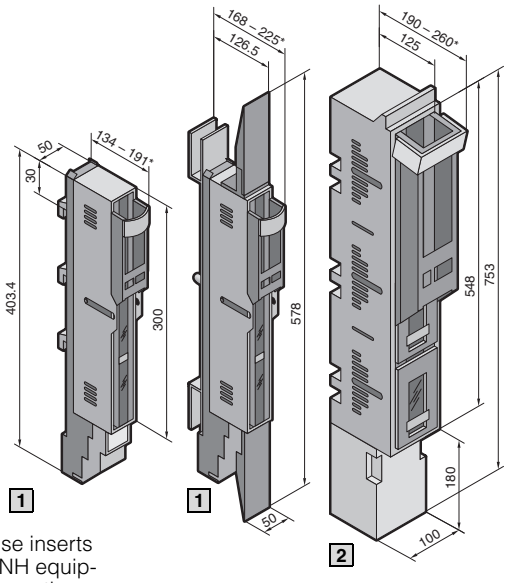
Connection of round conductors[1] mm²	Clamping area for laminated copper bars mm	Tightening torque Nm	Width (B) mm	Height (H) mm min.	Height (H) mm max.	Packs of	Model No. SV
1 – 4	–	2	8	–	–	15	**3555.000**
1 – 4	–	2	11	17	23	15	**3455.500**
2.5 – 16	8 x 8	3	14	22	29	15	**3456.500**
16 – 50	10.5 x 11	6 – 8	18.5	26	39	15	**3457.500**
35 – 70	16.5 x 15	10 – 12	24.5	39	57	15	**3458.500**
70 – 185	22.5 x 20	12 – 15	30.5	44	66	15	**3459.500**

[1] Wire end ferrules should be used with fine wire conductors.

NH fused isolators, size 00 – 3







* Off-load position

Material:
Cover:
Fibreglass-reinforced polyamide
Strip chassis:
Duroplastic polyester
Contact tracks:
Silver-plated hard copper

Scope of supply SV 3591.040:
Including
1 busbar adaptor[1)],
2 compensating panels

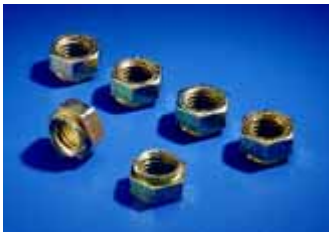
Scope of supply SV 3591.050:
Including
1 busbar adaptor[1)]
(two-way adaptor),
4 compensating panels

[1)] Tightening torque 25 Nm (bar attachment)

Note:
When using gR fuse inserts (VDE 0636/23) in NH equipment, please observe the information on page 1134.

Technical information,
see page 1134.

Version		1		2			Page
Size		00		1	2	3	
Rated current		160 A		250 A	400 A	630 A	
Rated operating voltage		690 V~		690 V~	690 V~	690 V~	
Cable outlet		top/bottom		top/bottom	top/bottom	top/bottom	
Type of connection		Screw M8		Screw M12	Screw M12	Screw M12	
Tightening torque ● Assembly screw ● Terminal screw		14 Nm 14 Nm		40 Nm 40 Nm	40 Nm 40 Nm	40 Nm 40 Nm	
Packs of		1	2	1	1	1	
Model No. SV		**3591.040**	**3591.050**	**3485.000**	**3486.000**	**3487.000**	
Accessories	Packs of						
3 Identification label support	6	3595.010	3595.010	–	–	–	363
Micro-switch	5	3071.000	3071.000	3071.000	3071.000	3071.000	363
Lug terminal connection parts	1 set	3592.020	3592.020	–	–	–	365
Clamp-type terminal connection	1 set	3592.010	3592.010	–	–	–	365



Inserted screw nuts M12

Self-holding nuts with knurled ring.
For drilled holes in busbars Ø 14.5 mm.

Note:
Inserted screw nuts M12 are already included in the supply of SV 3591.040/.050 and SV 3485.000 – SV 3487.000.

Packs of	Model No. SV
30	**3591.060**

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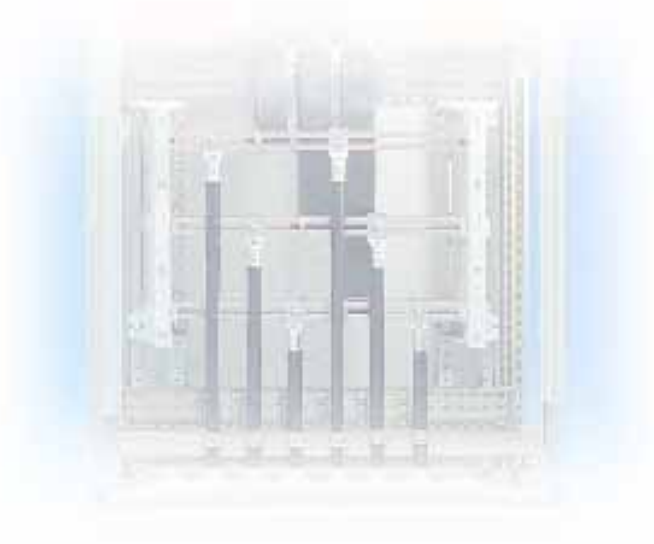
Busbar systems up to 2500 A/3000 A (150 mm)

Overview



These bar systems with 150 mm bar centre distance are suitable for power transmission and distribution.

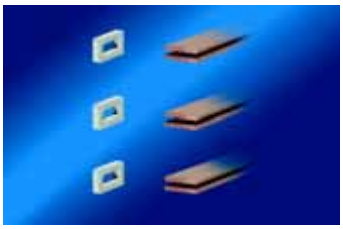
The maximum bar accommodation of the busbar supports is 80 x 10 mm or 100 x 10 mm.



System components



Busbar support
up to 2500 A, 2 x 3-pole



Spacing pieces
to reduce the bar cross-section in 10 mm increments

Busbars E-Cu

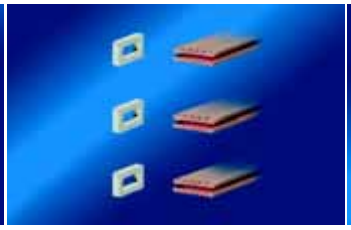


Connection plates

Bar insulation



Busbar support
up to 3000 A, 2 x 3-pole



Spacing pieces
to reduce the bar cross-section in 10 mm increments

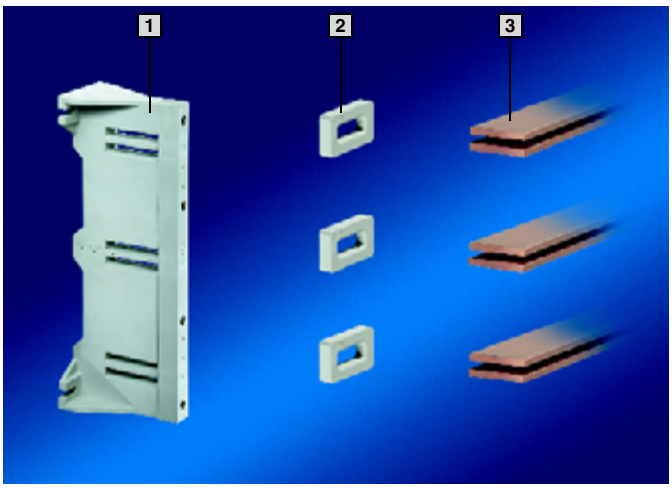
Commercially available
busbars E-Cu
Cross-sections: 100 x 10 mm

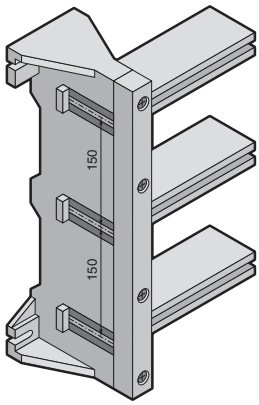


Connection plates

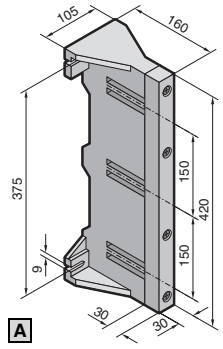
Bar insulation

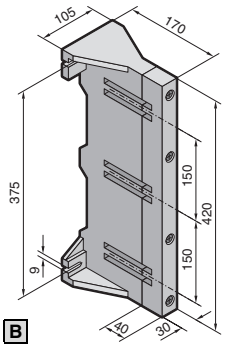
System components





Planning software Rittal SV Plan/ Power Plan,
see page 1061.





1 Busbar support

Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Continuous operating temperature: max. 140°C.
Fire protection corresponding to UL 94-V0.

Short-circuit protection diagram,
see page 1126.

Technical information
for the calculation of rated currents,
see page 1137.

	A 2500 A	B 3000 A
Rated current up to		
Rated operating voltage up to	1000 V~, 50/60 Hz to VDE 0660	
Number of poles	3-pole	
Bar centre distance	150 mm	
Max. bar accommodation without spacing pieces	2 x 80 x 10 mm	2 x 100 x 10 mm
Tightening torque ● Assembly screw ● Cover attachment	 8 – 10 Nm 5 – 10 Nm	 8 – 10 Nm 5 – 10 Nm
Packs of	2	2
Model No. SV	**3055.000**	**3057.000**

2 Spacing pieces

for SV 3055.000/SV 3057.000
To reduce the bar dimensions in 10 mm increments. Also suitable for stepped busbar assemblies.

Packs of	Model No. SV
12	**3056.000**

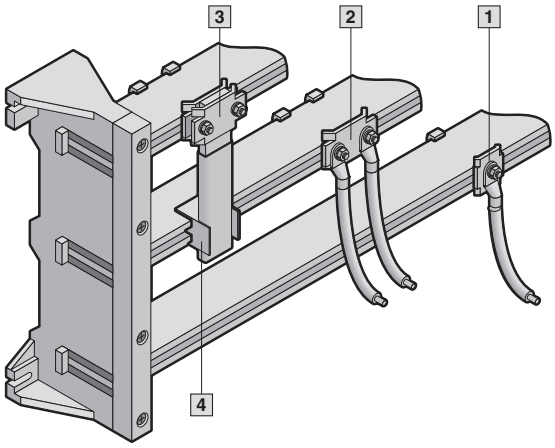
3 Busbars

made from E-Cu
To DIN EN 13 601.
Length: 2400 mm/bar.

Dimensions	Packs of	Model No. SV
60 x 10 mm	3	**3589.000**
80 x 10 mm	3	**3590.000**

System overview Page 354 **Connection plates** Page 356 **Bar insulation** Page 356

System components





Connection plates

for SV 3055.000
Tightening torque: 10 – 15 Nm.

Connection	Packs of	Model No. SV
1 Ring terminal M10 up to 240 mm²	3 sets	**3058.000[1)]**
2 2 x ring terminals M10 up to 240 mm²	3 sets	**3059.000[1)]**
3 Laminated flat copper up to 40 x 10 mm	3 sets	**3061.000[2)]**

T-head screws:
[1)] M10 x 100 mm
[2)] M10 x 120 mm

Accessories:

Laminated copper bars,
see page 361.



Connection plates

for SV 3057.000
Tightening torque: 10 – 15 Nm.

Note:
One connection plate per terminal connection is omitted.

Connection	Packs of	Model No. SV
3 2 x ring terminals M10 up to 240 mm²	3 sets	**3061.000[1)]**

T-head screws:
[1)] M10 x 120 mm

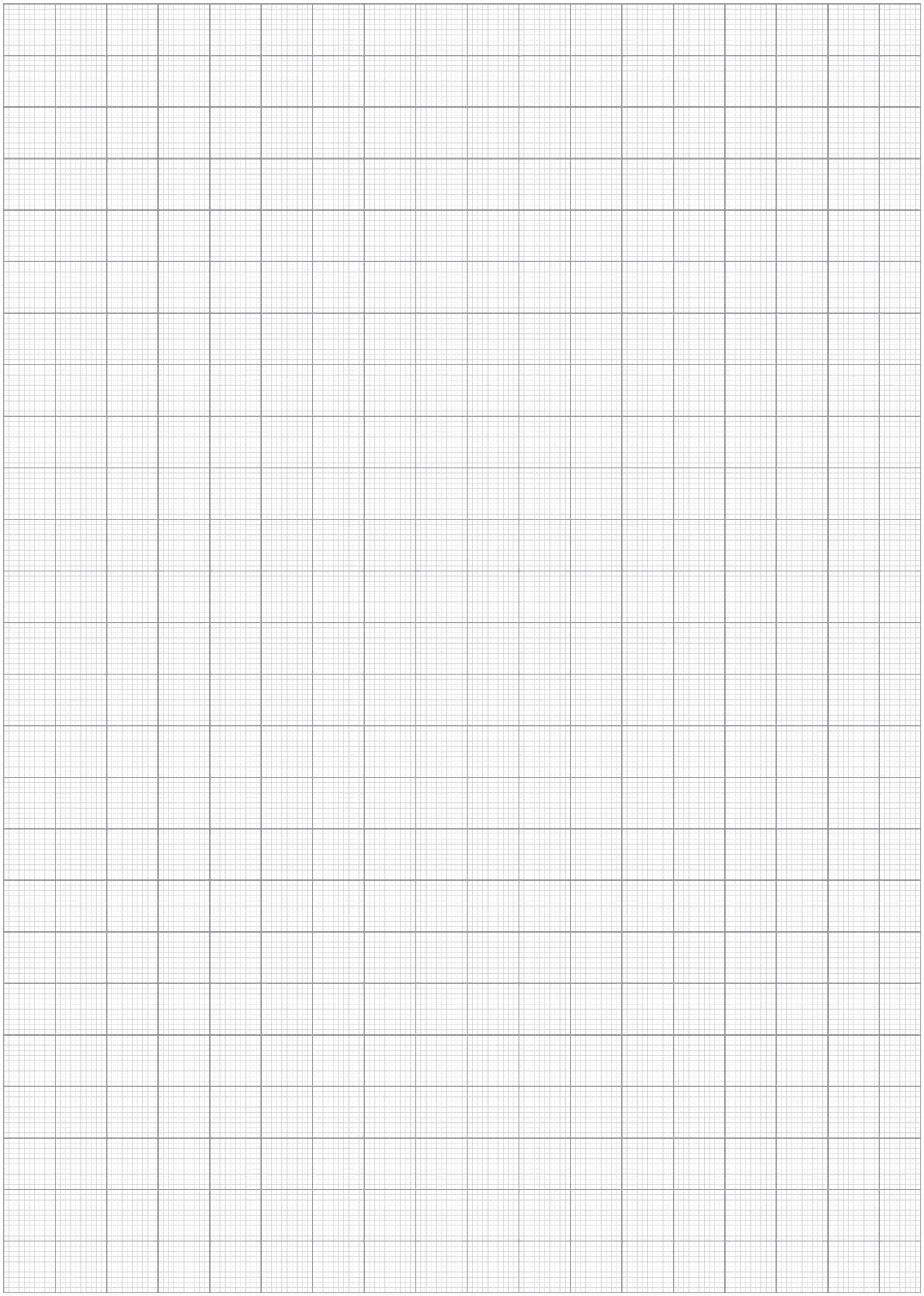


4 Bar insulation

for SV 3055.000 and SV 3057.000
For supply lead routing, plug-type.

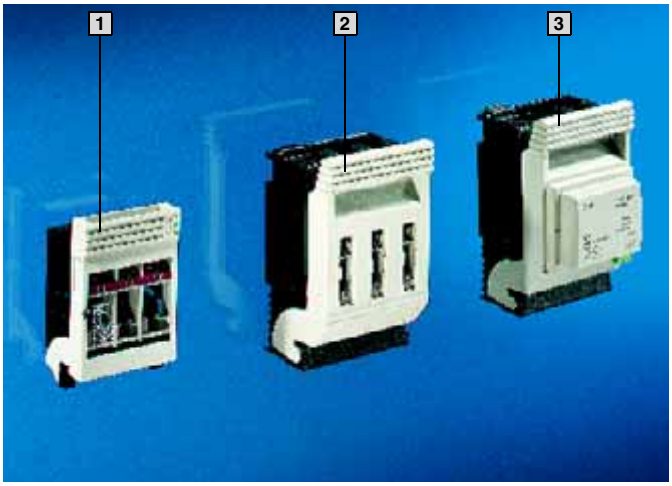
Packs of	Model No. SV
9	**3060.000**

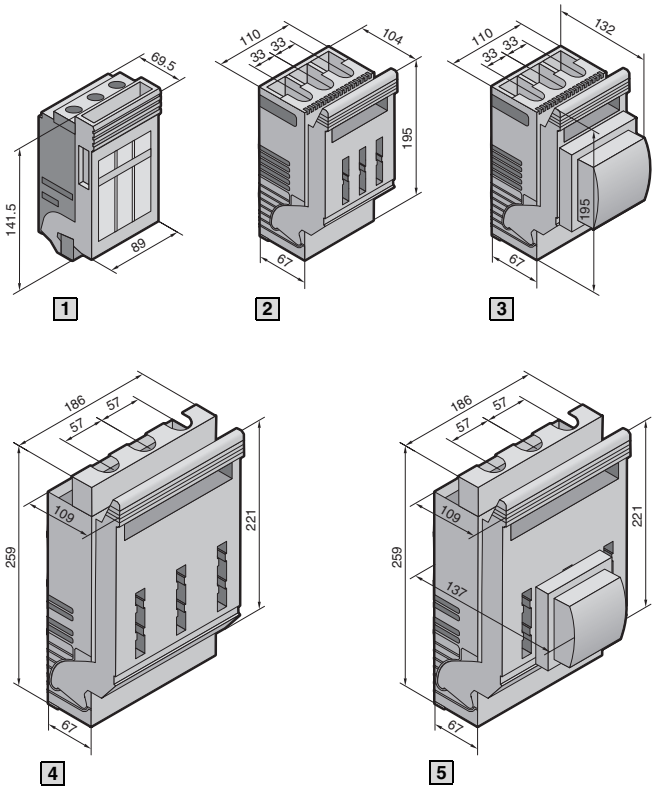
System overview Page 354 **Busbar system** Page 355



Mounting plate assembly

NH on-load isolator, size 000/00/1





Material:
Isolator lid, contact hazard protection, isolator chassis: Fibreglass-reinforced polyamide
Contact tracks:
Silver-plated hard copper

Note:
When using gR fuse inserts (VDE 0636/23) in NH equipment, please observe the information on page 1134.

Drilling dimensions,
see page 1136.

Technical information,
see page 1132.

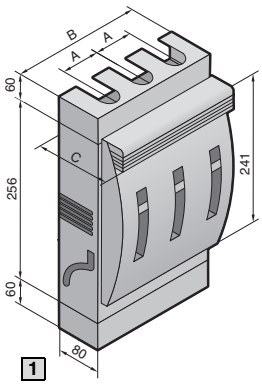
Version		1	2	3	2	3	4	5	Page
Size		000	00		00		1		
Rated current		100 A (160 A)[1]	160 A		160 A		250 A		
Rated operating voltage		690 V~	690 V~		690 V~		690 V~		
Cable outlet		top/ bottom	top/ bottom	bottom	top/ bottom	bottom	top/ bottom	bottom	
Type of connection	Terminal up to	50 mm²	–	–	–	–	–	–	
	Screw terminal	–	M8 up to 95 mm²		–	–	M10 up to 150 mm²		
	Clamp-type terminal connection up to	–	–	–	70 mm²	70 mm²	–	–	
Tightening torque ● Assembly screw ● Terminal screw		– 3 Nm	3 – 5 Nm 10 – 15 Nm	3 – 5 Nm 10 – 15 Nm	3 – 5 Nm 2 – 3 Nm	3 – 5 Nm 2 – 3 Nm	3 – 5 Nm 15 – 20 Nm	3 – 5 Nm 15 – 20 Nm	
Packs of		1	1	1	1	1	1	1	
Model No. SV		**3431.000**	**3488.000**	**–**	**3489.000**	**–**	**3409.000**	**–**	
with electronic fuse monitoring and LED display Model No. SV		**–**	**–**	**3488.310**	**–**	**3489.310**	**–**	**3409.310**	
Accessories	Packs of								
Micro-switch	5	3071.000	3071.000	3071.000	3071.000	3071.000	3071.000	3071.000	363
Mounting set	1	3432.000	–	–	–	–	–	–	364
Lug terminal connection parts	1 set	–	–	–	–	–	3414.000	3414.000	365

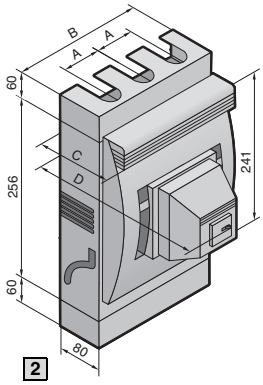
[1] 160 A with 95 mm² connection cross-section (95 mm² connector pieces available on request).

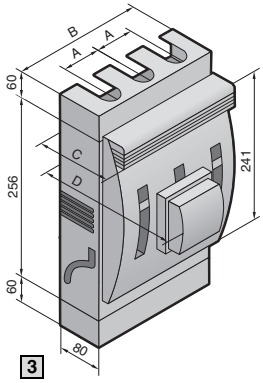
Accessories Page 360

NH on-load isolator, size 2/3









Material:
Isolator lid, contact hazard protection, isolator chassis: Fibreglass-reinforced polyamide
Contact tracks:
Silver-plated hard copper

Note:
When using gR fuse inserts (VDE 0636/23) in NH equipment, please observe the information on page 1134.

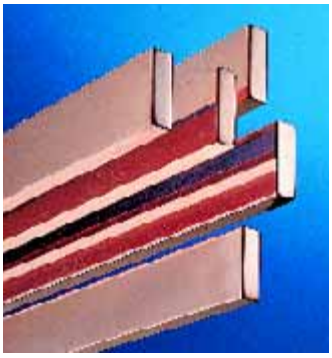
Drilling dimensions,
see page 1136.

Detailed drawing,
see page 1136.

Technical information,
see page 1132.

Size		2		3		Page
Rated current		400 A		630 A		
Rated operating voltage		690 V~		690 V~		
Cable outlet		top/bottom	bottom	top/bottom	bottom	
Type of connection		Screw terminal M10 up to 240 mm²		Screw terminal M10 up to 240 mm²		
Tightening torque ● Assembly screw ● Terminal screw		14 Nm 32 Nm		14 Nm 32 Nm		
A mm		65	65	80	80	
B mm		210	210	250	250	
C mm		128.5	128.5	133.5	133.5	
D mm		207	160	211	165	
Packs of		1		1		
1 **Model No. SV**		**3415.010**	**–**	**3095.010**	**–**	
2 **with electromechanical fuse monitoring Model No. SV**		**3415.110**	**–**	**3095.110**	**–**	
3 **with electronic fuse monitoring and LED display Model No. SV**		**–**	**3415.310**	**–**	**3095.310**	
Accessories	Packs of					
Micro-switch	5	3071.000	3071.000	3071.000	3071.000	363
Lug terminal connection parts	1 set	3499.000	3499.000	3499.000	3499.000	365
Clamp-type terminal connection	1 set	3499.010	3499.010	3499.010	3499.010	365

Accessories Page 360

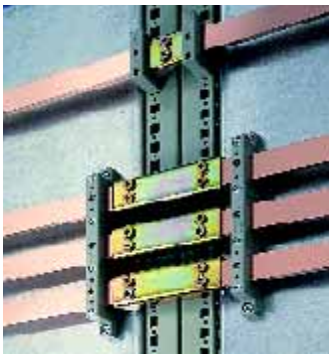


Busbars

made from E-Cu
To DIN EN 13 601.
Length: 2400 mm/bar.

Dimensions mm	Weight per bar kg	Packs of	Model No. SV
12 x 5	1.28	6	**3580.000**
15 x 5	1.60	6	**3581.000**
20 x 5	2.14	6	**3582.000**
25 x 5	2.67	6	**3583.000**
30 x 5	3.20	6	**3584.000**
12 x 10	2.56	6	**3580.100**
15 x 10	3.20	6	**3581.100**
20 x 10	4.27	6	**3585.000**
30 x 10	6.41	6	**3586.000**
40 x 10	8.55	3	**3587.000**
50 x 10	10.68	3	**3588.000**
60 x 10	12.82	3	**3589.000**
80 x 10	17.09	3	**3590.000**





Busbar connectors

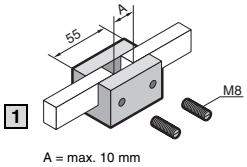
For connecting busbars, no drilling required.

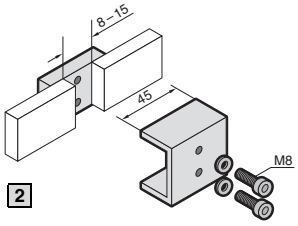
Material:
SV 9350.070
Brass, nickel-plated surface finish

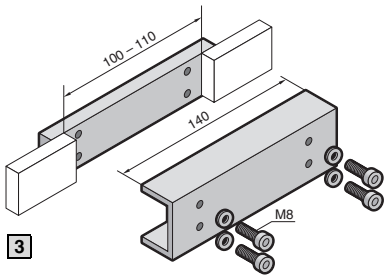
SV 9320.020/SV 9320.030
Top piece: Sheet steel, yellow passivated
Contact plate: E-Cu, silver-plated

For busbars mm	Application		Tightening torque	Packs of	Model No. SV
	Single connection	Baying connection[1)]			
12 x 5 – 15 x 10	1	–	10 Nm	3	**9350.070**
20 x 5 – 30 x 10	2	–	20 Nm	3	**9320.020**
	–	3	20 Nm	3	**9320.030**

[1)] From enclosure to enclosure





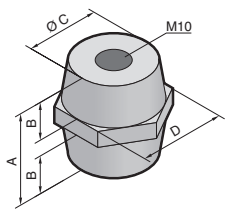




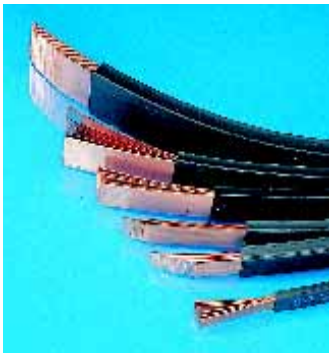
Base isolators

For configuring busbar systems with any given bar centre distances and for assembling PE or PEN bars.

Material:
Duroplastic polyester (UP resin).
Continuous operating temperature: max. 135°C.



Rated operating voltage	1 kV	1 kV
Tensile strength	12 kN	13 kN
Torsional strength	75 Nm	90 Nm
Bending strength	6 kN	6 kN
Tightening torque	40 Nm	40 Nm
A mm	40	50
B mm	15	19
Ø C mm	32	42
D mm	SW 36	SW 50
Packs of	6	6
Model No. SV	**3031.000**	**3032.000**



Laminated copper bars Rittal Flexibar “S”

Length: 2000 mm/bar.

Material:
Cu lamina
- High-purity electrolyte copper F20

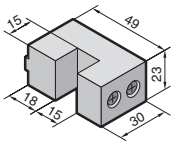
Insulation
- High-strength vinyl compound
- Expansion 370 %
- Temperature range: –30°C to +105°C
- Flame retardant version to UL 94-V0
- Dielectric strength: 20 kV/mm

Short-circuit protection diagram,
see page 1127.

Construction[1] mm	I_n at 50 K[2]	I_n at 30 K[2]	I_n at 10 K[2]	Packs of	Model No. SV
6 x 9.0 x 0.8	250 A	220 A	120 A	1	**3565.000**
6 x 13.0 x 0.5	200 A	150 A	110 A	1	**3566.000**
4 x 15.5 x 0.8	300 A	210 A	140 A	1	**3567.000**
6 x 15.5 x 0.8	350 A	290 A	170 A	1	**3568.000**
10 x 15.5 x 0.8	450 A	350 A	190 A	1	**3569.000**
5 x 20.0 x 1.0	400 A	300 A	180 A	1	**3570.000**
5 x 24.0 x 1.0	450 A	370 A	230 A	1	**3571.000**
10 x 24.0 x 1.0	800 A	600 A	340 A	1	**3572.000**
5 x 32.0 x 1.0	550 A	470 A	280 A	1	**3573.000**
10 x 32.0 x 1.0	1000 A	800 A	460 A	1	**3574.000**
5 x 40.0 x 1.0	800 A	600 A	340 A	1	**3575.000**
10 x 40.0 x 1.0	1200 A	950 A	500 A	1	**3576.000**
5 x 50.0 x 1.0	900 A	700 A	400 A	1	**3577.000**
10 x 50.0 x 1.0	1400 A	1000 A	600 A	1	**3578.000**
10 x 63.0 x 1.0	1600 A	1240 A	715 A	1	**3579.000**

[1] Number of lamina x lamina width x lamina thickness
[2] The sum total of the ambient temperature and the temperature increase produces the resultant conductor temperature of the laminated flat copper bar.
Example:
SV 3565.000 loaded with 220 A, i.e. the temperature increases by 30 K. At an ambient temperature of 35°C, this produces a resultant conductor temperature of 35°C + 30 K = 65°C.





Universal support

For the attachment of laminated copper bars from 20 x 5 to 63 x 10 mm.

Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Fire protection corresponding to UL 94-V0.

Supply includes:
Screws and “U” nuts for mounting on PS/TS mounting rails.

Packs of	Model No. SV
3	**3079.000**

Short-circuit protection diagram,
see page 1127.



Universal support

For the attachment of laminated copper bars from 40 x 5 to 100 x 10 mm.

Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Fire protection corresponding to UL 94-V0.

Supply includes:
Screws and sliding nuts for attachment on C rails.

Packs of	Model No. SV
3 sets	**3079.010**

Accessories:

C rails 30/15,
see page 928.

Accessories



1



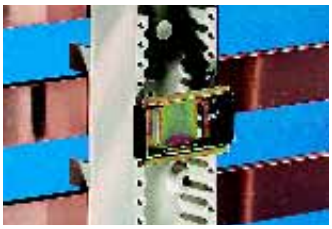
2

Insert strip

To extend the build width of the component adaptors and component supports.

For	see page	Width mm	Packs of	Model No. SV
1 Mini-PLS component adaptors and quick-fit component adaptors	304 – 306	9	2	**9623.000**
2 Component adaptors and component supports	328 – 330 + 333	9	1	**3538.000**
2 Component adaptor (SV 3445.000/SV 3446.000)	331	17.5	1	**3448.000**[1)]

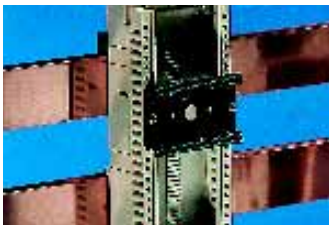
[1)] Including extended support rail and cover strips.



1



2



3

Support rails

Supply includes:
Assembly parts.

For	see page	Support rails				
		Fig.	Width mm	Height mm	Packs of	Model No. SV
Mini-PLS component adaptor	304	1	45	7.5	10	**9320.150**
	304 + 306		54	7.5	10	**3548.000**
			72	7.5	10	**3549.000**
	306	2	72	15	5	**9320.120**
Multi-functional component adaptor	312 – 314 325 + 326	3	45	10	5	**9320.090**
	313 + 314 326 + 327		54	10	5	**9320.100**
Component adaptor	304 + 306	1	54	7.5	10	**3548.000**
	328 – 330		72	7.5	10	**3549.000**
Component adaptor (SV 3445.000/SV 3446.000)	331	1	54	7.5	10	**3447.000**
Component adaptor (SV 3445.000/SV 3446.000 with SV 3448.000)	331	1	70	7.5	10	**3496.000**
Component adaptor (SV 9320.000/SV 9320.010)	332	2	72	15	5	**9320.120**
Component support	333	1	54	7.5	10	**3548.000**
			72	7.5	10	**3549.000**



Plug-in connector

For mounting the AS-interface load feeder module with matching support type 3RK1 901-3CA00, Siemens brand, on the Mini-PLS component adaptor and multi-functional component adaptor.

For	see page	Packs of	Model No. SV
Mini-PLS component adaptor (width 45/54 mm)	304 + 306	1	**9623.100**
Multi-functional component adaptor (width 45 mm)	312 + 314 325 + 326	1	**9320.110**



Mounting clip

for multi-functional component adaptor (width 45 mm)
For additional locking of motor starter combinations.

Supply includes:
Support rails, 45 mm wide.

Packs of	Model No. SV
5	**9320.140**



Cover strips

for component adaptors and component supports

For width mm	Packs of	Model No. SV
54	20	**3536.000**
72	20	**3537.000**



Identification labels

for bus-mounting fuse bases

Packs of	Model No. SV
100	**9320.080**



Identification label support

for NH fused isolators, size 00
For clip-on mounting on the isolator housing.

Packs of	Model No. SV
6	**3595.010**



Micro-switches

for NH isolators/NH fused isolators
To indicate the switching position of the NH device (lid unit).

Packs of	Model No. SV
5	**3071.000**



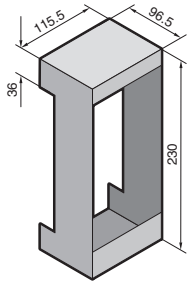
Accessories



Contact hazard protection frame

Material:
ABS,
fire protection corresponding to UL 94-V0.

For	see page	Packs of	Model No. SV
NH bus-mounting on-load isolators, size 00	338	1	**3408.000**





PLS cover

The PLS cover guarantees additional contact hazard protection for special busbars when using NH equipment on Rittal PLS 800 A/1600 A. Attached by simply clipping onto the PLS base tray section.

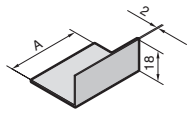
Material:
SV 3099.000/SV 3499.070
ABS.

SV 3499.040/SV 3499.050
Thermally modified hard PVC.

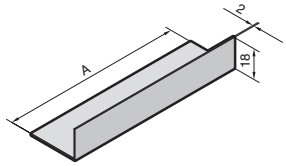
Fire protection corresponding to UL 94-V0.

For		see page	A mm	Packs of	Model No. SV
1 NH fused isolator	Size 00	336	50	2	**3499.070**
2 NH bus-mounting on-load isolators	Size 1	339	186	2	**3099.000**
3 NH bus-mounting on-load isolators	Size 2	340	210	1	**3499.040**
	Size 3	341	250	1	**3499.050**

1



2



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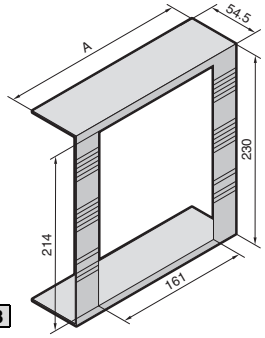
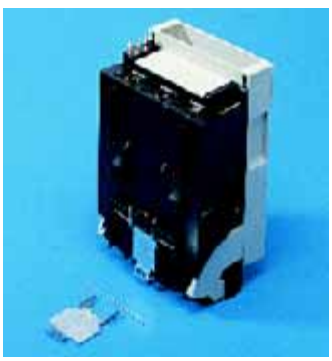




Mounting set

For mounting the NH on-load isolator on 35 mm support rails to DIN EN 715 (7.5 mm/15 mm high).

For	see page	Packs of	Model No. SV
NH on-load isolators, size 000	358	1	**3432.000**



Lug terminal connection parts

for NH isolators, sizes 1 to 3

For connecting laminated copper bars and round conductors up to 70 mm².
Tightening torque:
Terminal screw
[1] 8 Nm
[2] 15 Nm

For NH isolators	Clamping area	Packs of	Model No. SV
Size 1	16 x 12 mm	1 set	**3414.000[1]**
Size 2, 3	21 x 11 mm	1 set	**3499.000[2]**



Clamp-type terminal connection

for NH isolators, sizes 2 and 3

For the connection of round conductors up to 240 mm².
Tightening torque:
Terminal screw 15 Nm.

Packs of	Model No. SV
1 set	**3499.010**



Lug terminal connection parts

for NH fused isolators size 00

For connecting laminated copper bars and round conductors 1.5 to 25 mm².
Clamping area: 16 x 10 mm.
Tightening torque:
Terminal screw 4 Nm.

Packs of	Model No. SV
1 set	**3592.020**



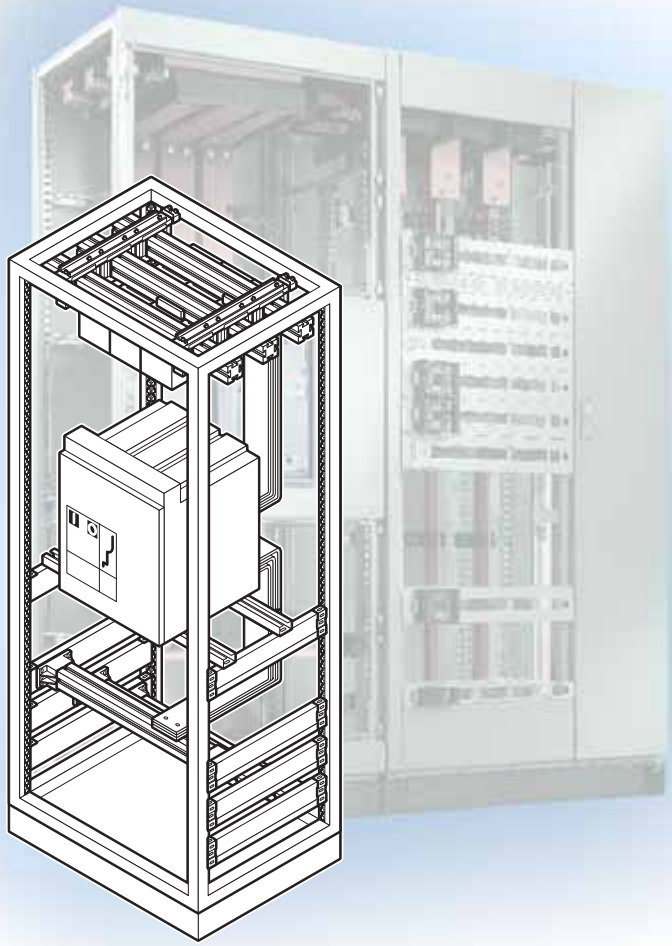
Clamp-type terminal connection

for NH fused isolators size 00

For the connection of round conductors 1.5 to 95 mm².
Tightening torque:
Terminal screw 4 Nm.

Packs of	Model No. SV
1 set	**3592.010**

Overview, Rittal SV-TS 8 and Maxi-PLS



SV-TS 8 and Maxi-PLS – the ideal combination for low-voltage distributors and switchgear in the heavy current range. The system is assembled without any form of machining (such as sawing, drilling, bending etc.). As a result, this future-oriented, fully modular system offers new dimensions in fast assembly and safety.

The futuristic modular system

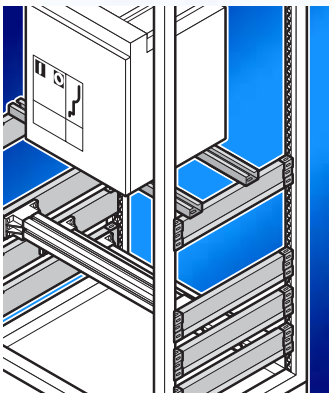
SV-TS 8 enclosures are fully prepared.
The enclosure frame is fully fitted with a three-piece gland plate, rear panel, roof and door or partial doors.
Punched sections without mounting flanges to accommodate the end supports and system support rails for the power circuit-breakers are fitted ready to install.

Standardised Maxi-PLS busbars with ingenious fastening technology
Thanks to the perfect system technology and customised pitch pattern, installation of Maxi-PLS supports and bars is precise-fit, simple and fast.
With the aid of sliding blocks or studs, the four attachment levels of the Maxi-PLS busbars permit infinitely variable attachment and contacting of round conductors, laminated flat copper and Maxi-PLS connection brackets and connection kits.

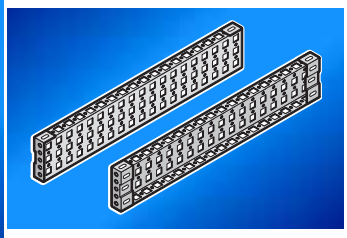
System packages for all commercially available power circuit-breakers.
Maxi-PLS busbars, in conjunction with the isolator chassis, U contact maker and connection brackets, form the heart of the modular system for connecting air circuit-breakers up to 3200 A with standard components.

The connection kits are precisely tailored to the respective power circuit-breakers.

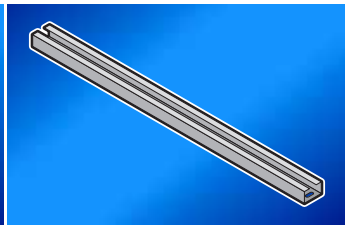
Type testing to
EN 60 439-1/IEC 60 439-1
Special testing under accidental arcing conditions to EN 60 439-1, supplement 2/IEC 1641



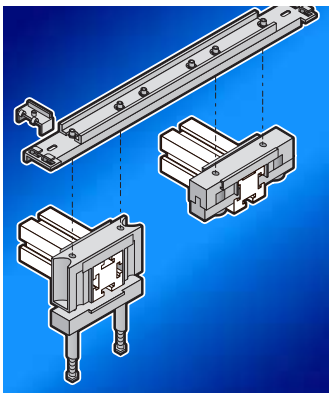
SV-TS 8 system components



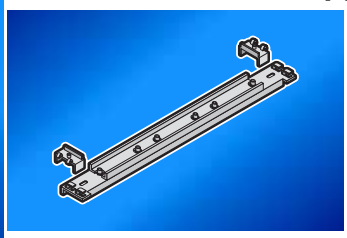
TS punched section with mounting flange, 23 x 73 mm



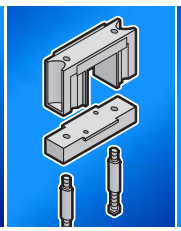
System support rails



Maxi-PLS busbar support



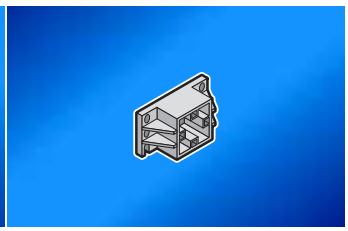
System attachment



Busbar support

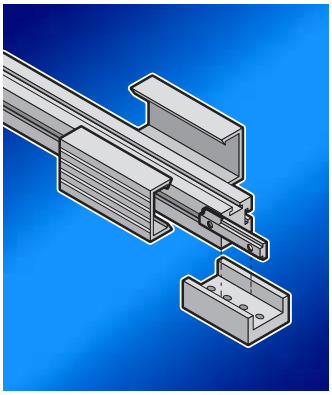
Busbar support, suitable for top mounting



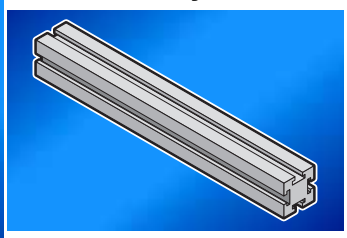


End supports

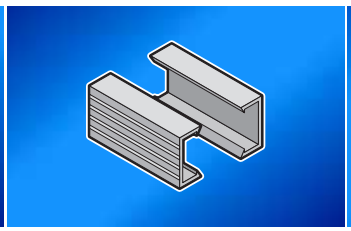
Overview, Rittal SV-TS 8 and Maxi-PLS



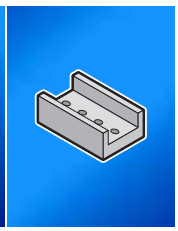
Maxi-PLS system components



Busbars E-Cu

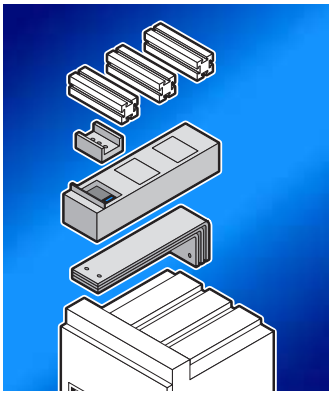


Cover section

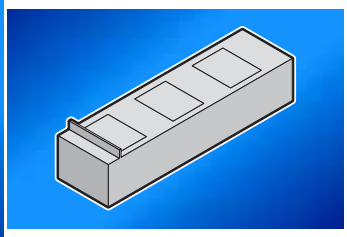




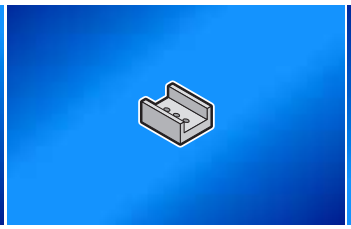
Longitudinal connector E-Cu
Sliding blocks



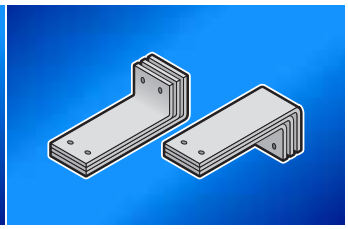
Maxi-PLS connection components



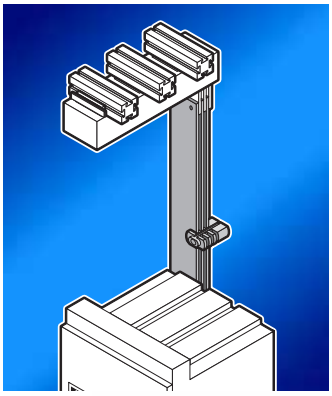
Isolator chassis



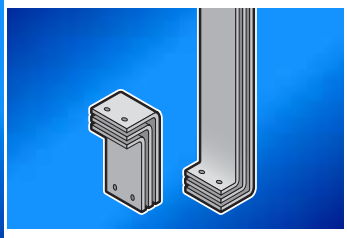
U contact makers E-Cu



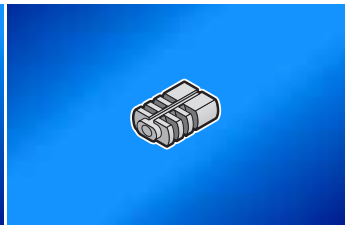
Connection bracket E-Cu



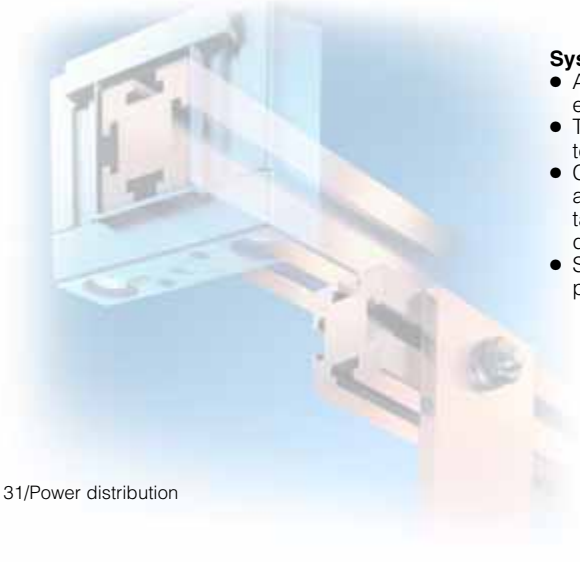
Maxi-PLS connector kits



Connector kits top/bottom



Stacking insulator

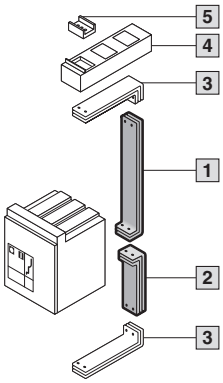


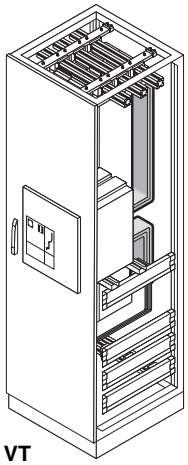
System concept
- All manual machining is eliminated
- Type testing of the system technology
- Compact busbar with four attachment levels; bar length tailored to the enclosure dimensions
- Standardised contact hazard protection

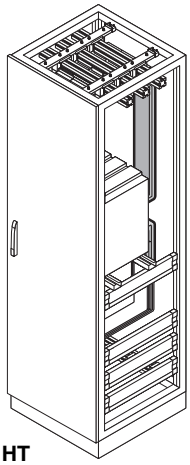
System benefits
- Increased productivity (easier project planning, no manual production of busbar connections and connection points, faster assembly)
- Compact configuration, easy access to all connection points

Connection kits (3-pole)









For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 600 mm.

Correct selection should be made according to the following criteria:

- Make, size
- Rated current I_e
- Switch version either “static installation” or “rack-mounted”
- Position of the power circuit-breaker:
  VT = in door cutout
  HT = behind the door

1 Connection kit, top
2 Connection kit, bottom
3 Connection bracket
4 Isolator chassis
5 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Extended
Extended delivery times.

Siemens 3WN6			**Model No. SV**						Page
Rated operating current I_e			630 A	800 A	1000 A	1250 A	1600 A	2000 A	
Size (BG)			I	I	I	I	I	–	
Static	VT	1 top	**9641.030**	**9641.070**	**9641.110**	**9641.150**	**9641.190**	**–**	
		2 bottom	**9641.040**	**9641.080**	**9641.120**	**9641.160**	**9641.200**	**–**	
	HT	1 top	**9641.010**	**9641.050**	**9641.090**	**9641.130**	**9641.170**	**–**	
		2 bottom	**9641.020**	**9641.060**	**9641.100**	**9641.140**	**9641.180**	**–**	
Rack-mounted	VT	1 top	**9641.350**	**9641.390**	**9641.430**	**9641.470**	**9641.510**	**–**	
		2 bottom	**9641.360**	**9641.400**	**9641.440**	**9641.480**	**9641.520**	**–**	
	HT	1 top	**9641.330**	**9641.370**	**9641.410**	**9641.450**	**9641.490**	**–**	
		2 bottom	**9641.340**	**9641.380**	**9641.420**	**9641.460**	**9641.500**	**–**	
Approximate weight (kg) top/bottom			16/10	16/10	31/19.5	31/19.5	31/19.5	–	
Accessories	Packs of								
3 Connection bracket	1 set		9640.430	9640.430	9640.440	9640.440	9640.440	–	377
4 Isolator chassis	1 set		9640.020	9640.020	9640.020	9640.020	9640.020	–	377
5 U contact maker	3		9640.170	9640.170	9640.170	9640.170	9640.170	–	377
Stacking insulator	6		9660.200	9660.200	9660.200	9660.200	9660.200	–	405

Siemens 3WL, Moeller IZM			**Model No. SV**						Page
Rated operating current I_e			630 A	800 A	1000 A	1250 A	1600 A	2000 A	
Size (BG)			I	I	I	I	I	II	
Static	VT	1 top	**9644.030**	**9644.070**	**9644.110**	**9644.150**	**9644.190**	**9644.510**	
		2 bottom	**9644.040**	**9644.080**	**9644.120**	**9644.160**	**9644.200**	**9644.520**	
	HT	1 top	**9644.010**	**9644.050**	**9644.090**	**9644.130**	**9644.170**	**9644.490**	
		2 bottom	**9644.020**	**9644.060**	**9644.100**	**9644.140**	**9644.180**	**9644.500**	
Rack-mounted	VT	1 top	**9644.310**	**9644.350**	**9644.390**	**9644.430**	**9644.470**	**9644.530**	
		2 bottom	**9644.320**	**9644.360**	**9644.400**	**9644.440**	**9644.480**	**9644.540**	
	HT	1 top	**9644.290**	**9644.330**	**9644.370**	**9644.410**	**9644.450**	**9644.550**[1)]	
		2 bottom	**9644.300**	**9644.340**	**9644.380**	**9644.420**	**9644.460**	**9644.560**[1)]	
Approximate weight (kg) top/bottom			16/10	16/10	16/10	31/19.5	31/19.5	41/29	
Accessories	Packs of								
3 Connection bracket	1 set		9640.430	9640.430	9640.430	9640.440	9640.440	9640.450	377
4 Isolator chassis	1 set		9640.020	9640.020	9640.020	9640.020	9640.020	9640.020	377
5 U contact maker	3		9640.170	9640.170	9640.170	9640.170	9640.170	9640.170	377
Stacking insulator	6		9660.200	9660.200	9660.200	9660.200	9660.200	9660.200	405

[1)] For installation in 800 mm deep enclosures.

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Connection kits (3-pole)

Mitsubishi AE-SS			Model No. SV					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Static	VT	1 top	–	**9645.030**	**9645.070**	**9645.110**	**9645.150**	
		2 bottom	–	**9645.040**	**9645.080**	**9645.120**	**9645.160**	
	HT	1 top	–	**9645.010**	**9645.050**	**9645.090**	**9645.130**	
		2 bottom	–	**9645.020**	**9645.060**	**9645.100**	**9645.140**	
Rack-mounted	VT	1 top	–	**9645.350**	**9645.390**	**9645.430**	**9645.470**	
		2 bottom	–	**9645.360**	**9645.400**	**9645.440**	**9645.480**	
	HT	1 top	–	**9645.330**	**9645.370**	**9645.410**	**9645.450**	
		2 bottom	–	**9645.340**	**9645.380**	**9645.420**	**9645.460**	
Approximate weight (kg) top/bottom			–	16/10	31/19.5	31/19.5	47/29	
Accessories	Packs of							
3 Connection bracket	1 set		–	9640.430	9640.440	9640.440	9640.450	377
4 Isolator chassis	1 set		–	9640.020	9640.020	9640.020	9640.020	377
5 U contact maker	3		–	9640.170	9640.170	9640.170	9640.170	377
Stacking insulator	6		–	9660.200	9660.200	9660.200	9660.200	405

Merlin Gerin Masterpact NW			Model No. SV					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Static	VT	1 top	**9642.030**	**9642.070**	**9642.110**	**9642.150**	**9642.190**	
		2 bottom	**9642.040**	**9642.080**	**9642.120**	**9642.160**	**9642.200**	
	HT	1 top	**9642.010**	**9642.050**	**9642.090**	**9642.130**	**9642.170**	
		2 bottom	**9642.020**	**9642.060**	**9642.100**	**9642.140**	**9642.180**	
Rack-mounted	VT	1 top	**9642.310**	**9642.350**	**9642.390**	**9642.430**	**9642.470**	
		2 bottom	**9642.320**	**9642.360**	**9642.400**	**9642.440**	**9642.480**	
	HT	1 top	**9642.290**	**9642.330**	**9642.370**	**9642.410**	**9642.450**	
		2 bottom	**9642.300**	**9642.340**	**9642.380**	**9642.420**	**9642.460**	
Approximate weight (kg) top/bottom			16/10	31/19.5	31/19.5	31/19.5	41/29	
Accessories	Packs of							
3 Connection bracket	1 set		9640.430	9640.440	9640.440	9640.440	9640.450	377
4 Isolator chassis	1 set		9640.020	9640.020	9640.020	9640.020	9640.020	377
5 U contact maker	3		9640.170	9640.170	9640.170	9640.170	9640.170	377
Stacking insulator	6		9660.200	9660.200	9660.200	9660.200	9660.200	405

ABB Sace Emax			Model No. SV					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Size (BG)			E1	–	E1	E2	E2	
Static	VT	1 top	**9643.030**	**–**	**9643.070**	**9643.110**	**9643.150**	
		2 bottom	**9643.040**	**–**	**9643.080**	**9643.120**	**9643.160**	
	HT	1 top	**9643.010**	**–**	**9643.050**	**9643.090**	**9643.130**	
		2 bottom	**9643.020**	**–**	**9643.060**	**9643.100**	**9643.140**	
Rack-mounted	VT	1 top	**9643.310**	**–**	**9643.350**	**9643.390**	**9643.430**	
		2 bottom	**9643.320**	**–**	**9643.360**	**9643.400**	**9643.440**	
	HT	1 top	**9643.290**	**–**	**9643.330**	**9643.370**	**9643.410**	
		2 bottom	**9643.300**	**–**	**9643.340**	**9643.380**	**9643.420**	
Approximate weight (kg) top/bottom			16/10	–	31/19.5	31/19.5	47/29	
Accessories	Packs of							
3 Connection bracket	1 set		9640.430	–	9640.440	9640.440	9640.450	377
4 Isolator chassis	1 set		9640.020	–	9640.020	9640.020	9640.020	377
5 U contact maker	3		9640.170	–	9640.170	9640.170	9640.170	377
Stacking insulator	6		9660.200	–	9660.200	9660.200	9660.200	405

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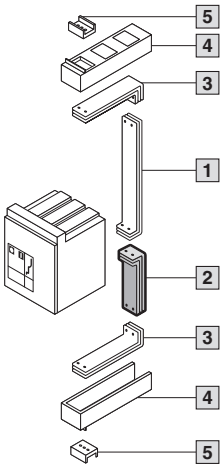
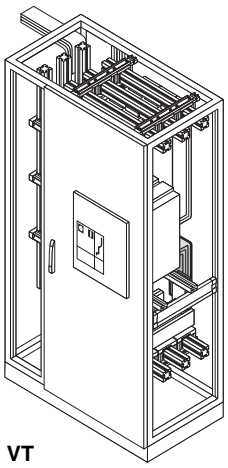
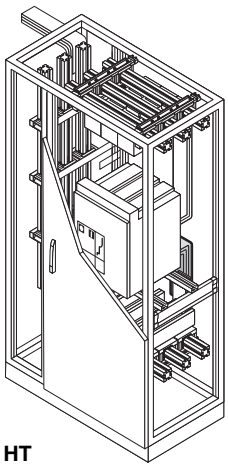
Connection kits for coupling sets (3-pole)









For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 800 mm.

Correct selection should be made according to the following criteria:

- Make, size
- Rated current I_e
- Switch version either “static installation” or “rack-mounted”
- Position of the power circuit-breaker:
  VT = in door cutout
  HT = behind the door

1 Connection kit, top see page 368 and 369.

2 Connection kit, bottom for coupling set

3 Connection bracket

4 Isolator chassis

5 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WN6		**Model No. SV**		Page
Rated operating current I_e		1600 A	2000 A	
Size (BG)		I	–	
Static	VT 2 bottom	**9641.205**	**–**	
	HT 2 bottom	**9641.185**	**–**	
Rack-mounted	VT 2 bottom	**9641.525**	**–**	
	HT 2 bottom	**9641.505**	**–**	
Approximate weight (kg)		19.5	–	
Accessories	Packs of			
3 Connection bracket	1 set	9640.440	–	377
4 Isolator chassis	1 set	9640.020	–	377
5 U contact maker	3	9640.170	–	377
Stacking insulator	6	9660.200	–	405

Siemens 3WL, Moeller IZM		**Model No. SV**		Page
Rated operating current I_e		1600 A	2000 A	
Size (BG)		I	II	
Static	VT 2 bottom	**9644.205**	**9644.525**	
	HT 2 bottom	**9644.185**	**9644.505**	
Rack-mounted	VT 2 bottom	**9644.485**	**9644.545**	
	HT 2 bottom	**9644.465**	**9644.565**[1)]	
Approximate weight (kg)		19.5	29	
Accessories	Packs of			
3 Connection bracket	1 set	9640.440	9640.450	377
4 Isolator chassis	1 set	9640.020	9640.020	377
5 U contact maker	3	9640.170	9640.170	377
Stacking insulator	6	9660.200	9660.200	405

[1)] For installation in 800 mm deep enclosures.

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Connection kits for coupling sets (3-pole)

Mitsubishi AE-SS		**Model No. SV**		Page
Rated operating current I_e		1600 A	2000 A	
Static	VT 2 bottom	**9645.125**	**9645.165**	
	HT 2 bottom	**9645.105**	**9645.145**	
Rack-mounted	VT 2 bottom	**9645.445**	**9645.485**	
	HT 2 bottom	**9645.425**	**9645.465**	
Approximate weight (kg)		19.5	29	
Accessories	Packs of			
3 Connection bracket	1 set	9640.440	9640.450	377
4 Isolator chassis	1 set	9640.020	9640.020	377
5 U contact maker	3	9640.170	9640.170	377
Stacking insulator	6	9660.200	9660.200	405

Merlin Gerin Masterpact NW		**Model No. SV**		Page
Rated operating current I_e		1600 A	2000 A	
Static	VT 2 bottom	**9642.165**	**9642.205**	
	HT 2 bottom	**9642.145**	**9642.185**	
Rack-mounted	VT 2 bottom	**9642.445**	**9642.485**	
	HT 2 bottom	**9642.425**	**9642.465**	
Approximate weight (kg)		19.5	29	
Accessories	Packs of			
3 Connection bracket	1 set	9640.440	9640.450	377
4 Isolator chassis	1 set	9640.020	9640.020	377
5 U contact maker	3	9640.170	9640.170	377
Stacking insulator	6	9660.200	9660.200	405

ABB Sace Emax		**Model No. SV**		Page
Rated operating current I_e		1600 A	2000 A	
Size (BG)		E2	E2	
Static	VT 2 bottom	**9643.125**	**9643.165**	
	HT 2 bottom	**9643.105**	**9643.145**	
Rack-mounted	VT 2 bottom	**9643.405**	**9643.445**	
	HT 2 bottom	**9643.385**	**9643.425**	
Approximate weight (kg)		19.5	29	
Accessories	Packs of			
3 Connection bracket	1 set	9640.440	9640.450	377
4 Isolator chassis	1 set	9640.020	9640.020	377
5 U contact maker	3	9640.170	9640.170	377
Stacking insulator	6	9660.200	9660.200	405

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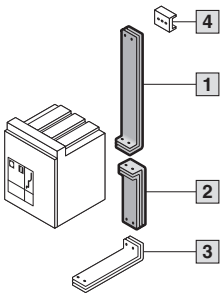
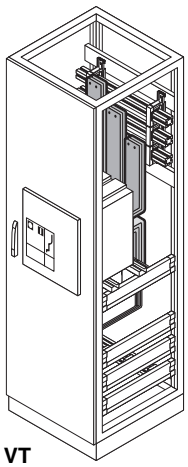
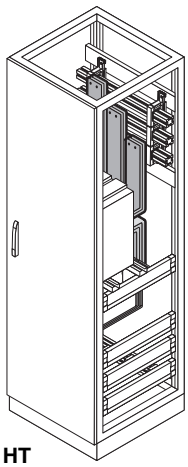
Connection kits for rear section (3-pole)









For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 600 mm.

Correct selection should be made according to the following criteria:

- Make, size
- Rated current I_e
- Switch version either “static installation” or “rack-mounted”
- Position of the power circuit-breaker:
  VT = in door cutout
  HT = behind the door

1 Connection kit, top
2 Connection kit, bottom
3 Connection bracket
4 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WN6			**Model No. SV**						Page
Rated operating current I_e			630 A	800 A	1000 A	1250 A	1600 A	2000 A	
Size (BG)			I	I	I	I	I	–	
Static	VT	1 top	**9641.033**	**9641.073**	**9641.113**	**9641.153**	**9641.193**	**–**	
		2 bottom	**9641.043**	**9641.083**	**9641.123**	**9641.163**	**9641.203**	**–**	
	HT	1 top	**9641.013**	**9641.053**	**9641.093**	**9641.133**	**9641.173**	**–**	
		2 bottom	**9641.023**	**9641.063**	**9641.103**	**9641.143**	**9641.183**	**–**	
Rack-mounted	VT	1 top	**9641.353**	**9641.393**	**9641.433**	**9641.473**	**9641.513**	**–**	
		2 bottom	**9641.363**	**9641.403**	**9641.443**	**9641.483**	**9641.523**	**–**	
	HT	1 top	**9641.333**[1)]	**9641.373**[1)]	**9641.413**[1)]	**9641.453**[1)]	**9641.493**[1)]	**–**	
		2 bottom	**9641.343**[1)]	**9641.383**[1)]	**9641.423**[1)]	**9641.463**[1)]	**9641.503**[1)]	**–**	
Approximate weight (kg) top/bottom			16/10	16/10	31/19.5	31/19.5	31/19.5	–	
Accessories	Packs of								
3 Connection bracket	1 set		9640.430	9640.430	9640.440	9640.440	9640.440	–	377
4 U contact maker	3		9640.170	9640.170	9640.170	9640.170	9640.170	–	377

Siemens 3WL, Moeller IZM			**Model No. SV**						Page
Rated operating current I_e			630 A	800 A	1000 A	1250 A	1600 A	2000 A	
Size (BG)			I	I	I	I	I	II	
Static	VT	1 top	**9644.033**	**9644.073**	**9644.113**	**9644.153**	**9644.193**	**9644.513**	
		2 bottom	**9644.043**	**9644.083**	**9644.123**	**9644.163**	**9644.203**	**9644.523**	
	HT	1 top	**9644.013**	**9644.053**	**9644.093**	**9644.133**	**9644.173**	**9644.493**	
		2 bottom	**9644.023**	**9644.063**	**9644.103**	**9644.143**	**9644.183**	**9644.503**	
Rack-mounted	VT	1 top	**9644.313**	**9644.353**	**9644.393**	**9644.433**	**9644.473**	**9644.533**[1)]	
		2 bottom	**9644.323**	**9644.363**	**9644.403**	**9644.443**	**9644.483**	**9644.543**[1)]	
	HT	1 top	**9644.293**[1)]	**9644.333**[1)]	**9644.373**[1)]	**9644.413**[1)]	**9644.453**[1)]	**9644.553**[1)]	
		2 bottom	**9644.303**[1)]	**9644.343**[1)]	**9644.383**[1)]	**9644.423**[1)]	**9644.463**[1)]	**9644.563**[1)]	
Approximate weight (kg) top/bottom			16/10	16/10	16/10	31/19.5	31/19.5	41/29	
Accessories	Packs of								
3 Connection bracket	1 set		9640.430	9640.430	9640.430	9640.440	9640.440	9640.450	377
4 U contact maker	3		9640.170	9640.170	9640.170	9640.170	9640.170	9640.170	377

[1)] For installation in 800 mm deep enclosures.

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Connection kits for rear section (3-pole)

Mitsubishi AE-SS			**Model No. SV**					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Static	VT	1 top	–	**9645.033**	**9645.073**	**9645.113**	**9645.153**	
		2 bottom	–	**9645.043**	**9645.083**	**9645.123**	**9645.163**	
	HT	1 top	–	**9645.013**	**9645.053**	**9645.093**	**9645.133**	
		2 bottom	–	**9645.023**	**9645.063**	**9645.103**	**9645.143**	
Rack-mounted	VT	1 top	–	**9645.353**	**9645.393**	**9645.433**	**9645.473**	
		2 bottom	–	**9645.363**	**9645.403**	**9645.443**	**9645.483**	
	HT	1 top	–	**9645.333**	**9645.373**	**9645.413**	**9645.453**[1)]	
		2 bottom	–	**9645.343**	**9645.383**	**9645.423**	**9645.463**[1)]	
Approximate weight (kg) top/bottom			–	16/10	31/19.5	31/19.5	47/29	
Accessories	Packs of							
3 Connection bracket	1 set		–	9640.430	9640.440	9640.440	9640.450	377
4 U contact maker	3		–	9640.170	9640.170	9640.170	9640.170	377

Merlin Gerin Masterpact NW			**Model No. SV**					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Static	VT	1 top	**9642.033**	**9642.073**	**9642.113**	**9642.153**	**9642.193**	
		2 bottom	**9642.043**	**9642.083**	**9642.123**	**9642.163**	**9642.203**	
	HT	1 top	**9642.013**	**9642.053**	**9642.093**	**9642.133**	**9642.173**	
		2 bottom	**9642.023**	**9642.063**	**9642.103**	**9642.143**	**9642.183**	
Rack-mounted	VT	1 top	**9642.313**	**9642.353**	**9642.393**	**9642.433**	**9642.473**	
		2 bottom	**9642.323**	**9642.363**	**9642.403**	**9642.443**	**9642.483**	
	HT	1 top	**9642.293**	**9642.333**	**9642.373**	**9642.413**	**9642.453**	
		2 bottom	**9642.303**	**9642.343**	**9642.383**	**9642.423**	**9642.463**	
Approximate weight (kg) top/bottom			16/10	31/19.5	31/19.5	31/19.5	41/29	
Accessories	Packs of							
3 Connection bracket	1 set		9640.430	9640.440	9640.440	9640.440	9640.450	377
4 U contact maker	3		9640.170	9640.170	9640.170	9640.170	9640.170	377

ABB Sace Emax			**Model No. SV**					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Size (BG)			E1	–	E1	E2	E2	
Static	VT	1 top	**9643.033**	**–**	**9643.073**	**9643.113**	**9643.153**	
		2 bottom	**9643.043**	**–**	**9643.083**	**9643.123**	**9643.163**	
	HT	1 top	**9643.013**	**–**	**9643.053**	**9643.093**	**9643.133**	
		2 bottom	**9643.023**	**–**	**9643.063**	**9643.103**	**9643.143**	
Rack-mounted	VT	1 top	**9643.313**	**–**	**9643.353**	**9643.393**	**9643.433**	
		2 bottom	**9643.323**	**–**	**9643.363**	**9643.403**	**9643.443**	
	HT	1 top	**9643.293**	**–**	**9643.333**	**9643.373**	**9643.413**[1)]	
		2 bottom	**9643.303**	**–**	**9643.343**	**9643.383**	**9643.423**[1)]	
Approximate weight (kg) top/bottom			16/10	–	31/19.5	31/19.5	47/29	
Accessories	Packs of							
3 Connection bracket	1 set		9640.430	–	9640.440	9640.440	9640.450	377
4 U contact maker	3		9640.170	–	9640.170	9640.170	9640.170	377

[1)] For installation in 800 mm deep enclosures.

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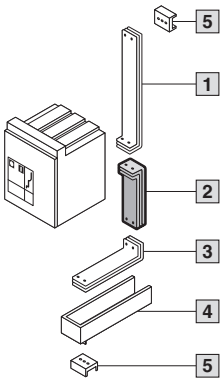
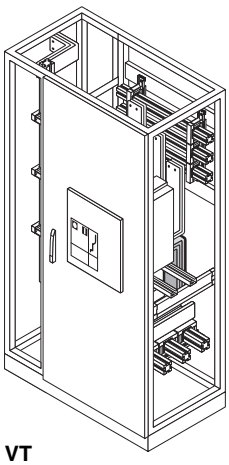
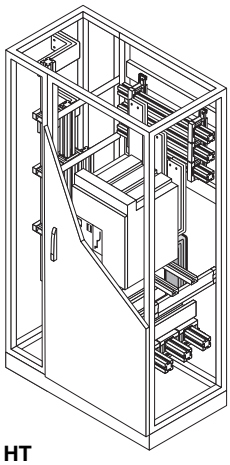
Connection kits for coupling sets – rear section (3-pole)







VT



HT

For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 800 mm.

Correct selection should be made according to the following criteria:

- Make, size
- Rated current I_e
- Switch version either “static installation” or “rack-mounted”
- Position of the power circuit-breaker:
  VT = in door cutout
  HT = behind the door

1 Connection kit, top see page 368 and 369.

2 Connection kit, bottom for coupling set

3 Connection bracket

4 Isolator chassis

5 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WN6		**Model No. SV**		Page
Rated operating current I_e		1600 A	2000 A	
Size (BG)		I	–	
Static	VT 2 bottom	**9641.204**	**–**	
	HT 2 bottom	**9641.184**	**–**	
Rack-mounted	VT 2 bottom	**9641.524**	**–**	
	HT 2 bottom	**9641.504**[1)]	**–**	
Approximate weight (kg)		19.5	–	
Accessories	Packs of			
3 Connection bracket	1 set	9640.440	–	377
4 Isolator chassis	1 set	9640.020	–	377
5 U contact maker	3	9640.170	–	377

Siemens 3WL, Moeller IZM		**Model No. SV**		Page
Rated operating current I_e		1600 A	2000 A	
Size (BG)		I	II	
Static	VT 2 bottom	**9644.204**	**9644.524**	
	HT 2 bottom	**9644.184**	**9644.504**	
Rack-mounted	VT 2 bottom	**9644.484**	**9644.544**[1)]	
	HT 2 bottom	**9644.464**[1)]	**9644.564**[1)]	
Approximate weight (kg)		19.5	29	
Accessories	Packs of			
3 Connection bracket	1 set	9640.440	9640.450	377
4 Isolator chassis	1 set	9640.020	9640.020	377
5 U contact maker	3	9640.170	9640.170	377

[1)] For installation in 800 mm deep enclosures.

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Connection kits for coupling sets – rear section (3-pole)

Mitsubishi AE-SS		**Model No. SV**		Page
Rated operating current I_e		1600 A	2000 A	
Static	VT 2 bottom	**9645.124**	**9645.164**	
	HT 2 bottom	**9645.104**	**9645.144**	
Rack-mounted	VT 2 bottom	**9645.444**	**9645.484**	
	HT 2 bottom	**9645.424**	**9645.464**[1)]	
Approximate weight (kg)		19.5	29	
Accessories	Packs of			
3 Connection bracket	1 set	9640.440	9640.450	377
4 Isolator chassis	1 set	9640.020	9640.020	377
5 U contact maker	3	9640.170	9640.170	377

Merlin Gerin Masterpact NW		**Model No. SV**		Page
Rated operating current I_e		1600 A	2000 A	
Static	VT 2 bottom	**9642.164**	**9642.204**	
	HT 2 bottom	**9642.144**	**9642.184**	
Rack-mounted	VT 2 bottom	**9642.444**	**9642.484**	
	HT 2 bottom	**9642.424**	**9642.464**	
Approximate weight (kg)		19.5	29	
Accessories	Packs of			
3 Connection bracket	1 set	9640.440	9640.450	377
4 Isolator chassis	1 set	9640.020	9640.020	377
5 U contact maker	3	9640.170	9640.170	377

ABB Sace Emax		**Model No. SV**		Page
Rated operating current I_e		1600 A	2000 A	
Size		E2	E2	
Static	VT 2 bottom	**9643.124**	**9643.164**	
	HT 2 bottom	**9643.104**	**9643.144**	
Rack-mounted	VT 2 bottom	**9643.404**	**9643.444**	
	HT 2 bottom	**9643.384**	**9643.424**[1)]	
Approximate weight (kg)		19.5	29	
Accessories	Packs of			
3 Connection bracket	1 set	9640.440	9640.450	377
4 Isolator chassis	1 set	9640.020	9640.020	377
5 U contact maker	3	9640.170	9640.170	377

[1)] For installation in 800 mm deep enclosures.

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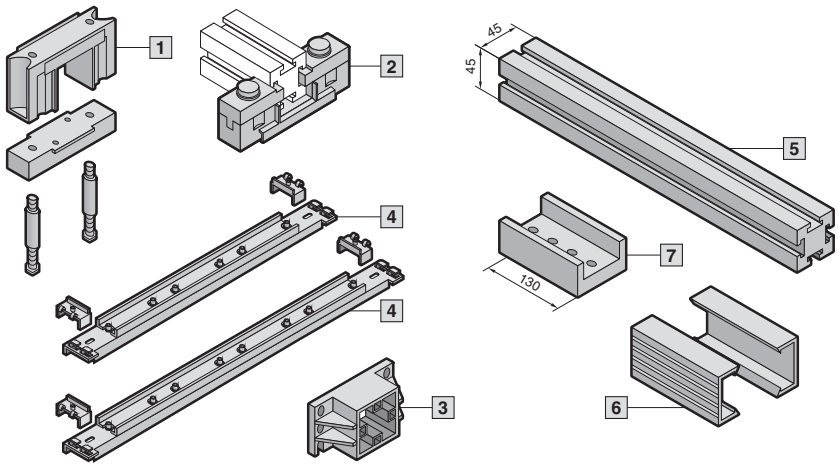
System components





Material:
Busbar support, end support, end cover: PA 6.6
System attachment: Stainless steel
Cover section: Hard PVC

Detailed drawing,
see page 1138.

Maxi-PLS system components			3-pole			4-pole		
			approx. weight (kg/pack)	Packs of	Model No. SV	approx. weight (kg/pack)	Packs of	Model No. SV
1 **Busbar support**			–	3	**9640.000**	–	3 + 1	**9640.000 9649.000**
2 **Busbar support, suitable for top mounting**			–	3	**9640.160**	–	3	**9640.160**
3 **End supports**			–	6	**9640.010**	–	6 + 2	**9640.010 9649.010**
4 **System attachment** for installing the busbar supports.								
For enclosures	Enclosure depth mm	Bar centre distance mm						
TS (roof section)	500	100	–	2	9640.100	–	–	–
	600	100	–	2	**9640.120**	–	2	**9640.080**
	600	150	–	2	9640.140	–	–	–
PS (roof section)	500	100	–	2	9640.110	–	–	–
	600	100	–	2	9640.130	–	–	–
TS/PS (rear section)	–	185	–	2	**9640.150**	–	–	–
	–	100	–	–	–	–	2	**9640.090**
5 **Maxi-PLS busbars E-Cu** (special lengths available on request).								
Length mm	For enclosure width mm	For application[1)]						
491	600	A	19.2	3	**9640.200**	25.6	4	**9649.200**
525	600	B	20.4	3	**9640.210**	27.2	4	**9649.210**
599	600	C	24.0	3	**9640.220**	32.0	4	**9649.220**
691	800	A	27.0	3	**9640.230**	36.0	4	**9649.230**
725	800	B	28.5	3	**9640.240**	38.0	4	**9649.240**
799	800	C	31.5	3	**9640.250**	42.0	4	**9649.250**
891	1000	A	36.0	3	**9640.260**	48.0	4	**9649.260**
925	1000	B	37.0	3	**9640.270**	49.4	4	**9649.270**
999	1000	C	40.0	3	**9640.280**	53.4	4	**9649.280**
1091	1200	A	43.0	3	**9640.290**	57.4	4	**9649.290**
1125	1200	B	45.0	3	**9640.300**	60.0	4	**9649.300**
1199	1200	C	48.0	3	**9640.310**	64.0	4	**9649.310**
2400	–	–	96.0	3	**9640.360**	128.0	4	**9649.360**
6 **Cover section** for clip-on mounting on the Maxi-PLS busbars, length 1000 mm.			–	5	**9640.050**	–	5	**9640.050**
7 **Longitudinal connector E-Cu** for simple baying connection of the Maxi-PLS busbars. Including sliding blocks, bolts, washers and nuts.			5.2	3	**9640.190**	5.2 1.7	3 + 1	**9640.190 9649.190**
End cover for clip-on mounting on the end surface of Maxi-PLS busbars.			–	6	**9640.060**	–	6 + 2	**9640.060 9649.060**

[1)] A = Cable connection system with end support
B = Left-hand or right-hand end enclosure in a switchgear installation
C = Bayed enclosure with panels bayed on the left and right

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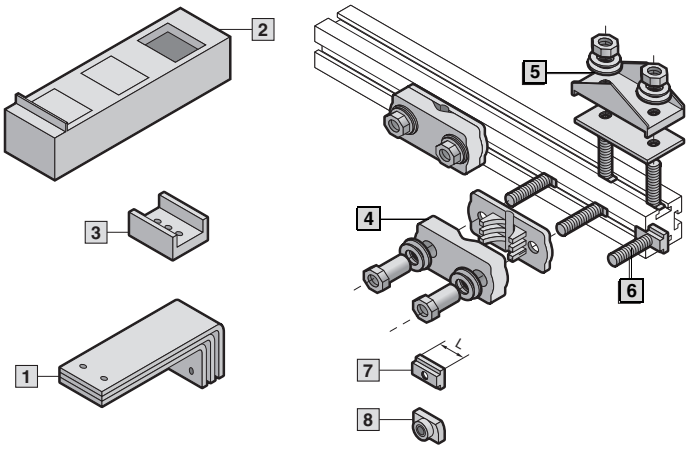
Connection components





Detailed drawing,
see page 1139.

Maxi-PLS connection components			3-pole approx. weight (kg/pack)	3-pole Packs of	3-pole Model No. SV	4-pole approx. weight (kg/pack)	4-pole Packs of	4-pole Model No. SV
1 **Connection bracket E-Cu** Transition from the main busbar system to the connection kits.								
For enclosure depth mm	Width mm	Number of brackets per phase						
500	60	1	5	1 set	9640.400	–	–	–
500	60	2	10	1 set	9640.410	–	–	–
500	60	3	14	1 set	9640.420	–	–	–
600	60	1	6	1 set	**9640.430**	9	1 sets	**9649.430**
600	60	2	11	1 set	**9640.440**	15	1 sets	**9649.440**
600	60	3	16	1 set	**9640.450**	22	1 sets	**9649.450**
2 **Isolator chassis** for isolated routing of the connection brackets. Material: PA 6.6, black, including assembly parts.								
Bar centre distance mm		For connection bracket width mm						
100		60	–	1 set	**9640.020**	–	1 set	**9649.020**
150		60	–	1 set	9650.020	–	–	–
150		100	–	1 set	9650.030	–	–	–
3 **U contact maker E-Cu** for contacting the connection brackets to the Maxi-PLS busbars. Including sliding blocks.								
Width 60 mm			2.4	3	**9640.170**	2.4 0.8	3 + 1	**9640.170** **9649.170**
Width 100 mm			4.0	3	9640.180	–	–	–
4 **Connection clamp** for the connection of round conductors 95 to 300 mm² (multi-wire and sector). Suitable for retro-fitting on Maxi-PLS busbars. Including assembly parts.								
			–	3	**9640.320**	–	3	**9640.320**
5 **Connection plates** for the connection of laminated flat copper bars. Including assembly parts.								
Maximum clamping area	2 x 10 x 32 x 1 mm		–	3	**9640.330**	–	3	**9640.330**
	2 x 10 x 63 x 1 mm		–	3	**9640.340**	–	3	**9640.340**
	2 x 10 x 100 x 1 mm		–	3	**9640.350**	–	3	**9640.350**
6 **Terminal stud** for connecting cables with ring terminals. Including sliding blocks.								
Thread	M12	Length 30 mm	–	3	**9640.370**	–	3	**9640.370**
	M16	Length 30 mm	–	3	**9640.380**	–	3	**9640.380**
7 **Sliding blocks** for sliding into the Maxi-PLS busbar section at the sides.								
Thread	M8	Length (L) 20 mm	–	15	**9640.970**	–	15	**9640.970**
	M10	Length (L) 25 mm	–	15	**9640.980**	–	15	**9640.980**
8 **Sliding nuts** for retrospective insertion into the Maxi-PLS busbar section.								
Thread	M6		–	15	**9640.900**	–	15	**9640.900**
	M8		–	15	**9640.910**	–	15	**9640.910**
	M10		–	15	**9640.920**	–	15	**9640.920**
Threaded bolts for individual connection options[1]. Including plain washers, spring lock washers and nuts.								
Thread	M6	Length 35 mm	–	6	**9640.930**	–	6	**9640.930**
	M8	Length 35 mm	–	6	**9640.940**	–	6	**9640.940**
	M10	Length 80 mm	–	6	**9640.960**	–	6	**9640.960**

[1] Sliding blocks or sliding nuts are additionally required for attachment.

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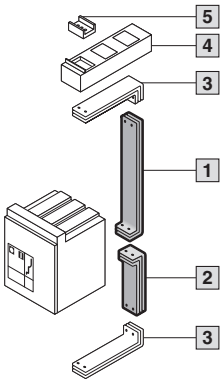
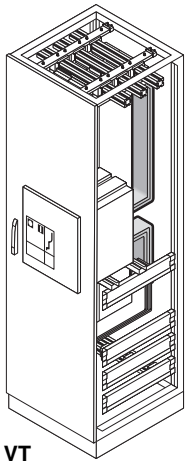
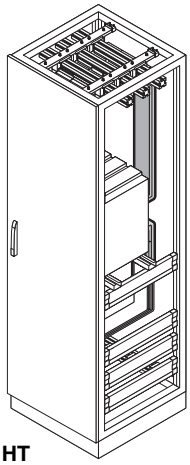
Connection kits (3-pole)









For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 600 mm.

Correct selection should be made according to the following criteria:

- Make, size
- Rated current I_e
- Switch version either "static installation" or "rack-mounted"
- Position of the power circuit-breaker:
  VT = in door cutout
  HT = behind the door

1 Connection kit, top
2 Connection kit, bottom
3 Connection bracket
4 Isolator chassis
5 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WN6			**Model No. SV**						Page
Rated operating current I_e			630 A	800 A	1000 A	1250 A	1600 A	2000 A	
Size (BG)			I	I	I	I	I	–	
Static	VT	1 top	**9651.030**	**9651.070**	**9651.110**	**9651.150**	**9651.190**	**–**	
		2 bottom	**9651.040**	**9651.080**	**9651.120**	**9651.160**	**9651.200**	**–**	
	HT	1 top	**9651.010**	**9651.050**	**9651.090**	**9651.130**	**9651.170**	**–**	
		2 bottom	**9651.020**	**9651.060**	**9651.100**	**9651.140**	**9651.180**	**–**	
Rack-mounted	VT	1 top	**9651.350**	**9651.390**	**9651.430**	**9651.470**	**9651.510**	**–**	
		2 bottom	**9651.360**	**9651.400**	**9651.440**	**9651.480**	**9651.520**	**–**	
	HT	1 top	**9651.330**	**9651.370**	**9651.410**	**9651.450**	**9651.490**	**–**	
		2 bottom	**9651.340**	**9651.380**	**9651.420**	**9651.460**	**9651.500**	**–**	
Approximate weight (kg) top/bottom			16/10	16/10	31/19.5	31/19.5	31/19.5	–	
Accessories	Packs of								
3 Connection bracket	1 set		9650.400	9650.400	9650.410	9650.410	9650.410	–	391
4 Isolator chassis	1 set		9650.020	9650.020	9650.020	9650.020	9650.020	–	391
5 U contact maker	3		9650.170	9650.170	9650.170	9650.170	9650.170	–	391
Stacking insulator	6		9660.200	9660.200	9660.200	9660.200	9660.200	–	405

Siemens 3WL, Moeller IZM			**Model No. SV**						Page
Rated operating current I_e			630 A	800 A	1000 A	1250 A	1600 A	2000 A	
Size (BG)			I	I	I	I	I	II	
Static	VT	1 top	**9654.030**	**9654.070**	**9654.110**	**9654.150**	**9654.190**	**9654.690**	
		2 bottom	**9654.040**	**9654.080**	**9654.120**	**9654.160**	**9654.200**	**9654.700**	
	HT	1 top	**9654.010**	**9654.050**	**9654.090**	**9654.130**	**9654.170**	**9654.710**	
		2 bottom	**9654.020**	**9654.060**	**9654.100**	**9654.140**	**9654.180**	**9654.720**	
Rack-mounted	VT	1 top	**9654.350**	**9654.390**	**9654.430**	**9654.470**	**9654.510**	**9654.650**	
		2 bottom	**9654.360**	**9654.400**	**9654.440**	**9654.480**	**9654.520**	**9654.660**	
	HT	1 top	**9654.330**	**9654.370**	**9654.410**	**9654.450**	**9654.490**	**9654.670**[1)]	
		2 bottom	**9654.340**	**9654.380**	**9654.420**	**9654.460**	**9654.500**	**9654.680**[1)]	
Approximate weight (kg) top/bottom			16/10	16/10	16/10	31/19.5	31/19.5	41/29	
Accessories	Packs of								
3 Connection bracket	1 set		9650.400	9650.400	9650.400	9650.410	9650.410	9650.420	391
4 Isolator chassis	1 set		9650.020	9650.020	9650.020	9650.020	9650.020	9650.020	391
5 U contact maker	3		9650.170	9650.170	9650.170	9650.170	9650.170	9650.170	391
Stacking insulator	6		9660.200	9660.200	9660.200	9660.200	9660.200	9660.200	405

[1)] For installation in 800 mm deep enclosures.

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Connection kits (3-pole)

Mitsubishi AE-SS			Model No. SV					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Static	VT	1 top	–	**9655.030**	**9655.070**	**9655.110**	**9655.150**	
		2 bottom	–	**9655.040**	**9655.080**	**9655.120**	**9655.160**	
	HT	1 top	–	**9655.010**	**9655.050**	**9655.090**	**9655.130**	
		2 bottom	–	**9655.020**	**9655.060**	**9655.100**	**9655.140**	
Rack-mounted	VT	1 top	–	**9655.310**	**9655.350**	**9655.390**	**9655.430**	
		2 bottom	–	**9655.320**	**9655.360**	**9655.400**	**9655.440**	
	HT	1 top	–	**9655.290**	**9655.330**	**9655.370**	**9655.410**	
		2 bottom	–	**9655.300**	**9655.340**	**9655.380**	**9655.420**	
Approximate weight (kg) top/bottom			–	16/10	31/19.5	31/19.5	47/29	
Accessories	Packs of							
3 Connection bracket	1 set		–	9650.400	9650.410	9650.410	9650.420	391
4 Isolator chassis	1 set		–	9650.020	9650.020	9650.020	9650.020	391
5 U contact maker	3		–	9650.170	9650.170	9650.170	9650.170	391
Stacking insulator	6		–	9660.200	9660.200	9660.200	9660.200	405

Merlin Gerin Masterpact NW			Model No. SV					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Static	VT	1 top	**9652.030**	**9652.070**	**9652.110**	**9652.150**	–	
		2 bottom	**9652.040**	**9652.080**	**9652.120**	**9652.160**	–	
	HT	1 top	**9652.010**	**9652.050**	**9652.090**	**9652.130**	–	
		2 bottom	**9652.020**	**9652.060**	**9652.100**	**9652.140**	–	
Rack-mounted	VT	1 top	**9652.310**	**9652.350**	**9652.390**	**9652.430**	–	
		2 bottom	**9652.320**	**9652.360**	**9652.400**	**9652.440**	–	
	HT	1 top	**9652.290**	**9652.330**	**9652.370**	**9652.410**	–	
		2 bottom	**9652.300**	**9652.340**	**9652.380**	**9652.420**	–	
Approximate weight (kg) top/bottom			16/10	31/19.5	31/19.5	31/19.5	–	
Accessories	Packs of							
3 Connection bracket	1 set		9650.400	9650.410	9650.410	9650.410	–	391
4 Isolator chassis	1 set		9650.020	9650.020	9650.020	9650.020	–	391
5 U contact maker	3		9650.170	9650.170	9650.170	9650.170	–	391
Stacking insulator	6		9660.200	9660.200	9660.200	9660.200	–	405

ABB Sace Emax			Model No. SV					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Size (BG)			E1	–	E1	E2	E2	
Static	VT	1 top	**9653.030**	**–**	**9653.070**	**9653.110**	**9653.150**	
		2 bottom	**9653.040**	**–**	**9653.080**	**9653.120**	**9653.160**	
	HT	1 top	**9653.010**	**–**	**9653.050**	**9653.090**	**9653.130**	
		2 bottom	**9653.020**	**–**	**9653.060**	**9653.100**	**9653.140**	
Rack-mounted	VT	1 top	**9653.310**	**–**	**9653.350**	**9653.390**	**9653.430**	
		2 bottom	**9653.320**	**–**	**9653.360**	**9653.400**	**9653.440**	
	HT	1 top	**9653.290**	**–**	**9653.330**	**9653.370**	**9653.410**	
		2 bottom	**9653.300**	**–**	**9653.340**	**9653.380**	**9653.420**	
Approximate weight (kg) top/bottom			16/10	–	31/19.5	31/19.5	47/29	
Accessories	Packs of							
3 Connection bracket	1 set		9650.400	–	9650.410	9650.410	9650.420	391
4 Isolator chassis	1 set		9650.020	–	9650.020	9650.020	9650.020	391
5 U contact maker	3		9650.170	–	9650.170	9650.170	9650.170	391
Stacking insulator	6		9660.200	–	9660.200	9660.200	9660.200	405

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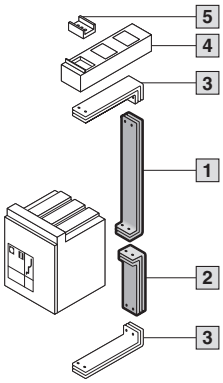
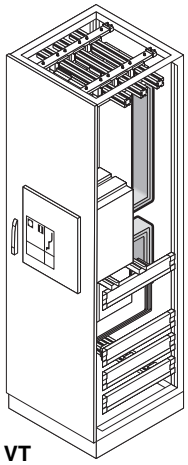
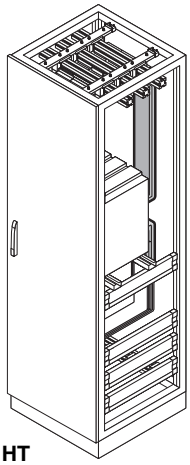
Connection kits (3-pole)









For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 800 mm.

Correct selection should be made according to the following criteria:

- Make, size
- Rated current I_e
- Switch version either "static installation" or "rack-mounted"
- Position of the power circuit-breaker:
  VT = in door cutout
  HT = behind the door

1 Connection kit, top
2 Connection kit, bottom
3 Connection bracket
4 Isolator chassis
5 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WN6		**Model No. SV**			Page
Rated operating current I_e		2000 A	2500 A	3200 A	
Size (BG)		II	II	II	
Static	VT 1 top	**9651.230**	**9651.270**	**9651.310**	
	VT 2 bottom	**9651.240**	**9651.280**	**9651.320**	
	HT 1 top	**9651.210**	**9651.250**	**9651.290**	
	HT 2 bottom	**9651.220**	**9651.260**	**9651.300**	
Rack-mounted	VT 1 top	**9651.550**	**9651.590**	**9651.630**	
	VT 2 bottom	**9651.560**	**9651.600**	**9651.640**	
	HT 1 top	**9651.530**	**9651.570**	**9651.610**	
	HT 2 bottom	**9651.540**	**9651.580**	**9651.620**	
Approximate weight (kg) top/bottom		48/32	67/50	67/50	
Accessories	Packs of				
3 Connection bracket	1 set	9650.470	9650.480	9650.480	391
4 Isolator chassis	1 set	9650.030	9650.030	9650.030	391
5 U contact maker	3	9650.180	9650.180	9650.180	391
Stacking insulator	6	9660.200	9660.200	9660.200	405

Siemens 3WL, Moeller IZM		**Model No. SV**			Page
Rated operating current I_e		2000 A	2500 A	3200 A	
Size (BG)		II	II	II	
Static	VT 1 top	**9654.690**	**9654.270**	**9654.310**	
	VT 2 bottom	**9654.700**	**9654.280**	**9654.320**	
	HT 1 top	**9654.710**	**9654.250**	**9654.290**	
	HT 2 bottom	**9654.720**	**9654.260**	**9654.300**	
Rack-mounted	VT 1 top	**9654.650**	**9654.590**	**9654.630**	
	VT 2 bottom	**9654.660**	**9654.600**	**9654.640**	
	HT 1 top	**9654.670**[1)]	**9654.570**[1)]	**9654.610**[1)]	
	HT 2 bottom	**9654.680**[1)]	**9654.580**[1)]	**9654.620**[1)]	
Approximate weight (kg) top/bottom		41/29	67/50	67/50	
Accessories	Packs of				
3 Connection bracket	1 set	9650.420	9650.480	9650.480	391
4 Isolator chassis	1 set	9650.020	9650.030	9650.030	391
5 U contact maker	3	9650.170	9650.180	9650.180	391
Stacking insulator	6	9660.200	9660.200	9660.200	405

[1)] For installation in 800 mm deep enclosures.

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Connection kits (3-pole)

Mitsubishi AE-SS			Model No. SV			Page
Rated operating current I_e			2000 A	2500 A	3200 A	
Static	VT	1 top	**9655.190**	**9655.230**	**9655.270**	
		2 bottom	**9655.200**	**9655.240**	**9655.280**	
	HT	1 top	**9655.170**	**9655.210**	**9655.250**	
		2 bottom	**9655.180**	**9655.220**	**9655.260**	
Rack-mounted	VT	1 top	**9655.470**	**9655.510**	**9655.550**	
		2 bottom	**9655.480**	**9655.520**	**9655.560**	
	HT	1 top	**9655.450**	**9655.490**	**9655.530**	
		2 bottom	**9655.460**	**9655.500**	**9655.540**	
Approximate weight (kg) top/bottom			48/32	67/50	67/50	
Accessories	Packs of					
3 Connection bracket	1 set		9650.470	9650.480	9650.480	391
4 Isolator chassis	1 set		9650.030	9650.030	9650.030	391
5 U contact maker	3		9650.180	9650.180	9650.180	391
Stacking insulator	6		9660.200	9660.200	9660.200	405

Merlin Gerin Masterpact NW			Model No. SV			Page
Rated operating current I_e			2000 A	2500 A	3200 A	
Static	VT	1 top	**9652.190**	**9652.230**	**9652.270**	
		2 bottom	**9652.200**	**9652.240**	**9652.280**	
	HT	1 top	**9652.170**	**9652.210**	**9652.250**	
		2 bottom	**9652.180**	**9652.220**	**9652.260**	
Rack-mounted	VT	1 top	**9652.470**	**9652.510**	**9652.550**	
		2 bottom	**9652.480**	**9652.520**	**9652.560**	
	HT	1 top	**9652.450**	**9652.490**	**9652.530**	
		2 bottom	**9652.460**	**9652.500**	**9652.540**	
Approximate weight (kg) top/bottom			41/29	48/32	67/50	
Accessories	Packs of					
3 Connection bracket	1 set		9650.420	9650.470	9650.480	391
4 Isolator chassis	1 set		9650.020	9650.030	9650.030	391
5 U contact maker	3		9650.170	9650.180	9650.180	391
Stacking insulator	6		9660.200	9660.200	9660.200	405

ABB Sace Emax			Model No. SV			Page
Rated operating current I_e			2000 A	2500 A	3200 A	
Size (BG)			E3	E3	E3	
Static	VT	1 top	**9653.190**	**9653.230**	**9653.270**	
		2 bottom	**9653.200**	**9653.240**	**9653.280**	
	HT	1 top	**9653.170**	**9653.210**	**9653.250**	
		2 bottom	**9653.180**	**9653.220**	**9653.260**	
Rack-mounted	VT	1 top	**9653.470**	**9653.510**	**9653.550**	
		2 bottom	**9653.480**	**9653.520**	**9653.560**	
	HT	1 top	**9653.450**	**9653.490**	**9653.530**	
		2 bottom	**9653.460**	**9653.500**	**9653.540**	
Approximate weight (kg) top/bottom			48/32	48/32	67/50	
Accessories	Packs of					
3 Connection bracket	1 set		9650.470	9650.470	9650.480	391
4 Isolator chassis	1 set		9650.030	9650.030	9650.030	391
5 U contact maker	3		9650.180	9650.180	9650.180	391
Stacking insulator	6		9660.200	9660.200	9660.200	405

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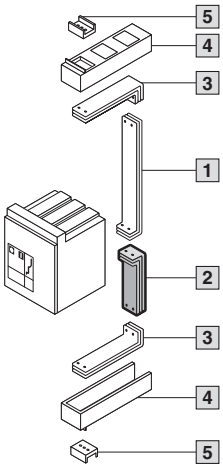
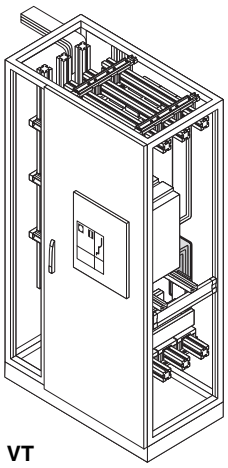
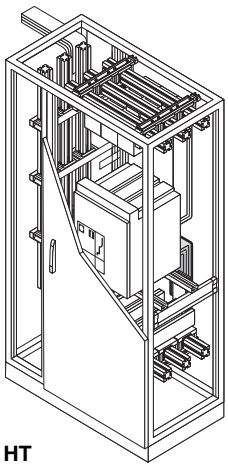
Connection kits for coupling sets (3-pole)









For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 1000 mm.

Correct selection should be made according to the following criteria:

- Make, size
- Rated current I_e
- Switch version either “static installation” or “rack-mounted”
- Position of the power circuit-breaker:
  VT = in door cutout
  HT = behind the door

1 Connection kit, top see page 378 – 381.

2 Connection kit, bottom for coupling set

3 Connection bracket

4 Isolator chassis

5 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WN6		**Model No. SV**				Page
Rated operating current I_e		1600 A[1)]	2000 A	2500 A	3200 A	
Size (BG)		I	II	II	II	
Static	VT 2 bottom	**9651.205**	**9651.245**	**9651.285**	**9651.325**	
	HT 2 bottom	**9651.185**	**9651.225**	**9651.265**	**9651.305**	
Rack-mounted	VT 2 bottom	**9651.525**	**9651.565**	**9651.605**	**9651.645**	
	HT 2 bottom	**9651.505**	**9651.545**	**9651.585**	**9651.625**	
Approximate weight (kg)		19.5	32	50	50	
Accessories	Packs of					
3 Connection bracket	1 set	9650.410	9650.470	9650.480	9650.480	391
4 Isolator chassis	1 set	9650.020	9650.030	9650.030	9650.030	391
5 U contact maker	3	9650.170	9650.180	9650.180	9650.180	391
Stacking insulator	6	9660.200	9660.200	9660.200	9660.200	405

Siemens 3WL, Moeller IZM		**Model No. SV**				Page
Rated operating current I_e		1600 A[1)]	2000 A[1)]	2500 A	3200 A	
Size (BG)		I	II	II	II	
Static	VT 2 bottom	**9654.205**	**9654.705**	**9654.285**	**9654.325**	
	HT 2 bottom	**9654.185**	**9654.725**	**9654.265**	**9654.305**	
Rack-mounted	VT 2 bottom	**9654.525**	**9654.665**	**9654.605**	**9654.645**	
	HT 2 bottom	**9654.505**	**9654.685[2)]**	**9654.585[2)]**	**9654.625[2)]**	
Approximate weight (kg)		19.5	29	50	50	
Accessories	Packs of					
3 Connection bracket	1 set	9650.410	9650.420	9650.480	9650.480	391
4 Isolator chassis	1 set	9650.020	9650.020	9650.030	9650.030	391
5 U contact maker	3	9650.170	9650.170	9650.180	9650.180	391
Stacking insulator	6	9660.200	9660.200	9660.200	9660.200	405

[1)] Installation of the power circuit-breaker is also possible in 800 mm wide enclosures.
[2)] For installation in 800 mm deep enclosures.

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Connection kits for coupling sets (3-pole)

Mitsubishi AE-SS		Model No. SV				Page
Rated operating current I_e		1600 A[1)]	2000 A	2500 A	3200 A	
Static	VT 2 bottom	**9655.125**	**9655.205**	**9655.245**	**9655.285**	
	HT 2 bottom	**9655.105**	**9655.185**	**9655.225**	**9655.265**	
Rack-mounted	VT 2 bottom	**9655.405**	**9655.485**	**9655.525**	**9655.565**	
	HT 2 bottom	**9655.385**	**9655.465**	**9655.505**	**9655.545**	
Approximate weight (kg)		19.5	32	50	50	
Accessories	Packs of					
3 Connection bracket	1 set	9650.410	9650.470	9650.480	9650.480	391
4 Isolator chassis	1 set	9650.020	9650.030	9650.030	9650.030	391
5 U contact maker	3	9650.170	9650.180	9650.180	9650.180	391
Stacking insulator	6	9660.200	9660.200	9660.200	9660.200	405

Merlin Gerin Masterpact NW		Model No. SV				Page
Rated operating current I_e		1600 A[1)]	2000 A[1)]	2500 A	3200 A	
Static	VT 2 bottom	**9652.165**	**9652.205**	**9652.245**	**9652.285**	
	HT 2 bottom	**9652.145**	**9652.185**	**9652.225**	**9652.265**	
Rack-mounted	VT 2 bottom	**9652.445**	**9652.485**	**9652.525**	**9652.565**	
	HT 2 bottom	**9652.425**	**9652.465**	**9652.505**	**9652.545**	
Approximate weight (kg)		19.5	29	32	50	
Accessories	Packs of					
3 Connection bracket	1 set	9650.410	9650.420	9650.470	9650.480	391
4 Isolator chassis	1 set	9650.020	9650.020	9650.030	9650.030	391
5 U contact maker	3	9650.170	9650.170	9650.180	9650.180	391
Stacking insulator	6	9660.200	9660.200	9660.200	9660.200	405

ABB Sace Emax		Model No. SV					Page
Rated operating current I_e		1600 A	2000 A		2500 A	3200 A	
Size (BG)		E2[1)]	E2[1)]	E3	E3	E3	
Static	VT 2 bottom	**9653.125**	**9653.165**	**9653.205**	**9653.245**	**9653.285**	
	HT 2 bottom	**9653.105**	**9653.145**	**9653.185**	**9653.225**	**9653.265**	
Rack-mounted	VT 2 bottom	**9653.405**	**9653.445**	**9653.485**	**9653.525**	**9653.565**	
	HT 2 bottom	**9653.385**	**9653.425**	**9653.465**	**9653.505**	**9653.545**	
Approximate weight (kg)		19.5	29	32	32	50	
Accessories	Packs of						
3 Connection bracket	1 set	9650.410	9650.420	9650.470	9650.470	9650.480	391
4 Isolator chassis	1 set	9650.020	9650.020	9650.030	9650.030	9650.030	391
5 U contact maker	3	9650.170	9650.170	9650.180	9650.180	9650.180	391
Stacking insulator	6	9660.200	9660.200	9660.200	9660.200	9660.200	405

[1)] Installation of the power circuit-breaker is also possible in 800 mm wide enclosures.

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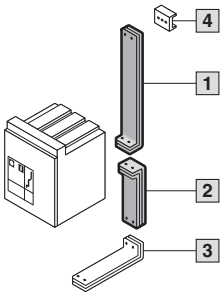
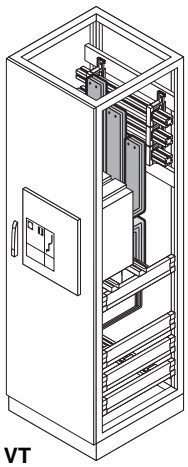
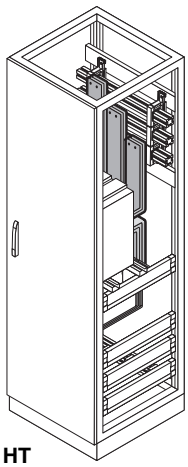
Connection kits for rear section (3-pole)









For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 600 mm.

Correct selection should be made according to the following criteria:

- Make, size
- Rated current I_e
- Switch version either “static installation” or “rack-mounted”
- Position of the power circuit-breaker:
  VT = in door cutout
  HT = behind the door

1 Connection kit, top
2 Connection kit, bottom
3 Connection bracket
4 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WN6			**Model No. SV**						Page
Rated operating current I_e			630 A	800 A	1000 A	1250 A	1600 A	2000 A	
Size (BG)			I	I	I	I	I	–	
Static	VT	1 top	**9651.033**	**9651.073**	**9651.113**	**9651.153**	**9651.193**	**–**	
		2 bottom	**9651.043**	**9651.083**	**9651.123**	**9651.163**	**9651.203**	**–**	
	HT	1 top	**9651.013**	**9651.053**	**9651.093**	**9651.133**	**9651.173**	**–**	
		2 bottom	**9651.023**	**9651.063**	**9651.103**	**9651.143**	**9651.183**	**–**	
Rack-mounted	VT	1 top	**9651.353**[1)]	**9651.393**[1)]	**9651.433**[1)]	**9651.473**[1)]	**9651.513**[1)]	**–**	
		2 bottom	**9651.363**[1)]	**9651.403**[1)]	**9651.443**[1)]	**9651.483**[1)]	**9651.523**[1)]	**–**	
	HT	1 top	**9651.333**[1)]	**9651.373**[1)]	**9651.413**[1)]	**9651.453**[1)]	**9651.493**[1)]	**–**	
		2 bottom	**9651.343**[1)]	**9651.383**[1)]	**9651.423**[1)]	**9651.463**[1)]	**9651.503**[1)]	**–**	
Approximate weight (kg) top/bottom			16/10	16/10	31/19.5	31/19.5	31/19.5	–	
Accessories	Packs of								
3 Connection bracket	1 set		9650.400	9650.400	9650.410	9650.410	9650.410	–	391
4 U contact maker	3		9650.170	9650.170	9650.170	9650.170	9650.170	–	391

Siemens 3WL, Moeller IZM			**Model No. SV**						Page
Rated operating current I_e			630 A	800 A	1000 A	1250 A	1600 A	2000 A	
Size (BG)			I	I	I	I	I	II	
Static	VT	1 top	**9654.033**	**9654.073**	**9654.113**	**9654.153**	**9654.193**	**9654.693**	
		2 bottom	**9654.043**	**9654.083**	**9654.123**	**9654.163**	**9654.203**	**9654.703**	
	HT	1 top	**9654.013**	**9654.053**	**9654.093**	**9654.133**	**9654.173**	**9654.713**	
		2 bottom	**9654.023**	**9654.063**	**9654.103**	**9654.143**	**9654.183**	**9654.723**	
Rack-mounted	VT	1 top	**9654.353**	**9654.393**	**9654.433**	**9654.473**[1)]	**9654.513**[1)]	**9654.653**[1)]	
		2 bottom	**9654.363**	**9654.403**	**9654.443**	**9654.483**[1)]	**9654.523**[1)]	**9654.663**[1)]	
	HT	1 top	**9654.333**[1)]	**9654.373**[1)]	**9654.413**[1)]	**9654.453**[1)]	**9654.493**[1)]	**9654.673**[1)]	
		2 bottom	**9654.343**[1)]	**9654.383**[1)]	**9654.423**[1)]	**9654.463**[1)]	**9654.503**[1)]	**9654.683**[1)]	
Approximate weight (kg) top/bottom			16/10	16/10	16/10	31/19.5	31/19.5	41/29	
Accessories	Packs of								
3 Connection bracket	1 set		9650.400	9650.400	9650.400	9650.410	9650.410	9650.420	391
4 U contact maker	3		9650.170	9650.170	9650.170	9650.170	9650.170	9650.170	391

[1)] For installation in 800 mm deep enclosures.

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Connection kits for rear section (3-pole)

Mitsubishi AE-SS			Model No. SV					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Static	VT	1 top	–	**9655.033**	**9655.073**	**9655.113**	**9655.153**	
		2 bottom	–	**9655.043**	**9655.083**	**9655.123**	**9655.163**	
	HT	1 top	–	**9655.013**	**9655.053**	**9655.093**	**9655.133**	
		2 bottom	–	**9655.023**	**9655.063**	**9655.103**	**9655.143**	
Rack-mounted	VT	1 top	–	**9655.313**	**9655.353**	**9655.393**	**9655.433**[1)]	
		2 bottom	–	**9655.323**	**9655.363**	**9655.403**	**9655.443**[1)]	
	HT	1 top	–	**9655.293**	**9655.333**[1)]	**9655.373**[1)]	**9655.413**[1)]	
		2 bottom	–	**9655.303**	**9655.343**[1)]	**9655.383**[1)]	**9655.423**[1)]	
Approximate weight (kg) top/bottom			–	16/10	31/19.5	31/19.5	47/29	
Accessories	Packs of							
3 Connection bracket	1 set		–	9650.400	9650.410	9650.410	9650.420	391
4 U contact maker	3		–	9650.170	9650.170	9650.170	9650.170	391

Merlin Gerin Masterpact NW			Model No. SV					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Static	VT	1 top	**9652.033**	**9652.073**	**9652.113**	**9652.153**	–	
		2 bottom	**9652.043**	**9652.083**	**9652.123**	**9652.163**	–	
	HT	1 top	**9652.013**	**9652.053**	**9652.093**	**9652.133**	–	
		2 bottom	**9652.023**	**9652.063**	**9652.103**	**9652.143**	–	
Rack-mounted	VT	1 top	**9652.313**	**9652.353**	**9652.393**	**9652.433**	–	
		2 bottom	**9652.323**	**9652.363**	**9652.403**	**9652.443**	–	
	HT	1 top	**9652.293**[1)]	**9652.333**[1)]	**9652.373**[1)]	**9652.413**[1)]	–	
		2 bottom	**9652.303**[1)]	**9652.343**[1)]	**9652.383**[1)]	**9652.423**[1)]	–	
Approximate weight (kg) top/bottom			16/10	31/19.5	31/19.5	31/19.5	–	
Accessories	Packs of							
3 Connection bracket	1 set		9650.400	9650.410	9650.410	9650.410	–	391
4 U contact maker	3		9650.170	9650.170	9650.170	9650.170	–	391

ABB Sace Emax			Model No. SV					Page
Rated operating current I_e			800 A	1000 A	1250 A	1600 A	2000 A	
Size			E1	–	E1	E2	E2	
Static	VT	1 top	**9653.033**	**–**	**9653.073**	**9653.113**	**9653.153**	
		2 bottom	**9653.043**	**–**	**9653.083**	**9653.123**	**9653.163**	
	HT	1 top	**9653.013**	**–**	**9653.053**	**9653.093**	**9653.133**	
		2 bottom	**9653.023**	**–**	**9653.063**	**9653.103**	**9653.143**	
Rack-mounted	VT	1 top	**9653.313**	**–**	**9653.353**	**9653.393**	**9653.433**[1)]	
		2 bottom	**9653.323**	**–**	**9653.363**	**9653.403**	**9653.443**[1)]	
	HT	1 top	**9653.293**[1)]	**–**	**9653.333**[1)]	**9653.373**[1)]	**9653.413**[1)]	
		2 bottom	**9653.303**[1)]	**–**	**9653.343**[1)]	**9653.383**[1)]	**9653.423**[1)]	
Approximate weight (kg) top/bottom			16/10	–	31/19.5	31/19.5	47/29	
Accessories	Packs of							
3 Connection bracket	1 set		9650.400	–	9650.410	9650.410	9650.420	391
4 U contact maker	3		9650.170	–	9650.170	9650.170	9650.170	391

[1)] For installation in 800 mm deep enclosures.

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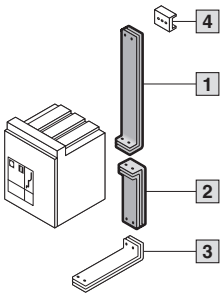
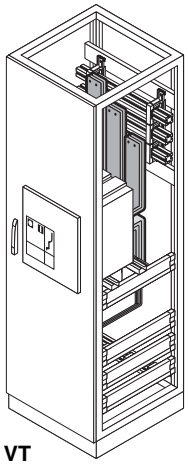
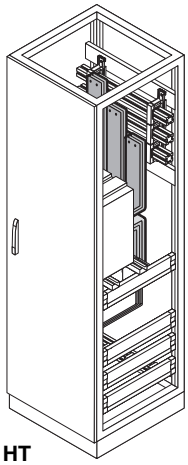
Connection kits for rear section (3-pole)









For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 800 mm.

Correct selection should be made according to the following criteria:

- Make, size
- Rated current I_e
- Switch version either “static installation” or “rack-mounted”
- Position of the power circuit-breaker:
  VT = in door cutout
  HT = behind the door

1 Connection kit, top
2 Connection kit, bottom
3 Connection bracket
4 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WN6			**Model No. SV**			Page
Rated operating current I_e			2000 A	2500 A	3200 A	
Size (BG)			II	II	II	
Static	VT	1 top	**9651.233**	**9651.273**	**9651.313**	
		2 bottom	**9651.243**	**9651.283**	**9651.323**	
	HT	1 top	**9651.213**	**9651.253**	**9651.293**	
		2 bottom	**9651.223**	**9651.263**	**9651.303**	
Rack-mounted	VT	1 top	**9651.553**[1)]	**9651.593**[1)]	**9651.633**[1)]	
		2 bottom	**9651.563**[1)]	**9651.603**[1)]	**9651.643**[1)]	
	HT	1 top	**9651.533**[1)]	**9651.573**[1)]	**9651.613**[1)]	
		2 bottom	**9651.543**[1)]	**9651.583**[1)]	**9651.623**[1)]	
Approximate weight (kg) top/bottom			48/32	67/50	67/50	
Accessories	Packs of					
3 Connection bracket	1 set		9650.470	9650.480	9650.480	391
4 U contact maker	3		9650.180	9650.180	9650.180	391

Siemens 3WL, Moeller IZM			**Model No. SV**			Page
Rated operating current I_e			2000 A	2500 A	3200 A	
Size (BG)			II	II	II	
Static	VT	1 top	**9654.693**	**9654.273**	**9654.313**	
		2 bottom	**9654.703**	**9654.283**	**9654.323**	
	HT	1 top	**9654.713**	**9654.253**	**9654.293**	
		2 bottom	**9654.723**	**9654.263**	**9654.303**	
Rack-mounted	VT	1 top	**9654.653**[1)]	**9654.593**[1)]	**9654.633**[1)]	
		2 bottom	**9654.663**[1)]	**9654.603**[1)]	**9654.643**[1)]	
	HT	1 top	**9654.673**[1)]	**9654.573**[1)]	**9654.613**[1)]	
		2 bottom	**9654.683**[1)]	**9654.583**[1)]	**9654.623**[1)]	
Approximate weight (kg) top/bottom			41/29	67/50	67/50	
Accessories	Packs of					
3 Connection bracket	1 set		9650.420	9650.480	9650.480	391
4 U contact maker	3		9650.170	9650.180	9650.180	391

[1)] For installation in 800 mm deep enclosures.

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Connection kits for rear section (3-pole)

Mitsubishi AE-SS			**Model No. SV**			Page
Rated operating current I_e			2000 A	2500 A	3200 A	
Static	VT	1 top	**9655.193**	**9655.233**	**9655.273**	
		2 bottom	**9655.203**	**9655.243**	**9655.283**	
	HT	1 top	**9655.173**	**9655.213**	**9655.253**	
		2 bottom	**9655.183**	**9655.223**	**9655.263**	
Rack-mounted	VT	1 top	**9655.473**	**9655.513**[1)]	**9655.553**[1)]	
		2 bottom	**9655.483**	**9655.523**[1)]	**9655.563**[1)]	
	HT	1 top	**9655.453**[1)]	**9655.493**[1)]	**9655.533**[1)]	
		2 bottom	**9655.463**[1)]	**9655.503**[1)]	**9655.543**[1)]	
Approximate weight (kg) top/bottom			48/32	67/50	67/50	
Accessories	Packs of					
3 Connection bracket	1 set		9650.470	9650.480	9650.480	391
4 U contact maker	3		9650.180	9650.180	9650.180	391

Merlin Gerin Masterpact NW			**Model No. SV**			Page
Rated operating current I_e			2000 A	2500 A	3200 A	
Static	VT	1 top	**9652.193**	**9652.233**	**9652.273**	
		2 bottom	**9652.203**	**9652.243**	**9652.283**	
	HT	1 top	**9652.173**	**9652.213**	**9652.253**	
		2 bottom	**9652.183**	**9652.223**	**9652.263**	
Rack-mounted	VT	1 top	**9652.473**	**9652.513**	**9652.553**[1)]	
		2 bottom	**9652.483**	**9652.523**	**9652.563**[1)]	
	HT	1 top	**9652.453**[1)]	**9652.493**[1)]	**9652.533**[1)]	
		2 bottom	**9652.463**[1)]	**9652.503**[1)]	**9652.543**[1)]	
Approximate weight (kg) top/bottom			41/29	48/32	67/50	
Accessories	Packs of					
3 Connection bracket	1 set		9650.420	9650.470	9650.480	391
4 U contact maker	3		9650.170	9650.180	9650.180	391

ABB Sace Emax			**Model No. SV**			Page
Rated operating current I_e			2000 A	2500 A	3200 A	
Size (BG)			E3	E3	E3	
Static	VT	1 top	**9653.193**	**9653.233**	**9653.273**	
		2 bottom	**9653.203**	**9653.243**	**9653.283**	
	HT	1 top	**9653.173**	**9653.213**	**9653.253**	
		2 bottom	**9653.183**	**9653.223**	**9653.263**	
Rack-mounted	VT	1 top	**9653.473**	**9653.513**	**9653.553**[1)]	
		2 bottom	**9653.483**	**9653.523**	**9653.563**[1)]	
	HT	1 top	**9653.453**[1)]	**9653.493**[1)]	**9653.533**[1)]	
		2 bottom	**9653.463**[1)]	**9653.503**[1)]	**9653.543**[1)]	
Approximate weight (kg) top/bottom			48/32	48/32	67/50	
Accessories	Packs of					
3 Connection bracket	1 set		9650.470	9650.470	9650.480	391
4 U contact maker	3		9650.180	9650.180	9650.180	391

[1)] For installation in 800 mm deep enclosures.

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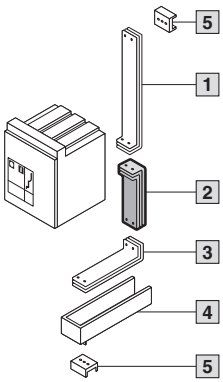
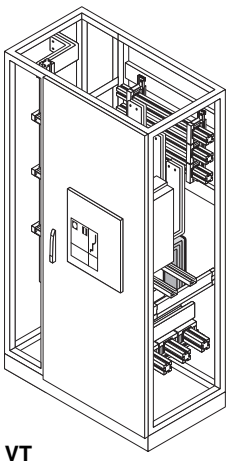
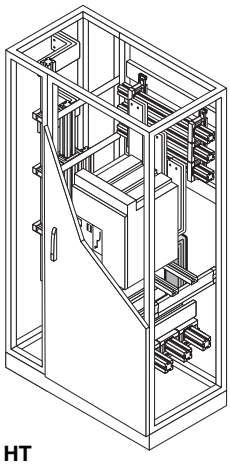
Connection kits for coupling sets – rear section (3-pole)






VT


HT

For installation in 600 mm deep and 2000 mm high enclosures. Recommended enclosure width 1000 mm.

Correct selection should be made according to the following criteria:

- Make, size
- Rated current I_e
- Switch version either “static installation” or “rack-mounted”
- Position of the power circuit-breaker:
  VT = in door cutout
  HT = behind the door

1 Connection kit, top, see page 378 – 381.

2 Connection kit, bottom for coupling set

3 Connection bracket

4 Isolator chassis

5 U contact maker

Note:
Technical modifications reserved.
Connection kits for other enclosure sizes or 4-pole systems available on request.

Delivery time:
Extended delivery times.

Siemens 3WN6		**Model No. SV**				Page
Rated operating current I_e		1600 A[1]	2000 A	2500 A	3200 A	
Size (BG)		I	II	II	II	
Static	VT 2 bottom	**9651.204**	**9651.244**	**9651.284**	**9651.324**	
	HT 2 bottom	**9651.184**	**9651.224**	**9651.264**	**9651.304**	
Rack-mounted	VT 2 bottom	**9651.524[2]**	**9651.564[2]**	**9651.604[2]**	**9651.644[2]**	
	HT 2 bottom	**9651.504[2]**	**9651.544[2]**	**9651.584[2]**	**9651.624[2]**	
Approximate weight (kg)		19.5	32	50	50	
Accessories	Packs of					
3 Connection bracket	1 set	9650.410	9650.470	9650.480	9650.480	391
4 Isolator chassis	1 set	9650.020	9650.030	9650.030	9650.030	391
5 U contact maker	3	9650.170	9650.180	9650.180	9650.180	391

Siemens 3WL, Moeller IZM		**Model No. SV**				Page
Rated operating current I_e		1600 A[1]	2000 A[1]	2500 A	3200 A	
Size (BG)		I	II	II	II	
Static	VT 2 bottom	**9654.204**	**9654.704**	**9654.284**	**9654.324**	
	HT 2 bottom	**9654.184**	**9654.724**	**9654.264**	**9654.304**	
Rack-mounted	VT 2 bottom	**9654.524[2]**	**9654.664[2]**	**9654.604[2]**	**9654.644[2]**	
	HT 2 bottom	**9654.504[2]**	**9654.684[2]**	**9654.584[2]**	**9654.624[2]**	
Approximate weight (kg)		19.5	29	50	50	
Accessories	Packs of					
3 Connection bracket	1 set	9650.410	9650.420	9650.480	9650.480	391
4 Isolator chassis	1 set	9650.020	9650.020	9650.030	9650.030	391
5 U contact maker	3	9650.170	9650.170	9650.180	9650.180	391

[1] Installation of the power circuit-breaker is also possible in 800 mm wide enclosures.
[2] For installation in 800 mm deep enclosures.

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SV-TS 8 enclosures Page 392 **Accessories** Page 401

Connection kits for coupling sets – rear section (3-pole)

Mitsubishi AE-SS		Model No. SV				Page
Rated operating current I_e		1600 A[1]	2000 A	2500 A	3200 A	
Static	VT 2 bottom	**9655.124**	**9655.204**	**9655.244**	**9655.284**	
	HT 2 bottom	**9655.104**	**9655.184**	**9655.224**	**9655.264**	
Rack-mounted	VT 2 bottom	**9655.404**	**9655.484**	**9655.524[2]**	**9655.564[2]**	
	HT 2 bottom	**9655.384[2]**	**9655.464[2]**	**9655.504[2]**	**9655.544[2]**	
Approximate weight (kg)		19.5	32	50	50	
Accessories	Packs of					
3 Connection bracket	1 set	9650.410	9650.470	9650.480	9650.480	391
4 Isolator chassis	1 set	9650.020	9650.030	9650.030	9650.030	391
5 U contact maker	3	9650.170	9650.180	9650.180	9650.180	391

Merlin Gerin Masterpact NW		Model No. SV				Page
Rated operating current I_e		1600 A[1]	2000 A[1]	2500 A	3200 A	
Static	VT 2 bottom	**9652.164**	**9652.204**	**9652.244**	**9652.284**	
	HT 2 bottom	**9652.144**	**9652.184**	**9652.224**	**9652.264**	
Rack-mounted	VT 2 bottom	**9652.444**	**9652.484**	**9652.524**	**9652.564[2]**	
	HT 2 bottom	**9652.424[2]**	**9652.464[2]**	**9652.504[2]**	**9652.544[2]**	
Approximate weight (kg)		19.5	29	32	50	
Accessories	Packs of					
3 Connection bracket	1 set	9650.410	9650.420	9650.470	9650.480	391
4 Isolator chassis	1 set	9650.020	9650.020	9650.030	9650.030	391
5 U contact maker	3	9650.170	9650.170	9650.180	9650.180	391

ABB Sace Emax		Model No. SV					Page
Rated operating current I_e		1600 A	2000 A		2500 A	3200 A	
Size (BG)		E2[1]	E2[1]	E3	E3	E3	
Static	VT 2 bottom	**9653.124**	**9653.164**	**9653.204**	**9653.244**	**9653.284**	
	HT 2 bottom	**9653.104**	**9653.144**	**9653.184**	**9653.224**	**9653.264**	
Rack-mounted	VT 2 bottom	**9653.404**	**9653.444[2]**	**9653.484**	**9653.524**	**9653.564[2]**	
	HT 2 bottom	**9653.384[2]**	**9653.424[2]**	**9653.464[2]**	**9653.504[2]**	**9653.544[2]**	
Approximate weight (kg)		19.5	29	32	32	50	
Accessories	Packs of						
3 Connection bracket	1 set	9650.410	9650.420	9650.470	9650.470	9650.480	391
4 Isolator chassis	1 set	9650.020	9650.020	9650.030	9650.030	9650.030	391
5 U contact maker	3	9650.170	9650.170	9650.180	9650.180	9650.180	391

[1] Installation of the power circuit-breaker is also possible in 800 mm wide enclosures.
[2] For installation in 800 mm deep enclosures.

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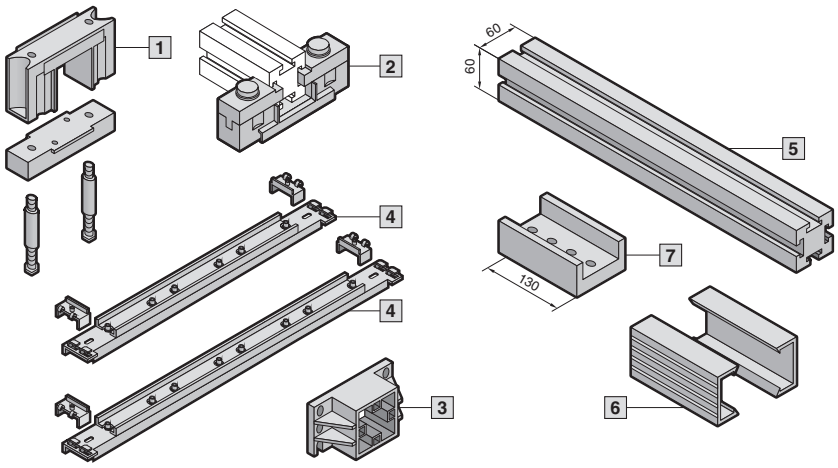
Rittal Maxi-PLS up to 3200 A

System components





Material:
Busbar support, end support, end cover: PA 6.6
System attachment: Stainless steel
Cover section: Hard PVC

Detailed drawing,
see page 1138.

Maxi-PLS system components			3-pole			4-pole		
			approx. weight (kg/pack)	Packs of	Model No. SV	approx. weight (kg/pack)	Packs of	Model No. SV
1	**Busbar support**		–	3	**9650.000**	–	3 + 1	**9650.000** **9659.000**
2	**Busbar support, suitable for top mounting**		–	3	**9650.160**	–	3	**9650.160**
3	**End supports**		–	6	**9650.010**	–	6 + 2	**9650.010** **9659.010**
4	**System attachment** for installing the busbar supports.							
	For enclosures	Enclosure depth mm / Bar centre distance mm						
	TS (roof section)	600 / 150	–	2	**9650.100**	–	–	**–**
		800 / 150	–	2	9650.120	–	2	**9650.080**
	PS (roof section)	600 / 150	–	2	9650.110	–	–	**–**
		800 / 150	–	2	9650.130	–	–	**–**
	TS/PS (rear section)	– / 185	–	2	**9650.150**	–	–	**–**
		– / 150	–	–	–	–	2	**9650.090**
5	**Maxi-PLS busbars E-Cu** (special lengths available on request).							
	Length mm	For enclosure width mm / For application[1)]						
	491	600 / A	35.0	3	**9650.200**	46.7	4	**9659.200**
	525	600 / B	37.0	3	**9650.210**	49.4	4	**9659.210**
	599	600 / C	43.0	3	**9650.220**	57.4	4	**9659.220**
	691	800 / A	49.0	3	**9650.230**	65.4	4	**9659.230**
	725	800 / B	51.0	3	**9650.240**	68.0	4	**9659.240**
	799	800 / C	56.0	3	**9650.250**	74.7	4	**9659.250**
	891	1000 / A	63.0	3	**9650.260**	84.0	4	**9659.260**
	925	1000 / B	65.0	3	**9650.270**	86.7	4	**9659.270**
	999	1000 / C	71.0	3	**9650.280**	94.7	4	**9659.280**
	1091	1200 / A	77.0	3	**9650.290**	102.7	4	**9659.290**
	1125	1200 / B	80.0	3	**9650.300**	106.7	4	**9659.300**
	1199	1200 / C	85.0	3	**9650.310**	113.4	4	**9659.310**
	2400	– / –	171.0	3	**9650.360**	228.0	4	**9659.360**
6	**Cover section** for clip-on mounting on the Maxi-PLS busbars, length 1000 mm.		–	5	**9650.050**	–	5	**9650.050**
7	**Longitudinal connector E-Cu** for simple baying connection of the Maxi-PLS busbars. Including sliding blocks, bolts, washers and nuts.		7.0	3	**9650.190**	7.0 2.4	3 + 1	**9650.190** **9659.190**
	End cover for clip-on mounting on the end surface of Maxi-PLS busbars.		–	6	**9650.060**	–	6 + 2	**9650.060** **9659.060**
	Stabiliser to increase short-circuit resistance (I_{cw} up to 120 kA).		–	4[2)]	**9650.140**	–	–	**–**

[1)] A = Cable connection system with end support
B = Left-hand or right-hand end enclosure in a switchgear installation
C = Bayed enclosure with panels bayed on the left and right
[2)] Modules for two complete stabilisers

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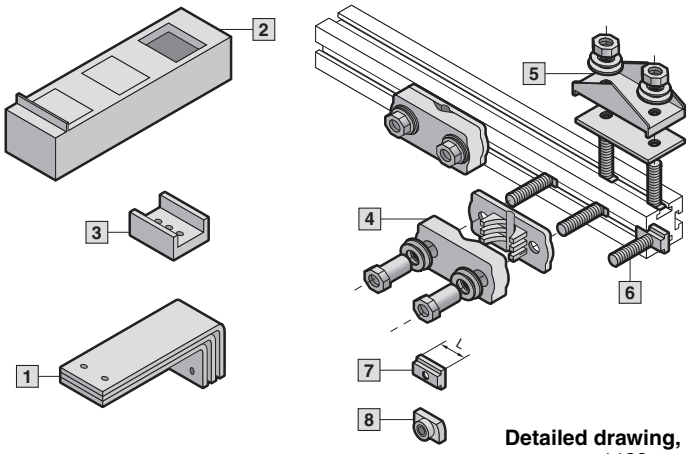
Connection components





Detailed drawing,
see page 1139.

Maxi-PLS connection components			3-pole			4-pole		
			approx. weight (kg/pack)	Packs of	Model No. SV	approx. weight (kg/pack)	Packs of	Model No. SV
1	**Connection bracket E-Cu** Transition from the main busbar system to the connection kits.							
For enclosure depth mm	Width mm	Number of brackets per phase						
600	60	1	6	1 set	**9650.400**	–	–	**–**
600	60	2	11	1 set	**9650.410**	–	–	**–**
600	60	3	17	1 set	**9650.420**	–	–	**–**
800	60	1	8	1 set	9650.430	11	1 set	**9659.400**
800	60	2	15	1 set	9650.440	20	1 set	**9659.410**
800	60	3	22	1 set	9650.450	30	1 set	**9659.420**
600	100	1	9	1 set	**9650.460**	–	–	**–**
600	100	2	18	1 set	**9650.470**	–	–	**–**
600	100	3	26	1 set	**9650.480**	–	–	**–**
800	100	1	13	1 set	9650.490	18	1 set	**9659.460**
800	100	2	24	1 set	9650.500	32	1 set	**9659.470**
800	100	3	36	1 set	9650.510	48	1 set	**9659.480**
2	**Isolator chassis** for isolated routing of the connection brackets. Material: PA 6.6, black, including assembly parts.							
Bar centre distance mm		For connection bracket width mm						
150		60	–	1 set	9650.020	–	1 set	**9659.020**
150		100	–	1 set	**9650.030**	–	1 set	**9659.030**
3	**U contact maker E-Cu** for contacting the connection brackets to the Maxi-PLS busbars. Including sliding blocks.							
Width 60 mm			3.4	3	9650.170	3.4 1.2	3 + 1	**9650.170** **9659.170**
Width 100 mm			5.7	3	**9650.180**	5.7 1.9	3 + 1	**9650.180** **9659.180**
4	**Connection clamp** for the connection of round conductors 95 to 300 mm² (multi-wire and sector). Suitable for retro-fitting on Maxi-PLS busbars. Including assembly parts.							
			–	3	**9650.320**	–	3	**9650.320**
5	**Connection plates** for the connection of laminated flat copper bars. Including assembly parts.							
Maximum clamping area	2 x 10 x 32 x 1 mm		–	3	**9650.330**	–	3	**9650.330**
	2 x 10 x 63 x 1 mm		–	3	**9650.340**	–	3	**9650.340**
	2 x 10 x 100 x 1 mm		–	3	**9650.350**	–	3	**9650.350**
6	**Terminal stud** for connecting cables with ring terminals. Including sliding blocks.							
Thread	M12	Length 32 mm	–	3	**9650.370**	–	3	**9650.370**
	M16	Length 32 mm	–	3	**9650.380**	–	3	**9650.380**
7	**Sliding blocks** for sliding into the Maxi-PLS busbar section at the sides.							
Thread	M10	Length (L) 25 mm	–	15	**9650.980**	–	15	**9650.980**
	M12	Length (L) 35 mm	–	15	**9650.990**	–	15	**9650.990**
8	**Sliding nuts** for retrospective insertion into the Maxi-PLS busbar section.							
Thread	M6		–	15	**9650.900**	–	15	**9650.900**
	M10		–	15	**9650.910**	–	15	**9650.910**
	M12		–	15	**9650.920**	–	15	**9650.920**
	Threaded bolts for individual connection options[1]. Including plain washers, spring lock washers and nuts.							
Thread	M6	Length 35 mm	–	6	**9650.930**	–	6	**9650.930**
	M10	Length 35 mm	–	6	**9650.940**	–	6	**9650.940**
	M12	Length 80 mm	–	6	**9650.960**	–	6	**9650.960**

[1] Sliding blocks or sliding nuts are additionally required for attachment.

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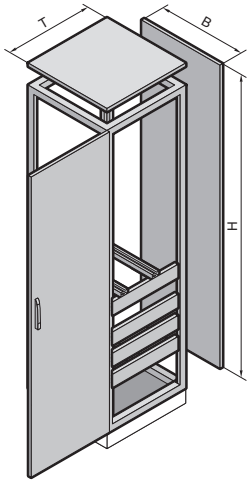
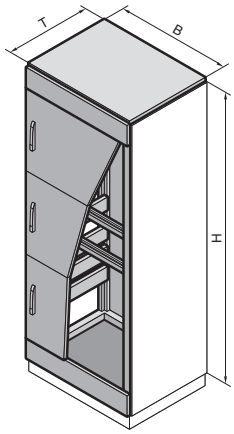
Rittal Maxi-PLS SV-TS 8 enclosures

for incoming/outgoing circuit







Pre-assembled for direct installation of power circuit-breakers

Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed,
powder-coated on the outside in textured RAL 7035
Gland plates: Zinc-plated

Supply includes:
Enclosure frame
with fitted punched section without mounting flange for Maxi-PLS end support attachment and fitted system support rails for power circuit-breaker attachment;
door(s), roof, rear panel,
gland plates (three-piece).

Detailed drawing,
see page 1140.

Technical information,
see page 1142.

For Maxi-PLS		Packs of	**3-pole**				Page
			2000 A		3200 A		
Width (B) in mm			600		800		
Height (H) in mm			2000		2000		
Depth (T) in mm			600		600		
Model No. SV		1	**9660.665**	**9660.675**	**9660.865**	**9660.875**	
Door(s)			1	3	1	3	
Approximate weight (kg)			78	78	88	88	
Base/plinth							
Components front and rear	Height 100 mm	1 set	8601.600	8601.600	8601.800	8601.800	835
	Height 200 mm	1 set	8602.600	8602.600	8602.800	8602.800	835
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.060	8601.060	835
	Height 200 mm	1 set	8602.060	8602.060	8602.060	8602.060	835
Accessories							
Cable clamp rails		2	4191.000	4191.000	4192.000	4192.000	979
Cable entry plates[1)]		2	8800.060	8800.060	8800.080	8800.080	964
Side panels		2	8106.235	8106.512	8106.235	8106.512	853
Roof plates, vented[2)]		1	9660.235	9660.235	9660.245	9660.245	406
Roof plates with pressure relief function[2)]		1	9660.935	9660.935	9660.945	9660.945	406
Cover attachment		8	–	9660.680	–	9660.680	404
Device module			■	■	■	■	401
Contact hazard protection cover			■	■	■	■	402
Mounting bracket		24	9660.090	9660.090	9660.090	9660.090	404
Lock systems							
Standard double-bit lock insert may be exchanged for comfort handle, see page 881 and other inserts, see page 888.							

[1)] Cable entry grommets, see page 965.
[2)] In exchange for the standard TS roof.
To order enclosures in textured RAL 7032, please add extension .XX0 to the Model No. Delivery times available on request.

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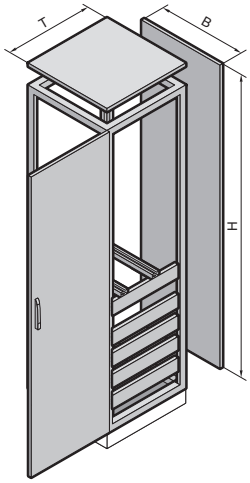
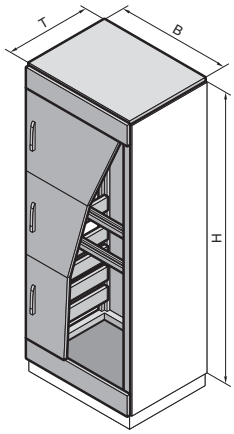
for incoming/outgoing circuit







Pre-assembled for direct installation of power circuit-breakers

Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed,
powder-coated on the outside in textured RAL 7035
Gland plates: Zinc-plated

Supply includes:
Enclosure frame
with fitted punched section without mounting flange for Maxi-PLS end support attachment and fitted system support rails for power circuit-breaker attachment;
door(s), roof, rear panel,
gland plates (three-piece).

Detailed drawing,
see page 1140.

Technical information,
see page 1142.

For Maxi-PLS		Packs of	4-pole				Page
			2000 A		3200 A		
Width (B) in mm			800		800		
Height (H) in mm			2000		2000		
Depth (T) in mm			600		800		
Model No. SV		1	**9649.625**	**9649.635**	**9659.625**	**9659.635**	
Door(s)			1	3	1	3	
Approximate weight (kg)			90	90	100	100	
Base/plinth							
Components front and rear	Height 100 mm	1 set	8601.800	8601.800	8601.800	8601.800	835
	Height 200 mm	1 set	8602.800	8602.800	8602.800	8602.800	835
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.080	8601.080	835
	Height 200 mm	1 set	8602.060	8602.060	8602.080	8602.080	835
Accessories							
Cable clamp rails		2	4192.000	4192.000	4192.000	4192.000	979
Cable entry plates[1)]		2	8800.080	8800.080	8800.080	8800.080	964
Side panels		2	8106.235	8106.512	8108.235	8108.512	853
Roof plates, vented[2)]		1	9660.245	9660.245	9659.535	9659.535	406
Roof plates with pressure relief function[2)]		1	9660.945	9660.945	–	–	406
Cover attachment		8	–	9660.680	–	9660.680	404
Device module			■	■	■	■	401
Contact hazard protection cover			■	■	■	■	402
Mounting bracket		24	9660.090	9660.090	9660.090	9660.090	404
Lock systems							
Standard double-bit lock insert may be exchanged for comfort handle, see page 881 and other inserts, see page 888.							

[1)] Cable entry grommets, see page 965.
[2)] In exchange for the standard TS roof.
To order enclosures in textured RAL 7032, please add extension .XX0 to the Model No. Delivery times available on request.

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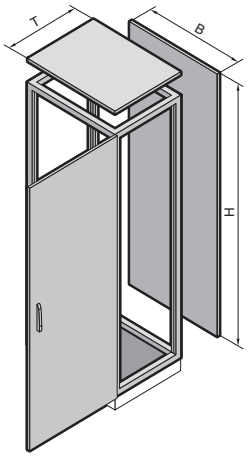
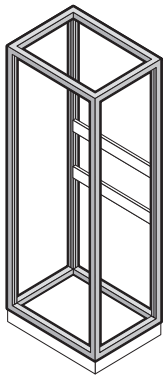
Accessories Page 401

Rittal Maxi-PLS SV-TS 8 enclosures

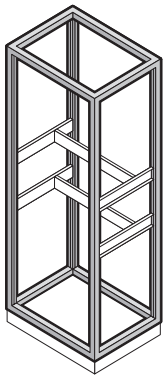
for Rittal NH fused isolators







1 Mounting in rear section



2 Mounting in centre section

Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed,
powder-coated on the outside in textured RAL 7035
Gland plates: Zinc-plated

Supply includes:
Enclosure frame, door, roof, rear panel, gland plates (three-piece), TS punched sections with mounting flanges

Technical information,
see page 1143.

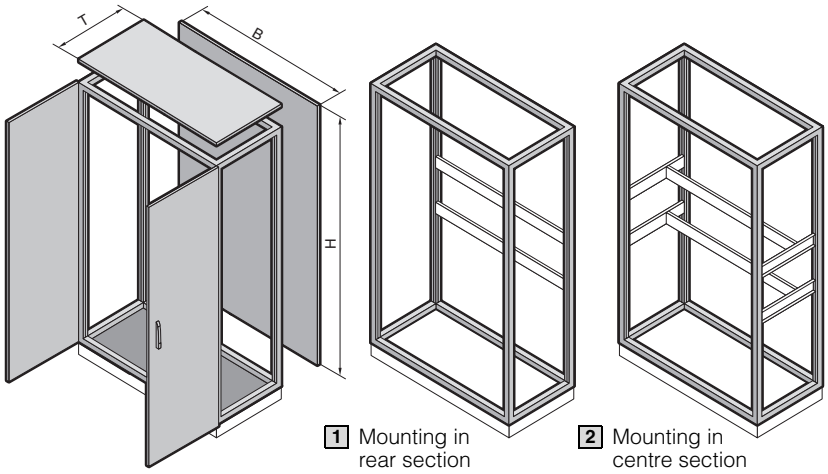
Maxi-PLS **1 For mounting in the rear section**		Packs of	**3-pole/4-pole** 2000 A/3200 A						Page
Width (B) in mm			600	600	600	800	800	800	
Height (H) in mm			2000	2000	2000	2000	2000	2000	
Depth (T) in mm			500	600	800	500	600	800	
Model No. SV		1	**9660.505**[1)]	**9660.605**[1)]	**9660.805**[1)]	**9660.535**[1)]	**9660.635**[1)]	**9660.835**[1)]	
Technical specifications correspond to Model No. TS			8605.500	8606.500	8608.500	8805.500	8806.500	8808.500	144 – 146
Door			1	1	1	1	1	1	
Approximate weight (kg)			74.0	76.0	83.0	88.4	92.6	99.1	
Base/plinth									
Components front and rear	Height 100 mm	1 set	8601.600	8601.600	8601.600	8601.800	8601.800	8601.800	835
	Height 200 mm	1 set	8602.600	8602.600	8602.600	8602.800	8602.800	8602.800	835
Trim panels (sides)	Height 100 mm	1 set	8601.050	8601.060	8601.080	8601.050	8601.060	8601.080	835
	Height 200 mm	1 set	8602.050	8602.060	8602.080	8602.050	8602.060	8602.080	835
Also required									
2 For mounting in the centre section									
TS punched section with mounting flange (4 per enclosure)		4	8612.550	8612.560	8612.580	8612.550	8612.560	8612.580	922
PS punched section without mounting flange (2 per enclosure)		4	4376.000	4376.000	4376.000	4377.000	4377.000	4377.000	925
Support bracket (4 per enclosure)		24 sets	4183.000	4183.000	4183.000	4183.000	4183.000	4183.000	933
Threaded blocks M6 (8 per enclosure)		50	4162.000	4162.000	4162.000	4162.000	4162.000	4162.000	936
Accessories									
Cable clamp rails		2	4191.000	4191.000	4191.000	4192.000	4192.000	4192.000	979
Cable entry plates[2)]		2	8800.060	8800.060	8800.060	8800.080	8800.080	8800.080	964
Side panels		2	8105.235	8106.235	8108.235	8105.235	8106.235	8108.235	853
Roof plates, vented[3)]		1	–	9660.235	9659.525	–	9660.245	9659.535	406
Roof plates with pressure relief function[3)]		1	–	9660.935	–	–	9660.945	–	406
Cover plate, contact hazard protection[4)]		1 set	–	9660.460	–	–	9660.470	–	403
Mounting bracket		24	–	9660.090	–	–	9660.090	–	404
Blanking cover			■	■	■	■	■	■	404
Terminal studs			■	■	■	■	■	■	405
Lock systems									
Standard double-bit lock insert may be exchanged for comfort handle, see page 881 and other inserts, see page 888.									

[1)] Without mounting plate.
[2)] Cable entry grommets, see page 965.
[3)] In exchange for the standard TS roof.
[4)] Only used when mounting the Maxi-PLS system in the rear section.
To order enclosures in textured RAL 7032, please add extension .XX0 to the Model No. Delivery times available on request.

System overview Page 366 **NH fused isolators size 00 – 3** Page 353 **System components** Page 376/390 **Connection components** Page 377/391 **Accessories** Page 401

for Rittal NH fused isolators





1 Mounting in rear section

2 Mounting in centre section

Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed,
powder-coated on the outside in textured RAL 7035
Gland plates: Zinc-plated

Supply includes:
Enclosure frame, door(s), roof, rear panel, gland plates (three-piece), TS punched sections with mounting flanges.

Technical information,
see page 1143.

Maxi-PLS **1 For mounting in the rear section**		Packs of	3-pole/4-pole 2000 A/3200 A					Page
Width (B) in mm			1000	1000	1200	1200	1200	
Height (H) in mm			2000	2000	2000	2000	2000	
Depth (T) in mm			500	600	500	600	800	
Model No. SV		1	**9660.595**[1]	**9660.695**[1]	**9660.555**[1]	**9660.655**[1]	**9660.855**[1]	
Technical specifications correspond to Model No. TS			8005.500	8006.500	8205.500	8206.500	8208.500	144 – 146
Doors			2	2	2	2	2	
Approximate weight (kg)			109.6	113.7	133.6	137.6	146.0	
Base/plinth								
Components front and rear	Height 100 mm	1 set	8601.000	8601.000	8601.200	8601.200	8601.200	835
	Height 200 mm	1 set	8602.000	8602.000	8602.200	8602.200	8602.200	835
Trim panels (sides)	Height 100 mm	1 set	8601.050	8601.060	8601.050	8601.060	8601.080	835
	Height 200 mm	1 set	8602.050	8602.060	8602.050	8602.060	8602.080	835
Also required								
2 For mounting in the centre section								
TS punched section with mounting flange (4 per enclosure)		4	8612.550	8612.560	8612.550	8612.560	8612.580	922
PS punched section without mounting flange (2 per enclosure)		4	4382.000	4382.000	4378.000	4378.000	4378.000	925
Support bracket (4 per enclosure)		24 sets	4183.000	4183.000	4183.000	4183.000	4183.000	933
Threaded blocks M6 (8 per enclosure)		50	4162.000	4162.000	4162.000	4162.000	4162.000	936
Accessories								
Cable clamp rails		2	4336.000	4336.000	4196.000	4196.000	4196.000	979
Cable entry plates[2]		4	8800.100	8800.100	8800.120	8800.120	8800.120	964
Side panels		2	8105.235	8106.235	8105.235	8106.235	8108.235	853
Roof plates, vented[3]		1	–	9660.255	–	9660.265	9659.555	406
Roof plates with pressure relief function[3]		1	–	9660.955	–	9660.965	–	406
Cover plate, contact hazard protection[4]		1 set	–	9660.480	–	9660.490	–	403
Mounting bracket		24	–	9660.090	–	9660.090	–	404
Blanking cover			■	■	■	■	■	404
Terminal studs			■	■	■	■	■	405
Lock systems								
Standard double-bit lock insert may be exchanged for comfort handle, see page 881 and other inserts, see page 888.								

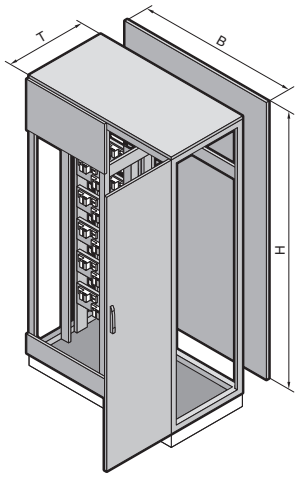
[1] Without mounting plate.
[2] Cable entry grommets, see page 965.
[3] In exchange for the standard TS roof.
[4] Only used when mounting the Maxi-PLS system in the rear section.
To order enclosures in textured RAL 7032, please add extension .XX0 to the Model No. Delivery times available on request.

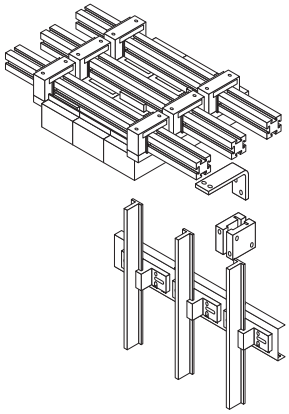
System overview Page 366 **NH fused isolators size 00 – 3** Page 353 **System components** Page 376/390 **Connection components** Page 377/391 **Accessories** Page 401

Rittal Maxi-PLS SV-TS 8 enclosures

for NH fused isolators







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed,
powder-coated on the outside in textured RAL 7035
Gland plates: Zinc-plated

Supply includes:
Enclosure frame
with fitted support rails to accommodate the T-bar support;
Door, roof, rear panel, gland plates (three-piece).

Detailed drawing,
see page 1140.

Technical information,
see page 1144.

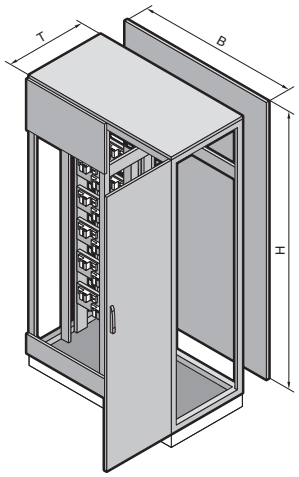
For Maxi-PLS		Packs of	**3-pole** 2000 A/3200 A				Page
For NH fused isolators brand			ABB SlimLine		Jean Müller SASIL		
Width (B) in mm			1000	1200	1000	1200	
Height (H) in mm			2000	2000	2000	2000	
Depth (T) in mm			600	600	600	600	
Model No. SV		1	**9660.515**	**9660.545**	**9660.415**	**9660.445**	
Door			1	1	1	1	
Approximate weight (kg)			110	135	110	135	
Base/plinth							
Components front and rear	Height 100 mm	1 set	8601.000	8601.200	8601.000	8601.200	835
	Height 200 mm	1 set	8602.000	8602.200	8602.000	8602.200	835
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.060	8601.060	835
	Height 200 mm	1 set	8602.060	8602.060	8602.060	8602.060	835
Maxi-PLS system components							
T-bar supports up to 800 A	T-support	3	9660.000	9660.000	9660.000	9660.000	398
	T-end support	3	9660.010	9660.010	9660.010	9660.010	398
T-bar supports up to 1600 A	T-support	3	9660.100	9660.100	9660.100	9660.100	398
	T-end support	3	9660.110	9660.110	9660.110	9660.110	398
T-busbars E-Cu up to 800 A	Length 1000 mm	3	9660.020	9660.020	9660.020	9660.020	398
	Length 1600 mm	3	9660.030	9660.030	9660.030	9660.030	398
T-busbars E-Cu up to 1600 A	Length 1000 mm	3	9660.120	9660.120	9660.120	9660.120	398
	Length 1600 mm	3	9660.130	9660.130	9660.130	9660.130	398
T-connection kits up to 800 A, for Maxi-PLS	2000 A	1 set	9660.050	9660.050	9660.050	9660.050	398
	3200 A	1 set	9660.070	9660.070	9660.070	9660.070	398
T-connection kits up to 1600 A, for Maxi-PLS	2000 A	1 set	9660.140	9660.140	9660.140	9660.140	398
	3200 A	1 set	9660.160	9660.160	9660.160	9660.160	398
U contact maker			■	■	■	■	377/391
Isolator chassis			■	■	■	■	377/391
Accessories							
Side panels		2	8106.512	8106.512	8106.512	8106.512	853
Cover for distribution busbar (from the isolator manufacturer's range)			ABB Model No. NHP 407062 R..		Jean Müller Model No. A 8900 101		
Roof plates, vented[1)]		1	9660.255	9660.265	9660.255	9660.265	406
Roof plates with pressure relief function[1)]		1	9660.955	9660.965	9660.955	9660.965	406
Lock systems							
Standard double-bit lock insert may be exchanged for comfort handle, see page 881 and other inserts, see page 888.							

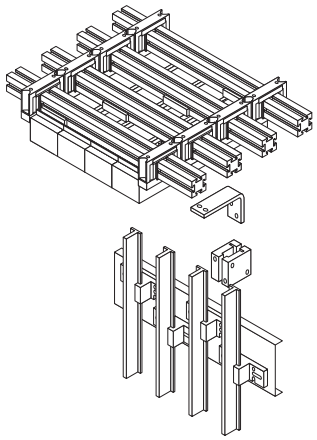
[1)] In exchange for the standard TS roof.
To order enclosures in textured RAL 7032, please add extension .XX0 to the Model No. Delivery times available on request.

System overview Pag 366 **System components** Page 376/390 **Connection components** Page 377/391 **Accessories** Page 401 **C rails** Page 928

for NH fused isolators







Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed,
powder-coated on the outside in textured RAL 7035
Gland plates: Zinc-plated

Supply includes:
Enclosure frame
with fitted support rails to accommodate the T-bar support;
Door, roof, rear panel, gland plates (three-piece).

Detailed drawing,
see page 1141.

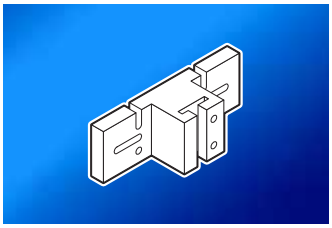
Technical information,
see page 1144.

For Maxi-PLS		Packs of	**4-pole**								Page
			2000 A				3200 A				
For NH fused isolators brand			ABB SlimLine		Jean Müller SASIL		ABB SlimLine		Jean Müller SASIL		
Width (B) in mm			1000	1200	1000	1200	1000	1200	1000	1200	
Height (H) in mm			2000	2000	2000	2000	2000	2000	2000	2000	
Depth (T) in mm			600	600	600	600	800	800	800	800	
Model No. SV		1	**9649.665**	**9649.675**	**9649.645**	**9649.655**	**9659.665**	**9659.675**	**9659.645**	**9659.655**	
Door			1	1	1	1	1	1	1	1	
Approximate weight (kg)			120	145	120	145	145	160	145	160	
Base/plinth											
Components front and rear	Height 100 mm	1 set	8601.000	8601.200	8601.000	8601.200	8601.000	8601.200	8601.000	8601.200	835
	Height 200 mm	1 set	8602.000	8602.200	8602.000	8602.200	8602.000	8602.200	8602.000	8602.200	835
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.060	8601.060	8601.080	8601.080	8601.080	8601.080	835
	Height 200 mm	1 set	8602.060	8602.060	8602.060	8602.060	8602.080	8602.080	8602.080	8602.080	835
Maxi-PLS system components											
T-bar supports up to 800 A	T-support	3 + 1	9660.000 + 9649.100								398
	T-end support	3 + 1	9660.010 + 9649.110								398
T-bar supports up to 1600 A	T-support	3 + 1	9660.100 + 9659.100								398
	T-end support	3 + 1	9660.110 + 9659.110								398
T busbars E-Cu up to 800 A	Length 1000 mm	3 + 1	9660.020 + 9649.120								398
	Length 1600 mm	3 + 1	9660.030 + 9649.130								398
T busbars E-Cu up to 1600 A	Length 1000 mm	3 + 1	9660.120 + 9659.120								398
	Length 1600 mm	3 + 1	9660.130 + 9659.130								398
T-connection kits up to 800 A		1 set	9649.080	9649.080	9649.140	9649.140	9659.080	9659.080	9659.140	9659.140	398
T-connection kits up to 1600 A		1 set	9649.090	9649.090	9649.150	9649.150	9659.090	9659.090	9659.150	9659.150	398
U contact maker		3 + 1	9640.170 + 9649.170				9650.170 + 9659.170				377/391
Isolator chassis		1 set	9649.020	9649.020	9649.020	9649.020	9659.020	9659.020	9659.020	9659.020	377/391
Accessories											
Side panels		2	8106.512	8106.512	8106.512	8106.512	8108.512	8108.512	8108.512	8108.512	853
Cover for distribution busbar (from the isolator manufacturer's range)			ABB Model No. NHP 407062 R..		Jean Müller Model No. A 8900 101		ABB Model No. NHP 407062 R..		Jean Müller Model No. A 8900 101		
Roof plates, vented[1)]		1	9660.255	9660.265	9660.255	9660.265	9659.545	9659.555	9659.545	9659.555	406
Roof plates with pressure relief function[1)]		1	9660.955	9660.965	9660.955	9660.965	–	–	–	–	406
Lock systems											
Standard double-bit lock insert may be exchanged for comfort handle, see page 881 and other inserts, see page 888.											

[1)] In exchange for the standard TS roof.
To order enclosures in textured RAL 7032, please add extension .XX0 to the Model No. Delivery times available on request.

System overview Page 366 **System components** Page 376/390 **Connection components** Page 377/391 **Accessories** Page 401 **C rails** Page 928

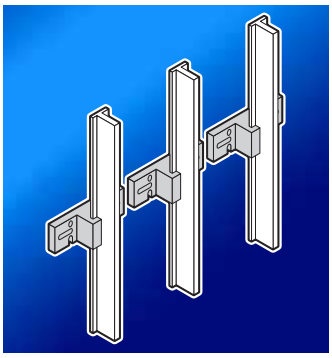
System components for NH fused isolator panels



T-bar supports

Rated current up to	Version	3-pole		4-pole				
		Packs of	Model No. SV	Packs of	Model No. SV		Packs of	Model No. SV
800 A	T-support	3	**9660.000**	3	**9660.000**	+	1	**9649.100**
	T-end support	3	**9660.010**	3	**9660.010**	+	1	**9649.110**
1600 A	T-support	3	**9660.100**	3	**9660.100**	+	1	**9659.100**
	T-end support	3	**9660.110**	3	**9660.110**	+	1	**9659.110**

Detailed drawing,
see page 1141.



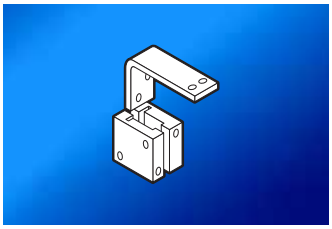
T-busbars E-Cu

10 mm knife edge

Rated current up to	Length mm	approx. weight (kg/busbar)	3-pole		4-pole				
			Packs of	Model No. SV	Packs of	Model No. SV		Packs of	Model No. SV
800 A	1000	4.3	3	**9660.020**	3	**9660.020**	+	1	**9649.120**
	1600	6.7	3	**9660.030**	3	**9660.030**	+	1	**9649.130**
1600 A	1000	8.3	3	**9660.120**	3	**9660.120**	+	1	**9659.120**
	1600	13.3	3	**9660.130**	3	**9660.130**	+	1	**9659.130**

Detailed drawing,
see page 1141.

Technical information,
see page 1144.



T-connection kits

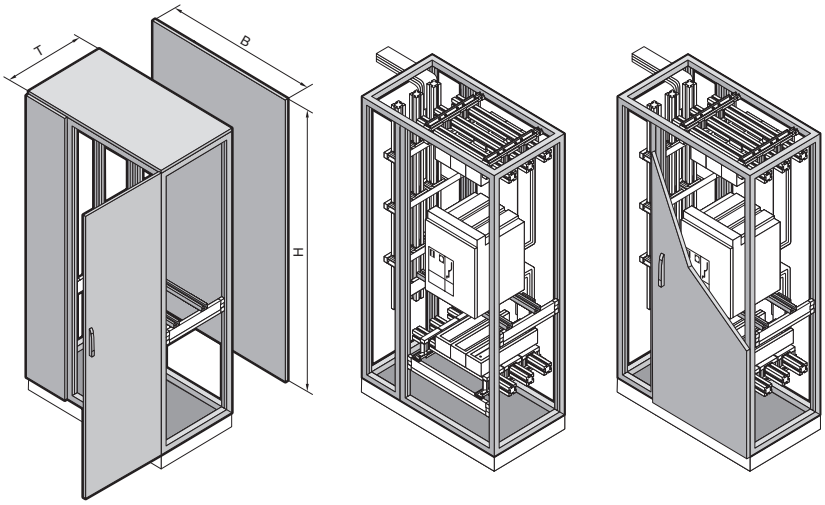
800 A/1600 A
For NH fused isolator brands ABB and Jean Müller

For Maxi-PLS	Packs of	3-pole					4-pole		Page
		2000 A			3200 A		2000 A	3200 A	
For enclosure depth mm		500	600	600	600	800	600	800	
Bar centre distance mm		100	100	150	150	150	100	150	
For T-busbar up to 800 A									
Approximate weight (kg/set)		8	9	9	9	10	12	14	
For ABB SlimLine **Model No. SV**	1 set	9660.040	**9660.050**	9660.060	**9660.070**	9660.080	**9649.080**	**9659.080**	
For Jean Müller SASIL **Model No. SV**	1 set	9660.040	**9660.050**	9660.060	**9660.070**	9660.080	**9649.140**	**9659.140**	
For T-busbar up to 1600 A									
Approximate weight (kg/set)		–	13	13	13	15	18	20	
For ABB SlimLine **Model No. SV**	1 set	–	**9660.140**	9660.150	**9660.160**	9660.170	**9649.090**	**9659.090**	
For Jean Müller SASIL **Model No. SV**	1 set	–	**9660.140**	9660.150	**9660.160**	9660.170	**9649.150**	**9659.150**	
Accessories									
U contact maker	3 + 1	9640.170 –	9640.170 –	9640.170 –	9650.170 –	9650.170 –	9640.170 9649.170	9650.170 9659.170	377/ 391
Isolator chassis	1 set	9640.020	9640.020	9650.020	9650.020	9650.020	9649.020	9659.020	377/ 391

System overview Page 366 **System components** Page 376/390 **Connection components** Page 377/391 **SV-TS 8 enclosures** Page 396
Accessories Page 401

for coupling sets





Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Door, roof and rear panel:
Dipcoat-primed,
powder-coated on the outside in textured RAL 7035
Gland plates: Zinc-plated

Supply includes:
Enclosure frame
with fitted system support rails for power circuit-breaker attachment;
door, roof, rear panel,
gland plates (three-piece).

Detailed drawing,
see page 1141.

Technical information,
see page 1145.

For Maxi-PLS		Packs of	3-pole		4-pole		Page
			2000 A	3200 A	2000 A	3200 A	
Width (B) in mm			800	1000	1000	1000	
Height (H) in mm			2000	2000	2000	2000	
Depth (T) in mm			600	600	600	800	
Model No. SV		1	**9660.305**	**9660.355**	**9649.685**	**9659.695**	
Door			1	1	1	1	
Approximate weight (kg)			145	175	165	195	
Base/plinth							
Components front and rear	Height 100 mm	1 set	8601.800	8601.000	8601.000	8601.000	835
	Height 200 mm	1 set	8602.800	8602.000	8602.000	8602.000	835
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	8601.060	8601.080	835
	Height 200 mm	1 set	8602.060	8602.060	8602.060	8602.080	835
Maxi-PLS system components							
Coupling sets, vertical (Maxi-PLS in the roof section)		1 set	9660.320	9660.370	9649.700	9659.700	400
Coupling sets, vertical (Maxi-PLS in the rear section)		1 set	9660.310	9660.360	–	–	400
Maxi-PLS busbars, E-Cu 57		3	9640.210	9650.240	–	–	376/390
		4	–	–	9649.240	9659.240	376/390
System attachment (Maxi-PLS in the roof section)	for coupling set[1]	2	9640.070	9650.070	9649.070	9659.070	400
	for busbars[1]	2	9640.120	9650.100	9640.080	9650.080	376/390
System attachment (Maxi-PLS in the rear section)	for coupling set[1]	2	9640.070	9650.070	9649.070	9659.070	400
	for system rear[2]	2	9640.150	9650.150	9640.090	9650.090	376/390
	for system bottom[2]	2	9640.120	9650.100	9640.080	9650.080	376/390
Accessories							
Side panels		2	8106.512	8106.512	8106.512	8108.512	853
Roof plates, vented[3]		1	9660.245	9660.255	9660.255	9659.545	406
Roof plates with pressure relief function[3]		1	9660.945	9660.955	9660.955	–	406
Device module			■	■	■	■	401
Mounting bracket		24	9660.090	9660.090	9660.090	9660.090	404
Lock systems							
Standard double-bit lock insert may be exchanged for comfort handle, see page 881 and other inserts, see page 888.							

[1] 2 packs required per system configuration.
[2] 1 pack required per system configuration.
[3] In exchange for the standard TS roof.
To order enclosures in textured RAL 7032, please add extension .XX0 to the Model No. Delivery times available on request.

System overview Page 366 **Connection kits for coupling sets** Page 370/382 **System components** Page 376/390
Connection components Page 377/391 **Accessories** Page 401

System components for coupling sets



Coupling sets

vertical
For installation in 600/800 mm deep SV-TS 8 enclosures for coupling sets.

Coupling sets are selected according to the rated current I_e of the primary busbars to be coupled:
- Coupling set 2000 A:
  $I_e \leq 2000$ A
- Coupling set 3200 A:
  I_e 2000 A ≤ 3200 A

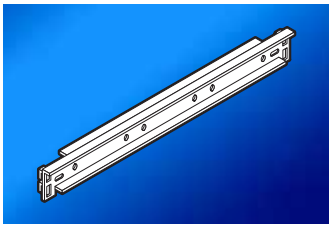
Supply includes:
3-pole
3 Maxi-PLS busbars E-Cu,
1 set of connection brackets E-Cu, top (L1 – L3),
1 set of connection brackets E-Cu, bottom (L1 – L3),
assembly parts.

4-pole
4 Maxi-PLS busbars E-Cu,
1 set of connection brackets E-Cu, top (L1 – L3, N),
1 set of connection brackets E-Cu, bottom (L1 – L3, N),
assembly parts.

For Maxi-PLS in the roof section	3-pole		4-pole		Page
	2000 A	3200 A	2000 A	3200 A	
Approximate weight (kg)	98	152	130	202	
Packs of	1 set	1 set	1 set	1 set	
Model No. SV	**9660.320**	**9660.370**	**9649.700**	**9659.700**	
Also required					
Sliding blocks (Packs of 15)	9640.980[1)]	9650.990[1)]	9640.980[2)]	9650.990[2)]	377/391

For Maxi-PLS in the rear section	3-pole			Page
	2000 A	3200 A		
Weight (kg)	82	140		
Packs of	1 set	1 set		
Model No. SV	**9660.310**	**9660.360**		
Also required				
Sliding blocks (Packs of 15)	9640.980[1)]	9650.990[1)]		377/391

[1)] Quantity required per system configuration: 24
[2)] Quantity required per system configuration: 32



System attachment

for vertical coupling set
For attaching the busbar supports – see page 376/390 – and coupling sets to the side TS frame section.

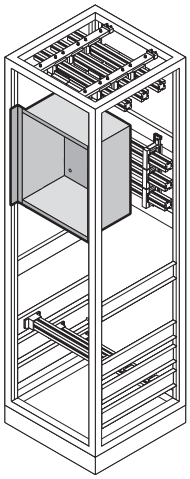
Material:
Stainless steel

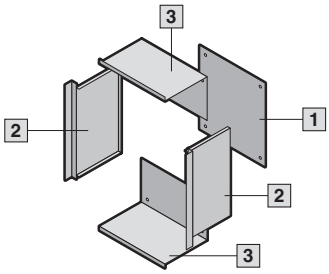
For Maxi-PLS coupling section	3-pole		4-pole	
	2000 A	3200 A	2000 A	3200 A
Bar centre distance mm	100	150	100	150
Packs of	2	2	2	2
Model No. SV	**9640.070**	**9650.070**	**9649.070**	**9659.070**

System overview Page 366 **Connection kits for coupling sets** Page 370/382 **System components** Page 376/390
Connection components Page 377/391 **SV-TS 8 enclosures** Page 399 **Accessories** Page 401

Device module















For use in power circuit breaker incoming/outgoing feeder panels with a minimum depth of 600 mm.
The removable mounting plate may be used for the configuration e.g. of fuses, power circuit-breakers and switchgear.

Material:
Side parts, centre parts:
Sheet steel, spray-finished in RAL 7035
Mounting plate:
Sheet steel, zinc-plated, passivated
Front panel:
Aluminium, anodised

Supply includes:
2 side parts,
2 centre parts,
connector parts,
mounting plate,
optional front panel.

1 Mounting plate
2 Side parts
3 Centre parts

Note:
Please observe the manufacturer-specific data regarding the arcing space of power circuit-breakers.

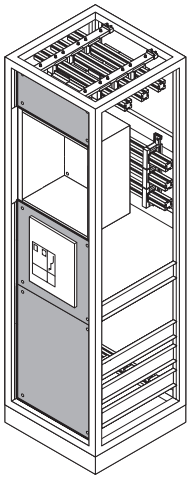
Version		Packs of	For enclosure width 600 mm	For enclosure width 800 mm	Page
Interior dimensions, clearance width	Width in mm		432	632	
	Height in mm		263	263	
	Depth in mm		245.5	245.5	
Mounting plate	Width in mm		420	620	
	Height in mm		250	250	
without front panel **Model No. SV**		1	**9660.700**	**9660.710**	
with front panel **Model No. SV**		1	**9660.720**	**9660.730**	
with front panel, horizontally hinged **Model No. SV**		1	**9660.740**	**9660.750**	
with front panel, vertically hinged **Model No. SV**		1	**9660.760**	**9660.770**	
Also required					
Mounting bracket		24	9660.090[1)]	9660.090[1)]	404

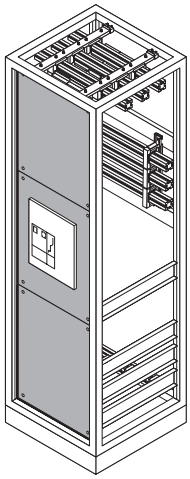
[1)] 4 mounting brackets are required to attach a device module.

Contact hazard protection cover









For SV-TS 8 enclosures with power circuit-breaker
For covering incoming or outgoing feeder panels so that they are safe from finger-contact (IP 2X).

Material:
Sheet steel, spray-finished.

Colour:
RAL 7035

Supply includes:
3 front covers.

Note:
Cutouts for power circuit-breakers must be provided by the customer.
SV-TS 8 enclosures,
see page 392/393.

Device modules,
see page 401.

Variant A:
Incoming/outgoing panel with device module

Variant B:
Incoming/outgoing panel without device module

		Packs of	Variant A (for enclosures with device module)		Variant B (for enclosures without device module)		Page
For enclosure	Width in mm		600	800	600	800	
	Height in mm		2000	2000	2000	2000	
For design	1-door **Model No. SV**	1 set	**9660.280**	**9660.380**	**9660.780**	**9660.880**	
	3-door **Model No. SV**	1 set	**9660.290**[1)]	**9660.390**[1)]	**9660.790**	**9660.890**	
Also required							
Mounting bracket		24	9660.090[2)]	9660.090[2)]	9660.090[2)]	9660.090[2)]	404

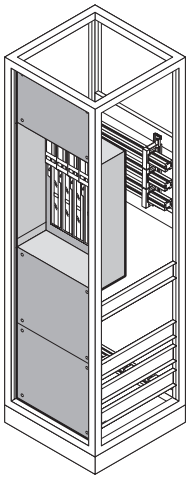
[1)] Including trim panel
[2)] 12 mounting brackets are required to attach the contact hazard protection cover plates.

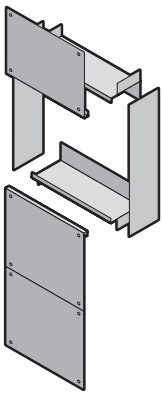
Dimensions of the contact hazard protection cover plates

Model No. SV	Width mm	Height mm			
		Top	Middle	Bottom	Trim panel
9660.280	506	204	656	721	–
9660.290	506	246.5	567	567	20
9660.380	706	204	656	721	–
9660.390	706	246.5	567	567	20
9660.780	506	526	656	721	–
9660.790	506	567	567	567	–
9660.880	706	526	656	721	–
9660.890	706	567	567	567	–

Contact hazard protection cover







For SV-TS 8 enclosures with Rittal NH fused isolators
To cover NH fused isolators in the rear enclosure area so that they are safe from finger-contact (IP 2X).

Material:
Sheet steel, spray-finished.

Colour:
RAL 7035

Supply includes:
3 front covers,
2 depth covers,
2 side covers,
connector parts.

Note:
SV-TS 8 enclosures,
see page 394/395.
NH fused isolators,
see page 353.

For enclosure	Width in mm	Packs of	600	800	1000	1200	Page
	Height in mm		2000	2000	2000	2000	
	Depth in mm		600	600	600	600	
Free installation width for Rittal NH fused isolators[1] mm	**without** use of longitudinal connectors		500	700	900	1100	
	with use of longitudinal connectors		400	600	800	1000	
Model No. SV		1 set	**9660.460**	**9660.470**	**9660.480**	**9660.490**	
Also required							
Mounting bracket		24	9660.090[2]	9660.090[2]	9660.090[2]	9660.090[2]	404
Accessories							
Cover panel for NH isolators	Size 00	4	9660.180	9660.180	9660.180	9660.180	404
	Size 1 – 3	4	9660.190	9660.190	9660.190	9660.190	404

[1] When using the top-mounted busbars SV 9640.160/SV 9650.160, see page 376/390.
Longitudinal connectors SV 9640.190/SV 9650.190 for Maxi-PLS busbars, see page 376/390.
[2] 12 mounting brackets are required to attach the contact hazard protection cover plates.

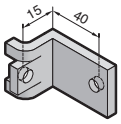


Mounting bracket

For attaching the device modules and contact hazard protection covers.
Tapped hole M6.

Material:
Sheet steel, zinc-plated, passivated.

Supply includes:
Assembly screws.



Packs of	Model No. SV
24	**9660.090**



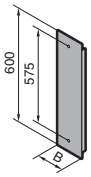
Blanking cover

To cover free NH fused isolator slots.

Material:
Sheet steel, spray-finished.

Colour:
RAL 7035

Supply includes:
Assembly screws.



For NH size	Width (B) mm	Packs of	Model No. SV
00	49.5	4	**9660.180**
1 to 3	99.5	4	**9660.190**

Note:
NH fused isolators,
see page 353.



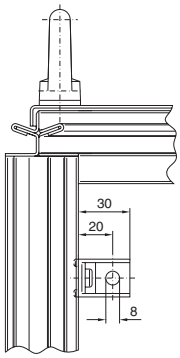


Cover attachment

For simple mounting of covers.

Note:
Only suitable for use in conjunction with three-door enclosures.

Packs of	Model No. SV
8	**9660.680**

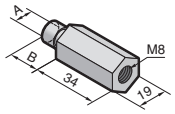




Terminal studs

For the attachment of NH fused isolators, size 00 (Model No. SV 3591.040)
– see page 353 – on Maxi-PLS busbars.

For Maxi-PLS	2000 A	3200 A	Page
A	M10	M12	
B	9	12	
Packs of	3	3	
Model No. SV	**9640.390**	**9650.390**	
Also required			
Sliding blocks	9640.980	9650.990	377/391



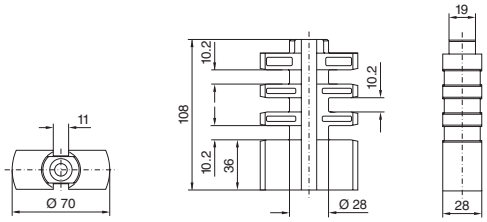


Stacking insulator

To support the connection kits top/bottom.
Easily retro-fitted.

Supply includes:
Assembly parts.

Packs of	**Model No. SV**
6	**9660.200**





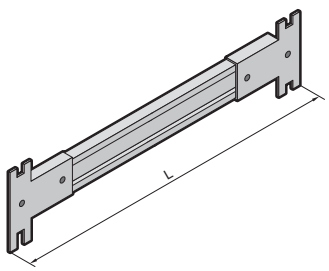
C rails

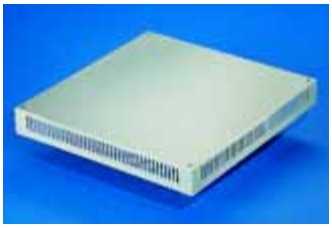
For attaching the stacking insulator to the TS frame section.

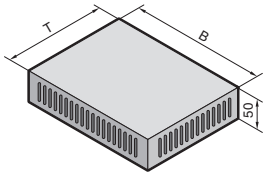
Material:
Sheet steel, zinc-plated, passivated.

Supply includes:
4 C rails,
8 brackets,
assembly parts.

For TS enclosures		Length (L) mm	Packs of	**Model No. SV**
Width mm	Depth mm			
600	600	600	4	**9660.210**
800	800	800	4	**9660.220**







Roof plates, vented

In exchange for the standard SV-TS roof.
All-round vent slots

Material:
Sheet steel, spray-finished.

Colour:
RAL 7035

Protection category:
IP 2X

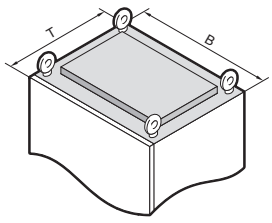
Supply includes:
Assembly parts.

For TS enclosures		Packs of	Model No. SV
Width (B) mm	Depth (T) mm		
600	600	1	**9660.235**
	800	1	**9659.525**
800	600	1	**9660.245**
	800	1	**9659.535**
1000	600	1	**9660.255**
	800	1	**9659.545**
1200	600	1	**9660.265**
	800	1	**9659.555**

To order roof plates in textured RAL 7032, please add extension .XX0 to the Model No.
Delivery times available on request.







Roof plates

with pressure relief function

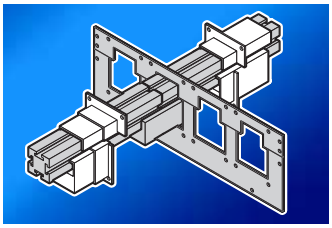
In exchange for the standard SV-TS roof.
Roof plates with pressure relief function to IEC 60 439-1, supplement 2 (special test): “Procedure for testing under accidental arc conditions”.

Material:
Sheet steel, spray-finished.

Colour:
RAL 7035

For TS enclosures		Packs of	Model No. SV
Width (B) mm	Depth (T) mm		
600	600	1	**9660.935**
800	600	1	**9660.945**
1000	600	1	**9660.955**
1200	600	1	**9660.965**

To order roof plates in textured RAL 7032, please add extension .XX0 to the Model No.
Delivery times available on request.



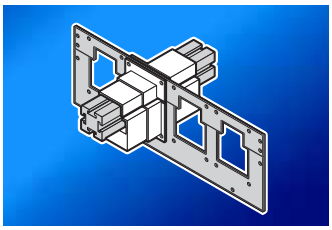
Busbar gland

Exceeds the requirements of BGV A2 in conjunction with the divider panel and the divider panel modules.

Material:
PA 6.6

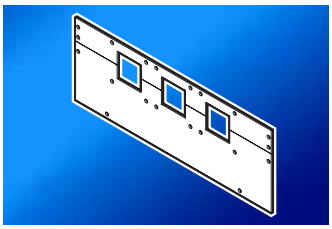
Supply includes:
Assembly parts.

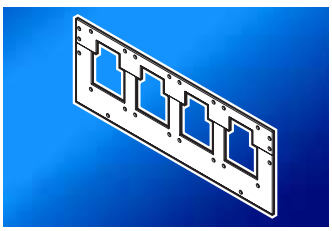
Note:
The busbar gland may also be used as a cover for the longitudinal connectors.



For Maxi-PLS	Packs of	For use **without** longitudinal connectors **Model No. SV**	For use **with** longitudinal connectors **Model No. SV**	
2000 A	1 set	**9640.600**[1)]	**9640.610**[2)]	–
3200 A	1 set	**9650.600**[1)]	–	**9650.610**[2)]
Also required				
Busbar gland	1 set	–	**9640.600**[2)]	**9650.600**[2)]

Required number of packs for system configuration
[1)] 3-pole = 6 packs
4-pole = 8 packs
[2)] 3-pole = 3 packs
4-pole = 4 packs



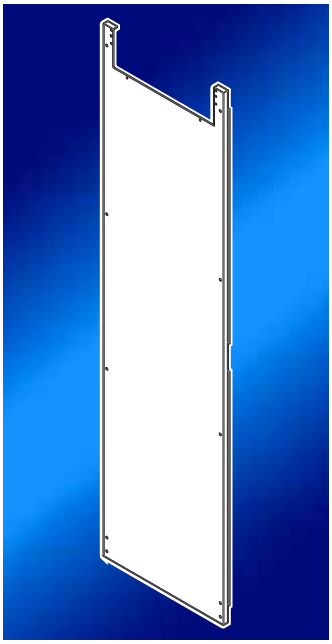


Divider panel modules

For Maxi-PLS		For enclosure depth mm	Bar centre distance mm	Packs of	For use **without** longitudinal connectors **Model No. SV**	For use **with** longitudinal connectors **Model No. SV**
2000 A	3-pole	600	100	1 set	**9640.620**	**9640.630**
	3-pole	–	185	1 set	**9640.640**	**9640.650**
	4-pole	600	100	1 set	**9649.600**	**9649.610**
3200 A	3-pole	600	150	1 set	**9650.620**	**9650.630**
	3-pole	–	185	1 set	**9650.640**	**9650.650**
	4-pole	800	150	1 set	**9659.600**	**9659.610**

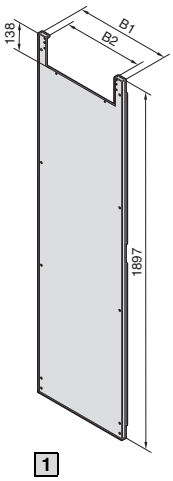
Material:
PA 6.6

Supply includes:
Assembly parts.



Divider panel

For side shielding from neighbouring panels. In conjunction with the busbar gland and the divider panel modules, as a preventive measure to prevent arcing.



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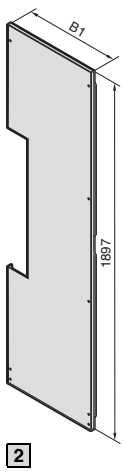


2

B = Width

1 For TS enclosurs with Maxi-PLS busbars in the roof section

For TS enclosures		B1 mm	B2 mm	Packs of	Model No. SV
Depth mm	Height mm				
600	2000	502	418	1	**9660.620**
800	2000	702	618	1	**9659.590**

2 For TS enclosurs with Maxi-PLS busbars in the rear section

For TS enclosures		B1 mm	Packs of	Model No. SV
Depth mm	Height mm			
600	2000	502	1	**9660.610**
800	2000	702	1	**9659.580**

Material:
Sheet steel, 1.5 mm, zinc-plated, passivated.

Supply includes:
Assembly parts.

ISV distribution enclosure

up to 630 A/up to 1600 A

The “one-stop supplier” concept has distinct advantages. Easier planning and procurement with one partner, faster installation thanks to coordinated systems, and hence reduced labour and investment costs.



ISV-TS 8 enclosure system
- Bayable with all TS 8 enclosures of the same height and depth
- Pre-configured
- Flexible interior installation with the TS 8 enclosure accessories range, such as doors, lock systems, partial mounting plates, climate control components
- Optional door hinging on l/h or r/h side
- Suitable for component mounting as an incoming or outgoing feeder panel, depending on requirements
- Cable entry freely selectable depending on the enclosure configuration

ISV modules
- Pitch pattern 150 x 250 mm (H x W)
- Refined quick-fit assembly system facilitates precise positioning of the modules in the ISV-TS 8 enclosure
- Cover is prepared for a lead seal

ISV components
Fully configurable with Rittal components, such as
- NH fused isolators
- NH on-load isolators
- Bus-mounting fuse bases
- Connection components
- Optional busbar installation with SV busbar systems up to 1600 A (185 mm bar centre distance) or Rittal Maxi-PLS up to 2000 A

Systematic fast assembly



The ISV enclosure system, with its pre-configured mounting level, is perfectly prepared for mounting the installation modules.



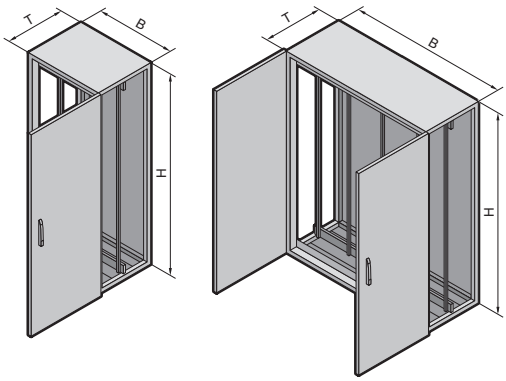
The required modules may be screw-fastened directly to the mounting levels without any further accessories.



The matching contact hazard protection cover plates inside the enclosure guard against accidental contact with live parts.

ISV-TS 8 enclosures for distribution enclosures up to 630 A





Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Contact hazard protection frame: Hard PVC, RAL 9002

Surface finish:
Enclosure frame:
Dipcoat-primed
Roof, rear panel, door(s):
Dipcoat-primed,
powder-coated on the outside in textured RAL 7035
Gland plates: Zinc-plated

Supply includes:
Enclosure frame with mounting level,
door(s), roof, rear panel, gland plates (three-piece), contact hazard protection frame.

Detailed drawing,
see page 1148.

Technical specifications,
see page 1148.

Width (B) in mm		Packs of	600		850		1100		Page
Height (H) in mm			2000		2000		2000		
Depth (T) in mm			400	600	400	600	400	600	
Model No. SV		1	**9665.945**	**9665.905**	**9665.955**	**9665.915**	**9665.965**	**9665.925**	
Door(s)			1	1	1	1	2	2	
Approximate weight (kg)			89.5	94.5	113.5	120	157	167	
Base/plinth									
Components front and rear	Height 100 mm	1 set	8601.600	8601.600	8601.850	8601.850	8601.300	8601.300	835
	Height 200 mm	1 set	8602.600	8602.600	8602.850	8602.850	8602.100	8602.100	835
Trim panels (sides)	Height 100 mm	1 set	8601.040	8601.060	8601.040	8601.060	8601.040	8601.060	835
	Height 200 mm	1 set	8602.040	8602.060	8602.040	8602.060	8602.040	8602.060	835
Accessories									
Cable clamp rails		2	4191.000	4191.000	4195.000	4195.000	–	–	979
Cable entry plates[1)]		2	8800.060	8800.060	8800.085	8800.085	–	–	964
Side panels		2	8104.235	8106.235	8104.235	8106.235	8104.235	8106.235	853
Cable entry gland			■	■	■	■	■	■	420
Lock systems									
Standard double-bit lock insert may be exchanged for comfort handle, see page 881 and other inserts, see page 888.									

[1)] Cable entry grommets, see page 965.
To order enclosures in textured RAL 7032, please add extension .XX0 to the Model No. Delivery times available on request.
To order side panels in textured RAL 7032, please add extension .200 to the Model No. Delivery times available on request.

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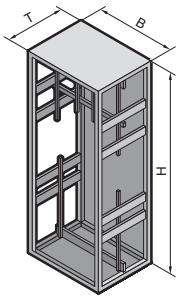
ISV distribution enclosure

ISV-TS 8 enclosures for distribution enclosures up to 1600 A





Material:
Sheet steel
Enclosure frame, roof, rear panel and gland plates: 1.5 mm
Door: 2.0 mm
Contact hazard protection frame: Hard PVC, RAL 9002

Surface finish:
Enclosure frame:
Dipcoat primed
Roof, rear panel, door:
Dipcoat primed,
powder-coated on the outside in textured RAL 7035
Gland plates: Zinc-plated

Supply includes:
Enclosure frame with mounting level,
door, roof, rear panel,
gland plates (three-piece),
contact hazard protection frame.

Note:
- For assembly and space reasons, a contact hazard protection module with 4 height units (600 mm) and 2 or 3 width units (500 or 750 mm), depending on the enclosure selection, is always required on the inlet or outlet side.
- When using Rittal NH fused isolators size 00 – 3, see page 353, care should be taken to ensure that for thermal reasons, a contact protection hazard module with at least 1 height unit (150 mm) is always fitted above the NH isolators.
- The contact hazard protection modules to cover the NH strips all round will need to be machined by the customer.

Detailed drawing,
see page 1148.

Width (B) in mm		Packs of	600	850	Page
Height (H) in mm			2000	2000	
Depth (T) in mm			600	600	
Model No. SV		1	**9665.975**	**9665.985**	
Door			1	1	
Approximate weight (kg)			94.5	120	
Base/plinth					
Components front and rear	Height 100 mm	1 set	8601.600	8601.850	835
	Height 200 mm	1 set	8602.600	8602.850	835
Trim panels (sides)	Height 100 mm	1 set	8601.060	8601.060	835
	Height 200 mm	1 set	8602.060	8602.060	835
Also required					
Support bracket		24 sets	4183.000	4183.000	933
Punched sections without mounting flanges		4	4376.000	4382.000	925
Maxi-PLS system attachment for mounting the busbar supports SV 3052.000, see page 351 or SV 9640.160, see page 376		2	9640.150	9640.150	376
Accessories					
Cable clamp rails		2	4191.000	4195.000	979
Cable entry plates[1)]		2	8800.060	8800.085	964
Side panels		2	8106.235	8106.235	853
Cable entry gland			■	■	420
Lock systems					
Standard double-bit lock insert may be exchanged for comfort handle, see page 881 and other inserts, see page 888.					

[1)] Cable entry grommets, see page 965.
To order enclosures in textured RAL 7032, please add extension .XX0 to the Model No. Delivery times available on request.
To order side panels in textured RAL 7032, please add extension .200 to the Model No. Delivery times available on request.

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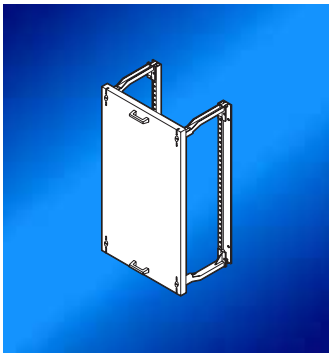


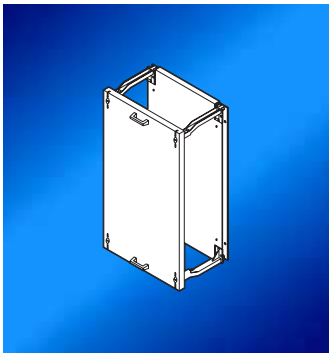
Contact hazard protection modules

- For covering free installation areas
- Cover is prepared for a lead seal
- Insulating material RAL 9002

Mechanical interior installation	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
Empty module	1	250 mm	1	150 mm	1	**9665.000**
	1	250 mm	2	300 mm	1	**9665.010**
	1	250 mm	3	450 mm	1	**9665.020**
	1	250 mm	4	600 mm	1	**9665.030**
	2	500 mm	1	150 mm	1	**9665.040**
	2	500 mm	2	300 mm	1	**9665.050**
	2	500 mm	3	450 mm	1	**9665.060**
	2	500 mm	4	600 mm	1	**9665.070**
	3	750 mm	4	600 mm	1	**9665.510**

Accessories	Page
Terminal block	420
Cable clamp rails	420

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm

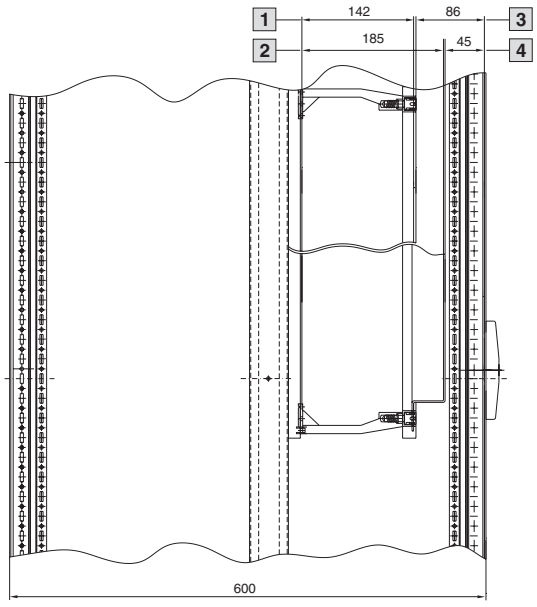


Mounting plate modules

- With mounting plate made from 2 mm zinc-plated sheet steel
- Cover is prepared for a lead seal
- Maximum usable depth 142 mm
- Insulating material RAL 9002

Mechanical interior installation: Mounting plate (W x H)	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
200 x 150 mm	1	250 mm	1	150 mm	1	**9665.080**
200 x 300 mm	1	250 mm	2	300 mm	1	**9665.090**
200 x 450 mm	1	250 mm	3	450 mm	1	**9665.100**
200 x 600 mm	1	250 mm	4	600 mm	1	**9665.110**
450 x 150 mm	2	500 mm	1	150 mm	1	**9665.120**
450 x 300 mm	2	500 mm	2	300 mm	1	**9665.130**
450 x 450 mm	2	500 mm	3	450 mm	1	**9665.140**
450 x 600 mm	2	500 mm	4	600 mm	1	**9665.150**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm



Clearance frame

1 Mounting plate module
2 Mounting plate module with deep cover
3 Contact hazard protection
4 Contact hazard protection with deep cover

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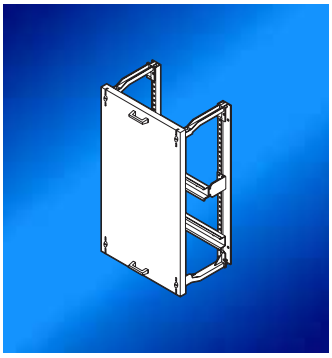
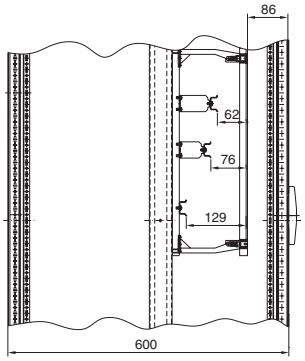
Installation modules





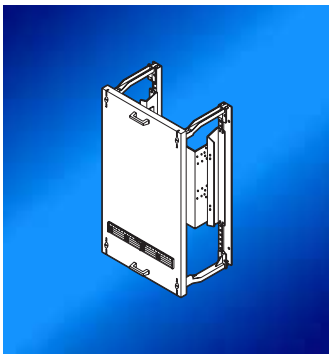
Support rail modules

- For the installation of terminal blocks, contactors etc.
- Support rails 35/15 mm
- Adjustable on a 25 mm pitch pattern
- Cover is prepared for a lead seal
- Insulating material RAL 9002

Mechanical interior installation: Number of support rails	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
1	1	250 mm	1	150 mm	1	**9665.160**
	1	250 mm	2	300 mm	1	**9665.170**
2	1	250 mm	3	450 mm	1	**9665.180**
3	1	250 mm	4	600 mm	1	**9665.190**
1	2	500 mm	1	150 mm	1	**9665.200**
	2	500 mm	2	300 mm	1	**9665.210**
2	2	500 mm	3	450 mm	1	**9665.220**
3	2	500 mm	4	600 mm	1	**9665.230**

Accessories	Page
Spacers	419
Terminal block	420
Cable clamp rails	420
Support rails	420

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm



Support modules

- Variably usable with switchgear
- Solid mounting plate
- Cover is prepared for a lead seal
- Insulating material RAL 9002

Mechanical interior installation: Mounting surface	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
W x H 190 x 210 mm, installation depth variable from 86 – 161 mm	1	250 mm	3	450 mm	1	**9665.360**
W x H 190 x 210 mm, installation depth variable from 86 – 153 mm	2	500 mm	3	450 mm	1	**9665.370**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm

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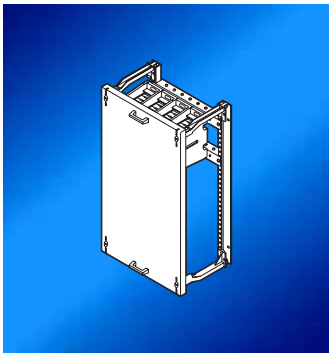


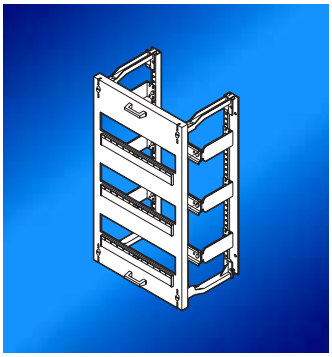
Connection modules

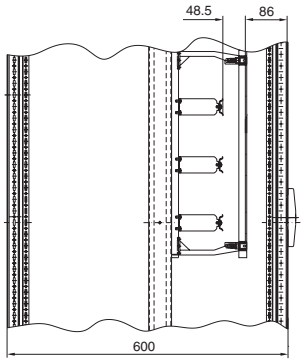
- For connecting copper and aluminium conductors
- Single-wire or multi-wire conductors with crimped wire end ferrule or laminated copper bar
- Cover is prepared for a lead seal
- Insulating material RAL 9002

Mechanical interior installation: Terminal connection top and bottom		Size				Packs of	Model No. SV
		Width unit (WU)[1]		Height unit (U)[2]			
250 A, 4-pole	Round conductor: 1 x 16 – 150 mm² or 2 x 16 – 70 mm² Laminated flat copper: Clamping area W x H 17 x 21 mm	1	250 mm	3	450 mm	1	**9665.300**
250 A, 5-pole		1	250 mm	3	450 mm	1	**9665.310**
400 A, 4-pole	Round conductor: 1 x 50 – 240 mm² or 2 x 25 – 120 mm² Laminated flat copper: Clamping area W x H 25 x 21 mm	1	250 mm	3	450 mm	1	**9665.320**
400 A, 5-pole		1	250 mm	3	450 mm	1	**9665.330**
630 A, 4-pole	Round conductor: 1 x 120 – 300 mm² or 2 x 120 – 185 mm² Laminated flat copper: Clamping area W x H 41 x 21 mm	2	500 mm	3	450 mm	1	**9665.340**
630 A, 5-pole		2	500 mm	3	450 mm	1	**9665.350**

Accessories	Page
Laminated copper bars	361
Cable clamp rails	420

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm





DIN rail mounted device modules

- To accommodate DIN rail mounted devices
- Support rails 35/7.5 mm
- Cover is prepared for a lead seal
- Insulating material RAL 9002

Mechanical interior installation	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
Horizontal pitch of 12 (1 x 12 x 18 mm)	1	250 mm	1	150 mm	1	**9665.240**
Horizontal pitch of 24 (2 x 12 x 18 mm)	1	250 mm	2	300 mm	1	**9665.250**
Horizontal pitch of 36 (3 x 12 x 18 mm)	1	250 mm	3	450 mm	1	**9665.260**
Horizontal pitch of 48 (4 x 12 x 18 mm)	1	250 mm	4	600 mm	1	**9665.270**
Horizontal pitch of 24 (2 x 12 x 18 mm)	2	500 mm	1	150 mm	1	**9665.280**
Horizontal pitch of 48 (4 x 12 x 18 mm)	2	500 mm	2	300 mm	1	**9665.290**
Horizontal pitch of 72 (6 x 12 x 18 mm)	2	500 mm	3	450 mm	1	**9665.500**

Accessories	Page
Cover strips	419
Terminal block	420

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm

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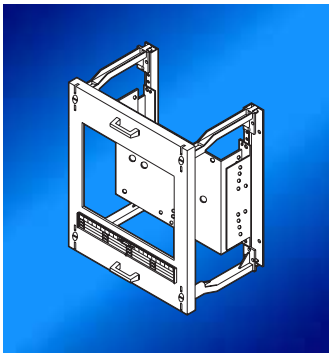
Installation modules



NH on-load isolator modules

- Suitable to accommodate Rittal on-load isolators for mounting plate assembly
- Cover is prepared for a lead seal
- Insulating material RAL 9002

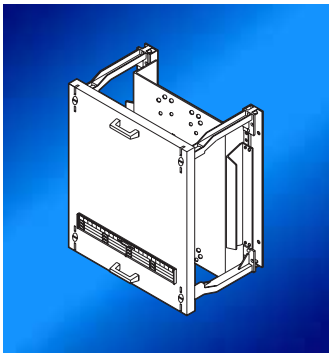
Mechanical interior installation			Size				Packs of	Model No. SV
			Width unit (WU)[1]		Height unit (U)[2]			
Mounting plate slotted and positioned plus cutout in the cover to fit NH on-load isolators	1 x size 00 160 A	1	1	250 mm	2	300 mm	1	**9665.380**
	2 x size 00 160 A	1	1	250 mm	2	300 mm	1	**9665.390**
	1 x size 1 250 A	2	1	250 mm	3	450 mm	1	**9665.400**
	1 x size 2 400 A	3	1	250 mm	3	450 mm	1	**9665.410**
	1 x size 3 630 A	4	2	500 mm	3	450 mm	1	**9665.420**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm

NH on-load isolator for mounting plate assembly

	Size	Model No. SV	Model No. SV[1]	Page
1	Size 00	3488.000 3489.000	3488.310 3489.310	358
2	Size 1	3409.000	3409.310	358
3	Size 2	3415.010	3415.310	359
4	Size 3	3095.010	3095.310	359

[1] with electronic fuse monitoring and LED display



Power circuit-breaker modules

- Suitable for accommodating commercially available power circuit-breakers of brands ABB, Merlin Gerin, Moeller and Siemens in 3-pole versions, up to 630 A
- Cover is prepared for a lead seal
- Insulating material RAL 9002

Note:
The pitch patterns of holes for attachment of the power circuit-breakers and the corresponding cut-out dimensions for the covers are shown in the ISV assembly instructions.

Power circuit-breakers are not included with the supply.

Mechanical interior installation		Size				Packs of	Model No. SV
		Width unit (WU)[1]		Height unit (U)[2]			
Mounting plate slotted and positioned for power circuit-breakers	1	1	250 mm	2	300 mm	1	**9665.430**
	2	1	250 mm	3	450 mm	1	**9665.440**
	3	1	250 mm	2	300 mm	1	**9665.450**
	4	1	250 mm	3	450 mm	1	**9665.460**
	5	1	250 mm	3	450 mm	1	**9665.470**
	6	1	250 mm	3	450 mm	1	**9665.480**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm

Power circuit-breakers

I_N	Brand							
	ABB		Merlin Gerin		Moeller Electric		Siemens	
160 A	1	Tmax T1 Tmax T2	3	Compact NS 100 Compact NS 160	1	NZM 1	3	Sentron VL160 Sentron VL160X
					3	NZM 7		
250 A	2	Tmax T3	4	Compact NS 250	1	NZM 2	4	Sentron VL250
					5	NZM 7		
400 A	5	SACE Isomax S5	6	Compact NS 400	5	NZM 10	5	Sentron VL400
630 A	5	SACE Isomax S5 SACE Isomax S6	6	Compact NS 630	5	NZM 10	5	Sentron VL630

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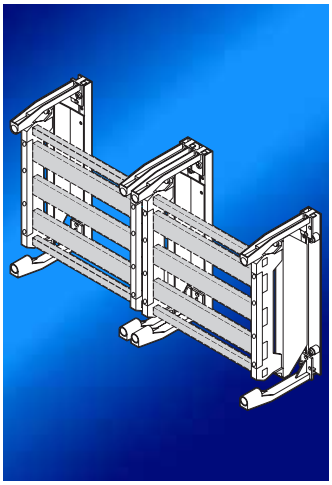
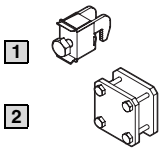


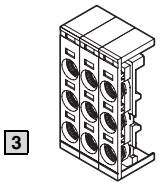
Busbar support

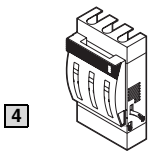
- 5-pole, 60 mm bar centre distance

Note:

- Depending on the configuration and connection variant, the busbars must be cut to length prior to installation, in accordance with the ISV assembly instructions.
- 5-pole busbar variant only suitable for the configuration of busbar connections and NH bus-mounting on-load isolators, size 00.
- With bus-mounting fuse bases, only 3-pole configuration (L1/L2/L3) is supported. In such cases, N and PE must be configured via busbar support SV 3050.000 (see page 318) or busbar module (Model No. SV 9665.590 or SV 9665.600, see page 418).







Mechanical interior installation	Usable busbar dimensions E-Cu	Packs of	Model No. SV
Busbar support for 2 height units[1] and max. 2 width units[2]	Busbars L1/L2/L3 30 x 5 mm (400 A) 30 x 10 mm (630 A)	4	**9665.490**
	Busbar N 25 x 10 mm		
	Busbar PE 12 x 10 mm		

Assembly components		Model No. SV	Page
1 Conductor connection clamps for bar thickness	5 mm	3450.500 – 3453.500/3550.000	324
	10 mm	3455.500 – 3458.500/3555.000	324
2 Plate clamp		3554.000	324
3 Bus-mounting fuse bases			see below
4 NH bus-mounting on-load isolators, size 00			see below
Also required			
Contact hazard protection cover plate for			
1 Conductor connection clamps			416
2 Plate clamp			416
3 Bus-mounting fuse bases			416
4 NH bus-mounting on-load isolators, size 00			416
Accessories			
Busbars E-Cu			360
Busbar connectors for E-Cu[3]	30 x 5/10 mm (L1/L2/L3)	9320.020	360
	25 x 10 mm (N)	9320.020	360
	12 x 10 mm (PE)	9350.070	360
Laminated copper bars			361

[1] 1 U ≙ 150 mm
[2] 1 WU ≙ 250 mm
[3] for busbar connections from enclosure to enclosure

3 Bus-mounting fuse bases and accessories

Type	Bus-mounting fuse base	Contact hazard protection cover	End caps	Page
	Model No. SV	Model No. SV	Model No. SV	
D 02-E 18	3418.000	3419.000	3420.000	334
D II-E 27	3427.000	3428.000	3429.000	334
D III-E 33	3433.000	3434.000	3435.000	334

4 NH bus-mounting on-load isolator

Size	Model No. SV	Model No. SV[1]	Page
Size 00	3400.000 3401.000 3402.000 3403.000	3490.210 3491.210 3492.210 3493.210	338

[1] with electronic fuse monitoring and LED display

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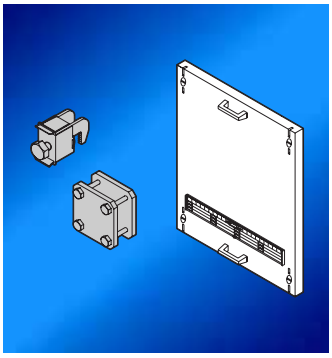
Installation modules



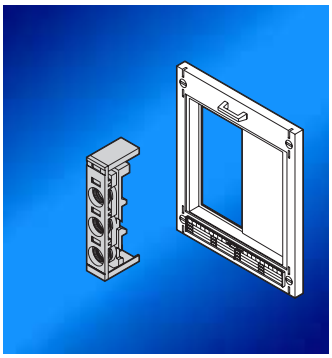
Contact hazard protection cover

for conductor connection clamps and plate clamp

- Cover is prepared for a lead seal
- Insulating material RAL 9002

Version	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
Solid	1	250 mm	2	300 mm	1	**9665.530**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm



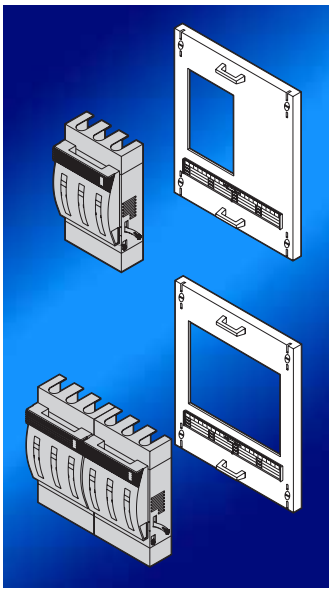
Contact hazard protection covers

for bus-mounting fuse bases

- Cover is prepared for a lead seal
- Insulating material RAL 9002

For	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
6 x D 02-E 18	1	250 mm	2	300 mm	1	**9665.520**
4 x D II-E 27, 3 x D III-E 33	1	250 mm	2	300 mm	1	**9665.540**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm



Contact hazard protection covers

for NH bus-mounting on-load isolators, size 00

- Cover is prepared for a lead seal
- Insulating material RAL 9002

For	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
1 x size 00	1	250 mm	2	300 mm	1	**9665.550**
2 x size 00	1	250 mm	2	300 mm	1	**9665.560**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm

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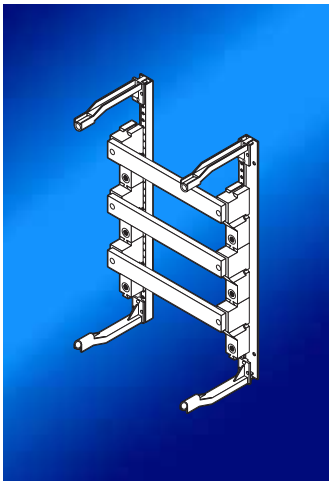


NH fused isolators modules

- With busbars E-Cu (100 mm bar centre distance)
- For NH fused isolator, size 00 or busbar connections

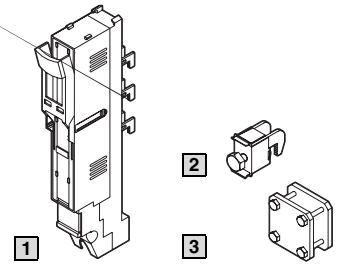
Note:

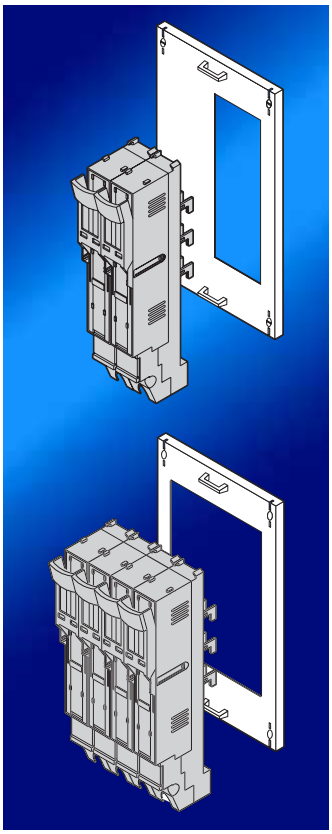
- In order to be able to guarantee problem-free cable connection, a contact hazard protection module (Model No. SV 9665.000, see page 411) must be installed beneath the NH fused isolator modules.
- Busbar connection in accordance with “ISV” assembly instructions.

Mechanical interior installation: Busbar system	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
630 A, 3-pole with busbars E-Cu 30 x 10 mm	1	250 mm	3	450 mm	1	**9665.570**
	2	500 mm	3	450 mm	1	**9665.580**

Assembly components	Model No. SV	Page
1 NH fused isolator, size 00	3591.010	349
2 Conductor connection clamps	3455.500 – 3459.500/3555.000	344
3 Plate clamp	3554.000	344
Also required		
Contact hazard protection cover plate for		
1 NH fused isolator, size 00		see below
2 Conductor connection clamps		418
3 Plate clamp		418
Accessories		
Laminated copper bars		361

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm





Contact hazard protection covers

For NH fused isolator, size 00

- Cover is prepared for a lead seal
- Insulating material RAL 9002

For	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
2 x size 00	1	250 mm	3	450 mm	1	**9665.620**
4 x size 00	1	250 mm	3	450 mm	1	**9665.630**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm

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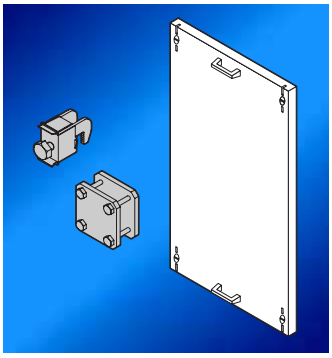
Installation modules



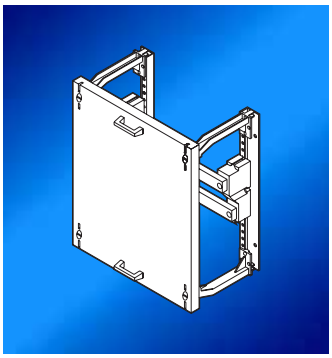
Contact hazard protection cover

for conductor connection clamps and plate clamp

- Cover is prepared for a lead seal
- Insulating material RAL 9002

Version	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
Solid	1	250 mm	3	450 mm	1	**9665.610**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm



Busbar modules

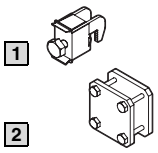
2-pole

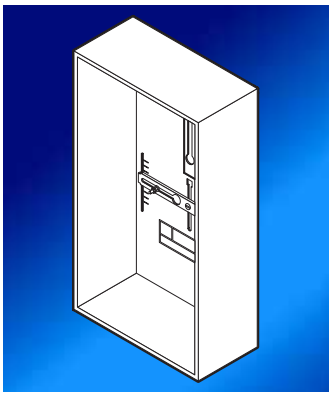
- For connecting N and PE
- Contact hazard protection cover included
- Cover is prepared for a lead seal
- Insulating material RAL 9002

Mechanical interior installation: Busbar system	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
2-pole for N and PE with busbars E-Cu 30 x 10 mm	1	250 mm	2	300 mm	1	**9665.590**
	2	500 mm	2	300 mm	1	**9665.600**

Assembly components	Model No. SV	Page
1 Conductor connection clamps	3455.500 – 3459.500/3555.000	324
2 Plate clamp	3554.000	324
Accessories		
Laminated copper bars		361

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm





Meter mounting board module

- Open module for internal measurements
- Clearance depth available for meter installation 170 mm
- Insulating material RAL 9002

Note:
The meter mounting board module does not comply with meter mounting board standard DIN 43 870/VDE 0603 and does not meet the conditions for total insulation.
Use in unmetered areas only by arrangement with the local electricity supply company.

Mechanical interior installation	Size				Packs of	Model No. SV
	Width unit (WU)[1]		Height unit (U)[2]			
Attachment rails to accommodate a meter	1	250 mm	3	450 mm	1	**9665.790**

[1] 1 WU ≙ 250 mm
[2] 1 U ≙ 150 mm

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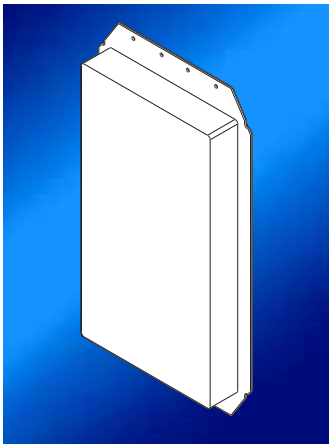
Accessories

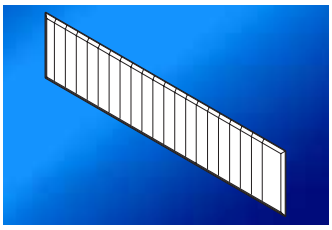


Deep cover

For increasing the usable depth.

- For installation on one-piece contact hazard protection covers
- W x H x D 450 x 250 x 43 mm
- Insulating material RAL 7035

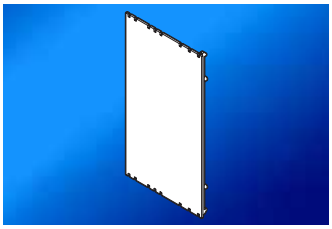
Packs of	Model No. SV
1	**9665.640**



Cover strips

For blanking spare component cutouts in DIN rail mounted device modules, max. 12 divider units (12 x 18 mm), divisible every 9 mm.

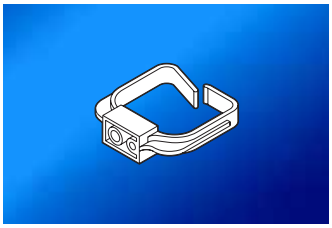
Packs of	Model No. SV
1	**9665.650**



Blanking cover

For blanking spare cutouts for bus-mounting fuse bases, 108 mm wide.

Packs of	Model No. SV
1	**9665.660**

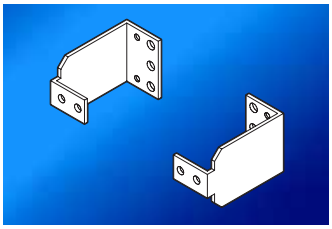


Wiring brackets

for installing

- C rails 30/15 mm
- TS punched sections with mounting flanges
- TS frame section

Packs of	Model No. SV
10	**9665.670**

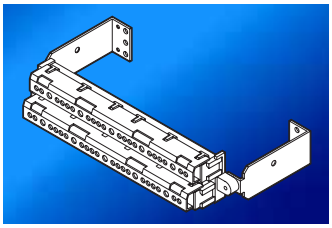


Spacers

For configuring support rails with attachment screws, 53 mm high.

Packs of	Model No. SV
2	**9665.680**

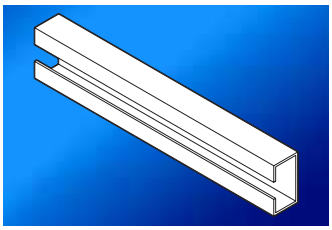
Accessories



Terminal block

For installation into 250 mm wide contact hazard protection and support rail modules 2-pole for N and PE, each with 20 x 4 mm², 5 x 25 mm².

Packs of	Model No. SV
1	**9665.690**

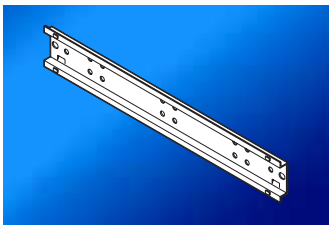


Cable clamp rails

For attaching cable clamps,
see page 981, in

- Connection modules
- Contact hazard protection modules
- Support rail modules

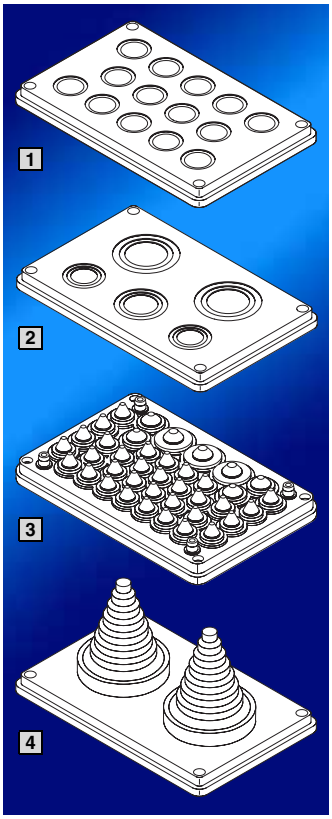
Width units required for the modules	Packs of	Model No. SV
1 WU (250 mm)	1	**9665.700**
2 WU (500 mm)	1	**9665.710**



Support rails

For snap fastening components or terminals, 15 mm high.

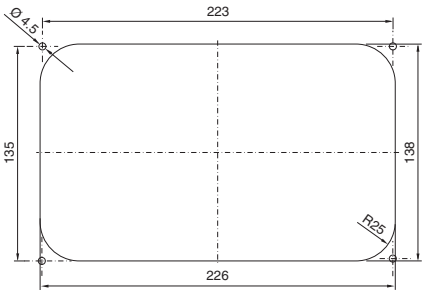
Width units required for the modules	Packs of	Model No. SV
1 WU (250 mm)	1	**9665.720**
2 WU (500 mm)	1	**9665.730**



Cable entry gland

- Including seal
- External dimensions 250 x 160 mm
- Protection category IP 55
- Insulating material RAL 7032

Version	Packs of	Model No. SV
1 14 x M25/32	1	**9665.750**
2 2 x M25/32/40, 1 x M32/40/50, 2 x M40/50/63	1	**9665.760**
3 With sealing membranes 32 x dia. 7 – 16 mm, 4 x dia. 10 – 20 mm, 3 x dia. 14 – 26 mm	1	**9665.770**
4 With entry glands up to 66 mm diameter	1	**9665.780**



Cutout dimensions for
SV 9665.750 to SV 9665.780





Rittal Electronic Systems offer “complete know-how” in the field of electronic packaging at a high level – up to Level 4 integration.

For CPCI, VME and AdvancedTCA applications.

This means “plug & play” systems for **extremely high data throughput levels –** in telecommunications, in the network and server segment, in automation, in traffic guidance systems and in medical technology.

System solutions in a modern design, with **super-fast backplanes,** with **integral power modules** and with **effective climate control concepts.**

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Features



ATCA – Advanced Telecom Computing Architecture –

The first cross-industry standard developed by the PICMG (PCI Industrial Computers Manufacturer Group) for telecommunications applications that were previously developed on a proprietary basis. ATCA – The solution for high demands in terms of system availability and performance, in both telecommunications and industrial automation, transport technology and medical technology. Rittal's product spectrum includes a range of complete systems in various designs with the corresponding accessories.

System benefits

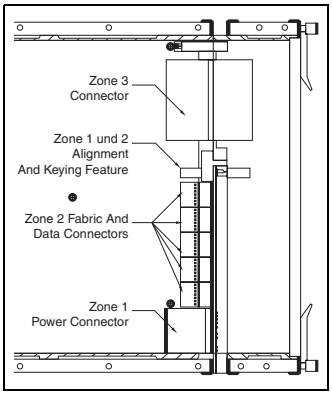
AdvancedTCA™

- System availability of at least 99.999 %.
- Fail-safe maximised, thanks to redundancy
- Hot-swap capability ensures uninterrupted operation.
- Transfer rates of up to 2.5 Terabit/s.
- Large board formats: 8 U x 280 mm.
- Switched Fabric architecture.
- By reducing proprietary platforms, the high cost of development and training is eliminated.
- Available off the shelf.
- Specified heat losses up to 200 W per board.
- Support of different protocols (Ethernet, Infiniband, Rapid I/O, PCI-Express).
- Defined performance of up to 3.125 Gbit/sec.



The mechanical components ATCA Shelf (PICMG 3.0)

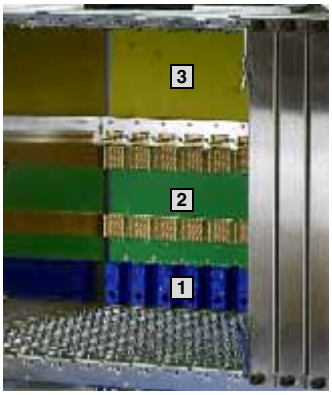
- 1 x system rack (mechanical)
- 1 x backplane (Switched Fabric)
- 1 x backplane (electrical distribution)
- 4 x fans
- 2 x or 4 x 48 V power entry modules (PEM)
- Installation space for 2 x Shelf Management Controllers
- Installation space for 2 x PC controllers
- A shelf has either 14 or 16 slots.
- A shelf with 14 slots is based on 482.6 mm (19″).
- A shelf with 16 slots is based on 23″ or ETSI.
- The height of a shelf is N x U (19″/23″) or N x 25 mm (ETSI).
- The depth of a shelf is 385 mm and is suitable for installation in 600 mm deep enclosures.



Boards

- Dimensions according to IEC 60297-3 and specifications to PICMG 3.0.
- The front boards (8 U x 6 HP and 280 mm depth) contain the electronic functions and the connectors. They are offset from the pitch line by 6.61 mm and are 1.6 to 2.4 mm thick, have an ESD clip on the component side 1, and attachment holes for the cover of component side 2. Essentially, a board type plug-in unit consists of a front panel with centering pin, EMC seal, ESD clip, injector/extractor handles with optional microswitch operation for hot swap, and optional M3-knurled screws.

  A cover is obligatory for component side 2 (rear) to reinforce the PCB and/or for EMC protection.
- Rear I/O boards (RTM): 8 U x 6 HP x 70 mm



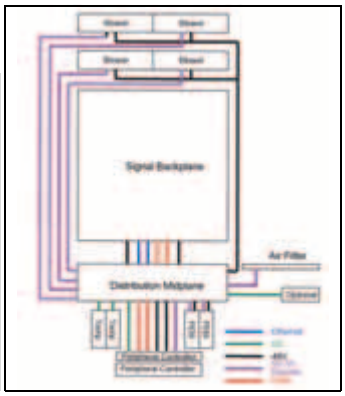
Connector zones

Zone 1:
Power supply and system management

Zone 2:
Data communication

Zone 3:
RTM (rear I/O)

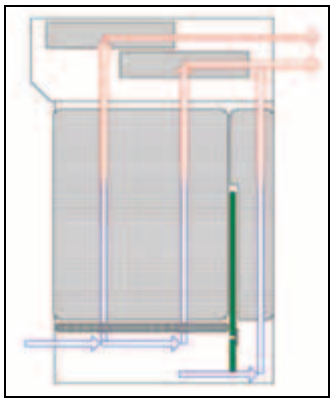
Zone 1 and Zone 2 are equipped with a special centering/keying device.



Shelf management

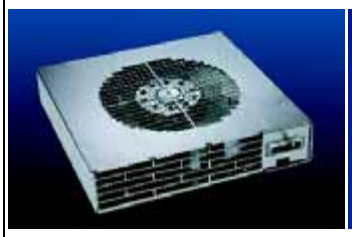
Interfaces for the monitoring and control of:

- Boards
- PEMs (power entry modules)
- Fan
- Air inlet temperature
- Remote alarm signals
- Air filter available/ not available



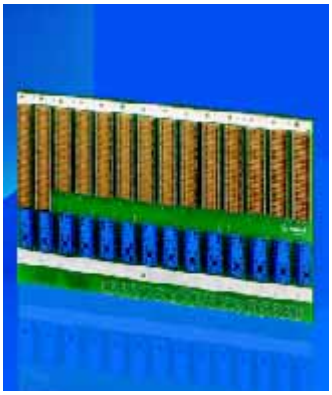
Side view, right

Shelf cooling





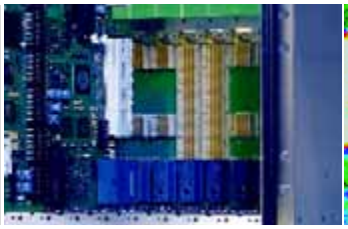
- ATCA specifies heat losses of up to 200 W per front board and 30 W per rear board, which translates into approximately 3 kW for a fully configured shelf with 14 boards.
- The four high-capacity RiCool fans from Rittal with 300 m^3/h ensure optimum climatic conditions.
- Redundancy and hot-swap ensure reliability, even in the event of a fan failure.
- Replaceable dust filter in the air inlet zone.

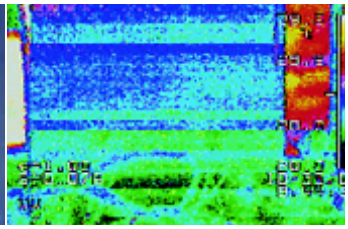


Backplanes

3 times higher performance!

- Full Mesh backplane from Rittal with 10 Gbit/sec. (acc. to PICMG 3.x, 3.125 Gbit/sec. is required).





- Dual Intelligent Platform Management Interface (IPMI), bussed or radial.
- Product range: Full Mesh, Dual Star, Dual Dual Star also optionally available with additional Mesh performance.

- Thermal image of a Rittal backplane under full load. The red zone at the top is attributable to resistive loads.



AdvancedTCA solutions from Rittal

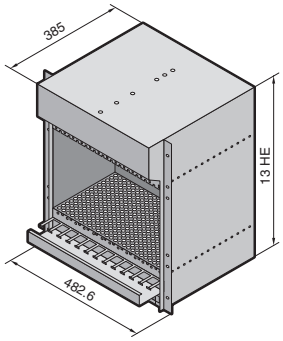
As a competent supplier of Electronic Packaging Solutions, Rittal and its subsidiary Kaparel have been actively involved in development of the AdvancedTCA standard.

This knowledge and experience is incorporated into product development. Rittal offers complete solutions for ATCA applications. Upon request, these may also be tailored to specific requirements. There is a particular emphasis on the area of heat management.

Complex solutions, from direct cooling of the board via the shelf through to the enclosure, provide reliability, even with extreme requirements.

AdvancedTCA Shelf Version VA-1 (Rittal ShMC)





HE = U

Technical specifications:
- 482.6 mm (19″) x 13 U x 385 mm deep
- 14 x 6 HP slots for front boards and RTM
- 14 slot backplanes with bussed IPMI
- 2 or 4 x PEM connected at the rear
- Prepared for 2 x rear connected Rittal ShMC
- Rear connected PC (2 x)
- Space for rear telecom service connection
- RiCool fan connected at the front (4 fans each with 180 cfm/300 m³/h, dual IPMI, dual 48 V)
- Filter frame connected at the front (with air baffle plate and filter mat)
- Zone 3 air seal (14 x 6 HP – slot-based)
- Optional cable ducts for front and rear

ShMC:
The choice of backplane depends on the Shelf Management Controller (ShMC) used. The function of the chosen ShMC determines the function of the peripheral controller (PC).

PEM:
Depending on the application, different types of Power Entry Modules (PEMs) are available. At least two (@ 90 A) are required, and up to a maximum of four (@ 50 A) may be used

Detailed drawing,
see page 1149/1150.

AdvancedTCA Shelf VA-1 (ShMC connectable from rear)

Shelf	U	Slots	Backplane	IPMI	Rittal ShMC[1)]	SwitchSlots	PC	PEM	PEM-Amp	RiCool-2	Model No. RP
VA-1	13	14	Dual Star	bussed	2 x kernels	centre	2 x	2 x	90 A each	4 x 48 V-IPMI	**3688.306**
VA-1	13	14	Dual Star	bussed	2 x kernels	centre	2 x	4 x	50 A each	4 x 48 V-IPMI	**On request**
VA-1	13	14	Full Mesh	bussed	2 x kernels	1 + 2	2 x	2 x	90 A each	4 x 48 V-IPMI	**3688.305**
VA-1	13	14	Full Mesh	bussed	2 x kernels	1 + 2	2 x	4 x	50 A each	4 x 48 V-IPMI	**3688.463**

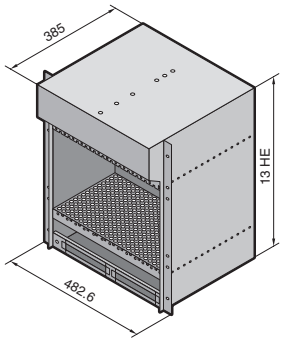
Accessories	Packs of		Page
Filler panel at front with airflow management	1	3688.267	429
Filler panel at rear with airflow management	1	3688.268	429
Filler panel front/rear without airflow management	1	3688.266	429
Cable duct, front	1	On request[2)]	
Cable duct, rear	1	On request[2)]	
Spare parts			
PC (Peripheral Controller)	1	**3688.323**	
PEM-IPMI 90 A (Power Entry Module)	1	**3688.464**	
PEM-IPMI 50 A	1	**3688.465**	
ShMC (Shelf Management Controller)	1	**3688.326**	
Filter (frame, air baffle plate, mat)	1	**3688.385**	
RiCool-2 fan	1	**3688.297**	
Zone 3 air seal 6 HP	1	**3688.290**	
Assembly parts for Zone 3 air seal	100	**3688.387**	

[1)] ShMC not included with the supply.
[2)] Standard attachment for application-specific solutions.

Accessories for ATCA Page 428

AdvancedTCA Shelf Version VB-1/VB-2





HE = U

Technical specifications:
Version VB-1 (Intel/ShMC)
- 482.6 mm (19″) x 13 U x 385 mm deep
- 14 x 6 HP slots for front boards and RTM
- 14 slot backplanes with radial IPMI
- 2 or 4 x PEM connected at the rear
- Prepared for 2 x front connectable Intel ShMC
- Rear connected PC (2 x)
- Space for rear telecom service connection
- RiCool fan connected at the front (4 fans each with 180 cfm/300 m³/h, dual IPMI, dual 48 V)
- Filter frame connected at the front (with air baffle plate and filter mat)
- Zone 3 air seal (14 x 6 HP – slot-based)
- Optional cable ducts for front and rear

Technical specifications:
Version VB-2 (PigeonPoint ShMC)
- 482.6 mm (19″) x 13 U x 385 mm deep
- 14 x 6 HP slots for front boards and RTM
- 14 slot backplanes with bussed IPMI
- 2 or 4 x PEM connected at the rear
- Prepared for 2 x rear connectable PigeonPoint ShMC
- Rear connected PC (2 x)
- Space for rear telecom service connection
- RiCool fan connected at the front (4 fans each with 180 cfm/300 m³/h, dual IPMI, dual 48 V)
- Filter frame connected at the front (with air baffle plate and filter mat)
- Zone 3 air seal (14 x 6 HP – slot-based)
- Optional cable ducts for front and rear

ShMC:
The choice of backplane depends on the Shelf Management Controller (ShMC) used. The function of the chosen ShMC determines the function of the peripheral controller (PC).

PEM:
Depending on the application, different types of Power Entry Modules (PEMs) are available. At least two (@ 90 A) are required, and up to a maximum of four may be used (@ 50 A).

Detailed drawing,
see page 1149/1150.

AdvancedTCA Shelf VB-1 (ShMC connectable from front)

Shelf	U	Slots	Backplane	IPMI	Intel ShMC[1)]	SwitchSlots	PC	PEM[2)]	PEM-Amp	RiCool-2	Model No. RP
VB-1	13	14	Dual Star	radial	2 x CMM	centre	2 x	2 x	90 A each	4 x 48 V-IPMI	**3688.303**
VB-1	13	14	Dual Star	radial	2 x CMM	centre	2 x	4 x	50 A each	4 x 48 V-IPMI	**On request**
VB-1	13	14	Full Mesh	radial	2 x CMM	1 + 2	2 x	2 x	90 A each	4 x 48 V-IPMI	**3688.301**
VB-1	13	14	Full Mesh	radial	2 x CMM	1 + 2	2 x	4 x	50 A each	4 x 48 V-IPMI	**3688.466**

AdvancedTCA Shelf VB-2 (ShMC connectable from front)

Shelf	U	Slots	Backplane	IPMI	PigeonPoint ShMC[1)]	SwitchSlots	PC	PEM[2)]	PEM-Amp	RiCool-2	Model No. RP
VB-2	13	14	Dual Star	bussed	2 x CMM	centre	2 x	2 x	90 A each	4 x 48 V-IPMI	**3688.304**
VB-2	13	14	Dual Star	bussed	2 x CMM	centre	2 x	4 x	50 A each	4 x 48 V-IPMI	**3688.469**
VB-2	13	14	Full Mesh	bussed	2 x CMM	1 + 2	2 x	2 x	90 A each	4 x 48 V-IPMI	**3688.302**
VB-2	13	14	Full Mesh	bussed	2 x CMM	1 + 2	2 x	4 x	50 A each	4 x 48 V-IPMI	**3688.470**

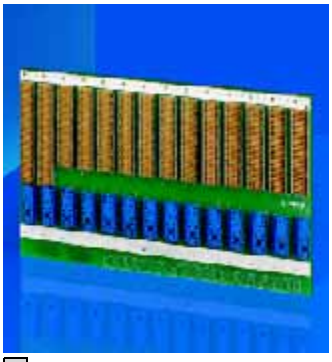
Accessories	Packs of		Page
Filler panel at front with airflow management	1	3688.267	429
Filler panel at rear with airflow management	1	3688.268	429
Filler panel front/rear without airflow management	1	3688.266	429
Cable duct, front	1	On request[3)]	
Cable duct, rear	1	On request[3)]	

Spare parts		for VB-1	for VB-2
PC (Peripheral Controller)	1	**3688.322**	**3688.324**
PEM-IPMI 90 A (Power Entry Module)	1	**3688.388**	
PEM-IPMI 50 A	1	**3688.467**	**3688.471**
PEM-Basic 90 A (Power Entry Module)	1	**3688.378**	
PEM-Basic 50 A	1	**3688.468**	**3688.472**
ShMC (Shelf Management Controller)	1	**3688.338**	**3688.320**
Filter (frame, air baffle plate, mat)	1	**3688.385**	
RiCool-2 fan	1	**3688.297**	
Zone 3 air seal 6 HP	1	**3688.290**	
Assembly parts for Zone 3 air seal	100	**3688.387**	

[1)] ShMC not included with the supply. [2)] PEM-IPMI included with the supply. [3)] Standard attachment for application-specific solutions.

Accessories for ATCA Page 428

Accessories



1

AdvancedTCA backplanes

- 4, 14, 16 slot version
- Dual Star, Full Mesh
- Meets AdvancedTCA specification Version 1.0
- Other versions available on request

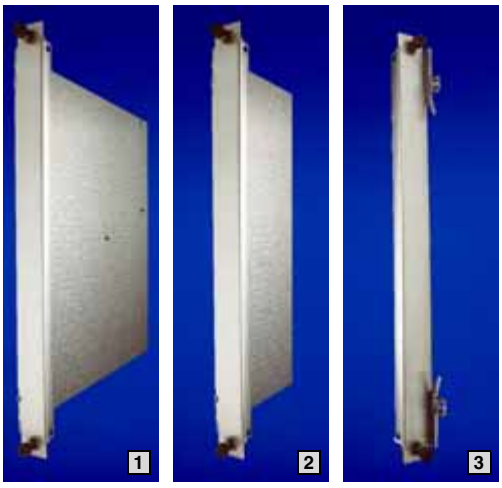
Description	Number of slots	Model No. RP
Triple Full Mesh with bussed IPMI	4	**3688.760**
1 Full Mesh with bussed IPMI	14	**3688.763**
Dual Star with bussed IPMI	14	**3688.307**
Full Mesh with bussed IPMI	16	**3688.317**
Dual Star with bussed IPMI	16	**3688.429**

Face plates, filler panels, handles

A complete customer-specific range of face plates and filler panels is available and offers individual cutouts, screen printing or coating on request, together with a range of handle types, including lock and microswitch actuation. The face plates and filler panels are optionally available with stick-on or snap-on EMC seals. The lock device of the handle also serves as earthing and guarantees a secure hold, even in earthquake zone 4 (NEBS level 3).

The AdvancedTCA face plates and filler panels may be used both for the front boards and for the RTMs (Rear Translation Modules). For the front board, the obligatory cover of component side 2 is integrated into the front panel design. An air management version for front slots or RTM is available for Zone 3.

- Every face plate has two locks.
- Injector/extractor handles, assembly parts and EMC seals must be ordered separately.
- The face plates are deigned for the I/O interface.
- The filler panels are used on unused or reserved slots and offer EMC protection and airflow management.
- The AdvancedTCA face plate with 6 HP is defined in PICMG 3.0.
- I/O units requiring a connection to the chassis ground should be connected via the front panel alignment/ground pin.



Face plate

1 Front, with cover for component side 2

2 Rear, with cover for component side 2

3 Front/rear, without cover for component side 2

Material:
Stainless steel

Face plate front with compulsory cover for component side

HP	Packs of	Model No. RP
6	1	**9805.174**
12	1	**On request**

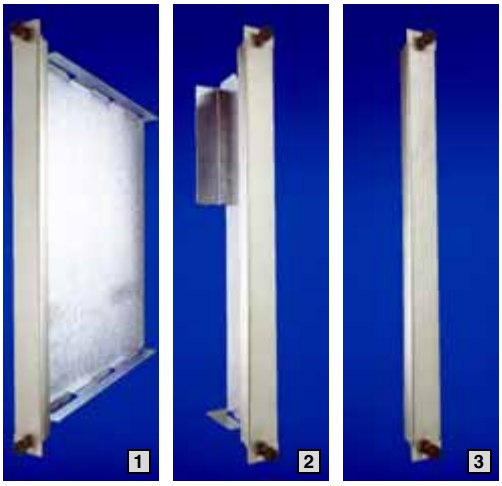
Face plate front with compulsory cover for component side

HP	Packs of	Model No. RP
6	1	**9808.764**
12	1	**On request**

Face plate front/rear (optional) without cover for component side 2

HP	Packs of	Model No. RP
6	1	**9805.172**
12	1	**On request**

Detailed drawing,
see page 1150.



Filler panel

1 Front with airflow management
2 Rear with airflow management
3 Front/rear without airflow management

Material:
Stainless steel

Filler panel, front with compulsory airflow regulation – 8 U, 6 HP, 280 mm

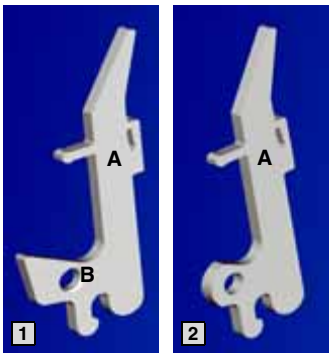
Type	HP	Packs of	Model No. RP
Front	6	1	**3688.267**

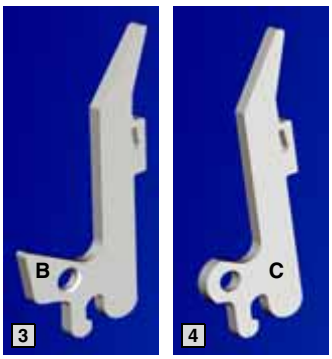
Filler panel, rear with compulsory airflow regulation – 8 U, 6 HP, 70 mm

Type	HP	Packs of	Model No. RP
Rear	6	1	**3688.268**

Filler panel front/rear (optional) without airflow regulation

Type	HP	Packs of	Model No. RP
Front/rear	6	1	**3688.266**





Handles

1 Handles, type 1 –
Handle with microswitch,
control component A + B

2 Handles, type 2 –
Handle with microswitch, control component A

3 Handles, type 1 –
Handle with microswitch, control component B

4 Handles, type 2 –
Handle without microswitch,
control component C

Type 1 handle
Microswitch A + B (B position for max. I/O)

Control component	Packs of	Material	Model No. RP
A + B	1	Stainless steel	**9805.161**
B	1	Stainless steel	**9808.691**

Type 2 handle
Microswitch A (position for 4 x PMC, if PMC is installed on the outermost position of the host)

Control component	Packs of	Material	Model No. RP
A	1	Stainless steel	**9808.692**
C	1		**9808.693**

Detailed drawing,
see page 1150.

EMC seals

for face plates and filler panels

Attachment	U	Packs of	Material	Model No. RP
Bonded	8	1	Foam	**9805.160**
Bonded	8	1	Stainless steel	**3688.342**
Snap-on	8	1	Stainless steel	**3688.397**

Screws

Type	Used for	Packs of	Head	Model No. RP
M2.5 x 6	PCB attachment	100	Phillips	**3654.340**
M3 x 10	Backplane	100		**3688.386**

Rack-mount systems for CPCI and VMEbus

Features



Rittal supplies complete plug-and-play solutions for VME and CompactPCI applications at a high level – up to Level 4 integration. The systems are supplied complete with power supply, backplane, measures for EMC and ESD protection, as well as climate control. Fully assembled, pre-wired and tested.

Individually customised to your requirements.



Systems for CompactPCI





- Systems for the configuration of industrial computers to CompactPCI specifications
- Complies with IEC 60 297-3 and IEEE 1101.1/10/11 as well as CompactPCI Spec. Rev. 1.0 (PICMG)

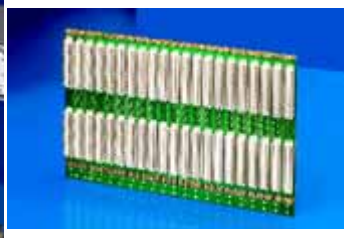
Backplanes
High-speed CompactPCI backplanes. Optionally with H.110 bus and bridges for extension.

Power supplies in various output categories, plug-in or open frame.

PICMG EUROPE



Systems for VMEbus





- Systems for the configuration of industrial computers to VME specifications
- Complies with IEC 60 297-3 as well as IEEE 1101.1/ 1101.10 and 1101.11

Backplanes
High-speed backplanes to VME/ VME64x specifications.

Power supplies in various output categories, plug-in or open frame.



Design features







Side panels and flanges
of aluminium, clear-chromated.

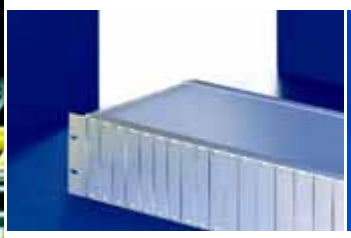
10 mm pitch pattern of holes
in the side panels allows individual system configuration.

Horizontal rails with 10 mm extension for injector/extractor handles.

Features



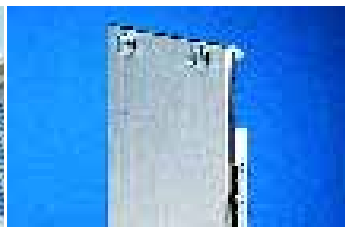
EMC measures



Conductive surface finish of all system components.



EMC gaskets of stainless steel make contact with the individual components.



U-shaped EMC front panels with EMC gaskets ensure reliable contact.



Safety and ESD protection



Keyable guide rails for the installation of keys.



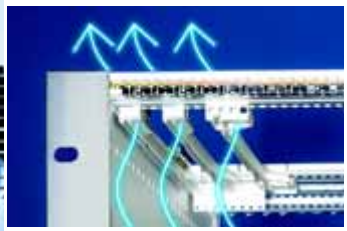
Potential equalisation
ESD pin and ESD clip in the guide rail to discharge static charges before making contact with the board type plug-in unit.



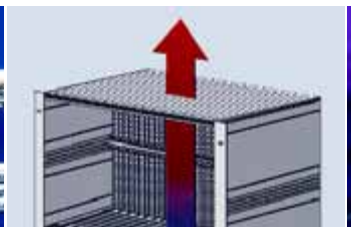
ESD clip in the guide rail ensures permanent direct discharge from the PCB.



Climate control



Maximum air flow, thanks to the narrow design of the guide rails and horizontal rails.



Individual air flow management ensures targeted air routing and optimum heat dissipation. Optionally from bottom to top or from front to rear.



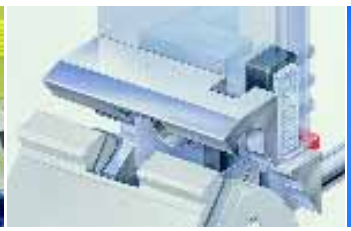
High-performance RiCool fan ensures optimum ventilation. 1 U, hot swap-compatible 204 m^3/h, including speed control and fault alarm signal.



System configuration



Injector/extractor handles to reliably overcome high insertion/extraction forces.



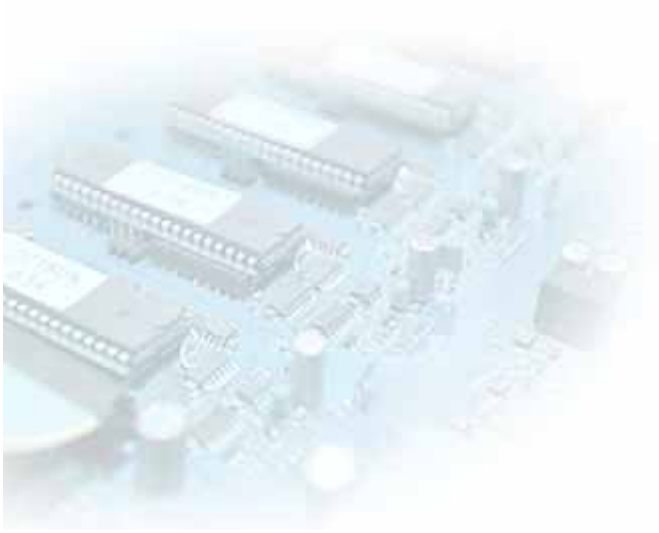
Live insertion
Microswitches in the injector/extractor handles inactivate the hot-swap circuitry.



Keyable, red guide rails for defined positioning of the CPU.

Rack-mount systems for CPCI and VMEbus

Features

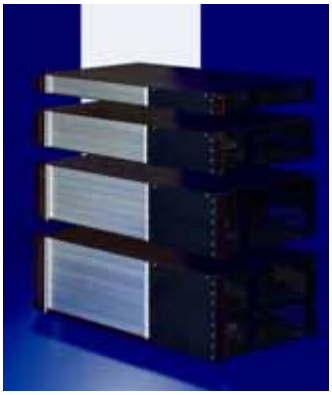


The 300 mm deep Slim-Box enclosures are designed for the horizontal installation of CPCI/VME boards.

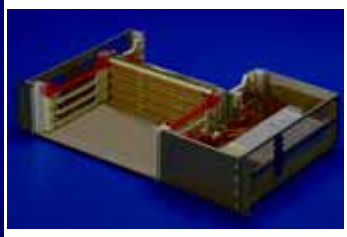
The technical features offered by the enclosures are truly impressive: 2 slots per U front and rear, excellent heat dissipation from left to right thanks to fans in the side panel, and a Monolithic backplane.

Depending on the design, including one ATX power supply or prepared for installation of a plug-in power supply.

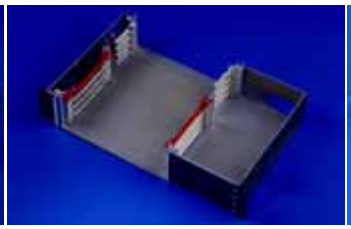
Slim-Box with VME backplane, see page 447.



Slim-Box rack-mount systems 1, 2, 3, 4 U



Version 1:
with backplane and ATX power supply or . . .



Version 2:
without backplane with ATX power supply for individual configuration or . . .



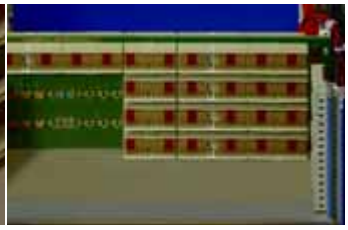
Version 3:
with backplane (from 2 U with H. 110) and prepared for installation of a plug-in power supply (accessory).



2 slots per U for CPCI/ VME boards at the front and rear.



Keyable plastic guide rail.



VME or CPCI backplane,
some with H. 110 (Version 3).



Integral ATX power supply
(Version 1, 2).



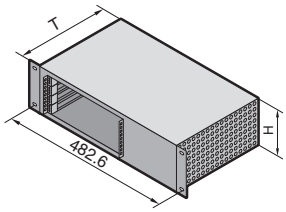
Optional plug-in power supply
hot swap-compatible
(Version 3).



DC fan in the side panel for optimum horizontal ventilation.

Rack-mount system, Slim-Box 1 U, 2 U, 3 U, 4 U





Technical specifications:
- Rack-mount housing 482.6 mm (19″) for the horizontal installation of boards
- Front and rear 2 slots per U for CPCI boards
- Enclosure cooling from left to right
- EMC and ESD-compatible design
- Including fan:
  for 1 U: 12 V DC, 21 m^3/h
  for 2 U: 12 V DC, 74 m^3/h
  for 3 U: 12 V DC, 195 m^3/h or 74 m^3/h,
  for 4 U: 12 V DC, 74 m^3/h
- Conforms to IEEE 1101.1/10/11, CompactPCI Spec. 2.0

Material:
Sheet steel, spray-finished

Slim-Box Version 1	**U** (H)	**1**	**1**	**2**	**2**	**3**	**3**	**4**	**4**
	Depth (T) in mm	300	300	300	300	300	300	300	300
Model No. RP with CPCI backplane and power supply		**9907.475**	**9907.471**	**9907.476**	**9907.472**	**9907.477**	**9907.473**	**9907.478**	**9907.474**
Installation space for boards, mm		160	160	160	160	160	160	160	160
Installation space for rear I/O boards, mm		80	–	80	–	80	–	80	–
Number of front/rear slots		2/2	2	4/4	4	6/6	6	8/8	8
Keyable guide rails		8	4	16	8	24	12	32	16
Power supply unit (ATX)		200 W	200 W	200 W	200 W	300 W	300 W	300 W	300 W
Monolithic CPCI backplane 64 Bit/33 MHz, 6.5 U		1	1	1	1	1	1	1	1
DC fan in the left-hand side panel		3	3	2	2	1	1	4	4

Slim-Box Version 2	**U** (H)	**1**	**2**	**3**	**4**
	Depth (T) in mm	300	300	300	300
Model No. RP without backplane, with power supply		**9907.479**	**9907.480**	**9907.481**	**9907.482**
Installation space for boards, mm		160	160	160	160
Installation space for rear I/O boards, mm		80	80	80	80
Number of front/rear slots		2	4	6	8
Keyable guide rails		8	16	24	32
Power supply unit (ATX)		200 W	200 W	300 W	300 W
DC fan in the left-hand side panel		3	2	1	4

Slim-Box Version 3	**U** (H)	**1**	**2**	**3**	**4**
	Depth (T) in mm	300	300	300	300
Model No. RP with CPCI backplane, without power supply		**3689.177**	**3689.178**	**3689.179**	**3689.180**
Installation space for boards, mm		160	160	160	160
Installation space for rear I/O boards, mm		80	80	80	80
Number of front/rear slots		2/1	4/2	6/3	8/4
Keyable guide rails		10	20	30	40
Monolithic CPCI backplane 6.5 U 64 Bit/33 MHz, H.110 (from 2 U)		1	1	1	1
DC fan in the left-hand/right-hand side panel		3/4	2/3	1/1 + 1	4/6
Plug-in power supply unit, order separately		see page 481			

Accessories		**EMC**	Page	**Non-EMC**	Page
Front panels	3 U, 4 HP	3685.178	538	3684.891	537
	3 U, 8 HP	3685.182	538	3684.895	537
	6 U, 4 HP	3685.186	538	3684.913	537
	6 U, 8 HP	3685.190	538	3684.917	537
H.110, 48 V connection cable		**3688.697**			

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Rack-mount system, Ripac 3 U, 5 slots/4 U, 7 slots horizontal



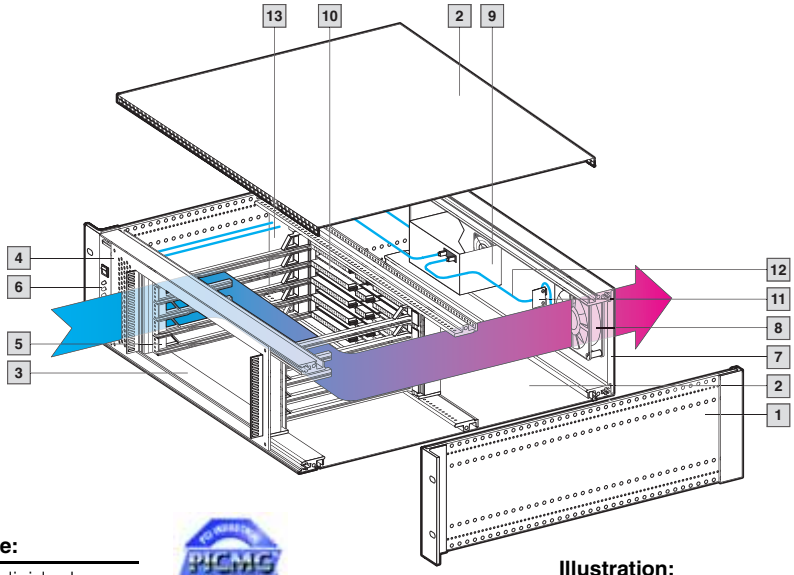

Illustration:
MPS system 3 U for CPCI

Technical specifications:
Subrack, 405 mm deep,
for installation in 482.6 mm (19″) enclosures or cases.
Prepared to accommodate CPCI boards and drives.
Complies with IEC 60 297-3/-5 and IEEE 1101.1/1101.10.
Fully assembled, pre-wired and tested.

Rittal service:
Modifications or individual system solutions can be provided at short notice. Rittal's system specialists will be happy to assist you with planning and configuration.

PICMG EUROPE

U			3	4	Page
Side panel depth mm			405	405	
Wiring space (depth in mm)			210	210	
For PCB			6 U x 160 mm	6 U x 160 mm	
MPS system Model No. RP for CPCI			**3687.717**	**3687.718**	
Mechanical supply includes					
Description		Material	Quantity		
1	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/ stainless steel	1	1	–
2	Top and bottom/covers, solid	Aluminium, unplated	2	2	515
13	Air block panel	Aluminium	1	1	521
	EMC shielding plate for fan	Aluminium, clear-chromated	1	1	524
3	Horizontal mounting kit	Aluminium, clear-chromated	1	1	508
4	Trim frame for horizontal mounting kit	2.5 mm aluminium, clear-chromated	1	1	509
5	Plastic guide rails, keyable	Polycarbonate UL 94-V0	8	12	510
	Plastic guide rails, keyable, red	Polycarbonate	2	2	510
6	EMC front panel 3 U/5 HP for switches/LED	2.5 mm aluminium, clear-chromated	1	–	457
	EMC front panel 4 U/5 HP for switches/LED	2.5 mm aluminium, clear-chromated	–	1	457
7	EMC rear panel 3 U/84 HP with fan and connector cutout	2.5 mm aluminium, clear-chromated	1	–	–
	EMC rear panel 4 U/84 HP with fan and connector cutout	2.5 mm aluminium, clear-chromated	–	1	–
Electrical/electronic supply includes					
Description		Technical specifications			
8	DC fan	12 V DC, 48 m³/h, per fan (UL, CSA, VDE) optionally speed-controlled	1	1	523
9	Power supply unit ATX, PS/2 (RP 3687.793)	300 W	1	1	483
10	CPCI backplane	6.5 U, 5 slots	1	–	440
	CPCI backplane	6.5 U, 7 slots	–	1	440
	LED display module with mains switch	for 3.3 V, +5 V, ±12 V, fan failure	1	1	–
11	Filter module for DC fan	Interference voltage filter	1	1	457
12	DC cable harness	–	■	■	–

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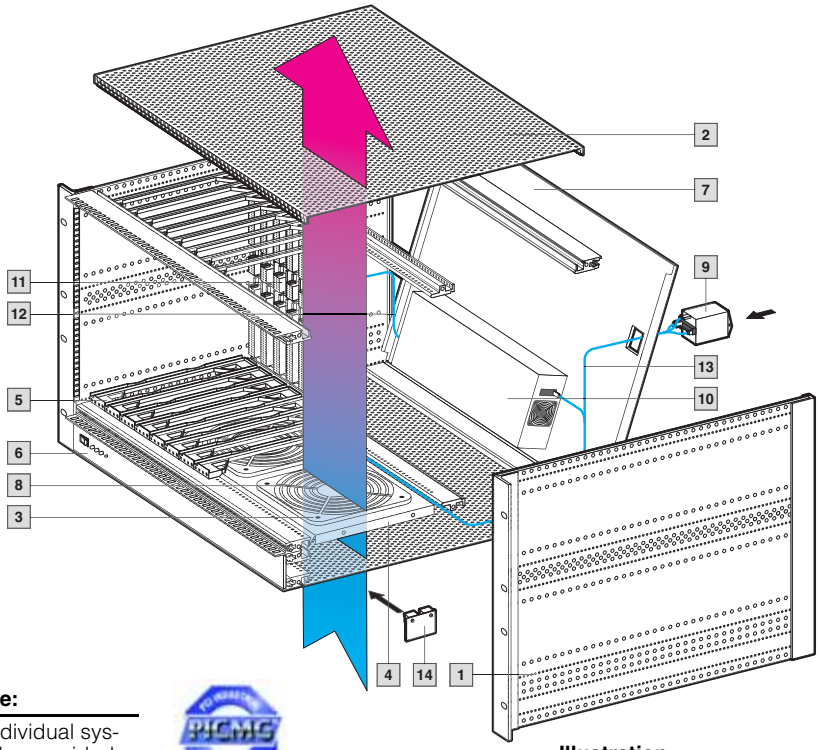
Rack-mount systems, Ripac 4 U/7 U, 8 slots





Technical specifications:
Subrack, 405 mm deep,
for installation in 482.6 mm (19″)
enclosures or cases.
Prepared to accommodate CPCI
boards and drives.
Complies with IEC 60 297-3/-5
and IEEE 1101.1/1101.10.
Fully assembled, pre-wired and
tested.

Rittal service:
Modifications or individual system solutions can be provided at short notice. Rittal's system specialists will be happy to assist you with planning and configuration.

PICMG EUROPE

Illustration:
MPS system 7 U for CPCI

U			4 (3 + 1)	7 (6 + 1)	Page
Side panel depth mm			405	405	
Wiring space (depth in mm)			210	210	
For PCB			3 U/ 6 U x 160 mm	3 U/ 6 U x 160 mm	
MPS system Model No. RP for CPCI			**3687.719**	**3687.720**	
Mechanical supply includes					
Description		Material	Quantity		
1	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/ stainless steel	1	1	–
2	Top and bottom covers, vented	Aluminium, unplated	2	2	515
3	Finger guard	Polyamide	3	3	524
4	Fan mounting plate	1 mm aluminium, anodised	1	1	520
5	Plastic guide rails, keyable	Polycarbonate UL 94-V0	14	14	510
	Plastic guide rails, keyable, red	Polycarbonate	2	2	510
6	EMC front panel 1 U/84 HP for switches and LED	2.5 mm aluminium, clear-chromated	1	1	–
	EMC rear panel 4 U/84 HP, horizontally hinged with connector cutout	2.5 mm aluminium, clear-chromated	1	–	–
7	EMC rear panel 7 U/84 HP, horizontally hinged with connector cutout	2.5 mm aluminium, clear-chromated	–	1	–
Electrical/electronic supply includes					
Description		Technical specifications			
8	DC fan	24 V DC, 140 m^3/h, per fan (VDE, UL, CSA) optionally speed-controlled	3	3	523
9	IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	1	458
10	Open frame power supply (RP 3687.695)	400 W, 3.3 V/25 A, 5 V/25 A, 12 V/8 A, –12 V/7 A (VDE, UL, CSA)	–	1	482
	Power supply unit ATX PS/2 (RP 3687.793)	300 W with switch connection cable	1	–	483
	CPCI backplane	3.5 U, 8 slots	1	–	440
11	CPCI backplane	6.5 U, 8 slots	–	1	440
	LED display module with mains switch	for 3.3 V, +5 V, ±12 V, fan failure	1	–	–
12	DC cable harness	–	■	■	–
13	AC cable harness	–	–	■	–
14	Filter module for DC fan	Interference voltage filter	3	3	457

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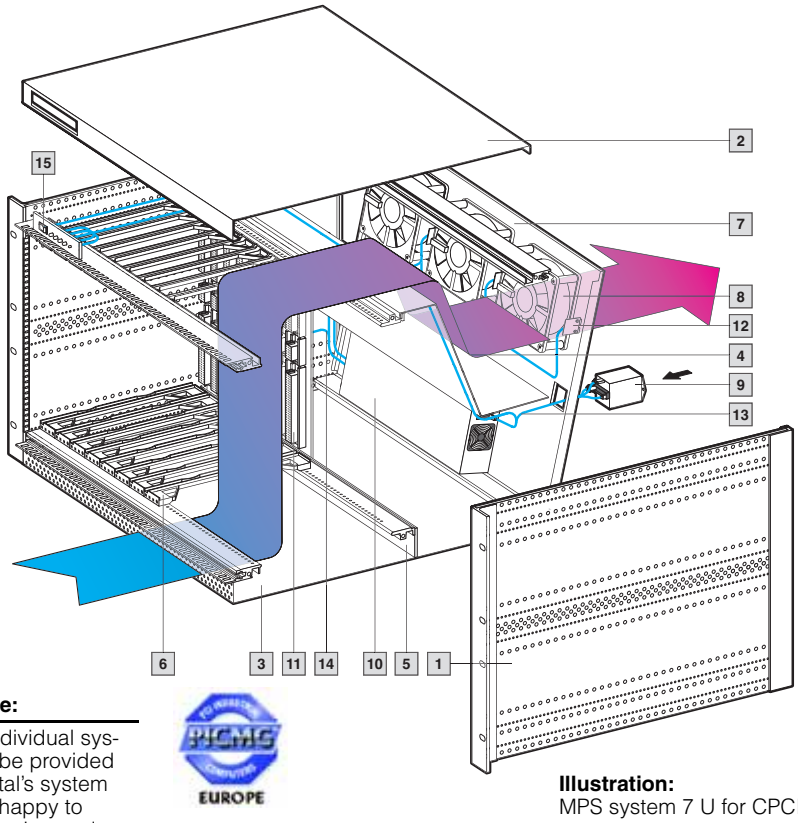
Rack-mount systems, Ripac 7 U, 8 slots





Technical specifications:
Subrack, 405 mm deep,
for installation in 482.6 mm (19″) enclosures or cases.
Prepared to accommodate CPCI boards and drives.
Complies with IEC 60 297-3/-5 and IEEE 1101.1/1101.10.
Fully assembled, pre-wired and tested.

Rittal service:
Modifications or individual system solutions can be provided at short notice. Rittal's system specialists will be happy to assist you with planning and configuration.

Illustration:
MPS system 7 U for CPCI

U			7 (6 + 2 x 1/2)	Page
Side panel depth mm			405	
Wiring space (depth in mm)			210	
For PCB			6 U x 160 mm	
MPS system Model No. RP for CPCI			**3687.721**	
Mechanical supply includes				
Description		Material	Quantity	
1	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	–
2	Cover with 1/2 U edge fold and cutouts for LED/switches	Aluminium, unplated	1	517
3	Bottom cover with 1/2 U edge fold, ventilated at the front	Aluminium, unplated	1	517
	EMC shielding plate for fan	Aluminium, clear-chromated	3	524
4	Air baffle plate	Aluminium	1	521
5	Air block panel 1/2 U	Epoxy	1	521
6	Plastic guide rails, keyable	Polycarbonate UL 94-V0	14	510
	Plastic guide rails, keyable, red	Polycarbonate	2	510
7	EMC rear panel, horizontally hinged, 7 U, with fan and connector cutout	2.5 mm aluminium, clear-chromated	1	
Electrical/electronic supply includes				
Description		Technical specifications		
8	DC fan	12 V DC, 140 m³/h, per fan (UL, CSA, VDE) optional speed control	3	523
9	IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	458
10	Open frame power supply (RP 3687.695)	400 W, 3.3 V/25 A, 5 V/25 A, 12 V/8 A, –12 V/7 A (VDE, UL, CSA)	1	482
11	CPCI backplane	6.5 U, 8 slots	1	440
12	Filter module for DC fan	Interference voltage filter	3	457
13	AC cable harness	–	■	–
14	DC cable harness	–	■	–
15	LED display module with mains switch	for 3.3 V, +5 V, ±12 V, fan failure	1	–

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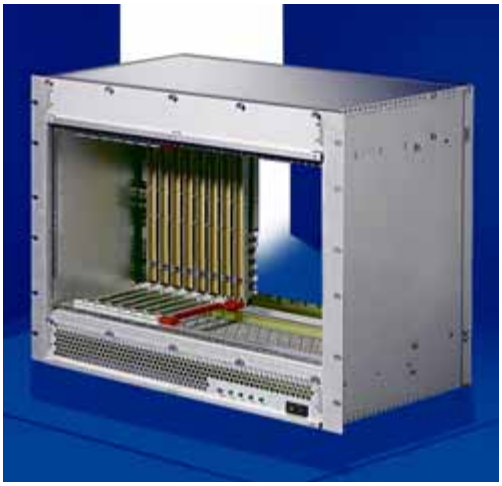
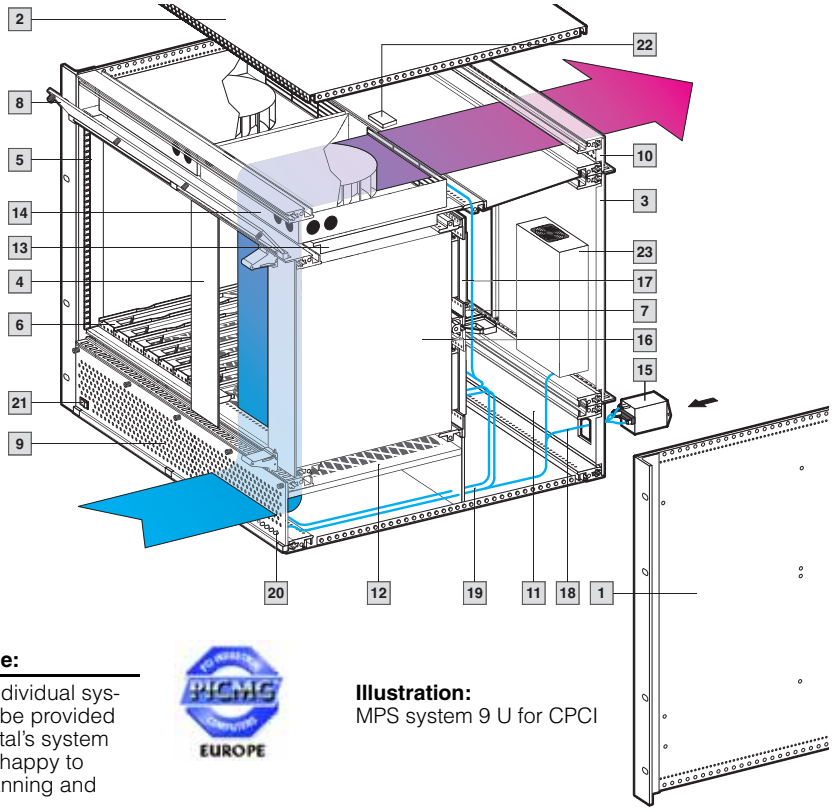
Rack-mount systems, Ripac 9 U, 8 slots, with RiCool radial fan





Technical specifications:
Subrack, 290.5 mm deep, for installation in 482.6 mm (19″) enclosures or cases.
Prepared to accommodate CPCI boards and drives.
Complies with IEC 60 297-3/-5 and IEEE 1101.1/10/11.
Fully assembled, pre-wired and tested.

Rittal service:
Modifications or individual system solutions can be provided at short notice. Rittal's system specialists will be happy to assist you with planning and configuration.

PICMG EUROPE

Illustration:
MPS system 9 U for CPCI

U			9 (6 + 2 x 1½)	Page
Side panel depth mm			290.5	
Wiring space (depth in mm)			85.5	
For PCB			6 U x 160 mm	
MPS system Model No. RP for CPCI			**3687.723**	
Mechanical supply includes				
Description		Material	Quantity	
1	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	–
2	Top and bottom covers	Aluminium, unplated	2	515
3	EMC rear panel 6 U/28 HP + 8 HP	2.5 mm aluminium, clear-chromated	1	–
4	EMC front panel	2.5 mm aluminium, clear-chromated	1	539
5	EMC contact strip	Aluminium, clear-chromated	1	507
6	Plastic guide rails, keyable	Polycarbonate UL 94-V0	14	510
	Plastic guide rails, keyable, red	Polycarbonate	2	510
7	Guide rails for I/O transition modules	Polycarbonate UL 94-V0	16	511
	Guide rails, keyable, green, for power supply	Polycarbonate	2	510
8	Front panel 1½ U/84 HP, horizontally hinged	2.5 mm aluminium, electrically conductive	1	–
9	Front panel 1½ U/84 HP, vented, horizontally hinged, for switch/LED	2.5 mm aluminium, electrically conductive	1	–
10	EMC rear panel 1½ U/84 HP, vented	2.5 mm aluminium, electrically conductive	1	–
11	EMC rear panel 1½ U/84 HP with connector cutout	2.5 mm aluminium, electrically conductive	–	–
12	Filter mat 84 HP, 160 mm, for slide-in attachment	–	1	–
13	Mounting plate for RiCool	1 mm sheet steel, zinc-plated, passivated	1	–
Electrical/electronic supply includes				
Description		Technical specifications		
14	RiCool DC fan, individually removable including fault alarm signal, speed control	24 V DC, 204 m³/h, 48 W	2	–
15	IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	458
16	Power supply, plug-in, 6 U/8 HP	350 W	1	481
	CPCI backplane	6.5 U, 8 slots	1	440
17	CPCI backplane for power supply	–	1	–
18	AC cable harness	–	■	–
19	DC cable harness	–	■	–
20	LED display module	for 3.3 V, +5 V, ±12 V, fan failure	1	–
21	Mains switch	–	1	–
22	Monitoring module for RiCool	–	1	–
23	Power supply for RiCool	–	1	–

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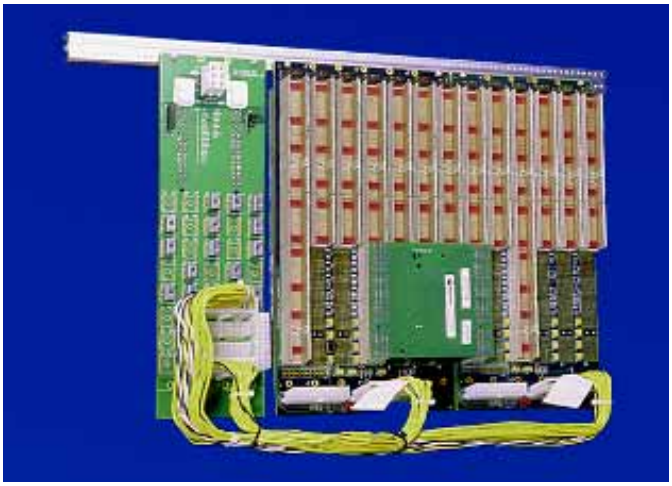
Backplanes, technical specifications



Rittal offers an extensive range of powerful backplanes for CompactPCI.

- Modular assembly facilitates expansion up to a maximum of 21 slots
- Connection between the individual segments via CPCI or H.110 bridge modules
- Voltage supply via ATX-compatible connector
- Additional 2 x 3 Mate-N-Lock connector for 48 V with H.110 backplane
- Optional development of customer-specific Monolithic backplanes
- 8 layer multi-layer
- System slot on right (left upon request)

Modular assembly

The Ripac backplanes in 32 or 64-bit versions allow the configuration of CPCI systems from 2 to 21 slots. This is possible thanks to the modular design of the backplanes and connection of the individual segments via CPCI or H.110 bridge modules. Each backplane segment contains between 2 and 8 slots and operates in stand-alone mode in conjunction with a CPU board and a power supply unit.

For assembling larger systems, several segments may be joined together via PCI bridge modules fitted at the rear. In such cases, only one of the segments will run in the system slot with a CPU board. The remaining segments will have a subordinate status without CPU boards. However, the first slot on the right of the backplane is available for a standard 32 or 64 bit CompactPCI host CPU.

Technical specifications

CPU slot
A single 3 U or 6 U CPU board with 32 or 64 bits is required for each system. The system slot on the right-hand side ensures that 2-slot or wider system boards do not conceal other slots, thus rendering them unusable.

Available slots
Each backplane contains two to eight 3 U or 6 U slots (32 or 64 bit).

Data transfer rate
132/264 Mbytes for 32/64-bit version
+5 V, 33 MHz PCI bus interface
264/512 Mbytes for 32/64-bit version
+3.3 V, 66 MHz (max. 5 slots) PCI bus interface

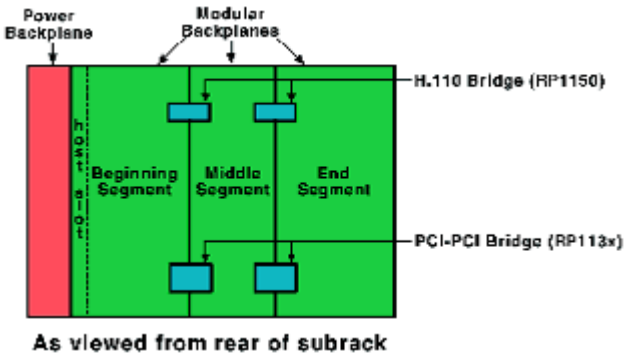
PCI bridges
Single backplanes do not require bridges. For each additional backplane, however, a bridge fitted at the rear is required.

Power supply
Voltage supply via one or more ATX connectors.

Control connector
Each backplane has a control connector at which +3.3, +5, ±12 V voltages can be picked off, e.g. for the connection of power LEDs.

I/O modules for J3 – J5
I/O modules can be connected at the rear of each slot.

Standards
- PCI 2.1 (PCI specification)
- PICMG 2.0 (CompactPCI spec.)
- PICMG 2.1 (hot swap spec.)
- IEEE 1101.1, mechanical system
- IEEE 1101.10, mechanical system
- IEEE 1101.11, mechanical system



32-bit pin assignment

P2 connector[9)]

PIN	Z[6)]	A	B	C	D	E	F
22	GND	GA4[5)]	GA3[5)]	GA2[5)]	GA1[5)]	GAO[5)]	GND
21	GND	**BP(I/O)**	**BP(I/O)**	BP(I/O)	BP(I/O)	BP(I/O)	GND
20	GND	**BP(I/O)**	**BP(I/O)**	BP(I/O)	**BP(I/O)**	BP(I/O)	GND
19	GND	**BP(I/O)**	**BP(I/O)**	BP(I/O)	BP(I/O)	BP(I/O)	GND
18	GND	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	GND
17	GND	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	GND
16	GND	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	GND
15	GND	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	GND
14	GND	BP(I/O)	BP(I/O)	BP(I/O)	**BP(I/O)**	BP(I/O)	GND
13	GND	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	BP(I/O)	BP(I/O)	GND
12	GND	BP(I/O)	BP(I/O)	BP(I/O)	**BP(I/O)**	BP(I/O)	GND
11	GND	BP(I/O)	**BP(I/O)**	**BP(I/O)**	BP(I/O)	BP(I/O)	GND
10	GND	BP(I/O)	BP(I/O)	BP(I/O)	**BP(I/O)**	BP(I/O)	GND
9	GND	BP(I/O)	**BP(I/O)**	**BP(I/O)**	BP(I/O)	BP(I/O)	GND
8	GND	BP(I/O)	BP(I/O)	BP(I/O)	**BP(I/O)**	BP(I/O)	GND
7	GND	BP(I/O)	**BP(I/O)**	**BP(I/O)**	BP(I/O)	BP(I/O)	GND
6	GND	BP(I/O)	BP(I/O)	BP(I/O)	**BP(I/O)**	BP(I/O)	GND
5	GND	BP(I/O)	**BP(I/O)**	**BP(I/O)**	BP(I/O)	BP(I/O)	GND
4	GND	**BP(I/O)**	**BP(I/O)**	BP(I/O)	**BP(I/O)**	BP(I/O)	GND
3	GND	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	GND
2	GND	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	GND
1	GND	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	**BP(I/O)**	GND

P1 connector[9)]

PIN	Z[6)]	A	B	C	D	E	F
25	GND	5 V	REQ64#	ENUM#	3.3 V	5 V	GND
24	GND	AD(1)	5 V	V(I/O)[3)]	AD(O)	ACK64#	GND
23	GND	3.3 V	AD(4)	AD(3)	5 V	AD(2)	GND
22	GND	AD(7)	GND	3.3 V	AD(6)	AD(5)	GND
21	GND	3.3 V	AD(9)	AD(8)	M66EN[3)]	C/BE(0)#	GND
20	GND	AD(12)	GND	V(I/O)[3)]	AD(11)	AD(10)	GND
19	GND	3.3 V	AD(15)	AD(14)	GND	AD(13)	GND
18	GND	SERR#	GND	3.3 V	PAR	C/BE(1)#	GND
17	GND	3.3 V	SDONE	SBQ#	GND	PERR#	GND
16	GND	DEVSEL	GND	V(I/O)[1)3)]	STOP#	LOCK#	GND
15	GND	3.3 V	FRAME#	IRDY	GND[2)]	TRDY#	GND
12 – 14			KEY AREA				GND
11	GND	AD(18)	AD(17)	AD(16)	GND	C/BE(2)#	GND
10	GND	AD(21)	GND	3.3 V	AD(20)	AD(19)	GND
9	GND	C/BE(3)#	IDSEL	AD(23)	GND	AD(22)	GND
8	GND	AD(26)	GND	V(I/O)[3)]	AD(25)	AD(24)	GND
7	GND	AD(30)	AD(29)	AD(28)	GND	AD(27)	GND
6	GND	REQ#	GND	3.3 V	CLK	AD(31)	GND
5	GND	BRSVP1A5	BRSVP1B5	RST#	GND	GNT#	GND
4	GND	BRSVP1A4	GND	V(I/O)[3)]	INTP	INTS	GND
3	GND	INTA#	INTB#	INTC#	5 V	INTD#	GND
2	GND	TCK	5 V	TMS	TDO	TDI	GND
1	GND	5 V	–12 V	TRST#	+12 V	5 V	GND

32-bit and 64-bit backplane – Technical specifications:
The CPCI specifications define both 32-bit and 64-bit versions. Both versions may be implemented on a 3 U daughterboard. However, the 32-bit version allows the complete P2/J2 connector to be used for user-defined I/O signals (slots 2 – 8). Slot 1 (system slot) uses separate P2/J2 pins for functions such as clock, arbitration, (grant/requests) and other system functions. These pins are printed in bold in the table. In 32-bit systems the P2/J2 connection may optionally be populated at the rear with 16 mm long pins and a transfer frame. Signals can be picked off or I/O boards connected at the rear.

64-bit CompactPCI pin assignments – Technical specifications:
With the 64-bit CompactPCI, both P1 and P2 connectors are fully assigned with signals. User-defined I/O signal pins are not available. I/O signals are only available with 6 U boards on connectors P3, P4 and P5.

64-bit pin assignment

P2 connector[9)]

PIN	Z[7)]	A	B	C	D	E	F
22	GND	GA4[6)]	GA3[6)]	GA2[6)]	GA1[6)]	GAO[6)]	GND
21	GND	**CLK6**	GND	RSV	RSV	RSV	GND
20	GND	**CLK5**	**GND**	RSV	GND[8)]	RSV	GND
19	GND	**GND**	GND[8)]	RSV	RSV	RSV	GND
18	GND	BRSVP2A18	BRSVP2B18	BRSVP2C18	GND[8)]	BRSVP2E18	GND
17	GND	BRSVP2A17	GND[8)]	PRST#	**REQ6#**	**GNT6#**	GND
16	GND	BRSVP2A16	BRSVP2B16	DEG#	GND[8)]	BRSVP2E16	GND
15	GND	BRSVP2A15	GND	FAL#	**REQ5#**	**GNT5#**	GND
14	GND	AD(35)	AD(34)	AD(33)	GND	AD(32)	GND
13	GND	AD(38)	GND	V(I/O)[3)]	AD(37)	AD(36)	GND
12	GND	AD(42)	AD(41)	AD(40)	GND	AD(39)	GND
11	GND	AD(45)	GND	V(I/O)[3)]	AD(44)	AD(43)	GND
10	GND	AD(49)	AD(48)	AD(47)	GND	AD(46)	GND
9	GND	AD(52)	GND	V(I/O)[3)]	AD(51)	AD(50)	GND
8	GND	AD(56)	AD(55)	AD(54)	GND	AD(53)	GND
7	GND	AD(59)	GND	V(I/O)[3)]	AD(58)	AD(57)	GND
6	GND	AD(63)	AD(62)	AD(61)	GND	AD(60)	GND
5	GND	C/BE(5)#	GND	V(I/O)[3)]	C/BE(4)#	PAR64	GND
4	GND	V(I/O)[3)]	BRSVP2B4	C/BE(7)#	–	C/BE(6)#	GND
3[3)]	GND	**CLK4**	GND	**GNT3#**	–	**GNT4#**	GND
2[3)]	GND	**CLK2**	**CLK3**	**SYSEN#[4)]**	–	**REQ3#**	GND
1[3)]	GND	**CLK1**	GND	**REQ1#**	–	**REQ2#**	GND

P1 connector[9)]

PIN	Z[7)]	A	B	C	D	E	F
25	GND	5 V	REQ64#	ENUM#	3.3 V	5 V	GND
24	GND	AD(1)	5 V	V(I/O)[3)]	AD(0)	ACK64#	GND
23	GND	3.3 V	AD(4)	AD(3)	5 V	AD(2)	GND
22	GND	AD(7)	GND	3.3 V	AD(6)	AD(5)	GND
21	GND	3.3 V	AD(9)	AD(8)	M66EN[4)5)]	C/BE(0)	GND
20	GND	AD(12)	GND	V(I/O)[3)]	AD(11)	AD(10)	GND
19	GND	3.3 V	AD(15)	AD(14)	GND	AD(13)	GND
18	GND	SERR#	GND	3.3 V	PAR	C/BE(1)#	GND
17	GND	3.3 V	SDONE	SBO#	GND	PERR#	GND
16	GND	DEVSEL#	GND	V(I/O)[1)3)]	STOP#	LOCK#	GND
15	GND	3.3 V	FRAME#	IRDY#	GND[2)3)]	TRDY#	GND
12 – 14			KEY AREA				
11	–	AD(18)	AD(17)	AD(16)	GND	C/BE(2)#	GND
10	GND	AD(21)	GND	3.3 V	AD(20)	AD(19)	GND
9	GND	C/BE(3)#	IDSEL	AD(23)	GND	AD(22)	GND
8	GND	AD(26)	GND	V(I/O)	AD(25)	AD(24)	GND
7	GND	AD(30)	AD(29)	AD(28)	GND	AD(27)	GND
6	GND	REQ#	GND	3.3 V	CLK	AD(31)	GND
5	GND	BRSVA5	BRSVB 5	RST#	GND	GNT#	GND
4	GND	BRSVA4	GND	V(I/O)	INTP	INTS	GND
3	GND	INTA#	INTB#	INTC	5 V	INTD#	GND
2	GND	TCK	5 V	TMS	TDO	TDI	GND
1	GND	5 V	–12 V	TRST#	+12 V	5 V	GND

The signals printed in bold are only assigned in the system slot
[1)] "Early mate" pin [2)] "Late mate" pin [3)] +3.3 V or 5 V [4)] Earthed with system slot [5)] GND with 33 MHz backplane, bussed in 66 MHz systems
[6)] Each slot may have its own address code (see CPCI specification) [7)] Not for daughterboards [8)] Not for CPCI boards after Version 1.0
[9)] All Rittal standard CPCI backplanes are designed for 64-bit applications on the layout side. With 32-bit versions, the P2/J2 connector is populated on request.

Backplanes



1



2

Backplanes, 3.5 U

Number of layers	8
Layer structure	2 GND layers
PCB thickness	3.2 mm
Data transfer rate	132/264 Mbytes/32, 64-bit version
Power inlets	2 – 4 slots: 1 x ATX connector 5 – 7 slots: 2 x ATX connector 8 slots: 3 x ATX connector
Control connector	+3.3 V, +5 V, +12 V, –12 V
CPU slot	on right (left upon request)
Standards	PCI 2.1 (PCI specification) PICMG 2.0 (CompactPCI) PICMG 2.1 (hot swap) IEEE 1101.1/10/11
Installation height	3.5 U (150.9 mm)
Distance between slots	4 HP
Connectors	J1, J2 32 or 64 bit, no rear I/O
Operating temperature range	0° – 70°C
Relative humidity	90 %, non-condensing
Geographic addressing	64-bit versions

Material:
Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:
Backplane, fully populated.

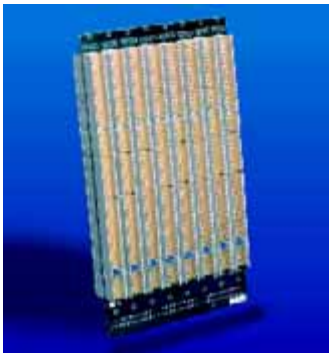
1 Front view
2 Rear view

Slots	Version	Model No. RP	
		32-bit	64-bit
2	SE	–	**3687.864**
3	SBE	**3687.865**	**3686.578**
4	SBE	**3687.863**	**3686.576**
5	SBE	**3687.862**	**3686.575**
6	SBME	**3687.861**	**3686.548**
7	SBE	**3687.860**	**3686.547**
8	S.	**3687.859**	**3686.546**

S = Stand alone
B = Beginning segment
M = Middle segment
E = Ending segment

Accessories:

CPCI/CPCI bridge, RP 3686.571,
see page 443.
Accessories for backplane mounting:
Conductive strips, see page 505.
Insulating strips, see page 505.



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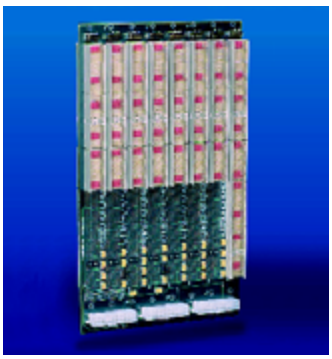


2

Backplanes, 6.5 U

Number of layers	8
Layer structure	2 GND layers
PCB thickness	3.2 mm
Data transfer rate	132/264 Mbytes/32, 64-bit version
Power inlets	2 – 4 slots: 1 x ATX connector 5 – 7 slots: 2 x ATX connector 8 slots: 3 x ATX connector
Control connector	+3.3 V, +5 V, +12 V, –12 V
CPU slot	on right (left upon request)
Standards	PCI 2.1 (PCI spec) PICMG 2.0 (CompactPCI) PICMG 2.1 (hot swap) IEEE 1101.1/10/11
Installation height	6.5 U (284.3 mm)
Distance between slots	4 HP
Connectors	J1, J2 32 or 64-bit J3, J4, J5 for rear I/O (64-bit only)
Operating temperature range	0° – 70°C
Relative humidity	90 %, non-condensing
Geographic addressing	64-bit versions

Material:
Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:
Backplane, fully populated.

1 Front view
2 Rear view

Backplanes

Slots	Version	Model No. RP	
		32-bit	64-bit
2	SBE	–	**3686.581**
3	SBE	**3687.871**	**3686.580**
4	SBE	**3687.870**	**3686.579**
5	SBE	**3687.869**	**3686.552**
6	SBME	**3687.868**	**3686.551**
7	SBE	**3687.867**	**3686.550**
8	S	**3687.866**	**3686.549**

Note:
Cannot be used when rear connection of 80 mm is required.

Backplanes for low profile bridge

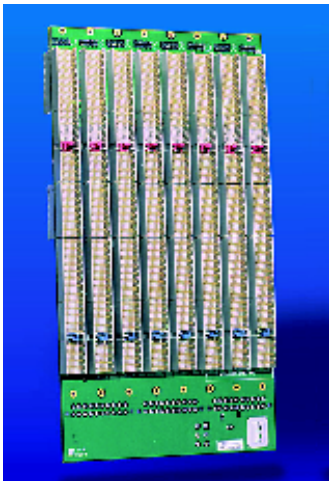
Slots	Version	Model No. RP
		64-bit
3	SBE	**3689.209**
4	SBE	**3689.208**
5	SBE	**3689.207**
6	SBME	**3689.206**
7	SBE	**3689.205**

Note:
May be used when rear connection of 80 mm is required.

S = Stand alone
B = Beginning segment
M = Middle segment
E = Ending segment

Accessories:

CPCI/CPCI bridge, RP 3686.571, see page 443.
CPCI/CPCI low profile bridge, see page 443.
Accessories for backplane mounting:
Conductive strips, see page 505.
Insulating strips, see page 505.



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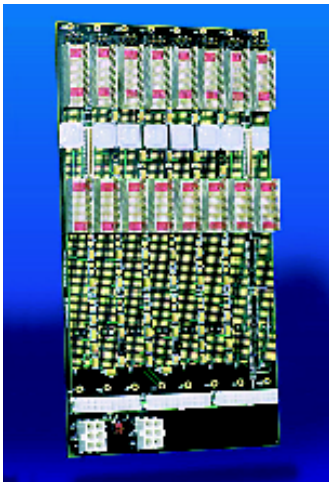


2

1 Front view
2 Rear view

Backplanes 7 U with H.110

Number of layers	8
Layer structure	2 GND layers
PCB thickness	3.2 mm
Data transfer rate	132/264 MBytes/32, 64-bit (for CPCI)
Power inlets	up to 4 slots 1 x ATX connector 5 – 7 slots: 2 x ATX connector 8 slots: 3 x ATX connector
CPU slot	right
Standards	PCI 2.1 (PCI specification) PICMG 2.0 (CompactPCI) PICMG 2.1 (hot swap) PICMG 2.5 (CPCI Computer Telephony) IEEE 1101.1/10/11
Installation height	7 U
Distance between slots	4 HP
Connectors	J1, J2 64 bit J3 rear I/O J4 H.110
Operating temperature range	0° – 70°C
Relative humidity	90 %, non-condensing
Geographic addressing	Yes

Material:
Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:
Backplane, fully populated.

Slots	Version	Model No. RP	
		H.110 connected to system slot	H.110 not connected to system slot
3	S	**3688.508**[1)]	–
4	SE	**3688.507**[2)]	–
5	SB	**3687.875**[2)]	**3688.506**[2)]
6	SBME	**3687.874**[2)]	**3688.505**[2)]
7	SBE	**3687.873**[2)]	**3688.504**[2)]
8	S	**3687.877**	**9805.494**

[1)] Extendible with low profile bridges
[2)] Extendible with bridges RP 3686.571

S = Stand alone
M = Middle segment
B = Beginning segment
E = Ending segment

Accessories:

CPCI/CPCI bridge, RP 3686.571,
see page 443.
CPCI/CPCI low profile bridge,
see page 443.

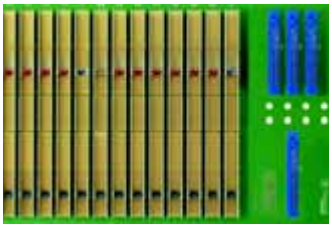
J4 pin assignment

No.	Row Z	Row A	Row B	Row C	Row D	Row E	Row F
25	NP	SGA4	SGA3	SGA2	SGA1	SGA0	FG
24	NP	GA4	GA3	GA2	GA1	GA0	FG
23	NP	+12 V	/CT reset	/CT EN	–12 V	CT_MC	FG
22	NP	PFSO#	RSVD	RSVD	RSDV	RSDV	FG
21	NP	-SEL Vbat	PFS1#	RSDV	RSDV	SEL VbatRtn	FG
20	NP	NP	NP	NP	NP	NP	NP
19	NP	NP	NP	NP	NP	NP	NP
18	NP	VRG	IN/C	IN/C	IN/C	VRGRtn	NP
17	NP	NP	NP	NP	NP	NP	NP
16	NP	NP	NP	NP	NP	NP	NP
15	NP	-Vbat	IN/C	IN/C	IN/C	Vbat Rtn	NP
14	KEY AREA						
13							
12							
11	NP	CT_D29	CT_D30	CT_D31	V(I/O)	/CT_FRAME	GND
10	NP	CT_D27	+3.3 V	CT_D28	+5 V	/C_FRAME B	GND
9	NP	CT_D24	CT_D25	CT_D26	GND	/FR_COMP	GND
8	NP	CT_D21	CT_D22	CT_D23	+5 V	CT_C8 A	GND
7	NP	CT_D19	+5 V	CT_D20	GND	CT_C8 B	GND
6	NP	CT_D16	CT_D17	CT_D18	GND	CT_NETREF	GND
5	NP	CT_D13	CT_D14	CT_D15	+3.3 V	CT_NETREF	GND
4	NP	CT_D11	+5 V	CT_D12	+3.3 V	SCLK	GND
3	NP	CT_D8	CT_D9	CT_D10	GND	SCLK-D	GND
2	NP	CT_D4	CT_D5	CT_D6	CT_D7	GND	GND
1	NP	CT_D0	+3.3 V	CT_D1	CT_D2	CT_D3	GND

Key to J4 pin assignment

CT_name	=	H.110 TDM bus signals
+5 V	=	+5 V power
+3.3 V	=	+3.3 V power
GND	=	Logic ground
V(I/O)	=	I/O cell power
FG	=	Frame ground
RSVD	=	reserved for future use
NP	=	a pin and pad REQUIRED to be not populated to meet safety regulations
IN/C	=	No connect required for safety agency insulation requirements

-SELVbat	= short loop battery
SELVbatRtn	= short loop battery return
-Vbat	= telecom power distribution bus
VbatRtn	= return bus pin for -Vbat
SGA0-SGA4	= shelf enumeration bus signals
GA0-GA4	= slot ID signals: not bussed
VRG	= bus for ringing voltage
VRGRtn	= bus for ringing voltage
PFSO#-PFS1#	= busses for power fail sense
KEY AREA	= area utilized for key



Backplanes 7 U, Switch Fabric to PICMG 2.16

The “Switch Fabric” backplanes comply with PICMG specification 2.16. They support telephony applications and systems with a high level of availability in which CompactPCI is combined with Ethernet for high-speed applications.

Power inlets	Positronic 47-pole, or ATX
CPU slot	right
Standards	PCI 2.1 (PCI specification) PICMG 2.0 (CompactPCI) PICMG 2.1 (hot swap) PICMG 2.5 (CPCI Computer Telephony) IEEE 1101.1/10/11 PICMG 2.16
Installation height	7 U (6 U for RP 3686.396 and RP 3689.186)
Distance between slots	4 HP
Operating temperature range	0° – 70°C
Relative humidity	90 %, non-condensing
Geographic addressing	Yes

Material:
Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:
Backplane, fully populated.

Technical specifications:
- 7 U, 84 HP/32 HP
- Complies with PICMG 2.1, fully hot swap-compatible
- Selectable voltage V (I/O) (3.3 V or 5 V) where configured for 33 MHz CompactPCI
- Integral Schottky diode bus terminator
- Prepared for up to four backplane reinforcements to avoid bending during card insertion
- H.110 CT bus complies with specification PICMG 2.5 at all node slots.
- Supports 8 HP CPU boards when one node slot is relinquished
- Twin redundant support for Switch Fabric (2 fabric and 12 basic nodes), as specified in PICMG 2.16
- Supports rear transition modules with all board slots
- Configurable for power supply with either two 6 U x 8 HP, three 6 U x 4 HP, three 3 U x 4 HP, three 3 U x 8 HP or four 3 U x 4 HP
- All power supply slots conform to PICMG 2.11
- Power supply connectors for H.110-Vbat, -SELVbat and VRG power signals
- ATX power connector for auxiliary power inlet/outlet
- Two fan power connectors for 12 V and system management support
- System control bus (SMBus) conforms to PICMG 2.9 and supports all boards, power supplies, power entry modules, fans and alarm cards
- Support of I^2C bridge function on the alarm card for >19 SMBus nodes

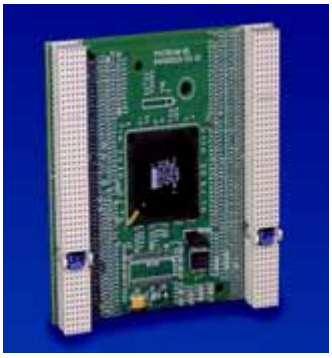
Width	Number of slots	Description of slots	Model No. RP
32 HP	8	1 fabric slot 6 node slots with CPCI and H.110 1 host slot	**3689.188**
		see RP 3689.188, but without H.110	**3686.414**
84 HP	16	1 fabric slot 6 node slots with CPCI and H.110 1 host slot 1 fabric slot 6 node slots with CPCI and H.110 1 host slot 3 slots for power supplies	**3686.396**
		see RP 3686.396, but without H.110	**3689.186**
84 HP	21	7 node slots with CPCI and H.110 1 host slot 1 node slot with H.110, without CPCI 1 fabric slot 7 node slots with CPCI and H.110 1 host slot 1 node slot with H.110, without CPCI 1 fabric slot 1 alarm slot	**3686.397**
		see RP 3686.397, but without H.110	**3689.190**
		see RP 3686.397, but without CPCI	**3689.191**

Front

1	System (CPU) card	12	Node card
2	Node card	13	Node card
3	Node card	14	Node card
4	Node card	15	Node card
5	Node card	16	Fabric card B
6	Node card	17	Blank
7	Node card	18	Power supply 1
8	Fabric card A	19	Power supply 2
9	System (CPU) card	20	Power supply 3
10	Node card	21	Blank
11	Node card		

Rear

1	System RTC	12	Node RTC
2	Node RTC	13	Node RTC
3	Node RTC	14	Node RTC
4	Node RTC	15	Node RTC
5	Node RTC	16	Fabric B RTC
6	Node RTC	17	Alarm card
7	Node RTC	18	PEM 1
8	Fabric A RTC	19	
9	System RTC	20	PEM 2
10	Node RTC	21	
11	Node RTC		



1



2

Modular CPCI bridge

CPCI bridge may be connected to the rear to extend the bus by a maximum of 7 additional slots. The CPCI bridge handles all communications between the individual bus segments. The front slots are freely available for CPCI boards. It supports the 64-bit PCI bus and may be used in conjunction with CPCI backplanes 3.5 U and 6.5 U.

Technical specifications:

- May be connected at the rear on CPCI backplanes
- PCI bridge
- 64 bit “high performance” Intel 21 154
- For use with all Rittal CPCI backplanes (not with low profile backplanes)
- Corresponding to PCI specifications 2.1
- Conforms to CPCI
- CPCI bridge connects CPCI backplanes from right to left (as viewed from the front) – i.e. the “left-hand” connector accommodates the host board

Material:
Fibreglass epoxy to IEC 60 249 (FR4)

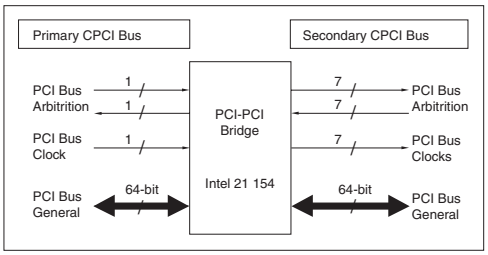
Supply includes:
Bridge, fully populated.

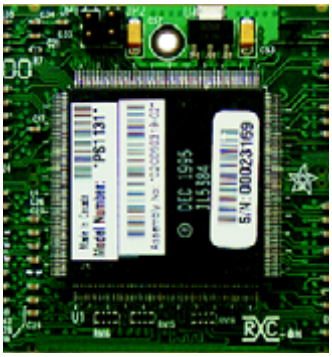
1 Front view

2 Rear view

Description	Model No. RP
64-bit CPCI bridge	**3686.571**

Extended delivery times





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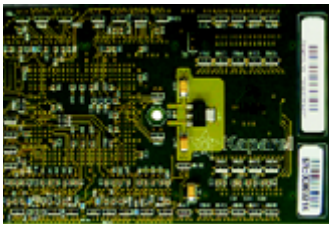


2

Modular low profile bridge

CPCI bridge may be connected to the rear to extend the bus by a maximum of 7 additional slots, **without any loss of slots:** Optionally available as a 32-bit or 64-bit version. Only suitable for use in conjunction with low profile backplanes.

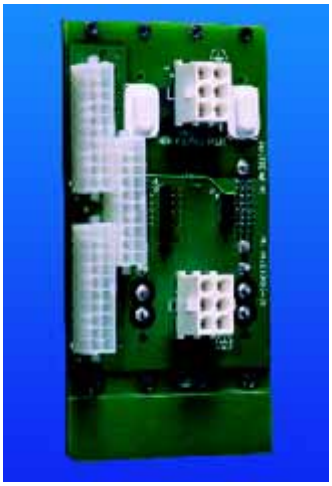
Material:
Fibreglass epoxy to IEC 60 249 (FR4)

Supply includes:
Bridge, fully populated.

1 32-bit version

2 64-bit version

Version	Bits	Model No. RP
left-right	32	**3689.210**
right-left	32	**3689.211**
left-right	64	**9810.637**
right-left	64	**9812.625**



Power supply backplane 3.5 U

- Board 3.5 U, 16 HP
- For use in conjunction with Rittal CPCI backplanes
- Accommodation of up to two power supplies with up to 250 W
- AC/DC connection is via two 2 x 3-pole connectors
- Output voltages to supply one or more CPCI backplanes are available at 3 ATX-compatible connectors
- Complies with PICMG 2.0, PICMG 2.11

Technical specifications:
Accommodation of 2 x 3 U, 8 HP CPCI power supplies with up to 250 W.

The second power supply unit may be used for redundancy (with power distribution) or, via parallel connection, to increase the current.

Input voltages:
- AC input via 2 x 3-pole AMP Mate-N-Lock (AMP # 350732-1), connector J12
- Connected via pin 45, 46, 47, type Positronic
- Maximum current load per pin is 25 A, matching counter-connector for cable harness AMP # 350715
- DC input via 2 x 3-pole AMP Mate-N-Lock (AMP # 350732-1), connector J5 connected through pin 46, 47, type Positronic
- Maximum current load per pin is 25 A, matching counter-connector for cable harness AMP # 350715

Output voltage:
- Three 20-pole ATX-compatible connectors for ATX cable harness (connection of power supply board to CPCI backplane)

Description	Model No. RP
Board for plug-in power supply with Positronic connector, 47-pin	**3688.603**
ATX (12″) cable harness	**9810.337**
ATX (16″) cable harness	**3686.570**
ATX (20″) cable harness	**9810.338**

Material:
Fibreglass epoxy to IEC 60 249 (FR4)

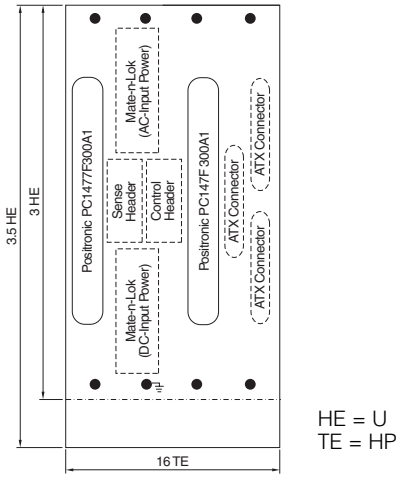
Supply includes:
Board, fully populated.

Note:
Plug-in power supplies for CPCI available on request,
see page 481.

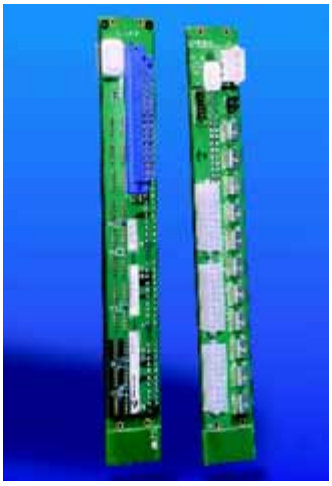
Connector assignment

Pin		Pin		Pin		Pin	
1	+5 V	13	+3.3 V	25	Not used	37	Not used
2	+5 V	14	+3.3 V	26	Not used	38	DEG#
3	+5 V	15	+3.3 V	27	R/EN	39	INH#
4	+5 V	16	+3.3 V	28	Not used	40	Not used
5	0 V (shared)	17	+3.3 V	29	Not used	41	Not used
6	0 V (shared)	18	+3.3 V	30	+5 V Sense	42	FAL#
7	0 V (shared)	19	0 V (shared)	31	Not used	43	Not used
8	0 V (shared)	20	+12 V	32	Not used	44	Not used
9	0 V (shared)	21	0 V	33	+3.3 V Sense	45	Chassis GND
10	0 V (shared)	22	0 V (shared)	34	0 V Sense	46	AC neutral
11	0 V (shared)	23	Not used	35	Not used	47	AC line
12	0 V (shared)	24	0 V (shared)	36	Not used		

RP 3688.603



HE = U
TE = HP



Power supply backplane 6.5 U, 8 HP

- Board 6.5 U, 8 HP
- For use in conjunction with Rittal CPCI backplanes 3.5 U, 6.5 U, H.110
- Accommodation of a power supply with up to 500 W
- AC/DC connection is made via 3-pole connectors
- Output voltages to supply one or more CPCI backplanes are available at 3 ATX-compatible connectors or at special power terminals

Technical specifications:
Accommodation of a 6 U CPCI power supply with up to 500 W.

Input voltages:
- AC input via 3-pole AMP Mate-N-Lock connector
  Max. current load per pin 25 A
- DC input via 3-pole AMP Mate-N-Lock connector
  Max. current load per pin 25 A

Output voltage:
- Three 20-pole ATX-compatible connectors for ATX cable harness (connection of power supply board to CPCI backplane) and/or special power terminals

Description	Model No. RP
Board for plug-in power supply with Positronic connector, 47-pin	**3688.607**
ATX (12″) cable harness	**9810.337**
ATX (16″) cable harness	**3686.570**
ATX (20″) cable harness	**9810.338**

Extended delivery times

Material:
Fibreglass epoxy to IEC 60 249 (FR4)

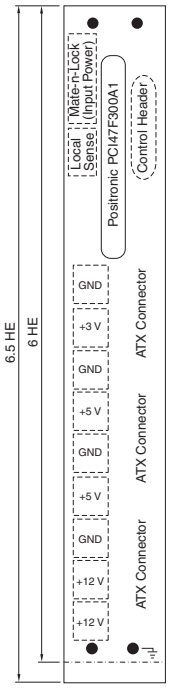
Supply includes:
Board, fully populated.

Note:
Plug-in power supplies for CPCI available on request,
see page 481.

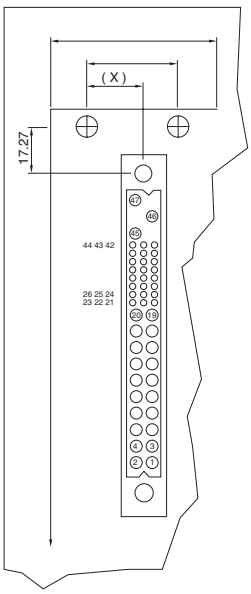
Connector assignment

Pin		Pin		Pin		Pin	
1	+5 V	13	+3.3 V	25	Not used	37	Not used
2	+5 V	14	+3.3 V	26	Not used	38	DEG#
3	+5 V	15	+3.3 V	27	R/EN	39	INH#
4	+5 V	16	+3.3 V	28	Not used	40	Not used
5	0 V (shared)	17	+3.3 V	29	Not used	41	Not used
6	0 V (shared)	18	+3.3 V	30	+5 V Sense	42	FAL#
7	0 V (shared)	19	0 V (shared)	31	Not used	43	Not used
8	0 V (shared)	20	+12 V	32	Not used	44	Not used
9	0 V (shared)	21	0 V	33	+3.3 V Sense	45	Chassis GND
10	0 V (shared)	22	0 V (shared)	34	0 V Sense	46	AC neutral
11	0 V (shared)	23	Not used	35	Not used	47	AC line
12	0 V (shared)	24	0 V (shared)	36	Not used		

RP 3688.607

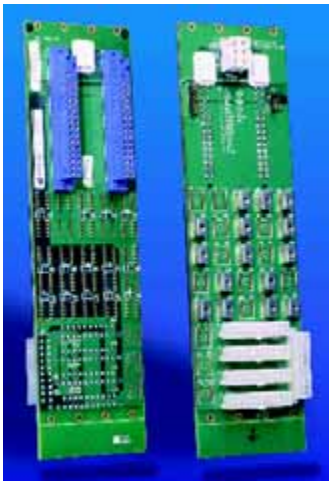


HE = U



X = 5.18 mm

Backplanes



Power supply backplane 6.5 U, 16 HP

- Board 6.5 U, 16 HP
- For use in conjunction with Rittal CPCI backplanes 3.5 and 6.5 U
- Accommodation of two power supplies with up to 500 W
- AC/DC connection is via two 2 x 3-pole connectors
- Output voltages to supply one or more CPCI backplanes are available at 5 ATX-compatible connectors or special power terminals

Technical specifications:
Accommodation of 2 x 6 U CPCI power supplies with up to 500 W

Input voltages:
- AC input via 2 x 3-pole AMP Mate-N-Lock connector
  Max. current load per pin 25 A
- DC input via 2 x 3-pole AMP Mate-N-Lock connector
  Max. current load per pin 25 A

Output voltage:
- Five 20-pole ATX-compatible connectors for ATX cable harness (connection of power supply board to CPCI backplane) and/or special power terminals

Description	Model No. RP
Board for 2 x plug-in power supplies with Positronic connector, 47-pin	**3688.608**
ATX (12″) cable harness	**9810.337**
ATX (16″) cable harness	**3686.570**
ATX (20″) cable harness	**9810.338**

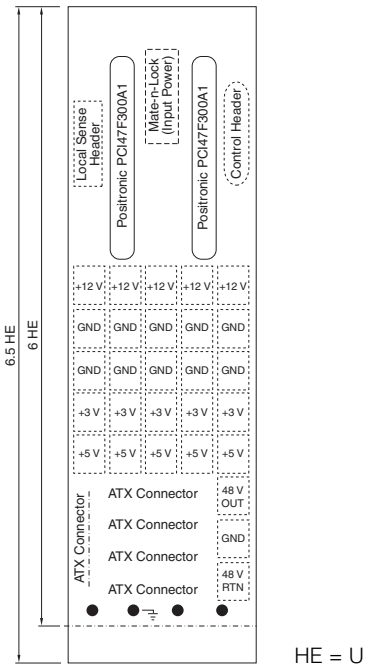
Extended delivery times

Material:
Fibreglass epoxy to IEC 60 249 (FR4)

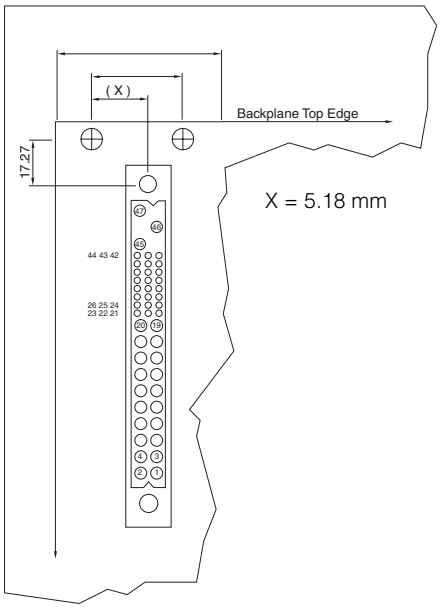
Supply includes:
Board, fully populated.

Note:
Pluggable power supplies,
see page 481.

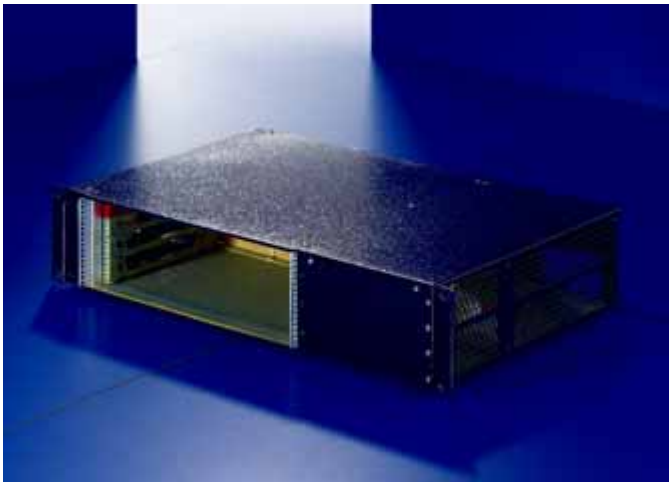
RP 3688.608

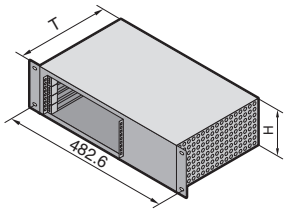


HE = U



Rack-mount systems, Slim-Box 1 U, 2 U, 3 U, 4 U





Technical specifications:
- Rack-mount housing 482.6 mm (19″) for the horizontal installation of boards
- Front and rear 2 slots per U for VME boards
- Enclosure cooling from left to right
- EMC and ESD-compatible design
- Including fan:
  for 1 U: 12 V DC, 21 m^3/h
  for 2 U: 12 V DC, 74 m^3/h
  for 3 U: 12 V DC, 195 m^3/h or 74 m^3/h,
  for 4 U: 12 V DC, 74 m^3/h
- Conforms to IEEE 1101.1/10/11, ANSI/VITA 1014, IEC 821

Material:
Sheet steel, spray-finished

Slim-Box Version 1	**U** (H)	**1**	**1**	**2**	**2**	**3**	**3**	**4**	**4**
	Depth (T) in mm	360	300	360	300	360	300	360	300
Model No. RP with VME backplane and power supply		**9907.467**	**9907.463**	**9907.468**	**9907.464**	**9907.469**	**9907.465**	**9907.470**	**9907.466**
Installation space for boards, mm		160	160	160	160	160	160	160	160
Installation space for rear I/O boards, mm		160	–	160	–	160	–	160	–
Number of front/rear slots		2/2	2	4/4	4	6/6	6	8/8	8
Keyable guide rails		8	4	16	8	24	12	32	16
Power supply unit (ATX)		200 W	200 W	200 W	200 W	300 W	300 W	300 W	300 W
Monolithic VME backplane, passive		1	1	1	1	1	1	1	1
DC fan in the left-hand side panel		3	3	2	2	1	1	4	4

Slim-Box Version 2	**U** (H)	**1**	**2**	**3**	**4**
	Depth (T) in mm	300	300	300	300
Model No. RP without backplane, with power supply		**9907.479**	**9907.480**	**9907.481**	**9907.482**
Installation space for boards, mm		160	160	160	160
Installation space for rear I/O boards, mm		80	80	80	80
Number of front/rear slots		2	4	6	8
Keyable guide rails		8	16	24	32
Power supply unit (ATX)		200 W	200 W	300 W	300 W
DC fan in the left-hand side panel		3	2	1	4

Accessories		**EMC**	Page	**Non-EMC**	Page
Front panels	3 U, 4 HP	3685.178	538	3684.891	537
	3 U, 8 HP	3685.182	538	3684.895	537
	6 U, 4 HP	3685.186	538	3684.913	537
	6 U, 8 HP	3685.190	538	3684.917	537

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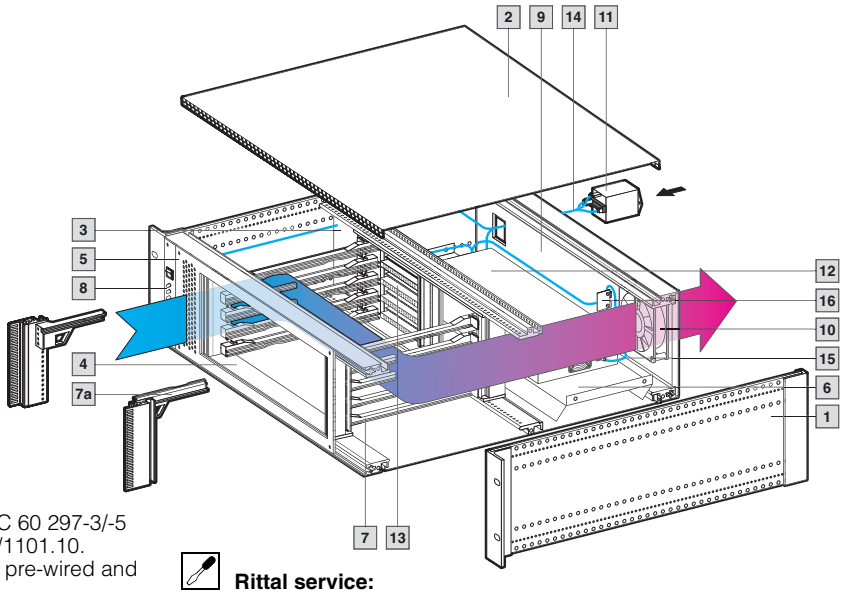
Rack-mount systems, Ripac 3 U, 5 slots/4 U, 7 slots horizontal





Technical specifications:
Subrack, 405 mm deep, for installation in 482.6 mm (19″) enclosures or cases. Prepared to accommodate VMEbus boards and drives.

Complies with IEC 60 297-3/-5 and IEEE 1101.1/1101.10. Fully assembled, pre-wired and tested.

Rittal service:

Modifications or individual system solutions can be provided at short notice.

Rittal's system specialists will assist you with planning and configuration.

U			3	3	4	4	Page
Side panel depth mm			405	405	405	405	
Wiring space (depth in mm)			210	210	210	210	
For PCB			6 U x 160 mm	6 U x 160 mm	6 U x 160 mm	6 U x 160 mm	
MPS system Model No. RP for VME			**3687.698**	**–**	**3687.700**	**–**	
MPS system Model No. RP for VME64x			**–**	**3687.699**	**–**	**3687.696**	
Mechanical supply includes							
Description		Material	Quantity				
1	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/ stainless steel	1	1	1	1	–
2	Top and bottom covers, solid	Aluminium, unplated	2	2	2	2	515
3	Air block panel	Aluminium	1	1	1	1	521
4	Horizontal mounting kit	Aluminium, clear-chromated	1	1	1	1	508
5	Trim frame for horizontal mounting kit	2.5 mm aluminium, clear-chromated	1	1	1	1	509
6	Mounting base for power supply unit	2 mm aluminium, anodised	1	1	1	1	485
	EMC shielding plate for fan	Aluminium, clear-chromated	1	1	1	1	524
7	Guide rails	Polycarbonate UL 94-V0	10	–	14	–	509
7a	Plastic guide rails, keyable	Polycarbonate UL 94-V0	–	10	–	14	510
8	EMC front panel 3 U or 4 U/5 HP, for switch LED	2.5 mm aluminium, clear-chromated	1	1	1	1	–
9	EMC rear panel 3 U/84 HP, with fan and connector cutout	2.5 mm aluminium, clear-chromated	1	1	–	–	–
	EMC rear panel 4 U/84 HP, with fan and connector cutout	2.5 mm aluminium, clear-chromated	–	–	1	1	–
Electrical/electronic supply includes							
Description		Technical specifications					
10	DC fan	12 V DC, 48 m³/h per fan (UL, CSA, VDE) optional speed control	1	1	1	1	523
11	IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	1	1	1	458
12	Switch mode power supply unit	250 W, 5 V/35 A, +12 V/8 A, –12 V/8 A (VDE, UL, CSA)	1	1	1	1	479
13	VME backplane	J1, 5 slots, IN-board, passive, ADC	1	–	–	–	456
	VME64x backplane	J1/J2, 5 slots (without P0)	–	1	–	–	454
	VME backplane	J1, 7 slots, IN-board, passive, ADC	–	–	1	–	456
	VME64x backplane	J1/J2, 7 slots	–	–	–	1	454
	LED display module with mains switch	for +5 V, ±12 V, fan failure	1	1	1	1	–
14	AC cable harness	–	■	■	■	■	–
15	DC cable harness	–	■	■	■	■	–
16	Filter module for DC fan	Interference voltage filter	1	1	1	1	457

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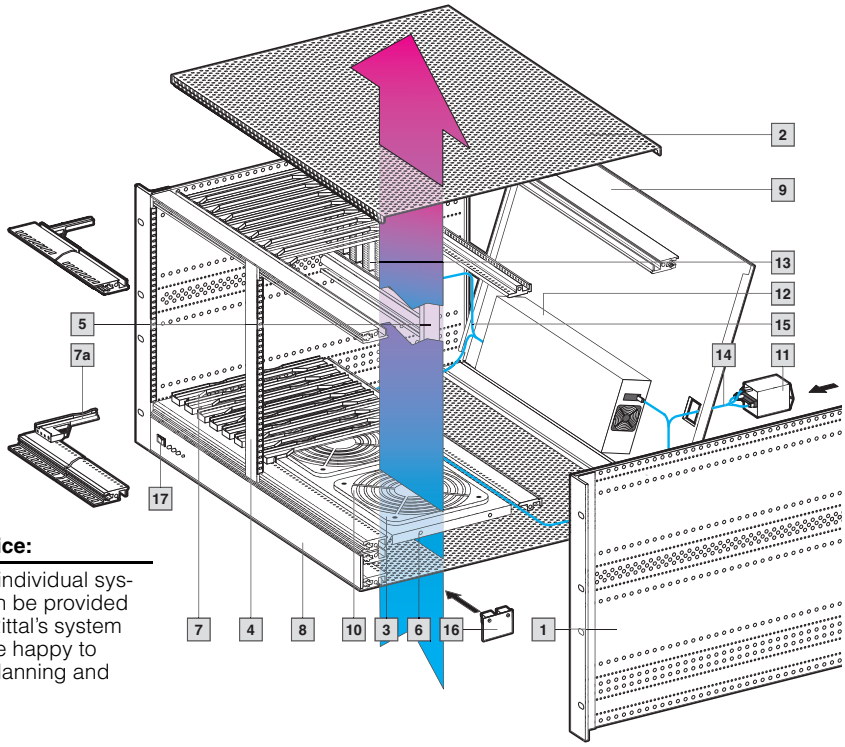
Rack-mount systems, Ripac 4 U/7 U, 12 slots





Technical specifications:
Subrack, 405 mm deep, for installation in 482.6 mm (19″) enclosures or cases. Prepared to accommodate VMEbus boards and drives. Complies with IEC 60 297-3/-5 and IEEE 1101.1/1101.10. Fully assembled, pre-wired and tested.

Rittal service:
Modifications or individual system solutions can be provided at short notice. Rittal's system specialists will be happy to assist you with planning and configuration.

U			4 (3 + 1)	7 (6 + 1)	7 (6 + 1)	Page
Side panel depth mm			405	405	405	
Wiring space (depth in mm)			210	210	210	
For PCB			3 U x 160 mm	3 U/6 U x 160 mm		
MPS system Model No. RP for VME			**3687.702**	**3687.703**	**–**	
MPS system Model No. RP for VME64x			**–**	**–**	**3687.704**	
Mechanical supply includes						
Description		Material	Quantity			
1	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/ stainless steel	1	1	1	–
2	Top and bottom covers, vented	Aluminium, unplated	2	2	2	515
3	Finger guard	polyamide	3	3	3	524
4	EMC front panel, 6 U/4 HP (with 7 U)	Aluminium, clear-chromated	–	1	–	
5	Support, vertical (with 7 U)	Aluminium, clear-chromated	–	1	–	508
6	Fan mounting plate	1 mm aluminium, anodised	1	1	1	520
7	Plastic guide rails	Polycarbonate UL 94-V0	24	24	–	509
7a	Plastic guide rails, keyable	Polycarbonate UL 94-V0	–	–	24	510
8	EMC front panel 1 U/84 HP for switches/LED	2.5 mm aluminium, clear-chromated	1	1	1	–
	Rear panel 4 U/84 HP, horizontally hinged with connector cutout	2.5 mm aluminium, clear-chromated	1	–	–	–
9	EMC rear panel 7 U/84 HP, horizontally hinged with connector cutout	2.5 mm aluminium, clear-chromated	–	1	1	–
Electrical/electronic supply includes						
Description		Technical specifications				
10	DC fan	12 V DC, 140 m^3/h per fan (VDE, UL, CSA) optionally speed-controlled	3	3	3	523
11	IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	1	1	458
12	Switch mode power supply unit	400 W, 5 V/80 A, +12 V/8 A, –12 V/8 A (VDE, UL, CSA)	1	1	–	479
	Switch mode power supply unit (RP 3687.695)	400 W, 3.3 V/25 A, +5 V/25 A, +12 V/8 A, –12 V/7 A (VDE, UL, CSA)	–	–	1	482
13	VME backplane	J1, 12 slots, IN-board, passive, ADC	1	1	–	456
	VME64x backplane	J1/J2, 12 slots	–	–	1	454
17	LED display module with mains switch	for (3.3 V), +5 V, ±12 V, fan failure	1	1	1	–
14	AC cable harness	–	■	■	■	–
15	DC cable harness	–	■	■	■	–
16	Filter module for DC fan	Interference voltage filter	3	3	3	457

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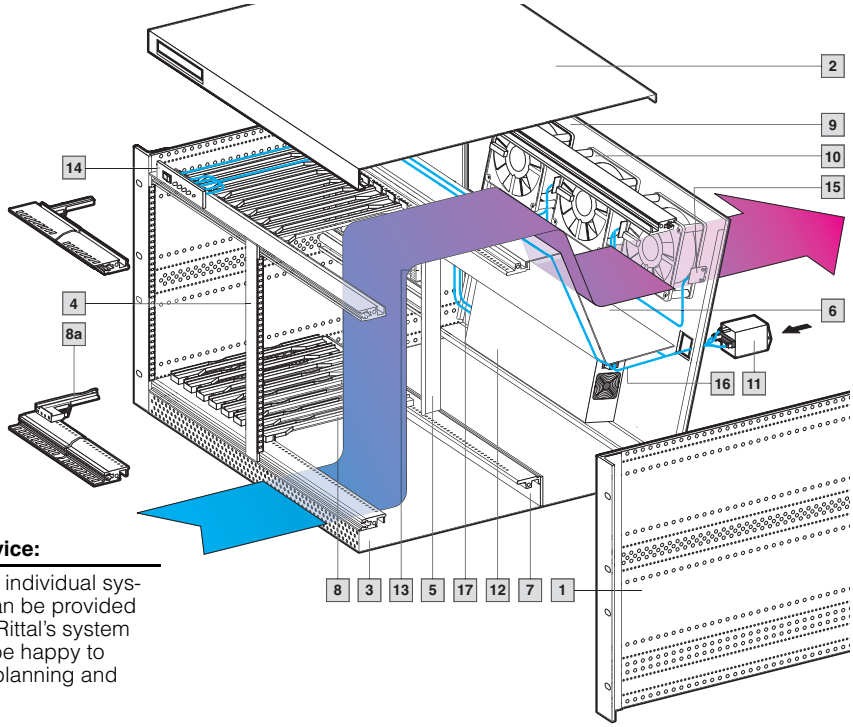
Rack-mount systems, Ripac 7 U, 12 slots





Technical specifications:
Subrack, 405 mm deep, for installation in 482.6 mm (19″) enclosures or cases. Prepared to accommodate VMEbus boards and drives. Complies with IEC 60 297-3/-5 and IEEE 1101.1/1101.10. Fully assembled, pre-wired and tested.

Rittal service:
Modifications or individual system solutions can be provided at short notice. Rittal's system specialists will be happy to assist you with planning and configuration.

U	7 (6 + 2 x 1/2)	7 (6 + 2 x 1/2)	Page
Side panel depth mm	405	405	
Wiring space (depth in mm)	210	210	
For PCB	6 U x 160 mm	6 U x 160 mm	
MPS system Model No. RP for VME	**3687.705**	**–**	
MPS system Model No. RP for VME64x	**–**	**3687.706**	

Mechanical supply includes

	Description	Material	Quantity		
1	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	1	–
2	Cover with 1/2 U edge fold and cutouts for switches/LEDs	Aluminium, unplated	1	1	517
3	Bottom cover with 1/2 U edge fold, ventilated at the front	Aluminium, unplated	1	1	517
4	EMC front panel, 6 U/4 HP	2.5 mm aluminium, clear-chromated	1	–	
	EMC shielding plate for fan	Aluminium, clear-chromated	3	3	524
5	Vertical support	Aluminium, clear-chromated	1	–	508
6	Air baffle plate	1 mm aluminium, anodised	1	1	521
7	Air block panel, 1/2 U	Epoxide	1	1	521
8	Plastic guide rails	Polycarbonate UL 94-V0	24	–	509
8a	Plastic guide rails, keyable	Polycarbonate UL 94-V0	–	24	510
9	EMC rear panel, horizontally hinged, 7 U, with fan and connector cutout	2.5 mm aluminium, clear-chromated	1	1	–

Electrical/electronic supply includes

	Description	Technical specifications			
10	DC fan	12 V DC, 140 m³/h per fan, (UL, CSA, VDE) optional speed control	3	3	523
11	IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	1	458
12	Switch mode power supply unit	400 W, 5 V/80 A, +12 V/8 A, –12 V/8 A (VDE, UL,CSA)	1	–	479
	Switch mode power supply unit (RP 3687.695)	400 W, 3.3 V/25 A, 5 V/25 A, 12 V/8 A, –12 V/7 A (VDE, UL, CSA)	–	1	482
13	VME backplane	J1, 12 slots, IN-board passive, ADC	1	–	456
	VME64x backplane	J1/J2, 12 slots (without P0)	–	1	454
14	LED display module with mains switch	for (3.3 V), +5 V, ±12 V, fan failure	1	1	–
15	Filter module for DC fan	Interference voltage filter	3	3	457
16	AC cable harness	–	■	■	–
17	DC cable harness	–	■	■	–

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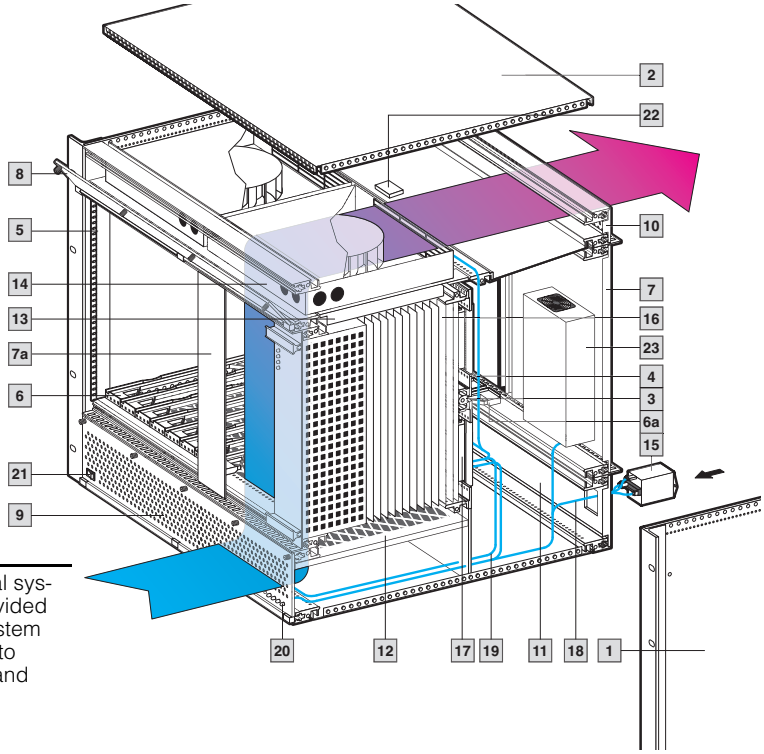
Rack-mount systems, Ripac 9 U, 12 slots, with RiCool radial fan





Technical specifications:
Subrack, 290.5 mm deep, for installation in 482.6 mm (19″) enclosures or cases. Prepared to accommodate VMEbus boards and drives. Complies with IEC 60 297-3/-5 and IEEE 1101.1/10/11. Fully assembled, pre-wired and tested.

Rittal service:
Modifications or individual system solutions can be provided at short notice. Rittal's system specialists will be happy to assist you with planning and configuration.

U		**9 (6 + 2 x 1 1/2)**	Page
Side panel depth mm		290.5	
Wiring space (depth in mm)		85.5	
For PCB		6 U x 160 mm	
MPS system Model No. RP for VME64x		**3687.708**	
Mechanical supply includes			
Description	Material	Quantity	
1 Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear-chromated/stainless steel	1	–
2 Top and bottom	1 mm aluminium, unplated	2	515
3 Centre horizontal rail 12 HP	1 mm aluminium, clear-chromated	1	–
4 Z rail 12 HP	Aluminium, clear-chromated	4	–
5 EMC contact strip	Aluminium, clear-chromated	2	507
6 Plastic guide rails, keyable	Polycarbonate UL 94-V0	24	510
Guide rails, keyable, green, for power supply	Polycarbonate UL 94-V0	2	510
6a Guide rails for I/O transition modules	Polycarbonate UL 94-V0	24	511
7 EMC rear panel 6 U/36 HP	2.5 mm aluminium, clear-chromated	1	–
7a EMC front panel	2.5 mm aluminium, clear-chromated	1	–
8 Front panel 1 1/2 U/84 HP, horizontally hinged	2.5 mm aluminium, clear-chromated	1	–
9 Front panel 1 1/2 U/84 HP, vented, horizontally hinged for switch/LED	2.5 mm aluminium, clear-chromated	1	–
10 EMC rear panel 1 1/2 U/84 HP, vented	2.5 mm aluminium, clear-chromated	1	–
11 EMC rear panel, 1 1/2 U/84 HP, with connector cutout	2.5 mm aluminium, clear-chromated	1	–
12 Filter mat 160 mm, 84 HP, for slide-in attachment	–	1	–
13 Mounting plate for RiCool	1 mm sheet steel, zinc-plated, passivated	1	–
Electrical/electronic supply includes			
Description	Technical specifications		
14 RiCool DC fan, individually removable. Including fault alarm signal, speed control	24 V DC, 204 m³/h, 48 W	2	–
15 IEC filtered mains inlet	6 A (VDE, UL, CSA)	1	458
16 Power supply, plug-in, 6 U/12 HP	270 W, 5 V/35 A, +12 V/6 A, –12 V/2 A (VDE, IEC)	1	480
Backplane VME64x, without P0	J1/J2, 12 slots	1	454
17 Female connector for power supply unit	H15	2	–
18 AC cable harness	–	■	–
19 DC cable harness	–	■	–
20 LED display module	for +5 V, ±12 V, fan failure	1	–
21 Mains switch	–	1	–
22 Monitoring module for RiCool and backplane	–	2	–
23 Power supply for RiCool	–	1	–

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General technical specifications – VMEbus

The VMEbus, based on standard IEEE 1014 and IEC 821, has become established worldwide as an industry standard.
The VME64 represents an extension of the VME family to ANSI/VITA 1-1994 and supports 64-bit data traffic. The VME64x extends the VME family to ANSI/VITA 1.1-1997 and is available with the optional 133-pole 2 mm connector J0. 160-pole connectors are used with VME64x. This system remains backward compatible, so that assemblies with 96-pole connectors to IEC 60 603-2 may still be used. All Rittal VMEbus boards are of a **HIGHSPEED-DESIGN.** Minimal reflections are achieved, due to even surge impedance of the signal track. Consistent shielding of every signal trace guarantees minimal feedback, and therefore ensures uninterrupted operation even in 64 bit mode with the **2e protocol** (160 Mbyte/s).

Daisy-chain circuit

With the daisy-chain circuit, a distinction is made between manual daisy-chaining and automatic daisy-chaining. Automatic daisy-chaining renders the connection of jumpers superfluous, and users are saved the time-consuming task of insertion and extraction. What is more, possible misconnections are avoided. Automatic daisy-chaining can be achieved in two ways. Rittal VMEbuses are generally supplied with automatic daisy-chaining.

Termination

In order to avoid malfunctions on signal tracks that may arise as a result of reflections on the exposed track end, these must be terminated with the VMEbus. Termination may be either ON-/IN-board (on the backplane) or OFF-board (external). With regard to the type of termination, a distinction is made between passive and active termination. The benefit of active termination lies in the lower closed-circuit current consumption. Passive termination is distinguished by superior frequency response and a broader temperature range.

Pin assignment J1 and J2

Pin assignment J1

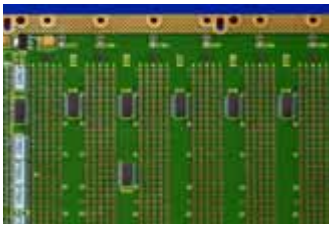
Pin assignment for J1 connector VME64x					
		Pin assignment for J1 connector VME			
Pin no.	Row z	Row a	Row b	Row c	Row d
1	MPR	D00	BBSY	D08	VPC
2	GND	D01	BCLR	D09	GND
3	MCLK	D02	ACFAIL	D10	+ V1
4	GND	D03	BG0IN	D11	+ V2
5	MSD	D04	BG0OUT	D12	RsvU
6	GND	D05	BG1IN	D13	– V1
7	MMD	D06	BG1OUT	D14	– V2
8	GND	D07	BG2IN	D15	RsvU
9	MCTL	GND	BG2OUT	GND	GAP
10	GND	SYSCLK	BG3IN	SYSFAIL	GAO
11	RTRY1	GND	BG3OUT	BERR	GA1
12	GND	DS1	BR0	SYSRESET	+3.3 V
13	RsvBus	DS0	BR1	LWORD	GA2
14	GND	WRITE	BR2	AM5	+3.3 V
15	RsvBus	GND	BR3	A23	GA3
16	GND	DTACK	AM0	A22	+3.3 V
17	RsvBus	GND	AM1	A21	GA4
18	GND	AS	AM2	A20	+3.3 V
19	RsvBus	GND	AM3	A19	RsvBus
20	GND	IACK	GND	A18	+3.3 V
21	RsvBus	IACKIN	SERCLK (1)	A17	RsvBus
22	GND	IACKOUT	SERDAT (1)	A16	+3.3 V
23	RsvBus	AM4	GND	A15	RsvBus
24	GND	A07	IRQ7	A14	+3.3 V
25	RsvBus	A06	IRQ6	A13	RsvBus
26	GND	A05	IRQ5	A12	+3.3 V
27	RsvBus	A04	IRQ4	A11	LI/I
28	GND	A03	IRQ3	A10	+3.3 V
29	SBB	A02	IRQ2	A09	LI/O
30	GND	A01	IRQ1	A08	+3.3 V
31	SBA	–12 V	+5 V STDBT	+12 V	GND
32	GND	+5 V	+5 V	+5 V	VPC

Pin assignment J2

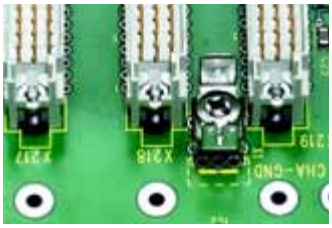
Pin assignment for J2 connector VME64x					
		Pin assignment for J2 connector VME			
Pin no.	Row z	Row a	Row b	Row c	Row d
1	UD	User def.	+5 V	User def.	UD
2	GND	User def.	GND	User def.	UD
3	UD	User def.	Retry	User def.	UD
4	GND	User def.	A24	User def.	UD
5	UD	User def.	A25	User def.	UD
6	GND	User def.	A26	User def.	UD
7	UD	User def.	A27	User def.	UD
8	GND	User def.	A28	User def.	UD
9	UD	User def.	A29	User def.	UD
10	GND	User def.	A30	User def.	UD
11	UD	User def.	A31	User def.	UD
12	GND	User def.	GND	User def.	UD
13	UD	User def.	+5 V	User def.	UD
14	GND	User def.	D16	User def.	UD
15	UD	User def.	D17	User def.	UD
16	GND	User def.	D18	User def.	UD
17	UD	User def.	D19	User def.	UD
18	GND	User def.	D20	User def.	UD
19	UD	User def.	D21	User def.	UD
20	GND	User def.	D22	User def.	UD
21	UD	User def.	D23	User def.	UD
22	GND	User def.	GND	User def.	UD
23	UD	User def.	D24	User def.	UD
24	GND	User def.	D25	User def.	UD
25	UD	User def.	D26	User def.	UD
26	GND	User def.	D27	User def.	UD
27	UD	User def.	D28	User def.	UD
28	GND	User def.	D29	User def.	UD
29	UD	User def.	D30	User def.	UD
30	GND	User def.	D31	User def.	UD
31	UD	User def.	GND	User def.	UD
32	GND	User def.	+5 V	User def.	UD



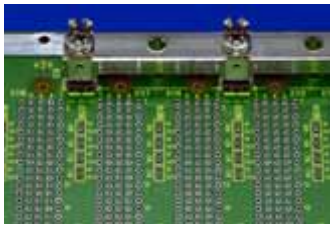
Automatic daisy chaining J1 and J1/J2
Via the use of connectors with integral mechanical switches, the contact is automatically opened when the daughter-board is inserted, and closed again when it is extracted.



Automatic daisy chaining VME64x
The second option for automatic daisy chaining is achieved here by an “or” logic integrated onto the backplane. If the daughter-board is extracted, the logic closes the daisy chain.



Chassis GND connection
An electrically conductive chassis GND surface is attached to the subracks in the mounting section of the backplane. This facilitates EMC-sealed mounting of the backplane in the subracks. With VME64x, subracks and system earth are linked in RF terms by capacitors (10nF, 200 V on each slot). Static charges are discharged via a resistor (≥ 1 MΩ). A combined connection component (screw M4 and Faston 2.8 or 6.3 x 0.8 mm) is provided for connection of the enclosure earth.



Power connections
Infeed of the main operating voltage +5 V/+3.3 V and GND is provided via busbars with M6 screw terminal. The auxiliary operating voltages are supplied via double Fastons with additional M4 screw thread. Optimum supply of the daughter-boards and hence problem-free operation is ensured, thanks to the arrangement of the infeed modules on the backplane.

Utility connector
The special signals to the power pack and to external LEDs are routed on a separate connector on the backplanes.

Depending on the backplane type, a 7-pole, a 10-pole or a 14-pole connector with 2.54 mm spacing is provided.

Pin assignment, 7 pins

1	GND sense
2	+5 V Sense
3	GND
4	+5 V
5	ACFAIL-
6	SYSFAIL-
7	SYSRESET-

Pin assignment, 10/14 pins

GND	1	2	GND sense (5 V)
+5 V	3	4	+5 V Sense
ACFAIL-	5	6	ACFAIL-
SYSFAIL-	7	8	SYSFAIL-
SYSRESET-	9	10	SYSRESET-
+3.3 V	11	12	+3.3 V Sense
GND	13	14	GND sense (3.3 V)

Geographic address pin assignments (VME64x)

Slot no.	GAP Pin J1-D9	GA4 Pin J1-D17	GA3 Pin J1-D15	GA2 Pin J1-D13	GA1 Pin J1-D11	GA0 Pin J1-D10
1	Open	Open	Open	Open	Open	GND
2	Open	Open	Open	Open	GND	Open
3	GND	Open	Open	Open	GND	GND
4	Open	Open	Open	GND	Open	Open
5	GND	Open	Open	GND	Open	GND
6	GND	Open	Open	GND	GND	Open
7	Open	Open	Open	GND	GND	GND
8	Open	Open	GND	Open	Open	Open
9	GND	Open	GND	Open	Open	GND
10	GND	Open	GND	Open	GND	Open
11	Open	Open	GND	Open	GND	GND
12	GND	Open	GND	GND	Open	Open
13	Open	Open	GND	GND	Open	GND
14	Open	Open	GND	GND	GND	Open
15	GND	Open	GND	GND	GND	GND
16	Open	GND	Open	Open	Open	Open
17	GND	GND	Open	Open	Open	GND
18	GND	GND	Open	Open	GND	Open
19	Open	GND	Open	Open	GND	GND
20	GND	GND	Open	GND	Open	Open
21	Open	GND	Open	GND	Open	GND

Pin assignments J0

Pin no.	ROW Z	ROW A	ROW B	ROW C	ROW D	ROW E	ROW F
1 – 19	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND





Backplanes VME64x

Technical specifications:

Number of layers	10
Layer structure	Optimised for optimum RF performance. Outer layers designed as shielding surface.
PCB thickness	4.3 mm
Ohmic resistance of the signal tracks	< 1.5 Ohm
Surge impedance Z of the signal tracks	50 Ohm
Basic power consumption, terminated at both ends	Active: < 0.1 A
Power supply: – Busbar with M6 screw terminal – M4 screw terminal and FASTON 6.3 x 0.8 mm – < 5 slots	 x x FASTON 6.3 x 0.8 mm
Current carrying capacity of busbar	200 A
Current carrying capacity of a combined Double flat-pin connector/screw terminal	25 A
Current carrying capacity of a FASTON flat connector	10 A
Current carrying capacity of the assembly, per slot	+3.3 V 12.5 A +12 V 9.0 A –12 V 1.5 A +5 VSTDBY 1.5 A +48 V (38 – 75 V) 3.0 A
Termination ON-/IN-board	active
Installation height	6 U/6.5 U
Distance between slots	4 HP
Connectors	Press-fit technique quality class 2, 400 connection cycles 160 pins compatible with C96 Optional J0, style 2 mm, 95/133 pins
Operating temperature range	Active termination 0°... +70°C
Relative humidity	90 %, non-condensing

VME64x 6 U

Slots	Dimensions		Model No. RP	
	Height mm	Width mm	without P0 connector	with P0 connector
5	261.6	100	**3687.608**	**3687.609**
7	261.6	141	**3687.610**	**3687.611**
9	261.6	181.5	**9904.930**	**9904.932**
10	261.6	202	**9904.931**	**9904.933**
12	261.6	242.5	**3686.634**	**3686.473**
21	261.6	425.5	**3686.635**	**3686.474**

VME64x 6.5 U

Slots	Dimensions		Model No. RP	
	Height mm	Width mm	without P0 connector	with P0 connector
5	283.7	100	**9910.012**	**9910.007**
7	283.7	141	**9910.013**	**9910.008**
9	283.7	181.5	**9910.014**	**9910.009**
10	283.7	202	**9904.928**	**9904.929**
12	283.7	242.5	**9910.015**	**9910.010**
21	283.7	425.5	**9910.016**	**9910.011**

Material:
Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:
Backplane, fully populated.

Accessories:

for backplane mounting:
Conductive strips, see page 505.
Insulating strips, see page 505.



Backplanes VME J1/J2 Monolithic

Technical specifications:

Number of layers	6
Layer structure	Optimised for optimum RF performance. Outer layers designed as shielding surface.
PCB thickness	3.2 – 4.0 mm
Ohmic resistance of the signal tracks	< 1.5 Ohm
Surge impedance Z of the signal tracks	60 Ohm
Basic power consumption, terminated at both ends	Active: < 0.1 A Passive: < 1.4 A
Power supply: – Busbar with M6 screw terminal – M4 screw terminal and FASTON 6.3 x 0.8 mm – < 5 slots	 x x FASTON 6.3 x 0.8 mm
Current carrying capacity of busbar	200 A
Current carrying capacity of a combined double flat-pin connector/screw terminal	25 A
Current carrying capacity of a FASTON flat connector	10 A
Current carrying capacity of the assembly, per slot	+5 V 9.0 A +12 V 1.5 A –12 V 1.5 A +5 VSTDBY 1.5 A
Termination ON-/IN-board	Passive or active
Installation height	6 U
Distance between slots	4 HP
Connectors	Press-fit technique quality class 2, 400 connection cycles C96
Operating temperature range	Active termination 0°... +70°C Passive termination –40°...+85°C
Relative humidity	90 %, non-condensing

Slots	Dimensions		Model No. RP	
	Height mm	Width mm	passive	active
2	261.7	39.5	**3686.475**	**3686.495**
3	261.7	59.5	**3686.476**	**3686.496**
4	261.7	80	**3686.477**	**3686.497**
5	261.7	100	**3686.478**	**3686.498**
6	261.7	120.5	**3686.479**	**3686.499**
7	261.7	141	**3686.480**	**3686.500**
8	261.7	161.5	**3686.481**	**3686.501**
9	261.7	181.5	**3686.482**	**3686.502**
10	261.7	202	**3686.483**	**3686.503**
11	261.7	222.5	**3686.484**	**3686.504**
12	261.7	242.5	**3686.485**	**3686.505**
13	261.7	263	**3686.486**	**3686.506**
14	261.7	283	**3686.487**	**3686.507**
15	261.7	303.5	**3686.488**	**3686.508**
16	261.7	324	**3686.489**	**3686.509**
17	261.7	344	**3686.490**	**3686.510**
18	261.7	364.5	**3686.491**	**3686.511**
19	261.7	385	**3686.492**	**3686.512**
20	261.7	405	**3686.493**	**3686.513**
21	261.7	425.5	**3686.494**	**3686.514**

Material:
Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:
Backplane, fully populated.

Accessories:

for backplane mounting:
Conductive strips, see page 505.
Insulating strips, see page 505.

Backplanes



VME J1 system bus

Technical specifications:

	VME J1	VME J2
Number of layers	6	2
Layer structure	Optimised for optimum RF performance. Outer layers designed as shielding surface.	
PCB thickness	3.2 mm	3.2 mm
Ohmic resistance of the signal tracks	< 1.5 Ohm	< 1.5 Ohm
Surge impedance Z of the signal tracks	60 Ohm	60 Ohm
Basic power consumption, terminated at both ends	Passive: < 1.0 A	< 0.6 A
Power supply: – M4 screw terminal and FASTON 6.3 x 0.8 mm – < 5 slots	x FASTON 6.3 x 0.8 mm	x FASTON 6.3 x 0.8 mm
Current carrying capacity of a combined double flat-pin connector/screw terminal	25 A	25 A
Current carrying capacity of a FASTON flat connector	10 A	10 A
Current carrying capacity of the assembly per slot	+5 V 4.5 A +12 V 1.5 A –12 V 1.5 A +5 VSTDBY 1.5 A	+5 V 4.5 A
Termination ON-/IN-board	Passive	Passive
Installation height	3 U	3 U
Distance between slots	4 HP	4 HP
Connectors	Press-fit technique, quality class 2, 400 connection cycles C96	Press-fit technique, quality class 2, 400 connection cycles C96
Operating temperature range	Passive termination –40°...+85°C	Passive termination –40°...+85°C
Relative humidity	90 %, non-condensing	90 %, non-condensing

Slots	Dimensions		Model No. RP
	Height mm	Width mm	
3	128.4	59.5	**3686.555**
4	128.4	80	**3686.556**
5	128.4	100	**3686.557**
6	128.4	120.5	**3686.558**
7	128.4	141	**3686.559**
8	128.4	161.5	**3686.560**
9	128.4	181.5	**3686.561**
10	128.4	202	**3686.562**

Slots	Dimensions		Model No. RP
	Height mm	Width mm	
12	128.4	242.5	**3686.563**
13	128.4	263	**3686.564**
14	128.4	283	**3686.565**
15	128.4	303.5	**3686.566**
18	128.4	364.5	**3686.567**
20	128.4	405	**3686.568**
21	128.4	425.5	**3686.569**

Material:
Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:
Backplane, fully populated.

Accessories:

for backplane mounting:
Conductive strips, see page 505.
Insulating strips, see page 505.



VME J2 expansion bus

Material:
Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:
Backplane, fully populated.

Accessories:

for backplane mounting:
Conductive strips, see page 505.
Insulating strips, see page 505.

Slots	Dimensions		Model No. RP
	Height mm	Width mm	
3	128.4	59.5	**3686.585**
4	128.4	80	**3686.586**
5	128.4	100	**3686.587**
6	128.4	120.5	**3686.588**
7	128.4	141	**3686.589**
8	128.4	161.5	**3686.590**
9	128.4	181.5	**3686.591**
10	128.4	202	**3686.592**

Slots	Dimensions		Model No. RP
	Height mm	Width mm	
12	128.4	242.5	**3686.593**
13	128.4	263	**3686.594**
14	128.4	283	**3686.595**
15	128.4	303.5	**3686.596**
18	128.4	364.5	**3686.597**
20	128.4	405	**3686.598**
21	128.4	425.5	**3686.599**



Mains switch

- Rocker switch 6 A/250 V, 2-pole, FASTON connections (4.7 x 0.8 mm)
- VDE, UL, CSA, TÜV, SEMKO, DEMCO, SEV, NEMKO, SETI, BEAB approvals
- Isolation resistance: > 10 MΩ
- Test voltage: 1 kV
- Frame: 21 x 15 mm
- Cutout: 19.2 x 12.9 mm
- Installation depth: 17 mm

Max. current	Packs of	Model No. RP
6 A	1	**3687.711**



Connection cable

for power supply,
see page 771.



EMC front panel

with LED and mains switch
Front panel with switch module and display board with LEDs.

Supply includes:
EMC front panel 5 HP,
Rocker switch,
Display board with LEDs:
+3.3 V/+5 V/+12 V/–12 V/fan failure,
assembly parts.

For	LED version	Model No. RP	
		3 U	4 U
CPCI/ VME 64x	+3.3 V +5 V ±12 V Alarm	**3687.712**	**3687.714**
VME	+5 V ±12 V Alarm	**3687.713**	**3687.715**



Filter module

for DC fan with fault monitoring
The filter module serves to suppress interference on the +12 V power supply. In addition, a signal is generated in the event of a fan failure or significant drop below the nominal speed (displayed via the LED display board).

- Max. current of fan: 700 mA at an operating voltage of 12 V DC.

Supply includes:
Board with 2 screw terminals.

Packs of	Model No. RP
1	**3687.716**

Accessories

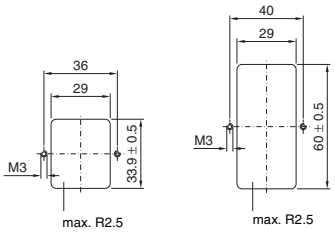


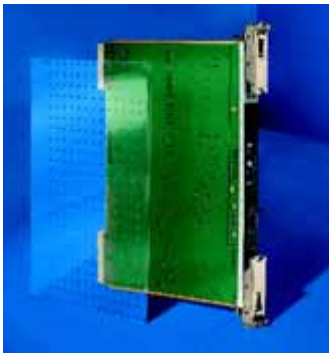
Filtered IEC mains inlet

Combination module consisting of IEC 320 socket, line filter and 5 x 20 mm fuse holder to IEC 320 and IEC 950.

Technical specifications:
Metal enclosure for screw mounting
Mains input: via IEC 320 socket
Mains output: via 3 FASTON contacts (L, N, PE, 6.3 x 0.8)
Versions with or without switches
Temperature range: – 25°C to +85°C

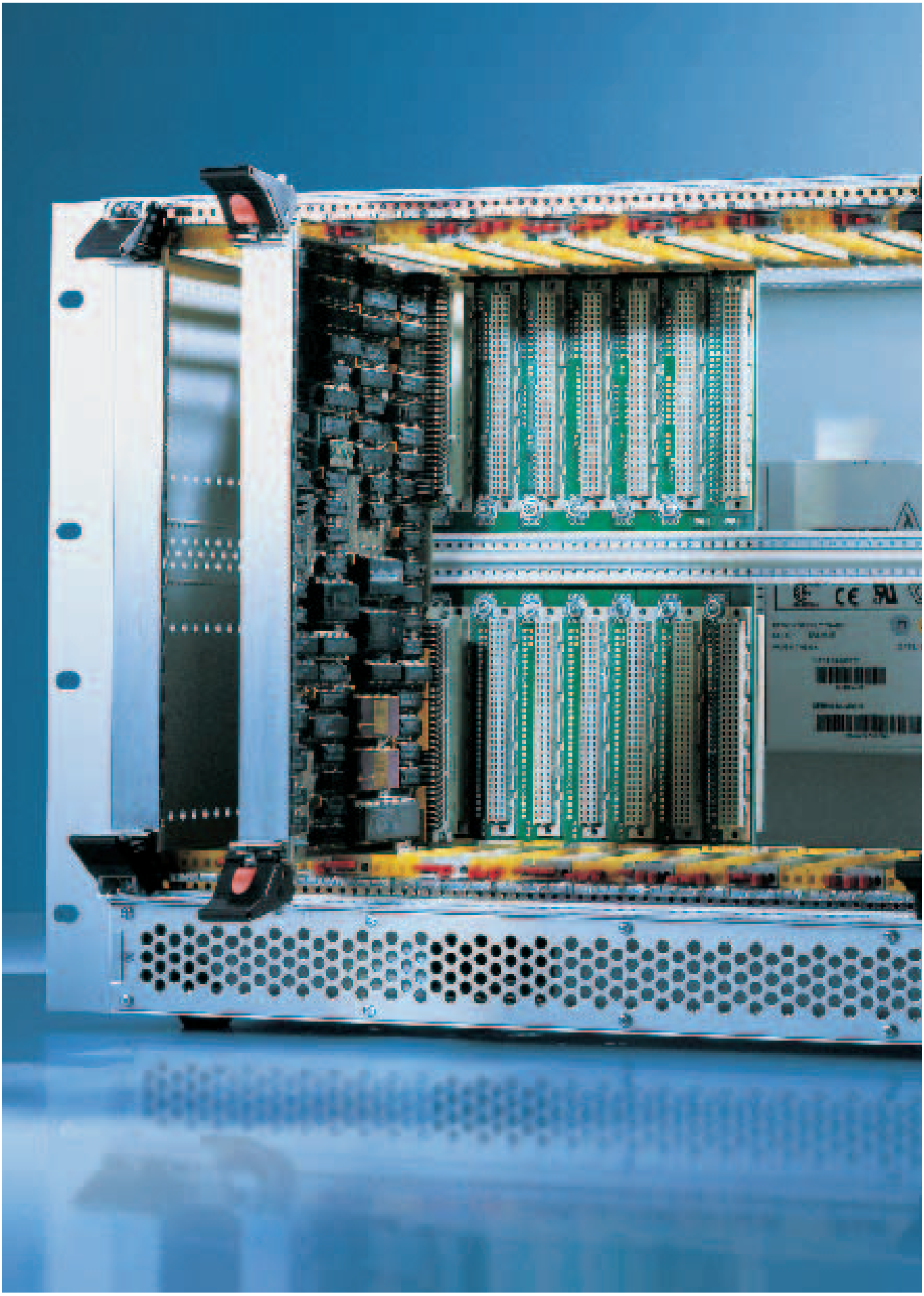
	Model No. RP	
	with switch	without switch
	3687.709	**3687.710**
Mains voltage max.	250 V AC	250 V AC
Leakage current	2 x 0.32 mA	≤ 500 µA
Max. current	6 A	6 A
Mounting holes	40 mm	36 mm
Installation depth	90 mm	56 mm
Cutout	60 x 29 mm	33.9 x 29 mm
Approvals	VDE, SEMKO, SEV, UL, CSA	VDE





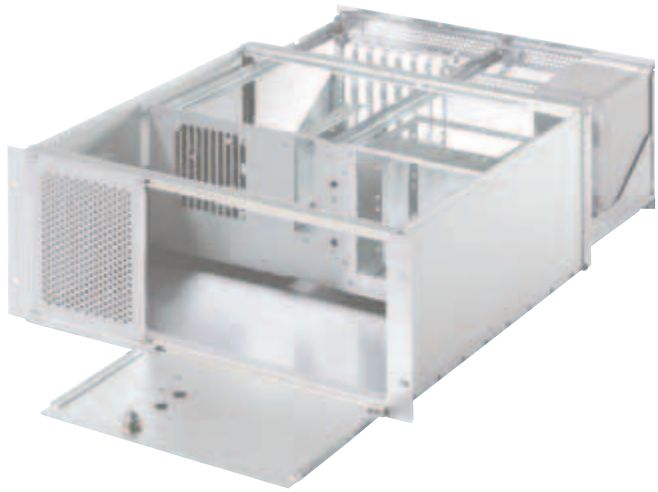
Plastic covers

for PCBs,
see page 531.



Rack-mount systems for industrial PCs and storage devices

Features



We offer an extensive range of products for industrial PCs to the ATX standard, from 482.6 mm (19″) rack-mount versions in 1, 2 and 4 U, through to solutions for direct mounting on mounting plates.

Shown opposite is a version with pull-out inner housing and electronics for automatic restart following a mains failure.



ATX Ripac, aluminium



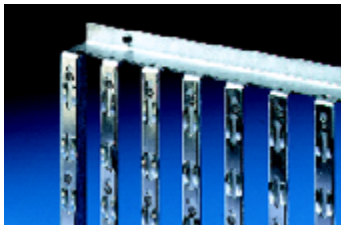
The top-of-the-range model with outstanding maintenance-friendliness: The inner housing can be pulled out like a drawer.



Enclosure body of clear chromated aluminium, conductive.



Horizontally hinged, lockable front panel offers rapid access to drives and control components, as well as protecting against unauthorised access.



EMC gaskets – for unused slot covers – and conductive attachment of the motherboard.



Option of externally mounting 3 x 5¼″ and 1 x 3½″ drives for internal installation. Drive covers (accessory) for unused positions.



Integral electronics for automatic restart following a mains failure.



ATX 1, 2 U, sheet steel



The space-saving solution, e.g. in the server segment. The neutral design blends in well with other components.



Includes riser card for 1 slot or 2 slots.



Drive installation (1 and 2 U): Installation of 1 x 5¼″ and 1 x 3½″ drives.

Features



ATX 4 U, sheet steel



Lockable front panel protects against unauthorised access.



Slide rail mounting with no loss of height, due to reduced side panel height.



Unpainted contact points ensure reliable contact.



AT/ATX (Vario) Economy with front door



ATX Economy: Fully assembled and prewired.
AT/ATX Vario Economy: the basic case for individual installation and self-assembly.



Enclosure made from sheet steel zinc-plated/spray-finished, for demanding requirements in terms of stability and safety.



Easy removal of the drive module for external population.



ATX with front connections



As a 482.6 mm (19″) version for mounting in the enclosure, or for mounting directly onto the **mounting plate**.



I/O connections at the front guarantee access from the front and flexibility, e.g. with minimal space available for connections to other systems.



Rear panel with cutout for PS/2 power pack.



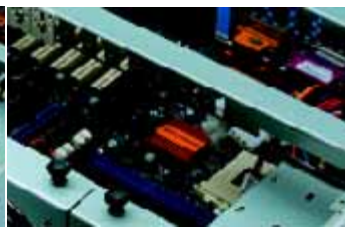
Systems for storage devices



Protection under tough conditions is afforded by Rittal RAID systems, available in three variants. An optional ATX board may be installed.

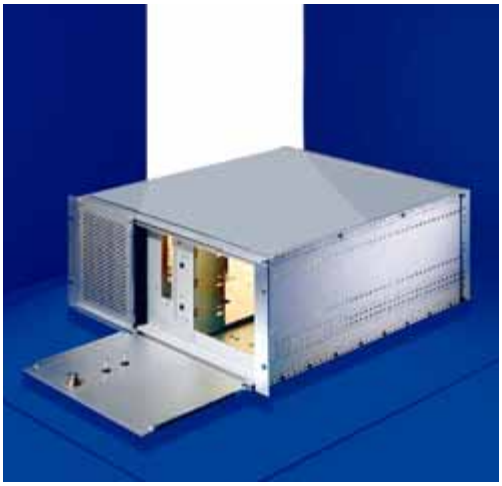


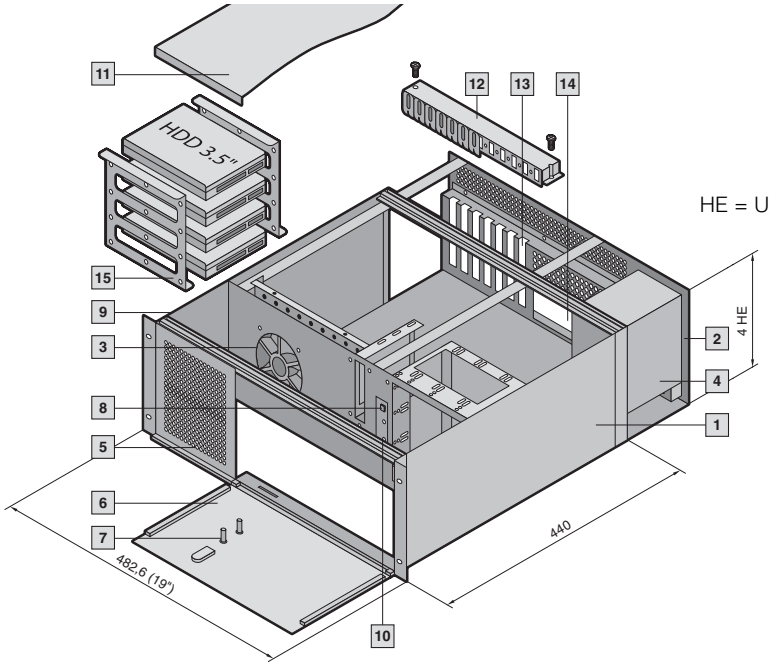
Fan inside (ATX 9-drive)



Optional **installation** of an ATX board with 6-drive and 9-drive version.

ATX Ripac 4 U, aluminium





Technical specifications:
482.6 mm (19″) rack-mount system for the installation of ATX/ Mini-ATX or Micro-ATX boards and 3 x 5¼″ and 1 x 3½″ drives.
Width: 482.6 mm (19″)
Height: 4 U (177.0 mm)
Overall depth: 440 mm.
EMC prepared.

Material/surface finish:
Side panels, front panels: Aluminium, clear-chromated
Cover:
1.0 mm aluminium, clear-chromated
Rack-mounted PC frame: Sheet steel, zinc-plated, passivated

Standards:
Complies with IEC 60 297-3 and ATX specification 2.01

Special designs available on request.

Supply includes:

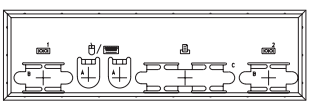
1 Rack-mount system 4 U, including drive module
2 Rack-mounted PC frame
3 1 fan 120 mm with filter
4 ATX power pack 300 W (Technical specifications, see RP 3688.129, page 483)
5 Front door, horizontally hinged
6 Front door, horizontally hinged, lockable
7 LED displays
8 Reset button
9 EMC gaskets, all round
10 ON/OFF switch with electronics for automatic restart following a mains failure (activation/deactivation of the electronics via jumper)
11 Covers

	Packs of		Page
U		**4**	
Width in mm		482.6 (19″)	
Height in mm		177.0	
Depth in mm		440.0	
Model No. RP basic system fully assembled	1	**3659.000**	
Accessories			
12 Card retainer	7	3659.010	476
Mounting bar for card retainer	1	3659.090	476
13 Unused slot cover	5	3659.030	475
Cover for 5¼″ drive space	1	3659.050	475
15 Drive support	1 set	3659.060	475
Spare filter mat	1	**3659.070**	–
Uninterruptible power supply Output: 300 VA/180 W	1	3659.080	482
14 **ATX I/O covers, sheet steel**[1)]			
Type “Aurora Marl”	1	**3659.040**	–
Type “Tucson”/“Venus”	1	**3659.130**	–
Type “Providence”	1	**3659.140**	–

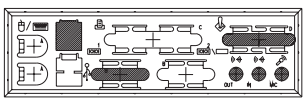
[1)] Other versions available on request; please specify the type of mainboard.

ATX I/O covers:

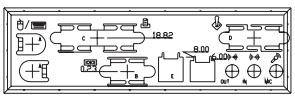
Type “Aurora Marl”



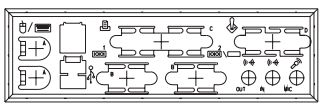
Type “Venus”



Type “Providence”

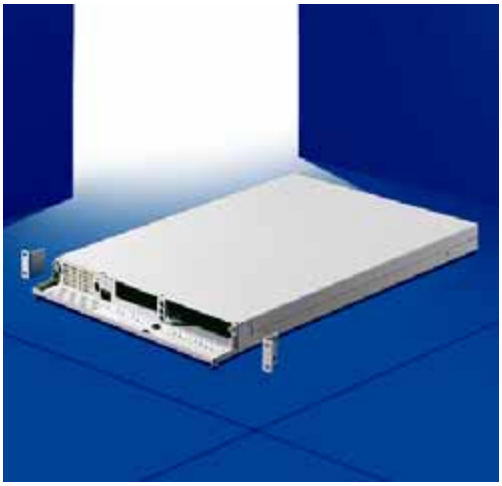


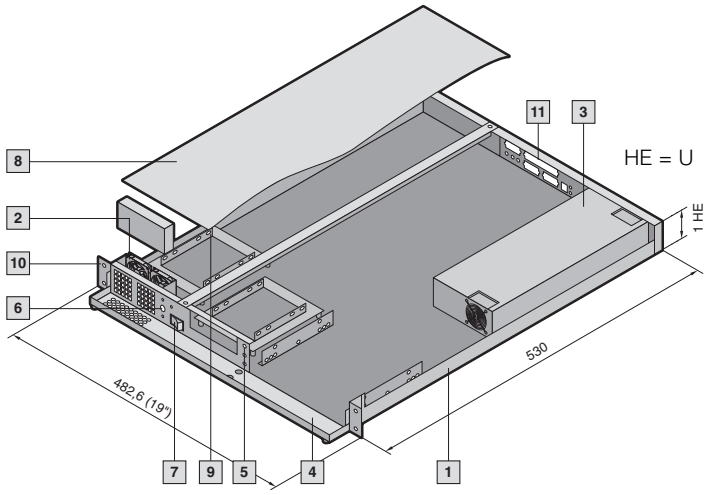
Type "Tucson"



Accessories Page 475 **Keyboard rack 482.6 mm (19″)** Page 1050 **TFT display 15″** Page 1050

ATX 1 U, sheet steel





Technical specifications:
482.6 mm (19″) rack-mount system for the installation of ATX/ Mini-ATX or Micro-ATX boards and 1 x 5¼″ and 1 x 3½″ drives.
Width: 482.6 mm (19″)
Height: 1 U (44.0 mm)
Overall depth: 532.5 mm.
EMC prepared.

Material/surface finish:
Case, cover:
1.2 mm sheet steel, zinc-plated and spray-finished in RAL 7035
Front door: 1.2 mm sheet steel, spray-finished in RAL 7035, unpainted contact points

Standards:
Complies with IEC 60 297-3 and ATX specification 2.01

Special designs available on request.

Supply includes:

1 Rack-mounted system 1 U, including drive module
2 2 x 40 mm fans and filter mat
3 ATX power pack 200 W (Technical specifications, see RP 3688.130, page 484)
4 Front door, horizontal hinge
5 LED displays, speakers
6 Reset button
7 On/off switch
8 Covers
9 Drive support for 1 x 3½″ hard drives
10 19″ flanges
11 Rear panel with integral I/O shield, type Venus

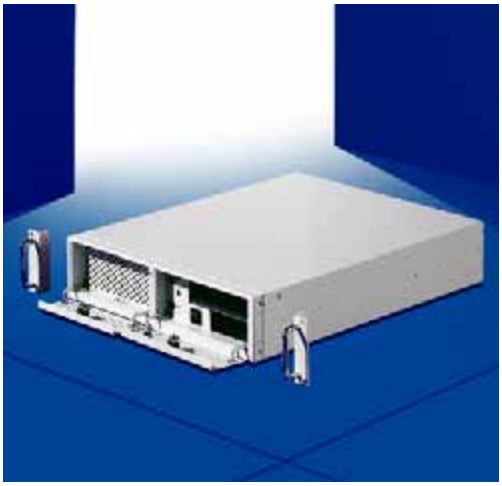
Riser card, 1 x PCI slot, 32 bit

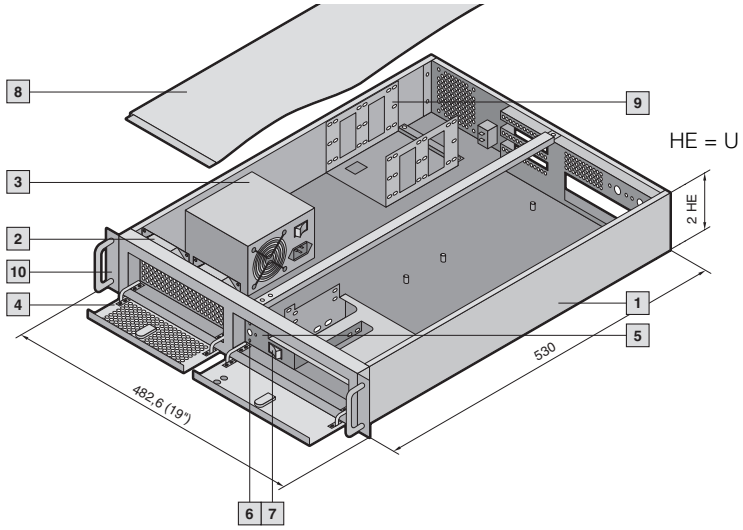
	Packs of		Page
U		**1**	
Width in mm		482.6 (19″)	
Height in mm		44.0 (1 U)	
Depth in mm		532.5/530.0	
Model No. RP basic system fully assembled	1	**3659.500**	
Accessories			
Unused slot cover	5	3659.030	475
Cover for 5¼″ drive space	1	3659.110	475
Cover for 3½″ drive space	1	3659.410	475
Uninterruptible power supply	1	3659.080	482
Front handles for ATX 1 U	2	3659.540	475

[1] Other versions available on request; please specify the type of mainboard.

Accessories Page 475 **Keyboard rack 482.6 mm (19″)** Page 1050 **TFT display 15″** Page 1050

ATX 2 U, sheet steel





Technical specifications:
482.6 mm (19″) rack-mount system for the installation of ATX/ Mini-ATX or Micro-ATX boards and 1 x 5¼″ and 1 x 3½″ drives.
Width: 482.6 mm (19″)
Height: 2 U (88.0 mm)
Overall depth: 532.5 mm.
EMC prepared.

Material/surface finish:
Case, cover:
1.2 mm sheet steel, zinc-plated and spray-finished in RAL 7035
Front door: 1.2 mm sheet steel, spray-finished in RAL 7035, unpainted contact points

Standards:
Complies with IEC 60 297-3 and ATX specification 2.01

Special designs available on request.

Supply includes:

1. Rack-mount system 2 U, including drive module
2. 2 x 80 mm fans and filter mat
3. ATX power pack 300 W with mains cable, PFC active (Technical specifications, see RP 3688.129, page 483)
4. Front door, horizontally hinged, lockable
5. LED displays, speakers
6. Reset button
7. On/off switch
8. Covers
9. Drive support for 3 x 3½″ hard drives
10. 19″ flanges

Bus and data connection cable

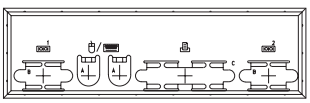
Riser card, 2 x PCI slot, 32 bit

	Packs of		Page
U		**2**	
Width in mm		482.6 (19″)	
Height of flanges/side panels in mm		88.0 (2 U)	
Depth in mm		532.5/530.0	
Model No. RP basic system fully assembled	1	**3659.600**	
Accessories			
Unused slot cover	5	3659.030	475
Cover for 5¼″ drive space	1	3659.110	475
Cover for 3½″ drive space	1	3659.410	475
Uninterruptible power supply	1	3659.080	482
Telescopic slides for 600 mm enclosure depth	1 set	3659.180	475
Telescopic slides for 800 mm enclosure depth	1 set	3659.190	475
Front handles for ATX 2 U	2	3659.020	475
Fan 12 V DC, 60 mm, for the rear panel	2	3659.250	476
ATX I/O covers, sheet steel[1)]			
Type “Aurora Marl”	1	**3659.040**	–
Type “Tucson”/“Venus"	1	**3659.130**	–
Type “Providence”	1	**3659.140**	–

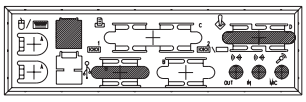
[1)] Other versions available on request; please specify the type of mainboard.

ATX I/O covers:

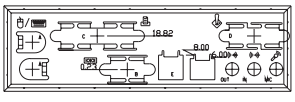
Type “Aurora Marl”



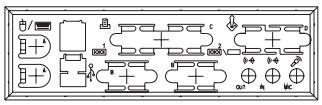
Type “Venus”



Type “Providence”



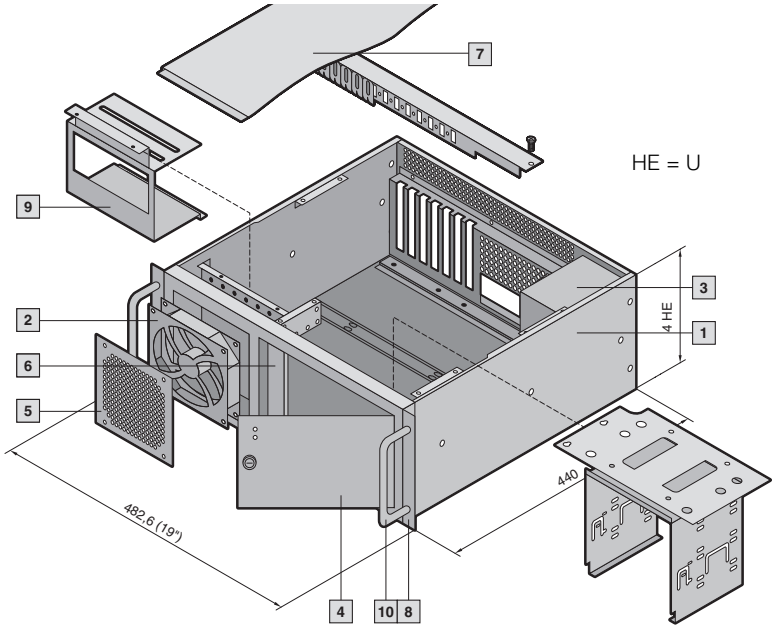
Type "Tucson"



Accessories Page 475 **Keyboard rack 482.6 mm (19″)** Page 1050 **TFT display 15″** Page 1050

ATX 4 U, sheet steel





Technical specifications:
482.6 mm (19″) rack-mount system for the installation of ATX/ Mini-ATX or Micro-ATX boards and 3 x $5^1/_4$″ and 1 x $3^1/_2$″ drives.
Width: 482.6 mm (19″)
Height: 4 U (177.0 mm)
Side panels: 174.0 mm
Overall depth: 442.5 mm
Suitable for mounting on slide rails.

Material/surface finish:
Case, covers, front panels:
1.2 mm sheet steel, spray-finished in RAL 7035, unpainted contact points

Standards:
Complies with IEC 60 297-3 and ATX specification 2.01

Special designs available on request.

Supply includes:

1 Rack-mount system 4 U, including drive module

2 1 x 120 mm fan and filter mat, exchangeable from the front

3 ATX power pack 300 W (Technical specifications, see RP 3688.129, page 483)

4 Front door, vertically hinged, lockable

5 Front panel with ventilation holes and filter mat

6 LED displays, speakers Reset switch, on/off switch

7 Cover

8 Two 482.6 mm (19″) flanges

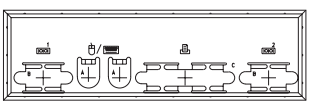
9 Drive support for 4 x $3^1/_2$″ hard drives

	Packs of		Page
U		**4**	
Width in mm		482.6 (19″)	
Height of flanges/side panels in mm		177.0/174.0	
Depth in mm		442.5/440.0	
Model No. RP basic system fully assembled	1	**3659.900**	
Accessories			
Card retainer	7	3659.010	476
Mounting bar for card retainer	1	3659.090	476
Unused slot cover	5	3659.030	475
Cover for $5^1/_4$″ drive space	1	3659.110	475
Cover for $3^1/_2$″ drive space	1	3659.410	475
Uninterruptible power supply	1	3659.080	482
Telescopic slides for 600 mm enclosure depth	1 set	3659.180	475
Telescopic slides for 800 mm enclosure depth	1 set	3659.190	475
10 Front handles for ATX 4 U	2	3659.240	475
ATX I/O covers, sheet steel[1)]			
Type “Aurora Marl”	1	**3659.040**	–
Type “Tucson”/“Venus”	1	**3659.130**	–
Type “Providence”	1	**3659.140**	–

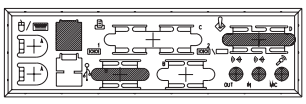
[1)] Other versions available on request; please specify the type of mainboard.

ATX I/O covers:

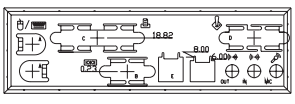
Type “Aurora Marl”



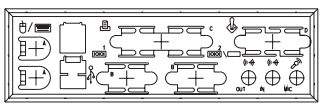
Type “Venus”



Type “Providence”



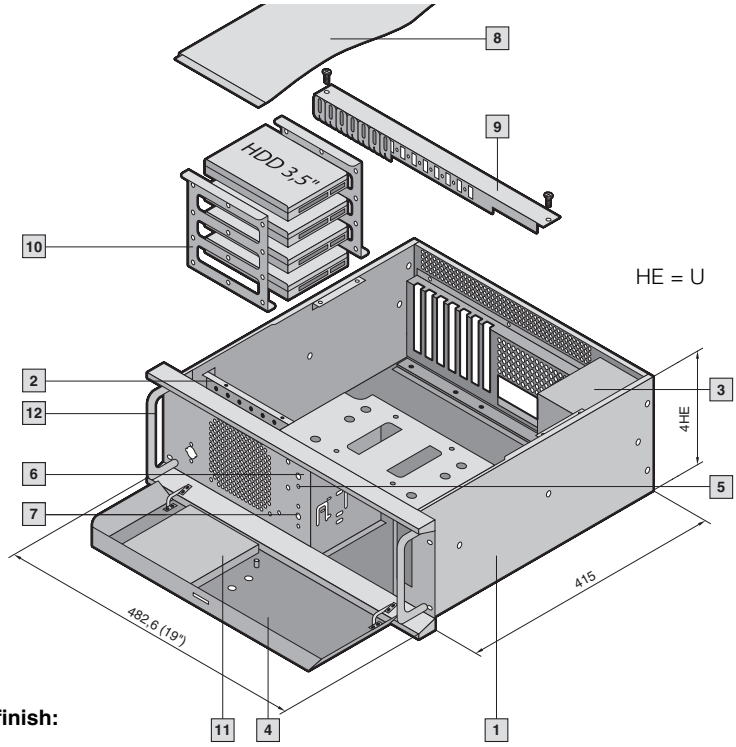
Type “Tucson”



Accessories Page 475 **Keyboard rack 482.6 mm (19″)** Page 1050 **TFT display 15″** Page 1050

ATX Economy with front door, 4 U, sheet steel





Technical specifications:
482.6 mm (19″) rack-mount system for the installation of ATX/ Mini-ATX or Micro-ATX boards and 3 x 5¼″ and 1 x 3½″ drives.
Width: 482.6 mm (19″)
Height: 4 U (177.0 mm)
Overall depth: 430 mm.
EMC prepared.

Material/surface finish:
Case, cover:
1.2 mm sheet steel, zinc-plated, passivated
Front door: 1.2 mm sheet steel, spray-finished in RAL 7035, unpainted contact points

Standards:
Complies with IEC 60 297-3 and ATX specification 2.01

Special designs available on request.

Supply includes:

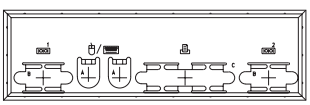
1 Rack-mount system 4 U, including drive module
2 1 x 120 mm fan and filter mat
3 ATX power pack 300 W (Technical specifications, see RP 3688.121, page 483)
4 Front door, horizontally hinged, lockable
5 LED displays, speakers
6 Reset button
7 On/off switch
8 Cover

	Packs of		Page
U		**4**	
Width in mm		482.6 (19″)	
Height of flanges/side panels in mm		177.0/174.0	
Depth in mm		430.0/415.0	
Model No. RP basic system fully assembled	1	**3659.100**	
Accessories			
9 Card retainer	7	3659.010	476
Mounting bar for card retainer	1	3659.090	476
Unused slot cover	5	3659.030	475
Cover for 5¼″ drive space	1	3659.110	475
Cover for 3½″ drive space	1	3659.410	475
10 Drive support for hard disks	1 set	3659.230	475
11 Spare filter mat	1	**3659.120**	–
Uninterruptible power supply	1	3659.080	482
Telescopic slides for 600 mm enclosure depth	1 set	3659.180	475
Telescopic slides for 800 mm enclosure depth	1 set	3659.190	475
12 Front handles for ATX 4 U	2	3659.240	475
ATX I/O covers, sheet steel[1]			
Type “Aurora Marl”	1	**3659.040**	–
Type “Tucson”/“Venus"	1	**3659.130**	–
Type “Providence”	1	**3659.140**	–

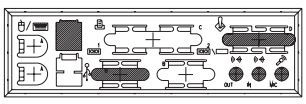
[1] Other versions available on request; please specify the type of mainboard.

ATX I/O covers:

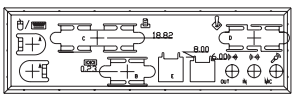
Type “Aurora Marl”



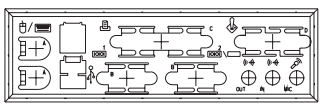
Type “Venus”



Type “Providence”

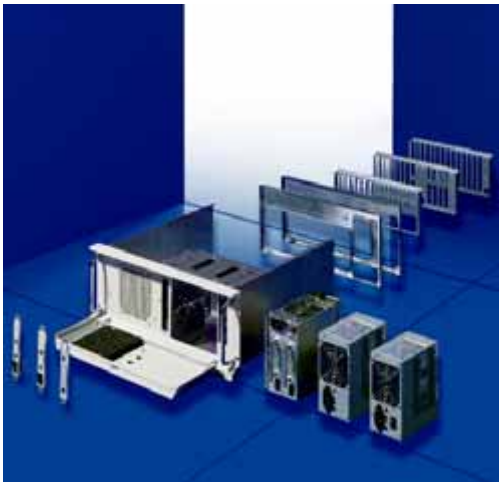


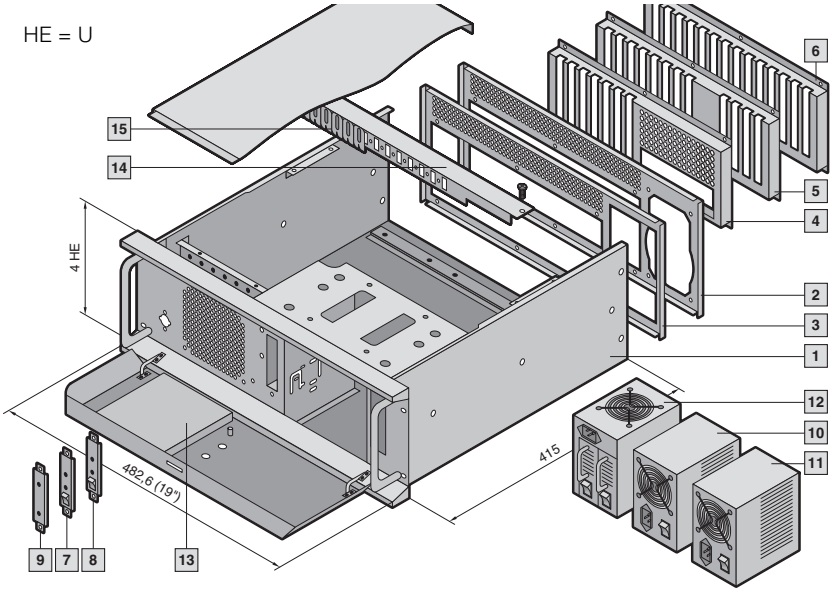
Type "Tucson"



Accessories Page 475 **Keyboard rack 482.6 mm (19″)** Page 1050 **TFT display 15″** Page 1050

Modular system AT/ATX Vario Economy with front door, 4 U, sheet steel





The modular principle of AT/ATX Vario Economy allows installation to accommodate individual requirements. The basic case may be fitted for both AT and ATX applications with the appropriate selection of rear panels, power packs and front trim panels. For self-assembly, or on request fully assembled and wired.

Technical specifications:
19″ rack-mount system for the installation of ATX/Mini-ATX, Micro-ATX boards or AT/Baby-AT boards as well as 3 x 5¼″ and 1 x 3½″ drives.
Width: 482.6 mm (19″)
Height: 4 U (177.0/174.0 mm)
Overall depth: 430 mm.

Material/surface finish:
Case, cover:
1.2 mm sheet steel, zinc-plated, passivated
Front door: 1.2 mm sheet steel, spray-finished in RAL 7035, unpainted contact points

Standards:
Complies with IEC 60 297-3 and ATX specification 2.01

Special designs available on request.

Basic enclosure supply includes:

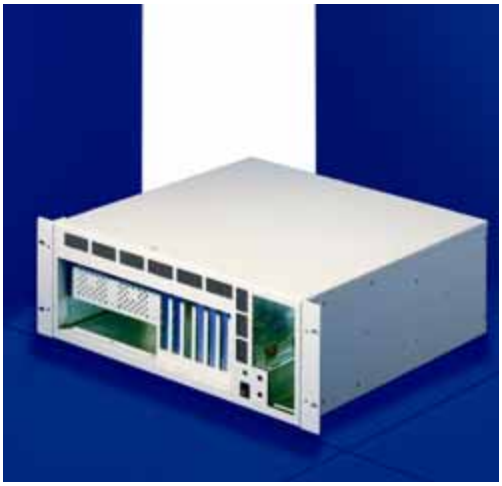
1 Case 4 U, 430 mm deep including assembly parts, covers, drive holder, fan, horizontally hinged front door, and air filter.

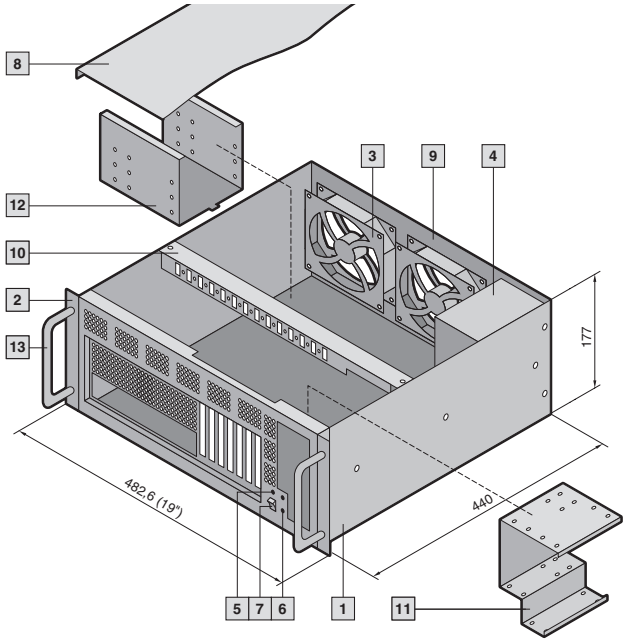
Note:
Rear panel, front trim panel and power pack should be ordered separately (for self-assembly).

	Packs of							Page
U		4						
		Installation for AT/ATX power pack (PS/2)			Installation for redundant power pack (PS/2)			
		ATX	AT 8 + 4 slots	AT 14 slots	ATX	AT 8 + 4 slots	AT 14 slots	
Model No. RP basic enclosure fitted	1	**3659.400**						
Installation, rear								
2 Rear panel for AT/ATX power pack	1	3659.290	3659.290	3659.290	–	–	–	476
3 Rear panel for redundant power pack	1	–	–	–	3659.310	3659.310	3659.310	476
4 Slotted rear panel for ATX 7 slot	1	3659.320	–	–	3659.320	–	–	476
5 Slotted rear panel 8 + 4 slots for AT	1	–	3659.330	–	–	3659.330	–	476
6 Slotted rear panel 14 slots for AT	1	–	–	3659.340	–	–	3659.340	476
Installation, front								
7 Front trim panel ATX with 2 x LED, reset switch	1	3659.350	–	–	3659.350	–	–	476
8 Front trim panel AT with 2 x LED, reset switch	1	–	3659.360	3659.360	–	3659.360	3659.360	476
9 Front trim panel ATX with automatic restart, 2 x LED, reset, Power On switch	1	3659.370	–	–	3659.370	–	–	476
Power packs								
10 ATX power pack 300 W, PFC passive	1	3688.121	–	–	–	–	–	483
ATX power pack 300 W, PFC active	1	3688.129	–	–	–	–	–	483
ATX power pack 400 W, PFC active	1	3688.128	–	–	–	–	–	483
11 AT power pack 300 W, PFC passive	1	–	3688.118	3688.118	–	–	–	483
12 Redundant power pack (PS/2), 2 x 300 W	1	–	–	–	3688.123	–	–	484
Fan 12 V DC, 60 mm, for the rear panel	2	3659.250	3659.250	3659.250	3659.250	3659.250	3659.250	476
13 Spare filter mat	1	**3659.120**	**3659.120**	**3659.120**	**3659.120**	**3659.120**	**3659.120**	–
Accessories								
14 Mounting bar for card retainer	1	3659.090	3659.090	3659.090	3659.090	3659.090	3659.090	476
15 Card retainer	7	3659.010	3659.010	3659.010	3659.010	3659.010	3659.010	476

Accessories Page 475 **Keyboard rack 482.6 mm (19″)** Page 1050 **TFT display 15″** Page 1050

ATX with front connections for 482.6 mm (19″) installation, 4 U





Technical specifications:
482.6 mm (19″) rack-mount system for the installation of ATX/ Mini-ATX or Micro-ATX boards and 1 x 5¼″ and 1 x 3½″ drives, vertical.
Width: 482.6 mm (19″)
Height: 4 U
Flanges: 177.0 mm
Side panels: 174.0 mm
Overall depth: 442.5 mm
Connections for I/Os, front
EMC prepared.
Suitable for mounting on slide rails.

Material/surface finish:
Case, covers:
1.2 mm sheet steel, spray-finished in RAL 7035, unpainted contact points

Standards:
Complies with IEC 60 297-3 and ATX specification 2.01

Special designs available on request.

Supply includes:

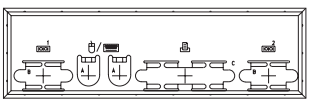
1 Rack-mount system 4 U, including drive holder
2 19″ flanges
3 2 x 120 mm fans
4 ATX power pack 300 W (Technical specifications, see RP 3688.129, page 483)
5 LED displays
6 Reset button
7 On/off switch
8 Cover
9 Rear panel with cutout and connection for power pack
10 Mounting bar for card retainer
11 Drive support for 1 x 5¼″ and 1 x 3½″
12 Drive support for 3 x hard drive 3½″

	Packs of		Page
U		**4**	
Width in mm		482.6 mm (19″)	
Height of flanges/side panels in mm		177.0/174.0	
Depth in mm		442.5/440.0	
Model No. RP basic system fully assembled	1	**3659.700**	
Accessories			
Card retainer	7	3659.010	476
Unused slot cover	5	3659.030	475
Cover for 5¼″ drive space	1	3659.110	475
Cover for 3½″ drive space	1	3659.410	475
Telescopic slides for 600 mm enclosure depth	1 set	3659.180	475
Telescopic slides for 800 mm enclosure depth	1 set	3659.190	475
13 Front handles for ATX 4 U	2	3659.240	475
ATX I/O covers, sheet steel[1]			
Type “Aurora Marl”	1	**3659.040**	–
Type “Tucson”/“Venus”	1	**3659.130**	–
Type “Providence”	1	**3659.140**	–

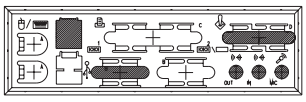
[1] Other versions available on request; please specify the type of mainboard.

ATX I/O covers:

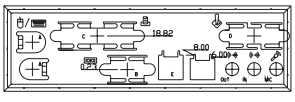
Type “Aurora Marl”



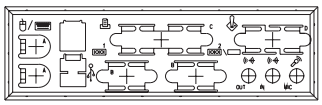
Type “Venus”



Type “Providence”



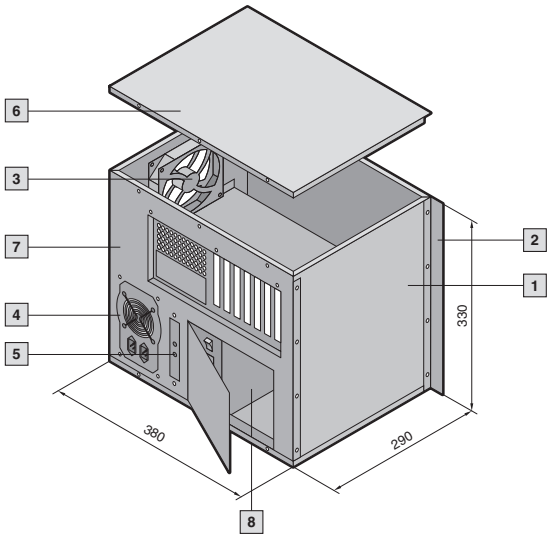
Type “Tucson”



Accessories Page 475 **Keyboard rack 482.6 mm (19″)** Page 1050 **TFT display 15″** Page 1050

ATX with front connections for wall mounting





Technical specifications:
System for the installation of ATX/Mini-ATX or Micro-ATX boards as well as 3 x 5¼″ and 1 x 3½″ drives, vertical.
Width: 380 mm
Height: 330 mm
Overall depth: 292.5 mm
Connections for I/Os, front
EMC prepared.
Suitable for mounting on mounting plates.

Material/surface finish:
Case, covers:
1.2 mm sheet steel, zinc-plated, passivated, unpainted, unpainted contact points

Standards:
Complies with IEC 60 297-3 and ATX specification 2.01

Special designs available on request.

Supply includes:

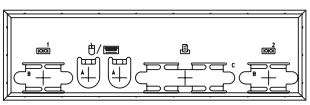
1 Rack-mounted system, including drive holder
2 Flanges for wall mounting
3 1 fans 120 mm
4 ATX power pack 300 W (Technical specifications, see RP 3688.129, page 483)
5 LED displays
6 Cover
7 Front panel
8 Drive support for 3 x 5¼″ and 1 x 3½″ drives

	Packs of		Page
Width in mm		380.0	
Height in mm		330.0	
Depth in mm		292.5/290.0	
Model No. RP basic system fully assembled	1	**3659.710**	
Accessories			
Unused slot cover	5	3659.030	475
Cover for 5¼″ drive space	1	3659.110	475
Cover for 3½″ drive space	1	3659.410	475
Uninterruptible power supply	1	3659.080	482
ATX I/O covers, sheet steel[1]			
Type “Aurora Marl”	1	**3659.040**	–
Type “Tucson”/“Venus”	1	**3659.130**	–
Type “Providence”	1	**3659.140**	–

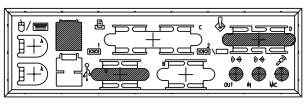
[1] Other versions available on request; please specify the type of mainboard.

ATX I/O covers:

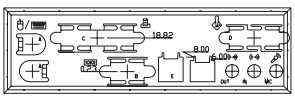
Type “Aurora Marl”



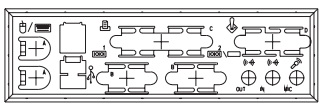
Type “Venus”



Type “Providence”



Type “Tucson”

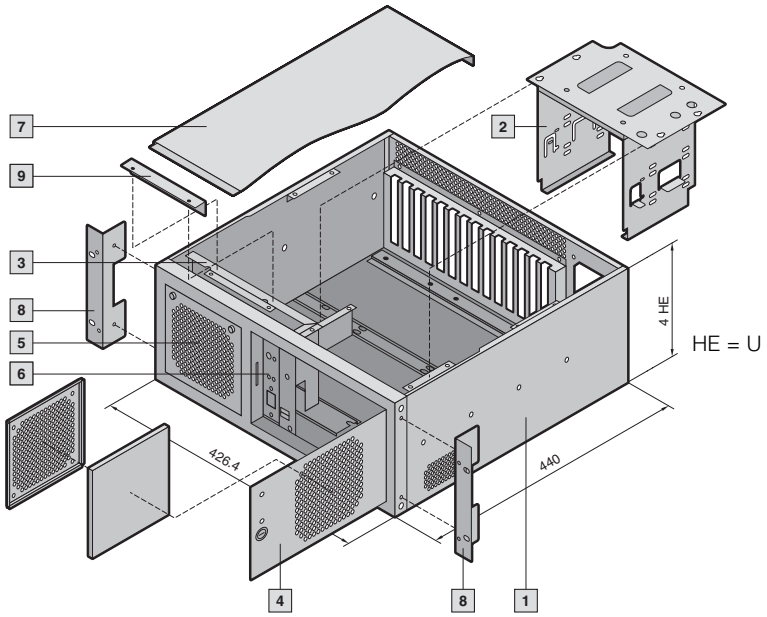


Accessories Page 475 **Keyboard rack 482.6 mm (19″)** Page 1050 **TFT display 15″** Page 1050

Rack-mount systems for industrial PCs

for PICMG backplane, 4 U, sheet steel





Technical specifications:
19″ rack-mount system for the installation of a PICMG backplane, max. 14 slots as well as 3 x 5¼″ hard disks, and 1 x 3½″ hard disks, internal.
Width: 482.6 mm (19″)
Height: 4 U (177.0 mm)
Overall depth: 442.5 mm
EMC prepared.

Material/surface finish:
Case, cover:
1.2 mm sheet steel, spray-finished in RAL 7035, unpainted contact points

Standards:
Complies with IEC 60 297-3

Supply includes:

1 Rack-mount system 4 U, 440 mm deep 482.6 mm (19″) wide, for max 14 slot PICMG backplane (10 full size boards)

2 Drive holder for the installation of 3 x 5¼″ drives, externally and 1 x 3½″ drives, internally

3 1 fans 120 mm

4 Front door vented, including filter mat, vertically hinged, lockable.

5 Front panel with ventilation holes and filter mat

6 LED displays, speaker, reset button, 2 x USB 2.0, on/off button

7 Cover

8 19″ flanges

9 Support for full-size boards

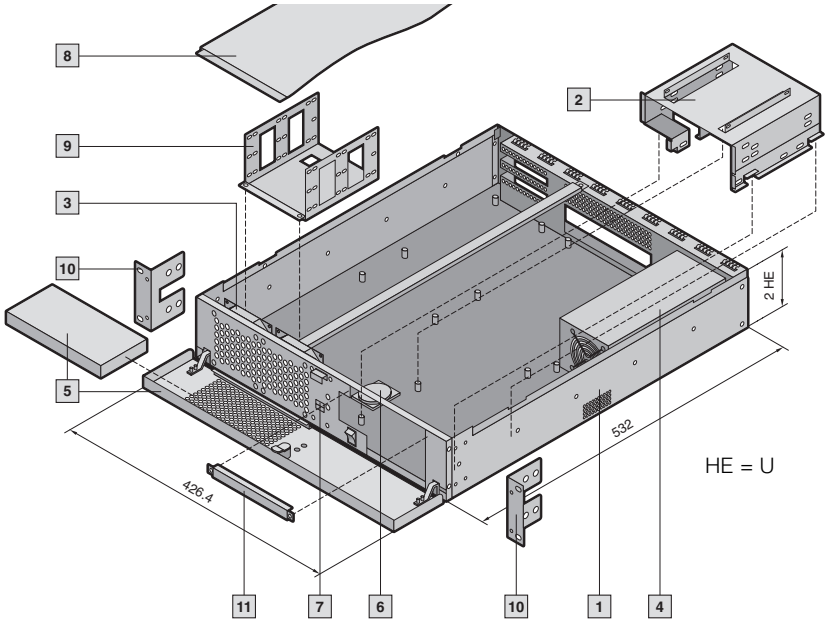
Note:
Order power pack separately, see page 482 – 485.

	Packs of		Page
U		**4**	
Width in mm		482.6 (19″)	
Height of flanges/side panels in mm		177.0/174.0	
Depth in mm		442.5/440.0	
Model No. RP basic system fully assembled	1	**3659.650**	
Accessories			
Card retainer	7	3659.010	476
Mounting bar for card retainer	1	3659.090	476
Unused slot cover	5	3659.030	475
Cover for 5¼″ drive space	1	3659.110	475
Adaptor for installation of 3½″ floppy in 5¼″ space	1	3659.280	476
Adaptor for installation of 3½″ hard disk in 5¼″ space	1	3659.270	476
Uninterruptible power supply	1	3659.080	482
Telescopic slides for 600 mm enclosure depth	1 set	3659.180	475
Telescopic slides for 800 mm enclosure depth	1 set	3659.190	475
Front handles for ATX 4 U	2	3659.240	475

Accessories Page 475 **Keyboard rack 482.6 mm (19″)** Page 1050 **TFT display 15″** Page 1050

ATX with horizontally hinged front door, 2 U, sheet steel





Technical specifications:
19″ rack-mount system for the installation of ATX/Mini-ATX or Micro-ATX boards and 1 x 5¼″, 1 x 3½″ drives.
and 1 x Slim-CD-ROM.
Width: 482.6 mm (19″)
Height: 2 U (88.0 mm)
Overall depth: 532 mm
EMC prepared.

Material/surface finish:
Case, cover:
1.2 mm sheet steel, spray-finished in RAL 7035, unpainted contact points

Standards:
Complies with IEC 60 297-3 and ATX specification 2.01

Special designs available on request.

Supply includes:

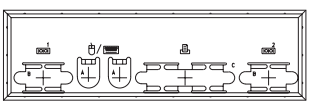
1 Rack-mount system
2 Disk drive holder for installation of 1 x 5¼″ and 1 x 3½″ drives and 1 x Slim-CD-ROM
3 2 x 80 mm fans
4 ATX power pack 300 W, PFC active
5 Front door, horizontally hinged, lockable, with filter mat
6 Speakers
7 Reset button, LED displays, On/off button, 2 x USB 2.0
8 Covers
9 Drive support for 3 x 3½″ hard disk
10 19″ flanges
11 Cover for Slim-CD-ROM
Bus and data connection cable
Riser card, 2 x PCI slot, 32 bit

	Packs of		Page
U		**2**	
Width in mm		482.6 (19″)	
Height in mm		88.0	
Depth in mm		532.0/530.0	
Model No. RP basic system fully assembled	1	**3659.640**	
Accessories			
Unused slot cover	5	3659.030	475
Cover for 5¼″ drive space	1	3659.110	475
Cover for 3½″ drive space	1	3659.410	475
Uninterruptible power supply	1	3659.080	482
Telescopic slides for 600 mm enclosure depth	1 set	3659.180	475
Telescopic slides for 800 mm enclosure depth	1 set	3659.190	475
Front handles for ATX 2 U	2	3659.020	475
ATX I/O covers, sheet steel[1)]			
Type “Aurora Marl”	1	**3659.040**	–
Type “Tucson”/“Venus”	1	**3659.130**	–
Type “Providence”	1	**3659.140**	–

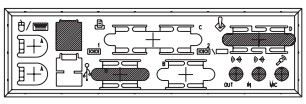
[1)] Other versions available on request; please specify the type of mainboard.

ATX I/O covers:

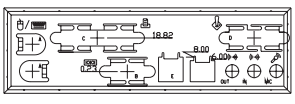
Type “Aurora Marl”



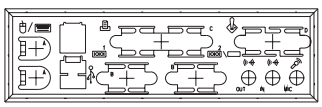
Type “Venus”



Type “Providence”



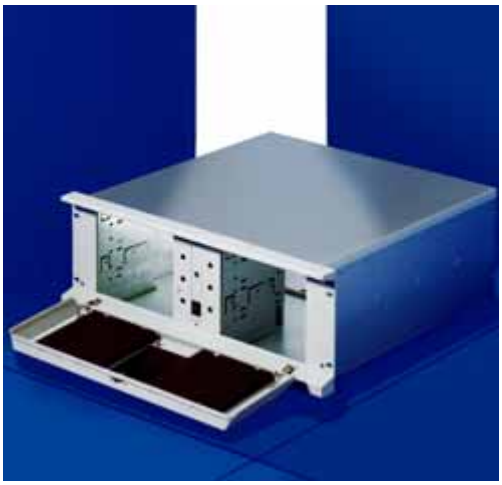
Type “Tucson”

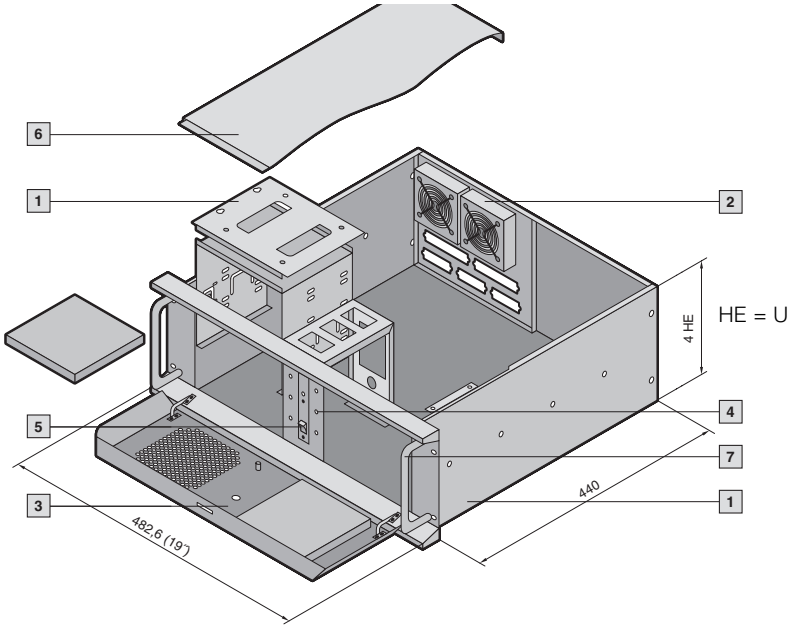


Accessories Page 475 **Keyboard rack 482.6 mm (19″)** Page 1050 **TFT display 15″** Page 1050

Rack-mount systems for storage devices

19″ RAID subrack





Technical specifications:
19″ rack-mount system for horizontal installation of storage devices $5^1/_4$″ or $3^1/_2$″.
Width: 482.6 mm (19″)
Height: 4 U
Overall depth: 455 mm
EMC prepared.

Material/surface finish:
Case, covers:
1.2 mm sheet steel, zinc-plated passivated and spray-finished in RAL 7035
Front door: Spray-finished in RAL 7035,
unpainted contact points

Standards:
Complies with IEC 60 297-3.

Special designs available on request.

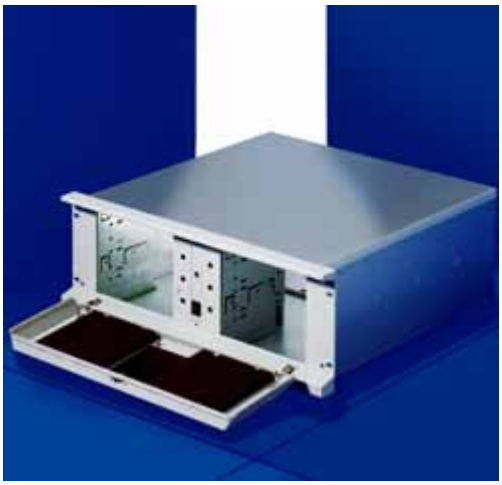
Supply includes:
1 Rack-mount system 4 U, including drive holders
2 2 x 120 mm fans
3 Front door, horizontally hinged, lockable
4 LED displays
5 On/off switch
6 Cover

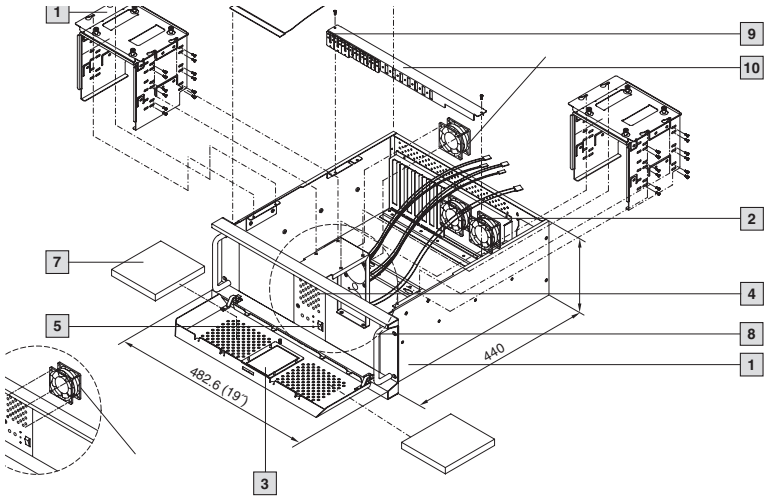
Note:
Order power pack separately, see page 483.

	Packs of		Page
U		**4**	
Width in mm		482.6 (19″)	
Height in mm		177.0 (4 U)	
Depth in mm		455.0/440.0	
Model No. RP basic system fully assembled	1	**3659.300**	
Accessories			
7 Front handles	2	3659.240	475
Redundant power pack for RAID (2 x 300 W) PFC active	1	3688.125	484
AT power pack for RAID (300 W) PFC passive	1	3688.119	483
Telescopic slides for 600 mm enclosure depth	1 set	3659.180	475
Telescopic slides for 800 mm enclosure depth	1 set	3659.190	475
Adaptor for installation of $3^1/_2$″ hard disks in $5^1/_4$″ space	1	3659.270	476
Adaptor for installation of $3^1/_2$″ floppy in $5^1/_4$″ space	1	3659.280	476
Cover for $5^1/_4$″ drive space	1	3659.110	475

Accessories Page 475 **Keyboard rack 482.6 mm (19″)** Page 1050 **TFT display 15″** Page 1050

19″ ATX RAID subrack, 6-drive





HE = U

Technical specifications:
19″ rack-mount system for the horizontal installation of 6 storage devices $5^1/_4$″ or $3^1/_2$″ horizontally and one ATX board.
Width: 482.6 mm (19″)
Height: 4 U
Overall depth: 455 mm
EMC prepared.

Material/surface finish:
Case, cover:
1.2 mm sheet steel, zinc-plated, passivated, unpainted
Front door: Spray-finished in RAL 7035, unpainted contact points

Standards:
Complies with IEC 60 297-3 and ATX specification 2.01.

Special designs available on request.

Supply includes:
- 1 Rack-mount system 4 U, including drive holders
- 2 2 fans 60 mm
- 3 Front door, horizontally hinged, lockable
- 4 LED displays
- 5 On/off switch
- 6 Cover
- 7 Filter mats
- 11 Option

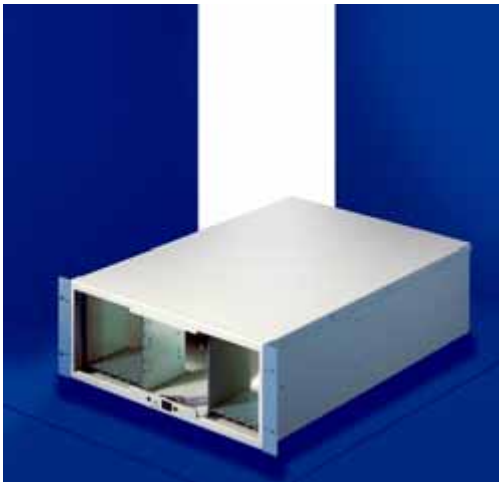
Note:
Order power pack separately, see page 483/485.

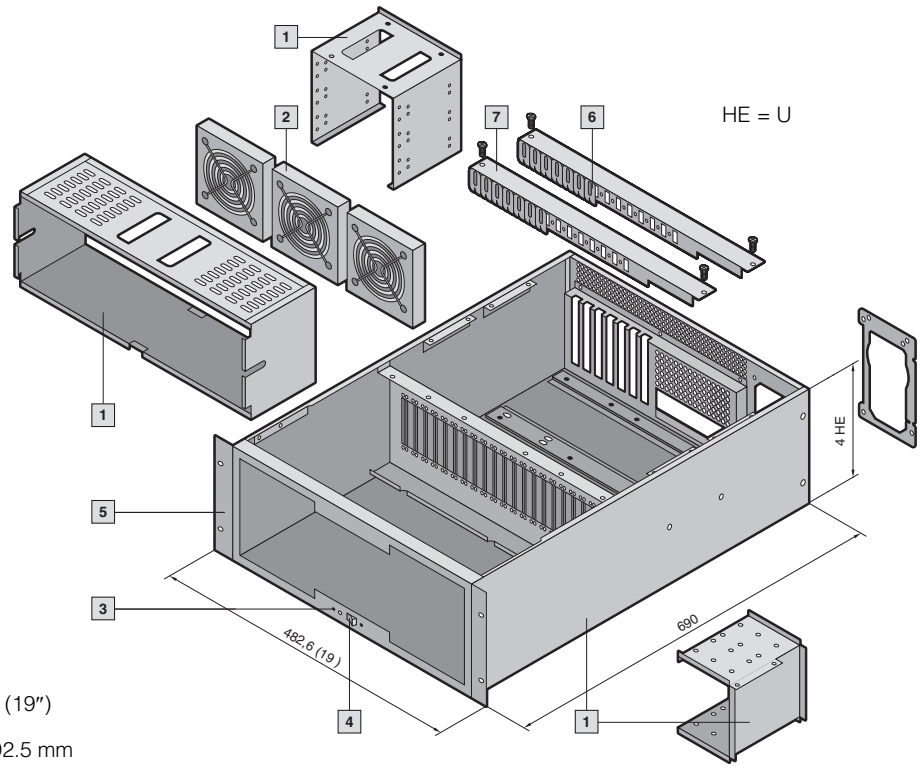
	Packs of		Page
U		**4**	
Width in mm		482.6 (19″)	
Height of flanges/side panels in mm		177.0/174.0	
Depth in mm		455.0/440.0	
Model No. RP basic system fully assembled	1	**3659.420**	
Accessories			
8 Front handles 4 U	2	3659.240	475
9 Card retainer	7	3659.010	476
10 Mounting bar for card retainer	1	3659.090	476
AT power pack 300 W, PFC passive	1	3688.118	483
ATX power pack 300 W, PFC passive	1	3688.121	483
ATX power pack 300 W, PFC active	1	3688.129	483
ATX power pack 250 W, PFC active	1	3688.127	483
Redundant power pack (PS/2)	1	3688.120	485
Fan 12 V DC, 60 mm, with 2 connectors	2	3659.250	476
Telescopic slides for 600 mm enclosure depth	1 set	3659.180	475
Telescopic slides for 800 mm enclosure depth	1 set	3659.190	475
Adaptor for installation of $3^1/_2$″ hard disks in $5^1/_4$″ spaces	1	3659.270	476
Adaptor for installation of $3^1/_2$″ floppy in $5^1/_4$″ spaces	1	3659.280	476
Cover for $5^1/_4$″ drive space	1	3659.110	475
Unused slot cover	5	3659.030	475
Front trim panel ATX with automatic restart, 2 x LED, reset, Power On switch	1	3659.370	476
ATX I/O covers, sheet steel[1)]			
Type “Aurora Marl”	1	3659.040	471
Type “Tucson”/“Venus”	1	3659.130	471
Type “Providence”	1	3659.140	471

[1)] Other versions available on request; please specify the type of mainboard.

Accessories Page 475 **Keyboard rack 482.6 mm (19″)** Page 1050 **TFT display 15″** Page 1050

19″ ATX RAID subrack, 9-drive





The 9-drive ATX RAID subrack is suitable for the horizontal and vertical installation of 9 storage devices and an ATX board. The rear panel is prepared for the installation of PS/2 or redundant power packs.

Technical specifications:
19″ rack-mount system for the installation of 6 x $5^1/_4$″ storage devices vertically and 3 x $5^1/_4$″ horizontally, plus 3 x $3^1/_2$″ storage devices internally and an ATX board.

Width: 482.6 mm (19″)
Height: 4 U
Overall depth: 692.5 mm
EMC prepared.

Material/surface finish:
Case, cover: 1.2 mm sheet steel, spray-finished RAL 7035
Front trim panel:
Spray-finished in RAL 7035

Standards:
Complies with IEC 60 297-3 and ATX specification 2.01.

Special designs available on request.

Supply includes:
1 Rack-mount system 4 U, including drive modules
2 3 x 120 mm fans
3 LED displays
4 On/off switch
5 Two 482.6 mm (19″) flanges
Cover

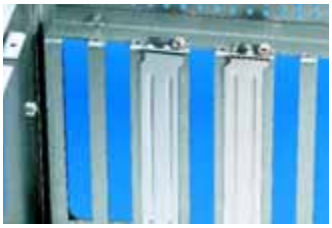
Note:
Order power pack separately, see page 483/485.

	Packs of		Page
U		**4**	
Width in mm		482.6 (19″)	
Height in mm		177.0 (4 U)	
Depth in mm		692.5/690.0	
Model No. RP basic system fully assembled	1	**3659.430**	
Accessories			
Front handles 4 U	2	3659.240	475
6 Card retainer	7	3659.010	476
7 Mounting bar for card retainer	1	3659.090	476
AT power pack 300 W, PFC passive	1	3688.118	483
ATX power pack 300 W, PFC passive	1	3688.121	483
ATX power pack 300 W, PFC active	1	3688.129	483
ATX power pack 250 W, PFC active	1	3688.127	483
Redundant power pack PS/2	1	3688.120	485
Telescopic slides for 800 mm enclosure depth	1 set	3659.190	475
Adaptor for installation of $3^1/_2$″ hard disks in $5^1/_4$″	1	3659.270	476
Adaptor for installation of $3^1/_2$″ floppy in $5^1/_4$″	1	3659.280	476
Cover for $5^1/_4$″ drive space	1	3659.110	475
Unused slot cover	5	3659.030	475
ATX I/O covers, sheet steel[1]			
Type “Aurora Marl”	1	3659.040	471
Type “Tucson”/“Venus”	1	3659.130	471
Type “Providence”	1	3659.140	471

[1] Other versions available on request; please specify the type of mainboard.

Accessories Page 475 **Keyboard rack 482.6 mm (19″)** Page 1050 **TFT display 15″** Page 1050

Accessories



Unused slot cover

Screw-on cover to conceal slot cutouts which are not required.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. RP
5	**3659.030**



Cover for drives

To conceal the $3^1/_2$″ or $5^1/_4$″ drive slots.

Material:
Sheet steel, zinc-plated/spray-finished in RAL 7035

Supply includes:
Assembly parts.

Version	Packs of	Model No. RP
$3^1/_2$″	1	**3659.410**
$5^1/_4$″	1	**3659.110**

For ATX Ripac

Version	Packs of	Model No. RP
$5^1/_4$″	1	**3659.050**



Telescopic slides

Facilitate optimum accessibility to the units, even when built-in.
For up to a maximum enclosure width of 426 mm.

Load capacity:
30 kg

Material:
Sheet steel

Supply includes:
1 set = 2 telescopic slides, installation kit, assembly parts.

For enclosure depth mm	Maximum extension mm	Model No. RP
600	511.2	**3659.180**
800	596.4	**3659.190**

Note:
May only be fitted in conjunction with L-shaped 482.6 mm (19″) sections!



Front handles

The handles are fitted onto the 482.6 mm (19″) flange. They allow easy withdrawal of the cases from the enclosure.

Material:
Sheet steel, plated

Supply includes:
Assembly parts.

For enclosure height (U)	Packs of	Model No. RP
1	2	**3659.540**
2	2	**3659.020**
4	2	**3659.240**



Drive support

The drive supports will additionally accommodate a maximum of 4 additional $3^1/_2$″ hard disks. They are mounted inside the enclosure behind the fan.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For system	Packs of	Model No. RP
ATX Economy	1 set	**3659.230**
ATX Ripac	1 set	**3659.060**

Accessories



Card retainer

For secure attachment and stabilisation of slot cards up to 327 mm depth. The card retainers are height-adjustable so that even cards of different heights may be securely attached.
A mounting bar is needed to fit the card retainer (already included with ATX Ripac).

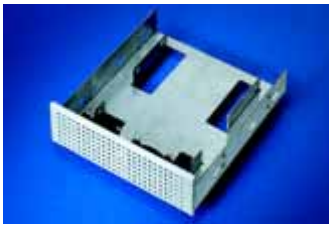
Material:
Card retainer: Plastic
Mounting bar: Sheet steel, zinc-plated, passivated

Card retainer

Packs of	Model No. RP
7	**3659.010**

Mounting bar

Packs of	Model No. RP
1	**3659.090**



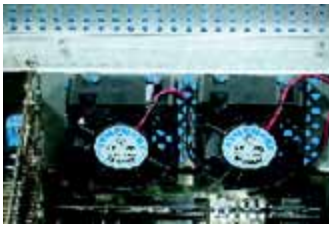
Adaptor

For the installation of $3^1/_2$″ hard disks or floppies in $5^1/_4$″ installation slots.

Material:
Sheet steel, zinc-plated,
Front panel spray-finished in RAL 7035.

Supply includes:
Assembly parts.

Version	Packs of	Model No. RP
for $3^1/_2$″ hard disk	1	**3659.270**
for $3^1/_2$″ floppy	1	**3659.280**

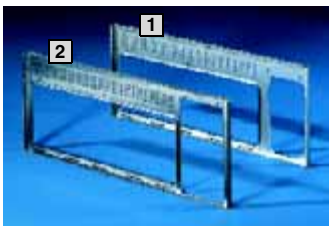


DC fan for rear panel

Fan 12 V DC, 60 mm, for mounting on the rear panel. Including two 4-pole connectors with terminal.

Supply includes:
2 fans with connection cable, including assembly parts.

Packs of	Model No. RP
2	**3659.250**



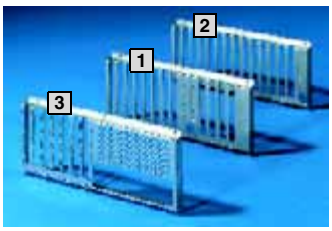
Rear panels

For the installation of AT/ATX Economy. Optionally with cutout for AT/ATX power pack or redundant power pack.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Version	Packs of	Model No. RP
1 for AT/ATX power pack PS/2	1	**3659.290**
2 for redundant power pack PS/2	1	**3659.310**



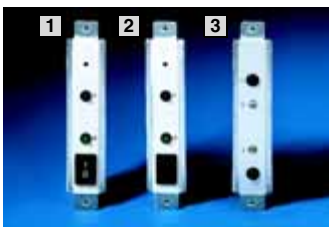
Slotted rear panels

For the installation of AT/ATX Economy. Mounted on the rear panels. Optionally for AT (8 + 4 or 14 slots) or ATX (7 slots).

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Version	Packs of	Model No. RP
1 AT 4 + 8 slots	1	**3659.330**
2 AT 14 slots	1	**3659.340**
3 ATX 7 slots	1	**3659.320**



Front trim panels

For the installation of AT/ATX Economy. Mounted in the front of the enclosure.

Optionally for:
- AT (2 x LED, reset button)
- ATX (2 x LED, reset button)
- ATX (2 x LED, reset button), electronics for automatic restart following mains failure

Version	Packs of	Model No. RP
1 AT	1	**3659.360**
2 ATX	1	**3659.350**
3 ATX (with electronics)	1	**3659.370**

Rack-mount systems for industrial PCs and storage devices



Power supply units

Features



Rittal offers an extensive range of power supply units in various designs.

The range includes 482.6 mm (19″) compatible, as well as Open Frame version or PS/2 variants as well as power supplies to supply DC voltage to controllers, systems and plant in many different areas.



Open Frame (VME)

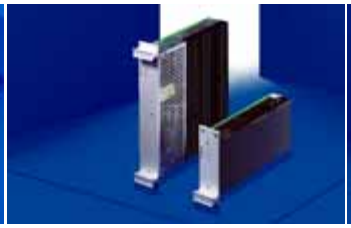


250/600/400/1000 W

Design features
- Open frame design
- Mounting on mounting base or enclosure rear panel
- Fan cooled
- Wide-range input
- Aluminium enclosure
- 3 outputs

User benefits
- Minimal space requirements with a high power output
- Universal applications
- Approvals: EN 60 950, UL 1950, IEC 950 and CSA 22.2 No. 234

3 U, 6 U (VME)



130/160/270 W, plug-in, integral VMEbus signalling

Design features
- 482.6 mm (19″) module to IEC 60 297-3
- Mounting in the subrack with the aid of plastic guide rails
- Connection via connectors H15, IEC 60 603-2 (DIN 41 612)
- 3 outputs

User benefits
- 482.6 mm (19″) compatible
- Hot swappable
- Approvals: EN 60 950, VDE 0805 and IEC 950

3 U, 6 U (CPCI)



175/200/250/350 W, plug-in

Design features
- 482.6 mm (19″) module to IEC 60 297-3
- Mounting in the subrack with the aid of plastic guide rails
- Positronic connector 47-pole PICMG 2.9
- 4 outputs

User benefits
- 482.6 (19″) compatible
- Hot swappable
- Approvals: EN 60 950 A1 – A4, CSA 22.2, UL 1950, C
- PICMG specification



PS/2 (AT/ATX)



250/300/400 W
Power supply units for ATX and CPCI systems

Design features
- Open frame design
- Mounting on a mounting plate or subrack rear panel
- Integral fan
- Sheet steel enclosure
- PFC active or passive
- Optional redundant versions

User benefits
- Universal applications
- Approvals: CSA

UPS



Uninterruptible power supply for installation in a 5¼″ drive bays. Guarantees power supply in the event of a mains failure (6 minutes).

Design features
- Installation in 1 or 2 standard 5¼″ drive holders
- Integral batteries

User benefits
- Minimal space requirements
- Approvals: CE, EN 60 950

Redundant



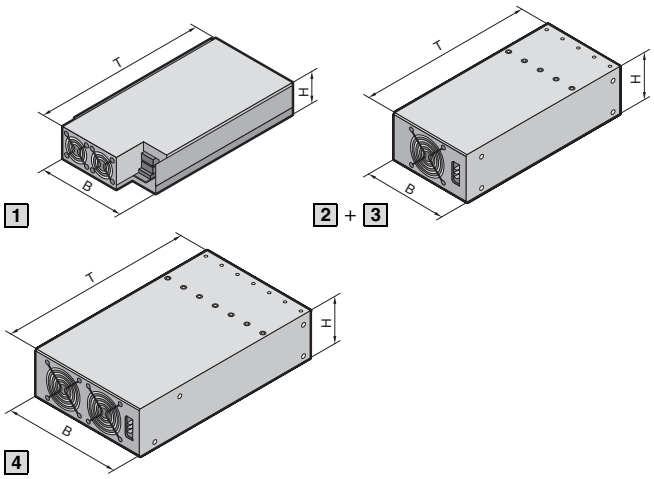
2 x 300 W power supplies for RAID or ATX.

Design features
- Hot-swap version
- PFC active

User benefits
- Universal applications
- Hot swap-compatible

Ripac power supplies – Open Frame





Note:
Power supply 1000 W:
48 V DC input on request.

Detailed drawing,
see page 1151 – 1152.

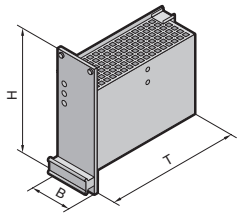
	1 250 W			2 400 W			3 600 W			4 1000 W		
Height (H) in mm	49.5			63.0			63.0			63.0		
Width (B) in mm	126.5			126.5			126.5			175.5		
Depth (T) in mm	259.5			279.0			323.0			283.5		
Model No. RP 35 A	**3686.622**			**–**			**–**			**–**		
Model No. RP 60 A	**–**			**3686.623**			**–**			**–**		
Model No. RP 85 A	**–**			**3686.629**			**3686.624**			**–**		
Model No. RP 110 A	**–**			**–**			**–**			**3686.625**		
Output sizes												
Output	1	2	3	1	2	3	1	2	3	1	2	3
Output voltage	5 V	+12 V	–12 V	5 V	+12 V	–12 V	5 V	+12 V	–12 V	5 V	+12 V	–12 V
Output current	35 A	8 A		60 A 85 A	8 A		85 A	8 A		110 A	16 A	8 A
Maximum power output	250 watts			400 watts			600 watts			1000 watts		
Setting range of output voltage	5 – 5.5 V	9 – 15 V		2.5 – 5.7 V	5 – 16 V		± 10 %			4.5 – 5.5 V	9 – 15 V	5 – 15 V
Load compensation (load variation 0 – 100 %)	50 mV	± 3 %		< 0.5 %			< 0.5 %			< 0.5 %		
Line regulation ($U_{e\,min} – U_{e\,max}$)	± 50 mV or ± 3 %			< 25 mV	< 60 mV		< 25 mV	< 60 mV		< 0.5 %		
Base load	10 %	–		–			–			–		
Infeed compensation (Sense)	0.5 V	0.5 V	–	0.5 V	–		0.5 V	–		max. 0.5 V	1 V	
Residual ripple (max.)	1 %			1 %	2 %		1 %	2 %		1 %	2 %	
Temperature coefficient	0.02 %/°C			0.03 %/°C			0.03 %/°C			0.03 %/°C		
Overvoltage protection	Yes											
Overload protection[1)]	Yes			Thermal current limiting			Yes					
Overload protection, thermal	–						In case of fan failure or overtemperature					
Overload protection, electronic	–						at 132 % U_{rated} or short-circuit			Yes, each module separately		
Input variables												
Mains voltage U_e	85 – 264 V AC; 120 – 340 V DC			90 – 264 V AC						150 – 264 V AC		
Mains frequency	45 – 65 Hz			47 – 63 Hz						–		
Power factor	EN 61 000-3-2			> 0.95						–		
Start-up current limitation	< 40 A (cold start)			<50 A						–		
Efficiency (typ.)	70 %			75 %						72 %		
General specifications, see page 1151 – 1152												
Accessories: Mounting base for power supply, see page 485												

[1)] All outputs short circuit-resistant up to a maximum of 30 sec.

Power supply units

Ripac power supplies for VME, plug-in





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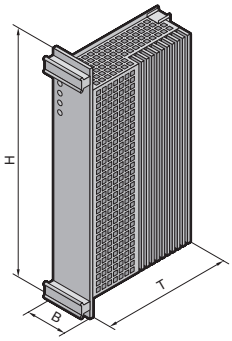


2

Connector assignment,
see page 1153.

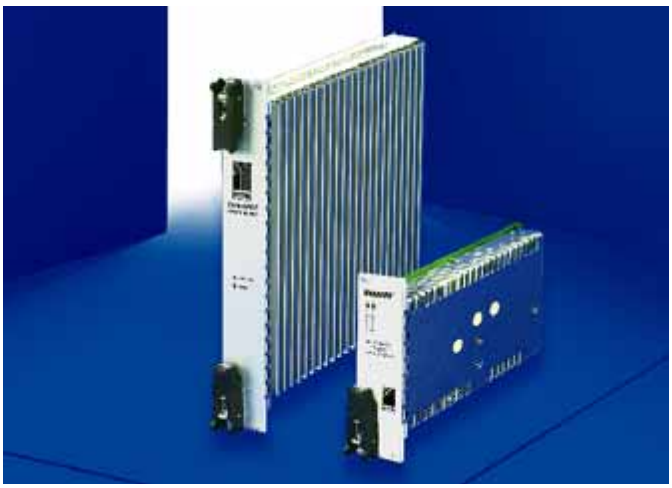
Characteristic curve diagram,
see page 1153.

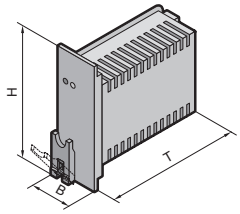
Detailed drawing,
see page 1153.

	1			2		
Height (H)	3 U			6 U		
Width (B)	10 HP		12 HP	8 HP		12 HP
Depth (T) in mm	170.0		170.0	170.0		170.0
Model No. RP power supply	**3686.469**		**3686.470**	**3686.471**		**3685.306**
Model No. RP front panel	**3685.304**		**3685.305**	**3686.472**		**3685.307**
Output sizes						
Output	1	2	3	1	2	3
Output voltage	5 V	+12 V	–12 V	5 V	+12 V	–12 V
Output current 3 U, 10 HP/6 U, 8 HP	14 A	5 A	2 A	20 A	5 A	2 A
Output current 3 U, 12 HP/6 U, 12 HP	20 A	5 A	2 A	35 A	6 A	2 A
Maximum power output	130 W (10 HP), 160 W (12 HP)			160 W (8 HP), 270 W (12 HP)		
Setting range of output voltage	± 5 %	–		± 5 %	–	
Load compensation (load variation 0 – 100 %)	< 0.1 %	< 1 %		< 0.1 %	< 1 %	
Line regulation ($U_{e\,min}$ – $U_{e\,max}$)	< 0.2 % at 99 – 138/187 – 264 V AC			< 0.2 % at 230 V AC + 15 % – 19 %		
Base load	–					
Compensation time	< 1 ms at I_a 20 – 80 %					
Infeed compensation (Sense)	± 0.25 V	–		± 0.25 V	–	
Residual ripple (max.)	< 35 mV		< 20 mV	< 45 mVss	< 30 mVss	< 15 mVss
Interference voltage	50 mV typ. (bandwidth 20 MHz)			< 80 mV typ. (bandwidth 20 MHz)		
Temperature coefficient	0.025 %/K					
Overvoltage protection (automatically recovery)	125 % + 5 %	125 % + 10 %		125 % ± 5%	120 % ± 10 %	
Overload protection	typ. 110 % $I_{a\,rated}$, U/I characteristic curve acting on all outputs, outputs short circuit-resistant					
Overtemperature protection	Cuts out if the internal temperature is too high, cuts in again with hysteresis					
AC-FAIL, SYSRESET	TTL signals with 48 mA drive current, active low					
ON delay	< 0.5 s			–		
Ramp-up time	< 30 ms			50 ms		
Input variables						
Mains voltage U_e	AC 187 – 264 V, 50/60 Hz with automatic changeover to AC 90 – 138 V (in the range 90 – 94 V AC only 85 % rated load) or 264 – 347 V DC			AC 187 – 264 V, 50/60 Hz with automatic changeover to AC 99 – 138 V		
Mains frequency	47 – 63 Hz					
Efficiency (typ.)	80 %					
Startup current limitation	< 10 A typ. – in cold state < 15 A typ. – in warm state			< 25 A typ. – in cold state < 35 A typ. – in warm state		
Fuse	4 AT			8 AT		

General specifications, see page 1153

Ripac power supplies for CPCI, plug-in





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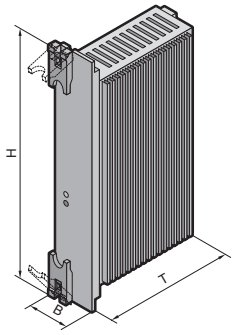


2

Connector assignment,
see page 1154.

Detailed drawing,
see page 1154.

	1								2							
Height (H)	3 U								6 U							
Width (B)	8 HP								8 HP							
Depth (T) in mm	170.0								170.0							
Model No. RP AC power supply	**3688.534**				**3688.694**				**3688.695**				**3688.528**			
Model No. RP DC power supply	**3688.537**				**3688.655**				**3688.696**				**3688.530**			
Output sizes																
Output	U_1	U_2	U_3	U_4	U_1	U_2	U_3	U_4	U_1	U_2	U_3	U_4	U_1	U_2	U_3	U_4
Output voltage	5 V	3.3 V	12 V	–12 V	5 V	3.3 V	12 V	–12 V	5 V	3.3 V	12 V	–12 V	5 V	3.3 V	12 V	–12 V
Output current	25 A	20 A	5 A	0.5 A	30 A	25 A	5 A	0.5 A	33 A	33 A	6 A	1.5 A	40 A	40 A	9 A	1 A
Outpu current U_1 and U_2	30 A max.				38 A max.								80 A max.			
Maximum power output	175 W				200 W				250 W				350 W			
Base load (only U_1)	5 %	–			5 %	–			5 %	–			10 %			
Load compensation (dyn.)	< 3 % at 25 % load variation (1A/µs) 1 % after 300 µs															
Line regulation	< ± 1 % (90 – 264 V AC)												< ± 1 % (90 – 264 V AC) U_1, U_2, U_3			
Infeed compensation (Sense)	0.25 V	0.25 V	0.25 V	–	0.25 V	0.25 V	0.25 V	–	–	–	–	–	0.25 V	0.25 V	0.25 V	–
Residual ripple (PARD)	50 mV or 1 % (bandwidth 20 MHz)															
Temperature coefficient	< ± 0.02 %/K (0° – 50°C) after 20 min. start-up time															
Overvoltage protection	125 % ± 10 %, reset by switching on again															
Overload protection	Current limiting of all outputs, automatic return at normal load															
Overtemperature protection	At overtemperature switches off all outputs, automatic return at normal temperature															
Input variables																
Mains voltage or DC input	90 – 264 V AC, 47 – 63 Hz, 3.2 A max. 36 – 72 V DC, 7.9 A												90 – 264 V AC, 47 – 63 Hz, 7 A 40 – 72 V DC, 14 A			
Power Factor	0.99 at V AC 115 V, full load															
Starting current	15 A (115 V AC) cold start, 30 A (230 V AC) cold start															
Fuse	3.15 A, 250 V AC or 10 A, DC												10 A, 250 V AC or 20 A, DC			
Signals and control cables																
Power Fail (Pin 42)	In the event of a mains failure > 4 ms before output voltages from control range and in the event of failure or undervoltage of any output voltage															
DEG (pin 38)	In case of overtemperature												–			
Remote enable	Use logic “0” (TTL level)															
Remote inhibit	Use logic “1” (TTL level)															
LED displays, two-colour	Green: “Power ON” and output voltages present Red: Error															
General specifications, see page 1154																

CPCI power supplies, uninterruptible power supply



CPCI power supply

Open Frame 400 watts

- Wide-range input (90 – 253 V AC)
- Power factor to EN 61 000-3-2
- Radio interference suppression to EN 55 022, curve B
- Immunity to interference to EN 61 000-4-2/4/5 Level 3 (formerly IEC 801-2/4/5)
- Quick installation due to “Fast On” connectors (approx. 30 sec.)
- Tested to EN 60 950, UL 1950 and CSA 22.2 No. 234

Technical specifications:
400 W max.
3.3 V/25 A
5.0 V/25 A
12.0 V/8 A
–12.0 V/7 A

Height mm	Width mm	Depth mm	Model No. RP
126	63	279	**3687.695**



CPCI power supply

Plug-type, 180 watts

- Module, 3 U, 12 HP, plug-in
- Connector M24/8/DIN 41612
- Automatic changeover 120/230 V AC
- All outputs permanently short-circuit resistant
- SELV outputs to EN 60 950
- Overvoltage protection on the primary and secondary circuits
- Overtemperature protection
- Control inputs: ENABLE, INHIBIT
- Signal output: DERATE
- EMC standards EN 50 081-1 and EN 50 082-2
- EN 60 950/VDE 0805-SELV, protection category I, VDE 0100

Technical specifications:
180 W max.
5.1 V/20 A
3.3 V/14 A
12.0 V/2 A
–12.0 V/1 A

Detailed data specification sheet available on request.

Height U	Width HP	Model No. RP	
		Power supply	Front panel for power supply
3	12	**3686.682**	**3685.330**

Accessories:

Female connector type M24/8,
see page 485.
Female connector type H15,
see page 550.
Guide rails,
see page 509 onwards.



Uninterruptible power supply

- Ensures power continuity in the event of a mains failure
- Suitable for installation in a 5¼″ drive holder
- Floating contacts (DB-9) for UPS communication: Indicates the operating states: mains ok/ mains failure/end of battery capacity/input for UPS deactivation signal
- Integral maintenance-free batteries
- CE certified, EN 60 950 tested (LVD/EMC)

Note:
The UPS does not have an RS-232 interface. Upon request you can obtain an adaptor cable including CD-ROM with shutdown drivers for automatic termination of program routines and shutdown of the system for Windows, Netware and Linux.
Additional battery (5¼″) to extend to 500 VA available on request.

Packs of	Model No. RP
1	**3659.080**

Technical specifications:
Output 300 VA/180 W
Input/output voltage: 220, 230, 240 V AC ± 15 %
Input frequency: 50 Hz ± 5 %
Output frequency: 50 Hz ± 1 %
Switch-over time: < 4 ms
Charging time: 6 – 8 hours
(to 90 % capacity)
Operating environment:
Temperature 0°C – 40°C,
Humidity 0 – 90 %
Status displays:
LED for mains operation, back-up, low battery, over-temperature
Acoustic alarms:
Mains interruption (sounds every 5 sec.),
Low battery (sounds every sec.)
Test function:
Test switch on the front panel to check the UPS function
Approvals:
CE, EN 60 950 tested (LVD/EMC)
Hold-up time: 6 min.

AT/ATX power supplies, redundant power supplies



ATX power supply unit

for external switches

- PS/2 model
- Built-in fan
- Short circuit-protected
- CSA-approved
- Connection cable for $5^1/_4$″ and $3^1/_2$″ disk drives, hard drive and motherboard
- PFC passive

Technical specifications:
300 W/230 V AC
+3.3 V, 0.2 A/16.0 A
+5.0 V, 30.0 A/19.5 A
+12.0 V, 11.0 A
–12.0 V, 0.8 A
–5.0 V, 0.3 A
+5.0 VSB, 2.0 A
+3.3 V and +5 V, total max. 150 W
if 3.3 V/0.2 A, target +5 V/30 A
if 3.3 V/16 A, target +5 V/19.5 A

Packs of	Model No. RP
1	**3687.793**

Supply includes:
Connection cable.

Accessories:
Front panel for ATX power supply, see page 483.



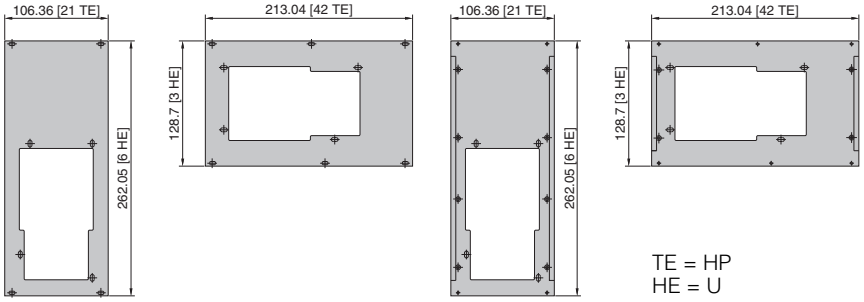
Front panel

for ATX power supply
Front panel with cutouts for mounting the ATX power supply units in the subrack.

Material:
Aluminium, clear-chromated

Supply includes:
1 front panel, assembly parts,
EMC gaskets (with EMC version).

U	HP	Model No. RP	
		EMC	Non-EMC
3	42	**3685.331**	**3685.328**
6	21	**3685.332**	**3685.329**





AT/ATX power supply

- PS/2 model
- Built-in fan
- Short circuit-protected
- CSA-approved
- On/off switch
- PFC active/passive
- W x H x D = 86 x 150 x 140 mm
- 47 – 63 Hz

Supply includes:
Connection cable.

Version	Power	Packs of	Model No. RP
AT	300 W	1	**3688.118**
AT for RAID	300 W	1	**3688.119**
ATX	300 W	1	**3688.121**
ATX	250 W	1	**3688.127**
ATX	300 W	1	**3688.129**
ATX	400 W	1	**3688.128**

Technical specifications:

3688.118	3688.119	3688.121	3688.127	3688.129	3688.128
300 W max./ 230 V AC 5.0 V/30.0 A –5.0 V/0.5 A 12.0 V/12.0 A –12.0 V/0.5 A PFC passive	300 W/ 230 V AC 5.0 V/16.0 A –5.0 V/1.0 A 12.0 V/18.0 A –12.0 V/1.0 A PFC passive	300 W max./ 115/230 V AC 3.3 V/15.0 A 5.0 V/30.0 A –5.0 V/0.3 A 12.0 V/15.0 A –12.0 V/0.8 A +5 VSB/2.0 A 3.3 V plus 5 V max. = 200 W 3.3 V, 5 V plus 12 V max. = 280 W PFC passive	250 W max./ 100 – 240 V AC 3.3 V/20.0 A 5.0 V/25.0 A –5.0 V/0.3 A 12.0 V/13.0 A –12.0 V/0.8 A +5 VSB/2.0 A 3.3 V plus 5 V max. = 150 W 3.3 V, 5 V plus 12 V max. = 230 W PFC active	300 W max./ 110 – 240 V AC 3.3 V/28.0 A 5.0 V/30.0 A –5.0 V/0.3 A +5 VSB/2 A 12.0 V/13.0 A –12.0 V/0.8 A 3.3 V plus 5 V max. = 180 W 3.3 V, 5 V plus 12 V max. = 280 W PFC active	400 W max./ 110 – 240 V AC 3.3 V/28.0 A 5.0 V/40.0 A –5.0 V/0.3 A 12.0 V/15.0 A –12.0 V/0.8 A +5 VSB/2.0 A 3.3 V plus 5 V max. = 235 W 3.3 V, 5 V plus 12 V max. = 380 W PFC active

AT/ATX power supplies, redundant power supplies



ATX power supply unit 1 U

- 2 built-in fans
- Short circuit-protected
- On/off switch
- PFC active
- W x H x D = 85 x 40 x 230 mm

Technical specifications:
200 W max./
100 – 240 V AC
47 – 63 Hz
3.3 V/14.0 A
5.0 V/20.0 A
–5.0 V/0.3 A
12.0 V/6.0 A
–12.0 V/0.8 A
+5 VSB/2 A
+3.3 V plus 5 V max. = 120 W
+3.3, 5 V plus 12 V max. = 180 W

Version	Packs of	Model No. RP
ATX	1	**3688.130**

Supply includes:
DC connection cable.



Redundant power supply

for RAID

- Built-in fan
- Hot-swap version
- PFC active
- Individual power pack available (separately)
- W x H x D = 190 x 170 x 183 mm

Technical specifications:
2 x 300 W
90 – 264 V AC
47 – 63 Hz
5.0 V/25.0 A
12.0 V/14.0 A
–5.0 V/0.5 A
–12.0 V/0.5 A

Version	Packs of	Model No. RP
RAID version	1	**3688.125**
Individual power pack (spare)	1	**3688.126**

Supply includes:
DC connection cable.



Redundant power supply

for ATX

- PS/2 model, 2 switches, 1 connector
- Built-in fan
- Hot-swap version
- PFC active
- Individual power pack available (separately)
- W x H x D = 86 x 150 x 185 mm

Technical specifications:
2 x 300 W
90 – 264 V AC
47 – 63 Hz
3.3 V/20.0 A
5.0 V/25.0 A
5 VSB/1.5 V
12.0 V/16.0 A max. 20 A
–12.0 V/0.5 A
5 V, 3.3 V and 12 V plus max. 285 W

Version	Packs of	Model No. RP
ATX version	1	**3688.123**
Individual power pack (spare)	1	**3688.124**

Supply includes:
DC connection cable.

AT/ATX power supplies, redundant power supplies



Redundant power supply

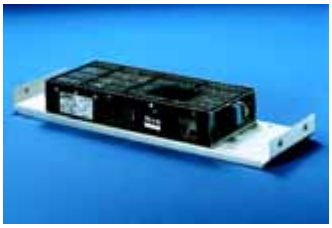
for ATX

- PS/2 model, 2 switches, 2 connector
- Built-in fan
- Hot-swap version
- PFC active
- Individual power pack available (separately)
- W x H x D = 86 x 160 x 220 mm

Technical specifications:
2 x 300 W
90 – 264 V AC
47 – 63 Hz
3.3 V/18.0 A
5.0 V/26.0 A
5.0 VSB/1.2 A
12.0 V/16.0 A max. 20 A
–12.0 V/1.0 A
+5 V, 3.3 V plus 12.0 V max. = 285 W

Version	Packs of	Model No. RP
ATX version	1	**3688.120**
Individual power pack (spare)	1	**3688.122**

Supply includes:
DC connection cable.



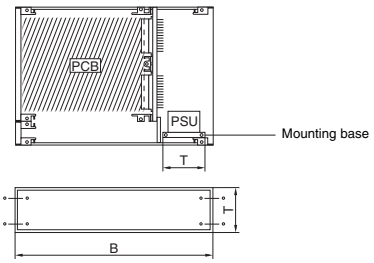
Mounting base for power supplies

- Attaches to the subrack side panel

Material:
2 mm aluminium, clear-chromated

Supply includes:
Assembly parts.

Width (B) mm	Depth (T) mm	Model No. RP
431.8	100	**3684.323**
431.8	130	**3684.324**





Female connector type M24/8

IEC 60 603-2 (DIN 41 612)

- Female connector for plug-in CPCI power supplies
- Quality level 2 to IEC 60 603-2 (DIN 41 612)
- Optional 20 A high current contacts for straight conductor connection either crimp or solder
- Volume resistance max. 1.5 mΩ
- Max. rated current: 40 A

Supply includes:
5 connection sockets
(crimping or soldering method).

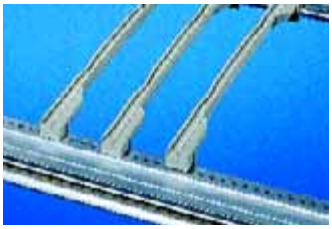
Type of connection	Packs of	Model No. RP
Soldering	1	**3687.665**
Crimping	1	**3687.666**

Also required:

For mounting in the subrack, a Z rail is required, see page 504.



Female connector type H15 IEC 60 603-2 (DIN 41 612)
for plug-in power supplies, see page 550.



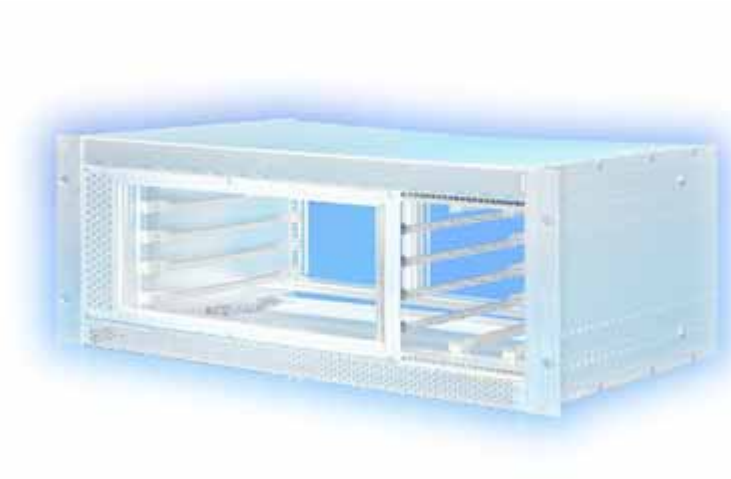
Plastic guide rails
for routing the plug-in power supply, see page 509.



Keyable guide rails, plastic, see page 510/511.

Note:
The CompactPCI specification prescribes green guide rails with $^1/_2$ HP offset for power supply installation (PICMG 2.11).

Features

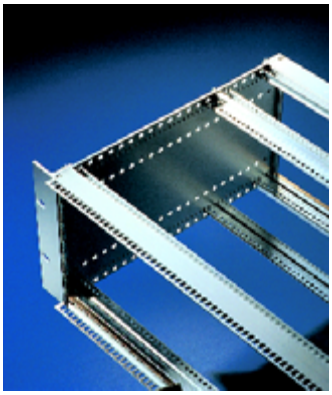


The modular concept of Ripac subracks facilitates a wide range of potential applications with a minimum of components.

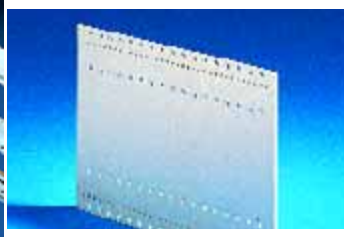
All Ripac subracks are based on to common horizontal rails and system components.

The difference lies in the design of the side panels and/or installation variants.

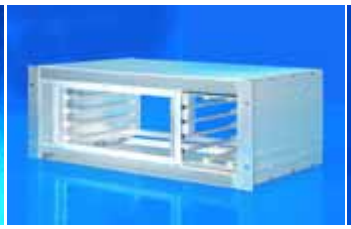
The subracks are shock- and vibration-tested and comply with IEC 60 297-3 as well as IEEE 1101.1/1101.10.



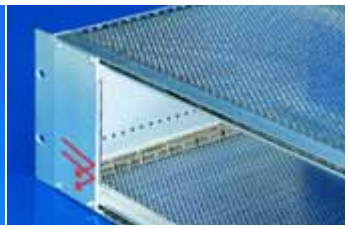
Design features, Ripac Vario and Vario EMC



Depth-variable system installation is supported by the 10 mm pitch pattern of holes in the side panels.



Complex applications thanks to numerous size variants and system accessories.



EMC shielding via horizontal and vertical EMC gaskets. May also be retrofitted.



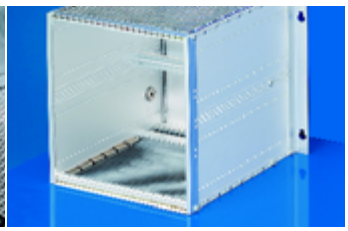
Design features, Ripac Compact



Top-hat rail mounting
Rear adaptors allow simple snap-mounting directly onto the top-hat rail.



Mounting on mounting plates
Machined keyholes for direct mounting on mounting plates.



EMC version optional.



Design features, Ripac Vario Mobil

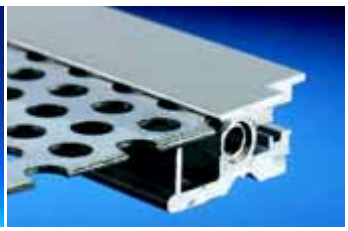


- The subracks have been tested for use in the German national railway. Testing was conducted in accordance with standard EN 50 155 (electronic equipment in rail vehicles). The construction of the subracks tested conforms to IEC 60 297.
- Vibration and shock-tested to: IEC 600-68-2-6, test Fc IEC 600-68-2-27, test Ea
- Supply includes: Subrack, fully assembled.



Design features, Ripac ECO





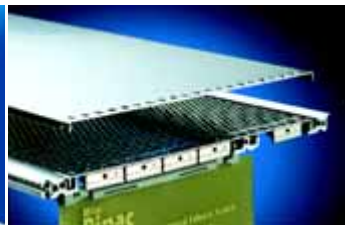
Side panels of sheet steel, zinc-plated. Flanges of aluminium, clear-chromated. Prescribed mounting positions for 160 and 220 mm board formats.

Simple cover mounting: Easily slid into the horizontal rails.



System installation, accessories



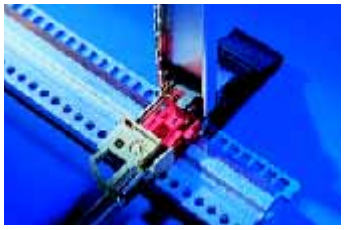


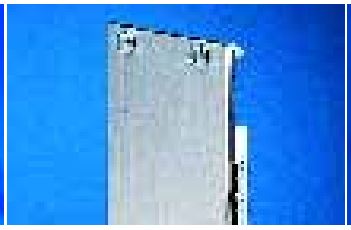


Guide rails of plastic or aluminium, also keyable.

Covers vented or solid, snap-fastening or screw-fastening.

ESD contacts for guide rails, to remove electrostatic charges.







Keys for keying the board-type plug-in units.

Front panels in various versions, e.g. with handles, vented or for EMC applications.

Injector/extractor handles self-latching, of plastic or aluminium.



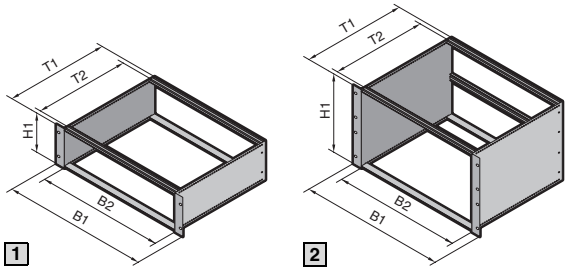


Connectors IEC 60 603-2 (DIN 41 612) in various designs.

Mounting kits for combined installation of single and double Euroboards, horizontal or vertical.

Ripac ECO 3 U, 6 U, sheet steel





Material/surface finish:
Side panels:
1.5 mm sheet steel, zinc-plated, passivated
Flanges/horizontal rails:
Extruded aluminium section, clear-chromated

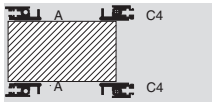
Supply includes:
Side panels, flanges, horizontal rails, threaded inserts

Detailed parts lists,
see page 1155.

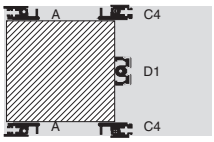
Tests:
Vibration and shock-tested to:
IEC 600-68-2-6 test Fc
IEC 600-68-2-27 test Ea

Standards:
Ripac subracks are based on the system dimensions of IEC 60 297-3/-5.

Detailed drawing,
see page 1155.



1 for backplane

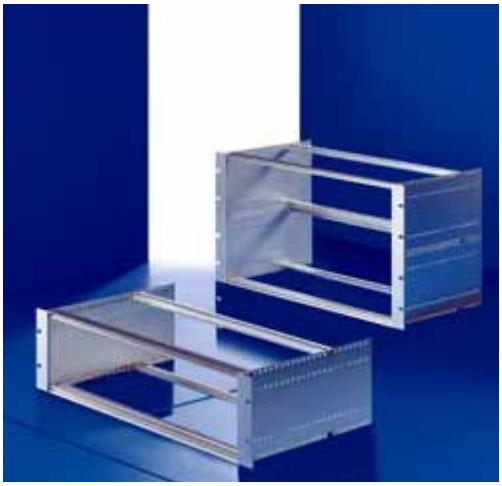


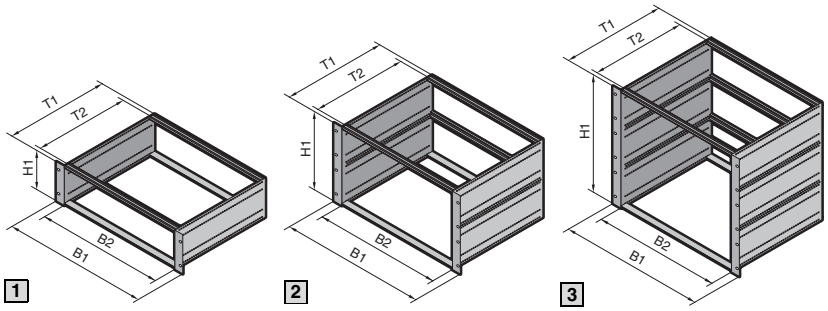
2 for backplane

					Model No. RP		Page
					1	2	
U (H1)					**3**	**6**	
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For backplane	
482.6 (19″)	84	175	150	160	**3688.114**	**3688.116**	
		235	210	220	**3688.115**	**3688.117**	
Accessories							
Trim section rear, 3 U					3688.112		497
Trim section rear, 6 U					3688.113		497
Z (connector) rail					3684.602		504
Insulating strips					3684.611		505
Cover, perforated, for 175 mm depth					3688.105		518
Cover, perforated, for 210 mm depth					3688.106		518
Cover, solid, for 175 mm depth					3688.107		518
Cover, solid, for 210 mm depth					3688.108		518
Mounting clips for covers					3688.109		518
Assembly screw for mounting clips					9902.188		518
Guide rails							509
Horizontal rails							498

Subrack components Page 495 **Accessories** Page 506 **Assembly parts** Page 576 **Ripac Vario** Page 489 **Ripac Compact** Page 493
Ripac Vario Mobil Page 494

Ripac Vario 3 U, 6 U, 9 U





B = Width
T = Depth

Material/surface finish:
Side panels:
2.5 mm aluminium,
clear-chromated
482.6 mm (19″) flanges and
horizontal rails:
Extruded aluminium section,
clear-chromated

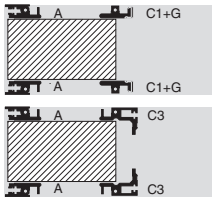
Supply includes:
Flanges, side panels,
horizontal rails,
threaded inserts, insulating
strips, fastenings.

Detailed parts lists,
see page 1156.

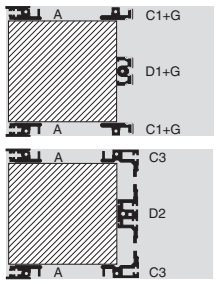
Tests:
Vibration and shock-tested to:
IEC 600-68-2-6 test Fc
IEC 600-68-2-27 test Ea

Standards:
Ripac subracks are based
on the system dimensions on
IEC 60 297-3/-5.

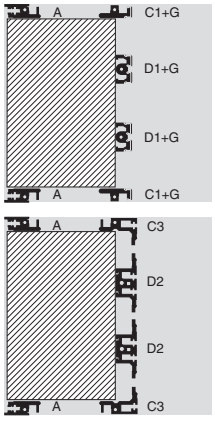
Detailed drawing,
see page 1155.



1 Top: For backplane
Bottom: For connector



2 Top: For backplane
Bottom: For connector



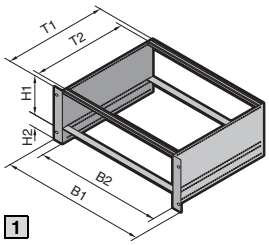
3 Top: For backplane
Bottom: For connector

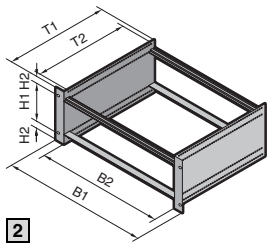
					Model No. RP					
					1		2		3	
U					**3**	**3**	**6**	**6**	**9**	**9**
Height (H1) in mm					132		265.35		398.70	
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For connectors IEC 60 603-2 (DIN 41 612)	For backplane	For connectors IEC 60 603-2 (DIN 41 612)	For backplane	For connectors IEC 60 603-2 (DIN 41 612)
482.6 (19″)	84	185	160	160	**3684.020**	**3684.034**	**3684.043**	**3684.056**	–	–
		225	200	160	**3684.021**	**3684.035**	**3684.044**	**3684.057**	–	–
		245	220	220	**3684.022**	**3684.036**	**3684.045**	**3684.058**	–	–
		285	260	220	**3684.023**	**3685.281**	**3684.046**	–	–	–
		305	280	280	**3685.231**	**3685.233**	**3685.238**	**3685.240**	–	–
		345	320	280	**3684.024**	–	**3684.047**	–	**3684.051**	**3684.059**
		365	340	340	**3685.232**	**3685.234**	**3685.239**	–	–	–
		405	380	340	**3684.025**	–	**3684.048**	–	**3684.052**	**3684.060**
		465	440	400	**3684.026**	–	**3684.049**	–	**3684.053**	**3684.061**
		525	500	400	**3684.027**	–	**3684.050**	–	**3684.054**	–
		585	560	400	–	–	–	–	**3684.055**	–

Covers Page 515 **Guide rails** Page 509 **Assembly kits** Page 508 **Horizontal rails** Page 498 **EMC accessories** Page 506 **Front panels** Page 525

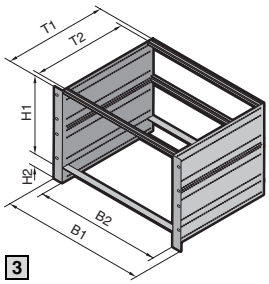
Ripac Vario 4 U, 7 U

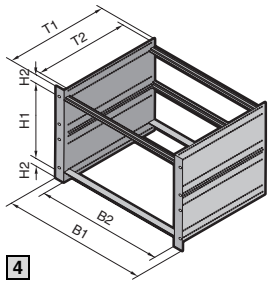






B = Width
T = Depth





Material/surface finish:
Side panels:
2.5 mm aluminium,
clear-chromated
482.6 mm (19″) flanges and
horizontal rails:
Extruded aluminium section,
clear-chromated

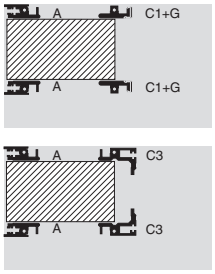
Supply includes:
Flanges, side panels,
horizontal rails,
threaded inserts, insulating
strips, fastenings.

Detailed parts lists,
see page 1156.

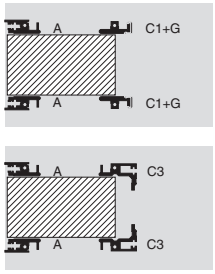
Tests:
Vibration and shock-tested to:
IEC 600-68-2-6 test Fc
IEC 600-68-2-27 test Ea

Standards:
Ripac subracks are based
on the system dimensions of
IEC 60 297-3/-5.

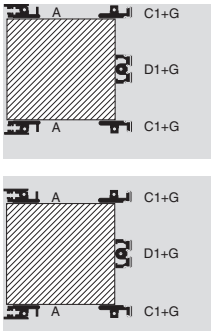
Detailed drawing,
see page 1155.



1 Top: For backplane
Bottom: For connector



2 Top: For backplane
Bottom: For connector



3 Top: For backplane
(6 U + 1 U)

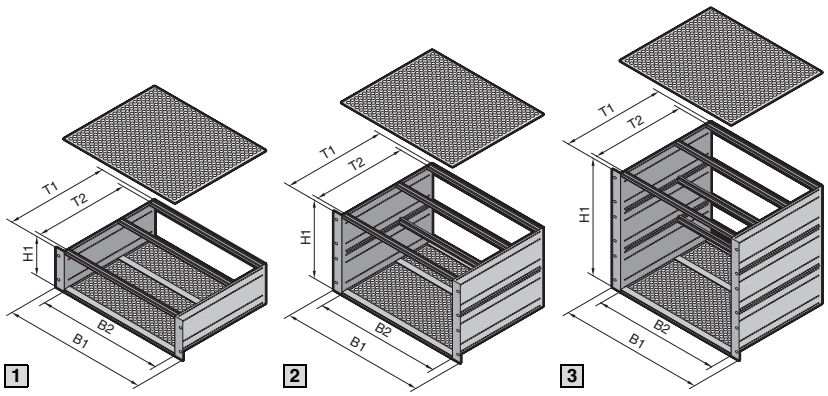
4 Bottom: For backplane
(6 U + 2 x 1/2 U)

					Model No. RP					
					1		2		3	4
U (H1 + H2)					4 (3 + 1)	4 (3 + 1)	4 (3 + 2 x 1/2)	4 (3 + 2 x 1/2)	7 (6 + 1)	7 (6 + 2 x 1/2)
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For connectors IEC 60 603-2 (DIN 41 612)	For backplane	For connectors IEC 60 603-2 (DIN 41 612)	For backplane	For backplane
482.6 (19″)	84	245	220	220	**3685.235**	–	–	–	–	–
		285	260	220	**3684.028**	**3684.037**	**3684.031**	**3684.040**	–	–
		305	280	280	**3685.236**	–	–	–	–	–
		345	320	280	**3684.029**	**3684.038**	**3684.032**	**3684.041**	–	–
		365	340	340	**3685.237**	–	–	–	–	–
		405	380	340	**3684.030**	**3684.039**	**3684.033**	**3684.042**	**3684.064**	**3684.062**
		465	440	400	–	–	–	–	**3684.065**	**3684.063**

Covers Page 515 **Guide rails** Page 509 **Assembly kits** Page 508 **Horizontal rails** Page 498 **EMC accessories** Page 506 **Front panels** Page 525

Ripac Vario EMC 3 U, 6 U, 9 U





B = Width
T = Depth

Material/surface finish:
Side panels:
2.5 mm aluminium,
clear-chromated
Flanges and horizontal rails:
Extruded aluminium section,
clear-chromated
Covers: Aluminium, unplated

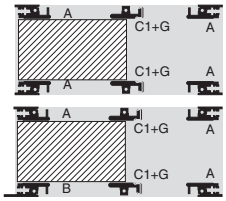
Supply includes:
Flanges, rear trim, side panels, EMC gaskets, covers, mounting blocks, horizontal rails, insulating strips.

Detailed parts lists,
see page 1156.

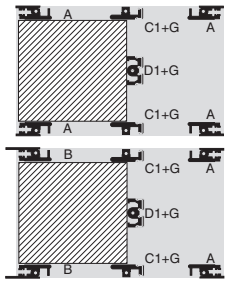
Tests:
Vibration and shock-tested to:
IEC 600-68-2-6 test Fc
IEC 600-68-2-27 test Ea

Standards:
Ripac subracks are based on the system dimensions of IEC 60 297-3/-5.

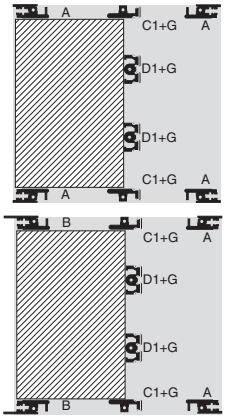
Detailed drawing,
see page 1155.



1
Top: For backplane
Bottom: For backplane/ front horizontal rail with 10 mm extension



2
Top: For backplane
Bottom: For backplane/ front horizontal rail with 10 mm extension



3
Top: For backplane
Bottom: For backplane/ front horizontal rail with 10 mm extension

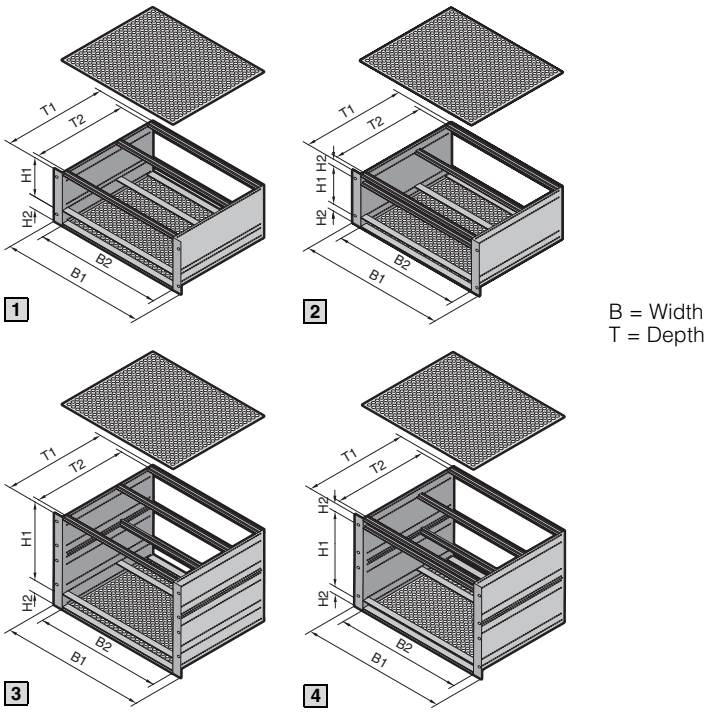
					Model No. RP					
					1		2		3	
U					**3**		**6**		**9**	
Height (H1) in mm					132		265,35		398,70	
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For backplane[1)]	For backplane	For backplane[1)]	For backplane	For backplane[1)]
482.6 (19″)	84	245	220	160	**3684.128**	**3684.142**	**3684.156**	**3684.169**	–	–
		285	260	220	**3684.129**	**3684.143**	**3684.157**	**3684.170**	–	–
		305	280	220	**3685.241**	**3685.243**	**3685.242**	**3685.244**	–	–
		345	320	280	**3684.130**	**3684.144**	**3684.158**	**3684.171**	**3684.162**	**3684.175**
		405	380	340	**3684.131**	**3684.145**	**3684.159**	**3684.172**	**3684.163**	**3684.176**
		465	440	400	**3684.132**	**3684.146**	**3684.160**	**3684.173**	**3684.164**	**3684.177**
		525	500	400	**3684.133**	**3684.147**	**3684.161**	**3684.174**	**3684.165**	**3684.178**
		585	560	400	–	–	–	–	**3684.166**	**3684.179**

[1)] Front horizontal rails with 10 mm extension for injector/extractor handles (B)

Guide rails Page 509 **Assembly kits** Page 508 **Horizontal rails** Page 498 **EMC accessories** Page 506 **Front panels** Page 525

Ripac Vario EMC 4 U, 7 U





B = Width
T = Depth

Material/surface finish:
Side panels:
2.5 mm aluminium,
clear-chromated
Flanges and horizontal rails:
Extruded aluminium section,
clear-chromated
Covers: Aluminium, unplated

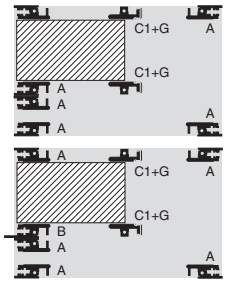
Supply includes:
Flanges, rear trims, side panels, EMC gaskets, covers, mounting blocks, horizontal rails, threaded inserts, insulating strips.

Detailed parts lists,
see page 1156.

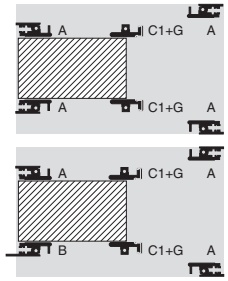
Tests:
Vibration and shock-tested to:
IEC 600-68-2-6 test Fc
IEC 600-68-2-27 test Ea

Standards:
Ripac subracks are based on the system dimensions of IEC 60 297-3/-5.

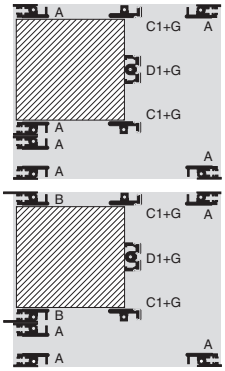
Detailed drawing,
see page 1155.



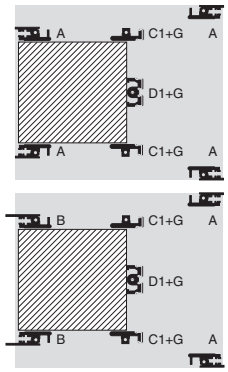
1
Top: For backplane
Bottom: For back-plane/front horizontal rail with 10 mm extension



2
Top: For backplane
Bottom: For back-plane/front hoprizontal rail with 10 mm extension



3
Top: For backplane
Bottom: For back-plane/front horizontal rail with 10 mm extension



4
Top: For backplane
Bottom: For back-plane/horizontal rails, front, with 10 mm extension

					Model No. RP							
					1		2		3		4	
U (H1 + H2)					4 (3 + 1)	4 (3 + 1)	4 (3 + 2 x 1/2)	4 (3 + 2 x 1/2)	7 (6 + 1)	7 (6 + 1)	7 (6 + 2 x 1/2)	7 (6 + 2 x 1/2)
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For backplane[1]	For backplane	For backplane[1]	For backplane	For backplane[1]	For backplane	For backplane[1]
482.6 (19″)	84	285	260	220	**3684.134**	**3684.148**	**3684.137**	**3684.151**	**3684.187**	**3684.192**	–	–
		345	320	280	**3684.135**	**3684.149**	**3684.138**	**3684.152**	**3684.188**	**3684.193**	**3684.189**	**3684.196**
		405	380	340	**3684.136**	**3684.150**	**3684.139**	**3684.153**	**3684.180**	**3684.194**	**3684.190**	**3684.197**
		465	440	400	–	–	–	–	**3684.181**	**3684.195**	**3684.191**	**3684.198**

[1] Front cross rails with 10 mm extension for injector/extractor handles (B)

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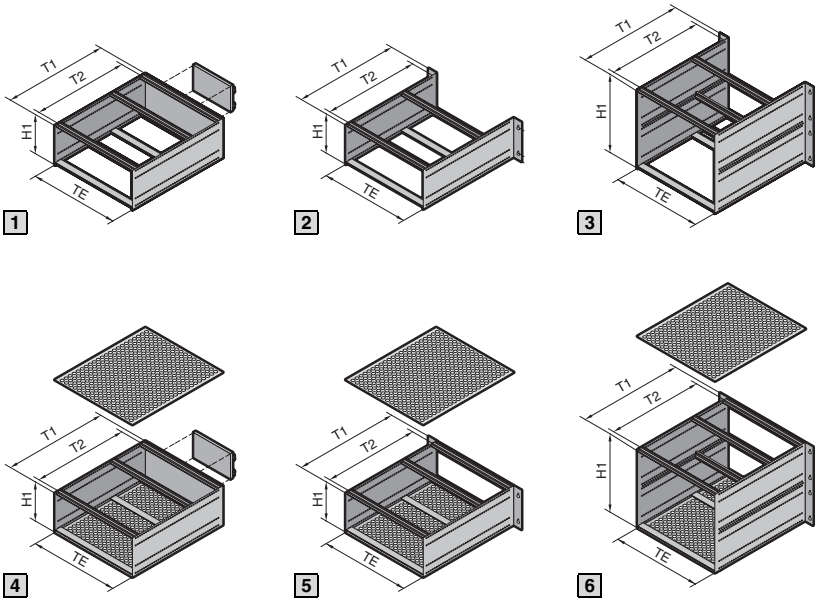
Ripac Compact 3 U, 6 U





T = Depth
TE = HP

1 4
Ripac Compact 3 U
for top-hat rail

2 3 5 6
Ripac Compact 3 U
for mounting plate

Material/surface finish:
Side panels:
2.5 mm aluminium,
clear-chromated
Flanges and horizontal rails:
Extruded aluminium section,
clear-chromated

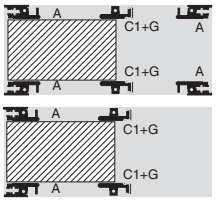
Supply includes:
Side panels, front trims, flanges for mounting plates or top-hat rail adaptors, EMC-front/rear panels, EMC gaskets, covers, horizontal rails, threaded inserts, insulating strips.

Detailed parts lists,
see page 1157.

Tests:
Vibration and shock-tested to:
IEC 600-68-2-6 test Fc
IEC 600-68-2-27 test Ea

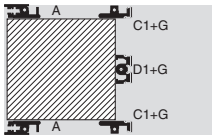
Standards:
Ripac subracks are based on the system dimensions of IEC 60 297-3/-5.

Detailed drawing,
see page 1155/1157.

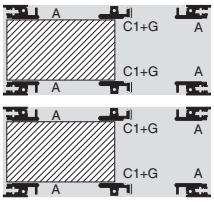


1 Top:
For top-hat rail

2 Bottom:
For mounting plate

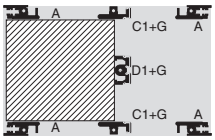


3 For mounting plate



4 Top: EMC for top-hat rail

5 Bottom: EMC for mounting plate



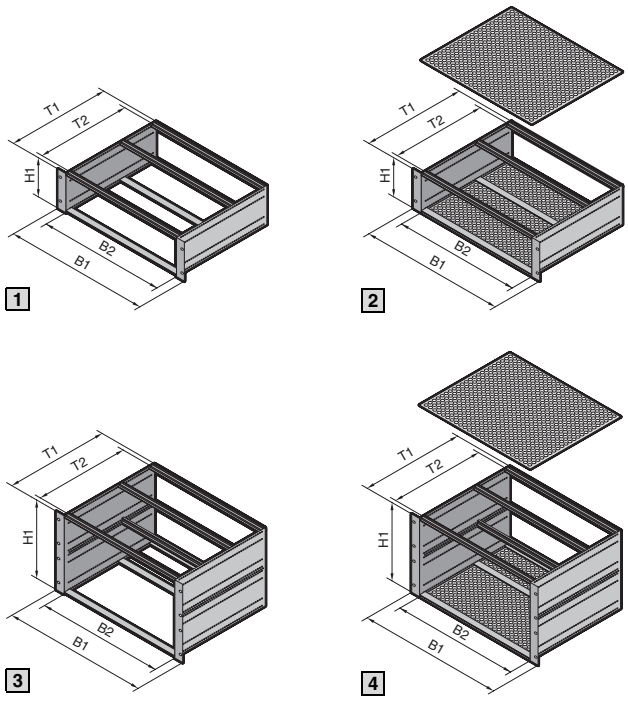
6 EMC for mounting plate

			Model No. RP					Model No. RP EMC				
			1	2	1	2	3	4	5	4	5	6
U			**3**	**3**	**3**	**3**	**6**	**3**	**3**	**3**	**3**	**6**
Height (H1) in mm			132				265.35	132				265.35
HP			21	21	42	42	42	21	21	42	42	42
Mounting			Top hat rail	Mounting plate	Top hat rail	Mounting plate	Mounting plate	Top hat rail	Mounting plate	Top hat rail	Mounting plate	Mounting plate
Side panel (T1) mm	T2 mm	Max. board depth mm	For backplane									
225	200	160	**3687.667**	**3687.669**	**3687.671**	**3687.673**	**3687.680**	**3687.682**	**3687.684**	**3687.686**	**3687.688**	**3687.690**
285	260	220	**3687.668**	**3687.670**	**3687.672**	**3687.674**	**3687.681**	**3687.683**	**3687.685**	**3687.687**	**3687.689**	**3687.691**

Covers Page 515 **Guide rails** Page 509 **Assembly kits** Page 508 **Horizontal rails** Page 498 **EMC accessories** Page 506 **Front panels** Page 525

Ripac Vario Mobil 3 U, 6 U, for mobile use





B = Width
T = Depth

Material/surface finish:
Side panels:
2.5 mm aluminium, clear-chromated
482.6 mm (19″) flanges and horizontal rails:
Extruded aluminium section, clear-chromated
Covers: Aluminium, unplated

Supply includes:
Flanges, rear trims, side panels, EMC gaskets, covers, mounting blocks, horizontal rails, threaded inserts, insulating strips, fully assembled.

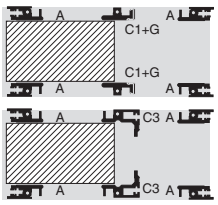
Detailed parts lists,
see page 1158.

Tests:
Vibration and shock-tested to:
IEC 600-68-2-6 test Fc
IEC 600-68-2-27 test Ea
The subracks have been tested for use in the German national railway. The test was conducted in accordance with standard EN 50 155, 1996 (electrical equipment for rail vehicles).
The configuration of the tested subracks conforms to IEC 48D.

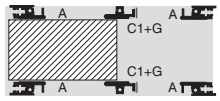
Standards:
Ripac subracks are based on the system dimensions of IEC 60 297-3/-5.

Note:
The subracks are supplied fully assembled.

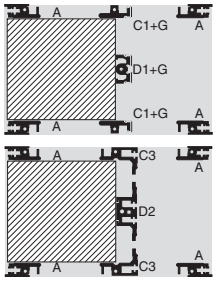
Detailed drawing,
see page 1155/1158.



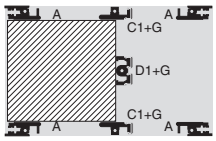
1 Top:
For backplane
Bottom:
For connector



2 EMC for backplane



3 Top:
For backplane
Bottom:
For connector

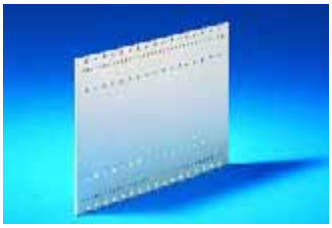


4 EMC for backplane

					Model No. RP 1		Model No. RP EMC 2	Model No. RP 3		Model No. RP EMC 4
U					**3**	**3**	**3**	**6**	**6**	**6**
Height (H1) in mm					132			265.35		
B1 mm	B2 HP	Side panel (T1) mm	T2 mm	Max. PCB depth mm	For backplane	For connectors IEC 60 603-2 (DIN 41 612)	For backplane	For backplane	For connectors IEC 60 603-2 (DIN 41 612)	For backplane
482.6 (19″)	84	245	220	220	**3687.782**	**3687.780**	**3687.784**	**3687.783**	**3687.781**	**3687.785**

Covers Page 515 **Guide rails** Page 509 **Assembly kits** Page 508 **EMC accessories** Page 506

Side panels and flanges



Side panels

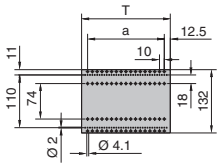
for Ripac Vario, Ripac Vario EMC, Ripac Compact and Ripac Vario Mobil
Mounting holes and anti-twist half-shears on a 10 mm pitch pattern.

Material:
2.5 mm aluminium, clear-chromated

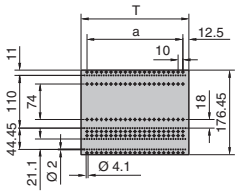
U			Model No. RP								
			3	4 (3 + 1)	4 (3 + 2 x 1/2)	6	7 (6 + 1)	7 (6 + 2 x 1/2)	9	10	11
D (T) mm	a[1] mm	Packs of									
185	160	1	**3684.511**	–	–	**3684.529**	–	–	–	–	–
225	200	1	**3684.512**	**3685.793**	**3685.890**	**3684.530**	**3685.896**	**3685.893**	**3685.797**	–	–
245	220	1	**3684.513**	**3685.850**	**3685.891**	**3684.531**	**3685.897**	**3685.894**	–	–	–
285	260	1	**3684.514**	**3684.523**	**3684.526**	**3684.532**	**3685.743**	**3685.895**	–	–	–
305	280	1	**3684.515**	**3685.794**	–	**3684.533**	–	–	**3685.798**	–	–
345	320	1	**3684.516**	**3684.524**	**3684.527**	**3684.534**	**3685.744**	**3685.745**	**3684.547**	–	–
365	340	1	**3684.517**	**3685.795**	–	**3684.535**	–	–	**3685.799**	–	–
405	380	1	**3684.518**	**3684.525**	**3684.528**	**3684.536**	**3684.541**	**3684.543**	**3684.548**	**3684.545**	–
425	400	1	**3684.519**	–	–	**3684.537**	–	–	–	–	–
465	440	1	**3684.520**	**3685.796**	**3685.892**	**3684.538**	**3684.542**	**3684.544**	**3684.549**	**3684.546**	**3684.552**
525	500	1	**3684.521**	–	–	**3684.539**	**3685.898**	**3685.959**	**3684.550**	**3685.899**	**3684.553**
585	560	1	**3684.522**	–	–	**3684.540**	–	–	**3684.551**	–	**3684.554**

[1] a = Distance between the first and last mounting hole

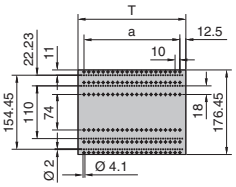
3 U



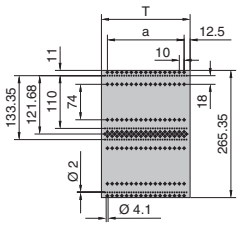
4 U (3 U + 1 U)



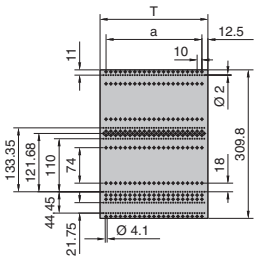
4 U (3 U + 2 x 1/2 U)



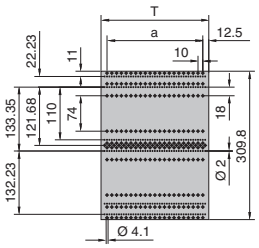
6 U



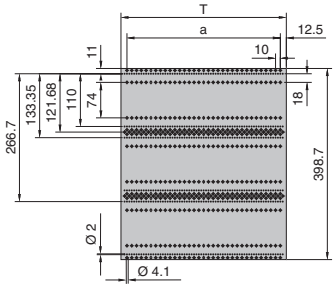
7 U (6 U + 1 U)



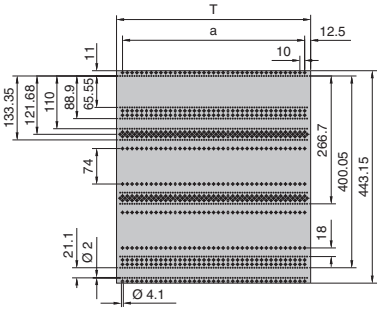
7 U (6 U + 2 x 1/2 U)



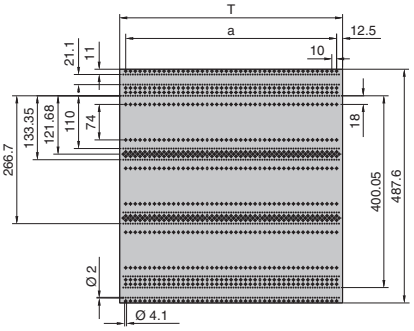
9 U



10 U



11 U



Side panels and flanges

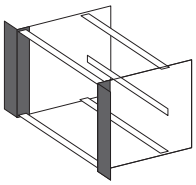


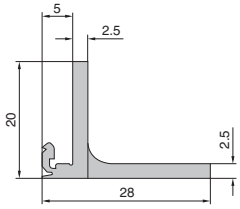
Flange 482.6 mm (19 ″)

To fit all Ripac Vario, Ripac Vario EMC, Ripac Compact and Ripac Vario Mobil subracks. With integral channel to accommodate EMC gaskets.

Material:
Extruded aluminium section

Surface finish:
Clear-chromated





U	Packs of	Model No. RP	
		with handle holes	without handle holes
2	1	–	**3684.614**
3	1	**3684.622**	**3684.615**
4	1	**3684.623**	**3684.616**
6	1	**3684.624**	**3684.617**
7	1	**3684.625**	**3684.618**
9	1	–	**3684.619**
10	1	–	**3684.620**
11	1	–	**3684.621**

Accessories:

EMC gaskets, vertical,
see page 506.

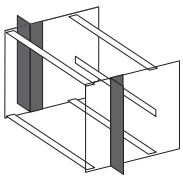


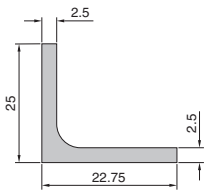
Flange 482.6 mm (19 ″)

set-back
To fit all Ripac Vario, Ripac Vario EMC and Ripac Vario Mobil subracks.

Material:
Extruded aluminium section

Surface finish:
Clear-chromated





U	Packs of	Model No. RP
3	1	**3684.626**
4	1	**3684.627**
6	1	**3684.628**
7	1	**3684.629**
9	1	**3684.630**
10	1	**3684.631**
11	1	**3684.632**

Also required:

Assembly screws, nuts and washers.
Packs of 4 sets, Model No. RP 3687.015,
see page 577.



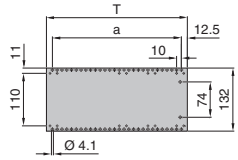
Side panels

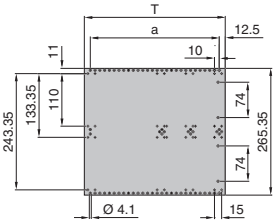
for Ripac ECO
Mounting holes for 160/220 mm PCB installation. Consistent pitch pattern of holes top and bottom for cover attachment.

Material:
1.5 mm sheet steel, zinc-plated, passivated

D (T) mm	a[1] mm	Packs of	Maximum board depth mm	Model No. RP	
				3 U	6 U
175	150	1	160	**3688.100**	**3688.102**
235	210	1	220	**3688.101**	**3688.103**

[1] a = Distance between the first and last mounting hole

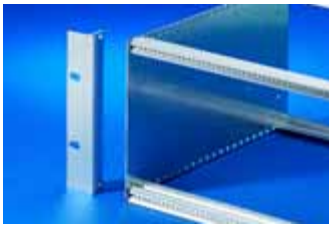




Accessories:

Flange for Ripac ECO,
see page 497.

Side panels and flanges

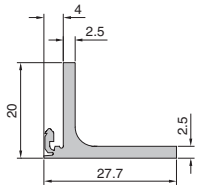


Flange 482.6 mm (19 ″)

for Ripac ECO
With integral channel to accommodate EMC gaskets.

Material:
Extruded aluminium section

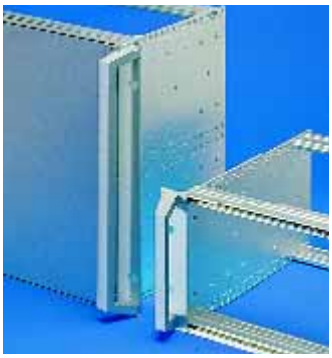
Surface finish:
Clear-chromated



U	Packs of	Model No. RP
3	1	**3688.110**
6	1	**3688.111**

Accessories:

EMC gaskets, vertical,
see page 506.



Handles

for subracks and component shelves
For fitting on the subrack flange with handle holes and on all component shelves

Material:
Die-cast zinc

Surface finish:
Spray-finished, silver-grey

Supply includes:
Assembly parts.

For	Packs of	Model No. RP
Subrack 3 U and 4 U	2	**3636.010**
Component shelves		
Subrack 6 U and 7 U	2	**3666.010**

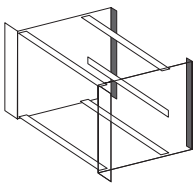


Trim section, rear

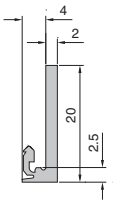
To fit all subrack versions. Ensures 84 HP fit at the rear of the subrack. With integral channel to accommodate EMC gaskets.

Material:
Extruded aluminium section

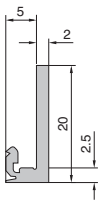
Surface finish:
Clear-chromated



Ripac ECO



Ripac Vario



For all Ripac Vario, Ripac Vario EMC, Ripac Compact and Ripac Vario Mobil

U	Model No. RP	
	Packs of 1	Packs of 2
2	**3684.633**	–
3	**3684.634**	**3685.276**
4	**3684.635**	–
6	**3684.636**	**3685.277**
7	**3684.637**	–
9	**3684.638**	–
10	**3684.639**	–
11	**3684.640**	–

For Ripac ECO subracks only

U	Packs of	Model No. RP
3	1	**3688.112**
6	1	**3688.113**

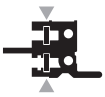
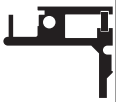
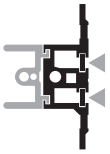
Accessories:

EMC gaskets, vertical,
see page 506.

Table of horizontal rails

Ripac section system: Complete, simple and easy to manage

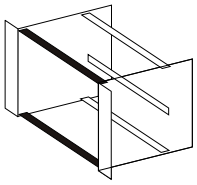
To fit all subrack systems as well as the Ripac Vario-Module instrument case/system enclosure range

Main sections / Additional extrusions	**A** Front horizontal rail	**B** Front horizontal rail, with 10 mm extension, for extractor handle type IV or VII	**B1** Double front horizontal rail, with 10 mm extension	**C1** Rear horizontal rail	**C2** Rear horizontal rail, reinforced version	**C3** Rear horizontal rail, with integral Z rail	**C4** Rear horizontal rail, with channel, for Ripac ECO	**C5** Rear horizontal rail, with integral Z rail, for Ripac ECO	**D1** Rear horizontal rail, centre	**D2** Rear horizontal rail, centre with integral Z rail
	Page 499	Page 499	Page 500	Page 500	Page 500	Page 501	Page 501	Page 502	Page 502	Page 503
										
E Rear adaptor rail, centre, to acommodate guide rails  Page 503	–	–	–	–	–	–	–	–		
F Z rail for connector Page 504	–	–	–			–		–		–
G Insulating strips[1] Page 505	–	–	–			–		–		–
H Conductive strips[1] Page 505	–	–	–			–		–		–
I Threaded insert Page 504				–					–	
J Identification strips Page 504								–	–	–
K EMC gaskets, horizontal Page 507				–	–	–		–	–	–

[1] For conductive or insulated attachment of backplanes

All system requirements may be covered with just a few basic types of horizontal rail. A cost-effective, easy-to-manage range.





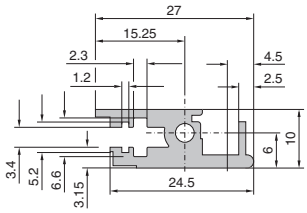
Front horizontal rail (A)

To accommodate guide rails and for the attachment of front panels.

- Front projection 2.5 mm in accordance with IEC 60 297-3.
- HP pitch patterns of holes for the precise installation of guide rails
- M4 thread on end face
- Straight-through core hole
- Horizontal rail 192 HP without machining on the end faces. Suitable for cutting to length

Material:
Extruded aluminium section

Surface finish:
Clear-chromated or anodised



Usable width (HP)	Packs of	Model No. RP
4 (left)	1	**3684.592**
4 (right)	1	**3684.955**
8 (left)	1	**3684.593**
8 (right)	1	**3684.956**
12	1	**3684.594**
16	1	**3684.595**
20	1	**3684.596**
21	1	**3685.985**
40	1	**3684.960**
42	1	**3684.560**
63	1	**3684.561**
84	1	**3684.562**
84	2	**3685.267**[1)]
192	1	**3688.000**[2)]

[1)] Including 4 assembly screws
[2)] Anodised

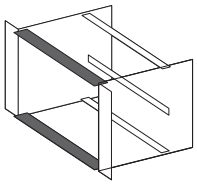
Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 576.

Accessories:

Threaded inserts,
see page 504.





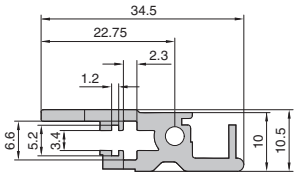
Front horizontal rail, with 10 mm extension (B)

for type IV, IVs and VII injector/extractor handle
To accommodate guide rails and for the attachment of front panels.

- Front projection and pitch pattern of holes based on IEEE 1101.10 and IEC 60 297-5-101, for use of type IV and VII injector/extractor handles
- HP pitch patterns of holes for the precise installation of guide rails
- M4 thread on end face
- Straight-through core hole
- Horizontal rail 192 HP without machining on the end faces. Suitable for cutting to length

Material:
Extruded aluminium section

Surface finish:
Clear-chromated or anodised



Usable width (HP)	Packs of	Model No. RP
40	1	**3684.961**
42	1	**3684.565**
63	1	**3684.566**
84	1	**3684.567**
84	2	**3685.269**[1)]
192	1	**3688.001**[2)]

[1)] Including 4 assembly screws
[2)] Anodised

Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 576.

Accessories:

Threaded inserts,
see page 504.

Horizontal rails



Double front horizontal rail, with 10 mm extension (B1)

To accommodate guide rails and for the attachment of front panels.

- Front projection and pitch pattern of holes based on IEEE 1101.10 and IEC 60 297-5-101, for use of type IV and VII injector/extractor handles
- HP pitch patterns of holes for the precise installation of guide rails
- M4 thread on end face
- Straight-through core hole

Material:
Extruded aluminium section

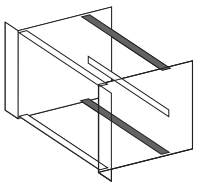
Surface finish:
Clear-chromated

Usable width (HP)	Packs of	Model No. RP
84	1	**3687.724**

Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 576.





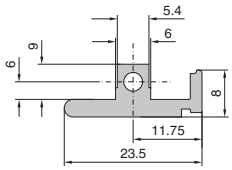
Rear horizontal rail (C1)

To accommodate guide rails and for the attachment of Z rails, insulating strips or conductive strips and backplanes.

- Tapped holes M2.5 on a 1 HP pitch pattern
- HP pitch patterns of holes for the precise installation of guide rails in the HP pitch pattern
- M2.5 thread for the installation of Z-rails, or backplanes.
- M4 thread on end face
- Straight-through core hole
- Horizontal rail 192 HP without machining on the end faces. Suitable for cutting to length

Material:
Extruded aluminium section

Surface finish:
Clear-chromated or anodised



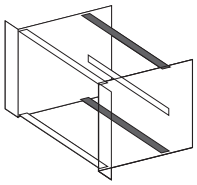
Usable width (HP)	Packs of	Model No. RP
21	1	**3685.991**
40	1	**3684.962**
42	1	**3684.570**
63	1	**3684.571**
84	1	**3684.572**
84	2	**3685.268**[1)]
192	1	**3688.002**[2)]

[1)] Including 4 assembly screws
[2)] Anodised

Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 576.



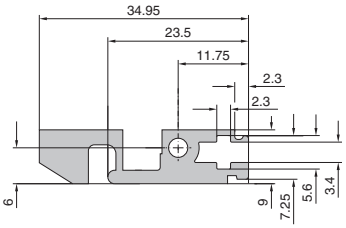


Rear horizontal rail, reinforced version (C2)

For use with high loads.

Material:
Extruded aluminium section

Surface finish:
Clear-chromated



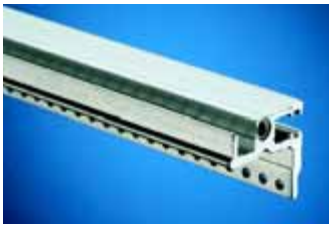
Usable width (HP)	Packs of	Model No. RP
42	1	**3687.604**
63	1	**3687.605**
84	1	**3687.606**

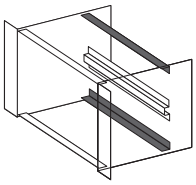
Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 576.

Accessories:

Threaded inserts,
see page 504.





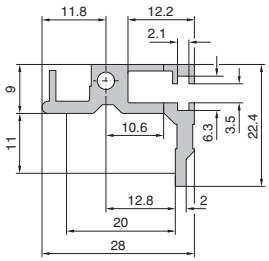
Rear horizontal rail, with integral Z rail (C3)

To accommodate guide rails. Integral Z rail for mounting connectors to IEC 60 603-2.

- HP pitch patterns of holes for the precise installation of guide rails
- 84 tapped holes M2.5 for the mounting of connectors
- M4 thread on end face
- Straight-through core hole

Material:
Extruded aluminium section

Surface finish:
Clear-chromated



Usable width (HP)	Packs of	Model No. RP
42	1	**3686.191**
63	1	**3686.919**
84	1	**3686.159**

Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 576.



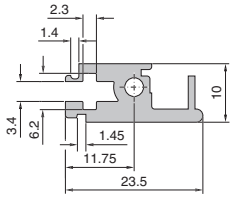
Rear horizontal rail, with channel, for Ripac ECO (C4)

For the accommodation of guide rails and for the attachment of Z rails, insulating strips or conductive strips and backplanes.

- HP pitch patterns of holes for the precise installation of guide rails
- Channel for sliding in covers
- For mounting backplanes/Z rails, threaded inserts (RP 3684.610) are additionally required
- M4 thread on end face
- Straight-through core hole
- Not suitable for mounting under covers

Material:
Extruded aluminium section

Surface finish:
Clear-chromated



Usable width (HP)	Packs of	Model No. RP
84	1	**3688.104**

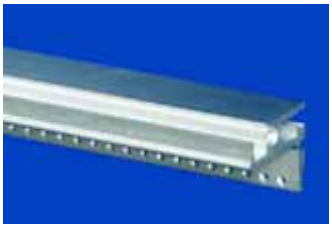
Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 576.

Accessories:

Threaded inserts,
see page 504.

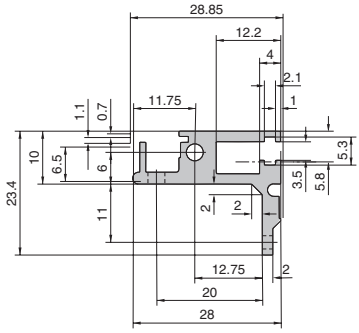
Horizontal rails



Rear horizontal rail, with integral Z rail, for Ripac ECO (C5)

To accommodate guide rails. Integral Z rail for mounting connectors to IEC 60 603-2.

- HP pitch patterns of holes for the precise installation of guide rails
- 84 tapped holes M2.5 for connector mounting
- M4 thread on end face
- Straight-through core hole



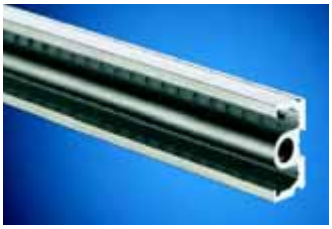
Usable width (HP)	Packs of	Model No. RP
84	1	**9901.991**

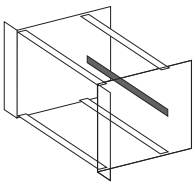
Material:
Extruded aluminium section

Surface finish:
Clear-chromated

Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 576.





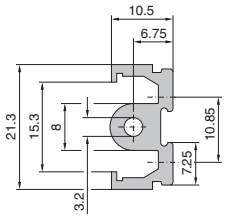
Rear horizontal rail, centre (D1)

When using 6 U PCBs or box-type plug-in units. Option of attaching Z rails, insulating strips or conductive strips.

- 2 x 84 tapped holes M2.5
- M4 thread on end face
- Straight-through core hole
- Horizontal rail 192 HP for cutting to length

Material:
Extruded aluminium section

Surface finish:
Clear-chromated or anodised



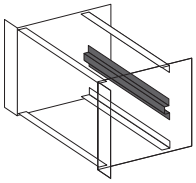
Usable width (HP)	Packs of	Model No. RP
40	1	**3684.963**
42	1	**3684.580**
63	1	**3684.581**
84	1	**3684.582**
84	1	**3685.270**[1)]
192	1	**3688.003**[2)]

[1)] Including 2 assembly screws
[2)] Anodised

Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 576.





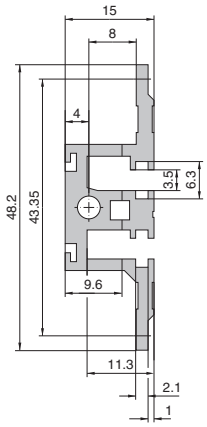
Rear horizontal rail, centre, with integral Z rail (D2)

When using 6 U PCBs or box type plug-in units. Integral Z rail for mounting connectors to IEC 60 603-2.

- 2 x 84 tapped holes M2.5
- M4 thread on end face
- Straight-through core hole

Material:
Extruded aluminium section

Surface finish:
Clear-chromated

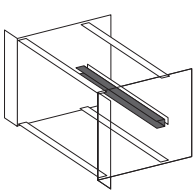


Usable width (HP)	Packs of	Model No. RP
42	1	**3687.600**
63	1	**3687.601**
84	1	**3687.602**

Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 576.





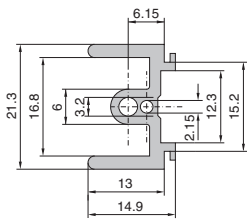
Rear adaptor rail, centre (E)

When subdividing 6 U into 2 x 3 U, the adaptor rail when fastened to the centre horizontal rail accommodates the guide rails.

- HP pitch patterns of holes for the precise installation of guide rails
- M4 and M2.5 thread on the end face
- Straight-through core hole
- Horizontal rail 192 HP without machining on the end faces. Suitable for cutting to length.

Material:
Extruded aluminium section

Surface finish:
Clear-chromated or anodised



Usable width (HP)	Packs of	Model No. RP
12	1	**3684.587**
16	1	**3684.588**
20	1	**3684.589**
40	1	**3684.964**
42	1	**3684.590**
63	1	**3686.005**
84	1	**3684.591**
84	1	**3685.272**[1)]
192	1	**3688.004**[2)]

[1)] Including 2 assembly screws
[2)] Anodised

Also required:

Assembly screws M4 x 12,
packs of 100, Model No. RP 3654.300,
see page 576.

Horizontal rails

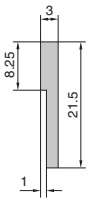


Z rail for connector IEC 60 603-2 (F)

With 84 x M2.5 thread.

Material:
Extruded aluminium section

Surface finish:
Clear-chromated



Usable width (HP)	Packs of	Model No. RP
4	1	**3684.597**
8	1	**3684.598**
20	1	**3684.599**
40	1	**3684.965**
42	1	**3684.600**
63	1	**3684.601**
84	1	**3684.602**
84	2	**3685.271**

Also required:

Assembly screws M2.5 x 6,
packs of 100, Model No. RP 3654.340,
see page 576.



Threaded insert (I)

With M2.5 threaded holes on an HP pitch pattern. To slide into the horizontal rail, type A, B, B1, C3, C5, D2 and for the rear horizontal rail, reinforced version, type C2.

Material:
Sheet steel, zinc-plated

Usable Width (HP)	Packs of	Model No. RP for horizontal rails	
		Front Type A, B, B1, C3, C4, C5, D2	Rear Type C2 Reinforced version
4	1	**3684.603**	**–**
8	1	**3684.604**	**–**
12	1	**3684.605**	**–**
16	1	**3684.606**	**–**
20	1	**3684.607**	**–**
21	1	**3686.149**	**–**
40	1	**3684.966**	**–**
42	1	**3684.608**	**3687.616**
63	1	**3684.609**	**3687.617**
84	1	**3684.610**	**–**
84	2	**–**	**3604.830**



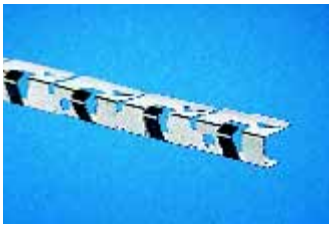
Identification strip (J)

To identify the slots on the subrack, self-adhesive. The following versions are available.

4 mm wide:
- for horizontal rails
- for rear horizontal rails

2 mm wide:
- for front horizontal rails (channel on front face)

for horizontal rail	Width mm	Label	Packs of	Model No. RP
Front	4	1 ... 84	1	**3687.575**
Front	4	1 ... 168	1	**3687.577**
rear	4	84 ... 1	1	**3687.574**
Front	2	1 ... 84	1	**3687.576**



EMC gaskets, horizontal (K)

see page 507.

Horizontal rails



Conductive strip (H)

For conductive mounting of backplanes.

- 84 HP
- Slides onto the rear horizontal rail

Material:
Aluminium, clear-chromated



Usable width (HP)	Packs of	Model No. RP
84	1	**3684.612**
84	2	**3685.273**



Insulating strip (G)

For insulated mounting of backplanes.

- 21 HP
- Slides onto the rear horizontal rail

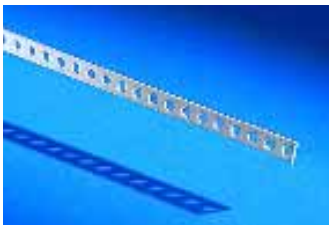
Material:
Plastic, self-extinguishing to UL 94-V0

Usable width (HP)	Packs of	Model No. RP
21	1	**3684.611**
21	8	**3685.274**



Rear horizontal rail, centre, fitted with insulating strips (top) and conductive strips (bottom).





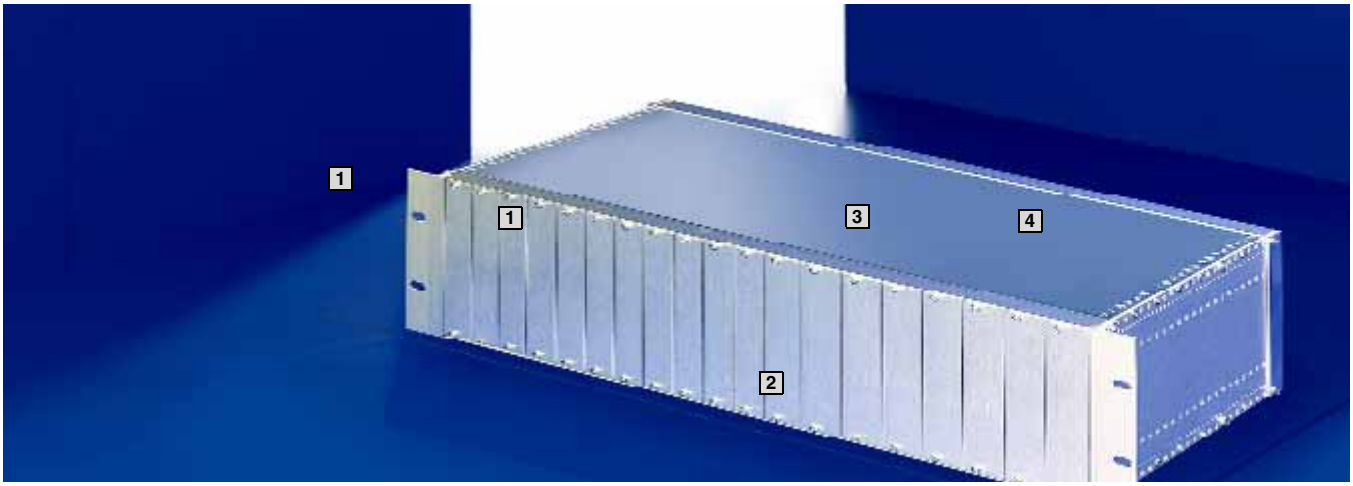
Punched strip

Material:
Aluminium, clear-chromated



Usable width (HP)	Packs of	Model No. RP
84	2	**3685.275**

Components for EMC installation

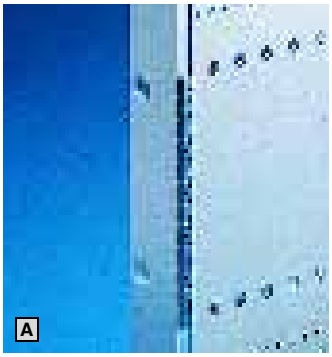


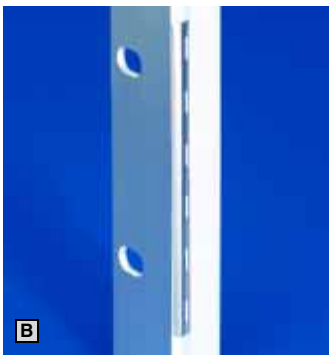
EMC (electromagnetic compatibility), refers to the ability of an electrical device to function satisfactorily in its electromagnetic environment without influencing or being influenced by this environment more than is admissible.

These requirements were taken into account when developing the Rittal subracks. They are made entirely from metal and coated with a conductive surface finish.

Stainless steel EMC gaskets ensure conductive connection of the seperate parts.

1 EMC gaskets, vertical
2 EMC gaskets, horizontal
3 EMC gaskets for covers
4 Mounting blocks





EMC gaskets, vertical

To ensure EMC protection between the subrack side panel and the front/rear panels. There are two versions available.

Suitable for mounting on:
- 482.6 mm (19″) flanges for subracks
- Corner trims, rear
- EMC contact strip
- U-shaped front panels
- Trim panels for Ripac Vario-Module
- Flanges for Ripac Vario-Module

Material:
Stainless steel

German patent
No. 101 15 252 and
No. 198 46 627
US patent no. 6,500,012

EMC

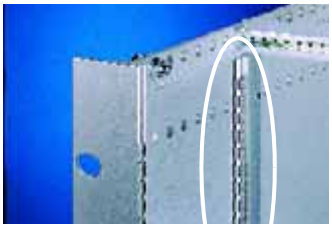
A Version 1: Segmented

U	Model No. RP Packs of 1	Model No. RP Packs of 10
1	**3686.973**	**3684.236**
2	**3686.974**	**3684.237**
3	**3686.975**	**3684.238**
4	**3686.976**	**3684.239**
6	**3686.977**	**3684.240**
7	**3686.978**	**3684.241**
9	**3686.979**	**3684.242**
10	**3686.980**	**3684.243**
11	**3686.981**	**3684.244**

B Version 2: One-piece

U	Model No. RP Packs of 1
2	**3688.610**
3	**3688.611**
4	**3688.612**
5	**3688.613**
6	**3688.614**
7	**3688.615**
8	**3688.634**
9	**3688.616**
10	**3688.609**
11	**3688.633**
12	**3688.606**

Components for EMC installation

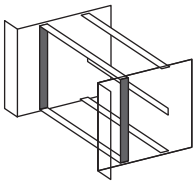


EMC contact strip

To ensure EMC protection horizontal rails are set-back.
Integral channel to accommodate EMC gaskets.

Material:
Extruded aluminium section, clear-chromated

Note:
2 sections are required for each subrack.



EMC

U	Packs of	Model No. RP
3	1	**3684.643**
6	1	**3684.644**
9	1	**3684.645**

Also required:

EMC gaskets, vertical, see page 506.
Assembly screws M3 x 6, packs of 100, Model No. RP 3684.233, see page 576.





EMC gaskets, horizontal (K)

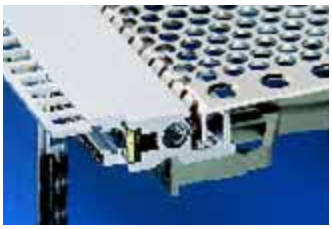
For horizontal EMC protection. For snap-fastening onto the front horizontal rails.

Material:
Stainless steel

European patent no. 0 937 375 with validity for DE
US patent no. 6,137,052
Chinese Patent No. ZL 97 1 98582.0

EMC

Usable width (HP)	Packs of	Model No. RP
For top/bottom horizontal rail		
40	1	**3684.974**
84	1	**3684.808**
84	10	**3684.246**
For subdivision of 6 U into 2 x 3 U, between 2 horizontal rails		
84	1	**3685.789**
84	10	**3685.229**



EMC gaskets

for covers
For EMC shielding between the horizontal rails and covers.

Material:
Stainless steel

EMC

HP	Packs of	Model No. RP
84	10	**3684.245**

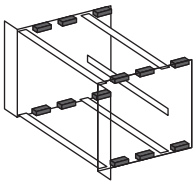


Mounting blocks

For mounting covers, versions 1 – 4, on the subrack side panel.

Material:
Die-cast zinc, nickel-plated

Note:
For EMC applications, mounting blocks must be fitted across the entire subrack depth. The table here shows the number of mounting blocks required to install 1 cover with EMC shielding.



EMC

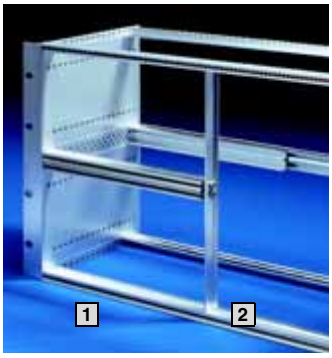
	Packs of	Model No. RP
Mounting blocks 28.5 mm long	10	**3684.234**

Also required:

Assembly screws M3 x 6, packs of 100, Model No. RP 3684.233, see page 576.

Number of mounting blocks for max. EMC protection	Cover plate depth mm
4	142
8	192
10	212
12	252
14	272
16	312
18	332
20	372
24	432
28	492
32	552

Mounting kits



Vertical divider kit

For the combined installation of single and double Euroboards in 6 U and 9 U subracks.

Material:
Aluminium, clear-chromated

Supply includes:
2 horizontal rails, front,
1 adaptor rail,
2 threaded inserts,
1 vertical support (from 12 HP),
assembly parts.

Accessories:

Front panel, see page 508.
EMC gaskets, horizontal, see page 507.

6 U (2 x 3 U)

HP 2 (6 U)	HP 1 (2 x 3 U)	Model No. RP
68	14	**3684.220**
61	21	**3684.221**
54	28	**3684.222**
42	40	**3684.223**
40	42	**3684.224**

9 U (1 x 6 U + 1 x 3 U)

HP (9 U)	HP (1 x 6 + 1 x 3 U)	Model No. RP
80	4	**3684.225**
76	8	**3684.226**
70	12	**3684.227**
66	16	**3684.228**
62	20	**3684.229**



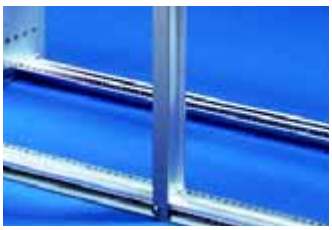
Vertical support

Required for the combined installation of single, double and triple Euroboards in one subrack.

Material:
Aluminium, extruded

Surface finish:
Clear-chromated

U	Packs of	Model No. RP
6	1	**3684.678**
9	1	**3684.679**



Front panel

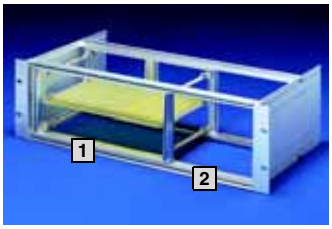
To conceal the vertical support of the vertical divider kit.

Material:
Aluminium, anodised

Supply includes:
Mounting parts.

U	HP	Packs of	Model No. RP
6	2	1	**3685.176**
9	2	1	**3685.286**

EMC version,
see page 538.



Horizontal divider kit

For the horizontal installation of 6 U/9 U PCBs in 3 U/4 U subracks.

1 Horizontal installation space:
3 U subrack: 20 HP (5 slots)
4 U subrack: 28 HP (7 slots)

2 Vertical installation space:
(with installation of double Euroboards)
31 HP (without trim frame)
28 HP (with trim frame)

Material:
Aluminium, clear-chromated

Supply includes:
2 horizontal rails, front,
2 horizontal rails, rear,
1 or 2 rear horizontal rails, centre
2 threaded inserts,
4 or 6 insulating strips,
4 connection parts,
assembly parts.

For backplane mounting
with standard horizontal rail, front

U horizontal	Model No. RP	
	for 3 U subrack	for 4 U subrack
6	**3684.206**	**3684.208**
9	**3684.207**	**3684.209**

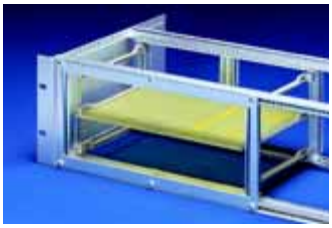
For backplane mounting,
front horizontal rail with 10 mm extension

U horizontal	Model No. RP	
	for 3 U subrack	for 4 U subrack
6	**3684.210**	**3684.212**
9	**3684.211**	**3684.213**

Accessories:

Trim frame,
see page 509.

Mounting kits/guide rails



Trim frame

for horizontal mounting kit
To conceal the front sections of the horizontal mounting kit.

Material:
Aluminium, anodised

U horizontal	HP	Model No. RP	
		for 3 U subrack	for 4 U subrack
6	56	**3685.783**	**3685.785**
9	84	**3685.784**	**3685.786**

Also required:
Collar screws and plastic collars,
packs of 100 sets, Model No. RP 3658.160,
see page 576.



Trim frame, vented

for horizontal mounting kit
To conceal the front sections of the horizontal mounting kit.

Material:
Aluminium

Surface finish:
Anodised,
clear-chromated (EMC version)

Supply includes:
EMC accessories
(for EMC version).

EMC

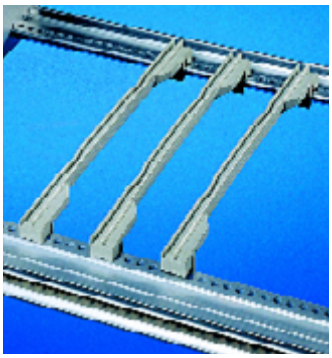
U horizontal	HP	Model No. RP	
		for 3 U subrack	for 4 U subrack
6	63	**3685.787**	**3685.788**

Also required:
Collar screws and plastic collars,
packs of 100 sets, Model No. RP 3658.160,
see page 576.

EMC version

U horizontal	HP	Model No. RP	
		for 3 U subrack	for 4 U subrack
6	63	**3685.291**	**3685.292**

Also required:
Centering screws,
packs of 100, Model No. RP 3687.050,
see page 577.



Plastic guide rails

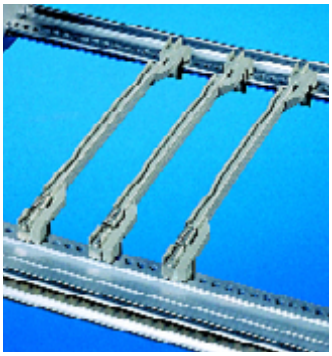
For 160, 220 and 280 mm PCBs up to 2 mm nominal thickness.

2 versions are available:
- Snap-in fastening and screw-fastening
- Snap-in fastening

Material:
Polycarbonate, base material to UL 94-V0

PCB depth mm	Packs of	Model No. RP	
		Snap-in fastening/ screw-fastening[1)]	Snap-in fastening
160	1	**3684.657**	**3684.654**
220	1	**3684.658**	**3684.655**
280	1	**3684.659**	**3684.656**

Also required:
[1)] Assembly screws,
packs of 100, Model No. RP 3654.360,
see page 576.



Plastic guide rails

for contact spring fitting
For 160, 220 and 280 mm PCBs up to 2 mm nominal thickness. By installing contact springs, an electrical connection can be made between the PCB and the assembly.

Material:
Polycarbonate, base material to UL 94-V0

PCB depth mm	Packs of	Model No. RP
160	1	**3684.660**
220	1	**3684.661**
280	1	**3684.662**

Accessories:
Contact springs,
see page 510.

Guide rails



Contact springs

For electrical connection between the PCB and the subrack, or to discharge static charges from the PCB.
Suitable for installation in “guide rails for contact spring fitting” and “end pieces for guide rails”.

Packs of	Model No. RP
10	**3687.726**



1



2

Guide rails, aluminium

For high loads. Suitable for nominal PCB thicknesses from 1.6 mm. A distinction is made between guide rails for and without end pieces. The guide rails without end pieces are screw-fastened directly into the horizontal rail.

Material:
Aluminium

PCB depth mm	Packs of	Model No. RP	
		1 Without end piece[1)]	2 For end pieces
160	1	**3687.526**	**3684.663**
220	1	**3687.527**	**3684.664**
280	1	**3687.528**	**3684.665**
1000	1	**3684.666**	–

Also required:

[1)] Screw M2.5 x 6, packs of 100,
Model No. RP 3654.340, see page 576.
[1)] Nut M2.5, packs of 100,
Model No. RP 3654.370, see page 576.
[1)] Retaining cage M2.5, packs of 100,
Model No. RP 9901.417, see page 576.



End pieces

for guide rails, aluminium
To discharge static charges, contact springs RP 3687.726 may be used.

Material:
Polycarbonate, base material UL 94-V1

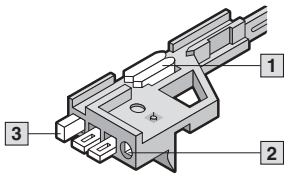
	Packs of	Model No. RP
End piece, front	1	**3684.668**
End piece, rear	1	**3685.759**

Accessories:

Contact springs,
see page 510.







Keyable guide rails, plastic

Guide rails 4 HP, keyable, to IEEE 1101.10.
- For 1.6 – 2.0 mm nominal thickness
- Chambers for the installation of keys
- Option of installing ESD contact to discharge static charges
- Narrow design for maximum air flow
- Various colour variants to identify the slots:
  – Red for system slot
  – Green for power supply
  – Yellow and grey for board-type plug-in units

1 ESD contact for PCB
2 ESD contact for front panel
3 Keys

Material:
Polycarbonate, base material to UL 94-V0

Note:
For coding use in conjunction with injector/extractor handles type IV, IVs, VII.

Accessories:

Keys, see page 514.
ESD contact, see page 513.
Extractor handles type IV, IVs, VII,
see page 528 – 530.

For PCB depth mm	Packs of	Model No. RP			
		Grey	Red	Green	Yellow
160	10	**3685.257**	–	–	–
220	10	**3685.258**	–	–	–
280	10	**3685.259**	–	–	–
160	1	**3684.669**	**3686.063**	**3688.055**	**3689.089**
220	1	**3684.953**	–	–	**3689.091**
280	1	**3684.954**	–	–	**3689.093**



Keyable guide rails

with $^1/_2$ HP offset

Guide rails with $^1/_2$ HP offset for use, in telecom applications. This allows PCBs to be populated on both sides. Green guide rails with offset are prescribed in the CompactPCI specification (PICMG 2.11) for the installation of power supply units.

- For 1.6 – 2.0 mm PCB thickness
- 4 HP x 160/220 mm
- Narrow design for maximum air flow
- Chambers for the installation of keys
- Option of installing ESD contact to discharge static charges

Material:
Polycarbonate, base material to UL 94-V0

Note:
For coding for use in conjunction with extractor handles type IV, IVs, VII with $^1/_2$ HP offset.

For PCB depth mm	Packs of	Colour	Model No. RP
160	1	Grey	**3686.137**
		Yellow	**3689.090**
		Green	**3687.832**
220	1	Grey	**3686.136**
		Yellow	**3689.092**
280	1	Grey	**3686.000**

Accessories:

Keys, see page 514.
ESD contact, see page 513.
Extractor handles type IVs, type VII, with $^1/_2$ HP offset, see page 529 – 530.



Keyable guide rails

for rear I/O assemblies

Guide rails 4 HP, keyable, to IEEE 1101.10. Prepared to accommodate a ground contact for assembly of a plug-type connection.

- For 1.6 – 2.0 mm nominal thickness
- For 80 mm deep PCBs
- Chambers for the installation of keys
- Option of installing ESD contact to discharge static charges
- Narrow design for maximum air flow
- For CPCI or VME applications

Material:
Polycarbonate, base material to UL 94-V0

Note:
For coding use in conjunction with type IV, IVs, VII injector/extractor handles.

Colour	For PCB depth mm	Packs of	Model No. RP	
			Guide rails	
			Top	Bottom
Grey	80	1	**3687.936**	**3687.937**
Yellow	80	1	**3689.097**	**3689.098**

Accessories:

Keys, see page 514.
ESD contact, see page 513.
Ground contact, see page 511.
Extractor handles type IV, IVs, VII, see page 528 – 530.





Ground contact

Ensures a plug-in ground connection. UL-approved.

Material:
Die-cast zinc

Supply includes:
Grounding bush, contact spring.

Note:
Only suitable for use in conjunction with keyable guide rails for rear I/O assemblies.

	Model No. RP	
	1 set	50 sets
Location bush and contact spring	**3689.036**	**3687.951**

Also required:

Assembly screws 3.5 x 12 mm, packs of 50, Model No. RP 3684.109, see page 576.

Guide rails



Keyable guide rails, aluminium, three-piece

Keyable guide rails with aluminium centre part, for high mechanical loads.
Suitable for 1.6 – 2.0 mm PCB thickness.

Guide rails comprise of the following individual components:

1 2 end pieces,
2 1 aluminium centre part,
3 Insulating centre part(s)



1 End pieces

for three-piece guide rails
For 1.6 – 2.0 mm PCB thickness.

Material:
Polycarbonate, base material to UL 94-V0

	Packs of	Model No. RP
	10 pairs	**3685.265**
Front end piece	1	**3685.790**
Rear end piece	1	**3684.670**

Note:
A front and a rear end piece is required for each guide rail.



2 Aluminium centre piece

for three-piece guide rails
For 1.6 – 2.0 mm PCB thickness.

Material:
Aluminium, unplated

For PCB depth mm	Model No. RP	
	Packs of 1	Packs of 10
220	**3684.673**	**3685.260**
280	**3684.674**	**3685.261**
340	**3684.675**	**3685.262**
400	**3684.676**	**3685.263**
1000	**3684.672**	–



3 Insulated centre part

for three-piece guide rails
The insulating centre part is pushed onto the aluminium centre piece.
Length: 60 mm.

Material:
Plastic, self-extinguishing to UL 94-V0

Packs of	Model No. RP
1	**3684.677**
10	**3685.264**

For PCB depth mm	Number of insulating strips required
160	1
220	2
280	3
340	4
400	5



Plastic guide rails

for box type plug-in units
For PCB depth 1.6 mm.
For insertion into covers with vent slots, see page 545.

Material:
Noryl

For PCB depth mm	Packs of	Model No. RP
160	10	**3606.140**
220	10	**3606.200**





Air block panel

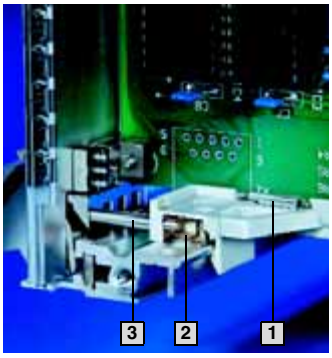
for unused slots
To conceal unused slots and prevent unwanted airflow. The air block panel simply snaps into position on the guide rails.

Material:
Polycarbonate, self-extinguishing UL 94-V0

Colour:
Blue

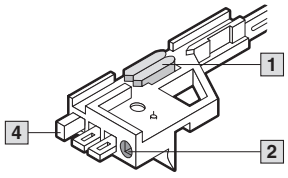
Note:
Not suitable for use in conjunction with guide rails with $^1/_2$ HP offset.

for guide rail	Packs of	Model No. RP
160 mm	1	**3687.924**









ESD contacts

for installation in keyable guide rails.
To discharge static charges.

1 **ESD contact for plug-in board**
For permanent, direct discharge from the PCB.

2 **ESD clip for front panel**
To discharge static charges in conjunction with the ESD pin. For insertion into the end piece of the guide rail.

3 **ESD pin**

4 **Keys**

Material:

1 Stainless steel

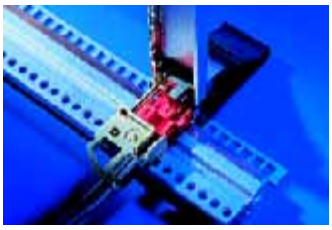
2 Tin bronze

ESD contact for	Packs of	Model No. RP
PCB	50	**3684.204**
Font panel	50	**3684.205**

Note:
Only for use in conjunction with extractor handle with ESD pin (type IV, IVs, VII),
see page 528 – 530.

Keying/card ejectors





Keys

Keys are used for coding of board-type plug-in units and prevent their use of assemblies in incorrect slots. The keys are inserted into the chambers of the keyable guide rails and of injector/extractor handles, types IV, IVs and VII (4 positions are possible). This produces 64 keying combinations per guide rail. When keying the top and bottom guide rail, 4096 potential combinations are possible.

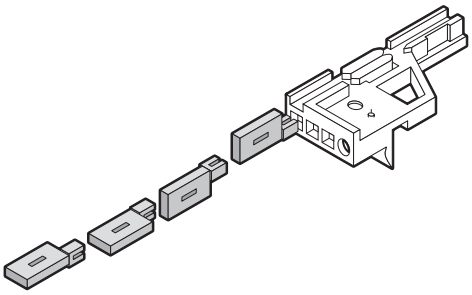
Standards:
IEEE 1101.10, IEC 602 97-5-104

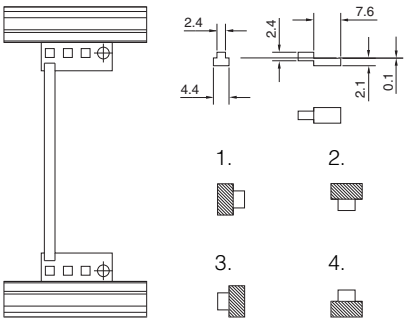
Material:
Plastic, PBTP, basic material to UL 94-V0

Colour	Packs of	Model No. RP
Grey	100	**3684.325**
Red	100	**3684.326**

Accessories:

Keying tool,
see page 514.





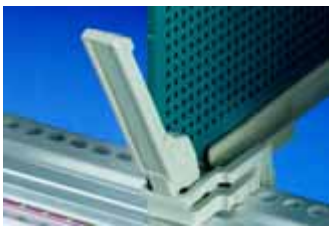


Coding tool

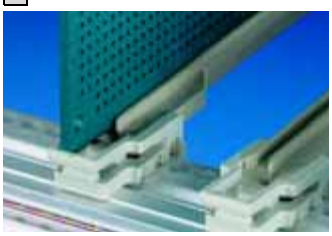
For simple assembly of coding keys. Up to 3 keys may be fitted at the same time. An integral alignment pin makes positioning easier.

Material:
Polycarbonate, base material to UL 94-V0

Packs of	Model No. RP
1	**3687.956**



1



2

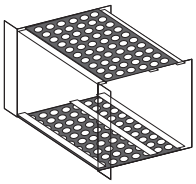
PCB ejector/retainer

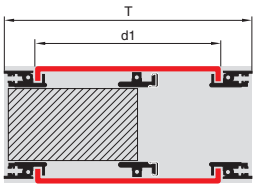
The two-piece board ejector is used for securing and extracting PCBs without front panels. The base section may also be used separately for board retention only.

Material:
Polycarbonate, base material to UL 94-V0

	Packs of	Model No. RP
1 PCB ejector/retainer	10	**3687.014**
2 PCB retainer	10	**3687.052**







Covers version 1

For all Ripac Vario, Ripac Vario EMC, Ripac Compact and Ripac Vario Mobil subracks.
To cover the overall subrack depth.
(EMC application) or for connector protection.

- Flat design for top and bottom
- Optionally solid or perforated
- For mounting on the subrack side panel with the aid of mounting blocks.

Material:
1.0 mm aluminium, untreated, hole diameter 4 mm in vented version.

Set includes:
2 covers,
8 mounting blocks 28.5 mm long,
24 assembly screws

Single piece supply includes:
1 cover

Note:
For EMC applications, additional mounting blocks must be fitted across the entire subrack depth.

HP	For side panel depth D (T) mm	Cover depth d1 mm	Model No. RP			
			Single piece[1)]		Set	
			Perforated	Solid	Perforated	Solid
21	225	192	**3687.618**	**3687.620**	–	–
21	285	252	**3687.619**	**3687.621**	–	–
42	175	142	**3684.957**	**3687.626**	–	–
42	225	192	**3687.623**	**3687.627**	–	–
42	245	212	**3684.958**	**3687.628**	–	–
42	285	252	**3685.642**	**3687.629**	–	–
84	175	142	**3684.681**	**3684.680**	**3685.245**	**3685.250**
84	225	192	**3684.694**	**3684.683**	–	–
84	235	202	**3685.851**	**3685.813**	–	–
84	245	212	**3684.695**	**3684.684**	**3685.246**	**3685.251**
84	285	252	**3684.696**	**3684.685**	–	–
84	295	262	**3685.855**	**3685.814**	–	–
84	305	272	**3685.852**	**3684.686**	**3685.247**	**3685.252**
84	345	312	**3684.698**	**3684.687**	–	–
84	365	332	**3685.853**	**3684.688**	**3685.248**	**3685.253**
84	405	372	**3684.700**	**3684.689**	**3685.249**	**3685.254**
84	465	432	**3684.701**	**3684.691**	–	–
84	525	492	**3684.702**	**3684.692**	–	–
84	585	552	**3684.703**	**3684.693**	–	–

Also required:

[1)] Mounting blocks,
see page 507.
[1)] EMC gaskets for covers,
see page 507.
[1)] Assembly screws,
packs of 100, Model No. RP 3684.233,
see page 576.

Covers



Covers version 2

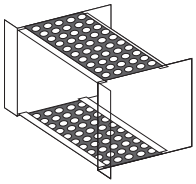
For all Ripac Vario, Ripac Vario EMC, Ripac Compact and Ripac Vario Mobil subracks.
To cover the PCB depth.

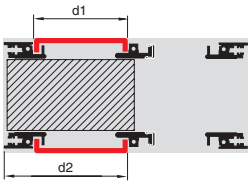
- Flat design for top and bottom
- Optionally solid or perforated
- For mounting on the subrack side panel with the aid of mounting blocks.

Material:
1.0 mm aluminium, untreated, hole diameter 4 mm with vented version.

Set includes:
2 covers,
8 mounting blocks à 28.5 mm,
24 assembly screws

Single piece supply includes:
1 cover

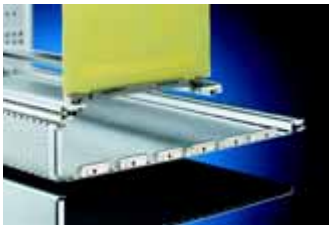




HP	For PCB depth d2 mm	Cover depth d1 mm	Model No. RP			
			Single piece[1]		Set	
			Perforated	Solid	Perforated	Solid
21	160	142	**3687.630**	**3687.634**	–	–
21	220	202	**3687.631**	**3687.635**	–	–
42	160	142	**3684.957**	**3687.626**	–	–
42	220	202	**3687.633**	**3687.637**	–	–
42	280	262	**3687.638**	**3687.639**	–	–
84	160	142	**3684.681**	**3684.680**	**3685.245**	**3685.250**
84	220	202	**3685.851**	**3685.813**	–	–
84	280	262	**3685.855**	**3685.814**	–	–
84	340	322	**3685.856**	–	–	–
84	400	382	**3685.857**	–	–	–

Also required:

[1] Mounting blocks,
see page 507.
[1] Assembly screws,
packs of 100, Model No. RP 3684.233,
see page 576.



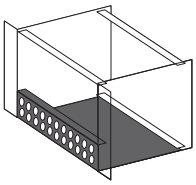
Covers version 3

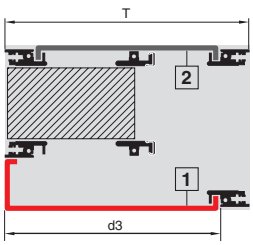
For all Ripac Vario, Ripac Vario EMC and Ripac Vario Mobil subracks.
To cover the overall subrack depth.
(EMC application).

- Cover with 1 U edge fold (item 1), to conceal the 1 U area in the subrack
- In addition, a flat cover version 1 (item 2) is required.
- Optionally perforated or solid on the front
- Suitable for subracks 4 U (3 + 1), 7 U (6 + 1)
- For mounting on the subrack side panel with the aid of mounting blocks.

Material:
1.0 mm aluminium, untreated, hole diameter 4 mm in vented version.

Note:
For EMC applications, mounting blocks must be fitted across the entire subrack depth.

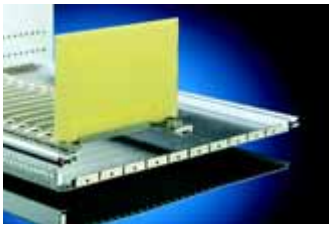


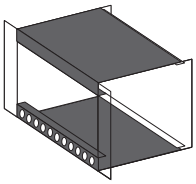


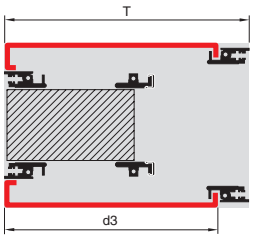
HP	For side panel depth D (T) mm	Cover depth d3 mm	Model No. RP	
			Perforated	Solid
84	285	270	**3684.720**	**3684.714**
84	345	330	**3684.721**	**3684.715**
84	405	390	**3684.722**	**3684.716**
84	465	450	**3684.723**	**3684.717**
84	525	510	**3684.724**	**3684.718**
84	585	570	**3684.725**	**3684.719**

Also required:

Mounting blocks, see page 507.
EMC gaskets for covers, see page 507.
Assembly screws,
packs of 100, Model No. RP 3684.233,
see page 576.
Cover, version 1, see page 515.







Covers version 4

For all Ripac Vario, Ripac Vario EMC and Ripac Vario Mobil subracks.
To cover the overall subrack depth.
(EMC application).

- Cover top/bottom with $^1/_2$ U edge fold to cover the $^1/_2$ U section in the subrack.
- Optionally perforated or solid on the front.
- Suitable for subracks 4 U (3 + 2 x $^1/_2$), 7 U (6 + 2 x $^1/_2$).
- For mounting on the subrack side panel with the aid of mounting blocks.

Material:
1.0 mm aluminium, untreated, hole diameter 4 mm in vented version.

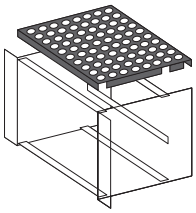
Note:
For EMC applications, mounting blocks must be fitted across the entire subrack depth.

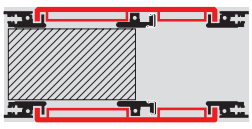
HP	For side panel depth D (T) mm	Cover depth d3 mm	Model No. RP	
			Perforated	Solid
84	285	270	**3684.732**	**3684.726**
84	345	330	**3684.733**	**3684.727**
84	405	390	**3684.734**	**3684.728**
84	465	450	**3684.735**	**3684.729**
84	525	510	**3684.736**	**3684.730**
84	585	570	**3684.737**	**3684.731**

Also required:

Mounting blocks,
see page 507.
EMC gaskets for coves,
see page 507.
Assembly screws,
packs of 100, Model No. RP 3684.233,
see page 576.







Covers version 5

(snap fastening)
For all Ripac Vario, Ripac Vario EMC and Ripac Vario Mobil subracks.
To cover the overall subrack depth or PCB depth.

Simple assembly:
- Side edge fold with half shears facilitates fast assembly (without mounting blocks) by simply snap-fastening.
- Side notches for fitting horizontal rails in 160, 220 or 280 mm depth.
- Optionally solid or perforated.

Material:
1.0 mm aluminium, untreated, hole diameter 4 mm in vented version.

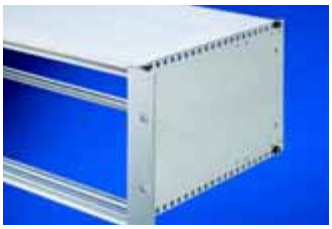
Supply includes:
2 gaskets

EMC

HP	Position Side notches for horizontal rails mm	For side panel depth mm	Model No. RP	
			Perforated	Solid
21	160	175/185	**3687.624**	–
21	160/220	235	**3687.692**	–
42	160	175/185	**3687.625**	–
42	160/220	235	**3687.677**	–
42	160	245	**3687.640**	–
84	160	175/185	**3687.641**	**3687.647**
84	160	245	**3687.642**	**3687.648**
84	160/220	235	**3687.643**	**3687.649**
84	160/220	285	**3687.644**	**3687.650**
84	160/220	305	**3687.645**	**3687.651**
84	160/220/280	345	**3687.646**	**3687.652**

Covers





Covers

For Ripac Eco subracks
To cover the overall subrack depth.

- Optionally perforated or solid.
- The plates slide into the horizontal rails.
- Mounting clips may optionally be used for additional support.

Material:
Sheet steel, zinc-plated, passivated

HP	For side panel depth mm	Model No. RP	
		Perforated	Solid
84	175	**3688.105**	**3688.107**
84	235	**3688.106**	**3688.108**

Accessories:

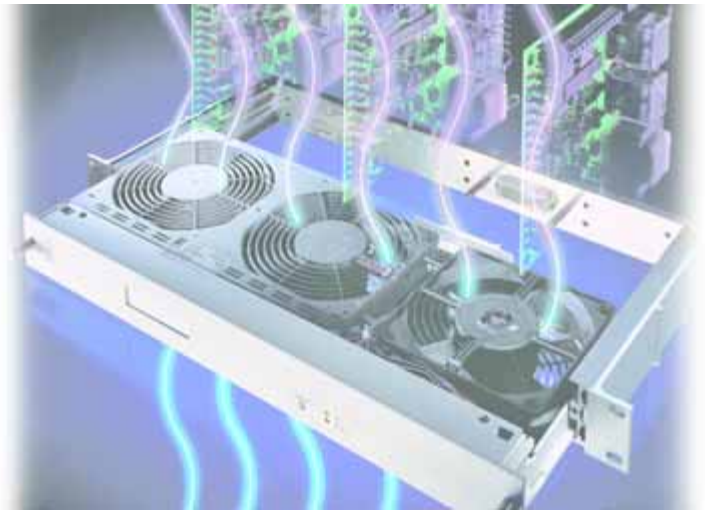
Mounting clips

Packs of	Model No. RP
1	**3688.109**

Assembly screws for mounting clips

Packs of	Model No. RP
1	**9902.188**

Features

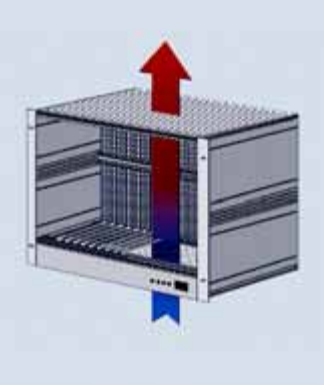


Heat shortens the service life of equipment leading to failure, and also diminishes the electronic high performance.

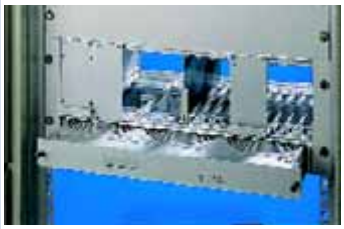
The problem lies in high heat losses and compact installation spaces. For this reason, effective heat dissipation is vital to ensure long service life and operational reliability.

As well as the components shown below, Rittal system climate control also offers a range of other 482.6 mm (19″) cooling systems and rack-mounted fans.

System climate control, see from page 578.



Vertical cooling



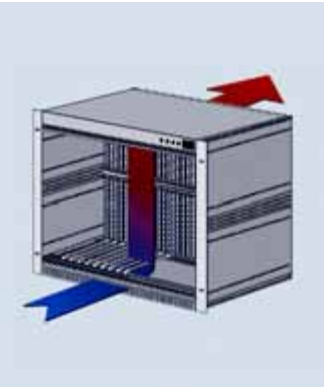
Rack-mounted fans are installed below the subrack in the enclosure. This ensures permanent air circulation to prevent the formation of hot spots.



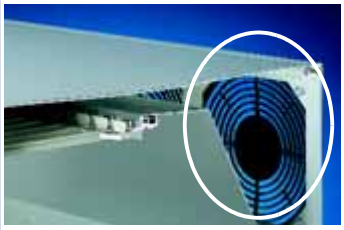
Fans are installed directly in the subrack, below or above the PCBs, with the aid of fan mounting plates, thereby preventing heat accumulation.



AC and DC fans in various output categories, can be retrofitted.



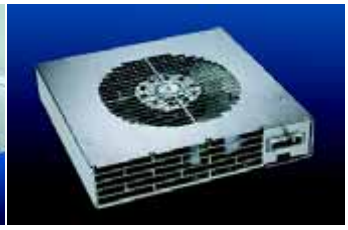
Diagonal cooling



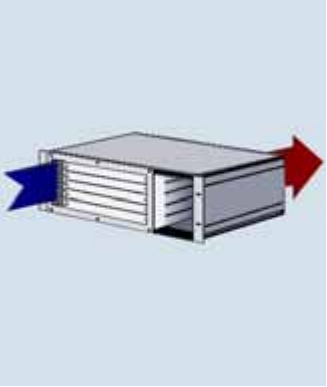
The air baffle plate in combination with . . .

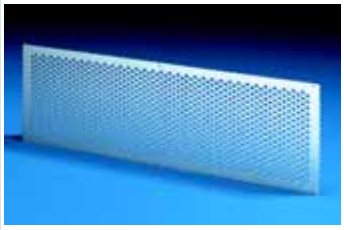


. . . the air block panel ensures targeted air routing inside the subrack.



RiCool high-capacity fan for heat losses of 700 W or more.

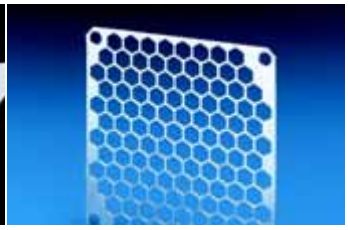




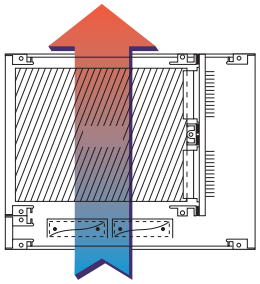
Front and rear panels for ventilation – also available in an EMC version.



Rear panels with cutouts for the installation of 80 or 120 mm fans.



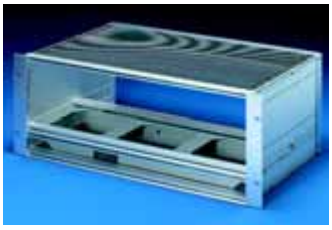
A finger guard or EMC shielding plate may be used to cover the fan cutouts.

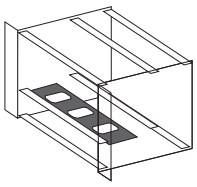


Vertical cooling from bottom to top

- Air flow via normal convection or forced cooling devices in the enclosure or housing outside of the subrack.
- Vertical forced air flow, supported by fans installed at the bottom of the subrack (1 U). For the cooling of enclosures and housings, rack-mounted fans, see page 645 and rack-mounted cooling units, see page 644, are available.







Fan mounting plate

For installing 120 mm fans in 4 U and 7 U subracks.
For mounting on the subrack side panels.

Material:
1.5 mm Aluminium, anodised

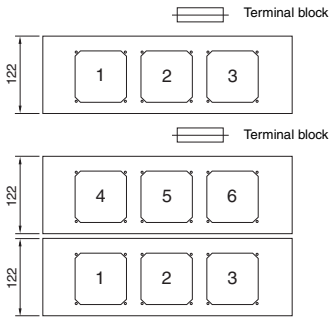
Supply includes:
1 fan mounting plate

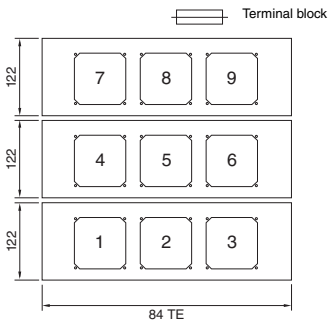
U	For PCB depth	No. of fan mounting plates required	HP	Model No. RP
1	160 mm	1	84	**3684.317**
	220 mm	1		
	280 mm	2		
	340 mm	2		
	400 mm	3		

Also required:

1 terminal block is required for each subrack.

Packs of	Model No. RP
1	**3686.805**





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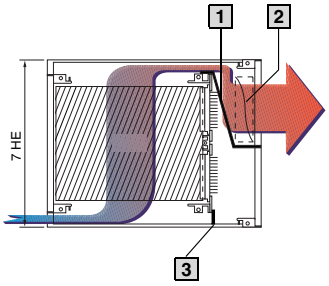
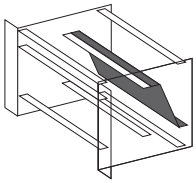


Diagonal cooling from front to back

Diagonal air flow from front to back allows individual cooling of PCBs in vertical installation position. An air baffle and air partition ensure controlled air flow.

1 Air baffle, see page 521.
2 Fan (mounted on the rear panel), see page 523.
3 Air partition, see page 521.





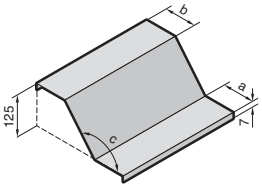
Air baffle

For controlled air flow in 7 U subracks. For mounting on subrack side panels with the aid of mounting blocks.

Material:
1 mm aluminium

Surface finish:
Anodised

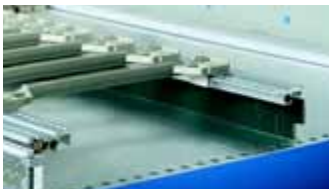
Supply includes:
Assembly parts.

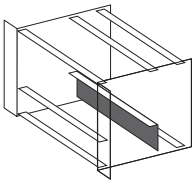


Subrack depth mm	a mm	b mm	c degrees	Model No. RP
285	71	56	90	**3685.302**
345	48	67	120	**3685.303**
405	108	67	120	**3684.320**
465	168	67	120	**3684.321**
525	228	67	120	**3684.322**

Also required:

Mounting blocks,
see page 507.

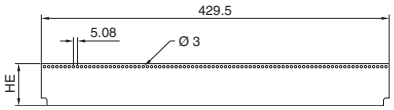




Air partition

For controlled air flow in the subrack. The partitions are mounted on the horizontal rails together with the backplanes.

Material:
Epoxy

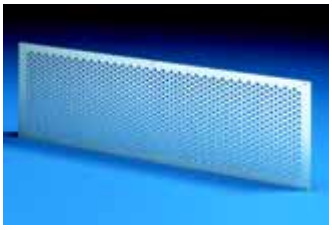


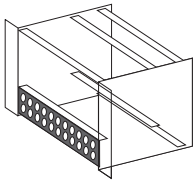
HE = U

U	Model No. RP
1/2	**3684.870**
1	**3684.871**
3	**3684.872**

Also required:

Fastening screws and washers,
packs of 100 sets, Model No. RP 3684.019,
see page 576.

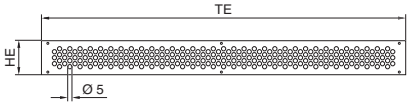




Front/rear panels for ventilation

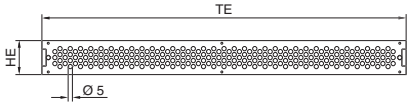
Material:
2.5 mm aluminium

Surface finish:
Anodised,
passivated (EMC version)



Scope of supply of the EMC version:
1 front panel
1 contact strip
1 gasket strip
1 vertical EMC gasket
assembly parts.

EMC



HE = U
TE = HP

U	HP	Packs of	Model No. RP
1	84	1	**3684.812**
2	84	1	**3684.813**
3	84	1	**3684.814**

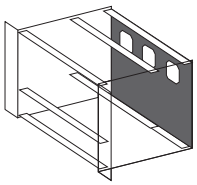
Also required:

Captive screw,
packs of 100 sets, Model No. RP 3685.097,
see page 577.

EMC version:

U	HP	Packs of	Model No. RP
1	84	1	**3684.281**
2	84	1	**3684.282**
3	84	1	**3684.283**





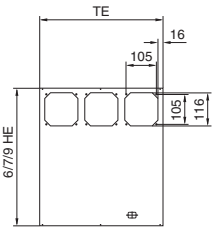
Rear panels for fan installation

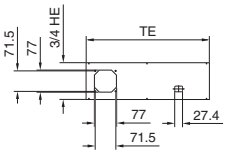
Material:
2.5 mm aluminium

Surface finish:
Anodised,
clear-chromated (EMC version)

Scope of supply of the EMC version:
1 rear panel
1 contact strip
1 gasket strip
1 vertical EMC gasket
assembly parts.

EMC





HE = U
TE = HP

U	HP	for fans	Packs of	Model No. RP
3	85	80 mm	1	**3684.839**
4	85	80 mm	1	**3684.840**
6	85	120 mm	1	**3684.841**
7	85	120 mm	1	**3684.842**
9	85	120 mm	1	**3684.843**

Also required:

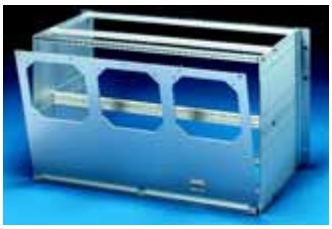
Captive screw,
packs of 100 sets, Model No. RP 3685.097,
see page 577.

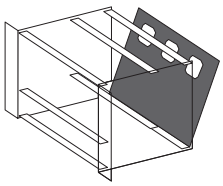
EMC version:

U	HP	for fans	Packs of	Model No. RP
3	84	80 mm	1	**3684.284**
4	84	80 mm	1	**3684.285**
6	84	120 mm	1	**3684.286**
7	84	120 mm	1	**3684.287**
9	84	120 mm	1	**3684.288**

Accessories:

Fan, see page 523.





Rear plates, horizontally hinged for fan installation

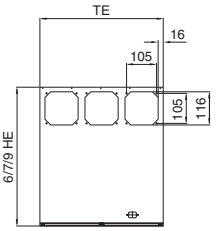
Material:
2.5 mm aluminium

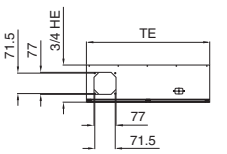
Surface finish:
Anodised,
clear-chromated (EMC version)

Supply includes:
1 rear panel
1 set of hinges,
incl. assembly parts.

EMC version supply includes:
1 rear panel
1 contact strip
1 gasket strip
1 vertical EMC gasket
1 set of hinges,
incl. assembly parts.

EMC





HE = U
TE = HP

U	HP	for fans	Packs of	Model No. RP
3	85	80 mm	1	**3684.304**
4	85	80 mm	1	**3684.305**
6	85	120 mm	1	**3684.306**
7	85	120 mm	1	**3684.307**
9	85	120 mm	1	**3684.308**

Also required:

Captive screw,
packs of 100 sets, Model No. RP 3685.097,
see page 577.

EMC version:

U	HP	for fans	Packs of	Model No. RP
3	84	80 mm	1	**3684.311**
4	84	80 mm	1	**3684.312**
6	84	120 mm	1	**3684.313**
7	84	120 mm	1	**3684.314**
9	84	120 mm	1	**3684.315**

Accessories:

Fan, see page 523.



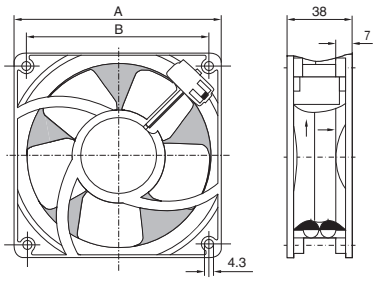
AC fans

For subracks and microcomputer systems.

Supply includes:
1 fan without connection cable.

Also required:

Assembly screws,
packs of 1 set, Model No. RP 3685.197,
see page 577.



AC fans

Dimensions			Bearing	Rated voltage V/Hz	Power watts	Noise level dB (A)	Temperature range °C	Volume flow m^3/h	**Model No. RP**
Fan mm	A mm	B mm							
80	79.5	71.5	Ball bearing	115/60	11.0	42	–40 to +95	57	**3686.645**
80	79.5	71.5	Ball bearing	230/50	12.0	37	–40 to +90	48	**3686.646**
120	119.0	105.0	Ball bearing	115/60	18.0	51	–40 to +90	180	**3686.643**
120	119.0	105.0	Ball bearing	230/50	19.0	47	–40 to +85	160	**3686.644**

Connection cable

Cable length mm	Packs of	**Model No. RP**
610	1	**3686.658**
1000	1	**3686.659**



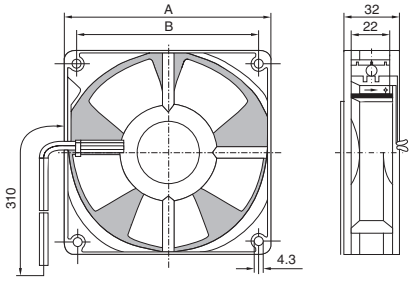
DC fans

Optionally available with temperature-dependent speed control via additional temperature sensor.

Supply includes:
1 fan with connection cable (310 mm).

Also required:

Assembly screws,
packs of 1 set, Model No. RP 3685.197,
see page 577.
Temperature sensor for DC fans with speed control, see page 524.



DC fan with speed control and alarm signal

Dimensions			Bearing	Rated voltage V (DC)	Voltage range Volt	Power watts	Noise level dB (A)	Temperature range °C	Temperature max. °C	Volume flow m^3/h	**Model No. RP**
Fan mm	A mm	B mm									
80	79.5	71.5	Ball bearing	12	8.0 – 14.0	2.2	34	–20 to +65	65	48	**3686.649**
80	79.5	71.5	Ball bearing	24	21.6 – 26.4	2.4	36	–20 to +65	65	54	**3686.650**
120	119.0	104.8	Ball bearing	12	8.0 – 12.6	5.4	45	–20 to +65	65	170	**3686.647**
120	119.0	104.8	Ball bearing	24	21.0 – 27.0	5.4	45	–20 to +65	65	170	**3686.648**

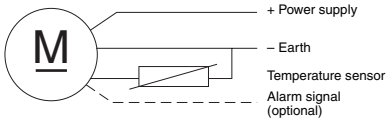
DC fan without speed control and, without alarm signal

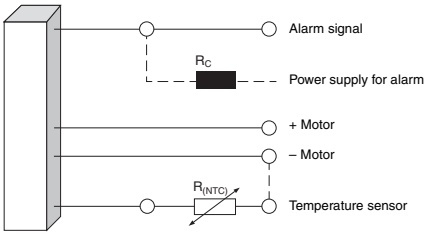
Dimensions			Bearing	Rated voltage V (DC)	Voltage range Volt	Power watts	Noise level dB (A)	Temperature range °C	Temperature max. °C	Volume flow m^3/h	**Model No. RP**
Fan mm	A mm	B mm									
80	79.5	71.5	Ball bearing	12	6.0 – 15.0	1.8	34	–20 to +75	75	48	**3687.612**
80	79.5	71.5	Ball bearing	24	12.0 – 28.0	2.1	34	–20 to +75	75	48	**3687.613**
120	119.0	104.8	Ball bearing	12	6.0 – 15.0	2.6	39	–20 to +75	75	140	**3687.614**
120	119.0	104.8	Ball bearing	24	12.0 – 28.0	2.6	39	–20 to +75	75	140	**3687.615**

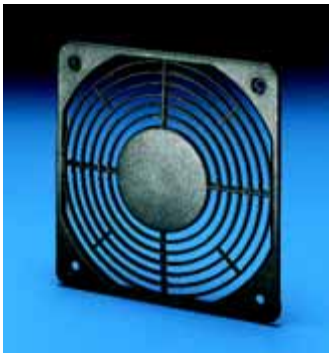
Temperature sensor

For DC fans 12/24 V with speed control.

Voltage	Packs of	Model No. RP
12 V/24 V (DC)	1	**3686.657**







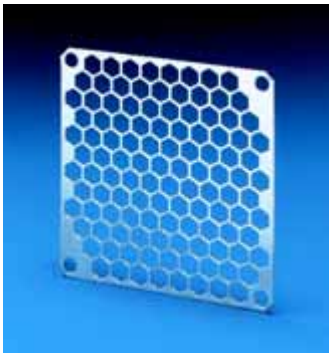
Finger guard

For AC fans and DC fans

Material:
Polyamide, self-extinguishing to UL 94-V0

Colour:
Black

For fans	Packs of	Model No. RP
80 mm	1	**3686.656**
120 mm	1	**3686.655**

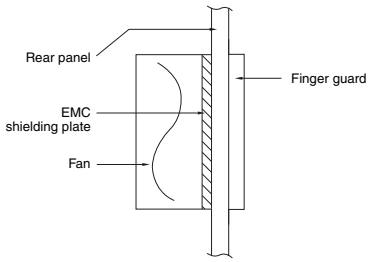


EMC shielding plate

For AC fans and DC fans

Material:
1 mm aluminium, clear-chromated

For fans	Packs of	Model No. RP
80 mm	1	**3686.359**
120 mm	1	**3686.329**

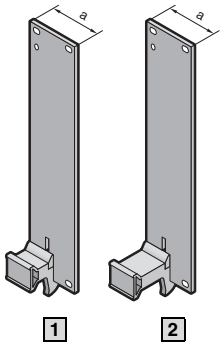




Air block panel

for unused slots
see page 513.





Flat front panels

with type I or II extractor handle
Complete modular systems

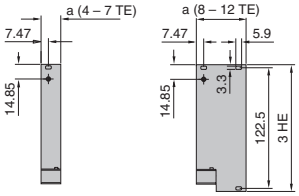
Material:
Front panel: 2.5 mm aluminium, anodised
Handle: Plastic, black

Supply includes:
1 front panel,
2 handles (1 for 3 U),
1 set of assembly parts,
1 PCB holder (for 3 U).

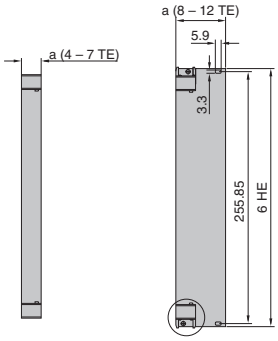
U	HP	a mm	Model No. RP 1 Type I	Model No. RP 2 Type II
3	4	20.0	**3684.330**	**3684.358**
3	5	25.1	**3684.331**	**3684.359**
3	6	30.2	**3684.332**	**3684.360**
3	7	35.3	**3684.333**	**3684.361**
3	8	40.3	**3684.334**	**3684.362**
3	10	50.5	**3684.335**	**3684.363**
3	12	60.7	**3684.336**	**3684.364**
6	4	20.0	**3684.337**	**3684.365**
6	5	25.1	**3684.338**	**3684.366**
6	6	30.2	**3684.339**	**3684.367**
6	7	35.3	**3684.340**	**3684.368**
6	8	40.3	**3684.341**	**3684.369**
6	10	50.5	**3684.342**	**3684.370**
6	12	60.7	**3684.343**	**3684.371**
9	4	20.0	–	**3684.372**
9	8	40.3	–	**3684.373**

Front panels with type I, II or IV, IVs extractor handles

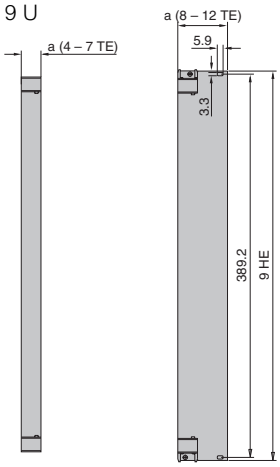
3 U



6 U



9 U

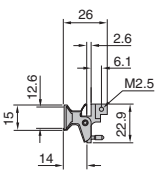


HE = U
TE = HP

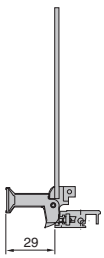
Extractor handles

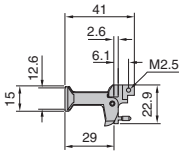
Type I



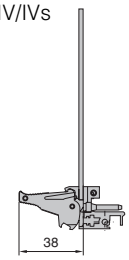


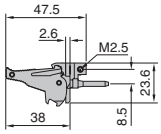
Type II





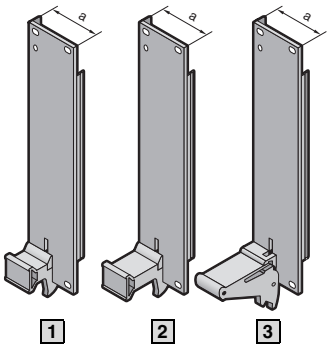
Type IV/IVs





Front panels, handles





U-channel front panels

with type I, II extractor handle or type IV injector/extractor handle
Complete modular systems

Material:
Front panel: Extruded aluminium section, clear chromated
Handle: Plastic, black

Supply includes:
1 front panel,
2 handles (1 for 3 U),
1 EMC gasket, vertical, version 1,
1 set of assembly parts,
1 PCB holder (for 3 U).

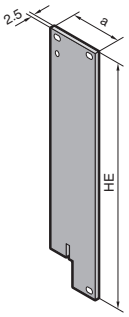
EMC

U	HP	a mm	Model No. RP 1 Type I	2 Type II	3 Type IV[1)]
3	4	20.0	**3684.344**	**3684.374**	**3684.413**
3	5	25.1	**3684.345**	**3684.375**	**3684.414**
3	6	30.2	**3684.346**	**3684.376**	**3684.415**
3	7	35.3	**3684.347**	**3684.377**	**3684.416**
3	8	40.3	**3684.348**	**3684.378**	**3684.417**
3	10	50.5	**3684.349**	**3684.379**	**3684.418**
3	12	60.7	**3684.350**	**3684.380**	**3684.419**
6	4	20.0	**3684.351**	**3684.381**	**3684.420**
6	5	25.1	**3684.352**	**3684.382**	**3684.421**
6	6	30.2	**3684.353**	**3684.383**	**3684.422**
6	7	35.3	**3684.354**	**3684.384**	**3684.423**
6	8	40.3	**3684.355**	**3684.385**	**3684.424**
6	10	50.5	**3684.356**	**3684.386**	**3684.425**
6	12	60.7	**3684.357**	**3684.387**	**3684.426**
9	4	20.0	–	**3684.388**	**3684.427**
9	5	25.1	–	–	**3684.428**
9	6	30.2	–	–	**3684.429**
9	7	35.3	–	–	**3684.430**
9	8	40.3	–	**3684.389**	**3684.431**
9	10	50.5	–	–	**3684.432**
9	12	60.7	–	–	**3684.433**

[1)] Insertion only in conjunction with front horizontal rails, with 10 mm extension (B), see page 499.

Detailed drawing,
see page 525.





HE = U

Flat front panels

for type I, II, IV, IVs or VII handles

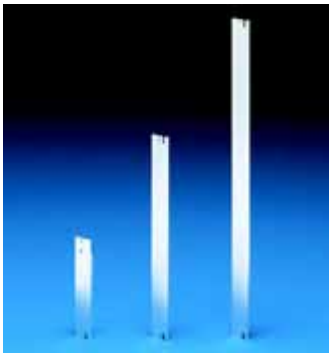
Material:
2.5 mm aluminium, anodised

HP	a mm	Model No. RP 3 U	6 U	9 U
4	20.0	**3685.500**	**3685.508**	**3685.516**
5	25.1	**3685.501**	**3685.509**	**3685.517**
6	30.2	**3685.502**	**3685.510**	**3685.518**
7	35.3	**3685.503**	**3685.511**	**3685.519**
8	40.3	**3685.504**	**3685.512**	**3685.520**
10	50.5	**3685.505**	**3685.513**	**3685.521**
12	60.7	**3685.506**	**3685.514**	**3685.522**

Detailed drawing,
see page 527.

Also required:

From front panel widths of 4 HP (at 3 U) and 7 HP (at 6 U):
Captive screws and plastic collars,
packs of 100 set, Model No. RP 3658.160,
see page 576.
For 3 U front panels:
PCB holder set, see page 536.



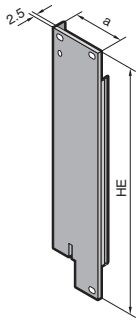
U-channel front panels

for type I, II, IV, IVs or VII handles

Material:
2.5 mm aluminium, clear chromated

EMC

HP	a mm	Model No. RP		
		3 U	6 U	9 U
4	20.0	**3685.524**	**3685.532**	**3685.540**
5	25.1	**3685.525**	**3685.533**	**3685.541**
6	30.2	**3685.526**	**3685.534**	**3685.542**
7	35.3	**3685.527**	**3685.535**	**3685.543**
8	40.3	**3685.528**	**3685.536**	**3685.544**
10	50.5	**3685.529**	**3685.537**	**3685.545**
12	60.7	**3685.530**	**3685.538**	**3685.546**

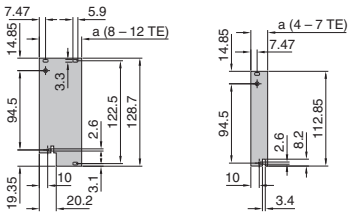


Also required:

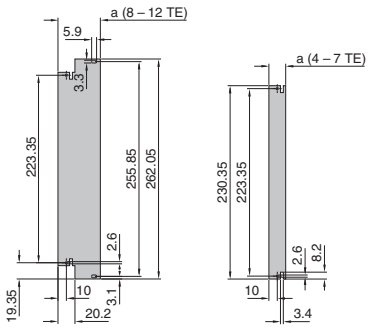
EMC gasket, see page 506.
From front panel widths of 4 HP (at 3 U) and 7 HP (at 6 U):
Centering screw with slot,
packs of 100 sets, Model No. RP 3687.050,
see page 577.
Posidrive centering screw,
packs of 100 sets, Model No. RP 3687.051,
see page 577.
For 3 U front panels:
PCB holder set, see page 536.

Front panels for type I, II, IV, IVs or VII handles

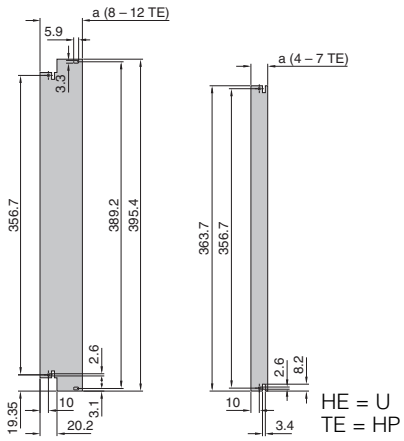
3 U



6 U



9 U



Flat front panel

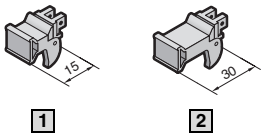


U-channel front panel



Front panels, handles





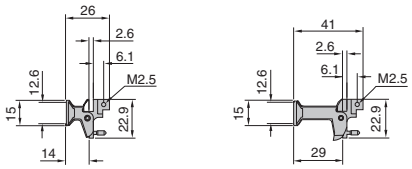
1 2

Extractor handle type I and type II

- Suitable for flat front panels/U-channel front panels
- For PCB removal
- May be used in combination with horizontal rails with 10 mm extension

Supply includes:
Assembly parts.

Note:
With 3 U, only one extractor handle is required.



1 2

1 Type I extractor handle, 15 mm

Colour	Packs of	Model No. RP
Grey	1	**3685.587**
Black	1	**3685.589**

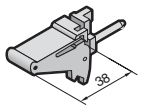
2 Type II extractor handle, 30 mm

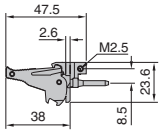
Colour	Packs of	Model No. RP
Grey	1	**3685.588**
Black	1	**3685.590**

Accessories:

Identification strips for extractor handles, see page 529.







Injector/extractor handle type IV

Handles with micro-switch
For inserting and removing PCB's with a high connector pin-count.

- Insertion/removal function
- Integral microswitch for "live insertion" applications
- Sellf-activation of the micro-switch during insertion/removal
- ESD pin to dissipate static charges prior to making contact with the connectors and for precise positioning of the board type plug-in units
- Codeable
- Integral PCB attachment
- Self-locking
- Bayable

Handle without micro-switch
Description see above. Micro-switch may be retro-fitted.

Supply includes:
1 handle without or with micro-switch, assembly parts.

Note:

- Can only be inserted in conjunction with front horizontal rails, with 10 mm extension (B), see page 499.
- With 3 U, only one extractor handle is required.

Handles with micro-switch

Colour	Installation	Packs of	Model No. RP
Grey	Top	1	**3686.905**
Grey	Bottom	1	**3686.904**
Black	Top	1	**3686.907**
Black	Bottom	1	**3686.906**

Handle without micro-switch

Colour	Installation	Packs of	Model No. RP
Grey	Top	1	**3686.901**
Grey	Bottom	1	**3686.900**
Black	Top	1	**3686.903**
Black	Bottom	1	**3686.902**

Accessories:

Keying pins, see page 514.
Keyable guide rails, see page 510.
Micro-switch, see page 530.
Connector pin for baying, see page 529.



Injector/extractor handle type IV

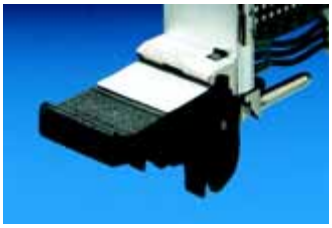
8 HP, bayed
Suitable for 4 HP front panels that must be connected to each other mechanically.

Supply includes:
2 bayed handles, fully assembled.

Colour	Installation	Packs of	Model No. RP
Black	Bottom	1	**3686.908**
Black	Top	1	**3686.909**

Accessories:

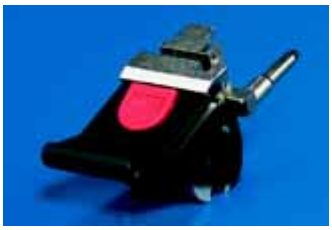
Connector pin for baying, see page 529.



Identification strips

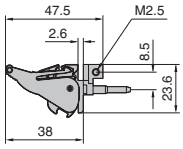
for type I, II extractor handle and type IV injector/extractor handle
Width 4 HP

Packs of	Model No. RP
100	**3684.328**



Injector/extractor handle type IVs

with push-button
For inserting and removing PCB's with a high pin-count. A metal insert ensures reliable functioning, even at forces of up to 815 N.



- Insertion/removal function
- Push-button for locking and unlocking the board type plug-in unit (cannot be extracted in the locked position)
- Optionally with 1/2 HP offset PCB attachment, e.g. for component mounting on both sides
- Optional micro-switch for "live insertion" applications
- ESD pin to dissipate static charges prior to making contact with the connectors and for precise positioning of the board type plug-in unit
- Codeable
- Integral PCB attachment
- Bayable

Material:
Plastic/metal

Supply includes:
Assembly parts.

Note:
- Insertion only in conjunction with front horizontal rails, with 10 mm extension (B), see page 499.
- With 3 U, only one extractor handle is required.

Handles without offset

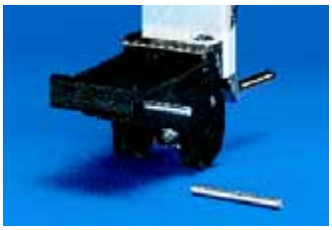
Installation	Packs of	Model No. RP
Top	1	**3688.770**
Bottom	1	**3688.771**

Handles with 1/2 HP offset

Installation	Packs of	Model No. RP
Top	1	**3688.772**
Bottom	1	**3688.773**

Accessories:

Keys, see page 514.
Keyable guide rails, see page 510.
Keyable guide rails with 1/2 HP offset, see page 511.
Micro-switch, see page 530.
Connector pin for baying, see page 529.



Connection pin

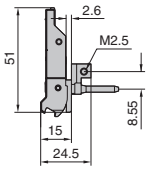
for injector/extractor handles, types IV, IVs and VII
The connection pin can be used to connect injector/extractor handles, types IV, IVs and VII.

Material:
Steel

Packs of	Model No. RP
20	**3685.319**

Front panels, handles





Injector/extractor handle type VII

Plastic (telecom)
For inserting and removing PCB's with a high connector pin-count. This handle was specifically designed for use in telecom applications.

- Insertion/removal function
- Optionally with 1/2 HP offset PCB attachment, e.g. for component mounting on both sides
- Minimum space requirements, due to fold-up handle
- Codeable
- Optional integral micro-switch for "live insertion" applications
- ESD pin to dissipate static charges prior to making contact with the connectors and for precise positioning of the board type plug-in unit
- Large labelling area on the front

Material:
Plastic

Supply includes:
Assembly parts.

Note:
Insertion only in conjunction with front horizontal rails, with 10 mm extension (B),
see page 499.

Handles without offset

Installation	Packs of	Model No. RP
Top	1	**3688.784**
Bottom	1	**3688.785**

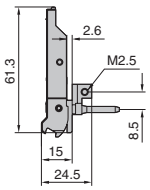
Handles with 1/2 HP offset

Installation	Packs of	Model No. RP
Top	1	**3688.780**
Bottom	1	**3688.781**

Accessories:

Keys, see page 514.
Keyable guide rails, see page 510.
Keyable guide rails with 1/2 HP offset, see page 511.
Micro-switch, see page 530.
Connector pin for baying, see page 529.





Injector/extractor handle type VII

Metal (telecom)
For inserting and removing PCB's with a high connector pin-count (up to 815 N). This handle was specifically designed for use in telecom applications.

- Insertion/removal function
- Optionally with 1/2 HP offset PCB attachment, e.g. for component mounting on both sides
- Minimum space requirements, due to fold-up handle
- Codeable
- Optional integral micro-switch for "live insertion" applications
- ESD pin to dissipate static charges prior to making contact with the connectors and for precise positioning of the board type plug-in unit
- Metal design for use in aggressive atmospheres

Material:
Die-cast zinc

Supply includes:
Assembly parts.

Note:
Insertion only in conjunction with front horizontal rails, with 10 mm extension (B),
see page 499.

Handles without offset

Installation	Packs of	Model No. RP
Top	1	**3688.790**
Bottom	1	**3688.791**

Handles with 1/2 HP offset

Installation	Packs of	Model No. RP
Top	1	**3688.786**
Bottom	1	**3688.787**

Accessories:

Keys, see page 514.
Keyable guide rails, see page 510.
Keyable guide rails with 1/2 HP offset, see page 511.
Micro-switch, see page 530.
Connector pin for baying, see page 529.



Micro-switch

For "live insertion" applications.
For mounting in type IV, IVs and VII injector/extractor handles.
May also be retro-fitted.

Technical specifications:
Switching load: 50 mA 30 V DC
Service life:
at nominal load: 30,000
mechanical: 50,000

Packs of	Model No. RP
10	**3684.410**

Also required:

Micro-switch mounting clip, see page 531.



Micro-switch

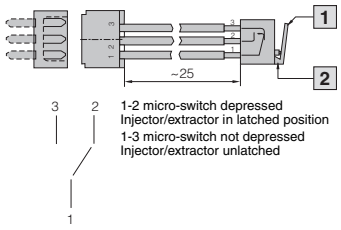
with cable and connector
For “live insertion” applications.
For mounting in type IV, IVs and VII injector/extractor handles.

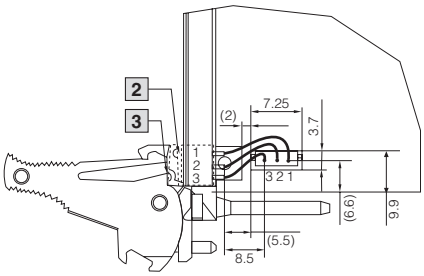
Supply includes:
Micro-switch, connector Type Molex 51021-0200, Mounting clips, 3 cables, 25 mm x #32 AWG, fully assembled.

Packs of	Model No. RP
1 set	**3686.536**

Also required:
Micro-switch mounting clip, see page 531.

1 Lever not depressed
2 Lever hinge
3 Lever contact point





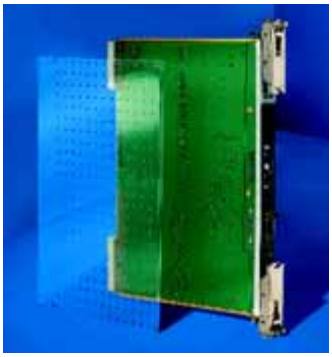


Micro-switch mounting clip

For mounting micro-switches in handles.

Packs of	Model No. RP
10	**3684.411**





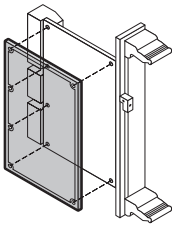
Plastic covers

for PCBs
For mechanical protection of the solder side and of the EMC gaskets.
Attachment holes as per CPCI or VME-specifications. Optionally available as perforated or solid version.

Material:
0.3 mm plastic, antistatic

0.5 mm plastic, antistatic[1)], UL 94-V0

for PCBs	Packs of	Model No. RP			
		for CPCI			for VME
		perforated[1)]	solid[1)]	solid	solid
3 U x 160 mm	1	**3687.932**	**3686.572**	**3685.966**	**3685.626**
	5	–	–	–	**3685.279**
3 U x 220 mm	1	–	–	–	**3685.805**
	5	–	–	–	**3685.266**
6 U x 80 mm	1	**3687.933**	**3686.573**	**3686.037**	**3685.146**
6 U x 160 mm	1	**3687.934**	**3686.574**	**3685.967**	**3685.627**
	5	–	–	–	**3685.280**
6 U x 220 mm	1	–	–	–	**3685.824**
	5	–	–	–	**3685.000**

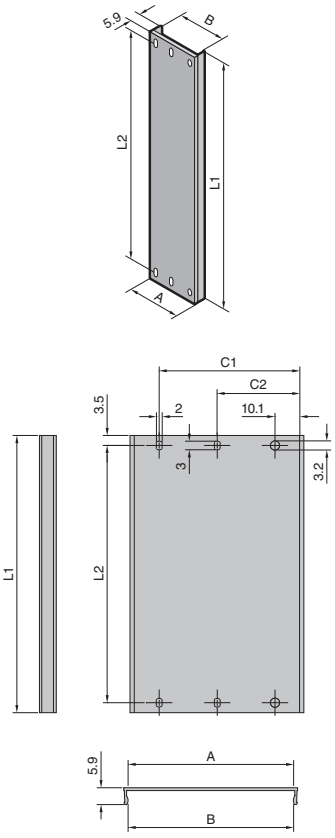


Also required:
Required for mounting the perforated CPCI covers:

Mounting clips

Packs of	Model No. RP
100	**3687.955**

Front panels, handles



Front panels

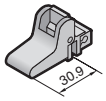
for type III extractor handle

Material:
1.0 mm extruded aluminium section

Surface finish:
Untreated

HP	A mm	B mm	C1 mm	C2 mm	Model No. RP		
					3 U	6 U	9 U
3	15.20	12.20	–	–	**3685.548**	**3685.555**	**–**
4	20.22	17.20	–	–	**3685.549**	**3685.556**	**3685.562**
5	25.28	22.28	–	22.68	**3685.550**	**3685.557**	**3685.563**
6	30.36	27.36	–	25.22	**3685.551**	**3685.558**	**3685.564**
8	40.52	37.52	–	30.30	**3685.552**	**3685.559**	**3685.566**
10	50.68	47.68	40.46	25.22	**3685.553**	**3685.560**	**3685.567**
12	60.84	57.84	50.62	30.30	**3685.554**	**3685.561**	**3685.568**
L1 mm					97.00	230.35	363.70
L2 mm					90.00	223.35	356.70

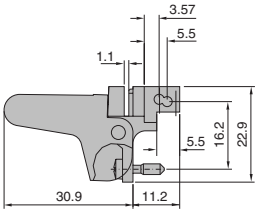




Type III handle, extractor

Material:
Fibreglass-reinforced polycarbonate
Base: nickle-plated ABS

Colour:
Grey



HP	Packs of	Model No. RP
3	1	**3685.591**
4	1	**3685.592**



Covers

for the end spaces

Material:
Fibreglass-reinforced polycarbonate

HP	Width mm	Packs of	Model No. RP
1	5	1	**3687.529**
2	10.08	1	**3687.530**
4	20.24	1	**3687.531**



Universal bracket

for front panel support

Material:
Nickel-plated plastic

HP	Packs of	Model No. RP
4	1	**3687.545**



Flat front panels

with type V handle and PCB holder
Complete modular systems

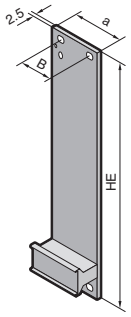
Material:
Front panel: 2.5 mm aluminium, natural anodised.
Handle: Aluminium, natural anodised.
PCB holder: Polycarbonate

Supply includes:
1 front panel,
1 handle (2 for 6 U),
1 PCB holder (2 for 6 U),
assembly parts.

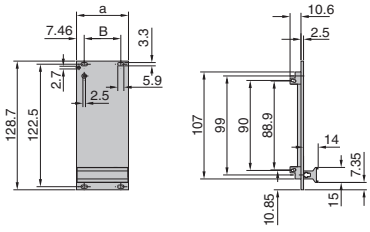
HP	a mm	B mm	Model No. RP	
			3 U H = 128.7	6 U H = 262.05
3	14.9	–	**3652.000**	**3652.200**
4	20.0	–	**3652.010**	**3652.210**
5	25.1	–	**3652.020**	**3652.220**
6	30.1	–	**3652.030**	**3652.230**
7	35.2	–	**3652.040**	**3652.240**
8	40.3	–	**3652.050**	**3652.250**
10	50.5	35.6	**3652.060**	**3652.260**
12	60.6	45.7	**3652.070**	**3652.270**
14	70.8	55.9	**3652.080**	**–**

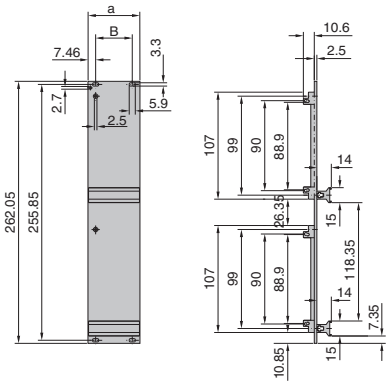
Accessories:

Identification strips for handles,
see page 535.

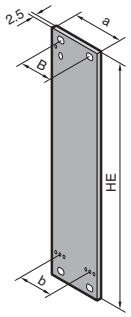


HE = U





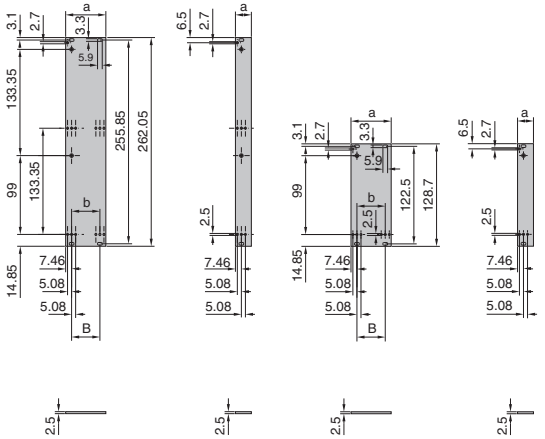
Front panels, handles



Flat front panels

for type V and VI handle

Material:
2.5 mm aluminium, anodised



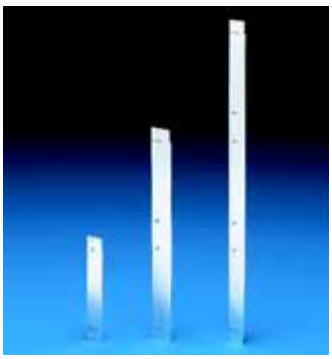
HP	a mm	B mm	b mm	Packs of	Model No. RP 3 U	Model No. RP 6 U
3	14.9	–	–	1	**3685.569**	**3685.578**
4	20.0	–	–	1	**3685.570**	**3685.579**
5	25.1	–	–	1	**3685.571**	**3685.580**
6	30.2	–	15.2	1	**3685.572**	**3685.581**
7	35.2	–	20.3	1	**3685.573**	**3685.582**
8	40.3	–	25.4	1	**3685.574**	**3685.583**
10	50.5	35.6	35.6	1	**3685.575**	**3685.584**
12	60.6	45.7	45.7	1	**3685.576**	**3685.585**
14	70.8	55.9	55.9	1	**3685.577**	**3685.586**

Also required:

Captive screws and plastic collars,
packs of 100 set, Model No. RP 3658.160,
see page 576.

Accessories:

Handles type V, see page 535.
Handles type VI, see page 536.



U-channel front panels

for type V and VI handle

Material:
2.5 mm aluminium, clear-chromated

Supply includes:
1 vertical EMC gasket, version 1.

EMC

HP	a mm	B mm	Packs of	Model No. RP 3 U	Model No. RP 6 U
4	20.0	–	1	**3687.655**	**3687.660**
6	30.2	–	1	**3687.656**	**3687.661**
8	40.3	–	1	**3687.657**	**3687.662**
10	50.5	35.6	1	**3687.658**	**3687.663**
12	60.6	45.7	1	**3687.659**	**3687.664**

Also required:

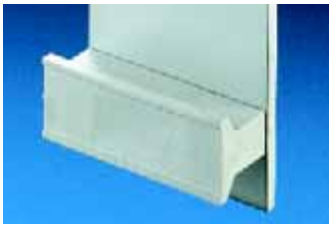
Centering screw with slot,
packs of 100 sets, Model No. RP 3687.050,
see page 577.

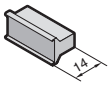
Accessories:

Handles type V, see page 535.
Handles type VI, see page 536.

Detailed drawing,
see page 534.

Front panels, handles





Type V handle

Plastic

Material:
Plastic

HP	Colour	Packs of	Model No. RP
3	Grey	1	**3685.490**
4	Grey	1	**3685.491**
8	Grey	1	**3685.492**
12	Grey	1	**3685.493**
20	Grey	1	**3685.494**
3	Black	1	**3685.495**
4	Black	1	**3685.496**
8	Black	1	**3685.497**
12	Black	1	**3685.498**
20	Black	1	**3685.499**

Also required:

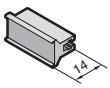
Assembly kit,
packs of 1 set, Model No. RP 3687.519,
see page 576.

Identification strips

for type V handle, plastic
self-adhesive

HP	Packs of	Model No. RP
24	1	**3687.693**

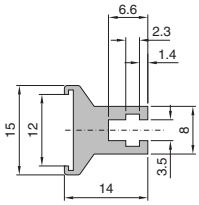




Type V handle

Aluminium

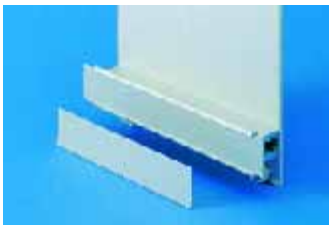
Material:
Aluminium, anodised.



HP	Model No. RP	HP	Model No. RP
3	**3685.595**	12	**3685.602**
4	**3685.596**	14	**3685.603**
5	**3685.597**	21	**3685.761**
6	**3685.598**	28	**3685.762**
7	**3685.599**	42	**3685.763**
8	**3685.600**	1 m	**3685.604**
10	**3685.601**		

Also required:

Assembly kit,
packs of 1 set, Model No. RP 3687.146,
(for 6 HP and above, 2 packs are required),
see page 577.



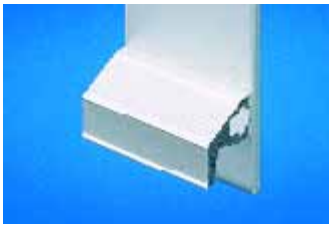
Identification strips

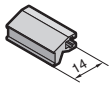
for type V handle, aluminium
For individual labelling of the handles.

Material:
0.5 mm aluminium, anodised

HP	Packs of	Model No. RP
3	1	**3685.746**
4	1	**3685.747**
5	1	**3685.748**
6	1	**3685.749**
7	1	**3685.750**
8	1	**3685.751**
10	1	**3685.752**
12	1	**3685.753**
14	1	**3685.754**
21	1	**3685.755**
28	1	**3685.756**
42	1	**3685.757**
1 m	1	**3685.758**
0.5 m	5	**3606.300**

Front panels, handles

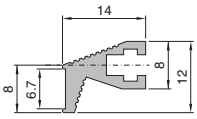




Type VI handle

Aluminium

Material:
Aluminium, anodised.



HP	Model No. RP	HP	Model No. RP
3	**3685.605**	12	**3685.612**
4	**3685.606**	14	**3685.613**
5	**3685.607**	21	**3685.614**
6	**3685.608**	28	**3685.615**
7	**3685.609**	42	**3685.616**
8	**3685.610**	84	**3685.617**
10	**3685.611**	1 m	**3685.618**

Also required:

Assembly kit,
packs of 1 set, Model No. RP 3687.146,
(for 6 HP and above, 2 packs are required),
see page 577.



PCB holder kit

For securing PCBs to front panels.

Material:
Die-cast

Note:
Only required at the top with 3 U front panels with lever handles.

Packs of	Model No. RP
10	**3685.198**

Also required:

For securing PCBs to PCB holders:
Pan-head screws,
packs of 100 sets, Model No. RP 3654.320,
see page 576.
For securing PCB holders to front panels:
Oval head screws,
packs of 100 sets, Model No. RP 3685.282,
see page 577.



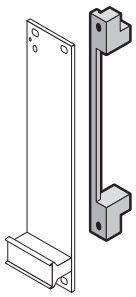
PCB holder

For front panels
For securing PCBs to front panels with type V and VI handles.

Material:
Noryl

Supply includes:
Assembly parts.

Packs of	Model No. RP
10	**3606.330**

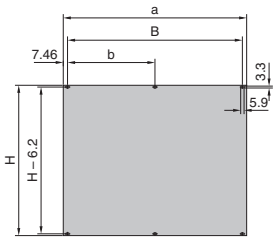


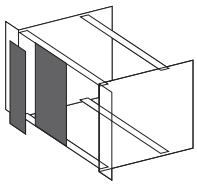


Front panels

as filler panel, flat

Material:
2.5 mm aluminium, natural anodised.





Also required:

Captive screws and plastic collars,
packs of 100 set, Model No. RP 3658.160,
see page 576.

HP	a mm	B mm	b mm	Model No. RP						
				1 U H = 39.8	2 U H = 84.25	3 U H = 128.7	4 U H = 173.15	6 U H = 262.05	7 U H = 306.5	9 U H = 395.4
2	9.8	–	–	–	–	**3684.889**	–	**3684.911**	–	**3684.738**
3	14.9	–	–	–	–	**3684.890**	–	**3684.912**	–	–
4	20.0	–	–	–	–	**3684.891**	–	**3684.913**	–	**3684.739**
5	25.1	–	–	–	–	**3684.892**	–	**3684.914**	–	–
6	30.1	–	–	–	–	**3684.893**	–	**3684.915**	–	–
7	35.2	–	–	–	–	**3684.894**	–	**3684.916**	–	–
8	40.3	–	–	–	–	**3684.895**	–	**3684.917**	–	**3684.740**
10	50.5	35.6	–	–	–	**3684.896**	–	**3684.918**	–	–
12	60.6	45.7	–	–	–	**3684.897**	–	**3684.919**	–	**3684.741**
14	70.8	55.9	–	–	–	**3684.898**	–	**3684.920**	–	–
20	101.3	86.4	–	–	–	**3684.899**	–	**3684.921**	–	–
21	106.4	91.4	–	–	**3685.350**	**3684.900**	–	**3684.922**	–	–
24	121.7	106.7	–	–	**3685.429**	–	–	–	–	–
27	136.8	121.9	–	–	–	**3684.901**	–	**3684.923**	–	–
28	141.9	127.0	–	–	–	**3684.902**	–	**3684.924**	–	–
40	202.9	188.0	–	–	–	**3684.903**	–	**3684.976**	–	**3684.977**
42	213.0	198.1	–	**3684.885**	**3684.887**	**3684.904**	**3684.908**	**3684.925**	**3684.928**	**3684.742**
60	304.5	289.6	–	–	–	**3684.905**	–	–	–	–
63	319.7	304.8	152.4	–	–	**3684.906**	**3684.909**	**3684.926**	**3684.929**	–
84	426.4	411.5	203.2	**3684.886**	**3684.888**	**3684.907**	**3684.910**	**3684.927**	**3684.930**	**3684.743**
85	413.5	411.5	203.2	–	–	**3684.744**	**3684.745**	**3684.746**	**3684.747**	**3684.748**

Front panels, handles



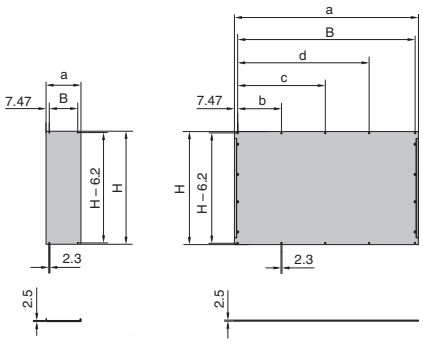
Front panels

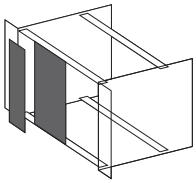
as filler panels, U-shaped

Material:
2.5 mm aluminium, clear-chromated

Supply includes:
1 one-part front panel (for 2 – 14 HP version)
or three-part (for > 14 HP version),
1 vertical EMC gasket, version 1,
1 contact strip (three-part only),
1 gasket strip (three-part only).

EMC

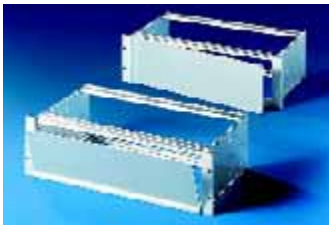




Also required:

Centering screw with slot,
packs of 100 sets, Model No. RP 3687.050,
see page 577.

HP	a mm	B mm	b mm	c mm	d mm	Model No. RP 1 U H = 39.8	2 U H = 84.25	3 U H = 128.7	4 U H = 173.15	6 U H = 262.05	7 U H = 306.5	9 U H = 395.4
2	9.8	–	–	–	–	–	–	**3685.177**	–	**3685.185**	–	**3685.193**
3	14.9	–	–	–	–	–	–	**3686.138**	–	**3686.139**	–	**3686.140**
4	20.0	–	–	–	–	–	–	**3685.178**	–	**3685.186**	–	**3685.194**
5	25.1	–	–	–	–	–	–	**3685.179**	–	**3685.187**	–	–
6	30.1	–	–	–	–	–	–	**3685.180**	–	**3685.188**	–	–
7	35.2	–	–	–	–	–	–	**3685.181**	–	**3685.189**	–	–
8	40.3	25.4	–	–	–	–	–	**3685.182**	–	**3685.190**	–	**3685.195**
10	50.5	35.6	–	–	–	–	–	**3685.183**	–	**3685.191**	–	–
12	60.6	45.7	–	–	–	–	–	**3685.184**	–	**3685.192**	–	**3685.196**
14	70.8	55.9	–	–	–	–	–	**3684.249**	–	**3684.258**	–	**3684.278**
16	80.9	66.0	–	–	–	–	–	**3685.348**	–	**3685.349**	–	–
20	101.3	86.4	–	–	–	–	–	**3684.250**	–	**3684.259**	–	**3684.279**
21	106.4	91.4	–	–	–	–	–	**3684.272**	–	**3684.275**	–	–
28	141.9	127.0	61.0	–	–	–	–	**3684.251**	–	**3684.260**	–	–
40	202.9	188.0	91.5	–	–	–	–	**3684.273**	–	**3684.276**	–	**3684.280**
42	213.0	198.1	96.5	–	–	–	–	**3684.252**	**3684.255**	**3684.261**	**3684.264**	**3684.267**
60	304.5	289.6	96.5	193.0	–	–	–	**3684.274**	–	**3684.277**	–	–
63	319.7	304.8	101.6	203.2	–	–	–	**3684.253**	**3684.256**	**3684.262**	**3684.265**	**3684.268**
84	426.4	411.5	101.6	203.2	304.8	**3684.247**	**3684.248**	**3684.254**	**3684.257**	**3684.263**	**3684.266**	**3684.269**

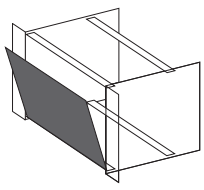


Front panels

Hinged

Material:
2.5 mm aluminium, anodised

Supply includes:
1 front panel,
1 set of hinges,
assembly parts.

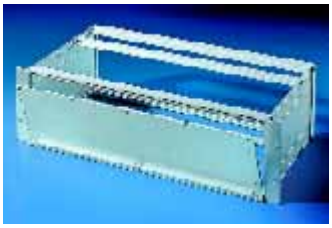


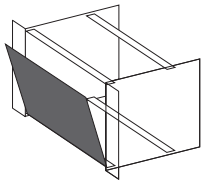
U	HP	Model No. RP vertically hinged	horizontally hinged
3	42[1)]	**3652.600**	**3652.500**
3	84[1)]	**3652.610**	**3652.510**
3	85	–	**3684.291**
4	85	–	**3684.292**
6	42[1)]	**3652.620**	**3652.520**
6	84[1)]	**3652.630**	**3652.530**
6	85	–	**3684.293**
7	85	–	**3684.294**
9	85	–	**3684.295**

Also required:

[1)] With rear mounting of 42 HP and 84 HP front panels, additonal trim sections must be attached at the rear of the subrack.
Trim sections, see page 497.

Front panels, handles





EMC front panels

Hinged

Material:
2.5 mm aluminium, clear-chromated

EMC

Supply includes:
1 front panel,
1 set of hinges,
1 contact strip,
1 gasket strip,
1 vertical EMC gasket, version 1,
assembly parts.

U	HP	**Model No. RP** horizontally hinged
3	84	**3684.298**
4	84	**3684.299**
6	84	**3684.300**
7	84	**3684.301**
9	84	**3684.302**



Mezzanine front panels

Die-cast zinc
For PCI mezzanine cards (PMC).

Conforms to IEEE 1386

Material:
Die-cast zinc

Packs of	**Model No. RP**
1	**3688.659**

Accessories:

EMC seals,
see page 540.
Assembly screws M2.5 x 6,
packs of 100 sets, Model No. RP 3654.340,
see page 576.



Mezzanine front panels

Extruded aluminium section
For PCI mezzanine cards (PMC).

Conforms to IEEE 1386

Material/surface finish:
Extruded aluminium section, clear-chromated

Packs of	**Model No. RP**
1	**3688.658**

Accessories:

EMC seals,
see page 540.
Assembly screws M2.5 x 6,
packs of 100 sets, Model No. RP 3654.340,
see page 576.



Support spacers

for mezzanine cards
10 mm, for mounting mezzanine cards.

Packs of	**Model No. RP**
1	**3688.663**

Front panels, handles



Covers

for mezzanine cutouts
To conceal unused mezzanine cutouts. The covers are simply clipped into the cutouts.

Material:
Stainless steel

Packs of	Model No. RP
1	**3688.660**



EMC seals

for mezzanine front panels
For inserting into the all-round channel of the mezzanine front panels.

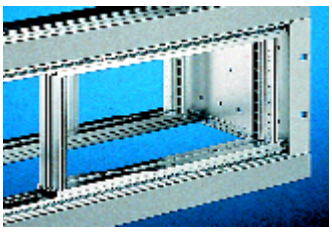
Material/surface finish:
Sealing ring made of conductive carbon filled silicon, sealing gasket made from stainless steel.

Option	Packs of	Model No. RP
Sealing ring	1	**3688.661**
Sealing gasket	1	**3688.662**

Keying pin

for mezzanine cards
To ensure the the correnct installation of mezzanine parent cards. The keying pins are bolted onto the parent boards.

Packs of	Model No. RP
1	**3688.664**

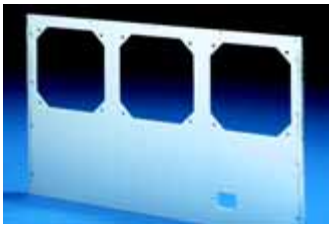


Door cutout trim

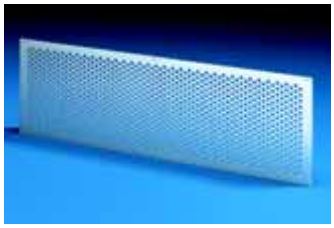
To conceal the cut-out edges when subracks are installed in the door.

Material:
Aluminium

Width	Packs of	Model No. UN
269.2 mm ($^1/_2$ 19″)	2	**3634.060**
482.6 mm (19″)	2	**3634.070**



Rear panels,
for fan installation,
see page 522.



Front/rear panels,
for ventilation,
see page 521.



Ripac box type plug-in units, type I

Technical specifications:
Installation depth: 160 and 220 mm
Height: 3 U and 6 U
to IEC 60 297-3,
to accommodate:
individual connectors

Material:
Front panel: 2.5 mm aluminium,
natural anodised
Rear panel: 2 mm aluminium, natural anodised
Side panel sections: Extruded aluminium section,
natural anodised
Handle: Aluminium, natural anodised.
PCB holder: Plastic

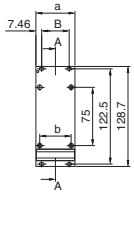
Available upon request:
- Box type plug-in units in special sizes or with printing
- EMC box type plug-in units with EMC front panels

Accessories:

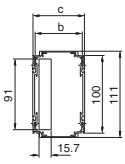
Covers,
see page 545.
Guide rails,
see page 512.
Individual components,
see page 542.

HP	a mm	B mm	b mm	c mm	C mm	d mm	e mm	f mm	Model No. RP 3 U	3 U	6 U
Board depth 160 mm											
6	32.2	–	20.3	27.5	–	171.5	122	167	**3653.000**	**–**	**–**
8	40.3	–	30.5	36.0	–	171.5	122	167	**–**	**3653.010**	**–**
10	50.5	35.6	40.6	46.2	–	171.5	122	167	**–**	**3653.020**	**3653.100**
12	60.6	45.7	50.8	56.4	–	171.5	122	167	**–**	**3653.030**	**3653.110**
14	70.8	55.9	60.9	66.5	–	171.5	122	167	**–**	**3653.040**	**3653.120**
21	106.3	91.4	96.4	102.0	86.3	171.5	122	167	**–**	**3653.050**	**3653.130**
28	141.9	127.0	132.0	137.6	121.8	171.5	122	167	**–**	**3653.060**	**3653.140**
42	213.1	198.1	203.2	208.8	193.0	171.5	122	167	**–**	**3653.070**	**3653.150**
Board depth 220 mm											
10	50.5	35.6	40.6	46.2	–	231.5	182	227	**–**	**3653.200**	**3653.300**
12	60.6	45.7	50.8	56.4	–	231.5	182	227	**–**	**3653.210**	**3653.310**
14	70.8	55.9	60.9	66.5	–	231.5	182	227	**–**	**3653.220**	**3653.320**
21	106.3	91.4	96.4	102.0	86.3	231.5	182	227	**–**	**3653.230**	**3653.330**
28	141.9	127.0	132.0	137.6	121.8	231.5	182	227	**–**	**3653.240**	**3653.340**
42	213.1	198.1	203.2	208.8	193.0	231.5	182	227	**–**	**3653.250**	**3653.350**
Supply includes											
Font panel									1	1	1
Handle									1	1	2
Side panels									1	2	2
Cover including rear panel									1	–	–
Rear panel									–	1	2
PCB holder									2	2	2
Assembly parts (set)									1	1	1

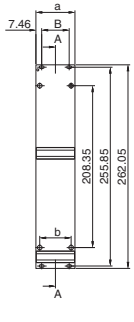
Section A – A
Board depth 160 mm



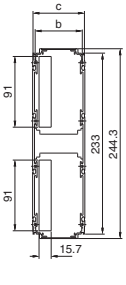
Section B – B
Type I, 3 U



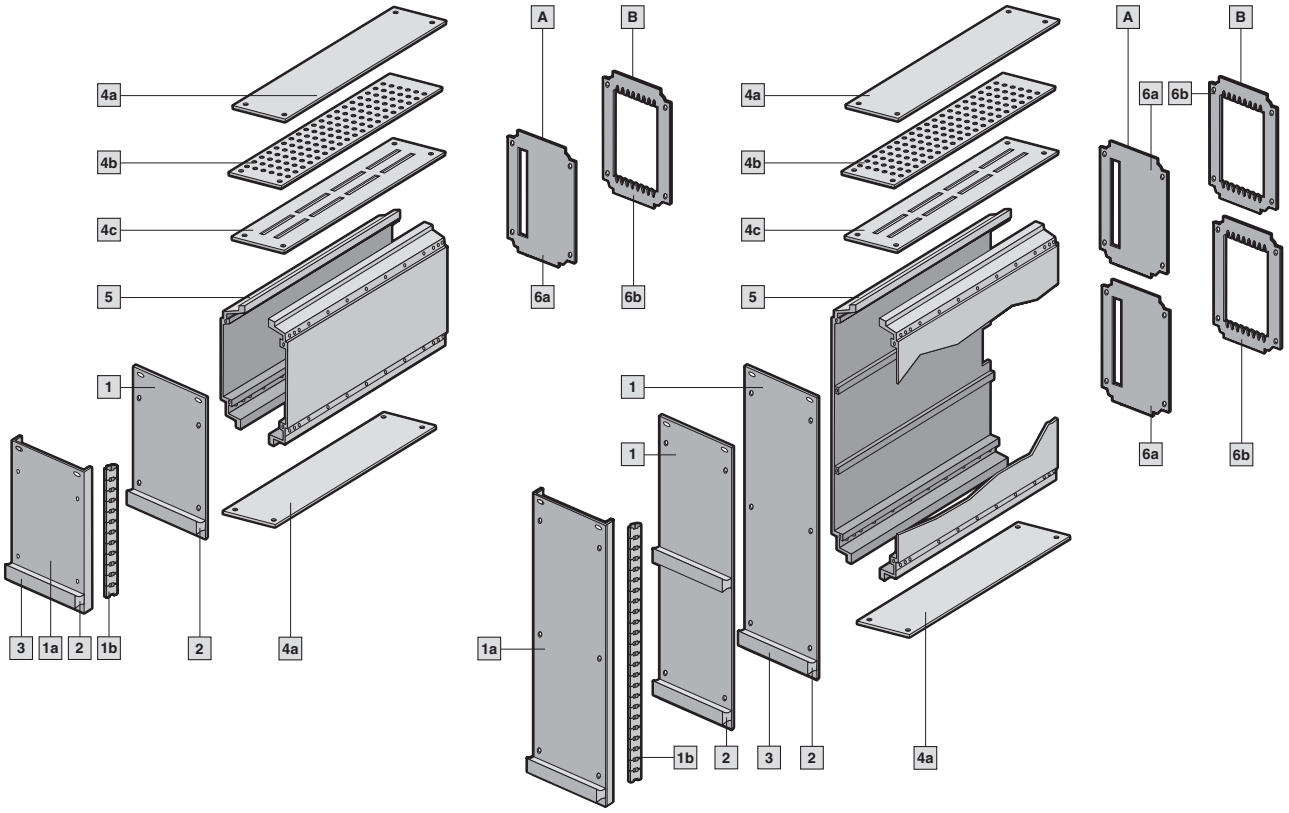
Section A – A
Board depth 160 mm



Section B – B
Type I, 6 U



Ripac box type plug-in units individual components

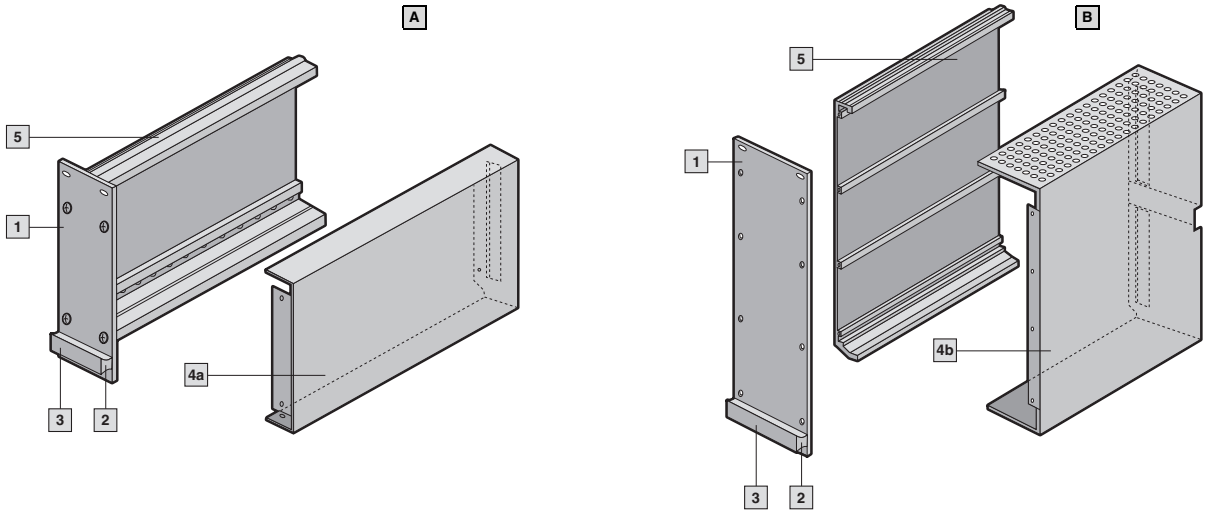


Ripac box type plug-in units, types I and II in 3 U and 6 U, individual components

Box type plug-in units, individual components		A Type I	B Type II	Packs of	8 HP	10 HP	12 HP	14 HP	21 HP	28 HP	42 HP	Page
Type I for one connector/type II for several connectors												
Front panels of 2.5 mm aluminium, anodised surface finish												
1	for 3 U	■	■	1	**3685.769**	**3685.629**	**3685.630**	**3685.631**	**3685.636**	**3685.637**	**3685.638**	–
1	for 6 U (for 1 handle)	■	■	1	**3685.767**	**3685.633**	**3685.634**	**3685.635**	**3685.639**	**3685.640**	**3685.641**	–
1	for 6 U (for 2 handles)	■	■	1	**–**	**3687.520**	**3687.521**	**3687.522**	**3687.523**	**3687.524**	**3687.525**	–
EMC front panels of 2.5 mm aluminium, surface finish clear-chromated (only for use in conjunction with 10 HP box type plug-in unit)												
1a	for 3 U/10 HP box type plug-in units	■	■	1	–	–	**3687.587**	–	–	–	–	–
1a	for 6 U/10 HP box type plug-in units	■	■	1	–	–	**3687.588**	–	–	–	–	–
EMC gaskets, vertical, for front panels												
1b	for 3 U	■	■	1	–	–	3686.975	–	–	–	–	506
1b	for 6 U	■	■	1	–	–	3686.977	–	–	–	–	506
Handle type V												
2	of aluminium, anodised surface finish	■	■	1	3685.600	3685.601	3685.602	3685.603	3685.761	3685.762	3685.763	535
2	of plastic	■	■	1	3685.492	–	3685.493	–	3685.494	–	–	535
Identification strips												
3	of 0.5 mm aluminium, anodised surface finish	■	■	1	3685.751	3685.752	3685.753	3685.754	3685.755	3685.756	3685.757	535
Covers 4a 4b of 1 mm aluminium, untreated 4c of 1.2 mm sheet steel, painted, RAL 9006 (with vent slots)												
4a	unvented, for board depth 160 mm	■	■	1	3687.555	3685.689	3685.690	3685.691	3685.692	3685.693	3685.694	545
4a	unvented, for board depth 220 mm	■	■	1	3687.562	3685.701	3685.702	3685.703	3685.704	3685.705	3685.706	545
4b	vented, for board depth 160 mm	■	■	1	3687.585	3685.683	3685.684	3685.685	3685.686	3685.687	3685.688	545
4b	vented, for board depth 220 mm	■	■	1	–	3685.695	3685.696	3685.697	3685.698	3685.699	3685.700	545
4c	vent slots for guide rails, for board depth 160 mm	■	■	1	–	3687.556	3687.557	3687.558	3687.559	3687.560	3687.561	545
4c	vent slots for guide rails, for board depth 220 mm	■	■	1	–	3687.563	3687.564	3687.565	3687.566	3687.567	3687.568	545
Side panel of extruded aluminium section, anodised surface finish												
5	3 U, for board depth 160 mm	■	■	1				**3685.645**				–
5	6 U, for board depth 160 mm	■	■	1				**3685.648**				–
5	3 U, for board depth 220 mm	■	■	1				**3685.646**				–
5	6 U, for board depth 220 mm	■	■	1				**3685.649**				–
Rear panel 6a of 2.0 mm aluminium, untreated 6b of 1.2 mm sheet steel, spray-finished												
6a	for 1 connector	■	–	1	**3687.536**	**3685.707**	**3685.708**	**3685.709**	**3685.710**	**3685.711**	**3685.712**	–
6b	for several connectors	–	■	1	**–**	**–**	**–**	**–**	**3687.537**	**3687.538**	**3687.539**	–

Assembly parts for box type plug-in units, see page 543

Ripac box type plug-in units individual components



Ripac box type plug-in units, types V and VI in 3 U and 6 U, individual components

Box type plug-in units, individual components		A Type V	B Type VI	Packs of	6 HP	7 HP	8 HP	10 HP	12 HP	14 HP	Page
Type V with cover (unvented)/type VI with cover (vented)											
Front panels of 2.5 mm aluminium, anodised surface finish											
1	for 3 U	■	■	1	**3685.768**	**3685.628**	**3685.769**	**3685.629**	**3685.630**	**3685.631**	–
	for 6 U	■	■	1	**3685.766**	**3685.632**	**3685.767**	**3685.633**	**3685.634**	**3685.635**	–
Handle type V											
2	of aluminium, anodised surface finish	■	■	1	3685.598	3685.599	3685.600	3685.601	3685.602	3685.603	535
	of plastic	■	■	1	–	–	3685.492	–	3685.493	–	535
Identification strips for 3 U											
3	of 0.5 mm aluminium, anodised surface finish	■	■	1	3685.749	3685.750	3685.751	3685.752	3685.753	3685.754	535
Cover of 1 mm aluminium, clear chromated surface finish											
4a	unvented, 3 U, for board depth 160 mm	■	–	1	**3685.774**	**3685.658**	**3685.776**	**3685.659**	**3685.660**	**3685.661**	–
	unvented, 3 U, for board depth 220 mm	■	–	1	**3685.775**	**3685.674**	**3685.777**	**3685.675**	**3685.676**	**3685.677**	–
	unvented, 6 U, for board depth 160 mm	■	–	1	**3685.717**	**3685.662**	**3685.764**	**3685.663**	**3685.664**	**3685.665**	–
	unvented, 6 U, for board depth 220 mm	■	–	1	**3685.718**	**3685.678**	**3685.765**	**3685.679**	**3685.680**	**3685.681**	–
4b	vented, 3 U, for board depth 160 mm	–	■	1	**3685.770**	**3685.650**	**3685.772**	**3685.651**	**3685.652**	**3685.653**	–
	vented, 3 U, for board depth 220 mm	–	■	1	**3685.771**	**3685.666**	**3685.773**	**3685.667**	**3685.668**	**3685.669**	–
	vented, 6 U, for board depth 160 mm	–	■	1	**3685.713**	**3685.654**	**3685.715**	**3685.655**	**3685.656**	**3685.657**	–
	vented, 6 U, for board depth 220 mm	–	■	1	**3685.714**	**3685.670**	**3685.716**	**3685.671**	**3685.672**	**3685.673**	–
Side panel of extruded aluminium section, anodised surface finish											
5	3 U, for board depth 160 mm	■	■	1	**3685.645**						–
	6 U, for board depth 160 mm	■	■	1	**3685.648**						–
	3 U, for board depth 220 mm	■	■	1	**3685.646**						–
	6 U, for board depth 220 mm	■	■	1	**3685.649**						–

Assembly parts for box type plug-in unit types I, II, V, VI				
Description	for installation of:	Packs of	**Model No. RP**	
Assembly kit for box type plug-in unit I/II, 3 U	Box type plug-in units, type I/II, 3 U	1 set	**3687.589**	–
Assembly kit for box type plug-in unit I/II, 6 U	Box type plug-in units, type I/II, 6 U	1 set	**3687.590**	–
Assembly kit for box type plug-in units type V/VI	Box type plug-in units, type V/VI	1 set	**3685.294**	–
Assembly kit for box type plug-in unit with EMC-front panel	Box type plug-in unit with EMC front panel	1 set	**3687.591**	–
Assembly kit for plastic handles	Plastic handles on box type plug-in units	1 set	3687.519	576

For more screws, see page 576

Ripac box type plug-in units for drives



Vertical drive chassis

For the installation of drives or CD-ROMs.
May be installed in all Ripac subracks.

- Optionally prepared for EMC or non-EMC
- Accomodation for $3^1/_2$″ or $5^1/_4$″ drives or CD-ROM, vertical
- Front panel and support plate integrated

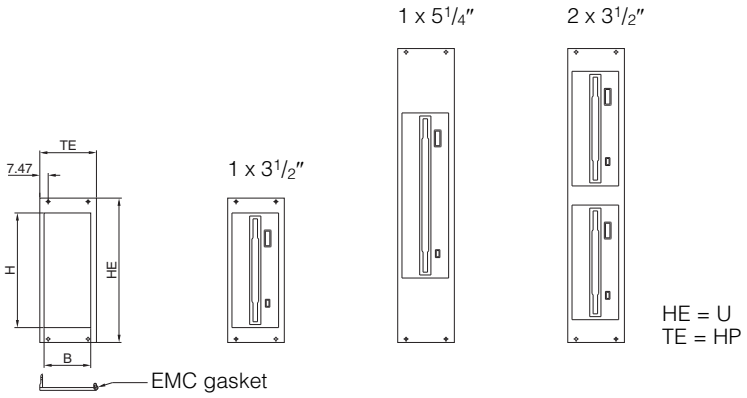
Material:
Front panel: 2.5 mm aluminium
Support plate: Aluminium

Surface finish:
Clear-chromated

EMC

Supply includes:
1 front panel with support plate,
1 EMC gasket (with EMC modules),
assembly parts.

Installation drives	Font panel		Depth drive approx. mm	Font panel cutout		Model No. RP	
	U	HP		Height (H) mm	Width (B) mm	EMC	Non-EMC
1 x $3^1/_2$″	3	8	160	102	26	**3684.469**	**3685.078**
2 x $3^1/_2$″	6	8	160	102	2 x 26	**3684.478**	**3685.087**
1 x $5^1/_4$″	6	10	220	147	41.5	**3684.481**	**3685.090**
1 x $3^1/_2$″	3	8	160	–	–	**–**	**3685.091**
	3	10	160	–	–	**–**	**3685.092**
2 x $3^1/_2$″	6	8	160	–	–	**–**	**3685.095**
	6	10	160	–	–	**–**	**3685.096**





Guide rails

for drive chassis
For routing drive chassis in the subrack.

Material:
Aluminium

Supply includes:
Press-fit pin.

For installation depth mm	Packs of	Model No. RP
160	1	**3686.989**

Note:
Two guide rails are required for each drive chassis.

Also required:

Assembly screws,
packs of = 100, Model No. RP 3654.340,
see page 576.



PCB holder

for box type plug-in units
For fastening PCBs in box type plug-in units.

Material:
PBTP, basic material to UL-94-V0

Supply includes:
Assembly parts.

Packs of	Model No. RP
2	**3606.321**

Ripac box type plug-in units/installation



Covers

for type I and II box type plug-in units

Without vent slots
For slide-in fastening.

Material:
1.0 mm aluminium, untreated



With vent slots
For screw fastening.
Suitable for the installation of guide rails.

Material:
1.2 mm sheet steel, spray-finished

Colour:
RAL 9006

Unit width	Packs of	Model No. RP	
		with vent slots[1)]	without vent slots
Board depth 160 mm			
8 HP	1	–	**3687.555**
10 HP	1	**3687.556**	**3685.689**
12 HP	1	**3687.557**	**3685.690**
14 HP	1	**3687.558**	**3685.691**
21 HP	1	**3687.559**	**3685.692**
28 HP	1	**3687.560**	**3685.693**
42 HP	1	**3687.561**	**3685.694**
Board depth 220 mm			
8 HP	1	–	**3687.562**
10 HP	1	**3687.563**	**3685.701**
12 HP	1	**3687.564**	**3685.702**
14 HP	1	**3687.565**	**3685.703**
21 HP	1	**3687.566**	**3685.704**
28 HP	1	**3687.567**	**3685.705**
42 HP	1	**3687.568**	**3685.706**

Also required:

[1)] Assembly screws,
packs of 100 sets, Model No. RP 3685.289,
see page 577.



Covers

for type I und II box type plug-in units
Slide-in, with vent holes (EMC).

Material:
1.0 mm aluminium, untreated

Unit width	Packs of	Model No. RP	
		Board depth	
		160 mm	220 mm
8 HP	1	**3687.585**	–
10 HP	1	**3685.683**	**3685.695**
12 HP	1	**3685.684**	**3685.696**
14 HP	1	**3685.685**	**3685.697**
21 HP	1	**3685.686**	**3685.698**
28 HP	1	**3685.687**	**3685.699**
42 HP	1	**3685.688**	**3685.700**



Guide rails

for box type plug-in units,
see page 512.

Connectors

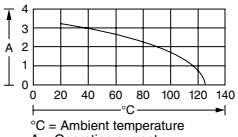
Specifications of male and female connectors to IEC 60 603-2 (DIN 41 612)

	Version B	Version C
Moulded body	Fibreglass-reinforced polyester, grey, self-exting. (UL 94-V0)	Fibreglass-reinforced polyester, grey, self-exting. (UL 94-V0)
Contacts	Male connector CuZn, female connector $CuSn_6$ or $CuSn_8$ optionally plated 2 µm Ni	Male connector CuZn, female connector $CuSn_6$ or $CuSn_8$ optionally plated 2 µm Ni
Connections	$CuNi_9Sn_2$, nickle-plated, optionally tin-plated, Connection zones optionally plated Au/Ni	$CuNi_9Sn_2$, nickle-plated, optionally tin-plated, Connection zones optionally plated Au/Ni
Test class	55/125/56 (to DIN 40 045)	55/125/56 (to DIN 40 045)
Temperature range	–55°C to +125°C	– 55°C to +125°C
Total insertion force	32 pin ≤ 30 N, 64 pin ≤ 60 N	32 pin ≤ 30 N, 48 pin ≤ 45 N, 64 pin ≤ 60 N, 96 pin ≤ 90 N
Retention force	≥ 0.15 N with 0.56 mm test blade	≥ 0.15 N with 0.56 mm test blade
Mechanical service life (connection cycles/quality level)	400 ≙ quality level II	400 ≙ quality level II
Assembling force	80 N (max. 150 N)	80 N (max. 150 N)
Pin retention force	min. 30 N	min. 30 N
Operating current according to derating curve	32 pin: 20°C: 3.2 A/70°C: 1.5 A/100°C: 1.0 A 64 pin: 20°C: 2.0 A/70°C: 1.0 A/100°C: 0.5 A	32/48 pin: 20°C: 3.2 A/70°C: 1.5 A/100°C: 1.0 A 64/96 pin: 20°C: 2.0 A/70°C: 1.0 A/100°C: 0.5 A
Dielectric strength	1.0 kV, 50 Hz (with 2.54 mm)	1.0 kV, 50 Hz (with 2.54 mm)
Operating voltage	250 V~ (with 2.54 mm) VDE 0110, insulation category A	250 V~ (with 2.54 mm) VDE 0110, insulation category A
Min. clearance and creapage distances	1.2 mm (row population) 1.3 mm (contact → contact)	2.5 mm (population rows a + c) 1.2 mm (row population) 3.0 mm (population rows a + c) 1.3 mm (contact → contact)
Volume resistance	≤ 20 mΩ (max. 2 mΩ deviation from standard)	≤ 20 mΩ (max. 2 mΩ deviation from standard)
Insulation resistance	≥ 10^{12}Ω (min. 10^9 Ω after climatic stress)	≥ 10^{12}Ω (min. 10^9 Ω after climatic stress)
Capacitance	approx. 0.5 – 1 pF (contact → contact)	approx. 0.5 – 1 pF (contact → contact)

	Version F	Version H	Version R
Moulded body	Fibreglass-reinforced polyester/ polycarbonate, grey, self-exting (UL 94-V0)	Fibreglass-reinforced polyester/ polycarbonate, grey, self-exting (UL 94-V0)	Fibreglass-reinforced polyester, grey, self-extinguishing (UL 94-V0)
Contacts	Male connector CuZn, female connector $CuSn_6$ or $CuSn_8$ optionally plated Au/2µ Nl	Male and femal connector copper alloy, hard silver-plated	Male connector CuZn, female connector $CuSn_6$ or $CuSn_8$ optionally plated Au/2µ Nl
Connections	$CuNi_9Sn_2$, nickle-plated, optionally tin-plated, connection zones optionally Au/Ni	Tin-plated	$CuNi_9Sn_2$, nickle-plated, optionally tin-plated, connection zones optionally Au/Ni
Test class	55/125/56 (to DIN 40 045)		55/125/56 (to DIN 40 045)
Temperature range	–55°C to +125°C	–65°C to +125°C	–55°C to +125°C
Total insertion force	32 pin ≤ 50 N, 48 pin ≤ 75 N	max. 90 N	32 pin ≤ 30 N, 48 pin ≤ 45 N; 64 pin ≤ 60 N, 96 pin ≤ 90 N
Retention force	≥ 0.15 N with 0.56 mm test blade		≥ 0.15 N with 0.56 mm test blade
Mechanical service life (connection cycles/quality level)	400 ≙ quality level II		400 ≙ quality level II
Assembling force			80 N (max.150 N)
Pin retention force			min. 30 N
Operating current according to derating curve	32/48 pin: 20°C: 6.0 A/70°C: 4.0 A/100°C: 2.5 A	20°C: 15 A/70°C: 12 A/100°C: 8 A	32/48 pin: 20°C: 3.2 A/70°C: 1.5 A/100°C: 1.0 A 64/96 pin: 20°C: 2.0 A/70°C: 1.0 A/100°C: 0.5 A
Dielectric strength	1.55 kV (with b, z), 3 kV (with d, z)	3.0 kV, 50 Hz	1.0 kV, 50 Hz (with 2.54 mm)
Operating voltage	125 V~ (b, z), 250 V~ (d, z)	500 V, VDE 0110 size C	250 V~ (with 2.54 mm) VDE 0110, insulation category A
Min. clearance and creapage distances	≥ 1.6 mm (≥ 3 mm for population rows d + z); ≥ 3.0 mm (≥ 5 mm for population rows d + z);	≥ 4.5 mm ≥ 8.0 mm	2.5 mm (population rows a + c) 1.2 mm (row population) 3.0 mm (population rows a + c) 1.3 mm (contact → contact)
Volume resistance	≤ 15 mΩ (max. 2 mΩ deviat. from stand.)	≤ 15 mΩ	≤ 20 mΩ (max. 2 mΩ deviat. from stand.)
Insulation resistance	≥ 10^{12}Ω	≥ 10^{12}Ω	≥ 10^{12}Ω (min. 10^9 Ω after climatic stress)
Capacitance	approx. 2.5 pF (1.5 pF for popul. d, z)		approx. 0.5 – 1 pF (contact → contact)

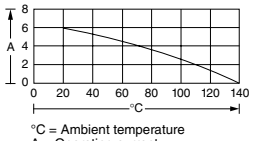
Derating curves

B, C, R



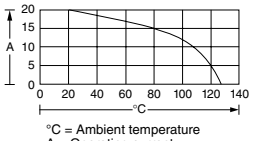
Version B, C, R
20°C – 3.20 A
70°C – 2.45 A
100°C – 1.65 A

F



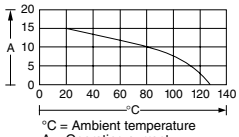
Version F
20°C – 6.0 A
70°C – 4.0 A
100°C – 2.5 A

H11



Version H11
20°C – 20.0 A
70°C – 16.0 A
100°C – 12.2 A

H15



Version H15 R
20°C – 15.0 A
70°C – 11.0 A
100°C – 8.0 A

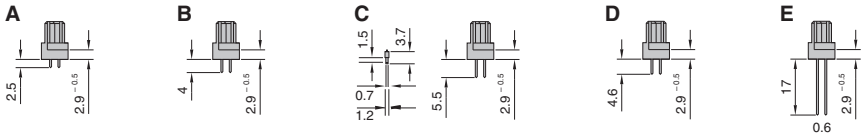


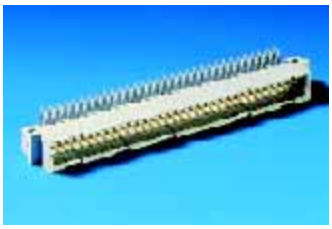
Female connector version B

IEC 60 603-2 (DIN 41 612)

- 3.2 A/pin (at 20°C ambient temperature)
- Solder or press-fit technology

Type of connection		Model No. RP Solder pin (A)	Solder pin (B)	Solder pin (C)	Press-fit pin (D)	Press-fit pin (E)	No. of contacts
Population	Row a 1, 2, 3 ...	**3686.700**	**3686.703**	**3686.706**	**3686.709**	**3686.712**	32
Population	Row a + b Pin 2, 4, 6 ...32	**3686.701**	**3686.704**	**3686.707**	**3686.710**	**3686.713**	32
Population	Row a + b 1, 2, 3 ...	**3686.702**	**3686.705**	**3686.708**	**3686.711**	**3686.714**	64
Hole diameter for printed circuit boards		$1^{\pm 0.1}$	$1^{\pm 0.1}$	$1^{\pm 0.1}$	$1^{+0.009}_{-0.006}$	$1^{+0.009}_{-0.006}$	





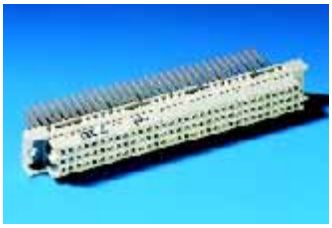


Male connector version B

IEC 60 603-2 (DIN 41 612)

- 3.2 A/pin (at 20°C ambient temperature)
- Solder or press-fit technology

Type of connection		Model No. RP Solder pin (A)	Press-fit pin (B)	No. of contacts
Population	Row a 1, 2, 3 ...	**3686.715**	**3686.718**	32
Population	Row a + b Pin 2, 4, 6 ...32	**3686.716**	**3686.719**	32
Population	Row a + b 1, 2, 3 ...	**3686.717**	**3686.720**	64
Hole diameter for printed circuit boards		$1^{\pm 0.1}$	$1^{+0.009}_{-0.006}$	

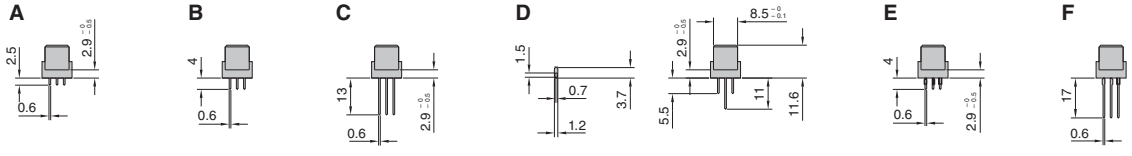


Female connector version C

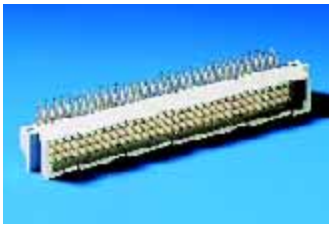
IEC 60 603-2 (DIN 41 612)

- 3.2 A/pin (at 20°C ambient temperature)
- Solder or press-fit technology

Type of connection		Model No. RP Solder pin (A)	Solder pin (B)	Wrap post (C)	Solder pin (D)	Press-fit pin (E)	Press-fit pin (F)	No. of contacts
Population	Row a + b Pin 2, 4, 6 ...32	**3686.721**	**3686.725**	**3686.729**	**3686.733**	**3686.737**	**3686.741**	32
Population	Row a + b + c Pin 2, 4, 6 ...32	**3686.722**	**3686.726**	**3686.730**	**3686.734**	**3686.738**	**3686.742**	48
Population	Row a + c	**3686.723**	**3686.727**	**3686.731**	**3686.735**	**3686.739**	**3686.743**	64
Population	Row a + b + c	**3686.724**	**3686.728**	**3686.732**	**3686.736**	**3686.740**	**3686.744**	96
Hole diameter for printed circuit boards		$1^{\pm 0.1}$	$1^{\pm 0.1}$	$1^{\pm 0.1}$	$1^{\pm 0.1}$	$1^{+0.009}_{-0.006}$	$1^{+0.009}_{-0.006}$	



Connectors



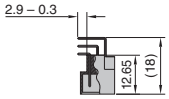
Female connector version C

IEC 60 603-2 (DIN 41 612)

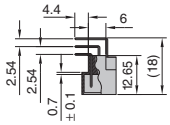
- 3.2 A/pin (at 20°C ambient temperature)
- Solder or press-fit technology

Type of connection		Model No. RP: Solder pin (A)	Solder pin (B)	Press-fit pin (C)	No. of contacts
Population	Row a + c Pin 2, 4, 6 ...32	**3686.745**	**3686.749**	**3686.753**	32
Population	Row a + b + c Pin 2, 4, 6 ...32	**3686.746**	**3686.750**	**3686.754**	48
Population	Row a + b	**3686.747**	**3686.751**	**3686.755**	64
Population	Row a + b + c	**3686.748**	**3686.752**	**3686.756**	96
Hole diameter for printed circuit boards		$1^{\pm 0.1}$	$1^{\pm 0.1}$	$1^{+0.009}_{-0.006}$	

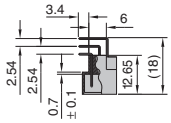
A



B



C





Female connector version F

IEC 60 603-2 (DIN 41 612)

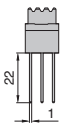
- 5.6 A/pin (at 20°C ambient temperature)
- Solder or wire-wrap technology

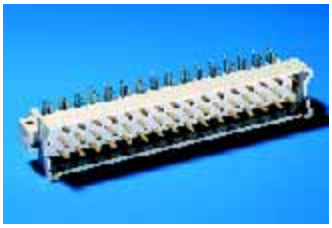
Type of connection		Model No. RP: Solder pin (A)	Wrap post (B)	No. of contacts
Population	Rows b, z Pin 2, 4, 6 ...32	**3686.814**	**3686.820**	32
Population	Rows d, z Pin 2, 4, 6 ...32	**3686.815**	**3686.821**	32
Population	Rows d, b, z Pin 2, 4, 6 ...32	**3686.816**	**3686.822**	48
Hole diameter for printed circuit boards		$1.6^{\pm 0.1}$	$1^{+0.009}_{-0.006}$	

A



B





Male connector version F

IEC 60 603-2 (DIN 41 612)

- 5.6 A/pin (at 20°C ambient temperature)
- Solder or pins

Type of connection		Model No. RP: Solder pin	No. of contacts
Population	Rows b, z Pin 2, 4, 6 ...32	**3686.817**	32
Population	Rows d, z Pin 2, 4, 6 ...32	**3686.818**	32
Population	Rows d, b, z Pin 2, 4, 6 ...32	**3686.819**	48
Hole diameter for printed circuit boards		$1^{\pm 0.1}$	





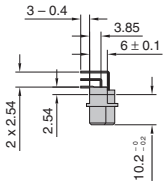
Female connector version R

IEC 60 603-2 (DIN 41 612)

- 3.2 A/pin (at 20°C ambient temperature)
- Solder or press-fit technology

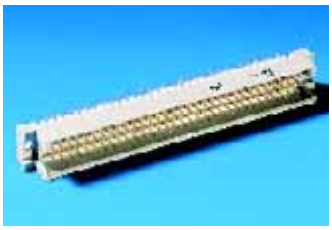
Type of connection		Model No. RP: Solder pin (A)	Press-fit (B)	No. of contacts
Population	Row a + c Pin 2, 4, 6 ...32	**3686.757**	–	32
Population	Row a + b + c Pin 2, 4, 6 ...32	**3686.758**	–	48
Population	Row a + c	**3686.759**	**3686.761**	65
Population	Row a + b + c	**3686.760**	**3686.762**	96
Hole diameter for printed circuit boards		$1^{\pm 0.1}$	$1^{+0.009}_{-0.006}$	

A



B





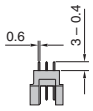
Male connector version R

IEC 60 603-2 (DIN 41 612)

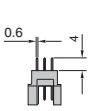
- 3.2 A/pin (at 20°C ambient temperature)
- Solder or press-fit technology

Type of connection		Model No. RP: Solder pin (A)	Solder pin (B)	Wrap post (C)	Press-fit pin (D)	Press-fit pin (E)	No. of contacts
Population	Row a + c Pin 2, 4, 6 ...32	**3686.763**	**3686.767**	**3686.771**	**3686.775**	**3686.779**	32
Population	Row a + b + c Pin 2, 4, 6 ...32	**3686.764**	**3686.768**	**3686.772**	**3686.776**	**3686.780**	48
Population	Row a + c	**3686.765**	**3686.769**	**3686.773**	**3686.777**	**3686.781**	64
Population	Row a + b + c	**3686.766**	**3686.770**	**3686.774**	**3686.778**	**3686.782**	96
Hole diameter for printed circuit boards		$1^{\pm 0.1}$	$1^{\pm 0.1}$	$1^{\pm 0.1}$	$1^{+0.009}_{-0.006}$	$1^{+0.009}_{-0.006}$	

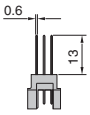
A



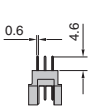
B



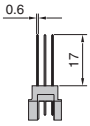
C



D



E





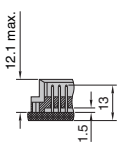
Male connector shroud type R

IEC 60 603-2 (DIN 41 612)

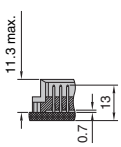
- For adaptor connectors

Type of connection	Model No. RP: A	B	C	D
Population 96 pins	**3686.783**	**3686.784**	**3686.807**	**3686.808**

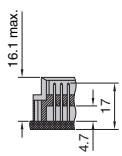
A



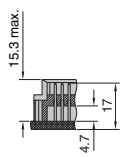
B



C



D



Connectors

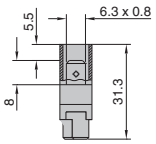


Female connector version H11

IEC 60 603-2 (DIN 41 612)

- 15 A/pin (at 20°C ambient temperature)
- Flat-pin connector terminal

	Model No. RP
Type of connection	Faston
Population 11 pins	**3686.788**



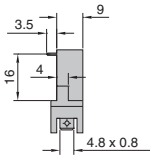


Male connector version H11

IEC 60 603-2 (DIN 41 612)

- 15 A/pin (at 20°C ambient temperature)
- Solder technique
- Optional leading earth (2)

	Model No. RP
Type of connection	Solder pin
Population 11 pins	**3686.785**
Population 10 + 1 pin	**3686.786**
Population 9 + 2 pin	**3686.787**



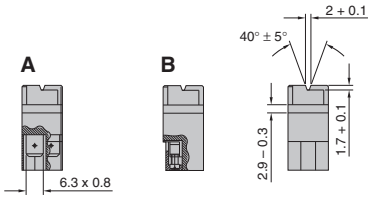


Female connector version H15

IEC 60 603-2 (DIN 41 612)

- 15 A/pin (at 20°C ambient temperature)
- Blade terminals or screw termination

	Model No. RP	
Type of connection	Faston (A)	Screw termination (B)
Population 15 pins	**3686.789**	**3686.790**



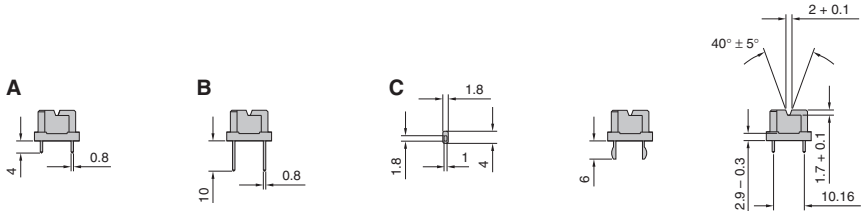


Female connector version H15

IEC 60 603-2 (DIN 41 612)

- 15 A/pin (at 20°C ambient temperature)
- Solder technique

	Model No. RP		
Type of connection	Solder pin (A)	Solder pin (B)	Solder lug (C)
Population 15 pins	**3686.791**	**3686.792**	**3686.793**



Connectors

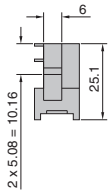


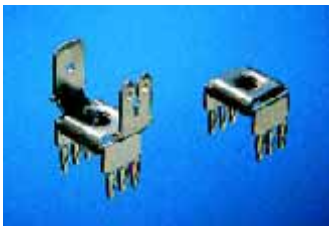
Female connector version H15

IEC 60 603-2 (DIN 41 612)

- 15 A/pin (at 20°C ambient temperature)
- Solder technique

	Model No. RP
Type of connection	Solder pin
Population 15 pins	**3686.794**



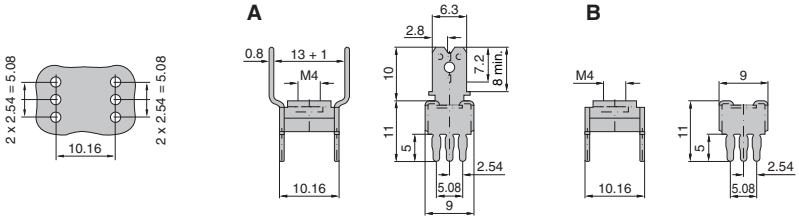


Screw/plug-in connections

Press-fit technique.

- With 6 pins
- 30 A rated current maximum

Type	Pins	Model No. RP
A	6	**3686.801**
B	6	**3686.802**





Faston

Press-fit or solder.

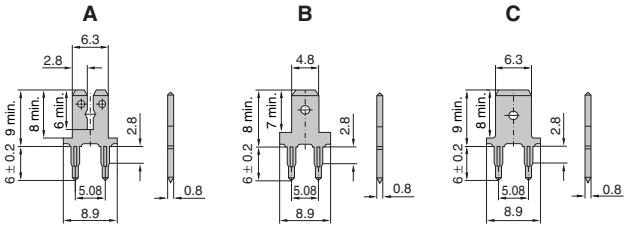
Material:
$CuSn_6$

Surface finish:
min. 2 µm SnPb

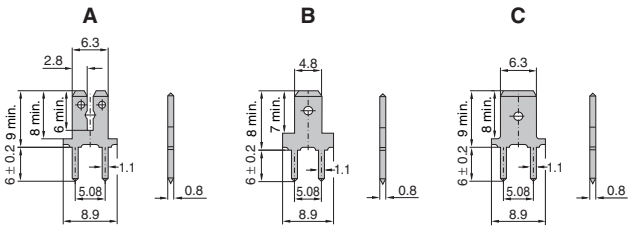
Technical specifications:
Assembling force: max. 60 kg
Pin retention force: at least 12 kg
Drill bit: 1.75 mm
Hole: 1.6 ± 0.9 mm after plating

Type	Model No. RP	
	Press-fit pin	Solder pin
A	**3686.795**	**3686.798**
B	**3686.796**	**3686.799**
C	**3686.797**	**3686.800**

Press-fit technique



Solder technique



Assembly parts

For fastening	Dimensions	Description	Packs of	Model No. RP	Page
Connectors to Z rails	M2.5 x 6	Posidrive screw	100	3654.340	576
Connectors to PCBs	M2.5 x 12	Posidrive screw	100	3654.350	576

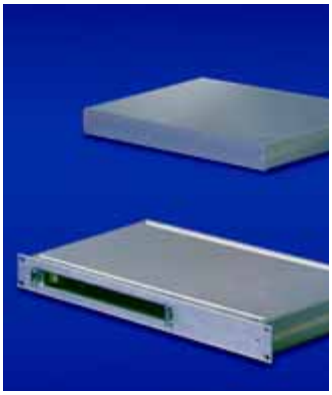
Instrument cases/system enclosures

Features



Alongside the Rittal Vario-Case iS, the classic instrument case with its wide range of application-related benefits, the RiCase instrument case stands out with its modern design. Particular features include the numerous colour variants and the all-metal enclosure construction.

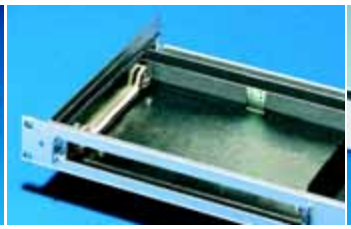
The system enclosure (instrument case or rack-mounted enclosure) Ripac Vario-Module is fully compatible with the latest Ripac subrack range, making it ideal for individual configuration and assembly as a microcomputer system.



RiBox



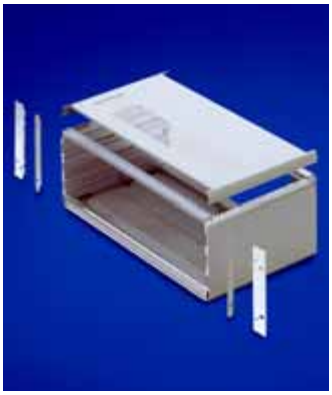
System enclosure for horizontal installation of individual boards, hubs, routers and modems.



Mounting plate of sheet steel for individual population.



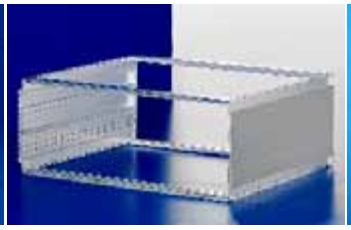
Installation kit for horizontal installation of boards.



Ripac Vario-Module



System enclosure
for direct installation of PCBs or board-type plug-in units.



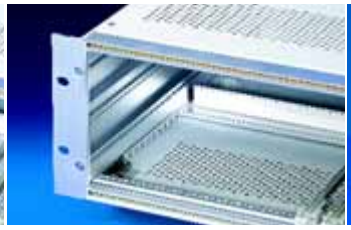
Basic enclosure
optionally for EMC or non-EMC applications and . . .



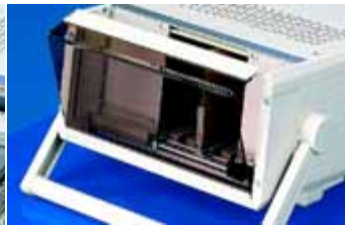
. . . individually configurable with cover plates.



Optionally with **corner trim** for configuration as an instrument case or . . .



. . . with **482.6 mm (19″) flanges** for configuration as a rack-mounted enclosure.



Acrylic glazed front doors, horizontally hinged, to protect built-in control components.

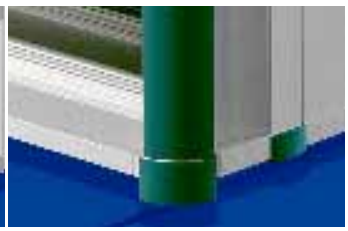
Features



Rittal RiCase



All-metal instrument case for 482.6 mm (19″) slide-in equipment
The perfect “safe” for valuable electronics. Extruded aluminium sections and die-cast elements form an extremely robust yet lightweight enclosure.



Stability and non-slip properties are guaranteed by 10 mm high corner caps. The distance from the desktop or from the lower enclosure offers excellent ventilation conditions.



The styling and colours add **innovative design accents.** This emphasises the high value of the electronic fittings within.



Slide-in strips are simply pushed into a suitable profile channel, and any required attachment is supported.



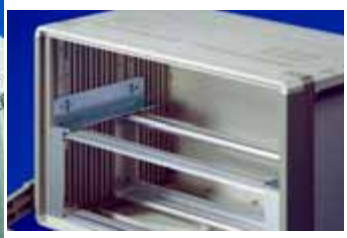
Natural convection from bottom to top, via optional perforations in the base and cover trays.



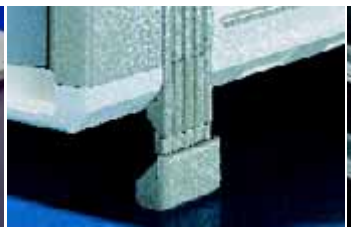
Rack-mounted fans provide forced ventilation.



Rittal Vario-Case iS



Instrument cases for the installation of slide-in equipment as well as modular assemblies and PCBs. The pitch pattern of channels in the side panels provides variable support attachments.



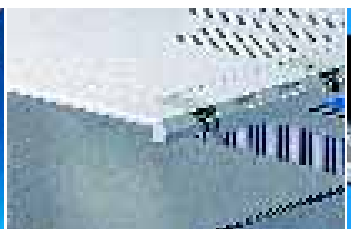
Twin **fold-out enclosure feet** in the base trays enable two different angles of inclination.



Stackability thanks to integral enclosure feet and recesses, even with different depths.



Versatile **handling options** with support stands, carrying handles and recessed handles.

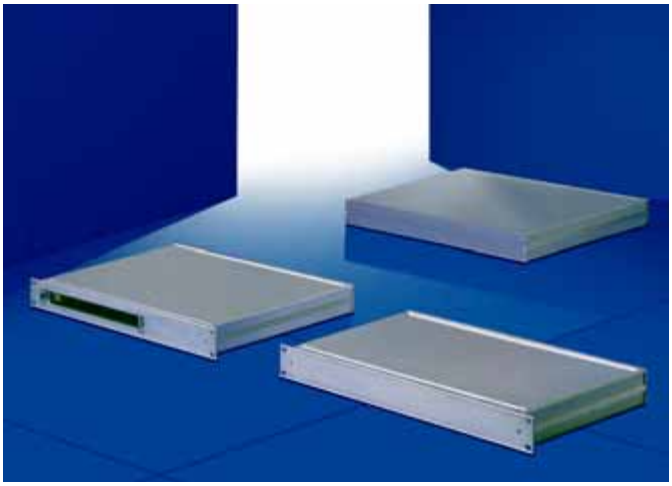


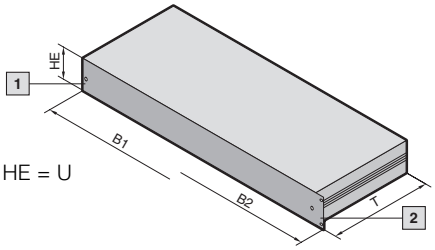
Concealed screw fastenings for an excellent design.



Individual climate control: Front panels with vent slots, vented base/cover trays, rack-mounted fans.

RiBox system enclosures 1 U





Technical specifications:
System enclosures 1 U, 150, 200, 250, 300, 350 mm deep
Easy to assembly with just 4 screws.
Optionally for use as an instrument case or 19″ rack-mounted enclosure,
Front panel to hold a an overlay to conceal the screws.
Maximum possible useful interior space.
Optional EMC upgrades with additional EMC gaskets.
Option of installing 1 VME or CPCI board horizontally.

Design:
System enclosure 1 U, to IEC 60 297-1.
Optionally available for 19″ rack-mounting in the enclosure or as an instrument case version.

1 Designed as desktop unit

2 Designed as rack

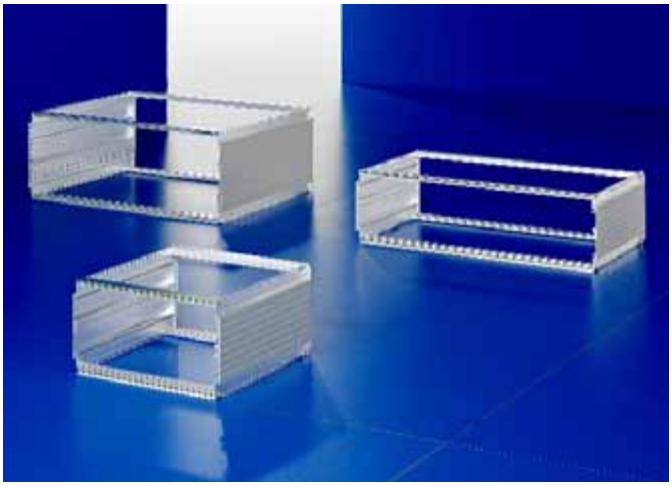
Material/surface finish:
Side panels:
Extruded aluminium section, untreated
Base/cover trays:
Aluminium, clear-chromated
Front/rear panel:
Extruded aluminium section, clear-chromated
Mounting plate:
Sheet steel

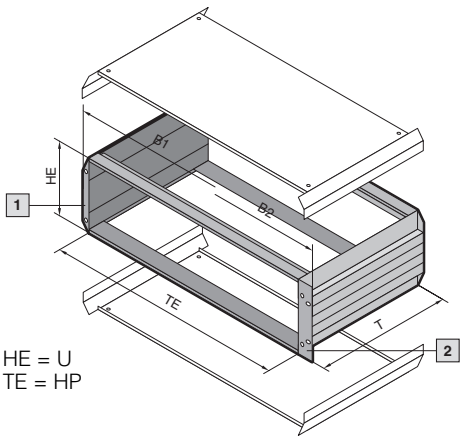
Detailed drawing,
see page 1159.

U	1	1	1	1	1	–	–
Width (B1) in mm	447	447	447	447	447	–	–
Width (B2) in mm	19″ (482.6)	19″ (482.6)	19″ (482.6)	19″ (482.6)	19″ (482.6)	19″ (482.6)	19″ (482.6)
Depth (T) in mm	150	200	250	300	350	250	350
Model No. RP instrument case	**3687.819**	**3687.820**	**3687.821**	**3687.822**	**3687.823**	**–**	**–**
Model No. RP rack	**3687.814**	**3687.815**	**3687.816**	**3687.817**	**3687.818**	**–**	**–**
Model No. RP rack-mount including mounting kit for double Euroboards	**–**	**–**	**–**	**–**	**–**	**3684.072**	**3684.073**
Supply includes							
Side panel	2	2	2	2	2	2	2
Font panel	1	1	1	1	1	1	1
Rear panel	1	1	1	1	1	1	1
Base/cover tray	2	2	2	2	2	2	2
Mounting kit	–	–	–	–	–	1	1
Accessories							
EMC set	**3684.080**	**3684.080**	**3684.080**	**3684.080**	**3684.080**	**3684.080**	**3684.080**
Mounting plate	**3684.074**	**3684.075**	**3684.076**	**3684.077**	**3684.078**	**–**	**–**

Ripac Vario-Module Page 555 **RiCase** Page 562 **Vario-Case** Page 569

Ripac Vario-Module 3 U, 4 U





Technical specifications:
May be used as a rack-mounted enclosure or instrument case. External dimensions to IEC 60 297-1 for installation in enclosures, 482.6 mm (19″). Installation dimensions for board type plug-in assemblies to IEC 60 297-3 and IEEE 1101.1/1101.10.

Material/Surface finish:
Side panels:
Extruded aluminium section, spray-finished in RAL 7035
Horizontal rails: Extruded aluminium section, clear-chromated
Corner trims: Die-cast zinc, spray-finished in RAL 7035
Side trims: Extruded aluminium section, spray-finished in RAL 7035

Protection category:
IP 40 for non-vented version.

Supply includes:
2 side panels,
4 horizontal rails,
4 threaded inserts,
2 rear corner trim pieces,
assembly parts.

1 Equipped as an instrument case

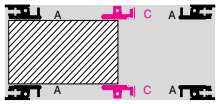
2 Equipped as a rack-mounted unit

Note:
Corner trim pieces, mounting flanges or top and bottom covers must be ordered separately.

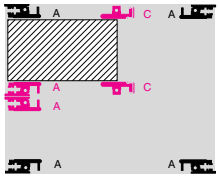
Horizontal rails for further configuration must be ordered separately,
see page 498.

Detailed drawing,
see page 1160.

Horizontal rail configuration



3 U



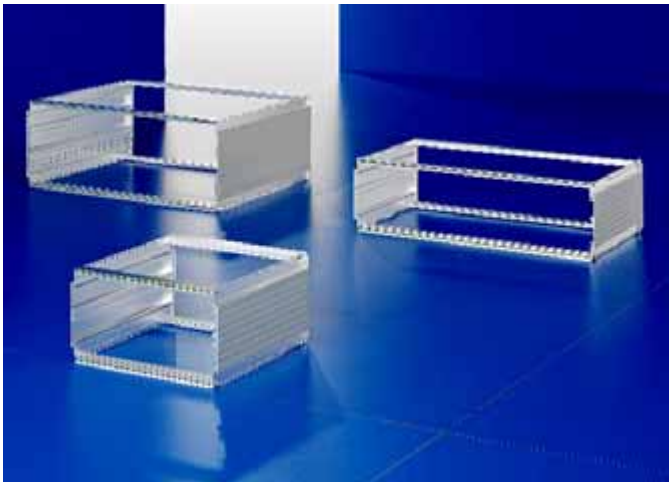
4 U (3 + 1)

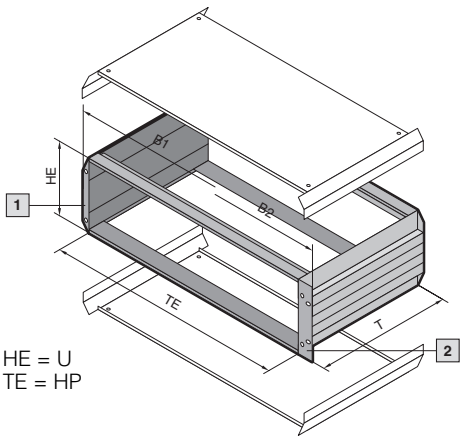
Ripac Vario-Module	Packs of	3 U							4 U (3 + 1)			Page
Installation width (HP)		42	42	63	63	84	84	84	84	84	84	
Width (B1) in mm		235,6	235,6	342,3	342,3	449,0	449,0	449,0	449,0	449,0	449,0	
Width (B2) in mm		251.6	251.6	358.3	358.3	465.1	465.1	465.1	465.1	465.1	465.1	
Depth (T) in mm		250.4	310.4	250.4	310.4	250.4	310.4	370.4	250.4	310.4	370.4	
Model No. VM Basic enclosure	1	**3982.040**	**3982.070**	**3982.050**	**3982.080**	**3982.060**	**3982.090**	**3982.100**	**3982.110**	**3982.120**	**3982.130**	
Also required												
Top covers												
– with vent holes	1	3982.941	3982.951	3982.942	3982.952	3982.940	3982.950	3982.960	3982.940	3982.950	3982.960	559
– without vent holes	1	3982.901	3982.911	3982.902	3982.912	3982.900	3982.910	3982.920	3982.900	3982.910	3982.920	559
Bottom covers												
– with vent holes	1	3982.741	3982.751	3982.742	3982.752	3982.740	3982.750	3982.760	3982.740	3982.750	3982.760	559
– without vent holes	1	3982.701	3982.711	3982.702	3982.712	3982.700	3982.710	3982.720	3982.700	3982.710	3982.720	559
Front corner trim pieces for assembly as instrument case	2	3981.310	3981.310	3981.310	3981.310	3981.310	3981.310	3981.310	3981.320	3981.320	3981.320	560
Flange for configuration as rack mount												
– without handle holes	2	3981.210	3981.210	3981.210	3981.210	3981.210	3981.210	3981.210	3981.220	3981.220	3981.220	560
– with handle holes	2	3981.260	3981.260	3981.260	3981.260	3981.260	3981.260	3981.260	3981.270	3981.270	3981.270	560
Accessories												
Front/rear panels		see page 525 – 540										
Carrying handles	2	3981.350	3981.360	3981.350	3981.360	3981.350	3981.360	3981.370	3981.350	3981.360	3981.370	560
Front handles[1)]	2	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	497
Acrylic front door	1	3981.420	3981.420	3981.430	3981.430	3981.440	3981.440	3981.440	3981.450	3981.450	3981.450	561
Rear adjustable feet	4	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	561

[1)] only for use in conjunction with mounting flanges with handle holes.

Accessories Ripac Vario-Module Page 559 **RiBox** Page 554 **RiCase** Page 562 **Vario-Case** Page 569

Ripac Vario-Module 3 U, 4 U EMC





Technical specifications:
May be used as a rack-mounted enclosure or instrument case.
External dimensions to IEC 60 297-1, for installation in enclosures, 482.6 mm (19″).
Installation dimensions for board type plug-in assemblies to IEC 60 297-3 and IEEE 1101.1/1101.10.

Material/Surface finish:
Side panels:
Extruded aluminium section, spray-finished in RAL 7035
Horizontal rails: Extruded aluminium section, clear-chromated
Corner trims: Die-cast zinc, Spray-finished in RAL 7035
Side trims: Extruded aluminium section, spray-finished in RAL 7035
Contact points: Conductive

Protection category:
IP 40 for non-vented version.

Supply includes:
2 side panels,
4 horizontal rails,
4 threaded inserts,
2 rear corner trim pieces,
assembly parts.

1 Equipped as an instrument case

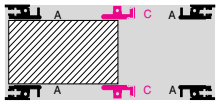
2 Equipped as a rack-mounted unit

Note:
Corner trim pieces, mounting flanges or top and bottom covers must be ordered separately.

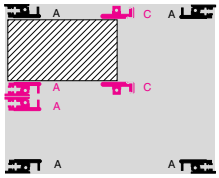
Horizontal rails for further configuration must be ordered separately,
see page 498.

Detailed drawing,
see page 1160.

Horizontal rail configuration



3 U



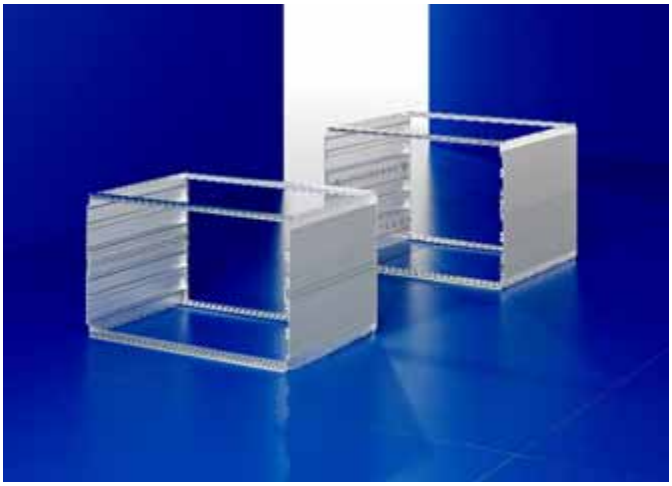
4 U (3 + 1)

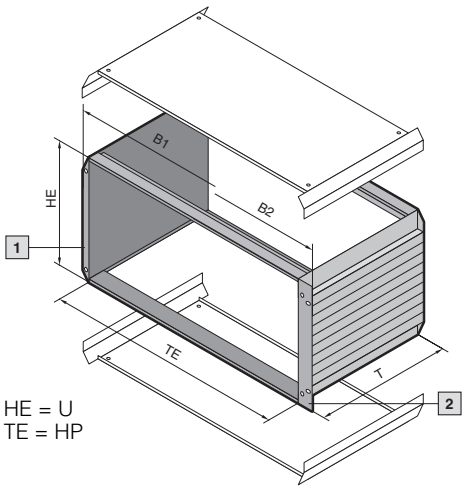
Ripac Vario-Module	Packs of	3 U							4 U (3 + 1)			Page
Installation width (HP)		42	42	63	63	84	84	84	84	84	84	
Width (B1) in mm		235.6	235.6	342.3	342.3	449.0	449.0	449.0	449.0	449.0	449.0	
Width (B2) in mm		251.6	251.6	358.3	358.3	465.1	465.1	465.1	465.1	465.1	465.1	
Depth (T) in mm		250.4	310.4	250.4	310.4	250.4	310.4	370.4	250.4	310.4	370.4	
Model No. VM Basic enclosure EMC	1	**3983.040**	**3983.070**	**3983.050**	**3983.080**	**3983.060**	**3983.090**	**3983.100**	**3983.110**	**3983.120**	**3983.130**	
Also required												
EMC top covers												
– with vent holes	1	3981.941	3981.951	3981.942	3981.952	3981.940	3981.950	3981.960	3981.940	3981.950	3981.960	559
– without vent holes	1	3981.901	3981.911	3981.902	3981.912	3981.900	3981.910	3981.920	3981.900	3981.910	3981.920	559
EMC bottom covers												
– with vent holes	1	3981.741	3981.751	3981.742	3981.752	3981.740	3981.750	3981.760	3981.740	3981.750	3981.760	559
– without vent holes	1	3981.701	3981.711	3981.702	3981.712	3981.700	3981.710	3981.720	3981.700	3981.710	3981.720	559
Front corner trim pieces for assembly as instrument case	2	3981.310	3981.310	3981.310	3981.310	3981.310	3981.310	3981.310	3981.320	3981.320	3981.320	560
Flange for assembly as rack-mounted unit												
– without handle holes	2	3981.210	3981.210	3981.210	3981.210	3981.210	3981.210	3981.210	3981.220	3981.220	3981.220	560
– with handle holes	2	3981.260	3981.260	3981.260	3981.260	3981.260	3981.260	3981.260	3981.270	3981.270	3981.270	560
EMC installation												
EMC gaskets, horizontal												
– for upper/lower horizontal rail	1	3684.808	3684.808	3684.808	3684.808	3684.808	3684.808	3684.808	3684.808	3684.808	3684.808	507
– between covers and horizontal rails	10	3684.245	3684.245	3684.245	3684.245	3684.245	3684.245	3684.245	3684.245	3684.245	3684.245	507
EMC gaskets, vertical	1	3686.975	3686.975	3686.975	3686.975	3686.975	3686.975	3686.975	3686.976	3686.976	3686.976	506
Front/rear panels EMC	see page 525 – 540											
Accessories												
Front/rear panels	see page 525 – 540											
Carrying handles	2	3981.350	3981.360	3981.350	3981.360	3981.350	3981.360	3981.370	3981.350	3981.360	3981.370	560
Front handles[1)]	2	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	3636.010	497
Acrylic front door	1	3981.420	3981.420	3981.430	3981.430	3981.440	3981.440	3981.440	3981.450	3981.450	3981.450	561
Rear adjustable feet	4	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	561

[1)] only in conjunction with mounting flanges with handle holes.

Accessories Ripac Vario-Module Page 559 **RiBox** Page 554 **RiCase** Page 562 **Vario-Case** Page 569

Ripac Vario-Module 6 U, 7 U





Technical specifications:
May be used as a rack-mounted enclosure or instrument case.
External dimensions to IEC 60 297-1 for installation in enclosures, 482.6 mm (19″).
Installation dimensions for board type plug-in assemblies to IEC 60 297-3 and IEEE 1101.1/1101.10.

Material/surface finish:
Side panels:
Extruded aluminium section, spray-finished in RAL 7035
Horizontal rails:
Extruded aluminium section, clear-chromated
Corner trims: Die-cast zinc, Spray-finished in RAL 7035

Protection category:
IP 40 for non-vented version.

Supply includes:
2 side panels,
4 horizontal rails,
4 threaded inserts,
2 rear corner trim pieces,
2 side trims centre,
assembly parts.

1 Equipped as an instrument case

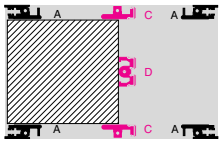
2 Equipped as a rack-mounted unit

Note:
Corner trim pieces, mounting flanges or top and bottom covers must be ordered separately.

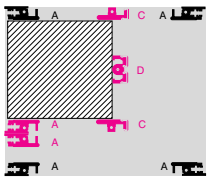
Horizontal rails for further configuration must be ordered separately,
see page 498.

Detailed drawing,
see page 1160.

Horizontal rail configuration



6 U



7 U (6 + 1)

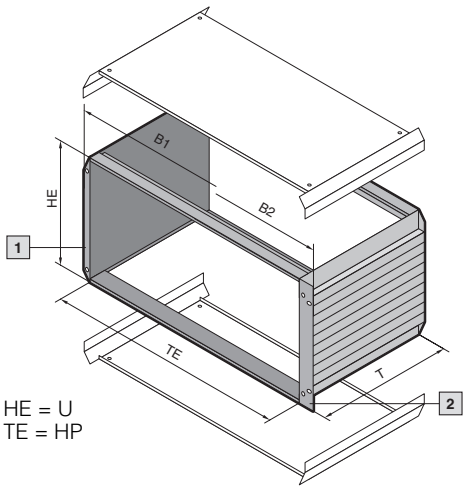
Ripac Vario-Module	Packs of	6 U			7 U (6 + 1)		Page
Installation width (HP)		84	84	84	84	84	
Width (B1) in mm		449.0	449.0	449.0	449.0	449.0	
Width (B2) in mm		465.1	465.1	465.1	465.1	465.1	
Depth (T) in mm		310.4	370.4	430.4	310.4	430.4	
Model No. VM Basic enclosure	1	**3982.140**	**3982.150**	**3982.160**	**3982.170**	**3982.190**	
Also required							
Top covers – with vent holes – without vent holes	 1 1	 3982.950 3982.910	 3982.960 3982.920	 3982.970 3982.930	 3982.950 3982.910	 3982.970 3982.930	 559 559
Bottom covers – with vent holes – without vent holes	 1 1	 3982.750 3982.710	 3982.760 3982.720	 3982.770 3982.730	 3982.750 3982.710	 3982.790 3982.730	 559 559
Corner trim pieces for assembly as instrument case	2	3981.330	3981.330	3981.330	3981.340	3981.340	560
Mounting flanges for assembly as rack-mounted unit – without handle holes – with handle holes	 2 2	 3981.230 3981.280	 3981.230 3981.280	 3981.230 3981.280	 3981.240 3981.290	 3981.240 3981.290	 560 560
Accessories							
Front/rear panel	see page 525 – 540						
Carrying handles	2	3981.360	3981.370	3981.380	3981.360	3981.370	560
Front handles[1)]	2	3666.010	3666.010	3666.010	3666.010	3666.010	497
Acrylic front door	1	3981.460	3981.460	3981.460	3981.470	3981.470	561
Rear adjustable feet	4	3901.000	3901.000	3901.000	3901.000	3901.000	561

[1)] only in conjunction with mounting flanges with handle holes.

Accessories Ripac Vario-Module Page 559 **RiBox** Page 554 **RiCase** Page 562 **Vario-Case** Page 569

Ripac Vario-Module 6 U, 7 U EMC





Technical specifications:
May be used as a rack-mounted enclosure or instrument case.
External dimensions to IEC 60 297-1 for installation in enclosures, 482.6 mm (19″).
Installation dimensions for board type plug-in assemblies to IEC 60 297-3 and IEEE 1101.1/1101.10.

Material/surface finish:
Side panels:
Extruded aluminium section, spray-finished in RAL 7035
Horizontal rails:
Extruded aluminium section, chromated
Corner trims: Die-cast zinc, Spray-finished in RAL 7035
Contact points: Conductive

Protection category:
IP 40 for non-vented version.

Supply includes:
2 side panels,
4 horizontal rails,
4 threaded inserts,
2 rear corner trim pieces,
2 side trims centre,
assembly parts.

1 Equipped as an instrument case

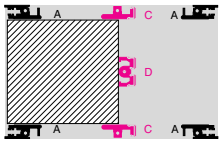
2 Equipped as a rack-mounted unit

Note:
Corner trim pieces, mounting flanges or top and bottom covers must be ordered separately.

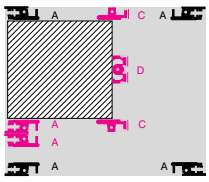
Horizontal rails for further configuration must be ordered separately,
see page 498.

Detailed drawing,
see page 1160.

Horizontal rail configuration



6 U



7 U (6 + 1)

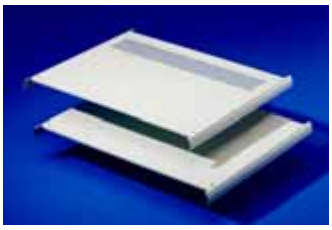
Ripac Vario-Module	Packs of	6 U			7 U (6 + 1)		Page
Installation width (HP)		84	84	84	84	84	
Width (B1) in mm		449.0	449.0	449.0	449.0	449.0	
Width (B2) in mm		465.1	465.1	465.1	465.1	465.1	
Depth (T) in mm		310.4	370.4	430.4	310.4	430.4	
Model No. VM Basic enclosure EMC	1	**3983.140**	**3983.150**	**3983.160**	**3983.170**	**3983.190**	
Also required							
EMC top covers – with vent holes – without vent holes	 1 1	 3981.950 3981.910	 3981.960 3981.920	 3981.970 3981.930	 3981.950 3981.910	 3981.970 3981.930	 559 559
EMC bottom covers – with vent holes – without vent holes	 1 1	 3981.750 3981.710	 3981.760 3981.720	 3981.770 3981.730	 3981.750 3981.710	 3981.770 3981.730	 559 559
Front corner trim pieces for assembly as instrument case	2	3981.330	3981.330	3981.330	3981.340	3981.340	560
Mounting flanges for assembly as rack-mounted unit – without handle holes – with handle holes	 2 2	 3981.230 3981.280	 3981.230 3981.280	 3981.230 3981.280	 3981.240 3981.290	 3981.240 3981.290	 560 560
EMC installation							
EMC gaskets, horizontal – for upper/lower horizontal rail – between covers and horizontal rails	 1 10	 3684.808 3684.245	 3684.808 3684.245	 3684.808 3684.245	 3684.808 3684.245	 3684.808 3684.245	507
EMC gaskets, vertical	1	3686.977	3686.977	3686.977	3686.978	3686.978	506
Front/rear panels EMC	see page 525 – 540						
Accessories							
Front/rear panel	see page 525 – 540						
Carrying handles	2	3981.360	3981.370	3981.380	3981.360	3981.370	560
Front handles[1)]	2	3666.010	3666.010	3666.010	3666.010	3666.010	497
Acrylic front door	1	3981.460	3981.460	3981.460	3981.470	3981.470	561
Rear adjustable feet	4	3901.000	3901.000	3901.000	3901.000	3901.000	561

[1)] only in conjunction with mounting flanges with handle holes.

Accessories Ripac Vario-Module Page 559 **RiBox** Page 554 **RiCase** Page 562 **Vario-Case** Page 569

Enclosure population

For individual interior installation of the enclosures, system components from the Ripac range may be used (see from page 498).



Top covers

For Ripac Vario-Module

Standard version
Material:
Sheet steel, spray-finished

Colour:
RAL 7035

EMC version
Material:
Sheet steel, spray-finished
Contact points: Conductive

Width HP	Depth mm	Model No. VM standard		Model No. VM EMC	
		with vent holes	without vent holes	with vent holes	without vent holes
42	250.4	**3982.941**	**3982.901**	**3981.941**	**3981.901**
	310.4	**3982.951**	**3982.911**	**3981.951**	**3981.911**
63	250.4	**3982.942**	**3982.902**	**3981.942**	**3981.902**
	310.4	**3982.952**	**3982.912**	**3981.952**	**3981.912**
84	250.4	**3982.940**	**3982.900**	**3981.940**	**3981.900**
	310.4	**3982.950**	**3982.910**	**3981.950**	**3981.910**
	370.4	**3982.960**	**3982.920**	**3981.960**	**3981.920**
	430.4	**3982.970**	**3982.930**	**3981.970**	**3981.930**



Bottom covers

For Ripac Vario-Module

Standard version
Material:
Sheet steel, spray-finished

Colour:
RAL 7035

EMC version
Material:
Sheet steel, spray-finished
Contact points: Conductive

Width HP	Depth mm	Model No. VM standard		Model No. VM EMC	
		with vent holes	without vent holes	with vent holes	without vent holes
42	250.4	**3982.741**	**3982.701**	**3981.741**	**3981.701**
	310.4	**3982.751**	**3982.711**	**3981.751**	**3981.711**
63	250.4	**3982.742**	**3982.702**	**3981.742**	**3981.702**
	310.4	**3982.752**	**3982.712**	**3981.752**	**3981.712**
84	250.4	**3982.740**	**3982.700**	**3981.740**	**3981.700**
	310.4	**3982.750**	**3982.710**	**3981.750**	**3981.710**
	370.4	**3982.760**	**3982.720**	**3981.760**	**3981.720**
	430.4	**3982.770**	**3982.730**	**3981.770**	**3981.730**



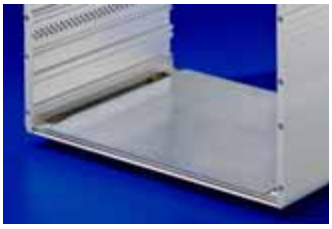
Feet

with fold-out support stand.
Load capacity up to 20 kg.

Material:
Plastic

Colour:
RAL 7035

Packs of	Model No. VM
2	**3919.000**



Mounting plate

For mounting heavy components.

Material:
Aluminium

Supply includes:
Assembly parts.

Width HP	Depth mm	Packs of	Model No. VM
42	220	1	**3982.370**
63	250	1	**3982.380**
84	250	1	**3982.390**

Ripac Vario-Module accessories



Front flanges

Required when the Ripac Vario-Module is to be used as a rack-mounted enclosure.
The flanges have a channel to accommodate vertical EMC gaskets.

Material:
Aluminium, clear-chromated

U	Packs of	Model No. VM	
		without handle hole	with handle hole
3	2	**3981.210**	**3981.260**
4	2	**3981.220**	**3981.270**
6	2	**3981.230**	**3981.280**
7	2	**3981.240**	**3981.290**

Accessories:

EMC gaskets, vertical,
see page 506.
Front handles for mounting on front flanges,
see page 497.



Front corner trims

Required when the Ripac Vario-Module is to be used as a desk-top case.
The corner trims have a channel to accommodate vertical EMC gaskets.

Material:
Die-cast zinc

Colour:
RAL 7035

U	Packs of	Model No. VM
1	2	**3981.570**
2	2	**3981.300**
3	2	**3981.310**
4	2	**3981.320**
6	2	**3981.330**
7	2	**3981.340**
8	2	**3981.590**

Accessories:

Vertical EMC gaskets,
see page 506.
Front handles for mounting on front corner trim pieces, see page 560.



Front handles

For mounting on front corner trims

Maximum load capacity: 500 N

Material:
Cover: ABS
Handle part: Aluminium, clear-anodised.

Supply includes:
2 handle parts, 4 covers, assembly parts.

U	Packs of	Model No. VM
3	2	**3982.350**
4	2	**3982.360**
6	2	**3982.400**
7	2	**3982.410**



Carrying handles

For ergonomic transportation, even with stacked enclosures.
May also be used as a support stand.

Max. load capacity: 350 N.

Material:
Die-cast zinc and extruded aluminium section

Colour:
RAL 7035

Note:
Only for use with front and rear trims.

For enclosure depth	Packs of	Model No. VM
250.4 mm	2	**3981.350**
310.4 mm	2	**3981.360**
370.4 mm	2	**3981.370**
430.4 mm	2	**3981.380**

Ripac Vario-Module accessories



Rear feet

For mounting on the rear of the enclosure.
Dual function:
- Mechanical protection of the connection components.
- Also acts as a cable tidy during transportation.

Material:
PA, self-extinguishing to UL 94-V0

Colour:
RAL 7035

Packs of	Model No. VM
4	**3901.000**

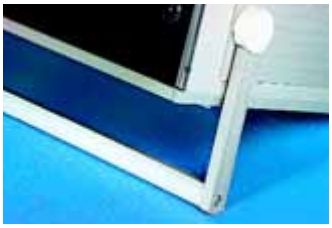


Earthing set

For connecting the cover plates/gland plates to the side panels with PE conductors.

Supply includes:
Conductor cable green/yellow, 1.5 mm^2, with washer, flat-pin connector and assembly parts.

Packs of	Model No. RP
4	**3900.000**



Support stand/carrying handle

To fit Ripac Vario Module 3 U, 4 U and 6 U, adjustable on a 30° pitch pattern.

Material:
Extruded aluminium section/die-cast

Colour:
RAL 7035

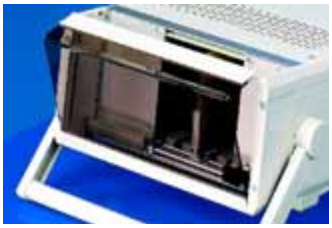
Supply includes:
Assembly parts.

Note:
Corner trim for support stands/carrying handles should be ordered separately.

For Ripac Vario-Module	Packs of	Model No. VM
42 HP	1	**3981.390**
63 HP	1	**3981.400**
84 HP	1	**3981.410**

German patent no. 41 10 873

Corner trim for support stand	Packs of	Model No. VM
3 U	2	**3981.310**
4 U	2	**3981.500**
6 U	2	**3981.510**



Acrylic front doors

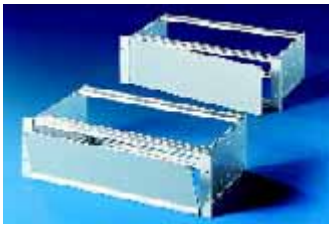
horizontally hinged
For protection of built-in control components.

Material:
Side parts:
Aluminium, spray-finished in RAL 7035.
Window: Smoked acrylic

Supply includes:
Assembly parts.

U	For Ripac Vario-Module	Packs of	Model No. VM
3	42 HP	1	**3981.420**
3	63 HP	1	**3981.430**
3	84 HP	1	**3981.440**
4	84 HP	1	**3981.450**
6	84 HP	1	**3981.460**
7	84 HP	1	**3981.470**

German patent no. 41 10 872



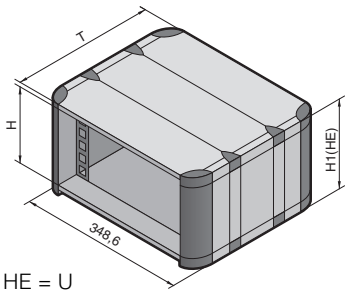
Front panels/rear panels

To cover the enclosures front and rear.
Also available as a hinged or EMC version.
Model No. see page 538/539.

Instrument cases/system enclosures

Rittal RiCase 269.2 mm ($^1/_2$ 19″)





HE = U

Technical specifications:
Depth:
300 mm, 420 mm, 540 mm
Installation width:
269.2 mm ($^1/_2$ 19″)
Installation options:
269.2 mm ($^1/_2$ 19″) slide-in equipment and modular assemblies to IEC 60 297-3

Material/surface finish:
Covers: Extruded aluinium section/die-cast, spray-finished
Side panels: Extruded aluinium section, spray-finished
Corner caps: Plastic
482.6 mm (19″) mounting bracket: Extruded aluminium section, clear-chromated

Colour:
RAL 7035 (pale grey)

Decorative colours and corner caps:
RAL 5018 (turquoise)
RAL 5012 (pale blue)
RAL 7030 (stone grey)

Protection category:
IP 42 for unvented version.

Supply includes:
2 side panels,
2 covers,
8 corner caps,
8/12/16 cover caps (300/420/540 mm depth),
4 482.6 mm (19″) mounting brackets,
4 tapped strips,
2 untapped strips,
1 rear wall
Enclosures are supplied partially assembled.

Special sizes and colours available on request.

Property rights:
German registered design no. 96 09 457
IR Reg. Design no. DM/039 974 with validity for FR, IT
UK reg. design no. 2064682
US Design Patents Des. 402,640 and Des. 423,464
Japan. Reg. Designs No. 1045507 and 1045508

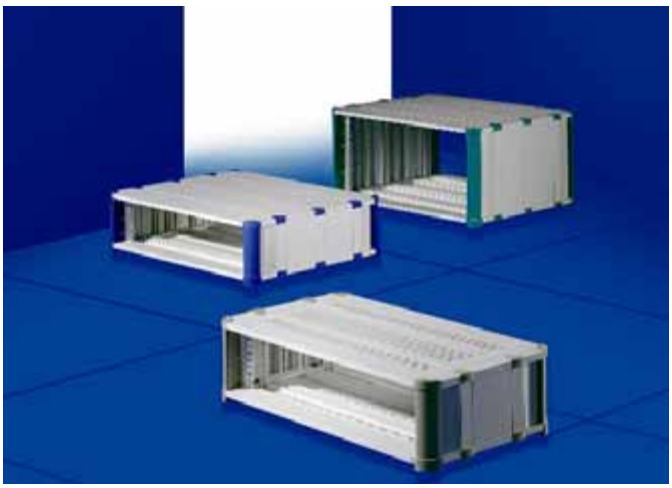
Detailed drawing,
see page 1161.

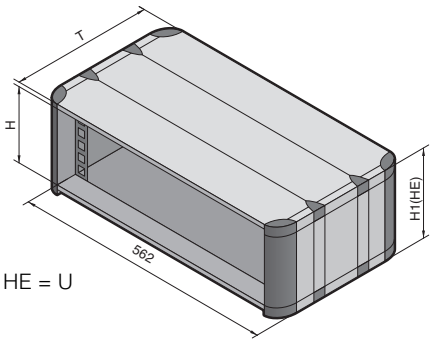
Enclosures for subrack width 269.2 mm ($^1/_2$ 19″)		Packs of	1 U		2 U		3 U			4 U		Page
Height (H) in mm			77.5	77.5	121.9	121.9	166.4	166.4	166.4	210.8	210.8	
H1 (U) in mm			45.0	45.0	89.4	89.4	133.8	133.8	133.8	178.3	178.3	
Depth (T) in mm			300.0	420.0	300.0	540.0	300.0	420.0	540.0	420.0	540.0	
Unvented												
Model No. RC, RAL 5018[1)]		1	**3750.100**	**–**	**3750.200**	**–**	**3750.210**	**3750.300**	**–**	**3750.400**	**–**	
Model No. RC, RAL 5012[1)]		1	**3750.102**	**–**	**3750.202**	**–**	**3750.212**	**3750.302**	**–**	**3750.402**	**–**	
Model No. RC, RAL 7030		1	**3750.104**	**–**	**3750.204**	**–**	**3750.214**	**3750.304**	**–**	**3750.404**	**–**	
Vented												
Model No. RC, RAL 5018[1)]		1	**–**	**3750.110**	**–**	**3750.220**	**–**	**3750.350**	**3750.360**	**–**	**3750.450**	
Model No. RC, RAL 5012[1)]		1	**–**	**3750.112**	**–**	**3750.222**	**–**	**3750.352**	**3750.362**	**–**	**3750.452**	
Model No. RC, RAL 7030		1	**–**	**3750.114**	**–**	**3750.224**	**–**	**3750.354**	**3750.364**	**–**	**3750.454**	
Weight (kg)	Vented/ unvented		3.3 3.4	4.2 4.4	3.7 3.8	5.4 6.1	4.1 4.2	5.2 5.4	6.1 6.8	5.8 6.0	6.8 7.5	
Accessories												
Carrying handles, horizontal		2	3751.250	3751.260	3751.250	3751.270	3751.250	3751.260	3751.270	3751.260	3751.270	565
Support stand/ carrying handle	RAL 5018[1)]	1	3751.200	3751.200	3751.200	3751.200	3751.200	3751.200	3751.200	3751.200	3751.200	566
	RAL 5012[1)]	1	3751.202	3751.202	3751.202	3751.202	3751.202	3751.202	3751.202	3751.202	3751.202	566
	RAL 7030	1	3751.204	3751.204	3751.204	3751.204	3751.204	3751.204	3751.204	3751.204	3751.204	566
Blanking plates (rear panel)		3	3746.000	3746.000	3747.000	3747.000	3748.000	3748.000	3748.000	3749.000	3749.000	1013
Front door, vertically hinged		1	–	–	–	–	3751.300	3751.300	3751.300	3751.300	3751.300	566
Slide rails		2	3751.500	3751.510	3751.500	3751.520	3751.500	3751.510	3751.520	3751.510	3751.520	565
Mounting bracket 482.6 mm (19″)		2	3751.650	3751.650	3751.660	3751.660	3751.670	3751.670	3751.670	3751.680	3751.680	564
Tapped strips with M4 thread		8	3751.700	3751.700	3751.710	3751.710	3751.720	3751.720	3751.720	3751.730	3751.730	564
End section		2	–	–	–	–	3751.900	3751.900	3751.900	3751.910	3751.910	565

[1)] Extended delivery times.

RiCase accessories Page 564 **Subracks** Page 486 **RiBox** Page 554 **Ripac Vario-Module** Page 555 **Vario-Case** Page 569

Rittal RiCase 482.6 mm (19″)





Technical specifications:
Depth:
300 mm, 420 mm, 540 mm
Installation width:
482.6 mm (19″)
Installation options:
482.6 mm (19″) slide-in equipment and modular assemblies to IEC 60 297-3

Material/surface finish:
Covers: Extruded aluinium section/die-cast, spray-finished
Side panels: Extruded aluinium section, spray-finished
Corner caps: Plastic
482.6 mm (19″) mounting bracket: Extruded aluminium section, clear-chromated

Colour:
RAL 7035 (pale grey)

Decorative colours and corner caps:
RAL 5018 (turquoise)
RAL 5012 (pale blue)
RAL 7030 (stone grey)

Protection category:
IP 42 for unvented version.

Supply includes:
2 side panels,
2 covers,
8 corner caps,
8/12/16 cover caps (300/420/540 mm depth),
2 482.6 mm (19″) mounting brackets,
2 tapped strips,
2 untapped strips,
enclosures are supplied partially assembled.

Note:
For rear installation, order back panel/door separately.

Special sizes and colours available on request.

Detailed drawing,
see page 1161.

Enclosures for subrack width 482.6 mm (19″)		P. of	3 U		4 U		6 U			7 U		9 U		12 U	Page
Height (H) in mm			166.4	166.4	210.8	210.8	299.7	299.7	299.7	344.2	344.2	433.1	433.1	566.5	
H1 (U) in mm			133.8	133.8	178.3	178.3	267.2	267.2	267.2	311.7	311.7	400.6	400.6	534.0	
Depth (T) in mm			300.0	420.0	300.	420.	300.0	420.0	540.0	420.0	540.0	420.0	540.0	540.0	
Unvented															
Model No. RC, RAL 5018[1)]		1	**3750.310**	**3750.320**	**3750.410**	**3750.420**	**3750.600**	**3750.610**	**3750.620**	**3750.700**	**3750.710**	**3750.900**	**3750.910**	**3750.000**	
Model No. RC, RAL 5012[1)]		1	**3750.312**	**3750.322**	**3750.412**	**3750.422**	**3750.602**	**3750.612**	**3750.622**	**3750.702**	**3750.712**	**3750.902**	**3750.912**	**3750.002**	
Model No. RC, RAL 7030		1	**3750.314**	**3750.324**	**3750.414**	**3750.424**	**3750.604**	**3750.614**	**3750.624**	**3750.704**	**3750.714**	**3750.904**	**3750.914**	**3750.004**	
Vented															
Model No. RC, RAL 5018[1)]		1	**3750.330**	**3750.340**	**3750.430**	**3750.440**	**3750.630**	**3750.640**	**3750.650**	**3750.720**	**3750.730**	**3750.920**	**3750.930**	**3750.030**	
Model No. RC, RAL 5012[1)]		1	**3750.332**	**3750.342**	**3750.432**	**3750.442**	**3750.632**	**3750.642**	**3750.652**	**3750.722**	**3750.732**	**3750.922**	**3750.932**	**3750.032**	
Model No. RC, RAL 7030		1	**3750.334**	**3750.344**	**3750.434**	**3750.444**	**3750.634**	**3750.644**	**3750.654**	**3750.724**	**3750.734**	**3750.924**	**3750.934**	**3750.034**	
Weight (kg)	Vented/ unvented		5.3 5.4	6.9 7.1	5.7 7.2	7.5 7.7	6.5 6.6	8.5 8.7	10.8 12.2	9.1 9.3	11.5 12.9	10.1 10.3	12.9 14.3	15.0 16.4	
Accessories															
Carrying handles, horizontal		2	3751.250	3751.260	3751.250	3751.260	3751.250	3751.260	3751.270	3751.260	3751.270	3751.260	3751.270	3751.270	565
Support stand/carrying handle	RAL 5018[1)]	1	3751.210	3751.210	3751.210	3751.210	3751.210	3751.210	3751.210	3751.210	3751.210	3751.210	3751.210	3751.210	566
	RAL 5012[1)]	1	3751.212	3751.212	3751.212	3751.212	3751.212	3751.212	3751.212	3751.212	3751.212	3751.212	3751.212	3751.212	566
	RAL 7030	1	3751.214	3751.214	3751.214	3751.214	3751.214	3751.214	3751.214	3751.214	3751.214	3751.214	3751.214	3751.214	566
Back panel, screw-fastened		1	3751.600	3751.600	3751.610	3751.610	3751.620	3751.620	3751.620	3751.630	3751.630	3751.530	3751.530	3751.540	568
Rear door, vertically hinged		1	3751.100	3751.100	3751.110	3751.110	3751.120	3751.120	3751.120	3751.130	3751.130	–	–	–	568
Rear door for fan installation		1	3751.150	3751.150	3751.160	3751.160	3751.170	3751.170	3751.170	3751.180	3751.180	–	–	–	568
Front door, vertically hinged		1	3751.320	3751.320	3751.330	3751.330	3751.340	3751.340	3751.340	3751.350	3751.350	–	–	–	566
Slide rails		2	3751.500	3751.510	3751.500	3751.510	3751.500	3751.510	3751.520	3751.510	3751.520	3751.510	3751.510	3751.520	565
Mounting angles 482.6 mm (19″)		2	3751.670	3751.670	3751.680	3751.680	3751.690	3751.690	3751.690	3751.640	3751.640	3751.780	3751.780	3751.790	564
Slide-in strips with M4 thread		8	3751.720	3751.720	3751.730	3751.730	3751.740	3751.740	3751.740	3751.750	3751.750	3751.760	3751.760	3751.770	564
End section		2	3751.900	3751.900	3751.910	3751.910	3751.920	3751.920	3751.920	3751.930	3751.930	3751.820	3751.820	3751.830	565

[1)] Extended delivery times.

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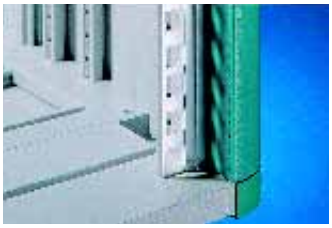
Rittal RiCase accessories



Mounting angles 482.6 mm (19 ″)

For front/rear installation of subracks and blanking plates.

Material:
Extruded aluminium section, clear-chromated

Supply includes:
Assembly parts.

Note:
1 pack of tapped strips and 2 packs of mounting rails and spacers are required for depth-adjustable installation.

For enclosure height	Packs of	Model No. RC
1 U	2	**3751.650**
2 U	2	**3751.660**
3 U	2	**3751.670**
4 U	2	**3751.680**
6 U	2	**3751.690**
7 U	2	**3751.640**
9 U	2	**3751.780**
12 U	2	**3751.790**

Also required:

Slide-in strips, see page 564.
Mounting rails, see page 564.
Spacers, see page 564.



Threaded inserts

with M4 thread
for RiCase, Vario-Case iS
For the installation of mounting brackets, slide rails, mounting kits, cable ducts etc. Simply slide into the channels in the side panels.

Material:
Extruded aluminium section, clear-chromated

For enclosure height	Packs of	Model No. RC
1 U	8	**3751.700**
2 U	8	**3751.710**
3 U	8	**3751.720**
4 U	8	**3751.730**
6 U	8	**3751.740**
7 U	8	**3751.750**
9 U	8	**3751.760**
12 U	8	**3751.770**

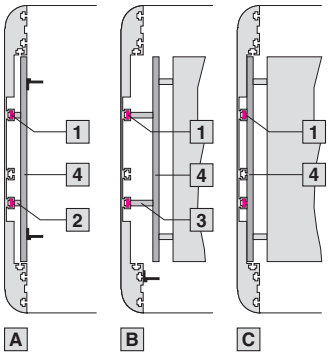


Mounting rails

- For depth-variable installation of mounting angles
- For the installation of component shelves, static or pull-out

Material:
Aluminium, clear-chromated

Supply includes:
Assembly parts.



A Version for depth-variable mounting angles
B Component shelf installation for 482.6 mm/19″ (width 409 mm, also with telescopic slides)
C Direct component shelf installation (width 471 mm)

1 Slide-in strips
2 Short spacers
3 Long spacers
4 Mounting rails

For enclosure depth mm	Packs of	Model No. RC
420	2	**3751.410**
540	2	**3751.420**

Also required:

Threaded inserts, see page 564.
Spacers, see page 564.

Accessories:

Component shelf, see page 944.
Component shelf, 482.6 mm (19″), see page 939.



Spacers

For the attachment of mounting rails.

Version	Packs of	Model No. RC
Short for depth-variable mounting bracket	4	**3751.450**
Long for component shelf installation (width 409 mm)	4	**3751.460**

Rittal RiCase accessories



Slide rails

To support heavy installed equipment.

Material:
1.5 mm sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure depth mm	Packs of	Model No. RC
300	2	**3751.500**
420	2	**3751.510**
540	2	**3751.520**

Also required:

Threaded inserts,
see page 564.

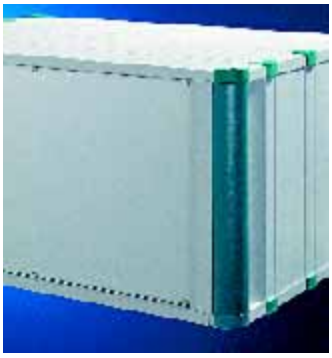


Earthing set

for RiCase, Vario-Case iS
To meet electrical protective measures; fits all RiCase and Vario-Case iS enclosures.

Supply includes:
Threaded insert, screw, green/yellow connection cable, serrated washer, nut.

Packs of	Model No. VC
4	**3798.000**



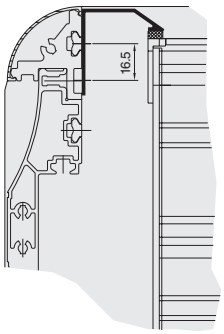
Rear trim

To cover the sides to the left and right of the sub-rack when no rear door or rear panel is used.

Material:
Extruded aluminium section, spray-finished

Colour:
RAL 7035

Supply includes:
Assembly parts.



For enclosure height	Packs of	Model No. RC
3 U	2	**3751.900**
4 U	2	**3751.910**
6 U	2	**3751.920**
7 U	2	**3751.930**
9 U	2	**3751.820**
12 U	2	**3751.830**



Carrying handles

horizontal
For easy, secure transportation.
- May be retrofitted
- Load capacity 30 kg/pair

Material:
Side parts: Die-cast, spray-finished
Centre part: Extruded aluminium section, spray-finished

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosure depth mm	Packs of	Model No. RC
300	2	**3751.250**
420	2	**3751.260**
540	2	**3751.270**

Rittal RiCase accessories



1



2



3

Support stand/carrying handle

- Support stand/carrying handle adjustable on a 30° pitch pattern.
- Suitable for retrofitting with 2 – 7 U.
- For 269.2 mm ($^1/_2$ 19″) and 482.6 mm (19″) wide enclosures
- Load capacity 30 kg

Material:
Hinged part: Die-cast, spray-finished
Centre part: Extruded aluminium section, spray-finished with plastic cover

Colour:
RAL 7035

Decorative colours:

1 RAL 7030 (stone grey)

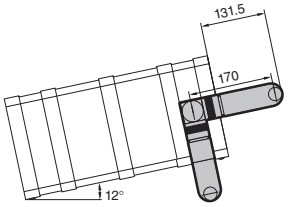
2 RAL 5018 (turquoise)

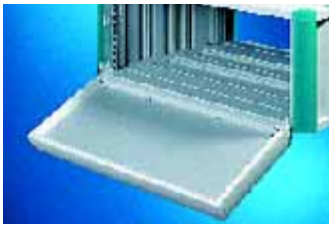
3 RAL 5012 (pale blue)

Supply includes:
Assembly parts.

For enclosure width mm	Decorative colour RAL	B mm	Model No. RC
269.2 ($^1/_2$ 19″)	5018[1)]	392	**3751.200**
269.2 ($^1/_2$ 19″)	5012[1)]	392	**3751.202**
269.2 ($^1/_2$ 19″)	7030	392	**3751.204**
482.6 (19″)	5018[1)]	605	**3751.210**
482.6 (19″)	5012[1)]	605	**3751.212**
482.6 (19″)	7030	605	**3751.214**

B = Overall width of handle
[1)] Extended delivery times.





Keyboard lid

Suitable for the installation of 482.6 mm (19″) keyboards.
- Horizontally hinged with security lock
- Removable cover plate

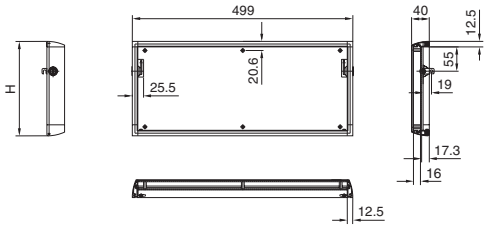
Material:
Frame section: Extruded aluminium section/die-cast, spray-finished
Base and cover plate: Aluminium, spray-finished.

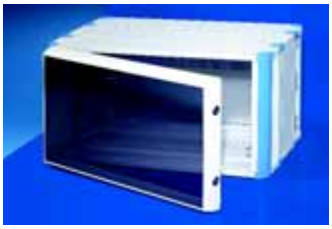
Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosure width mm	H (U)	Packs of	Model No. RC
482.6 (19″)	4	1	**3751.800**
482.6 (19″)	6	1	**3751.810**

Note:
Use only in conjunction with support stand/carrying handle.





Glazed front door

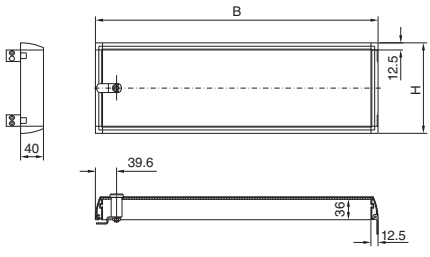
vertically hinged
For mechanical protection of built-in control components.
- Optionally hinged on the right or left
- With security lock

Material:
Frame section: Extruded aluminium section, spray-finished
Corner pieces: Die-cast aluminium, spray-finished
Glass pane: Smoked acrylic

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosure width mm	B mm	H (U)	Model No. RC
269.2 ($^1/_2$ 19″)	289	3	**3751.300**
269.2 ($^1/_2$ 19″)	289	4	**3751.310**
482.6 (19″)	503	3	**3751.320**
482.6 (19″)	503	4	**3751.330**
482.6 (19″)	503	6	**3751.340**
482.6 (19″)	503	7	**3751.350**





Aluminium front door

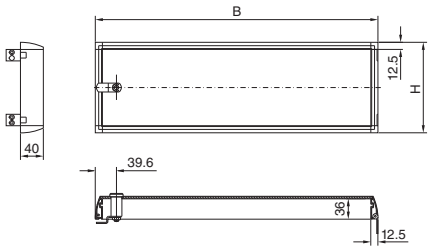
vertically hinged
For mechanical protection of built-in control components.
- Optionally hinged on the right or left
- With security lock

Material:
Frame section: Extruded aluminium section, spray-finished
Corner pieces: Die-cast aluminium, spray-finished
Aluminium plate

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosure width mm	B mm	H (U)	Model No. RC
482.6 (19″)	503	3	**3751.360**
482.6 (19″)	503	4	**3751.370**
482.6 (19″)	503	6	**3751.380**





Front door

For tower enclosure
For mechanical protection of built-in control components.
- Optionally hinged on the right or left
- With security lock

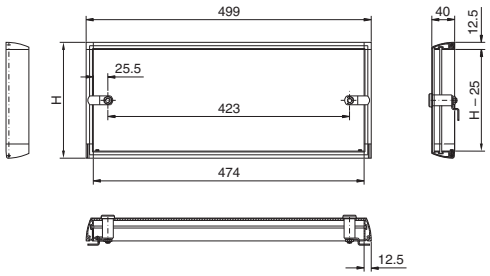
Material:
Frame section: Extruded aluminium section, spray-finished
Corner pieces: Die-cast aluminium, spray-finished
Glazed pane: Smoked acrylic

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosure width mm	B mm	H (U)	Model No. RC
482.6 (19″)	503	3	**3751.390**
482.6 (19″)	503	4	**3751.430**

B = Overall width of front door

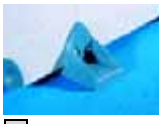




1



2



3

Tower feet

For vertical siting of enclosures.
May be retrofitted.

Material:
Plastic to UL 94-V0, self-extinguishing

Decorative colours:

1 RAL 7030 (stone grey)

2 RAL 5018 (turquoise)

3 RAL 5012 (pale blue)

Supply includes:
4 tower feet,
assembly parts.

Decorative colour RAL	Packs of	Model No. RC
5018	1 set	**3751.850**
5012	1 set	**3751.852**
7030	1 set	**3751.854**

Rittal RiCase accessories

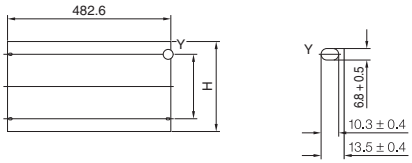


Back panel

Screw-fastened
To close off the rear.

Material:
2/3 mm aluminium, natural anodised

Supply includes:
482.6 mm (19″) mounting bracket, assembly parts.



For enclosure width mm	H (U)	Packs of	Model No. RC
482.6 (19″)	3	1	**3751.600**
482.6 (19″)	4	1	**3751.610**
482.6 (19″)	6	1	**3751.620**
482.6 (19″)	7	1	**3751.630**
482.6 (19″)	9	1	**3751.530**
482.6 (19″)	12	1	**3751.540**



Rear door

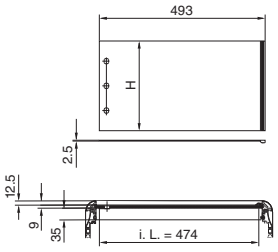
vertically hinged
To close off the rear.
- Hinged, with security lock
- Optionally hinged on the left or right

Material:
Aluminium, spray-finished

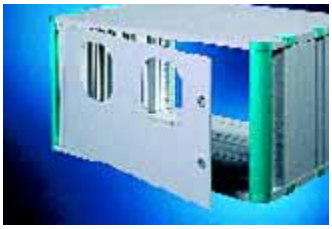
Colour:
RAL 7035

Supply includes:
Assembly parts.

For Enclosure width mm	H (U)	Packs of	Model No. RC
482.6 (19″)	3	1	**3751.100**
482.6 (19″)	4	1	**3751.110**
482.6 (19″)	6	1	**3751.120**
482.6 (19″)	7	1	**3751.130**



i.L. = Clearance width



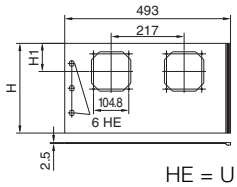
Rear door

for fan installation
To close off the rear.
- With security lock
- Optionally hinged on the left or right
- For the installation of 120 mm fans

Material:
Aluminium, spray-finished

Colour:
RAL 7035

Supply includes:
Assembly parts.



HE = U

For Enclosure width mm	H (U)	H1 mm	Model No. RC
482.6 (19″)	3	66.65	**3751.150**
482.6 (19″)	4	88.90	**3751.160**
482.6 (19″)	6	83.50	**3751.170**
482.6 (19″)	7	83.50	**3751.180**

Accessories:

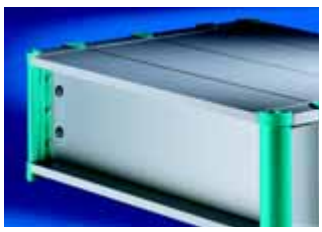
Fan expansion kit,
see page 649.



Assembly screws M6,
see page 1019.
Captive nuts M6,
see page 1020.



Fan expansion kit,
see page 649.

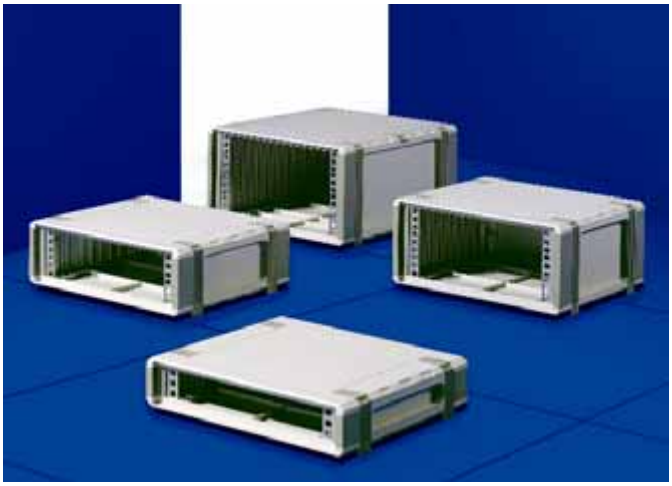


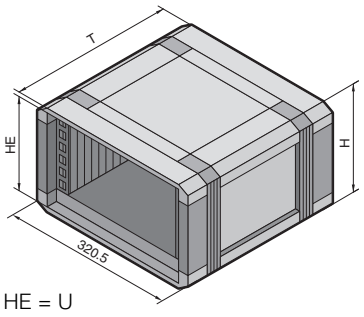
Blanking plates,
see page 1013.
Hinged blanking plates,
see page 1013.



Ventilation front panels,
see page 1013.

Rittal Vario-Case iS, 269.2 mm (1/2 19″) 1 U, 2 U, 3 U, 4 U





HE = U

Technical specifications:
Total depth: 300 mm, 400 mm
Installation width:
269.2 mm (1/2 19″)
Installation option:
269.2 mm (1/2 19″) racks and modular assemblies to IEC 60 297-3

Material/surface finish:
Side panels: Extruded aluminium section, spray-finished similar to RAL 7030/7035
Cover trays: Plastic UL 94-V0 (self-extinguishing), colour similar to RAL 7035
Rear panel: 2 mm aluminium, natural anodised.

Supply includes:
2 plastic covers,
4 (6) enclosure feet and
4 (6) screw covers,
2 side panels,
1 rear panel,
without vent slots,
4 mounting angles,
4 threaded inserts,
4 untapped strips,
assembly parts.
Enclosures are supplied partially assembled.

EMC version,
see page 292.

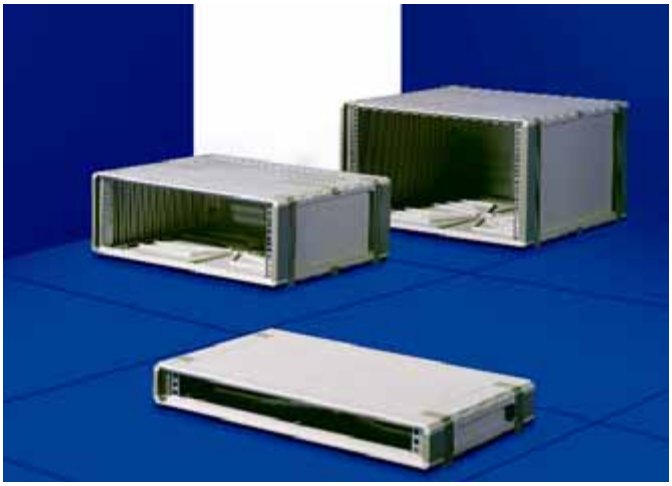
Special sizes and colours available on request.

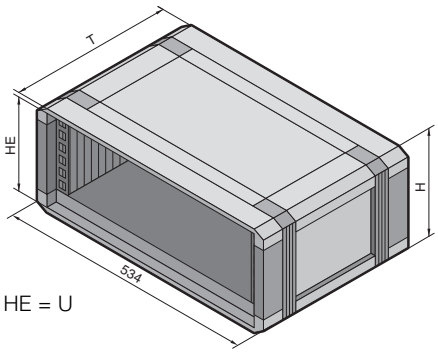
Detailed drawing,
see page 1162.

Enclosure for subrack width 269.2 mm (1/2 19″)	Packs of	1 U	2 U	3 U		4 U		Page
Depth (T) in mm		300	300	300	400	300	400	
Height (H) in mm		74.75	119.20	163.65	163.65	208.10	208.10	
Model No. VC without vent slots	1	**3710.000**	**3720.000**	**3730.000**	**3731.000**	**3740.000**	**3741.000**	
Accessories								
Mounting kit	1	–	–	3780.000	3780.000	–	–	572
Carrying handle, vertical	2	–	–	3785.000	3785.000	–	–	575
Carrying handles, horizontal	2	3787.000	3787.000	3787.000	3788.000	3787.000	3788.000	575
Blanking plate (rear panel)	3	3746.000	3747.000	3748.000	3748.000	3749.000	3749.000	1013
Slide rails	4	3782.000	3782.000	3782.000	3783.000	3782.000	3783.000	573
Front door, vertically hinged (acrylic door)	1	–	–	3700.000	3700.000	3701.000	3701.000	574

Accessories Vario-Case Page 572 **Subracks** Page 486 **RiBox** Page 554 **Ripac Vario-Module** Page 555 **RiCase** Page 562

Rittal Vario-Case iS, 482.6 mm (19″)/1 U, 4 U, 7 U





Technical specifications:
Total depth: 300 mm, 400 mm, 500 mm
Installation width:
482.6 mm (19″)
Installation option:
482.6 mm (19″) slide-in equipment and modular assemblies to IEC 60 297-3

Material/surface finish:
Side panels: Extruded aluminium section spray-finished similar to RAL 7030/7035
Cover trays: Plastic
UL 94-V0 (self-extinguishing), colour similar to RAL 7035
Rear panel: 2 mm aluminium, natural anodised.

Supply includes:
2 plastic covers,
4 (6) enclosure feet and
4 (6) screw covers,
2 side panels,
1 rear panel,
without/with vent slots,
4 mounting angles,
4 threaded inserts,
4 untapped strips,
assembly parts.
Enclosures are supplied partially assembled.

EMC version,
see page 292.

Special sizes and colours available on request.

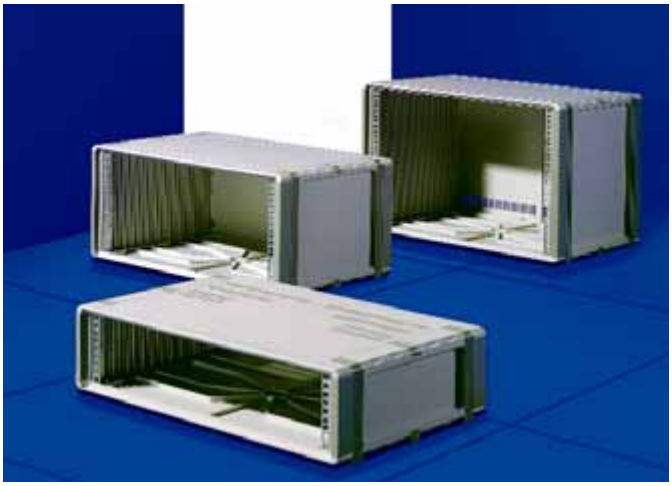
Detailed drawing,
see page 1163.

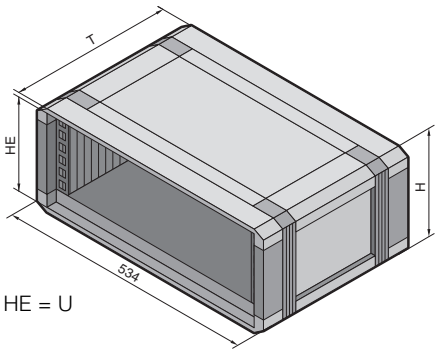
Enclosure for subrack width 482.6 mm (19″)	Packs of	1 U		4 U			7 U		Page
Depth (T) in mm		300	400	300	400	500	400	500	
Height (H) in mm		74.75	74.75	208.10	208.10	208.10	341.40	341.40	
Model No. VC without vent slots	1	**3713.000**[1)]	**3714.000**	**3743.000**	**3744.000**	**3745.000**[1)]	**3774.000**	**3775.000**	
Model No. VC with vent slots	1	**3713.200**[1)]	**3714.200**	**3743.200**	**3744.200**	**3745.200**[1)]	**3774.200**	**3775.200**	
Accessories									
Carrying handles, horizontal	2	3787.000	3788.000	3787.000	3788.000	3789.000	3788.000	3789.000	575
Support stand/carrying handle	1	3797.000	3797.000	3797.000	3797.000	3797.000	3797.000	3797.000	573
Blanking plate (rear panel)	3	1931.200	1931.200	1934.200	1934.200	1934.200	1935.200	1935.200	1013
Slide rails	4	3782.000	3783.000	3782.000	3783.000	3784.000	3783.000	3784.000	573
Front door, vertically hinged (acrylic door)	1	–	–	3703.000	3703.000	3703.000	3705.000	3705.000	574
Front door, horizontally hinged (acrylic door)	1	–	–	3727.000	3727.000	3727.000	3729.000	3729.000	574
482.6 mm (19″) 1 U drawer	1	–	–	–	–	4541.000	–	4541.000	1015
482.6 mm (19″) 3 U drawer	1	–	–	–	–	4542.000	–	4542.000	1015

[1)] Delivery times approx. 4 weeks.

Accessories Vario-Case Page 572 **Subracks** Page 486 **RiBox** Page 554 **Ripac Vario-Module** Page 555 **RiCase** Page 562

Rittal Vario-Case iS, 482.6 mm (19″)/3 U, 6 U, 9 U





Technical specifications:
Total depth: 300 mm, 400 mm, 500 mm
Installation width:
482.6 mm (19″)
Installation option:
482.6 mm (19″) slide-in equipment and modular assemblies to IEC 60 297-3

Material/surface finish:
Side panels: Extruded aluminium section, spray-finished similar to RAL 7030/7035
Cover trays: Plastic
UL 94-V0 (self-extinguishing), colour similar to RAL 7035
Rear panel: Plastic
UL 94-V0 (self-extinguishing), Colour similar to RAL 7035

Supply includes:
2 plastic covers,
4 (6) enclosure feet and
4 (6) screw covers,
2 side panels,
1 rear panel,
without/with vent slots,
2 mounting angles,
2 threaded inserts,
2 untapped strips,
assembly parts.
Enclosures are supplied partially assembled.

EMC version,
see page 292.

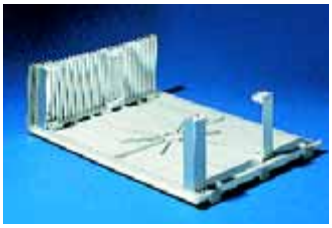
Special sizes and colours available on request.

Detailed drawing,
see page 1163.

Enclosure for subrack width 482.6 mm (19″)	Packs of	3 U			6 U			9 U		Page
Depth (T) in mm		300	400	500	300	400	500	400	500	
Height (H) in mm		163.65	163.65	163.65	297.00	297.00	297.00	430.50	430.50	
Model No. VC without vent slots	1	**3733.000**	**3734.000**	**3735.000**	**3763.000**	**3764.000**	**3765.000**	**3794.000**	**3795.000**	
Model No. VC with vent slots	1	**3733.200**	**3734.200**	**3735.200**	**3763.200**	**3764.200**	**3765.200**	**3794.200**	**3795.200**	
Accessories										
Mounting kit	1	3780.000	3780.000	3780.000	3781.000	3781.000	3781.000	–	–	572
Carrying handles, horizontal	2	3787.000	3788.000	3789.000	3787.000	3788.000	3789.000	3788.000	3789.000	575
Carrying handle, vertical	2	3785.000	3785.000	3785.000	3786.000	3786.000	3786.000	–	–	575
Support stand/carrying handle	1	3797.000	3797.000	3797.000	3797.000	3797.000	3797.000	3797.000	3797.000	573
Blanking plate (rear panel)	3	1933.200	1933.200	1933.200	1936.200	1936.200	1936.200	1939.200	1939.200	1013
Slide rails	4	3782.000	3783.000	3784.000	3782.000	3783.000	3784.000	3783.000	3784.000	573
Front door, vertically hinged (acrylic door)	1	3702.000	3702.000	3702.000	3704.000	3704.000	3704.000	–	–	574
Front door, horizontally hinged (acrylic door)	1	3726.000	3726.000	3726.000	3728.000	3728.000	3728.000	–	–	574
482.6 mm (19″) 1 U drawer	1	–	–	4541.000	–	–	4541.000	–	4541.000	1015
482.6 mm (19″) 3 U drawer	1	–	–	4542.000	–	–	4542.000	–	4542.000	1015

Accessories Vario-Case Page 572 **Subracks** Page 486 **RiBox** Page 554 **Ripac Vario-Module** Page 555 **RiCase** Page 562

Rittal Vario-Case iS accessories



Mounting kit

For direct installation of board type plug-in units without using a subrack.
The vertical rails/adaptors of the mounting kit are used to fasten horizontal rails/horizontal rail sets in Vario-Case iS enclosures.

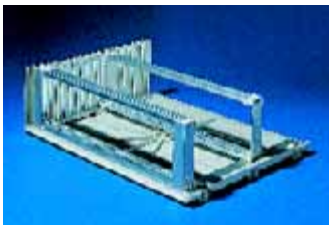
Material:
Vertical rails: Aluminium, natural anodised.
Adaptor: Plastic

Supply includes:
2 vertical rails, front,
2 vertical rails, rear,
4 threaded inserts,
8 adaptors (12 for 6 U),
assembly parts.

For VC	Model No. VC
3 U	**3780.000**
6 U	**3781.000**

Also required:

Horizontal rail sets,
see page 572.



Horizontal rail sets

To equip Rittal Vario-Case iS enclosures.
For direct installation of board type plug-in units without using a subrack.

	Fitting 3 U, 84 HP		Fitting 6 U, 84 HP	
	Without integrated Z rails for backplanes or female connectors to IEC 60 603-2 (DIN 41 612)	**With integrated Z rails** for female connectors to IEC 60 603-2 (DIN 41 612)	**Without integrated Z rails** for backplanes or female connectors to IEC 60 603-2 (DIN 41 612)	**With integrated Z rails** for female connectors to IEC 60 603-2 (DIN 41 612)
Model No. UV	**3663.301**	**3663.311**	**3663.601**	**3663.611**
Packs of	1 set	1 set	1 set	1 set
Horizontal rails, front	2	2	2	2
Horizontal rails, rear	2	–	2	–
Horizontal rails, rear, with integrated Z rails	–	2	–	2
Centre horizontal rail	–	–	1	–
Centre horizontal rail, with integrated Z rails	–	–	–	1
Threaded inserts	4	2	6	2
HP strips	4	4	4	4
Assembly screws	8	8	12	12

Also required:

For horizontal rail sets without integral Z rails:
Z rails, see page 504.

Accessories:

		Packs of	Model No. UV
Guide rails	160 mm	10	**3606.700**
	220 mm	10	**3606.720**
Insulating strips		2	**3604.850**



Mounting angle for 482.6 mm (19″)

Depth-adjustable on a 12.5 mm pitch pattern, for fastening slide-in equipment or front plates in Vario-Case iS enclosures.
For depth-variable installation of subracks/slide-in equipment via threaded inserts.

Material:
Aluminium, natural anodised.

Supply includes:
Assembly screws.

U	Packs of	Model No. VC
1	4	**3717.000**
2	4	**3716.000**
3	4	**3790.000**
4	4	**3718.000**
6	4	**3791.000**
7	4	**3719.000**
9	4	**3792.000**

Also required:

Threaded inserts M4,
see page 564.

Rittal Vario-Case iS accessories



Slide rails

To support heavy subracks/slide-in equipment.

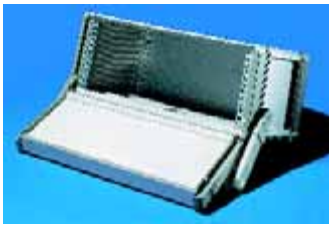
Material:
1.5 mm sheet steel, passivated

Supply includes:
Assembly screws.

For enclosures mm	Packs of	Model No. VC
300	4	**3782.000**
400	4	**3783.000**
500	4	**3784.000**

Also required:

To secure the slide rails in the enclosure:
Threaded inserts M4, see page 564.



Keyboard lid

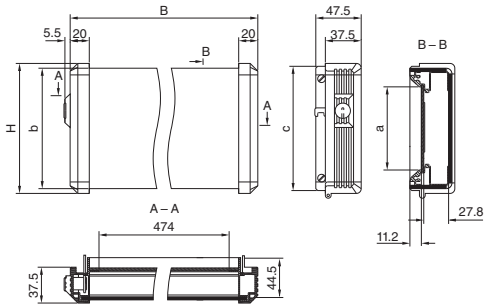
Suitable for the installation of 482.6 mm (19″) keyboards. Hinged, with security lock.

Material:
Centre/side parts: Aluminium,
spray-finished similar to RAL 7030/7035
Corner pieces:
Die-cast zinc, spray-finished similar to RAL 7030
Insertion plate:
Aluminium, spray-finished
similar to RAL 7035

Supply includes:
Fitted keyboard lid,
with solid aluminium plate on the inside,assembly parts.

	Model No. VC	
	4 U	6 U
	3722.000	**3723.000**
W (B) mm	534	534
H mm	203	292
a mm	155	244
b mm	193	282
c mm	197	286

3 U on request.





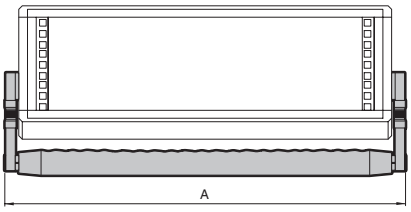
Support stand/carrying handle

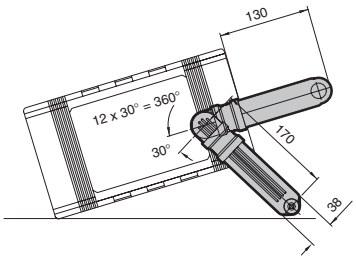
- Suitable for retrofitting to 2 U – 6 U enclosures
- Support stand/carrying handle adjustable in 30° increments
- Load capacity up to 30 kg

Material:
End pieces:
Die-cast zinc, spray-finished in RAL 7030
Centre part: Extruded aluminium section with plastic cover, spray-finished in RAL 7030

Supply includes:
Assembly parts.

For VC mm	A mm	Packs of	Model No. VC
269.2 ($^1/_2$19″)	364.5	1	**3796.000**
482.6 (19″)	578.0	1	**3797.000**





Rittal Vario-Case iS accessories





Front doors, vertically hinged

Aluminium or acrylic

- For the protection of the installed control components
- Optional right-hand or left-hand hinge
- Fitted with security lock
- May be used as a front or rear door

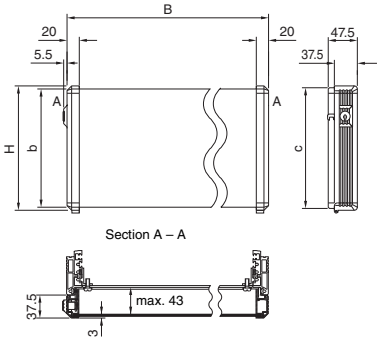
Material of the aluminium door:
Side panels: Extruded aluminium section/die-cast, spray-finished in RAL7030
Centre part: Aluminium, spray-finished, similar to RAL 7035

Material of the acrylic door:
Side panels: Extruded aluminium section/die-cast, spray-finished in RAL7030
Window: Smoked acrylic

Supply includes:
1 door, assembly parts.

Aluminium door	U	W (B) mm	H mm	b mm	c mm	Model No. VC
482.6 mm (19″)	3	534	159	149	153	**3707.000**
482.6 mm (19″)	4	534	203	193	197	**3708.000**
482.6 mm (19″)	6	534	292	282	286	**3709.000**

Acrylic door	U	W (B) mm	H mm	b mm	c mm	Model No. VC
269.2 mm (1/2 19″)	3	320.5	157.5	147.0	151.5	**3700.000**
269.2 mm (1/2 19″)	4	320.5	202.0	192.0	196.0	**3701.000**
482.6 mm (19″)	3	534.0	157.5	147.0	151.5	**3702.000**
482.6 mm (19″)	4	534.0	202.0	192.0	196.0	**3703.000**
482.6 mm (19″)	6	534.0	291.0	281.0	285.0	**3704.000**
482.6 mm (19″)	7	534.0	335.3	325.5	329.4	**3705.000**





Front doors, horizontally hinged

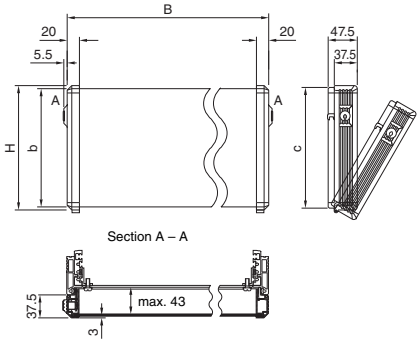
Acrylic

- For the protection of the installed control components
- Optional bottom or top hinges
- Fitted with security lock

Material:
Side panels: Extruded aluminium section/die-cast, spray-finished in RAL7030
Window: Smoked acrylic

Supply includes:
1 door, assembly parts.

Acrylic door	U	W (B) mm	H mm	b mm	c mm	Model No. VC
269.2 mm (1/2 19″)	3	320.5	157.5	147.0	151.5	**3724.000**
269.2 mm (1/2 19″)	4	320.5	202.0	192.0	196.0	**3725.000**
482.6 mm (19″)	3	534.0	157.5	147.0	151.5	**3726.000**
482.6 mm (19″)	4	534.0	202.0	192.0	196.0	**3727.000**
482.6 mm (19″)	6	534.0	291.0	281.0	285.0	**3728.000**
482.6 mm (19″)	7	534.0	335.3	325.5	329.4	**3729.000**



Rittal Vario-Case iS accessories



Carrying handles, vertical

For easy, convenient transportation.

Material:
End pieces: Die-cast zinc,
spray-finished similar to RAL 7035
Centre part: Extruded aluminium section,
spray-finished in RAL 7035

Supply includes:
Assembly parts.

For VC	Packs of	Model No. VC
3 U	2	**3785.000**
6 U	2	**3786.000**



Carrying handles, horizontal

For easy, convenient transportation.

Material:
Side panels: Die-cast zinc,
spray-finished similar to RAL 7035
Centre part: Extruded aluminium section,
spray-finished in RAL 7035

Supply includes:
Assembly parts.

For VC	Packs of	Model No. VC
300 mm deep	2	**3787.000**
400 mm deep	2	**3788.000**
500 mm deep	2	**3789.000**



Plastic caps

for VC feet
Designed for retrofitting to the feet of Vario-Case iS enclosures, these soft plastic caps prevent slipping on smooth surfaces.

Material:
Soft PVC, Shore hardness 60°

Colour:
RAL 7030

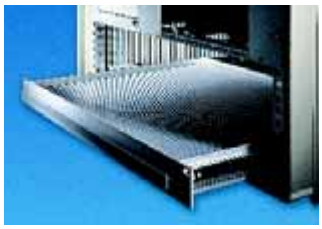
Packs of	Model No. VC
12	**3736.000**



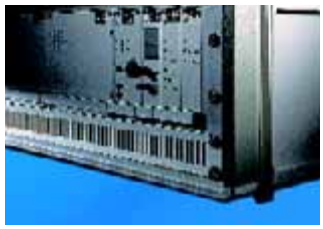
Threaded insert M4,
see page 564.



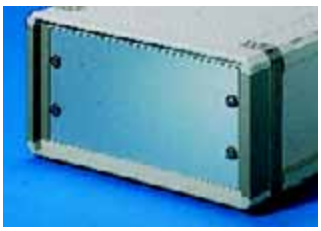
Earthing set,
see page 565.



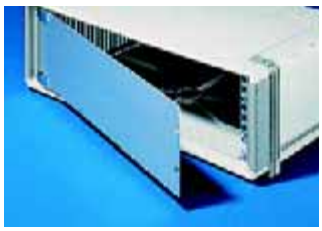
Drawer/utility table
pull-out drawer with base,
see page 1015,
drawer with frame open bottom,
see page 1015.



Ventilation front panels,
see page 1013.



Blanking plates,
see page 1013.



Blanking plate, vertically hinged,
see page 1013.
Horizontally hinged,
see page 1013.



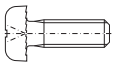
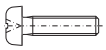
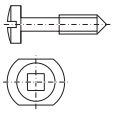
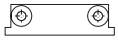
Hinge,
see page 1013.



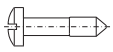
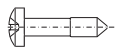
M6 assembly screws,
see page 1019.

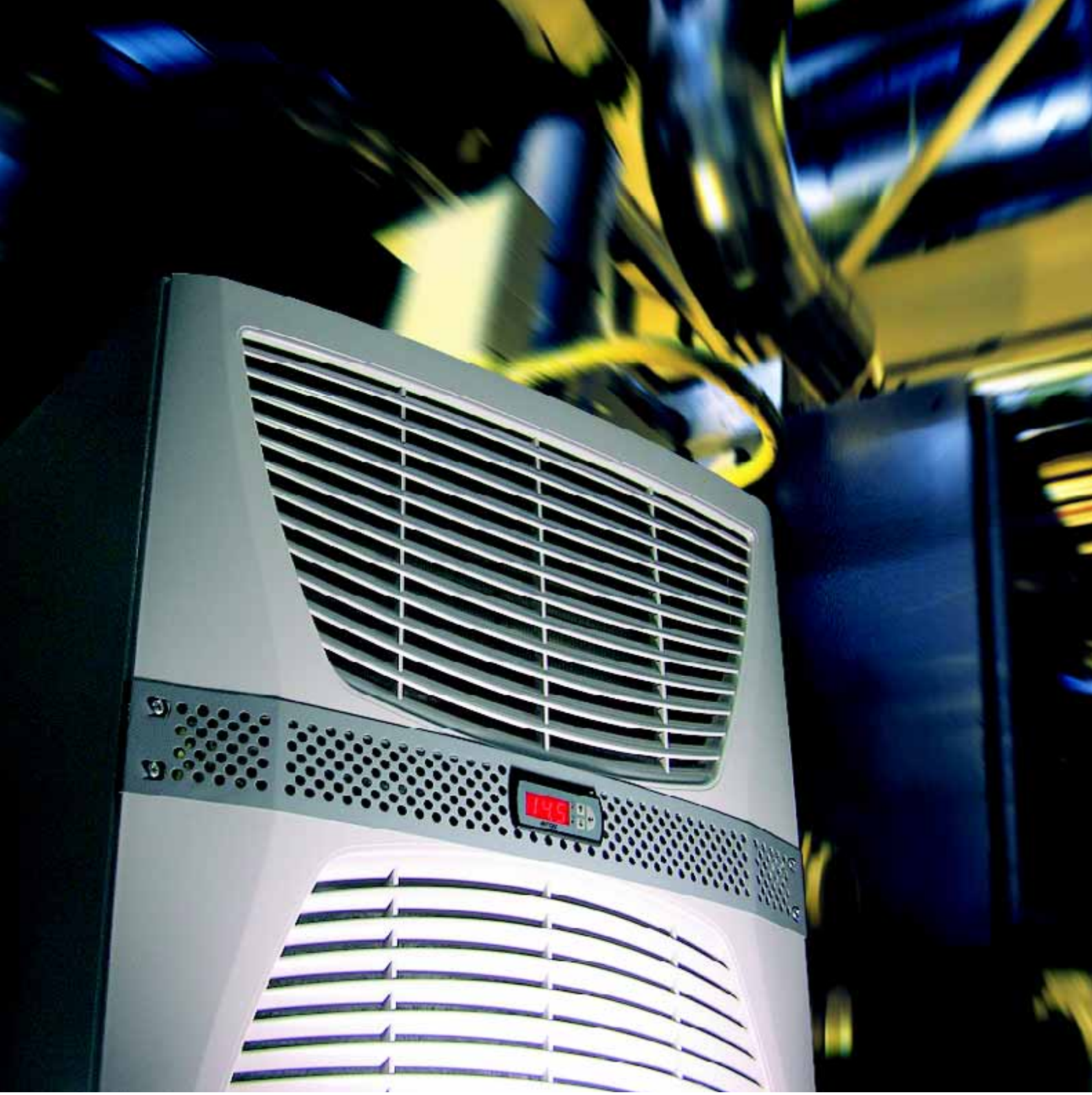
Captive nut M6,
see page 1020.

Assembly parts

For the attachment of	Description	Dimensions	Model No.	Packs of
Front panels to unit side panels	Oval csk-screw ISO 7047-4.8-Z-A2F	M3 x 8 	**3606.550**	100
Rear panels to box-type plug-in units	Panhead posidrive screw ISO 7045-4.8-Z-A2F	M3 x 8 	**3606.560**	100
PCB holders (plastic) to front panels, top	Oval csk-screw ISO 7047-4.8-Z-A2F	M2.5 x 10 	**3606.610**	100
– Horizontal rails to side panels – Divider panels to horizontal rails – Horizontal rails to vertical supports	Panhead self-locking screw similar to DIN ISO 7045-8.8-Z-A2F	M4 x 12 	**3654.300**	100
– PCBs to PCB holders (die-cast for 3 U, 6 U), top – PCBs to extractor handles with 6 U	Panhead screw ISO 7045-4.8-Z-A2F	M2.5 x 8 	**3654.320**	100
– PCB holder (plastic) to type V/VI handles, bottom – PCBs to PCB holders (plastic) – Backplanes to tapped strips	Panhead screw ISO 7045-4.8-Z-A2F	M2.5 x 10 	**3654.330**	100
– Connectors to Z rails – Z rails to horizontal rails – Type V/VI handles to partial front panels, bottom right for ≥ 5 HP – Aluminium guide rails to horizontal rails – Mezzanine front panels	Panhead screw ISO 7045-4.8-Z-A2F	M2.5 x 6 	**3654.340**	100
Aluminium guide rails to horizontal rails (fastening of sqare nuts)	Retaining cage	M2.5	**9901.417**	100
Handle type V (plastic) to front panels and box type plug-in units	Mounting kit for type V handle (plastic): Cover black Cover grey Hex nut Screw Screw Square nut DIN 502-11H-A2F	 M2.5 M2.5 x 16 M2.5 x 12 M2.5	**3687.519**	1 set
Connectors to PCBs	Panhead screw ISO 7045-4.8-Z-A2F	M2.5 x 12 	**3654.350**	100
Guide rails (plastic) to horizontal rails	Screw for plastic WN 1413	M2.2 x 6 	**3654.360**	100
– Flat front panels to handles type V, VI – Aluminium guide rails to horizontal rails	Square nut DIN 562-A2F	M2.5 	**3654.370**	100
– Flat front panels to horizontal rails – Trim frame to conceal the front sections of the horizontal mounting kit	Captive screws (cheese-head) and plastic collars	M2.5 x 11 	**3658.160**	100 set
Flat front panels	Plastic collars		**3687.021**	100
PCB to type III handle	Screw for plastic WN 1412	M3.0 x 8 	**3658.190**	100
– PCBs to PCB holders (plastic) – PCB holders to front panels, top	Hex nut ISO 4032-8	M2.5 	**3658.210**	100
– Backplanes to threaded inserts – Air partitions to horizontal rails	Mounting kit for backplanes: Panhead screw ISO 7045-4.8-Z-A2F Washer PE, natural DIN 125	 M2.5 x 6  2.7 	**3684.019**	100
– Covers to mounting blocks – EMC contact profiles	Flat csk-screw ISO 7046-1-4.8-Z-A2F	M3 x 6 	**3684.233**	100
Covers to side panels	Mounting block		**3684.234**	10
Type V/VI handle to front panels	Bracket		**3684.435**	100
Female connector to PCB attachment	Pop rivet DIN 7340-B-CuZn	2.5 x 0.3 x 10	**3684.482**	100
Ground contact to keyable guide rails	Fastening screw for ground contact	M3.5 x 12	**3684.109**	50

Assembly parts

For the attachment of	Description	Dimensions	Model No.	Packs of
Fans to fan mounting plate	Mounting kit for fans:		**3685.197**	1 set
	Flat csk-screw ISO 7046-1-4.8-Z-A2F	M4 x 12 		
	Hex nut ISO 4032-8	M4 		
	Serrated washer DIN 6797-A-Fst	4.3 		
Covers to side panels	Mounting kit for covers:		**3685.256**	24 sets
	Mounting block			
	Flat csk-screw ISO 7046-1-4.8-Z-A2F	M3 x 6 		
PCB holders (die-cast) to front panels, top	Oval csk-screw ISO 7047-4.8-Z-A2F	M2.5 x 8 	**3685.282**	100
– Covers/box type plug-in units type I/II – Contact/spring sections for 3-part front panels	Flat csk-screw ISO 7046-1-4.8-Z-A2F	M2.5 x 5 	**3685.289**	100
– Handles on front panels for box type plug-in units – Front panels to hinge strip	Flat csk-screw ISO 7046-1-4.8-Z-A2F	M2.5 x 6 	**3685.290**	100
Holder (horizontal assembly kit) to horizontal rail	Flat csk-screw similar to ISO 7046-1-4.8-Z-A2F	M2.5 x 5 	**3686.916**	100
Holder (horizontal assembly kit) to horizontal rail	Flat csk-screw similar to ISO 7046-1-4.8-Z-A2F	M2.5 x 8 	**3686.917**	100
Contact and spring sections on 3-part front panels without countersink	Panhead csk-screw ISO 7046-4.8-Z-A2F	M2.5 x 5 	**3686.924**	100
Recessed flanges to side panels	Mounting kit for recessed flanges:		**3687.015**	4 sets
	Panhead self-locking screw similar to DIN ISO 7045-8.8-Z-A2F	M4 x 8 		
	Hex nut ISO 4032-8	M4 		
	Washer	4.3 		
Fastening the threaded inserts in horizontal rails	Grub screw ISO 7434-14H	M2.5 x 8 	**3687.020**	100
– EMC front panels to horizontal rails – EMC trim frame to conceal the front sections of the horizontal mounting kit	Centering screw with slotted head	M2.5 x 11 	**3687.050**	100
EMC front panels to horizontal rails	Centering screw posidrive	M2.5 x 11 	**3687.051**	100
Front panels and rear panels to horizontal rails	Collar screw, cheese-hed slotted	M2.5 x 11 	**3685.097**	100
Type V/VI handles (aluminium) to front panels	Mounting kit for type V/VI handles:		**3687.146**	1 set
	Panhead screw ISO 7045-1-4.8-Z-A2F	M2.5 x 6 		
	Bracket			
	Square nut DIN 562-11H-A2F	M2.5 		



Everyone talks about the future, but Rittal helps shape it – and that includes the field of climate control.

Development work focuses on the holistic **protection of process control with the minimum possible energy consumption.**

Modern cooling units with excellent efficiency and perfect interface technology, together with **liquid cooling concepts,** offer fresh new perspectives for the correct cooling of electronic components. This is crucial to the availability and reliability of machinery and IT technology.

For this reason, Rittal collaborates closely with you to develop customised climate control concepts.

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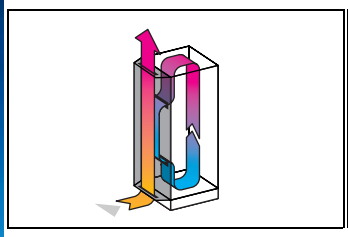
Features



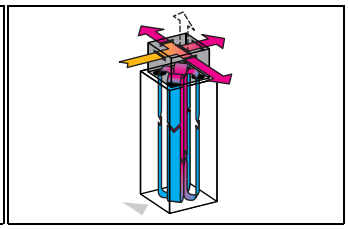
Rittal system climate control offers holistic process protection. This includes the cooling of sensitive electronics in enclosures and cases for industrial process control, as well as server and network technology, regardless of the ambient conditions. But these are not isolated solutions – with Rittal, everything is interconnected. Perfectly linked and controlled cooling technology with eco-friendly, energy-efficient equipment.



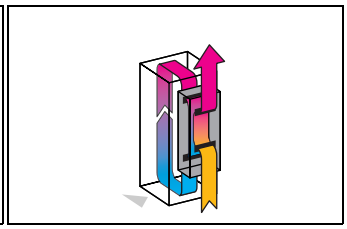
Selection criteria



Integral cooling technology
The unity of enclosure and cooling components achieves particularly effective cooling. Assembly time is eliminated. The investment costs for the complete unit offer exceptionally good value for money.



Roof-mounted cooling units
Requirement-oriented routing of cooling air in the internal circuit is possible, with up to four cold air outlet openings and the optional use of ducts. In the external circuit, the heated air is expelled to the rear, left and right, and optionally upwards. This means that there are no obstacles to bayed use and siting close to the wall.



Wall-mounted cooling units
Depending on the space and design requirements, internal mounting, partial internal mounting and external mounting are all possible. Thanks to large distances between the air intake and outlet openings, effective cold air throughput of the enclosure is achieved.

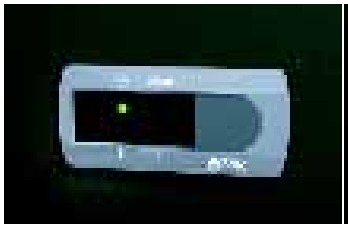


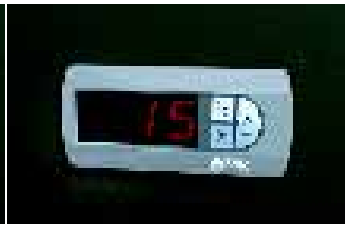
Intelligent control

The two controller variants for operational reliability offer a comprehensive range of functions. Essential control electronics are well protected and cooled in the inner circuit.

Both variants have the following properties:

- Three voltage options: 115 V, 230 V, 400/460 V 3~
- Integral start-up delay and door limit switch function
- Icing protection function
- Monitoring of all motors
- Phase monitoring for three-phase units





Basic controller:

- Visualisation of the operating status via LED display
- Switching hysteresis: 5 K
- Floating fault signal contact in case of overtemperature
- Setpoint adjustable from outside via potentiometer (setting range 20° – 55°C)

Comfort controller

- Switching hysteresis: 2 – 10 K preset to 5 K
- System alarm, individually configurable for 2 floating fault signal contacts
- Visualisation of the current enclosure internal temperature and all system messages on the display
- Storage of all system states in the log file
- Optional extension card for integration into superordinate remote monitoring systems e.g. with CMC

Features



Integral cooling technology





Infinite possibilities
The TS 8 Top enclosure system platform offers full compatibility in terms of baying techniques, lock systems and interior installation.

Fast exchange of the door and side panel
The symmetrical design means that the door hinge can be swapped very quickly to the opposite side, even with the designer climate control door.

Exchangeable in a flash
With all integrated cooling technology models, the cooling module can be very rapidly exchanged in just a few actions for servicing purposes.



Roof-mounted cooling units





Flexible performance
Only 3 mounting cutouts for 6 different output categories in 28 design variants.

Targeted air routing in the enclosure
The internal air circulation is targeted and effective: The heated air is extracted centrally. Air exhaust occurs in the four corners, depending on requirements.

Flexible condensate management
All roof-mounted cooling units with Comfort controller are equipped with condensate warning feature. A condensate pump and condensate evaporation may be integrated.



Wall-mounted cooling units





Wall-mounted cooling units – Practical and stylish
The mounting cutout is selected depending on the mounting variant: external, internal or partial internal mounting. This makes optimum use of the space available.

Effective air routing inside the enclosure
The large distance between the air inlet and outlet in the internal circuit makes wall-mounted cooling units particularly effective. This ensures optimum air throughput inside the enclosure, and air short-circuits are avoided.

Developed for easy servicing, inside and out
The assemblies, their arrangement and the divided internal case construction make all types of maintenance and servicing work much easier.

Benefits:

- Useful cooling output from 225 W to 4000 W
- Extensive control and monitoring features, even with the basic version
- Three-phase cooling units support multiple voltages as standard
- Uniform, output-related, cross-system mounting cutouts, to match TopTherm air/air heat exchangers
- Targeted, individual air routing
- No assembly work and low investment costs, thanks to the complete solution consisting of an enclosure and integral cooling unit[1)]
- May be integrated directly into TS 8 bayed enclosure suites[1)]

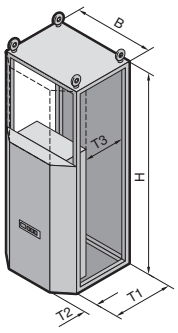
Important:

- Use a base/plinth of at least 100 mm height to ensure uninhibited air entry[1)]
- Avoid overloading the roof plate by using stays (see TS 8 system accessories)
- Air inlet and outlet openings in the internal and external circuit must not be obstructed.

[1)] Only for integral cooling technology.

Enclosures, single-door, useful cooling output 1100/1500 W





B = Width
T = Depth

Property rights:
German patent no. 196 09 794
European patent no. 0 886 994
with validity for ES, FR, GB, IT, NL, SE
Taiwanese patent no. N 11 05 287
US patent no. 6,134,109
South Korean patent
no. 3 295 093

Supply includes:
Enclosure frame with rear panel, roof and climate control door, including TS 8 hinges, door opening angle approx. 110°, spray-finished, including pre-assembled cooling module, r/h door hinge, may be swapped to opposite side, 4 eyebolts, pre-fitted, mounting plate, three-part gland plates, depth stay as shipping brace.

Also required:
For correct functioning of the external circuit:
Base/plinth, 100 or 200 mm high,
see page 835.

Optionally available:
Microcontroller control with
- digital temperature indicator,
- floating contact for collective fault signal,
- connection for door operated switch for start-up delay.

Automatic condensate evaporation.

Approvals,
see page 66.

Detailed drawing,
see page 1164.

Performance diagrams,
available on the Internet.

Model No. SK[1]		**8687.100**	**8607.100**	**8687.840**	**8607.840**	**8887.150**	**8807.100**	**8887.140**	**8807.140**
Rated operating voltage V, Hz		230, 50/60		400, 2~, 50/60		230, 50/60		400, 2~, 50/60	
Dimensions in mm	B	600	600	600	600	800	800	800	800
	H	1800	2000	1800	2000	1800	2000	1800	2000
	T1	600	600	600	600	600	600	600	600
	T2	100	100	100	100	100	100	100	100
Maximum installation depth up to mounting plate	T3	478							
Suitable for baying with TS 8 enclosures mm	T	600							
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35**	**1100 W/1250 W**				**1500 W/1510 W**			
	L 35 L 50	**820 W/1000 W**				**1065 W/1240 W**			

Rated current max.		3.2 A/3.8 A		1.9 A/2.2 A		4.0 A/4.5 A		2.3 A/2.6 A	
Start-up current		11.0 A/12.0 A		6.3 A/6.9 A		9.0 A/10.0 A		5.2 A/5.7 A	
Pre-fuse T		10.0 A/10.0 A		6.0 A/6.0 A		10.0 A/10.0 A		6.0 A/6.0 A	
Power consumption P_{el} to DIN 3168	L 35 L 35	525 W/630 W		540 W/650 W		650 W/750 W		670 W/780 W	
	L 35 L 50	605 W/725 W		625 W/750 W		750 W/850 W		780 W/880 W	
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	2.1				2.3			
Refrigerant		R134a, 675 g				R134a, 700 g			
Permissible operating pressure p. max.		23 bar							
Temperature and setting range		+20°C to +55°C							
Protection category to EN 60 529/10.91	External circuit	IP 24							
	Internal circuit	IP 54							
Duty cycle		100 %							
Type of connection		Terminal strip							
Weight		155 kg	163 kg	158 kg	166 kg	182 kg	192 kg	185 kg	195 kg
Colour		RAL 7035[2]							
Air throughput of fans	External circuit	580 m³/h				600 m³/h			
	Internal circuit	420 m³/h				480 m³/h			
Temperature control		Internal thermostat (factory setting +35°C)							

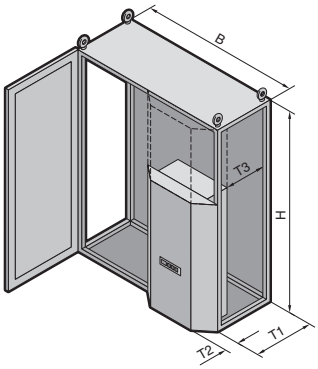
Also required	Packs of									Page
Base/plinth components front/rear, 100 mm	1 set	8601.600				8601.800				835
Base/plinth trim, side, 100 mm	1 set	8601.060								835
Side panels	2	8186.200	8106.200	8186.200	8106.200	8186.200	8106.200	8186.200	8106.200	853

[1] Delivery times available on request.
[2] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **TS 8 enclosures** From page 142 **Configuration software** Page 1063

Enclosures, two-door, useful cooling output 2000/2500 W





B = Width
T = Depth

Property rights:
German patent no. 196 09 794
European patent no. 0 886 994
with validity for ES, FR, GB, IT, NL, SE
Taiwanese patent no. N 11 05 287
US patent no. 6,134,109
South Korean patent
no. 3 295 093

Supply includes:
Enclosure frame with rear panel, roof and climate control door, including TS 8 hinges, door opening angle approx. 110°, lockable door with standard hinges, spray-finished, including pre-assembled cooling module, 4 eyebolts, pre-fitted,
mounting plate, three-part gland plates, depth stays as shipping braces.

Also required:
For correct functioning of the external circuit:
Base/plinth, 100 or 200 mm high,
see page 835.

Optionally available:
Microcontroller control with
- digital temperature indicator,
- floating contact for collective fault signal,
- connection for door operated switch for start-up delay.

Automatic condensate evaporation.

Approvals,
see page 66.

Detailed drawing,
see page 1164.

Performance diagrams,
available on the Internet.

Model No. SK[1]		**8287.170**	**8807.180**	**8207.170**	**8207.180**	**8807.260**	**8807.250**
Device position		right	left	right	left	left	
Rated operating voltage V, Hz		230, 50/60				400, 3~, 50/60	
Dimensions in mm	B H T1 T2	1200 1800 600 100	1200 1800 600 100	1200 2000 600 100		1200 1800 600 100	1200 2000 600 100
Maximum installation depth up to mounting plate	T3	445	445	445		415	415
Suitable for baying with TS 8 enclosures mm	T	600					
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**2000 W/2010 W** **1420 W/1650 W**				**2500 W/2550 W** **1650 W/1750 W**	

Rated current max.		5.8 A/6.3 A			3.0 A/3.2 A	
Start-up current		26.0 A/29.0 A			14.0 A/16.0 A	
Pre-fuse T		16.0 A/16.0 A			6.0 A/6.0 A	
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	960 W/1070 W 1030 W/1180 W			1330 W/1640 W 1580 W/2000 W	
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	2.1			1.9	
Refrigerant		R134a, 925 g			R134a, 975 g	
Permissible operating pressure p. max.		28 bar				
Temperature and setting range		+20°C to +55°C				
Protection category to EN 60 529/10.91	External circuit	IP 24				
	Internal circuit	IP 54				
Duty cycle		100 %				
Type of connection		Terminal strip				
Weight		231 kg	246 kg		231 kg	245 kg
Colour		RAL 7035[2]				
Air throughput of fans	External circuit	630 m^3/h			700 m^3/h	
	Internal circuit	520 m^3/h			620 m^3/h	
Temperature control		Internal thermostat (factory setting +35°C)				

Also required	Packs of					Page
Base/plinth components front/rear, 100 mm	1 set	8601.200				835
Base/plinth trim, side, 100 mm	1 set	8601.060				835
Side panels	1 set	8186.200	8106.200	8186.200	8106.200	853

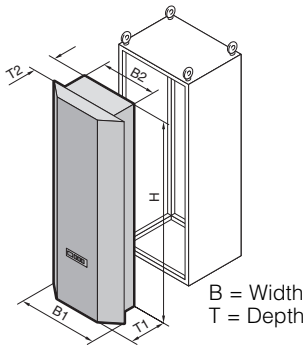
[1] Delivery times available on request.
[2] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **TS 8 enclosures** From page 142 **Configuration software** Page 1063

Climate control doors

Doors, for installing on 600 mm wide TS 8 enclosures, useful cooling output 1100/1500





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European patent no. 0 886 994
with validity for ES, FR, GB, IT, NL, SE
Taiwanese patent
no. N 11 05 287
US patent no. 6,134,109
South Korean patent
no. 0 299 406
Japanese patent no. 3 295 093

Supply includes:
Climate control door unit with pre-fitted cooling module, including TS 8 hinges, door opening angle approx. 110°.

Note:
Climate control doors for two-door TS 8 enclosures
see page 587/588.

Also required:
Base/plinth, 100 or 200 mm high,
see page 835.

Optionally available:
Automatic condensate evaporation.

Approvals,
see page 66/67.

Detailed drawing,
see page 1165.

Performance diagrams,
available on the Internet.

Model No. SK with thermostat		**3306.880[1)]**	**3306.800[1)]**	**3306.884[1)]**	**3306.840[1)]**	**3307.880[1)]**	**3307.800[1)]**	**3307.890[1)]**	**3307.840**
Model No. SK with microcontroller		**3306.580[1)]**	**3306.500[1)]**	**3306.590[1)]**	**3306.540[1)]**	**3307.580[1)]**	**3307.500[1)]**	**3307.590[1)]**	**3307.540[1)]**
Rated operating voltage V, Hz		230, 50/60		400, 2~, 50/60		230, 50/60		400, 2~, 50/60	
Dimensions in mm	B1	592	592	592	592	592	592	592	592
	B2	461	461	461	461	461	461	461	461
	H	1777.5	1977.5	1777.5	1977.5	1777.5	1977.5	1777.5	1977.5
	T1	157	157	157	157	190	190	190	190
	T2	57	57	57	57	90	90	90	90
Dimensions to fit TS enclosures mm	B	600	600	600	600	600	600	600	600
	H	1800	2000	1800	2000	1800	2000	1800	2000
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35**	**1100 W/1250 W**				**1500 W/1680 W**			
	L 35 L 50	**820 W/1000 W**				**1110 W/1120 W**			

Rated current max.		3.2 A/3.8 A		1.9 A/2.2 A		4.2 A/4.8 A	2.4 A/2.8 A
Start-up current		11.0 A/12.0 A		6.3 A/6.9 A		22.0 A/24.0 A	12.7 A/13.8 A
Pre-fuse T		10.0 A/10.0 A		6.0 A/6.0 A		16.0 A/16.0 A	10.0 A/10.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35	525 W/630 W		540 W/650 W		560 W/710 W	570 W/725 W
	L 35 L 50	605 W/725 W		625 W/750 W		670 W/840 W	680 W/860 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	2.1					
Refrigerant		R134a, 675 g				R134a, 800 g	
Permissible operating pressure p. max.		23 bar				26 bar	
Temperature and setting range		+20°C to +55°C					
Protection category to EN 60 529/10.91	External circuit	IP 24					
	Internal circuit	IP 54					
Duty cycle		100 %					
Type of connection		Terminal strip					
Weight		58 kg	60 kg	61 kg	63 kg	72 kg	75 kg
Colour		RAL 7035[2)]					
Air throughput of fans	External circuit	580 m^3/h				600 m^3/h	
	Internal circuit	420 m^3/h				480 m^3/h	
Temperature control		Internal thermostat or microcontroller control (factory setting +35°C)					

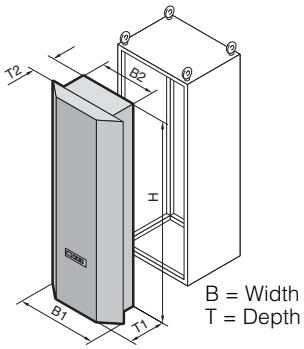
Accessories	Packs of			Page
Metal filters	1	3284.200		669
Door-operated switch	1	4127.000		956
Temperature indicator	1	3114.100		660
Air diverter	1	3213.300	–	659

[1)] Delivery times available on request.
[2)] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **TS 8 enclosures** From page 142 **Configuration software** Page 1063

Doors, for installing on 800 mm wide TS 8 enclosures, useful cooling output 1500 W





Property rights:
German patent no. 196 09 794
European patent no. 0 886 994
with validity for ES, FR, GB, IT, NL, SE
Taiwanese patent no. N 11 05 287
US patent no. 6,134,109
South Korean patent
no. 0 299 406
Japanese patent no. 3 295 093

Supply includes:
Climate control door unit with pre-fitted cooling module, including TS 8 hinges, door opening angle approx. 110°.

Also required:
Base/plinth, 100 or 200 mm high,
see page 835.

Optionally available:
Automatic condensate evaporation.

Approvals,
see page 66/67.

Detailed drawing,
see page 1165.

Performance diagrams,
available on the Internet.

Model No. SK with thermostat		**3308.880**[1]	**3308.800**[1]	**3308.884**[1]	**3308.840**[1]
Model No. SK with microcontroller		**3308.580**[1]	**3308.500**	**3308.590**[1]	**3308.540**
Rated operating voltage V, Hz		230, 50/60		400, 2~, 50/60	
Dimensions in mm	B1 B2 H T1 T2	792 661 1777.5 157 57	792 661 1977.5 157 57	792 661 1777.5 157 57	792 661 1977.5 157 57
Dimensions to fit TS enclosures mm	B H	800 1800	800 2000	800 1800	800 2000
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35 L 35 L 50**	**1500 W/1510 W 1065 W/1240 W**			

Rated current max.		4.0 A/4.5 A		2.3 A/2.6 A	
Start-up current		9.0 A/10.0 A		5.2 A/5.7 A	
Pre-fuse T		10.0 A/10.0 A		6.0 A/6.0 A	
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	650 W/750 W 750 W/850 W		670 W/780 W 780 W/880 W	
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	2.3			
Refrigerant		R134a, 700 g			
Permissible operating pressure p. max.		23 bar			
Temperature and setting range		+20°C to +55°C			
Protection category to EN 60 529/10.91	External circuit	IP 24			
	Internal circuit	IP 54			
Duty cycle		100 %			
Type of connection		Terminal strip			
Weight		65 kg	67 kg	68 kg	70 kg
Colour		RAL 7035[2]			
Air throughput of fans	External circuit	600 m^3/h			
	Internal circuit	480 m^3/h			
Temperature control		Internal thermostat or microcontroller control (factory setting +35°C)			

Accessories	Packs of		Page
Metal filters	1	3288.200	669
Door-operated switch	1	4127.000	956
Temperature indicator	1	3114.100	660
Air diverter	1	Available on request.	–

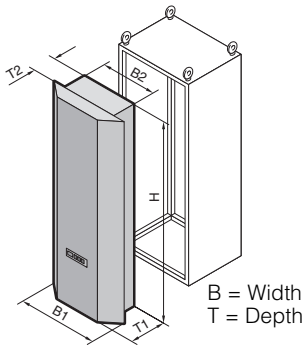
[1] Delivery times available on request.
[2] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **TS 8 enclosures** From page 142 **Configuration software** Page 1063

Climate control doors

Doors, for installing on 600 mm wide TS 8 enclosures, useful cooling output 2000/2500





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with validity for ES, FR, GB, IT, NL, SE
Taiwanese patent no. N 11 05 287
US patent no. 6,134,109
South Korean patent
no. 0 299 406
Japanese patent no. 3 295 093

Supply includes:
Climate control door unit with pre-fitted cooling module, including TS 8 hinges, door opening angle approx. 110°.

Note:
Climate control doors for two-door TS 8 enclosures,
see page 587/588.

Also required:
Base/plinth, 100 or 200 mm high,
see page 835.

Optionally available:
Automatic condensate evaporation.

Approvals,
see page 66/67.

Detailed drawing,
see page 1165.

Performance diagrams,
available on the Internet.

Model No. SK with thermostat		**3309.880[1)]**	**3309.800**	**3309.884[1)]**	**3309.840[1)]**	**3310.880[1)]**	**3310.800**
Model No. SK with microcontroller		**3309.580[1)]**	**3309.500**	**3309.590[1)]**	**3309.540**	**3310.580[1)]**	**3310.500[1)]**
Rated operating voltage V, Hz		230, 50/60		400, 2~, 50/60		400, 3~, 50/60	
Dimensions in mm	B1	592	592	592	592	592	592
	B2	461	461	461	461	461	461
	H	1777.5	1977.5	1777.5	1977.5	1777.5	1977.5
	T1	190	190	190	190	220	220
	T2	90	90	90	90	120	120
Dimensions to fit TS enclosures mm	B	600	600	600	600	600	600
	H	1800	2000	1800	2000	1800	2000
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35**	**2000 W/2010 W**				**2500 W/2550 W**	
	L 35 L 50	**1420 W/1650 W**				**1650 W/1750 W**	

Rated current max.		5.8 A/6.3 A		3.4 A/3.6 A		3.0 A/3.2 A	
Start-up current		26.0 A/29.0 A		15.0 A/16.5 A		14.0 A/16.0 A	
Pre-fuse T		16.0 A/16.0 A		10.0 A/10.0 A		6.0 A/6.0 A	
Power consumption P_{el} to DIN 3168	L 35 L 35	960 W/1070 W		985 W/1100 W		1330 W/1640 W	
	L 35 L 50	1030 W/1180 W		1055 W/1210 W		1580 W/2000 W	
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	2.1				1.9	
Refrigerant		R134a, 925 g				R134a, 975 g	
Permissible operating pressure p. max.		28 bar					
Temperature and setting range		+20°C to +55°C					
Protection category to EN 60 529/10.91	External circuit	IP 24					
	Internal circuit	IP 54					
Duty cycle		100 %					
Type of connection		Terminal strip					
Weight		72 kg	74 kg	75 kg	77 kg	74 kg	76 kg
Colour		RAL 7035[2)]					
Air throughput of fans	External circuit	630 m^3/h				700 m^3/h	
	Internal circuit	520 m^3/h				620 m^3/h	
Temperature control		Internal thermostat or microcontroller control (factory setting +35°C)					

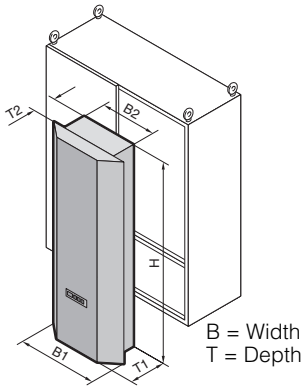
Accessories	Packs of		Page
Metal filters	1	3284.200	669
Door-operated switch	1	4127.000	956
Temperature indicator	1	3114.100	660

[1)] Delivery times available on request.
[2)] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **TS 8 enclosures** From page 142 **Configuration software** Page 1063

Doors, for installing on 1200 mm wide TS 8 enclosures, useful cooling output 1100/1500





Property rights:
German patent no. 196 09 794
European patent no. 0 886 994
with validity for ES, FR, GB, IT, NL, SE
Taiwanese patent no. N 11 05 287
US patent no. 6,134,109
South Korean patent
no. 0 299 406
Japanese patent no. 3 295 093

Supply includes:
Climate control door unit with pre-fitted cooling module, including TS 8 hinges, door opening angle approx. 110°.

Note:
With the device positioned on the right, one pack consists of a climate control door for installing in the right-hand half of the enclosure, plus a special lockable door for the left-hand half.

With the device positioned on the left, one pack consists of a climate control door for installing on the left-hand half of the enclosure. The existing lockable door on the right may be used.

Climate control doors for single-door TS 8 enclosures,
see page 584 – 588.

Also required:
Base/plinth, 100 or 200 mm high,
see page 835.

Optionally available:
Automatic condensate evaporation.

Approvals,
see page 67.

Detailed drawing,
see page 1165.

Performance diagrams,
available on the Internet.

Model No. SK with thermostat[1)]	left	**3306.270**	**3306.230**	**3306.470**	**3306.430**	**3307.270**	**3307.230**	**3307.470**	**3307.430**
	right	**3306.250**	**3306.210**	**3306.450**	**3306.410**	**3307.250**	**3307.210**	**3307.450**	**3307.410**
Model No. SK with microcontroller[1)]	left	**3306.570**	**3306.530**	**3306.670**	**3306.630**	**3307.570**	**3307.530**	**3307.670**	**3307.630**
	right	**3306.550**	**3306.510**	**3306.650**	**3306.610**	**3307.550**	**3307.510**	**3307.650**	**3307.610**
Rated operating voltage V, Hz		230, 50/60		400, 2~, 50/60		230, 50/60		400, 2~, 50/60	
Dimensions in mm	B1 B2 H T1 T2	592 461 1777.5 157 57	592 461 1977.5 157 57	592 461 1777.5 157 57	592 461 1977.5 157 57	592 461 1777.5 190 90	592 461 1977.5 190 90	592 461 1777.5 190 90	592 461 1977.5 190 90
Dimensions to fit TS enclosures mm	B H	1200 1800	1200 2000	1200 1800	1200 2000	1200 1800	1200 2000	1200 1800	1200 2000
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35 L 35 L 50**	**1100 W/1250 W 820 W/1000 W**				**1500 W/1680 W 1110 W/1120 W**			

Rated current max.		3.2 A/3.8 A		1.9 A/2.2 A		4.2 A/4.8 A	2.4 A/2.8 A
Start-up current		11.0 A/12.0 A		6.3 A/6.9 A		22.0 A/24.0 A	12.7 A/13.8 A
Pre-fuse T		10.0 A/10.0 A		6.0 A/6.0 A		16.0 A/16.0 A	10.0 A/10.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	525 W/630 W 605 W/725 W		540 W/650 W 625 W/750 W		560 W/710 W 670 W/840 W	570 W/725 W 680 W/860 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	2.1					
Refrigerant		R134a, 675 g				R134a, 800 g	
Permissible operating pressure p. max.		23 bar				26 bar	
Temperature and setting range		+20°C to +55°C					
Protection category to EN 60 529/10.91	External circuit	IP 24					
	Internal circuit	IP 54					
Duty cycle		100 %					
Type of connection		Terminal strip					
Weight		58 kg	60 kg	61 kg	63 kg	72 kg	75 kg
Colour		RAL 7035[2)]					
Air throughput of fans	External circuit	580 m^3/h				600 m^3/h	
	Internal circuit	420 m^3/h				480 m^3/h	
Temperature control		Internal thermostat or microcontroller control (factory setting +35°C)					

Accessories	Packs of			Page
Metal filters	1	3284.200		669
Door-operated switch	1	4127.000		956
Temperature indicator	1	3114.100		660
Air diverter	1	3213.300	–	659

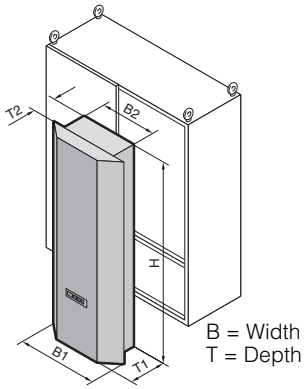
[1)] Delivery times on request. [2)] RAL 7032 on request. Special voltages available on request. Technical modifications reserved.

Accessories Page 657 **TS 8 enclosures** From page 142 **Configuration software** Page 1063

Climate control doors

Doors, for installing on 1200 mm wide TS 8 enclosures, useful cooling output 2000/2500





Property rights:
German patent no. 196 09 794
European patent no. 0 886 994
with validity for ES, FR, GB, IT, NL, SE
Taiwanese patent no. N 11 05 287
US patent no. 6,134,109
South Korean patent
no. 0 299 406
Japanese patent no. 3 295 093

Supply includes:
Climate control door unit with pre-fitted cooling module, including TS 8 hinges, door opening angle approx. 110°.

Note:
With the device positioned on the right, one pack consists of a climate control door for installing in the right-hand half of the enclosure, plus a special lockable door for the left-hand half.

With the device positioned on the left, one pack consists of a climate control door for installing on the left-hand half of the enclosure. The existing lockable door on the right may be used.

Climate control doors for single-door TS 8 enclosures,
see page 584 – 588.

Also required:
Base/plinth, 100 or 200 mm high,
see page 835.

Optionally available:
Automatic condensate evaporation.

Approvals,
see page 67.

Detailed drawing,
see page 1165.

Performance diagrams,
available on the Internet.

Model No. SK with thermostat[1)]	left	**3309.210**	**3309.140**	**3309.410**	**3309.440**	**3310.150**	**3310.130**
	right	**3309.170**	**3309.120**	**3309.470**	**3309.420**	**3310.250**	**3310.230**
Model No. SK with microcontroller[1)]	left	**3309.510**	**3309.530**	**3309.610**	**3309.640**	**3310.550**	**3310.530**
	right	**3309.570**	**3309.520**	**3309.670**	**3309.620**	**3310.650**	**3310.630**
Rated operating voltage V, Hz		230, 50/60		400, 2~, 50/60		400, 3~, 50/60	
Dimensions in mm	B1 B2 H T1 T2	592 461 1777.5 190 90	592 461 1977.5 190 90	592 461 1777.5 190 90	592 461 1977.5 190 90	592 461 1777.5 220 120	592 461 1977.5 220 120
Dimensions to fit TS enclosures mm	B H	1200 1800	1200 2000	1200 1800	1200 2000	1200 1800	1200 2000
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**2000 W/2010 W** **1420 W/1650 W**				**2500 W/2550 W** **1650 W/1750 W**	

Rated current max.		5.8 A/6.3 A		3.4 A/3.6 A		3.0 A/3.2 A	
Start-up current		26.0 A/29.0 A		15.0 A/16.5 A		14.0 A/16.0 A	
Pre-fuse T		16.0 A/16.0 A		10.0 A/10.0 A		6.0 A/6.0 A	
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	960 W/1070 W 1030 W/1180 W		985 W/1100 W 1055 W/1210 W		1330 W/1640 W 1580 W/2000 W	
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	2.1				1.9	
Refrigerant		R134a, 925 g				R134a, 975 g	
Permissible operating pressure p. max.		28 bar					
Temperature and setting range		+20°C to +55°C					
Protection category to EN 60 529/10.91	External circuit	IP 24					
	Internal circuit	IP 54					
Duty cycle		100 %					
Type of connection		Terminal strip					
Weight		72 kg	74 kg	75 kg	77 kg	74 kg	76 kg
Colour		RAL 7035[2)]					
Air throughput of fans	External circuit	630 m³/h				700 m³/h	
	Internal circuit	520 m³/h				620 m³/h	
Temperature control		Internal thermostat or microcontroller control (factory setting +35°C)					

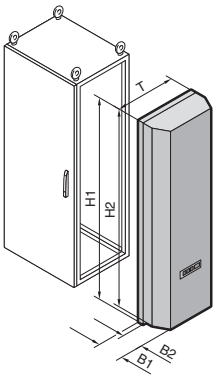
Accessories	Packs of		Page
Metal filters	1	3284.200	669
Door-operated switch	1	4127.000	956
Temperature indicator	1	3114.100	660

[1)] Delivery times on request. [2)] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **TS 8 enclosures** From page 142 **Configuration software** Page 1063

Panels, for installing on 600 mm deep TS 8 enclosures, useful cooling output 1100/1400





B = Width
T = Depth

Supply includes:
Climate control side panel with pre-fitted cooling module.

Also required:
Base/plinth, 100 or 200 mm high,
see page 835.

Optionally available:
Microcontroller control with
- digital temperature indicator,
- floating contact for collective fault signal,
- connection for door operated switch for start-up delay.

Automatic condensate evaporation.

Approvals,
see page 68.

Performance diagrams,
can be found on the Internet.

Model No. SK		**3331.116**	**3331.316**	**3331.140**[1]	**3331.340**[1]	**3331.216**[1]	**3331.416**	**3331.240**[1]	**3331.440**[1]
Rated operating voltage V, Hz		230, 50/60		400, 2~, 50/60		230, 50/60		400, 2~, 50/60	
Dimensions in mm	B1	171	171	171	171	171	171	171	171
	B2	157	157	157	157	157	157	157	157
	H1	1797	1997	1797	1997	1797	1997	1797	1997
	H2	1782.5	1982.5	1782.5	1982.5	1782.5	1982.5	1782.5	1982.5
	T	562	562	562	562	562	562	562	562
Dimensions to fit TS enclosures mm	H	1800	2000	1800	2000	1800	2000	1800	2000
	T	600	600	600	600	600	600	600	600
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35**	**1100 W/1200 W**				**1400 W/1450 W**			
	L 35 L 50	**730 W/830 W**				**1010 W/1060 W**			

Rated current max.		4.0 A/4.6 A	2.3 A/2.7 A	4.0 A/4.6 A	2.3 A/2.7 A
Start-up current		11.0 A/12.0 A	6.4 A/6.9 A	11.0 A/12.0 A	6.4 A/6.9 A
Pre-fuse T		6.0 A/6.0 A		6.0 A/6.0 A	
Power consumption P_{el} to DIN 3168	L 35 L 35	670 W/850 W	690 W/870 W	710 W/910 W	725 W/930 W
	L 35 L 50	800 W/1000 W	820 W/1020 W	810 W/1030 W	830 W/1050 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.6		2.0	1.9
Refrigerant		R134a, 825 g		R134a, 875 g	
Permissible operating pressure p. max.		25 bar		24 bar	
Temperature and setting range		+20°C to +50°C			
Protection category to EN 60 529/10.91	External circuit	IP 34			
	Internal circuit	IP 54			
Duty cycle		100 %			
Type of connection		Terminal strip			
Weight		58 kg	62 kg	58 kg	62 kg
Colour		RAL 7035[2]			
Air throughput of fans	External circuit	550 m^3/h			
	Internal circuit	275 m^3/h			
Temperature control		Internal thermostat (factory setting +35°C)			

Accessories	Packs of		Page
Metal filters	1	3289.200	669
Door-operated switch	1	4127.000	956
Temperature indicator	1	3114.100	660
Air diverter	1	3213.300	659

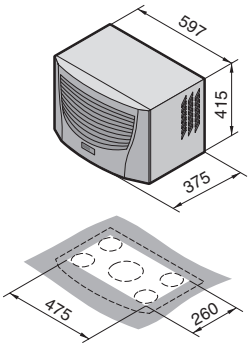
[1] Delivery times available on request.
[2] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **TS 8 enclosures** From page 142 **Configuration software** Page 1063

Roof-mounted cooling units

Useful cooling output 500/750 W





Property rights:
German registered design no. 402 02 324
German registered design no. 402 02 325

Supply includes:
Fully wired ready for connection, including drilling template and assembly parts.

Note:
Cooling units with Comfort controller may be integrated e.g. into superordinate remote monitoring systems by way of an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).

Accessories:
Roof plate for TS 8 with mounting cutout, see page 664.

Optionally available:
With automatic condensate evaporation.

Approvals,
see page 68/69.

Detailed drawing,
see page 1166.

Performance diagrams,
available on the Internet.

Model No. SK with Basic controller, RAL 7035		**3382.100**	**3382.110**	**3359.100**	**3359.110**	**3359.140**
Model No. SK with Comfort controller, RAL 7035		**3382.500**	**3382.510**	**3359.500**	**3359.510**	**3359.540**
Model No. SK with Basic controller, stainless steel[1)]		**3382.200**	**3382.210**	**3359.200**	**3359.210**	**3359.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3382.600**	**3382.610**	**3359.600**	**3359.610**	**3359.640**
Rated operating voltage V, Hz		230, 50/60	115, 50/60	230, 50/60	115, 50/60	400, 2~, 50/60
Dimensions in mm	WHD	597 x 415 x 375				
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35**	**500 W/510 W**		**750 W/810 W**		
	L 35 L 50	**270 W/370 W**		**545 W/590 W**		
Rated current max.		2.7 A/2.9 A	5.5 A/6.0 A	3.0 A/3.9 A	6.0 A/7.8 A	1.7 A/2.2 A
Start-up current		9.2 A/10.2 A	18.4 A/18.4 A	10.0 A/10.7 A	20.0 A/21.4 A	5.8 A/6.2 A
Pre-fuse T		10.0 A/10.0 A	10.0 A/10.0 A	10.0 A/10.0 A	16.0 A/16.0 A	10.0 A/10.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35	360 W/410 W	370 W/420 W	410 W/520 W	420 W/535 W	
	L 35 L 50	410 W/450 W	420 W/470 W	490 W/600 W	500 W/615 W	
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.4		1.8		
Refrigerant		R134a, 250 g		R134a, 300 g		
Permissible operating pressure p. max.		25 bar				
Temperature and setting range		+20°C to +55°C				
Protection category to EN 60 529/10.91	External circuit	IP 34				
	Internal circuit	IP 54				
Duty cycle		100 %				
Type of connection		Plug-in terminal strip				
Weight		30 kg	35 kg	32 kg	37 kg	
Air throughput of fans (unimpeded air flow)	External circuit	910 m^3/h				
	Internal circuit	440 m^3/h				
Temperature control		Basic or Comfort controller (factory setting +35°C)				

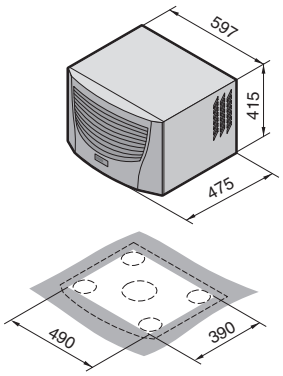
Accessories	Packs of		Page
Filter mats	3	3286.500	668
Metal filters	1	3286.510	669
Quick-change frame	1	3286.700	665
Door-operated switch	1	4127.000	956
SK bus system for Comfort controller	1	3124.100	663
RiDiag II including cables for Comfort controller	1	3159.100	1063
Interface card for Comfort controller	1	3124.200	662
Air ducting system	1	3286.870	658
Cover stoppers for interior air outlet	2	3286.780	658
Condensate hose	1	3301.612	665

[1)] Delivery times on request. Special voltages available on request. Technical modifications reserved.

Accessories Page 657 **Configuration software** Page 1063

Useful cooling output 1000 W





Property rights:
German registered design no. 402 02 324
German registered design no. 402 02 325

Supply includes:
Fully wired ready for connection, including drilling template and assembly parts.

Note:
Integration of the cooling units with Comfort controller, e.g. into superordinate remote monitoring systems, can be achieved by means of an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).

Accessories:
Roof plate for TS 8 with mounting cutout, see page 664.

Optionally available:
With automatic condensate evaporation.

Approvals,
see page 68/69.

Detailed drawing,
see page 1166.

Performance diagrams,
available on the Internet.

Model No. SK with Basic controller, RAL 7035		**3383.100**	**3383.110**	**3383.140**
Model No. SK with Comfort controller, RAL 7035		**3383.500**	**3383.510**	**3383.540**
Model No. SK with Basic controller, stainless steel[1)]		**3383.200**	**3383.210**	**3383.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3383.600**	**3383.610**	**3383.640**
Rated operating voltage V, Hz		230, 50/60	115, 50/60	400, 2~, 50/60
Dimensions in mm	WHD	597 x 415 x 475		
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1000 W/1080 W** **760 W/820 W**		
Rated current max.		4.3 A/4.5 A	8.3 A/8.7 A	2.4 A/2.4 A
Start-up current		15.5 A/15.5 A	25.3 A/24.3 A	8.0 A/8.8 A
Pre-fuse T		10.0 A/10.0 A	16.0 A/16.0 A	10.0 A/10.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	550 W/650 W 660 W/750 W	580 W/660 W 670 W/755 W	
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.8		
Refrigerant		R134a, 500 g		
Permissible operating pressure p. max.		25 bar		
Temperature and setting range		+20°C to +55°C		
Protection category to EN 60 529/10.91	External circuit	IP 34		
	Internal circuit	IP 54		
Duty cycle		100 %		
Type of connection		Plug-in terminal strip		
Weight		40 kg	46 kg	46 kg
Air throughput of fans	External circuit	1760 m^3/h		
	Internal circuit	440 m^3/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)		

Accessories	Packs of		Page
Filter mats	3	3286.500	668
Metal filters	1	3286.510	669
Quick-change frame	1	3286.800	665
Door-operated switch	1	4127.000	956
SK bus system for Comfort controller	1	3124.100	663
RiDiag II including cables for Comfort controller	1	3159.100	1063
Interface card for Comfort controller	1	3124.200	662
Air ducting system	1	3286.870	658
Cover stoppers for interior air outlet	2	3286.880	658
Condensate hose	1	3301.612	665

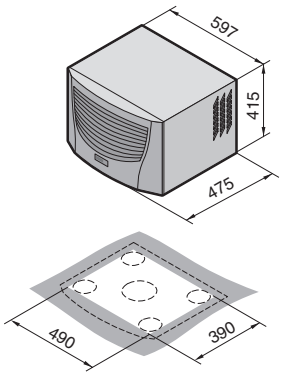
[1)] Delivery times on request. Special voltages available on request. Technical modifications reserved.

Accessories Page 657 **Configuration software** Page 1063

Roof-mounted cooling units

Useful cooling output 1100 W





Property rights:
German registered design no. 402 02 324
German registered design no. 402 02 325

Especially for office applications. Low noise level (considerably quieter than cooling units for industrial applications).

Supply includes:
Fully wired ready for connection, including automatic condensate evaporation, drilling template and assembly parts.

Note:
Integration of the cooling units with Comfort controller, e.g. into superordinate remote monitoring systems, can be achieved by means of an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).

Accessories:
Roof plate for TS 8 with mounting cutout, see page 664.

Approvals,
see page 68.

Detailed drawing,
see page 1166.

Performance diagrams,
available on the Internet.

Model No. SK with Comfort controller		**3273.500**	**3273.515[1)]**
Rated operating voltage V, Hz		230, 50/60	115, 50/60
Dimensions in mm	WHD	597 x 415 x 475	
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1100 W/1200 W** **850 W/870 W**	
Rated current max.		5.2 A/5.4 A	11.0 A/11.5 A
Start-up current		15.5 A/16.5 A	32.0 A/35.0 A
Pre-fuse T		10.0 A/10.0 A	20.0 A/20.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	890 W/910 W 960 W/1100 W	920 W/940 W 990 W/1140 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.2	
Refrigerant		R134a, 700 g	
Permissible operating pressure p. max.		25 bar	
Temperature and setting range		+20°C to +55°C	
Protection category to EN 60 529/10.91	External circuit	IP 34	
	Internal circuit	IP 54[2)]	
Duty cycle		100 %	
Type of connection		Plug-in terminal strip	
Weight		42 kg	47 kg
Colour		RAL 7035	
Air throughput of fans	External circuit	1760 m^3/h	
	Internal circuit	440 m^3/h	
Temperature control		Basic or Comfort controller (factory setting +35°C)	

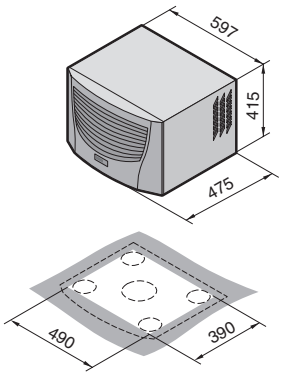
Accessories	Packs of		Page
Filter mats	3	3286.100	668
Metal filters	1	3286.210	669
Door-operated switch	1	4127.000	956
SK bus system for Comfort controller	1	3124.100	663
RiDiag II including cables for Comfort controller	1	3159.100	1063
Interface card for Comfort controller	1	3124.200	662
Air ducting system	1	3286.870	658
Cover stoppers for interior air outlet	2	3286.980	658
Condensate hose	1	3301.612	665

[1)] Delivery times available on request.
[2)] In order to avoid increased condensation, we recommend enclosures with a protection category of at least IP 54.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Configuration software** Page 1063

Useful cooling output 1500/2000 W





Property rights:
German registered design no. 402 02 324
German registered design no. 402 02 325

Supply includes:
Fully wired ready for connection, including drilling template and assembly parts.

Note:
Integration of the cooling units with Comfort controller, e. g. into superordinate remote monitoring systems, can be achieved by means of an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).

Accessories:
Roof plate for TS 8 with mounting cutout, see page 664.

Optionally available:
With automatic condensate evaporation.

Approvals,
see page 68/69.

Detailed drawing,
see page 1166.

Performance diagrams,
available on the Internet.

Model No. SK with Basic controller, RAL 7035		**3384.100**	**3384.110**	**3384.140**	**3385.100**	**3385.110**	**3385.140**
Model No. SK with Comfort controller, RAL 7035		**3384.500**	**3384.510**	**3384.540**	**3385.500**	**3385.510**	**3385.540**
Model No. SK with Basic controller, stainless steel[1)]		**3384.200**	**3384.210**	**3384.240**	**3385.200**	**3385.210**	**3385.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3384.600**	**3384.610**	**3384.640**	**3385.600**	**3385.610**	**3385.640**
Rated operating voltage V, Hz		230, 50/60	115, 50/60	400, 2~, 50/60	230, 50/60	115, 50/60	400, 2~,50/60
Dimensions in mm	WHD	597 x 415 x 475			597 x 415 x 475		
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1500 W/1520 W** **1100 W/1210 W**			**2000 W/2130 W** **1570 W/1670 W**		
Rated current max.		5.7 A/6.8 A	12.5 A/14.1 A	3.4 A/4.0 A	5.7 A/6.6 A	13.0 A/14.2 A	3.3 A/3.8 A
Start-up current		16.6 A/17.1 A	30.7 A/29.1 A	9.8 A/9.6 A	16.8 A/18.4 A	36.0 A/32.0 A	10.0 A/12.0 A
Pre-fuse T		10.0 A/10.0 A	20.0 A/20.0 A	10.0 A/10.0 A	10.0 A/10.0 A	20.0 A/20.0 A	10.0 A/10.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	815 W/930 W 950 W/1090 W	850 W/950 W 1000 W/1150 W		1000 W/1175 W 1100 W/1310 W	1050 W/1250 W 1160 W/1380 W	
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.8			2.0		
Refrigerant		R134a, 500 g			R134a, 950 g		
Permissible operating pressure p. max.		25 bar					
Temperature and setting range		+20°C to +55°C					
Protection category to EN 60 529/10.91	External circuit	IP 34					
	Internal circuit	IP 54					
Duty cycle		100 %					
Type of connection		Plug-in terminal strip					
Weight		41 kg	47 kg	47 kg	42 kg	48 kg	48 kg
Air throughput of fans	External circuit	1760 m^3/h			1820 m^3/h		
	Internal circuit	470 m^3/h					
Temperature control		Basic or Comfort controller (factory setting +35°C)					

Accessories	Packs of		Page
Filter mats	3	3286.500	668
Metal filters	1	3286.510	669
Quick-change frame	1	3286.800	665
Door-operated switch	1	4127.000	956
SK bus system for Comfort controller	1	3124.100	663
RiDiag II including cables for Comfort controller	1	3159.100	1063
Interface card for Comfort controller	1	3124.200	662
Air ducting system	1	3286.870	658
Cover stoppers for interior air outlet	2	3286.880	658
Condensate hose	1	3301.612	665

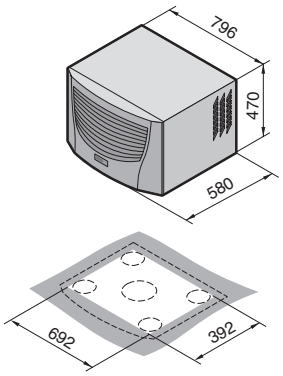
[1)] Delivery times available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Configuration software** Page 1063

Roof-mounted cooling units

Useful cooling output 3000/4000 W





Property rights:
German registered design no. 402 02 324
German registered design no. 402 02 325

Supply includes:
Fully wired ready for connection, including drilling template, eyebolt and assembly parts.

Note:
Integration of the cooling units with Comfort controller, e.g. into superordinate remote monitoring systems, can be achieved by means of an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).

Accessories:
Roof plate for TS 8 with mounting cutout, see page 664.

Optionally available:
With automatic condensate evaporation.

Approvals,
see page 68/69.

Detailed drawing,
see page 1166.

Performance diagrams,
available on the Internet.

Model No. SK with Basic controller, RAL 7035		**3386.140**	**3387.140**
Model No. SK with Comfort controller, RAL 7035		**3386.540**	**3387.540**
Model No. SK with Basic controller, stainless steel[1)]		**3386.240**	**3387.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3386.640**	**3387.640**
Rated operating voltage V, Hz		400, 50/460, 60, 3~	400, 50/460, 60, 3~
Dimensions in mm	WHD	796 x 470 x 580	796 x 470 x 580
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**3000 W/3300 W** **2460 W/2750 W**	**4000 W/4200 W** **3250 W/3490 W**
Rated current max.		3.0 A/3.1 A	3.5 A/3.6 A
Start-up current		8.0 A/9.0 A	17.0 A/19.0 A
Pre-fuse T		Motor circuit breaker 10.0 A/10.0 A	
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	1180 W/1490 W 1430 W/1770 W	1620 W/2060 W 1870 W/2340 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	2.5	
Refrigerant		R134a, 1600 g	R134a, 1800 g
Permissible operating pressure p. max.		25 bar	
Temperature and setting range		+20°C to +55°C	
Protection category to EN 60 529/10.91	External circuit	IP 34	
	Internal circuit	IP 54	
Duty cycle		100 %	
Type of connection		Plug-in terminal strip	
Weight		70 kg	77 kg
Air throughput of fans	External circuit	3450 m^3/h	3870 m^3/h
	Internal circuit	1280 m^3/h	1420 m^3/h
Temperature control		Basic or Comfort controller (factory setting +35°C)	

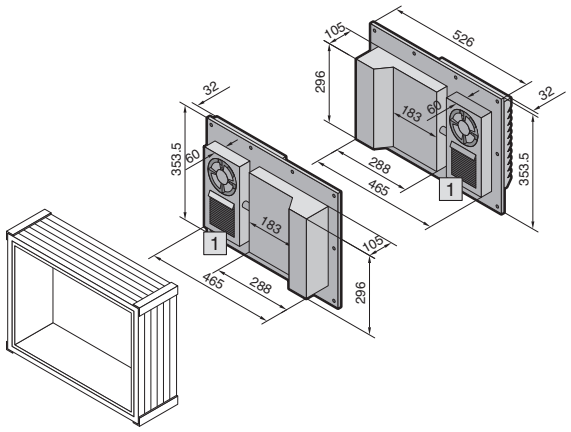
Accessories	Packs of		Page
Filter mats	3	3286.600	668
Metal filters	1	3286.610	669
Quick-change frame	1	3286.900	665
Door-operated switch	1	4127.000	956
SK bus system for Comfort controller	1	3124.100	663
RiDiag II including cables for Comfort controller	1	3159.100	1063
Interface card for Comfort controller	1	3124.200	662
Air ducting system	1	3286.970	658
Cover stoppers for interior air outlet	2	3286.980	658
Condensate hose	1	3301.612	665

[1)] Delivery times on request. Special voltages available on request. Technical modifications reserved.

Accessories Page 657 **Configuration software** Page 1063

VIP small cooling units, useful cooling output 225 W





The new VIP small cooling units were developed especially for cooling the VIP 6000 command panel. In addition, VIP small cooling units also offer a space-saving, economical solution for the climate control of small enclosures where small heat loads are generated by the system.

Supply includes:
Fully wired ready for connection and pre-mounted on an aluminium rear panel to fit VIP 6000 operating housing 7 U.

Property rights:
German patent
no. 198 17 917

[1] **Distance from installed equipment at least 60 mm**

Approvals,
see page 69.

Performance diagrams,
available on the Internet.

Model No. SK		**3201.100**	**3202.100**
Condenser version		left	right
Rated operating voltage V, Hz		230, 50/60	
Dimensions in mm	W H D	526 353.5 105	
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 45**	**225 W/270 W** **160 W/200 W**	

Rated current max.		1.5 A/1.5 A
Start-up current		1.9 A/2.0 A
Pre-fuse T		4.0 A/4.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 45	285 W/300 W 315 W/325 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	0.8/0.9
Refrigerant		R134a, 170 g
Permissible operating pressure p. max.		27 bar
Temperature and setting range		+20°C to +45°C
Protection category to EN 60 529/10.91	External circuit	IP 24
	Internal circuit	IP 54
Duty cycle		100 %
Type of connection		Terminal strip
Weight		10.5 kg
Colour		Rear panel aluminium, vent grille RAL 7035
Air throughput of fans	External circuit	235 m^3/h / 270 m^3/h
	Internal circuit	160 m^3/h / 180 m^3/h
Temperature control		Electronic control (factory setting +35°C)

Accessories	Packs of		Page
Temperature indicator	1	3114.100	660
Condensate hose	1	3301.608	665

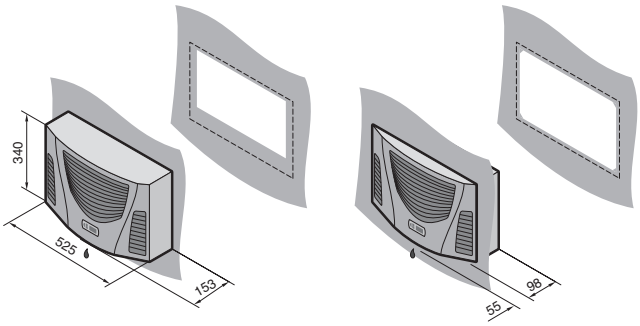
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Configuration software** Page 1063

Wall-mounted cooling units

Mini cooling unit in horizontal format, useful cooling output 300 W





Mini cooling units in horizontal format, ideal for cooling small and operating housings with optimum space utilisation.

Supply includes:
Fully wired ready for connection, including drilling template and assembly parts.

Approvals,
see page 69.

Detailed drawing,
see page 1167.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM

Model No. SK		**3302.300**	**3302.310**
Rated operating voltage V, Hz		230, 50/60	115, 60
Dimensions in mm	W H D	525 340 153	
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**300 W/320 W** **150 W/160 W**	

Rated current max.		1.6 A/1.7 A	3.3 A
Start-up current		4.3 A/5.3 A	8.0 A
Pre-fuse T		10 A/10 A	10 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	285 W/300 W 320 W/340 W	290 W 340 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.1	
Refrigerant		R134a, 100 g	
Permissible operating pressure p. max.		25 bar	
Temperature and setting range		+20°C to +55°C	
Protection category to EN 60 529/10.91	External circuit	IP 34	
	Internal circuit	IP 54	
Duty cycle		100 %	
Type of connection		Plug-in terminal strip	
Weight		13 kg	
Colour		RAL 7035	
Air throughput of fans	External circuit	345 m^3/h	
	Internal circuit	310 m^3/h	
Temperature control		Basic controller	

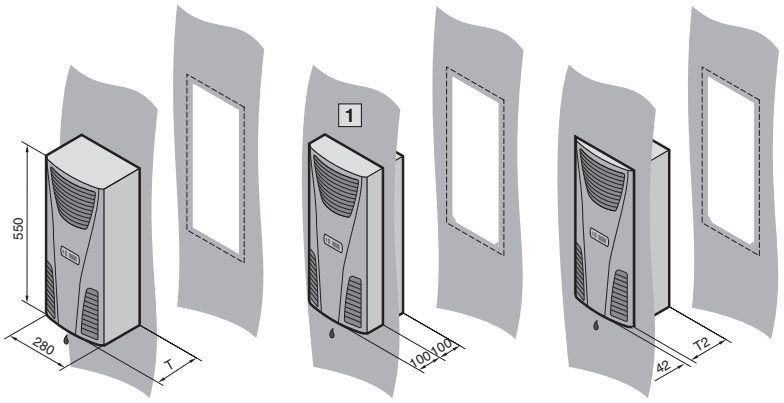
Accessories	Packs of		Page
Temperature indicator	1	3114.100	660
Condensate hose	1	3301.608	665
Filter mats	3	3286.110	668
Metal filters	1	3286.120	669

Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Configuration software** Page 1063

Useful cooling output 300/500 W





B = Width
T = Depth

RITTAL TOP THERM

Supply includes:
Fully wired ready for connection, including drilling template and assembly parts.

Note:
Integration of the cooling units with Comfort controller, e. g. into superordinate remote monitoring systems, can be achieved by means of an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).

1 Partial internal mounting possible with 3303.XXX only.

Approvals,
see page 69.

Detailed drawing,
see page 1167.

Performance diagrams,
available on the Internet.

Property rights:
German registered designs
no. 402 02 324 and
no. 402 02 325
Japanese registered design
no. 1 187 896
Indian registered design
no. 189 953
US design patent no. D 488,480
IR reg. design no. DM/061 967
with validity for FR, IT, ES

Model No. SK with Basic controller, RAL 7035		**3302.100**	**3302.110**	**3303.100**	**3303.110**
Model No. SK with Comfort controller, RAL 7035		**–**	**–**	**3303.500**	**3303.510**
Model No. SK with Basic controller, stainless steel[1)]		**3302.200**	**3302.210**	**3303.200**	**3303.210**
Model No. SK with Comfort controller, stainless steel[1)]		**–**	**–**	**3303.600**	**3303.610**
Rated operating voltage V, Hz		230, 50/60	115, 60	230, 50/60	115, 60
Dimensions in mm	B H T T2	280 550 140 98		280 550 200 158	
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**300 W/320 W** **150 W/170 W**	**300 W** **150 W**	**500 W/610 W** **280 W/350 W**	**500 W** **280 W**
Rated current max.		1.6 A/1.7 A	3.3 A	2.6 A/2.6 A	5.7 A
Start-up current		3.0 A/3.4 A	8.0 A	5.1 A/6.4 A	11.5 A
Pre-fuse T		10.0 A/10.0 A	10.0 A	10.0 A/10.0 A	10.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	245 W/255 W 255 W/275 W	290 W 340 W	360 W/380 W 420 W/390 W	470 W 500 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.2		1.4	
Refrigerant		R134a, 100 g		R134a, 170 g	
Permissible operating pressure p. max.		25 bar		28 bar	
Temperature and setting range		+20°C to +55°C			
Protection category to EN 60 529/10.91	External circuit	IP 34			
	Internal circuit	IP 54			
Duty cycle		100 %			
Type of connection		Plug-in terminal strip			
Weight		13 kg		17 kg	
Air throughput of fans	External circuit	310 m³/h		345 m³/h	
	Internal circuit	345 m³/h		310 m³/h	
Temperature control		Basic or Comfort controller (factory setting +35°C)			

Accessories	Packs of			Page
Filter mats	3	3286.300		668
Metal filters	1	3286.310		669
Door-operated switch	1	4127.000		956
SK bus system for Comfort controller	1	–	3124.100	663
RiDiag II including cables for Comfort controller	1	–	3159.100	1063
Interface card for Comfort controller	1	–	3124.200	662
Condensate hose	1	3301.608	3301.610	665

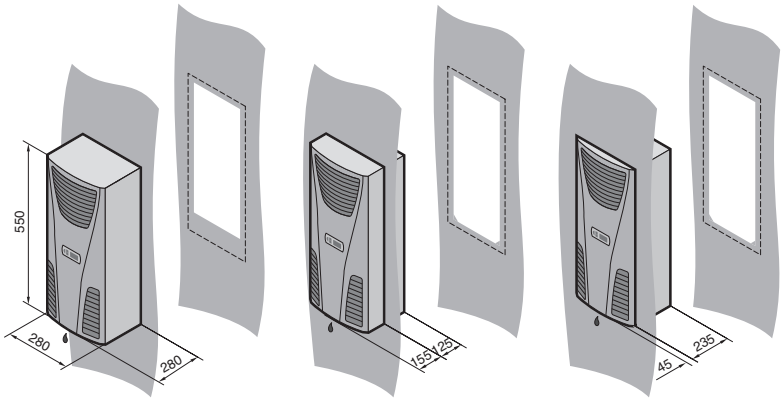
[1)] Delivery times on request. Special voltages available on request. Technical modifications reserved.

Accessories Page 657 **Configuration software** Page 1063

Wall-mounted cooling units

Useful cooling output 750 W





Supply includes:
Fully wired ready for connection, including drilling template and assembly parts.

Note:
Cooling units with Comfort controller may be integrated e.g. into superordinate remote monitoring systems by way of an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).

Approvals,
see page 70.

Detailed drawing,
see page 1167.

Performance diagrams,
available on the Internet.

Property rights:
German registered designs
no. 402 02 324 and
no. 402 02 325
Japanese registered design
no. 1 187 896
Indian registered design
no. 189 953
US design patent no. D 488,480
IR reg. design no. DM/061 967
with validity for FR, IT, ES

Model No. SK with Basic controller, RAL 7035		**3361.100**	**3361.110**	**3361.140**
Model No. SK with Comfort controller, RAL 7035		**3361.500**	**3361.510**	**3361.540**
Model No. SK with Basic controller, stainless steel[1)]		**3361.200**	**3361.210**	**3361.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3361.600**	**3361.610**	**3361.640**
Rated operating voltage V, Hz		230, 50/60[3)]	115, 60[3)]	400[2)], 2~, 50/60[3)]
Dimensions in mm	W H D	280 550 280		
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**750 W/780 W** **510 W/540 W**	**750 W** **500 W**	**750 W/780 W** **510 W/540 W**
Rated current max.		2.3 A/2.4 A	6.5 A	1.3 A/1.4 A
Start-up current		5.7 A/5.7 A	13.9 A	3.3 A/3.3 A
Pre-fuse T		10 A/10 A	10 A	10 A/10 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	480 W/555 W 545 W/610 W	560 W 650 W	490 W/570 W 560 W/630 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.5		
Refrigerant		R134a, 280 g		
Permissible operating pressure p. max.		28 bar		
Temperature and setting range		+20°C to +55°C		
Protection category to EN 60 529/10.91	External circuit	IP 34		
	Internal circuit	IP 54		
Duty cycle		100 %		
Type of connection		Plug-in terminal strip		
Weight		22 kg		
Air throughput of fans (unimpeded air flow)	External circuit	480 m^3/h		
	Internal circuit	600 m^3/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)		

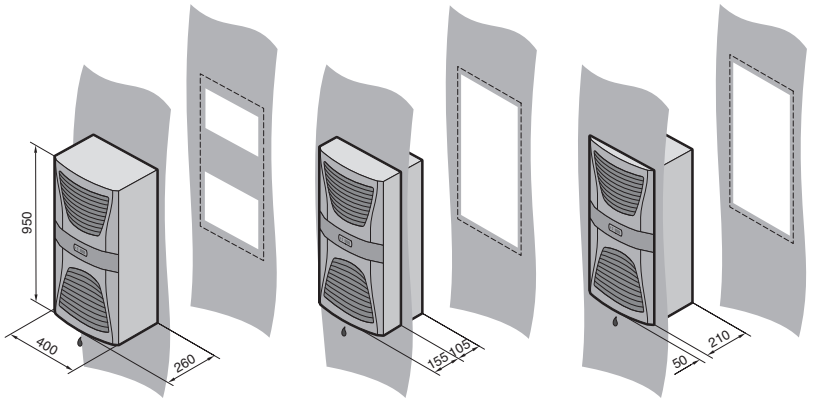
Accessories	Packs of		Page
Filter mats	3	3286.300	668
Metal filters	1	3286.310	669
Door-operated switch	1	4127.000	956
SK bus system for Comfort controller	1	3124.100	663
RiDiag II including cables for Comfort controller	1	3159.100	1063
Interface card for Comfort controller	1	3124.200	662
Condensate hose	1	3301.608	665

[1)] Delivery times on request. [2)] external toroidal core transformer Ø 126 x 65 mm deep for mounting in the enclosure. [3)] T_u max. = 52°C/60 Hz.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Configuration software** Page 1063

Useful cooling output 500/1000 W





Supply includes:
Fully wired ready for connection, including drilling template and assembly parts.

Note:
Integration of the cooling units with Comfort controller, e.g. into superordinate remote monitoring systems, can be achieved by means of an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).

Optionally available:
With automatic condensate evaporation.

Approvals,
see page 70.

Detailed drawing,
see page 1168.

Performance diagrams,
available on the Internet.

Property rights:
German registered design no. 402 02 325
IR reg. design no. DM/062 557 with validity for FR, IT, ES
Indian registered design no. 190 269
Japanese registered design no. 1 187 905

Model No. SK with Basic controller, RAL 7035		**3304.100**	**3304.110**	**3304.140**	**3305.100**	**3305.110**	**3305.140**
Model No. SK with Comfort controller, RAL 7035		**3304.500**	**3304.510**	**3304.540**	**3305.500**	**3305.510**	**3305.540**
Model No. SK with Basic controller, stainless steel		**3304.200**	**3304.210**	**3304.240**	**3305.200**	**3305.210**	**3305.240**
Model No. SK with Comfort controller, stainless steel		**3304.600**	**3304.610**	**3304.640**	**3305.600**	**3305.610**	**3305.640**
Rated operating voltage V, Hz		230, 50/60	115[1], 50/60	400, 50/ 460, 60, 3~	230, 50/60	115[1], 50/60	400, 50/ 460, 60, 3~
Dimensions in mm	W H D	400 950 260			400 950 260		
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1000 W/1060 W** **790 W/840 W**			**1500 W/1510 W** **1230 W/1250 W**		
Rated current max.		4.8 A/4.4 A	9.5 A/10.0 A	2.5 A/2.6 A	5.4 A/6.0 A	11.0 A/12.5 A	2.3 A/2.6 A
Start-up current		12.0 A/14.0 A	26.0 A/28.0 A	11.5 A/12.7 A	22.0 A/24.0 A	42.0 A/46.0 A	12.2 A/11.3 A
Pre-fuse T		10.0 A/10.0 A	16.0 A/16.0 A	10.0 A/10.0 A[2]	16.0 A/16.0 A	20.0 A/20.0 A	10.0 A/10.0 A[2]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	700 W/650 W 750 W/710 W	725 W/680 W 780 W/750 W	580 W/550 W 660 W/680 W	850 W/1000 W 1000 W/1160 W	880 W/1050 W 1040 W/1200 W	800 W/980 W 960 W/1150 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.4		1.7	1.8	1.7	1.9
Refrigerant		R134a, 500 g			R134a, 600 g		
Permissible operating pressure p. max.		25 bar					
Temperature and setting range		+20°C to +55°C					
Protection category to EN 60 529/10.91	External circuit	IP 34					
	Internal circuit	IP 54					
Duty cycle		100 %					
Type of connection		Plug-in terminal strip					
Weight		39 kg	44 kg	40 kg	41 kg	46 kg	42 kg
Air throughput of fans	External circuit	900 m³/h					
	Internal circuit	600 m³/h			800 m³/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)					

Accessories	P. of		Page
Filter mats	3	3286.400	668
Metal filters	1	3286.410	669
Door-operated switch	1	4127.000	956
SK bus system for Comfort controller	1	3124.100	663
RiDiag II including cables for Comfort controller	1	3159.100	1063
Interface card for Comfort controller	1	3124.200	662
Condensate hose	1	3301.612	665

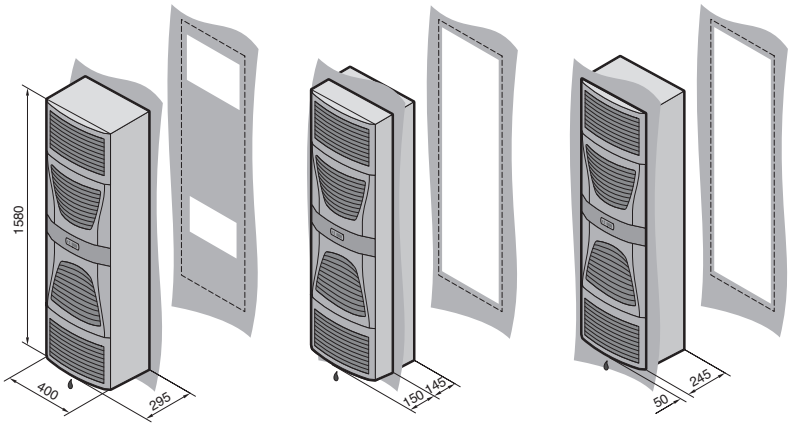
[1] Delivery times available on request. [2] Motor circuit-breaker
Optionally available with automatic condesate evaporation. Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Configuration software** Page 1063

Wall-mounted cooling units

Useful cooling output 2000/2500 W





RITTAL TOP THERM

Supply includes:
Fully wired ready for connection, including drilling template, eyebolt and assembly parts.

Note:
Integration of the cooling units with Comfort controller, e.g. into superordinate remote monitoring systems, can be achieved by means of an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).

Optionally available:
With automatic condensate evaporation.

Also required:
For installation in the door, the use of a ride-up roller is recommended, see page 898.

Approvals,
see page 70.

Detailed drawing,
see page 1168.

Performance diagrams,
available on the Internet.

Model No. SK with Basic controller, RAL 7035		**3328.100**	**3328.110**	**3328.140**	**3329.100**	**3329.110**	**3329.140**
Model No. SK with Comfort controller, RAL 7035		**3328.500**	**3328.510**	**3328.540**	**3329.500**	**3329.510**	**3329.540**
Model No. SK with Basic contr., stainless steel[1)]		**3328.200**	**3328.210**	**3328.240**	**3329.200**	**3329.210**	**3329.240**
Model No. SK with Comfort contr., stainl. steel[1)]		**3328.600**	**3328.610**	**3328.640**	**3329.600**	**3329.610**	**3329.640**
Rated operating voltage V, Hz		230, 50/60	115, 50/60	400, 50/ 460, 60, 3~	230, 50/60	115, 50/60	400, 50/ 460, 60, 3~
Dimensions in mm	W	400			400		
	H	1580			1580		
	D	290			290		
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35**	**2000 W/2350 W**			**2500 W/2750 W**		**2500 W/2700 W**
	L 35 L 50	**1450 W/1690 W**			**1600 W/1750 W**		**1900 W/1950 W**
Rated current max.		6.9 A/8.5 A	13.6 A/16.2 A	2.5 A/3.0 A	8.0 A/10.0 A	16.0 A/21.0 A	3.4 A/3.5 A
Start-up current		22.0 A/26.0 A	36.0 A/39.0 A	6.5 A/7.5 A	21.0 A/21.0 A	44.0 A/42.0 A	6.5 A/7.3 A
Pre-fuse T		16.0 A/16.0 A	25.0 A/25.0 A	10.0 A/10.0 A[2)]	16.0 A/16.0 A	25.0 A/25.0 A	10.0 A/10.0 A[2)]
Power consumption P_{el} to DIN 3168	L 35 L 35	900 W/1070 W	960 W/1130 W	930 W/1150 W	1320 W/1550 W	1380 W/1600 W	1300 W/1500 W
	L 35 L 50	1130 W/1220 W	1170 W/1290 W	1150 W/1400 W	1500 W/1880 W	1550 W/1940 W	1550 W/1850 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.7		2.3	1.9		2.0
Refrigerant		R134a, 950 g					
Permissible operating pressure p. max.		28 bar					
Temperature and setting range		+20°C to +55°C					
Protection category to EN 60 529/10.91	External circuit	IP 34					
	Internal circuit	IP 54					
Duty cycle		100 %					
Type of connection		Plug-in terminal strip					
Weight		66 kg	73 kg	67 kg	69 kg	76 kg	70 kg
Air throughput of fans	External circuit	640 m³/h			710 m³/h		
	Internal circuit	550 m³/h			640 m³/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)					

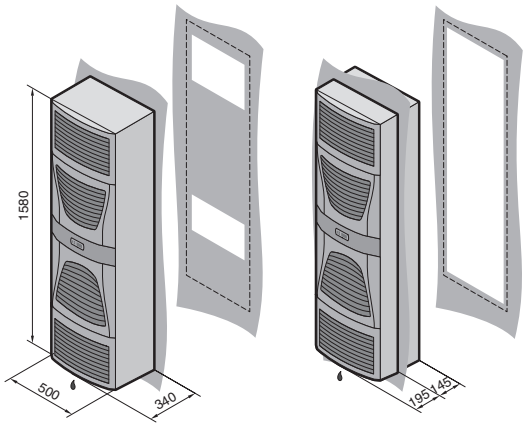
Accessories	Packs of		Page
Filter mats	3	3286.400	668
Metal filters	1	3286.410	669
Door-operated switch	1	4127.000	956
SK bus system for Comfort controller	1	3124.100	663
RiDiag II incl. cables for Comfort contr.	1	3159.100	1063
Interface card for Comfort controller	1	3124.200	662
Condensate hose	1	3301.612	665

[1)] Delivery times available on request. [2)] Motor circuit-breaker
Optionally available with automatic condesate evaporation. Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Configuration software** Page 1063

Useful cooling output 4000 W





Supply includes:
Fully wired ready for connection, including drilling template, eyebolt and assembly parts.

Note:
Integration of the cooling units with Comfort controller, e.g. into superordinate remote monitoring systems, can be achieved by means of an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).

Optionally available:
With automatic condensate evaporation.

Also required:
For installation in the door, the use of a ride-up roller is recommended, see page 898.

Approvals,
see page 70.

Detailed drawing,
see page 1168.

Performance diagrams,
available on the Internet.

Model No. SK with Basic controller, RAL 7035		**3332.140**
Model No. SK with Comfort controller, RAL 7035		**3332.540**
Model No. SK with Basic controller, stainless steel[1)]		**3332.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3332.640**
Rated operating voltage V, Hz		400, 50/460, 60, 3~
Dimensions in mm	W H D	500 1580 340
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**4000 W/4400 W** **3070 W/3570 W**

Rated current max.		3.8 A/3.9 A
Start-up current		9.2 A/11.0 A
Pre-fuse T		Motor circuit breaker 10.0 A/10.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	1710 W/2110 W 1980 W/2450 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	2.3
Refrigerant		R134a, 3000 g
Permissible operating pressure p. max.		28 bar
Temperature and setting range		+20°C to +55°C
Protection category to EN 60 529/10.91	External circuit	IP 34
	Internal circuit	IP 54
Duty cycle		100 %
Type of connection		Plug-in terminal strip
Weight		91 kg
Air throughput of fans	External circuit	2000 m^3/h
	Internal circuit	1500 m^3/h
Temperature control		Basic or Comfort controller (factory setting +35°C)

Accessories	Packs of		Page
Filter mats	3	3286.400	668
Metal filters	1	3286.410	669
Door-operated switch	1	4127.000	956
SK bus system for Comfort controller	1	3124.100	663
RiDiag II including cables for Comfort controller	1	3159.100	1063
Interface card for Comfort controller	1	3124.200	662
Condensate hose	1	3301.612	665

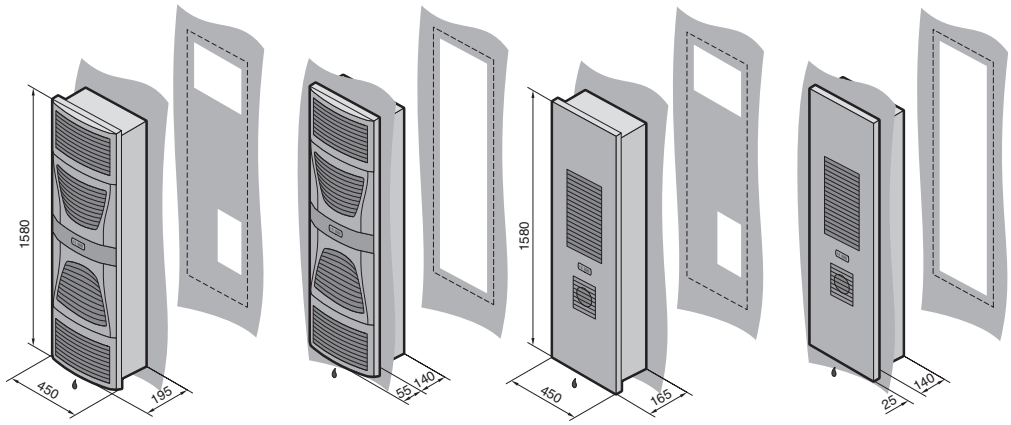
[1)] Delivery times available on request.
Optionally available with automatic condesate evaporation. Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Configuration software** Page 1063

Wall-mounted cooling units

Slimline, useful cooling output 1500 W





The super-slimline design permits system adaptation for applications where high heat loads are accommodated in a confined space.

Supply includes:
Fully wired ready for connection, including drilling template and assembly parts.

Note:
Cooling units with Comfort controller may be integrated e.g. into superordinate remote monitoring systems by way of an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).

Optionally available:
With automatic condensate evaporation.

Approvals,
see page 71.

Detailed drawing,
see page 1169.

Performance diagrams,
available on the Internet.

Model No. SK with Basic controller, RAL 7035		**3366.100**	**3377.100[1)]**	**3366.110**	**3377.110[1)]**	**3366.140**	**3377.140[1)]**
Model No. SK with Comfort controller, RAL 7035		**3366.500**	**3377.500[1)]**	**3366.510**	**3377.510[1)]**	**3366.540**	**3377.540[1)]**
Model No. SK with Basic controller, stainless steel		**3366.200[1)]**	**3377.200[1)]**	**3366.210[1)]**	**3377.210[1)]**	**3366.240[1)]**	**3377.240[1)]**
Model No. SK with Comfort controller, stainless steel		**3366.600[1)]**	**3377.600[1)]**	**3366.610[1)]**	**3377.610[1)]**	**3366.640[1)]**	**3377.640[1)]**
Rated operating voltage V, Hz		230, 50/60		115, 50/60		400/460, 3~, 50/60	
Dimensions in mm	W H D	450 1580 195	450 1580 165	450 1580 195	450 1580 165	450 1580 195	450 1580 165
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1500 W/1500 W** **1050 W/1100 W**					

Rated current max.		6.5 A/6.7 A	13.2 A/13.6 A	2.6 A/2.8 A
Start-up current		22.0 A/24.0 A	43.0 A/47.0 A	8.0 A/8.8 A
Pre-fuse T		10.0 A/10.0 A	20.0 A/20.0 A	10.0 A/10.0 A[2)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	920 W/1050 W 1095 W/1210 W	950 W/1080 W 1140 W/1250 W	950 W/1100 W 1120 W/1290 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.6		
Refrigerant		R134a, 700 g		
Permissible operating pressure p. max.		28 bar		
Temperature and setting range		+20°C to +55°C		
Protection category to EN 60 529/10.91	External circuit	IP 34		
	Internal circuit	IP 54		
Duty cycle		100 %		
Type of connection		Plug-in terminal strip		
Weight		45 kg	50 kg	46 kg
Air throughput of fans (unimpeded air flow)	External circuit	910 m^3/h		
	Internal circuit	860 m^3/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)		

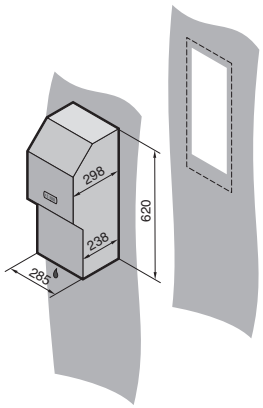
Accessories	Packs of							Page
Filter mats	3	3286.400	3253.010	3286.400	3253.010	3286.400	3253.010	668
Metal filters	1	3286.410	3253.220	3286.410	3253.220	3286.410	3253.220	669
Trim frame for external mounting	1	3377.000						664
Door-operated switch	1	4127.000						956
SK bus system for Comfort controller	1	3124.100						663
RiDiag II including cables for Comfort controller	1	3159.100						1063
Interface card for Comfort controller	1	3124.200						662
Condensate hose	1	3301.612						665

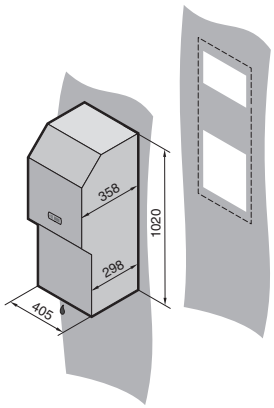
[1)] Delivery times available on request. [2)] Motor circuit-breaker
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Configuration software** Page 1063

Design NEMA 4x, useful cooling output 500/1000/1500 W







Supply includes:
Fully wired ready for connection, including drilling template and assembly parts.

Note:
Cooling units with Comfort controller may be integrated e.g. into superordinate remote monitoring systems by way of an optional interface board SK 3124.200 (RS 232, RS 485, RS 422 and PLC interface).

Approvals,
see page 71.

Detailed drawing,
see page 1169.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM

Model No. SK with Basic controller[1)]		**3303.104**	**3303.114**	**3304.104**	**3304.114**	**3304.144**	**3305.104**	**3305.114**	**3305.144**
Model No. SK with Comfort controller[1)]		**3303.504**	**3303.514**	**3304.504**	**3304.514**	**3304.544**	**3305.504**	**3305.514**	**3305.544**
Rated operating voltage V, Hz		230, 50/60	115, 60	230, 50/60	115, 50/60	400, 50/ 460, 60, 3~	230, 50/60	115, 50/60	400, 50/ 460, 60, 3~
Dimensions in mm	W H D	285 620 298		405 1020 358			405 1020 358		
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**500 W/610 W** **280 W/350 W**	**500 W** **280 W**	**1000 W/1060 W** **790 W/840 W**			**1500 W/1510 W** **1230 W/1250 W**		
Rated current max.		2.6/2.6 A	5.7 A	4.8/4.4 A	9.5/10.0 A	2.5/2.6 A	5.4/6.0 A	11.0/12.5 A	2.3/2.6 A
Start-up current		5.1/6.4 A	11.5 A	12.0/14.0 A	26.0/28.0 A	11.5/12.7 A	22.0/24.0 A	42.0/46.0 A	12.2/11.3 A
Pre-fuse T		10.0/10.0 A	10.0 A	10.0/10.0 A	16.0/16.0 A	10.0 A[2)]	16.0/16.0 A	20.0/20.0 A	10.0 A[2)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	360/380 W 420/390 W	470 W 500 W	700/650 W 750/710 W	725/680 W 780/750 W	580/550 W 660/680 W	850/1000 W 1000/1160 W	880/1050 W 1040/1200 W	800/980 W 960/1150 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.4				1.7	1.8	1.7	1.9
Refrigerant		R134a, 170 g		R134a, 500 g			R134a, 600 g		
Permissible operating pressure p. max.		28 bar		25 bar			25 bar		
Temperature and setting range		+20°C to +55°C							
Protection category		NEMA 4x							
Duty cycle		100 %							
Type of connection		Plug-in terminal strip							
Weight		25 kg		49 kg	54 kg	50 kg	51 kg	56 kg	52 kg
Material		Stainless steel 1.4301 (V2A)							
Air throughput of fans	External circuit	345 m^3/h		900 m^3/h			900 m^3/h		
	Internal circuit	310 m^3/h		600 m^3/h			800 m^3/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)							

Accessories	P. of			Page
Door-operated switch	1	4127.000	4127.000	956
SK bus system for Comfort controller	1	3124.100	– / 3124.100	663
RiDiag II for Comfort controller, incl. cables	1	3159.100		1063
Interface card for Comfort controller	1	3124.200		662
Condensate hose	1	3301.610	3301.612	665

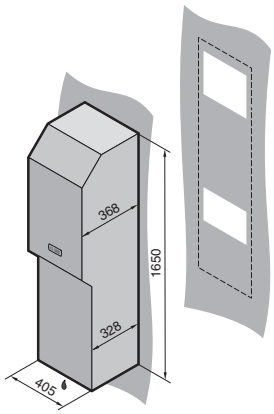
[1)] Delivery times available on request. [2)] Motor circuit-breaker
Special voltages and technical modifications available on request.

Accessories Page 657 **Configuration software** Page 1063

Wall-mounted cooling units

Design NEMA 4x, useful cooling output 2000/2500 W





Supply includes:
Fully wired ready for connection, including drilling template and assembly parts.

Note:
Integration of the cooling units with Comfort controller, e.g. into superordinate remote monitoring systems, can be achieved by means of an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).

Approvals,
see page 71.

Detailed drawing,
see page 1170.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM

Model No. SK with Basic controller[1)]		**3328.104**	**3328.114**	**3328.144**	**3329.104**	**3329.114**	**3329.144**
Model No. SK with Comfort controller[1)]		**3328.504**	**3328.514**	**3328.544**	**3329.504**	**3329.514**	**3329.544**
Rated operating voltage V, Hz		230, 50/60	115, 50/60	400, 50/ 460, 60, 3~	230, 50/60	115, 50/60	400, 50/ 460, 60, 3~
Dimensions in mm	W H D	405 1650 368					
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**2000 W/2350 W** **1450 W/1690 W**			**2500 W/2850 W** **1600 W/1750 W**		
Rated current max.		6.9 A/5.0 A	13.6 A/16.2 A	2.5 A/3.0 A	8.0 A/10.0 A	16.0 A/21.0 A	3.4 A/3.5 A
Start-up current		22.0 A/26.0 A	36.0 A/39.0 A	6.5 A/7.5 A	21.0 A/21.0 A	44.0 A/42.0 A	6.5 A/7.3 A
Pre-fuse T		16.0 A/16.0 A	25.0 A/25.0 A	10.0 A/10.0 A[2)]	16.0 A/16.0 A	25.0 A/25.0 A	10.0 A/10.0 A[2)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	900/1070 W 1330/1220 W	960/1130 W 1170/1290 W	930/1150 W 1150/1400 W	1320/1550 W 1500/1880 W	1380/1600 W 1550/1980 W	1300/1500 W 1550/1850 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.7		2.3	1.9		2.0
Refrigerant		R134a, 900 g					
Permissible operating pressure p. max.		28 bar					
Temperature and setting range		+20°C to +55°C					
Protection category		NEMA 4x					
Duty cycle		100 %					
Type of connection		Plug-in terminal strip					
Weight		80 kg	87 kg	80 kg	83 kg	90 kg	83 kg
Material		Stainless steel 1.4301 (V2A)					
Air throughput of fans	External circuit	640 m^3/h			710 m^3/h		
	Internal circuit	550 m^3/h			640 m^3/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)					

Accessories	P. of		Page
Door-operated switch	1	4127.000	956
SK bus system for Comfort controller	1	3124.100	663
RiDiag II including cables for Comfort controller	1	3159.100	1063
Interface card for Comfort controller	1	3124.200	662
Condensate hose	1	3301.612	665

[1)] Delivery times available on request. [2)] Motor circuit-breaker
Special voltages and technical modifications available on request.

Accessories Page 657 **Configuration software** Page 1063

Design NEMA 4x, useful cooling output 2000/2500 W



Recooling systems

Features



Recooling systems ensure centralised, efficient cooling and provision of the cooling medium (generally water). For example, all cooling tasks on a system or machine can be solved via a single pipeline system. Spatial separation between cooling production and process cooling can be achieved with recooling systems.



Application diversity of centralised cooling technology



Enclosure cooling
In conjunction with air/water heat exchangers, optimum dissipation of high heat loads is guaranteed, even under extreme environmental temperatures and air pollution.

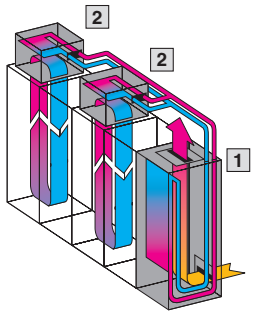


Cooling of liquid media
Direct and indirect cooling of liquids are the prerequisite for ensuring essential machine precision and speed.

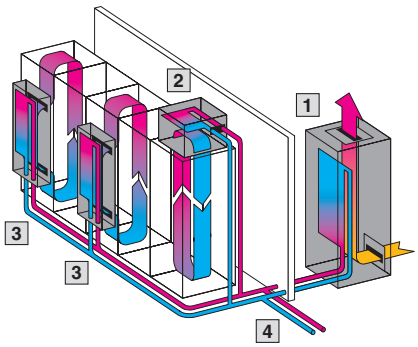


Process cooling
High-quality material processing, such as laser cutting, necessitates high levels of temperature precision with simultaneous cooling of the peripheral technology.

Siting conditions



Unity with enclosures
For example, recooling systems may be attached directly to a bayed enclosure suite to provide effective, centralised cooling of all cases and enclosures on a machine or plant.



Spatially separated
High heat loads can even be dissipated in confined and awkward spaces, thanks to the spatial separation of the recooling system from the enclosures and machine. In all cases, as well as enclosure cooling, cooling water may also be produced for process and machine cooling or for cooling liquid media.

1 Recooling system
2 Air/water heat exchanger, roof-mounted
3 Air/water heat exchanger, wall-mounted
4 Further cooling options, e.g. machine cooling

Benefits:

- A single system for enclosure cooling, process and machine cooling, and the cooling of liquid media.
- Integration into bayed enclosure suites
- Individual project planning
- Commissioning and servicing

Important:

- Cooling output calculated at an ambient temperature of 32°C and an inlet temperature of 10°C and 18°C (water)/20°C (oil)

Project planning examples



Example 1

Production line

High-quality material processing requires a high degree of temperature precision with simultaneous cooling of the peripheral technology. This task – the cost-effective cooling of various equipment in the production line – is performed centrally by the recooling system in an industrial enclosure. It supplies the machine and process cooling with the required cooling water, as well as supplying the control enclosures via air/water heat exchangers.

Example 2

Test laboratory

Every single product is subjected to in-depth functional and quality testing at the in-house test laboratory. In order to ensure that the test process runs smoothly, the control enclosures are cooled via air/water heat exchangers, and the three test benches are supplied with the required cooling water in line with requirements. These diverse cooling tasks are performed by the recooling system integrated into the TS 8 Top enclosure system.
Visually, they form a single unit with the TS 8 control enclosures.

Example 3

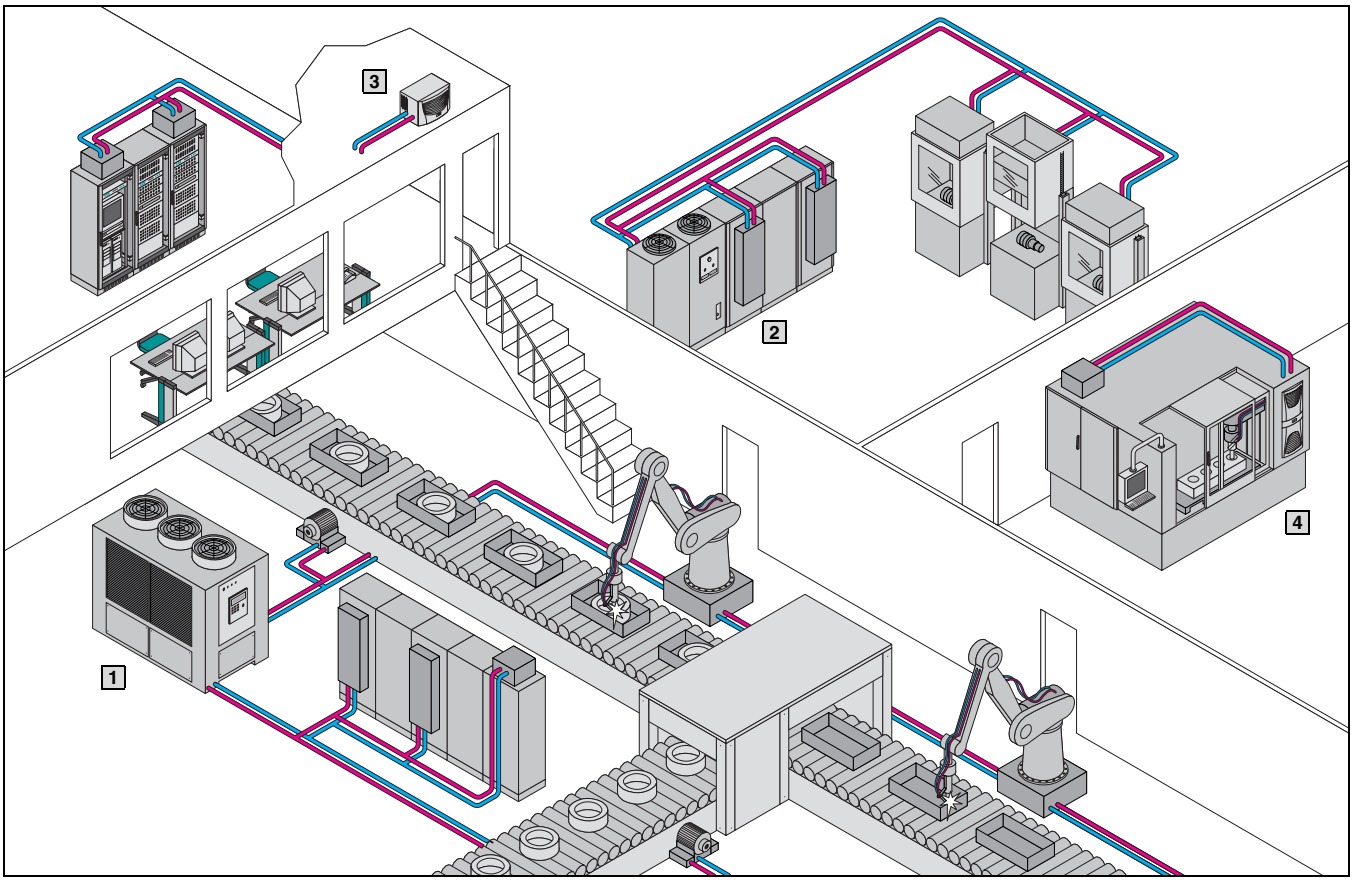
Control room

In conjunction with air/water heat exchangers, the server and network enclosures installed in the production control room are cooled by a Mini recooling system. To avoid contaminating the room air, and to facilitate optimum dissipation of the heat loss generated by the recooling systems, this is installed outside of the production control room.

Example 4

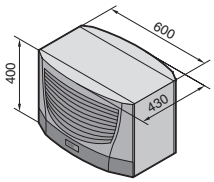
Tool production

The heat loss generated during tool machining (e.g. by water-cooled motor spindles with high-frequency drives) must be dissipated efficiently. In such cases, this task is performed by a wall-mounted Mini recooling system which at the same time ensures cooling of the control unit, likewise integrated into the machine.



Mini, cooling output 960/1490 W





Technical design:
- Compact and modular layout of the cooling components on a base plate which functions as a collecting tray.
- Medium-conveying pumps.
- Precise temperature control, based on microprocessor technology.
- Collective fault signal with floating contact.
- Application-specific special equipment available on request.
- Pressure-sealed system (.600) or open system with tank (.610).

Supply includes:
Recooling system wired and plumbed ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Approvals,
available on the Internet.

Detailed drawing,
available on the Internet.

Layout diagram,
see page 1173.

Characteristic curves of pump,
see page 1173.

Options,
see page 1171.

Model No. SK		**3318.600**	**3318.610**	**3319.600**	**3319.610**
Rated operating voltage V, Hz		230, 50/60			
Dimensions in mm	W H D	600 400 430			
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**780 W/870 W** **960 W/1070 W**		**1200 W/1330 W** **1490 W/1660 W**	
Power consumption		630 W/780 W		845 W/1050 W	
Rated current max.		4.2 A		5.4 A	
Refrigerant		R134a			
$P_{max.}$ cooling circuit		25 bar			
Temperature range	Environment	+5°C to +43°C			
	Liquid media	+10°C to +30°C			
Pump capacity		See characteristic curve			
Tank		Pressure-sealed	Made from PP plastic	Pressure-sealed	Made from PP plastic
Tank capacity		–	2.5 l	–	2.5 l
Water connections		2 x $^1/_2$″ IG			
Weight		48 kg		51 kg	
Colour		RAL 7035			
Protection category (electrics)		IP 44			
Air throughput of fans		900 m³/h			
Temperature control		Microcontroller control, setting range +10°C to +30°C (factory setting +18°C)			

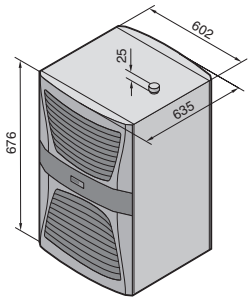
Accessories	Packs of		Page
Metal filter mat	1	3286.510	669

Customised solutions and technical modifications available on request.

Air/water heat exchangers From page 626 **Configuration software** Page 1063 **By-pass safety valve** Page 667 **Additives** Page 668

Mini, cooling output 3000/4500 W





Technical design:
- Compact, modular configuration of the cooling components with integral water tank. Operator display may optionally be mounted on the front or rear.
- Integral tank level display.
- Medium-conveying pumps.
- Precise temperature control, based on microprocessor technology.
- Collective fault signal with floating contact.
- Application-specific special equipment available on request.

Supply includes:
Recooling system wired and plumbed ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Approvals,
available on the Internet.

Detailed drawing,
available on the Internet.

Layout diagram,
see page 1173.

Characteristic curves of pump,
see page 1173.

Options,
see page 1171.

Model No. SK		**3320.600**	**3334.600**
Rated operating voltage V, Hz		400, 3~, 50/60/460, 3~, 60[1)]	
Dimensions in mm	W H D	602 676 635	
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		 **2650 W/3000 W** **3000 W/3400 W**	 **3900 W/4700 W** **4500 W/5400 W**

Power consumption		1716 W/1953 W	2001 W/2505 W
Rated current max.		3.8 A/3.9 A	4.9 A/5.0 A
Refrigerant		R134a	
$P_{max.}$ cooling circuit		25 bar	
Temperature range	Environment	+5°C to +43°C	
	Liquid media	+10°C to +30°C	
Pump capacity		See characteristic curve	
Tank		Made from stainless steel 1.4301	
Tank capacity		30 l	
Water connections		2 x 1/2″ IG	
Weight		88 kg	94 kg
Colour		RAL 7035	
Protection category (electrics)		IP 44	
Air throughput of fans		1785 m³/h	
Temperature control		Microcontroller control, setting range +10°C to +30°C (factory setting +18°C)	

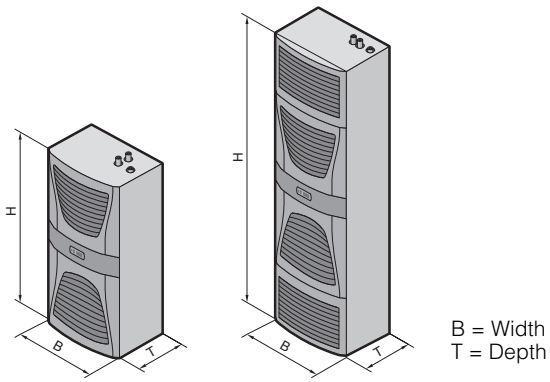
Accessories	Packs of		Page
Metal filter mat	1	3286.520	669

[1)] Supports multiple voltages without rewiring.
Special voltages and technical modifications available on request.

Air/water heat exchangers From page 626 **Configuration software** Page 1063 **By-pass safety valve** Page 667 **Additives** Page 668

Mini, for wall mounting, cooling output 1000/2500/4000 W





B = Width
T = Depth

Technical design:
- Compact, modular configuration of the cooling components with integral water tank.
- Application-specific special equipment available on request.
- Open system with tank.

Supply includes:
Recooling system fully wired and plumbed ready for connection,
with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Approvals,
available on the Internet.

Detailed drawing,
available on the Internet.

Layout diagram,
see page 1174.

Characteristic curves of pump,
see page 1174.

Options,
see page 1171.

Model No. SK		**3360.100**	**3360.250**	**3360.400**
Rated operating voltage V, Hz		400, 3~, 50/60/460, 3~, 60[1]		
Dimensions in mm	W H D	400 950 310	400 1580 290	500 1580 340
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**830 W/930 W** **1000 W/1120 W**	**2100 W/2350 W** **2500 W/2800 W**	**3300 W/3700 W** **4000 W/4500 W**
Power consumption		700 W/760 W	1550 W/2000 W	1980 W/2450 W
Rated current max.		2.7 A/3.0 A	3.7 A/3.8 A	3.9 A/4.2 A
Refrigerant		R134a		
$P_{max.}$ cooling circuit		23 bar		
Temperature range	Environment	+5°C to +43°C		
	Liquid media	+10°C to +30°C		
Pump capacity		See characteristic curve		
Tank		Made from PP plastic		
Tank capacity		5 l	10 l	15 l
Water connections		Quick-release coupling (counterpart included in accessory bag)		
Weight		47 kg	78 kg	99 kg
Colour		RAL 7035		
Protection category (electrics)		IP 44		
Air throughput of fans		500 m³/h	710 m³/h	2000 m³/h
Temperature control		Microcontroller control, setting range +10°C to +30°C (factory setting +18°C)		

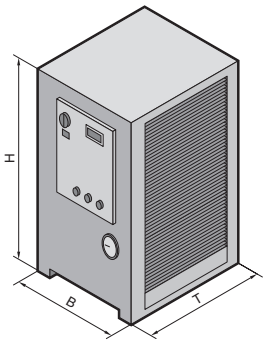
Accessories	Packs of		Page
Filter mat	1	3286.400	668
Metal filter mat	1	3286.410	669

[1] Supports multiple voltages without rewiring.
Special voltages and technical modifications available on request.

Air/water heat exchangers From page 626 **Configuration software** Page 1063 **By-pass safety valve** Page 667 **Additives** Page 668

In floor-standing enclosure, cooling output 2100 to 7700 W





B = Width
T = Depth

Technical design:
- Robust industrial standard in 3 enclosure sizes.
- Identical basic enclosure for oil and water recooling systems.
- Spare space for the integration of special equipment.
- Variable air routing is possible via the l/h or r/h side panel.
- Floating contact for collective fault signal.
- Level monitor.
- Multi-coil vaporiser in the tank.

Supply includes:
Recooling system wired and plumbed ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:

Metal filter mats, castors, eyebolts and safety modules available on request.

Approvals,
available on the Internet.

Detailed drawing,
available on the Internet.

Layout diagram,
see page 1174.

Characteristic curves of pump,
see page 1174.

Options,
see page 1171.

Model No. SK		**3336.100**	**3336.200**	**3336.300**	**3336.500**	**3336.600**	**3336.650**
Rated operating voltage V, Hz		400, 3~, 50					
Dimensions in mm	W H D	470 725 540	485 965 650		595 1180 800		
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**1700 W** **2100 W**	**2100 W** **2580 W**	**2300 W** **3360 W**	**3550 W** **5040 W**	**4800 W** **6160 W**	**5200 W** **7700 W**

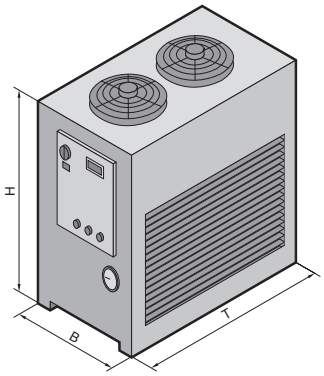
Power consumption		1.5 kW		1.8 kW	2.3 kW	2.9 kW	3.6 kW
Rated current max.		2.8 A		3.5 A	4.2 A	4.9 A	5.7 A
Refrigerant		R134a					
$P_{max.}$ cooling circuit		24 bar					
Temperature range	Environment	+15°C to +45°C					
	Liquid media	+10°C to +25°C					
Pump capacity		See characteristic curve					
Tank		Made from stainless steel 1.4301					
Tank capacity		17 l	33 l		57 l		
Water connections		$^3/_4$″ IG			1″ IG		
Weight		75 kg	97 kg	99 kg	141 kg	143 kg	147 kg
Colour		RAL 7035					
Protection category (electrics)		IP 54					
Air throughput of fans		700 m³/h	1250 m³/h	1785 m³/h	3140 m³/h		
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +18°C)					

Delivery times available on request.
Special voltages, other frequencies, and technical modifications available on request.

Air/water heat exchangers From page 626 **Configuration software** Page 1063 **By-pass safety valve** Page 667 **Additives** Page 668

In floor-standing enclosure, cooling output 10000 to 25200 W





B = Width
T = Depth

Technical design:
- Robust industrial enclosures in 2 sizes.
- Identical basic enclosure for oil and water recooling systems.
- Integration of application-specific special equipment on request.
- Variable air routing is possible via the l/h or r/h side panel.
- Optimum accessibility for servicing purposes by removing the side panel.
- Floating contact for collective fault signal.
- Bi-frequency version (50/60 Hz).
- Flow monitor.

Supply includes:
Recooling system wired and plumbed ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:

Metal filter mats, castors, lifting eyes and safety modules available on request.

Approvals,
available on the Internet.

Detailed drawing,
available on the Internet.

Layout diagram,
see page 1175.

Characteristic curves of pump,
see page 1175.

Options,
see page 1171.

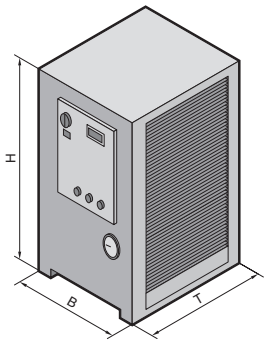
Model No. SK		**3336.700**	**3336.710**	**3336.720**	**3336.730**	**3336.740**	**3336.750**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60					
Dimensions in mm	W	615			715		
	H	1178			1178		
	D	1160			1360		
Cooling output at							
T_w = 10°C/T_u = 32°C		**8250 W/10400 W**	**11900 W/15500 W**	**13450 W/16550 W**	**15000 W/18100 W**	**17000 W/20650 W**	**20600 W/26350 W**
T_w = 18°C/T_u = 32°C		**10000 W/12600 W**	**14350 W/18700 W**	**16300 W/20100 W**	**18500 W/22350 W**	**20900 W/25400 W**	**25200 W/32250 W**
Power consumption		3800 W/5300 W	4800 W/6500 W	5300 W/7100 W	6400 W/9000 W	7100 W/9900 W	8100 W/11500 W
Rated current max.		10.6 A/10.8 A	13.1 A/13.3 A	14.1 A/14.3 A	16.2 A/18.4 A	18.2 A/20.4 A	19.7 A/22.4 A
Refrigerant		R407C					
$P_{max.}$ cooling circuit		27 bar					
Temperature range	Environment	+15°C to +45°C[1)]					
	Liquid media	+10°C to +25°C					
Pump capacity		See characteristic curve					
Tank		Made from stainless steel 1.4301					
Tank capacity		60 l			100 l		
Water connections		1″ IG					
Weight		215 kg	225 kg	235 kg	240 kg	250 kg	260 kg
Colour		RAL 7035					
Protection category (electrics)		IP 54					
Air throughput of fans		6280 m³/h			10880 m³/h		
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +18°C)					

[1)] SK 3336.720 and SK 3336.750 +15°C to +40°C.
Delivery times available on request.
Special voltages and technical modifications available on request.

Air/water heat exchangers From page 626 **Configuration software** Page 1063 **By-pass safety valve** Page 667 **Additives** Page 668

In floor-standing enclosure for oil, cooling output 2550 to 7900 W





B = Width
T = Depth

Technical design:
- Robust industrial standard in 2 enclosure sizes.
- Identical basic enclosure for oil and water recooling systems.
- Variable air routing is possible via the l/h or r/h side panel.
- High-capacity gear pump.
- Floating contact for collective fault signal.
- Integration of application-specific special equipment on request.

Supply includes:
Recooling system wired and plumbed ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:

Metal filter mats, castors, lifting eyes available on request.

Approvals,
available on the Internet.

Detailed drawing,
available on the Internet.

Layout diagram,
see page 1175.

Options,
see page 1171.

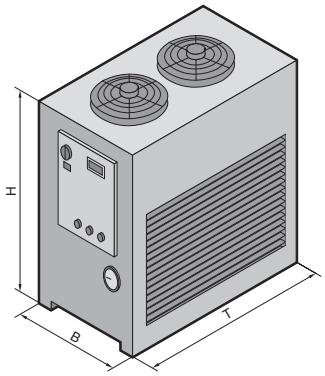
Model No. SK		**3337.200**	**3337.300**	**3337.500**	**3337.600**	**3337.650**
Rated operating voltage V, Hz		400, 3~, 50				
Dimensions in mm	W H D	485 965 650		595 1180 800		
Cooling output with oil ISO VG 32 **T_{oil} = 20°C** **T_u = 32°C**		**2550 W**	**3400 W**	**5150 W**	**6700 W**	**7900 W**
Power consumption		1.2 kW	1.6 kW	2.3 kW	2.8 kW	3.6 kW
Rated current max.		3.1 A	3.7 A	4.9 A	5.4 A	5.7 A
Refrigerant		R134a				
$P_{max.}$ cooling circuit		24 bar				
Temperature range	Environment	+15°C to +45°C				
	Liquid media	+15°C to +35°C				
Pump capacity at 10 bar		10 l/min		24 l/min		
Optional tank		Made from stainless steel 1.4301				
Optional tank capacity		33 l		57 l		
Connections		$^3/_4$″ IG		1″ IG		
Weight		103 kg	105 kg	148 kg	150 kg	154 kg
Colour		RAL 7035				
Protection category (electrics)		IP 54				
Air throughput of fans		1250 m³/h	1785 m³/h	3140 m³/h		
Temperature control		Electronic control with digital display, setting range +15°C to +35°C (factory setting +20°C)				

Delivery times available on request.
Special voltages, other frequencies, and technical modifications available on request.

Configuration software Page 1063

In floor-standing enclosure for oil, cooling output 10600 to 26100 W





B = Width
T = Depth

Technical design:
- Robust industrial housing in 2 enclosure sizes.
- Identical basic enclosure for oil and water recooling systems.
- Variable air routing is possible via the l/h or r/h side panel.
- Optimum accessibility for servicing purposes by removing the side panel.
- High-capacity gear pump.
- Floating contact for collective fault signal.
- Integration of application-specific special equipment on request.

Supply includes:
Recooling system wired and plumbed ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:

Metal filter mats, castors, lifting eyes available on request.

Approvals,
available on the Internet.

Detailed drawing,
available on the Internet.

Layout diagram,
see page 1176.

Options,
see page 1171.

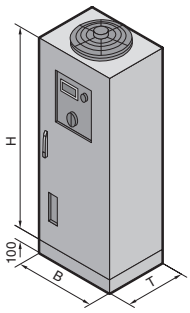
Model No. SK		**3337.700**	**3337.710**	**3337.720**	**3337.730**	**3337.740**	**3337.750**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60					
Dimensions in mm	W H D	615 1178 1160			715 1178 1360		
Cooling output with oil ISO VG 32 **T_{oil} = 20°C** **T_u = 32°C**		**10600 W** **12000 W**	**15150 W** **17500 W**	**17200 W** **20000 W**	**19250 W** **22500 W**	**21600 W** **25000 W**	**26100 W** **30000 W**
Power consumption		5300 W/ 6300 W	6400 W/ 7700 W	7100 W/ 8200 W	8700 W/ 10300 W	9600 W/ 11300 W	10500 W/ 13300 W
Rated current max.		12 A/12 A	15 A/15 A	16 A/16 A	19 A/20 A	21 A/22 A	22 A/24 A
Refrigerant		R407C					
$P_{max.}$ cooling circuit		28 bar					
Temperature range	Environment	+15°C to +45°C[1)]					
	Liquid media	+15°C to +35°C					
Pump capacity at 10 bar		45 l/min			68 l/min		
Optional tank		Made from stainless steel 1.4301					
Optional tank capacity		60 l			100 l		
Connections		1″ IG					
Weight		222 kg	232 kg	242 kg	248 kg	258 kg	268 kg
Colour		RAL 7035					
Protection category (electrics)		IP 54					
Air throughput of fans		6280 m^3/h			10880 m^3/h		
Temperature control		Electronic control with digital display, setting range +15°C to +35°C (factory setting +20°C)					

[1)] SK 3337.720 and SK 3337.750 +15°C to +40°C.
Delivery times available on request.
Special voltages, other refrigerants, and technical modifications available on request.

Configuration software Page 1063

In TS 8 Top enclosure system, cooling output 6000/7500 W





B = Width
T = Depth

Technical design:
- Compact structure with control components in the front and air intake via the rear.
- Suitable for bayed siting.
- Special fittings and options available on request.
- Float-actuated switch as protection against running dry.
- Floating collective fault signal.
- Equipped with Grundfos pumps and Siemens components.
- Service accessibility from all sides.

Supply includes:
Recooling system wired and plumbed ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:
Metal filter mat and safety module available on request.

Approvals,
available on the Internet.

Detailed drawing,
available on the Internet.

Layout diagram,
see page 1176.

Characteristic curves of pump,
see page 1176.

Options,
see page 1171.

Model No. SK		**3335.060**	**3335.075**
Rated operating voltage V, Hz		400, 3~, 50	
Dimensions in mm	W H D	600 2000 600	
Base/plinth height mm		100	
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		 **4800 W** **6000 W**	 **6000 W** **7500 W**
Power consumption		2.4 kW	3.0 kW
Rated current max.		7.6 A	8.1 A
Refrigerant		R407C	
$P_{max.}$ cooling circuit		24 bar	
Temperature range	Environment	+10°C to +43°C	
	Liquid media	+10°C to +30°C	
Pump capacity		See characteristic curve	
Tank		Made from PP plastic	
Tank capacity		80 l	
Water connections		3/4″ IG	
Weight		180 kg	190 kg
Colour		RAL 7035	
Protection category (electrics)		IP 54	
Air throughput of fans		4000 m³/h	
Temperature control		Electronic control with digital display, setting range +10°C to +30°C (factory setting +18°C)	

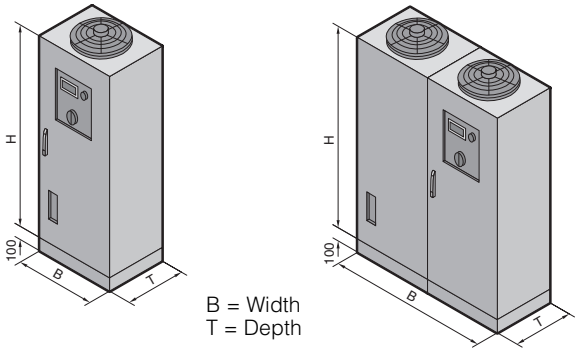
Delivery times available on request.
Special voltages, other frequencies and refrigerants, and technical modifications available on request.

Air/water heat exchanger From page 626 **TS 8 lock systems** From page 881 **TS 8 baying systems** From page 861 **Configuration software** Page 1063
By-pass safety valve Page 667 **Additives** Page 668

Recooling systems

In TS 8 Top enclosure system, cooling output 10000 to 25000 W





Technical design:
- Compact structure with control components in the front and air intake via the rear.
- Suitable for bayed siting.
- Special fittings and options available on request.
- Float-actuated switch as protection against running dry.
- Floating collective fault signal.
- Magnetic valve in the cooling circuit.
- Equipped with Grundfos pumps and Siemens components.
- Service accessibility from all sides.

Supply includes:
Recooling system wired and plumbed ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:

Metal filter mat and safety module available on request.

Approvals,
available on the Internet.

Detailed drawing,
available on the Internet.

Layout diagram,
see page 1176.

Characteristic curves of pump,
see page 1176.

Options,
see page 1171.

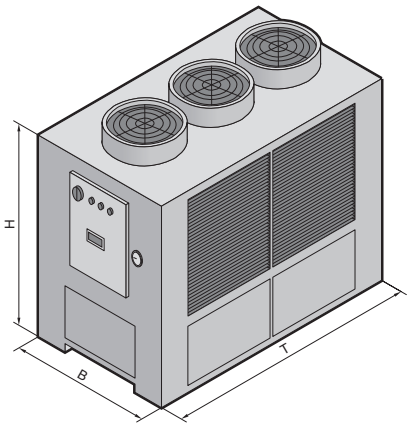
SK		3335.100	3335.120	3335.150	3335.200	3335.250
Rated operating voltage V, Hz		400, 3~, 50				
Dimensions in mm	W H D	800 2000 600			1200 2000 600	
Base/plinth height mm		100				
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**8000 W** **10000 W**	**10000 W** **12000 W**	**11500 W** **15000 W**	**17000 W** **20000 W**	**22000 W** **25000 W**
Power consumption		4.0 kW	4.8 kW	6.0 kW	8.0 kW	10.0 kW
Rated current max.		12.5 A	17.3 A	18.5 A	23.5 A	27.5 A
Refrigerant		R407C				
$P_{max.}$ cooling circuit		24 bar				
Temperature range	Environment	+10°C to +43°C				
	Liquid media	+10°C to +30°C				
Pump capacity		See characteristic curve				
Tank		Made from PP plastic				
Tank capacity		120 l			240 l	
Water connections		3/4″ IG			1″ IG	
Weight		250 kg	270 kg	380 kg	530 kg	560 kg
Colour		RAL 7035				
Protection category (electrics)		IP 54				
Air throughput of fans		6000 m³/h			8000 m³/h	
Temperature control		Electronic control with digital display, setting range +10°C to +30°C (factory setting +18°C)				

Delivery times available on request.
Special voltages, other frequencies, and technical modifications available on request.

Air/water heat exchanger From page 626 **TS 8 lock systems** From page 881 **TS 8 baying systems** From page 861 **Configuration software** Page 1063
By-pass safety valve Page 667 **Additives** Page 668

In industrial enclosure, cooling output 32 kW to 172 kW





B = Width
T = Depth

Technical design:
- Robust industrial enclosure,
- Optimum service accessbility by removing the panels.
- Floating contact for collective fault signal.
- With shell-and-tube evaporator, without tank (SK 3339.300 – .500).
- Integration of application-specific special equipment on request.

Supply includes:
Recooling system wired and plumbed ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:

Metal filter mat available on request.

Approvals,
available on the Internet.

Detailed drawing,
available on the Internet.

Layout diagram,
see page 1177.

Characteristic curves of pump,
see page 1177.

Options,
see page 1171.

Model No. SK		**3339.100**	**3339.200**	**3339.300**	**3339.400**	**3339.500**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60		400, 3~, 50		
Dimensions in mm	W H D	815 1400 1560		1550 2000 2500		1630 2200 3400
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**26150 W/31350 W** **32025 W/38430 W**	**29550 W/35450 W** **36225 W/43480 W**	**54700 W** **66700 W**	**62200 W** **75900 W**	**141000 W** **172200 W**
Power consumption		15900 W	17600 W	27000 W	28300 W	61000 W
Rated current max.		24.4 A	26.9 A	67 A	74 A	108 A
Refrigerant		R407C				
$P_{max.}$ cooling circuit		28 bar				
Temperature range	Environment	+15°C to +45°C				
	Liquid media	+10°C to +25°C				
Pump capacity		See characteristic curve				
Tank		Made from stainless steel 1.4301				
Tank capacity		150 l		Pressure-sealed		
Water connections		1 1/4″ IG		2″ IG		3″ IG
Weight		280 kg	300 kg	800 kg	850 kg	2100 kg
Colour		RAL 7035				
Protection category (electrics)		IP 44				
Air throughput of fans		18000 m³/h		32000 m³/h		48000 m³/h
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +18°C)				

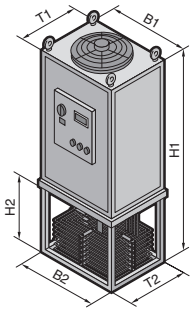
Delivery times available on request.
Special voltages, other frequencies and refrigerants, and technical modifications available on request.

Air/water heat exchangers From page 626 **Configuration software** Page 1063 **By-pass safety valve** Page 667 **Additives** Page 668

Immersible recooling systems

for oil, cooling output 2400 to 5600 W





B = Width
T = Depth

Technical design:
- For the cooling of oil
- Robust industrial standard in 3 enclosure sizes
- Flat evaporator coil insensitive to dirt
- Bi-frequency components (50/60 Hz)

Supply includes:
Immersible recooling system wired and plumbed ready for connection, **metal filter, eyebolts,** with multilingual documentation, including functional diagram and wiring plans.

Approvals,
available on the Internet.

Detailed drawing,
available on the Internet.

Layout diagram,
see page 1177.

Options,
see page 1171.

Model No. SK for oil		**3338.020**	**3338.040**	**3338.060**	**3338.080**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60			
Cooling output at T_{oil} = 20°C/T_u = 32°C		**2400 W/2700 W**	**3200 W/3600 W**	**4600 W/5200 W**	**5600 W/6300 W**
Dimensions in mm	B1 H1 T1	785 1650 785			
Dimensions of immersible part, mm	B2 T2	719 719			
Immersion depth mm	H2	550			
Minimum medium level with flat evaporator coil, mm		205		280	

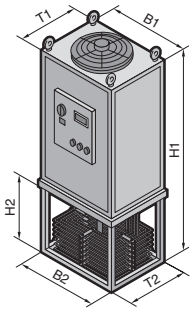
Power consumption		2.2 kW/2.7 kW	2.5 kW/3.1 kW	3.5 kW/4.3 kW	3.9 kW/4.7 kW
Rated current max.		3.5 A/3.7 A	3.8 A/4.0 A	5.5 A/5.9 A	5.6 A/5.8 A
Refrigerant		R134a			
$P_{max.}$ cooling circuit		24 bar			
Temperature range	Environment	+15°C to +42°C			
	Liquid media	+10°C to +25°C			
Weight		133 kg	143 kg	158 kg	173 kg
Colour		RAL 7035			
Protection category (electrics)		IP 44			
Air throughput of fans		1500/1560 m^3/h		2200/2350 m^3/h	
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +20°C)			

Delivery times available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Configuration software Page 1063

for oil, cooling output 8500 to 17300 W





B = Width
T = Depth

Technical design:
- For the cooling of oil
- Robust industrial standard in 3 enclosure sizes
- Flat evaporator coil insensitive to dirt
- Bi-frequency components (50/60 Hz)

Supply includes:
Immersible recooling system wired and plumbed ready for connection, **metal filter, eyebolts,** with multilingual documentation, including functional diagram and wiring plans.

Approvals,
available on the Internet.

Detailed drawing,
available on the Internet.

Layout diagram,
see page 1177.

Options,
see page 1171.

Model No. SK for oil		**3338.100**	**3338.120**	**3338.140**	**3338.160**	**3338.180**	**3338.200**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60					
Cooling output at T_{oil} = 20°C/T_u = 32°C		**8500 W/ 9500 W**	**10500 W/ 11800 W**	**12000 W/ 13400 W**	**13600 W/ 15200 W**	**15300 W/ 17100 W**	**17300 W/ 19400 W**
Dimensions in mm	B1 H1 T1	785 1650 785					
Dimensions of immersible part, mm	B2 T2	719 719					
Immersion depth mm	H2	550					
Minimum medium level with flat evaporator coil, mm		330	380		430		

Power consumption		6.2 kW/7.4 kW	6.8 kW/8.1 kW	7.6 kW/9.0 kW	8.4 kW/10.0 kW	9.3 kW/11.0 kW	10.4 kW/12.3 kW
Rated current max.		8.4 A/8.6 A	9.2 A/9.3 A	10.1 A/10.5 A	11.1 A/11.5 A	12.1 A/12.4 A	13.3 A/13.7 A
Refrigerant		R407C					
$P_{max.}$ cooling circuit		27 bar					
Temperature range	Environment	+15°C to +42°C					
	Liquid media	+10°C to +25°C					
Weight		183 kg	203 kg	228 kg	248 kg	253 kg	263 kg
Colour		RAL 7035					
Protection category (electrics)		IP 54					
Air throughput of fans		7200/7480 m³/h			7900/8480 m³/h		
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +20°C)					

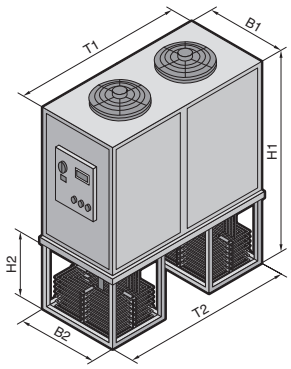
Delivery times available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Configuration software Page 1063

Immersible recooling systems

for oil, cooling output 20700 to 77900 W





B = Width
T = Depth

Technical design:
- For the cooling of oil
- Robust industrial standard in 3 enclosure sizes
- Flat evaporator coil insensitive to dirt
- Bi-frequency components (50/60 Hz)

Supply includes:
Immersible recooling system wired and plumbed ready for connection, **metal filter, eyebolts,** with multilingual documentation, including functional diagram and wiring plans.

Approvals,
available on the Internet.

Detailed drawing,
available on the Internet.

Layout diagram,
see page 1177.

Options,
see page 1171.

Model No. SK for oil		**3338.220**	**3338.240**	**3338.260**	**3338.280**	**3338.300**	**3338.320**	**3338.340**	**3338.360**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60							
Cooling output at T_{oil} = 20°C/T_u = 32°C		**20700 W/ 23200 W**	**30800 W/ 34500 W**	**34900 W/ 39100 W**	**44500 W/ 49800 W**	**48600 W/ 54400 W**	**60600 W/ 67900 W**	**72600 W/ 81300 W**	**77900 W/ 87200 W**
Dimensions in mm	B1 H1 T1	785 1650 1830			1830 1650 1830				
Dimensions of immersible part, mm	B2 T2	719 1764			1764 1764				
Immersion depth mm	H2	550							
Minimum medium level with flat evaporator coil, mm		380	430		380		430		

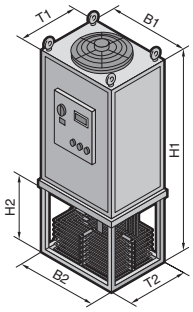
Power consumption		12.9 kW/ 16.1 kW	18.0 kW/ 22.0 kW	20.1 kW/ 24.8 kW	26.4 kW/ 31.4 kW	28.9 kW/ 34.4 kW	34.4 kW/ 41.1 kW	39.9 kW/ 47.8 kW	42.5 kW/ 50.9 kW
Rated current max.		17.3 A/ 17.8 A	21.6 A/ 23.0 A	24.3 A/ 25.5 A	35.5 A/ 35.2 A	35.4 A/ 35.8 A	42.7 A/ 42.9 A	50.0 A/ 50.0 A	53.0 A/ 53.0 A
Refrigerant		R407C							
$P_{max.}$ cooling circuit		27 bar							
Temperature range	Environment	+15°C to +45°C							
	Liquid media	+10°C to +25°C							
Weight		305 kg	380 kg		425 kg			435 kg	455 kg
Colour		RAL 7035							
Protection category (electrics)		IP 54							
Air throughput of fans		15000/15600 m³/h			30000/31200 m³/h				
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +20°C)							

Delivery times available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Configuration software Page 1063

for emulsion, cooling output 2400 to 5600 W





B = Width
T = Depth

Technical design:
- For the cooling of emulsion
- Robust industrial standard in 3 enclosure sizes
- Flat evaporator coil insensitive to dirt
- Bi-frequency components (50/60 Hz)

Supply includes:
Immersible recooling system wired and plumbed ready for connection, **metal filter, eyebolts,** with multilingual documentation, including functional diagram and wiring plans.

Approvals,
available on the Internet.

Detailed drawing,
available on the Internet.

Layout diagram,
see page 1177.

Options,
see page 1171.

Model No. SK for emulsion		**3338.500**	**3338.520**	**3338.540**	**3338.560**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60			
Cooling output at T_{EM} = 20°C/T_u = 32°C		**2400 W/2700 W**	**3200 W/3600 W**	**4600 W/5200 W**	**5600 W/6300 W**
Dimensions in mm	B1 H1 T1	785 1650 785			
Dimensions of immersible part, mm	B2 T2	719 719			
Immersion depth mm	H2	550			
Minimum medium level with flat evaporator coil, mm		180		205	

Power consumption		2.4 kW/3.0 kW	2.7 kW/3.4 kW	3.7 kW/4.6 kW	4.1 kW/5.0 kW
Rated current max.		3.8 A/4.0 A	4.1 A/4.3 A	5.9 A/6.3 A	6.0 A/6.3 A
Refrigerant		R134a			
$P_{max.}$ cooling circuit		24 bar			
Temperature range	Environment	+15°C to +42°C			
	Liquid media	+10°C to +25°C			
Weight		130 kg	140 kg	155 kg	170 kg
Colour		RAL 7035			
Protection category (electrics)		IP 44			
Air throughput of fans		1500/1560 m³/h		2200/2350 m³/h	
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +20°C)			

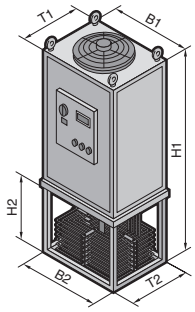
Delivery times available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Configuration software Page 1063

Immersible recooling systems

for emulsion, cooling output 8500 to 17300 W





B = Width
T = Depth

Technical design:
- For the cooling of emulsion
- Robust industrial standard in 3 enclosure sizes
- Flat evaporator coil insensitive to dirt
- Bi-frequency components (50/60 Hz)

Supply includes:
Immersible recooling system wired and plumbed ready for connection, **metal filter, eyebolts,** with multilingual documentation, including functional diagram and wiring plans.

Approvals,
available on the Internet.

Detailed drawing,
available on the Internet.

Layout diagram,
see page 1177.

Options,
see page 1171.

Model No. SK for emulsion		**3338.580**	**3338.600**	**3338.620**	**3338.640**	**3338.660**	**3338.680**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60					
Cooling output at T_{EM} = 20°C/T_u = 32°C		**8500 W/ 9500 W**	**10500 W/ 11800 W**	**12000 W/ 13400 W**	**13600 W/ 15200 W**	**15300 W/ 17100 W**	**17300 W/ 19400 W**
Dimensions in mm	B1 H1 T1	785 1650 785					
Dimensions of immersible part, mm	B2 T2	719 719					
Immersion depth mm	H2	550					
Minimum medium level with flat evaporator coil, mm		280			330		

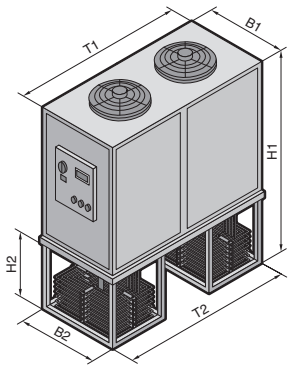
Power consumption		6.4 kW/7.6 kW	7.0 kW/8.3 kW	7.8 kW/9.5 kW	8.6 kW/10.2 kW	9.5 kW/11.3 kW	10.6 kW/12.6 kW
Rated current max.		8.9 A/9.0 A	9.6 A/9.9 A	10.6 A/11.2 A	11.5 A/12.0 A	12.5 A/13.2 A	13.7 A/14.1 A
Refrigerant		R407C					
P_{max}. cooling circuit		27 bar					
Temperature range	Environment	+15°C to +42°C					
	Liquid media	+10°C to +25°C					
Weight		180 kg	200 kg	225 kg	245 kg	250 kg	260 kg
Colour		RAL 7035					
Protection category (electrics)		IP 54					
Air throughput of fans		7200/7480 m³/h			7900/8480 m³/h		
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +20°C)					

Delivery times available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Configuration software Page 1063

for emulsion, cooling output 20700 to 77900 W





B = Width
T = Depth

Technical design:
- For the cooling of emulsion
- Robust industrial standard in 3 enclosure sizes
- Flat evaporator coil insensitive to dirt
- Bi-frequency components (50/60 Hz)

Supply includes:
Immersible recooling system wired and plumbed ready for connection, **metal filter, eyebolts,** with multilingual documentation, including functional diagram and wiring plans.

Approvals,
available on the Internet.

Detailed drawing,
available on the Internet.

Layout diagram,
see page 1177.

Options,
see page 1171.

Model No. SK for emulsion		**3338.700**	**3338.720**	**3338.740**	**3338.760**	**3338.780**	**3338.800**	**3338.820**	**3338.840**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60							
Cooling output at T_{EM} = 20°C/T_u = 32°C		**20700 W/ 23200 W**	**30800 W/ 34500 W**	**34900 W/ 39100 W**	**44500 W/ 49800 W**	**48600 W/ 54400 W**	**60600 W/ 67900 W**	**72600 W/ 81300 W**	**77900 W/ 87200 W**
Dimensions in mm	B1 H1 T1	785 1650 1830			1830 1650 1830				
Dimensions of immersible part, mm	B1 T2	719 1764			1764 1764				
Immersion depth mm	H2	550							
Minimum medium level with flat evaporator coil, mm		280	330		280			330	380

Power consumption		13.3 kW/ 16.6 kW	18.4 kW/ 22.5 kW	20.5 kW/ 25.3 kW	27.1 kW/ 27.8 kW	29.7 kW/ 35.4 kW	35.2 kW/ 42.1 kW	40.7 kW/ 48.8 kW	43.3 kW/ 51.9 kW
Rated current max.		17.9 A/ 18.4 A	22.2 A/ 23.6 A	24.9 A/ 26.1 A	36.7 A/ 36.5 A	36.6 A/ 37.0 A	43.9 A/ 44.1 A	51.2 A/ 51.1 A	54.2 A/ 54.2 A
Refrigerant		R407C							
$P_{max.}$ cooling circuit		27 bar							
Temperature range	Environment	+15°C to +45°C							
	Liquid media	+10°C to +25°C							
Weight		300 kg	375 kg		420 kg		420 kg	430 kg	450 kg
Colour		RAL 7035							
Protection category (electrics)		IP 54							
Air throughput of fans		15000/15600 m³/h			30000/31200 m³/h				
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +20°C)							

Delivery times available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Configuration software Page 1063

Features of air/air heat exchangers



The requirement for use of **air/air heat exchangers** is that the ambient temperature must be below the enclosure internal temperature. Dust and any aggressive ambient air is unable to ingress the enclosure interior, thanks to the two separate air circuits.

The air of the enclosure interior may also be cooled to below the level of the external temperature by using **air/water heat exchangers** with a central recooling system. Dust is unable to penetrate the enclosure. The waste heat from the enclosure does not raise the temperature of the ambient air, provided the cold water supply system is spatially separated.



Platform strategy/installation







Identical installation cutouts
for various output categories.

Easily retro-fitted
Thanks to the low weight, simple assembly cutouts and problem-free attachment of the heat exchangers, a cabinet or enclosure is easily retro-fitted.



Servicing/security



Simple maintenance
The heat exchanger module is very easily removed, for effortless cleaning. The cleverly thought-out structure enables fast, economical maintenance.

Benefits:

- Specific thermal output from 17.5 W/K to 90 W/K
- External and internal circuit may be controlled separately
- Mounting cutouts and enclosure dimensions identical to TopTherm wall-mounted cooling units
- Suitable for external and internal mounting
- Top design identical to TopTherm wall-mounted cooling units

Important:

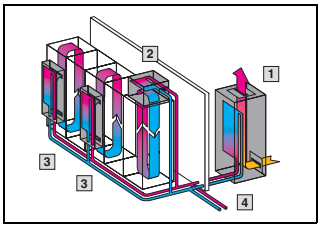
- The temperature difference between the room temperature and enclosure internal temperature will have a decisive effect on the heat loss that may be dissipated.

For calculation bases, refer to our website: www.rittal.com

Features of air/water heat exchangers



Even suitable for use in extreme conditions



Example: Parallel connection of air/water heat exchangers with cold water supply via a recooling system.

Overflow valves and bypass control should be integrated into the recooling system and the customer's own pipeline system respectively.

1 Recooling system

2 Air/water heat exchanger, roof-mounted

3 Air/water heat exchanger, wall-mounted

4 Additional cooling water circuit for machine cooling

Ideal for any location
If direct dissipation of heat loss to the ambient air is not desired or ineffective due to confined spaces, the air/water heat exchanger may provide the ideal solution. Particularly by spatially separating the exchanger from the recooling system, highly individual and effective solutions for cooling individual enclosures or bayed enclsosure suites can be achieved.



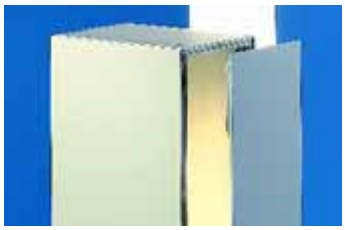
Variants



Roof mounting
Especially for bayed enclosures, where wall-mounted devices would obstruct the door.



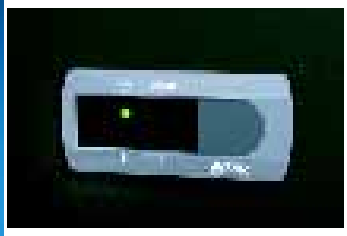
Wall mounting
For mounting on the wall or any sufficiently large vertical surface.



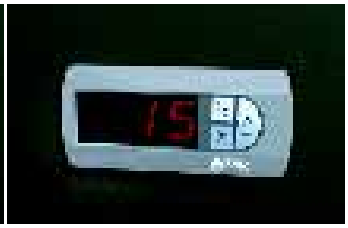
Side panel
Economical use: Air/water heat exchanger as a side panel in the TS 8 enclosure system.



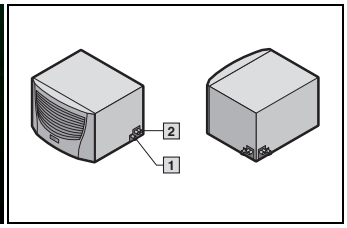
Controller



Basic controller:
- Visualisation of the operating status via LED display
- Switching hysteresis: 5 K
- Floating fault signal contact in case of overtemperature
- Setpoint adjustable from outside via potentiometer (setting range 20° – 55°C)



Comfort controller
- Switching hysteresis: 2 – 10 K preset to 5 K
- System alarm, individually configurable for 2 floating fault signal contacts
- Visualisation of the current enclosure internal temperature and all system messages on the display
- Storage of all system states in the log file
- Optional extension card for integration into superordinate remote monitoring systems e.g. with CMC



Flexible water logistics and condensate management
Any condensate arising is discharged via one of the two tube connectors ($^1/_2$″) and a discharge hose, which should be laid with a gradient ensuring that there are no kinks. In order to avoid increased condensation, the cooling water temperature should be adapted to match the required cooling output.

1 Condensate discharge (flexible)

2 Cooling water connection (flexible)

Benefits:

- Useful cooling output from 600 W to 5000 W
- Suitable for use even in extreme conditions and ambient temperatures up to +70°C
- Also available with all water-carrying parts made from V4A
- System for TS 8 integrated into the side panel

Important:

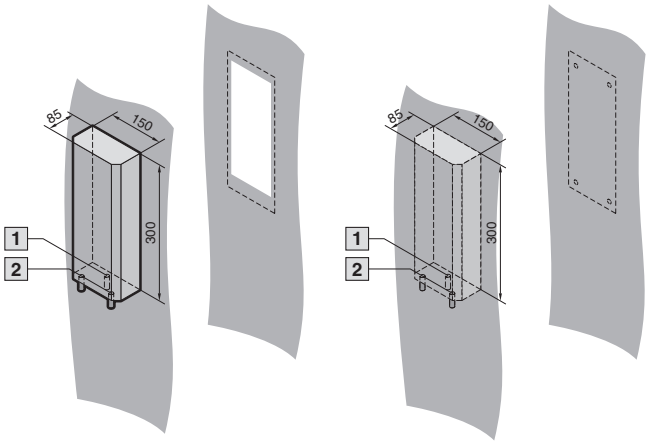
- Air/water heat exchangers should always be used in conjunction with recooling systems or a cooling water circuit

For calculation formulae and requirements regarding water quality, refer to our website: www.rittal.com

Air/water heat exchanger

Micro, wall-mounted, useful cooling output 300 W





Especially for selective cooling of hotspots in small enclosures.

Supply includes:
Fully wired ready for connection, including drilling template and assembly parts.

1 Condensate discharge
2 Cooling water connection (quick-release fastener)

Approvals,
see page 75.

Detailed drawing,
see page 1178.

Performance diagrams,
available on the Internet.

Model No. SK		**3212.230**	**3212.115[1)]**	**3212.024**
Rated operating voltage V, Hz		230, 50/60	115, 50/60	24 V (DC)
Dimensions in mm	W H D	150 300 85		
Useful cooling output	**L 35 W 10, 200 l/h**	**300 W**		

Rated current max.	0.11 A/0.13 A	0.23 A/0.24 A	1.20 A
Pre-fuse T	4.0 A		
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 12)		
Water inlet temperature	> +1°C to +30°C		
Permissible operating pressure p. max.	1 to 10 bar		
Temperature range	+1°C to +70°C		
Protection category to EN 60 529/10.91	IP 55[2)]		
Duty cycle	100 %		
Type of connection	Connection clamp		
Weight	3 kg		
Colour	RAL 7035		
Air throughput of fans (unimpeded air flow)	280 m^3/h		250 m^3/h

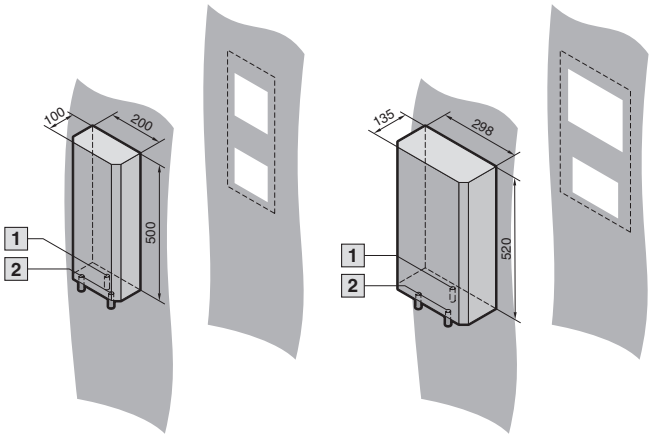
Accessories	Packs of		Page
Temperature indicator	1	3114.100	660
Door-operated switch	1	4127.000	956
Condensate hose	1	3301.612	665
Flow regulator valve	1	see accessories	667

[1)] Delivery times available on request.
[2)] IP 65 available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Recooling systems** From page 606 **Configuration software** Page 1063

Wall mounting, useful cooling output 600/1000 W





Supply includes:
Fully wired ready for connection with terminal strip, including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, see page 608 onwards.

1 Condensate discharge 1/2″
2 Cooling water connection 1/2″

Approvals, see page 76.

Detailed drawing, see page 1178.

Performance diagrams, available on the Internet.

Model No. SK		**3214.100**	**3217.100**
Rated operating voltage V, Hz		230, 50/60	
Dimensions in mm	W H D	200 500 100	298 520 135
Useful cooling output	**L 35 W 10, 200 l/h** **L 35 W 10, 400 l/h**	**600 W** **650 W**	**1000 W** **1100 W**

Rated current max.	0.17 A/0.18 A	0.6 A/0.55 A
Pre-fuse T	2.0 A	4.0 A
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 12)	
Water inlet temperature	> +1°C to +30°C	
Permissible operating pressure p. max.	1 to 10 bar	
Temperature range	+1°C to +70°C	
Protection category to EN 60 529/10.91	IP 55[1)]	
Duty cycle	100 %	
Type of connection	Terminal strip	
Weight	7 kg	9.5 kg
Colour	RAL 7032	
Air throughput of fans	120 m³/h	240 m³/h
Temperature control	Thermostat-controlled magnetic valve	
Temperature monitoring	Internal thermostat, with change-over contact, switching load 16 A, setting range +20°C to +60°C (factory setting +35°C)	

Accessories	Packs of		Page
Temperature indicator	1	3114.100	660
Door-operated switch	1	4127.000	956
Condensate hose	1	3301.612	665
Flow regulator valve	1	see accessories	667

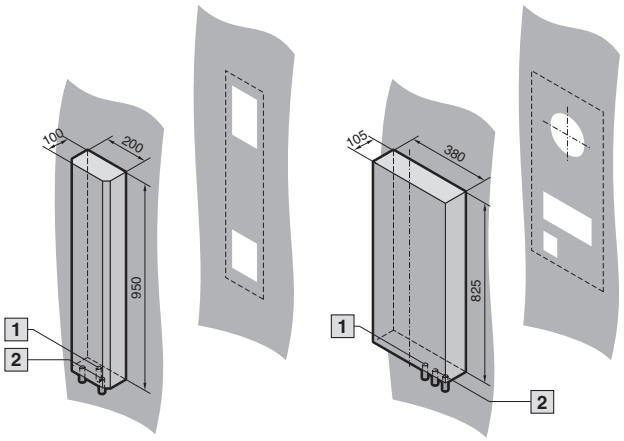
[1)] IP 65 available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Recooling systems** From page 606 **Configuration software** Page 1063

Air/water heat exchanger

Wall mounting, useful cooling output 1250/1540 W





Supply includes:
Fully wired ready for connection with terminal strip or connection cable (3 m), including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, see page 608 onwards.

1 Condensate discharge 1/2″
2 Cooling water connection 1/2″

Approvals, see page 76.

Detailed drawing, see page 1179.

Performance diagrams, available on the Internet.

Model No. SK		**3215.100**	**3247.000**
Rated operating voltage V, Hz		230, 50/60	
Dimensions in mm	W H D	200 950 100	380 825 105
Useful cooling output	**L 35 W 10, 200 l/h** **L 35 W 10, 400 l/h**	**1250 W** **1300 W**	**1540 W** **1700 W**

Rated current max.	0.38 A/0.4 A	0.43 A/0.5 A
Pre-fuse T	4.0 A	
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 12)	
Water inlet temperature	> +1°C to +30°C	
Permissible operating pressure p. max.	1 to 10 bar	
Temperature range	+1°C to +70°C	
Protection category to EN 60 529/10.91	IP 55[1)]	
Duty cycle	100 %	
Type of connection	Terminal strip	Connection cable 3 m
Weight	13 kg	17 kg
Colour	RAL 7032	
Air throughput of fans	200 m^3/h	240 m^3/h
Temperature control	Thermostat-controlled magnetic valve	
Temperature monitoring	Internal thermostat, with change-over contact, switching load 16 A, setting range +20°C to +60°C (factory setting +35°C)	

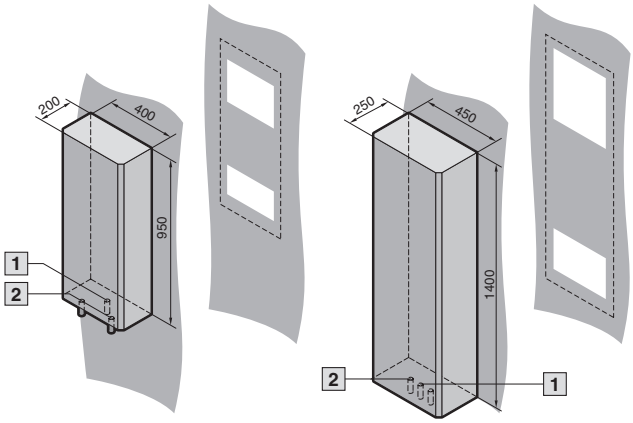
Accessories	Packs of		Page
Temperature indicator	1	3114.100	660
Door-operated switch	1	4127.000	956
Condensate hose	1	3301.612	665
Flow regulator valve	1	see accessories	667

[1)] IP 65 available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Recooling systems** From page 606 **Configuration software** Page 1063

Wall mounted, useful cooling output 2250/3000/4500 W





Supply includes:
Fully wired ready for connection with terminal strip, including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, see page 608 onwards.

1 Condensate discharge $^1/_2$″
2 Cooling water connection $^1/_2$″

Approvals, see page 76.

Detailed drawing, see page 1179.

Performance diagrams, available on the Internet.

Model No. SK		**3218.104**[1]	**3218.100**	**3216.100**
Rated operating voltage V, Hz		230, 50/60		
Dimensions in mm	W	400		450
	H	950		1400
	D	200		250
Useful cooling output	**L 35 W 10, 200 l/h**	**2250 W**	**3000 W**	**4500 W**
	L 35 W 10, 400 l/h	**2650 W**	**3500 W**	**5000 W**

Rated current max.	0.42 A/0.48 A		1.0 A/1.1 A
Pre-fuse T	4.0 A		
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 12)		
Water inlet temperature	> +1°C to +30°C		
Permissible operating pressure p. max.	1 to 10 bar		
Temperature range	+1°C to +70°C		
Protection category to EN 60 529/10.91	IP 55[2]		
Duty cycle	100 %		
Type of connection	Terminal strip		
Weight	19 kg	21 kg	56 kg
Colour	RAL 7032		
Air throughput of fans	240 m^3/h	450 m^3/h	1000 m^3/h
Temperature control	Thermostat-controlled magnetic valve		

Accessories	Packs of		Page
Temperature indicator	1	3114.100	660
Door-operated switch	1	4127.000	956
Condensate hose	1	3301.612	665
Flow regulator valve	1	see accessories	667

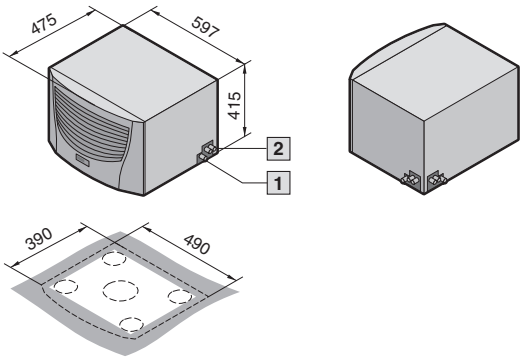
[1] Delivery times available on request, all water-carrying parts V4A 1.4571.
[2] IP 65 available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Recooling systems** From page 606 **Configuration software** Page 1063

Air/water heat exchanger

Roof-mounted, useful cooling output 2500 W





Supply includes:
Fully wired ready for connection with connector, including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, from page 608.

1 Condensate discharge (flexible)

2 Cooling water connection (flexible)

Approvals,
see page 76.

Detailed drawing,
see page 1180.

Performance diagrams,
available on the Internet.

Property rights:
German registered designs
no. 402 02 324 and
no. 402 02 325
US design patent
no. US D 492,319S
Indian registered design
no. 189 956
Chinese registered design
no. ZL 0330 6415.6

	Water-carrying parts			
Model No. SK Basic controller	**CuAL**	**3209.100**	**3209.110**	**3209.140[1)]**
Model No. SK Comfort controller	**CuAL**	**3209.500**	**3209.510**	**3209.540[1)]**
Useful cooling output CuAL	**L 35 W 10, 400 l/h**	**2500 W**		
Model No. SK Basic controller	**V4A (stainless steel)**	**3209.104[1)]**	**3209.114[1)]**	**3209.144[1)]**
Model No. SK Comfort controller	**V4A (stainless steel)**	**3209.504[1)]**	**3209.514[1)]**	**3209.544[1)]**
Useful cooling output V4A	**L 35 W 10, 400 l/h**	**1875 W**		
Rated operating voltage V, Hz		230, 50/60	115, 50/60	400, 2~, 50/60
Dimensions in mm	W H D	597 415 475		

Rated current max.	0.40 A	0.85 A	0.25 A
Pre-fuse T	4.0 A		
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 13)		
Water inlet temperature	> +1°C to +30°C		
Permissible operating pressure p. max.	1 to 10 bar		
Temperature range	+1°C to +70°C		
Protection category to EN 60 529/10.91	IP 55[2)]		
Duty cycle	100 %		
Type of connection	Plug-in terminal strip		
Weight	23.5 kg	27.5 kg	27.5 kg
Colour	RAL 7035		
Air throughput of fans (unimpeded air flow)	1030 m^3/h		
Temperature control	Basic or Comfort controller (factory setting +35°C)		

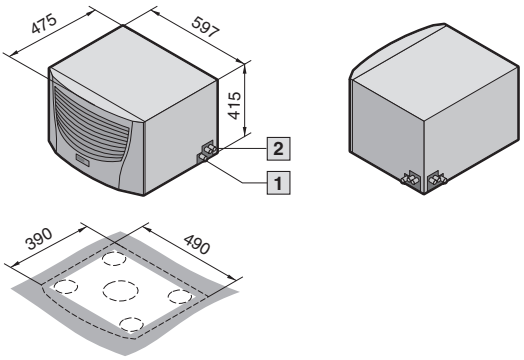
Accessories	Packs of		Page
Door-operated switch	1	4127.000	956
SK bus system for Comfort controller	1	3124.100	663
Interface card for Comfort controller	1	3124.200	662
Air ducting system	1	3286.870	658
Cover stoppers for interior air outlet	1	3286.880	658
Condensate hose	1	3301.612	665
Flow regulator valve	1	see accessories	667

[1)] Delivery times available on request.
[2)] IP 65 available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Recooling systems** From page 606 **Configuration software** Page 1063

Roof-mounted, useful cooling output 4000 W





Supply includes:
Fully wired ready for connection with connector, including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, from page 608.

1 Condensate discharge (flexible)

2 Cooling water connection (flexible)

Approvals,
see page 76.

Detailed drawing,
see page 1180.

Performance diagrams,
available on the Internet.

Property rights:
German registered designs
no. 402 02 324 and
no. 402 02 325
US design patent
no. US D 492,319S
Indian registered design
no. 189 956
Chinese registered design
no. ZL 0330 6415.6

	Water-carrying parts			
Model No. SK Basic controller	**CuAL**	**3210.100**	**3210.110**	**3210.140[1)]**
Model No. SK Comfort controller	**CuAL**	**3210.500**	**3210.510**	**3210.540[1)]**
Useful cooling output CuAL	**L 35 W 10, 400 l/h**	**4000 W**		
Model No. SK Basic controller	**V4A (stainless steel)**	**3210.104[1)]**	**3210.114[1)]**	**3210.144[1)]**
Model No. SK Comfort controller	**V4A (stainless steel)**	**3210.504[1)]**	**3210.514[1)]**	**3210.544[1)]**
Useful cooling output V4A	**L 35 W 10, 400 l/h**	**3000 W**		
Rated operating voltage V, Hz		230, 50/60	115, 50/60	400, 2~, 50/60
Dimensions in mm	W H D	597 415 475		

Rated current max.	0.44 A	0.9 A	0.25 A
Pre-fuse T	4.0 A		
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 13)		
Water inlet temperature	> +1°C to +30°C		
Permissible operating pressure p. max.	1 to 10 bar		
Temperature range	+1°C to +70°C		
Protection category to EN 60 529/10.91	IP 55[2)]		
Duty cycle	100 %		
Type of connection	Plug-in terminal strip		
Weight	25.5 kg	29.5 kg	29.5 kg
Colour	RAL 7035		
Air throughput of fans (unimpeded air flow)	925 m^3/h		
Temperature control	Basic or Comfort controller (factory setting +35°C)		

Accessories	Packs of		Page
Door-operated switch	1	4127.000	956
SK bus system for Comfort controller	1	3124.100	663
Interface card for Comfort controller	1	3124.200	662
Air ducting system	1	3286.870	658
Cover stoppers for interior air outlet	1	3286.880	658
Condensate hose	1	3301.612	665
Flow regulator valve	1	see accessories	667

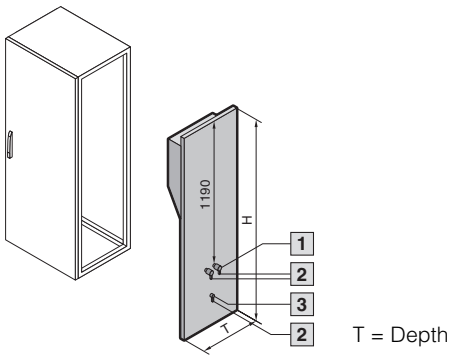
[1)] Delivery times available on request.
[2)] IP 65 available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Recooling systems** From page 606 **Configuration software** Page 1063

Air/water heat exchanger

As a side panel for 600 mm deep TS 8 enclosures, useful cooling output 700 W





T = Depth

Supply includes:
Wired ready for connection, with terminal strip, sealing material and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, see page 608 onwards.

1 Water connections
2 Hose 10 mm diameter
3 Condensate discharge

Approvals,
see page 76.

Detailed drawing,
see page 1180.

Performance diagrams,
available on the Internet.

Property rights:
German patent no. 198 04 901
European patent no. 1 053 582 with validity for ES, FR, GR, IT
Australian patent no. 740 300
US patent no. 6,488,214

Model No. SK		**3316.180**	**3316.200**
Rated operating voltage V, Hz		230, 50/60	
Dimensions to fit TS enclosures mm	D H	600 1800	600 2000
Useful cooling output	**L 35 W 10, 100 l/h**	**700 W**	

Rated current max.	0.45 A/0.51 A
Pre-fuse T	4.0 A
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 12)
Water inlet temperature	> +1°C to +35°C
Permissible operating pressure p. max.	1 to 10 bar
Temperature range	+1°C to +70°C
Protection category to EN 60 529/10.91	IP 54
Duty cycle	100 %
Type of connection	Terminal strip
Weight	26 kg
Colour	RAL 7035[1)]
Air throughput of fans	170 m³/h
Temperature control	Thermostat-controlled magnetic valve
Temperature monitoring	Internal thermostat, with change-over contact, switching load 16 A, setting range +20°C to +60°C (factory setting +35°C)

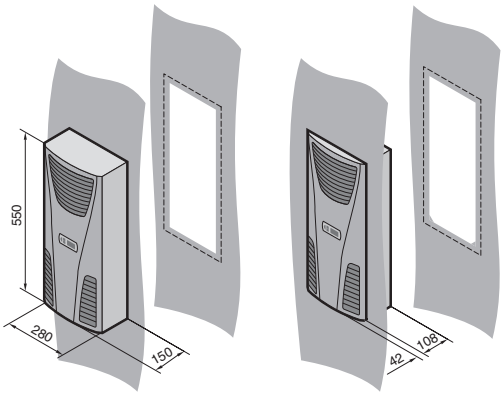
Accessories	Packs of		Page
Temperature indicator	1	3114.100	660
Door-operated switch	1	4127.000	956
Condensate hose	1	3301.610	665
Flow regulator valve	1	see accessories	667

[1)] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Recooling systems** From page 606 **Configuration software** Page 1063

Wall mounted, specific thermal output 17.5 – 60 W/K





RITTAL TOP THERM

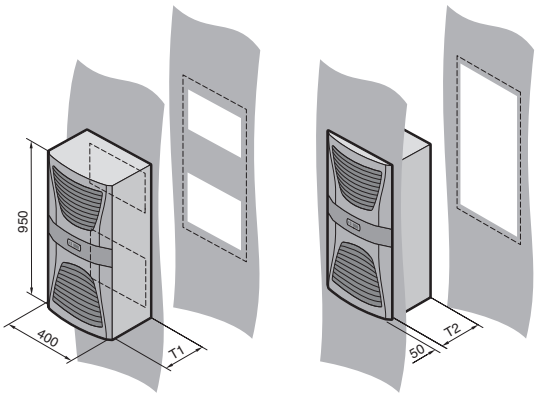
Supply includes:
Fully wired unit ready for connection.

Approvals,
see page 77.

Detailed drawing,
see page 1181.

Performance diagrams,
available on the Internet.

Property rights:
German registered designs
no. 402 02 324 and
no. 402 02 325
IR reg. design no. DM/061 967
and no. DM/062 557
Chinese registered design
no. ZL 0330 8461.1
Indian registered design
no. 190 269 and no. 189 953
Japanese registered design
no. 1 187 905 and
no. 1 187 896
US design patent
no. US D 488,480S



B = Width
T = Depth

Model No. SK		3126.100	3127.100	3128.100	3129.100
Rated operating voltage V, Hz		230, 50/60			
Dimensions in mm	B H T1 T2	280 550 150 –	400 950 205 155	400 950 225 175	
Specific thermal output		**17.5 W/K**	**30 W/K**	**45 W/K**	**60 W/K**

Fans		2 per heat exchanger			
Max. rated current per fan		0.11 A/0.13 A	0.28 A/0.34 A	0.3 A/0.4 A	0.38 A/0.4 A
Power per fan		23 W/27 W	60 W/75 W	70 W/90 W	85 W/90 W
Air throughput of fans	External circuit	265 m^3/h / 315 m^3/h	480 m^3/h / 525 m^3/h	600 m^3/h / 625 m^3/h	860 m^3/h / 900 m^3/h
	Internal circuit	265 m^3/h / 315 m^3/h	480 m^3/h / 525 m^3/h	600 m^3/h / 625 m^3/h	860 m^3/h / 900 m^3/h
Temperature range		–5°C to +55°C			
Type of connection		Plug-in terminal strip			
Weight		10 kg	18 kg	19 kg	21 kg
Colour		RAL 7035			
Protection category to EN 60 529/10.91	Internal circuit	IP 54			

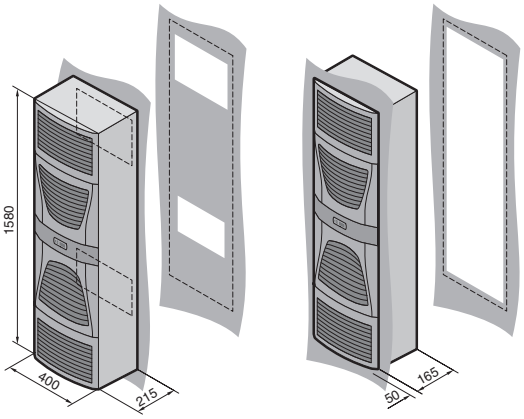
Accessories	Packs of			Page
Filter mats	3	3286.300	3286.400	668
Metal filters	1	3286.310	3286.410	669
Thermostat	1	3110.000		661
Temperature indicator	1	3114.100		660
Speed control	1	3120.000		662

Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Configuration software** Page 1063

Wall mounted, specific thermal output 90 W/K





Supply includes:
Fully wired unit ready for connection.

Approvals,
see page 77.

Detailed drawing,
see page 1181.

Performance diagrams,
available on the Internet.

Property rights:
German registered designs
no. 402 02 324 and
no. 402 02 325
IR reg. design no. DM/061 967
and no. DM/062 557
Brazilian registered design
no. DI 6203240-2
Chinese registered design
no. ZL 0330 4386.8
Indian registered designs
nos. 190 270, 189 954, 189 955,
189 958
Japanese registered design
no. 1 187 906 and no. 1 187 897
US design patent
no. US D 492,319S and
US D 492,320S

RITTAL TOP THERM

Model No. SK		**3130.100**
Rated operating voltage V, Hz		230, 50/60
Dimensions in mm	W H D	400 1580 215
Specific thermal output		**90 W/K**

Fans		2 per heat exchanger
Max. rated current per fan		0.67 A/0.88 A
Power per fan		150 W/200 W
Air throughput of fans	External circuit	850 m^3/h / 945 m^3/h
	Internal circuit	850 m^3/h / 945 m^3/h
Temperature range		–5°C to +55°C
Type of connection		Plug-in terminal strip
Weight		34 kg
Colour		RAL 7035
Protection category to EN 60 529/10.91	Internal circuit	IP 54

Accessories	Packs of		Page
Filter mats	3	3286.400	668
Metal filters	1	3286.410	669
Thermostat	1	3110.000	661
Temperature indicator	1	3114.100	660
Speed control	1	3120.000	662

Special voltages available on request. We reserve the right to make technical modifications.

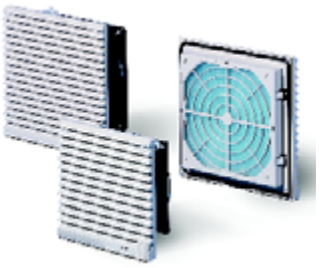
Accessories Page 657 **Configuration software** Page 1063

Features



Fan-and-filter units are ideal for dissipating high heat loads cost-effectively. The pre-requisite is that the ambient air must be relatively clean with a temperature below the desired enclosure internal temperature.

The entire range of fan-and-filter units is now also available with EMC shielding and all required rated voltages.



Fast assembly







Super-fast clip-on mounting
This guarantees fast, completely secure attachment of the fan-and-filter unit. The pre-requisites for protection category IP 54 are met as standard.

Screws are not required. Removal of the louvred grille, likewise without any screws, means that filter mat changes can be achieved in next to no time.

Blowing or extracting?
The air direction may be quickly reversed from blowing (standard setting) to extracting. Simply rotate the fan through 180°.



Application diversity and functions







Not always full power!
At lower ambient temperatures, the air throughput may be reduced. By adapting the fan-and-filter speed to match the temperature using a controller, noise generation is reduced.

Also available with EMC shielding
All fan-and-filter units and outlet filters are alternatively available with EMC shielding.
The required conductive connection is achieved via a metallic coating on the fan-and-filter unit housing and a special sealing frame.

Hosed water protection
Particularly for applications in the food industry, the hose-proof hood prevents the ingress of damp. The protection category of IP 56 is achieved in conjunction with filter mats.

Benefits:

- Air throughput of 20 m^3/h to 700 m^3/h
- Super-fast assembly
- IP 54 as standard
- Air flow direction may be reversed from extracting (standard setting) to blowing
- All fans also available with EMC shielding

Important:

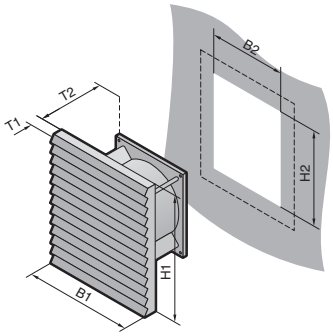
- The prescribed heat loss and the maximum anticipated ambient temperature define the required volumetric flow
- Always use the fan-and-filter units and outlet filters together

For calculation formulae refer to our website: www.rittal.com

Fan-and-filter units

Air throughput 20/55 m³/h





B = Width
T = Depth

Supply includes:
Fan-and-filter unit ready for installation, including filter mats.

German registered design no. M 93 04 846

Approvals,
see page 77.

Performance diagrams,
available on the Internet.

Model No. fan-and-filter unit SK		**3321.107**	**3321.117**	**3321.027**	**3321.047**[1]	**3322.107**	**3322.117**	**3322.027**	**3322.047**[1]
Rated operating voltage V, Hz		230, 50/60	115, 50/60	24 (DC)	48 (DC)	230, 50/60	115, 50/60	24 (DC)	48 (DC)
Dimensions in mm	B1/H1	116.5				148.5			
	B2/H2	92 + 0.8[2]				124[2]			
	T1	10				10.5			
Max. installation depth mm	T2	42				57			
Air throughput, unimpeded air flow		**20/25 m³/h**		**20 m³/h**		**55/66 m³/h**		**55 m³/h**	
Air throughput with outlet filter including standard filter mat		1 x SK 3321.207: **15/18 m³/h**				1 x SK 3322.207: **43/50 m³/h**			

Axial fan		self-starting shaded pole motor		DC motor		self-starting shaded pole motor		DC motor	
Rated current max.		69 mA 58 mA	138 mA 115 mA	125 mA	90 mA	0.12 A 0.11 A	0.24 A 0.23 A	0.35 A	90 mA
Power		12.5 W/10.3 W		3.0 W	4.1 W	19.0 W/18.0 W		7.7 W	4.4 W
Noise level		41/46 dB (A)		41 dB (A)		46/49 dB (A)		46 dB (A)	
Temperature range		–10°C to +55°C							
Colour		RAL 7035[3]							
Protection category to EN 60 529/10.91		IP 54 standard IP 56 when using a hose-proof hood							
Model No. outlet filter SK		**3321.207**				**3322.207**			

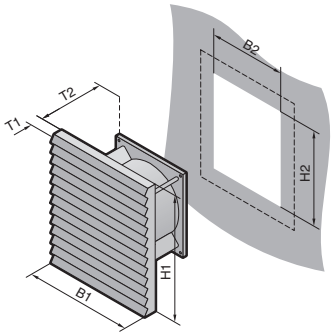
Accessories	Packs of									Page
Spare filter mats	5	3321.700				3322.700				670
Thermostat	1	3110.000								661
Temperature indicator	1	3114.100	3114.115	3114.024	–	3114.100	3114.115	3114.024	–	660
Speed control	1	3120.000	3120.115	–	–	3120.000	3120.115	–	–	662
Hose-proof hood	1	3321.800				3322.800				666

[1] Delivery times available on request.
[2] For metal thickness > 2.5 mm, the cutout B2/H2 must be 1 mm larger.
[3] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **EMC-protected design** Page 640 **Configuration software** Page 1063

Air throughput 105/180 m³/h





B = Width
T = Depth

Supply includes:
Fan-and-filter unit ready for installation, including filter mats.

German registered design no. M 93 04 846

Approvals,
see page 77.

Performance diagrams,
available on the Internet.

Model No. fan-and-filter unit SK		**3323.107**	**3323.117**	**3323.027**	**3323.047**[1]	**3324.107**	**3324.117**	**3324.027**	**3324.047**[1]
Rated operating voltage V, Hz		230, 50/60	115, 50/60	24 (DC)	48 (DC)	230, 50/60	115, 50/60	24 (DC)	48 (DC)
Dimensions in mm	B1/H1	204				255			
	B2/H2	177[2]				224[2]			
	T1	12.5				12.5			
Max. installation depth mm	T2	82.5				105			
Air throughput, unimpeded air flow		**105/120 m³/h**		**105 m³/h**		**180/160 m³/h**		**180 m³/h**	
Air throughput with outlet filter including standard filter mat		1 x SK 3323.207: **71/82 m³/h** 2 x SK 3323.207: **85/98 m³/h** 1 x SK 3325.207: **78/90 m³/h**				1 x SK 3325.207: **115/95 m³/h** 2 x SK 3325.207: **165/140 m³/h** 1 x SK 3326.207: **155/130 m³/h**			

Axial fan		self-starting shaded pole motor		DC motor		self-starting shaded pole motor		DC motor	
Rated current max.		0.12 A 0.11 A	0.24 A 0.23 A	0.35 A	90 mA	0.19 A 0.20 A	0.38 A 0.40 A	0.3 A	0.34 A
Power		19.0 W/18.0 W		8.0 W	4.3 W	30.0 W/35.0 W		7.2 W	14.0 W
Noise level		46/49 dB (A)		46 dB (A)		52/48 dB (A)		52 dB (A)	
Temperature range		–10°C to +55°C							
Colour		RAL 7035[3]							
Protection category to EN 60 529/10.91		IP 54 standard IP 55 when using an additional fine filter mat IP 56 when using an additional fine filter mat and hose-proof hood							
Model No. outlet filter SK		**3323.207**				**3325.207**			

Accessories	Packs of									Page
Spare filter mats	5	3171.100				3172.100				670
Fine filter mats	5	3181.100				3182.100				670
Thermostat	1	3110.000								661
Temperature indicator	1	3114.100	3114.115	3114.024	–	3114.100	3114.115	3114.024	–	660
Speed control	1	3120.000	3120.115	–	–	3120.000	3120.115	–	–	662
Hose-proof hood	1	3323.800				3324.800				666

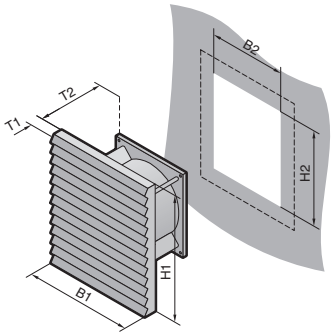
[1] Delivery times available on request.
[2] For metal thickness > 2.5 mm, the cutout B2/H2 must be 1 mm larger.
[3] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **EMC-protected design** Page 640 **Configuration software** Page 1063

Fan-and-filter units

Air throughput 230 m³/h





B = Width
T = Depth

Supply includes:
Fan-and-filter unit ready for installation, including filter mats.

German registered design no. M 93 04 846

Approvals,
see page 77.

Performance diagrams,
available on the Internet.

Model No. fan-and-filter unit SK		**3325.107**	**3325.117**	**3325.027**	**3325.047**[1]
Rated operating voltage V, Hz		230, 50/60	115, 50/60	24 (DC)	48 (DC)
Dimensions in mm	B1/H1	255			
	B2/H2	224[2]			
	T1	12.5			
Max. installation depth mm	T2	105			
Air throughput, unimpeded air flow		**230/265 m³/h**		**230 m³/h**	
Air throughput with outlet filter including standard filter mat		1 x SK 3325.207: **170/205 m³/h** 2 x SK 3325.207: **200/230 m³/h** 1 x SK 3326.207: **190/215 m³/h**			

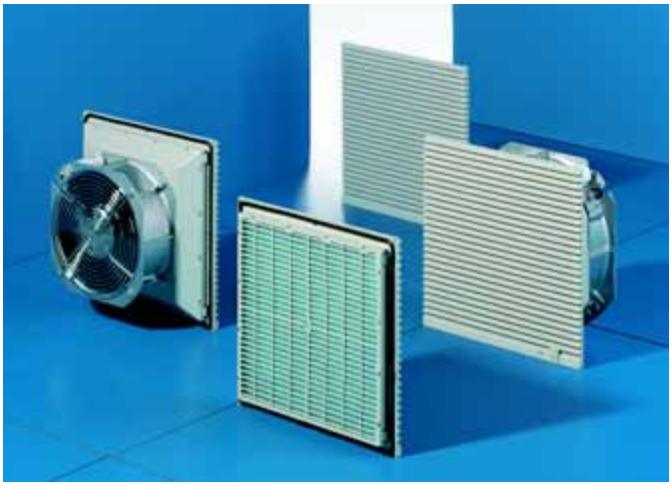
Axial fan	self-starting shaded pole motor		DC motor	
Rated current max.	0.28 A 0.24 A	0.53 A 0.49 A	0.59 A	0.31 A
Power	41.0 W/38.0 W		14.0 W	15.0 W
Noise level	54/56 dB (A)		54 dB (A)	
Temperature range	–10°C to +55°C			
Colour	RAL 7035[3]			
Protection category to EN 60 529/10.91	IP 54 standard IP 55 when using an additional fine filter mat IP 56 when using an additional fine filter mat and hose-proof hood			
Model No. outlet filter SK	**3325.207**			

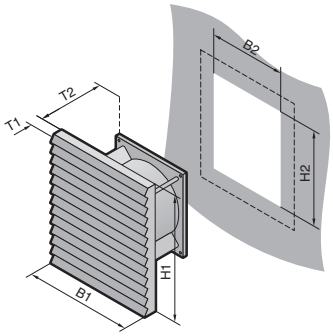
Accessories	Packs of					Page
Spare filter mats	5	3172.100				670
Fine filter mats	5	3182.100				670
Thermostat	1	3110.000				661
Temperature indicator	1	3114.100	3114.115	3114.024	–	660
Speed control	1	3120.000	3120.115	–	–	662
Hose-proof hood	1	3324.800				666

[1] Delivery times available on request.
[2] For metal thickness > 2.5 mm, the cutout B2/H2 must be 1 mm larger.
[3] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **EMC-protected design** Page 640 **Configuration software** Page 1063

Air throughput 550/700 m³/h





B = Width
T = Depth

Supply includes:
Fan-and-filter unit ready for installation, including filter mats.

German registered design no. M 93 04 846

Approvals,
see page 77.

Performance diagrams,
available on the Internet.

Model No. fan-and-filter unit SK		**3326.107**	**3326.117**	**3327.107**	**3327.117**	**3327.147**
Rated operating voltage V, Hz		230, 50/60	115, 50/60	230, 50/60	115, 50/60	400/460, 3~, 50/60
Dimensions in mm	B1/H1	323				
	B2/H2	292[1]				
	T1	12.5				
Max. installation depth mm	T2	125		145		
Air throughput, unimpeded air flow		**550/600 m³/h**		**700/720 m³/h**		
Air throughput with outlet filter including standard filter mat		1 x SK 3326.207: **360/390 m³/h** 2 x SK 3326.207: **440/495 m³/h**		1 x SK 3326.207: **525/575 m³/h**		

Axial fan	Capacitor motor				Rotary current motor
Rated current max.	0.29 A 0.35 A	0.58 A 0.70 A	0.65 A 0.95 A	1.5 A 2.0 A	0.27 A 0.37 A
Power	64.0 W/80.0 W		115.0 W/212.0 W	167.0 W/230.0 W	146.0 W/220.0 W
Noise level	59/61 dB (A)		75/76 dB (A)		
Temperature range	–10°C to +55°C				
Colour	RAL 7035[2]				
Protection category to EN 60 529/10.91	IP 54 standard IP 55 when using an additional fine filter mat IP 56 when using an additional fine filter mat and hose-proof hood				
Model No. outlet filter SK	**3326.207**				

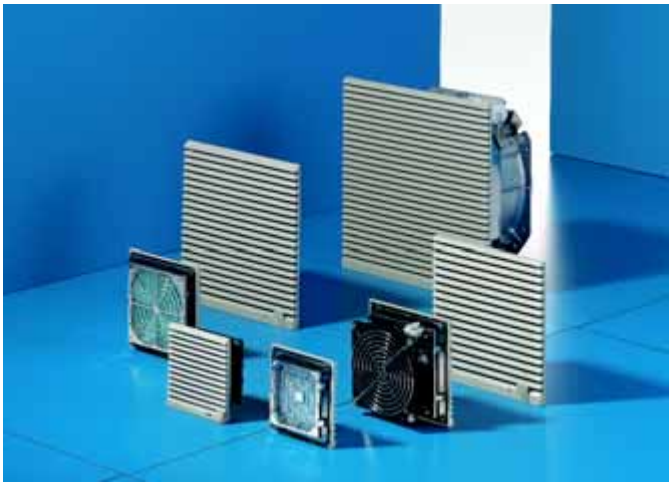
Accessories	Packs of						Page
Spare filter mats	5	3173.100		3327.700			670
Fine filter mats	5	3183.100					670
Thermostat	1	3110.000				–	661
Temperature indicator	1	3114.100	3114.115	3114.100	3114.115	–	660
Speed control	1	3120.000	3120.115	3120.000	–	–	662
Hose-proof hood	1	3326.800					666

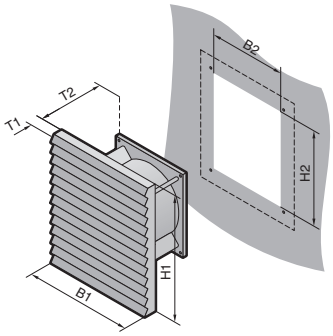
[1] For metal thickness > 2.5 mm, the cutout B2/H2 must be 1 mm larger.
[2] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **EMC-protected design** Page 640 **Configuration software** Page 1063

Fan-and-filter unit – EMC

Air throughput 20 – 105 m³/h





B = Width
T = Depth

Supply includes:
Fan-and-filter unit ready for installation, including drilling template, filter mat and assembly parts.

Approvals,
see page 78.

Performance diagrams,
available on the Internet.

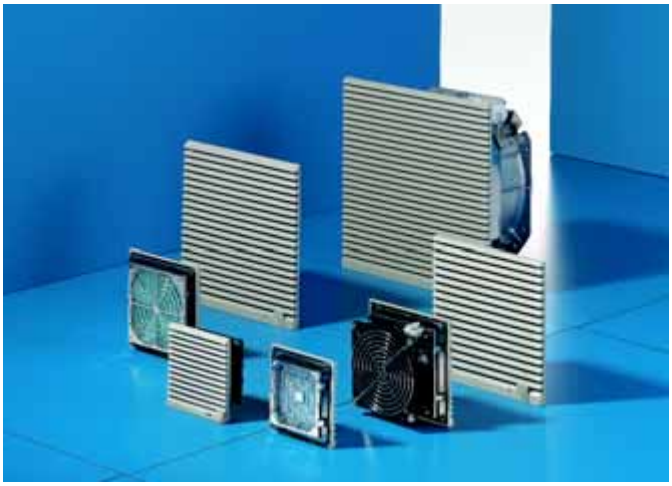
Model No. fan-and-filter unit SK		**3321.607**	**3321.617[1)]**	**3322.607**	**3322.617[1)]**	**3323.607**	**3323.617[1)]**
Rated operating voltage V, Hz		230, 50/60	115, 50/60	230, 50/60	115, 50/60	230, 50/60	115, 50/60
Dimensions in mm	B1/H1	116.5		148.5		204	
	B2/H2	92 + 0.8[2)]		124[2)]		177[2)]	
	T1	10		10.5		12.5	
Max. installation depth mm	T2	42		57		82,5	
Air throughput, unimpeded air flow		**20/25 m³/h**		**55/66 m³/h**		**105/120 m³/h**	
Air throughput with outlet filter including standard filter mat		1 x 3321.267: **15/18 m³/h**		1 x 3322.267: **43/50 m³/h** 2 x 3322.267: **48/55 m³/h** 1 x 3323.267: **48/55 m³/h**		1 x 3323.267: **71/82 m³/h** 2 x 3323.267: **85/98 m³/h** 1 x 3325.267: **78/90 m³/h**	
Axial fan		self-starting shaded pole motor					
Rated current max.		69 mA/ 58 mA	138 mA/ 115 mA	0.12 A/ 0.11 A	0.24 A/ 0.23 A	0.12 A/ 0.11 A	0.24 A/ 0.23 A
Power		12.5 W/10.3 W		19.0 W/18.0 W			
Noise level		41/46 dB (A)		46/49 dB (A)			
Temperature range		–10°C to +55°C					
Colour		RAL 7035[3)]					
Protection category to EN 60 529/10.91		IP 54 standard					
Model No. outlet filter – EMC SK		**3321.267**		**3322.267**		**3323.267**	

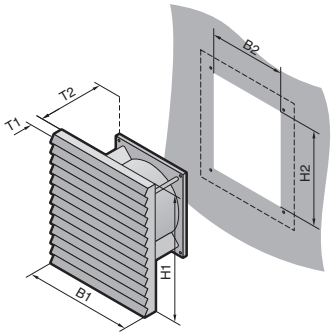
Accessories	Packs of							Page
Spare filter mats	5	3321.700		3322.700		3171.100		670
Fine filter mats	5	–				3181.100		670
Thermostat	1	3110.000						661
Temperature indicator	1	3114.100	3114.115	3114.100	3114.115	3114.100	3114.115	660
Speed control	1	3120.000	3120.115	3120.000	3120.115	3120.000	3120.115	662
Hose-proof hood	1	3321.800		3322.800		3323.800		666

[1)] Delivery times available on request.
[2)] For metal thickness > 2.5 mm, the cutout B2/H2 must be 1 mm larger.
[3)] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Configuration software** Page 1063

Air throughput 180 – 700 m³/h





B = Width
T = Depth

Supply includes:
Fan-and-filter unit ready for installation, including drilling template, filter mat and assembly parts.

Approvals,
see page 78.

Performance diagrams,
available on the Internet.

Model No. fan-and-filter unit SK		**3324.607**	**3324.617**[1]	**3325.607**	**3325.617**	**3326.607**	**3326.617**[1]	**3327.607**	**3327.617**[1]
Rated operating voltage V, Hz		230, 50/60	115, 50/60	230, 50/60	115, 50/60	230, 50/60	115, 50/60	230, 50/60	115, 50/60
Dimensions in mm	B1/H1	255				323			
	B2/H2	224[2]				292[2]			
	T1	12.5				12.5			
Max. installation depth mm	T2	105				129		145	
Air throughput, unimpeded air flow		**180/160 m³/h**		**230/265 m³/h**		**550/600 m³/h**		**700/720 m³/h**	
Air throughput with outlet filter including standard filter mat		1 x 3325.267: **115/95 m³/h** 2 x 3325.267: **165/140 m³/h** 1 x 3326.267: **155/130 m³/h**		1 x 3325.267: **170/205 m³/h** 2 x 3325.267: **200/230 m³/h** 1 x 3326.267: **190/215 m³/h**		1 x 3325.267: **170/205 m³/h** 2 x 3325.267: **200/230 m³/h** 1 x 3326.267: **360/390 m³/h**		1 x 3326.267: **525/575 m³/h**	

Axial fan		self-starting shaded pole motor				Capacitor motor			
Rated current max.		0.19 A/ 0.20 A	0.38 A/ 0.40 A	0.28 A/ 0.24 A	0.53 A/ 0.49 A	0.29 A/ 0.35 A	0.58 A/ 0.70 A	0.65 A/ 0.95 A	1.50 A/ 2.00 A
Power		30.0 W/ 35.0 W		41.0 W/ 38.0 W		64.0 W/ 80.0 W		155.0 W/ 212.0 W	167.0 W/ 230.0 W
Noise level		52/48 dB (A)		54/56 dB (A)		59/61 dB (A)		75/76 dB (A)	
Temperature range		–10°C to +55°C							
Colour		RAL 7035[3]							
Protection category to EN 60 529/10.91		IP 54 standard							
Model No. outlet filter – EMC SK		**3325.267**				**3326.267**			

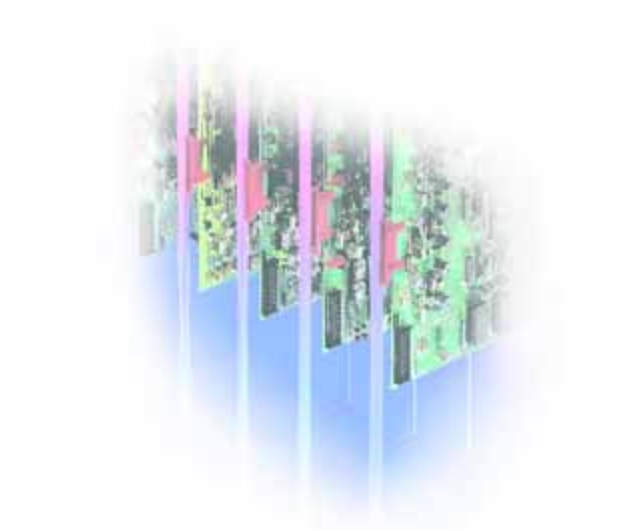
Accessories	Packs of									Page
Spare filter mats	5	3172.100				3173.100		3327.700		670
Fine filter mats	5	3182.100				3183.100				670
Thermostat	1	3110.000								661
Temperature indicator	1	3114.100	3114.115	3114.100	3114.115	3114.100	3114.115	3114.100	3114.115	660
Speed control	1	3120.000	3120.115	3120.000	3120.115	3120.000	3120.115	3120.000	3120.115	662
Hose-proof hood	1	3324.800				3326.800				666

[1] Delivery times available on request.
[2] For metal thickness > 2.5 mm, the cutout B2/H2 must be 1 mm larger.
[3] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

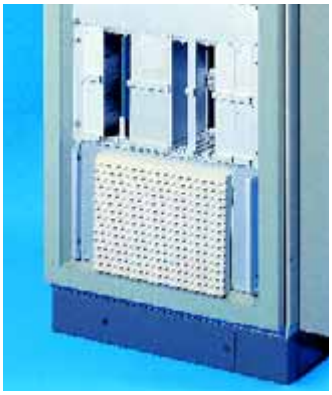
Accessories Page 657 **Configuration software** Page 1063

Climate control tailored to enclosures

Features

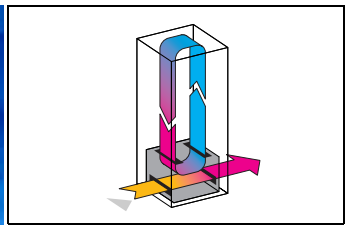


All rack-mounted climate control components are mounted directly on the 482.6 mm (19″) mounting angles. Positioning directly beneath the electronic components ensures effective cooling, and prevents the formation of hot spots.



Rack-mounted cooling units





Useful cooling output 1000 W, 6 U
The heated air is drawn in, cooled, and blown out underneath the electronic equipment being cooled.

Simple attachment to the 482.6 mm (19″) mounting angles
Sealed enclosures require a door cutout for the external air circuit.

With open enclosures, a fully equipped front is essential. The setpoint of the temperature controller is set via a service flap.



Rack-mounted fan







Vario rack-mounted fan
The rack-mounted fan slides into the guide frame like a drawer. Connectors on the rear ensure immediate contact.

Installation options for the guide frame: Directly in the subrack, via two mounting brackets on the 482.6 mm (19″) mounting angles.

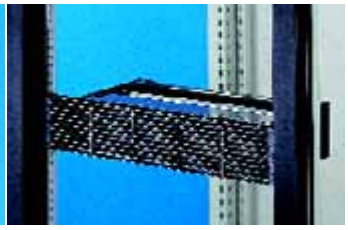
Ideal for avoiding hot spots in fully populated enclosures.



Centrifugal fan







320 m³/h air throughput, 2 U
The high air throughput means that Rittal centrifugal fans are capable of dissipating large heat losses from the enclosure. The minimal noise generation of 52 dB creates a pleasant working environment.

Front outlet grille 2 U for hot air outlet to the outside in the upper section of the enclosure.

Features

Ready-to-use, wired modules equipped with fans for numerous Rittal enclosure system platforms offer effective air throughput and minimal assembly work. Fan roofs, fan cross members for server enclosures (door installation), internal fan mounting panels and enclosure internal fans are all available.



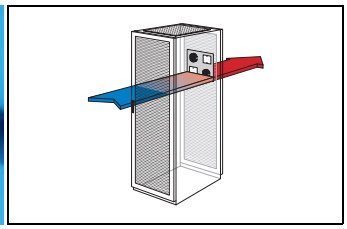
Fan for integration into the door



For TS 8: Door mounted fans for server enclosures
Specifically for installation in the tubular door frame of perforated doors.



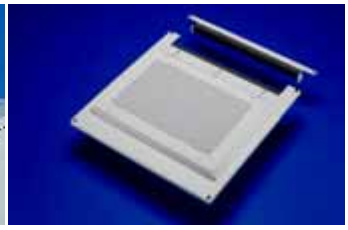
Door mounted fans for TS 8 server enclosures
Specifically for installing in perforated doors. The growing packaging density in data communications and network enclosures means that active, direct ventilation of the enclosure has become indispensable. The door-mounted fans, attached to the rear or front door, support horizontal air routing of the servers.



Fans for integration into the roof



For all enclosures: Roof-mounted fans, passive or active
May be integrated into any enclosure roof area with suitable dimensions for the mounting cutout.



For TS 8: Fan roof, modular
In exchange for the existing roof plate. Fan and cable entry are pre-integrated.



For the office sector: Roof-mounted fan
Low noise generation and high performance for sensitive office areas. Unit consisting of TS roof plate and fan.

Air baffle systems



For TS 8: Internal fan mounting panel
Twin-walled side panel for targeted air routing.



Enclosure internal fan
Supports active climate control components and thereby selectively avoids hot spots.

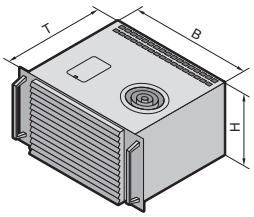


For TS 8: Air baffle system
Cold air from the hollow base is routed to the twin-walled door and distributed in a targeted manner.

Rack-mounted cooling units

for 482.6 mm (19″), useful cooling output 1000 W





B = Width
T = Depth

Supply includes:
Wired ready for connection with connection cable (3 m), including drilling template.

Also required:
For installation in a closed enclosure:
Adaptor for front air supply and air duct for waste air, see Accessories.

Approvals,
see page 78.

Detailed drawing,
see page 1182.

Performance diagrams
can be found on the Internet.

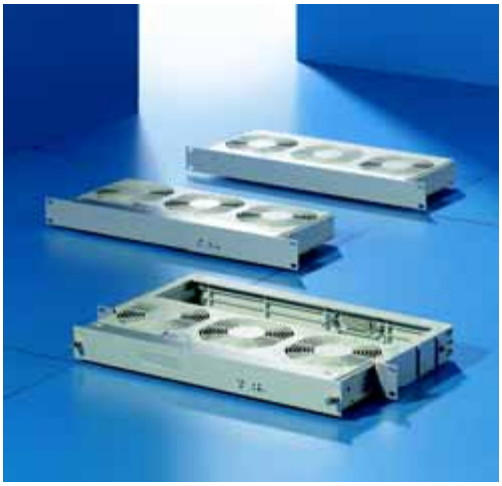
Model No. SK		**3278.134[1)]**	**3292.134**
Rated operating voltage V, Hz		115, 50/60	230, 50/60
Dimensions in mm	W H D	445 265.9 (6 U) 542	
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1000 W/1050 W** **660 W/770 W**	
Rated current max.		8.4 A/10.8 A	3.8 A/4.5 A
Start-up current		21.0 A/22.0 A	10.0 A/11.8 A
Pre-fuse T		10.0 A/16.0 A	6.0 A/6.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	615 W/710 W 680 W/800 W	585 W/650 W 650 W/720 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.6	1.7
Refrigerant		R134a, 700 g	
Permissible operating pressure p. max.		25 bar	
Temperature and setting range		+20°C to +55°C	
Protection category to EN 60 529/10.91	External circuit	IP 34	
	Internal circuit	IP 54	
Duty cycle		100 %	
Type of connection		Connection cable 3 m	
Weight		38 kg	35 kg
Colour		RAL 7032	
Air throughput of fans	External circuit	620 m³/h	
	Internal circuit	460 m³/h	
Temperature control		Internal thermostat (factory setting +35°C)	

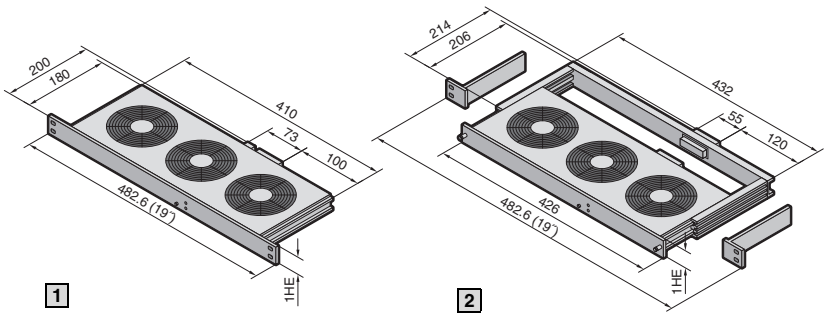
Accessories	Packs of			Page
Filter mats	3	3286.000		668
Adaptor for front air supply	1	3259.000		659
Air duct	10	3220.000		659
Temperature indicator	1	3114.115	3114.100	660
Door-operated switch	1	4127.000		956

[1)] Delivery times available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Configuration software** Page 1063

for 482.6 mm (19″), air throughput 320/480 m³/h





1 2

HE = U

Rack-mounted fan/Vario rack-mounted fan supply includes:
Wired unit ready for connection, including terminal strip and assembly parts.

Guide frame supply includes:
Guide frame including connector and fitted connection cable (3 m), bracket for optional attachment to the 482.6 mm (19″) system, assembly parts.

Also required:
Remember to order the appropriate guide frame for your chosen application.

Approvals,
see page 78.

Detailed drawing,
see page 1182.

Performance diagrams
can be found on the Internet.

		1 Rack-mounted fans					2 Vario rack-mounted fans			
		Model No. SK					**Model No. SK**			
2 fans Distance between axes 85 mm		**3340.024**[1]	**3340.115**[1]	**3340.230**	**–**	**–**	**3350.024**[1]	**3350.115**[1]	**3350.230**	**–**
3 fans Distance between axes 85 mm		**3341.024**[1]	**3341.115**	**3341.230**	**–**	**9769.002**[1][2]	**3351.024**[1]	**3351.115**[1]	**3351.230**	**–**
3 fans Distance between axes 105 mm		**3342.024**	**3342.115**[1]	**3342.230**	**3342.500**[2]	**–**	**3352.024**[1]	**3352.115**[1]	**3352.230**	**3352.500**[1][3]
Rated operating voltage V		24 V (DC)	115 V (AC)	230 V (AC)	24 V (DC) 115 – 230 V (AC)	36 V (DC) up to 72 V (DC)	24 V (DC)	115 V (AC)	230 V (AC)	24 V (DC) 115 – 230 V (AC)
Model No. SK matching guide frame		**–**	**–**	**–**	**–**	**–**	**3356.100**[1]	**3355.100**	**3355.100**	**3357.100**[1]
Accessories	Page									
Temperature indicator 230 V (AC)	660	3114.100	3114.115	3114.100	3114.024	–	3114.100	3114.115	3114.100	3114.024
Thermostat	661	3110.000								
Speed control	662	3120.000	3120.115	3120.000	–	–	3120.000	3120.115	3120.000	–

Technical specifications								
Model No. SK/CS	**3340.230** **3350.230**	**3340.115** **3350.115**	**3340.024** **3350.024**	**3341.230** **3351.230** **3342.230** **3352.230**	**3341.115** **3351.115** **3342.115** **3352.115**	**3341.024** **3351.024** **3342.024** **3352.024**	**3342.500**[2] **3352.500**[2]	**9769.002**
Rated operating voltage V, Hz	AC 230 V 50/60 Hz	AC 115 V 50/60 Hz	DC 24 V –	AC 230 V 50/60 Hz	AC 115 V 50/60 Hz	DC 24 V –	DC 24 V AC 115 – 230 V 50/60 Hz	36 V (DC) up to 72 V (DC)
Rated current max.	0.24 A/ 0.22 A	0.46 A/ 0.46 A	0.49 A	0.36 A/ 0.33 A	0.69 A/ 0.69 A	0.74 A	0.85 A	0.28 A
Pre-fuse T	6 A							6 A
Number of fans	2			3				3
Air throughput, unimpeded air flow	320 m³/h			480 m³/h				250 m³/h
Temperature range	–10°C to +55°C							–33°C to +55°C
Noise level	51 dB (A)	52 dB (A)	51 dB (A)	51 dB (A)	52 dB (A)	51 dB (A)		52 dB (A)

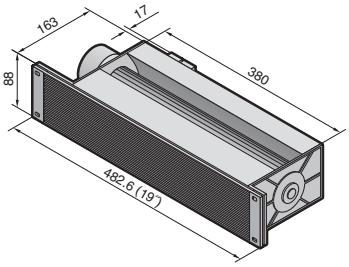
[1] Delivery times available on request.
[2] Rack-mounted fan for metric mounting angles available on request.
[3] Version with monitoring.

Accessories Page 657 **Configuration software** Page 1063

Centrifugal fan

Air throughput 320 m³/h





Supply includes:
Fully assembled and wired unit, ready for connection, including filter mat.

Approvals,
see page 79.

Detailed drawing,
see page 1182.

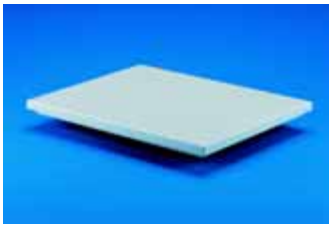
Performance diagrams
can be found on the Internet.

Model No. SK		**3145.000**	**3144.000**
Rated operating voltage V, Hz		115, 50/60	230, 50/60
Dimensions in mm	W H D	482.6 (19″) 88 (2 U) 158	
Air throughput, unimpeded air flow		**320 m³/h**	

Rated current max.		0.32 A	0.16 A	
Power		37 watts		
Noise level		52 dB (A)		
Speed		2245 rpm^{-1}		
Temperature range		–10°C to +55°C		
Maximum static pressure difference		65 – 70 Pa		
Accessories	Packs of			Page
Temperature indicator	1	3114.115	3114.100	660
Thermostat	1	3110.000		661
Filter mats	5	3177.000		668
Front outlet grille 2 U	1	3176.000		667
Roof vent	1	3148.007		647
Speed control	1	3120.115	3120.000	662

Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 657 **Configuration software** Page 1063

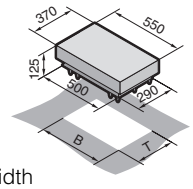


Roof-mounted fan and vent attachment

for TS

The active roof-mounted fan and the passive vent attachment (TS 8801.380) integrate perfectly into the system-wide mounting concept of Rittal system climate control. They fit precisely onto the cut-outs of the small and medium performance category of TopTherm roof-mounted cooling units.

Of course, they may also be mounted on any sufficiently large roof surface.



B = Width
T = Depth

TS roof plates with prepared mounting cutouts are additionally available.

Roof-mounted fan supply includes:
Unit ready to connect with built-in radial fan, sealing material and assembly parts.

Vent attachment:
see page 664.

Protection category:
IP 43 to EN 60 529/10.91

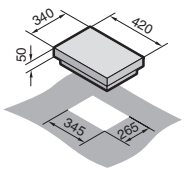
Detailed drawing,
see page 1183.

Model No. SK		**3149.410**	**3149.420**	**3149.440**	**3149.810**	**3149.820**	**3149.840**	**8801.380**	Page
Rated operating voltage V, Hz		115, 50/60	230, 50/60	400, 3~, 50/60 460, 3~, 60	115, 50/60	230, 50/60	400, 3~, 50/60 460, 3~, 60	Roof vent	
Air throughput, unimpeded air flow		**400 m³/h**			**800 m³/h**			**Without motor**	
Required mounting cutout	W x D mm	475 x 260						490 x 390	
Power consumption of fan		120 W/170 W		95 W/140 W	170 W/225 W		180 W/310 W		
Rated current of fan		1.1/1.6 A	0.55/0.88 A	0.35/0.35 A	1.5/2.2 A	0.75/1.1 A	0.35/0.55 A		
Temperature range		–10°C to +55°C							
Noise level		68/69 dB (A)			69/70 dB (A)				
Weight		10 kg			11 kg				
Colour shade		RAL 7035							
Accessories									
Roof plate 600 x 600 mm for TS 8 with cutout		8801.300						8801.310	664
Roof plate 600 x 800 mm for TS 8 with cutout		8801.320						8801.330	664
Roof plate 1200 x 600 mm for TS 8 with cutout		–						8801.350	664
Temperature indicator		3114.115	3114.100	–	3114.115	3114.100	–	–	660
Speed control		3120.115	3120.100	–	3120.115	3120.100	–	–	662



Roof-mounted fan

- The roof-mounted fan is easily installed using 6 screws. The sealing tape supplied can be used to seal it against the enclosure.
- The assembly screws are invisible from the outside.
- The roof-mounted fan casing has a large air outlet surface and labyrinthine air ducting.



Protection category:
IP 43 to EN 60 529/10.91. By additionally installing the filter holder with filter mat SK 3175.000, with roof vent SK 3148.000 a protection category of IP 44 is achieved.

Supply includes:
Fully wired unit ready for connection with built-in radial fan, sealing material and assembly parts, connection cable (3 m), drilling template.

Accessories:

Filter holder,
see page 667.

Detailed drawing,
see page 1183.

Model No. SK	**3149.007**	**3169.007**	**3148.007**
Rated operating voltage V, Hz	230, 50/60	115, 50/60	Without fan motor
Air throughput	**360 m³/h**		
Rated current max.	0.2 A	0.55 A	
Power consumption	42 W	65 W	
Temperature range	–10°C to +60°C		
Noise level	53 dB (A)		
Weight	7.8 kg		
Colour[1)]	RAL 7035, textured enamel		

[1)] To order the version in RAL 7032, please add extension .000 to the Model No.
Special voltages available on request. Technical modifications reserved.

for TS/FR(i)



Roof-mounted fan

for TS/FR(i) for the office sector

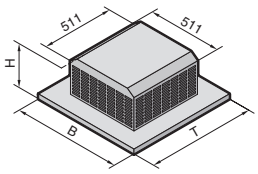
This new roof ventilation concept offers a wealth of performance, assembly and cost benefits associated with the use of integrated ventilation systems. This roof-mounted fan may be ordered with and without a roof plate. Another outstanding feature is the enormous volumetric flow in proportion to exceptionally low noise levels, making it ideal for use in sensitive office areas.

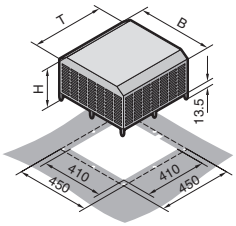
Technical specifications:
- Fitted onto a roof plate based on TS.
- Easy assembly; the work of creating mounting cutouts has been eliminated altogether.
- Radial fan.

Supply includes:
Fully wired ready for connection, including assembly parts.

Model No. SK	**3164.610**	**3164.620**	**3164.810**	**3164.820**	**3164.115**	**3164.230**	Page
Rated operating voltage V, Hz	115, 50/60	230, 50/60	115, 50/60	230, 50/60	115, 50/60	230, 50/60	
Air throughput (unimpeded air flow)	**1500 m³/h[1)]**						
Version	with roof plate				without roof plate		
Dimensions in mm W H D	800 240 800		800 240 900		511 227 511		
Power consumption	6.8 W/8.1 W						
Rated current	0.6 A/0.7 A	0.3 A/0.35 A	0.6 A/0.7 A	0.3 A/0.35 A	0.6 A/0.7 A	0.3 A/0.35 A	
Radial fan	–						
Noise level	40 dB (A)						
Temperature range	+20°C to +55°C						
Colour	RAL 7035						
Accessories							
Temperature indicator in 1 U patch panel	7109.035						660
Temperature indicator	3114.115	3114.100	3114.115	3114.100	3114.115	3114.100	660
Thermostat	3110.000						661

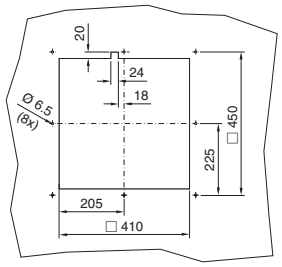
[1)] 800 m³/h at 40 Pa counterpressure using two integrated louvres, type DK 7580.500, in the enclosure base/plinth.
Special voltages available on request. Technical modifications reserved.





B = Width
T = Depth

Mounting cutout
only required for fans without roof plate



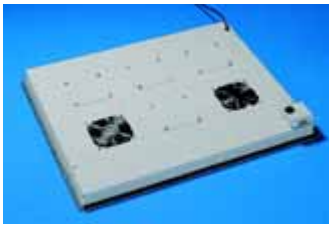


TS 8 air baffle system

The system has an air inlet nozzle in the base frame. In this way, cold air may be drawn in from below. The air is routed into the twin-walled door. The cold air can then be distributed inside the rack with special covers. 15 covers are supplied with every door.

Colour:
RAL 7035

	Packs of	**Model No. DK**
TS 8 sheet steel door, twin-walled W 600 x H 2000 mm	1	**7766.520**
TS 8 sheet steel door, twin-walled W 600 x H 2200 mm	1	**7766.522**
Air inlet nozzle W 600 mm	1	**7766.500**



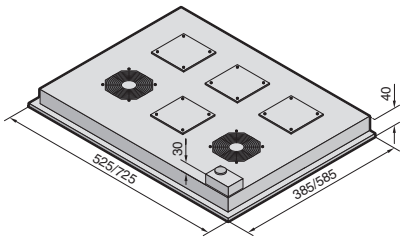
Fan mounting plate

for TS

The fan mounting plate may be retrospectively installed in all TS 8 network enclosures from above. The plate is mounted at the front of the enclosure, whilst the rear section is left free for cable entry. A rubber cable clamp strip is supplied loose for optimum sealing at the rear and sides, to ensure targeted air routing.
Not suitable for crane transportation!
Not suitable for combination with 482.6 mm (19″) mounting frame.

The following combinations are possible:
- Solid roof plate raised with 20 or 50 mm roof spacers.
- Roof plate for cable entry raised with 20 or 50 mm roof spacers.
- Vented roof plate for cable entry.

In conjunction with the large swing frame, usage is only possible from an enclosure depth of 800 mm, in conjunction with a roof plate for cable entry from 900 mm.



For enclosures		No. of fans	Max. no. of fans	Model No. DK
Width mm	Depth mm			
600	600	2	4	**7966.035**
600	800 900 1000	2	6	**7968.035**
800	600	2	6	**7986.035**
800	800 900 1000	2	6	**7988.035**

The air throughput can be increased with the fan expansion kit DK 7980.000.

Technical specifications for one fan:
Rated operating voltage: 230 V
Power consumption: 15/14 W at 50/60 Hz
Air throughput (unimpeded air flow):
160/180 m^3/h, 50/60 Hz
Temperature range: –10°C to +55°C

Technical specifications of thermostat:
Rated operating voltage: 250 V
Temperature range: +5°C to +55°C

Colour:
RAL 7035

Supply includes:
2 fans, 2/4 cutouts to extend to 4/6 fans, thermostat optionally for attachment to the fan mounting plate or to the 25 mm DIN pitch pattern of the enclosure,
Rubber cable clamp strip.
Thermostat and fan fully wired to connection cable (2.5 m).

Accessories:

Fan expansion kit, see below.



Fan expansion kit

For retro-fitting various fan units or to supplement the fan mounting plate and fan roof, modular.

Technical specifications DK 7980.000:
Rated operating voltage: 230 V~
Power consumption: 15/14 W at 50/60 Hz
Air throughput (unimpeded air flow):
160/180 m^3/h, 50/60 Hz
Noise level (unimpeded air flow): 37 dB (A)
Temperature range: –10°C to +55°C

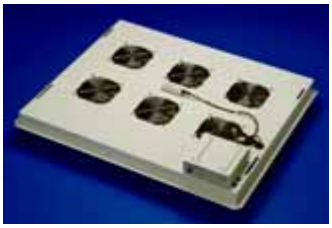
Technical specifications DK 7980.100:
Rated operating voltage: 230 V~
Power consumption: 14/12 W at 50/60 Hz
Air throughput (unimpeded air flow):
108/120 m^3/h, 50/60 Hz
Noise level (unimpeded air flow): 34 dB (A)
Temperature range: –20°C to +70°C

Technical specifications DK 7980.148:
Rated operating voltage: 48 V (DC)
Power consumption: 7.7 W
Air throughput (unimpeded air flow): 184 m^3/h
Noise level (unimpeded air flow): 42 dB (A)
Temperature range: –20°C to +70°C

Dimensions W x H x D mm	Packs of	Model No. DK
119 x 119 x 38	1 set	**7980.000**
119 x 119 x 25	1 set	**7980.100**
119 x 119 x 25	1 set	**7980.148**

Supply includes:
Fan, including assembly parts and connection cable (0.61 m).

DC fan mounting plate





DC fan mounting plate

for TS

Exceptionally low-noise thanks to FCS speed control, fully fitted
Suitable for TS 8 enclosures with a raised roof (> 20 mm) or TS 8 roof plate, vented. The fan mounting plate may be used as an alternative to fan mounting plate 7988.035. It is installed from above. A cable entry is prepared in the rear section of the plate.
Not suitable for combination with 482.6 mm (19″) mounting frame.

Advantages of the DC fan mounting plate with FCS technology:

- Exceptionally low-noise thanks to speed control.
- All fans are individually monitored for failure.
- High air throughput thanks to DC technology (unimpeded air flow 6 x 165 m^3/h = 990 m^3/h).
- EMC-compatible thanks to DC fan.
- Temperature monitoring and control.
- High level of safety thanks to low safety voltage with 24 V DC power pack.
- Visual and acoustic alarm messages, plus relay alarm output.
- Freely selectable installation location for the FCS control unit (included with the supply of the fan mounting plate, in 482.6 mm (19″) with 7320.440 or on the frame with 7320.450).
- Suitable for international use, thanks to wide-range power pack 100 – 240 V AC and socket to IEC 320.
- Fully pre-configured.
- Network-compatible via CMC-TC processing unit 7320.100 (all relevant data such as temperature etc. are displayed in the web browser, or alarms are sent in the form of an SNMP trap).

For enclosures width mm	For enclosures depth mm	Number of DC fans	**Model No. DK**
800	800 900 1000	6	**7858.488**

Technical specifications:
Power pack rated voltage:
100 – 240 V AC, 50/60 Hz
Power pack rated current: Max. 1.5 A
Power pack secondary range: 24 V DC, 3 A
Temperature range: +5°C to +40°C
Total air throughput (unimpeded air flow):
6 x 165 m^3/h = 990 m^3/h

Technical specifications for one fan:
Rated voltage: 24 V DC
Rated current: max. 0.28 A
Rated output: max. 6.72 W
Air throughput (unimpeded air flow): 165 m^3/h
Speed: 2650 rpm
Noise level: up to 41.0 dB (A)
at maximum speed activation

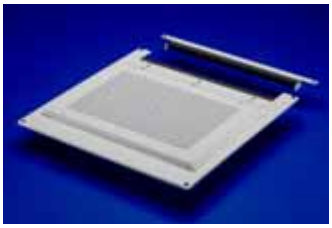
Also required:

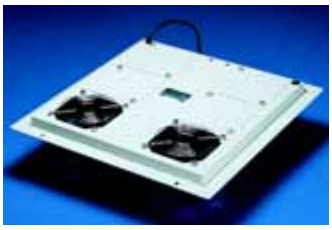
Connection cable 230/115 V.
Example D version, Model No. 7200.210,
see page 771.

Accessories:

1 U mounting unit, Model No. 7320.440,
see page 771.
Mounting module, Model No. 7320.450,
see page 772.

Note:
For more information on the FCS system,
see page 786.





Fan roof, modular, two-piece

for TS/FR(i)

The modular roof plate consists of individual components and can be configured for the ventilation of TS 8 enclosures in line with requirements.
The modules:

Roof plate, two-piece with cutout
For fan mounting and cable entry at the rear via a sliding angular bracket with rubber cable clamp strip. In exchange for the existing roof plate. The two-piece design allows convenient retrofitting of cables at any time.

Cover plate
To cover the cutout, optionally solid or vented. The top-mounted cover plate may be raised for extra air throughput using the supplied spacers.

Fan insert
For active ventilation:
A fully pre-wired fan tray including 2.5 m connection cable, with two fan motors and additional cutouts. The air throughput may be increased with a fan expansion kit.

Material:
Sheet steel, spray-finished

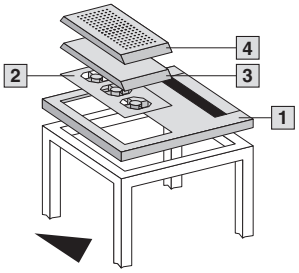
Colour:
RAL 7035

Technical specifications for one fan:
Rated operating voltage: 230 V
Power consumption: 15/14 W at 50/60 Hz
Air throughput (unimpeded air flow):
160/180 m^3/h at 50/60 Hz
Temperature range: –10°C to +55°C

Detailed drawing,
see page 1183.

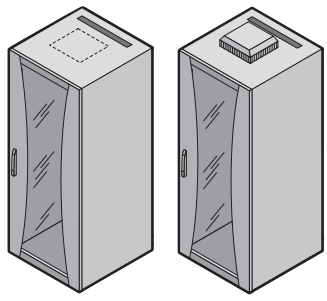
Accessories:

Fan expansion kit DK 7980.000,
see page 649.
Thermostat SK 3110.000,
see page 661.
Speed control SK 3120.000,
see page 662.



For enclosures		Model No. DK				Fan insert	
		Roof plate	Cover plate				
Width mm	Depth mm	1 With cutout	3 Solid	4 Vented	2 Fan insert	Fan pre-wired	Maximum no. of fans
600	600	**7826.366**	**2102.180**	**2102.400**	**2102.320**	2	2
600	800	**7826.368**	**2102.190**	**2102.410**	**2102.490**	2	6
600	900	**7826.369**	**2102.190**	**2102.410**	**2102.490**	2	6
600	1000	**7826.360**	**2102.190**	**2102.410**	**2102.490**	2	6
800	600	**7826.486**	**7885.100**	**7885.200**	**7885.000**	2	3
800	800	**7826.488**	**7886.100**	**7886.200**	**7886.000**	2	8
800	900	**7826.489**	**7886.100**	**7886.200**	**7886.000**	2	8
800	1000	**7826.480**	**7886.100**	**7886.200**	**7886.000**	2	8





Fan unit, active

for TE

For active ventilation of the TE 7000, a ventilation opening may be broken out of the front area in the standard roof plate and fitted with the fan module. The fan module is pre-wired ready for connection and has 2 fans, 1 thermostat and a connection cable including IEC 320 connector. An additional fan may optionally be integrated.

Supply includes:
Fan unit including assembly parts, 2 fans, thermostat and connection cable.

Technical specifications for one fan:
Fan extension kit, see page 649.

Technical specifications of thermostat:
Rated operating voltage: 250 V
Temperature range: +5°C to +55°C

For enclosures W x D mm	Number of pre-wired fans	Possible number of fans	Model No. TE
All dimensions	2	3	**7000.670**

Also required:

Connection cable,
see page 771.

Accessories:

Fan expansion kit,
see page 649.



Door mounted fan

for TS 8 server enclosures,
especially for installing in perforated doors.
The growing packaging density in data communications and network enclosures make active, direct ventilation of the enclosure indispensable. The door mounted fan, which is attached to the rear or front door, supports horizontal air routing for the servers and therefore facilitates faster heat dissipation from active components.

Technical specifications:
- Standard cross member with two fans.
- Air throughput, unimpeded air flow 600 m³/h.
- By adding two fan expansion kits, the air throughput may be increased to 1200 m³/h.
- The direction of air flow is easily reversed by rotating the fan.
- Several units may be positioned in a cascade arrangement.
- Simple mounting on the tubular door frame.

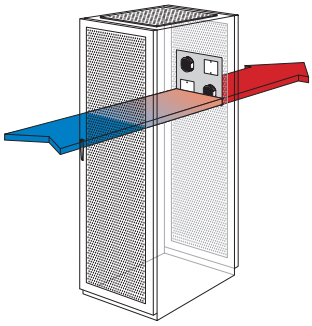
Supply includes:
Wired ready for connection with 2.5 m connection cable, including assembly parts.

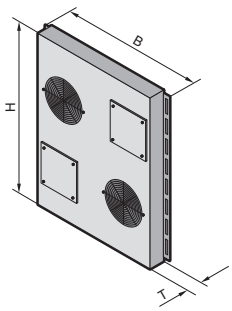
Accessories:

Fan expansion kit,
see below.

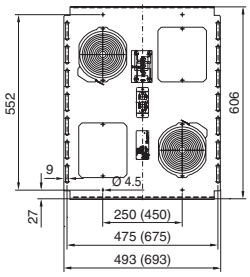
Note:
Only for mounting on the tubular door frame!

Door configuration for installation in 2 and 4-door ISP racks available on request.





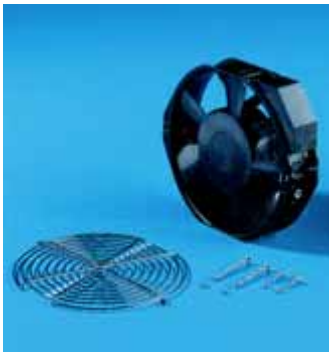
B = Width
T = Depth





Model No. SK	3165.624[1)]	3165.648[1)]	3165.615[1)]	3165.630[1)]	3165.824[1)]	3165.848[1)]	3165.815[1)]	3165.830[1)]	Page
Rated operating voltage V, Hz	24 (DC)	48 (DC)	115, 50/60	230, 50/60	24 (DC)	48 (DC)	115, 50/60	230, 50/60	
Air throughput (unimpeded air flow)	**600 m³/h**								
Power consumpion for two fans	40 W	48 W	70 W/64 W	70 W/70 W	40 W	48 W	70 W/64 W	70 W/70 W	
Rated current of fan	1.5 A	1.0 A	0.76 A/0.72 A	0.38 A/0.36 A	1.5 A	1.0 A	0.76 A/0.72 A	0.38 A/0.36 A	
Dimensions in mm W H D	493 606 64.5				693 606 64.5				
For doors with width (mm)	600				800				
Noise level	55 dB (A)								
Temperature range	+20°C to +55°C								
Colour	RAL 7035								
Accessories									
Temperature indicator	3114.024	–	3114.115	3114.100	3114.024	–	3114.115	3114.100	660
Thermostat	3110.000								661

[1)] Delivery times available on request.
Special voltages available on request. Technical modifications reserved.



Fan expansion kit

for door mounted fan
To increase the air throughput of the door mounted fan.

To fit door mounted fan	Model No. SK
3165.624, 3165.824	**3165.024**
3165.648, 3165.848	**3165.048**
3165.615, 3165.815	**3165.115**
3165.630, 3165.830	**3165.230**



Internal fan mounting panel

for TS 8

A fan unit integrated into the TS 8 twin wall for targeted air routing in the lower part of the enclosure. A second fan unit may optionally be mounted to reinforce air circulation. Optional air routing design may be achieved retrospectively by simply inserting or exchanging cover plates.

Technical specifications:

- Rated operating voltage: 230 V, 50/60 Hz
- Air throughput (3 fans): 200/230 m^3/h (unimpeded air flow)
- Power consumption (3 fans): 57/54 W
- Rated current (3 fans) 0.36/0.33 A

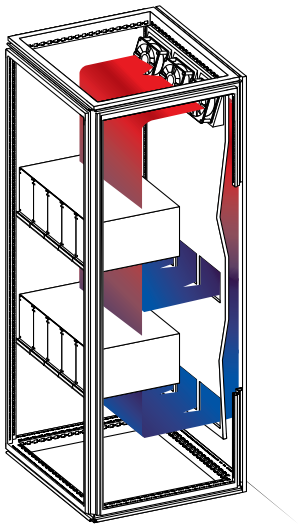
Supply includes:

1 pack =
1 internal fan mounting panel,
3 fan cross members,
3 cover plates.

Property rights:

German patent no. 198 04 219
European patent no. 1 053 581
with validity for ES, FR, GB, IT
Australian patent no. 737 950
US patent no. 6,494,779

For TS enclosure		Height of internal panel mm	Model No. SK
Width mm	Height mm		
600	1800	1548	**3347.180**
600	2000	1748	**3347.200**
800	1800	1548	**3348.180**
800	2000	1748	**3348.200**





Fan cross member

for internal fan mounting panel

May be additionally installed to increase the air circulation.

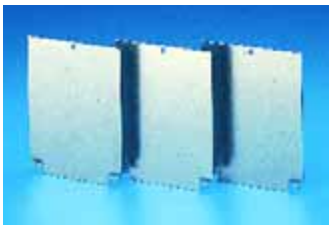
Technical specifications:

- Rated operating voltage: 230 V, 50/60 Hz
- Air throughput (3 fans): 200/230 m^3/h (unimpeded air flow)

Packs of	Model No. SK
3	**3349.100**

Property rights:

German patent no. 198 04 906
European patent no. 1 053 662
with validity for ES, FR, GB, IT
Australian patent no. 737 485
US patent no. 6,315,656
Chinese patent no. ZL 988 13378.4



Cover plates

for internal fan mounting panel

For optional design of the air routing.

Packs of	Model No. SK
3	**3349.300**



Enclosure internal fan

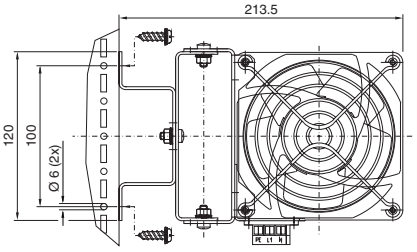
for TS

To prevent hot spots and support the air routing of active enclosure climate control components. Adjustable in two axes. Attached to the TS 8 frame section. Several fans may be cascaded using the quick-release clamping strip.

Supply includes:

Fully wired unit ready for connection with radial fan and lockable swivel device, as well as assembly parts.

Air throughput, unimpeded air flow	Power consumption W	Rated current A	Rated voltage V, Hz	Model No. SK
160 m^3/h	19.0/18.0	0.12/0.11	230, 50/60	**3108.100**
160 m^3/h	19.0/18.0	0.24/0.23	115, 50/60	**3108.115**
160 m^3/h	3.5	0.15	24 V (DC)	**3108.024**



Features



Condensation poses a particular risk for control electronics, especially with outdoor siting, but also indoors. Various different output categories ensure that the correct thermal output is always available. In this way, the total required thermal output can be distributed with complete accuracy within an enclosure.

Simple assembly and perfect control









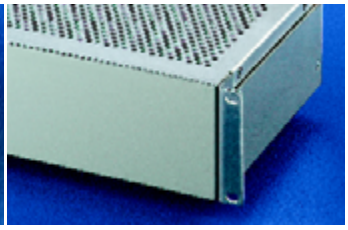
Fast assembly
This is achieved with a screw or snap fastening on the mounting plate or 35 mm EN 50 022 support rails.

No condensation, and always the right temperature
The heater is controlled as required via a hygrostat or enclosure internal thermostat.

Maximum performance in the outdoor sector







Fully wired unit ready for connection
Compact power with 1000 W thermal output.

19″ rack mount
For seamless integration into the 482.6 mm (19″) structure, with 3 thermal components and 3 fan units. This creates circulation, so that condensation is reliably avoided.

Benefits:

- Continuous thermal output of 10 W to 1000 W
- Self-regulating PTC technology
- Quick-assembly system

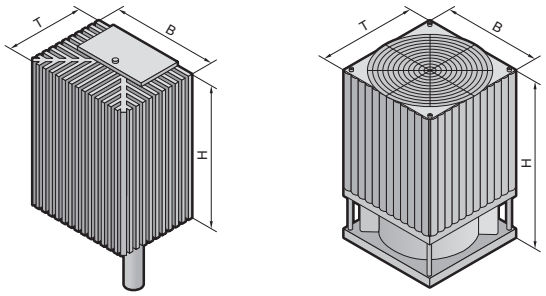
Important:

- For the correct temperature and to avoid compensation, use a thermostat or hygrostat, see page 661
- The thermal output is increased with fans
- Heaters should always be installed in an upright position. Leave a distance of 50 mm at the top and bottom to allow convection
- Heat is distributed evenly in large enclosures by using several low-output heaters

General remarks and calculation formulae can be found on our website: www.rittal.com

Continuous thermal output 10 – 300 W





B = Width
T = Depth

Supply includes:
Unit ready to install with permanently attached connection cable (0.3 m). SK 3102.000 with fitted fan including terminal strip.

Note:
- Thermostat SK 3110.000 (see accessories) is recommended for precise temperature control in the enclosure.
- In order to prevent condensation on assemblies, hygrostat SK 3118.000 (see accessories) is recommended to regulate heating.
- In larger enclosures, even heat distribution is best achieved by installing several low-output heaters.
- Installation in the enclosure is generally advisable, even when using heat exchangers and cooling units, in order to prevent condensation.

Approvals,
see page 80.

Detailed drawing,
see page 1183.

Performance diagrams
are available on the Internet.

Model No. SK		**3105.000**	**3106.000**	**3115.000**	**3116.000**	**3107.000**	**3107.000 + 3108.000**	**3102.000 (incl. fan)**
Dimensions in mm	W	45	45	64	64	80	80	120
	H	75	125	110	185	140	178	168
	D	35	35	45	45	118	118	120
Rated operating voltage V, Hz		110 – 240 V AC/DC					230 V, 50/60	
Continuous thermal output at T_u = 20°C		**10 W**	**20 W**	**30 W**	**50 W**	**130 W**	**200 W[1)]**	**300 W[1)]**
Pre-fuse T		2 A		4 A				

Accessories	Packs of		Page
Thermostat	1	3110.000	661
Hygrostat	1	3118.000	661
Temperature indicator	1	3114.000	660

[1)] Output with fan
Special voltages available on request. We reserve the right to make technical modifications.



Axial fan

for heater SK 3107.000
Ball bearing
Temperature range: –40°C/+85°C
Rated operating voltage:
230 V, 50/60 Hz
Power consumption: 18 watts
Noise level: 33 dB (A)
Speed: 2800/3300 rpm
Air throughput: 50 m^3/h

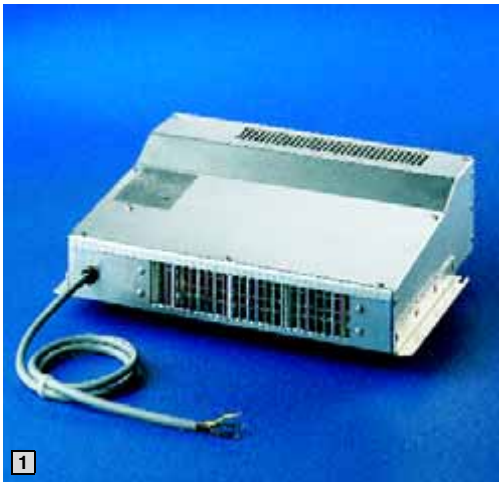
Packs of	**Model No. SK**
1	**3108.000**

Detailed drawing,
see page 1184.

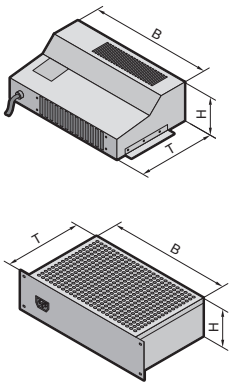
Accessories Page 657 **Configuration software** Page 1063

Enclosure heaters

for CS Outdoor enclosures, continuous thermal output 600/1000 W







B = Width
T = Depth

1 Enclosure heater
2 Heater module

Material:
Enclosure: Aluminium

Surface finish:
Natural, 9763.023 with spray-finished front panel

Supply includes:

1 Fully wired unit ready for connection with permanently attached connection cable.

2 Fully wired unit ready for connection, designed as a 482.6 mm (19″) rack mount with 3 thermal components and 3 fan units.

Approvals,
see page 80.

Detailed drawing,
are available on the Internet.

Performance diagrams
can be found on the Internet.

Model No. CS		**9769.015**	**9769.023**
Installation		in the enclosure	19″ mounting angles
Dimensions in mm	W H D	325 82 220	482.6 (19″) 87.2 (2 U) 236
Rated operating voltage V, Hz		230 V AC, 50/60	230 V AC, 50/60
Continuous thermal output		**1000 W**	**600 W**
Rated current max.		5.0 A	2.6 A
Temperature range		–33°C to +65°C	–33°C to +65°C
Air throughput, unimpeded air flow		120 m³/h	480 m³/h
Type of connection		Connection cable with wire end ferrules	Via front IEC connector (3-pole)
Weight		3.0 kg	3.1 kg
Accessories	Packs of		Page
Thermostat	1	3110.000	3110.000 661
Hygrostat	1	3118.000	3118.000 661

Accessories Page 657 **Configuration software** Page 1063 **Outdoor enclosures** Page 814

Features



Finding the perfect climate control solution is now even easier, with matching system accessories. Perfectly coordinated components adapt the climate control components superbly to your specific requirements. Be it targeted air routing or precise control of the equipment, Rittal has the perfect solution for everything.



Air routing



Air duct system for TopTherm roof-mounted cooling unit and air/water heat exchanger
With the air duct system, cold air may be routed directly to specific areas of the enclosure.



Air diverter
For targeted, downward cold air routing in climate controlled enclosures, climate control doors and TopTherm wall-mounted cooling units.



Adaptor
For unhindered front air infeed when using rack-mounted cooling units in enclosures with front doors.



Controller



Enclosure internal thermostat and hygrostat
Constant temperature and humidity to protect sensitive electronics.



Speed control
Temperature-dependent speed control to minimise noise and save energy in part-load operation.



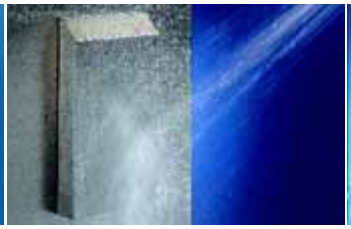
SK Bus system
SK bus system with master/slave function to enable several cooling units to communicate with one another.



Installation/maintenance



Fast assembly
Easy installation with prepared TS roof plates.

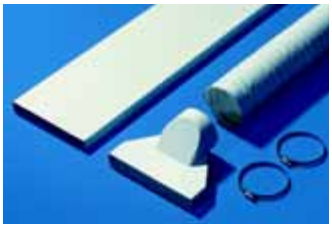


Hose-proof hoods
For protection category IP 55 to EN 60 529/10.91 with fan-and-filter units and outlet filters.



Filter mats
For use in cooling units under exterme conditions.

Air routing





Air duct system

for TopTherm roof-mounted cooling units

The air duct system for Rittal TopTherm roof-mounted cooling units makes it possible to route the cold air directly to specific areas of the enclosure. The risk of “short circuits” in the air circulation due to self-ventilated installed devices is therefore effectively eliminated.
The length of the shallow duct is 1500 mm, and it may be cut to the desired length.

Material:
Flame-resistant plastic to DIN 4102/B1.

Supply includes:
Shallow duct, compensating hose

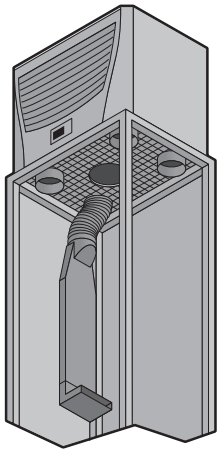
Accessories:

90° deflector,
see page 658.
Cover bungs,
see page 658.

For cooling unit	Packs of	Model No. Air duct system SK
SK 3382. . . ./SK 3383. . . ./SK 3384. . . ./SK 3385. . . .	1	**3286.870**
SK 3386. . . ./SK 3387. . . .	1	**3286.970**



Note:
Do not direct cold air straight at active components. When using the ducting system, the performance of the cooling unit may be reduced, depending on the application in question.





90° deflector

for air duct system

For targeted air deflection at the end of the shallow channel.

Material:
Flame-resistant plastic to DIN 4102/B1.

Packs of	Model No. SK
1	**3286.990**



Cover bungs

for TopTherm roof-mounted cooling units

To cover unneeded cold air outlets in TopTherm roof-mounted cooling units.

Material:
Polyurethane foam

For cooling unit	Packs of	Model No. SK
SK 3382. . . .	2	**3286.780**
SK 3383. . . ./SK 3384. . . ./SK 3385. . . .	2	**3286.880**
SK 3386. . . ./SK 3387. . . .	2	**3286.980**

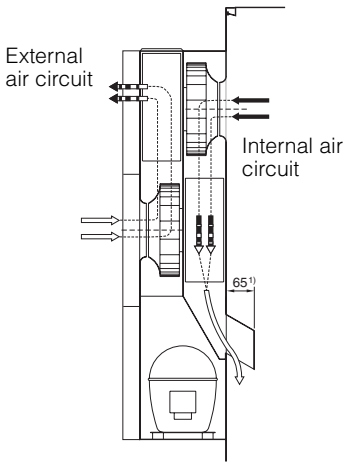


Air diverter

For use in climate controlled enclosures, climate control doors, climate control side panels and TopTherm wall-mounted cooling units.
For targeted air routing of the cold air in a downward direction.
Particularly well-suited for densely-packed electrical components in the lower section of the enclosure.

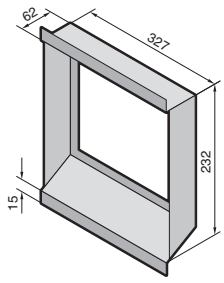
Material:
Sheet steel

For devices	Model No. SK
SK 8607. . . ./SK 8687. . . . SK 3306. . . ./SK 3331. . . .	**3213.300**
SK 3304. . . ./SK 3305. . . .	**3213.310**
SK 3328. . . ./SK 3329. . . .	**3213.320**
SK 3332. . . .	**3213.330**[1)]



[1)] 115 mm for SK 3213.330





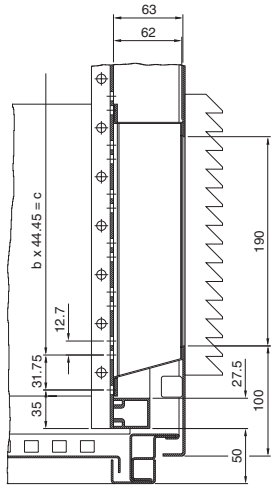
Adaptor

for front air infeed
When using rack-mounted cooling units SK 3278.134/SK 3292.134 in enclosures with front doors (sheet steel or acrylic), this adaptor must be used. It enables ambient air to be extracted unhindered from outside, which is essential for correct functioning of the cooling unit.

Material:
Sheet steel

Supply includes:
Adaptor, sealing gasket, foamed plastic gasket, assembly parts.

Packs of	Model No. SK
1	**3259.000**





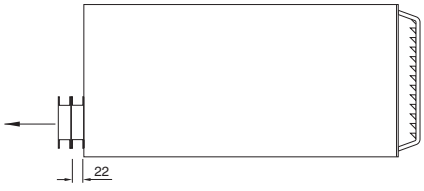
Air duct

for discharge of waste air
For use of rack-mounted cooling units SK 3292.134/SK 3278.134 in enclosures with a depth > 600 mm.
The heated ambient air is blown backwards out of the enclosure through the air duct. The air duct may be extended as required.

Material:
ABS plastic

Supply includes:
Air duct including attachment clamps.

Packs of	Model No. SK
10	**3220.000**



Air duct, may be extended to any length

Regulation/control



Digital enclosure internal temperature display and thermostat

For installing on the enclosure door or wall and in a cooling unit or heat exchanger.

Technical specifications:

- Small dimensions.
- Depth: 100 mm.
- The 3-digit 7-segment display is 13 mm high and clearly legible.
- Can be switched from °C/°F.
- The display can be used in a temperature range from +5°C to +70°C.
- With 1500 mm long NTC sensor.
- Two relay outputs as change-over contact and normally open contact (maximum contact load 230 V, 6 A).
- Freely selectable switching difference.
- The freely adjustable setpoint values can be adjusted via the membrane keyboard at the front.
  Setting range: +5°C to +55°C.
- Display and switching accuracy +/– 2 K.
- Mounting cutout 68 x 33 mm.
- Storage of the minimum and maximum recorded temperature until resetting is next carried out.

Rated operating voltage	Model No. SK
230 V (AC)	**3114.100**
115 V (AC)	**3114.115**[1)]
24 V (DC)	**3114.024**[1)]

[1)] Delivery times available on request.
Special requirements available on request.



Digital enclosure internal temperature display and thermostat

Integrated into a patch panel 1 U.
Including cable attachment for connection cable and label holder.

Rated operating voltage:
230 V (AC)
Special voltages available on request.

Technical specifications:

- Small dimensions.
- Depth: 100 mm.
- The 3-digit 7-segment display is 13 mm high and clearly legible.
- Can be switched from °C/°F.
- The display can be used in a temperature range from +5°C to +70°C.
- With 1500 mm long NTC sensor.
- Two relay outputs as change-over contact and normally open contact (maximum contact load 230 V, 6 A).
- Freely selectable switching difference.
- The freely adjustable setpoint values can be adjusted via the membrane keyboard at the front.
  Setting range: +5°C to +55°C.
- Display and switching accuracy +/– 2 K.
- Mounting cutout 68 x 33 mm.
- Storage of the minimum and maximum recorded temperature until resetting is next carried out.

Supply includes:
Panel, temperature indicator and thermostat, identification strip.

Colour	Model No. DK
RAL 7035	**7109.035**



Enclosure internal thermostat

Especially suitable for controlling fan-and-filter units, heaters and heat exchangers, this thermostat can also be used as a signal generator for monitoring the enclosure internal temperature.

Technical specifications:

- Bi-metal sensor as a temperature-sensitive element with thermal feedback.
- Contact population: Single-pole change-over contact as a quick-break contact.
- Permissible contact load:
  Category 5 – 3 (heating)
  AC 10 (4)[1)] A,
  DC = 30 W
  Category 5 – 4 (cooling)
  AC 5 (4)[1)] A,
  DC = 30 W
  ([1)]) = Inductive load at cos φ = 0.6
- Setting range +5°C to +60°C
- Weight approx. 105 grams
- Dimensions 71 x 71 x 33.5 mm
- Switching difference approx. 1 K ± 0.8 K.

Rated operating voltage	Model No. SK
230/115/60/48/24 V (AC)	3110.000
60/48/24 V (DC)	

- A broad voltage spectrum i.e. just one model covers 24 to 230 V.
- Time-saving connection technique using a terminal strip with a screw connection from the outside.
- Flexible mounting on a vertical or horizontal 35 mm support rail to EN 50 022, and snap fastening in the TS/ES enclosure section using the supplied adaptor.



Hygrostat

The hygrostat switches on the heater and/or fan when a preset relative humidity in the enclosure is exceeded.
In this way, the relative humidity is raised above the dew point, and condensation on assemblies or electronic components is avoided.

Technical specifications:

- Contact population: Single-pole change-over contact as a quick-break contact.
- Permissible contact load:
  AC ~ 5 (0.2)[1)] A
  DC = max. 20 W
  ([1)]) = Inductive load at cos φ = 0.6
- Setting range 50 – 100 % relative humidity
- Weight approx. 100 g
- Dimensions 71 x 71 x 33.5 mm
- Switching difference approx. 4 %

Rated operating voltage	Model No. SK
24 – 230 V (AC/DC)	3118.000

- A broad voltage spectrum i.e. just one model covers 24 to 230 V.
- Time-saving connection technique using a terminal strip with a screw connection from the outside.
- Flexible mounting on a vertical or horizontal 35 mm support rail to EN 50 022, and snap fastening in the TS/ES enclosure section using the supplied adaptor.



Bottom-mounted adaptor

for enclosure internal thermostat SK 3110.000 and hygrostat SK 3118.000

Bottom-mounted adaptor with mounting option for screwed cable glands, for targeted cable infeed from appropriate equipment such as SK fan-and-filter units and enclosure heaters. In conjunction with screwed cable glands, it is also suitable for use as strain relief.

Packs of	Model No. SK
1	3110.200

Regulation/control



Speed control

Temperature-dependent speed control for Rittal fan-and-filter units and air/air heat exchangers with a rated operating voltage of 230 V AC, for noise reduction and to save energy in part-load operation.

Technical specifications:

- For mounting on a 35 mm support rail DIN EN 50 022.
- Dimensions (W x H x D): 94 x 57 x 180 mm
- Rated operating voltage: 230 V (AC)/115 V (AC)
- Setting range: +20°C to +55°C
- Phase cross-over with microcontroller
- Maximum fan output 250 W or 1.2 A at 230 V (AC)
- Maximum fan output 100 W or 1.2 A at 115 V (AC)

Rated operating voltage	Model No. SK
230 V (AC)	**3120.000**
115 V (AC)	**3120.115**[1)]

[1)] Delivery times available on request.

Supply includes:
Speed control, built into a PK enclosure 9512.100, NTC sensor, length 1.80 m.



Mounting adaptor

for speed control

The mounting adaptor enables direct attachment of the speed control SK 3120.000/.115 to the vertical frame sections of network enclosures.

Material:
Sheet steel, zinc-plated, passivated.

Packs of	Model No. DK
1 set	**7526.964**

Supply includes:
Mounting adaptor including assembly parts.



Interface card

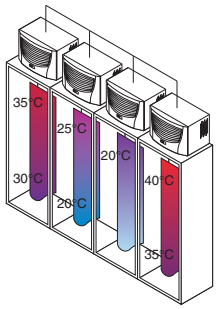
for TopTherm cooling units with Comfort controller

The interface card is an extension for TopTherm cooling units with Comfort controller. In this way it is possible, e.g. to monitor a master/slave combination of up to 10 cooling units. Control is achieved via standardised interfaces: RS232 (DB9) or RS 485, one PLC interface (DB9). RS 422 (RJ45 jack) is the connection to the Rittal CMC-TC. Remote monitoring via TCP-IP, graphical interfaces for operation, evaluation and control, documentation, connection to additional sensors for access control, monitoring is therefore possible. The extension card is built into a 1 U plastic housing. A voltage supply of 24 V DC is needed. This may be supplied from the CMC-TC via a wide-range power pack DK 7320.425 (100 to 240 V AC, 50/60 Hz) or externally via a Kycon connector.

Packs of	Model No. SK
1	**3124.200**

Supply includes:
Interface card integrated into a plastic box W x H x D (mm): 136 x 44 (1 U) x 129.

Serial SUB-D cable, 1.5 m.



SK bus system

The SK bus system facilitates communications between several enclosure cooling units, version Rittal TopTherm .500/.510/.540, production date 05/02 or later, via a master/slave construction such as that required e.g. in complex bayed enclosure systems for optimum operating results.

Technical specifications:
The master/slave construction facilitates common activation and deactivation via door limit switches, parallel activation and deactivation via a temperature setpoint, and common collective fault signals and temperature logging, thereby eliminating the need for intricate wiring.

For	Model No. SK
TopTherm	**3124.100**
Climate controlled enclosures	**3124.000**

Supply includes:
3 m shielded interface cable, including operating manual on programming the cooling units.

Note:
$n_B = n_K - 1$
n_B: Number of order units (SK bus system)
n_K: Number of cooling units to be linked

Property rights:
German patent no. 196 15 469



Cable connection kit

for CS Outdoor cooling units
For simple connection of CS cooling units. All cables preassembled with the corresponding connectors.
Length of cables approx. 2500 mm.

Supply includes:
1 set = 3 cables for AC,
door operated switch and
alarm connection.

Packs of	Model No. CS
1 set	**9765.105**



Cable connection kit

for CS Outdoor heat exchangers
For simple connection of CS heat exchangers. All cables preassembled with the corresponding connectors.
Length of cables approx. 2500 mm.

Option	Model No. CS
3 cables for AC/DC and alarm connection	**9765.110**
2 cables for DC and alarm connection	**9765.115**



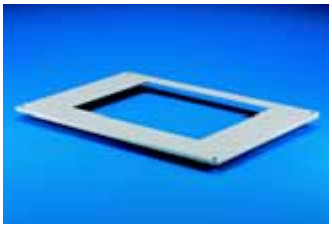
Test adaptor

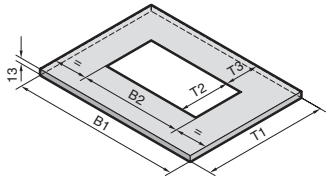
for CS Outdoor climate control equipment
The 9-pole sub-D interface allows testing of all CS climate control equipment. Alternatively supports automatic or manual test procedures.

Supply includes:
1 set = test adaptor
including 2 m connection cable.

Packs of	Model No. CS
1 set	**9765.050**

General





B = Width
T = Depth

Roof plates TS

For mounting on:
- TopTherm roof-mounted cooling units
- TopTherm roof-mounted fan
- Vent attachment TS

The cutouts in the roof plate are arranged in such a way that the TopTherm roof-mounted cooling units are positioned centrally on the enclosure.

Material:
Sheet steel

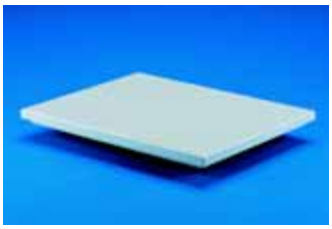
Supply includes:
Assembly parts.

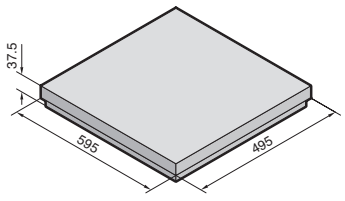
Colour:
RAL 7035

For enclosures W x D mm	To fit the mounting of TopTherm	Model No. TS
600 x 600	SK 3382. . . .	**8801.300**[1]
800 x 600		**8801.320**
600 x 600	SK 3273.5. . SK 3383. . . . SK 3384. . . . SK 3385. . . .	**8801.310**[1]
800 x 600		**8801.330**
1200 x 600		**8801.350**
800 x 600	SK 3386. . . . SK 3387. . . .	**8801.340**[2]
1200 x 600		**8801.360**

[1] When mounting the cooling units, there may be a collision with the eyebolts of the enclosure; for this reason roof fastening screws are supplied loose with the roof plates.
[2] Attachment is from the inside using metal brackets and retaining clamps.

For mounting TopTherm	B1	B2	T1	T2	T3	Model No. TS
SK 3382. . .	567.5	475	567.5	260	129.3	**8801.300**
SK 3382. . .	767.5	475	567.5	260	129.3	**8801.320**
SK 3383. . . /SK 3384. . . /SK 3385. . .	567.5	490	567.5	390	61.3	**8801.310**
SK 3383. . . /SK 3384. . . /SK 3385. . .	767.5	490	567.5	390	61.3	**8801.330**
SK 3383. . . /SK 3384. . . /SK 3385.XXX	1167.5	490	567.5	390	61.3	**8801.350**
SK 3386. . . /SK 3387. . .	767.5	692	567.5	392	57.8	**8801.340**
SK 3386. . . /SK 3387. . .	1167.5	692	567.5	392	57.8	**8801.360**





Vent attachment TS

For passive ventilation with labyrinthine air flow routing, to match the roofs for TopTherm roof-mounted cooling units.

Colour:
RAL 7035

Protection category:
IP 43

Supply includes:
Assembly parts.

For roof plates with cutout	Model No. TS
490 x 390 mm	**8801.380**



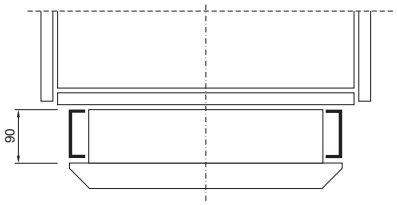
Trim frame

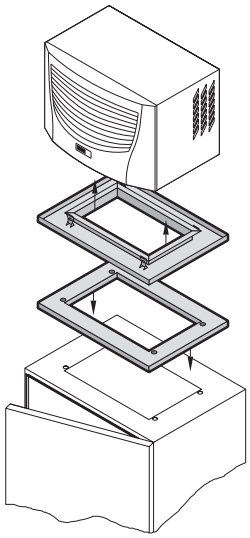
for slimline cooling units
Slimline cooling units can be internally or externally mounted on an enclosure door or wall. The trim frame presents a closed front for the cooling unit.

Material:
Sheet steel

Colour:
RAL 7035

For cooling unit	Model No. SK
SK 3366. . . . SK 3377. . . .	**3377.000**





Quick-change frame

for TopTherm roof-mounted cooling units

The quick-change frame is more than just an alternate frame. Together with the seal, the lower part of the frame is screw-fastened to the enclosure, making it possible to attach or remove the plug-in cooling unit to/from the top part of the quick-change frame previously mounted on the cooling unit using quick-release fasteners. In case of servicing, this means minimal assembly times and hence minimal downtime. What is more, the quick-change frame offers effective protection against the ingress of oil into the enclosure in oily atmospheres, thanks to its integral drainage trough.

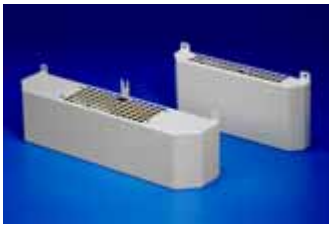
Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Quick-change frame, seal, quick-release fasteners.

For TopTherm cooling unit	Model No. SK
SK 3382. . . .	**3286.700**
SK 3383. . . . SK 3384. . . . SK 3385. . . .	**3286.800**
SK 3386. . . . SK 3387. . . .	**3286.900**

Property rights:
German patent no. 41 10 323
French Patent no. 2 675 317
GB patent no. 2 254 735



Electronic condensate evaporator

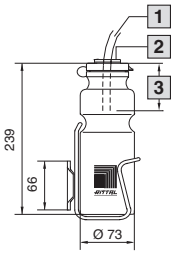
For external mounting on enclosures.
For use with all enclosure cooling units and air/water heat exchangers.
Evaporation performance:
[1] 2.4 l/d
[2] 4.2 l/d

Colour:
RAL 7035

Supply includes:
Electronic condensate evaporator, ready for connection.

Rated operating voltage	Model No. SK	
	For SK 3302/ SK 3303	For 400 mm wide cooling units
230 V, 50/60 Hz	**3301.560[1)]**	**3301.570[2)]**
115 V, 50/60 Hz	**3301.580[1)]**	**3301.590[2)]**

Detailed drawing,
see page 1184.



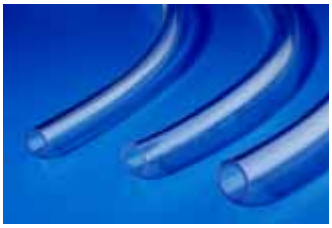
Condensate collecting bottle

For mounting on the enclosure.
For use with all enclosure cooling units and air/water heat exchangers.
Safety overflow at the side.
Capacity approximately 0.75 l.

1 Condensate discharge tube
2 Membrane grommet
3 max. 70 mm

Packs of	Model No. SK
1	**3301.600**

Supply includes:
Condensate collecting bottle, bottle holder including assembly parts.



Condensate hose

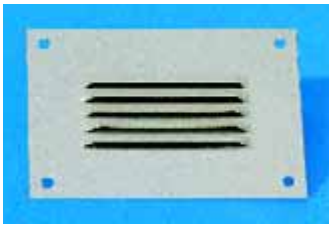
For removing and forwarding condensate. For connecting to enclosure cooling units.

Material:
PVC, transparent

Supply includes:
10 m hose

For devices	Material thickness Ø	Model No. SK
SK 3302. . . /SK 320.	8 x 1.5 mm	**3301.608**
SK 3303. . . /SK 3361. . . .	10 x 1.5 mm	**3301.610**
SK 3273. . . /SK 3304. . . / SK 3305. . . /SK 3328. . . / SK 3329. . . /SK 3332. . . / SK 3366. . . /SK 3359. . . / SK 3382. . . /SK 3383. . . / SK 3384. . . /SK 3385. . . / SK 3386. . . /SK 3387. . . / SK 3377. . . .	12 x 2 mm	**3301.612**

General



Integrated louvres

For ventilation by convection; easily retro-fitted using 4 screws.

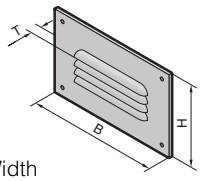
Material:
Sheet steel

Colour:
RAL 7035

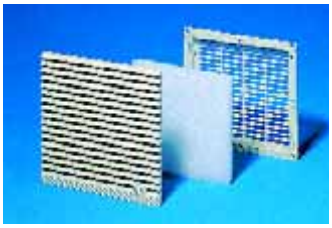
W mm	H mm	D mm	Packs of	Model No. SK
160	110	8	4	**2541.235**
210	100	8	4	**2542.235**
330	110	8	4	**2543.235**

For RAL 7032, use order extension .200; to order primed version, use extension .300. Delivery times available on request.

Detailed drawing,
see page 1184.



B = Width
T = Depth



Outlet filter

For ventilation by convection, an outlet filter can be installed in the upper and lower sections of the enclosure.

Material:
ABS,
material resistance to UL 94-V0.

Colour:
RAL 7035

Supply includes:
Outlet filter including filter mat.

Dimensions in mm	Model No. SK
116.5 x 22	**3321.207**
148.5 x 24.5	**3322.207**
204 x 30	**3323.207**
255 x 30	**3325.207**
323 x 30	**3326.207**

For RAL 7032, use order extension .200.

Note:
EMC version,
see page 640.

Accessories:

Spare filter mats,
see page 670.
Fine filter mats,
see page 670.





Hose-proof hoods

for fan-and-filter units/outlet filters
When the hose-proof hood is mounted above the fan-and-filter unit and outlet filter in conjunction with a fine filter mat, a protection category of IP 56 to EN 60 529/10.91 is achieved. Particularly suitable for use in the food industry.

Material:
Stainless steel

Protection category:
In conjunction with the fan-and-filter units/outlet filters, NEMA 3R + 12 is met.

For	Dimensions in mm	Model No. SK
SK 3321. . . .	150 x 260 x 40	**3321.800**[1)]
SK 3322. . . .	176 x 270 x 55	**3322.800**
SK 3323. . . .	233 x 410 x 55	**3323.800**
SK 3324. . . . SK 3325. . . .	282 x 500 x 85	**3324.800**
SK 3326. . . . SK 3327. . . .	350 x 560 x 110	**3326.800**

[1)] Delivery times available on request.





Front outlet grille 2 U

for centrifugal fans

This front outlet grille is required if a 482.6 mm (19″) cross-flow blower (SK 3144.000/SK 3145.000) is used in the lower section of the electronic enclosure and the hot air is to be expelled to the outside from the upper section of the enclosure. The design of the grille matches that of the intake grille in the cross-flow blower.
These grilles can also be used as simple inflow and outflow grilles with natural convection.

Packs of	Model No. SK
1	**3176.000**

Accessories:

Filter mat,
see page 668.



Filter holder

for roof ventilation

The use of a filter mat is required in order to increase the protection category of the roof vent (SK 3148.000).
Protection category IP 43 to EN 60 529/10.91 is achieved.

Material:
Sheet steel

Supply includes:
Filter holder including filter mat.

W x H x D mm	Model No. SK
340 x 244 x 15	**3175.000**

Accessories:

Spare filter mat,
see page 670.



Bypass safety valve

For use with recooling systems and air/water heat exchangers.

Material:
Brass

Option	Packs of	Model No. SK
1/2″_619_E bypass valve	1	**3301.900**
3/4″_619_E bypass valve	1	**3301.910**
1″_619_E bypass valve	1	**3301.920**



Flow regulator valve

For use with air/water heat exchangers. Especially if more than one heat exchanger (n > 1) is used in the water cooling circuit.

Material:
Brass

Option	Packs of	Model No. SK
3/4″ x 1/2″ flow regulator valve	1	**3301.930**
3/4″ x 3/4″ flow regulator valve	1	**3301.940**

Filter mats



Additives for recooling systems

Supply includes:
10 l canister

Rifrost	Antifrogen water mixture	Model No. SK
Outdoor	1 : 2	**3301.950**
Standard	1 : 4	**3301.960**



Filter mats

Rittal cooling units are low-maintenance and are supplied without filter mats. Filter mats may be used for extreme conditions.

Material:
Open-celled polyurethane foamed plastic with excellent physical and mechanical properties. Temperature-resistant from –40°C to +80°C. Thickness: 10 mm.

For TopTherm cooling units

For cooling unit	W x H x D mm	Packs of	Model No. SK
SK 3302.300/SK 3302.310	190 x 95 x 10	3	**3286.110**
SK 3302. . . /SK 3303. . . /SK 3361. . . .	265 x 200 x 10	3	**3286.300**
SK 3304. . . /SK 3305. . . /SK 3328. . . /SK 3329. . . / SK 3332. . . /SK 3366. . . .	344 x 268 x 10	3	**3286.400**
SK 3273. . . /SK 3382. . . /SK 3383. . . /SK 3384. . . / SK 3385. . . /SK 3359. . . .	530 x 255 x 10	3	**3286.500**
SK 3386. . . /SK 3387. . . .	720 x 300 x 10	3	**3286.600**
SK 3377. . . .	205 x 210 x 10	3	**3253.010**

For discontinued cooling units

For cooling unit	W x H x D mm	Packs of	Model No. SK
SK 3296. . . /SK 3272.100/SK 3290. . . /SK 3280.100/ SK 3299. . . /SK 3261. . . .	539 x 332 x 10	3	**3286.100**
SK 3265.100/SK 3266.100	270 x 332 x 10	3	**3267.100**
SK 3256. . . .	395 x 300 x 10	3	**3254.000**
SK 3293. . . /SK 3281.100/SK 3298. . . /SK 3279.100/ SK 3260. . . /SK 3269. . . /SK 3262.100/SK 3393. . . / SK 3381.100/SK 3391. . . .	334 x 313 x 10	3	**3294.100**
SK 3255. . . /SK 3395. . . .	350 x 245 x 10	3	**3253.000**
SK 3394. . . .	315 x 200 x 10	3	**3285.000**
SK 3292.134/SK 3278.134	325 x 250 x 10	3	**3286.000**



Filter mats

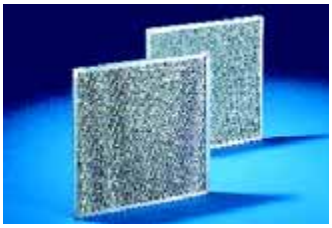
Made of chopped-fibre mat with a progressive structure. Temperature-resistant to 100°C, self-extinguishing category F1 to DIN 53 438.
Dust-laden air side: Open structure.
Clean air end: Closed structure.
Reliable filtering of virtually all types of dust from a particle size of 10 µm.

Material:
Chemical fibre

For centrifugal fans/front outlet grilles 2 U

For centrifugal fans/front outlet grilles 2 U	W x H x D mm	Packs of	Model No. SK
SK 3144.000/SK 3145.000/SK 3176.000	425 x 85 x 8	5	**3177.000**

Filter mats



Metal filter

Particularly when cooling units are used in dusty and damp environments, it is advisable to use washable metal filters.
If air or steam condenses on the metal surfaces, any particles that may be present will adhere to the metal and are easily washed out with water or grease-dissolving detergents.

Material:
Aluminium
Thickness: 10 mm

For TopTherm cooling units

For cooling unit	W x H x D mm	Packs of	Model No. SK
SK 3302.300/SK 3302.310	190 x 95 x 10	1	**3286.120**
SK 3302.100/SK 3302.110/SK 3303. . . ./SK 3361. . . .	265 x 200 x 10	1	**3286.310**
SK 3304. . . ./SK 3305. . . ./SK 3328. . . ./SK 3329. . . ./ SK 3332. . . ./SK 3366. . . .	344 x 288 x 10	1	**3286.410**
SK 3273. . . ./SK 3382. . . ./SK 3383. . . ./SK 3384. . . ./ SK 3385. . . ./SK 3359. . . .	530 x 255 x 10	1	**3286.510**
SK 3386. . . ./SK 3387. . . .	720 x 300 x 10	1	**3286.610**
SK 3377. . . .	205 x 210 x 10	1	**3253.220**

For discontinued cooling units

For cooling unit	W x H x D mm	Packs of	Model No. SK
SK 3296. . . ./SK 3272.100/SK 3290. . . ./SK 3280.100	520 x 290 x 10	1	**3286.210**
SK 3299. . . ./SK 3261. . . .	520 x 315 x 10	1	**3286.200**
SK 3265.100/SK 3266.100	265 x 320 x 10	1	**3267.200**
SK 3256. . . .	315 x 365 x 10	1	**3254.200**
SK 3293. . . ./SK 3281.100/SK 3298. . . ./SK 3279.100/ SK 3260. . . ./SK 3269. . . ./SK 3262.100/SK 3393. . . ./ SK 3381.100/SK 3391. . . .	300 x 328 x 10	1	**3294.200**
SK 3255. . . ./SK 3395. . . .	348 x 210 x 10	1	**3253.200**
SK 3394. . . .	375 x 415 x 10	1	**3285.200**

For climate control doors

For climate control door	W x H x D mm	Packs of	Model No. SK
SK 3306. . . ./SK 3307. . . ./SK 3309. . . ./SK 3310. . . .	424 x 100 x 10	1	**3284.200**
SK 3308. . . .	624 x 100 x 10	1	**3288.200**
SK 3331. . . .	380 x 150 x 10	1	**3289.200**

For Mini recooling systems

For recooling systems	W x H x D mm	Packs of	Model No. SK
SK 3318.600/SK 3318.610/SK 3319.600/SK 3319.610	530 x 255 x 10	1	**3286.510**
SK 3320.600/SK 3334.600	500 x 558 x 8	1	**3286.520**
SK 3360. . . .	344 x 268 x 10	1	**3286.410**

Filter mats





Spare filter mats

Made of chopped-fibre mat with a progressive structure.
Temperature-resistant to 100°C, self-extinguishing category F1 to DIN 53 438.
Dust-laden air side: Open structure.
Clean air end: Closed structure.
Reliable filtering of virtually all types of dust from a particle size of 10 µm.

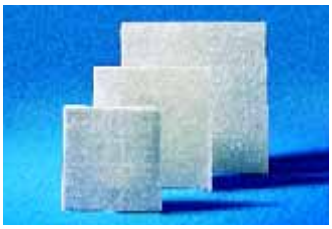
Material:
Chemical fibre

For fan-and-filter units

For fan-and-filter units	W x H x D mm	Packs of	Model No. SK
SK 3321. . . .	89 x 89 x 10	5	**3321.700**
SK 3322. . . .	120 x 120 x 12	5	**3322.700**
SK 3323. . . .	173 x 173 x 17	5	**3171.100**
SK 3324. . . /SK 3325. . . .	221 x 221 x 17	5	**3172.100**
SK 3326. . . .	289 x 289 x 17	5	**3173.100**
SK 3327. . . .	289 x 289 x 10	5	**3327.700**

For filter holders

For filter holders	W x H x D mm	Packs of	Model No. SK
SK 3175.000	338 x 242 x 20	3	**3174.000**



Fine filter mats

Made of chopped-fibre mat with a progressive structure.
Temperature-resistant to 100°C,
self-extinguishing category F1 to DIN 53 438.
Dust-laden air side: Open structure.
Clean air end: Closed structure.
Reliable filtering of virtually all types of dust from a particle size of 10 µm.

Material:
Chemical fibre

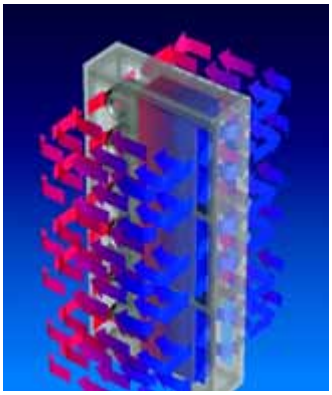
For fan-and-filter units/outlet filters

For fan-and-filter units/outlet filters	W x H x D mm	Packs of	Model No. SK
SK 3323. . . .	173 x 173 x 12	5	**3181.100**
SK 3324. . . /SK 3325. . . .	221 x 221 x 12	5	**3182.100**
SK 3326. . . /SK 3327. . . .	289 x 289 x 12	5	**3183.100**

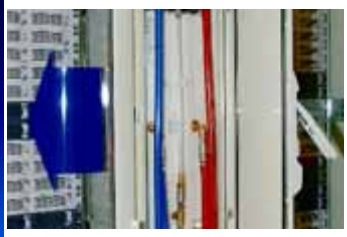
Features



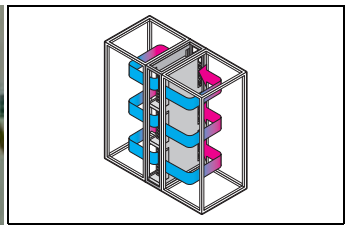
From passive air climate control to active liquid cooling of high-performance CPUs, Rittal provides all the required components and systems. They are designed precisely according to your requirements and application spectrum. Software-assisted planning and calculation of requirements, together with modular, rack-compatible technology, help to minimise investment costs, thereby offering a particularly future-safe solution with a high degree of flexibility.



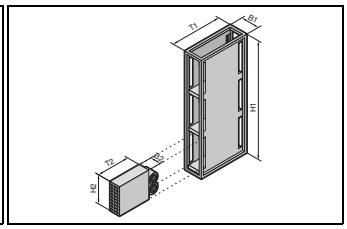
Liquid cooling package



Modular, upgradable and temperature-neutral cooling concept. 12 kW cooling output, with three cooling modules supported per cooling rack.



Optimised air routing
Cold air is blown in at the sides, so that the cold air is evenly distributed in front of the 482.6 mm (19″) level.



Optionally 1 or 2 server racks may be cooled – both standalone and bayed siting are possible. Bayable to TS and PS server racks, even retrospectively.



Rack-mounted recooling system



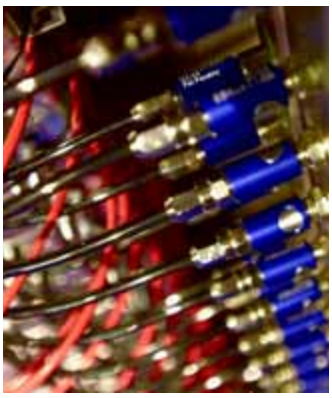
Microcontroller control



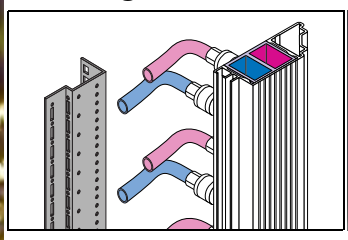
Liquid-cooled computers
in a 482.6 mm (19″) server rack are supplied via the shortest route via six cooling circuits, without the need for an additional rising main.



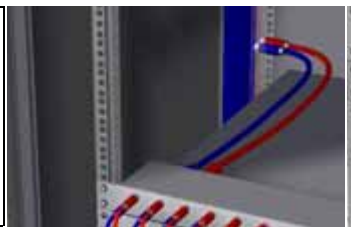
Vibration-free installation



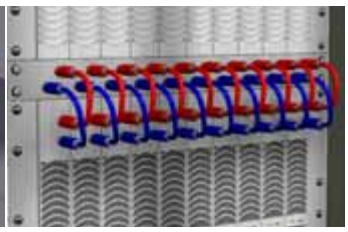
Cooling circuit distributor for processor climate control



The distributor pipes for inlet and return lines for targeted, reliable liquid cooling may be integrated into all standard rack systems.

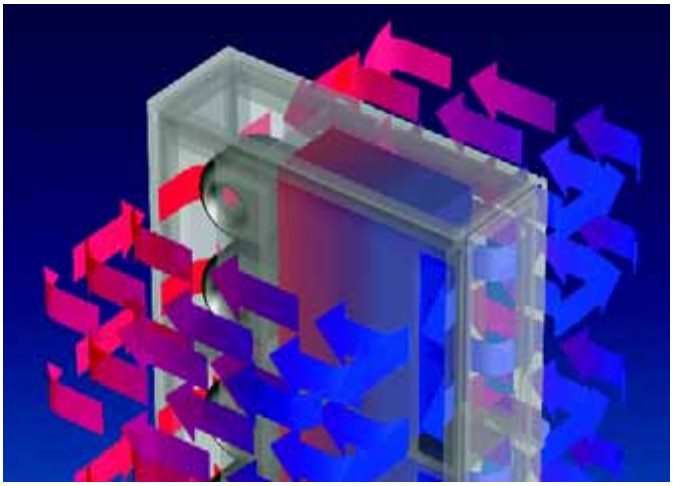


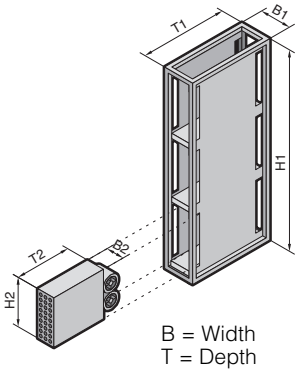
Cooling circuit distributor kit Blade server
The 482.6 mm (19″) distributors are connected to the rising main.



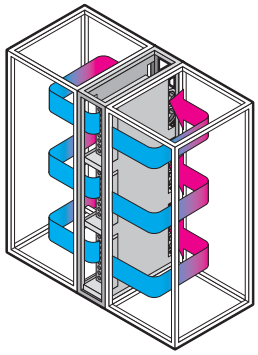
Cooling circuit distributor 482.6 mm (19″)
Connections for 10 servers and a main connection to the vertical rising main.

Rittal liquid cooling package





B = Width
T = Depth



Modular, upgradable and temperature-neutral cooling concept.

- Max. 12 kW cooling output, with three cooling modules possible per cooling rack.
- Approx. 4 kW cooling output per cooling module at 800 m³/h air throughput.
- Optimised air routing: Cold air is blown in at the sides, so that the cold air is evenly distributed in front of the 482.6 mm (19″) level.
- Optionally 1 or 2 server racks may be cooled – stand-alone and bayed siting possible.
- Bayable to TS and PS server racks, even retrospectively.
- Active condensate handling.
- Optional control and monitoring[1] of the cooling rack via Rittal CMC-TC.
- Two-piece modules; for easy installation in narrow passageways.

Technical specifications:

- Mounted as a cooling rack on a server rack based on TS 8, with H = 2000 mm, D = 1000 mm.
- Each cooling rack can accommodate a maximum of three air/water heat exchanger cooling modules.
- Standard supply: Cooling rack equipped with one cooling module.
- Individual modules upgradable to full installation via quick-release couplings.
- Control via a separate module which may be connected to the CMC-TC for incorporation into the network (monitoring).
- Condensation management: The pump in the condensate tray pumps any condensation into the return section of the cooling circuit.

		Enclosure + 3 modules		Individual module for 230 V/115 V
Model No. SK		**3301.230**	**3301.210**	**3301.250**
Rated operating voltage V, Hz		230, 50/60	115, 50/60	230, 50/60
Dimensions in mm	W H D	300 2000 1000		250 550 950
Useful cooling output at 15°C water inlet, 15 l/min, 20°C cold air		**4000 W/3500 W**	**4000 W/3500 W**	**4000 W/3500 W**

Rated current max.	1.8 A	
Pre-fuse T	5.0 A	
Cooling medium	Water (specifications may be found on the Internet)	
Water inlet temperature	+5°C to +30°C	
Permissible operating pressure p. max.	2 to 8 bar	
Temperature range	+5°C to +40°C	
Protection category to EN 60 529/10.91	IP 30	–
Duty cycle	100 %	
Type of connection	Current: Connection cable with earthing-pin plug: Water: ³/₄″ quick-release fastener	
Weight	max. 160 kg	approx. 25 kg
Colour	RAL 7035	
Air throughput of fans	max. 2400/2100 m³/h	800/700 m³/h
Temperature control	Electronically controlled magnetic valve and 4-way fan control	

[1] Flow, leakage, inlet/return, intake/exhaust temperature.
The general remarks on air/water heat exchangers (available on the Internet) apply.

For professional installation of the heat exchanger, where possible, the enclosures being cooled should be sealed against the ingress of ambient air:

Description	Dimensions in mm		Packs of	Model No.
Side panel, screw-fastened	H x D	2000 x 1000	2	**8100.235**
Glazed door	W x H	600 x 2000	1	**8610.600**[2]
		800 x 2000	1	**8610.800**[2]
Sheet steel door, solid	W x H	600 x 2000	1	**7824.205**[2]
		800 x 2000	1	**7824.207**[2]
[2] Alternatively: Sealing kit for vented sheet steel doors, size	W x H	600 x 2000	1	**7824.185**
	W x H	800 x 2000	1	**7824.187**

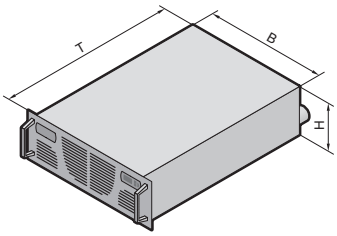
Description	Dimensions in mm		Packs of	Model No.
Divided partitioning plate for retrospective sealing in the base area	W x D	600 x 1000	1	**7825.300**
		800 x 1000	1	**7825.302**
Divided roof plate for cable entry	W x D	600 x 1000	1	**7826.605**[3]
		800 x 1000	1	**7826.805**[3]
Sealing kit for two-sided cooling when bayed			1 set	**7825.305**

[3] Retrospective installation is not possible.

Accessories Page 657 **Recooling systems** From page 606 **Server enclosures** From page 734 **Configuration software** Page 1063

Rack-mounted recooling system





B = Width
T = Depth

Liquid-cooled computers in a 482.6 mm (19″) server rack are supplied via the shortest route via six cooling circuits, without an additional rising main.

- Partial liquid cooling in heterogeneous environments.
- Combination of air and liquid cooling possible.

Technical specifications:

- Installation in the 482.6 mm (19″) level of the enclosure.
- 6 cooling circuit connections for server/CPU cooling on the back of the chiller via drip-free quick-release coupling.
- Vibration-free installation.
- 2 freely programmable alarm outputs.
- Operating pressure display.
- Optional automatic bypass.

Also required:

- Quick-release couplings
- Heat sink, retaining clamps
- Hose,
  see page 675.

Model No. SK		**3301.260**
Rated operating voltage V, Hz		230, 50/60
Dimensions in mm	W H D	442 175 751 + 100 mm for water connections
Cooling output at T_w = 25°C T_u = 32°C, 2 l/h		**1000 W/1070 W**

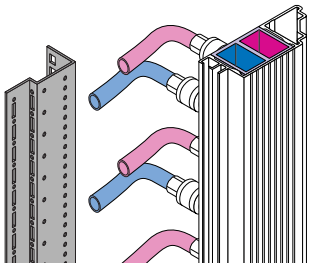
Power consumption		640/790 W
Rated current max.		4.5 A
Refrigerant		R134a, 550 g
$P_{max.}$ cooling circuit		25 bar
Temperature range	Environment	+10°C to +40°C
	Liquid media	+10°C to +35°C
Pump capacity		4 l/min at 2 bar
Tank		Pressure-sealed
Tank capacity		–
Water connections		Quick-release coupling, drip-free
Weight		45 kg
Colour		Textured RAL 7035.
Protection category (electrics)		IP 20
Air throughput of fans		450 m³/h
Temperature control		Microcontroller, setting range +10°C to +30°C, factory setting +18°C

Delivery times available on request.

Accessories Page 657 **Recooling systems** From page 606 **Server enclosures** From page 734 **Configuration software** Page 1063

Power Cooling System PCS





Cooling circuit distributor for racks

Water cooling
High performance for CPUs, power packs and disk drives by cooling directly at the area where heat is generated. The distributor pipes for inlet and return lines for targeted, reliable liquid cooling may be integrated into all standard rack systems.
They are linked to an external, central recooling unit which also controls the inlet temperature. The drip-free quick-release coupling ensures an extremely high level of operational reliability. Monitoring of the system functions is performed by the tried-and-trusted Rittal CMC-TC module.
There are 2 complete basic packages available for retro-fitting for different enclosure heights.

Supply includes:

Package 1
Water infeed:
Connection system, non-return valve and 10 m hose, $^1/_2$″, fittings, filter, vent valve.

Water distribution:
Cooling circuit distributor for 20 CPU cooling circuits, vent valve, 40 bulkhead couplings, 50 m distributor hose, 6 mm.

Package 2
Water infeed:
Connection system, non-return valve and 10 m hose, $^1/_2$″, fittings, filter, vent valve.

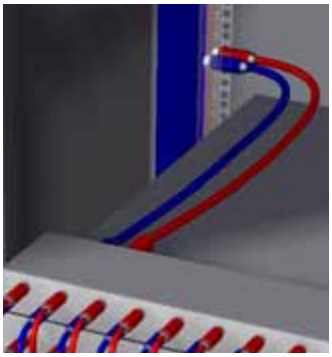
Water distribution:
Cooling circuit distributor for 40 CPU cooling circuits, vent valve, 80 bulkhead couplings, 100 m distributor hose, 6 mm.

For enclosure height		Model No. SK	
mm	U	Package 1	Package 2
1200	24	**3301.810**	–
2000	42	–	**3301.820**

Also required:
Recooling system,
see page 608 onwards.

Accessories:
Distributor accessories,
see page 675.





Cooling circuit distributor kit

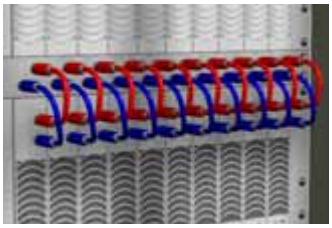
for Blade server
Our liquid cooling for server racks serves as a basis for this solution. The large number of drip-free taps to the individual computers is now replaced by the connection of horizontal liquid sub-distributors, where the drip-free connectors for connection of the Powerblade are found.
5 units are possible with 7 U per server and 1 per 482.6 mm (19″) distributor. The individual 482.6 mm (19″) distributors are connected to the rising main with drip-free connectors, so that the system is modular and scalable.

Supply includes:
1 vertical rising main with 5 taps,
1 482.6 mm (19″) cooling circuit distributor with 10 inlet and return connections,
1 connection hose (inlet and return) from the 482.6 mm (19″) cooling circuit distributor to the vertical rising main,
1 connection hose (inlet and return) from the vertical rising main to the recooler

Packs of	Model No. SK
1	**3301.280**

Also required:
Recooling system,
see page 608 onwards.

Accessories:
482.6 mm (19″) distributor,
distributor accessories,
see page 675.



Cooling circuit distributor 19″

For installation in the 482.6 mm (19″) level with drip-free connections for 10 servers and a main connection to the vertical rising main;
0.5 m hose in each case for the inlet and return.

Packs of	Model No. SK
1	**3301.270**

Accessories:

Distributor accessories,
see page 675.

Distributor accessories

Description		Packs of	Model No. SK
Heat sink		1	**3301.000**
Connector for heat sink	6 mm	2	**3301.010**
	4 mm	2	**3301.020**
Retaining clamps	Athlon	1	**3301.030**
	Opteron	1	**3301.040**
	Xeon	1	**3301.050**
	P 4	1	**3301.060**
Connection system for hose (sold by the metre)	4 mm	1	**3301.070**
	6 mm	1	**3301.080**
Screw-in coupling G 1/8″ with seal		10	**3301.090**
Screw-in connector G 1/8″ with seal		10	**3301.130**
Connector sleeve, 6 mm		10	**3301.160**
Connector grommet, 6 mm		10	**3301.170**
Straight screw-in connector G 1/8″, 6 mm		10	**3301.180**
Sealing bung, 6 mm		10	**3301.190**
Y-adaptor, 6 to 2 x 4 mm		10	**3301.700**
Water distribution: 2 x rising main 24 U for TS 8, vent valve, screw-in connector 1/2″, screw-in coupling 1/2″		1	**3301.710**
Water distribution: 2 x rising main 42 U for TS 8, vent valve, screw-in connector 1/2″, screw-in coupling 1/2″		1	**3301.720**
Water infeed: 2 x connector grommet 1/2″, 2 x connector sleeve 1/2″, hose 1/2″ (10 m), non-return valve 1/2″, dirt trap (with 2 x 1/2″ connector sleeve), screw-in connector 1/2″ (on the cooling unit), screw-in coupling 1/2″ (on the cooling unit), 6 x hose clamps 1/2″		1	**3301.730**
Monitoring at the connection to the CMC: Temperature sensor + clamping screw fastening		1	**3301.740**
Accessories/work materials	Hose cutter	1	**3301.750**
	Thermally conductive paste	1	**3301.760**
	Teflon sealing tape	1	**3301.770**
	Sealing bung 1/4″	1	**3301.780**



Permanent availability of your IT systems is undoubtedly crucial. This is your company's heartbeat. For this reason, it is important to ensure stable conditions for your complex server and software system architecture. With this in mind, Rittal combines the five key elementary infrastructure components to create an extremely variable, and above all secure system: **Rack, Power, Cooling, Security, Monitoring & Remote Management.** With Rittal, a high level of IT availability is guaranteed.

IT Solutions

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RimatriX5

The data centre of the future

New software, rising computer performance, high levels of availability –

these are the new challenges placed on the physical IT infrastructure.

Whether your company is small, medium-sized or large, the requirements on IT performance are growing. Highly complex applications, faster processors, and round-the-clock information and communication – all this demands a physical infrastructure which is more than intact. This leads to a number of elementary questions:

- Will the climate control of individual racks, entire server rooms and data centres withstand the rising heat generated?
- Is the energy supply and back-up designed for a high level of availability?
- How can the existing space be used to optimum effect, even with expansion?
- Are the applications and servers protected from physically-induced failures?
- Can all functions be efficiently managed via a perfect monitoring and remote system?
- Is uninterrupted expansion possible at any time?
- Are the costs under control?

The RimatriX5 concept solves all these tasks. The complete solution from Rittal, for the data centre of the future.



Rittal has the solution: RimatriX5 – the holistic, scalable,

efficient system solution for high levels of IT peformance,

with the added benefits and cost advantages of modularity.

RIMATRIX5
DRIVING IT-PERFORMANCE

With the perfectly coordinated components of rack, power, cooling, security and monitoring/remote management, you get an integral, holistic solution for the IT infrastructure. **Added value is provided by RimatriX5 with its globally available, local service:** Configuration and monitoring support via software, precise risk analysis, application-tailored installation and maintenance service and a rapid escalation service.

With RimatriX5, Rittal offers holistic solutions for a reliable, available and cost-saving IT infrastructure.

Be it server room or data centre, high or exceptional availability – the individual modules of RimatriX5 adapt at any time to suit the individual requirements. What's more, they grow along with requirements:



Monitoring & Remote Management

Thanks to simple operation and administration with the "Monitoring & Remote Management" module of RimatriX5, maintenance and operating costs may be permanently reduced in day-to-day operation, whilst overall availability is enhanced. For example, comprehensive monitoring, measurement and control tasks via the CMC module reduce the risk of failure and facilitate preventive intervention.

Security

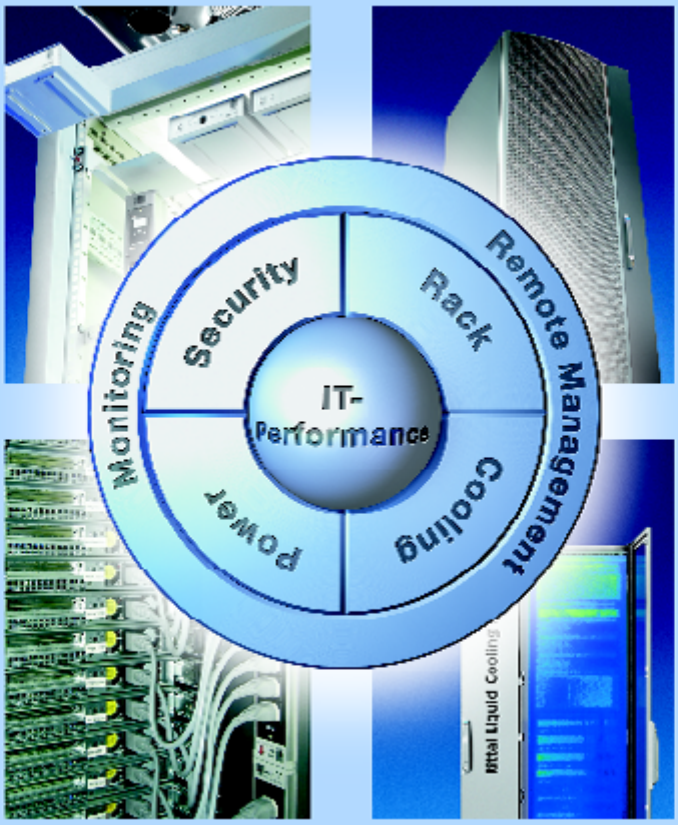
Due to modules for physical rack security and room protection within RimatriX5, a high level of protection of the IT infrastructure is guaranteed. For example, when it comes to physical rack security, temperature, smoke and vibration sensors coupled with modern access control solutions and tested enclosure extinguisher systems provide reliable protection against external influences.

See page 762.

Power

The Power module within the RimatriX5 concept ensures a constant and consistent energy supply.
From plug & play power distribution in the IT rack, to power distribution within the space, to power supply back-up with requirement-based UPS, the Power module of RimatriX5 offers optimum energy performance for a high level of availability.

See page 742.



Rack

As one of the world's leading manufacturers of server and network enclosures, Rittal offers an extensive selection with a unique range of accessories.
In this way, you can create the requirements for high-end individual expansion of your IT infrastructure with greater freedom, more flexibility, and enhanced security.

See page 680.

Cooling

With the climate control concepts of RimatriX5, investment costs are minimised, and investment security is maximised. From fans to active liquid cooling, the climate control solutions may be tailored to actual requirements. This helps to cut investment costs and offers adequate scope for future expansions.

See page 758.

The modular principle for the physical IT infrastructure means system solutions rather than piecework – scalable, flexible, and tailored to your application:

RimatriX5 – Driving IT performance

Features



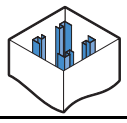
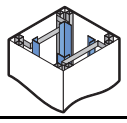
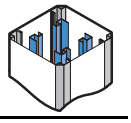
You define your requirements – Rittal has the solution!

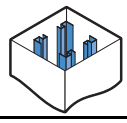
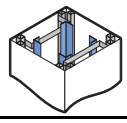
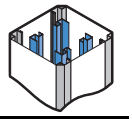
A variety of system platforms will accommodate your differentiated requirements in the networking sector.

You have the performance for new technologies today.

Consequently, your network grows effortlessly in line with new tasks.

The flexbility of its systems allows Rittal to offer this exceptional future-proofing.

Rittal system comparison	TE 7000	TS 8	FR(i)
One platform for all requirements in the IT market			
Load capacity			
up to 400 kg	■■■	■■■	■■■
up to 1000 kg		■■■	■■■
Baying			
side	■■■	■■■	■■■
in all levels		■■■	
Climate control			
Fan	■■■	■■■	■■■
Climate control device		■■■	■■
Air/water heat exchanger		■■■	
CPU liquid cooling		■■■	■■■
Cabling			
Cable space	■■■	■■	■■
Cable management	■■■	■■■	■■■

Rittal system comparison	TE 7000	TS 8	FR(i)
One platform for all requirements in the IT market			
Lock system			
2-point	■■■	■■■	■■■
4-point		■■■	
Security			
Access control	■■■	■■■	■■■
Climate control	■■■	■■■	■■■
Dismantling	■■■	■	■
Interior installation			
Depth-variable	■	■■■	■■
Partial installation		■■■	
2-level principle		■■■	■
Design	■■	■■	■■■
Standards IEC 60 297-1/2	■■■	■■■	■■■

Note: The more (symbol) the greater the compatibility.



TE 7000







Two 482.6 mm (19″) mounting levels in the multi-functional section create a solid framework. Load capacity 400 kg!

The benefits of this rack without an enclosure frame: Optimum accessibility, maximum use of the interior space, and superfast assembly.

482.6 mm (19″) distance between levels:
Tailored to Premium accessories in 50 mm increments, or fully depth-variable via the slot attachment.



TS 8







An ingenious symmetrical concept with baying on all sides. With two levels, the frame section affords infinite assembly diversity.

Fully depth-variable interior installation creates flexibility for various installed equipment. Fast assembly by simply locating and securing.

Climate control
For example, a fan unit integrated into the TS 8 twin wall for targeted air routing in the lower part of the enclosure.

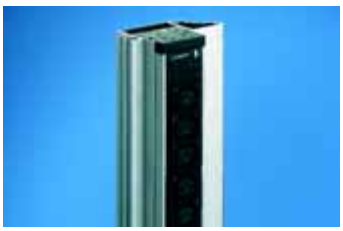
Features



flexRack(i)



Cable management
Cables may be routed and system accessories integrated within the hollow chamber of the frame section.



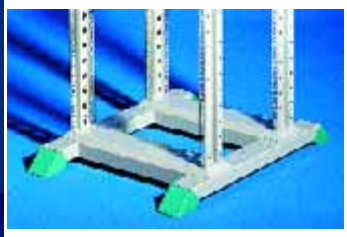
Power management integrated directly into the frame section. Three-phase infeed using the plug & play system, with no loss of enclosure volume.



Liquid cooling
The profile of the flexRack(i) allows integration of the inlet and return lines for targeted, safe liquid cooling.



DataRack



A second mounting level for heavy equipment or double panel assembly. Compatible with Rittal system accessories.



RiLab



Supporting column with two vertical tapped strips for flexible mounting on a 32 mm height pitch pattern. The 6-way socket strip with switch may be integrated into the power column.



Cable management



Gland plate module with brush strip for cable entry in the base area.

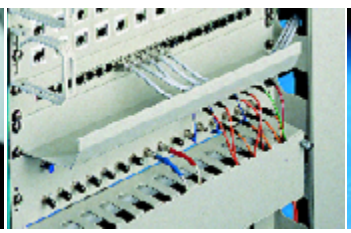


Cable clamp rail, depth-variable
The cable clamp rails may be located directly between two mounting frames.

Cable management 482.6 mm (19″)



The surplus cable holder may be attached to all support strips or to punched sections and rails with a 25 mm pitch pattern.



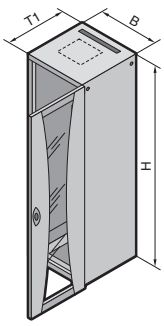
Grooved cable routing panel 482.6 mm (19″)
To hold the patching cables.

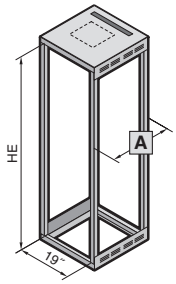


Fibre-optic shunting rings
Strain relief and bend radii are guaranteed by the specific design.

Network enclosures, based on Rittal TE 7000, width 600







B = Width
T = Depth
HE = U

A = Defined mounting distance for Premium accessories, see below.

Benefits:
- Coordinated accessories for fast installation in the delivered state
- No frame structure, optimum accessibility
- Load capacity up to 400 kg.

Material:
Sheet steel

Surface finish:
Mounting frame:
Electrophoretic dipcoat-primed
Enclosure panels:
Powder-coated,
RAL 7035/RAL 9005.

Supply includes:
Self-supporting 482.6 mm (19″) frame structure,
glazed door at the front,
two-point locking rod, recessed handle and security lock 3524 E,
sheet steel door at rear, two-point locking rod, recessed handle and security lock 3524 E,
pluggable side panels with security lock 3524 E,
base frame with maximum cutout (for optional population with module plates), roof plate for cable entry with covered cutout for fan, levelling feet, spacers for raising the cover plate.

Detailed drawing,
available on the Internet.

U	12	12	24	24	42	42	47	47
Width (B) in mm	600	600	600	600	600	600	600	600
Height (H) in mm	600	600	1200	1200	2000	2000	2200	2200
Depth (T1) in mm	600	800	600	800	600	800	600	800
482.6 mm (19″) distance between levels in its delivered state A	495	495	495	495	495	495	495	495
Model No. TE	**7000.390**	**7000.410**	**7000.430**	**7000.440**	**7000.500**	**7000.510**	**7000.560**	**7000.570**
Model No. TE as a bayed enclosure without side panels, incl. baying kit	–	–	–	–	**7000.502**	–	**7000.562**	–
Model No. TE incl. side panels, RAL 9005	–	–	–	–	**7000.505**	**7000.515**	–	–

A 495 mm – that is the distance between the two 482.6 mm (19″) levels in the delivered state for all enclosure formats. Corresponds to TS 8 nominal size, depth 400 mm, inner level.

B Pitch spacing 50 mm. The distance between the two 482.6 mm (19″) levels may be varied in 50 mm increments (445 to 695 mm).

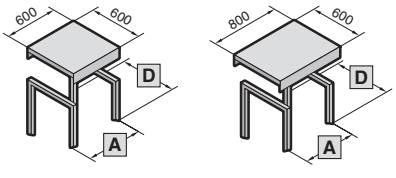
C Distance from door:
52.5 mm for depth 600
152.5 mm for depth 800

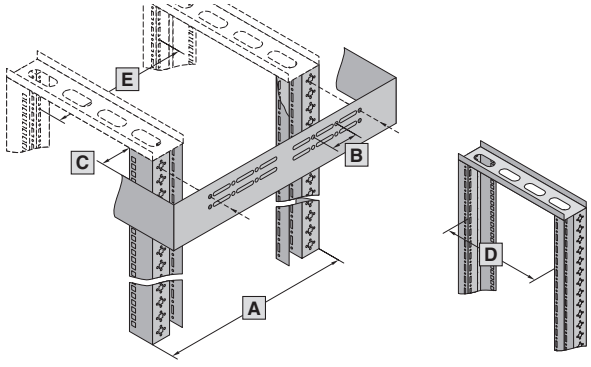
D The mounting distance in a rear mounting frame, horizontal, corresponds to the frame mounting dimensions of a 600 mm wide TS 8 (outer level, 525 mm).

E = A – 120 mm

The distance between levels is freely selectable via the slot fastening. All key mounting components – punched sections with mounting flanges, divider kits, slide rails, component shelves – are also available in depth-variable format.

German registered design no. 403 07 489





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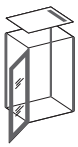
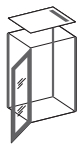
Network enclosures, based on Rittal TE 7000, width 600

					
U	12	12	24	24	Page
Width (B) in mm	600	600	600	600	
Height (H) in mm	600	600	1200	1200	
Depth (T1) in mm	600	800	600	800	
482.6 mm (19″) distance between levels in its delivered state A mm	495	495	495	495	
Model No. TE	**7000.390**	**7000.410**	**7000.430**	**7000.440**	
Model No. TE as a bayed enclosure without side panels, including baying kit	–	–	–	–	
Doors					
Glazed front door/sheet steel rear door	■	■	■	■	
Sheet steel front door/sheet steel rear door	On request	On request	On request	On request	
Ergoform-S handle for semi-cylinder, in exchange for the existing lock	2435.000	2435.000	2435.000	2435.000	885
Side panel					
Side panel, plug-type, including security lock 3524 E	■	■	■	■	856
Baying kit	7000.640	7000.640	7000.640	7000.640	867
Roof					
Roof plate with brush strip for cable entry, prepared to accommodate an active fan unit	■	■	■	■	
Fan unit, 2 fans (max. 3) including thermostat	7000.670	7000.670	7000.670	7000.670	651
Fan expansion kit	7980.000	7980.000	7980.000	7980.000	649
Spacers 20 mm to raise the cover plate above the fan cutout	■	■	■	■	
Base/plinth					
Roof frame with maximum cutout for individual population with module plates, levelling feet M10	■	■	■	■	
Module plate variants for individual population	from page 903	from page 903	from page 903	from page 903	
Base/plinth components solid, front and rear	8601.605	8601.605	8601.605	8601.605	835
Base/plinth components, vented, front and rear	7825.601	7825.601	7825.601	7825.601	835
Base/plinth trim, side	8601.065	8601.085	8601.065	8601.085	835
Base/plinth adaptor for levelling feet M12	8800.220	8800.220	8800.220	8800.220	849
Levelling feet M12	4612.000	4612.000	4612.000	4612.000	848
Base/plinth installation accessories	from page 834	from page 834	from page 834	from page 834	
Interior installation/Premium accessories					
482.6 mm (19″) mounting frames front and rear	■	■	■	■	
Punched section with mounting flange 17 x 73 mm, for mounting installation components, attached in the enclosure depth between the 482.6 mm (19″) mounting frames	8612.040	8612.040	8612.040	8612.040	921
Cable clamp rail, depth variable 425 – 725 mm, for cable attachment in the enclosure depth using cable ties	7858.160	7858.160	7858.160	7858.160	984
Cable clamp rail, for cable attachment in the enclosure width via cable ties, on the 482.6 mm (19″) mounting frame at the rear	7828.062	7828.062	7828.062	7828.062	983
C rail, for cable clamping in the enclosure depth via cable clamps	7828.040	7828.040	7828.040	7828.040	928
C rail, for cable clamping in the enclosure width via cable clamps, on the 482.6 mm (19″) mounting frame at the rear	7828.060	7828.060	7828.060	7828.060	928
Earthing kit for TE	7000.675	7000.675	7000.675	7000.675	961
TE socket strip, 8-way, with earthing-pin plug	7000.630	7000.630	7000.630	7000.630	748
Power management	from page 742	from page 742	from page 742	from page 742	
Slide rail for TE, for attachment between the 482.6 mm (19″) mounting frames, length 424 mm	7963.410	7963.410	7963.410	7963.410	1011
482.6 mm (19″) component shelf for fixed installation, for direct screw fastening without an installation kit, 412 mm deep, load capacity 30 kg, static	7000.620	7000.620	7000.620	7000.620	945
Cable management	from page 984	from page 984	from page 984	from page 984	
CMC-TC system monitoring	from page 762	from page 762	from page 762	from page 762	

■ included with the supply

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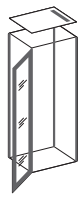
Network enclosures, based on Rittal TE 7000, width 600

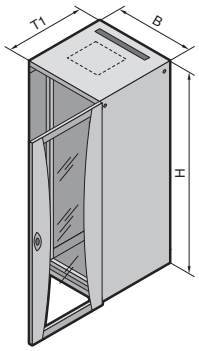
					
U	42	42	47	47	Page
Width (B) in mm	600	600	600	600	
Height (H) in mm	2000	2000	2200	2200	
Depth (T1) in mm	600	800	600	800	
482.6 mm (19″) distance between levels in its delivered state A mm	495	495	495	495	
Model No. TE	**7000.500**	**7000.510**	**7000.560**	**7000.570**	
Model No. TE as a bayed enclosure without side panels, including baying kit	**7000.502**	**–**	**7000.562**	**–**	
Doors					
Glazed front door/sheet steel rear door	■	■	■	■	
Sheet steel front door/sheet steel rear door	On request	On request	On request	On request	
Ergoform-S handle for semi-cylinder, in exchange for the existing lock	2435.000	2435.000	2435.000	2435.000	885
Side panel					
Side panel, plug-type, including security lock 3524 E	■ (7000.500 only)	■	■ (7000.560 only)	■	856
Baying kit	■ (7000.502 only)	7000.640	■ (7000.562 only)	7000.640	867
Roof					
Roof plate with brush strip for cable entry, prepared to accommodate an active fan unit	■	■	■	■	
Fan unit, 2 fans (max. 3) including thermostat	7000.670	7000.670	7000.670	7000.670	651
Fan expansion kit	7980.000	7980.000	7980.000	7980.000	649
Spacers 20 mm to raise the cover plate above the fan cutout	■	■	■	■	904
Base/plinth					
Roof frame with maximum cutout for individual population with module plates, levelling feet M10	■	■	■	■	
Module plate variants for individual population	from page 903	from page 903	from page 903	from page 903	
Base/plinth components solid, front and rear	8601.605	8601.605	8601.605	8601.605	835
Base/plinth components, vented, front and rear	7825.601	7825.601	7825.601	7825.601	835
Base/plinth trim, side	8601.065	8601.085	8601.065	8601.085	835
Base/plinth adaptor for levelling feet M12	8800.220	8800.220	8800.220	8800.220	849
Levelling feet M12	4612.000	4612.000	4612.000	4612.000	848
Base/plinth installation accessories	from page 834	from page 834	from page 834	from page 834	
Interior installation/Premium accessories					
482.6 mm (19″) mounting frames front and rear	■	■	■	■	
Punched section with mounting flange 17 x 73 mm, for mounting installation components, attached in the enclosure depth between the 482.6 mm (19″) mounting frames	8612.040	8612.040	8612.040	8612.040	921
Cable clamp rail, depth variable 425 – 725 mm, for cable attachment in the enclosure depth using cable ties	7858.160	7858.160	7858.160	7858.160	984
Cable clamp rail, for cable attachment in the enclosure width via cable ties, on the 482.6 mm (19″) mounting frame at the rear	7828.062	7828.062	7828.062	7828.062	983
C rail, for cable clamping in the enclosure depth via cable clamps	7828.040	7828.040	7828.040	7828.040	928
C rail, for cable clamping in the enclosure width via cable clamps, on the 482.6 mm (19″) mounting frame at the rear	7828.060	7828.060	7828.060	7828.060	928
Earthing kit for TE	7000.675	7000.675	7000.675	7000.675	961
TE socket strip, 8-way, with earthing-pin plug	7000.630	7000.630	7000.630	7000.630	748
Power management	from page 742	from page 742	from page 742	from page 742	
Slide rail for TE, for attachment between the 482.6 mm (19″) mounting frames, length 424 mm	7963.410	7963.410	7963.410	7963.410	1011
482.6 mm (19″) component shelf for fixed installation, for direct screw fastening without an installation kit, 412 mm deep, load capacity 30 kg, static	7000.620	7000.620	7000.620	7000.620	945
Cable management	from page 984	from page 984	from page 984	from page 984	
CMC-TC system monitoring	from page 762	from page 762	from page 762	from page 762	

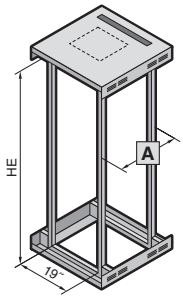
■ included with the supply.

Accessories Page 832 **Monitoring** Page 762 **Climate control** Page 578

Network enclosures, based on Rittal TE 7000, width 800







B = Width
T = Depth
HE = U

A = Defined mounting distance for Premium accessories, see below.

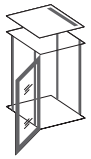
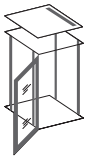
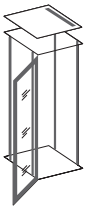
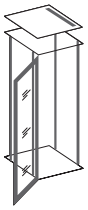
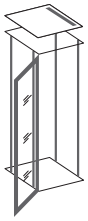
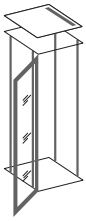
Benefits:
- Coordinated accessories for fast installation in the delivered state
- No frame structure, optimum accessibility
- Load capacity up to 400 kg.

Material:
Sheet steel

Surface finish:
Mounting frame:
Electrophoretic dipcoat-primed
Enclosure panels:
Powder coated,
RAL 7035/RAL 9005.

Supply includes:
Self-supporting 482.6 mm (19″) frame structure, glazed door at the front, two-point locking rod, recessed handle and security lock 3524 E, sheet steel door at rear, two-point locking rod, recessed handle and security lock 3524 E, pluggable side panels with security lock 3524 E, base frame with maximum cutout (for optional population with module plates), roof plate for cable entry with covered cutout for fan, levelling feet, spacers for raising the cover plate.

Detailed drawing,
available on the Internet.

						
U	24	24	42	42	47	47
Width (B) in mm	800	800	800	800	800	800
Height (H) in mm	1200	1200	2000	2000	2200	2200
Depth (T1) in mm	600	800	600	800	600	800
482.6 mm (19″) distance between levels in its delivered state A mm	495	495	495	495	495	495
Model No. TE	**7000.450**	**7000.460**[1)]	**7000.520**	**7000.530**[1)]	**7000.580**	**7000.590**
Model No. TE as bayed enclosure without side panels, including baying kit	–	–	–	**7000.532**[1)]	–	**7000.592**
Model No. TE incl. side panels, RAL 9005	–	–	**7000.525**	**7000.535**	–	–

[1)] **Model No. TE preconfigured with base/plinth, earthing and accessory kit:**
Height 1200 mm: 7000.840. Height 2000 mm: With side panel 7000.850, without side panel 7000.852.

A 495 mm – that is the distance between the two 482.6 mm (19″) level in the delivered state for all enclosure formats. Corresponds to TS 8 nominal size, depth 400 mm, inner level.

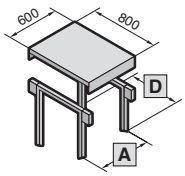
B Pitch spacing 50 mm. The distance between the two 482.6 mm (19″) levels may be varied in 50 mm increments (445 to 695 mm).

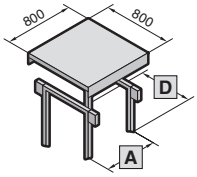
C Distance from door:
52.5 mm for depth 600
152.5 mm for depth 800

D The mounting distance in a rear mounting frame, horizontal, corresponds to the frame mounting dimensions of a 600 mm wide TS 8 (outer level, 525 mm).

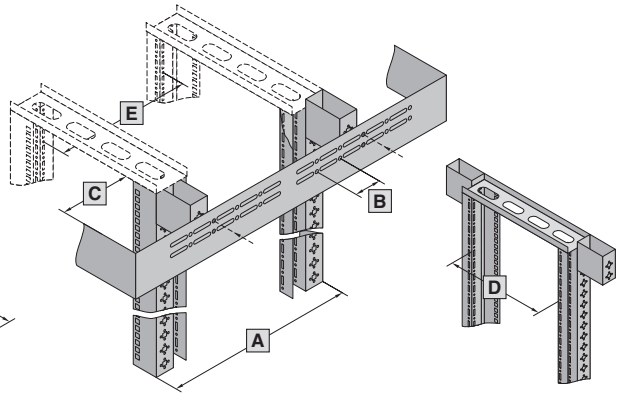
E = **A** – 120 mm

The distance between levels is freely selectable via the slot fastening. All key mounting components – punched sections with mounting flanges, divider kits, slide rails, component shelves – are also available in depth-variable format.





German registered design no.
M 403 07 489



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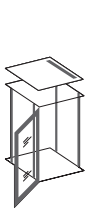
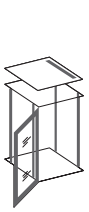
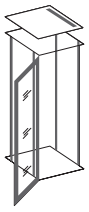
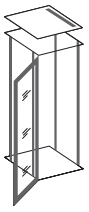
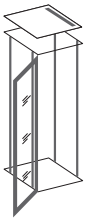
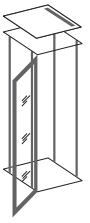
Network enclosures, based on Rittal TE 7000, width 800

U	24	24	42	42	47	47	Page
Width (B) in mm	800	800	800	800	800	800	
Height (H) in mm	1200	1200	2000	2000	2200	2200	
Depth (T1) in mm	600	800	600	800	600	800	
482.6 mm (19″) distance between levels in its delivered state A mm	495	495	495	495	495	495	
Model No. TE	**7000.450**	**7000.460**[1)]	**7000.520**	**7000.530**[1)]	**7000.580**	**7000.590**	
Model No. TE as a bayed enclosure without side panels, including baying kit	–	–	–	**7000.532**[1)]	–	**7000.592**	
Doors							
Glazed front door/sheet steel rear door	■	■	■	■	■	■	
Sheet steel front door/sheet steel rear door	On request	On request	On request	On request	On request	On request	
Ergoform-S handle for semi-cylinder, in exchange for the existing lock	2435.000	2435.000	2435.000	2435.000	2435.000	2435.000	885
Side panel							
Side panel, plug-type, including security lock 3524 E	■	■	■	■ (7000.530 only)	■	■ (7000.590 only)	856
Baying kit	7000.640	7000.640	7000.640	■ (7000.532 only)	7000.640	■ (7000.592 only)	867
Roof							
Roof plate with brush strip for cable entry, prepared to accommodate an active fan unit	■	■	■	■	■	■	
Fan unit, 2 fans (max. 3) including thermostat	7000.670	7000.670	7000.670	7000.670	7000.670	7000.670	651
Fan expansion kit	7980.000	7980.000	7980.000	7980.000	7980.000	7980.000	649
Spacers 20 mm to raise the cover plate above the fan cutout	■	■	■	■	■	■	904
Base/plinth							
Roof frame with maximum cutout for individual population with module plates, levelling feet M10	■	■	■	■	■	■	
Module plate variants for individual population	from p. 903	from p. 903	from p. 903	from p. 903	from p. 903	from p. 903	
Base/plinth components, solid, front and rear	8601.805	8601.805	8601.805	8601.805	8601.805	8601.805	835
Base/plinth components, vented, front and rear	7825.801	7825.801	7825.801	7825.801	7825.801	7825.801	835
Base/plinth trim, side	8601.065	8601.085	8601.065	8601.085	8601.065	8601.085	835
Base/plinth adaptor for levelling feet M12	8800.220	8800.220	8800.220	8800.220	8800.220	8800.220	849
Levelling feet M12	4612.000	4612.000	4612.000	4612.000	4612.000	4612.000	848
Interior installation/Premium accessories							
482.6 mm (19″) mounting frames front and rear	■	■	■	■	■	■	
Punched section with mounting flange 17 x 73 mm, for mounting installation components, attached in the enclosure depth between the 482.6 mm (19″) mounting frames	8612.040	8612.040	8612.040	8612.040	8612.040	8612.040	921
Cable clamp rail, depth variable 425 – 725 mm, for cable attachment in the enclosure depth using cable ties	7858.160	7858.160	7858.160	7858.160	7858.160	7858.160	984
Cable clamp rail, for cable attachment in the enclosure width via cable ties, on the 482.6 mm (19″) mounting frame at the rear	7828.062	7828.062	7828.062	7828.062	7828.062	7828.062	983
C rail, for cable clamping in the enclosure depth via cable clamps	4943.000	4943.000	4943.000	4943.000	4943.000	4943.000	928
C rail, for cable clamping in the enclosure width via cable clamps, on the 482.6 mm (19″) mounting frame at the rear	7828.060	7828.060	7828.060	7828.060	7828.060	7828.060	928
Earthing kit for TE	7000.675	7000.675	7000.675	7000.675	7000.675	7000.675	961
TE socket strip, 8-way, with earthing-pin plug	7000.630	7000.630	7000.630	7000.630	7000.630	7000.630	748
Power management	from p. 742	from p. 742	from p. 742	from p. 742	from p. 742	from p. 742	
Slide rail for TE, for attachment between the 482.6 mm (19″) mounting frames, length 424 mm	7963.410	7963.410	7963.410	7963.410	7963.410	7963.410	1011
482.6 mm (19″) component shelf for fixed installation, for direct screw fastening without an installation kit, 412 mm deep, load capacity 30 kg, static	7000.620	7000.620	7000.620	7000.620	7000.620	7000.620	945
Cable management	from p. 984	from p. 984	from p. 984	from p. 984	from p. 984	from p. 984	
CMC-TC system monitoring	from p. 762	from p. 762	from p. 762	from p. 762	from p. 762	from p. 762	

■ included with the supply.

[1)] **Model No. TE preconfigured with base/plinth, earthing and accessory kit:**
Height 1200 mm: 7000.840. Height 2000 mm: With side panel 7000.850, without side panel 7000.852.

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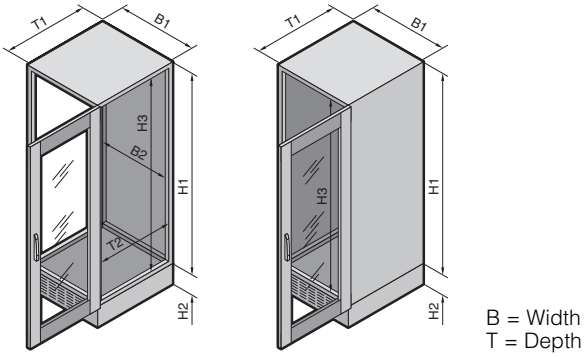
Network enclosures, based on Rittal TS 8, pre-configured





B = Width
T = Depth

Material:
Sheet steel

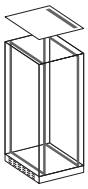
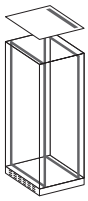
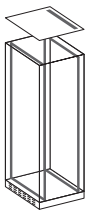
Surface finish:
Enclosure frame:
Dipcoat-primed
Doors, roof and base/plinth:
Dipcoat-primed,
powder-coated in RAL 7035
Gland plates, punched sections with mounting flanges and mounting angles:
Zinc-plated, passivated

Supply includes:
System frame with doors or rear panel, roof plate, vented base/plinth 100 mm,
earthing of all enclosure panels; supplied loose:
Levelling feet incl. base/plinth adaptor,
4 spacers, for raising the roof,
4 cable clamp rails for the inner frame level,
10 cable shunting rings (105 x 70 mm, plastic),
50 captive nuts, M6, conductive,
50 multi-tooth screws M6.

P 1
Glazed door at the front, 180°, sheet steel door at the rear, 130°. 482.6 mm (19″) mounting angles, front, fitted approx. 150 mm behind the frame front edge, screw-fastened to the TS punched sections with mounting flange as depth stays. Gland plate, one-piece, vented, with cable entry.

P 2
Glazed door at the front, 180°, sheet steel door at the rear, 130°. 482.6 mm (19″) mounting angles at the front and rear, distance between levels 498 mm. Cranked mounting angles screw-fastened to installation brackets approx. 150 mm behind the frame front edge. Gland plate at the front, fitted as an infill panel.

Detailed drawing,
available on the Internet.

	P 1	P 2	P 2	P 2
				
U	24	38	42	47
Width (B1) in mm	600	800	800	800
Height (H1 + H2) in mm	1200 + 100	1800 + 100	2000 + 100	2200 + 100
Depth (T1) in mm	600	800	800	800
Clearance width (B2) in mm	512	712	712	712
Clearance height (H3) in mm	1112	1712	1912	2112
Clearance depth (T2) in mm	512	712	712	712
Model No. DK including 2 plug-in side panels, with security lock 3524 E	**7830.100**	**7830.800**	**7830.200**	**7830.220**
Model No. DK as a bayed enclosure without side panels, incl. baying kit TS 8800.500	**–**	**7830.850**	**7830.250**	**7830.270**

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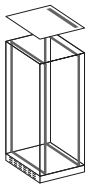
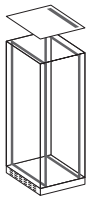
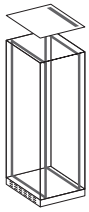
Network enclosures, based on Rittal TS 8, pre-configured

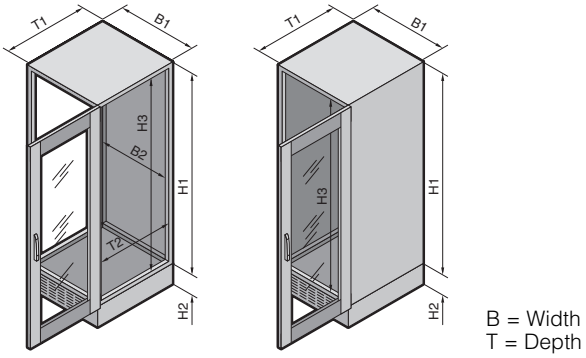
	P 1	P 2	P 2	P 2	Page
					
U	24	38	42	47	
Width (B1) in mm	600	800	800	800	
Height (H1 + H2) in mm	1200 + 100	1800 + 100	2000 + 100	2200 + 100	
Depth (T1) in mm	600	800	800	800	
Model No. DK incl. 2 plug-in side panels, with security lock 3524 E	**7830.100**	**7830.800**	**7830.200**	**7830.220**	
Model No. DK as bayed enclosure without side panels, incl. baying kit TS 8800.500	**–**	**7830.850**	**7830.250**	**7830.270**	
Doors					
Glazed front door/sheet steel rear door	■	■	■	■	
Various door options	from page 869	from page 869	from page 869	from page 869	
180° hinges for sheet steel rear door	8800.190	8800.190	8800.190	8800.190	893
Side panel					
Side panel, plug-in, IP 20	■	■ (7830.800 only)	■ (7830.200 only)	■/– (7830.220 only)	
Lock for side panel, plug-in, 3524 E	■	■	■	■	
Internal latch for side panel, plug-in	7824.510	7824.510	7824.510	7824.510	855
Side panel, screw-fastened, IP 55	8170.235	8188.235	8108.235	8128.235	853
Baying	from page 861	from page 861	from page 861	from page 861	
Roof					
Roof plate for cable entry	■	■	■	■	
Roof plate, vented	7826.766	7826.788	7826.788	7826.788	902
Roof plate, vented, for cable entry	7826.669	7826.889	7826.889	7826.889	902
Fan roof, modular	see page 651	see page 651	see page 651	see page 651	
Fan mounting plate, active, with controller	7966.035	7988.035	7988.035	7988.035	649
DC fan mounting plate with FCS speed control	–	7858.488	7858.488	7858.488	650
Spacers, 50 mm	7967.000	7967.000	7967.000	7967.000	904
Base/plinth					
Base/plinth components, solid, front and rear	8601.605	8601.805	8601.805	8601.805	835
Gland plate, multi-piece	–	7825.382	7825.382	7825.382	852
Gland plate variants	from page 851	from page 851	from page 851	from page 851	
Castors	see page 848	see page 848	see page 848	see page 848	
Interior installation					
482.6 mm (19″) mounting angles, cranked (for network technology)	■ (front)	■ (front and rear)	■ (front and rear)	■ (front and rear)	
Punched section with mounting flange, interior installation, rail systems	from page 917	from page 917	from page 917	from page 917	
Cable clamp rails, C rails	see page 980	see page 980	see page 980	see page 980	
Earthing/potential equalisation	■	■	■	■	
Socket strips, power management	from page 742	from page 742	from page 742	from page 742	
Component shelves	from page 939	from page 939	from page 939	from page 939	
482.6 mm (19″) installation system	from page 1010	from page 1010	from page 1010	from page 1010	
Cable management	from page 984	from page 984	from page 984	from page 984	
CMC-TC system monitoring	from page 762	from page 762	from page 762	from page 762	

■ included with the supply.

Accessories Page 832 **Monitoring** Page 762 **Climate control** Page 578

Network enclosures, based on Rittal TS 8, pre-configured





B = Width
T = Depth

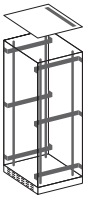
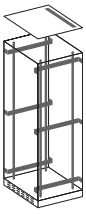
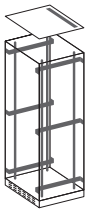
Material:
Sheet steel

Surface finish:
Enclosure frame:
Dipcoat-primed
Doors, roof and base/plinth:
Dipcoat-primed,
powder-coated in RAL 7035
Gland plates, punched sections with mounting flanges and mounting angles:
Zinc-plated, passivated

Supply includes:
System frame with doors or rear panel, roof plate,
vented base/plinth 100 mm,
earthing of all enclosure panels;
supplied loose:
Levelling feet incl. base/plinth adaptor,
4 spacers, for raising the roof,
4 cable clamp rails for the inner frame level,
10 cable shunting rings (105 x 70 mm, plastic),
50 captive nuts, M6, conductive,
50 multi-tooth screws M6.

P 3
Glazed door, vented, at the front, 180°,
sheet steel door, vented, at the rear, 180°.
482.6 mm (19″) mounting angles at the front and rear, distance between levels 740 mm.
L-shaped mounting angles screw-fastened to 2 or 3 depth stays respectively.
Gland plate, one-piece, vented, with cable entry.

Detailed drawing,
available on the Internet.

	P 3	P 3	P 3	P 3	P 3
					
U	24	42	42	47	47
Width (B1) in mm	800	800	800	800	800
Height (H1 + H2) in mm	1200 + 100	2000 + 100	2000 + 100	2200 + 100	2200 + 100
Depth (T1) in mm	900	900	1000	900	1000
Clearance width (B2) in mm	712	712	712	712	712
Clearance height (H3) in mm	1112	1912	1912	2112	2112
Clearance depth (T2) in mm	812	812	912	812	912
Model No. DK including 2 plug-in side panels, with security lock 3524 E	**7830.120**	**7830.300**	**7830.330**	**7830.320**	**7830.340**
Model No. DK as a bayed enclosure without side panels, incl. baying kit TS 8800.500	**–**	**7830.350**	**7830.335**	**7830.370**	**7830.380**

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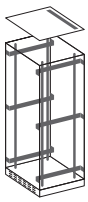
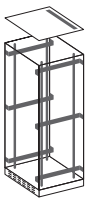
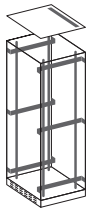
Network enclosures, based on Rittal TS 8, pre-configured

	P 3	P 3	P 3	P 3	P 3	Page
						
U	24	42	42	47	47	
Width (B1) in mm	800	800	800	800	800	
Height (H1 + H2) in mm	1200 + 100	2000 + 100	2000 + 100	2200 + 100	2200 + 100	
Depth (T1) in mm	900	900	1000	900	1000	
Model No. DK incl. 2 plug-in side panels, with security lock 3524 E	**7830.120**	**7830.300**	**7830.330**	**7830.320**	**7830.340**	
Model No. DK as bayed enclosure without side panels, incl. baying kit TS 8800.500	**–**	**7830.350**	**7830.335**	**7830.370**	**7830.380**	
Doors						
Glazed front door/sheet steel rear door, vented	■	■	■	■	■	
Various door options	from page 869	from page 869	from page 869	from page 869	from page 869	
Side panel						
Side panel, plug-in, IP 20	■	■ (7830.300 only)	■ (7830.330 only)	■/– (7830.320 only)	■/– (7830.340 only)	
Lock for side panel, plug-in, 3524 E	■	■	■	■	■	
Internal latch for side panel, plug-in	7824.510	7824.510	7824.510	7824.510	7824.510	855
Side panel, screw-fastened, IP 55	–	8109.235	8100.235	8129.235	–	853
Baying	from page 861	from page 861	from page 861	from page 861	from page 861	
Roof						
Roof plate for cable entry	■	■	■	■	■	
Roof plate, vented	7826.789	7826.789	7826.780	7826.789	7826.780	902
Roof plate, vented, for cable entry	7826.899	7826.899	7826.809	7826.899	7826.809	902
Fan roof, modular	see page 651	see page 651	see page 651	see page 651	see page 651	
Fan mounting plate, active, with controller	7988.035	7988.035	7988.035	7988.035	7988.035	649
DC fan mounting plate with FCS speed control	–			–	–	
Spacers, 50 mm	7967.000	7967.000	7967.000	7967.000	7967.000	904
Base/plinth						
Base/plinth components, solid, front and rear	8601.805	8601.805	8601.805	8601.805	8601.805	835
Gland plate variants	from page 851	from page 851	from page 851	from page 851	from page 851	
Castors	see page 848	see page 848	see page 848	see page 848	see page 848	
Interior installation						
482.6 mm (19″) mounting angles, L-shaped (for server technology)	■	■ (front and rear)	■ (front and rear)	■ (front and rear)	■ (front and rear)	
Punched section with mounting flange, interior installation, rail systems	from page 917	from page 917	from page 917	from page 917	from page 917	
Cable clamp rails, C rails	see page 980	see page 980	see page 980	see page 980	see page 980	
Earthing/potential equalisation	■	■	■	■	■	
Socket strips, power management	from page 742	from page 742	from page 742	from page 742	from page 742	
Component shelves	from page 939	from page 939	from page 939	from page 939	from page 939	
482.6 mm (19″) installation system	from page 1010	from page 1010	from page 1010	from page 1010	from page 1010	
Cable management	from page 984	from page 984	from page 984	from page 984	from page 984	
CMC-TC system monitoring	from page 762	from page 762	from page 762	from page 762	from page 762	

■ included with the supply.

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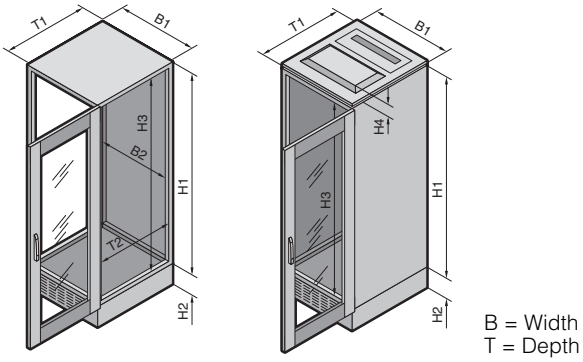
Network enclosures, based on Rittal TS 8, pre-configured





B = Width
T = Depth

Material:
Sheet steel

Surface finish:
Enclosure frame:
Dipcoat-primed
Doors, roof and base/plinth:
Dipcoat-primed,
powder-coated in RAL 7035
Gland plates, punched sections with mounting flanges and mounting angles:
Zinc-plated, passivated

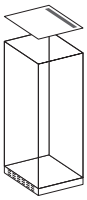
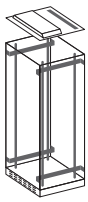
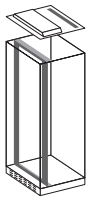
Supply includes:
System frame with doors or rear panel, roof plate,
vented base/plinth 100 mm,
earthing of all enclosure panels;
supplied loose:
Levelling feet incl. base/plinth adaptor,
4 spacers for raising the roof or vent panel,
4 cable clamp rails for the inner frame level,
10 cable shunting rings (105 x 70 mm, plastic),
50 captive nuts, M6, conductive,
50 multi-tooth screws M6.

P 4
Glazed door at the front, 180°, sheet steel door at the rear, 180°. Empty enclosure for individual configuration, 482.6 mm (19″)/ metric or combined partial installation of mounting angles/ enclosure frames is possible. Gland plate at the front, fitted as an infill panel.

P 5
Glazed door at the front, 180°, sheet steel door at the rear, 180°. 482.6 mm (19″) mounting angles at the front and rear, distance between levels 498 mm. L-shaped mounting angles screw-fastened to depth stays in the centre. Roof plate with cutout for fan insert with a vent panel on spacers. Gland plate at the front, fitted as an infill panel.

P 6
Glazed door at the front, 180°, sheet steel rear panel, 180°. Swing frame, large, with trim panel for the installation of 482.6 mm (19″) mounting components whilst utilising the full enclosure height. Full installation at the front, rear panel, including installation kit for swing frames SK 1995.825 up to a total static load capacity of 150 kg. Roof plate with cutout for fan insert with a vent panel on spacers. Gland plate, one-piece, vented, with cable entry.

Detailed drawing,
available on the Internet.

	P 4	P 5	P 6
			
U	42	42	40
Width (B1) in mm	800	800	800
Height (H1 + H2) in mm, (H1 + H2 + H4) in mm	2000 + 100	2000 + 100 + 25	2000 + 100 + 25
Depth (T1) in mm	800	800	800
Clearance width (B2) in mm	712	712	712
Clearance height (H3) in mm	1912	1912	1912
Clearance depth (T2) in mm	712	712	712
Model No. DK incl. 2 plug-in side panels, with security lock 3524 E	**7830.400**	**7830.500**	**7830.660**
Model No. DK as a bayed enclosure without side panels, incl. baying kit TS 8800.500	**–**	**7830.550**	**7830.670**

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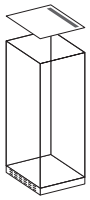
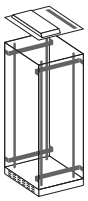
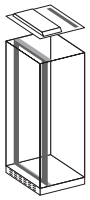
Network enclosures, based on Rittal TS 8, pre-configured

	P 4	P 5	P 6	Page
				
U	–	42	40	
Width (B1) in mm	800	800	800	
Height (H1 + H2) in mm, (H1 + H2 + H4) in mm	2000 + 100	2000 + 100 + 25	2000 + 100 + 25	
Depth (T1) in mm	800	800	800	
Model No. DK incl. 2 plug-in side panels, with security lock 3524 E	**7830.400**	**7830.500**	**7830.660**	
Model No. DK as a bayed enclosure without side panels, incl. baying kit TS 8800.500	**–**	**7830.550**	**7830.670**	
Doors				
Various door options	from page 869	from page 869	from page 869	
180° hinges for sheet steel rear door	8800.190	8800.190	–	
Side panel				
Side panel, plug-in, IP 20	■	■ (7830.500 only)	■ (7830.660 only)	
Lock for side panel, plug-in, 3524 E	■	■	■	
Internal latch for side panel, plug-in	7824.510	7824.510	7824.510	855
Side panel, screw-fastened, IP 55	8108.235	8108.235	8108.235	853
Baying	from page 861	from page 861	from page 861	
Roof				
Roof plate for cable entry	■	7826.885	7826.885	901
Roof plate, vented	7826.788	7826.788	7826.788	902
Roof plate, vented, for cable entry	7826.889	7826.889	7826.889	902
Fan roof, modular	see page 651	■ (without fan insert)	■ (without fan insert)	
Fan mounting plate, active, with controller	7988.035	–	–	649
DC fan mounting plate with FCS speed control	7858.488	7858.488	–	650
Spacers, 50 mm	7967.000	–	–	904
Base/plinth				
Base/plinth components, solid, front and rear	8601.805	8601.805	8601.805	835
Gland plate, multi-piece	7825.382	7825.382	–	852
Gland plate variants	from page 851	from page 851	from page 851	
Castors	see page 848	see page 848	see page 848	
Interior installation				
482.6 mm (19″) mounting angles, L-shaped (for server technology)	from page 1004	■ (front and rear)	482.6 mm (19″) large swing frame (40 U)	
Punched section with mounting flange, interior installation, rail systems	from page 917	from page 917	from page 917	
Cable clamp rails, C rails	see page 980	see page 980	see page 980	
Earthing/potential equalisation	■	■	■	
Socket strips, power management	from page 742	from page 742	from page 742	
Component shelves	from page 939	from page 939	from page 939	
482.6 mm (19″) installation system	from page 1010	from page 1010	from page 1010	
Cable management	from page 984	from page 984	from page 984	
CMC-TC system monitoring	from page 762	from page 762	from page 762	

■ included with the supply.

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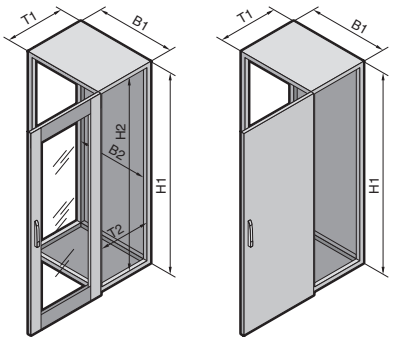
Network enclosures, based on Rittal TS 8, types 1 and 2





B = Width
T = Depth

Type 1
Glazed aluminium door at the front (180°),
with 3 mm single-pane safety glass, comfort handle for semi-cylinder and security lock 3524 E;
sheet steel door at the rear (130°) with handle and security lock 3524 E.

Type 2
Sheet steel door at the front (180°), with comfort handle for semi-cylinder and security lock 3524 E; sheet steel door at the rear (130°) with handle and security lock 3524 E.

Material:
Sheet steel

Surface finish:
Enclosure frame:
Dipcoat-primed
Doors and roof: Dipcoat-primed, powder-coated in RAL 7035
Base plates and punched sections with mounting flanges:
Zinc-plated, passivated

Supply includes:
Enclsoure frame with doors, roof plate, multi-piece gland plate, 2 punched sections with mounting flanges in the enclosure depth.

Approvals,
see page 82.

Detailed drawing,
available on the Internet.

U	15	20	20	24	24	24	24	24
Width (B1) in mm	600	600	800	600	800	800	800	800
Height (H1) in mm	800	1000	1000	1200	1200	1200	1200	1200
Depth (T1) in mm	600	600	600	600	600	800	900	1000
Clearance width (B2) in mm	512	512	712	512	712	712	712	712
Clearance height (H2) in mm	712	912	912	1112	1112	1112	1112	1112
Clearance depth (T2) in mm	512	512	512	512	512	712	812	912
Model No. DK, type 1 with glazed door at the front	**7820.100**	**7820.200**	**7820.240**	**7820.300**	**7820.340**	**7820.350**	**7820.355**	**7820.360**
Model No. DK, type 2 with sheet steel door at the front	**7821.100**	**7821.200**	**7821.240**	**7821.300**	**7821.340**	**–**	**7821.355**	**–**

U	29	29	29	33	33	33	38	38
Width (B1) in mm	600	600	800	600	600	800	600	600
Height (H1) in mm	1400	1400	1400	1600	1600	1600	1800	1800
Depth (T1) in mm	600	800	600	600	800	600	600	800
Clearance width (B2) in mm	512	512	712	712	512	712	712	512
Clearance height (H2) in mm	1312	1312	1312	1512	1512	1512	1512	1712
Clearance depth (T2) in mm	512	712	512	512	712	512	512	712
Model No. DK, type 1 with glazed door at the front	**7820.400**	**7820.410**	**7820.440**	**7820.500**	**7820.510**	**7820.540**	**7820.600**	**7820.610**
Model No. DK, type 2 with sheet steel door at the front	**7821.400**	**7821.410**	**7821.440**	**7821.500**	**7821.510**	**7821.540**	**7821.600**	**7821.610**

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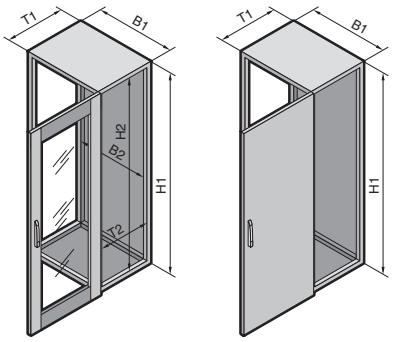
Network enclosures, based on Rittal TS 8, types 1 and 2





B = Width
T = Depth

Type 1
Glazed aluminium door at the front (180°),
with 3 mm single-pane safety glass, comfort handle for semi-cylinder and security lock 3524 E;
sheet steel door at the rear (130°) with handle and security lock 3524 E.

Type 2
Sheet steel door at the front (180°), with comfort handle for semi-cylinder and security lock 3524 E; sheet steel door at the rear (130°) with handle and security lock 3524 E.

Material:
Sheet steel

Surface finish:
Enclosure frame:
Dipcoat-primed
Doors and roof: Dipcoat-primed, powder-coated in RAL 7035
Base plates and punched sections with mounting flanges:
Zinc-plated, passivated

Supply includes:
Enclosure frame with doors, roof plate, multi-piece gland plate, 2 punched sections with mounting flanges in the enclosure depth.

Approvals,
see page 82.

Detailed drawing,
available on the Internet.

U	38	38	38	38	42	42	42	42
Width (B1) in mm	600	800	800	800	600	600	800	800
Height (H1) in mm	1800	1800	1800	1800	2000	2000	2000	2000
Depth (T1) in mm	900	600	800	1000	600	800	600	800
Clearance width (B2) in mm	512	712	712	712	712	512	512	712
Clearance height (H2) in mm	1712	1712	1712	1712	1912	1912	1912	1912
Clearance depth (T2) in mm	812	512	712	912	512	712	512	712
Model No. DK, type 1 with glazed door at the front	**7820.620**	**7820.640**	**7820.650**	**7820.670**	**7820.700**	**7820.710**	**7820.740**	**7820.750**
Model No. DK, type 2 with sheet steel door at the front	**7821.620**	**7821.640**	**7821.650**	**7821.670**	**7821.700**	**7821.710**	**7821.740**	**7821.750**

U	42	42	47	47	47	47	47	47
Width (B1) in mm	800	800	600	600	800	800	800	800
Height (H1) in mm	2000	2000	2200	2200	2200	2200	2200	2200
Depth (T1) in mm	900	1000	600	800	600	800	900	1000
Clearance width (B2) in mm	712	712	712	512	512	712	712	712
Clearance height (H2) in mm	1912	1912	2112	2112	2112	2112	2112	2112
Clearance depth (T2) in mm	812	912	512	712	512	712	812	912
Model No. DK, type 1 with glazed door at the front	**7820.760**	**7820.770**	**7820.800**	**7820.810**	**7820.840**	**7820.850**	**7820.860**	**7820.870**
Model No. DK, type 2 with sheet steel door at the front	**7821.760**	**7821.770**	**7821.800**	**7821.810**	**7821.840**	**7821.850**	**7821.860**	**7821.870**

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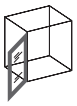
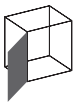
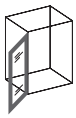
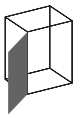
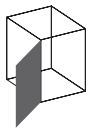
Network enclosures, based on Rittal TS 8, 15 – 20 U

	Type 1	Type 2	Type 1	Type 2	Type 1	Type 2	Page
							
U	15		20		20		
Width (B1) in mm	600		600		800		
Height (H1) in mm	800		1000		1000		
Depth (T1) in mm	600		600		600		
Model No. DK	**7820.100**	**7821.100**	**7820.200**	**7821.200**	**7820.240**	**7821.240**	
Doors							
Glazed front door/sheet steel rear door	■	–	■	–	■	–	
Sheet steel front door/sheet steel rear door	–	■	–	■	–	■	
Various door options	from page 869		from page 869		from page 869		
180° hinges for sheet steel rear door	8800.190		8800.190		8800.190		893
Side panel							
Side panel, plug-in,IP 20	7824.086		7824.106		7824.106		855
Lock for side panel, plug-in	7824.500		7824.500		7824.500		855
Internal latch for side panel, plug-in, 3524 E	7824.510		7824.510		7824.510		855
Side panel, screw-fastened, IP 55	8173.235		8174.235		8174.235		853
Baying	from page 861		from page 861		from page 861		
Roof							
Roof plate, solid	■		■		■		
Roof plate, vented	7826.766		7826.766		7826.786		902
Roof plate for cable entry	7826.665		7826.665		7826.865		901
Roof plate, vented, for cable entry	7826.669		7826.669		7826.869		902
Fan mounting plate, active, with controller	7966.035		7966.035		7986.035		649
Fan roof, modular	see page 651		see page 651		see page 651		
Spacers, 20 mm	2423.000		2423.000		2423.000		904
Spacers, 50 mm	7967.000		7967.000		7967.000		904
Climate control	see page 579		see page 579		see page 579		
Base/plinth							
Base/plinth components, vented, front and rear, H = 100 mm	7825.601		7825.601		7825.601		835
Base/plinth components, solid, front and rear, H = 100 mm	8601.605		8601.605		8601.805		835
Base/plinth trim panels, side, H = 100 mm	8601.065		8601.065		8601.065		835
Gland plate variants	from page 851		from page 851		from page 851		
Castors	see page 848		see page 848		see page 848		
Interior installation							
482.6 mm (19″) mounting angles, cranked (for network technology)	7827.080		7827.100		7827.100		1004
482.6 mm (19″) mounting angles, L-shaped (for server technology)	7827.081		7827.101		7827.101		1004
Depth stays for mounting angles	8612.060		8612.060		7827.600		1008
Installation brackets for mounting angles	–		–		7827.480		1009
Cable clamp rails	see page 980		see page 980		see page 980		
Earthing/potential equalisation	from page 960		from page 960		from page 960		
Socket strips/power management	from page 742		from page 742		from page 742		
Component shelves	from page 939		from page 939		from page 939		
482.6 mm (19″) installation system	from page 1010		from page 1010		from page 1010		
Cable management	from page 984		from page 984		from page 984		
CMC-TC system monitoring	from page 762		from page 762		from page 762		

■ included with the supply.

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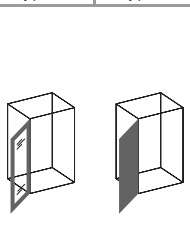
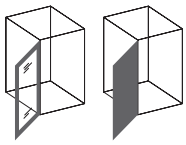
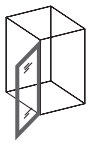
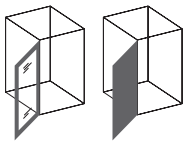
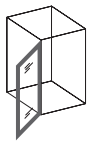
Network enclosures, based on Rittal TS 8, 24 U

	Type 1	Type 2	Type 1	Type 2	Type 1	Type 1	Type 2	Type 1	Page
									
U	24		24		24	24		24	
Width (B1) in mm	600		800		800	800		800	
Height (H1) in mm	1200		1200		1200	1200		1200	
Depth (T1) in mm	600		600		800	900		1000	
Model No. DK	**7820.300**	**7821.300**	**7820.340**	**7821.340**	**7820.350**	**7820.355**	**7821.355**	**7820.360**	
Doors									
Glazed front door/sheet steel rear door	■	–	■	–	■	■	–	■	
Sheet steel front door/ sheet steel rear door	–	■	–	■	–	–	■	–	
Various door options	from page 869		from page 869		from page 869	from page 869		from page 869	
180° hinges for sheet steel rear door	8800.190		8800.190		8800.190	8800.190		8800.190	893
Side panel									
Side panel, plug-in, IP 20	7824.126		7824.126		7824.128	7824.129		7824.120	855
Lock for side panel, plug-in	7824.500		7824.500		7824.500	7824.500		–	855
Internal latch for side panel, plug-in, 3524 E	7824.510		7824.510		7824.510	7824.510		–	855
Side panel, screw-fastened, IP 55	8170.235		8170.235		8175.235	–		8176.235	853
Baying	from page 861		from page 861		from page 861	from page 861		from page 861	
Roof									
Roof plate, solid	■		■		■	■		■	
Roof plate, vented	7826.766		7826.786		7826.788	7826.789		7826.780	902
Roof plate for cable entry	7826.665		7826.865		7826.885	7826.895		7826.805	901
Roof plate, vented, for cable entry	7826.669		7826.869		7826.889	7826.899		7826.809	902
Fan mounting plate, active, with controller	7966.035		7986.035		7988.035	7988.035		7988.035	649
Fan roof, modular	see page 651		see page 651		see page 651	see page 651		see page 651	
Spacers, 20 mm	2423.000		2423.000		2423.000	2423.000		2423.000	904
Spacers, 50 mm	7967.000		7967.000		7967.000	7967.000		7967.000	904
Climate control	see page 579		see page 579		see page 579	see page 579		see page 579	
Base/plinth									
Base/plinth components, vented, front and rear, H = 100 mm	7825.601		7825.801		7825.801	7825.801		7825.801	835
Base/plinth components, solid, front and rear, H = 100 mm	8601.605		8601.805		8601.805	8601.805		8601.805	835
Base/plinth trim panels, side, H = 100 mm	8601.065		8601.065		8601.085	8601.095		8601.015	835
Gland plate variants	from page 851		from page 851		from page 851	from page 851		from page 851	
Castors	see page 848		see page 848		see page 848	see page 848		see page 848	
Interior installation									
482.6 mm (19″) mounting angles, cranked (for network technology)	7827.120		7827.120		7827.120	7827.120		7827.120	1004
482.6 mm (19″) mounting angles, L-shaped (for server technology)	7827.121		7827.121		7827.121	7827.121		7827.121	1004
Depth stays for mounting angles	8612.060		7827.600		7827.800	7827.900		7827.000	1008
Installation brackets for mounting angles	–		7827.480		7827.480	7827.480		7827.480	1009
Cable clamp rails	see page 980		see page 980		see page 980	see page 980		see page 980	
Earthing/potential equalisation	from page 960		from page 960		from page 960	from page 960		from page 960	
Socket strips/power management	from page 742		from page 742		from page 742	from page 742		from page 742	
Component shelves	from page 939		from page 939		from page 939	from page 939		from page 939	
482.6 mm (19″) installation system	from page 1010		from page 1010		from page 1010	from page 1010		from page 1010	
Cable management	from page 984		from page 984		from page 984	from page 984		from page 984	
CMC-TC system monitoring	from page 762		from page 762		from page 762	from page 762		from page 762	

■ included with the supply.

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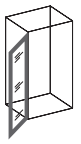
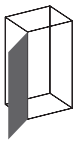
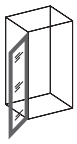
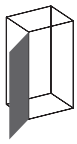
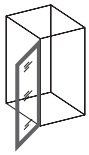
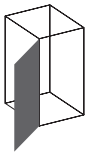
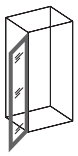
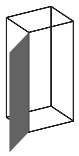
Network enclosures, based on Rittal TS 8, 29 – 33 U

	Type 1	Type 2	Type 1	Type 2	Type 1	Type 1	Type 2	Type 1	Page
									
U	29		29		29		33		
Width (B1) in mm	600		600		800		600		
Height (H1) in mm	1400		1400		1400		1600		
Depth (T1) in mm	600		800		600		600		
Model No. DK	**7820.400**	**7821.400**	**7820.410**	**7821.410**	**7820.440**	**7821.440**	**7820.500**	**7821.500**	
Doors									
Glazed front door/sheet steel rear door	■	–	■	–	■	–	■	–	
Sheet steel front door/sheet steel rear door	–	■	–	■	–	■	–	■	
Various door options	from page 869		from page 869		from page 869		from page 869		
180° hinges for sheet steel rear door	8800.190		8800.190		8800.190		8800.190		893
Side panel									
Side panel, plug-in, IP 20	7824.146		7824.148		7824.146		7824.166		855
Lock for side panel, plug-in	7824.500		7824.500		7824.500		7824.500		855
Internal latch for side panel, plug-in, 3524 E	7824.510		7824.510		7824.510		7824.510		855
Side panel, screw-fastened, IP 55	8146.235		8148.235		8146.235		8166.235		853
Baying	from page 861		from page 861		from page 861		from page 861		
Roof									
Roof plate, solid	■		■		■		■		
Roof plate, vented	7826.766		7826.768		7826.786		7826.766		902
Roof plate for cable entry	7826.665		7826.685		7826.865		7826.665		901
Roof plate, vented, for cable entry	7826.669		7826.689		7826.869		7826.669		902
Fan mounting plate, active, with controller	7966.035		7968.035		7986.035		7966.035		649
Fan roof, modular	see page 651		see page 651		see page 651		see page 651		
Spacers, 20 mm	2423.000		2423.000		2423.000		2423.000		904
Spacers, 50 mm	7967.000		7967.000		7967.000		7967.000		904
Climate control	see page 579		see page 579		see page 579		see page 579		
Base/plinth									
Base/plinth components, vented, front and rear, H = 100 mm	7825.601		7825.601		7825.801		7825.601		835
Base/plinth components, solid, front and rear, H = 100 mm	8601.605		8601.605		8601.805		8601.605		835
Base/plinth trim panels, side, H = 100 mm	8601.065		8601.085		8601.065		8601.065		835
Gland plate variants	from page 851		from page 851		from page 851		from page 851		
Castors	see page 848		see page 848		see page 848		see page 848		
Interior installation									
482.6 mm (19″) mounting angles, cranked (for network technology)	7827.140		7827.140		7827.140		7827.160		1004
482.6 mm (19″) mounting angles, L-shaped (for server technology)	7827.141		7827.141		7827.141		7827.161		1004
Depth stays for mounting angles	8612.060		8612.080		7827.600		8612.060		1008
Installation brackets for mounting angles	–		–		7827.480		–		1009
Cable clamp rails	see page 980		see page 980		see page 980		see page 980		
Earthing/potential equalisation	from page 960		from page 960		from page 960		from page 960		
Socket strips/power management	from page 742		from page 742		from page 742		from page 742		
Component shelves	from page 939		from page 939		from page 939		from page 939		
482.6 mm (19″) installation system	from page 1010		from page 1010		from page 1010		from page 1010		
Cable management	from page 984		from page 984		from page 984		from page 984		
CMC-TC system monitoring	from page 762		from page 762		from page 762		from page 762		

■ included with the supply.

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	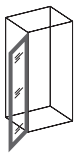	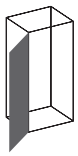	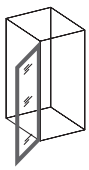	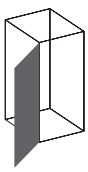	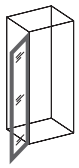	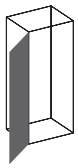	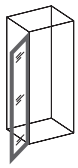	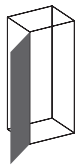	
U	33		33		38		38		
Width (B1) in mm	600		800		600		600		
Height (H1) in mm	1600		1600		1800		1800		
Depth (T1) in mm	800		600		600		800		
Model No. DK	**7820.510**	**7821.510**	**7820.540**	**7821.540**	**7820.600**	**7821.600**	**7820.610**	**7821.610**	
Doors									
Glazed front door/sheet steel rear door	■	–	■	–	■	–	■	–	
Sheet steel front door/sheet steel rear door	–	■	–	■	–	■	–	■	
Various door options	from page 869		from page 869		from page 869		from page 869		
180° hinges for sheet steel rear door	8800.190		8800.190		8800.190		8800.190		893
Side panel									
Side panel, plug-in, IP 20	7824.168		7824.166		7824.186		7824.188		855
Lock for side panel, plug-in	7824.500		7824.500		7824.500		7824.500		855
Internal latch for side panel, plug-in, 3524 E	7824.510		7824.510		7824.510		7824.510		855
Side panel, screw-fastened, IP 55	8168.235		8166.235		8186.235		8188.235		853
Baying	from page 861		from page 861		from page 861		from page 861		
Roof									
Roof plate, solid	■		■		■		■		
Roof plate, vented	7826.768		7826.786		7826.766		7826.768		902
Roof plate for cable entry	7826.685		7826.865		7826.665		7826.685		901
Roof plate, vented, for cable entry	7826.689		7826.869		7826.669		7826.689		902
Fan mounting plate, active, with controller	7968.035		7986.035		7966.035		7968.035		649
Fan roof, modular	see page 651		see page 651		see page 651		see page 651		
Spacers, 20 mm	2423.000		2423.000		2423.000		2423.000		904
Spacers, 50 mm	7967.000		7967.000		7967.000		7967.000		904
Climate control	see page 579		see page 579		see page 579		see page 579		
Base/plinth									
Base/plinth components, vented, front and rear, H = 100 mm	7825.601		7825.801		7825.601		7825.601		835
Base/plinth components, solid, front and rear, H = 100 mm	8601.605		8601.805		8601.605		8601.605		835
Base/plinth trim panels, side, H = 100 mm	8601.085		8601.065		8601.065		8601.085		835
Gland plate variants	from page 851		from page 851		from page 851		from page 851		
Castors	see page 848		see page 848		see page 848		see page 848		
Interior installation									
482.6 mm (19″) mounting angles, cranked (for network technology)	7827.160		7827.160		7827.180		7827.180		1004
482.6 mm (19″) mounting angles, L-shaped (for server technology)	7827.161		7827.161		7827.181		7827.181		1004
Depth stays for mounting angles	8612.080		7827.600		8612.060		8612.080		1008
Installation brackets for mounting angles	–		7827.480		–		–		1009
Cable clamp rails	see page 980		see page 980		see page 980		see page 980		
Earthing/potential equalisation	from page 960		from page 960		from page 960		from page 960		
Socket strips/power management	from page 742		from page 742		from page 742		from page 742		
Component shelves	from page 939		from page 939		from page 939		from page 939		
482.6 mm (19″) installation system	from page 1010		from page 1010		from page 1010		from page 1010		
Cable management	from page 984		from page 984		from page 984		from page 984		
CMC-TC system monitoring	from page 762		from page 762		from page 762		from page 762		

■ included with the supply.

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Network enclosures, based on Rittal TS 8, 38 U

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	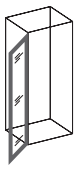	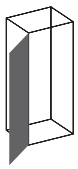	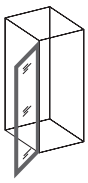	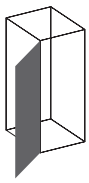	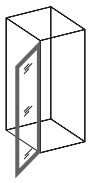	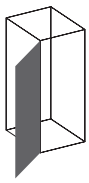	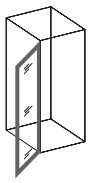	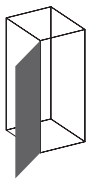	
U	38		38		38		38		
Width (B1) in mm	600		800		800		800		
Height (H1) in mm	1800		1800		1800		1800		
Depth (T1) in mm	900		600		800		1000		
Model No. DK	**7820.620**	**7821.620**	**7820.640**	**7821.640**	**7820.650**	**7821.650**	**7820.670**	**7821.670**	
Doors									
Glazed front door/sheet steel rear door	■	–	■	–	■	–	■	–	
Sheet steel front door/sheet steel rear door	–	■	–	■	–	■	–	■	
Various door options	from page 869		from page 869		from page 869		from page 869		
180° hinges for sheet steel rear door	8800.190		8800.190		8800.190		8800.190		893
Side panel									
Side panel, plug-in, IP 20	7824.189		7824.186		7824.188		7824.180		855
Lock for side panel, plug-in	7824.500		7824.500		7824.500		7824.500		855
Internal latch for side panel, plug-in, 3524 E	7824.510		7824.510		7824.510		7824.510		855
Side panel, screw-fastened, IP 55	8189.235		8186.235		8188.235		8180.235		853
Baying	from page 861		from page 861		from page 861		from page 861		
Roof									
Roof plate, solid	■		■		■		■		
Roof plate, vented	7826.769		7826.786		7826.788		7826.780		902
Roof plate for cable entry	7826.695		7826.865		7826.885		7826.805		901
Roof plate, vented, for cable entry	7826.699		7826.869		7826.869		7826.809		902
Fan mounting plate, active, with controller	7968.035		7986.035		7988.035		7988.035		649
Fan roof, modular	see page 651		see page 651		see page 651		see page 651		
Spacers, 20 mm	2423.000		2423.000		2423.000		2423.000		904
Spacers, 50 mm	7967.000		7967.000		7967.000		7967.000		904
Climate control	see page 579		see page 579		see page 579		see page 579		
Base/plinth									
Base/plinth components, vented, front and rear, H = 100 mm	7825.601		7825.801		7825.801		7825.801		835
Base/plinth components, solid, front and rear, H = 100 mm	8601.605		8601.805		8601.805		8601.805		835
Base/plinth trim panels, side, H = 100 mm	8601.095		8601.065		8601.085		8601.015		835
Gland plate variants	from page 851		from page 851		from page 851		from page 851		
Castors	see page 848		see page 848		see page 848		see page 848		
Interior installation									
482.6 mm (19″) mounting angles, cranked (for network technology)	7827.180		7827.180		7827.180		7827.180		1004
482.6 mm (19″) mounting angles, L-shaped (for server technology)	7827.181		7827.181		7827.181		7827.181		1004
Depth stays for mounting angles	8612.090		7827.600		7827.800		7827.000		1008
Installation brackets for mounting angles	–		7827.480		7827.480		7827.480		1009
Cable clamp rails	see page 980		see page 980		see page 980		see page 980		
Earthing/potential equalisation	from page 960		from page 960		from page 960		from page 960		
Socket strips/power management	from page 742		from page 742		from page 742		from page 742		
Component shelves	from page 939		from page 939		from page 939		from page 939		
482.6 mm (19″) installation system	from page 1010		from page 1010		from page 1010		from page 1010		
Cable management	from page 984		from page 984		from page 984		from page 984		
CMC-TC system monitoring	from page 762		from page 762		from page 762		from page 762		

■ included with the supply.

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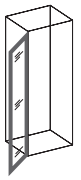
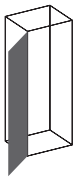
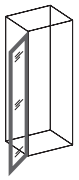
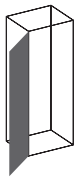
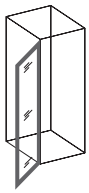
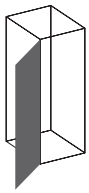
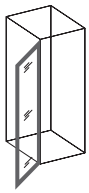
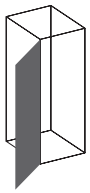
Network enclosures, based on Rittal TS 8, 42 U

	Type 1	Type 2	Type 1	Type 2	Type 1	Type 2	Type 1	Type 2	Page
									
U	42		42		42		42		
Width (B1) in mm	600		600		800		800		
Height (H1) in mm	2000		2000		2000		2000		
Depth (T1) in mm	600		800		600		800		
Model No. DK	**7820.700**	**7821.700**	**7820.710**	**7821.710**	**7820.740**	**7821.740**	**7820.750**	**7821.750**	
Doors									
Glazed front door/sheet steel rear door	■	–	■	–	■	–	■	–	
Sheet steel front door/sheet steel rear door	–	■	–	■	–	■	–	■	
Various door options	from page 869		from page 869		from page 869		from page 869		
180° hinges for sheet steel rear door	8800.190		8800.190		8800.190		8800.190		893
Side panel									
Side panel, plug-in, IP 20	7824.206		7824.208		7824.206		7824.208		855
Lock for side panel, plug-in	7824.500		7824.500		7824.500		7824.500		855
Internal latch for side panel, plug-in, 3524 E	7824.510		7824.510		7824.510		7824.510		855
Side panel, screw-fastened, IP 55	8106.235		8108.235		8106.235		8108.235		853
Baying	from page 861		from page 861		from page 861		from page 861		
Roof									
Roof plate, solid	■		■		■		■		
Roof plate, vented	7826.766		7826.768		7826.786		7826.788		902
Roof plate for cable entry	7826.665		7826.685		7826.865		7826.885		901
Roof plate, vented, for cable entry	7826.669		7826.689		7826.869		7826.889		902
Fan mounting plate, active, with controller	7966.035		7968.035		7986.035		7988.035		649
Fan roof, modular	see page 651		see page 651		see page 651		see page 651		
Spacers, 20 mm	2423.000		2423.000		2423.000		2423.000		904
Spacers, 50 mm	7967.000		7967.000		7967.000		7967.000		904
Climate control	see page 579		see page 579		see page 579		see page 579		
Base/plinth									
Base/plinth components, vented, front and rear, H = 100 mm	7825.601		7825.601		7825.801		7825.801		835
Base/plinth components, solid, front and rear, H = 100 mm	8601.605		8601.605		8601.805		8601.805		835
Base/plinth trim panels, side, H = 100 mm	8601.065		8601.085		8601.065		8601.085		835
Gland plate variants	from page 851		from page 851		from page 851		from page 851		
Castors	see page 848		see page 848		see page 848		see page 848		
Interior installation									
482.6 mm (19″) mounting angles, cranked (for network technology)	7827.200		7827.200		7827.200		7827.200		1004
482.6 mm (19″) mounting angles, L-shaped (for server technology)	7827.201		7827.201		7827.201		7827.201		1004
Depth stays for mounting angles	8612.060		8612.080		7827.600		7827.800		1008
Installation brackets for mounting angles	–		–		7827.480		7827.480		1009
Cable clamp rails	see page 980		see page 980		see page 980		see page 980		
Earthing/potential equalisation	from page 960		from page 960		from page 960		from page 960		
Socket strips/power management	from page 742		from page 742		from page 742		from page 742		
Component shelves	from page 939		from page 939		from page 939		from page 939		
482.6 mm (19″) installation system	from page 1010		from page 1010		from page 1010		from page 1010		
Cable management	from page 984		from page 984		from page 984		from page 984		
CMC-TC system monitoring	from page 762		from page 762		from page 762		from page 762		

■ included with the supply.

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Network enclosures, based on Rittal TS 8, 42 – 47 U

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	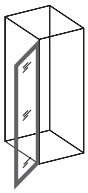	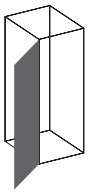	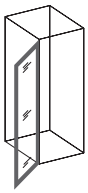	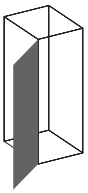	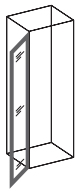	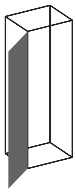	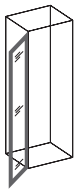	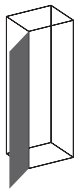	
U	42		42		47		47		
Width (B1) in mm	800		800		600		600		
Height (H1) in mm	2000		2000		2200		2200		
Depth (T1) in mm	900		1000		600		800		
Model No. DK	**7820.760**	**7821.760**	**7820.770**	**7821.770**	**7820.800**	**7821.800**	**7820.810**	**7821.810**	
Doors									
Glazed front door/sheet steel rear door	■	–	■	–	■	–	■	–	
Sheet steel front door/sheet steel rear door	–	■	–	■	–	■	–	■	
Various door options	from page 869		from page 869		from page 869		from page 869		
180° hinges for sheet steel rear door	8800.190		8800.190		8800.190		8800.190		893
Side panel									
Side panel, plug-in, IP 20	7824.209		7824.200		7824.226		7824.228		855
Lock for side panel, plug-in	7824.500		7824.500		7824.500		7824.500		855
Internal latch for side panel, plug-in, 3524 E	7824.510		7824.510		7824.510		7824.510		855
Side panel, screw-fastened, IP 55	8109.235		8100.235		8126.235		8128.235		853
Baying	from page 861		from page 861		from page 861		from page 861		
Roof									
Roof plate, solid	■		■		■		■		
Roof plate, vented	7826.789		7826.780		7826.766		7826.768		902
Roof plate for cable entry	7826.895		7826.805		7826.665		7826.685		901
Roof plate, vented, for cable entry	7826.899		7826.809		7826.669		7826.689		902
Fan mounting plate, active, with controller	7988.035		7988.035		7966.035		7968.035		649
Fan roof, modular	see page 651		see page 651		see page 651		see page 651		
Spacers, 20 mm	2423.000		2423.000		2423.000		2423.000		904
Spacers, 50 mm	7967.000		7967.000		7967.000		7967.000		904
Climate control	see page 579		see page 579		see page 579		see page 579		
Base/plinth									
Base/plinth components, vented, front and rear, H = 100 mm	7825.801		7825.801		7825.601		7825.601		835
Base/plinth components, solid, front and rear, H = 100 mm	8601.805		8601.805		8601.605		8601.605		835
Base/plinth trim panels, side, H = 100 mm	8601.095		8601.015		8601.065		8601.085		835
Gland plate variants	from page 851		from page 851		from page 851		from page 851		
Castors	see page 848		see page 848		see page 848		see page 848		
Interior installation									
482.6 mm (19″) mounting angles, cranked (for network technology)	7827.200		7827.200		7827.220		7827.220		1004
482.6 mm (19″) mounting angles, L-shaped (for server technology)	7827.201		7827.201		7827.221		7827.221		1004
Depth stays for mounting angles	7827.900		7827.000		8612.060		8612.080		1008
Installation brackets for mounting angles	7827.480		7827.480		–		–		1009
Cable clamp rails	see page 980		see page 980		see page 980		see page 980		
Earthing/potential equalisation	from page 960		from page 960		from page 960		from page 960		
Socket strips/power management	from page 742		from page 742		from page 742		from page 742		
Component shelves	from page 939		from page 939		from page 939		from page 939		
482.6 mm (19″) installation system	from page 1010		from page 1010		from page 1010		from page 1010		
Cable management	from page 984		from page 984		from page 984		from page 984		
CMC-TC system monitoring	from page 762		from page 762		from page 762		from page 762		

■ included with the supply.

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Network enclosures, based on Rittal TS 8, 47 U

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	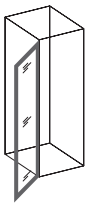	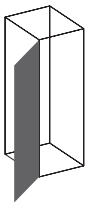	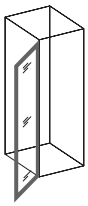	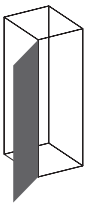	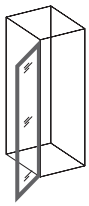	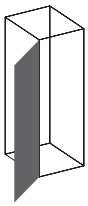	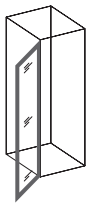	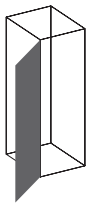	
U	47		47		47		47		
Width (B1) in mm	800		800		800		800		
Height (H1) in mm	2200		2200		2200		2200		
Depth (T1) in mm	600		800		900		1000		
Model No. DK	**7820.840**	**7821.840**	**7820.850**	**7821.850**	**7820.860**	**7821.860**	**7820.870**	**7821.870**	
Doors									
Glazed front door/sheet steel rear door	■	–	■	–	■	–	■	–	
Sheet steel front door/sheet steel rear door	–	■	–	■	–	■	–	■	
Various door options	from page 869		from page 869		from page 869		from page 869		
180° hinges for sheet steel rear door	8800.190		8800.190		8800.190		8800.190		893
Side panel									
Side panel, plug-in, IP 20	7824.226		7824.228		7824.229		7824.220		855
Lock for side panel, plug-in	7824.500		7824.500		7824.500		7824.500		855
Internal latch for side panel, plug-in, 3524 E	7824.510		7824.510		7824.510		7824.510		855
Side panel, screw-fastened, IP 55	8126.235		8128.235		8129.235		–		853
Baying	from page 861		from page 861		from page 861		from page 861		
Roof									
Roof plate, solid	■		■		■		■		
Roof plate, vented	7826.786		7826.788		7826.789		7826.780		902
Roof plate for cable entry	7826.865		7826.885		7826.895		7826.805		901
Roof plate, vented, for cable entry	7826.869		7826.889		7826.899		7826.809		902
Fan mounting plate, active, with controller	7986.035		7988.035		7988.035		7988.035		649
Fan roof, modular	see page 651		see page 651		see page 651		see page 651		
Spacers, 20 mm	2423.000		2423.000		2423.000		2423.000		904
Spacers, 50 mm	7967.000		7967.000		7967.000		7967.000		904
Climate control	see page 579		see page 579		see page 579		see page 579		
Base/plinth									
Base/plinth components, vented, front and rear, H = 100 mm	7825.801		7825.801		7825.801		7825.801		835
Base/plinth components, solid, front and rear, H = 100 mm	8601.805		8601.805		8601.805		8601.805		835
Base/plinth trim panels, side, H = 100 mm	8601.065		8601.085		8601.095		8601.015		835
Gland plate variants	from page 851		from page 851		from page 851		from page 851		
Castors	see page 848		see page 848		see page 848		see page 848		
Interior installation									
482.6 mm (19″) mounting angles, cranked (for network technology)	7827.220		7827.220		7827.220		7827.220		1004
482.6 mm (19″) mounting angles, L-shaped (for server technology)	7827.221		7827.221		7827.221		7827.221		1004
Depth stays for mounting angles	7827.600		7827.800		7827.900		7827.000		1008
Installation brackets for mounting angles	7827.480		7827.480		7827.480		7827.480		1009
Cable clamp rails	see page 980		see page 980		see page 980		see page 980		
Earthing/potential equalisation	from page 960		from page 960		from page 960		from page 960		
Socket strips/power management	from page 742		from page 742		from page 742		from page 742		
Component shelves	from page 939		from page 939		from page 939		from page 939		
482.6 mm (19″) installation system	from page 1010		from page 1010		from page 1010		from page 1010		
Cable management	from page 984		from page 984		from page 984		from page 984		
CMC-TC system monitoring	from page 762		from page 762		from page 762		from page 762		

■ included with the supply.

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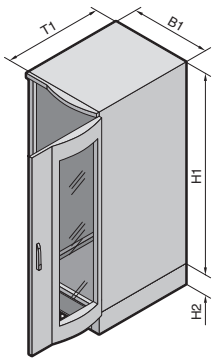
Network enclosures, based on Rittal flexRack(i), pre-configured





B = Width
T = Depth

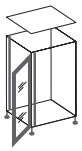
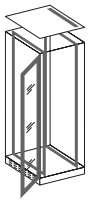
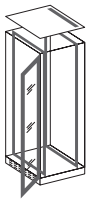
Material:
Vertical frame sections:
Extruded aluminium section
Base, roof frame, base/plinth, panels: Sheet steel.

Surface finish:
Enclosure panels:
Spray-finished in RAL 7035, frame sections and doors: RAL 9006,
Lock panels: RAL 7035,
Viewing window:
tinted, parsol grey,
Gland plates, 482.6 mm (19″) mounting angles:
Zinc-plated, passivated.

Supply includes:
Multi-platform frame FR(i) with designer glazed door at front (130°), sheet steel door at rear (130°).
Roof plate, side panels, vented base/plinth, gland plate, interior installation depending on design, see table on page 704.
Earthing of all enclosure panels, comfort handles for semi-cylinders with security lock 12321, front and rear.

Property rights:
German patent no. 103 11 376
German Registered Design no. 403 04 312 and 401 03 180
British Registered Design no. 301 54 31 and 210 49 77
US Design Patent no. 479,241

Detailed drawing,
available on the Internet.

					
U	11	11	25	42	42
Width (B1) in mm	600	600	600	800	800
Height (H1 + H2) in mm	600	600	1200	2000 + 100	2000 + 100
Depth (T1) in mm	805	1005	1005	805	1005
Depth absolute, incl. handles and roof curvature (T1) in mm + 90 mm	895	1095	1095	895	1095
Model No. FR(i) as single enclosure incl. 2 side panels	**7855.480**	**7855.500**	**7855.510**	**7855.550**	**7855.570**
Model No. FR(i) as bayed enclosure without side panels, incl. baying kit	**–**	**–**	**–**	**7855.540**	**7855.560**

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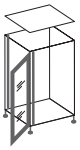
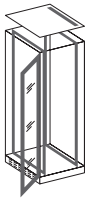
Network enclosures, based on Rittal flexRack(i), pre-configured

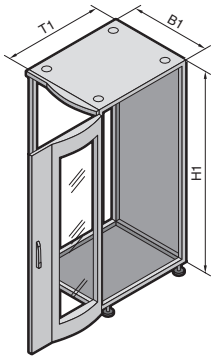
						
U	11	11	25	42	42	Page
Width (B1) in mm	600	600	600	800	800	
Height (H1 + H2) in mm	600	600	1200	2000 + 100	2000 + 100	
Depth (T1) in mm	805	1005	1005	805	1005	
Depth absolute, incl. handles and roof curvature (T1) in mm + 90 mm	895	1095	1095	895	1095	
Model No. FR(i) as single enclosure incl. 2 side panels	**7855.480**	**7855.500**	**7855.510**	**7855.550**	**7855.570**	
Model No. FR(i) as bayed enclosure without side panels, incl. baying kit	**–**	**–**	**–**	**7855.540**	**7855.560**	
Doors						
Designer glazed front door/sheet steel rear door	■	■	■	■	■	
Various door variants, based on TS 8, available on request	–	–	–	–	–	
Side panel						
Side panel, plug-type, incl. security lock 12321	■	■	■	■ (7855.550 only)	■ (7855.570 only)	856
Internal latch for side panel, plug-in	■	■	■	■	■	855
Baying	from page 861	from page 861	from page 861	from page 861	from page 861	
Roof						
Designer roof plate, solid	■	■	■	–	–	
Designer roof plate for cable entry, two-piece	–	–	–	■	■	901
Various roof plate variants, based on TS 8	from page 901	from page 901	from page 901	from page 901	from page 901	
Base/plinth						
Base/plinth components solid, front and rear	8601.605	8601.605	8601.605	8601.805	8601.805	835
Base/plinth components, vented, front and rear	7825.601	7825.601	7825.601	■	■	835
Base/plinth trim, side	8601.085	8601.015	8601.015	■	■	835
Base/gland plate, mounted at front as infill panel, rear part open	–	–	–	■	■	
Gland plate, one-piece, vented	■	■	■	–	–	851
Gland plate variants, based on TS 8	from page 851	from page 851	from page 851	from page 851	from page 851	
Interior installation						
482.6 mm (19″) mounting angles, L-shaped at front	■	■	■	–	–	1005
Additional 482.6 mm (19″) mounting angles, L-shaped	7856.800	7856.800	7856.803	7856.809	7856.809	1005
482.6 mm (19″) mounting frames, front and rear	–	–	–	■	■	1007
Additional 482.6 mm (19″) mounting frame	7856.710	7856.710	7856.713	7856.719	7856.719	1007
System punched section, interior installation of rail systems	from page 917	from page 917	from page 917	from page 917	from page 917	
Cable clamp rails	from page 980	from page 980	from page 980	from page 980	from page 980	
Earthing/potential equalisation	from page 960	from page 960	from page 960	from page 960	from page 960	
Socket strips/power management	from page 742	from page 742	from page 742	from page 742	from page 742	
Component shelves	from page 939	from page 939	from page 939	from page 939	from page 939	
482.6 mm (19″) installation system	from page 1010	from page 1010	from page 1010	from page 1010	from page 1010	
4 hammerhead rails incl. system adaptor, supplied loose, for cable clamping in the enclosure depth	–	–	–	■	■	983
10 cable shunting rings 105 x 70 mm, supplied loose	–	–	–	■	■	984
50 cage nuts and hexagon socket screws, supplied loose	–	–	–	■	■	936
Cable management	from page 984	from page 984	from page 984	from page 984	from page 984	
CMC-TC system monitoring	from page 762	from page 762	from page 762	from page 762	from page 762	

■ included with the supply.

Accessories Page 832 **Monitoring** Page 762 **Climate control** Page 578

Network enclosures, based on Rittal flexRack(i)





Material:
Vertical frame sections:
Extruded aluminium section
Base, roof frame, panels:
Sheet steel

Surface finish:
Enclosure panels:
Spray-finished in RAL 7035,
Frame sections and doors:
RAL 9006,
Lock panels: RAL 7035,
Viewing window:
Tinted, parsol grey,
Gland plates:
Zinc-plated, passivated

Supply includes:
Multi-platform frame FR(i) with designer glazed door front (130°), sheet steel rear door (130°), solid roof plate, multi-piece gland plate, levelling feet, comfort handles for semi-cylinder with security lock 12321, front and rear.

Property rights:
German patent no. 103 11 376
German Registered Design no. 403 04 312 and 401 03 180
British Registered Design no. 301 54 31 and 210 49 77
US Design Patent no. 479,241

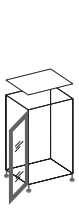
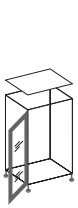
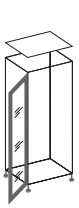
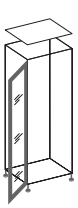
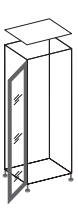
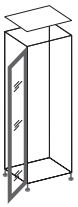
Detailed drawing,
available on the Internet.

U	11	11	24	24	38	42	42	47
Width (B1) in mm	600	600	600	600	600	600	600	600
Height (H1) in mm	600	600	1200	1200	1800	2000	2000	2200
Depth (T1) in mm	605	1005	605	1005	605	605	1005	1005
Depth absolute, incl. handles and roof curvature (T1) in mm + 90 mm	695	1095	695	1095	695	695	1095	1095
Model No. FR(i)	**7855.610**	**7855.620**	**7855.630**	**7855.640**	**7855.650**	**7855.660**	**7855.670**	**7855.680**

U	24	38	42	42	47	47
Width (B1) in mm	800	800	800	800	800	800
Height (H1) in mm	1200	1800	2000	2000	2200	2200
Depth (T1) in mm	805	805	805	1005	805	1005
Depth absolute, incl. handles and roof curvature (T1) in mm + 90 mm	895	895	895	1095	895	1095
Model No. FR(i)	**7855.690**	**7855.700**	**7855.710**	**7855.720**	**7855.730**	**7855.740**

Accessories Page 832 **Monitoring** Page 762 **Climate control** Page 578

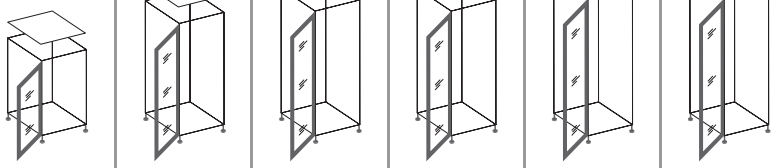
Network enclosures, based on Rittal flexRack(i)

									
U	11	11	24	24	38	42	42	47	Page
Width (B1) in mm	600	600	600	600	600	600	600	600	
Height (H1) in mm	600	600	1200	1200	1800	2000	2000	2200	
Depth (T1) in mm	605	1005	605	1005	605	605	1005	1005	
Depth absolute, incl. handles and roof curvature (T1) in mm + 90 mm	695	1095	695	1095	695	695	1095	1095	
Model No. FR(i)	**7855.610**	**7855.620**	**7855.630**	**7855.640**	**7855.650**	**7855.660**	**7855.670**	**7855.680**	
Doors									
Designer glazed front door/ sheet steel rear door	■	■	■	■	■	■	■	■	
Various door variants, based on TS 8, available on request	–	–	–	–	–	–	–	–	
Side panel									
Side panel, plug-type incl. security lock 12321	7856.660	7856.663	7856.666	7856.672	7856.675	7856.681	7856.687	7856.696	856
Internal latch for side panel, plug-in	7856.700	7856.700	7856.700	7856.700	7856.700	7856.700	7856.700	7856.700	855
Baying	from page 861	from page 861	from page 861	from page 861	from page 861	from page 861	from page 861	from page 861	
Roof									
Designer roof plate, solid	■	■	■	■	■	■	■	■	
Various roof plate options, based on TS 8	from page 901	from page 901	from page 901	from page 901	from page 901	from page 901	from page 901	from page 901	
Base/plinth									
Base/plinth components, solid, front and rear	8601.605	8601.605	8601.605	8601.605	8601.605	8601.605	8601.605	8601.605	835
Base/plinth components, vented, front and rear	7825.601	7825.601	7825.601	7825.601	7825.601	7825.601	7825.601	7825.601	835
Base/plinth trim, side	8601.065	8601.015	8601.065	8601.015	8601.065	8601.065	8601.015	8601.015	835
Multi-piece gland plate	■	■	■	■	■	■	■	■	
Gland plate variants, based on TS 8	from page 851	from page 851	from page 851	from page 851	from page 851	from page 851	from page 851	from page 851	
Interior installation									
482.6 mm (19″) mounting angles, L-shaped	7856.800	7856.800	7856.803	7856.803	7856.806	7856.809	7856.809	7856.812	1005
482.6 mm (19″) mounting frame	7856.710	7856.710	7856.713	7856.713	7856.716	7856.719	7856.719	7856.722	1007
Punched sections with mounting flanges, interior installation, rail systems	from page 917	from page 917	from page 917	from page 917	from page 917	from page 917	from page 917	from page 917	
Cable clamp rails	from page 980	from page 980	from page 980	from page 980	from page 980	from page 980	from page 980	from page 980	
Earthing/potential equalisation	from page 960	from page 960	from page 960	from page 960	from page 960	from page 960	from page 960	from page 960	
Socket strips/ power management	from page 742	from page 742	from page 742	from page 742	from page 742	from page 742	from page 742	from page 742	
Component shelves	from page 939	from page 939	from page 939	from page 939	from page 939	from page 939	from page 939	from page 939	
482.6 mm (19″) installation system	from page 1010	from page 1010	from page 1010	from page 1010	from page 1010	from page 1010	from page 1010	from page 1010	
Cable management	from page 984	from page 984	from page 984	from page 984	from page 984	from page 984	from page 984	from page 984	
CMC-TC system monitoring	from page 762	from page 762	from page 762	from page 762	from page 762	from page 762	from page 762	from page 762	

■ included with the supply.

Accessories Page 832 **Monitoring** Page 762 **Climate control** Page 578

Network enclosures, based on Rittal flexRack(i)



U	24	38	42	42	47	47	Page
Width (B1) in mm	800	800	800	800	800	800	
Height (H1) in mm	1200	1800	2000	2000	2200	2200	
Depth (T1) in mm	805	805	805	1005	805	1005	
Depth absolute, incl. handles and roof curvature (T1) in mm + 90 mm	895	895	895	1095	895	1095	
Model No. FR(i)	**7855.690**	**7855.700**	**7855.710**	**7855.720**	**7855.730**	**7855.740**	
Doors							
Designer glazed front door/sheet steel rear door	■	■	■	■	■	■	
Various door variants, based on TS 8, available on request	–	–	–	–	–	–	
Side panel							
Side panel, plug-in incl. security lock 12321	7856.669	7856.678	7856.684	7856.687	7856.693	7856.696	856
Internal latch for side panel, plug-in	7856.700	7856.700	7856.700	7856.700	7856.700	7856.700	855
Baying	from page 861	from page 861	from page 861	from page 861	from page 861	from page 861	
Roof							
Designer roof plate, solid	■	■	■	■	■	■	
Various roof plate options, based on TS 8	from page 901	from page 901	from page 901	from page 901	from page 901	from page 901	
Base/plinth							
Base/plinth components solid, front and rear	8601.805	8601.805	8601.805	8601.805	8601.805	8601.805	835
Base/plinth components, vented, front and rear	7825.801	7825.801	7825.801	7825.801	7825.801	7825.801	835
Base/plinth trim, side	8601.085	8601.085	8601.085	8601.015	8601.085	8601.015	835
Multi-piece gland plate	■	■	■	■	■	■	
Gland plate variants, based on TS 8	from page 851	from page 851	from page 851	from page 851	from page 851	from page 851	
Interior installation							
482.6 mm (19″) mounting frame	7856.725	7856.728	7856.731	7856.731	7856.734	7856.734	1007
System punched section, interior installation of rail systems	from page 917	from page 917	from page 917	from page 917	from page 917	from page 917	
Cable clamp rails	from page 980	from page 980	from page 980	from page 980	from page 980	from page 980	
Earthing/potential equalisation	from page 960	from page 960	from page 960	from page 960	from page 960	from page 960	
Socket strips/power management	from page 742	from page 742	from page 742	from page 742	from page 742	from page 742	
Component shelves	from page 939	from page 939	from page 939	from page 939	from page 939	from page 939	
482.6 mm (19″) installation system	from page 1010	from page 1010	from page 1010	from page 1010	from page 1010	from page 1010	
Cable management	from page 984	from page 984	from page 984	from page 984	from page 984	from page 984	
CMC-TC system monitoring	from page 762	from page 762	from page 762	from page 762	from page 762	from page 762	

■ included with the supply.

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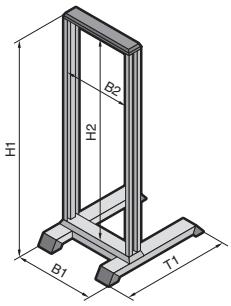
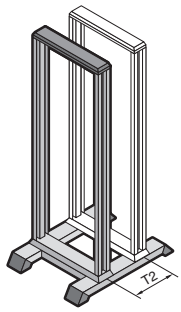
Distributor racks, based on Rittal Data Rack







Supply includes:
1 torsionally stiff section frame welded from 2 mm sheet steel with 482.6 mm(19″) punchings, spray finished in RAL 7035, trim in RAL 5018,
1 stable base/plinth of folded sheet steel and integral die-cast zinc feet (RAL 5018) with the option of floor anchoring, including mounting accessories. Alternatively, levelling feet (DK 7493.000) or castors (DK 7495.000) may be fitted.

Available on request:
- Metric (535 mm) version
- Side rails
- Special versions and special sizes

Load capacity:
max. 150 kg/level

Property rights:
German registered design M 9201859
German patent no. 4207282

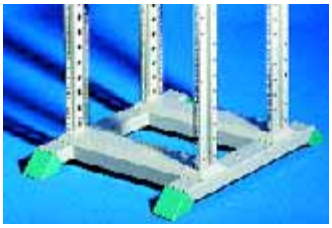
Detailed drawing,
available on the Internet.

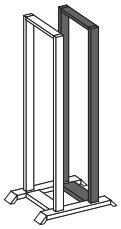
U	Packs of	31	36	40	45	Page
Width (B1) in mm		550	550	550	550	
Height (H1) in mm		1499.5	1721.8	1899.5	2121.8	
Depth (T1) in mm		750	750	750	750	
Clearance width (B2) mm		450	450	450	450	
Clearance height (H2) mm		1381.5	1603.8	1781.5	2003.8	
Distance from the second mounting level (T2) mm[1]		min. 150 – max. 350	min. 150 – max. 350	min. 150 – max. 350	min. 150 – max. 350	
U x 44.45 mm =		1377.95	1600.2	1778	2000.25	
Model No. DK		**7391.000**	**7396.000**	**7400.000**	**7445.000**	
Accessories						
Second mounting level[1]	1	7296.000	7297.000	7298.000	7299.000	709
Baying clamp	3	7494.000	7494.000	7494.000	7494.000	709
Levelling feet	4	7493.000	7493.000	7493.000	7493.000	710
Cable duct	1	7827.333	7827.338	7827.342	7827.347	987
C rails, 482.6 mm (19″)	6	7016.100	7016.100	7016.100	7016.100	992
Cable clamp rail, 482.6 mm (19″)	6	7016.110	7016.110	7016.110	7016.110	992
Cable clamp strap D = 250 mm	6	7016.120	7016.120	7016.120	7016.120	992
Twin castors	4	7495.000	7495.000	7495.000	7495.000	848
Depth stays	2	7401.000	7401.000	7401.000	7401.000	710
Component shelf 2 U for one pair of mounting angles D = 250 mm	1	7119.250	7119.250	7119.250	7119.250	948
Component shelf 2 U for one pair of mounting angles D = 400 mm	1	7119.400	7119.400	7119.400	7119.400	948
Component shelf 2 U for one level D = 300 mm[3]	1	7148.035	7148.035	7148.035	7148.035	946
Drawer 2 U	1	7281.035	7281.035	7281.035	7281.035	1051
Component shelf D = 300 mm[2) 3)]	1	7143.035	7143.035	7143.035	7143.035	944
Component shelf D = 400 mm[2) 3)]	1	7144.035	7144.035	7144.035	7144.035	944
Component shelf D = 500 mm[2) 3)]	1	7145.035	7145.035	7145.035	7145.035	944
Slide rails D max. < 190 mm	10	1962.200	1962.200	1962.200	1962.200	999
Slide rails D max. > 190 mm	10	1963.200	1963.200	1963.200	1963.200	999
Slide rails for pairs of mounting angles[1]	2	7402.000	7402.000	7402.000	7402.000	710

[1] Second mounting level may be positioned on a 50 mm pitch pattern.
[2] A second pair of mounting angles is required for assembly.
[3] Stationary installation or full withdrawal, telescopic slides see page 951.

Accesories Page 832 **Monitoring** Page 762 **19″ installation system** Page 1010 **Patch panels** Page 1021

Acessories for Rittal Data Rack





Second mounting level

In order to accommodate 482.6 mm (19″) network components or for the attachment of component shelves, slide rails and telescopic rails.
The mounting level may be positioned on a 50 mm pitch pattern.
Minimum distance between levels 150 mm, Maximum distance between levels 350 mm.

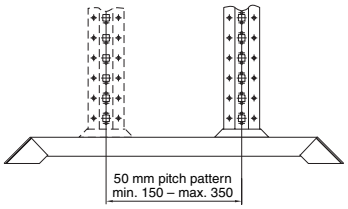
Material:
Sheet steel, 2 mm

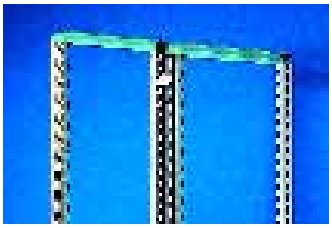
Colour:
RAL 7035

Supply includes:
1 torsionally stiff section frame including assembly parts. 482.6 mm (19″) punched profile at the front, hole centre distance 465 (470 mm at the rear), tailored to the attachment of patch panels and cable routing rails.

U	Model No. DK
31	**7296.000**
36	**7297.000**
40	**7298.000**
45	**7299.000**

Detailed drawing,
can be found on the Internet.





Baying connector

For assembling rows of distributor frames, or for cable routing between data racks.

Technical specifications:
Length: 53 mm

Colour:
RAL 7035

Packs of	Model No. DK
3	**7494.000**



Roof plate for cable routing

For optimised use of the Data Rack as a corridor distributor or cable management rack. By moving the guide plates, the individual cableways can be separately sized, thus enabling structured cable routing in data highways, even in the roof area.
On all Data Racks, the roof plate can be attached with two mounting levels and a distance between the levels of 350 mm.

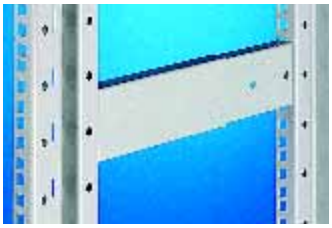
Packs of	Model No. DK
1	**7411.000**

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

Supply includes:
Roof plate including assembly parts.

Acessories for Rittal Data Rack



Depth stays

For securing and stabilising two pairs of 482.6 mm (19″) mounting angles in the data rack. The length of the depth stay is adjustable, and can accommodate all spacings of mounting angles.

Colour:
RAL 7035

Depth stays	Packs of	Model No. DK
	2	**7401.000**

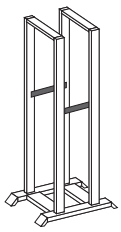


Continuous slide rail

for two pairs of mounting angles, 482.6 mm (19″)
The continuous slide rail is used to support heavy installed equipment in the Data Rack.
The mounting dimensions of the slide rails were selected to enable them to be combined with 500 mm deep, 482.6 mm (19″) component shelves. The mounting distance of the 482.6 mm (19″) mounting angles is 350 mm.

Requirements:
Second pair of mounting angles

Material:
Sheet steel, zinc-plated, passivated



Packs of	Model No. DK
2	**7402.000**

Accessories:

Component shelf, 500 mm deep, DK 7145.035, see page 944 .



Levelling feet

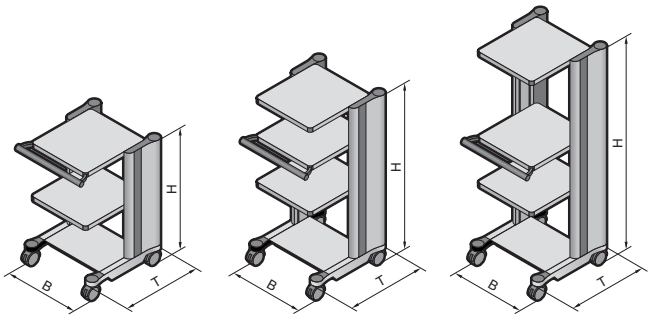
To compensate for height differences with floor irregularities.
The levelling feet are attached to the die-cast zinc feet of the base/plinth.

Supply includes:
4 levelling feet M12,
levelling range 40 mm.

Packs of	Model No. DK
4	**7493.000**

Mobile workstation, Rittal RiLab





Type 1 Type 2 Type 3

The workstation is ideal for positioning sensitive equipment securely whilst remaining flexible in terms of location. Useful accessories turn the RiLab into a "master of disguise" for the most diverse applications in the networking environment. It can be used as a mobile laboratory or test stand, a flexible measurement station or assembly workstation.

The versatile opportunities are almost unlimited. Particularly designed for the 482.6 mm (19″) systems, the mobile workstation can also be combined with Rittal RiCase enclosures.

Load capacity:
Base frame 225 kg in total, shelves max. 50 kg per shelf.

Material:
Sheet steel, 1.5 mm, spray-finished in RAL 7035, support column of extruded aluminium section, corner pieces and trim panels in ABS, RAL 5018. Special colours available on request.

Supply includes:
Base frame with two integral power columns,
shelf with handle rod,
additional shelf, twin castors,
fully assembled.

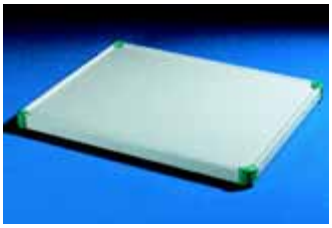
Approvals,
see page 83.

Detailed drawing,
available on the Internet.

		Type 1	Type 2	Type 3	Page
Width (B) in mm		714	714	714	
Height (H) in mm		820	1108	1428	
Depth (T) in mm		625	625	625	
Model No. DK		**7600.100**	**7600.200**	**7600.300**	
Accessories					
1 additional shelf, W x D 600 mm x 490 mm	Static surface load 50 kg	7600.500	7600.500	7600.500	712
1 monitor shelf, rotating, tilting, W x D 410 mm x 491 mm	Static surface load 35 kg	7600.530	7600.530	7600.530	712
1 pull-out shelf, with integral mouse pad, W x D 542 mm x 490 mm	Static surface load 20 kg	7600.520	7600.520	7600.520	712
1 pull-out shelf, W x D 542 mm x 490 mm	Static surface load 20 kg	7600.510	7600.510	7600.510	712
1 drawer with integral identification strip, W x H x D 600 mm x 96 mm x 490 mm	Static surface load 20 kg	7600.540	7600.540	7600.540	713
1 adaptor set for installing Rittal RiCase enclosures, tiltable		7600.590	7600.590	7600.590	713
1 6-way socket with switch, 16 A, 250 V, for installation in the power column		7600.600	7600.600	7600.600	713

Accessories Page 832 **RiCase enclosures** Page 563

Accessories for Rittal RiLab



RiLab shelf

With all-round raised safety edge. Reduces the risk of assemblies slipping off.

Technical specifications:
Load capacity 50 kg surface load, static

Material:
Sheet steel, 1.5 mm, RAL 7035,
Decorative trims of ABS, RAL 5018.

W x H x D mm	Packs of	Model No. DK
600 x 32 x 490	1	**7600.500**

Supply includes:
1 shelf,
including assembly parts.



Pull-out RiLab shelf

The pull-out shelf is fastened to the supporting pillars via telescopic slides. It guarantees and extension of up to 300 mm. The shelf can be locked in an inserted and extended position via two locating points.

Technical specifications:
Load capacity 20 kg surface load, static

Material:
Sheet steel, 1.5 mm, RAL 7035,
Decorative trims of ABS, RAL 5018.

W x H x D mm	Packs of	Model No. DK
542 x 48 x 490	1	**7600.510**

Supply includes:
1 shelf with telescopic slides,
including assembly parts.



Pull-out RiLab shelf with mouse pad

The pull-out shelf with integral mouse pad offers ideal accommodation for the mouse and key-board. The maximum extension is 295 mm.

Technical specifications:
Load capacity 20 kg surface load, static

Material:
Sheet steel, 1.5 mm, RAL 7035,
Decorative trims of ABS, RAL 5018.

W x H x D mm	Packs of	Model No. DK
542 x 64 x 490	1	**7600.520**

Supply includes:
1 shelf with telescopic slides and integral mouse pad,
including assembly parts.



Rotating, tilting monitor shelf

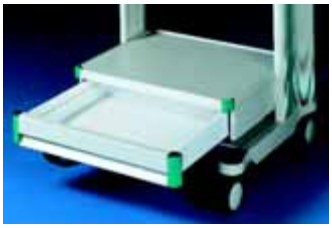
The monitor shelf has got an all-round safety edge. It can be tilted with infinite variation through ±15°. Horizontally, the shelf can be rotated through 70° with infinite variation, and locked.

Technical specifications:
Load capacity 35 kg surface load, static

Material:
Sheet steel, 1.5 mm, RAL 7035,
Decorative trims of ABS, RAL 5018.

W x H x D mm	Packs of	Model No. DK
410 x 32 x 491	1	**7600.530**

Supply includes:
1 monitor shelf with hinge and cable retainer,
including assembly parts.



Drawer

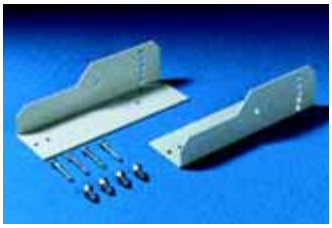
The drawer, which is open at the top, offers a practical solution for storing documents and equipment, and also features a front identification strip. The drawer can be closed at the top via a shelf fitted above it.

Technical specifications:
Load capacity 20 kg static surface load

Material:
1.0 mm sheet steel on the outside, polystyrene on the inside, RAL 7035, trim and corner pieces of ABS, RAL 5018.
Telescopic ball bearings slide.

W x H x D mm	Packs of	Model No. DK
600 x 96 x 490	1	**7600.540**

Supply includes:
1 drawer, including assembly parts.





Adaptor set

for Rittal RiCase enclosures, 600 mm wide
The adaptor set allows RiCase enclosures with a width of 600 mm to be integrated into the base frame. This achieves optimum synergy between the flexibility of the mobile workstation, and the mounting opportunities of the RiCase enclosure. The adaptor set is designed in such a way that the enclosure can be locked in five stages within a tilting range of ±15°.

Technical specifications:
Load capacity max. enclosure weigth 50 kg.

Material:
Sheet steel, 2.0 mm, RAL 7035

Packs of	Model No. DK
1 set	**7600.590**

Supply includes:
1 adaptor set, consisting of two mounting brackets, including mounting accessories.





6-way socket strip with switch

The socket strip has a 3 m long connection cable, and is conveniently housed in the power column of the mobile workstation. This permits direct on-site power supply over short distances without taking up any additional space.

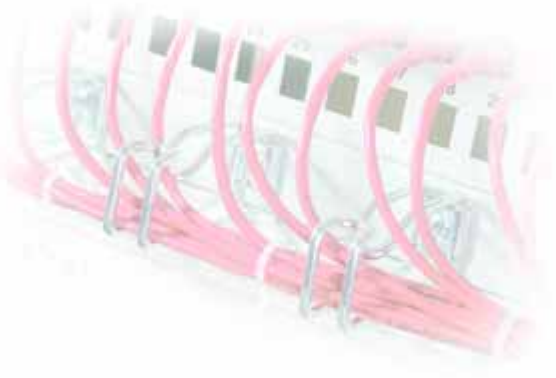
Technical specifications:
Socket strip with switch, 16 A, 250 V,
3 m connection cable, manufactured to
CEI 884-1, tested to VDE.

Material:
Aluminium section with polycarbonate cover, self-extinguishing to UL 94-V0.

Packs of	Model No. DK
1	**7600.600**

Supply includes:
1 socket strip, including assembly parts.

Features



The configuration of decentralised network units is extremely important for small and medium-sized companies.

Rittal creates new solutions to accommodate the growing demands.



RNC enclosure



Prepared for the installation of $^1/_2$ 19″ components. 10″ components may also be installed by using an adaptor. 482.6 mm (19″) variant for vertical population.



Plug & play side panels with integral vent slots.



Wall-mounting with frame.



RNC universal enclosure



The universal enclosure, vertical for 482.6 mm (19″) configuration, horizontal for $^1/_2$ 19″ or 10″ configuration.



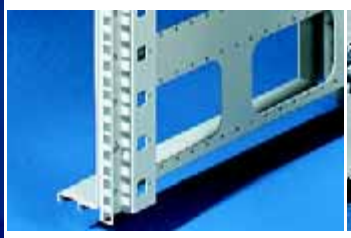
Bayed for 482.6 mm (19″) configuration, vertical and horizontal.



Passive ventilation
To accommodate a prepared fan, cable entry with brush strip.



Wall-mounted enclosure, based on Rittal QuickBox



Cutouts in the mounting bracket for access to the rear of the patch panels or active components.



Optimum cable clamping on the vertical or horizontal rail using cable ties.



Vent slots for passive ventilation.

Wall-mounted and distribution enclosures





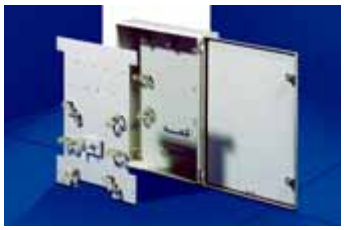
Wall-mounted enclosure based on AE with pull-out frame or depth-adjustable 482.6 mm (19″) level.



Office distributor
Comprehensive cabling for one storey can be achieved with the Office distributor.
The vertical arrangement of the 482.6 mm (19″) level guarantees a very slimline construction.



Small fibre-optic distributors
As a corridor and intermediate distributor of fibre-optic cables.



Small fibre-optic distributor, based on AE
The ideal enclosure for break-out applications.



Fibre-optic marshalling enclosure
Two access areas: Separate doors and security locks:
1. For splicing cassette mounting
2. For the patching chamber.



Small fibre-optic distributors, polycarbonate for extreme conditions: The small plastic enclosure with a high protection category of IP 66 to EN 60 529/ 10.91.

Wall-mounted enclosure, based on Rittal EL, 3-part/2-part





Optimum accessibility, thanks to 3-part or 2-part vertically hinged construction.



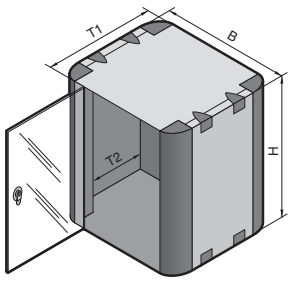
Equipped with **Mini comfort handle** (3 – 15 U), **comfort handle** (18 and 21 U) and replaceable **cable gland plates.**



2-part enclosure with swing frame. Facility for installing sub-racks and electronic components.

RNC enclosure





Rittal-Net.com is the passive platform for the fast, future-proof assembly of communications networks in the small office sector.
Three designer enclosures, for population with connection cables, patch cables and distributor panels, are tailored to the specific criteria of the SOHO market. Work groups may be set up quickly and easily.

Material:
1.5 mm sheet steel
Smoked grey acrylic glazing
Corner sections of aluminium
Corner feet made from thermoplastic foam

Colour:
Enclosure panels: RAL 7035
Corner sections: RAL 7030

Further information on the RNC distribution channel may be found at **www.rittal-net.com** (pages in German only)

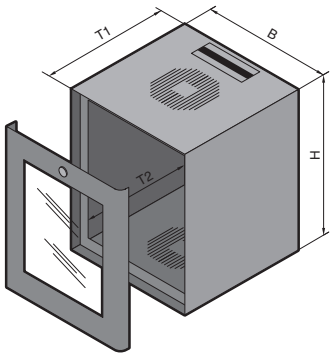
Detailed drawing,
available on the Internet.

U		Packs of	4	8	6
Width (B) in mm			342	342	342
Height (H) in mm			215	390	490
Depth (T1) in mm			280	280	400
Max. installation depth (T2) mm			250	250	335
Model No. DK empty enclosure, individual		1	**7870.100**	**7870.200**	**7870.300**
Model No. DK, bulk pack		24	**7870.500**	**–**	**–**
		18	**–**	**7870.510**	**–**
		12	**–**	**–**	**7870.520**
Version			42 HP ($^1/_2$ 19″)	42 HP ($^1/_2$ 19″)	84 HP (19″)
Installation position			horizontal	horizontal	vertical
Accessory kits					
Telephone distributor, including patch cable					
Telephone VF Cat. 3, 10 ports, UTP, LSA, modular, including 8 patch cables with RJ 45 connector, on both sides, extruded insulation, cable design in blue, cable length 0.25 m	Single	1	7870.802	7870.802	–
	Bulk pack	6	7870.582	7870.582	–
Telephone VF Cat. 3, 8 ports, UTP, modular, including 8 patch cables with RJ 45 connector, on both sides, extruded insulation, cable design in blue, cable length 0.25 m	Single	1	7870.800	7870.800	–
	Bulk pack	6	7870.580	7870.580	–
Telephone VF Cat. 3, 25 ports, UTP, LSA, including 12 patch cables with RJ 45 connector, on both sides, extruded insulation, MegaLine 526 SC flex 4P, cable design in blue, cable length 0.6 m	Single	1	–	–	7870.810
	Bulk pack	6	–	–	7870.590
Data distributor, including patch cable					
VF Cat. 5, 8 ports, STP, LSA, including 8 patch cables with RJ 45 connector, on both sides, extruded insulation, cable design in yellow, cable length 0.25 m	Single	1	7870.882	7870.882	–
	Bulk pack	6	7870.597	7870.597	–
VF Cat. 5, 8 ports, UTP, modular, including 8 patch cables with RJ 45 connector, on both sides, extruded insulation, cable design in yellow, cable length 0.25 m	Single	1	7870.820	7870.820	–
	Bulk pack	6	7870.595	7870.595	–
VF Cat. 6, 24 ports, STP, LSA, including 12 patch cables with RJ 45 connector, on both sides, extruded insulation, cable design in yellow, cable length 0.6 m	Single	1	–	–	7870.830
	Bulk pack	6	–	–	7870.600

Accessories Page 832

RNC universal enclosure





A contemporary design in black, with compact dimensions and a glazed door with tinted safety glass. Central locking with just one lock, the side panels cannot be removed whilst the front door is latched.

Suitable for use both as a stand-alone model and for wall mounting. The plug-in side panels ensure rapid access and plenty of scope when mounting.
Optional 1/2 19″, 10″ or 19″ components may be installed.

Simple baying is supported, both horizontally and vertically, using the connector kit supplied loose.

Passive ventilation via openings in the rear frame and via perforations in the roof and gland plate, prepared to accommodate a fan expansion kit DK 7980.100.
Cable entry optionally via the rear panel, roof or base.
All frame parts and panels are prepared for earthing.

Material:
Sheet steel, ESG

Colour:
Black, similar to RAL 9011

Supply includes:
Enclosure with glazed door,
Baying kit,
Brush strips for cable entry,
482.6 mm (19″) mounting level at front.

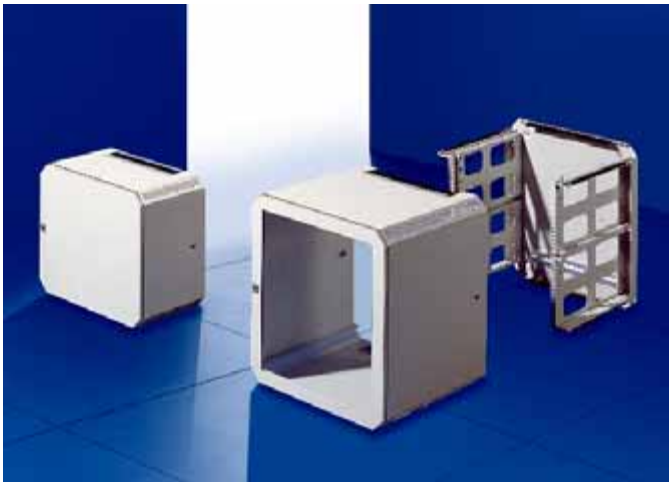
Property rights:
German patents
No. 10 210 481
No. 10 210 482

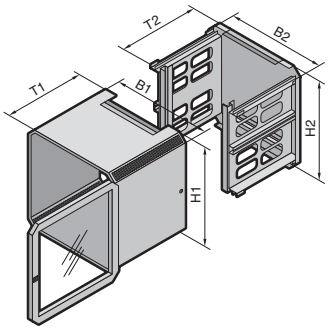
Detailed drawing,
available on the Internet.

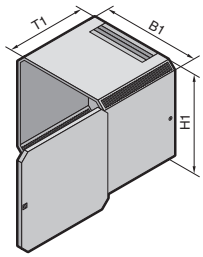
269.2 mm	Packs of	10	Page
U 482.6 mm (19 ″)		5	
Width (B) in mm		350	
Height (H) in mm		500	
Depth (T1) in mm		350	
Max. installation depth (T2) mm		270	
Model No. DK	1	**7870.350**	
Model No. DK	12	**7870.530**	
Accessories			
Socket strip 3-way, without switch	1	7240.110	746
Socket strip 7-way, without switch, for 482.6 mm (19″) level	1	7240.210	746
Socket strip 7-way, with switch, for 482.6 mm (19″) level	1	7240.220	746
1/2 19″ component shelf	1	7502.600	948
Cable management panel	1	7502.610	989
1/2 19″ blanking panel	2	7870.720	1025
1/2 19″ cable entry panel	2	7870.730	989
Blanking panel 1 U	2	7151.035	1025
Blanking panel 2 U	2	7152.035	1025
Blanking panel 3 U	2	7153.035	1025
Combination rail, length 200 mm	6	7502.302	980
Adaptor for 10″ system, 1 U	1	7870.760	1019
Adaptor for 10″ system, 4 U	1	7870.765	1019
Phillips-head screw M5, with plastic washer	100	2099.500	1019
Phillips-head screw M6, with plastic washer	100	2089.000	1019
Captive nuts M5, with contact	50	2094.500	1020
Captive nuts M6, with contact	50	2094.200	1020

Data and telephone distributor Page 807

Wall-mounted enclosure, based on Rittal QuickBox, 6 – 12 U







Perfect handling during installation and servicing, thanks to a removable cover.

Material:
Wall mounting plate with mounting brackets:
2.0 mm sheet steel
Enclosure cover:
1.0 mm sheet steel
Door: Sheet steel door or glazed door with sheet steel frame and safety glass ESG 3 mm

Surface finish:
Powder-coated
Enclosure: RAL 7035

Supply includes:
Wall section:
Pre-configured mounting bracket,
brush strip for cable entry at the bottom/top,
cable clamp rail

Enclosure cover:
consisting of base and cover tray with vent slots, brush strip for cable entry at the top/bottom, 2 side security locks, sheet steel door/glazed door with security lock, 482.6 mm (19″) mounting angles, infinitely depth-variable.

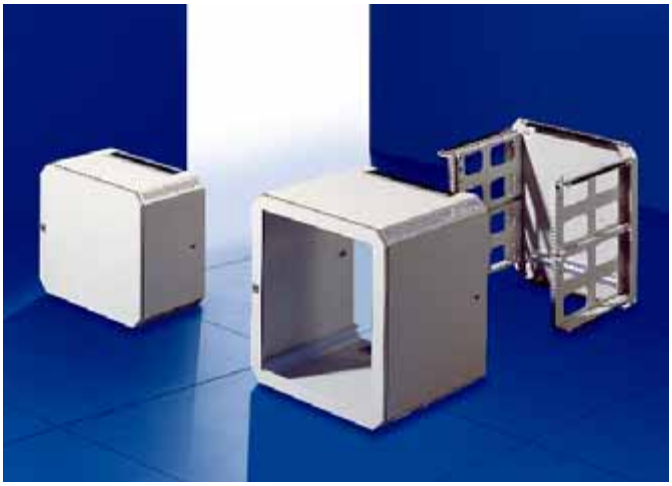
Property rights:
German patent
No. 198 11 711
German utility model
No. 298 23 843
European Patent No. 1 064 709
with validity for BE, ES, FR, GB, IT, NL, SE
Taiwanese Patent
No. NI 123 288
Russian Patent No. 2190912
Australian Patent
No. 733078
South Korean patent
No. 10-0375062
US patent no. 6,435,364

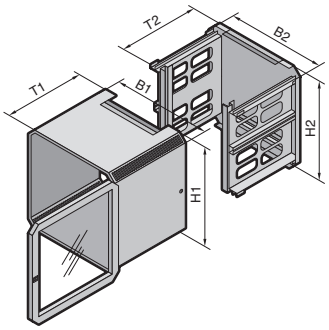
Detailed drawing,
available on the Internet.

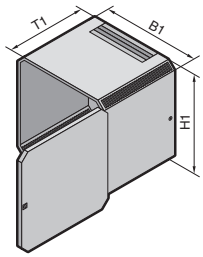
U/SU		P. of	6/10	6/10	6/10	9/15	9/15	9/15	12/20	12/20	12/20	Page
Enclosure cover	**Width** (B1) in mm		600	600	600	600	600	600	600	600	600	
	Height (H1) in mm		362	362	362	495	495	495	628	628	628	
	Depth (T1) in mm		300	400	600	300	400	600	400	500	600	
Wall section	**Width** (B2) in mm		595	595	595	595	595	595	595	595	595	
	Height (H2) in mm		355	355	355	488	488	488	621	621	621	
	Depth (T2) in mm		230	330	530	230	330	530	330	430	530	
Model No. with glazed door		1	**7502.013**	**7502.014**	**7502.016**	**7502.023**	**7502.024**	**7502.026**	**7502.034**	**7502.035**	**7502.036**	
Model No. with sheet steel door		1	**–**	**7502.114**	**–**	**7502.123**	**7502.124**	**7502.126**	**7502.134**	**–**	**7502.136**	
Accessories												
Mounting angles, 482.6 mm (19")		2	7502.201	7502.201	7502.201	7502.202	7502.202	7502.202	7502.203	7502.203	7502.203	1005
Mounting angles, metric		2	7502.211	7502.211	7502.211	7502.212	7502.212	7502.212	7502.213	7502.213	7502.213	1005
Solid gland plate		2	7502.310	7502.310	7502.310	7502.310	7502.310	7502.310	7502.310	7502.310	7502.310	970
Wall mounting bracket, 10 mm		1	2508.000	2508.000	2508.000	2508.000	2508.000	2508.000	2508.000	2508.000	2508.000	905
Wall mounting bracket, 40 mm		1	2503.000	2503.000	2503.000	2503.000	2503.000	2503.000	2503.000	2503.000	2503.000	905
Combination rails for enclosure width		6	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	980
Combination rails for enclosure depth	300/400 mm	6	7502.302	7502.302	7502.302	7502.302	7502.302	7502.302	7502.302	7502.302	7502.302	980
	500/600 mm		7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	980
Slide rails for enclosure depth	300 mm	2	7063.000	7063.000	7063.000	7063.000	7063.000	7063.000	7063.000	7063.000	7063.000	1011
	400 mm		7063.300	7063.300	7063.300	7063.300	7063.300	7063.300	7063.300	7063.300	7063.300	1011
	500/600 mm		7063.400	7063.400	7063.400	7063.400	7063.400	7063.400	7063.400	7063.400	7063.400	1011
Earthing kit		1	7502.240	7502.240	7502.260	7502.240	7502.240	7502.260	7502.240	7502.260	7502.260	962
Quick-release fastener		2	7502.220	7502.220	7502.220	7502.220	7502.220	7502.220	7502.220	7502.220	7502.220	891

Accessories Page 832

Wall-mounted enclosure, based on Rittal QuickBox, 15 – 21 U







Perfect handling during installation and servicing, thanks to a removable cover.

Material:
Wall mounting plate with mounting brackets:
2.0 mm sheet steel
Enclosure cover:
1.0 mm sheet steel
Door: Sheet steel door or glazed door with sheet steel frame and single-pane safety glass, 3 mm

Surface finish:
Powder-coated
Enclosure: RAL 7035

Supply includes:
Wall section:
Pre-configured mounting bracket,
brush strip for cable entry at the bottom/top,
cable clamp rail

Enclosure cover:
consisting of base and cover tray with vent slots, brush strip for cable entry at the top/bottom, 2 side security locks, sheet steel door/glazed door with security lock, 482.6 mm (19″) mounting angles, infinitely depth-variable.

Property rights:
German patent
No. 198 11 711
German utility model
No. 298 23 843
European Patent No. 1 064 709
with validity for BE, ES, FR, GB, IT, NL, SE
Taiwanese Patent
No. NI 123 288
Russian Patent No. 2190912
Australian Patent
No. 733078
South Korean patent
No. 10-0375062
US patent no. 6,435,364

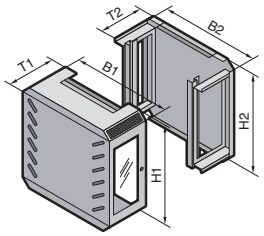
Detailed drawing,
available on the Internet.

U/SU		P. of	15/26	15/26	15/26	18/31	18/31	18/31	21/36	21/36	Page
Enclosure cover	**Width** (B1) in mm		600	600	600	600	600	600	600	600	
	Height (H1) in mm		762	762	762	895	895	895	1028	1028	
	Depth (T1) in mm		400	500	600	400	500	600	400	600	
Wall section	**Width** (B2) in mm		595	595	595	595	595	595	595	595	
	Height (H2) in mm		755	755	755	888	888	888	1021	1021	
	Depth (T2) in mm		330	430	530	330	430	530	330	530	
Model No. with glazed door		1	**7502.044**	**7502.045**	**7502.046**	**7502.054**	**7502.055**	**7502.056**	**7502.064**	**7502.066**	
Model No. with sheet steel door		1	**7502.144**	**–**	**7502.146**	**–**	**–**	**–**	**–**	**7502.166**	
Accessories											
Mounting angles, 482.6 mm (19″)		2	7502.204	7502.204	7502.204	7502.205	7502.205	7502.205	7502.206	7502.206	1005
Mounting angles, metric		2	7502.214	7502.214	7502.214	7502.215	7502.215	7502.215	7502.216	7502.216	1005
Solid gland plate		2	7502.310	7502.310	7502.310	7502.310	7502.310	7502.310	7502.310	7502.310	970
Wall mounting bracket, 10 mm		1	2508.000	2508.000	2508.000	2508.000	2508.000	2508.000	2508.000	2508.000	905
Wall mounting bracket, 40 mm		1	2503.000	2503.000	2503.000	2503.000	2503.000	2503.000	2503.000	2503.000	905
Combination rails for enclosure width		6	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	980
Combination rails for enclosure depth	300/400 mm	6	7502.302	7502.302	7502.302	7502.302	7502.302	7502.302	7502.302	7502.302	980
	500/600 mm		7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	7502.304	980
Slide rails for enclosure depth	300 mm	2	7063.000	7063.000	7063.000	7063.000	7063.000	7063.000	7063.000	7063.000	1011
	400 mm		7063.300	7063.300	7063.300	7063.300	7063.300	7063.300	7063.300	7063.300	1011
	500/600 mm		7063.400	7063.400	7063.400	7063.400	7063.400	7063.400	7063.400	7063.400	1011
Earthing kit		1	7502.240	7502.260	7502.260	7502.240	7502.260	7502.260	7502.240	7502.260	962
Quick-release fastener		2	7502.220	7502.220	7502.220	7502.220	7502.220	7502.220	7502.220	7502.220	891

Accessories Page 832

Wall-mounted enclosure, based on Rittal QuickBox with vertical 482.6 mm (19″) level





Optimum use of the interior space via side installation of the 482.6 mm (19″) components. Status monitoring via side viewing window.

Material:
Wall mounting plate with mounting brackets:
2.0 mm sheet steel
Enclosure cover:
1.0 mm sheet steel with side single-pane safety glass, 3 mm

Surface finish:
Spray-finished in RAL 7035

Supply includes:
Wall section:
with pre-configured 482.6 mm (19″) mounting brackets for side accommodation of mounting components and brush strip for cable entry from the bottom and top.

Enclosure cover:
with side vent slots to support passive climate control. The enclosure is secured via two security locks positioned at the sides.

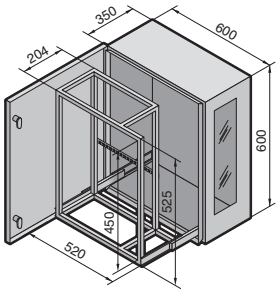
Detailed drawing,
available on the Internet.

U vertical		Packs of	3	6	Page
Enclosure cover	**Width** (B1) in mm		600	600	
	Height (H1) in mm		631	631	
	Depth (T1) in mm		210	360	
Wall section	**Width** (B2) in mm		595	595	
	Height (H2) in mm		630.3	630.3	
	Depth (T2) in mm		198	348	
Model No. DK		1	**7502.630**	**7502.660**	
Accessories					
Gland plates, solid		2	7502.310	7502.310	970
Wall mounting bracket, 10 mm		1	2508.000	2508.000	905
Wall mounting bracket, 40 mm		1	2503.000	2503.000	905
Combination rails for vertical mounting on the wall section QB		6	7502.302	7502.302	980
Combination rails for horizontal mounting		6	7502.304	7502.304	980
Mounting and cable management panel for cable routing and the attachment of small equipment		1	7502.270	7502.270	988
Mounting angles, 482.6 mm (19″) for front mounting, 12 U		2	7502.203	7502.203	1005

Accessories Page 832

Wall mounted enclosure, based on Rittal AE, with pull-out frame





Wall mounted distributor with 482.6 mm (19″) pull-out frame. Side and front installation with 482.6 mm (19″) components in a vertical mounting position. Horizontal installation also optionally supported at the front. Status monitoring via side viewing window. Pull-out frame may be removed for population via snap fastenings. Passive cooling via pre-configured outlet filter, may be upgraded to active. Optional accommodation facilities for earth rail DK 7113.000 in a vertical position on the pull-out frame.

Material:
Sheet steel

Surface finish:
Enclosure spray-finished, RAL 7035
Pull-out frame zinc-plated, passivated.

Supply includes:
1 wall-mounted distributor enclosure with sheet steel door, cam lock and double-bit insert. Pull-out frame attached to telescopic slides. Outlet filter in enclosure base and on left-hand side. Viewing window on right-hand side. Combination rail for cable clamping behind the cable entry. Additional cable clamp rail for mounting on the pull-out frame.

Protection category:
IP 43 to EN 60 529/10.91

Available on request:
- Fully modified wall-mounted distributors.
- Special designs

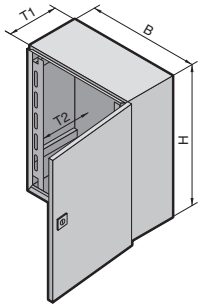
Detailed drawing,
available on the Internet.

Width in mm	Packs of	600	Page
Height in mm		600	
Depth in mm		350	
Model No. DK	1	**7644.000**	
Side 482.6 mm (19″) level, vertical		4 U	
Front 482.6 mm (19″) level, vertical and horizontal		10 U	
Accessories			
Plastic cable gland plates with prepunched PG holes	5	2563.000	966
Wall mounting bracket, 10 mm	1	2508.000	905
Wall mounting bracket, 40 mm	1	2503.000	905
Shelf	1	7644.400	949
Component shelf, 1 U	1	7119.140	947
Earth rail, horizontal	1	7113.000	962
Fan expension kit 220 V (may only be used at the bottom)	1 set	7980.100	649
Lock systems			
Plastic handle, version B, see page 886.			
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 888.			

Accessories Page 832

Wall-mounted enclosure, based on Rittal AE





Wall-mounted distributor with infinitely depth-variable 482.6 mm (19″) mounting level at the front. The ideal solution for small networks or corridor distributors.
Max. attainable protection category up to IP 55 (to EN 60 529/10.91) when using the prepunched plastic cable gland plates 2563.000 (optional).

Material:
Sheet steel

Surface finish:
Spray-finished in RAL 7035

Supply includes:
1 wall-mounted distributor enclosure with sheet steel door, cam lock and double-bit insert.
Gland plate with brush strip for cable entry at the bottom,
2 mounting angles, 482.6 mm (19″), depth-adjustable
1 C-rail for cable routing,
1 metal bracket for optional accommodation of an earth rail or 482.6 mm (19″) socket strip.

Available on request:
- Fully modified wall-mounted distributors.
- Special designs

Approvals,
see page 85.

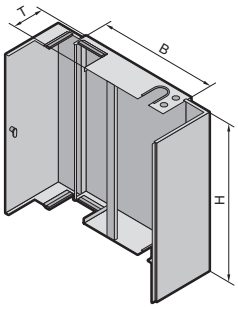
Detailed drawing,
available on the Internet.

U	Packs of	8	13	16	Page
Width (B) in mm		600	600	600	
Height (H) in mm		380	600	760	
Depth (T1) in mm		350	350	350	
Max. installation depth (T2) mm		310	310	310	
Model No. DK	1	**7641.000**	**7643.000**	**7645.000**	
Accessories					
Plastic cable gland plates with prepunched PG holes	5	2563.000	2563.000	2563.000	966
Wall mounting bracket, 10 mm	1	2508.000	2508.000	2508.000	905
Wall mounting bracket, 40 mm	1	2503.000	2503.000	2503.000	905
Glazed door, 34 mm profile depth	1	2730.000	2731.000	2732.000	878
Glazed door, 60 mm profile depth	1	2760.000	2761.000	2762.000	878
Rain canopy of sheet steel, RAL 7035	1	2511.500	2511.500	2511.500	899
Component shelf 2 U, fixed installation, 250 mm	1	7119.250	7119.250	7119.250	948
Swing frame, RAL 7035	1	2026.200	2027.200	2034.200	1002
Earth rail	1	7113.000	7113.000	7113.000	962
Lock systems					
Plastic handle, version B, see page 886.					
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 888.					

Accessories Page 832

Office distributor, 2 and 4 U, for fibre-optic and copper cables





The super-slimline design of this corridor distributor is achieved thanks to the vertical arrangement of the patch level.
The 2 or 4 U mounting level may be populated with patch panels and/or active components.
Cable entry is in the left-hand enclosure via brush strips. The right-hand part offers a large opening for cable sections and the option of attaching cable glands.

Material:
Sheet steel, 1.5 mm

Colour:
RAL 7035

Supply includes:
Office distributor, fully assembled, with security lock.

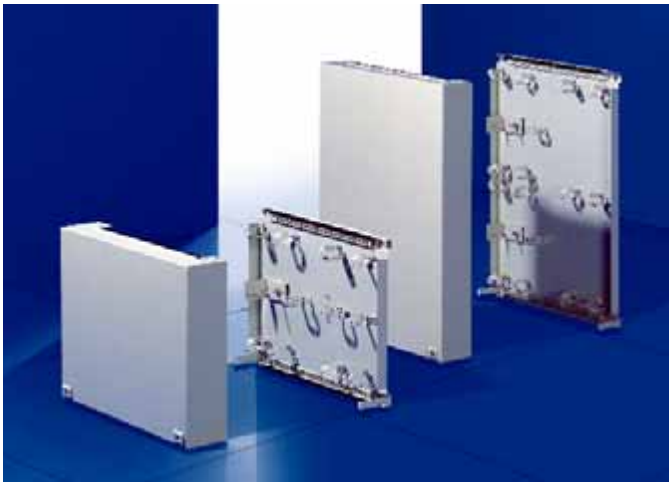
Available on request:
- Other variants
- Separate access authorisation available on request.

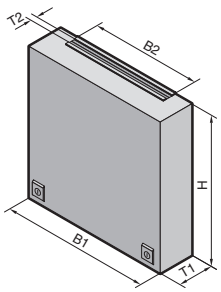
Detailed drawing,
available on the Internet.

U	Packs of	2	4
Width (B) in mm		400	400
Height (H) in mm		504	504
Depth (T) in mm		106	195
Model No. DK	1	**7245.000**	**7245.400**

Patch panels for fibre-optic and copper technology see page 1021 to 1025

Small fibre-optic distributor





Material:
Sheet steel, 1.5 mm

Surface finish:
Powder-coated in RAL 7035

Supply includes:
1 enclosure, two-part, in two designs to accommodate a maximum of 48 or 96 optical fibres respectively,
1 wall section:
with mounting holes for wall mounting,
11/16 shunting rings:
for patching cables/fibre stock,
1/2 splicing cassette holders:
To accommodate a maximum of 8 splicing cassettes,
2 comb strips:
for cable clamping, and brush inserts to provide protection against dust,
1 cover:
with suspension device and two cam locks.

Note:
When the small fibre-optic distributor is used without a patch panel, 1/2 splicing cassette holders may be retrofitted (maximum splicing cassette accommodation 16/32).

Available on request:
- Special designs

Property rights:
German patent no. 44 10 795

Detailed drawing,
available on the Internet.

Width (B1) in mm	Packs of	500	500	Page
Height (H) in mm		500	900	
Depth (T1) in mm		120	120	
Width of cable entry (B2) in mm		395	395	
Depth of cable entry (T2) in mm		29	29	
Model No. DK	1	**7452.035**	**7453.035**	
Number of fibres (when using patch panels)		1 – 48	1 – 96	
Accessories				
Patch panels with 12/24 locations for fibre-optic couplings		Maximum population 2 patch panels	Maximum population 4 patch panels	
F-SMA 6.5 mm, 24 locations	2	**7456.035**[1)]	**7456.035**[1)]	–
F-SMA 7.5 mm, 24 locations	2	**7457.035**[1)]	**7457.035**[1)]	–
ST, 24 locations	2	**7458.035**	**7458.035**	–
DIN 47 256, 24 locations	2	**7459.035**[1)]	**7459.035**[1)]	–
SC-, E-2000-, E-2000-Duplex, 24/12 locations	2	**7460.035**[1)]	**7460.035**[1)]	–
SC duplex, 12 locations	2	**7460.135**[1)]	**7460.135**[1)]	–
Splicing cassette holder for retrofitting	1	**7450.035**	**7450.035**	1026
Lock systems				
T handle without lock insert	1	2572.000	2572.000	887
T handle with lock insert no. 3524 E	1	2575.000	2575.000	887
Lock “15” (Zeiß-Ikon)	2	7059.035[1)]	7059.035[1)]	891
Key “15” (Zeiß-Ikon)	1	7059.100[1)]	7059.100[1)]	891
Plastic handle with lock no. 3524 E	1	2576.000	2576.000	886
Plastic handle	1	2533.000	2533.000	886
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 888.				

[1)] Extended delivery times.

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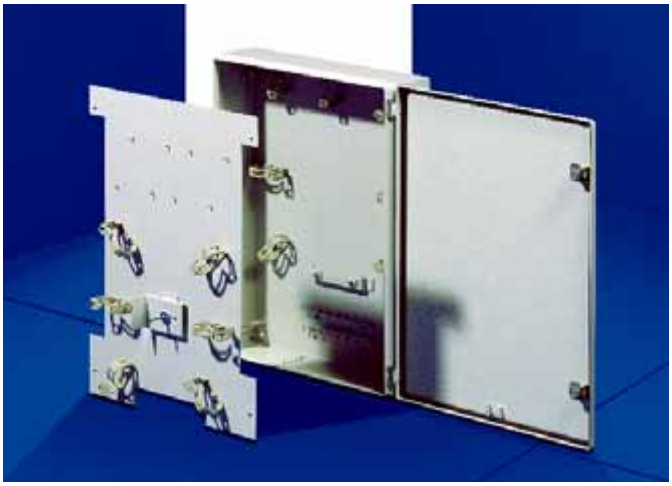
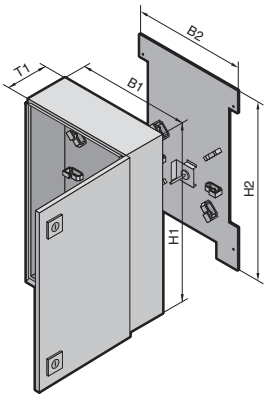
Small fibre-optic distributors, based on Rittal AE





Layout of the small fibre-optic distributor:

Basic enclosure:
With cable shunting rings to accommodate the fibre stock and a strain relief system for incoming and outgoing cables.

Mounting plate:
With accommodation for 4 splicing cassettes and 4 patch panels.

Patch panels:
There are 4 patch panels available with varying cutouts.
Other special variants available on request.

Material:
Sheet steel

Surface finish:
Spray-finished in RAL 7035

Colour:
RAL 7035

Protection category:
IP 55 (to EN 60 529/10.91) when using suitable cable gland plates.

Supply includes:
1 enclosure of sheet steel with
2 gland plates of sheet steel, sides,
1 gland plate, bottom
7 cable shunting rings 70 x 44 mm,
2 strain relief clips,
1 cable clamp rail, double,
1 door of sheet steel, with double-bit locks, with 2 hinges on the right,
1 mounting plate of sheet steel with 6 cable shunting rings 70 x 44 mm,
4 recesses for patch panels,
1 splicing cassette holder.

Detailed drawing,
available on the Internet.

Width (B1) in mm		Packs of	400	Page
Height (H1) in mm			500	
Depth (T1) in mm			155	
Mounting plate width (B2) mm			355	
Mounting plate height (H2) mm			455	
Model No. DK		1	**7454.000**	
Number of fibres (when using patch panels)			1 – 48	
Accessories				
Patch panel, maximum population with 4 patch panels	Locations			
Patch panel for 7.5 mm F-SMA couplings	12	2	7461.000	
Patch panel for ST couplings	12	2	7462.000	
Patch panel for SC, E-2000, E-2000 duplex couplings	12/6	2	7463.100	
Patch panel for SC duplex couplings	6	2	7463.200	
Cable gland with 2 half-shells, cable diameter from 8 – 36 mm, for mounting at the bottom, reduced protection category		1	2400.000	974
Plastic cable gland plates, PG size 13.5, for side mounting		5	1581.000	967
Plastic cable gland plates, PG size 13.5/16/21, for side mounting		5	1582.000	967
Wall mounting bracket, 40 mm		1	2503.000	905
Wall mounting bracket, 10 mm		1	2508.000	905
Lock systems				
Plastic handle		1	2533.000	886
Plastic handle with security cylinder insert		1	2576.000	886
Security cylinder insert no. 3524 E		1	2571.000	889
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 888.				

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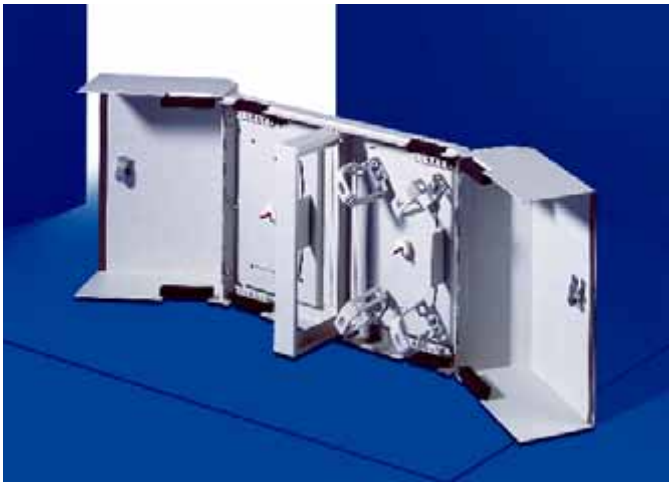
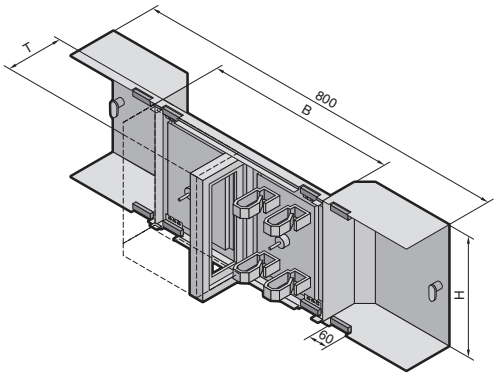
Fibre-optic marshalling enclosure





Patch panels are easily fastened to the gap. A door to cover and lock the splicing cassette accommodation, with separate lock. A second door to cover and lock the chamber/ splicing cassette accommodation, with separate lock.

Material:
Sheet steel, 1.0 mm

Colour:
RAL 7035

Supply includes:
1 enclosure to accommodate a maximum of 24 optical fibres, wall section with mounting holes for wall mounting,
2 doors with different locks, for separate access,
4 shunting rings, 70 x 44 mm,
2 splicing cassette holders each for 2 splicing cassettes,
4 rubber seals for cable entry,
4 comb strips for cable clamping.

Note:
If the marshalling enclosure is used without patch panels, 4 splicing cassettes, 2 per side, may be integrated.

Property rights:
German patent
No. 195 47 135
European patent no. 0 867 058 with validity for NL
European patent no. 0 867 059 with validity for DE, FR, GB, IT

Available on request:
- Other variants

Detailed drawing,
available on the Internet.

Width (B) in mm	Packs of	400	Page
Height (H) in mm		250	
Depth (T) in mm		120	
Model No. DK	1	**7247.000**	
Number of fibres (when using patch panels)		1 – 24	
Accessories			
Patch panel for 24 ST couplings	1	7247.010	
Patch panel for 24 SC, E -2000 couplings[1)]	1	7247.020	
Patch panel for 12 SC duplex couplings	1	7247.030	

[1)] 12 E-2000 duplex couplings may be accommodated.

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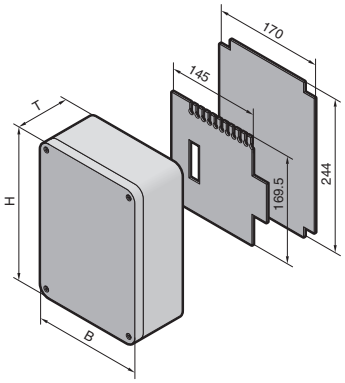
Small fibre-optic distributor, polycarbonate





Configuration
Small fibre-optic distributor:

Mounting plate:
With accommodation for one or two splicing cassettes, whereby the width of the cassettes may vary from 92 to 120 mm.

Dividing plate:
Serves to cover the splicing cassettes and separates them from the patch cables. Accommodation for patch panels and a cable clamp are also integrated.

Patch panels:
Patch panels for
F-SMA, E-2000-ST couplings,
E-2000 duplex and
SC and SC-duplex couplings
are available.
Other special variants available on request.

Cable entry:
For cable entry, there are prepunchings for PG cable glands integrated into the small fibre-optic distributor.
The cable glands (12 x PG 7 and 1 x PG 16) are included with the supply. Pre-assembled connectors will also fit through the knockout apertures (for diameters, see below). The cable may be held in the prepunched knockouts by a 2-piece cable entry or by cable entry grommets, depending on the diameter. The two-part cable entry and the grommets are not included with the supply, due to the different cable diameters.
Diameter of the prepunched knockouts:
12 x 12.5 mm
2 x 22.5 mm

Colour:
RAL 7035

Protection category:
IP 66 to EN 60 529/10.91.

Supply includes:
1 enclosure and lid of fibreglass-reinforced polycarbonate to accommodate splicing cassettes and patch panels,
1 enclosure lid with 2 hinges,
knockouts for PG glands are integrated into the enclosure,
12 x cable glands PG 7,
1 x cable gland PG 16,
1 mounting plate with variable accommodation of 2 splicing cassettes and integral anti-twist guard,
1 dividing plate to cover the splicing cassette, accommodation for 2 patch panels and comb strip for cable clamping,
2 lid screws of polyamide with option of preparing for a lead seal, polyamide insulating bungs for wall mounting screws.
All-round foamed-in PU seal.

Detailed drawing,
available on the Internet.

Width (B) in mm			Packs of	180	Page
Height (H) in mm				254	
Depth (T) in mm				90	
Model No. DK			1	**7451.000**	
Number of fibres (when using patch panels)				1 – 24	
Accessories					
	Locations per patch panel	Locations per enclosure			
Patch panel for 7.5 mm F-SMA couplings	12	24	2	7461.000	
Patch panel for ST couplings	12	24	2	7462.000	
Patch panel for SC, E-2000, E-2000 duplex couplings	12/6	24/12	2	7463.100	
Patch panel for SC duplex couplings	6	12	2	7463.200	
Wall mounting brackets			40	9583.000	103

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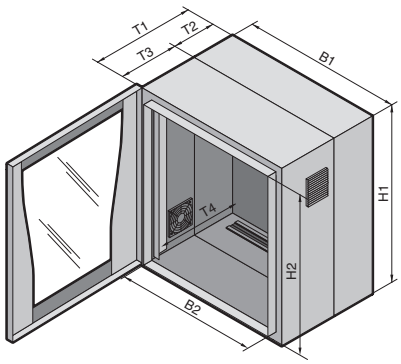
Wall-mounted enclosure, based on Rittal EL, 3-part, pre-configured, depth 573





Material:
Wall and hinged part:
Sheet steel, 1.5 mm
Viewing window:
3 mm safety glass.

Colour:
Wall and hinged part spray-finished in RAL 7035,
Glazed door RAL 7035/7015 (slate grey).

Protection category:
IP 43 to EN 60 529/10.91 for 77XX.735

Supply includes:
Wall section:
with vertical punched rails and C rail mounted horizontally for cable clamping, top cable gland plate solid, bottom cable gland plate with brush strips, earthing rail with star earthing, wall mounting bracket 10 mm.

Hinged part:
with 25 mm pitch pattern of holes in the front and rear frame, Two 482.6 mm (19″) mounting angles mounted on C rails, infinitely depth-variable, one outlet filter each on the left and right side.

Designer glazed door:
With 3 mm safety glass or slotted plate, 9 + 15 U with mini comfort handle for lock inserts, 21 U with comfort handle and 2-point locking, including lock 3524 E.

On request, fitted ex works:
- Fully modified wall-mounted distributors.
- Glazed door with aluminium frame[1)]
- Sheet steel door, solid[1)]

Approvals,
see page 86.

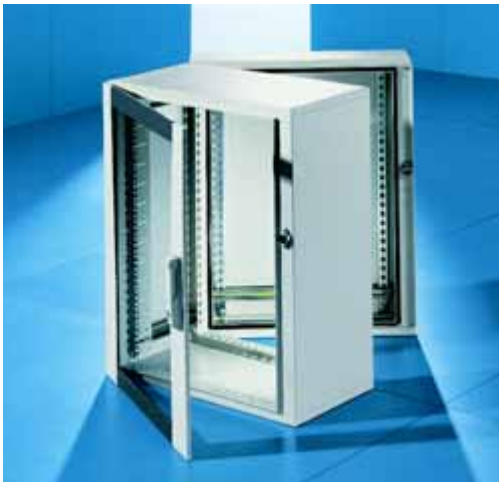
Detailed drawing,
available on the Internet.

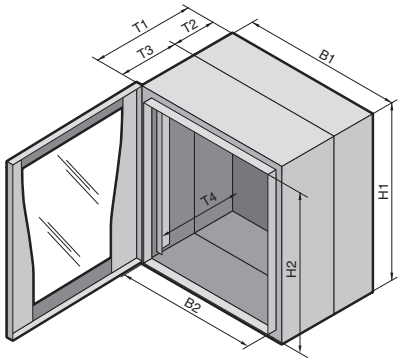
U	Packs of	9	15	21	Page
Width (B1) in mm		600	600	600	
Height (H1) in mm		478	746	1012	
Depth (T1) in mm		572.5	572.5	572.5	
Clearance width (B2) mm		451	451	451	
Clearance height (H2) mm		432	699	965	
Depth of wall section (T2) mm		135	135	135	
Depth of hinged part (T3) mm		416	416	416	
Maximum installation depth (T4) mm		520	520	520	
Model No. DK glazed door	1	**7709.735**	**7715.735**	**7721.735**	
Model No. DK slotted metal door[1)]	1	**7709.835**	**7715.835**	**7721.835**	
Load capacity, hinged part (kg)		45	75	75	
Accessories					
Solid gland plate	1	2235.135	2235.135	2235.135	970
Gland plate with brush insert	1	7705.035	7705.035	7705.035	970
Gland plate for metric cable glands	1	7705.235	7705.235	7705.235	970
Fan expansion kit, 230 V	1	7980.100	7980.100	7980.100	649
Spare filter mats	5	3322.700	3322.700	3322.700	670
Wall mounting bracket, 40 mm	1	2503.000	2503.000	2503.000	905
Lock inserts		see page 888			
Component shelf 2 U, fixed installation or fully extendible, 300 mm deep	1	7148.035	7148.035	7148.035	946
Component shelf 2 U, static installation, 250 mm	1	7119.250	7119.250	7119.250	948

[1)] Extended delivery times.

Accessories Page 832

Wall-mounted enclosure, based on Rittal EL, 3-part, with punched rails, depth 473





Material:
Wall and hinged part:
Sheet steel, 1.5 mm
Viewing window:
3 mm safety glass.

Colour:
Wall and hinged part spray-finished in RAL 7035,
Glazed door RAL 7035/7015 (slate grey).

Protection category:
IP 55 to EN 60 529/10.91

Supply includes:
Wall section:
With vertical punched rails and C rail mounted horizontally for cable clamping, solid cable gland plate top and bottom, wall mounting bracket 10 mm.

Hinged part:
with 25 mm pitch pattern of holes in the front and rear frame, Two 482.6 mm (19″) mounting angles mounted on C rails, infinitely depth-variable.

Designer glazed door:
6 – 15 U with mini comfort handle for lock inserts,
18 – 21 U with comfort handle and 2-point locking, including lock 3524 E.

On request, fitted ex works:
- Fully modified wall-mounted distributors.
- Special sizes[1)] (T = 373 mm, 573 mm)
- Glazed door with aluminium frame[1)]
- Sheet steel door, solid[1)]

Approvals,
see page 86.

Detailed drawing,
available on the Internet.

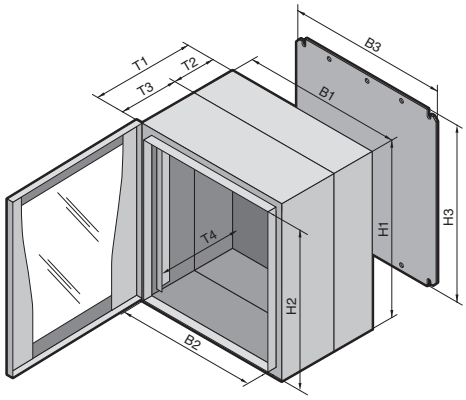
U	Packs of	6	9	12	15	18	21	Page
Width (B1) in mm		600	600	600	600	600	600	
Height (H1) in mm		345	478	612	746	878	1012	
Depth (T1) in mm		472.5	472.5	472.5	472.5	472.5	472.5	
Clearance width (B2) mm		451	451	451	451	451	451	
Clearance height (H2) mm		299	432	565	699	832	965	
Depth of wall section (T2) mm		135	135	135	135	135	135	
Depth of hinged part (T3) mm		316	316	316	316	316	316	
Maximum installation depth (T4) mm		420	420	420	420	420	420	
Model No. DK	1	**7706.135**	**7709.135**	**7712.135**	**7715.135**	**7718.135**	**7721.135**	
Load capacity, hinged part (kg)		30	45	60	75	75	75	
Accessories								
Gland plate with brush insert	1	7705.035	7705.035	7705.035	7705.035	7705.035	7705.035	970
Gland plate for metric cable glands	1	7705.235	7705.235	7705.235	7705.235	7705.235	7705.235	970
Wall mounting bracket, 40 mm	1	2503.000	2503.000	2503.000	2503.000	2503.000	2503.000	905
Lock inserts		see page 888						
Earth rail, horizontal	1	7113.000	7113.000	7113.000	7113.000	7113.000	7113.000	962
Component shelf 2 U, static installation and fully extendible	1	7148.035	7148.035	7148.035	7148.035	7148.035	7148.035	946
Component shelf 2 U, static installation	1	7119.250	7119.250	7119.250	7119.250	7119.250	7119.250	948
Component shelf 1 U, static installation, 140 mm	1	7119.140	7119.140	7119.140	7119.140	7119.140	7119.140	947

[1)] Extended delivery times.

Accessories Page 832

Wall-mounted enclosure, based on Rittal EL, 3-part, with mounting plate, depth 373





Material:
Wall and hinged part:
1.5 mm sheet steel
Mounting plate:
2.5 mm sheet steel, zinc-plated, passivated
Viewing window:
3 mm safety glass

Colour:
Wall and hinged part spray-finished in RAL 7035,
Glazed door RAL 7035/7015 (slate grey).

Protection category:
IP 55 to EN 60 529/10.91

Supply includes:
Wall section:
with 2 cable gland plates,
1 mounting plate supplied loose, assembly parts.

Hinged part:
with 2 mounting angles,
482.6 mm (19″), fitted at the front, assembly parts.

Designer glazed door:
3 – 15 U with mini comfort handle for lock inserts,
18 – 21 U with comfort handle and 2-point locking,
including lock 3524 E.

On request, fitted ex works:
- Special sizes and colours[1)]
- Glazed door with aluminium frame[1)]
- Sheet steel door, solid[1)]

Approvals,
see page 87.

Detailed drawing,
available on the Internet.

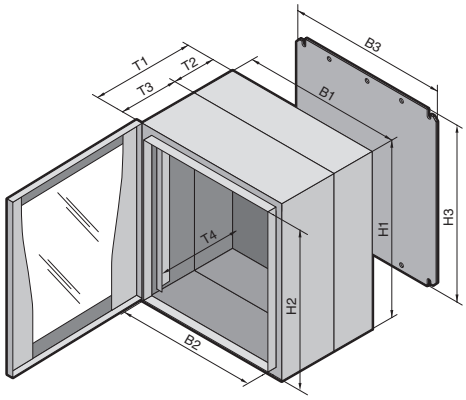
U	Packs of	3	6	9	12	15	18	21	Page
Width (B1) in mm		600	600	600	600	600	600	600	
Height (H1) in mm		212	345	478	612	746	878	1012	
Depth (T1) in mm		373	373	373	373	373	373	373	
Clearance width (B2) mm		490	490	490	490	490	490	490	
Clearance height (H2) mm		166	299	432	565	699	832	965	
Depth of wall section (T2) mm		135	135	135	135	135	135	135	
Depth of hinged part (T3) mm		216	216	216	216	216	216	216	
Maximum installation depth (T4) mm		342	342	342	342	342	342	342	
Width of mounting plate (B3) mm		485	485	485	485	485	485	485	
Height of mounting plate (H3) mm		165	299	432	565	699	832	965	
Model No. EL	1	**2243.605**	**2246.605**	**2249.605**	**2252.605**	**2255.605**	**2258.605**	**2261.605**	
Load capacity, hinged part (kg)		15	30	45	60	75	75	75	
Accessories									
Wall mounting bracket – 10 mm – 40 mm	1	2508.000 2503.000	2508.000 2503.000	2508.000 2503.000	2508.000 2503.000	2508.000 2503.000	2508.000 2503.000	2508.000 2503.000	905
Gland plate – with brush strip – for metric cable glands	1	7705.035 7705.235	7705.035 7705.235	7705.035 7705.235	7705.035 7705.235	7705.035 7705.235	7705.035 7705.235	7705.035 7705.235	970 970
Screwed cable glands		see page 972							
Lock inserts		see page 888							
Slide rails	10	2240.000	2240.000	2240.000	2240.000	2240.000	2240.000	2240.000	1011
C rails	4	2238.000	2238.000	2238.000	2238.000	2238.000	2238.000	2238.000	929
Blanking plates	3	see page 1013							

[1)] Extended delivery times.

Accessories Page 832

Wall-mounted enclosure, based on Rittal EL, 3-part, with mounting plate, depth 473





Material:
Wall and hinged part:
1.5 mm sheet steel
Mounting plate:
2.5 mm sheet steel, zinc-plated, passivated
Viewing window:
3 mm safety glass

Colour:
Wall and hinged part spray-finished in RAL 7035,
Glazed door RAL 7035/7015 (slate grey).

Protection category:
IP 55 to EN 60 529/10.91

Supply includes:
Wall section:
with 2 cable gland plates,
1 mounting plate supplied loose,
assembly parts.

Hinged part:
with 2 mounting angles,
482.6 mm (19″), fitted,
assembly parts.

Designer glazed door:
3 – 15 U with mini comfort handle for lock inserts,
18 – 21 U with comfort handle and 2-point locking,
including lock 3524 E.

On request, fitted ex works:
- Special sizes and colours[1)]
- Glazed door with aluminium frame[1)]
- Sheet steel door, solid[1)]

Approvals,
see page 87.

Detailed drawing,
available on the Internet.

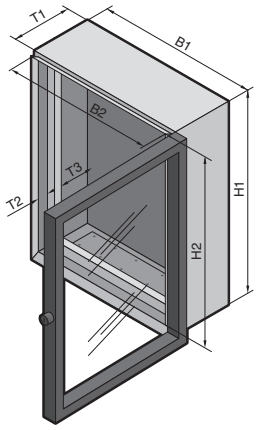
U	Packs of	3	6	9	12	15	18	21	Page
Width (B1) in mm		600	600	600	600	600	600	600	
Height (H1) in mm		212	345	478	612	746	878	1012	
Depth (T1) in mm		473	473	473	473	473	473	473	
Clearance width (B2) mm		490	490	490	490	490	490	490	
Clearance height (H2) mm		166	299	432	565	699	832	965	
Depth of wall section (T2) mm		135	135	135	135	135	135	135	
Depth of hinged part (T3) mm		316	316	316	316	316	316	316	
Maximum installation depth (T4) mm		442	442	442	442	442	442	442	
Width of mounting plate (B3) mm		485	485	485	485	485	485	485	
Height of mounting plate (H3) mm		165	299	432	565	699	832	965	
Model No. EL	1	**2253.605**	**2256.605**	**2259.605**	**2262.605**	**2265.605**	**2268.605**	**2271.605**	
Load capacity, hinged part (kg)		15	30	45	60	75	75	75	
Accessories									
Wall mounting bracket – 10 mm – 40 mm	1	2508.000 2503.000	2508.000 2503.000	2508.000 2503.000	2508.000 2503.000	2508.000 2503.000	2508.000 2503.000	2508.000 2503.000	905
Lock inserts		see page 888							
Gland plate – with brush strip – for metric cable glands	1	7705.035 2235.000	7705.035 2235.000	7705.035 2235.000	7705.035 2235.000	7705.035 2235.000	7705.035 2235.000	7705.035 2235.000	970 970
Screwed cable glands		see page 972							
Slide rails	10	2250.000	2250.000	2250.000	2250.000	2250.000	2250.000	2250.000	1011
C rails	4	2239.000	2239.000	2239.000	2239.000	2239.000	2239.000	2239.000	929
Blanking plates	3	see page 1013							

[1)] Extended delivery times.

Accessories Page 832

Wall-mounted enclosure, based on Rittal EL, 2-part, with swing frame, depth 369





Material:
Enclosure: 1.5 mm sheet steel
Swing frame: Sheet steel
Front door: Extruded aluminium section, 3 mm glazed acrylic

Surface finish:
Enclosure and swing frame: Electrophoretic dipcoat-primed and powder-coated RAL 7035
Front door: Dark brown anodised

Protection category:
IP 55 to EN 60 529/10.91

Supply includes:
Enclosure, front door, fitted swing frame, including assembly parts.

Available on request:
- Special sizes and colours

Approvals,
see page 87.

Detailed drawing,
available on the Internet.

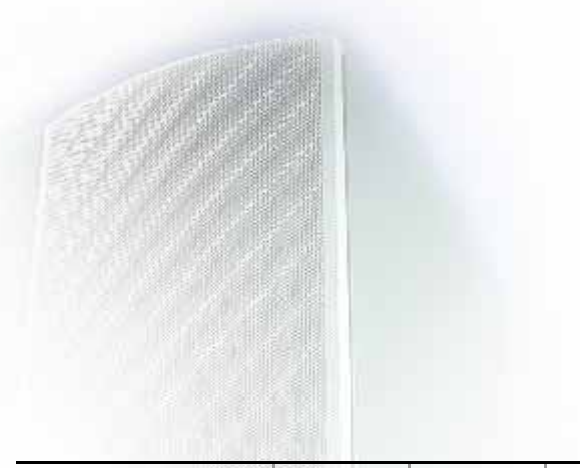
U	Packs of	6	11	14	Page
Width (B1) in mm		600	600	600	
Height (H1) in mm		380	600	760	
Depth (T1) in mm		369	369	369	
Clearance width (B2) mm		537	537	537	
Clearance height (H2) mm		317	537	697	
Distance from glazed door to swing frame (T2) mm		67 – 97	67 – 97	67 – 97	
Maximum installation depth (T3) mm		270	270	270	
Model No. EL	1	**1919.500**	**1920.500**	**1926.500**	
Weight (kg)		20.8	26.7	31.2	
Accessories					
Wall mounting bracket, 10 mm	1	2508.000	2508.000	2508.000	905
Wall mounting bracket, 40 mm	1	2503.000	2503.000	2503.000	905
Gland plates with hole	5	2563.000	2563.000	2563.000	966
Blanking plates	3	see page 1013			
Standard swing frame with double-bit lock insert may be exchanged for 27 mm lock inserts, type A, see page 888.					

Accessories Page 832

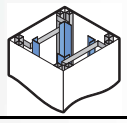
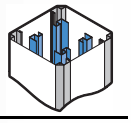


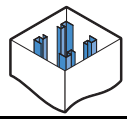
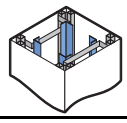
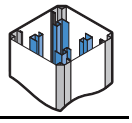
Server racks

Features



Each individual rack makes an important contribution to the physical security of your IT infrastructure. Our comprehensive range of benefits is based on more than 40 years of rack expertise, far-ranging experience in energy management, and the development of pioneering climate concepts. For this reason, Rittal server racks offer the ideal conditions to fuse all the relevant technologies into complete IT infrastructure solutions.

Rittal system comparison	TE 7000	TS 8	FR(i)
One platform for all requirements in the IT market			
Load capacity			
up to 400 kg	■■■	■■■	■■■
up to 1000 kg		■■■	■■■
Baying			
side	■■■	■■■	■■■
in all levels		■■■	
Climate control			
Fan	■■■	■■■	■■■
Climate control device		■■■	■■
Air/water heat exchanger		■■■	
CPU liquid cooling		■■■	■■■
Cabling			
Cable space	■■■	■■	■■
Cable management	■■■	■■■	■■■

Rittal system comparison	TE 7000	TS 8	FR(i)
One platform for all requirements in the IT market			
Lock-system			
2-point	■■■	■■■	■■■
4-point		■■■	
Security			
Access control	■■■	■■■	■■■
Climate control	■■■	■■■	■■■
Dismantling	■■■	■	■
Interior installation			
Depth-variable	■	■■■	■■
Partial installation		■■■	
2-level principle		■■■	■
Design	■■	■■	■■■
Standards IEC 60 297-1/2	■■■	■■■	■■■

Note: The more ■ the greater the compatibility.



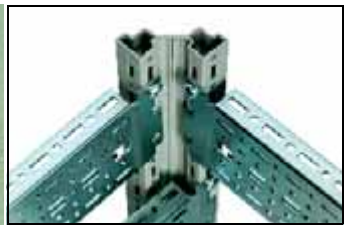
TS 8



Ventilation
Via perforated front and rear door with free surface area of 78 % in the perforated plate part.



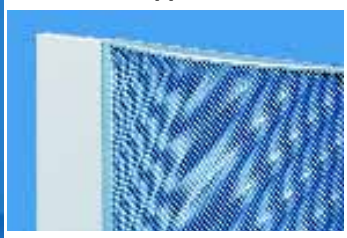
Lock system
with comfort handle and 4-point locking.



The ingenious symmetrical concept
of the frame offers baying on all sides. With two levels, the frame section affords infinite assembly diversity.



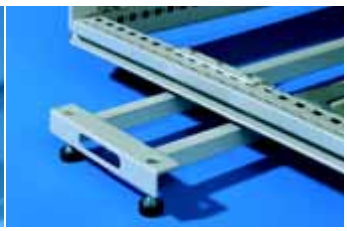
flexRack(i)



The new designer door
unites functionality with aesthetics.



Robust 482.6 mm (19″) mounting frame. Load capacity 1000 kg.



Optimised stability
for optimum operational reliability.

Features



TE 7000



Fully vented front and rear door.



Two-point locking rod, optionally with Ergoform-S handle system.



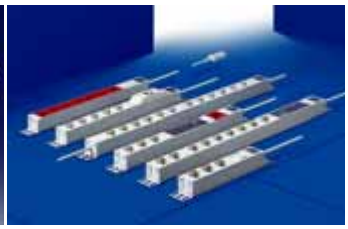
Power



Power Distribution Module PDR/PDM
Power sub-distribution in 482.6 mm (19″) format. May be retrofitted whilst the system is operational.



Power System Module PSM
Power management up to 96 A or 48 A with redundant circuit. Shock-hazard protected.



Socket strips
available in various length variants with various functional elements.



Cooling



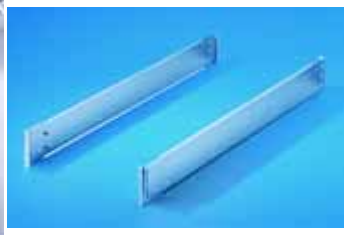
Processor climate control
Enclosure climate control for heat loss of 13 kW – 22 kW



Rack-mounted recooling system
Liquid-cooled computers are supplied via the shortest route via six cooling circuits.



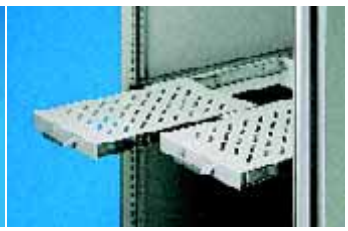
Server integration



Unversal server installation kit
For integration of the most common server types, using the original installation accessories.



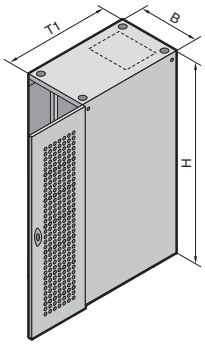
Depth-variable slide rail for flexible adaptation to the existing distance between levels.

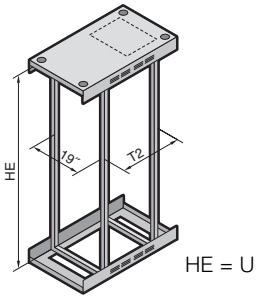


Component shelves, two-part
Two tower format servers may be moved independently of one another.

Based on Rittal TE 7000, 1000 mm deep







HE = U

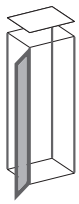
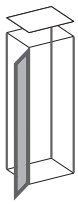
Benefits:
- No frame structure, optimum accessibility

Material:
Sheet steel

Surface finish:
Mounting frame:
Dipcoat-primed
Enclosure panels:
Powder-coated, RAL 7035/9005.

Supply includes:
Self-supporting 482.6 mm (19″) frame structure,
vented sheet steel door front and rear, two-point locking rod, recessed handle (front) and security lock 3524 E, roof plate for cable entry in corners with concealed cut-out for integrating fans, with levelling feet.

Detailed drawing,
available on the Internet.

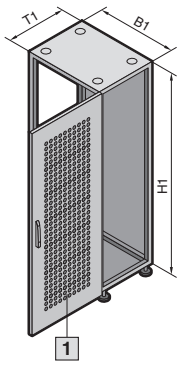
					
U		42	42	42	42
Width (B) in mm		600	600	800	800
Height (H) in mm		2000	2000	2000	2000
Depth (T1) in mm		1000	1000	1000	1000
482.6 mm (19″) distance between levels in its delivered state (T2) mm		740	740	740	740
Model No. TE as bayed enclosure without side panels, including baying kit	RAL 7035	**7000.882**	**–**	**7000.892**	**–**
	RAL 9005	**–**	**7000.885**	**–**	**7000.895**
Doors					
Sheet steel doors, fully vented, front and rear		■	■	■	■
Roof					
Roof plate including including concealed cut-outs for cable entry in corners and for optimum population with active fan units		■	■	■	■
Base					
Base frame with maximum cut-outs for cable entry in corners for optional population with solid modular plates, passively vented, or for cable entry		■	■	■	■
Interior installation					
482.6 mm (19″) mounting frames front and rear		■	■	■	■
Accessories					
Side panels, pluggable, including security lock 3524 E		**7000.653**	**7000.663**	**7000.653**	**7000.663**
Ergoform-S handle for semi-cylinder, in exchange for the existing lock		2435.000	2435.000	2435.000	2435.000
Fan unit, with 2 fans and thermostat, prewired ready for connection		7000.670	7000.670	7000.670	7000.670
Stabiliser		On request.	On request.	On request.	On request.
Transport kit, 4 castors including assembly parts		7000.672	7000.672	7000.672	7000.672
C-rail, for cable clamping in the enclosure width via cable clamps, on the 482.6 mm (19″) mounting frame at the rear		7828.060	7828.060	7828.060	7828.060
Cable clamp rail, depth variable 425 – 725 mm, for cable attachment in the enclosure depth using cable ties		7858.160	7858.160	7858.160	7858.160
Cable clamp rail for cable attachment in the enclosure width via cable ties, on the 482.6 mm (19″) mounting frame at the rear		7828.062	7828.062	7828.062	7828.062
Earthing kit for TE		7000.675	7000.675	7000.675	7000.675
Socket strip, 8-way, earthing-pin plug		7000.630	7000.630	7000.630	7000.630

■ Included with the supply.

Cable routing Page 964 **Power management** Page 742 **CMC-TC system monitoring** Page 762

Based on Rittal TS 8, pre-configured





Design features
- Firmly linked frame structure
- Front and rear door fully vented; free vented surface area 78 % in the perforated plate part
- 4-point locking, 2-point locking with multiple door versions
- Door hinge may be swapped to opposite side without any machining
- Cable entry via the roof and base/plinth
- Bayable at all levels
- Load capacity up to 1000 kg

Material:
Sheet steel

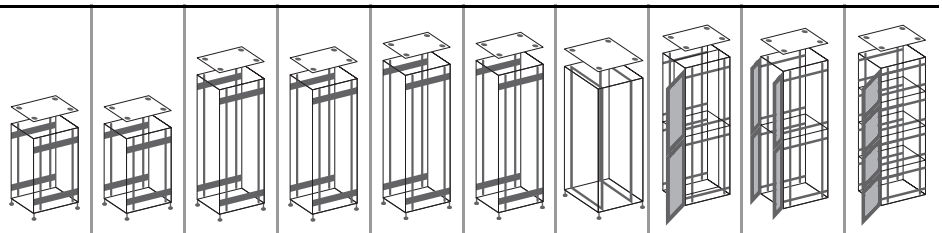
Surface finish:
Enclosure frame:
Dipcoat-primed
Enclosure panels:
Dipcoat-primed, powder-coated in RAL 7035 or RAL 9005

Mounting angles and punched sections with mounting flanges:
Zinc-plated, passivated

Supply includes:
Enclosure frame TS 8 with sheet steel doors front and rear, vented, with 130° hinges, L-shaped, depth-variable fitted mounting angles and/or 482.6 mm (19″) mounting frame, levelling feet, comfort handle with security lock and 4-point lock.

Detailed drawing,
available on the Internet.

1 Optimised air flow



Number of front and rear doors		1	1	1	1	1	1	1	2	2 (vertically divided)	4
U		24	24	42	42	47	47	42	2 x 21	2 x 21	4 x 10
Width (B1) in mm		600	600	600	600	600	600	800	600	600	600
Height (H1) in mm		1200	1200	2000	2000	2200	2200	2000	2200	2200	2200
Depth (T1) in mm		900	1000	900	1000	900	1000	1000	900	900	900
Model No. DK as bayed enclosure without side panels	RAL 7035	**7831.431**	**7831.433**	**7831.436**	**7831.438**	**7831.440**	**7831.442**	**7831.446**	**7831.450**	**7831.457**	**7831.460**
	RAL 9005	**7831.432**	**7831.434**	**7831.437**	**7831.439**	**7831.441**	**7831.443**	**–**	**7831.451**	**7831.458**	**7831.461**
Doors											
Sheet steel doors, vented, front and rear[1)]		■	■	■	■	■	■	■	■	■	■
Roof											
with openings for cable entry		■	■	■	■	■	■	■	■	■	■
Base/plinth											
Levelling feet		■	■	■	■	■	■	■	–	–	–
Interior installation											
482.6 mm (19″) levels, front and rear		■	■	■	■	■	■	■	–	–	–
L-shaped mounting angles		■	■	■	■	■	■	–	–	–	–
Mounting angles attached to depth stays		■	■	■	■	■	■	–	■	■	■
482.6 mm (19″) mounting frames front and rear		–	–	–	–	–	–	■	–	–	–
Panel earthing, fitted		■	■	■	■	■	■	■	–	–	–
Individual compartments, partitioned		–	–	–	–	–	–	–	■	■	■
Protected, separate cable routing per compartment		–	–	–	–	–	–	–	■	■	■
Accessories											
Side panels, plug-type, with T lock	RAL 7035	7824.129	7824.120	7824.209	7824.200	7824.229	7824.220	7824.200	7824.229	7824.229	7824.229
	RAL 9005	7816.129	7816.120	7816.209	7816.200	7816.229	7816.220	–	7816.229	7816.229	7816.229
Security lock for side panels		7824.500	7824.500	7824.500	7824.500	7824.500	7824.500	7824.500	7824.500	7824.500	7824.500
Base attachment bracket		8800.210	8800.210	8800.210	8800.210	8800.210	8800.210	8800.210	8800.210	8800.210	8800.210
Depth-variable slide rail, 1 U		7063.880	7063.880	7063.880	7063.880	7063.880	7063.880	7063.880	7063.878	7063.878	7063.878
Stabiliser, pull-out		7825.200	7825.250	7825.200	7825.250	7825.200	7825.250	7825.250	7825.200	7825.200	7825.200

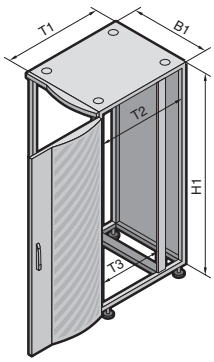
■ Included with the supply [1)] Free space in perforated plate part 78 %

Accessories Page 832 **Liquid Cooling** Page 672

Server racks

Based on Rittal flexRack(i), 1000 and 1200 mm deep, pre-configured





Design features
- Enclosure system may be dismantled because the vertical sections are screw-fastened to the roof and base frame.
- Aluminium vertical section with multi-functional system channel
- Vented front and rear door with free surface area of 64 % in the perforated plate part
- 2-point locking
- Cable entry via the roof and base
- Pull-out stabiliser
- Suitable for baying
- Load capacity up to 1000 kg

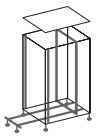
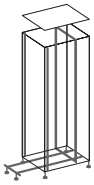
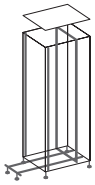
Material:
Vertical frame sections:
Extruded aluminium section.
Roof frame, panels: Sheet steel

Surface finish:
Enclosure panels/door trim panel:
Spray-finished in RAL 7035,
Frame sections, perforated plate of door: RAL 9006
482.6 mm (19″) mounting angles: Zinc-plated, passivated

Supply includes:
System frame section FR(i)[1] with designer door, vented, sheet steel door at rear, vented, levelling feet, stabiliser, earthing of all enclosure panels,
comfort handles for semi-cylinders with security lock 12321.

Property rights:
German patent
no. 103 11 376
German registered design
no. 403 04 312 and 401 03 180
British Registered Design
no. 301 54 31 and 210 49 77
US Design Patent no. 479,241

Detailed drawing,
available on the Internet.

				
U	24	42	24	42
Width (B1) in mm	600	600	600	600
Height (H1) in mm	1200	2000	1200	2000
Depth (T1) in mm	1005	1005	1205	1205
Depth absolute, including handles and roof curvature (T1) mm + 90 mm	1095	1095	1295	1295
Maximum distance between levels (T2) mm	829	829	1029	1029
Distance between the 482.6 mm (19″) levels (T3) mm	750	750	850	850
Model No. FR(i) as bayed enclosure without side panels	**7855.310**	**7855.330**	**7855.312**	**7855.332**
Doors				
Designer door, front, vented[2]	■	■	■	■
Sheet steel door, rear, vented[2]	■	■	■	■
Roof				
Solid roof plate	■	–	■	–
Roof plate with cable entry openings	–	■	–	■
Base frame				
Levelling feet	■	■	■	■
Stabiliser	■	■	■	■
Interior installation				
482.6 mm (19″) mounting angles, front	■	■	■	■
482.6 mm (19″) mounting frame, rear	■	■	■	■
Earthing				
Earthing of all enclosure panels on the enclosure frame	■	■	■	■
1 central earthing point fitted at the rear of the base frame	■	■	■	■
Accessories				
2 designer side panels with beading, including security lock 12321	7856.672	7856.687	7856.673	7856.688
Transport kit, 4 castors including assembly parts	7825.900	7825.900	7825.900	7825.900

[1] The system frame FR(i) is generally suitable for the installation of TS 8 accessories. [2] Free space in the perforated plate part 64 %.
■ Included with the supply.

Accessories Page 832 **Liquid Cooling** Page 672



Monitor/keyboard unit, 1 U

with 15″ and 17″ TFT display

This compact 1 U console in a new 2-colour design was developed for secure, space-saving server administration. In order to access other servers, this monitor/keyboard unit is easily combined with the Rittal KVM-Switch SSC view 8 (see page 740). This makes it possible to connect up to 8 servers to one unit in 1 U. The peculiarity of this compact solution is that a 482.6 mm (19″) keyboard including number pad and keypad may be integrated, in spite of its small size. The minimal depth of the unit, at just 490 mm (610 mm with 17″ TFT display, each without SSC extension), makes it suitable for installation in enclosures of depth 700 – 1000 mm. The installation kits supplied allow it to be adapted to an existing difference between levels of 680 – 850 mm for the 482.6 mm (19″) levels.
When closed, the drawer can be locked for protection against unauthorised operation.
In order to prevent heat accummulation when folded, the backlight is deactivated automatically. The illuminated master switch is easily accessbile on the front.

Upon request, it is also possible to integrate a trackball instead of the touchpad and the number pad (international versions). The display may be activated in both analog and digital form via the new standard Digital Visual Interface (DVI), which makes this monitor unit particularly future-proof for forthcoming server generations. The integral active mini-speakers ensure audio feedback in case of error messages or system sounds. The unit has a German keyboard layout. Versions in English and French, as well as country- and customer-specific versions, including USB keyboard connection, available on request.

Supply includes:
Complete monitor/keyboard unit in colour version RAL 7035 (light grey) or RAL 9005 (black) with design components and handle in RAL 9006 (silver) including assembly parts and all the required connection cables (approx. 1.6 m) for:

- Power supply
- VGA (15-pole D-Sub)
- DVI-D
- Audio (2 x jack plugs 3.5 mm, stereo)
- Keyboard connection (PS/2)
- Mouse connection (touchpad or trackball, PS/2).

		15″		17″	
		RAL 7035/ RAL 9006	RAL 9005/ RAL 9006	RAL 7035/ RAL 9006	RAL 9005/ RAL 9006
Touchpad	German	**9050.100**	**9050.200**	**9050.300**	**9050.400**[1]
	English	**9050.102**	**9050.202**	**9050.302**[1]	**9050.402**[1]
	French	**9050.103**[1]	**9050.203**[1]	**9050.303**[1]	**9050.403**[1]
Trackball	German	**9050.150**	**9050.250**	**9050.350**	**9050.450**
	International	**9050.151**[2]	**9050.251**[2]	**9050.351**[2]	**9050.451**[2]
Technical design					
TFT screen with anti-reflection coated security glass		15″ (381 mm)		17″ (432 mm)	
Maximum resolution		1024 x 768		1280 x 1024	
Colours		16.7 million			
Brightness		250 cd/m²			
Contrast ratio		approx. 400 : 1			
Sound		2 active mini-speakers			
Mains voltage		100 – 240 V AC, 50 – 60 Hz			
Dimensions (W x H x D)		448 mm x 1 U x 490 mm		448 mm x 1 U x 610 mm	
Connections at rear					
Mains voltage		IEC 320 connection			
Video input		Analog (D-SUB 15-pole, jack)			
		Digital (DVI-D, jack)			
Audio		3.5 mm, stereo			
Keyboard		PS/2, jack			
Mouse		PS/2, jack			
Power out		(12 V DC) for SSC view 8/view 32 Cat			

[1] Delivery time approx. 2 weeks. [2] International version only available with trackball and without numeric keypad. Please state the required language on the order.
Versions: French/Spanish/Portuguese/Italian/Danish/Norwegian/Finnish/Swedish/Belgian/ UK English/US English with EURO/Swiss/German. Other country-specific versions available on request.



1



2

SSC view 8/SSC view 32 Cat

8 or 32-port KVM switch
for monitor/keyboard unit 9050.XXX

These compact SSC views optionally extend the Rittal monitor/keyboard unit to include the function of an 8- or 32-port KVM switch, without requiring an additional U in the server rack for mounting. The switch may be mounted behind the existing monitor unit, and voltage is supplied via the power pack integrated into the drawer. The SSC has a password-protected OSD menu, but server selection may also be made via hotkeys.

The SSC view 8 may be cascaded with KVM switches from the SSCmulti series if more than the 8 servers are to be administered. In this way, the Rittal SSC switching system is able to grow flexibly in line with requirements. With the SSC view 32 Cat, the computers are connected via CAT cables and SSC converters (PS/2 or USB). In this way, the signals for video, keyboard and mouse are transmitted via a shared cable, considerably reducing the cabling work involved, particularly in fully configured racks. One SSC converter is required for each computer. Processor-controlled keyboard and mouse emulation for each channel ensures fault-free booting and reliable switching between the connected computers.

Rittal SSC	1 SSC view 8	2 SSC view 32 Cat
Model No. DK	**7552.000**	**7552.100**
Equipment		
Number of computers in stand-alone mode	8	32
Number of users	1	1
Number of users that may be administered (with allocation of rights)	2	10
Cascading as slave to SSCmulti series	■	–
Integral user/computer administration	■	■
OSD menu with mouse operation (English)	■	■
OSD superimposed on computer screen (may be deactivated)	■	■
OSD display of channels used	■	■
Hotkeys for computer selection	■	■
Autoscan	■	■
Autoskip (skip over unused channels)	■	■
Cable type to computer (view 8) or to SSC converter (view 32)	VGA/HD15, PS/2	Cat 5, 6, 7
Maximum cable length, SSC to computer (depending on cable quality)	4 m	15 m (30 m)
Port and system support	PS/2[1)]	PS/2, USB, SUN-USB
Automatic cable alignment (manually readjustable)	–	■[3)]
LED displays (rear)	None	Power
Maximum video resolution (depending on cable length)	1280 x 1024@85 Hz	1920 x 1440@75 Hz
Bandwidth	200 MHz	250 MHz
Connections		
Computer	SUB-HD15/PS/2	RJ45
Console	SUB-HD15/PS/2	SUB-HD15/PS/2
Service (for firmware update)	–	Jack 2.5 mm
Power supply 12 V from MTE[3)]	Hollow connector	Hollow connector
External power supply	12 V/approx. 0.8 A	12 V/approx. 1.0 A
Power consumption (approx.)	9 W	12 W
Operating temperature	+5 to +45°C	+5 to +45°C
Protection category	IP 40	IP 40
Enclosure	Sheet steel, powder-coated	Sheet steel, powder-coated
Colour	RAL 9006	RAL 9006
Dimensions (excluding projecting parts) approx. W x H x D mm	325 x 44 x 85	325 x 44 x 85
Dimensions (with rack installation) approx. W x H x D	19″ x 1 U x 140 mm	19″ x 1 U x 140 mm
Certifications	CE	CE
Accessories		
3 SSC converter PS/2	–	7552.201
4 SSC converter USB	–	7552.202
SSC converter SUN-USB	–	7552.203
5 CPU cable 2 m (with interlocking PS/2 connectors)	7552.120	–
CPU cable 4 m (with interlocking PS/2 connectors)	7552.140	–
Cat 5 cable 0.5 m	–	7320.470
Cat 5 cable 2 m	–	7320.472
Cat 5 cable 5 m	–	7320.475
Cat 5 cable 10 m	–	7320.481
Cat 5 cable 15 m	–	7320.485

[1)] Adaptor for SUN/MAC server available on request.
[2)] External long-range power input available on request.
[3)] With a cable length of max. 15 m, there is no need for any manual readjustments.
Above and beyond this, the maximum permissible cable length is approximately 30 m (depending on the cable quality).
Here, manual readjustment is needed.



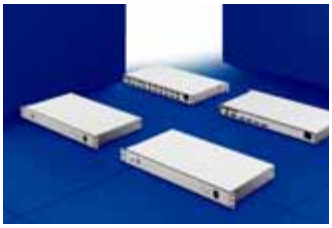
3



4



5



Rittal SSCmini/SSCmulti

By using the Rittal SSC, the number of keyboards, monitors and mice required is reduced to just one. Computer access becomes easier, more effective and more cost-efficient. As the number of computers increases, the SSC easily grows with it by cascading. The basic variant, the SSCmini, offers 4 channels and an integral hotkey function. The SSCmulti, the multi-talented all-rounder, additionally has 4/8/16 channels, an OSD menu, auto scan, auto skip and multi-platform capabilities. The multi-console feature supports a second Cat 5 console on the SSCmulti. As a hardware changeover switch, the Rittal SSC utilises the keyboard, monitor and mouse interfaces of the computer, irrespective of the software and operating system.

The SSCmulti is ideal for use in a heterogeneous server environment with different platforms such as PS/2 and IBM-compatible, HP 9000, sgi, SUN, RS 6000 and laptops.

Dimensions:
(W x H x D) 482.6 x 44 x 245 mm

Material:
Enclosure: Sheet steel

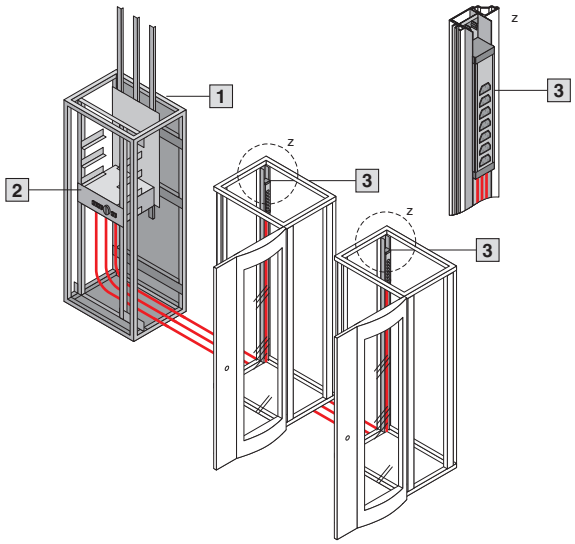
Surface finish:
Spray finished in RAL 7035

Available on request:
- Converter for Apple Mac and USB interface.
- Distance bridging via fibre-optics.
- Global access for remote server maintenance.

Rittal Server Switch Control SSC	SSCmini 4	SSCmulti 4	SSCmulti 8	SSCmulti 16
Model No. DK	**7551.000**	**7551.010**	**7551.020**	**7551.030**
Number of computers in stand-alone mode	4	4	8	16
Number of computers in cascade configuration (identical types/maximum)	–/64	16/64	64/128	256/256
Number of local operating consoles	1	1	1	1
Additional remote consoles (concurrent)	1	1	1	1
Integral remote control booster, Cat 5 port	–	■	■	■
Status displays	LEDs	OSD menu	OSD menu	OSD menu
On-screeen display (OSD)	(■)	■	■	■
Keyboard hotkey operation	■	■	■	■
Auto scan/auto skip	(■)	■	■	■
Free server name allocation	(■)	■	■	■
Password protection	(■)	■	■	■
Allocation of user rights	(■)	■	■	■
Keyboard and mouse emulation by 1 processor in each case	■	■	■	■
Combined operation of various different server platforms is supported	■	■	■	■
Direct connection of Sun servers (MiniDIN 8/SUN-VGA) – no adaptor required	–	■	■	■
Independent from the software and operating system	■	■	■	■
Stay live function in case of power loss	■	■	■	■
Power supply via	Keyboard output	Mains cable	Mains cable	Mains cable
Maximum video resolution (depending on distance) at 85 Hz	1600 x 1200	1600 x 1200	1600 x 1200	1600 x 1200
Bandwidth	250 MHz	250 MHz	250 MHz	250 MHz
Accessories				
CPU cable for video (HD15), PS/2 keyboard and PS/2 mouse,[2] 1 m	7551.110	7551.110	7551.110	7551.110
CPU cable for video (HD15), PS/2 keyboard and PS/2 mouse,[2] 2 m	7551.120	7551.120	7551.120	7551.120
CPU cable for video (HD15), PS/2 keyboard and PS/2 mouse,[2] 4 m	7551.140	7551.140	7551.140	7551.140
CPU cable for video (HD15), PS/2 keyboard and PS/2 mouse,[2] 6 m	7551.160	7551.160	7551.160	7551.160
CPU cable for video (HD15), PS/2 keyboard and PS/2 mouse,[2] 9 m	7551.190	7551.190	7551.190	7551.190
CPU cable for SUN video (HD15), miniDIN 8 keyboard/mouse, 1 m	–	7551.111	7551.111	7551.111
CPU cable for SUN video (HD15), miniDIN 8 keyboard/mouse, 2 m	–	7551.121	7551.121	7551.121
CPU cable for SUN video (HD15), miniDIN 8 keyboard/mouse, 4 m	–	7551.141	7551.141	7551.141
CPU cable for SUN video (HD15), miniDIN 8 keyboard/mouse, 6 m	–	7551.161	7551.161	7551.161
CPU cable for SUN video (HD15), miniDIN 8 keyboard/mouse, 9 m	–	7551.191	7551.191	7551.191
230 V connection cable with earthing-pin plug and IEC 320 connector, version D	–	7200.210	7200.210	7200.210
Remote console receiver module, desktop, transmission via 1 x Cat 5, up to 200 m	–	7551.900	7551.900	7551.900
Transmission kit (sender and receiver) up to 200 m (Cat 5)/up to 300 m (coax)	on request	on request	on request	on request
Console cable kit (HD15, 2 x RS/2) for passive extension, 2, 5, 7, 10 m	on request	on request	on request	on request

[2] Adaptor for serial mouse and DIN 5 keyboard enclosed (■) in conjunction with a SSCmulti.

Features



The permanent availability of IT is undoubtedly a crucial consideration for you. For this reason, you need to ensure high availability, stable electric power supply to your complex server and software system architecture. Create the framework conditions to ensure that all business processes operate on schedule with exceptionally high-level security parameters for the physical IT infrastructure.

1 Power Distribution Rack, PDR
2 Power Distribution Module, PDM
3 Power System Module, PSM



Power Distribution PDR/PDM



Power Distribution Rack
to accommodate a maximum of 8 PDMs. A maximum of 32 server racks may be connected.

Power Distribution Module PDM 482.6 mm (19″) subrack for power distribution of 40 kW in server and network enclosures.



Power System Module PSM







Busbar
Fully wired, shock-hazard protected, load capacity up to 96 A or 48 A, with redundant circuit.

Plug-in modules
for busbars, various country versions. May be retrofitted whilst the system is operational.

Active Power System Module PSM
Remote administration of the power supply, editing and monitoring of remote limits, SNMP trap message in case of alarm.



Power Modular Concept PMC – UPS systems







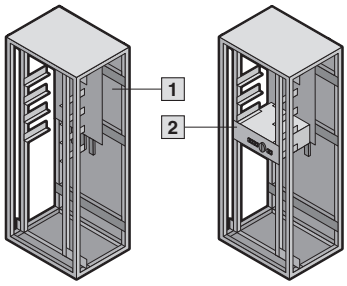
Modularity
High level of flexibility through modular expansion, depending on the UPS capacity requirements.

Redundancy
Multi-server configurations are protected by the redundant Rittal UPS concept.

Scalability
In large output categories, output and autonomy times may be scaled.

Power Distribution Rack PDR





- Power Distribution Rack to accommodate a maximum of 8 PDMs
- Height 1.20 m for 4 PDMs and 2 m height for 8 PDMs
- PDM may be retrofitted whilst operational
- A maximum of 32 racks may be fitted to the sub-distributor
- Fully shock-hazard protected
- Main switch in various options[1]:
  - Isolator switch
  - On-load isolator
  - Power circuit-breakers
  - RC circuit-breaker
- Low-voltage distribution up to 250 A

[1] Depending on the standards of the local power supply company

Note:
Observe the standards of the local power supply companies.

Material:
Sheet steel

Surface finish:
Enclosure frame:
Dipcoat-primed

Doors, roof and base/plinth:
Dipcoat-primed, powder-coated in RAL 7035
Gland plates, punched sections with mounting flanges and mounting angles:
Zinc-plated, passivated

Supply includes:
Enclosure frame with door (without tubular door frame), rear panel, side panels and roof plate, levelling feet including base/plinth adaptor, earthing of all enclosure panels, busbars shock-hazard protected, main switch integrated.

Extended delivery times.

Also required:
Power Distribution Module PDM, see page 743.

Detailed drawing,
available on the Internet.

Power Distribution Rack PDR		Packs of	1	1
Possible number of PDM modules			4	8
Dimensions in mm	W H D		800 1200 500	800 2000 500
Model No. DK		1	**7857.310**	**7857.300**
Accessories				
Base/plinth components front and rear	Height 100 mm	1 set	8601.800	8601.800
	Height 200 mm	1 set	8602.800	8602.800
Base/plinth trim side	Height 100 mm	1 set	8601.050	8601.050
	Height 200 mm	1 set	8602.050	8602.050



2 Power Distribution Module PDM

- 482.6 mm (19″) Power Distribution Module mechanically locked in the rack
- Scalable
- Including master switch, optional RC circuit-breaker
- 4 fused 3-phase outlets to the rack
- 3 x 230 V/16 A per outlet
- Connected load 400 V/3 AC, max. 63 A

Supply includes:
482.6 mm (19″) module, 3 U

Version	Model No. DK
PDM 482.6 mm (19″), 4 outlets per 10 kW	**7857.320**
PDM 19″, 4 outlets, project-specific	**7857.350**
Connection cable with 32 A CEEkon connector	**7857.321**

Plug & play connection cable

to the server enclosures

Length	Packs of	Model No. DK
3 m	1	**7857.130**
5 m	1	**7857.150**
8 m	1	**7857.180**
9 m	1	**7857.190**

assembly

Power System Module PSM

The ever-expanding power requirements of modern IT infrastructures demand refined solutions for power distribution inside the racks. This leads to an associated requirement for additional sockets. The new “intelligent power distribution system” from Rittal significantly reduces cabling and assembly work.

The modular system facilitates basic configuration of the racks, thanks to a vertical support rail with 3-phase infeed. The various insert modules to supply the active components may be snap-fitted into the support rail. This can even be done whilst the system is operational, because the support section is shock-hazard-protected.

The various modules, earthing pins, IEC320 etc. may be inserted into the support rail in any combination. This is easily achieved, even by non-electricians, thanks to the shock-hazard protected plug & play system.

Technical specifications/benefits:

- 3-phase construction with a maximum current of 3 x 16 A
- A redundant three-phase infeed with 3 x 16 A may also be added.
- The redundant circuit is completely separate from the 3 phases of the support rail.
- Each plug-in module picks off a phase on the support rail, either from infeed A or from the redundant infeed B, depending on the direction of connection.
- Modules may be retrofitted whilst the system is operational.
- All plug-in modules are equipped with integral overcurrent protection, so that only the affected module is deactivated in the event of an excessively high current. The other modules remain operational.
- Overvoltage protection may be integrated into the supply line.
- Support rail may be integrated into the vertical frame section of the flexRack(i) without additional equipment.

The vertical support rail allows the slots to be used flexibly across the entire enclosure height, and configured in a redundant manner via separate power infeed to the individual modules.

Supply includes:
Busbar with connection socket and operating instructions. Without cable.

Also required:

Connection cables, assembly kit and plug-in modules,
see page 744, 745.

Possible alternative:

Active Power System Module,
see page 775.

VDE **Reg. no. A592**



Busbar

Direct integration into the flexRack(i)
The busbar is supplied fully wired, without fuse, in two variants (infeed):

- EU: 5-pole with neutral conductor, 3 x 16 A
- US: 4-pole without neutral conductor

Busbar	For enclosure height mm	No. of modules	Model No. DK
EU type	1200	4	**7856.010**
EU type	2000	7	**7856.020**
US type	1200	4	**7856.050**[1)]
US type	2000	7	**7856.060**[1)]

[1)] Delivery times available on request.

Property rights:
German patent no. 101 60 418





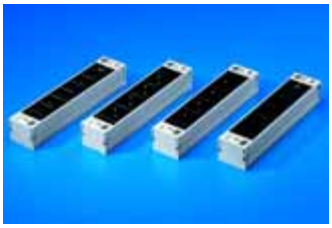




Mounting kit, fixed installation

for retrofitting in 600/700/800 mm wide TS 8 enclosure systems

For enclosure height 1200/2000 mm	Model No. DK
For static installation	**7856.011**
Hinged	**7856.012**



Plug-in modules

for busbar version EU and US. Length 250 mm.

Plug-in module	IEC320	IEC320	D/NL/A	F/B	USA	UK	CH
Number of sockets	6	4	4	4	4	3	4
Without overcurrent protection	**7856.080**	–	**7856.100**	**7856.120**[1)]	**7856.140**[1)]	**7856.160**[1)]	**7856.190**[1)]
With overcurrent protection	**7856.070**	**7856.220**[2)]	**7856.090**	**7856.110**[1)]	**7856.130**	**7856.150**[1)]	**7856.180**[1)]

[1)] Extended delivery times. Other modules available on request. [2)] With individual overcurrent fuse, see page 775.



Overvoltage protection

is connected upstream of the busbar.

Overvoltage protection	Model No. DK
With adaptor connector	**7856.170**



Active Power System Module PSM

Detailled information may be found under “Monitoring”, on page 775.



Connection cable, three-phase

3 m, fully wired ready for connection with adaptor and mains connector in two variants:

- EU: IEC309 connector
- US: L15-30P Nema connector

Connection cable	Model No. DK
EU type	**7856.025**
US type	**7856.055**[1)]

[1)] Delivery times available on request.



Connection cable, single-phase

The PSM system is easily operated as a single-phase system as well:

- CEE connector 230 V, 2P+E 16 A
- Cable length 3 m

Supply includes:
PVC cable, 3-pole
Connection cable, length 3 m
Contact protection CEE22

Packs of	Model No. DK
1	**7856.026**



Connection cable, UPS, single-phase

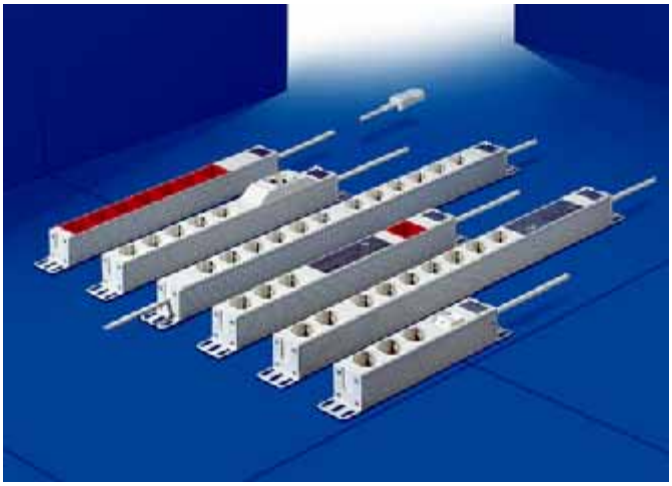
For connecting to an existing UPS:

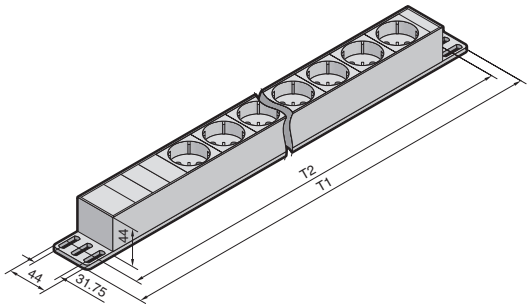
- IEC320 C14 connector (non-heating appliances)
- Cable length 3 m

Supply includes:
PVC cable, 3-pole
Connection cable, length 3 m
IEC cable coupler

Packs of	Model No. DK
1	**7856.027**

Voltage supply





Socket strips

The socket strips in the aluminium channel are available in various lengths with different functional elements. Special attention has been devoted to practical, universal fastening: With a bracket which may be used in four positions, there is a range of attachment options. Hence, for example, the 482 mm long socket strip may optionally be mounted on 482.6 mm (19″) mounting angles, on the enclosure frame, or in the rear section of the wall-mounted distributor. Without additional mounting accessories. The socket strip may be inserted into all sections with a 25 mm pitch pattern. This makes selection much easier, as well as providing additional flexibility and saving on warehousing.
Provision has also been made for the cable routing of the infeed, and when mounting in the 482.6 mm (19″) section there is adequate space to route the infeed between the socket strip and the mounting angle without kinks.
The arrangement of the sockets at a 45° angle allows unrestricted use of angular connectors.

Technical specifications:
Rated voltage: 250 V
Rated current: 10/16 A
Connection cable: 2 m long
H05VV-F3G1.5

Material:
Aluminium section natural anodised,
socket inserts polycarbonate.

Supply includes:
Socket strip,
two mounting brackets,
including assembly parts.

Standards:
Sockets:
E DIN VDE 0620-1/A1
(VDE 0620 part 1/A1): 2003-
E DIN VDE 0620-1/A2
(VDE 0620 part 1/A2): 2004-
Sockets B/F:
UTE NFC 61-303, CEE 7/NV
Overvoltage protection for low voltage:
DIN EN 61 643-11
(VDE 0675 part 6-11): 2002: 12
EMC interference suppression filter: EN 1332000: 1994

Detailed drawing,
available on the Internet.

Version	No. of sockets	Attachment			Length (T1) mm	Mounting dimension (T2) mm[1]	Model No. DK
		Frame	Wall-mounted distributor, horizontal	482.6 mm (19″) level			
Without switch	3	■			262.6	232.5	**7240.110**
	7	■	■	■	482.6	452.5	**7240.210**
	12	■			658.6	628.5	**7240.310**
With switch	3	■	■		306.6	276.5	**7240.120**
	7	■	■	■	482.6	452.5	**7240.220**
Overvoltage protection and interference suppression filter	5	■	■	■	482.6	452.5	**7240.230**
	9	■			658.6	628.5	**7240.330**
Overvoltage protection and interference suppression filter, with RJ 11 connector for CMC connection	9	■			812.6	782.5	**7200.630**
Miniature circuit-breaker	5	■	■	■	482.6	452.5	**7240.240**
Master/slave	1 + 3	■	■	■	482.6	452.5	**7240.250**
UPS strip	7	■	■	■	482.6	452.5	**7240.260**
RCCB	5	■	■	■	482.6	452.5	**7240.280**
RCCB and line protection	5	■	■	■	482.6	452.5	**7240.290**
For IEC 320 connector 10 A	12	■	■	■	482.6	452.5	**7240.200**
For IEC 320 connectors with IEC 320 input, 10 A	9	■	■	■	482.6	452.5	**7240.201**
For IEC 320 connectors with overvoltage protection and interference suppressor filter, 10 A	6	■	■	■	482.6	452.5	**7240.205**
With 2 circuits	6 + 6	■			720.6	690.5	**7240.370**
B/F sockets (Belgium, France)	7	■	■	■	482.6	452.5	**7240.510**
B/F sockets (Belgium, France)	12	■			658.6	628.5	**7240.512**

[1] Variable attachment distance within a range of 5 mm, the distance given is hole centre – hole centre of mounting bracket.

Variants:

Rocker switch
Illuminated, 2-pole switch. The safety bars prevent accidental contact.

Master/slave
2-pole electronic automatic switching unit. The operating point may be set from 9 W to 35 W. Equipment which switches to energy-saving or stand-by mode when switched on cannot be used as the master device. In the ON state, the master device must draw 9 W, and must not draw more than 35 W in the OFF state.

Overvoltage protection and interference suppression filter
The connected equipment is protected from voltage peaks in the mains and switching operations by the power suppliers. The EMC interference suppression filter provides protection from high-frequency interference voltage from both directions – the mains and the connected equipment.
The green ready light is extinguished in the event of disconnection or malfunctions. Connected equipment remains disconnected.

Overvoltage protection device (SPD), type 3
Maximum continuous voltage Uc: 280 V AC
Rated load current IL: 16 A
Maximum overvoltage protection at the mains end:
LS:B16A or 16AgL/gG
Protection level Up: 1.5 kV
Combined surge Uco (L-N): 5 kV
Combined surge Uco (L/N-PE): 6 kV
Rated discharge current In (L-N): 3.0 kA
Rated discharge current In (L/N-PE): 6.5 kA
Arrester disconnector: Permanently disconnects SPD and equipment from the mains
Status display: Green ready light is extinguished upon disconnection.

Overvoltage protection and interference suppression filter, with RJ 11 connector for connection to the CMC.
With the relay message contact, undervoltage and any failures caused by overvoltage can be reported via the CMC in the network using an SNMP trap.
Relay alarm output: RJ 11 jack
Load capacity of relay: 50 V DC, 100 mA

Miniature circuit-breaker
Protects cables from short-circuit and overload. 2-pole switching (thermal/magnetic). Tripping characteristic B.

UPS strip
With red socket inserts. These indicate the items of equipment protected by a UPS.
Connection cable with IEC 320 connector.
Cable: H05VV-F3G1.0/rated current: 10 A

2 circuits
Two circuits with two separate connection cables, 2.5 m.

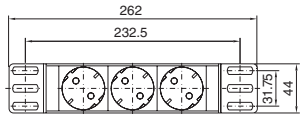
RCCB
For personal protection. With residual-current circuit-breaker IΔn 30 mA to DIN VDE 0664 part 1/85.

RCCB and line protection
A combination of personal, overload and short-circuit protection. With residual-current circuit-breaker IΔn 30 mA to DIN VDE 0664 part 1/85 and residual-current circuit-breaker to DIN VDE 0641/A 4/11.88 16 A/250 V~.

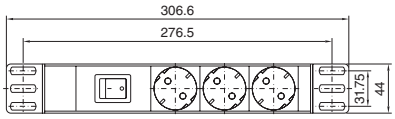
Version B/F (Belgium/France)
With 7 or 12 sockets to CEE 7-V UTE, with child-proof system.

IEC connector
With connection sockets to IEC 320, connection cable, 2 metres or IEC 320 input in the connector panel.
Cable: H05VV-F3G1.0/rated current: 10 A

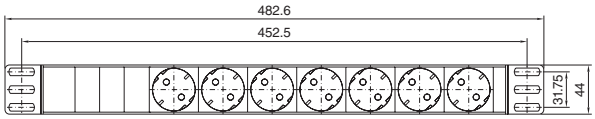
DK 7240.110



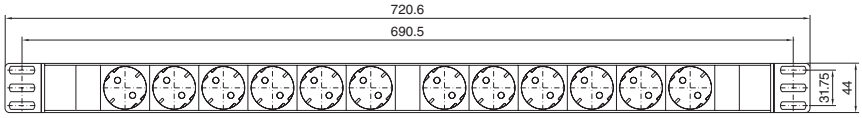
DK 7240.120



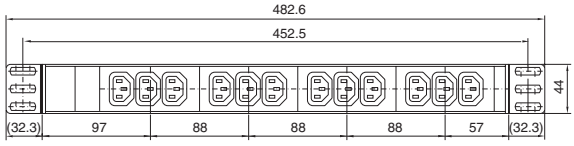
DK 7240.200 – DK 7240.290/DK 7240.510



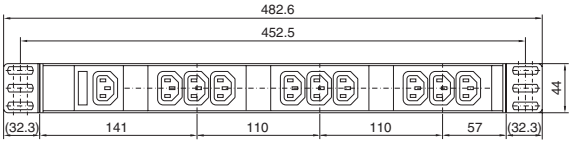
DK 7240.370



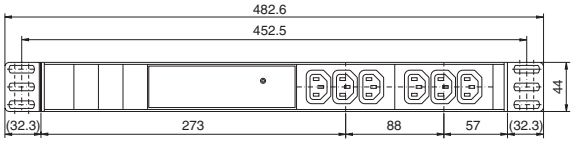
DK 7240.200



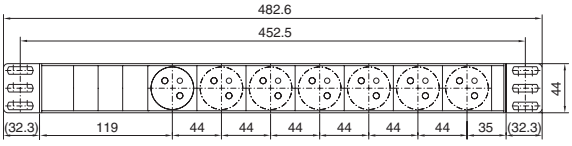
DK 7240.201



DK 7240.205



DK 7240.510



Voltage supply



Socket strips 230 V

Technical specifications:
Rated voltage 250 V AC,
maximum load
CH 10 A,
GB 13 A.

Material:
Plastic, halogen-free
Connection cable, 2 m long, without connector
H05VV-F3G1 (CH)
H05VV-F3G1.5 (GB)
Unrestricted use, including
angular connectors, thanks to the long row arrangement of plug-type contacts.

UK, CH version			Model No. DK UK version	Model No. DK CH version
No. of sockets	Length mm	With rocker switch		
6	470[1]		**7404.000**	**7604.000[2]**
8	553		**7406.510**	**7606.510[2]**
12	793		**7408.510**	**7608.510[2]**
16	1033		**7409.510[2]**	**7609.510[2]**
18	1153		**7412.510[2]**	**7612.510[2]**
5	470[1]	■	**7405.000**	**7605.000[2]**

[1] The socket strips can be mounted horizontally at the rear of the DK wall-mounted distributor based on EL/AE.
[2] Extended delivery times.

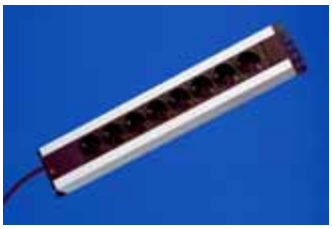


Socket strips

- Loading up to 16 A/max. 250 V AC.
- Plastic, self-extinguishing to UL 94-V0.
- Connection cable without connector, 2 m long.
- Various national versions available.

Versions for	No. of sockets	Model No. VR
D 16 A/250 V	4	**3850.500**
GB 13 A/250 V	4	**3851.500**
F/B 16 A/250 V	4	**3852.500**
CH 10 A/250 V	4	**3853.500**
USA/CDN 15 A/125 V	6	**3854.500**

Socket strips for IEC 320 connectors
see page 746.



TE socket strip

8-way socket strip for earthing-pin plug/version D. The strip is made of plastic and may be mounted vertically on the TE frame or in the rear 482.6 mm (19″) section. In the 482.6 mm (19″) section, more than 2 U of space is required. The sockets are arranged at an angle of 45° so that angular connectors are also easily used. The socket strip is supplied with a 2 m connection cable. The connection cable is contacted in a terminal slot in the strip. The terminal slot is equipped with a separate cover, so that this connection point can always be quickly and easily accessed. Replacement of the connection cable is likewise simple. Furthermore, the socket strip has external terminals for separate earthing.

Technical specifications:
Rated voltage: 230 Volt AC
Rated current: max. 16 A
Connection cable: Length 2 m, H05VV-F3G 1.5 mm^2, without connectors with wire end ferrules

TE socket strip	Model No. DK
8-way, earthing-pin	**7000.630**



Junction box with multi-functional bracket

The angle bracket can be installed in all network enclosures in a system-compatible design. The junction box serves as a transfer point for the power supply to all equipment (fans, lamps and socket strips). As well as being used as a junction box or interchange point, the bracket may also accommodate the thermostat (SK 3110.000) or the hygrostat (SK 3118.000) thanks to its integral holes.

Packs of	Model No. DK
1 set	**7280.035**

Material of bracket:
Sheet steel

Colour of bracket:
RAL 7035

Supply includes:
1 bracket, 1 junction box,
6 m connection cable 3 x 1.5 mm^2 (flexible).



Energy-Box, 482.6 mm (19″)

Technical specifications:
A depth-variable top hat rail for installed equipment to DIN 43 880, sizes 1 – 3 (e.g. to accommodate built-in sockets, miniature circuit-breakers etc.). Cable clamping at the rear, one N and one PE rail on an insulated plinth. Plastic cover including extension cover (UL 94-V0), maximum accommodation of 22 installed devices (width 18 mm). Maximum accommodation capacity = 22 HP (22 x 18 mm = 396 mm).

Packs of	U	Model No. DK
1	3	**7480.035[1)]**

[1)] To order versions in RAL 7032, please add extension .000 to the Model No.

Colour:
RAL 7035/RAL 7032[1)]

Supply includes:
Energy-Box with blanking covers

Note:
Individual population with circuit-breakers at the factory available on request.

German patent no. 42 00 836







Energy-Box, 482.6 mm (19″), pull-out

This Energy-Box is designed to accommodate both DC and AC components. The pull-out component front affords optimum accesss to the wiring space from above and below.

Connection clamps
for DC current:
2 clamps 35 mm^2,
9 clamps 16 mm^2 (per rail)

for AC current:
1 clamp 16 mm^2 (PE or N),
20 clamps 4 mm^2 (per rail)

Technical specifications:
Depth-adjustable top hat rail for snap-in attachment of installed equipment to DIN 43 880 in sizes 1 – 3 (e.g. to accommodate built-in sockets, miniature circuit-breakers etc. or entire installation assemblies such as the ABB “smissline” system). Cable clamping at the rear, two power distribution rails with connection clamps on isolated base/plinth. Plastic cover including extension cover, maximum accommodation of 22 installed devices (width 18 mm).
Maximum accommodation capacity = 22 HP (22 x 18 mm = 396 mm).
Depth: 220 mm.

U	Model No. DK
3	**7480.300**

Extended delivery times.

Colour:
RAL 7035

Supply includes:
Energy-Box with plastic blanking covers.

Available on request:
Distribution box for DC distribution in the outdoor enclosure.

Features

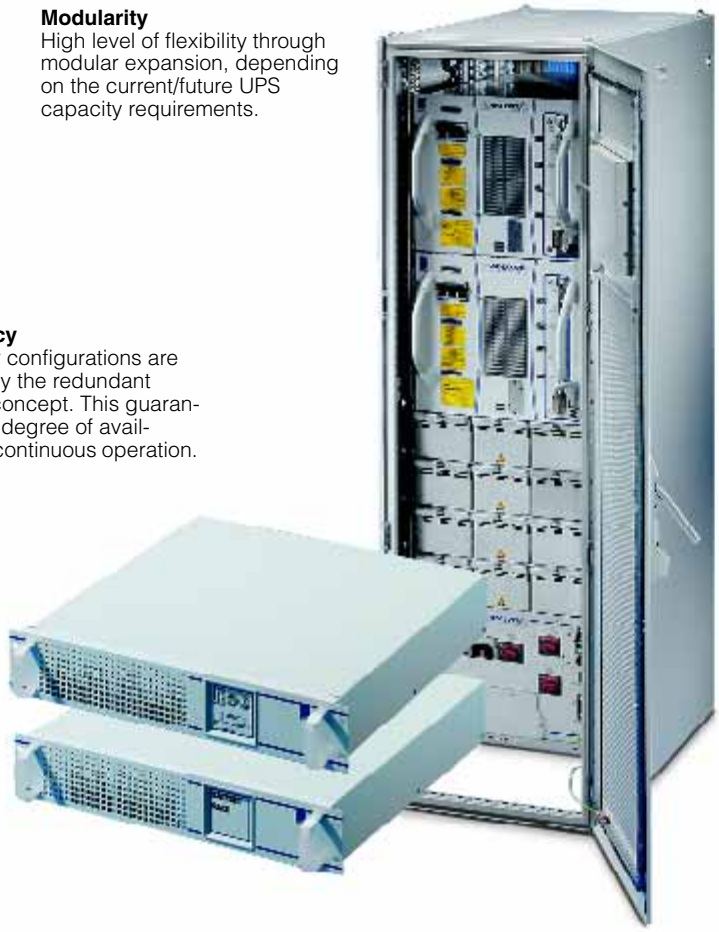
Rittal Modular Power Concept PMC – Applications

The modular Rittal UPS concept meets the versatile data center requirements and is easily expanded with additional UPS modules. High initial investments for the first-time installation are avoided thanks to the modular design concept, since UPS capacities may be upgraded at any time as and when required. The modular concept allows customers to invest as their business expands, and avoids unnecessary electrical installation.

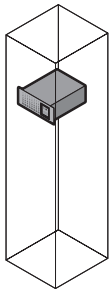
Modularity
High level of flexibility through modular expansion, depending on the current/future UPS capacity requirements.

Scalability
In large output categories, output and autonomy times may be scaled, while in small output categories autonomy times may be scaled.

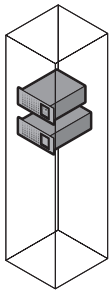
Redundancy
Multi-server configurations are protected by the redundant Rittal UPS concept. This guarantees a high degree of availability and continuous operation.



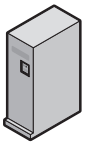
Output range 1 – 6 kVA



2 U UPS with integral battery pack (1/1.5 kVA).

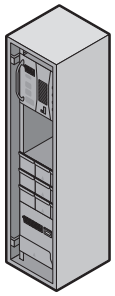


2 U UPS with 2 U battery pack (2/3 kVA).

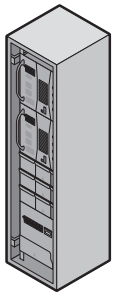


UPS floor standing enclosure with integral battery pack (6/1.5 kVA).

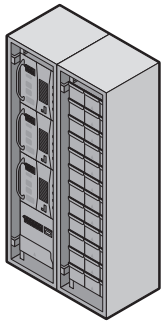
Output range 10 – 120 kVA



One PMC module 10 – 40 kVA with batteries in a TS 8 enclosure.



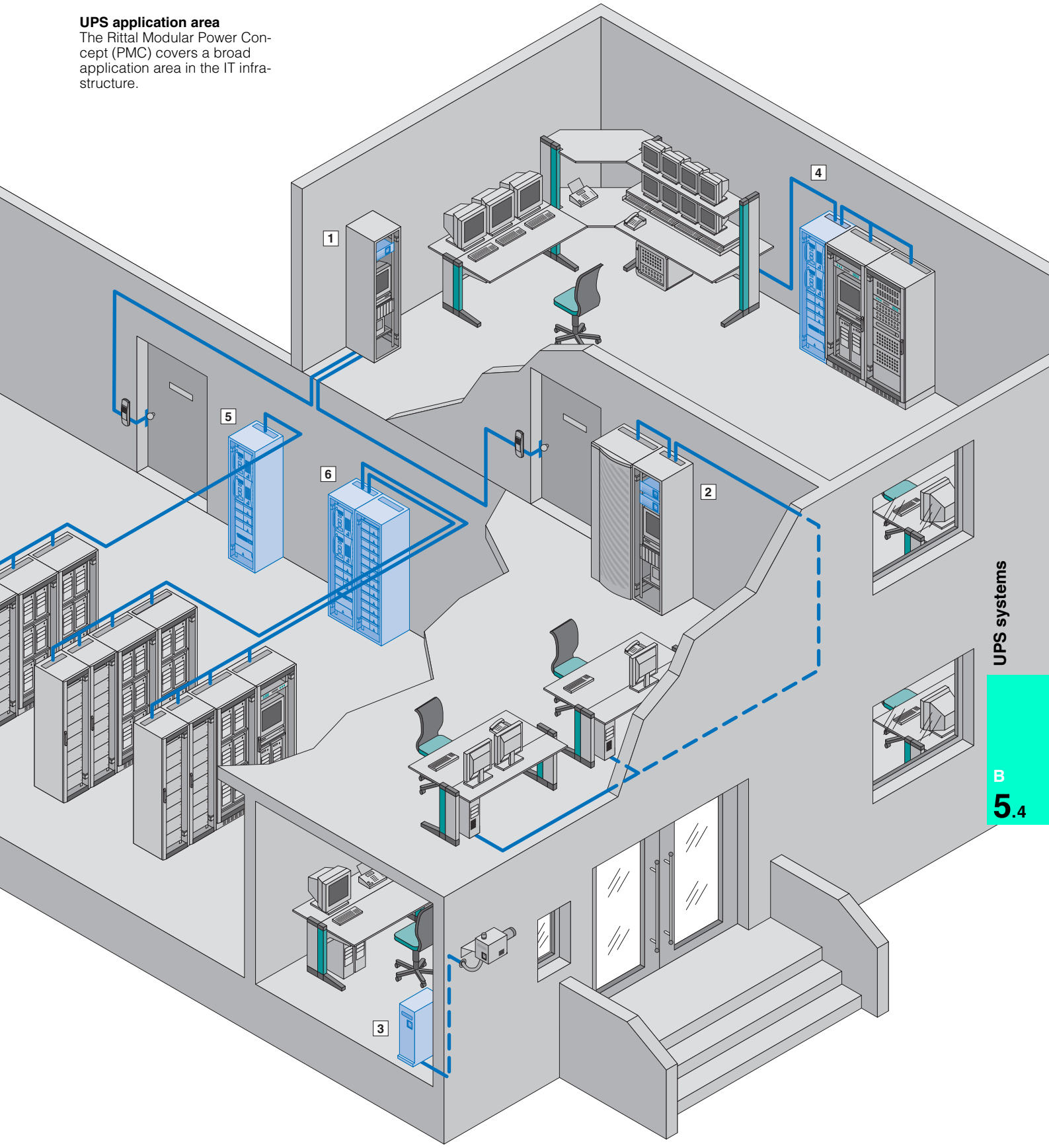
Two PMC modules 10 – 40 kVA each with batteries in a TS 8 enclosure.



Three PMC modules 10 – 40 kVA each with separate battery enclosure.

Features

UPS application area
The Rittal Modular Power Concept (PMC) covers a broad application area in the IT infrastructure.



1 UPS safeguards the access system to the building.

2 UPS safeguards the company's CAD system.

3 UPS for stand-alone applications.

4 Automatic system shutdown with administration option.

5 Central back-up of computer centres with redundant UPS functions.

6 Scalable UPS system for output and autonomy times.

UPS, single-phase, output range 1 – 6 kVA

The Rittal UPS with double conversion technology protects the IT infrastructure from hardware damage, data loss and operational standstill, triggered by power failures, voltage peaks or similar disruptions. Thanks to the active-power factor generated by the batteries/transformers, terminals are supplied with a constant energy quality. The system conforms to the UPS classification based on operating response in accordance with standard IEC 62 040-3 and VDE 0558 part 530. The Rittal UPS carries the classification code VFI-SS-111. The UPS software included as standard with the supply also facilitates the fully automated shutdown of systems and servers, as well as visualisation of the operating status.





Benefits of the Rittal Modular Power Concept (PMC)

- High-quality double transformer technology with perfect sinusoidal output voltage
- Electronic bypass
- Autonomy time may be extended with battery expansion
- Integral battery management, self-test and fast-charge system
- Sealed, maintenance-free lead gel battery, 5 year service life under Eurobat
- Clear LED display
- Alarm function
- Serial interface (RS-232)
- Optional relay, SNMP or AS 400 slide-in board
- Compatible with the Rittal CMC-TC monitoring system



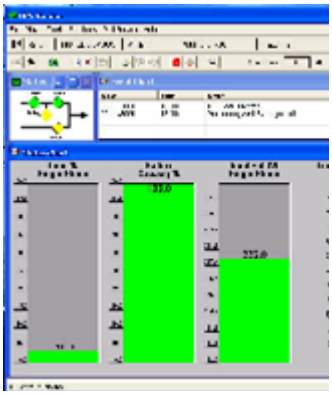
Technical features

Double-conversion technology
This technology is also known as online technology. The electrics with isolating transformer supplies connected equipment with a perfect sinusoidal output voltage.

Bypass function
The Rittal UPS system is equipped with an internal electronic bypass. This protects the UPS system from damage resulting from overload.

Intelligent battery management
The integral charging control checks the readiness of the battery units and ensures constant system availability. The battery remains protected from overcharging or exhaustive discharge.

Battery pack
All Rittal UPS systems may be equipped with additional battery packs. The battery packs serve to extend the autonomy time.
For UPS output categories 2 kVA and 3 kVA at least one battery pack is needed, since the control unit and battery are divided into separate enclosures here.



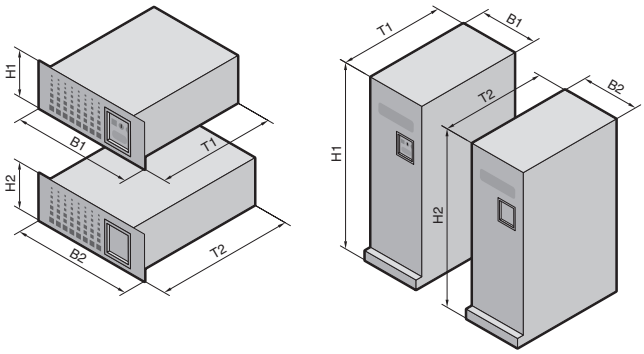
Software

The Rittal UPS software is included with the supply of UPS systems. It operates in the background and communicates with the Rittal UPS in an event-oriented manner via a serial interface. As soon as a malfunction is identified, a freely configurable shutdown routine may be used to shut down the systems automatically. All current operating systems are supported. Several network servers may be controlled simultaneously via the software. For each additional server, only an RCCMD (remote control command) licence is needed. The software also contains professional UPS management with the option of sending individual messages via e-mail, fax or mobile phone. A diverse spectrum of information is documented in the event memory.

Software benefits:
- Software compatible with all standard operating systems, included with the supply.
- HPOpenView plug-in for Windows included in the software package.
- If several servers are shut down via RCCMD, permanent polling of the servers is not necessary, which considerably reduces the system load. Each additional server requires an RCCMD licence.

UPS, single-phase, output range 1 – 6 kVA





Rittal Modular Power Concept (PMC)

Supply includes:
1-phase UPS systems based on the double-conversion technology with/without battery pack.

Available on request:
Replacement batteries,
AS 400 interface adaptor.

Also required:

Country-specific connection cables are required to operate the UPS systems.
Model No. see page 771.

Stored energy times (in minutes) in the event of a power failure at 100 %/ 50 % load:

UPS type 230 V	Supplied state Standard version	Additional battery packs				
		1	2	3	4	5
1 kVA	7/16	35/76	53/122	–	–	–
1.5 kVA	5/14	26/67	46/125	–	–	–
2 kVA	0/0	10/22	24/55	45/102	58/141	80/178
3 kVA	0/0	6/15	13/34	25/63	36/86	50/124
6 kVA	8/23	38/88	60/141	–	–	–

		UPS for 482.6 mm (19″) racks				UPS floor-standing enclosure with integral battery
		UPS with integral battery		UPS control unit		
Model No. DK		**7857.401**	**7857.402**	**7857.403**[1]	**7857.404**[1]	**7857.405**
Battery packs required, 2 U		–	–	7857.408	7857.408	–
Max. number of additional battery packs		2	2	5	5	2
Power	VA	1000	1500	2000	3000	6000
	Watts	700	1050	1400	2100	4200
Input	Rated voltage	230 V (160 – 276 V) AC ±3 %				
	Frequency	50/60 Hz ±5 %, automatic selection				
Output	Voltage	220/230/240 ±3 %				
	Frequency, synchronised	50/60 Hz ±0.5 % (sine)				
	Frequency, asynchronous	50/60 Hz ±5 % (sine)				

Rated current (max.)		4 A	5.7 A	7.7 A	12 A	29.6 A
Power factor to IEC 555-2		> 0.95				
Crest factor		3 : 1				
Overload response		110 % – 130 % for 10 sec., > 130 % ±10 % for 1.5 sec.				
Dimensions and weights						
Width (B1) in mm		482.6 (19″)				260
Height (H1) in mm		2 U				710
Depth (T1) in mm		410	493	410	460	555
Weight (kg)		17	20	8	11	91
Input socket-contacts		1 x IEC 320 C 13			1 x IEC 320 C 19	Clamps
Output socket-contacts		4 x IEC 320 C 13			1 x IEC 320 C 19	Clamps
Battery packs						
Model No. DK extension kit for UPS		**7857.406**	**7857.407**	**7857.408**	**7857.408**	**7857.409**
Width (B2) in mm		482.6 (19″)				260
Height (H2) in mm		2 U				705
Depth (T2) in mm		460				555
Weight (kg)		23	29	29	29	125
Accessories	Packs of					
Alarm relay slide-in card	1	**7857.400**				
RCCMD licence (Remote Control Command)	1	**7857.421**[2]				
SNMP slide-in card Ethernet, FTP, Telnet …	1	**7857.420**[2]				

[1] At least one battery pack 2/3 kVA 7857.408 must be ordered at the same time, because the UPS control units do not contain any batteries.
[2] Extended delivery times

Battery:
Maintenance-free lead battery, service life approx. 5 years according to EUROBAT.
Operating environments:
Temperature: 10°C – 40°C to 1500 m NN
Relative humidity: 20 – 90 %, non-condensing

USV application examples Page 750 **UPS, 3-phase** Page 754

UPS, three-phase, output range 10 – 120 kVA per rack



A modular, 3-phase technology which meets the growing requirements of the business-critical infrastructure. These days, no company can afford to have its business processes interrupted as a result of hardware errors, production failures or a breakdown in communications.

The Rittal UPS concept is more than just an uninterruptible power supply, it is a new concept in voltage protection, offering decisive advantages compared with traditional double-conversion 3-phase UPSs.



Benefits of the Rittal Modular Power Concept (PMC)

Performance/modularity/ redundancy
PMC is a new, 3-phase, modular N+1 redundant UPS technology.
PMC enables simple output expansion to cope with rising output demands.
PMC is more than just a UPS – it is a new concept in power supply (Modular Power Concept – PMC) offering key advantages compared with conventional double-conversion 3-phase UPS technology.
PMC is a flexible protection system consisting of 3-phase UPS modules in the output categories 10, 20, 30 and 40 kVA.
The modules may be extended without restriction in order to increase the overall output or achieve redundancy.

Scalability
Retrofitting of individual modules while the **system is operational** (hot swap) as required. This UPS offers an infrastructure with a permanently high level of availability.

High availability
Each UPS module operates **independently with its own intelligence.**

Monitoring
Simple and proven with **optional SNMP adaptor.**

Service-friendly
Individual modules may be exchanged, leading to **fast response times** in case of a malfunction plus enhanced availability.

Other features

Rittal offers a diverse range of pre-configured variation options for the UPS, embeded in a tried-and-trusted TS 8 enclosure.

Tailored to the requirements of a modern infrastructure in terms of space, performance and availability.



Rittal Modular Power Concept (PMC)

PMC is an innovative power protection system which ensures a high level of availability for critical applications by combining modularity (flexible, unlimited scalability and redundancy) with decentralised parallel architecture or DPA (redundant protection without “single point of failure”). Modularity supports easy upgrading of the capacity or battery time of the UPS system. The PMC UPS not only protects the critical load, but also the environment. Thanks to the high operating ratios (low power loss), low input distortion factor (low emission of harmonics from the mains end) and low noise generation, the PMC UPS has proven itself to be an environmentally compatible product.

Key properties of the PMC at a glance:
Modularity, redundancy, scalability, eco-friendliness, serviceability.



Modular Power Concept

The Rittal Modular Power Concept (PMC) allows easy adaptation to customer-specific reuqirements, thanks to its modular character, combined with investment security and a high level of availability.

The modules are integrated into prepared Rittal TS 8 UPS enclosures, where they may be extended whilst the system is operational.

PMC module

- Every individual UPS module contains a rectifier/booster, inverter, a static bypass and a separate CPU which monitors and controls all parts and coordinates parallel communication with the other modules.
- The modules are available in the output sizes 10, 20, 30 and 40 kVA and are prepared for easy 482.6 mm (19″) integration into the Rittal TS 8 UPS enclosure.
- The weight of the modules ranges from 40 kg (10/20 kVA) to 59 kg (40 kVA).
- In conjunction with the batteries, a diverse range of combinations may be quickly and easily compiled.
- Parallel connection occurs within the enclosure, thus facilitating a space-saving configuration of the UPS system.

UPS classification

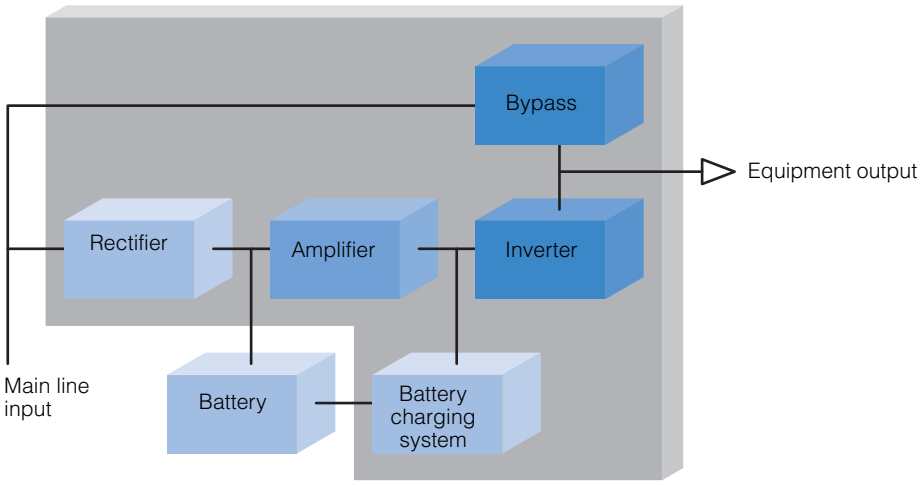
In order to facilitate comparability of UPS appliances from different manufacturers, a classification has been developed on the basis of operating response.

Modules bearing the code VFI-SS-111[1)] under the new IEC 62 040-3 classification are truly outstanding.

These UPS modules are transformerless, genuine online, double-conversion UPSs with static bypass.

[1)] New standard of high availability to protect the server environment.

UPS modules



UPS application examples Page 750 **UPS, 1-phase** Page 752

Redundant UPS concept



New standard of high availability to protect the server environment

Parallel connection of UPS systems:

- Increase capacity to enable the system to supply a greater load than a single installation.
- Redundancy, to increase UPS availability.

The fault-tolerant DPA (Distributed Parallel Architecture) design protects against “single point of failure”, and, therefore, ensures permanent availability.

Rittal PMC (2 modules and battery)

This enclosure has been developed for 2 modules with n+1 redundancy with a battery with a short autonomy time, in order to achieve the smallest possible basic surface area.

Modules are available in 10, 20, 30 and 40 kVA.

What is Distributed Parallel Architecture (DPA)?

The decentralised parallel architecture (DPA) of the modules includes integrated control electronics (CPU) for a rectifier, booster, inverter and static bypass. The CPU of each UPS module also has its own parallel intelligence. The commonalities of a complete UPS system with several modules are confined to control of the parallel bus connection.

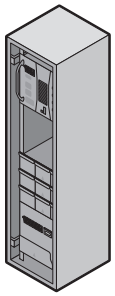
DPA guarantees supply of UPS power as long as the UPS power is higher than or equal to the critical load. This occurs without the UPS switching to bypass.

Switching to bypass only occurs if there is an overload or a short-circuit on the load side.

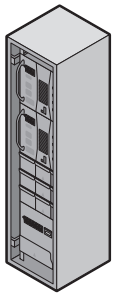
To consistently increase the availability, DPA is an extension of the bypass, so as to protect or ensure the supply of the critical load in the event of a short-circuit or overload.

High availability

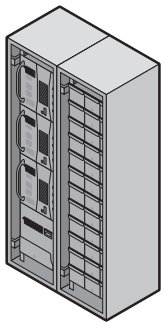
Redundancy means that at least two or more modules always share the critical load equally. In the event of failure of a UPS module, the other will assume the entire connected load without interruption.



One PMC module 10 – 40 kVA with batteries in a TS 8 enclosure.



Two PMC modules 10 – 40 kVA each with batteries in a TS 8 enclosure.



Three PMC modules 10 – 40 kVA each with separate battery enclosure.

UPS application examples Page 750 **UPS, 1-phase** Page 752

Scalable UPS concept





Extend your system at the same speed as your business.

The challenges faced by your infrastructure not only include the current circumstances, but also in particular the requirements of the future. Thanks to the scalable concept, your installation is easily extended.

Integration of up to three modules in one enclosure

This achieves maximum flexibility.

Your output may be easily extended by adding a further UPS module.

This can occur as a “hot swap” with the system operational, without needing to switch the system to bypass.

For this configuration, an additional battery enclosure is always required. The autonomy times may be flexibly adapted to your requirements.

Environmentally compatible UPS concept

High level of efficiency

- Thanks to the transformerless technology and the ESIS (Energy Saving Inverter Switching) technology, a 5 % higher efficiency is achieved, on average, than with conventional UPS systems. With efficiencies of up to 96 % operating costs are reduced, as is heat dissipation into the environment.

Low noise levels

- The noise level is dependent on the load; at <70 % of the nominal load the level is significantly reduced. This leads to a pleasant, user-friendly noise level in the environment.

Battery protection and battery management

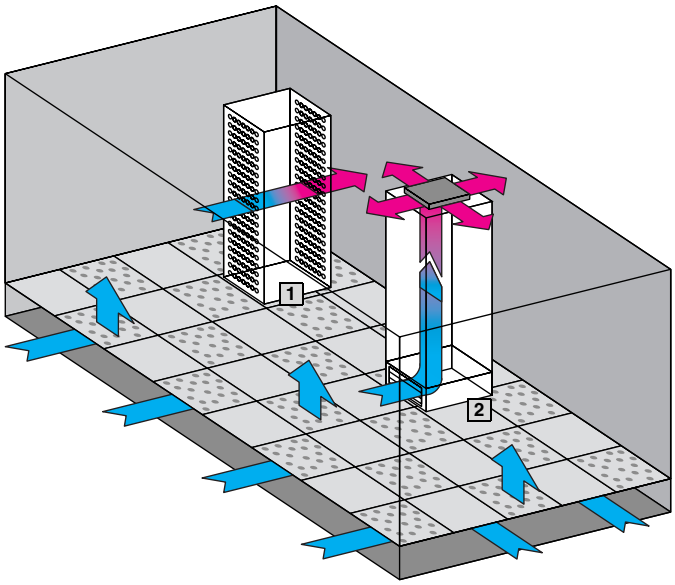
The batteries are protected from overcharging by ripple-free charging electronics. The electronics regulate the charge current depending on the ambient temperatures. The built-in flexible battery management (FBM) periodically checks the “fitness” of the batteries and automatically generates alarms in case of irregularities.

UPS application examples Page 750 **UPS, 1-phase** Page 752

Perfect solutions for every application

From passive air climate control to active liquid cooling of high-performance CPUs, Rittal offers the full range of components and systems. They are designed precisely according to your requirements and application spectrum. Allowance is made, not only for the conditions inside the rack, but also for the ambient conditions.

Software-assisted planning helps to minimise investment costs and also offers peace of mind.



Passive cooling (use of the ambient air)

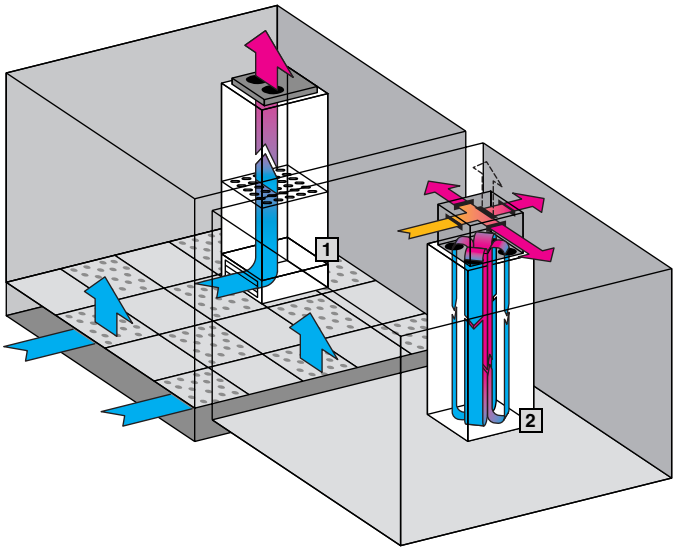
The air cooled via the regular ambient air or via the building's air-conditioning system is routed into the raised floor for rack cooling.

Doors with 78 % open surface area (diagram 1) or openings in the base/plinth and roof (diagram 2) ensure maximum air throughput via convection in conjunction with the fans.

Diagram 1 Horizontal cooling: 2 doors with high air throughput (78 % free space per door)

Diagram 2 Vertical cooling: via vented base/plinth and roof ventilation

See page 759.



Active cooling (use of the ambient air)

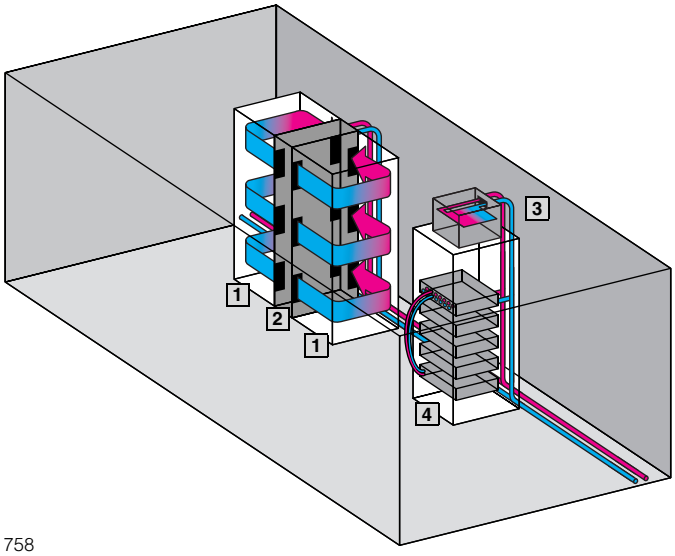
Fan systems for active cooling (diagram 1) amplify the air exchange inside the rack and use ambient air for cooling.

Active, rack-related cooling

By contrast, rack-related, active cooling (diagram 2) is capable of reducing the interior temperature of the rack to below the ambient temperature. This cooling technique is very effective with an appropriate room volume and in industrial environments.

Diagram 1 Fan systems, see page 759.

Diagram 2 Cooling units and rack-mounted recooling system 19″, see page 760.



High-performance cooling (liquid cooling, independent of the ambient air)

With liquid, under the same volumetric flow, approximately one thousand times as much heat loss may be dissipated as with air. This opens up a brand new dimension in cooling.

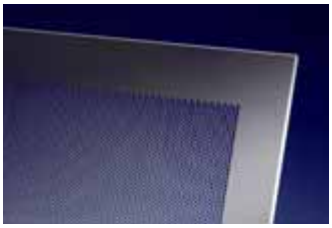
Liquid cooling systems for rack cooling
Extremely high heat loads are dissipated via air/water heat exchanger systems (diagram 2) from the racks (diagram 1).

Liquid cooling systems (4) for component cooling
CPUs, as well as power packs, hard disk drives and other electronic components are cooled directly – effectively and quietly.

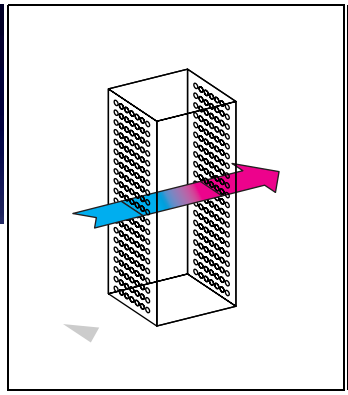
Diagram 1 Server racks
Diagram 2 LCP (Liquid Cooling Package)
Diagram 3 Air/water heat exchanger
Diagram 4 CPU cooling

See page 760.

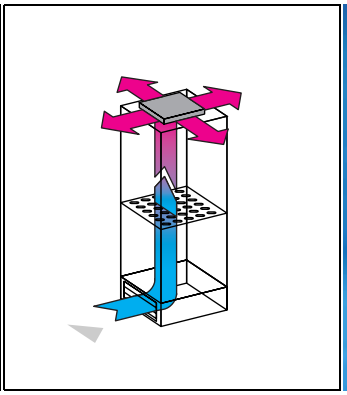
Passive cooling (use of the ambient air)



The perforations in the doors or openings in the base/plinth and roof ensure maximum air throughput via convection in conjunction with the equipment fans.



Horizontal ventilation
A high air throughput, stylish design and outstanding security are provided by the doors (with 78 % free surface area per door) of the server racks.



Vertical ventilation
Ventilation base/plinth, roof vent and slotted component shelves ensure heat dissipation.



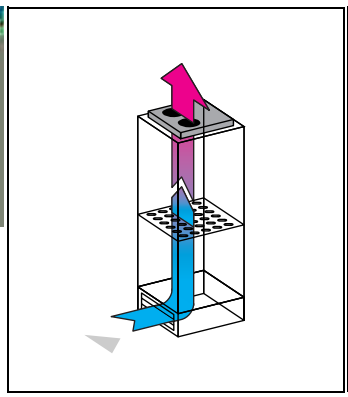
Air baffle system
Cool air from the hollow base is routed over the base/plinth and distributed via the door in a targeted manner.

Active cooling (use of the ambient air)

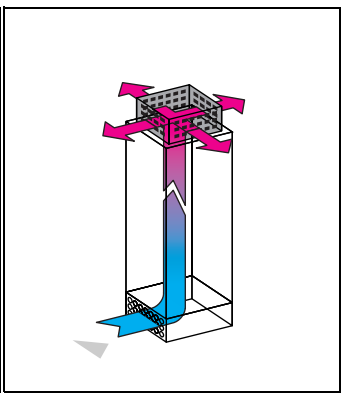


Fan systems to reinforce air exchange

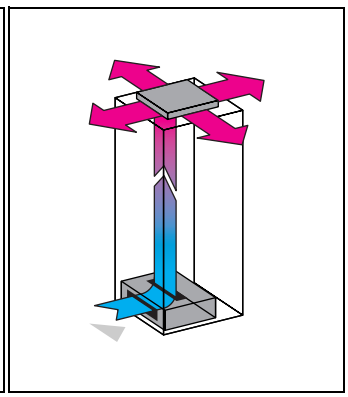
Rittal fan and filter units, see page 636.



Fan roofs
Various designs and outputs, extendible with fan kits. Fast assembly tailored to racks,
see page 647.



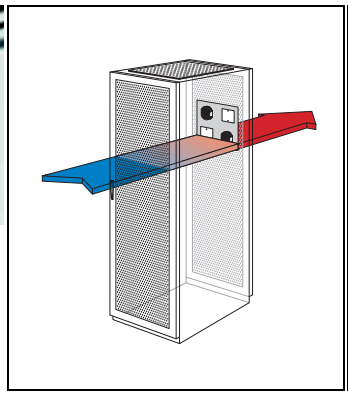
Roof-mounted fans
Quiet performance (1500 m^3/h) for office applications, wired ready for connection, easy assembly,
see page 647.



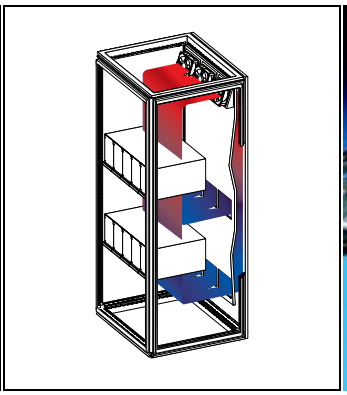
Centrifugal fan/rack-mounted fan
Centrifugal fan,
Rack-mounted fan,
Vario rack-mounted fan,
see page 645.



Fan systems to reinforce air exchange and circulation inside the rack



Fan cross member
For the perforated door of TS 8 server racks.
Air throughput up to 1200 m^3/h,
see page 652.



Internal fan mounting panel
for TS 8 enclosures. For improved air blending and heat dissipation,
see page 653.



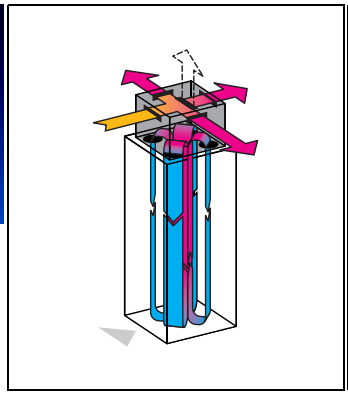
Internal fan
To avoid hot spots and support climate control components,
see page 653.

Active, rack-related cooling

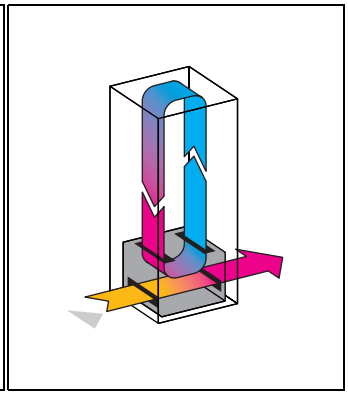


Cooling of the rack interior to below the ambient temperature!
The three systems shown opposite are specifically designed for the cooling of servers, IT and electronic components.

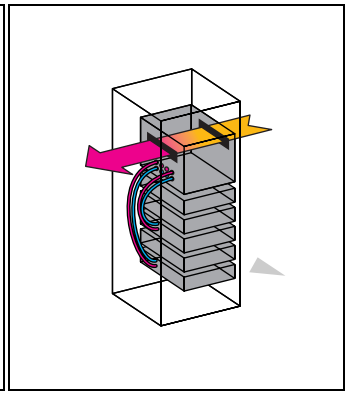
Rittal roof-mounted and wall-mounted cooling units,
see page 590.



Roof-mounted cooling unit (office application)
Useful cooling output 1100 W at an extremely low noise level,
see page 590.



Rack-mounted cooling units 482.6 mm (19″)
Useful cooling output 1000 W, simple installation in the 482.6 mm (19″) level,
see page 644.



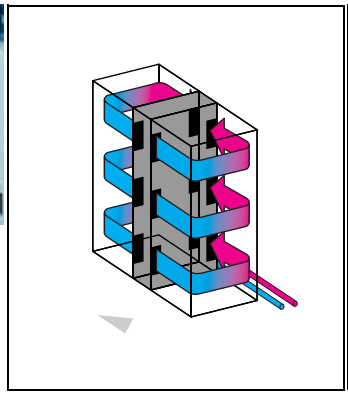
Rack-mounted recooling system 482.6 mm (19″)
Liquid-cooled computers are supplied directly via 6 cooling circuits.
Cooling output 1000 W,
see page 673.

High-performance cooling (independent from the ambient air)

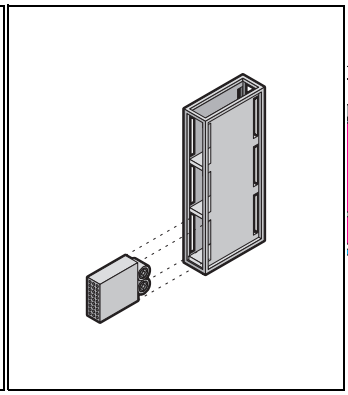


Liquid cooling systems to dissipate high heat loads
Also suitable for use in confined rooms without air-conditioning by using external recooling systems.

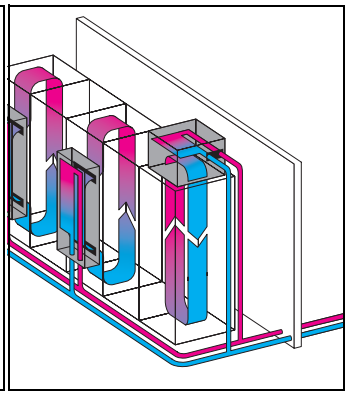
Recooling systems for liquid cooling,
see page 608.



Liquid cooling package
This cooling rack is fitted with up to 3 cooling modules (air/water heat exchangers),
see page 672.



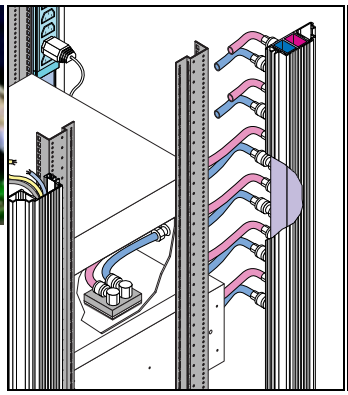
It is bayed with one or two TS 8 server racks (H 2000 x D 1000 mm).
Useful cooling output per module 4000 W (max. 12000 W),
see page 672.



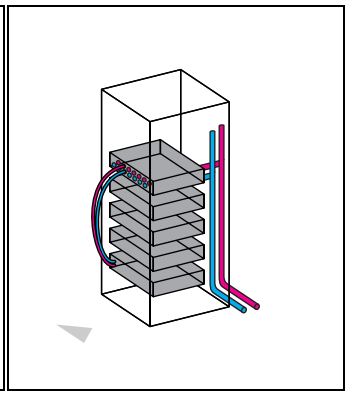
Air/water heat exchanger
Installation: Roof-mounting, wall-mounting and as TS 8 side panel (H 1800 x D 600 mm).
Useful cooling output from 600 to 4000 W,
see page 626.



Liquid cooling systems for component cooling
CPUs, as well as power packs, hard disk drives and other electronic components are cooled directly – effectively and quietly.

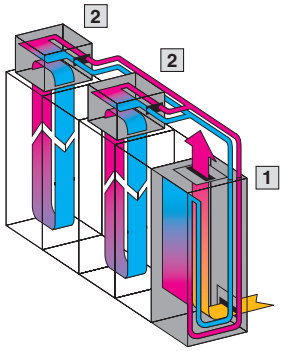


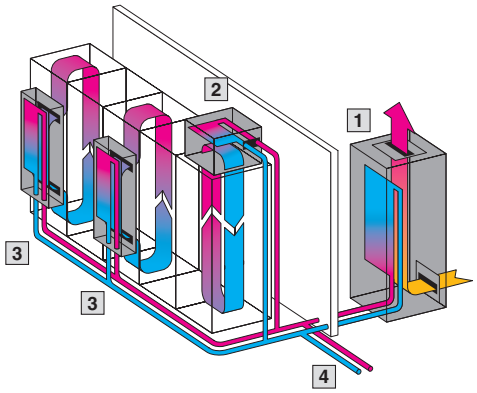
Cooling circuit distributor for racks
Pack 1 for 20, pack 2 for 40 CPU cooling circuits. Enclosure heights 1200 and 2000 mm,
see page 674.



Cooling circuit distributor 482.6 mm (19″)
Complete kit or individual distributors with drip-free connection of up to 10 servers,
see page 675.

Background technology: Recooling systems





Recooling systems ensure central cooling and supply of the cooling medium for liquid cooling systems. This makes it possible to achieve spatial separation between the generation of cold air and cooling itself, for the temperature-neutral expansion of data centres.

1 Recooling system
2 Air/water heat exchanger, roof-mounted
3 Air/water heat exchanger, wall-mounted
4 Further cooling options



Recooling systems solve all cooling tasks via a system of piping.
As well as IT and electronic components, production processes, machines and systems are also cooled.
A range of products from 960 W to 172 kW meets all required cooling services.



Recooling systems Mini
Smart design,
simple assembly,
cooling output from 960 to 4500 W,
see page 608 – 609.

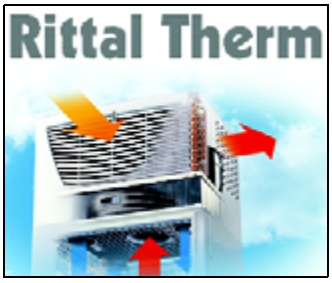


Recooling systems in the TS 8 Top enclosure system
Compact design,
bayable with TS 8 racks,
cooling output from 6000 to 25000 W,
see page 615 – 616.



Recooling systems in floor-standing and industrial enclosures
Cooling media water or oil,
cooling output from 2100 to 172000 W,
see page 617.

Advice, calculation, planning



- **Software Rittal Therm**
  Simple calculation of heat loss, calculation of dissipation via the surface, device selection.
- **CFD** (Computer Fluid Dynamics) offers system reliability, because the temperature, pressure and flow speed at every point of the calculated space are simulated at the planning phase.
- **Eliminate risks through thermography.** Even with the prototype of your plant or machine, the Rittal thermography service offers precise imaging of the real temperature conditions on site.
- **Support**
  Project planning,
  tests and measurements in the Rittal climate laboratory,
  commissioning,
  maintenance

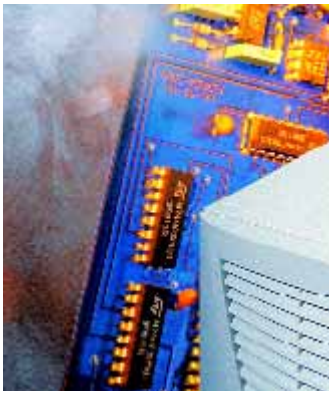
Rittal CMC-TC – Security management concept



Effective prevention, comprehensive security and central organisation of rack security. The new, modular CMC-TC facilitates the implementation of highly individual security solutions, thanks to its modular plug & play system and, therefore, affords a high level of protection for your investments.

More detailed information can be found at:

www.cmc-tc.com



Climate Control



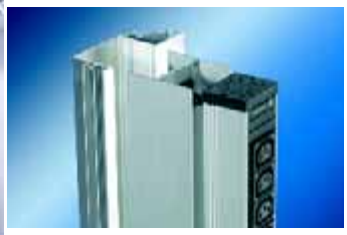




Consistent low temperatures for electronics are a key safety factor in the network and in the production process. Monitoring of the internal rack temperature and the control of climate technology to reliably dissipate heat loss is provided by the Rittal CMC-TC security system to minimise operating costs.



Power Management







Power requirements are on the increase, and there is a growing need for maximum availability of modern IT infrastructures. Rittal addresses the associated additional requirement for redundant power supply with a new, intelligent power distribution system which may be integrated with no loss of enclosure internal rack volume.



Access Control









Access authorisation is one of the most important security factors in any company. With the CMC-TC, this is registered for the entire network. In case of an unauthorised access attempt, the system raises the alarm. For example, doors may be opened by authorised individuals via a numerical code, magnetic card, smartcard, or the latest transponder technology.

Rittal CMC-TC – Security management concept

	Sensor unit	I/O unit	Climate unit			Access unit
	Sensors/actuators:				**Lock/reader:**	
7320.500	Temperature sensor	■	■	7320.700	Elec.-magn. Ergoform-S FR/PS/TC/TE	■
7320.510	Humidity sensor	■		7320.710	Elec.-magn. Ergoform-S QR	■
7320.520	Analog sensor input module “4 – 20 mA”	■		7320.721	Electro-magnetic TS 8 handle with master key function	■
7320.530	Access sensor[1)]	■	■	7320.730	Universal lock	■
7320.540	Vandalism sensor	■		7320.740	Relay output module for room door	■
7320.550	Airflow monitor	■	■	7320.750	Smart card reader	■
7320.560	Smoke alarm	■	■	7320.760	Magnetic card reader	■
7320.570	Motion sensor	■	■	7320.770	Coded lock	■
7320.580	Digital input module	■	■	7320.530	Access sensor[1)]	■
7320.590	Digital relay output module	■		7320.580	Digital input module for door release	■
7320.600	Voltage monitor	■	■	7320.900 7320.910 7320.920 7320.930	Lock FR(i)	■
7320.610	Voltage monitor with switch output	■				
7320.620	48 V voltage monitor	■	■			
7320.630	Leakage sensor	■		7320.950	Universal handle	■
7320.811	Fan Alarm System FAS	■				

[1)] Up to a maximum of 5 sensors may be connected in series.



The sensor units (SU)

Universal I/O unit

- The I/O unit is the measurement and alarm module.
- Alarm sensors may be connected (e.g. motion detector).
- Analog measurements can be transmitted and monitored (temperature, humidity, 4 – 20 mA).
- The system is capable of switching relay output modules.
- The unit has 4 universal ports for 4 sensors/actuators.
- The I/O unit must be connected to the PU. Data exchange and energy supply to the electronics are provided in this way.

Climate unit

- The climate unit serves to control the fans and hence regulate the temperature.
- The physical airflow of the fan is monitored with due regard for the controller.
- If no temperature sensor or airflow sensor is used, the two universal ports can also be fitted with other sensors (see table).
- Simple fan connection via IEC socket.
- The unit is designed for one fan system.
- The climate unit must be connected to the PU.

Access unit

- The access unit serves to control door systems.
- The doors can be opened remotely via the network.
- The doors can also be opened by selected individuals via a coded lock, magnetic card or smartcard.
- The doors of enclosures or rooms can be monitored and activated.
- The unit is designed for two separate door systems.
- The access unit must be connected to the PU. Data exchange and power supply to the electronics are provided in this way.

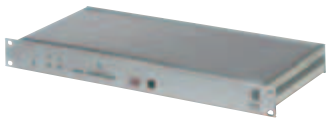
Processing unit (PU)



- The processing unit (PU) forms the basis of the monitoring system.
- The system can be incorporated directly into the user network via the network interface 10BaseT, TCP/IP, SNMP.
- The system has an integral web server, through which the system can be configured.
- The system can optionally be linked to the CMC-TC master via the network interface.

- The monitoring functions are determined by the sensor units or sensors/actuators linked to the PU, and can therefore be flexibly selected.
- Up to 4 sensor units may be connected in any given combination (I/O, access, climate, FCS).

Master unit



- The CMC-TC master is required in all situations where it is necessary to monitor large numbers of security-relevant factors or where high demands are placed on the system.
- The CMC-TC master offers high performance and conserves IP resources.
- The PU with the sensor units is always required for monitoring.

- Up to 10 processing units (PUs) may be connected to a sub-network as slaves.
- The master offers a 10/100BaseT interface to the user network and comprises all monitoring variables on HTTPS and SNMP.
- The system can be connected and operated directly via the Rittal SSC.

Sensor units



1



2



3

There is a choice of 4 sensor units:

I/O unit:
The alarm and measurement module

Access unit:
For controlling door systems

Climate unit:
For fan control and monitoring

FAN Control System FCS for DC fans

Benefits:

- Choice of functions thanks to 4 sensor units (active PSM, RTT I/O unit, RLCP on request)
- Open to customer-specific sensors/actuators
- Automatic sensor detection
- Simple installation based on the plug & play system
- No additional power pack required
- Choice of mounting on the enclosure frame or 482.6 mm (19″) mounting angles
- I/O unit: Freely selectable sensors/actuators
- Access unit: Personalised access detection
- Climate unit: Fan control with airflow monitoring

1 Interface for the sensor unit and processing unit connection. Used for data communication and power supply.
Cable 7320.470/.472/.481.

2 Just one press of the button, and the system automatically reconfigures itself.

3 Up to 3 systems may be integrated into the 1 U mounting unit: Model No. 7320.440.

Technical specifications:
The sensors/actuators are set up via an automatic electronic ID system. Because it is installed using a flexible plug & play system, there is no need for time-consuming programming and wiring. Power is supplied centrally via the connection cable to the PU.

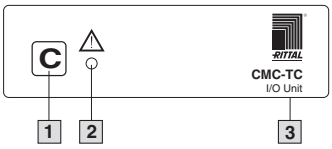
Technical specifications:
W x H x D: 136 mm x 44 mm (1 U) x 129 mm
Temperature application range: +5°C to +45°C
Humidity application range:
5 % to 95 % relative humidity,
non-condensing

Protection category:
IP 40 to EN 60 529



CMC-TC sensor unit I/O unit

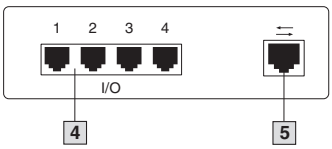
This sensor unit allows alarm messages, status messages and measurements to be forwarded or remote actions to be executed via relay output modules.
The I/O unit has 4 universal inputs/outputs. The sensors/actuators listed below can be operated here.
The interface to the user network is via the PU (processing unit), which is always required to operate the system.



1 **Control key** for detection/set-up of the sensors/actuators

2 **Alarm LED** signals alarms or configuration changes

3 **Mounting fixture** for 7320.440 or 7320.450



4 **RJ 12, 4 inputs for sensors/actuators** (see table)

5 **RJ 45, connection** to PU 7320.100 via connection cable 7320.470/.472/.481
(The unit is also supplied with power via this connection.)

Sensor unit I/O unit	**Model No. DK**
4 universal inputs or outputs	**7320.210**

Also required:

Sensors/actuators	max.	**Model No. DK**	Page
Temperature sensor	4	7320.500	773
Humidity sensor	4	7320.510	773
Analog sensor input module “4 – 20 mA”	4	7320.520	779
Access sensor[1)]	4 x 5	7320.530	777
Vandalism sensor	4	7320.540	777
Airflow monitor	4	7320.550	774
Smoke alarm	4	7320.560	773
Motion sensor	4	7320.570	778
Digital input module	4	7320.580	779
Digital relay output module	4	7320.590	779
Voltage monitor	4	7320.600	774
Voltage monitor with switch output	2 – 4	7320.610	774
48 V voltage monitor	4	7320.620	775
Leakage sensor	4	7320.630	778
Fan Alarm System FAS	4	7320.811	787

[1)] Up to a maximum of 5 sensors may be connected in series.

For selection aid, see page 770.

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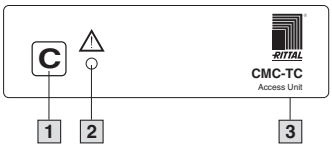
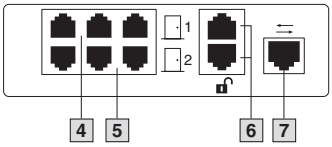
CMC-TC sensor unit Access unit

With this sensor unit, one or two doors may be released for access via the network, or personalised opening via a read system (e.g. smartcard reader) may be initiated. The system also monitors the status of the door, handle or latch. Authorised access codes can be set up via HTTP. The sensors/actuators/readers listed below can be operated here.
In order to operate the unit, at least one access sensor and at least one latch (e.g. handle) per door system must always be used.





1 **Control key** for detection/set-up of the sensors/actuators

2 **Alarm LED** signals alarms or configuration changes

3 **Mounting fixture** for 7320.440 or 7320.450

4 **Inputs for access sensor, handles** Latch system 1 (see table)

5 **Inputs for access sensor, handles** Latch system 2 (see table)

6 **I²C bus for reader units** Door system 1 and 2 (see table)

7 **RJ 45 connection** to PU 7320.100 via connection cable 7320.470/.472/.481 (The unit is also supplied with power via this connection.)

Sensor unit access unit	Model No. DK
Control of 2 door systems	**7320.220**

Also required:

Sensors/actuators	max.	Model No. DK	Page
Access sensor[1)]	2 x 5	7320.530	777
Digital input module for door release	2	7320.580	779
Latch/reader			
Electromagnetic Ergoform-S FR/PS/TC/TE	2	7320.700	781
Electromagnetic Ergoform-S QR	2	7320.710	781
Electromagnetic TS 8 handle Master key	2	7320.721	781
Universal lock	2	7320.730	783
Digital relay output module for room door	2	7320.740	780
Lock FR(i)	2	7320.900 / .910 / .920 / .930	783
Universal handle	2	7320.950	784
Smartcard reader for door release	2	7320.750	782
Magnetic card reader for door release	2	7320.760	782
Coded lock for door release	2	7320.770	782

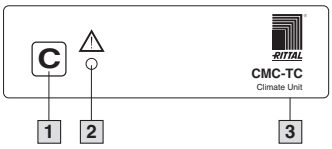
[1)] Up to a maximum of 5 sensors may be connected in series.

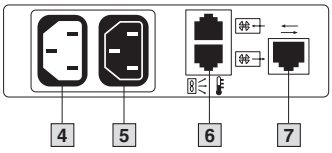
For selection aid, see page 770.



CMC-TC sensor unit Climate unit

A temperature control circuit is installed with this sensor unit. Temperature setpoints are set via the PU, and these are compared with the actual temperature. Depending on the evaluation, the fan system is activated. The function of the fans can also be monitored with an airflow sensor. Monitoring is only active whilst the fan is operational. Other sensors may optionally be connected to the unit.
In order to operate the unit as a temperature fan control circuit, at least one temperature sensor must always be used.





1 **Control key** for detection/set-up of the sensors/actuators

2 **Alarm LED** signals alarms or configuration changes

3 **Mounting fixture** for 7320.440 or 7320.450

4 **Input for fan supply** 115/230 V AC, cable 7200.210 – .215

5 **Output to fan** with cable 7200.215

6 **RJ 12, 2 inputs for sensors/actuators** (see table)

7 **RJ 45 connection** to PU 7320.100 via connection cable 7320.470/.472/.481 (The unit is also supplied with power via this connection.)

Sensor unit climate unit	Model No. DK
Control of a fan system	**7320.230**

Also required:

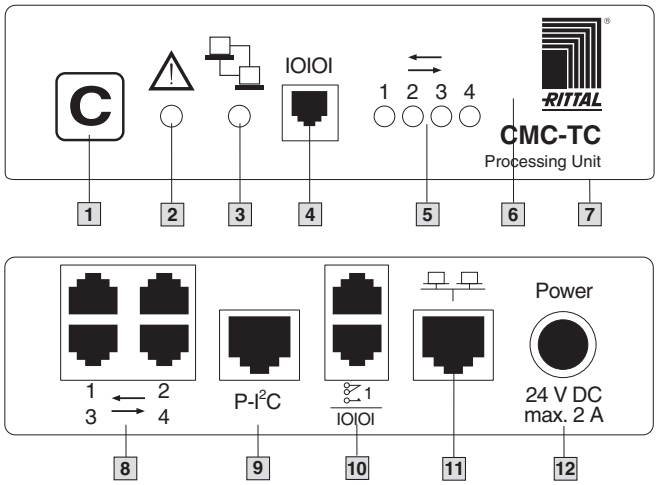
Sensors	max.	Model No. DK	Page
Temperature sensor	2	7320.500	773
Access sensor[1)]	2 x 5	7320.530	777
Airflow monitor	2	7320.550	774
Smoke alarm	2	7320.560	773
Motion sensor	2	7320.570	778
Digital input module	2	7320.580	779
Voltage monitor	2	7320.600	774
48 V voltage monitor	2	7320.620	775

[1)] Up to a maximum of 5 sensors may be connected in series.

For selection aid, see page 770.

Monitoring system processing unit





Benefits:
- Freely selectable monitoring functions
- Sensor/actuator ports extendible
- Network connection TCP/IP SNMP
- Integral web server for configuration
- Automatic menu generation
- Simple installation based on the plug & play system
- Alarm continues to record even in the event of a network failure
- Built-in real-time clock
- May be used via power supply unit for 115/230V AC or 48 V DC may be used
- Choice of mounting on the enclosure frame or 482.6 mm (19″) mounting angles
- The protocol for the master/slave system is TCP/IP SNMP
- May be used for large data centres or small individual applications

The processing unit forms the basis of the CMC-TC system. This unit is required for every monitoring application.

Interface to the customer:
The PU can be incorporated directly into the user network via 10BaseT. The PU can also be linked to the master 7320.000 via this interface (TCP/IP, SNMP).

Interface to the sensors/actuators:
The PU provides 4 open ports for sensor units. The sensor units determine the function of the PU. There is a choice of 4 different sensor units (I/O, access, climate, FCS) with varying functions. In this way, the monitoring functions may be freely combined.

Fast, easy programming and installation:
The sensors/actuators are set up via an automatic electronic ID system. Installation is via a flexible plug & play system.
This eliminates the need for time-consuming programming and wiring.

Power supply:
Power is supplied centrally via a power pack in the PU. The connected sensor units and all connected sensors are supplied with power in this way. There is a choice of two input voltages (AC power pack 7320.425 and DC power pack 7320.435).

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Model No. DK	7320.100
W x H x D in mm	136 x 44 (1 U) x 129
Network interface	Ethernet to IEEE 802.3 via 10BaseT half-duplex 10 Mbit/s
Protocols	TCP/IP, SNMP V1.0, TELNET, FTP, HTTP

Rated voltage	24 V DC
Serial interfaces	RS 232
Ports for sensor units	4 jacks RJ 45, shielded
Bus system	Power I²C for extension unit voltage AC 7200.520
Alarm relay output	Change-over contact max. 24 V DC 1 A
Audio display	Piezo signal generator
Time function	Real-time clock
Temperature application range	+5°C to +45°C
Humidity application range	5 % to 95 % relative humidity, non-condensing
IP protection category	IP 40 to EN 60 529

1 Control key
The control key is used for sensor/actuator detection, set-up of the system and acknowledgement.

2 Alarm LED
The LED signals alarms or configuration changes.

3 Link/Traffic LED
The LED indicates the status of the 10BaseT network interface.

4 RS 232 interface RJ 10
For programming via a serial PC interface.

5 LEDs channels of the sensor units
The LEDs indicate the status of the attached sensor units.

6 Audio alarm
There is an audio alarm signalling device integrated into the PU.

7 Mounting attachment
For attachment with individual bracket 7320.450 or 1 U mounting units 7320.440.

8 Inputs for the RJ 45 sensor units
Up to 4 sensor units may be connected to the PU via the 4 inputs. The sensor units determine the function of the PU.
There is a choice of 4 sensor units:
– I/O unit 7320.210
– Access unit 7320.220
– Climate unit 7320.230
– FCS 7320.810
Connection cable 7320.470/.472/.481.
Other connections available on request:
RTT I/O unit see page 764
active PSM see page 775
RLCP see page 672.

9 Power I²C bus RJ 45
Up to 2 voltage extension units 7200.520 may be connected via the power I²C Bus.
Up to three AC voltages may be monitored with every extension unit.
Connection cable 7320.470/.472/.481.

10 Alarm relay RJ 12/ RS 232 RJ 12
The upper RJ 12 jack provides a change-over contact for the PU alarm relay.
Connection cable 7200.430.
The lower RJ 12 jack provides a serial interface (display unit/GSM module/ISDN unit).

11 Ethernet 10BaseT RJ 45
Integral Ethernet interface to IEEE 802.3 via 10BaseT half-duplex 10 MBit/s.

12 Voltage supply
The rated voltage for the PU is 24 V DC. There is a choice of power packs with varying primary voltages.
AC power pack 7320.425.

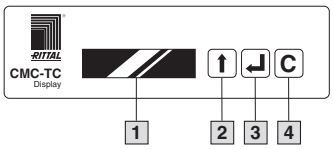
Also required:

For selection aid, see page 770.



CMC-TC display unit

For the local representation of CMC alarm and status messages on the rack.
The CMC-TC display unit is designed for connection to processing unit 7320.100. It comprises 2 lines each with 20 characters. The character height is 3 mm. The display is illuminated in order to ensure legibility even in poor light conditions. It is mounted in the 1 U component support 7320.440 or with the individual mounting unit 7320.450.
Power supply is via the processing unit.
The display is also ideal for use as a service tool for commissioning.

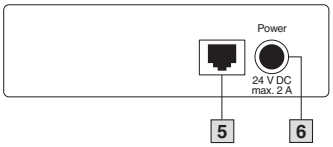


1 **LCD display** illuminates 2 x 20 characters

2 **“Change”** for selection

3 **“Enter”** to confirm

4 **“Clear”** to delete/acknowledge



5 **RJ 12 jack for connecting** to the serial interface of the PU

6 The GSM unit may optionally be supplied with **24 V DC,** 150 mA via this input. For applications with the PU, this is not necessary.

CMC-TC display unit	**Model No. DK**
Alarm text display	**7320.490**

Technical specifications:
- Plug & play installation via RJ 12 connector
- 2 x 20 characters
- Character height 3 mm
- Illuminated

Supply includes:
CMC-TC display module, connection cable for connection to the processing unit, operating instructions, assembly parts.

Note:
Only one tool, either “Display”, “ISDN Unit” or “GSM Unit”, may be connected to one PU.

Also required:

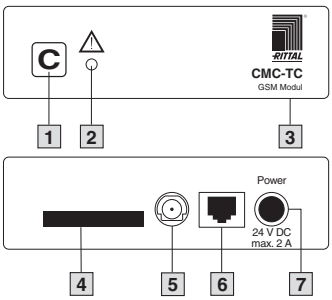
Components	**Model No. DK**
Processing unit	7320.100



CMC-TC GSM unit

In order to configure a redundant transmission channel or if there is no LAN infrastructure available, the unit may be used for alarm forwarding. The alarm signal is designed in SMS format. The GSM unit is linked to the processing unit 7320.100 via a serial interface. The power supply is likewise achieved via the connection cable. The only other thing needed to operate the module is a SIM card. This may either be a “data only” card or a conventional SIM card.
The GSM unit operates in the 900/1800 MHz frequency range – in other words, either D or E network cards may be used. Up to four target call numbers may be set and allocated to the various events.
To activate CMC-TC switch outputs, an SMS message may be sent to the modem via any commercially available mobile phone, and actions executed via this route. The aerial included with the supply has a connection cable of 2.8 m. Voltage supply is achieved via the processing unit.

Other functions, where offered by the provider:
- Voice mail



1 **Alarm LED**

2 **GSM LED**

3 **Mounting fixture** for 7320.440 or 7320.450

4 **SIM card rack mount**

5 **Aerial system**

6 **RJ 12 jack for connecting** to the serial interface of the PU

7 The GSM unit may optionally be supplied with **24 V DC, 500 mA** via this input. For applications with the PU, this is not necessary.

GSM unit	**Model No. DK**
SMS function	**7320.820**

A commercially available SIM card for D or E networks must be provided by the customer.

Note:
Only one tool, either “GSM Unit”, “ISDN Unit” or “Display”, may be connected to one PU.

Also required:

Components	**Model No. DK**
Processing unit	7320.100

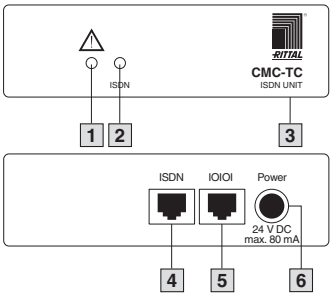
Additional units



CMC-TC ISDN unit

In order to configure a redundant transmission channel or if there is no LAN infrastructure available, the unit may be used for alarm forwarding. The alarm signal is designed in SMS format. The ISDN unit is linked to the processing unit 7320.100 via a serial interface. The power supply is likewise achieved via the connection cable. An ISDN connection is required in order to operate the module (the requirements for an ISDN connection). Up to four target call numbers may be set and allocated to the various events.
This variant of alarm reporting may also be used in countries with “SMS in the fixed network”. Furthermore, with “SMS in the fixed network”, it is also possible to control switch outputs via an SMS.
Power supply is via the processing unit.

Other functions, where offered by the provider:
- Voice mail



1 **Alarm LED**

2 **Status ISDN-LED**

3 **Mounting fixture** for 7320.440 or 7320.450

4 **RJ 45 ISDN jack**

5 **RJ 12 jack for connecting** to the serial interface of the PU

6 The ISDN unit may optionally be supplied with **24 V DC, 80 mA** via this input. For applications with the PU, this is not necessary.

Components	Model No. DK
ISDN unit	**7320.830**

Requirements for the ISDN connection:
- DSS1 (Euro-ISDN) must also be provided when connecting to the ISDN system.
- Point-to-multi-point configuration.

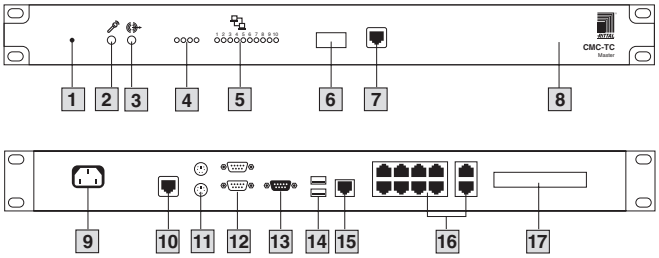
Note:
Only one tool, either “ISDN Unit”, “GSM Unit” or “Display”, may be connected to one PU.

Also required:

Components	Model No. DK
Processing unit	7320.100

Master monitoring system





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Benefits:
- Centralised administration
- Network connection 10/100BaseT
- Central web server for configuration
- Local administration via PS2/ VGA console
- Logging function for alarm messages
- Link for USB camera
- Free function selection for monitoring
- Ideal for large data centres
- **Web access via SSL 3.0 128-bit encryption**
- **Remote administration via SSH.**

The master system may be connected between the processing unit and the user network. There are ten 10BaseT network inputs available for the processing units (PU). The PUs transmit all monitoring-related data and messages to the master system via TCP/IP, SNMP. The master has a 10BaseT/100BaseT network interface for the user network.

All monitoring data is provided in a separate MIB via TCP/IP, SNMP. The system may optionally be configured remotely, via the integral web server, or directly, via a local console. Basic settings can also be implemented serially via RS 232 or Telnet. A Telnet routing function to the individual processing units is also pre-installed. This provides the user with a clear central monitoring facility.
For example, up to 160 temperature sensors may be accessed or up to 80 enclosure doors may be monitored and activated via one IP address.
Combined applications are also possible, and may be compiled individually from processing units and sensor units. Further functional scope for the CMC-TC master is available on request in the form of a software update. Images may be archived on the hard drive via an optional web camera. USB web camera available on request.

1 Key
Offset system reset key with contact hazard protection.

2 Input for microphone[1)]
3.5 mm jack socket.

3 Output for speaker[1)]
3.5 mm jack socket.

4 Status LEDs
LED 1 Alarm – Alarm system message.
LED 2 changeover 10/100 Mbit/s, network interface user network.
LED 3 Link/Activity, network interface user network.

5 LEDs
for the 10 network inputs of the processing units 7320.100.

6 IrDA[1)]
Infrared interface.

7 RJ 10
RS 232 interface for CMC-TC menu program.

8 Audio alarm
There is an audio alarm signalling device integrated into the master.

9 Voltage supply
The IEC jack supplies the system with power, connection cables 7200.210 to .215.

10 Alarm relays
RJ 12 socket with changeover contact.

11 Keyboard/mouse
PS2 jacks for keyboard and mouse.

12 RS 232
Two serial D-SUB 9 interfaces.

13 VGA interface HD15
Connection for monitor or Rittal SSC.

14 USB interfaces
Standard 1.1, for applications with Rittal camera.

15 Ethernet 10/100BaseT
RJ 45 jack network interface, user network Ethernet 10BaseT/100BaseT, IEEE 802.3 (10/100 Mbit/s), TCP/IP.

16 Ethernet 10BaseT (internal)
Ten RJ 45 jacks, network inputs for the processing units 7320.100
Ethernet 10BaseT, IEEE 802.3 (10/100 Mbit/s), TCP/IP.

17 PCMCIA[1)]
Two PCMCIA ports for applications with the Rittal modem.

[1)] These functions are prepared for specific customer application, on request.

Model No. DK	7320.000
W x D in mm	1 U x 200
Network interface	Ethernet to IEEE 802.3 via 10BaseT/100BaseT, 10/100 Mbit/s
Protocols	TCP/IP, SNMP V1.0, TELNET, SSH, TFTP, HTTPS

Rated voltage	100 – 240 Volt AC, 50/60 Hz
Ports for processing unit	10 jacks RJ 45, shielded, 10BaseT, TCP/IP, SNMP
Serial interfaces	RJ 10 jack RS 232 menu program, 2 D-SUB 9 jacks RS 232
USB	Standard 1.1 for Rittal web cameras
Infrared interface[1)]	IrDA 1.0 (SIR) on the front
PCMCIA[1)]	2 x type I/II or 1x type III for applications with Rittal modem
Relay output module	Change-over contact, max. load capacity 24 V DC, 1 A
Time function	Real-time clock
Temperature application range	+5°C to +40°C
Humidity application range	5 % to 95 % relative humidity, non-condensing
IP protection category	IP 40 to EN 60 529

! Also required:

For selection aid, see page 770.

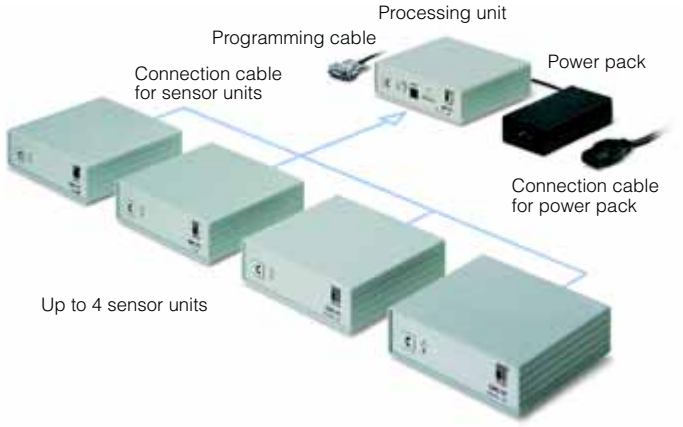


Camera available on request.

Connection tables

The basic system
The processing unit (PU) is the basis of any CMC-TC application. Connectivity is offered by the network interface (10BaseT, TCP/IP, SNMP) which connects directly into the user network or to the CMC-TC master. The following products are required for each CMC-TC application:

- Processing unit (7320.100)
- Power pack 100 – 240 V 50 – 60 Hz (7320.425) or power pack 48 V DC (7320.435)
- Connection cable for power pack, country-specific (7200.210 – .215)
- Connection cable, sensor unit (7320.470/.472/.481)
- At least one sensor unit (7320.210/.220/.230)
- Programming cable (7200.221)



Required accessories		Power pack 24 V DC	IEC connection cable	Programming cable	Connection cable Sensor unit	Mounting unit	Interference suppression capacitor
Model No. DK		**7320.425 7320.435**	**7200.210 7200.211 7200.213 7200.214 7200.215**	**7200.221**	**7320.470 7320.472 7320.481**	**7320.440 7320.450**	**7200.490**
Item selection		Page 771	Page 771	Page 771	Page 772	Page 771	Page 780
7320.000	Master		■	■			
7320.100	Processing unit	■	■ AC	■		□	
7320.210	I/O unit				■	□	
7320.220	Access unit				■	□	
7320.230	Climate unit		■		■	□	□
7320.600/.610	Voltage monitor with IEC jack		■				
7320.700	Electromagnetic Ergoform-S handle for FR, PS, TC and TE						
7320.730	Universal latch						
7320.750	Smart card reader						
7320.760	Magnetic card reader						
7320.770	Coded lock						
7200.630	CMC-TC socket strip						
7200.520	Voltage expansion unit		■ max. 3 x		■ max. 1 x		
2372.000	CMC-TC alarm signal lamp						

Required accessories		Adaptor for reader units	Connection cable RJ 10/12	Extension cable RJ 10/12	Locking bar PS/FR	Attachment for universal latch	Digital sensor input module
Model No. DK		**7200.344 7200.345 7200.346 7200.347**	**7200.420 7200.430**	**7200.440 7200.450 7320.814**	**7200.371 7200.372**	**7200.61X**	**7320.580**
Item selection		Page 782	Page 772	Page 772	Page 781	Page 783	Page 779
7320.000	Master						
7320.100	Processing unit						
7320.210	I/O unit			RJ 12 □[1)]			
7320.220	Access unit			RJ 12 □[1)]			
7320.230	Climate unit			RJ 12 □[1)]			
7320.600/.610	Voltage monitor with IEC jack						
7320.700	Electromagnetic Ergoform-S handle for FR, PS, TC and TE				■		
7320.730	Universal latch					□	
7320.750	Smart card reader	□					
7320.760	Magnetic card reader	□					
7320.770	Coded lock	□					
7200.630	CMC-TC socket strip		RJ 10 ■	RJ 10 □			■
7200.520	Voltage expansion unit						
2372.000	CMC-TC alarm signal lamp		RJ 12 ■	RJ 12 □			

□ = Optional accessories
■ = Required accessories
[1)] = In conjunction with CMC-TC accessories (sensors/actuators/handles/readers) type RJ 12



Connection cable/extension

The cable is used to connect to:
- CMC-TC master
- 24 V power pack for PU
- Active fan unit for TE
- Climate unit (connected fan)
- Voltage monitor
- Voltage expansion unit

Technical specifications:
PVC cable, 3-pole, with IEC connector (non-heating appliances) with contact protection CEE22.

Supply includes:
1 connection cable, length 2.5 m.

Country version	Voltage	Model No. DK
D/F/B	230	**7200.210**
GB	230	**7200.211**
CH	230	**7200.213**
USA/CDN	230/115	**7200.214**
IEC 320 extension	230/115	**7200.215**





Power pack for PU, FCS, FAS

A 24 V DC power pack is required to supply the processing unit with power. There are two variants available:
- The 100 – 240 V AC power pack requires an IEC connection cable to supply the voltage.
- An alternative power pack is designed for the telecommunications sector (48 V battery voltages) and is connected at the input end via a terminal block.

Both power packs include an output cable, 1.65 m long.

Technical specifications 7320.425:
Rated voltage: 100 – 240 V AC, 50/60 Hz
Rated current: max. 1.5 A
Secondary range: 24 V DC, 3 A

Technical specifications 7320.435:
Rated voltage: 20 – 72 V DC
Rated current: max. 2.5 A
Secondary range: 24 V DC, 1.3 A

Primary input voltage	Output voltage	Model No. DK
100 – 240 V AC/ 50/60 Hz	24 V DC	**7320.425**
48 V DC	24 V DC	**7320.435**

Also required:

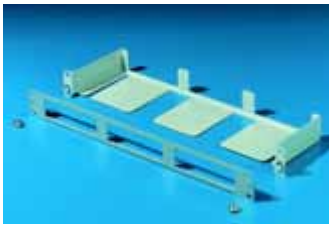
Connection cable for DK 7320.425 power pack, see page 771.



Programming cable

The interface cable is used to configure the network parameters in the processing unit and the master unit.
The RJ 10 connector is connected to the front jack of the PU/master, whilst the 9-pole SUB-D connector is connected to a serial PC interface.

Packs of	Model No. DK
1	**7200.221**





Mounting unit 1 U

The mounting unit can accommodate up to 3 sensor units or processing units in the 482.6 mm (19″) attachment level. Cable clamp straps 7610.000 or 7611.000 can be used for cable clamping.

Material:
Sheet steel, spray-finished

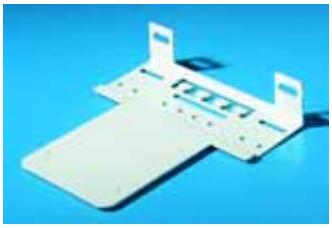
Colour:
RAL 7035

Packs of	Model No. DK
1	**7320.440**

Accessories:

Cable clamp strap, see page 985.

Cables/mounting accessories



Mounting module

The mounting module accommodates individual sensor units or processing units, for mounting on the frame section.

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

Packs of	Model No. DK
1	**7320.450**





Connection cable RJ 45

This cable is for data exchange and power supply to a sensor unit via the processing unit. There is an RJ 45 connector at each end of the shielded cable.

Length m	Packs of	Model No. DK
0.5	4	**7320.470**
2.0	4	**7320.472**
10.0	1	**7320.481**



Connection cable RJ 10, RJ 12

With the RJ 12 connection cable, the alarm relay output of the processing unit may be used for individual alarm lights/indicators. The RJ 10 connection cable facilitates connection to the CMC socket strip in conjunction with the digital input module. The cable is equipped with an RJ 10/12 connector at one end. The other end is open.

Connector	Length m	Packs of	Model No. DK
RJ 10	5	4	**7200.420**
RJ 12	5	4	**7200.430**



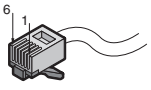
Extension cable RJ 10, RJ 12

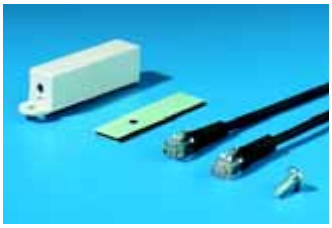
The cable is used to extend the sensor supply cables (RJ 12) and individual actuator cables. The cable is equipped with an RJ 10/12 connector at one end. There is an RJ 10/12 jack at the other end.

Connector/jack	Length m	Packs of	Model No. DK
RJ 10	5	4	**7200.440**
RJ 12	5	4	**7200.450**
RJ 12	1	2	**7320.814**



Example: RJ 12





Temperature sensor

The sensor assumes the function of a temperature monitor and contains an ID so that it is automatically detected and set up by the CMC-TC system. It is connected to a sensor unit via the connection cable supplied loose. If required, extension cable RJ 12 may be used. The sensor can also control a fan on the climate unit or fan control system (FCS).

Packs of	Model No. DK
1	**7320.500**

To fit sensor unit:

I/O unit	Access unit	Climate unit	FCS
■		■	■

Technical specifications:
Type: NTC
Resistance: 10 kOhm at 25°C
Tolerance: ±2°C
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Temperature application range:
+5°C to +45°C



Smoke alarm

The smoke alarm is based on an opto-electronic smoke particle evaluation within a measurement chamber. The alarm contains an ID so that it is automatically detected and set up by the CMC-TC system. The power supply and alarm relay to the sensor unit occurs via the supplied connection cable. If required, extension cable RJ 12 may be used.

Packs of	Model No. DK
1	**7320.560**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		■

Technical specifications:
Alarm type: Combustion product alarm (smoke)
Sensor/transmitter: Silicon PIN photodiode/
GaAs infr. LED
Measurement frequency: Once every ten seconds
Power consumption: max. 61 mA
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Dimensions (alarm with base/plinth):
D = 100 mm, H = 50 mm
Temperature application range: +5°C to +45°C



Humidity sensor

The sensor measures relative air humidity and converts it into a frequency signal. It contains an ID so that it is automatically detected and set up by the CMC-TC system. Power supply and data evaluation is performed by the I/O sensor unit via the connection cable supplied loose. If required, extension cable RJ 12 may be used.

Packs of	Model No. DK
1	**7320.510**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		

Technical specifications:
Sensor: With humidity/frequency converter
(50 kHz at 76 % rel. humidity)
Sensor measurement range:
Relative humidity 10...90 % rel. humidity ± 3 %
(at 20°C)
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Temperature application range:
+5°C to +45°C

Internal security



Airflow monitor

The airflow monitor determines whether the fan is achieving its full operating capacity.
Storage damage, dirty filter mats or jammed fan blades are promptly detected and reported by the sensor. The sensor contains an ID so that it is automatically detected and set up by the CMC-TC system. Its switch point is adjustable. The power supply and data exchange to the sensor unit occurs via the attached connection cable. If required, extension cable RJ 12 may be used.

Technical specifications:
Connection: RJ 12 jack, 6-pole on the cable
Connection cable: Length 2 m
Temperature application range: +5°C to +45°C

Packs of	Model No. DK
1	7320.550

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		■

Note:
The sensor can be operated with temperature-controlled fan via the climate unit sensor unit.

Accessories:

Connection cable RJ 12, see page 772.



Voltage monitor

The voltage monitor picks up a mains voltage to be monitored via the mains cable, and reports its status to a sensor unit:
Voltage ON or voltage OFF. The monitor contains an ID so that it is automatically detected and set up by the CMC-TC system. The connection cable, supplied loose, should be used for connection to the sensor unit. If required, extension cable RJ 12 may be used.

Packs of	Model No. DK
1	7320.600

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		■

Technical specifications:
Monitored rated voltage:
230 V AC 50/60 Hz
Connections:
IEC connector, RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Temperature application range:
+5°C to +45°C

Protection category:
IP 40

Also required:

For selection aid, see page 770.



Voltage monitor with IEC switch output

This sensor is used in conjunction with the CMC-TC to monitor voltage limits. The limits may be set via the WEB interface or SNMP. As an additional option, this voltage may also be switched on and off via the module, in order to reboot connected equipment via Ethernet.
It is connected via standard, commercially available IEC320 connectors as the input signal, and an IEC320 socket to connect the equipment.

Technical specifications:
- Plug & play installation via IEC320 connector
- The switching operation may be initiated in a time or event-based manner or via SNMP or WEB
- The maximum and minimum limits of voltage measurement are freely selectable
- Measurement range 100 – 250 V AC, 50/60 Hz
- Max. switching load 250 V AC and 8 A at cosphi = 1
- Tolerance: ±5 % at 20 – 30°C

Note:
The system has two functions. Each function occupies one input of the I/O unit.
1st function: Voltage measurement
2nd function: Relay switching

Packs of	Model No. DK
1	7320.610

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		

Also required:

For selection aid, see page 770.

Optionally available:

IEC connection cable 7200.210,
German version,
IEC extension cable 7200.215
for connecting the equipment.



Voltage monitor 48 V DC

The voltage monitor picks off a mains voltage to be monitored via the 3-pole jack, and reports its status to a sensor unit: Voltage ON or voltage OFF. The monitor contains an ID so that it is automatically detected and set up by the CMC-TC system. The connection cable, supplied loose, should be used for connection to the sensor unit. If required, extension cable RJ 12 may be used.

Technical specifications:
Monitored rated voltage:
48 V DC (12 – 60 Volt DC/12 – 25 Volt AC 50/60 Hz)
Connections:
3-pole connector, RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Temperature application range:
+5°C to +45°C

Protection category:
IP 40

Packs of	Model No. DK
1	**7320.620**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		■



Active Power System Module PSM

New active plug-in module for the busbar system PSM. The module has 4 x IEC320 C13 sockets and an integral overload tripping device.

The following active functions are additionally achieved:

- 2-digit local LED 7-segment current display on the module. Legibility is independent from the installation position.
- Measuring and monitoring of the current per module. Min./max. limits may be set. Measurement range 0 – 16 A.
- Alarm indication via a flashing 7-segment display.
- Monitoring of the overload fuse.
- Modules may be combined via the bus system, thereby enabling sequential activation.
- In conjunction with the CMC-TC, the modules may be activated and deactivated via HTTP and SNMP. The 4 jacks are always activated and deactivated together. A special software is required for operating processing unit 7320.100 together with the active PSM (see www.cmc-tc.com). The 4 free channels of PU can be switched with up to 4 active PSM systems in each case. The active PSM does not require any separate powerpack in conjunction with PU.
- Remote administration of the power supply, editing and monitoring of remote limits, SNMP trap message in case of alarm.
- 4 IEC320 C13 sockets per module.

Version	Packs of	Model No. DK
Entire active module with quadruple fuse to IEC320	1	**7856.200**

Material:
Aluminium chassis with plastic cover

Supply includes:
1 module (max. 10 A per module),
10 A integral overload tripping device,
1 bus cable,
1 infeed cable 24 V DC,
1 adaptor for powerpack 24 V DC.

Also required:

A separate powerpack (100 – 240 V AC/24 V DC) is required for stand-alone operation without CMC-TC (7201.210) and the relevant connection cables, see page 745.

Note:
For more information on the power rail system, see page 744.

Internal security





CMC-TC socket strip

With integral
- Interference suppressor filter
- Overvoltage protection
- Alarm contact

In the event of interference caused by overvoltage, the connected active network components are protected. With the relay message contact, undervoltage and any malfunctions caused by overvoltage can be reported via the CMC-TC in the network (SNMP trap). A green lamp on the strip indicates that the device is operational. The second protective device is the interference suppressor filter which protects valuable equipment as a passive component.

Packs of	Model No. DK
1	**7200.630**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		■

Technical specifications:
Number of sockets: 9
Length of strip: 650 mm
Rated voltage:
230 V AC, 50/60 Hz
Rated current: 16 A
Relay alarm output: RJ 10 jack
Relay load capacity: 50 Volt DC 100 mA

Technical specifications, overvoltage protection:
Arrester application category: D
Surge current resistance per conductor: 2.5 kA
Maximum surge strength: 8 kA

Also required:

A digital input module and an RJ10 connection cable is needed to link the CMC socket strip to the CMC-TC system.
For selection aid, see page 770.



CMC-TC extension unit

The CMC-TC extension unit picks off three independently monitored mains voltages via network cables and forwards the measurements to the processing unit. It is linked to the PU via the RJ 45 connection cable on the P-I²C port (sep. accessory). Up to two extension units may be connected serially to one PU. A separate power pack is not required. Alarm limits may be preset for all voltages.

Max. number per PU	Packs of	Model No. DK
2	1	**7200.520**

To fit processing unit, see page 766.

Technical specifications:
Voltage inputs:
3 x 100 – 230 V AC, IEC connector
Interface: I²C, P-I²C,
max. cable length 2 m
Temperature application range:
+5°C to +45°C
Tolerance: ± 5 % at 20 – 30°C

Protection category:
IP 40

Also required:

For selection aid, see page 770.

Accessories:

RJ 45 connection cable, see page 772.



Vandalism sensor

The sensor contains a position-insensitive alarm contact and an ID so that it is automatically detected and set up by the CMC-TC system.
It is connected to the I/O sensor unit via the connection cable supplied loose. If required, extension cable RJ 12 may be used.
The sensitivity of the sensor may be set using the PU software.

Packs of	Model No. DK
1	**7320.540**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		

Technical specifications:
Mercury-free contact, position-insensitive
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides



Access sensor

The access sensors monitor doors, side panels or windows in the enclosure. The magnet is secured to the moving part (e.g. side panel), whilst the reed contact is fastened to the immobile part (enclosure frame).
The permanent magnet holds the reed contact in a closed position. When the door is opened or the side panel removed, the reed contact drops off and opens the circuit. This triggers an alarm in the CMC-TC.
The sensor contains an ID so that it is automatically detected and set up by the CMC-TC system. It is connected to a sensor unit via the connection cable supplied loose. Up to five access sensors may be connected in series to one monitoring line, if necessary in conjunction with extension cable RJ 12. The jumper plug forms the end.

Packs of	Model No. DK
2	**7320.530**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■	■	■

Technical specifications:
2 magnets
(mounted on the moving part, directly adjacent)
2 sensors with reed contact
(mounting on the enclosure frame)
Connection 1: RJ 12 jack, 6-pole
(connection to the sensor unit)
Connection 2: RJ 12 socket, 6-pole (series connection with other access sensors, or finished with the jumper plug)
2 jumper plugs RJ 12 at the end
2 connection cables: Length 2 m,
RJ 12 connector 6/6 on both sides

External security



CMC-TC motion detector

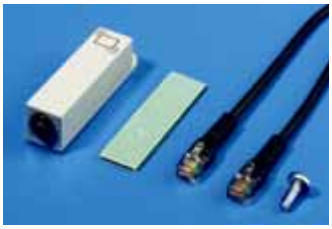
The motion detector may be used in enclosures or in rooms. Any modifications to the enclosure, such as opening a door or side panel, are indicated. The motion detector can also detect persons in the room or in front of the data cabinet.
The alarm contains an ID so that it is automatically detected and set up by the CMC-TC system. The power supply and data exchange to the sensor unit occurs via the connection cable, supplied loose. If required, extension cable RJ 12 may be used.

Packs of	Model No. DK
1	**7320.570**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		■

Technical specifications:
Alarm type: Infrared (IR) detector
Range: max. 7 m
Power consumption: max. 30 mA/24 V DC
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Dimensions:
W x H x D: 59 x 102 x 32 mm



Leakage sensor

The leakage sensor is equipped with an optical sensor head. If this sensor head becomes wet with moisture, it reports a leakage alarm. The sensor head may be mounted facing the floor. If water collects there and comes into contact with the sensor head, the alarm is triggered. The sensor contains an ID so that it is automatically detected and set up by the CMC-TC system. The connection cable, supplied loose, should be used for connection to the sensor unit. If required, extension cable RJ 12 may be used.

Packs of	Model No. DK
1	**7320.630**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		

Technical specifications:
Monitoring: Visual
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Temperature application range: +5°C to +45°C

Protection category:
IP 40



Analog sensor input module

The input module facilitates the connection of individual external analog sensors (4 – 20 mA) to the I/O sensor unit. As an adaptor, it performs the function of identification, so that an external sensor is automatically identified and set up by the CMC-TC system.
Sensors with 4 – 20 mA signal output and 24 V DC operating voltage (max. 50 mA) may be connected. The CMC-TC makes its internal power source available.
It is connected to a sensor unit via the connection cable supplied loose. If required, extension cable RJ 12 may be used.

Packs of	Model No. DK
1	**7320.520**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		

Technical specifications:
Analog input: 4 – 20 mA at 24 V DC
Maximum current output of the module: 50 mA
Sensors without GND may also be used.
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Sensor connection:
Pull-off clamping strip, 3-pole



Digital sensor input module

The input module facilitates the connection of individual external digital sensors to a sensor unit. As an adaptor, it performs the function of identification, so that an external sensor is automatically identified and set up by the CMC-TC system.
External sensors or detectors must have a floating contact (normally-closed or normally-open), because the module makes its internal voltage source available.
It is connected to a sensor unit via the connection cable supplied loose. If required, extension cable RJ 12 may be used.
In conjunction with the access unit, any given door release system (e.g. transponder) with a floating relay contact may be connected via the input module.

Packs of	Model No. DK
1	**7320.580**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■	■	■

Technical specifications:
Floating external sensor contact:
Voltage min. 24 V DC load capacity
Current: min. 10 mA load capacity
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Sensor connection:
Pull-off clamping strip, 3-pole



Relay output module

The output module allows individual, external extra-low voltage actuators to be switched via a change-over contact. As an intermediate relay, it performs the function of identification and isolation, so that an actuator is automatically identified and set up by the CMC-TC system.
It is connected to the I/O sensor unit via the connection cable supplied loose. If required, extension cable RJ 12 may be used. At the output end, the module contains a pull-off terminal strip for assignment with actuator cables. Power supply to the actuator must be provided externally.
The output relay may be switched remotely via SNMP or HTTP. Alternatively, alarm links can also be created with alarm inputs.

Packs of	Model No. DK
1	**7320.590**

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		

Technical specifications:
Condition of the actuator: cosPhi = 1
Max. load of the switch contact:
1 A, 30 V DC and 0.5 A, 48 V AC
Max. switching voltage: 48 V AC; 48 V DC
Max. switched current: 1 A
Max. switching load: 30 W, 62.5 VA
Min. switched current: 1 mA at 5 V DC
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Sensor connection:
Pull-off clamping strip, 3-pole

Individual security



Room door output module

The room door output module allows external door opener systems to be switched via a change-over contact. As an intermediate relay, it performs the function of identification and isolation, so that a door opener is automatically identified and set up by the CMC-TC system.
It is connected to the access unit via the connection cable supplied loose. If required, extension cable RJ 12 may be used. At the output end, the module contains a pull-off terminal strip for assignment with actuator cables. Power supply to the door opener must be provided externally.

Packs of	Model No. DK
1	**7320.740**

To fit sensor unit:

I/O unit	Access unit	Climate unit
	■	

Technical specifications:
Condition of the actuator: cosPhi = 1
Max. load of the switch contact:
1 A, 30 V DC and 0.5 A, 48 V AC
Max. switching voltage: 48 V AC; 48 V DC
Max. switched current: 1 A
Max. switching load: 30 W; 62.5 VA
Min. switched current: 1 mA at 5 V DC
Connection: RJ 12 jack, 6-pole
Connection cable: Length 2 m,
RJ 12 connector 6/6 on both sides
Sensor connection:
Pull-off clamping strip, 3-pole

Note:
One access sensor 7320.530 is always needed for each output module.



CMC-TC alarm signal lamp

The alarm signal lamp serves as a collective fault signal for all alarms in the CMC-TC.
Example: Temperature exceeded, fan defect, smoke alarm etc. The CMC-TC provides a user-friendly menu allowing the operator to select which message will affect the CMC-TC alarm relay.
The alarm signal lamp is activated via the alarm relay.
The lamp may be attached to the network enclosure or any other desired position, e.g. in the corridor.
The RJ 12 connection cable is required for connection to the PU.

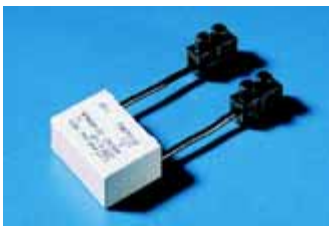
Item	Model No. SZ
LED steady light component 24 V DC, red	**2372.000**
Connection component	**2368.010**

To fit processing unit, see page 766.

Technical specifications:
Rated operating voltage: 24 V DC
Rated current: 60 mA

Also required:

For selection aid, see page 770.



Interference suppression capacitors

for fans

The capacitors are used for the interference suppression of fans with self-starting shaded pole motors. One capacitor should be connected directly parallel to the mains voltage for each fan unit. The capacitors are equipped with a terminal, which means that they are easily fitted to the fan cable.

Version	Packs of	Model No. DK
100 nF	20	**7200.490**

Technical specifications:
Dielectric strength: 275 V AC
Capacity: 100 nF
Type: X2



Comfort handle for TS 8 unit with master key function

The handle assumes the function of a door lock and lever handle monitoring.
The TS 8 handle 7320.721 includes the master key function. This means that the handle can always be opened with the master key, independently of the control system. A semi-cylinder is supplied loose, but a semi-cylinder 40 or 45 mm overall length to DIN 18 254 may also be used.
An access sensor (DK 7320.530) must be connected to the corresponding door for each handle.
If the lever handle is closed, the locking mechanism integrated into the handle latches automatically. The handle may be released via the CMC-TC system in the network or via optional add-on systems, such as smartcard readers etc. The handle is locked in a de-energised manner (without electrical connection). The push-button may be depressed following electrical release and then opens the lever automatically. The opening process must be completed within 15 seconds. Opening via the key is always superordinate, i.e. the enclosure may always be opened with the key in the case of electrical locking and in the event of a power failure (emergency opening).

Handle system	**Model No. DK**
TS 8 comfort handle master key	**7320.721**

To fit sensor unit:

I/O unit	Access unit	Climate unit
	■	

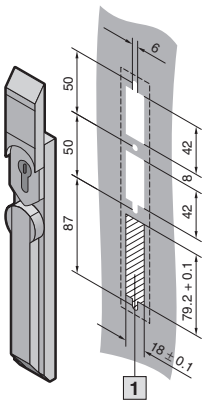
Technical specifications:
Rated voltage: 24 V DC
Rated current: max. 100 mA
Connection cable: Length 3 m, RJ 12 connector
Connection cable:
Length 2 m, RJ 12/RJ 12 connector
Coupling for extension:
RJ 12/RJ 12 jack
Temperature application range:
+5°C to +40°C

Protection category:
IP 40

Also required:

For selection aid, see page 770.





Handle systems with electromagnetic lock

The lock unit consists of a Rittal handle system whose handle is electromagnetically locked. It contains an identifier so that it is automatically detected and set up by the CMC-TC system. The power supply and data exchange to the access unit occurs via the attached connection cable. An access sensor (DK 7320.530) is always required for door monitoring. With the door closed and the clip-down handle locked home, latching is activated by switching on the lock magnet. The CMC-TC enables the handle to be pulled out by deactivating the lock magnet, thereby allowing the door to be opened. This deactivation can be initiated via an access unit such as a smartcard reader, magnetic card reader, coded lock and/or network management systems. The handle system likewise contains handle monitoring. The CMC-TC reports an alarm if the handle is not swung in and locked home after closing the door.
The push-button insert supplied can also be exchanged for **lock inserts.**

Note:
When using the Ergoform-S handle, an additional hole is required.

1 Additional hole for electronic lock (PS/FR/QR/VR/TC/TE)

Handle system	**Model No. DK**
Ergoform-S handle for FR, PS, TC, VR, TE	**7320.700**
Ergoform-S handle for QR	**7320.710**

To fit sensor unit:

I/O unit	Access unit	Climate unit
	■	

Note:
For PS and FR glazed doors, the locking bars listed below are required:

Locking bars

Version	**Model No. DK**
Lower door locking bar for 2000 mm high PS enclosures	**7200.371**
Lower door locking bar for 2000 mm high FR enclosures	**7200.372**
Lower door locking bar for TE enclosures	**on request**

Other sizes available on request.

Technical specifications:
Rated voltage: 24 V DC
Rated current: max. 100 mA
Connection cable: Length 3 m, RJ 12 connector
Connection cable:
Length 2 m, RJ 12/RJ 12 connector
Coupling for extension:
RJ 12/RJ 12 jack
Temperature application range:
+5°C to +40°C

Protection category:
IP 40

Also required:

For selection aid, see page 770.







Smartcard reader/ magnetic card reader/ coded lock

The door handle is released to authorised persons who have identified themselves with a smartcard/magnetic card/combination code. Smartcard readers/magnetic readers/coded locks are installed above the enclosure handle and can also function as a central unit for releasing several doors.
The entire access procedure can also be registered with the CMC-TC where there is network connection.

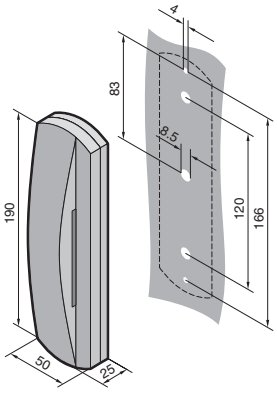
Technical specifications:
Rated voltage: 24 V DC
Rated current: max. 20 mA
Interface: I^2C bus
Smartcard type: I^2C chip
Magnetic card type:
Magnetic strip card with data on track 2.
The read system is designed for cards with both a high and a low level of magnetism.

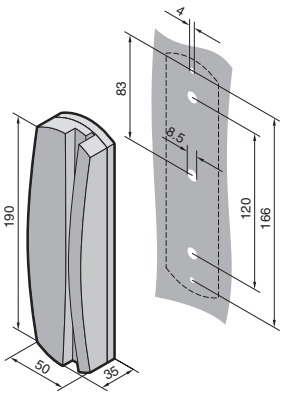
Read system	Model No. DK
Smart card reader	**7320.750**
Magnetic card reader	**7320.760**
Coded lock	**7320.770**

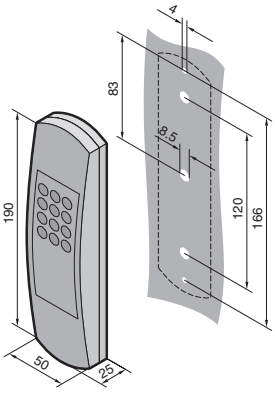
To fit sensor unit:

I/O unit	Access unit	Climate unit
	■	

Note:
Smartcard readers/magnetic card readers/coded locks may only be used in conjunction with the CMC-TC and an electric lock. 3 cards are supplied with the smartcard reader/magnetic card reader. Each card contains a four-digit code, which is different on all three cards. All cards are access-authorised. The code may be input directly on the coded lock.
Authorised codes may be set in the CMC-TC via WEB. The input code is transmitted to the CMC-TC and, where applicable, to the network management system, via the I^2C bus. A mounting adaptor for a TS aluminium glazed door is supplied loose with every reader.









More lock systems

can be found under system accessories from page 881 on.



Adaptor for reader units

The adaptors are used to install the reader units. They are screw-fastened between the design section of the door frame and the reader unit. No adaptor is required for shallow mounting levels. For TS aluminium glazed doors, an adaptor is supplied loose with every reader unit. One adaptor is required for each reader unit.

Glazed door enclosure type	Packs of	Model No. DK
VR	10	**7200.344**
PC	10	**7200.345**
PS	10	**7200.346**
TS design	10	**7200.347**

Type PC: For PC glazed doors
Type VR: For VR glazed doors and VR sheet steel doors
Type PS: For PS aluminium glazed door



Access door panels

for FR(i)

The access door panels contain an electromagnetic lock with a security lock. They may be exchanged for the existing trim panel of the FR(i) door. The door panel is easily linked to the CMC-TC monitoring system, allowing the FR(i) door to be remotely opened and monitored via the network. If a door trim panel variant with read system is selected, door release may also be implemented via the CMC-TC using the respective medium (smartcard, magnetic card or numerical code pad).
The standard door panels of FR(i) doors are easily exchanged for access door panels.

Jacks are provided for connection to the CMC-TC. This ensures plug & play exchange. The system may be connected to access unit 7320.220.
To operate the system, an access sensor (DK 7320.530) is additionally required. For the door panels with card reader systems, 3 cards are included with the supply.

Technical specifications:
Rated voltage: 24 V DC
Interface: I^2C
Smartcard type: I^2C chip
Magnetic card type:
Magnetic strip card with data on track 2.
The read system is designed for cards with both a high and a low level of magnetism.

Access door panels to exchange for standard trim panels in FR(i) doors

Access door panels	Enclosure height mm	Electromagnetic lock system	Read system	**Model No. DK**
FR(i)	2000	■	–	**7320.900**
FR(i)	2000	■	Smart card reader	**7320.910**
FR(i)	2000	■	Magnetic card reader	**7320.920**
FR(i)	2000	■	Coded lock	**7320.930**

■ Comfort handle TS 8 with master key function 7320.721 (see page 781) for the CMC-TC monitoring system is installed. All other height variants (FR(i) enclosure height 600, 1200, 1800 and 2200 mm) are available on request.

To fit sensor unit:

I/O unit	Access unit	Climate unit
	■	



Universal lock unit

The security lock consists of a base unit and a lock counterpart. The base unit is attached to the enclosure frame. The lock counterpart is attached to the door.
A mechanical setting allows you to choose between two states: at zero current when open, or at zero current when closed.
In order to identify the operating mode used, one of the two identifier modules (supplied loose) should be used, so that it is automatically identified and set up by the CMC-TC system. Power supply and data exchange is via the access unit, using the identifier modules and connection cables supplied loose. If required, extension cable RJ 12 may be used.
An access sensor (DK 7320.530) is always required for door monitoring.

Technical specifications:
Rated voltage: 24 V DC
Rated current: 140 mA
Temperature application range:
+10°C to +40°C

Supply includes:
1 base unit with connection cable 0.1 m, RJ 12 connector
1 lock counterpart
2 identifier modules with RJ 12 jack, 6-pole (connection to access unit),
RJ 12 jack, 6-pole (connection to universal lock),
1 connection cable for identifier modules,
2 m, RJ 12/RJ 12 connector without mounting kit.

Packs of	**Model No. DK**
1 set	**7320.730**

To fit sensor unit:

I/O unit	Access unit	Climate unit
	■	

Installation kit	**Model No. DK**
PS steel door	**7200.611**
PS aluminium glazed door	**7200.612**
FR sheet steel door[1)]	**7200.613**
FR glazed door[1)]	**7200.614**
TS steel door	**7200.615**
TS glazed door	**7200.616**
VR enclosure	**7200.617**

[1)] Attachment in 600 mm wide FR enclosures is only possible with recessed mounting of the 482.6 mm (19″) or metric attachment levels.

Note:
Attachment kits for the various different enclosure types and enclosure doors can be taken from the table.

Also required:

For selection aid, see page 770.



Note!
The handle only fits into the cut-out shown in the drawing. For other hole patterns, additional adaptors are needed, and/or machining of the door. Solutions provided on request.

Handle system for universal installation

with electromagnetic lock for the CMC-TC monitoring system

The universal handle is equipped with a pitch pattern of mounting holes which will fit many existing door systems. This handle is ideal for retrofitting to projects with varying enclosure types and variants.
The new handle may be connected to the CMC-TC system via plug & play.
Additionally, an access sensor (DK 7320.530) must always be used to enable polling of the door status. The handle is equipped with a connection cable and an RJ 12 connector, which may be plugged into the access unit 7320.220 of the CMC-TC system. The handle is equipped with a push-button insert which may be depressed when the electromagnetic lock is released.

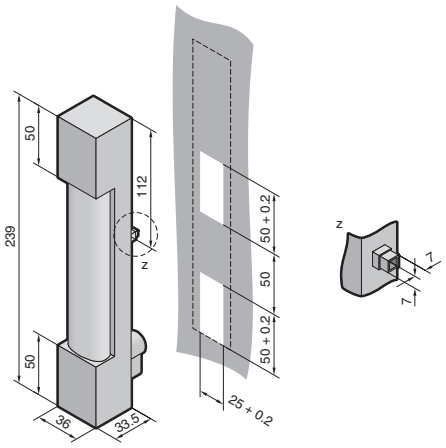
Technical specifications:
Rated voltage: 24 V DC
Rated current: max. 100 mA
Connection cable: Length 5 m, RJ 12 connector

	Type	Model No. DK
electro-magnetic handle	CMC-TC	**7320.950**

Extended delivery times.

To fit sensor unit:

I/O unit	Access unit	Climate unit
	■	







TS 8 transponder handle

with integral transponder release system from Simons & Voss

The electromagnetic TS 8 transponder handle may be retrofitted in the doors of TS 8 enclosures. The handle is equipped with an integral radio transponder. The transponder receiver with battery is integrated into the handle housing. Apart from the transponder transmitter, no additional accessories, such as additional electronics, cables, power pack etc., are required. The handle is easily exchanged without the need for wiring.
If battery servicing is required, this is indicated acoustically.
The handle is supplied in the zero state, so that it may be opened with any transponder transmitter.

Use with hand-held transmitter:
The transponder transmitter is actuated from the handle, as a result of which the latter is unlatched for a specified time window and may be opened by pressing the push-button.

Use with the CMC-TC transmitter:
The transponder transmitter is linked to the CMC-TC system via the room door output 7320.740 and the access unit. The transmitter is placed in the enclosure frame, near the handle. In this way, the door may be released via the CMC-TC system. Additionally, an access sensor (DK 7320.530) should always be used to enable polling of the door status.

Use of the programmable transponder:
The programmable transponder allows the individual transponder transmitters to be allocated to individual handles. Matrix programming is supported.

	Type	Model No. DK
Electromagnetic handle	Transponder, stand-alone application	**7320.960**
Transponder transmitter	Hand-held transmitter	**7320.961**
Transponder transmitter	CMC-TC transmitter	**7320.962**
Programmable transponder	programming	**7320.963**

Extended delivery times.

Benefits:
- No cables on the handle, because the electronics and battery are integrated into the handle.
- Several users may be set for one handle.
- Plug & play installation both mechanical and electrical.
- Individual control of the transponders and the set-up of each transponder is possible for up to 3 locking systems.
- With additional overlay to automatically block the old transponder in the event of reprogramming.
- Counterfeit-proof data communication is achieved via radio using crypto-codes.
- The “challenge response procedure” ensures protection against surveillance.
- The standard interface means that connections to other access and monitoring systems are not a problem.

The lock and organisation sytem is graded in the highest category with respect to unlocking protection to BSI 7500.

Systems with extra electronics and access control from Simons & Voss available on request.





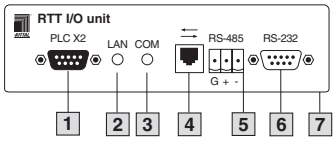
Monitoring of climate control units

Benefits:

- All data for the climate control units via the WEB browser.
- Setpoints may be set via WEB, SNMP, Telnet, RS232.
- Automatic alarm messages in the network via SNMP.
- SMS text messages via GSM (optional).

The “Monitoring of climate control units” set provides all the modules required for monitoring Rittal TopTherm cooling units with comfort control. Temperatures, messages, alarms etc. may be displayed directly on the Web interface in the intranet or Internet. Trap alarms are sent automatically to incorporate SNMP network management systems. SMS text messages are optionally possible via the Rittal GSM module.

Extensions/configuration:
The processing unit PU has 4 channels for 4 interface cards climate control unit RTT I/O unit. An RTT-I/O unit is supplied with the set. Three RTT-I/O may optionally be added. Each RTT-I/O unit is capable of monitoring one master TopTherm cooling unit, each with 9 slave climate control units. The set allows you to monitor up to 10 cooling units, and with extensions up to a maximum of 40 cooling units.
The I/O unit and climate unit may also be connected instead of the interface card. This facilitates additional monitoring of smoke, humidity, air flow etc.



1 **PLC X2** Optocoupler alarm Outputs for SPS

2 **LAN LED** Internal communication

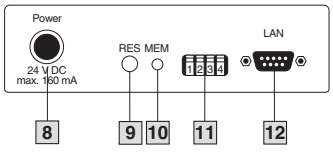
3 **COM LED** Status of serial interfaces

4 **RJ 45** for connecting to processing unit 7320.100

5 **RS-485** Interface

6 **RS-232** For set-up with a serial PC interface (e.g. Hyperterm)

7 **Mounting fixture** for 7320.440 or 7320.450



8 The ISDN unit may optionally be supplied with 24 V DC, 160 mA via this input. For applications with the PU, this is not necessary.

9 **RES** Reset key

10 **MEM** Eeprom fault

11 **Changeover switch** Serial interface

12 **LAN** Connection to the master cooling unit with comfort control

Monitoring of climate control unit	**Model No. DK**
Set	**7320.120**

Accessories:

Description	**Model No. DK**	Page
Programming cable Programming cable for setting up the PU	7200.221	771
CMC-TC 1 U mounting unit	7320.440	771
Interface card RTT-I/O unit (maximum of 3 additioanl cards)	3124.200	662
Connection cable GB 230 V AC	7200.211	771
Connection cable CH 230 V AC	7200.213	771
Connection cable USA/CDN 230/115 V AC	7200.214	771
IEC 320 extension 230 115 V AC	7200.215	771
GSM unit for SMS alarm message for TopTherm cooling units with comfort control	7320.820	767

Functions/settings:

- Setpoint temperature for enclosure
- Alarm temperature value for enclosure
- Warning temperature value for enclosure
- Filter mat monitoring

Warnings/alarms:

- Internal temperature too high
- Icing
- High-pressure sensor
- Leakage
- Condenser/fan defect
- Evaporator coil/fan defect
- Compressor defect
- Sensor failure, internal temperature
- Sensor failure, internal temperature
- Sensor failure, icing sensor
- Sensor failure, condensate level
- Sensor failure, internal temperature
- Phase missing or incorrect
- EEPROM defect

Supply includes:
Processing unit PU with firmware/software for applications with climate control units,
interface card, climate control unit RTT-I/O unit (SK 3124.200)
power pack 24 V DC, input 100 – 240 V AC (DK 7320.425),
connection cable D with IEC320 connector (DK 7200.210),
Cat5 connection cable, 2 m,
for connecting the RTT-I/O unit to the processing unit PU,
data cable RS232, 2 m, for connecting the RTT-I/O unit to the RTT climate control unit with comfort control.

Speed monitored/controlled fan system

Benefits:
- Excellent air throughput at a high operating ratio.
- Monitoring of fan speed.
- Plug and play compatibility system.
- Easily installed in Rittal fan roofs.
- Long service life.
- Noise minimisation/speed control.
- Alarm message via the CMC-TC in the network optionally possible.
- Open supply system 24/48 V DC/100 – 230 V AC.
- EMC compatibility via DC fan systems.

Equipment

Properties	Model No. FCS DK 7320.810	Model No. FAS DK 7320.811
Fan speed monitoring	■	■
Pre-selectable speed	■	
Non-temperature dependent speed	■	
Speed increase in the event of a fan failure	■	
Collective fault signal	■	■
Floating change-over contact	■	■
LAN connection via PU	■	
LAN via I/O unit + PU		■
Configurable via LAN	■	
Alarm output	Beeper, LED, relay, RJ 45 output for PU	Beeper, LED, relay, RJ 12 output for I/O unit

FCS example:
Control system with fan regulation and monitoring

Description	Required packs of	Model No. DK
Fan Control System FCS	1	7320.810
CMC-TC power pack 24 V, input 100 – 230 V AC	1	7320.425
CMC-TC temperature sensor	1	7320.500
Fan 24 V DC (packs of 2) with speed monitoring	3	7320.812
RJ 12 extension for DC fans, 1 m (packs of 2)	3	7320.814
CMC connection cable D 230 V AC	1	7200.210

FAS example:
Control system with fan monitoring

Description	Required packs of	Model No. DK
Fan Alarm System FAS	1	7320.811
CMC-TC power pack 24 V, input 100 – 230 V AC	1	7320.425
Fan 24 V DC (packs of 2) with speed monitoring	3	7320.812
RJ 12 extension for DC fans, 1 m (packs of 2)	3	7320.814
CMC connection cable D 230 V AC	1	7200.210



Fan Control System FCS

Speed-monitored fan system

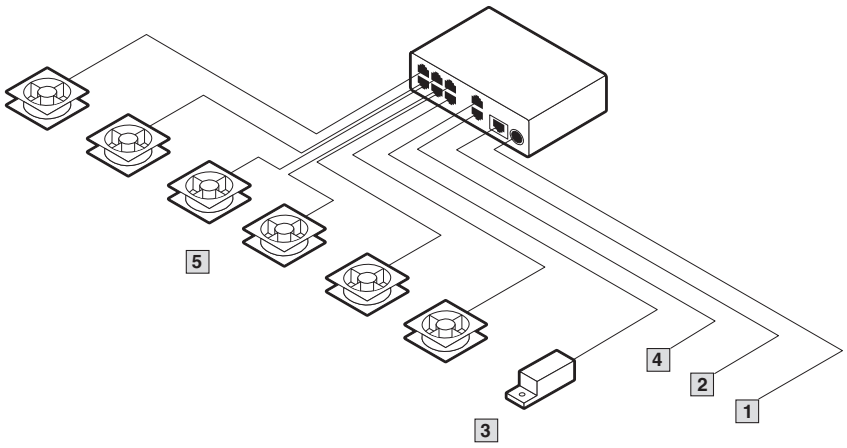
The Fan Control System regulates and controls the speed of up to 6 fans 7320.812, 24 V DC. This helps to save energy and reduce the noise level of the fans, as well as extending the service life of the fans. The failure of one or more fans is detected and notified in the form of a collective fault signal via LED display, beeper and integral alarm relay (floating change-over contact). Control is temperature-based using an external temperature sensor 7320.500. The temperature setpoint is set via a switch on the front. The system may also optionally be set and monitored via the network (Web/SNMP). It is connected directly to the CMC-TC (processing unit) 7320.100.

FCS	To fit processing unit	Model No. DK
Without fan	■	**7320.810**

Functions:
- Speed-regulated speed control.
- Fan speed monitoring.
- Optional connection via Web/SNMP.
- Redundant fan control; the air throughput of all fans is automatically increased in the event of a system failure.
- Plug & play installation via RJ 12 connector system.
- 482.6 mm (19″) mounting is possible via 7320.440.

Note:
Supplied pre-configured on request:
The FCS system may be fitted in all Rittal fan roofs.

FCS fitted in fan roof,
see page 650.



1 **Supply with 24 V/48 V DC** via
- Supply connection cable direct 7320.813
- CMC 24 V power pack 100 – 230 V AC (input) 7320.425
- CMC 24 V power pack 48 V DC (input) 7320.435
  For operation with 48 V DC, fans with 48 V DC must be used.

2 **RJ 45 jack** for connecting to the processing unit 7320.100 (optional) (Cat5 cable)

3 **CMC-TC temperature sensor** 7320.500

4 **Alarm relay output**
24/48 V DC, 1 A (floating change-over contact)

5 **Fan with speed monitoring**
7320.812 (24V DC). 48 V DC fans may optionally be used.



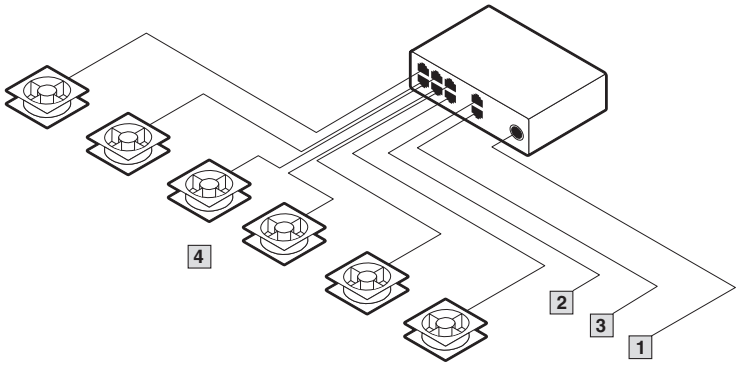
Fan Alarm System FAS

Speed-controlled fan system

The Fan Alarm System monitors the speed of up to 6 fans 7320.812, 24 V DC. The failure of one or more fans is detected and notified in the form of a collective fault signal via LED display, beeper and integral alarm relay (floating change-over contact). The system is designed as a plug & play system. The system may also be optionally monitored via the network (Web/SNMP). It is connected directly to the CMC-TC (the I/O unit) 7320.210.

Functions:

- Fan speed monitoring.
- Optional connection via Web/SNMP.
- Plug & play installation via RJ 12 connector system.
- 482.6 mm (19″) mounting is possible via 7320.440.



FAS	Model No. DK
Without fan	7320.811

To fit sensor unit:

I/O unit	Access unit	Climate unit
■		

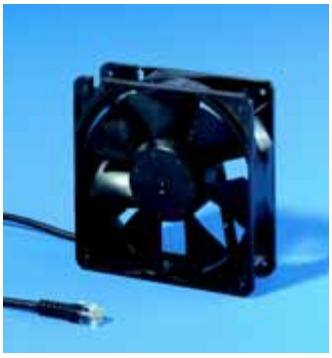
Note:
Supplied pre-configured on request:
The FAS system may be supplied fitted in all Rittal fan roofs.

1 **Supply with 24 V/48 V DC** via
- Supply connection cable direct 7320.813
- CMC 24 V power pack 100 – 230 V AC (input) 7320.425
- CMC 24 V power pack 48 V DC (input) 7320.435
  For operation with 48 V DC, fans with 48 V DC must be used.

2 **RJ 12 jack** for connecting to the I/O unit 7320.210 (optional)

3 **Alarm relay output** 48 V DC, 1 A (floating change-over contact)

4 **Fan with speed monitoring** 7320.812 (24 V DC). 48 V DC fans may optionally be used.



Fan 24 V DC

with speed monitoring

Fan with integral speed monitoring with RJ 12 connector/connection cable 0.6 m for connecting to FCS 7320.810 and FAS 7320.811.

Technical specifications:
Rated voltage: 24 V DC
Rated current: 0.28 A (max.)
Rated output: 6.72 W (max.)
Air throughput (unimpeded air flow): 165 m^3/h
Speed: 2650 rpm
Noise level: 41 dB (A)

Packs of	Model No. DK
2	7320.812

Note:
Fan variant with 48 V DC available on request.



RJ 12 extension

for 24 V DC fan, 1 m

The DC fans DK 7320.812 are equipped with a 0.6 m connection cable. If this length is not sufficient to connect to the FCS or FAS, the cable may be extended by 1 m using the RJ 12 coupling included in the set.

Technical specifications:
Coupling: RJ 12 jacks 6/6 at both ends
Connection cable: Length 1 m,
RJ 12 connector 6/6 on both sides
Temperature application range: +5°C to +45°C

Fan extension	Packs of	Model No. DK
1 m	2	7320.814



Supply connection cable

for FCS/FAS

If the customer has access to 24 V or 48 V DC, the FCS/FAS systems may be supplied with power (max. 48 V DC) via the supply connection cable. No power packs are then required for the application.
Length: 2 m

Packs of	Model No. DK
1	7320.813

Software



Network management systems

By using SNMP network management systems (NMS) such as HP Open View or Novell Manage Wise, it is possible to incorporate and address the CMC-TC system via SNMP. The required MIB is included with the supply.
The MIB is easily incorporated by simply copying. Standard MIB-II (RFC 1213) is also supported. It is included with the supply of the NMS. The private MIB contains all the required system variables, and is easily linked to the functions of the software HP Open View, Novell Manage Wise etc.

Note:
The MIB is also available from the Internet at
www.rittal.com, www.cmc-tc.com
as a download, and is included with the supply of every CMC-TC system.



Management system Aprisma Spectrum Enterprise Manager

The graphical user interface for the Spectrum Enterprise Manager covers every conceivable requirement. The MIB variables are arranged on the interface in a user-friendly configuration. This professional software package combines the highlights of the CMC-TC monitoring system with the Aprisma product.
The management module for Rittal CMC-TC, developed by DICOS, facilitates the integration of all information sent out by the CMC-TC agent into the Spectrum management platform. It also supports configuration of the threshold values being monitored. The SpectroServer receives all the information from the CMC-TC and provides users with an opportunity to visualise, control and configure Rittal racks direclty via the central Spectrum console. Integration into the enterprise management system supports central processing of alarms, so that these may be forwarded, e.g. via a voice mail system, or used as the basis for the automatic generation of a trouble ticket.

Note:
Further information can be found on the Internet at:
www.dicos.de
or by sending an order by e-mail to
sales@dicos.de



CMC-TC configurator

The CMC-TC configurator automatically compiles all the modules and accessories required for a CMC project. The user simply enters the monitoring requirements and the ambient conditions. The result is a list containing all the item numbers required for the project. In this way a project can be compiled quickly and effectively. This software requires MS Excel, Version 97 or above.

Note:
The CMC-TC configurator is available on the Internet at
www.rittal.com, www.cmc-tc.com
and may be downloaded free of charge.





CMC-TC Manager

The new CMC-TC Manager allows all Rittal SNMP agents to be managed in a single software package.

- CMC II (7200.100)
- PCU Web sockets (7200.000)
- CMC-TC processing unit (7320.100)

The graphical interface reproduces information from the system and offers the opportunity of configuring systems via SNMP.
Only the Java Runtime Environment JRE 1.3 (or higher version) must be installed on the relevant PC system. Java may be downloaded from the Internet at **www.sun.com**.
The various products (PCU, CMC II, CMC-TC) may be sorted on the basis of type or location. All important alarm messages enter the built-in trap receiver, and can be recorded with the logging function. The alarm messages can be forwarded directly using the e-mail function. The search function is used to distinguish and automatically list the SNMP agents.

Benefits:

- Open to operating systems via Java (Windows/ Linux).
- Graphical information and operator interface for:
  – CMC II
  – Web socket strip PCU
  – CMC-TC/processing unit
- Full integration of the management information base (MIB) of Rittal systems.
- Trap receiver with logging function.
- E-mails sent in the event of trap alarm messages.
- User-oriented system listing according to locations.

Note:
The software is available free of charge from the Internet.
www.rittal.com, www.cmc-tc.com





Plug-in for HP Open View

Thanks to its integration into HP Open View NNM, StableNet™ CMC-TC is centrally and permanently available. The management functions of HP Open View have been extended to optimum effect: NNM monitors the traps occurring in CMC-TCs and forwards them to StableNet™ CMC-TC. The MIB of processing unit 7320.100 of the CMC-TC system has been incorporated.

Functions:

- Integral trap manager
- Various alarm functions, e.g. e-mail, SMS etc.
- Integral MIB browser (cf. illustration)
- Graphical display of the monitored values with diagrams and tables
- Individual representation and organisation of the monitoring tools
- Pre-configured graphical interface for the CMC-TC
- Microsoft® Outlook® “look and feel”
- Non-platform-dependent (JAVA).

Other products from the StableNet™ suite with the option of integrating the StableNet™ CMC-TC manager:

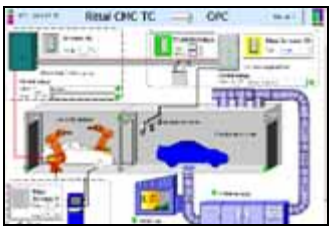
StableNet™ ARC
Advanced Router Configuration

- Management of all network components and CMC-TCs from within HP Open View NNM
- Efficient management of routers and switches

StableNet™ PME
Performance Management Engine

- Evaluation of the data obtained with StableNet™ CMC-TCs by means of comprehensive reporting functions
- Diverse opportunities for measuring network performance

Note:
Further information can be found on the Internet at:
www.infosim.net
or by sending an e-mail enquiry to
info@infosim.net



SNMP-OPC Server

The OPC Server allows all variables in the CMC-TC (MIB) to be integrated into control desk interfaces. Be it industrial automation technology or building automation, with OEL Process Control (OPC) “OEL: Object linking and Embedding” you get the ideal interface between your control desk software and the CMC-TC system.
Software available on request.
www.cmc-tc.com

Note:
Further information can be found on the Internet at:
www.obermeier-software.de
or by sending an e-mail enquiry to
info@obermeier-software

Kiosks

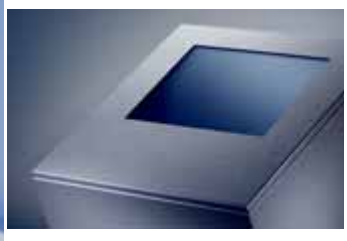
Information and service anytime, anywhere



New markets, new application areas, new opportunities! Kiosks are on hand 24 – 7 to provide up-to-the-minute information, attract interest, and receive requests, messages, reservations and orders. Sports, arts, entertainment, administration, transport, industry, trade and hotels – suitable applications are everywhere! Located directly at the point where they are needed, offering a high standard of quality and elegant design, kiosks represent valuable “partners” for information and business.



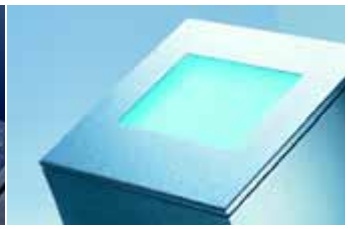
Arc-Line II



User-friendly TFT touchscreen display or . . .



. . . perfectly integrated into a keyboard recess.



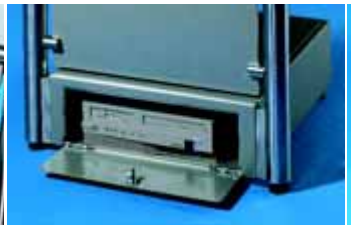
Which design do you prefer? Spray-finished sheet steel or stainless steel?



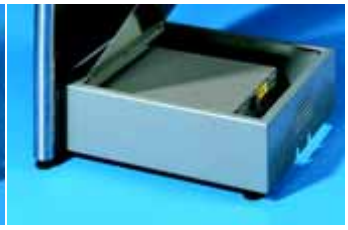
Opti-Line II



Keyboard: A new design in a smart aluminium cover.



Small door, optimise operation of the built-in PC-technology.



Large lid, easy to service and readily customised.



Opti-Desk



Various keyboard variants may be integrated, e.g. in stainless steel.



Design line A:
The worktop and base plate are harmoniously curved inwards.



Design line B:
The worktop and base plate are curved outwards, adding a dynamic touch.

Information and service anytime, anywhere



Opti-Wall



The optional electronic height adjustment also makes it easy for children and wheelchair users to access the multimedia world.



The speakers are protected by integration into the kiosk.



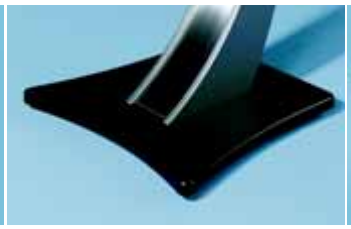
Compact, low-noise PC technology: The connections are easily accessible.



Alpha-Line



Powerful: The kiosk PC-systems Silent and Pro.
The door makes servicing work easy.



For stability coupled with striking elegance.



Simplicity to inspire you: Alpha-Line keyboard.



Out-Line Wall



The transparent trim panel and rain canopy ensure optimum operation.



Optionally integrated speakers are situated on the lower side, without affecting the protection category.



High-quality materials such as aluminium and stainless steel facilitate semi-outdoor use.



Out-Line Pro



The base/plinth is attached to the ground for stability.



Protection against vandalism also extends to the robust stainless steel keyboard with trackball.

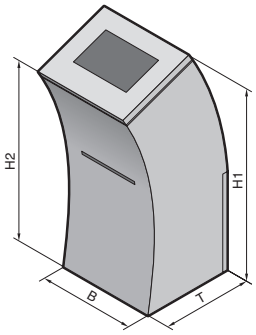


A high protection category of IP 55 is achieved, thanks to a sealing frame and lock system.

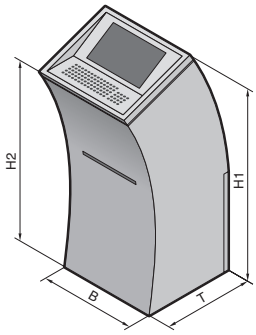
Arc-Line II







Touch



Keyboard

B = Width
T = Depth

Modern communications and technology with a new look. The Arc-Line now with TFT technology and with significantly more space for the installation of additional hardware. Thanks to the modified dimensions, the familiar kiosk standard keyboards may be installed in the lid.

Components with 482.6 m (19″) mounting dimensions may be integrated in the interior. All Arc-Line Classic models now have a protection category of IP 55. Additional installation of a sound system is possible, subject to compliance with the protection category.

Material:
Basic:
Sheet steel, spray-finished
Classic:
Stainless steel, brushed

Colour:
Basic:
RAL 9007

Protection category:
Classic:
IP 55

Specifications and the online configurator
can be found on the Internet at
www.terminals-by-rittal.de
or
www.kiosks-uk.com

Arc-Line II		Basic				Classic				Page
		Rear door		Front Door		Rear door		Front Door		
TFT display		17″	17″	17″	17″	17″	17″	17″	17″	
Contact sensor (touchscreen) including controller		■	–	■	–	■	–	■	–	
Keyboard recess for the insertion of ITS keyboards		–	■	–	■	–	■	–	■	
Basic electrical equipment with cabling and power pack for display and sound system (100 – 260 V, 50/60 Hz)		■	■	■	■	■	■	■	■	
Concealed paper slot		■	■	■	■	–	–	–	–	
Door		Hinged, rear		Hinged, front		Hinged, rear		Hinged, front		
Material		Sheet steel		Sheet steel		Stainless steel		Stainless steel		
Surface finish		Spray-finished in RAL 9007 (finely-textured)		Spray-finished in RAL 9007 (finely-textured)		Brushed		Brushed		
Dimen. of terminal enclosure approximately (B x H1 x T mm)		550 x 1180 x 700		550 x 1180 x 700		550 x 1180 x 700		550 x 1180 x 700		
H2 approx. mm		940		940		940		940		
Model No. ITS		**9012.100**	**9012.110**	**9012.200**	**9012.210**	**9012.300**	**9012.310**	**9012.400**	**9012.410**	
Accessories										
Active sound system including 2 speakers, fitted		9010.540	9010.540	9010.540	9010.540	9010.540	9010.540	9010.540	9010.540	–
Long-stroke keyboard with trackball, RAL 9005	German[1]	–	9004.300	–	9004.300	–	–	–	–	800
	US English[1]	–	9004.310	–	9004.310	–	–	–	–	800
Adaptor plate for internal mounting of the long-stroke keyboard, stainless steel		–	9003.160	–	9003.160	–	–	–	–	800
Service keyboard with trackball for touch systems	German	9004.500	–	9004.500	–	9004.500	–	9004.500	–	801
	US English	9004.502	–	9004.502	–	9004.502	–	9004.502	–	801
Membrane keyboard with mouse pad, IP 65	German[1]	–	9010.910	–	9010.910	–	9010.910	–	9010.910	801
	US English[1]	–	9010.912	–	9010.912	–	9010.912	–	9010.912	801
Stainless steel keyboard with trackball, IP 65	German[1]	–	9004.220	–	9004.220	–	9004.220	–	9004.220	800
	US English[1]	–	9004.222	–	9004.222	–	9004.222	–	9004.222	800
Component shelf for mounting on the 482.6 mm (19″) level		7144.035	7144.035	7144.035	7144.035	7144.035	7144.035	7144.035	7144.035	944
Mounting kit for component shelves		7063.858	7063.858	7063.858	7063.858	7063.858	7063.858	7063.858	7063.858	949
Telescopic slide		7061.000	7061.000	7061.000	7061.000	7061.000	7061.000	7061.000	7061.000	951
Slide rail		7963.410	7963.410	7963.410	7963.410	7963.410	7963.410	7963.410	7963.410	1011
Castors for Arc-Line II		7495.000	7495.000	7495.000	7495.000	7495.000	7495.000	7495.000	7495.000	848
ITS PC system “Silent”		9010.110	9010.110	9010.110	9010.110	9010.110	9010.110	9010.110	9010.110	799
ITS PC system “Pro II”		9010.125	9010.125	9010.125	9010.125	9010.125	9010.125	9010.125	9010.125	799
ITS PC system “Basic”		9003.070	9003.070	9003.070	9003.070	9003.070	9003.070	9003.070	9003.070	799
PC operating operating system[2] MS Windows XP Home	German[1]	9030.100	9030.100	9030.100	9030.100	9030.100	9030.100	9030.100	9030.100	–
	English[1]	9030.102	9030.102	9030.102	9030.102	9030.102	9030.102	9030.102	9030.102	–

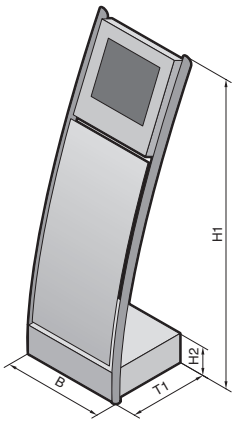
[1] Other language variants available on request.
[2] Operating system OEM version may only be ordered in conjunction with a PC system; other operating systems available on request.
Other accessories: Thermo-printers, DSL/ISDN modems and card readers, coin checkers etc. available on request.

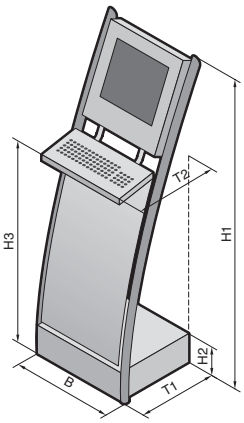
Accessories Page 832 **Keyboards** Page 800

Opti-Line II









B = Width
T = Depth

The Opti-Line II creates fresh visions with a tactile appeal. Stainless steel and aluminium, simplicity and elegance, function and aesthetics – these are all timeless attributes for successful communication. This is stylish packaging at its most attractive. A keyboard support with new lines, more modularity and a consistent design. A successful innovation from the legendary Opti-Line generation.

This is a modular system that meets all requirements, combining a flexible range of choices for keyboard variants and PC systems, depending on the intended application.

Material:
Display enclosure:
Sheet steel/plastic, grey aluminium (RAL 9007), spray-finished, smooth
Pedestal tubes:
Stainless steel V2A, brushed
PC case:
Sheet steel, grey aluminium (RAL 9007), spray-finished
Keyboard support:
Aluminium.

Property rights:
US design patent no. 478,582
German registered design no. 400 02 325

Specifications and the online configurator
can be found on the Internet at
www.terminals-by-rittal.de
or
www.kiosks-uk.com

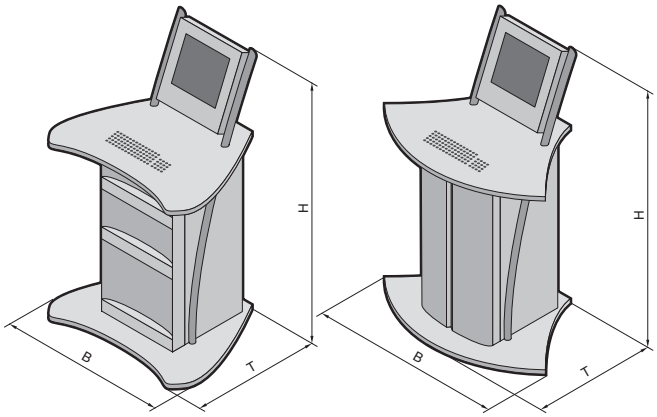
Opti-Line II		Touchscreen		Prepared for keyboard		Page
TFT display		15″	17″	15″	17″	
Basic electrical equipment with cabling and power pack for display and sound system (100 – 260 V, 50/60 Hz)		■	■	■	■	
Dimensions of terminal enclosure approximately (B x H1 x T1 mm)		560 x 1500 x 510	560 x 1500 x 510	560 x 1500 x 580	560 x 1500 x 580	
H2 approx. mm		140	140	140	140	
H3 approx. mm		965	965	965	965	
T2 approx. mm		580	580	580	580	
Model No. ITS		**9006.505**	**9006.705**	**9006.605**	**9006.805**	
Accessories						
Active sound system including 2 speakers, fitted		9010.510	9010.510	9010.510	9010.510	–
Long-stroke keyboard with trackball, RAL 9005	German[1]	–	–	9004.300	9004.300	800
	US English[1]	–	–	9004.310	9004.310	800
Adaptor plate for internal mounting of the long-stroke keyboard, stainless steel		–	–	9003.160	9003.160	800
Service keyboard with trackball for touch systems	German	9004.500	9004.500	–	–	801
	US English	9004.502	9004.502	–	–	801
Stainless steel keyboard with trackball, IP 65	German[1]	–	–	9004.220	9004.220	800
	US English[1]	–	–	9004.222	9004.222	800
Membrane keyboard with mouse pad, IP 65	German[1]	–	–	9010.910	9010.910	801
	US English[1]	–	–	9010.912	9010.912	801
ITS PC system “Silent”		9010.110	9010.110	9010.110	9010.110	799
ITS PC system “Pro II”		9010.125	9010.125	9010.125	9010.125	799
ITS PC system “Basic”		9003.070	9003.070	9003.070	9003.070	799
PC operating system[2] MS Windows XP Home	German[1]	9030.100	9030.100	9030.100	9030.100	–
	English[1]	9030.102	9030.102	9030.102	9030.102	–
WLAN upgrade kit IEEE 802.11 type 1 (USB)		9011.100	9011.100	9011.100	9011.100	–
Base plate for Opti-Line II		9006.150	9006.150	9006.150	9006.150	–

[1] Other language variants available on request.
[2] Operating system OEM version may only be ordered in conjunction with a PC system; other operating systems available on request.
Other accessories: ISDN/DSL modems and card readers, coin checkers, webcams etc. available on request.

Accessories Page 832 **Keyboards** Page 800

Opti-Desk





B = Width
T = Depth

The Opti-Desk is designed as a stylish free-standing PC workstation for the office environment and for use in the administrative sector.
The generous worktop offers plenty of work space, and its successful design blends harmoniously into any environment where effective advice, information and presentations are needed.

The PC hardware is housed in the lockable lower cupboard, where other equipment such as printers, scanners etc. may also be integrated on additional built-in component shelves. Several workstations may be bayed or sited in groups via optional worktops.

Material:
Display enclosure:
Sheet steel, spray-finished
Stainless steel
Worktop: MDF

Colour:
Body: RAL 9006
Display enclosure: RAL 9007
Worktop/base plate: RAL 9007
Design elements: RAL 9007

Property rights:
German registered design no. 403 02 344

Specifications and the online configurator
can be found on the Internet at **www.terminals-by-rittal.de** or **www.kiosks-uk.com**

Opti-Desk		Worktop curved inwards		Worktop curved outwards		Page
TFT display		15″	17″	15″	17″	
Basic electrical equipment with cabling and power pack for display (100 – 260 V, 50/60 Hz)		■	■	■	■	
Component shelf mounted in the bottom cupboard		■	■	■	■	
Base plate with slides		■	■	■	■	
Dimensions approximately (W x H x D mm)		1000 x 1500 x 800	1000 x 1500 x 800	1000 x 1500 x 800	1000 x 1500 x 800	
Dimensions of bottom cupboard with front door only approximately (W x H x D mm)		435 x 1000 x 530	435 x 1000 x 530	435 x 1000 x 530	435 x 1000 x 530	
Model No. ITS		**9021.250**	**9021.270**	**9021.255**	**9021.275**	
Accessories						
Active sound system including 2 speakers, fitted		9010.510	9010.510	9010.510	9010.510	–
Long-stroke keyboard with trackball, RAL 9005	German[1]	9004.300	9004.300	9004.300	9004.300	800
	US English[1]	9004.310	9004.310	9004.310	9004.310	800
Adaptor plate for long-stroke keyboard with trackball, stainless steel		9003.160	9003.160	9003.160	9003.160	800
Stainless steel keyboard with trackball, IP 65/IP 54	German[1]	9004.220	9004.220	9004.220	9004.220	800
	US English[1]	9004.222	9004.222	9004.222	9004.222	800
Membrane keyboard with mouse pad, IP 65	German[1]	9010.910	9010.910	9010.910	9010.910	801
	US English[1]	9010.912	9010.912	9010.912	9010.912	801
Component shelf for lower cupboard		9021.600	9021.600	9021.600	9021.600	–
Set of castors (2 with locks) to exchange for levelling feet		9021.650	9021.650	9021.650	9021.650	–
ITS PC system “Silent”		9010.110	9010.110	9010.110	9010.110	799
ITS PC system “Pro II”		9010.125	9010.125	9010.125	9010.125	799
ITS PC system “Basic”		9003.070	9003.070	9003.070	9003.070	799
PC operating system[2] MS Windows XP Home	German[1]	9030.100	9030.100	9030.100	9030.100	–
	English[1]	9030.102	9030.102	9030.102	9030.102	–
WLAN upgrade kit IEEE 802.11 type 1 (USB)		9011.100	9011.100	9011.100	9011.100	–

[1] Other language variants available on request.
[2] Operating system OEM version may only be ordered in conjunction with a PC system; other operating systems available on request.
Further accessories such as DSL/ISDN modem, card reader and coin checker, webcam etc. available on request.

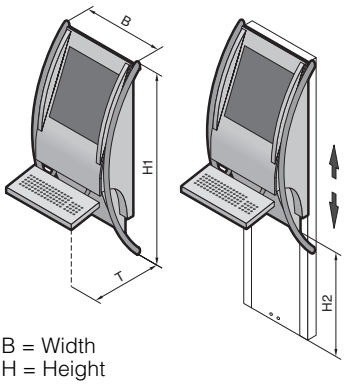
Accessories Page 832 **Keyboards** Page 800

Opti-Wall









B = Width
H = Height

This new compact kiosk for wall mounting was developed on the basis of the successful Opti-Line design. This wall-mounted kiosk system, designed for representative indoor applications, is sure to impress, not only with its refined design, but with the benefits of internal space utilisation. Despite the minimal dimensions of this kiosk, there are a range of different configuration variants available. You decide which TFT, PC or keyboard you require for your specific application.
There is a choice of two PC systems, specifically tailored to the intended application in terminal systems. In order to make it easier for children and wheelchair users to use a multimedia kiosk, the accessories for the Opti-Wall include an electric height adjuster which may be adjusted to the user's requirements via controls.

Material:
Sheet steel, spray-finished
Stainless steel

Colour:
RAL 9007 (display enclosure)
RAL 9006 (basic enclosure)

Property rights:
German registered design no. 403 02 344

Specifications and the online configurator
can be found on the Internet at **www.terminals-by-rittal.de** or **www.kiosks-uk.com**

Opti-Wall		Touchscreen		Prepared for keyboard		Page
TFT display		15″	17″	15″	17″	
Basic electrical equipment with cabling and power pack for display (100 – 260 V, 50/60 Hz)		■	■	■	■	
Dimensions of terminal enclosure approximately (B x H1 x T mm)		560 x 1000 x 200	560 x 1000 x 200	560 x 1000 x 400	560 x 1000 x 400	
Model No. ITS		**9020.150**	**9020.170**	**9020.250**	**9020.270**	
Accessories						
Active sound system including 2 speakers, fitted		9010.510	9010.510	9010.510	9010.510	–
Long-stroke keyboard with trackball, RAL 9005	German[1)]	–	–	9004.300	9004.300	800
	US English[1)]	–	–	9004.310	9004.310	800
Adaptor plate for long-stroke keyboard, stainless steel (required for the installation of 9004.300/.310)		–	–	9003.160	9003.160	800
Service keyboard with trackball for touch systems	German	9004.500	9004.500	–	–	801
	US English	9004.502	9004.502	–	–	801
Stainless steel keyboard with trackball, IP 65/IP 54	German[1)]	–	–	9004.220	9004.220	800
	US English[1)]	–	–	9004.222	9004.222	800
Membrane keyboard with mouse pad, IP 65	German[1)]	–	–	9010.910	9010.910	801
	US English[1)]	–	–	9010.912	9010.912	801
Electric height adjuster for Opti-Wall kiosk, H2 400 mm		9020.500	9020.500	9020.500	9020.500	–
ITS PC system "Silent"		9010.110	9010.110	9010.110	9010.110	799
ITS PC system "Pro II"		9010.125	9010.125	9010.125	9010.125	799
PC operating system[2)] MS Windows XP Home	German[1)]	9030.100	9030.100	9030.100	9030.100	–
	English[1)]	9030.102	9030.102	9030.102	9030.102	–
WLAN upgrade kit IEEE 802.11 type 1 (USB)		9011.100	9011.100	9011.100	9011.100	–

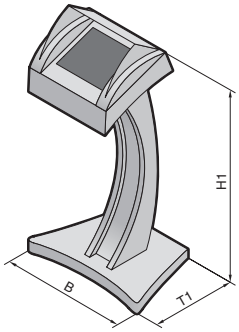
[1)] Other language variants available on request.
[2)] Operating system OEM version may only be ordered in conjunction with a PC system; other operating systems available on request.
Further accessories such as DSL/ISDN modem, webcam etc. available on request.

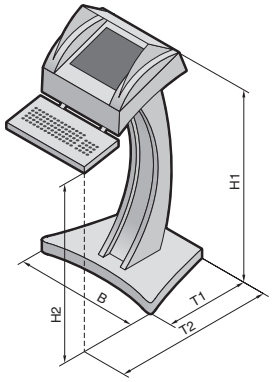
Accessories Page 832 **Keyboards** Page 800

Alpha-Line









B = Width
T = Depth

The kiosk for tomorrow's world. Here, communication becomes an experience. Two ambitious objectives are united in a single kiosk: The traditional and the mundane have given way to lightness and design. Rounded shapes add rhythm and style, ensuring a powerful impact from any perspective. Eye-catching and out-of-the-ordinary. Simply unusual.

Suitable for the installation of compact and powerful PC systems (Silent and Pro) as well as your choice of keyboard. Navigate your way into the future with a touchscreen or keyboard.

Material:
Monitor housing:
Sheet steel, grey aluminium (RAL 9007), spray-finished
Pedestal:
MDF, grey aluminium (RAL 9007), spray-finished, with stainless steel trim
Base plate:
MDF, spray-finished black (RAL 9005)

Keyboard support:
Aluminium
Design-elements:
Spray-finished black (RAL 9005)

Property rights:
German registered design no. 402 06 035
Japanese registered design no. 1181196
Brazilian registered design no. DI6202609
Chinese registered design no. ZL 02338459
GB registered design no. 3006546
IR registered design no. DM/062 638
US design patent no. US D480,731

Specifications and the online configurator
can be found on the Internet at
www.terminals-by-rittal.de
or
www. kiosks-uk.com

Alpha-Line		Touchscreen	Prepared for keyboard	Page
TFT display		15″	15″	
Basic electrical equipment with cabling and power pack for display and sound system (100 – 260 V, 50/60 Hz)		■	■	
Dimensions including base plate and viewing guard approximately (B x H1 x T1 mm)		580 x 1300 x 540	580 x 1300 x 640	
H2 approx. mm		1010	1010	
T2 approx. mm		620	620	
Model No. ITS		**9007.105**	**9007.205**	
Accessories				
Active sound system including 2 speakers, fitted		9010.510	9010.510	–
Long-stroke keyboard with trackball, RAL 9005	German[1]	–	9004.300	800
	US English[1]	–	9004.310	800
Adaptor plate for long-stroke keyboard with trackball, stainless steel		–	9003.160	800
Service keyboard with trackball for touch systems	German	9004.500	–	801
	US English	9004.502	–	801
Stainless steel keyboard with trackball, IP 65/IP 54	German[1]	–	9004.220	800
	US English[1]	–	9004.222	800
Membrane keyboard with mouse pad, IP 65	German[1]	–	9010.910	801
	US English[1]	–	9010.912	801
ITS PC system "Silent"		9010.110	9010.110	799
ITS PC system "Pro II"		9010.125	9010.125	799
PC operating system[2] MS Windows XP Home	German[1]	9030.100	9030.100	–
	English[1]	9030.102	9030.102	–

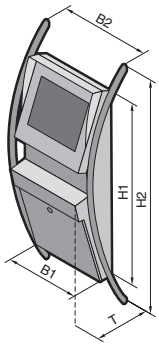
[1] Other language variants available on request.
[2] Operating system OEM version may only be ordered in conjunction with a PC system; other operating systems available on request.

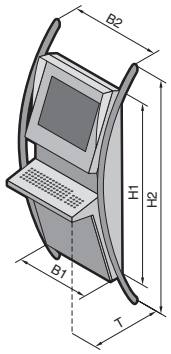
Accessories Page 832 **Keyboards** Page 800

Out-Line Wall









B = Width
T = Depth

The new Out-Line Wall is a further development of the Opti-Wall kiosk for the semi-outdoor sector (+5 to +40°C). Despite the minimal dimensions of this kiosk, there are a range of different configuration variants available.

Options include, an outdoor-compatible sound system with protection category IP 55. Climate control kits, consisting of a heater and fan-and-filter units, are also available. In addition to the accessories listed here, other variants are also possible, together with various colour variants as customer-specific complete systems.

Colour:
RAL 9007

Various spray-finishes, including anti-grafitti spray finish, available on request.

Protection category:
IP 55

Specifications and the online configurator
can be found on the Internet at
www.terminals-by-rittal.de
or
www.kiosks-uk.com

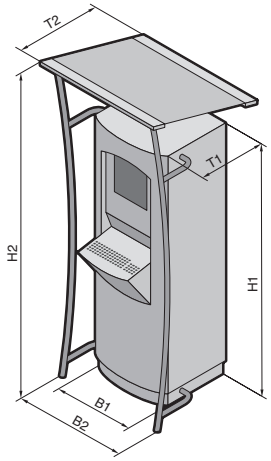
Out-Line Wall with protection category IP 55		Touchscreen		Prepared for keyboard		Page
TFT display (high brightness for outdoor applications)		15″	17″	15″	17″	
Basic electrical equipment with cabling and power pack for display and sound system (100 – 260 V, 50/60 Hz)		■	■	■	■	
Wall bracket		■	■	■	■	
Dimensions of enclosure body approximately (B1 x H1 x T mm)		480 x 1100 x 305	480 x 1100 x 305	480 x 1100 x 365	480 x 1100 x 365	
Enclosure dimensions including all projecting parts approximately (B2 x H2 x T mm)		600 x 1360 x 305	600 x 1360 x 305	600 x 1360 x 365	600 x 1360 x 365	
Model No. ITS		**9023.150**	**9023.170**	**9023.250**	**9023.270**	
Accessories						
Active sound system including 2 speakers, fitted		9010.540	9010.540	9010.540	9010.540	–
Service keyboard with trackball for touch systems	German	9004.500	9004.500	–	–	801
	US English	9004.502	9004.502	–	–	801
Stainless steel keyboard with trackball, IP 65/IP 54	German[1]	–	–	9004.220	9004.220	800
	US English[1]	–	–	9004.222	9004.222	800
Membrane keyboard with mouse pad, IP 65	German[1]	–	–	9010.910	9010.910	801
	US English[1]	–	–	9010.912	9010.912	801
ITS PC system “Pro II”		9010.125	9010.125	9010.125	9010.125	799
ITS PC system “Silent”		9010.110	9010.110	9010.110	9010.110	799
PC operating system[2] MS Windows XP Home	German[1]	9030.100	9030.100	9030.100	9030.100	–
	English[1]	9030.102	9030.102	9030.102	9030.102	–
Climate control kit for Out-Line Wall[3]	Type 1 (mains voltage: 115 V, 50/60 Hz)	9010.331	9010.331	9010.331	9010.331	–
	Type 2 (mains voltage: 230 V, 50/60 Hz)	9010.332	9010.332	9010.332	9010.332	–

[1] Other language variants available on request.
[2] Operating system OEM version may only be ordered in conjunction with a PC system; other operating systems available on request.
[3] Detailed knowledge of the conditions on-site exactly is required to dimension the climate control kit accurately.

Accessories Page 832 **Keyboards** Page 800

Out-Line Pro





B = Width
T = Depth

This outdoor kiosk is designed for multimedia in an outdoor setting.
Based on Rittal's expertise in the outdoor sector, this twin-walled aluminium kiosk offers a high level of security in terms of protection from a wide variety of climatic and physical conditions, including protection against vandalism.

Internally, the enclosure may be configured with other components from the Rittal range of accessories, such as component shelves etc. Special displays suitable for outdoor use with high levels of light intensity are used in complete systems.

Material:
Aluminium, spray-finished
Tubes: Stainless steel

Colour:
RAL 9007

Various spray-finishes, including anti-grafitti spray-finish, available on request.

Protection category:
IP 55

Property rights:
German registered design no. 403 02 344

Specifications and the online configurator
can be found on the Internet at **www.terminals-by-rittal.de**
or
www.kiosks-uk.com

Out-Line Pro		Touchscreen		Prepared for keyboard		Page
TFT display (suitable for outdoor use with an increased light intensity)		15″	17″	15″	17″	
Basic electrical equipment with cabling and power pack for display and sound system (100 – 260 V, 50/60 Hz)		■	■	■	■	
Base/plinth with stabilisers, may be screw-fastened to the ground.		■	■	■	■	
Dimensions of terminal enclosure approximately (B1 x H1 x T1 mm)		650 x 2000 x 400	650 x 2000 x 400	650 x 2000 x 400	650 x 2000 x 400	
Dimensions of terminal including roof approximately (B2 x H2 x T2 mm)		1000 x 2400 x 1000	1000 x 2400 x 1000	1000 x 2400 x 1000	1000 x 2400 x 1000	
Model No. ITS		**9022.150**	**9022.170**	**9022.250**	**9022.270**	
Accessories						
Active sound system including 2 speakers, fitted		9010.540	9010.540	9010.540	9010.540	–
Service keyboard with trackball for touch systems	German	9004.500	9004.500	–	–	801
	US English	9004.502	9004.502	–	–	801
Stainless steel keyboard with trackball, IP 65	German[1)]	–	–	9004.220	9004.220	800
	US English[1)]	–	–	9004.222	9004.222	800
Membrane keyboard with mouse pad, IP 65	German[1)]	–	–	9010.910	9010.910	801
	US English[1)]	–	–	9010.912	9010.912	801
ITS PC system "Silent"		9010.110	9010.110	9010.110	9010.110	799
ITS PC system "Pro II"		9010.125	9010.125	9010.125	9010.125	799
PC operating system[2)] MS Windows XP Home	German[1)]	9030.100	9030.100	9030.100	9030.100	–
	English[1)]	9030.102	9030.102	9030.102	9030.102	–
WLAN upgrade kit IEEE 802.11, type 2 (PCI card with external outdoor aerial for the PC system "Pro" and "Basic")		9011.110	9011.110	9011.110	9011.110	–
Climate control kit for outdoor terminals[3)]	Type 1 (mains voltage: 115 V)	9010.311	9010.311	9010.311	9010.311	–
	Type 2 (mains voltage: 230 V)	9010.312	9010.312	9010.312	9010.312	–

[1)] Other language variants available on request.
[2)] Operating system OEM version may only be ordered in conjunction with a PC system; other operating systems available on request.
[3)] Detailed knowledge of the conditions on-site is required to dimension the climate control kit accurately.
Operation at –20 to +40°C in Central Europe is possible under the conditions defined in IEC 68.
Further accessories such as card reader, coin checker as well as climate control units available on request.

Accessories Page 832 **Keyboards** Page 800

PC systems



Kiosks Mini-PC system
Rittal now offers innovative PC technology to match the kiosk systems which is specifically tailored to the requirements of the kiosk sector. There is a choice of three PC systems which are ideally suited for use in all terminal systems in terms of noise emission, system performance and compact design.

With the PC system “Silent”, the designers focussed their attention on a noise- and heat loss-reducing design. In this way, we have managed to dispense with the use of active fans for the power pack and for cooling the PCU.

Mini-PC configuration[1]		Silent	Pro II	Basic[4]
Fanless PC (Mini-ITX, VIA Eden CPU), 633 MHz		■	–	–
Intel Pentium M CPU min. 1.6 GHz with active fan		–	■	–
Intel Celeron CPU min. 2.0 GHz with active fan		–	–	■
Main memory		256 MB	256 MB	256 MB
Hard disk (minimum capacity, approx.)		40 GB	40 GB	40 GB
CD-ROM		■	–	■
DVD-ROM		–	■	–
Model No. ITS		**9010.110**	**9010.125**	**9003.070**
Interfaces				
PS/2 (keyboard and mouse)		■	■	■
VGA (onboard)		■	■	■
Sound (onboard, 6-way surround sound 5.1, AC97 codec) connections in/out		2/1	1/1	–
Sound (onboard AC97 codec) connections in/out		–	–	2/1
Ethernet 10 and 100 Mbit/s (RJ 45)		■	■	■
Serial (RS232, D-Sub 9 pin)		1 x	1 x	1 x
Parallel (ECP/EPP, D-Sub 25 pin)		1 x	–	1 x
USB		2 x	2 x	4 x rear/2 x front
Firewire (IEEE 1394)		2 x	–	–
SP-DIF out (RCA, if TV-out is not used)		■	–	–
TV-out (PAL & NTSC) (RCA, if SP-DIF is not used)		■	–	–
Extension slot PCI		–	–	2 x/1 x AGP Low Profile
External power pack (prim.: 100 – 240 V, 50/60 Hz/sec. 12 V, 60 – 80 W)		■	■	–
Internal power pack (100 – 240 V, 50/60 Hz)		–	–	■
Dimensions approximately (W x H x D mm)		300 x 55 x 300	300 x 55 x 300	350 x 95 x 385
Accessories[1]				
PC operating operating system[2] MS Windows XP Home	German[3]	9030.100	9030.100	9030.100
	English[3]	9030.102	9030.102	9030.102
	French[3]	9030.103	9030.103	9030.103
	Spanish[3]	9030.104	9030.104	9030.104

[1] We reserve the right to make configuration changes in line with technical progress.
[2] Operating system OEM version may only be ordered in conjunction with a PC system.
[3] Other language variants available on request.
[4] **PC system Basic not for use in: ITS Alpha-Line, ITS Opti-Wall, ITS Out-Line Wall and ITS Out-Line Pro.**
Other PC configurations available on request.

Accessories Page 832 **Keyboards** Page 800

Keyboards





Long-stroke keyboard

with trackball
Super-slimline, compact long-stroke keyboard (83/84 keys) with top-quality 16 mm trackball. Available in two different colours and several country layouts.

For independent installation into the keyboard supports or keyboard recesses, an adaptor plate is additionally required.

Mechanical specifications:
Key buttons in an 18 mm pitch pattern
Trackball Ø 16 mm
Weight: 720 g
Storage temperature: –20°C to +60°C
Operating temperature: 0°C to +50°C
Dimensions W x H x D:
370 x 138.5 x 20 mm.

Electrical specifications:
Connections: PS/2 for keyboard and trackball
Operating voltage: 5 V DC type 18 mA

USB version available on request.

Material:
Plastic

Language[1]	Model No. ITS	
	RAL 9005 (black)	RAL 7032 (beige)
German	**9004.300**	**9004.320**
US English	**9004.310**	**9004.330**
French	**9004.303**	**9004.323**
Spanish	**9004.304**	**9004.324**

[1] Other language variants available on request.

	Model No. ITS
Adaptor plate in brushed stainless steel	**9003.160**
Adaptor plate, sheet steel, RAL 9005 (black)	**9003.170**





Stainless steel keyboard

with trackball
The stainless-steel full-stroke keys (86 keys) with a stroke of 3.5 mm are laser-engraved and protected against being twisted out or snapped off. The keyboard conforms to CE requirements.

Mechanical specifications:
Actuator travel: 3.5 mm
Actuator force: 0.56 N, tactile
Service life: > 10 million actuations
Storage temperature: –40°C to +70°C
Operating temperature: –20°C to +60°C
Dimensions W x H x D:
432 x 155 x 34 mm (R = 10 mm).

Electrical specifications:
Connections: PS/2 for keyboard and trackball
Operating voltage: 5 V DC, max. 50 mA

USB version available on request.

Protection category:
Keyboard and trackball
IP 65 (idle)
IP 54 (in motion)

Language[1]	Model No. ITS
German	**9004.220**
US English	**9004.222**
French	**9004.223**
Spanish	**9004.224**
Finnish	**9004.226**
Swedish	**9004.227**

[1] Other language variants available on request.



Service keyboard

with trackball

Compact keyboard with intgral trackball for mobile on-site service use with kiosk systems. This keyboard makes maintenance work and software installation easier for kiosk systems with a touchscreen which do not have their own keyboard. This keyboard is not essential for operation of the terminals, but in many terminals it may remain inside the enclosure, thanks to the minimal dimensions. This keyboard additionally has 18 multimedia keys.

Mechanical specifications:
Actuator travel: 2.2 mm
Trackball: Ø 19 mm
Service life: 1 million actuations
Operating temperature: 0°C to +50°C
Dimensions W x H x D:
316 x 152 x 21 mm.

Electrical specifications:
Connections: PS/2 for keyboard and trackball

USB version available on request.

Language	Model No. ITS
German	**9004.500**
US English	**9004.502**

Material:
Plastic

Protection category:
IP 20



Membrane keyboard

with mouse pad

Membrane keyboard with 86 keys and integrated mouse pad in MF-II/WIN-compatible layout for integration into the keyboard support of all kiosk systems.

Mechanical specifications:
Actuator travel: 0.5 mm
Actuator force: 2.55 N ± 0.65 N
Service life: >1 million actuations
Touchpad: Active area 62 x 47 mm
Dimensions W x H x D:
432 x 155 x 18 mm
Front film: Resistant polyester
Keys: With key edge embossing
Carrier plate: Metal.

Electrical specifications:
Connections: PS/2 for keyboard and trackball

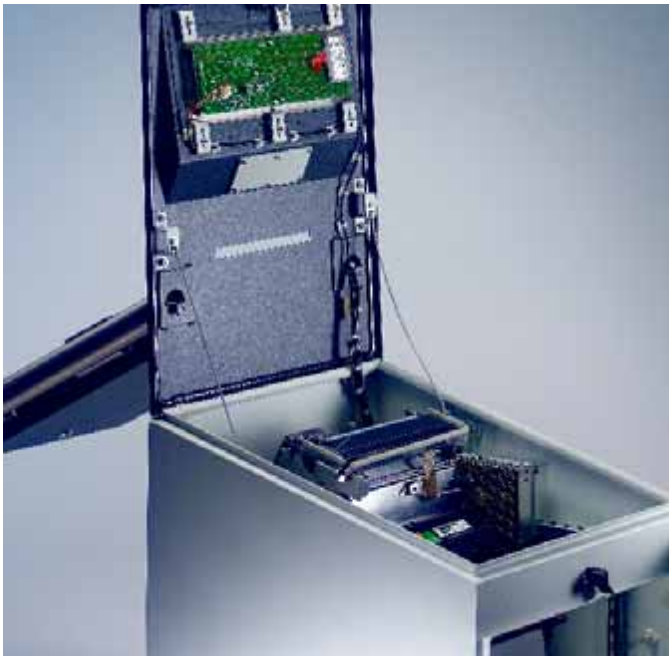
USB version available on request.

Language[1)]	Model No. ITS
German	**9010.910**
US English	**9010.912**
French	**9010.913**
Spanish	**9010.914**
Finnish	**9010.916**
Swedish	**9010.917**

[1)] Other language variants available on request.

Protection category:
IP 65





Example of a customer-specific terminal solution with 4000-page thermo-printer.

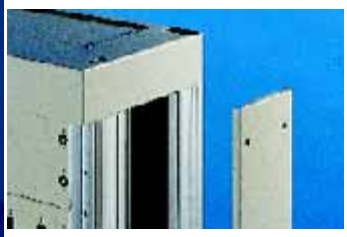
Features



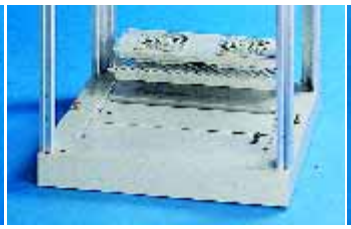
Modern telecommunications continuously place new demands on racks and enclosures. Above all, maximum flexibility is crucial to conform with the various standards. Combined with creative scope, you get cost-effective solutions for your individual requirements.



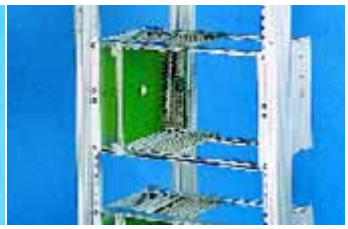
TC rack



Rear/side panel
to finish off a complete enclosure unit.



Roof and base/plinth insert
The inserts may be fitted as required in the roof or base/plinth.



Option of installing all standard **482.6 mm (19″) or metric (535 mm) components.**



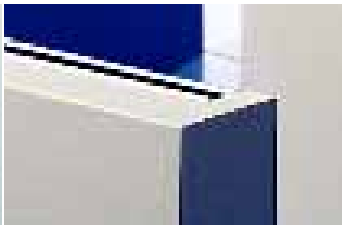
Small FM distributors



FM universal mounting brackets for LSA-Plus, VS-Standard and other common connection systems.



Prepared for mounting **LSA cable retainers** or routing troughs.



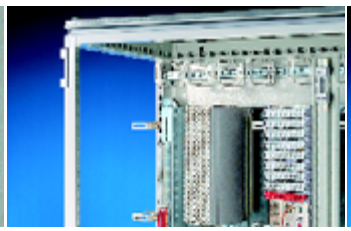
Cable entry
top and bottom. With 2 comb strips for cable clamping.



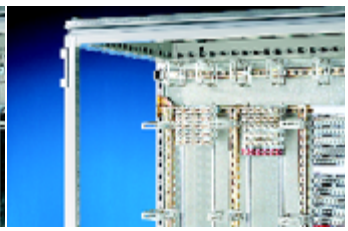
Modular FM distribution enclosures



Wall-mounted and bayed enclosures
Rittal diversity, from small distributors, to FM wall-mounted distributors, to two-door bayed enclosures.



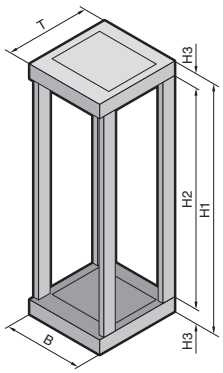
FM system strips
for DIN strips, dividing strips 71 and FM universal mounting brackets.



FM system rods
for LSA-Plus-Profil modules 2/10.

Rack system, based on Rittal TC rack





Material:
Roof/base frame:
Sheet steel, 2 mm
Frame:
Aluminium

Surface finish:
Roof/base frame:
Powder-coated in RAL 7035
Frame:
Natural, zinc-plated, passivated

Supply includes:
Frame:
4 supporting aluminium uprights,
the two front uprights are prepared to accommodate doors whilst the two rear uprights are prepared to accommodate a rear panel and a ceiling fastening.

Roof/base frame:
To accommodate roof/base cover modules.
Fitted as standard with cover plate (D = 300 mm) or sliding cover (D = 600 mm),
4 levelling feet.

Property rights:
German patent no. 43 33 027
European patent no. 645 957
with validity for FR, GB, IT, NL
US patent no. 5,513,759
Jap. patent no. 233373/94

Note:
Used in conjunction with metric (535 mm) mounting angles, the Telecommunication Rack meets the requirements of ETS standard 300119-3.

Available on request:
- TC rack fully fitted with all mounting parts
- Divided front doors
- Special sizes

Detailed drawing,
available on the Internet.

Width (B) in mm	Packs of	600	600	Page
Height (H1) in mm		2200	2200	
Depth (T) in mm		300	600	
Height or mounting dimension (H2) in mm		2050 (46 U/82 SU)	2050 (46 U/82 SU)	
Height roof/base frame (H3) in mm		75	75	
Model No. DK	1	**7723.035**	**7726.035**	
Door				
Sheet steel door, front, solid	1	7720.035[2)]	7720.035[2)]	804
Sheet steel door, front, with vent slots	1	7722.035[2)]	7722.035[2)]	804
Sheet steel door, front, with safety glass insert	1	7725.035[2)]	7725.035[2)]	804
Rear/side panel				
Rear panel	1	7729.235[2)]	7729.235[2)]	804
Side panels	2	7713.235	7716.235	804
Roof				
Ceiling fastening	1 set	7719.000	7719.000	804
Roof insert for cable entry	1	–[1)]	7701.035	804
Roof insert with vent slots	1	7702.035	7702.035	804
Active fan insert	1	7703.035	7703.035	804
Base/plinth				
Base insert for cable entry	1	–[1)]	7701.035	804
Base insert with vent slots	1	7702.035	7702.035	804
Active fan insert	1	7703.035	7703.035	804
Interior installation				
Component shelves for 482.6 mm (19″) mounting angles	1	7119.250	7119.400	948
Component shelves for metric mounting angles (530 mm)	1	7119.255[2)]	7119.455[2)]	948
Mounting angles, 482.6 mm (19″), 46 U	2	7758.000	7758.000	805
Metric mounting angles (535 mm), 82 SU	2	7760.000	7760.000	805
Depth stays	6	7128.000	7129.000	805
Cable clamp rails for installation in the enclosure width	4	7101.000	7101.000	805
Cable clamp rails for installation in the enclosure depth	4	7090.000	7107.000	805
Cable clamp straps for 482.6 mm (19″)	6	7875.400	7875.400	805

[1)] Special designs available on request. [2)] Extended delivery times.

Acessories for Rittal TC Rack



Door

For front mounting, with 180° hinges, locking rod, double-bit lock insert (may be exchanged for Ergoform-S lock system).

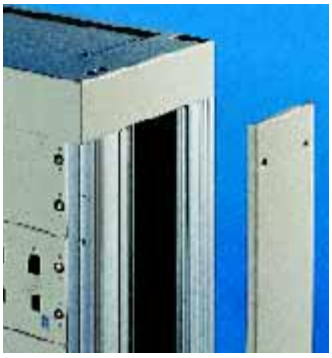
Material:
Sheet steel

Colour:
RAL 7035

Sheet steel door at front	Model No. DK
Solid	**7720.035**[1)]
With vent slots	**7722.035**[1)]
With safety glass insert	**7725.035**[1)]

Lock system	Model No. SZ
Ergoform-S handle RAL 7035	2435.000
Lock no. 3524 E	2467.000

[1)] Extended delivery times.
Available on request.



Rear/side panel

To finish off a complete enclosure unit, including assembly material.

Material:
Sheet steel

Colour:
RAL 7035

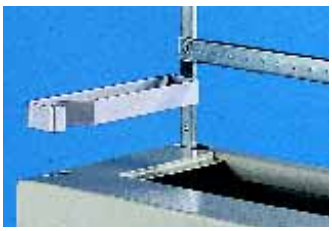
For side panels DK 7713.235 and DK 7716.235:

German patent no. 43 33 025
US patent no. 5,584,406

	For enclosure depth mm	Packs of	Model No. DK
Side panel	300	2	**7713.235**
Side panel	600	2	**7716.235**

	For enclosure width mm	Model No. DK
Rear panel	600	**7729.235**[1)]

[1)] Extended delivery times.



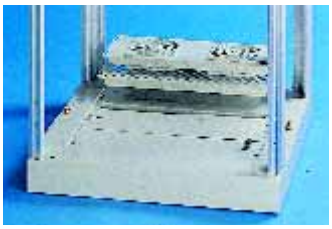
Ceiling fastening

Infinitely height-adjustable for ceiling fastening of free-standing Rittal TC Racks and for cable routing.
Max. mounting height of vertical stays: 550 mm

Material:
Sheet steel, zinc-plated, passivated

Model No. DK	7719.000

Supply includes:
2 vertical stays,
1 horizontal rail,
2 cable shunting rings,
including assembly parts.



Roof and base/plinth insert

The inserts may be fitted in the roof or base/plinth as required.

Material:
Sheet steel

Colour:
RAL 7035

Roof and base/plinth insert	Model No. DK
For cable entry[1)]	**7701.035**
With vent slots	**7702.035**
With active fan insert	**7703.035**

[1)] For Rittal TC Rack DK 7726.035.
Special design for DK 7723.035 available on request.





Mounting angles on a U/SU pitch pattern and T channel mounting angles,

482.6 mm (19″)/metric (535 mm)

The mounting angles are simply screwed to the rack upright; a combination of 482.6 mm (19″) and metric (535 mm) mounting angles is also possible. Also available in a T channel version. The mounting angles are depth-adjustable including mounting material.

	Packs of	Model No. DK		
		U pitch pattern mounting angles	SU pitch pattern mounting angles	T channel mounting angles
46 U	2	**7758.000**	–	**7758.100**
82 SU	2	–	**7760.000**	**7760.100**

Material:
Aluminium, clear-chromated

Accessories:

Captive nuts M5 /M6, spring nuts, screws M5 /M6,
see page 1019.



Depth stays

For infinitely variable adjustment of metric (535 mm) or 482.6 mm (19″) mounting angles across the entire enclosure depth, or for attachment of a second pair of 482.6 mm (19″) mounting angles at the rear.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Depth stays, including assembly parts.

Enclosure depth mm	Packs of	Model No. DK
300	6	**7128.000**
600	6	**7129.000**



Cable clamp rails

For installation in the enclosure width and depth. Fully height-adjustable for cable clamping with rear or side cable routing.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Cable clamp rails,
including assembly parts.

Enclosure width mm	Packs of	Model No. DK
600	4	**7101.000**

Enclosure depth mm	Packs of	Model No. DK
300	4	**7090.000**
600	4	**7107.000**



Clip-on nuts

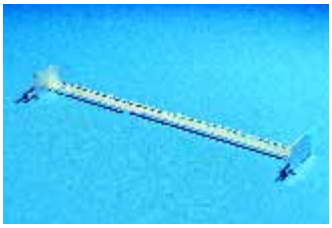
For variable interior installation of TC racks. Simply clip onto one of the two channels, for infinitely variable component mounting.

German patent no. 195 24 648
European patent no. 0 836 679
Japanese patent no. 28 91 779
US patent no. 5,897,276

Packs of	Model No. FR
50	**2102.500**

Accessories:

M6 assembly screws,
see page 1019.



Cable clamp strap

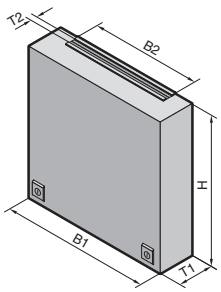
For system-compatible cable routing in the TC Rack, behind a pair of 482.6 mm (19″) mounting angles.

Material:
Sheet steel, zinc-plated, passivated

Depth mm	Packs of	Model No. DK
100	6	**7875.400**

Small FM distributors





Material:
Sheet steel, 1.5 mm

Surface finish:
Powder-coated in RAL 7035

Supply includes:
Two-part enclosure

Wall section:
With mounting holes for wall mounting, 2 comb strips for cable clamping and brush insert for cable entry, shunting ring for system-compatible routing of telecommunications cables.

Cover:
Retaining device and two cam locks with double-bit lock insert.

Property rights:
German patent
no. 44 10 795

Detailed drawing,
available on the Internet.

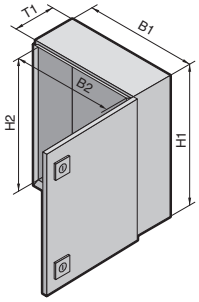
Width (B1) in mm	Packs of	300	500	500	900	Page
Height (H) in mm		500	500	700	700	
Depth (T1) in mm		120	120	120	120	
Width of cable entry (B2) in mm		195	395	395	795	
Depth of cable entry (T2) in mm		29	29	29	29	
Model No. DK	1	**7052.035**	**7053.035**	**7054.035**	**7055.035**	
Max. number of adjacent cable retainers or mounting troughs (LSA)		1	2	2	4	
Max. accommodation when using cable retainers or mounting troughs (LSA)		100 DA	200 DA	400 DA	800 DA	
Shunting ring, plastic, 70 x 44 mm		2	3	3	5	
Accessories						
FM universal mouting brackets type A, L = 275 mm, LSA-Plus	1 set	7031.100	7031.100	7031.100	7031.100	811
FM universal mouting brackets type B, L = 275 mm, VS-Standard	1 set	7031.101	7031.101	7031.101	7031.101	811
Lock systems						
“15” locks (Zeiss-Ikon)	2	7059.035[1)]	7059.035[1)]	7059.035[1)]	7059.035[1)]	891
“15” key (Zeiss-Ikon)	1	7059.100[1)]	7059.100[1)]	7059.100[1)]	7059.100[1)]	891
T handle without lock insert	1	2572.000	2572.000	2572.000	2572.000	887
T handle with lock insert no. 3524 E	1	2575.000	2575.000	2575.000	2575.000	887
Plastic handle with lock no. Nr. 3524 E	1	2576.000	2576.000	2576.000	2576.000	886
Plastic handle	1	2533.000	2533.000	2533.000	2533.000	886

Standard double-bit lock insert may be exchanged for 27 mm lock inserts, version A, see page 888.

[1)] Extended delivery times.

Modular FM wall-mounted distributor





Material:
Sheet steel, 1.5 mm
Door: 2.0 mm

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/10.91

Supply includes:
Enclosure: Based on Rittal AE with gland plate at bottom, swappable door hinge (height 1200 mm with 3-point locking rod and double-bit lock), earth rail, cable clamp rail,
2 punched rails to accommodate FM system strips,
FM system rods and
FM cable shunting strips.
Top horizontal punched rail to accommodate cable shunting rings, double-bit lock inserts.

Available on request:
- FM wall-mounted distributor configured with Rittal standard accessories (FM system strips, FM system rods, FM cable shunting strips etc.) to order.
- Cable routing with brush strips top/bottom.

Approvals,
see page 92.

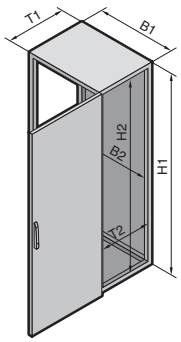
Detailed drawing,
available on the Internet.

Width (B1) in mm	Packs of	600	760	800	800	Page
Height (H1) in mm		600	760	1000	1200	
Depth (T1) in mm		350	300	300	300	
Clearance width (B2) in mm		560	720	760	760	
Clearance height (H2) in mm		560	720	960	1160	
Model No. DK	1	**7011.535**	**7012.535**	**7013.535**	**7014.535**	
Maximum accommodation when using FM system strips with trays or FM rods		340 paired wires	500 paired wires	990 paired wires	1170 paired wires	
Installation of FM system strips FM system towers FM system rods		2 set	2 set	3 set	3 set	
Accessories						
Plastic handles with lock cylinder insert	1	2439.000	2439.000	2439.000	2439.000	886
Ergoform-S handle	1	–	–	–	2435.000	885
FM system strips[1)]	1 set	7032.500	7033.500	7034.500	7035.500	809
FM system rods	1 set	7533.000	7534.000	7535.000	7536.000	810
FM cable shunting strips	1 set	7233.000	7234.000	7235.000	7236.000	810
Plastic cable gland plates	5	2563.000	2563.000	2563.000	2563.000	966
Wall mounting bracket, 10 mm	1	2508.000	2508.000	2508.000	2508.000	905
Wall mounting bracket, 40 mm	1	2503.000	2503.000	2503.000	2503.000	905

[1)] FM universal mounting bracket, VS standard, DIN strips, 71 dividing strip and distributor system series 5000 may be fitted.

Modular FM distributor racks





Material:
Sheet steel,
Enclosure frame, roof, rear panel and gland plates:
1.5 mm
Door: 2 mm

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/10.91

Supply includes:
Enclosure frame with door or 2 doors, without side panels, comfort handle with security lock, three-piece gland plate, rear panel and roof plate, 3 punched rails to accommodate FM system strips, FM system rods, FM cable shunting strips, 1 top horizontal punched rail to accommodate cable shunting rings, cable clamp rail, earth rail.

Available on request:
- FM distributor racks configured with Rittal standard accessories (FM system strips, FM system rods, FM cable shunting strips etc.) to order.
- FM distributor racks in special sizes.

Approvals,
see page 92.

Detailed drawing,
available on the Internet.

Width (B) in mm		Packs of	600	800	1200	Page
Height (H) in mm			2000	2000	2000	
Depth (T) in mm			400	400	400	
Clearance width (B2) in mm			512	712	1112	
Clearance height (H2) in mm			1912	1912	1912	
Clearance depth (T2) in mm			312	312	312	
Model No. DK		1	**7834.060**	**7834.080**	**7834.120**	
Maximum accommodation when using FM system strips with trays or FM rods			1300 paired wires	1950 paired wires	3250 paired wires	
Installation of FM system strips FM system towers FM system rods			2	3	5	
Accessories						
FM system strips[1]		1 set	7038.500	7038.500	7038.500	809
FM system rods		1 set	7538.000	7538.000	7538.000	810
FM cable shunting strips		1	7238.000	7238.000	7238.000	810
Cable shunting ring	120 x 90 mm	10	7111.900	7111.900	7111.900	810
	120 x 60 mm	10	7111.000	7111.000	7111.000	810
	80 x 40 mm	10	7112.000	7112.000	7112.000	810
Side panels		2	8104.235	8104.235	8104.235	853
Quick-fit baying clamps		6	8800.500	8800.500	8800.500	863
Roof plate for cable entry		1	7826.645[2]	7826.845[2]	7826.245[2]	901
Height 100 mm, base/plinth components front/rear		1 set	8601.600	8601.800	8601.200	835
Height 100 mm, base/plinth components sides 400 mm		1 set	8601.040	8601.040	8601.040	835
Height 200 mm, base/plinth components front/rear		1 set	8602.600	8602.800	8602.200	835
Height 200 mm, base/plinth components sides 400 mm		1 set	8602.040	8602.040	8602.040	835

[1] FM universal mounting bracket, VS standard, DIN strips, 71 dividing strip and distributor system series 5000 may be fitted.
[2] Extended delivery times.

Accessories Page 832















FM system strips

For user-specific solutions or modular FM enclosure assembly. The following connection systems may be mounted on the FM system strips:

- DIN connector strips to DIN 47 614, type B; soldering lugs to DIN 41 499, LSA-Plus connector strips 1/20 to DIN 47 608 with 170 mm mounting dimension, vertical (with 2 FM system strips, horizontal mounting is possible).
- Cable retainers or routing troughs for LSA connection technology.
- Dividing strip 71.
- Corning series 5000 distribution system for professional assembly of modern distributors with plug-type Faston technology.

The FM system strip features a 25 mm DIN pitch pattern (DIN 43 660). Shunting rings of plastic or metal may be fitted here for cable routing. As an alternative to this, however, FM cable shunting strips may also be used.

Design:
Installation height: 120 mm
Installation width: 75 mm

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
1 FM system strip,
2 shunting rings (105 x 70 mm),
including assembly parts.

Accessories:

FM universal mounting bracket,
see page 811.
Shunting ring (plastic) DK 7218.035,
DK 7219.035,
see page 984.
Shunting ring (metal) DK 7111.000, DK 7111.900,
DK 7112.000,
see page 810.
FM cable shunting strips,
see page 810.

Population opportunities for DIN, LSA and dividing strips

	Model No. DK					
FM system strips	**7032.500[1)]**	**7033.500[1)]**	**7034.500[1)]**	**7035.500[1)]**	**7038.500**	**7039.500**
Length mm	425	625	825	975	1625	1825
Connection system	Maximum population[1)] paired wires					
DIN connector strip	20	60	80	100	160	180
LSA connector strip	170	250	330	390	650	730
Dividing strip 71	100	200	200	300	500	600

[1)] Based on the following mounting dimensions:
– DIN connector strip 170 mm
– LSA connector strip 25 mm
– Dividing strip 71: 290 mm

Population opportunities for Corning distributor system series 5000

	Model No. DK					
FM system strips	**7032.500[1)]**	**7033.500[1)]**	**7034.500[1)]**	**7035.500[1)]**	**7038.500**	**7039.500**
Length mm	425	625	825	975	1625	1825
	No. of blocks per FM system strip					
Block 128 p. wires, L = 218 mm Block 100 p. wires, L = 152 mm	1 1	1 2	1 3	2 2	3 5	3 6
Block 384 p. wires, L = 640 mm Block 600 p. wires, L = 925 mm	– –	– –	– –	– –	1 1	1 1
Block 104 p. wires, L = 180 mm	2	3	4	5	8	9
Block 128 p. wires, L = 218 mm	1	2	3	4	7	8
Block 200 p. wires, L = 333 mm	1	1	2	2	4	5
Block 1000 p. wires, L = 1,690 mm	–	–	–	–	–	1

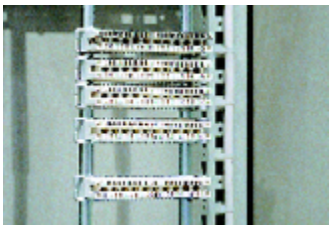
Population opportunities for FM universal mounting bracket

		Model No. DK					
FM system strips		**7032.500[1)]**	**7033.500[1)]**	**7034.500[1)]**	**7035.500[1)]**	**7038.500**	**7039.500**
Length mm		425	625	825	975	1625	1825
Max. packs of mounting brackets		1	2	2	3	5	6
Vertical bracket distance in mm		–	50	50	50	50	35
Connection system	Pitch pattern distance mm	No. of strips per system strip					
LSA-Plus	22,5	12	24	24	36	60	72
VS-Standard	25	11	22	22	33	55	66
Other connection systems	22.5	12	24	24	36	60	72
	17.5	15	30	30	45	75	90
	16	17	34	34	51	85	102

[1)] Extended delivery times.

Accessories for FM distribution racks





FM system rods

For user-specific solutions or modular FM enclosure assembly. LSA-Plus profile modules 2/10 may be mounted on the FM system rods. The rod diameter is 12 mm and the rod spacing 95 mm. The FM system rods may be supplemented with FM cable shunting strips, to permit the accommodation of patching cables.

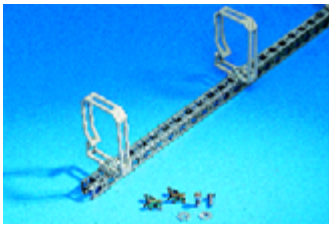
Design:
Installation height: 120 mm
Installation width: 110 mm

Material:
Round steel, clear-chromated

Supply includes:
2 rods,
2 rod holders, plus (with 650 paired wires and more) an additional rod spacer,
2 shunting rings (105 x 70 mm),
including assembly parts.

LSA-Plus[1] profile module 2/10	Length mm	Packs of	Model No. DK
170 DA	425	1 set	**7533.000**
250 DA	625	1 set	**7534.000**
330 DA	825	1 set	**7535.000**
390 DA	975	1 set	**7536.000**
650 DA	1625	1 set	**7538.000**
730 DA	1825	1 set	**7539.000**

[1] Refers to LSA strip pitch pattern of 25 mm.



FM cable shunting strips

For user-specific solutions or modular FM enclosure assembly.
FM cable shunting strips allow shunting between the connection systems.
The FM cable shunting strips are supplementary to FM system strips and FM system rods, and are designed for routing patch cables. They are mounted on the sides, next to the FM system strips or FM system rods.

Design:
Installation height: 132 mm
Installation width: 70 mm
Shunting ring: 105 x 70 mm

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
1 punched rail,
shunting rings,
including mounting accessories.

Shunting ring	Length mm	Packs of	Model No. DK
2	425	1 set	**7233.000[1]**
3	625	1 set	**7234.000[1]**
4	825	1 set	**7235.000[1]**
5	975	1 set	**7236.000[1]**
7	1625	1 set	**7238.000**
8	1825	1 set	**7239.000**

[1] Extended delivery times.



Cable shunting ring

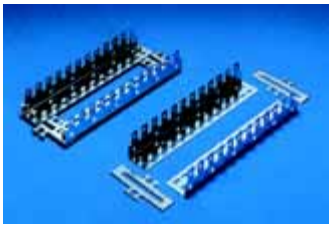
For flexible and system-compatible cable routing on FM system strips, FM distribution enclosures or at the sides on 482.6 mm (19″) mounting angles.

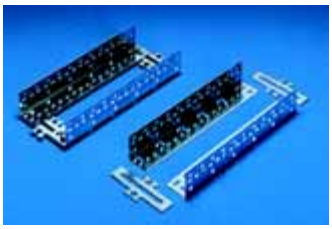
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Locating plate and assembly parts.

Dimensions mm	Packs of	Model No. DK
120 x 90	10	**7111.900**
120 x 60	10	**7111.000**
80 x 40	10	**7112.000**

German patent no. 38 13 002













FM universal mounting bracket

The universal mounting brackets consist of 2 brackets that can be combined with the connection systems of other manufacturers, depending on how they are positioned next to each other. The brackets may be slid flexibly against each other so that strips with different lengths can be used. The mounting brackets can be mounted in FM distribution enclosures or on FM system strips.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
2 mounting brackets, support strips, assembly parts.
Mounting bracket, type A for LSA-Plus strips (8 or 10 p. wires) and other commercially available connection systems.
Mounting bracket, type B for VS-Standard and other commercially available connection systems.

Mounting bracket	Length mm	Connection system	LSA-Plus	VS standard	Other connection systems			Packs of	**Model No. DK**
		Pitch pattern in mm	22.5	25	22.5	17.5	16		
Type A	275	No. of strips	12	–	–	15	–	1 set	**7031.100**
Type B	275	No. of strips	–	11	12	–	17	1 set	**7031.101**[1)]

[1)] Extended delivery times.



Rittal **outdoor enclosures, outdoor climate control components and remote monitoring systems** will withstand even the toughest conditions.

In this respect, we are uncompromising.

From basic requirements such as humidity, temperature fluctuations and sunlight, to **extreme conditions** such as seawater resistance or earthquake resistance, through to protection against vandalism, Rittal has the answer.

In this way, we ensure that there are no limits to our customers' targets.

Communication Systems

CS Outdoor enclosures from page 814

Features ... 814

CS Toptec page 817

CS wall-mounted enclosures page 818

CS compact enclosures page 819

Compact enclosures, Outdoor page 820

CS Basic enclosures from page 821

CS Basic enclosures, single-door ... 821
CS Basic enclosures, two-door ... 822

CS modular enclosures from page 823

CS modular enclosures, installation variants ... 824

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CS Outdoor climate control page 826

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Heat exchangers from page 827

Heat exchanger for CS modular enclosures ... 827
Heat exchanger for CS modular enclosures/ compact enclosures ... 828

Cooling units page 829

Cooling units for CS modular enclosures ... 829

Climate control units for CS Toptec page 830

Geothermal heat exchanger page 831

CS outdoor enclosures

Features



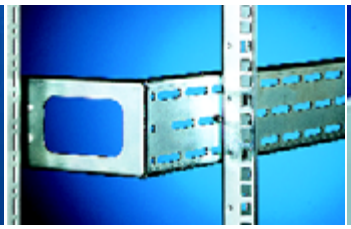
For all requirements in the outdoor sector, Rittal has the ideal enclosure solution, thanks to its platform strategy.
With single-walled or twin-walled enclosures of aluminium or coated sheet steel, as well as an extensive range of accessories. With constant interior temperatures and perfect climate, thanks to in-house development and production of cooling units, heat exchangers and heaters.



CS Toptec



The CS Toptec is based on the **TS 8 frame of stainless steel** 1.4301. Fully symmetrical,



more options for universal interior installation thanks to two all-round mounting levels on



a 25 mm pitch pattern, and **compatibility with system accessories TS 8.**



In the twin-walled enclosure all panels and doors are built up externally. This chimney effect reduces the influence of sunlight on the enclosure.



You are able to utilise the entire interior for your installation.



Bayed enclosure suites and enclosures with doors all round can be achieved thanks to the **combination of assembly components.**



CS wall-mounted enclosures



The **enclosure-within-an-enclosure concept** with the curved designer cover is a characteristic feature.



Security lock on the designer cover and door of the interior enclosure.



Air louvres at the sides and in the rear panel.

Features



CS compact enclosures



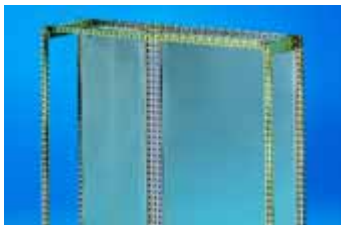
Application diversity: The basic dimensions of the compact enclosures correspond to Deutsche Telekom's base/plinth dimensions KVz 83 and 84.



The **rain canopy for optimum weather protection** and to accommodate an air/air heat exchanger.



Ergoform padlock handle system.
Security with semi-cylinder.



Assembly-friendly: Remove the enclosure cover, interior installation is soon complete on the open mounting frame, slip the cover back over, screw-fasten into position, and voila!



The gland plates ensure a **high degree of flexibility with cable entry.**



With the **roof-mounted heat exchanger** for 1100 mm wide enclosures, the protection category of IP 55 is retained.



CS basic enclosures



Eyebolts, concealed by the rain canopy, for crane transportation of the fully fitted unit.



Ventilation louvres all-round in the hinged rain canopy – with an all-round roof projection of 25 mm.



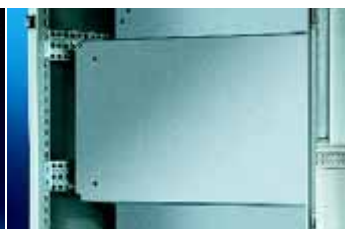
Width 1200 mm: **With removable centre bar** and two lockable doors with or without centre bar, with overlapping doors.



The open base frame may be covered with **gland plates.**



Individual installation with an **extensive choice of system accessories.**



25 mm system punchings for mounting 482.6 mm (19″) mounting angles, mounting plates or partial mounting plates.

CS outdoor enclosures

Features



CS modular enclosures



Protection against vandalism – These features will protect your equipment against unauthorised access:



No point of entry for leverage-type tools, because the double side panel seamlessly conceals the door hinges. The hinged



roof is screw-fastened to the enclosure frame, the base/plinth trim secured with security screws.



Batteries for emergency power back-up are securely housed in the **pull-out drawer** of the battery base/plinth.



High level of stability thanks to **ten-fold profiling** of the enclosure body.



The Rittal system punchings facilitate **highly flexible interior installation** at various levels.



Project business

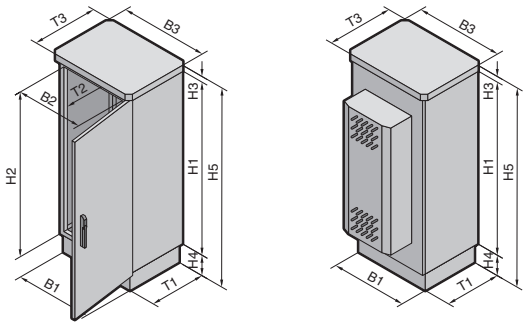
Particularly in project business, compliance with standards is of vital importance. We meet many of the required standards directly with standard enclosures or with slight modifications.
With Rittal, you get everything from a single source: From the enclosure, to climate control technology, to cable assembly. Within the framework of system integration, the entire AC/DC power supply and customer's system technology are installed.

Examples of some of the tests passed are listed below:

- Toptec without climate control module:
  Protection category testing IP 55 and NEMA 4x, transport tests to IEC 60 271-3-4 class 4M5, temperature cycling and humidity to Bellcore 487-R3-204,
- CS Toptec with climate control module:
  Salt spray fog testing (2 x 7 days) to Bellcore 487-R3-203,
- CS modular enclosures:
  Storage, transportation and operation to IEC 721-2-3.

CS Toptec





B = Width
T = Depth

Material:
Enclosure frame:
1.5 mm stainless steel 1.4301
Doors, side panels, roof:
2.0 mm aluminium, AlMg3
Base/plinth:
2.0 – 4.0 mm aluminium, AlMg3

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/10.91, complies with NEMA 3R.

Supply includes:
Twin-walled outdoor enclosure fully preconfigured.
Door front and rear, side panels left and right.
Walls and doors doubled on the outside by 25 mm,
doors hinged on r/h side,
with handle and security lock to DIN 18 254.
Roof projecting on all sides screw-fastened with security screws,
may be exchanged for eyebolts.
Roof additionally protected from dismantling by the door edge fold.
Side panels vented, inner side panel screw-fastened to the enclosure frame from the outside,
base/plinth including two screw-fastened gland plates for cable entry, screw-fastened base/plinth trim panels at the front and rear.

Version with heat exchanger/cooling unit:
Door with integral climate control unit.
Climate control unit attached to the mounting frame in the door.
Supplied state: as a built-in unit inside the enclosure, minimum exterior projection.

Note:
The enclosure dimensions correspond to IEC EN 61 969.

Property rights:
German patent
no. 101 13 893
UK Patent no. 2 375 472

Also required:

For versions with climate control units, cable connection kit, see page 663.

Optionally available:

Size variants, baying variants, complete system integration up to Level 4.

Detailed drawing,
available on the Internet.

Width (B1) in mm	Packs of	650	800	650	800	Page
Height (H1) in mm		1200	1200	1600	1600	
Depth (T1) in mm		650	650	650	650	
Clearance width (B2) in mm		562	712	562	712	
Clearance height (H2) in mm		1112	1112	1512	1512	
Clearance depth (T2) in mm		562	562	562	562	
Rain canopy width (B3) in mm		744	894	744	894	
Rain canopy height (H3) in mm		45	45	45	45	
Rain canopy depth (T3) in mm		744	744	744	744	
Base/plinth height (H4) in mm		100	100	100	100	
Overall height (H5) in mm		1345	1345	1745	1745	
Model No. CS without climate control module	1	**9774.100**	**9774.200**	**9774.300**	**9774.400**	
Model No. CS with heat exchanger 9776.100[1)]	1	**–**	**9774.210**	**–**	**9774.410**	
Model No. CS with heat exchanger 9776.150[1)]	1	**–**	**9774.230[2)]**	**–**	**9774.430[2)]**	
Model No. CS with cooling unit 9776.500[1)]	1	**–**	**9774.250**	**–**	**9774.450**	
Model No. CS with cooling unit 9776.550[1)]	1	**–**	**9774.270[2)]**	**–**	**9774.470[2)]**	
Accessories						
Concrete base/plinth	1	9765.184	9765.185	9765.184	9765.185	842
Mounting angles 482.6 mm (19″), full installation	2	7827.120	7827.120	7827.160	7827.160	1004
Divider kit for mounting angles 482.6 mm (19″)	4	7794.165	7794.280	7794.165	7794.280	1008
Mounting plate, full installation	1	9765.193	9765.193	9765.194	9765.194	916
Metal gland plate, prepunched	1	2562.100	2562.100	2562.100	2562.100	968
Enclosure light 48 V DC	1	9765.100	9765.100	9765.100	9765.100	955
Heater, 1000 W	1	9769.015	9769.015	9769.015	9769.015	656

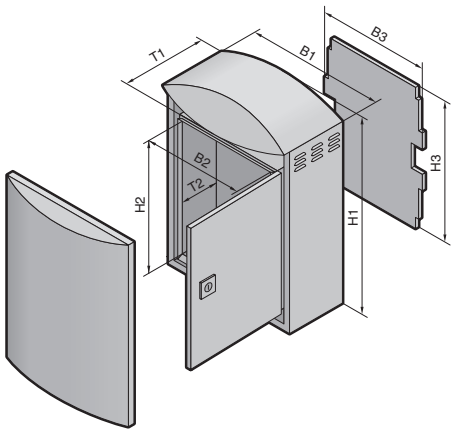
[1)] For technical specifications of climate control unit, refer to page 830.
[2)] Delivery times available on request.

Accessories Page 832 **Mounting plates** Page 916 **Rail systems** Page 917 **482.6 mm (19″) installation** Page 993 **Monitoring** Page 762

CS wall-mounted enclosures







Material:
Aluminium AlMg3
Enclosure:
Exterior: 2.0 mm
Interior: 1.5 mm/2.0 mm
Doors: 2.0 mm
Mounting plate/rotating frame:
2.0 mm clear-chromated

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/10.91

Supply includes:
Inner enclosure with door,
aluminium mounting plate
or rotating frame,
security lock
(CS 9791.045 and CS 9791.145
with 2 security locks),
foamed-in door seals,
gland plate at bottom,
mounting bracket for thermostat,
outer enclosure with integral
vent louvres,
designer cover with security
lock, C rails on the rear panel.

Protection rights for wall-mounted enclosure with mounting plate:
German utility model
no. 297 16 467
German registered design
no. 97 08 625
UK Registered Design
no. 2 072 965
IR reg. design no. DM/044 110
with validity for ES, FR, IT,
Indonesia
US patent no. 6,024,236
European patent no. 0 902 514
with validity for FI, GB, SE
Japan. patent no. 3 189 210

1 Wall-mounted enclosure with mounting plate

2 482.6 mm (19″) rotating frame

Rittal service:

Complete customised interior installation
of the wall-mounted enclosure up to integration level 4 to the customer's specifications is available.

Detailed drawing,
available on the Internet.

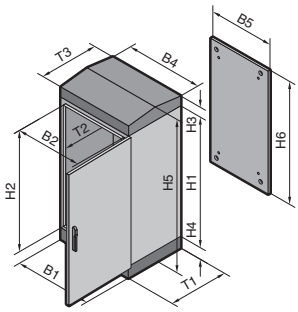
Width (B1) in mm	Packs of	370/300	420/350	530/460	630/580	630/580	Page
Height (H1) in mm		522.5/400	560.5/440	700/565	780/580	780/580	
Depth (T1) in mm		210/170	210/170	265/220	380/333	380/333	
Clearance width (B2) in mm		280	330	440	560	560	
Clearance height (H2) in mm		380	420	545	560	560	
Clearance depth (T2) in mm		145	145	195	308	240[2)]	
Mounting plate width (B3) in mm		270	320	430	550	–	
Mounting plate height (H3) in mm		380	410	535	550	–	
Model No. CS	1	**9791.015**	**9791.025**	**9791.035**	**9791.045**	**9791.145[1)]**	
Accessories							
Wall mounting	4	9765.120	9765.120	9765.120	9765.120	9765.120	906
Pole clamp	1 set	9765.125	9765.125	9765.125	9765.125	9765.125	906
Heater, 30 W	1	3115.000	3115.000	3115.000	3115.000	3115.000	655
Thermostat	1	3110.000	3110.000	3110.000	3110.000	3110.000	661

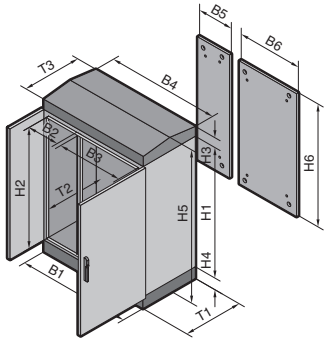
[1)] With 5 U rotating frame instead of mounting plate.
[2)] Max. installation depth in the 482.6 mm (19″) level.

Accessories Page 832 **Climate control** Page 826

CS compact enclosures







Version
Aluminium AlMg3

Material:
Enclosure, doors and rain canopy:
2.0 mm aluminium AlMg3
Mounting plate:
3.0 mm aluminium AlMg3
Base/plinth:
2.0 mm stainless steel 1.4301

Version
Sheet steel, zinc-plated, passivated

Material:
Enclosure and doors:
2.0 mm sheet steel, zinc-plated, passivated
Mounting plate:
3.0 mm sheet steel, zinc-plated, passivated
Base/plinth:
2.0 mm stainless steel 1.4301
Rain canopy:
2.0 mm aluminium AlMg3

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/10.91

Supply includes:
Single-walled enclosure, one or two doors, door(s) with a 130° hinge with door stay 110°, Ergoform padlock with security lock, 3-point lock, foamed-in door seal, mounting plate(s), mounting frame with 25 mm DIN rows of holes, enclosure basic support, base/plinth, rain canopy.

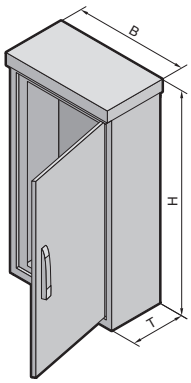
Detailed drawing,
available on the Internet.

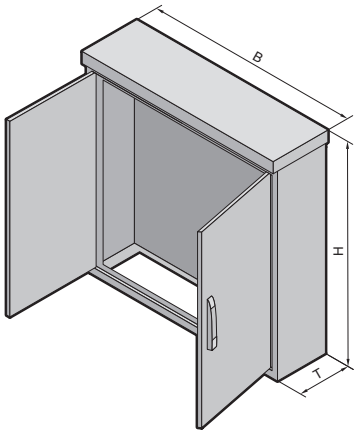
	Packs of	Aluminium AlMg3		Sheet steel, zinc-plated, passivated		Page
Width (B1) in mm		800	1100	800	1100	
Height (H1) in mm		1100	1100	1100	1100	
Depth (T1) in mm		320	320	320	320	
Clearance width (B2/B3) in mm		760/ –	360/660	760/ –	360/660	
Clearance height (H2) in mm		1060	1060	1060	1060	
Clearance depth (T2) in mm		296	296	296	296	
Rain canopy width (B4) in mm		814	1114	814	1114	
Rain canopy height (H3) in mm		60	60	60	60	
Rain canopy depth (T3) in mm		334	334	334	334	
Base/plinth height (H4) in mm		100	100	100	100	
Overall height (H5) in mm		1260	1260	1260	1260	
Mounting plate width (B5/B6) in mm		720/ –	321.5/621.5	720/ –	321.5/621.5	
Mounting plate height (H6) in mm		1020	1020	1020	1020	
Model No. CS	1	**9771.115**	**9772.115**	**9771.111**	**9772.111**	
Door(s)		1	2	1	2	
Accessories						
Roof-mounted heat exchanger, 15 W/K	1	–	9767.012	–	9767.012	828
Rain canopy for roof-mounted heat exchanger	1	–	**9779.053**	–	**9779.004**	–
Plastic gland plate	1	2562.500	2563.500	2562.500	2563.500	967
Metal gland plate	1	2562.100	2563.100	2562.100	2563.100	968

Accessories Page 832 **Cable entry** Page 964

Compact enclosures, Outdoor







Material:
Optionally
Sheet steel, zinc-plated,
or
Stainless steel 1.4301

Colour:
RAL 7035

Supply includes:
Enclosure, closed back and sides,
interior door(s):
Swing handle prepared for semi-cylinder 40 or 45 mm, overall length to DIN 18 254.

Roof plate:
With bonded insulating plate to prevent the formation of drips, screw-fastened at a distance to prevent condensation.

Protection category:
IP 44 to 60 529/10.91

Detailed drawing,
see page 1185.

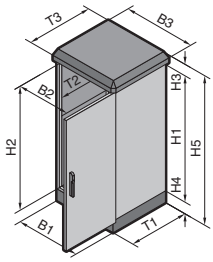
Width (B) in mm	Packs of	800	1200	1200	Page
Height (H) in mm		1200	800	1200	
Depth (T) in mm		350	350	350	
Model No. Sheet steel	1	**1620.000**	**1621.000**	**1622.000**	
Model No. Stainless steel	1	**1620.100**	**1621.100**	**1622.100**	
Doors		1	2	2	
Accessories					
Mounting plate sheet steel, 3 mm, zinc-plated, passivated	1	1616.200	1616.210	1616.220	916
Mounting plate MDF, 15 mm	1	1616.230	1616.230	1616.240	916
Concrete base/plinth	1	1616.300[1)]	1616.310[1)]	1616.310[1)]	842
Wiring plan pocket	1	4116.000	4115.000	4115.000	898
Door stay	1	1616.110	1616.110	1616.110	898

[1)] Delivery times available on request.

Accessories Page 832

CS Basic enclosures, single-door





Material:
Enclosure, roof and doors:
2.0 mm aluminium AlMg3
Base/plinth:
3.0 mm aluminium AlMg3

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/10.91
in conjunction with the gland plates available as accessories.

Supply includes:
Single-walled enclosure of all-round solid construction, with open base,
3-point locking via Ergoform padlock and lock cylinder, base/plinth, rain canopy.

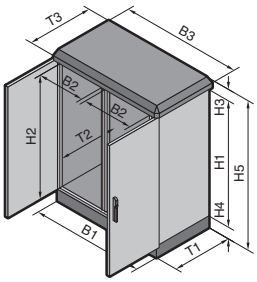
Detailed drawing,
available on the Internet.

Width (B1) in mm	Packs of	600	600	600	600	800	800	800	800	Page
Height (H1) in mm		800	1200	1400	1200	800	1200	1400	1200	
Depth (T1) in mm		400	400	400	500	400	400	400	500	
Clearance width (B2) in mm		511.4	511.4	511.4	511.4	711.4	711.4	711.4	711.4	
Clearance height (H2) in mm		711.4	1111.4	1311.4	1111.4	711.4	1111.4	1311.4	1111.4	
Clearance depth (T2) in mm		349	349	349	449	349	349	349	449	
Rain canopy width (B3) in mm		650	650	650	650	850	850	850	850	
Rain canopy height (H3) in mm		75	75	75	75	75	75	75	75	
Rain canopy depth (T3) in mm		450	450	450	550	450	450	450	550	
Base/plinth height (H4) in mm		100	100	100	100	100	100	100	100	
Overall height (H5) in mm		975	1375	1575	1375	975	1375	1575	1375	
Model No. CS	1	**9783.040**	**9783.050**	**9783.060**	**9783.030**	**9783.010**	**9783.020**	**9783.120**	**9783.110**	
Accessories										
Concrete base/plinth	1 set	9765.182	9765.182	9765.182	9765.082	9765.088	9765.088	9765.088	9765.084	842
One-piece gland plate	1 set	9785.017	9785.017	9785.017	9785.020	9785.018	9785.018	9785.018	9785.019	852
Gland plate, divided	1 set	9785.011	9785.011	9785.011	9785.014	9785.012	9785.012	9785.012	9785.013	852
Cable entry plate	1 set	4320.700	4320.700	4320.700	4320.700	4321.700	4321.700	4321.700	4321.700	852
Mounting plate	1	9765.090	9765.092	9765.098	9765.092	9765.097	9765.095	9765.099	9765.095	916
Mounting angles 482.6 mm (19″), full installation	2	7685.000	7688.000	7689.000	7688.000	7685.000	7688.000	7689.000	7688.000	1006
Installation kit for mounting angles	2	7696.000	7696.000	7696.000	7696.000	7698.000	7698.000	7698.000	7698.000	1006
Heater 1000 W	1	9769.015	9769.015	9769.015	9769.015	9769.015	9769.015	9769.015	9769.015	656
Thermostat	1	3110.000	3110.000	3110.000	3110.000	3110.000	3110.000	3110.000	3110.000	661

Accessories Page 832 **Rail systems** Page 917 **Cable entry** Page 964 **482.6 mm (19″) installation** Page 993 **Monitoring** Page 762

CS Basic enclosures, two-door





Material:
Enclosure, roof and doors:
2.0 mm aluminium AlMg3
Base/plinth:
3.0 mm aluminium AlMg3

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/10.91
in conjunction with the gland plates available as accessories.

Supply includes:
Single-walled enclosure of all-round solid construction, with open base,
3-point locking via Ergoform padlock and lock cylinder.
Version without centre bar: overlapping doors, lockable door with r/h hinge.
Version with with centre bar: 2 lockable doors, base/plinth, rain canopy.

Detailed drawing,
available on the Internet.

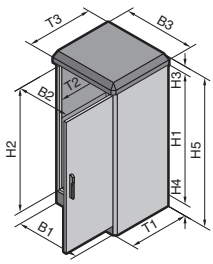
Width (B1) in mm	Packs of	1200	1200	1200	1200	Page
Height (H1) in mm		800	1200	1200	1400	
Depth (T1) in mm		400	400	500	400	
Clearance width (B2) in mm		511.4	511.4	511.4	511.4	
Clearance height (H2) in mm		711.4	1111.4	1111.4	1311.4	
Clearance depth (T2) in mm		349	349	449	349	
Rain canopy width (B3) in mm		1250	1250	1250	1250	
Rain canopy height (H3) in mm		75	75	75	75	
Rain canopy depth (T3) in mm		450	450	550	450	
Base/plinth height (H4) in mm		100	100	100	100	
Overall height (H5) in mm		975	1375	1375	1575	
Model No. CS without centre bar	1	**9784.110**[1)]	**9784.120**	**9784.140**	**9784.130**	
Model No. CS with centre bar	1	**9784.010**[1)]	**9784.020**	**9784.040**	**9784.030**	
Accessories						
Concrete base/plinth	1	9765.089	9765.089	9765.086	9765.089	842
One-piece gland plate	1 set	2 x 9785.017	2 x 9785.017	2 x 9785.020	2 x 9785.017	852
Gland plate, divided	1 set	2 x 9785.011	2 x 9785.011	2 x 9785.014	2 x 9785.011	852
Cable entry plates	1 set	4320.700	4320.700	4320.700	4320.700	852
Mounting plate for one half of the enclosure	1	9765.090	9765.092	9765.092	9765.098	916
Mounting plate	1	9765.190	9765.191	9765.191	9765.192	916
Mounting angles 482.6 mm (19″) for one half of the enclosure	2	7685.000	7688.000	7688.000	7689.000	1006
Divider kit for mounting angles 482.6 mm (19″)	2	7696.000	7696.000	7696.000	7696.000	1006
Heater 1000 W	1	9769.015	9769.015	9769.015	9769.015	656
Thermostat	1	3110.000	3110.000	3110.000	3110.000	661

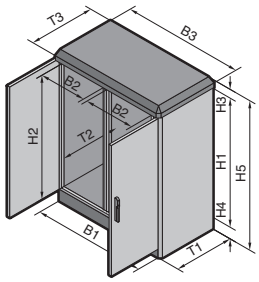
[1)] Extended delivery times.

Accessories Page 832 **Rail systems** Page 917 **Cable entry** Page 964 **482.6 mm (19″) installation** Page 993 **Monitoring** Page 762

CS modular enclosures







Technical specifications:
Basic module:
Solid top and sides, solid base with 4 gland plates (width 600 mm with 2 gland plates).
Double-walled rear panel screw-fastened from the inside.
Double-walled door with Ergoform padlock handle with 3-point locking, foamed-in PU seal. Gas pressurised spring as door stay.
Double side panel across the enclosure and base/plinth, screw-fastened from the inside, screws not visible from the outside.
Rain canopy, 75 mm high, hinged, 25 mm projection on all sides.
Base/plinth, 100 mm high.

Material:
Enclosure, roof and side panel:
2.0 mm aluminium AlMg3
Base/plinth:
3.0 mm aluminium AlMg3

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/10.91, complies with NEMA 3R.

Supply includes:
Twin-walled, fully assembled enclosure, consisting of basic module, roof, side panels and base/plinth.

Note:
Modular enclosure sheet steel, zinc-plated, on request.

Property rights:
German patents
no. 196 09 699 and 196 09 704
German utility model
no. 296 23 678
European patents
no. 0 886 899 and 0 886 900
with validity for FR, IT, GB, SE
US patents no. 6,109,053 and 5,971,511
South Korean patents
no. 0 334 548 and 0 325 930
Japan. patent no. 3 401 015

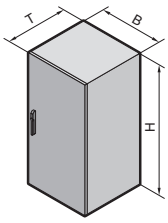
Detailed drawing,
available on the Internet.

Width (B1) in mm	Packs of	600	800	800	1200	Page
Height (H1) in mm		1200	1200	1600	1200	
Depth (T1) in mm		600	500	600	600	
Clearance width (B2) in mm		511.4	711.4	711.4	511.4	
Clearance height (H2) in mm		1111.4	1111.4	1511.4	1111.4	
Clearance depth (T2) in mm		554	454	554	554	
Rain canopy width (B3) in mm		700	900	900	1300	
Rain canopy height (H3) in mm		75	75	75	75	
Rain canopy depth (T3) in mm		650	550	650	650	
Base/plinth height (H4) in mm		100	100	100	100	
Overall height (H5) in mm		1375	1375	1775	1375	
Model No. CS	1	**9751.125**	**9751.145**	**9751.165**	**9752.125**	
Accessories						
Concrete base/plinth	1	9765.083	9765.084	9765.085	9765.087	842
Mounting plate	1	9765.092	9765.095	9765.096	9765.191	916
Mounting angles, 482.6 mm (19″)	2	7688.000	7688.000	7690.000	7688.000	1006
Divider kit, 482.6 mm (19″)	2	7696.000	7698.000	7698.000	7696.000 + 4371.000	1006
Mounting angles, metric (T-slot)	2	–	7000.240	7000.330	7000.240	1006
Divider kit, metric	1	–	7000.100	7000.100	7000.100 + 4371.000	1006
Plastic gland plates	1	2562.500	2562.500	2562.500	2562.500	967
Metal gland plate, pre-punched	1	2562.100	2562.100	2562.100	2562.100	968
Support rails	4	4396.000	4395.000	4396.000	4396.000	927
Heater 1000 W	1	9769.015	9769.015	9769.015	9769.015	656
Thermostat	1	3110.000	3110.000	3110.000	3110.000	661
Enclosure light 48 V DC	1	9765.100	9765.100	9765.100	9765.100	955

Accessories Page 832 **Rail systems** Page 917 **Cable entry** Page 964 **482.6 mm (19″) installation** Page 993 **Monitoring** Page 762

CS modular enclosures, installation variants





Material:
2.0 mm aluminium AlMg3
Base/plinth, battery plinth:
3.0 mm aluminium AlMg3

Colour:
RAL 7035

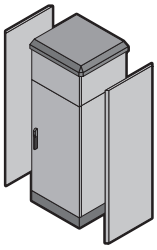
Protection category:
IP 55 to EN 60 529/10.91, complies with NEMA 3R.

Note:
Modular enclosures sheet steel, zinc-pl., available on request.

Other climate control devices, from page 826.
Please note the minimum enclosure dimensions when making your selection.

The enclosures are manufactured to order from individual modules.
Delivery times available on request.

Width (B) in mm	600	600	600	600	800	800	800	800	1200	1200	Page
Height (H) in mm	800	1000	1200	1600	1000	1200	1200	1600	1200	1200	
Depth (T) in mm	600	500	600	600	500	500	600	600	500	600	
Model No. CS	**9751.015**	**9751.075**	**9751.025**	**9751.035**	**9751.085**	**9751.045**	**9751.055**	**9751.065**	**9752.015**	**9752.025**	
Base/plinth											
Battery plinth 350 mm	**9754.025**	**9754.015**	**9754.025**	**9754.025**	**9754.035**	**9754.035**	**9754.045**	**9754.045**	2 x **9754.015**	2 x **9754.025**	
Standard base/plinth 100 mm	**9755.015**	**9755.065**	**9755.015**	**9755.015**	**9755.025**	**9755.025**	**9755.035**	**9755.035**	**9755.045**	**9755.055**	
Roof-mounted climate control											
Cooling unit	9762.012	9762.012	9762.012	9762.012	9762.012	9762.012	9762.012	9762.012	9762.012	9762.012	829
Heat exchangers	9764.012	9764.012	9764.012	9764.012	9764.012	9764.012	9764.012	9764.012	9764.012	9764.012	827
Climate hood	**9756.015**	**9756.065**	**9756.015**	**9756.015**	**9756.025**	**9756.025**	**9756.035**	**9756.035**	**9756.045**	**9756.055**	
Wall-mounted climate control											
Cooling unit	–	–	9761.012	9761.012	–	9761.032	9761.032	9761.032	9761.012	9761.012	829
Heat exchangers	–	–	9763.012	9763.012	–	9763.012	9763.012	9763.012	9763.012	9763.012	827
Roof											
Standard roof	**9757.015**	**9757.065**	**9757.015**	**9757.015**	**9757.025**	**9757.025**	**9757.035**	**9757.035**	**9757.045**	**9757.055**	
Roof for wall-mounted climate control	**–**	**–**	**9758.015**	**9758.015**	**–**	**9758.025**	**9758.035**	**9758.035**	**9758.045**	**9758.055**	
Side panel											
Side panel for 100 mm base/plinth	**9753.015**	**9753.175**	**9753.035**	**9753.045**	**9753.175**	**9753.025**	**9753.035**	**9753.045**	**9753.025**	**9753.035**	
Side panel for 350 mm base/plinth	**9753.055**	**9753.195**	**9753.075**	**9753.085**	**9753.195**	**9753.065**	**9753.075**	**9753.085**	**9753.065**	**9753.075**	
Side panel for 100 mm base/plinth and roof-mounted climate control	**9753.095**	**9753.185**	**9753.115**	**9753.125**	**9753.185**	**9753.105**	**9753.115**	**9753.125**	**9753.105**	**9753.115**	
Side panel for 350 mm base/plinth and roof-mounted climate control	**9753.135**	**9753.205**	**9753.155**	**9753.165**	**9753.205**	**9753.145**	**9753.155**	**9753.165**	**9753.145**	**9753.155**	



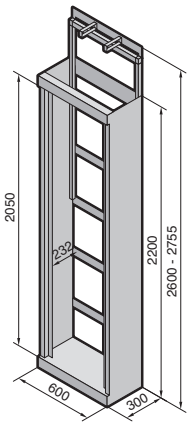
Order example:
Enclosure 600 x 800 x 600 mm of aluminium AlMg3 with standard base/plinth and roof-mounted cooling unit.

You will need:

Enclosure:	Basic enclosure 600 x 800 x 600 mm	**CS 9751.015**
Base/plinth:	Standard base/plinth 100 mm	**CS 9755.015**
Roof-mounted climate control:	Roof-mounted cooling unit	**CS 9762.012**
	Climate hood	**CS 9756.015**
Roof:	Standard roof	**CS 9757.015**
Side panel:	Side panel for 100 mm base/plinth and roof-mounted climate control	**CS 9753.095**

CS Indoor Rack





Material:
Side panels, roof and base frame:
Sheet steel, 2.0 mm
Mounting angles:
Extruded aluminium section

Surface finish:
Powder coated in textured RAL 7035
Mounting angles:
Natural aluminium, clear-chromated

Supply includes:
Screw-fastened frame, consisting of
2 side panels,
roof and base frame,
front plinth trim.
2 mounting angles,
ceiling attachment,
4 levelling feet,
4 rear panel struts,
enclosure panels, earthed.

Note:
The screw-fastened rack will accommodate metric or 482.6 mm (19″) installed equipment (to IEC 907 or IEC 297 and DIN 41 494). In addition to the basic rack, which satisfies the requirements of ETSI standard 300119-3, customised solutions can be designed in next to no time and implemented cost-effectively.

The following variants of the Indoor rack are available, amongst others:
- Solid front door
- Vented front door
- Horizontally divided doors
- Folding doors
- Overlapping doors
- Roof modules
- Cutouts in the enclosure panels
- Interior installation with system accessories

Detailed drawing,
available on the Internet.

Width in mm	Packs of	600
Height in mm		2200
Depth in mm		300
Clearance width in mm		500
Clearance height in mm		2050
Clearance depth in mm		232
Model No. CS with mounting angles 482.6 mm (19″)	1	**9790.042**
Model No. CS with mounting angles, metric	1	**9790.043**
Accessories		
Rear panel for screw fastening, sheet steel 2.0 mm	1	**9790.003**

Extended delivery times.

Accessories Page 832 **Component shelves** Page 939 **482.6 mm (19″) installation** Page 993

CS Outdoor climate control

Features

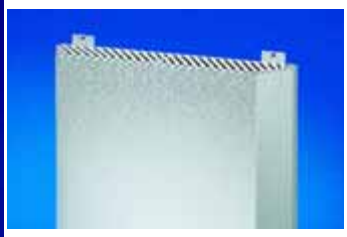


Rittal Communication Systems offer everything you need to protect your electronic equipment, from weather-tested enclosure solutions, to a variety of climate control components, through to complete security management systems. Cooling units, heat exchangers, fans and heaters especially designed for outdoor use ensure constant interior temperatures.

The protection category of IP 55 for the system as a whole is retained when using Outdoor heat exchangers and cooling units.



Flexible climate control







Climate control modules in various different output levels may be variably positioned on the door, rear panel, side panel or roof of the modular enclosure. For use in a temperature range from –33°C to +55°C (with cooling unit) or +65°C (with heat exchanger).





Cooling of the sensitive electronics in an outdoor enclosure requires **intelligent climate management.**

Rittal climate control modules keep the interior temperature at a consistently low level.



CS Toptec climate control







The **full 25 mm double wall** ensures heat exchange and minimises the influence of sunlight. The **concept for active climate control** with fixed cut-out dimensions and a depth-variable mounting frame leaves freedom of choice between a heat exchanger and a cooling unit, depending on the parameters at the installation site.

Heat exchanger for CS modular enclosures



Type 1 for roof mounting
Without microcontroller, without heater.



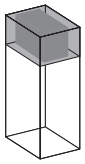
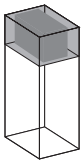
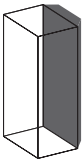
Type 2 for roof mounting
With microcontroller and heater as standard.

Mounting frame:
required for CS 9765.051.



Type 3 for wall mounting
With microcontroller and heater as standard. For external mounting on side panels and rear panels.
The picture shows the heat exchanger with designer cover (not included in the supply).

Property rights for type 1:
German patent no. 196 09 794
US patent no. 6,092,384
European patent no. 0 913 015 with validity for FR, GB, IT, SE
Japan. patent no. 23 279 576
South Korean patent no. 0 337 973

					
Model No. CS		**9764.040**	**9764.012**	**9763.012**	Page
Installation		Type 1 Roof-mounted	Type 2 Roof-mounted	Type 3 wall-mounted	
Rated operating voltage	DC (fan/ microcontroller)	48 V			
	AC (heater)	–	230 V, 50/60 Hz		
Enclosure dimensions (mm)	W H D	470 158 380	535 390 400	515 1170 151.5	
Minimum enclosure dimensions (mm)	W x H/D x H	–	–	600 x 1200	
	W x D	600 x 500	600 x 500	–	
Specific thermal output		**30 W/K**	**60 W/K**	**60 W/K**	
Heater		–	400 W	400 W	
Rated current max.	DC (fan/ microcontroller)	1.3 A	3.1 A	3.2 A	
	AC (heater)	–	1.9 A	1.9 A	
Temperature range		–33°C to +65°C			
Air throughput of fans – unimpeded air flow	internal/external circuit fan	345 m^3/h	830 m^3/h	830 m^3/h	
Temperature control		without[1]	Microcontroller[2]		
Type of connection		Plug panel			
Weight		7 kg	17 kg	31 kg	
Protection category to EN 60 529/10.91		IP 55 (internal circuit to external circuit)			
Material (enclosure)		Aluminium		Sheet steel	
Surface finish		spray-finished in RAL 7035			
CE Declaration of Conformity		■	■	■	
UL/CUL		–	■	■	
Accessories					
Cable connection kit		9765.110	9765.110	9765.110	663
Thermostat		3110.000	–	–	661
Mounting frame		–	**9765.051**	–	–

[1] Customers may fit their own temperature control (SK 3110.000).
[2] With temperature-controlled activation of the components (internal/external circuit, heater). Setpoints are preset. Modifications can only be made by arrangement.

CS modular enclosures Page 823

CS Outdoor climate control

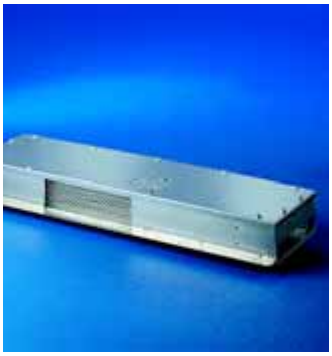
Heat exchanger for CS modular/compact enclosures



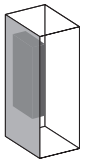
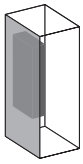
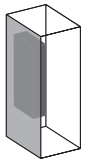
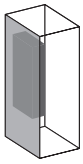
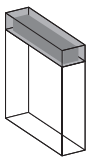
Type 4 for door mounting
With microcontroller and heater as standard.



Type 5 for door mounting
With microcontroller and heater as standard.



Type 6 for roof mounting
For installation in the rain canopy of the 1100 mm wide CS compact enclosure.

							
Model No. CS		**9768.032**	**9768.012**	**9768.042**	**9768.062**	**9767.012**	Page
Installation		Type 4 Door-mounted		Type 5 Door-mounted		Type 6 Roof-mounted[1]	
Rated operating voltage	DC (fan/ microcontroller)	48 V					
	AC (heater)	230 V, 50/60 Hz		–			
Enclosure dimensions (mm)	W H D	480 1005 110	510 1005 150	445 1050 150	575 1050 195	855 95 240	
Minimum enclosure dimensions (mm)	W H	600 1200	650 1200	650 1300	800 1300	1100 –	
Specific thermal output		**40 W/K**	**60 W/K**	**85 W/K**	**120 W/K**	**15 W/K**	
Heater		400 W		–			
Rated current max.	DC (fan/ microcontroller)	2.0 A	3.2 A	6.4 A	7.9 A	1.0 A	
	AC (heater)	1.9 A		–			
Temperature range		–33°C to +65°C					
Air throughput of fans – unimpeded air flow	Internal/external circuit fan	515 m^3/h	530 m^3/h	1020 m^3/h		100 m^3/h	
Temperature control		Microcontroller[2]				without[3]	
Type of connection		Plug panel			Sub-D connector 13W3[4]	Sub-D connector 3W3[4]	
Weight		13 kg	15 kg		32 kg	6 kg	
Protection category to EN 60 529/10.91		IP 55 (internal circuit to external circuit)					
Material (enclosure)		Aluminium					
Surface finish		spray finished in RAL 7035					
CE Declaration of Conformity		■	■	■	■	■	
UL/CUL		■	■	■	■	–	
Accessories							
Cable connection kit		9765.110	9765.110	9765.115	–	–	663
Thermostat		–	–	–	–	3110.000	661

[1] For compact enclosures.
[2] With temperature-controlled activation of the components (internal/external circuit, heater). Setpoints are preset. Modifications can only be made by arrangement.
[3] Customers may fit their own temperature control (SK 3110.000).
[4] Special connection cable included in the supply.

CS modular enclosures Page 823 **CS compact enclosures** Page 819

Cooling units for CS modular enclosures



Type 1 for roof mounting
With microcontroller and 400 watt heater as standard.

Mounting frame:
required for CS 9765.051.



Type 2 for door mounting
With microcontroller and 400 watt heater as standard.

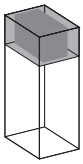
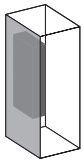
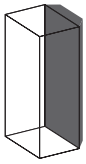
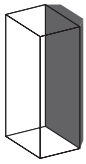
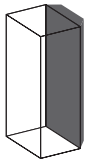
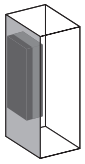


Type 3 for wall mounting
With microcontroller and 400 watt heater as standard. Alternative mounting on the rear panel or side panels is also possible.
The picture shows the cooling unit with designer cover (not included in the supply).



Type 4 for universal installation
With microcontroller and 800 watt heater as standard.

Installation options:
- in the door or rear panel
- in the side panel

								
Model No. CS		**9762.012**	**9768.100**	**9761.012**	**9761.032**	**9761.042**	**9768.150**	Page
Installation		Type 1 Roof-mounted	Type 2 Door-mounted	Type 3 Wall-mounted			Type 4 Universal	
Rated operating voltage	AC	230 V, 50/60 Hz						
Enclosure dimensions (mm)	W H D	535 390 400	430 1070 210	515 1170 151,5	695 1132 151,5	776 1100 250	400 1050 310	
Minimum enclosure dimensions (mm)	W x H/D x H	–	600 x 1200	600 x 1200	800 x 1200	800 x 1200	600 x 1200	
	W x D	600 x 500	–	–	–	–	–	
Useful cooling output EN 814	**L35 L35** **L35 L50**	**900 W** **750 W**	**900 W** **650 W**	**900 W** **750 W**	**1400 W** **1050 W**	**2500 W** **2000 W**	**1500 W** **1250 W**	
Heater		400 W	400 W	400 W	400 W	400 W	800 W	
Rated current max.		4.0 A	4.0 A	3.5 A	5.5 A	10.0 A	5.8 A	
Start-up current max.		10.7 A	11.6 A	10.8 A	15.5 A	32.0 A	19.0 A	
Power consumption	L35 L35 L35 L50	460 W 520 W	470 W 530 W	450 W 520 W	900 W 1000 W	1450 W 1650 W	940 W 1045 W	
Coolant		R134a						
p. max.		26 bar	28 bar	24 bar	24 bar	28 bar	28 bar	
Temperature range		–33°C to +55°C						
Air throughput of fans – unimpeded air flow	Internal circuit fan External circuit fan	570 m^3/h 570 m^3/h	580 m^3/h 430 m^3/h	880 m^3/h 880 m^3/h	850 m^3/h 880 m^3/h	1450 m^3/h 1450 m^3/h	850 m^3/h 680 m^3/h	
Temperature control		Microcontroller[1)]						
Type of connection		Plug panel						
Weight		29 kg	31 kg	45 kg	48 kg	52 kg	40 kg	
Protection category to EN 60 529/10.91		IP 55 (internal circuit to external circuit)						
Material (enclosure)		Aluminium		Sheet steel		Aluminium		
Surface finish		spray-finished in RAL 7035						
CE Declaration of Conformity		■	■	■	■	■	■	
UL/CUL		–	–	■	■	–	–	
Accessories								
Cable connection kit		9765.105	9765.105	9765.105	9765.105	9765.105	9765.105	663
Mounting frame		**9765.051**	–	–	–	–	–	–

[1)] With temperature-controlled activation of the components (internal/external circuit, heater). Setpoints are preset. Modifications can only be made by arrangement.

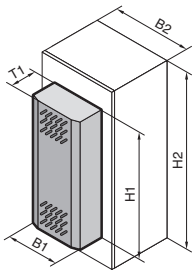
CS modular enclosures Page 823

CS Outdoor climate control

Climate control units for CS Toptec







B = Width
T = Depth

1 Heat exchanger/cooling unit
With three mounting positions for internal mounting, partial internal mounting or external mounting plus a choice between cooling via front or rear door.

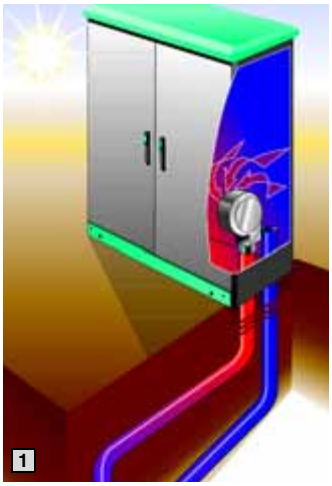
2 Heat exchanger/cooling unit
built into the CS Toptec

			Heat exchanger		Cooling units		Page
Model No. CS			**9776.100**	**9776.150**	**9776.500**	**9776.550**	
Installation			Universal		Universal		
Rated operating voltage	DC (fan/ microcontroller)		48 V		–		
	AC (heater)		–		230 V, 50/60 Hz		
Enclosure dimensions (mm)		B1 H1 T1	500 1000 150	500 1000 260	500 1000 150	500 1000 260	
Minimum enclosure dimensions mm			800 x 1200		800 x 1200		
Specific thermal output			**85 W/K**	**135 W/K**	**–**	**–**	
Useful cooling output EN 814		**L35 L35 L35 L50**	**–**	**–**	**1000 W/1020 W 680 W/555 W**	**1500 W/1425 W 1150 W/1060 W**	
Heater			–	–	400 W		
Rated current max.	DC (fan/ microcontroller)		4.5 A	8.0 A	–	–	
	AC (heater)		–		2.8 A/3.3 A	22.0 A/20.0 A	
Start-up current max.			–		7.5 A/8.3 A	8.0 A/9.6 A	
Power consumption		L35 L35 L35 L50	–		540 W/670 W 630 W/750 W	900 W 1000 W	
Coolant			–		R134a		
p. max.			–		28 bar	28 bar	
Temperature range			–		–33°C to +55°C		
Air throughput of fans – unimpeded air flow	Internal/ external circuit fan		530 m^3/h	–	580 m^3/h 630 m^3/h	880 m^3/h 950 m^3/h	
Temperature control			Microcontroller[1)]				
Type of connection			Plug panel		Female multi-point connector 9-pole		
Weight			25 kg	32 kg	31 kg	45 kg	
Protection category to EN 60 529/10.91			IP 55 (internal circuit to external circuit)				
Material (enclosure)			Aluminium				
Surface finish			spray-finished in RAL 7035				
CE Declaration of Conformity			■	■	■	■	
UL/CUL			–	–	–	–	
Accessories							
Cable connection kit			9765.115	9765.115	–	–	663

[1)] With temperature-controlled activation of the components (internal/external circuit, heater). Setpoints are preset. Modifications can only be made by arrangement.

CS Toptec Page 817

Geothermal heat exchangers, Terravent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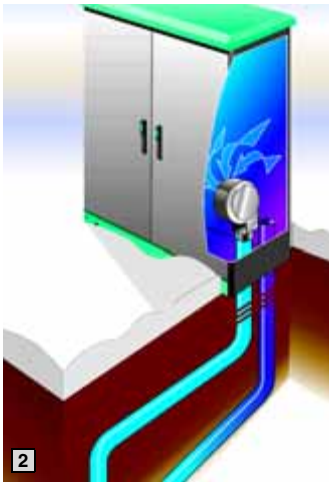
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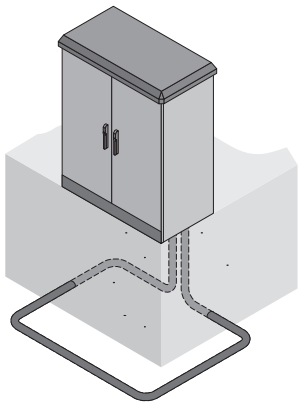
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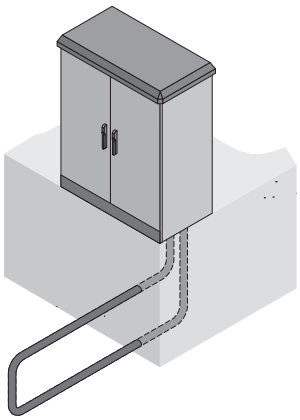
4

Rittal Terravent
This ingeniously simple and effective climate control principle, which uses geothermal effects to cool and heat, underscores Rittal's expertise in all aspects of enclosure systems for outdoor siting. The geothermal heat transmitter is suitable for use whenever earthworks are required to install an outdoor enclosure.
Throughout the world, at a certain depth beneath the earth's crust, the temperature is always roughly the same, whatever the season; and this fact is used to cool and heat outdoor enclosures. The hot air from the enclosure is forced into a pipe with a radial or axial fan.

A pipeline system laid in the earth cools the air, which in turn is used to cool the enclosure. In cool external temperatures, the temperature of the air inside the pipeline system rises, and this achieves a heating effect.
The inlet and outlet points of the pipes can be freely positioned to effectively avoid hot spots. Depending on the application, the air discharge and air inlet can be positioned in the base/plinth, in the roof, or at freely selectable positions inside the enclosure.

Benefits of the geothermal heat exchanger
- With the sealed ventilation system, ambient air is unable to penetrate the enclosure, which in turn prevents the ingress of humidity and aggressive pollutants from the air.
- Minimal energy requirements, since only a radial or axial fan is required to generate the air flow. The fan motors are available in various operating voltages.
- Reduction of noise emissions, since there are no active climate control components mounted on the outside of the enclosure.
- Minimal maintenance required for the fan system.
- Control, monitoring and alarm relays can be achieved via the CMC.

US patent no. 6,523,602

1 With a radial or axial fan, the hot air from the enclosure is forced into a pipe. A pipeline system laid in the earth cools the air, which in turn is used to cool the enclosure.

2 In cool external temperatures, the temperature of the air inside the pipeline system rises, and this achieves a heating effect.

3 **With the pipeline system laid horizontally**
Excellent heat dissipation is effected, because the pipeline system is laid horizontally on one level. Major excavation work is, however, required.

4 **With the pipeline system laid vertically**
The pipeline system to and from the outdoor enclosure is laid in a pit. The effects of heat dissipation are somewhat less pronounced, but the pipes are simply laid in a pit where the supply lines to the enclosure can also be laid.

Terravent supply includes
- Calculation of the maximum required and maximum possible thermal output.
- Calculation and dimensioning of the fan, the pipe diameter, the pipe length, and the best way of laying the pipe.
- Determination of the optimum positioning of the air inlet and air outlet on the enclosure.
- Supply of all components, pre-assembly of the fan pipe fixtures in the outdoor enclosure, installation of the fan, insulation of the enclosure (where necessary).

Packs of	Model No. CS
1 set	9767.500

Examples of temperature variation,
see page 1185.

System accessories

Base from page 834



Base/plinth TS 834
Base/plinth 843
Base 848

Walls from page 853



Side panels 853
Divider panels 857
Divider panels for module plates 858
Module plates 859

Baying system from page 861



For TS 8 861
Baying at the installation site 862
Baying for transport 865
Baying 866
TS 8 corner enclosures 868

Doors/locks from page 869



Door variants 869
Modular front design for TS 8 874
Viewing panels/operating panels 877
Lock systems 881
Hinges 893
Door, internal 895

Roof/wall mounting from page 899



Roof 899
Wall mounting 905

Interior installation from page 909



Mounting plates ... 909
Rail systems ... 917
Assembly components ... 931
Component shelves for frame attachment ... 939
Component shelves for attachment to the 482.6 mm (19″) frame ... 944
Component shelves for attachment to the 482.6 mm (19″) system punchings ... 946
Divider kits for component shelves ... 949
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Cable management from page 964



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Gland plates ... 966
Cable gland ... 972
Cable gland ... 973
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482.6 mm (19″) installation from page 993



Swing frame ... 993
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Mounting kits for mounting angles ... 1008
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482.6 mm (19″)/metric installation ... 1013
Patch panels for copper technology ... 1021
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Human/machine interface from page 1030



Handles, external mounting accessories ... 1030
Connection components ... 1034
Connection components, front assembly ... 1035
Front assembly ... 1036
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Monitors, keyboards ... 1046
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Mouse, mousepad ... 1054
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LED compact ... 1041
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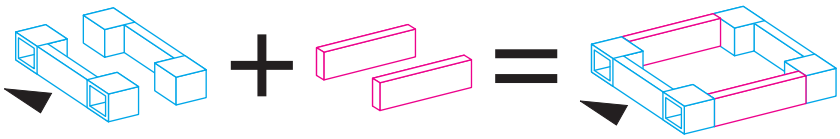
Rittal software service from page 1060



Planning/project management/selection ... 1060
Operational reliability/service ... 1063

Base/plinth TS



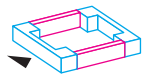
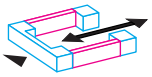
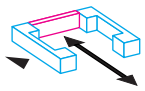
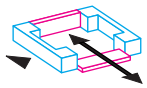
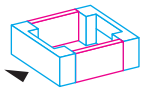
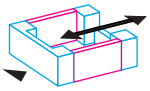
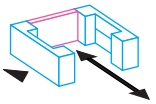
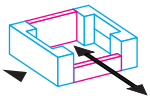
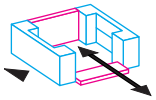
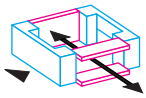
One Model No.
for the
base/plinth components
front and rear.

One Model No.
for the
base/plinth trims
at the sides.

A complete
base/plinth.

Modular base/plinth diversity

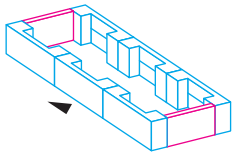
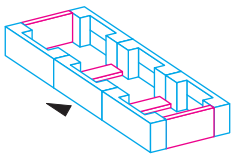
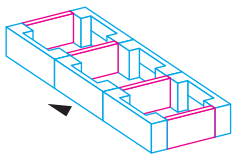
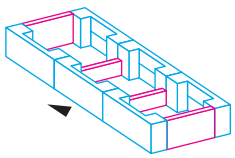
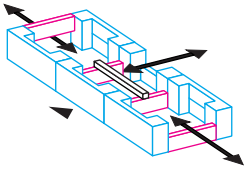
Regardless of the enclosure depth:
The base/plinth components at the front and rear, pre-configured with corner pieces, are always the same for the chosen width.
Only the side trim panels are selected according to the enclosure depth and the required base/plinth configuration. The modular concept produces exceptional advantages in terms of cost and function.
Assembly to the enclosure is conveniently carried out from the outside. The base/plinth interior offers diverse opportunities for mounting levels for cable management.

Base/plinth height	Basic form	Cable gland options			Stabilisation of bayed base/plinth	
100 mm						
200 mm						

Function and cost benefits

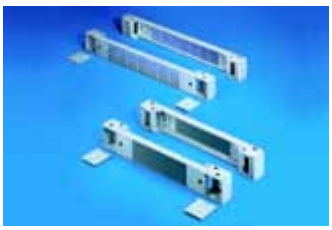
Fewer parts, more opportunities, lower purchasing, storage and assembly costs – the formula for the new modular base/plinth system.

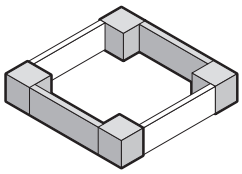
The following table shows three bayed base/plinths in 200 mm height illustrating a wide range of possible solutions and the potential savings with trim panels compared with the previous 200 mm base/plinth system each with two trim panels of 100 mm height at the sides.

Sample solutions	New supply includes	Functional benefits	Savings potential compared with twelve 100 mm trim panels
	3 packs of base/plinth components 1 pack of base plinth trim panels 200 mm high	Continuous cable chamber	2 trim panels 200 mm
	3 packs of base/plinth components 1 pack of base plinth trim panels 200 mm high 1 pack of base plinth trim panels 100 mm high 1 pack of base/plinth baying bracket TS 8601.100 (packs of 20) 4 units are required for this solution	Additional stabilisation for transportation purposes with base/plinth trim rotated through 90°	2 trim panels 200 mm 2 trim panels 100 mm
	3 packs of base/plinth components 2 packs of base plinth trim panels 200 mm high	Shielding of the base/plinths from one another	4 trim panels 200 mm
	3 packs of base/plinth components 1 pack of base plinth trim panels 200 mm high 1 pack of base plinth trim panels 100 mm high	Additional connection of the base/plinth	2 trim panels 200 mm 2 trim panels 100 mm
	Other options: • Cable entry at the side by mounting a 100 mm base/plinth trim panel (top or bottom). • Cable entry from the rear by dismantling one or more trim panels of the base/plinth components. • Cable clamp rail fitted on the 100 mm high trim panel.		









Base/plinth components front and rear

Sheet steel
for TS, CM, CL, PC-TS, IW, FR(i), TE
Base/plinth component consisting of one trim panel and two pre-configured corner pieces.
In 200 mm high base/plinth components, one trim panel is divided into two for cable entry.

Material:
Sheet steel, spray-finished
Cover caps plastic RAL 9005/7035

Supply includes:
1 set =
2 base/plinth components, 4 cover caps,
4 screws and captive nuts M12
for mounting on the enclosure.

Accessories:

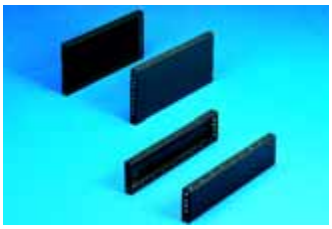
Base assembly plate SO 2817.000,
see page 838.
Filter mat for trim panel, vented,
see page 840.

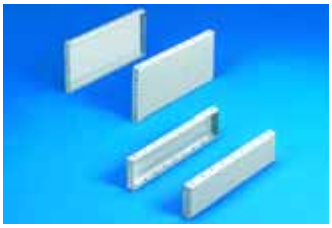
Detailed drawing,
see page 836.

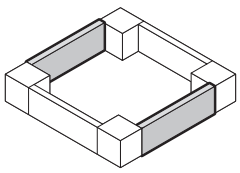
German patent no. 198 60 408

For enclosure width mm	Version	Colour		Model No. TS	
		RAL 7022	RAL 7035	100 mm high	200 mm high
400	Solid	■	–	**8601.400**	**8602.400**
500	Solid	■	–	**8601.500**	**8602.500**
600	Solid	■	–	**8601.600**	**8602.600**
	Solid	–	■	**8601.605**[1]	**8602.605**
	Vented	–	■	**7825.601**[2]	**–**
	Vented with designer cover	–	■	**7825.603**	**–**
800	Solid	■	–	**8601.800**	**8602.800**
	Solid	–	■	**8601.805**	**8602.805**
	Vented	–	■	**7825.801**	**–**
	Vented with designer cover	–	■	**7825.803**	**–**
850	Solid	■	–	**8601.850**	**8602.850**
1000	Solid	■	–	**8601.000**	**8602.000**
1100	Solid	■	–	**8601.300**	**8602.100**
1200	Solid	■	–	**8601.200**	**8602.200**

[1] **Version in RAL 9005: TS 8601.602**
[2] **Version in RAL 9005: TS 7825.605**







Base/plinth trim, side

Sheet steel
for TS, CM, CL, PC-TS, IW, FR(i), TE
For mounting between the base/plinth components. At 200 mm height, two 100 mm base/plinth trims may be used. Base/plinth trim panels (100 mm high) may be installed rotated through 90° in order to stabilise bayed base/plinth components.

Material:
Sheet steel, spray-finished

Supply includes:
1 set =
2 base/plinth trim panels, including parts for attaching to the base/plinth components.

Also required:

Base/plinth baying bracket TS 8601.100,
see page 838,
when base/plinth components are fitted by rotating through 90°.

Accessories:

Assembly bolts for base/plinth,
see page 838.

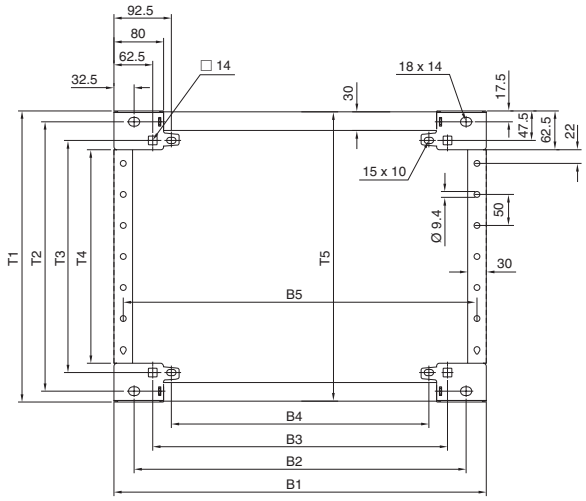
Detailed drawing,
see page 836.

For enclosure depth mm	Colour		Model No. TS	
	RAL 7022	RAL 7035	100 mm high	200 mm high
300	■	–	**8601.030**	**8602.030**
400	■	–	**8601.040**	**8602.040**
500	■	–	**8601.050**	**8602.050**
600	■	–	**8601.060**	**8602.060**
	–	■	**8601.065**	**8602.065**
800	■	–	**8601.080**	**8602.080**
	–	■	**8601.085**	**8602.085**
900	–	■	**8601.095**[1]	**8602.095**
1000	–	■	**8601.015**[2]	**8602.015**

[1] **Version in RAL 9005: TS 8601.090**
[2] **Version in RAL 9005: TS 8601.010**

Base/plinth TS

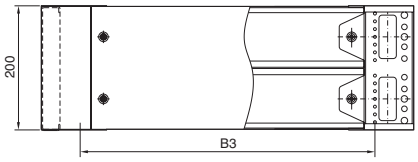
Base/plinth TS
Sheet steel



Plinth, 100 mm high



Plinth, 200 mm high



Description of the hole patterns

B1/T1 = External dimensions

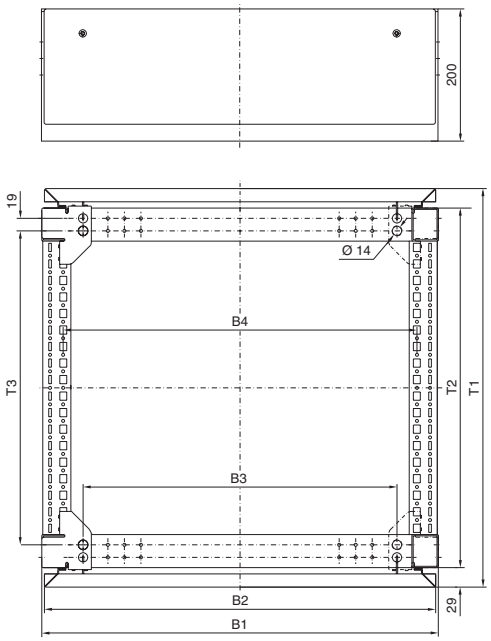
B2/T2 = For screw-fastening in the thread of the enclosure corner piece from below

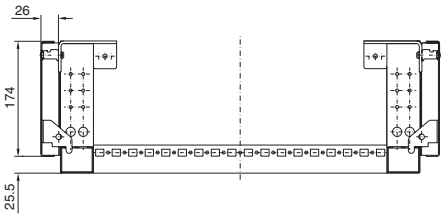
B3/T3 = for screw-fastening with captive nuts to the enclosure base from below or above

All holes (B2 – B4/T2 – T4) may be used for screw-fastening to the base.

Base/plinth components front/rear						Base/plinth trim, side						Page
Width mm	B1	B2	B3	B4	B5	Depth mm	T1	T2	T3	T4	T5	
–	–	–	–	–	–	300	269	235	175	144	268	835
400	400	335	275	215	370	400	369	335	275	244	368	835
500	500	435	375	315	470	500	469	435	375	344	468	835
600	600	535	475	415	570	600	569	535	475	444	568	835
800	800	735	675	615	770	800	769	735	675	644	768	835
850	850	785	725	665	820	–	–	–	–	–	–	835
1000	1000	935	875	815	970	900	869	835	775	744	868	835
1100	1100	1035	975	915	1070	–	–	–	–	–	–	835
1200	1200	1135	1075	1015	1170	1000	969	935	875	844	968	835

Cable chamber
for TS





Enclosure width mm	400	600	800	1200
B1	400	600	800	1200
B2	392	592	792	1192
B3	275	475	675	1075
B4	335	535	735	1135

Enclosure depth mm	500	600
T1	502	602
T2	444	544
T3	375	475



Cable chamber

for TS
The front and rear sheet steel trim panels are simply plugged in at the bottom by means of a guide, and are screw-fastened to the frame. Cable chambers can be bayed at the sides if required; they are bayed in the same way as base frames.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts for mounting on the enclosure.

For enclosures		Model No. TS
Width mm	Depth mm	
400	500	**8600.455**
400	600	**8600.465**
600	500	**8600.655**
600	600	**8600.665**
800	500	**8600.855**
800	600	**8600.865**
1200	500	**8600.255**
1200	600	**8600.265**

To order versions in RAL 7032, please use order number extension .XX0.
For primed version, please add extension .XX1 to the Model No.
Delivery times on request.

Accessories:

Side panels for cable chamber,
see page 837.

Detailed drawing,
see page 836.



Side panels

for cable chamber
Attachment is achieved by simply plugging in, flipping up and screw-fastening.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosure depth mm	Packs of	Model No. TS
500	2	**8600.510**
600	2	**8600.520**

To order versions in RAL 7032, please use order number extension .0X0.
For primed version, please add extension .XX1 to the Model No.
Delivery times on request.



Transport castors

for base/plinth TS
For locating onto the base/plinth corner piece 100 or 200 mm high by raising or tilting.

Load capacity:
Maximum permissible load per twin castor:
static: 100 kg

Supply includes:
1 set =
4 twin castors,
2 with, 2 without brakes.

Colour:
RAL 7022

Note:
Base/plinth trims, side, must be fitted in a free-standing position.

Ground clearance mm	Model No. TS
100	**8800.390**

Also required:

Base/plinth trim, side,
see page 835.

Base/plinth TS



Base assembly plate

for base/plinth TS and base/plinth, complete
For fastening the plinth to the floor without moving the enclosure or the bayed enclosure suite. For assembly screws up to 12 mm Ø.

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. SO
10	**2817.000**



Fastening bolts

For
- **Base/plinth TS**
- **Base/plinth, complete**
- **Base/plinth, stationary**

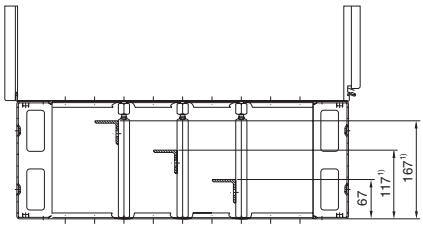
For mounting on base/plinth trim panels, side. The lockable assembly bolt allows the installation of cable clamp rails and standard C rails.

Material:
Hexagon steel, zinc-plated, passivated,
19 mm across flats

Base/plinth trim panel mm high	Packs of	Model No. SZ
100	10	**2819.000**
200	10	**2819.200**

Accessories:

Cable clamp rail,
see page 979.



1) only for height 200 mm





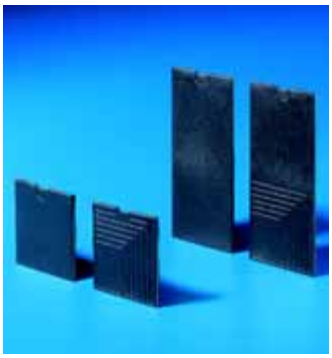
Base/plinth baying brackets

for base/plinth TS
Essential if the trim panels are mounted rotated through 90° for additional stabilisation during the transportation of bayed enclosures.
Additionally required for each trim panel: 2 units.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Screws M8 x 16 mm.

Packs of	Model No. TS
20	**8601.100**



Cover cap

for base/plinth components TS
As a replacement.

Material:
Plastic ABS

Colour:
RAL 9005

For base/plinth height mm	Packs of	Model No. TS
100	4	**8601.130**
200	4	**8601.140**





Base/plinth trim

with brush strip
for TS base/plinth

The supplement to the modular base/plinth concept (see page 834).
May also be exchanged retrospectively for the front or rear trim panel of the base/plinth components 100 or 200 mm high. By rotating the trim panel, the hammer-head strip for cable attachment may optionally be positioned at the top or bottom.

Material:
Sheet steel, spray-finished

Width mm	Height mm	Model No. TS	
		RAL 7022	RAL 7035
600	100	**8601.610**	**8601.615**

Accessories:

Cable tie SZ 2597.000,
see page 982.



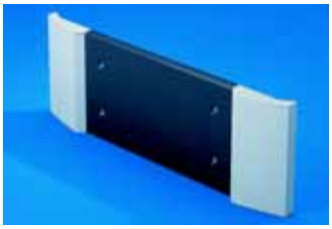
Connecting plinth trim

for base/plinth TS

For covering gaps in the case of back to back or corner enclosure suites. Simply push in between the trim panel and the corner piece before tightening the screws.

Material:
Sheet steel

For base/plinth height mm	Colour RAL	Packs of	Model No. TS
100	7022	2	**8601.110**
200	7022	2	**8601.120**
100	7035	2	**8601.115**
200	7035	2	**8601.125**





Base/plinth trim

for base/plinth TS

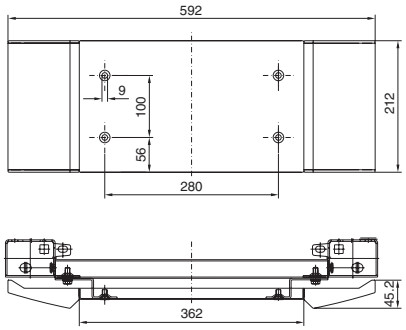
To continue the design of the
- bottom front door of PC enclosures based on TS,
- door of the IW enclosure.

The base/plinth trim is screw-fastened to the corner pieces of the TS base/plinth components from the outside.

Material:
Sheet steel, spray-finished
Designer covers: Extruded aluminium section

Colour:
RAL 7015
Designer covers: RAL 7035

Width mm	Height mm	Model No. PC
600	200	**8360.920**



Base/plinth TS



Base/plinth, stationary

for PC-TS, IW
Adapted to the design of the enclosure,
Height 100 mm, front projection.

Material:
Sheet steel, 2.0 mm

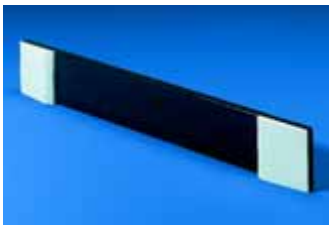
Colour:
RAL 7035
design component, front: RAL 7015

Supply includes:
1 design component, front
1 base/plinth component, rear
2 base/plinth trims, side

For depth mm	Model No. PC
600	**8800.920**
800	**8800.930**

Accessories:

Attachment opportunities for:
- Twin castors PC 4634.500, see page 848,
- Levelling feet PS 4612.000, see page 848,
- Fastening bolts for cable clamp rails SO 2819.000, see page 838,
- Support bracket PS 4183.000, see page 933.





Designer cover

for base/plinth TS
to continue the design of the
- Designer glazed door TS
- Designer sheet steel door TS

The trim panel is simply exchanged for the existing front trim panel of the base/plinth.

Material:
Sheet steel, spray-finished
design elements: Aluminium, spray-finished

Colour:
RAL 7024,
Design elements: RAL 7035

Supply includes:
Assembly parts.

Enclosure width mm	Version	Model No. DK
800	Solid	**7825.804**
800	Vented	**7825.806**



Filter mat

For
- **Base/plinth component, vented**
- **Base/plinth component, vented with designer trim**

To cover the trim panel in the base/plinth component.
The mounting frame simply clips into the base/plinth trim panel from behind.
Filter class G3 to DIN EN 779.

Supply includes:
Assembly frame.

For enclosure width mm	Packs of	Model No. DK
600	1	**7561.500**
800	1	**7581.500**

Spare filter mat

Supply includes:
Filter mat without mounting frames for base/plinth trim panels up to 800 mm wide.

	Packs of	Model No. DK
Spare filter mats	5	**7582.500**



Base/plinth components front and rear

Stainless steel for TS, CM, CL

Material:
Stainless steel 1.4301

Surface finish:
Brushed

Supply includes:
Assembly parts including 4 screws and captive nuts M12 for mounting on the enclosure.

100 mm high:
2 trim panels front/rear

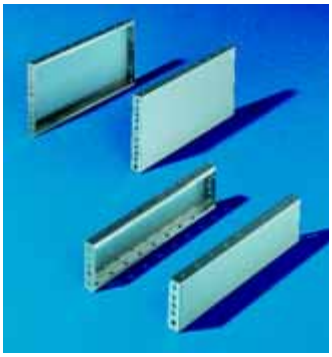
200 mm high:
2 corner pieces with removable trim panel, 1 trim panel front/rear.

For enclosure width mm	Model No. TS	
	100 mm high	200 mm high
600	**8701.600**	**8702.600**
800	**8701.800**	**8702.800**
1200	**8701.200**	**8702.200**

To order enclosures in stainless steel 1.4404 (AISI 316L) please add the extension .X05 to the Model No.
Delivery times on request.

Accessories:

Base/plinth trim, modular (perforated plate), see page 841.



Base/plinth trim, side

Stainless steel for TS, CM, CL

For mounting between the base/plinth components. At 200 mm height, two 100 mm base/plinth trims may be used.
Base/plinth trim (100 mm high) may be installed rotated through 90° in order to stabilise bayed base/plinth components.

Material:
Stainless steel 1.4301

Surface finish:
Brushed

Supply includes:
2 base/plinth trim panels, including parts for attaching to the base/plinth components.

For enclosure depth mm	Model No. TS	
	100 mm high	200 mm high
400	**8701.040**	**8702.040**
500	**8701.050**	**8702.050**
600	**8701.060**	**8702.060**

To order enclosures in stainless steel 1.4404 (AISI 316L) please add the extension .0X5 to the Model No.
Delivery times on request.

Also required:

Base/plinth baying bracket TS 8601.100, see page 838, when base/plinth components are fitted by rotating through 90°.

Accessories:

Assembly bolts for base/plinth, see page 838.
Levelling feet PS 4612.000, see page 848.

1 Base/plinth comp., front/rear
2 Base/plinth trim panels, side
3 Base/plinth corner piece
4 Trim panel, removable

Description of the hole patterns

B/T =
enclosure dimensions

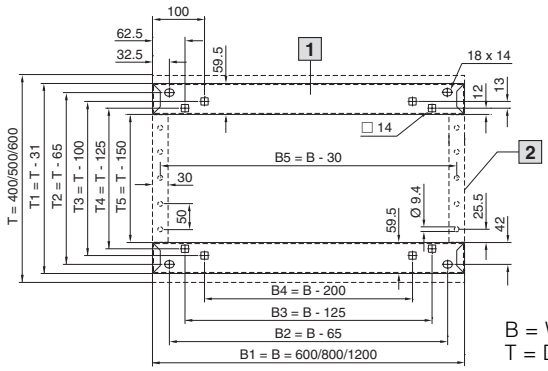
B1/T1 =
external dimensions

B2/T2 =
for screw-fastening in the thread of the enclosure corner piece from below

B3/T3 =
for screw-fastening with captive nuts to the enclosure base from below or above

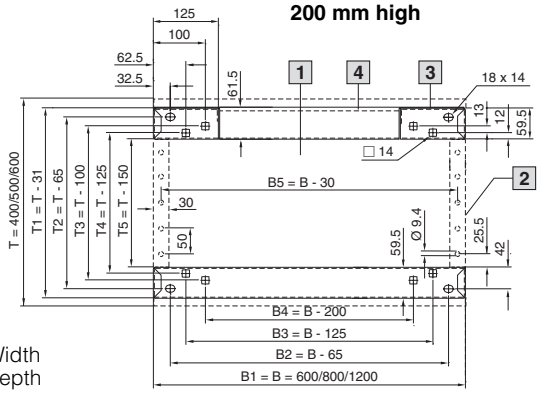
All holes (B2 – B4/T2 – T4) may be used for screw-fastening to the base.

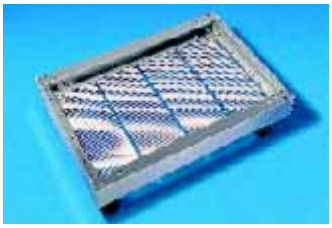
100 mm high



B = Width
T = Depth

200 mm high





Base/plinth trim, modular

for base/plinth TS and base/plinth, complete stainless steel

For cable routing in the stainless steel base/plinth, i.e. if levelling feet SO 2889.000 or SO 2890.000, see page 845, are used.
Width: 175 mm.

Material:
Stainless steel 1.4301

Supply includes:
4 base/plinth trim panels.

For enclosure depth mm	No. of base/plinth trims required for base/plinth width[1]				Model No. SO
	600 mm	800 mm	1000 mm	1200 mm	
400	3	4	5	6	**2907.000**
500	3	4	5	6	**2908.000**
600	3	4	5	6	**2913.000**

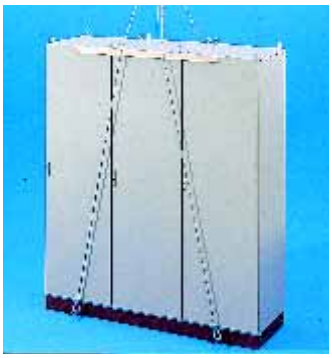
[1] If the surface is to be completely sealed.

Accessories:

Cable tie SZ 2597.000, see page 982.

Base/plinth TS





Transport plinth

for TS

For the transportation of heavy, bayed enclosure suites. Available in 200 mm increments from 2 to 5 m.
Transport plinths can have 2 tubes welded to receive cross-bars for transportation.
Variable punchings to suit all enclosure widths of 600 mm and above.

Surface finish:
Primed in reddish-brown rust-inhibiting paint, optionally spray-finished.

Note:
Please state the required width and depth of the enclosure suite when ordering.

Version with transport tubes

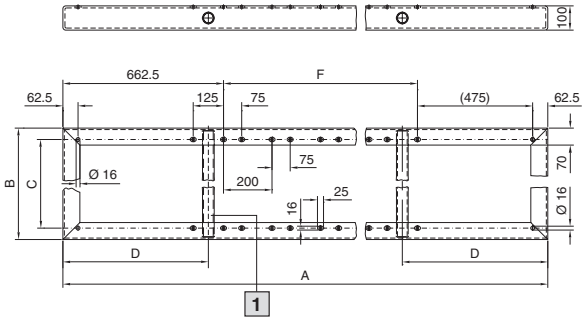
Colour	Packs of	Model No. SO
Primed, reddish-brown rust-inhibiting paint	1	**1228.010**
Similar to RAL 7022	1	**1228.110**
Similar to RAL 7032	1	**1228.210**
Similar to RAL 7035	1	**1228.310**

Delivery times on request.

Version without transport tubes

Colour	Packs of	Model No. SO
Primed, reddish-brown rust-inhibiting paint	1	**1228.000**
Similar to RAL 7022	1	**1228.100**
Similar to RAL 7032	1	**1228.200**
Similar to RAL 7035	1	**1228.300**

Delivery times on request.



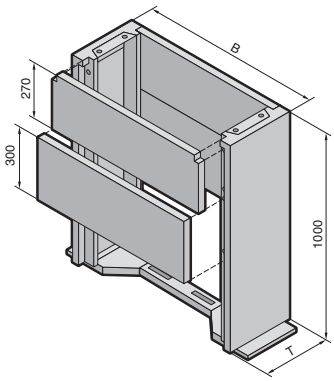
1 Optionally transport tube, internal diameter 40 mm and wall thickness of 3.25 mm

A	2000	2200	2400	2600	2800	3000	3200	3400
D	300	300	300	300	300	600	600	600
F	800	1000	1200	1400	1600	1800	2000	2200

A	3600	3800	4000	4200	4400	4600	4800	5000
D	600	600	600	1000	1000	1000	1000	1000
F	2400	2600	2800	3000	3200	3400	3600	3800

Enclosure depth mm	B	C
400	369	275
500	469	375
600	569	475
800	769	675





Concrete base/plinth

for Outdoor enclosures

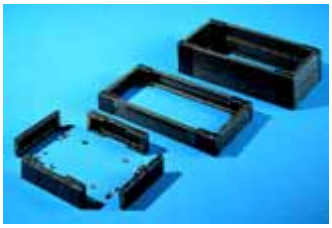
The base/plinth is made from pre-cast concrete sections which are easily fitted in situ. Front/rear base/plinth plates may be withdrawn for servicing works.
Total height approx. 1000 mm,
excavation depth approx. 700 mm.

Material/Surface finish:
Light concrete, untreated

Supply includes:
1 base plate,
2 side parts,
two-piece rear and front panel,
assembly parts
and fastening screws for mounting the enclosure.

For enclosures/housings		Model No. CS
Width (B) mm	Depth (T) mm	
Outdoor compact enclosures		
800	350	**1616.300**
1200	350	**1616.310**
CS compact enclosures		
800	320	**9765.080**
1100	320	**9765.081**
CS modular and basic enclosures		
600	400	**9765.182**
600	500	**9765.082**
600	600	**9765.083**
800	400	**9765.088**
800	500	**9765.084**
800	600	**9765.085**
1200	400	**9765.089**
1200	500	**9765.086**
1200	600	**9765.087**
CS Toptec		
650	650	**9765.184**
800	650	**9765.185**

Extended delivery times.
Other modules available on request.



Base/plinth, complete

Sheet steel for
AE, AK, AP, AP universal console, ES, PC-ES
Consisting of:
Trim panels at the front and rear with fitted corner pieces and side trim panels.

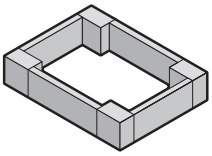
Material:
Sheet steel, spray-finished

Colour:
RAL 7022

Supply includes:
Assembly parts including 4 screws and captive nuts M12 for mounting on the enclosure.

100 mm high:
4 corner pieces, 2 trim panels front/rear,
2 trim panels, side

200 mm high:
4 corner pieces, 1 trim panel front/rear x 200 mm,
2 trim panels front/rear x 100 mm,
4 trim panels, side



Base/plinth for ES, PC-ES, AP universal console

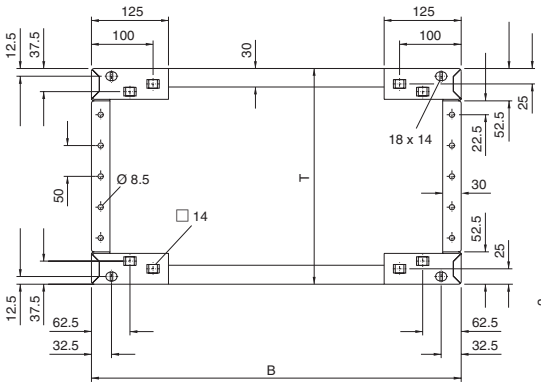
For enclosures/consoles			Model No. SO	
Width mm	Depth mm	Base/plinth depth (T) mm	100 mm high	200 mm high
600	400	350	**2804.200**	**2805.200**
600	500	450	**2807.200**	**2808.200**
600	600	550	**2813.200**	**2814.200**
600	800	750	**2846.200**	**2847.200**
800	400	350	**2823.200**	**2824.200**
800	500	450	**2829.200**	**2830.200**
1000	400	350	**2909.200**	**2910.200**
1200	400	350	**2836.200**	**2837.200**
1200	500	450	**2839.200**	**2840.200**
1600	400	350	**2905.200**	**2906.200**
1800	500	450	**2903.200**	**2904.200**

Base/plinth for AE, AK, AP

For enclosures/consoles			Model No. SO	
Width mm	Depth mm	Base/plinth depth (T) mm	100 mm high	200 mm high
600	300	279	**2816.200**	**2826.200**
600	400	370	**2911.200**	**2912.200**
800	300	279	**2818.200**	**2828.200**
800	400	370	**2901.200**	**2902.200**
800	500	440	**2841.200**	**2842.200**
1000	300	279	**2801.200**	**2802.200**
1000	400	370	**2891.200**	**2892.200**
1200	400	370	**2921.200**	**2922.200**
1200	500	440	**2851.200**	**2852.200**
1600	400	370	**2961.200**	**2962.200**
1600	500	440	**2863.200**	**2864.200**

Accessories:

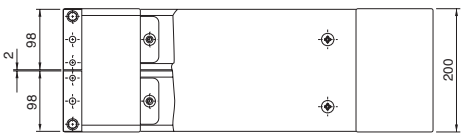
Assembly bolts for base/plinth,
see page 838.
Base assembly plate,
see page 838.



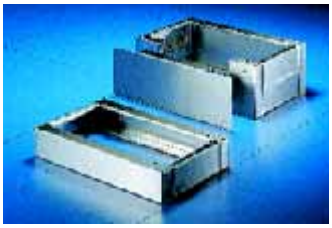
Plinth, 100 mm high



Plinth, 200 mm high



Base/plinth



Base/plinth, complete

Stainless steel
for ES, PC-ES, AP

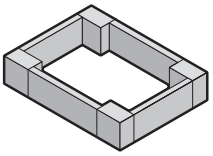
Material:
Stainless steel 1.4301

Surface finish:
Brushed

Supply includes:
Assembly parts including 4 screws and captive nuts M12 for mounting on the enclosure.

100 mm high:
2 trim panels front/rear,
2 trim panels, side

200 mm high:
2 corner pieces with removable trim panel,
1 trim panel front/rear, 4 trim panels, side.



Accessories:

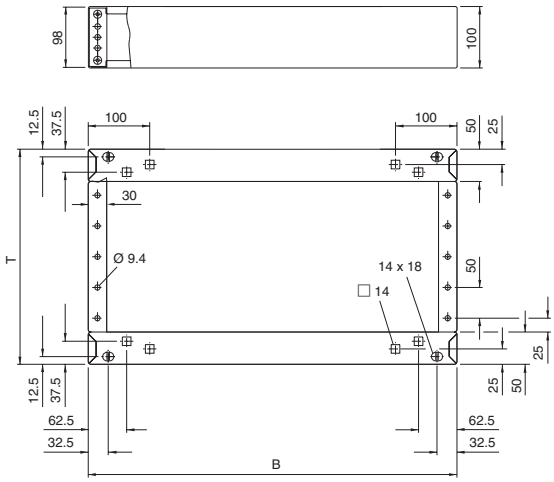
Levelling feet,
see page 845.
Base/plinth trim, modular (perforated plate),
see page 841.

Base/plinth for ES, PC, AP

For enclosures/consoles		Model No. SO	
Width mm	Depth mm	100 mm high	200 mm high
600	400	**2865.000**	**2875.000**
600	500	**2868.000**	**2876.000**
600	600	**2855.000**	**2877.000**
800	400	**2869.000**	**2878.000**
800	500	**2866.000**	**2879.000**
800	600	**2856.000**	**2880.000**
1000	400	**2867.000**	**2885.000**
1200	400	**2870.000**	**2886.000**
1200	500	**2860.000**	**2887.000**

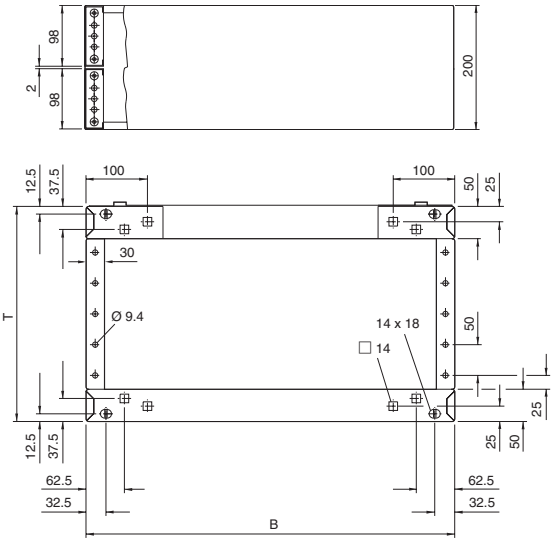
To order enclosures in 1.4404 (AISI 316L) please add the extension .500 to the Model No.
Delivery times available on request.

Plinth, 100 mm high



T = Enclosure depth – 50 mm
B = Enclosure width

Plinth, 200 mm high



T = Enclosure depth – 50 mm
B = Enclosure width



Transport castors

for base/plinth, complete
For locating onto the base/plinth corner piece 100 or 200 mm high by raising or tilting.

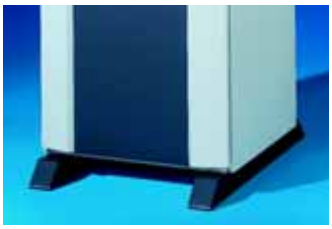
Load capacity:
Maximum permissible static load:
100 kg per twin castor

Supply includes:
1 set =
4 twin castors,
2 with, 2 without brakes.

Colour:
RAL 7022

Ground clearance mm	Model No. PS
60	**4570.000**





Cross-member

for TS, PC, IW, ES, AP
adjustable

To increase stability, the cross-member is positioned 138 mm above the base frame of the enclosure at the front and rear. For deeper enclosures, the rear part may be extended and screw-fastened again. For screw-fastening to the floor and enclosure with mounting hole at the sides front and rear. The castors and levelling feet may be secured to the welded nuts M12.

Material:
Sheet steel, spray-finished

Colour:
RAL 7015

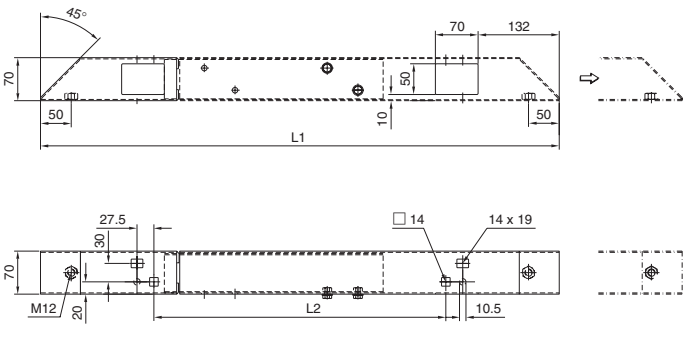
Note:
For mobile use, the cross-member must be screw-fastened twice in the corners of the enclosure.

For	Enclosure depth mm	L1	L2	Packs of	Model No. TS/AP
TS, PC, IW, ES	400	644	275	2	**8601.450**
	500	744	375		
	600	844	475	2	**8601.680**
	800	1044	675		
AP	400	634	320	2	**2697.450**
	500	734	390		

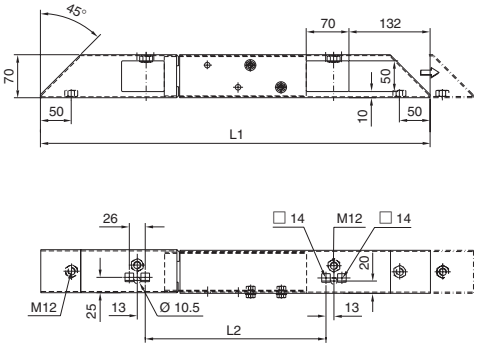
Accessories:

Attachment opportunities for
- Twin castors PC 4634.500, see page 848.
- Levelling feet PS 4612.000, see page 848.

TS 8601.450, TS 8601.680



AP 2697.450





Cast feet

For IW

For secure siting of
- enclosure for tower PC

or
- other own assemblies

Depth 700 mm

Material:
Cast aluminium

Colour:
RAL 7035

Supply includes:
Assembly parts.

Packs of	Model No. IW
2	**6902.920**

Accessories:

Base mount CP 6147.000, see page 233.
Twin castors, see page 848.



Levelling feet

For direct mounting underneath the base/plinth TS and the base/plinth, complete.
For unhindered access e.g. when cleaning the floor, and to compensate for floor irregularities.

Load capacity:
Maximum permissible static load:
400 kg per levelling foot

Adjustment range:
M12: 55 mm – 125 mm
M16: 45 mm – 120 mm

Material:
Stainless steel 1.4301

Thread	Packs of	Model No. SO
M12	4	**2889.000**
M16	4	**2890.000**

German utility model no. G 9406 468

Base/plinth



Base/plinth, mobile

For PC enclosure based on ES
Not assembled

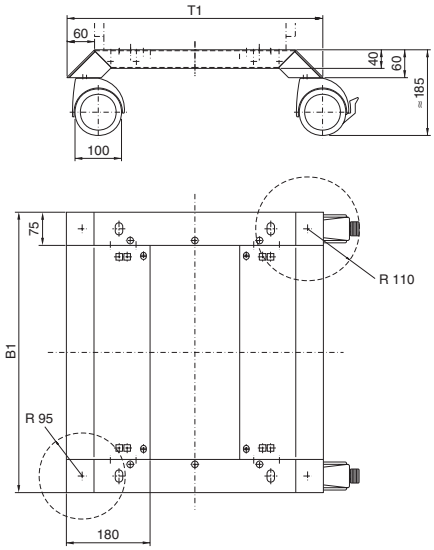
Load capacity per castor:
120 kg static load

Total load:
360 kg static load

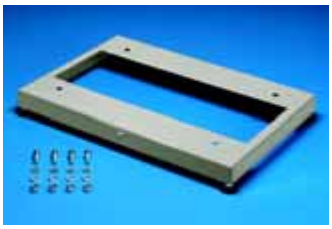
Colour:
RAL 7035/RAL 5018

German registered design
No. M 92 01 858
German patent no. 42 00 315
IR design no. DM/023580
with validity for DE, FR, IT

For enclosures		Model No. SO
Width mm	Depth mm	
600	600	**2981.235**
600	800	**2982.235**



B1 = Enclosure width
T1 = Enclosure depth + 150 mm



Base/plinth

for EL
The base/plinth can be fitted onto all EL enclosures with a centre part depth of 316 or 416 mm. Holes must be made for attaching to the centre part. A drilling template is supplied. These may additionally be fitted with castors for use as a mobile base/plinth.

Material:
Sheet steel

Colour:
RAL 7044

Supply includes:
4 levelling feet and assembly parts.

For centre part depth mm	Packs of	Height mm	Model No. DK/VR
316	1	50	**7505.300**
416	1	50	**7505.400**
Additional castors for base/plinth	4	50	**3805.500**





Under-floor frame

for DK-TS, FR(i)
For siting the enclosure on a false floor when heavy equipment is installed.

Material:
Sheet steel

Colour:
RAL 7044

Supply includes:
Baying connector and base attachment plate.

Width mm	Height mm	Depth mm	Model No. DK
600	400	1000	**7855.340**





Base/plinth

for RNC
To accommodate a maximum of two 3-way socket strips DK 7240.110 and also as storage space for cables.
Height: 60 mm.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
4 levelling feet and 2/4 cable shunting rings.

For RNC enclosures 42 HP (1/2 19″)		Model No. DK
Width mm	Depth mm	
342	280	**7870.710**

For RNC tower enclosures 84 HP (19″) vertical		Model No. DK
Width mm	Depth mm	
342	400	**7870.715**

Accessories:

Socket strip,
see page 746.



Stabiliser bracket

for base/plinth TS
The stabiliser bracket may be retrospectively screw-fastened to the outside of the base/plinth corner pieces.

Load capacity:
Up to a maximum of 80 kg static load.

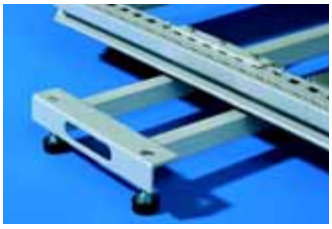
Material:
Sheet steel, spray-finished

Colour:
RAL 7035, warning markings RAL 2002

Supply includes:
Assembly parts.

Packs of	Model No. DK
2	**7825.150**





Stabiliser

for server racks DK-TS, FR(i)
The pull-out stabiliser is quickly and easily retro-fitted to the base frame of an FR(i) or TS 8 server rack and only extended when necessary. It may be used in combination with levelling feet and/or castors.

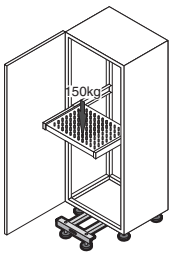
Load capacity:
Up to a maximum of 150 kg static load.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Enclosure depth mm	Model No. DK
900	**7825.200**
1000	**7825.250**

Note:
The stabiliser cannot be used with gland plates or base/plinths.



Base



Levelling feet

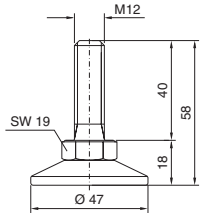
18 – 43 mm high
To compensate for height differences with floor irregularities. Thread length 40 mm.
Assembly thread M12.

Maximum permissible static load:
approx. 300 kg per levelling foot.

For:
- Baying system TS 8
- PC enclosure system
- Pedestal base plate CP 6137.035 – CP 6137.535
- Pedestal CP 6141.XXX
- Industrial workstations
- flexRack(i)

Packs of	Model No. PS
4	**4612.000**

Also required:
For mounting on the TS base/plinth:
Base/plinth adaptor TS 8800.220,
see page 849.





Levelling feet

85 – 115 mm high
For mounting on TS, ES and PC enclosures, for easier floor cleaning and to compensate for floor irregularities.
Height 100 mm.

Maximum permissible static load:
350 kg per levelling foot.

Packs of	Model No. SO
4	**2859.000**

Material:
Feet: Brass, nickel-plated
Threaded bolts and mounting plates:
Stainless steel 1.4301

Supply includes:
Assembly parts to the enclosure.



1



2



3



4

Twin castors

Mounting thread M12 x 20.

Maximum permissible static load (per castor) kg	Ground clearance mm	Lock	Packs of		Colour	Model No.
40	50	4 without	1 set	1	Black	**4611.000**
75	85	2 with, 2 without	1 set	2	Black with grey running surface	**6148.000**
120	125	2 with, 2 without	1 set	3	Black	**4634.500**
				4		**7495.000**

For:
- Baying system TS 8
- PC enclosure system
- Pedestal base plate CP 6137.035 – CP 6137.535
- Pedestal CP 6141.XXX
- Industrial workstations
- flexRack(i)
- Data Rack

Also required:
For mounting on the TS base/plinth:
Base/plinth adaptor for twin castors TS 8800.290,
see page 849.



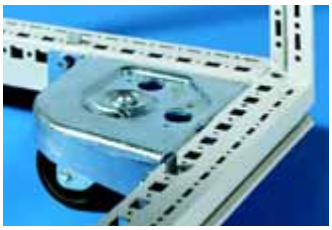
Transport castors

for TE
For easy transportation between sites.
The castors may additionally be screw-fastened to the levelling feet in the corner areas within the base frame.
Ground clearance: 58 mm

Permissible static load:
300 kg per enclosure

Supply includes:
1 set = 4 castors
including assembly parts.

Packs of	Model No. TE
1 set	7000.672



Transport kit

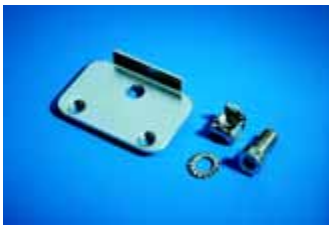
for DK-TS
For convenient movement of the network enclosures or as a mobile rack. Ground clearance approx. 40 mm.

Permissible static load:
750 kg per enclosure

Supply includes:
1 set = 4 castors (2 steerable ones)
including assembly parts.

Packs of	Model No. DK
1 set	7825.900

Note:
Only for enclosures without gland plates or gland plate frames.



Base/plinth adaptor

for levelling feet
Connection component for fastening M12 levelling feet PS 4612.000 to the TS base/plinth.

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. TS
4	8800.220

Also required:
Levelling feet, PS 4612.000,
see page 848.



Base/plinth adaptor

for twin castors
Connection component for mounting twin castors to the TS base/plinth.

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. TS
4	8800.290

Also required:
Base/plinth trim, side,
see page 835,
in all situations where a twin castor is mounted.

Base



Width divider

Divides 1200 mm wide TS enclosure into two halves.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
1 set =
1 bracket each for right/left,
2 compensation plates for the top,
assembly parts.

Packs of	Model No. TS
1 set	**8800.200**

Also required:

Depending on the installation situation:
TS punched rail 18 x 38 mm,
see page 923.
PS punched section without mounting flange,
see page 925.



1st mounting situation:
Two mounting plates side by side.
Two mounting plates (from 600 mm wide enclosures) in a 1200 mm wide enclosure permit independent positioning and easy handling.

Also required:

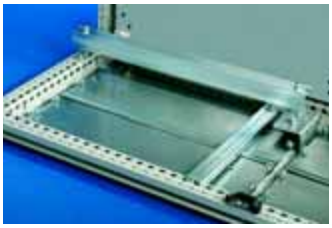
In accordance with the enclosure depth:
4 TS punched rails 18 x 38 mm at the bottom,
see page 923,
1 PS punched section without mounting flange 23 x 73 mm at the top,
see page 925.



2nd mounting situation:
System support rails, fitted on the left.
Whilst heavy installed equipment rests on the system support rails, the remaining floor space is left free, e.g. for unhindered cable entry.

Also required:

2 system support rails PS 4361.000,
see page 926.
1 TS punched rail 18 x 38 mm
in accordance with the enclosure depth
(included with the supply of the standard enclosure).



3rd mounting situation:
Cable clamp rail, installed on the left.
With 1200 mm wide enclosures, the width divider allows cable entry and cable clamping to be arranged differently on the left and right of the enclosure.

Also required:

1 cable clamp rail PS 4191.000,
see page 979.
1 TS punched rail 18 x 38 mm
in accordance with the enclosure depth
(included with the supply of the standard enclosure).



Base assembly bracket

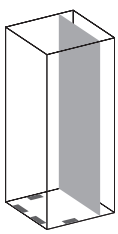
for TS, ES, AP universal console
For anchoring the enclosure at any position of the base frame, particularly in cases where the existing holes in the frame or base tray cannot be used due to the installed equipment or because the substructure prevents them from being used.

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. TS
4	**8800.210**

Note:
Additional holes in the base are required for mounting.









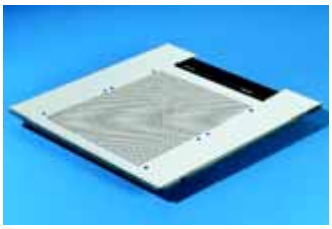
Reinforcement bracket

for TS, ES, AP universal console
For use as an additional stabiliser to the clamping straps when populated enclosures are screw-fastened via the base tray to the base/ plinth or pallet for transportation purposes.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts

Packs of	Model No. TS
4	**8800.830**



One-piece gland plate

vented, for DK-TS, FR(i)
The slotted gland plate has a cutout in the rear for cable entry, which is concealed with brush strips. The gland plate can be mounted or removed even when installation is already completed.

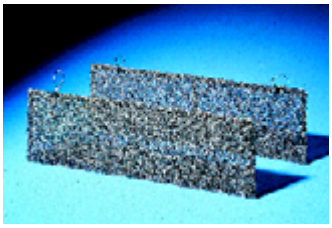
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts

For enclosures		Model No. DK
Width mm	Depth mm	
600	600	**7825.660**
600	800	**7825.680**
600	900	**7825.690**
600	1000	**7825.610**
800	600	**7825.860**
800	800	**7825.880**
800	900	**7825.890**
800	1000	**7825.810**

Accessories:

Filter mat for gland plate,
see page 851.



Filter mat

for one-piece gland plate
To conceal the slots in the gland plate. Depending on the enclosure depth, several filter mats may be required for complete concealment.

Enclosure depth mm	Filter mats required for complete concealment	Packs of	Model No. VR
600	1	1	**3804.000**
800	2		
900	2		
1000	3		



Gland plate modules

for DK-TS
For use in the base frame of the network enclosure. Used in exchange for an existing gland plate of the same depth or in conjunction with a multi-piece gland plate for pre-configuered TS 8 enclosures, see page 852.

Gland plate depth:
237.5 mm

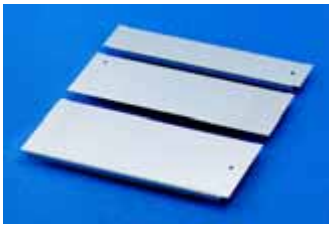
Design for cable entry:
With brush strip

Vented design:
With filter mat for concealing the holes and nylon tape for securing from the inside or outside.

For enclosure width mm	Model No. DK	
	Design	
	for cable entry	Vented
600	**7825.361**	**7825.360**
800	**7825.381**	**7825.380**

Material:
Sheet steel, zinc-plated, passivated.

Base



Gland plate, multi-piece

for DK-TS, pre-configured
Gland plates including sliding panel with foam rubber cable clamp strip for cable entry.

Material:
Sheet steel, zinc-plated, passivated.

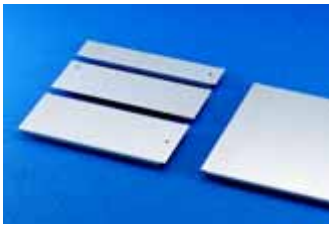
Supply includes:
Assembly parts.

Note:
For the size variant 800 x 800 mm, the gland plate included with the supply for pre-configured network enclosures should be additionally used. Also suitable for combined use with vented gland plate modules and those for cable entry.

For enclosures		Packs of	Model No. DK
Width mm	Depth mm		
800	800	1 set	**7825.382**
800	900	1 set	**7825.383**
800	1000	1 set	**7825.384**

Accessories:

Gland plate modules,
see page 851.



Gland plates

for CS basic enclosures
For sealing the base opening and for cable entry.

Material:
Aluminium, 2 mm.

Supply includes:
Assembly parts.

For enclosure dimensions		Packs of	Model No. CS	
Width mm	Depth mm		One-piece	Divided
600	400	1 set	**9785.017**	**9785.011**
600	500	1 set	**9785.020**	**9785.014**
800	400	1 set	**9785.018**	**9785.012**
800	500	1 set	**9785.019**	**9785.013**
1200	400	1 set	**2 x 9785.017**	**2 x 9785.011**
1200	500	1 set	**2 x 9785.020**	**2 x 9785.014**



Cable entry plates

for CS basic enclosures
For simple, fast cable entry and sealing in conjunction with cable entry grommets.
To replace individual modules in the divided gland plates.

German patent no. 42 07 281
European patent no. 0 560 119
with validity for FR, GB, IT, NL
Japan. Patent no. 2 533 052
US patent no. 5,422,436

Enclosure width mm	Cutouts per plate	Packs of	Model No. PS
600	5	2	**4320.700**
800	8	2	**4321.700**
1200	5	2	**2 x 4320.700**

Material:
Sheet steel, zinc-plated, passivated.

Supply includes:
Assembly parts.

Accessories:

Cable entry grommets,
see page 965.





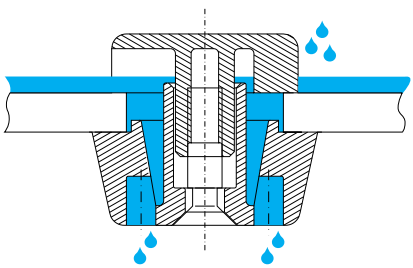
Condensate discharge

For reliable discharge from the inside and protection against splashes from the outside (labyrinth effect).
A hole diameter of 16 mm is required.
(With AE sheet steel, the holes are already provided in the base.)

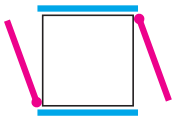
Material:
Polyamide

Colour:
Similar to RAL 7035

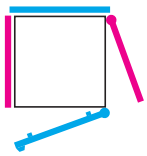
Packs of	Model No. SZ
6	**2459.000**



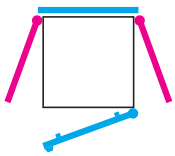
Side panels

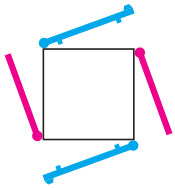


The TS side panel provides new dimensions in convenient access to the TS interior, thanks to the option of hinging.



Important:
Red areas (side panels), hinged and unhinged, must always be opposite one another. Blue areas (doors/rear panels) must always be opposite one another.





Only one surface on each vertical enclosure section may be hinged.



Note:
Climate control side panels with integral cooling module may be retrofitted instead of an enclosure side panel, see page 589.





Automatic potential equalisation

Side panels, screw-fastened, sheet steel

for TS
Easy positioning on the frame with the location aid. Six or eight enclosure panel holders with earthing insert ensure automatic potential equalisation and higher EMC protection. Earthing bolts with contact surface are pre-integrated.

Material:
1.5 mm sheet steel

Surface finish:
Dipcoat-primed,
powder-coated in textured RAL 7035 on the outside.

Protection category:
IP 55 to EN 60 529/10.91

Supply includes:
Assembly parts.

Note:
Enclosure panel holders may optionally be fitted from the inside or outside of the enclosure.
Area available for population:
External dimension – 100 mm.

Accessories:

Earth straps,
see page 960.

German patent no. 198 01 720

For enclosures		Packs of	Model No. TS
Height mm	Depth mm		
800	600	2	**8173.235**
1000	600	2	**8174.235**
1200	600	2	**8170.235**
1200	800	2	**8175.235**
1200	1000	2	**8176.235**
1400	500	2	**8145.235**
1400	600	2	**8146.235**
1400	800	2	**8148.235**
1600	500	2	**8165.235**
1600	600	2	**8166.235**
1600	800	2	**8168.235**
1800	400	2	**8184.235**
1800	500	2	**8185.235**
1800	600	2	**8186.235**
1800	800	2	**8188.235**
1800	900	2	**8189.235**
1800	1000	2	**8180.235**
2000	400	2	**8104.235**
2000	500	2	**8105.235**
2000	600	2	**8106.235**
2000	800	2	**8108.235**
2000	900	2	**8109.235**
2000	1000	2	**8100.235**
2200	600	2	**8126.235**
2200	800	2	**8128.235**
2200	900	2	**8129.235**

For RAL 7032 version, use order extension .200; to order primed version, use extension .300.
Delivery times on request.



Side panels, screw-fastened, sheet steel

for TS
To finish a complete enclosure. Easy attachment on the inside vertical enclosure frame member. Earthing inserts ensure automatic potential equalisation and a higher degree of EMC protection. Earth studs with contact surfaces are already included.

Material:
Stainless steel 1.4301, 1.5 mm

Surface finish:
Brushed, grain 240

Protection category:
IP 55 to EN 60 529/10.91

Supply includes:
Assembly parts.

For enclosures		Packs of	Model No. TS
Height mm	Depth mm		
1800	400	2	**8700.840**
1800	500	2	**8700.850**
2000	600	2	**8700.060**

To order enclosures in stainless steel 1.4404 (AISI 316L), use Model No. 8705.XXX.
Delivery times on request.

Detailed drawing,
see side panels for modular front design, page 876.

Side panels





Side panels, asymmetrical

for TS

The alternative to the standard side panel for improved visual appearance in the event of back to back, back to side or corner baying. The gap (A) which occurs with standard side panels is reduced to a standard dimension (B), see technical drawing.
In the case of the TS 8 corner enclosure, an asymmetrical side panel is included in the supply. The number of additionally required asymmetrical side panels depends on the baying variant which is selected.

Material:
Sheet steel, 1.5 mm

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/10.91

Supply includes:
Assembly parts.

For enclosures		Packs of	Model No. TS
Height mm	Depth mm		
1800	400	2	**8184.500**
1800	500	2	**8185.500**
1800	600	2	**8186.500**
2000	400	2	**8104.500**
2000	500	2	**8105.500**
2000	600	2	**8106.500**
2000	800	2	**8108.500**
2200	600	2	**8126.500**

For RAL 7032 version, use order extension .400; to order primed version, use extension .450. Delivery times on request.

Asymmetrical side panel



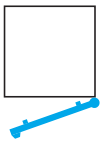
Side panel

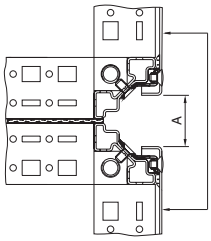


Rear panel



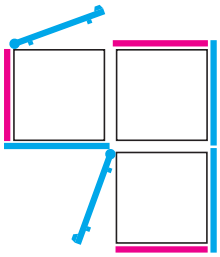
Door

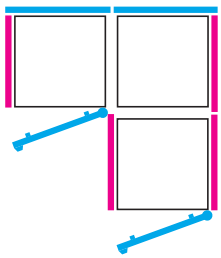


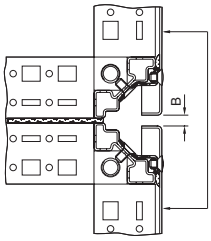


Side panel Standard

Corner baying

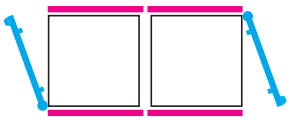




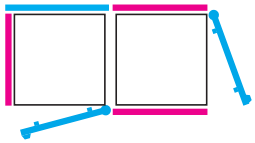


Side panel asymmetrical

Back-to-back baying



Side-to-back baying







Hinges

for
TS side panels, screw-fastened, sheet steel
TS side panels, asymmetrical

The 180° opening angle allows unhindered access. May be installed optionally from the inside or outside of the enclosure: Simply replace 3 enclosure panel holders with hinges. Despite the hinge, the protection category of the enclosure is retained.

Material:
Die-cast zinc

Supply includes:
Assembly screws.

Version	Packs of	Model No. TS
RAL 7035	6	**8800.110**
RAL 7032	6	**8800.010**

German utility model no. 298 20 604
US patent no. 6,238,027

Note:
Side panel and door hinges may only be installed on the same enclosure section when using a 180° door hinge (see page 893).





Side panel, plug-type

for TS
Side panel, lockable with 3 options:
- With lock
- Internal latch

Plug-and-play compatibility system: insert side panel into the base, press upwards into the recessed handle, and rotate the two toggle locks – there is no faster way of finishing off an entire enclosure suite at the side.
In addition, the Rittal cable routing components may be attached to the integral top hat rail.

Material:
Sheet steel, spray-finished

Colour:
RAL 7035/RAL 9005

Protection category:
IP 20/NEMA 1

Supply includes:
2 side panels with toggle locks.

Note:
The punched section (with mounting flanges) must be notched for use on the outer level.

For enclosures		Model No. DK	
Height mm	Depth mm	RAL 7035	RAL 9005
800	600	**7824.086**	–
1000	600	**7824.106**	–
1200	600	**7824.126**	–
1200	800	**7824.128**	–
1200	900	**7824.129**	**7816.129**
1200	1000	**7824.120**	**7816.120**
1400	600	**7824.146**	–
1400	800	**7824.148**	–
1600	600	**7824.166**	–
1600	800	**7824.168**	–
1800	600	**7824.186**	–
1800	800	**7824.188**	–
1800	900	**7824.189**	**7816.189**
1800	1000	**7824.180**	–
2000	600	**7824.206**	–
2000	800	**7824.208**	–
2000	900	**7824.209**	**7816.209**
2000	1000	**7824.200**	**7816.200**
2200	600	**7824.226**	–
2200	800	**7824.228**	–
2200	900	**7824.229**	**7816.229**
2200	1000	**7824.220**	**7816.220**

Accessories:

TS punched section with mounting flange, 17 x 73 mm, notched,
see page 921.
Internal latch DK 7824.510,
see page 855.



Lock

for side panel, plug-type
With security lock insert no. 3524 E, in exchange for the existing toggle locks.

Supply includes:
4 locks, 2 keys.

Packs of	Model No. DK
4	**7824.500**





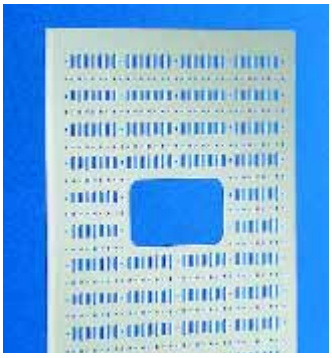
Internal latch

for side panel, plug-type
Additional security is achieved via the option of latching the side panel from the inside.
The side panels on the frame section are screw-fastened from the inside with latching brackets.

Supply includes:
Assembly parts.

For enclosure system	Packs of	Model No. DK	Model No. FR
TS	4	**7824.510**	–
FR(i)	4	–	**7856.700**

Side panels



Cable management panel

for DK-TS

The ideal, universal routing aid for network enclosures where large quantities of cables and lines are managed. Cutouts for for the attachment of cable shunting rings and nylon loop fasteners. Cable ties are available from the accessories range. With bayed enclosures, the panel may also be used as a partition with cable management facilities.
By attaching to the inner level, cables may be secured inside and out, and may also be used when a single panel is fitted.
The panel is secured to the inner mounting level of TS 8 enclosures using the assembly parts supplied. The cable management panel may be screwed to the outer mounting level on punched sections with mounting flanges.

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosures		Model No. DK
Width/depth mm	Height mm	
600	2000	**7824.560**
800	2000	**7824.580**
900	2000	**7824.590**

Further dimensions available on request.

German patent no. 100 07 470

Accessories:

Nylon loops,
see page 982.



Side panel, plug-type

for FR(i)

The lockable side panel is simply plugged in and secured via two security locks. The integral beading gives the side panels a special touch. Additional security is achieved via the option of latching the side panel from the inside. The side panels may be screw-fastened to the frame section from the inside using locking brackets FR 7856.700.

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

Protection category:
IP 20

Supply includes:
Safety lock 12321.

For enclosures		Packs of	Model No. FR
Height mm	Depth mm		
600	600	2	**7856.660**
600	1000	2	**7856.663**
1200	600	2	**7856.666**
1200	800	2	**7856.669**
1200	1000	2	**7856.672**
1800	600	2	**7856.675**
1800	800	2	**7856.678**
2000	600	2	**7856.681**
2000	800	2	**7856.684**
2000	1000	2	**7856.687**
2200	800	2	**7856.693**
2200	1000	2	**7856.696**

Accessories:

Internal latch FR 7856.700,
see page 855.



Side panels

for TE

To finish of individual racks or entire bayed suites of racks at the sides.
The side panels are simply located and secured with the integral padlock.
The super-lightweight design means that it is easily handled by one person.

Material:
Sheet steel, powder-coated

Colour:
RAL 7035

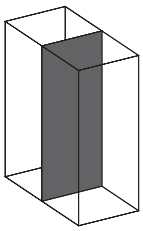
Protection category:
IP 20

Supply includes:
Security lock 3524 E.

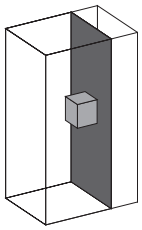
For enclosures		Packs of	Model No. TE
Height mm	Depth mm		
1200	600	2	**7000.642**
1200	800	2	**7000.644**
2000	600	2	**7000.650**
2000	800	2	**7000.652**
2200	600	2	**7000.654**
2200	800	2	**7000.656**











Divider panel

for TS

For shielding individual enclosure cells. Thanks to the symmetry of the frame system, the divider panel can also be used at the rear. All-round, double fold for stability and to hold the seal. Notches in the corners and half-way up the sides permit the use of angular baying brackets and baying brackets, even with a divider panel fitted. For mounting on the outer mounting level. This leaves the inner level free for further population.

Material:
Sheet steel, 1.5 mm, zinc-plated, passivated

Protection category:
IP 54 to EN 60 529/10.91

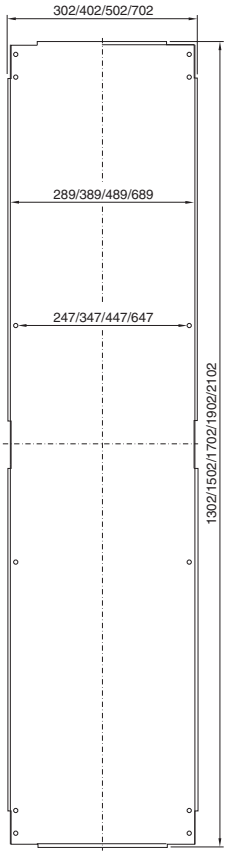
Supply includes:
Assembly parts.

Accessories:

Cover with door,
see page 860.
Baying bracket TS 8800.470 for enclosures with fitted divider panel.
see page 866.

Note:
The divider panel may also be fitted to the rear. This allows, e.g. frequency converters for heat dissipation to be installed in a divider panel with the cooling units facing outwards and protected/ finished off with a cover (see page 860).

For enclosures		Model No. TS
Height mm	Depth mm	
1400	500	**8609.450**
1600	500	**8609.650**
1800	400	**8609.840**
1800	500	**8609.850**
1800	600	**8609.860**
2000	400	**8609.040**
2000	500	**8609.050**
2000	600	**8609.060**
2000	800	**8609.080**
2200	600	**8609.260**





Divider panel

for TS

Solid partition for rack mounting, suspended between two TS 8 enclosures.

Material:
Sheet steel, zinc-plated, passivated

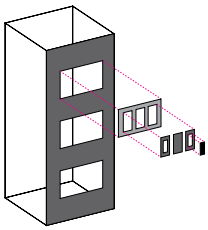
Note:
Baying connector TS 8800.490, for external use. Not suitable for use in conjunction with a baying seal. A seal that may be present must be removed prior to installation.

For enclosures		Model No. DK
Height mm	Depth mm	
2000	900	**7831.720**
2000	1000	**7831.722**

Accessories:

Baying connector TS 8800.490,
see page 864.

Divider panels for module plates



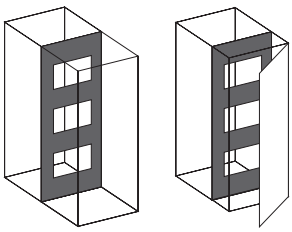
The divider panel and module plate system

More options:
The cutouts of a divider panel are individually equipped with module plates for 16-pole or 24-pole connectors, with module plates for cable entry and with solid module plates.

Faster assembly:
Usually only part of the total number of connector cutouts are used. Thanks to the new divider panel technique the cutouts do not need to be covered individually. The solid module plate is used instead.
The benefits: Less plates, less screws, less assembly work.







Divider panel

for module plates TS
With cutouts for the installation of module plates for connectors or for cable entry, and also for the entry of busbar systems and other installed equipment. All-round, double fold for stability and to hold the seal. Thanks to the symmetry of the enclosure frame, divider panels may also be fitted at the rear, dimenions permitting.
For mounting on the outer mounting level. This leaves the inner level free for further population.

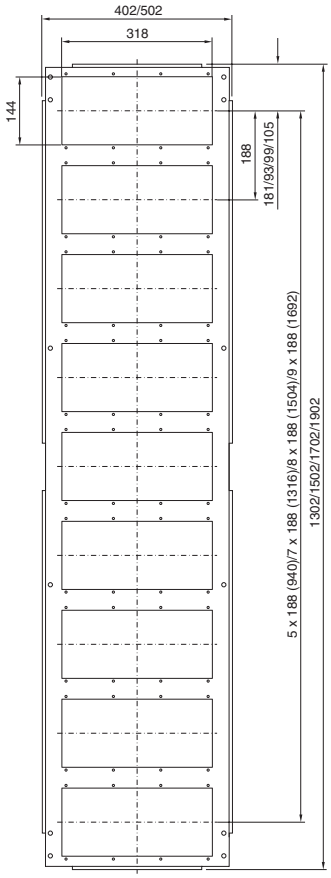
Material:
Sheet steel, 2 mm, zinc-plated, passivated

Supply includes:
Assembly parts and multi-tooth screws M5 x 12 mm for mounting the module plates.

Note:
Notches in the corners and half-way up the sides permit the use of angular baying brackets and baying brackets, even with a divider panel fitted.

Accessories:

Module plates,
see page 859.
Cover with door,
see page 860.
Baying bracket TS 8800.470 for enclosures with fitted divider panel,
see page 866.



For enclosures		Number of cutouts	Model No. TS
Height mm	Depth mm		
1400	500	6	**8609.180**
1600	500	8	**8609.165**
1800	500	9	**8609.100**
1800	600	9	**8609.110**
2000	500	10	**8609.120**
2000	600	10	**8609.130**



Primer/paint

For touching up and repairing powder-coated and wet-painted surfaces, air-drying.

Colour RAL	Model No. SZ		
	Touch-up pen 12 ml	Spray can 150 ml	Spray can 1000 ml
7022	–	**2581.000**	–
7032	**2436.732**	**2437.000**	**2438.000**
7035	**2436.735**	**2440.735**	**2438.735**

Module plates

Material:
Sheet steel, 2 mm, zinc-plated, passivated

Supply includes:
Seal

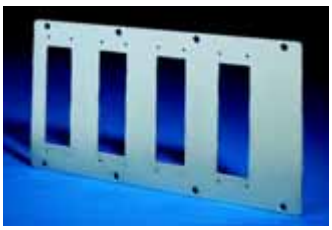
Version	Cutouts	Packs of	Model No. TS
Solid	–	1	**8609.160**
For 16-pole connectors	4	1	**8609.150**
For 24-pole connectors	4	1	**8609.140**
For cable entry	1	1	**8609.170**
For cable entry grommets	4	1	**8609.190**



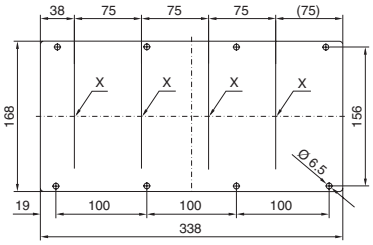
Solid
For sealing unused cutouts. Easily machined for individual cutouts.

Accessories:

Adaptor, cover,
see page 860.
Cable gland for connector cutouts,
see page 860.

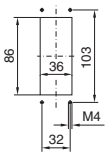


For 16/24-pole connectors
With cutouts to accommodate connectors. In addition to mounting on divider panels, module plates may also be attached to the 25 mm pitch pattern of the enclosure and to the rails of the TS/PS system.

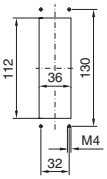


Accessories:

Adaptor, cover,
see page 860.
Cable gland for connector cutouts,
see page 860.



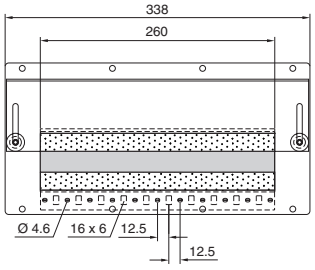
X 16-pole



X 24-pole

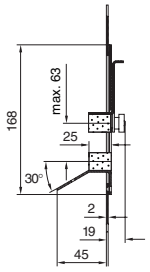


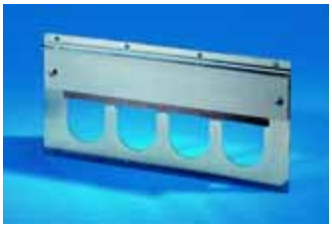
For cable entry
For the entry of pre-assemble cables. Sealed, routing is achieved via adjustable angle brackets with inserted foam cable clamp strip. Attachment bracket, punched, for cable clamping.



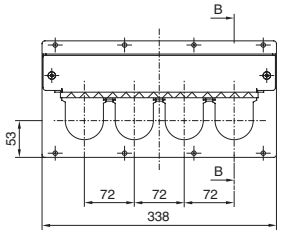
Accessories:

Cable tie for quick assembly SZ 2597.000,
see page 982.



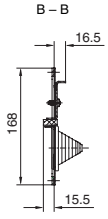


For cable entry grommets
For mounting on the divider panel for module plates TS. Slide the grommets into the cutouts, slide the clamp plate with seal down over them, and screw-fasten.

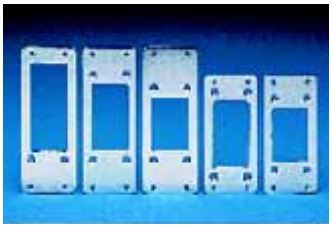


Also required:

Cable entry grommets,
see page 965
or connector grommets,
see page 965.



Module plates



Adaptor

for connector cutouts
For using connectors with varying numbers of poles.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Seal for adaptor and assembly parts.

For reduction	Packs of	Model No. SZ
From 24 to 16 poles	5	**2479.000**
From 24 to 10 poles	5	**2480.000**
From 24 to 6 poles	5	**2481.000**
From 16 to 10 poles	5	**2401.000**
From 16 to 6 poles	5	**2402.000**



Cover plate

for connector cutouts
For unused cutouts.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Seal and assembly parts.

For	Packs of	Model No. SZ
24-pole cutouts	20	**2477.000**
16-pole cutouts	20	**2478.000**

Note:
Connector grommet,
see page 974.



Partition

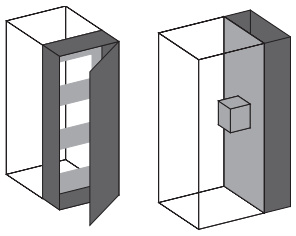
for DK-TS
For side partitioning of bayed TS server enclosures.
Up to 8 cable glands to the adjacent rack are possible, covered with blanking plates.

Material:
Sheet steel, zinc-plated, passivated

For enclosures		Packs of	Model No. DK
Height mm	Depth mm		
2200	900	1	**7831.715**

Note:
Only available on request for direct mounting on the enclosure.





Cover with door

for TS
To protect and finish off connectors or other installed equipment. 200 mm wide cover, with opening at the top or bottom for cable entry including a cover plate for unused opening.

Material:
Sheet steel
Cover: 1.5 mm
Door: 2.0 mm

Colour:
In textured RAL 7032

Supply includes:
Cover, door with locking rod and double-bit lock insert, 1 cover plate for the top or bottom.

Note:
May also be fitted at the rear to extend the enclosure depth. To cover the resultant gap, we recommend asymmetrical side panels (see page 854). In this way, for example, frequency converters to dissipate heat can be installed in a divider panel (see page 857) with the heat sinks facing outwards and protected/concealed with a cover.

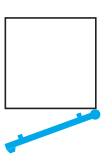
For enclosures		Model No. TS	
Height mm	Depth mm	RAL 7032	RAL 7035
2000	500	**8609.000**[1)]	**8609.020**
2000	600	**8609.010**[1)]	**8609.030**

[1)] Delivery times available on request.
For primed version, please add extension .XX1 to the Model No.
Delivery times on request.

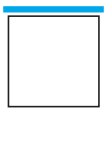
Accessories:

Lock inserts,
see page 881.
Comfort handle,
see page 881.
180° hinge,
see page 893.

Versatile door and side panel concept



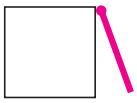
Door with lock



Rear panel



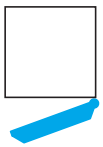
Side panel



Hinged side panel



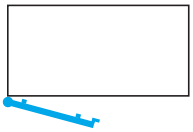
Side panel, asymmetrical



Climate control door



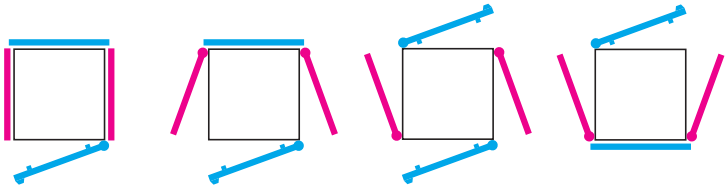
Climate control side panel



Adjacent door

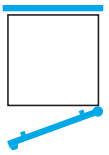
Important:

- Red areas (side panels, hinged and unhinged) must always be opposite one another.
- Blue areas (doors/rear panels) must always be opposite one another.

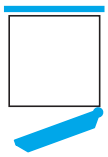


The versatile door and side panel concept also applies to the following baying variants:

. . . infinite possibilities



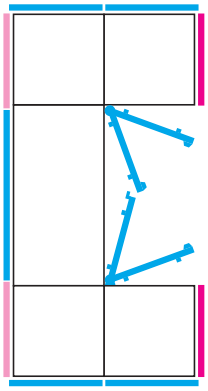
TS 8 standard enclosure

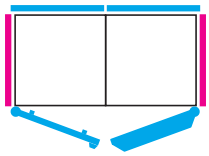


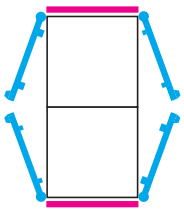
TS climate control enclosure

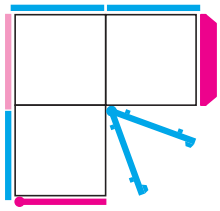


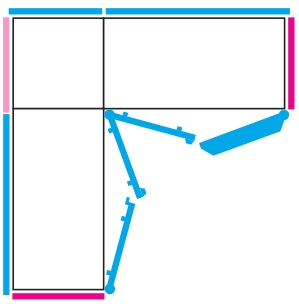
TS 8 corner enclosure

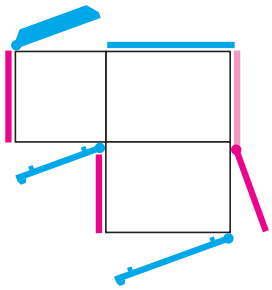


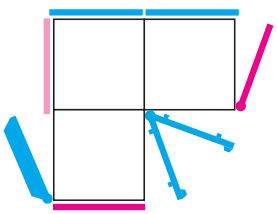




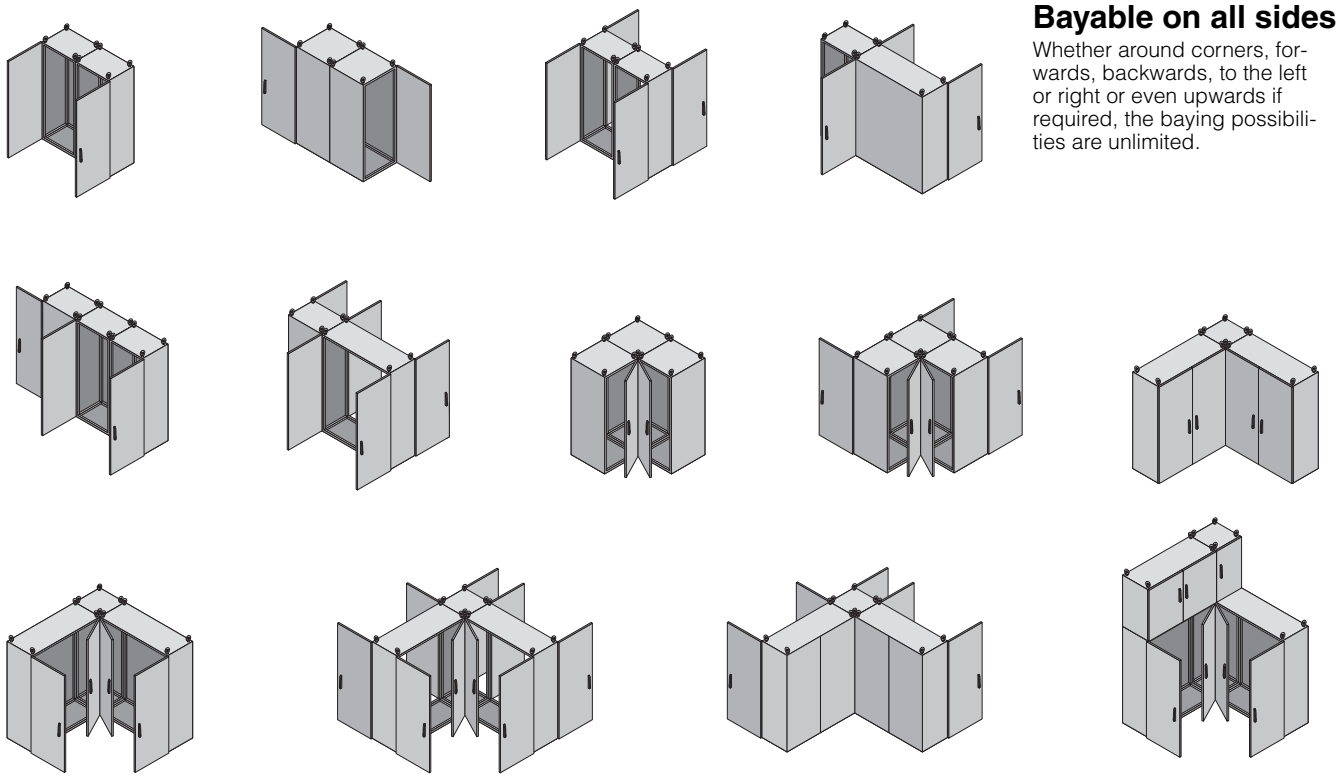






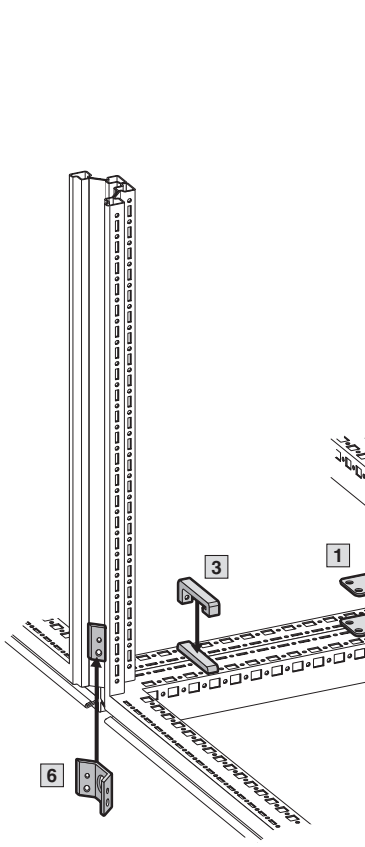


Baying at the installation site



Bayable on all sides

Whether around corners, forwards, backwards, to the left or right or even upwards if required, the baying possibilities are unlimited.

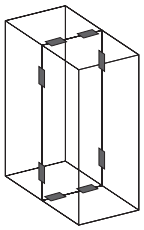


For baying at the installation site or for provisional siting in the workshop

1 Quick-fit baying clamps, one-piece
2 Quick-fit baying clamps, three-piece
3 Baying clamp, horizontal
4 Baying clamp, vertical for TS/TS
5 Baying clamp, vertical for TS/PS
6 Baying connector, external

Notes on the transport of bayed enclosures,
see page 864.





1 Quick-fit baying clamps, one-piece

for TS/TS and FR(i)/FR(i)
Simply attach the screws, insert the quick-fit baying clamp, tap in with a hammer and lock.

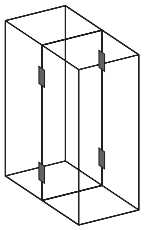
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. TS
6	8800.500

Note:
Only for monting on vertical enclosure sections of FR(i).





2 Quick-fit baying clamps, three-piece

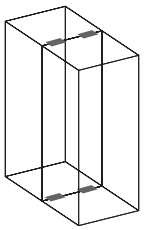
for TS/TS
Simply locate, connect with the lock plate, and secure.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. TS
6	8800.590





3 Baying clamp, horizontal

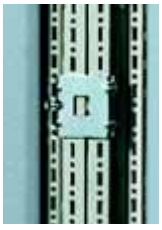
for TS/TS, TS/PS and FR(i)/FR(i)
For mounting on the horizontal enclosure sections.

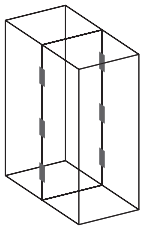
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. TS
4	8800.400

German patent no. 197 35 251
French patent no. 98 104 58
Jap. patent no. 2 965 975





4 Baying clamp, vertical

for TS/TS
For mounting on the vertical enclosure sections.

Material:
Sheet steel, zinc-plated, passivated

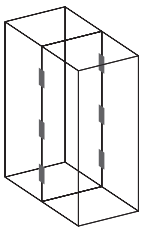
Supply includes:
Assembly parts.

Packs of	Model No. TS
6	8800.410

German patent no. 197 35 251
French patent no. 98 104 58
Jap. patent no. 2 965 975

Baying at the installation site





5 Baying clamp, vertical

for TS/PS
For mounting on the vertical enclosure sections.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

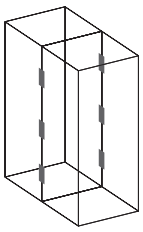
Packs of	Model No. TS
6	**8800.420**

German patent no. 198 01 185
US patent no. 6,435,759
European patent no. 104 8098
with validity for FR, GB, IT









6 Baying connector, external

for TS/TS
For mounting on the vertical enclosure sections.

Simply position on the outside and screw-fasten either from the inside or outside.

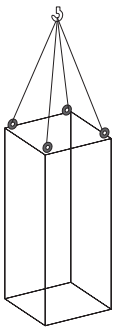
Material:
Sheet steel, zinc-plated, passivated
or stainless steel 1.4301

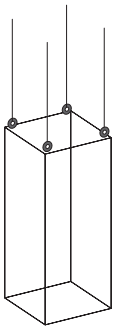
Supply includes:
Assembly parts.

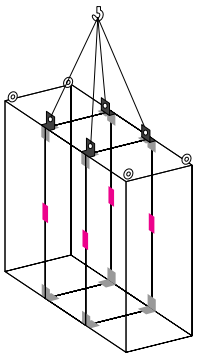
Version	Packs of	Model No. TS
Sheet steel	6	**8800.490**
Stainless steel	6	**8700.000**

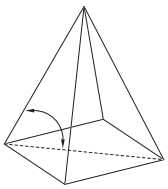
German patent no. 197 37 668

Note on the transport of bayed enclosures









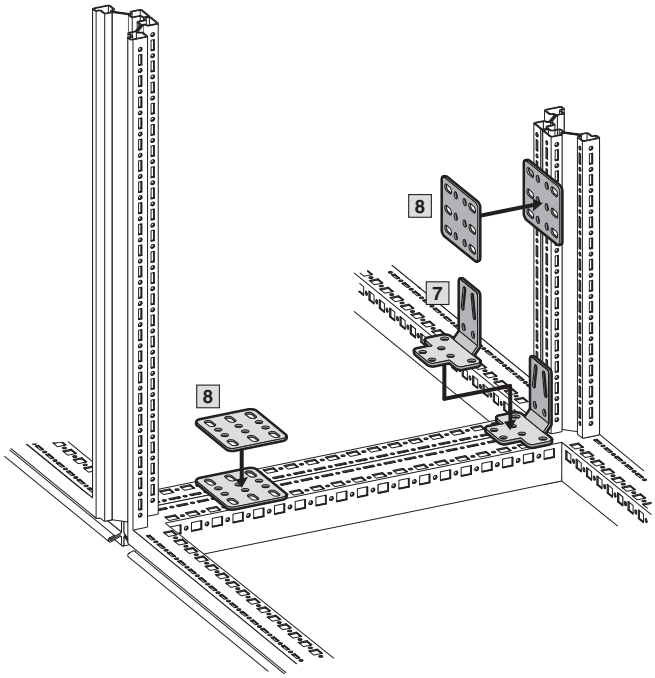
Individual enclosures are reliably transported using the eyebolts included with the supply.
For symmetrical loads, the following maximum permissible loads apply:
at 45° sling angle 4,800 N,
at 60° sling angle 6,400 N,
at 90° sling angle 13,600 N.

For the enclosure combination with angular baying brackets, quick-fit baying clamps and combination angles shown here, the load capacity with a sling angle of 60° is as follows:
for the left enclosure: 7,000 N,
for the middle enclosure: 14,000 N,
for the right enclosure: 7,000 N.

The sling angle between the roof plate and the sling has a significant influence on the total permissible load.
The sling angle must not be less than 45°, and where possible, should be less than 60°.

Note:
For larger baying combinations, we recommend the use of a transport base/plinth, see page 842.

Baying for transport



When transporting bayed enclosures

7 Baying bracket for TS/TS

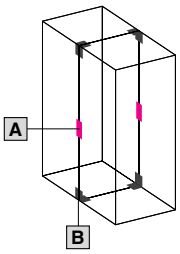
8 Baying bracket for TS/TS and for TS/PS

Note:
- In addition, the outer baying connector (see page 864), can be used.
- When transporting large, heavy enclosure combinations by crane, we additionally recommend the use of combination angles TS 4540.000, see page 866.

Also required:

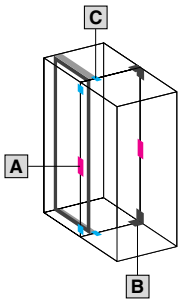
For protection category IP 55: One connector/clamp is required half-way up the enclosure height, see page 863.
Baying clamp, see page 863 – 864.

Notes on the transport of bayed enclosures, see page 864.



A 2 quick-fit baying clamps **TS 8800.500** (see page 863).

B 4 baying brackets **TS 8800.430** (see page 865).

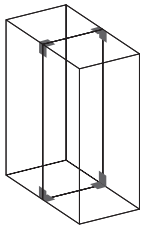


A 2 quick-fit baying clamps **TS 8800.500** (see page 863).

B 2 baying brackets **TS 8800.430** (see page 865).

C 4 baying brackets **TS 4582.500** (see page 865) if the angular baying brackets cannot be fitted in the foremost installation position due to installed equipment such as large swing frames.





7 Angular baying brackets

for TS/TS

The robust connection when transporting bayed enclosure suites.

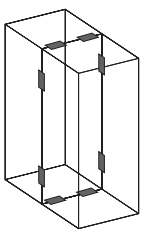
Screw-fastening may be optionally
- Horizontally and vertically with 8 screws
- Horizontally with 2 screws and M8 threaded blocks, vertically with 4 screws.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. TS
4	8800.430





8 Baying brackets

for TS/TS and TS/PS

For additional stabilisation, or in cases where:
- Mounting plate brackets
- Swing frames
- Busbar supports

prevent the installation of angular baying brackets.

Material:
Sheet steel, zinc-plated, passivated

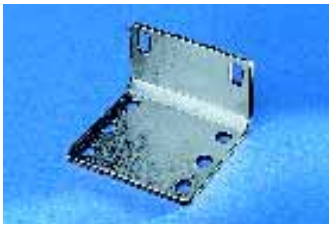
Supply includes:
Assembly parts.

Packs of	Model No. TS
4	4582.500

Accessories:

For mounting on the vertical TS enclosure section: Snap-on nut M8, TS 8800.808, see page 931.

Baying



Angular baying brackets

The alternative to baying bracket TS 4582.500 and for individual interior installations.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Screws M8 x 16 mm.

Packs of	Model No. PS
4	**4582.000**

Also required:

For mounting on:
horizontal TS enclosure section
Captive nut/threaded block M8, see page 936,
vertical TS enclosure section
Snap-on nut M8, TS 8800.808, see page 931.



Combination angle

For optimum distribution of tensile forces during transportation of bayed enclosures by crane.

Material:
Sheet steel, zinc-plated, passivated

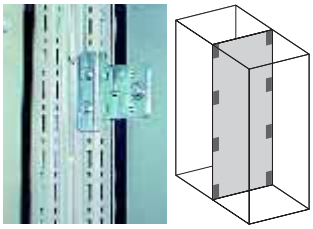
Supply includes:
Assembly parts.

Packs of	Model No. TS
4	**4540.000**

Accessories:

Baying cover,
see page 867.

Notes on the transport of bayed enclosures,
see page 864.



Baying attachment, vertical

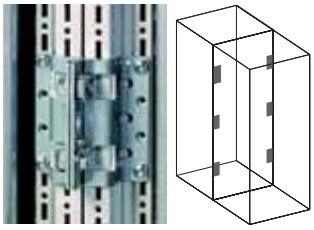
for TS/TS with divider panel
Only suitable for mounting in conjunction with the angle brackets of the divider panel (included with the supply).

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. TS
8	**8800.470**

Note:
May also be used for side or wall attachment/ fastening of enclosures. In such cases, additional holes must be drilled in the side or rear panel.



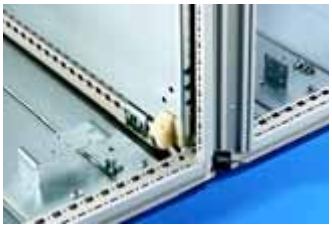
Baying attachment, vertical

for TS/TS
For baying two populated enclosures on the vertical enclosure section.
Simply locate into the vertical TS punchings, secure and connect both brackets by using the hex screws (supplied loose).
Using the fastening bolts, the enclosure is pulled into a defined end position, with a height or side offset of up to ±2 mm.

Packs of	Model No. TS
6	**8800.670**

Material:
Sheet steel 3 mm, zinc-plated, passivated.

Supply includes:
Assembly parts.



Baying clamp, horizontal

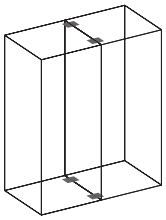
for back-to-back mounting
Two-piece, for in situ assembly of enclosures with mounting plate in the rearmost installation position.

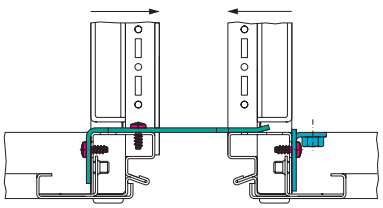
Material:
Sheet steel, zinc-plated, passivated

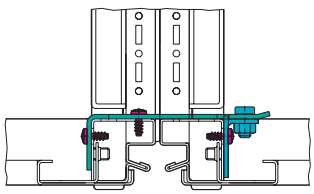
Supply includes:
Assembly parts.

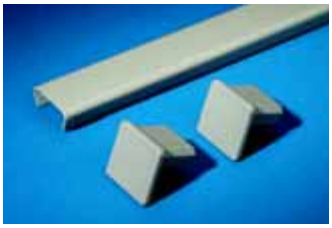
Packs of	Model No. TS
4	**8800.170**

German patent no. 10 157 979











Baying cover, top

A cover with two end caps may additionally be clipped over the seal between the two enclosures. This prevents dirt and liquid from collecting on the baying seal.

Material:
Cover section: Sheet steel, spray-finished or stainless steel 1.4301
End caps: Plastic

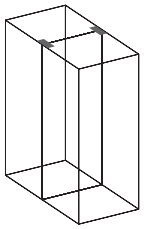
For enclosure depth mm	Packs of	Model No. TS		
		RAL 7032	RAL 7035	Stainless steel
400	1	**8800.440**	**8800.840**	**8700.140**
500	1	**8800.450**	**8800.850**	**8700.150**
600	1	**8800.460**	**8800.860**	**8700.160**
800	1	**8800.480**	**8800.880**	**–**

German patent no. 197 37 667
US patent no. 6,312,068
European patent no. 10 12,935
with validity for FR, IT

Note:
May also be fitted in the width with enclosure suites bayed back-to-back.

May also be used in conjunction with dust guard trim, see page 900.





Baying connector, external

for DK-TS/DK-TS with side panels
For retrospective baying of enclosures with side panels.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Packs of	Model No. DK
4	**7824.540**





Compensating panel

for TS
The panel is screw-fastened to the outside of the enclosure frame and serves as an infill panel when baying 2000 mm high enclosures of varying depths.
No seal between the enclosures.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Depth difference mm	Model No. DK
100	**7067.100**
200	**7067.200**



Baying kit

for FR(i)/FR(i) and FR(i)/FR
For mounting on the vertical enclosure sections.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Baying of/to	Packs of	Model No. FR(i)
FR(i)/FR(i)	1	**7856.752**
FR(i)/FR	1	**7856.750**



Baying kit

for TE
For connecting individual enclosures into bayed suites at the sides. The enclosures are connected between the base and roof frame.

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. TE
1 set	**7000.640**

TS 8 corner enclosures



TS 8 corner enclosures

The corner enclosure and the supplied components will accommodate the various baying options of the TS 8 frame on all outer surfaces. Fitted with a rear panel and an asymmetrical side panel (see page 854, mounted on the l/h (left hand) side), the corner enclosure also permits the option of baying in both the width and depth. The gland plates are aligned parallel to the rear panel. In TS 8 enclosures with a footprint outline, the gland plates may also be rotated through 90°. The baying system is identical to all other TS 8 enclosures.

Material:
Sheet steel, 1.5 mm

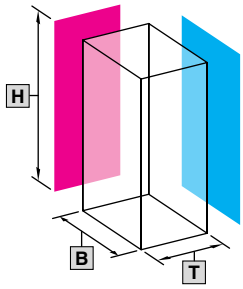
Surface finish:
Dip-coat primed, powder-coated on the outside in textured RAL 7035
Gland plates: Zinc-plated

Supply includes:
Enclosure frame with roof, rear panel (on the longest side), asymmetrical side panel, gland plates (divided lengthwise).

Width mm	Height mm	Depth mm	Model No. TS
400	1800	400	**8484.300**
500	1800	400	**8584.300**
600	1800	400	**8684.300**
500	1800	500	**8585.300**
600	1800	500	**8685.300**
600	1800	600	**8686.300**
400	2000	400	**8404.300**
500	2000	400	**8504.300**
600	2000	400	**8604.300**
800	2000	400	**8804.300**
500	2000	500	**8505.300**
600	2000	500	**8605.300**
800	2000	500	**8805.300**
600	2000	600	**8606.300**
800	2000	600	**8806.300**
600	2200	600	**8626.300**

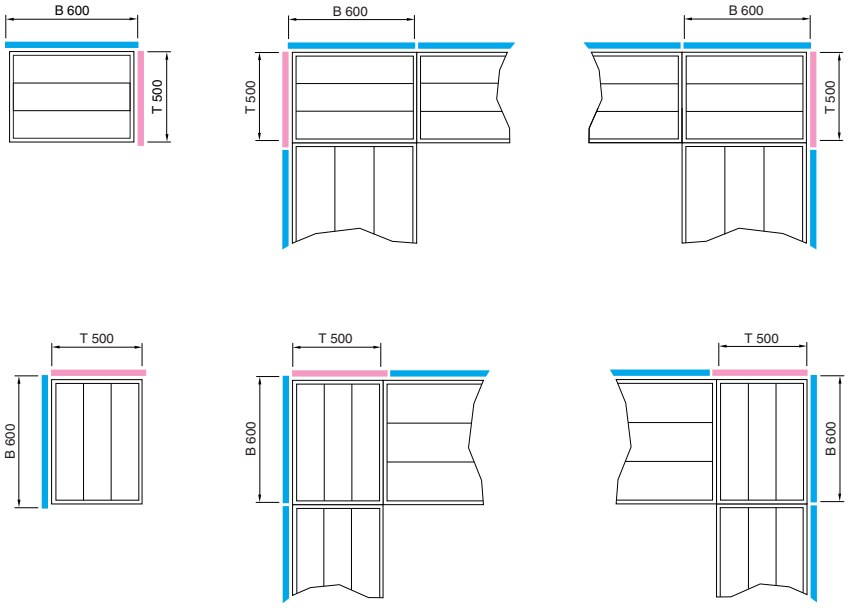
Extended delivery times.
To order versions in RAL 7032, please use order number extension .400.
Delivery times on request.





Baying examples

TS 8 corner enclosures



B = Width
T = Depth





Glazed door

for TS, CL
Instead of a sheet steel door or rear panel.

Design:
Frame:
Extruded aluminium section,
die-cast zinc corner pieces,
powder-coated in RAL 7035
Single-pane safety glass,
3 mm thick,
printed mask on the inside
RAL 7015
Locking rod with double-bit insert
180° hinges (4)
Visible area:
W – 140 mm,
H – 160 mm.

Protection category:
IP 55 to EN 60 529/10.91

German registered design
No. M 98 03 844
IR reg. design no. DM/045 440
with validity for BE, FR, NL, HU, LU
UK reg. design no. 2 076 673
South Korean reg. design no. 0 240 621
Russian reg. design no. 46 300
Japanese reg. design no. 1 056 165
US design patent no. 418 608

For enclosures		Model No. TS
Width mm	Height mm	
600	1800	**8610.680**
800	1800	**8610.880**
600	2000	**8610.600**
800	2000	**8610.800**
600	2200	**8610.620**
800	2200	**8610.820**

Also required:

When mounting instead of the rear panel:
Lock components for frame TS 8800.040,
see page 869.

Accessories:

Lock inserts,
see page 881.
Comfort handle,
see page 881.



Handle adaptor

The handle adaptor compensates for the design chamfer in the door profile to enable installation of the comfort handle.

Material:
Plastic

Supply includes:
1 adaptor plate,
1 extension for drive,
2 assembly screws.

for glazed door TS, CL

Colour	Model No. TS
RAL 7035	**8611.080**
RAL 8019	**8611.090**

for designer door IW and PC-TS, bottom door

Colour	Model No. PC
RAL 7035	**8611.300**

for glazed door IW

Colour	Model No. IW
RAL 7035	**6903.170**



Lock components

for frame TS
For retrofitting a glazed door or sheet steel door in place of a rear panel.

Material:
Die-cast zinc

Supply includes:
Assembly screws.

Packs of	Model No. TS
4	**8800.040**

Door variants



Sheet steel door

for DK-TS
To replace existing doors. With 180° hinges and swivel handle with security lock no. 3524 E, in exchange for comfort handle.

Material:
Sheet steel

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/10.91

Supply includes:
Assembly parts.

For enclosures		Model No. DK
Width mm	Height mm	
600	2000	**7824.205**
800	2000	**7824.207**
600	2200	**7824.225**
800	2200	**7824.227**

Accessories:

Comfort handle,
see page 881.
180° hinge for bayed TS enclosure suites with comfort handle, see page 893.



Sheet steel door, vented

for DK-TS
With 180° hinges and swivel handle with security lock no. 3524 E, in exchange for comfort handle. For optimum air throughput in network enclosures with a high proportion of active equipment. Slotted surface (SWG-6.7 hexagon) with air inlet opening >78 %.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosures		Model No. DK
Width mm	Height mm	
600	1200	**7824.123**
600	1800	**7824.183**
800	1800	**7824.184**
600	2000	**7824.203**
800	2000	**7824.204**
600	2200	**7824.223**
800	2200	**7824.224**

Accessories:

Comfort handle,
see page 881.
180° hinge for bayed TS enclosure suites with comfort handle, see page 893.



Glazed door, vented

for DK-TS
With 180° hinges and comfort handle with security lock no. 3524 E. For optimum air throughput in network enclosures with a low proportion of active equipment.

Material:
Sheet steel, spray-finished
Viewing window of 3 mm single-pane safety glass, side slotted surfaces (SWG-6.7 hexagon) for air inlet.

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosures		Model No. DK
Width mm	Height mm	
600	1200	**7824.121**
600	1800	**7824.181**
800	1800	**7824.182**
600	2000	**7824.201**
800	2000	**7824.202**
600	2200	**7824.221**
800	2200	**7824.222**

Accessories:

180° hinge for bayed TS enclosure suites with comfort handle, see page 893.



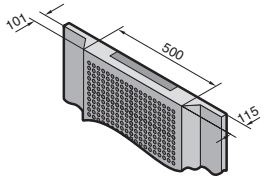
Adaptor door

for DK-TS
With 180° hinges and comfort handle with security lock no. 3524 E. To extend the enclosure depth by 100 mm. This creates the necessary free space at the rear for retro-fitting deep-build active components or space for system-compatible cabling at the front. Retro-fitting with deeper components is therefore easily achieved whilst in operation. The adaptor door is vented across the surface. Slotted surface (Ø 3 mm), air inlet opening > 60 %.
Simple cable routing via brush strips top and bottom.

Material:
Sheet steel

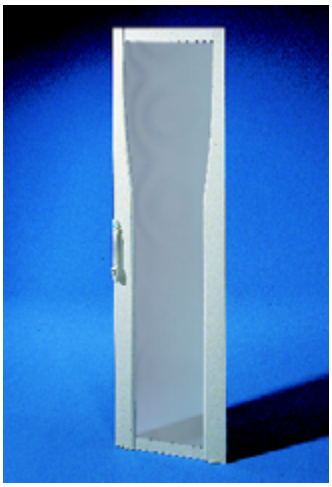
Colour:
RAL 7035

Supply includes:
Assembly parts.



For enclosures		Model No. DK
Width mm	Height mm	
600	2000	**7824.760**
600	2200	**7824.762**
800	2000	**7824.780**

Note:
Other sizes and side adaptor available on request.



Designer sheet steel door, vented

for TS
With 130° hinges and comfort handle with security lock no. 3524 E. For increased air throughput when installing active components. Slotted surface with air inlet opening > 78 %.

Material:
Sheet steel,
Design components of plastic

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosures		Model No. DK
Width mm	Height mm	
600	1200	**7816.612**
600	2000	**7816.620**
600	2200	**7816.622**
800	2000	**7816.820**
800	2200	**7816.822**

Note:
Non-interchangeable door hinge.
180° hinges not supported.



Designer glazed door

for TS
With 130° hinges and comfort handle with security lock no. 3524 E. For visual monitoring of the installed equipment.

Material:
Frame: Sheet steel, spray-finished
Design components of plastic
Window of 4 mm single-pane safety glass

Colour:
Frame elements, RAL 7035
Viewing window tinted, parsol grey

Protection category:
IP 55 to EN 60 529/10.91

Supply includes:
Assembly parts.

For enclosures		Model No. DK
Width mm	Height mm	
600	1200	**7824.612**
600	1800	**7824.618**
600	2000	**7824.620**
600	2200	**7824.622**
800	1800	**7824.818**
800	2000	**7824.820**
800	2200	**7824.822**

German registered design no. 401 03 180
UK reg. design no. 2104977
US design patent no. 479 241

Note:
Non-interchangeable door hinge.
180° hinges not supported.

Door variants



Sheet steel door, vertically divided

for TS
With 130° hinges and locking rod including comfort handle for semi-cylinder with security lock no. 3524 E. Thanks to the minimal rotation radius of the individual doors, the distance between individual bayed enclosure suites may be reduced. The extensive door perforations additionally support climate control of the installed equipment. Slotted surface with air inlet opening > 78 %.

Material:
Sheet steel

Protection category:
IP 55 to EN 60 529/10.91 (unvented)
IP 20 to EN 60 529/10.91 (vented)

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosures		Model No. DK	
Width mm	Height mm	Vented	Unvented
600	2000	**7824.360**	**7816.360**
600	2200	**7824.362**	**7816.362**
800	2000	**7824.380**	**7816.380**
800	2200	**7824.382**	**7816.382**

Accessories:

180° hinge TS 8800.190,
see page 893.



All-glass door, vertically divided

for TS
With 130°/180° hinges and locking rod including comfort handle for semi-cylinder with security lock no. 3524 E. Thanks to the minimal rotation radius of the individual doors, the distance between individual bayed enclosure suites may be reduced. When baying, an external 180° hinge is required.

Material:
5 mm single-pane safety glass, frame of aluminium frame elements.

Colour:
Frame elements, RAL 7035
Viewing windows tinted, parsol grey.

Supply includes:
Assembly parts.

For enclosures		Rotation range[1)]	Model No. DK
Width mm	Height mm		
800	2000	130°	**7824.480**
800	2000	180°	**7824.490**

[1)] Stand-alone siting

Note:
Not to be used in conjunction with a swing frame.



Lockable and adjacent door

for TS, CL
For example, if two 400 mm doors instead of one 800 mm wide door are used to comply with escape routes.

Material:
Sheet steel

Surface finish:
Dipcoat-primed,
powder-coated on the outside.

Supply includes:
2 doors
including hinges and lock parts.

For enclosures		Colour RAL	Model No. TS
Width mm	Height mm		
800	2000	7035	**8801.450**
800	2000	7032[1)]	**8801.400**

[1)] Delivery times available on request.

Note:
Enclosure without door (TS 8806.512),
see page 149.

Accessories:

Lock system,
see page 881.



Variable door concept

Instead of an enclosure door in a 600 mm/ 800 mm wide and 1800 mm/2000 mm high TS enclosure, climate control doors with integral cooling module may be retrofitted without major assembly work.

Possible alternative:

Climate control doors,
see page 584.



Trim frame

for TS

To conceal the TS 8 front frame in enclosures without a door.

Possible application areas include, for example:
- Studio technology
- Electronic configuration

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosures		Model No. DK
Width mm	Height mm	
600	2000	**7824.130**
800	2000	**7824.132**

Note:
The trim frame conceals the system punchings in the inner mounting level. The TS punched sections with mounting flange 23 x 73 mm (see page 922) may be used for installation.



Profile blanking frame

for TS

On request, all enclosures in the TS 8 series (see page 138) may be manufactured with a fitted profile blanking frame (design to match the TS glazed door) instead of door(s). For optimum access to installed equipment, trim frame hinged on the right, held by a mechanical snap fastener on the left.

Material:
Extruded aluminium section, die-cast zinc corner pieces, powder-coated

Colour:
RAL 7035

Packs of	Model No. TS
1	**xxxx.590**

Delivery times available on request.

Order example:
Baying system TS 8,
W x H x D: 800 x 2000 x 600 mm
- Standard TS 8806.500
- with profile blanking frame TS 8806.590





Interior door

with mounting frame
for compact enclosure AE IP 69K

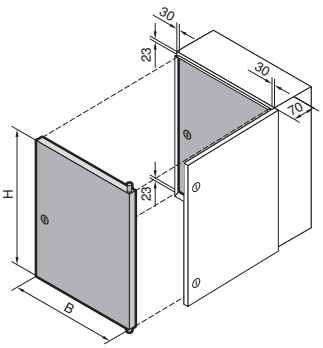
For the installation of control and display components. Mounting frame, depth-adjustable for a distance between the outer surface and the inside of the outer door of 35 to 85 mm (80 mm with AE 1101.010).

Material:
Sheet steel, 1.5 mm

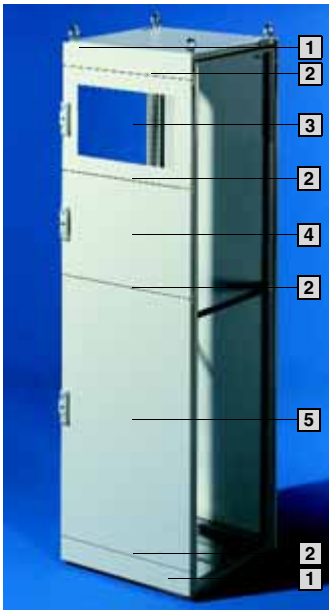
Colour:
RAL 7035

Supply includes:
Mounting frame, door with cam lock and screwdriver insert,
including assembly parts.

For AE enclosure	W (B) mm	H mm	Model No. AE
1101.010	160	260	**1101.910**
1101.020	330	330	**1101.920**
1101.030	330	580	**1101.930**
1101.040	580	580	**1101.940**



Modular front design for TS 8



Modular front design

for TS 8606.512
WHD 600 x 2000 x 600 mm,
for TS 8806.512
WHD 800 x 2000 x 600 mm
(see page 149)
and all other 600 and 800 mm wide TS 8 enclosures instead of a door or rear panel, insofar as the modular front is positioned in a suite between two enclosures with normal doors. If positioned as a free-standing enclosure or at the end of an enclosure suite, special side panels such as TS 8106.512 (see page 876) are required.
The partial doors with and without viewing panels can be arbitrarily combined with cross members. A trim panel and a cross member are each required a the top and bottom.
The requirements for you individual front design and the considerations which must be taken into account are illustrated on the sample configuration opposite.

Protection category:
With a completed enclosure
IP 55 to EN 60 529/10.91, NEMA 12 is met.

Also required:

1	Trim panels, height 100 mm or trim panel, hinged at the top, height 300 mm
2	Cross member

Accessories:

3	Partial door with viewing window, height 400 mm
4	Partial door without viewing window, height 400 mm
5	Partial door without viewing window, height 1000 mm





1 Trim piece, hinged at the top

for TS
For the installation of control and display components.

Material:
Sheet steel, 2 mm

Supply includes:
Hinges, cam locks with double-bit insert and assembly parts.

Note:
Not in combination with top-mounted module for TS (see page 900).

Width mm	Height mm	Colour RAL	Model No. TS
600	300	7035	**8801.230**
800			**8801.240**
1200			**8801.250**
600		7032	**8801.200**[1)]
800			**8801.210**[1)]
1200			**8801.220**[1)]

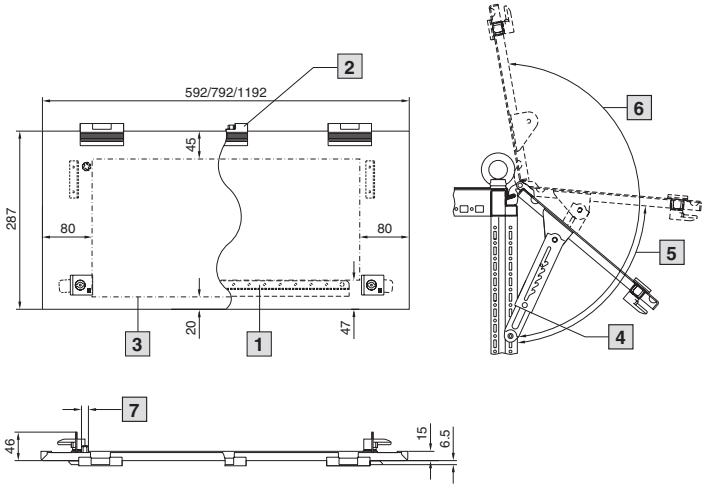
[1)] Delivery times available on request.

Accessories:

Support stay for trim piece, hinged at the top see page 876.
Lock inserts, version A, see page 888.

Rittal service:

Combination with shortened door, enclosure with already mounted trim instead of door, cutouts for operator and display components on request.



1	Only for width 800 mm and 1200 mm
2	Only for width 1200 mm
3	Usable interior area
4	Optional: Stay TS 8801.260
5	Maximum opening with support stay approx. 85°
6	Maximum opening without stay approx. 190°
7	Earthing bolt M8

Modular front design for TS 8



1 Trim panels

for TS
Required as upper and lower height trim.

Material:
Sheet steel, 2 mm, textured

Supply includes:
2 trim panels, assembly parts.

Height mm	Colour RAL	Model No. TS	
		Width 600 mm	Width 800 mm
100	7035	**8801.510**	**8801.110**
100	7032	**8801.610**[1)]	**8801.810**[1)]

[1)] Delivery times available on request.

Also required:

Cross member,
see page 875.



2 Cross member

for TS
As sealing member between:
- Trim panels
- Partial doors
- Trim piece, hinged at the top

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Packs of	Model No. TS	
	Width 600 mm	Width 800 mm
5	**8801.630**	**8801.830**





3 4 5 Partial doors

for TS
Door can be optionally hinged on the right or left side.
In the case of doors without viewing panel (height 600 – 1000 mm) the installation of monitor frame SZ 2305.000 is possible.
Standard double-bit lock insert may be exchanged for TS lock inserts, and from 600 mm height, for comfort handle.

Material:
Sheet steel, 2 mm

Supply includes:
Hinges and lock.

Also required:

Cross member,
see page 875.

Accessories:

Monitor frame SZ 2305.000,
see page 879.
TS lock inserts,
see page 881.
Comfort handle,
see page 881.

Solid

Height mm	Model No. TS			
	Width 600 mm		Width 800 mm	
	RAL 7035	RAL 7032[1)]	RAL 7035	RAL 7032[1)]
200	**8801.520**	**8801.620**	**8801.120**	**8801.820**
400	**8801.540**	**8801.640**	**8801.140**	**8801.840**
600	**8801.560**	**8801.660**	**8801.160**	**8801.860**
800	**8801.580**	**8801.680**	**8801.180**	**8801.880**
1000	**8801.500**	**8801.600**	**8801.100**	**8801.800**

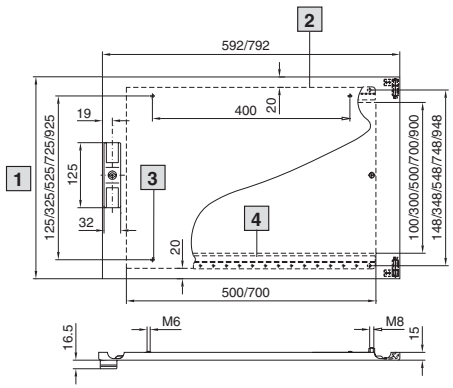
[1)] Delivery times available on request.

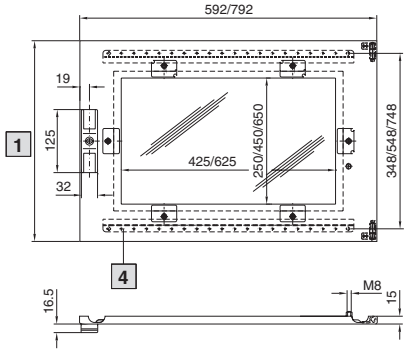
With 3 mm single-pane safety glass

Height mm	Model No. TS			
	Width 600 mm		Width 800 mm	
	RAL 7035	RAL 7032[1)]	RAL 7035	RAL 7032[1)]
400	**8801.550**	**8801.650**	**8801.150**	**8801.850**
600	**8801.570**	**8801.670**	**8801.170**	**8801.870**
800	**8801.590**	**8801.690**	**8801.190**	**8801.890**

[1)] Delivery times available on request.

1 Height – 2 mm
2 Usable interior area
3 M6 bolt only for width 600 mm
4 Perforated strip only for width 800 mm





Modular front design for TS 8



Drawer

for TS
Height 200 mm.
For mouse and keyboard with a maximum width of 500/700 mm.
A high level of protection is retained, even with the flap open.
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, version A, plastic handles, type B and T handles, type B.

Material:
Sheet steel

Supply includes:
Flap and assembly parts.

Colour	Model No. TS	
	Width 600 mm	Width 800 mm
RAL 7035	**8801.715**	**8801.915**
RAL 7032	**8801.710**[1)]	**8801.910**[1)]

[1)] Delivery times available on request.

Also required:

Cross member,
see page 875.

Accessories:

27 mm lock inserts, type A,
see page 888.
Plastic handles, type B,
see page 886.
T handles, type B,
see page 887.



Desk section

for TS
Height 200 mm.
For installing
- Keyboard, IP 67 mouse and mousepad
- Display and control elements

with screw-fastened cover plates top and bottom.

Material:
Sheet steel

Supply includes:
Assembly parts.

Colour	Model No. TS	
	Width 600 mm	Width 800 mm
RAL 7035	**8801.705**	**8801.905**
RAL 7032	**8801.700**[1)]	**8801.900**[1)]

[1)] Delivery times available on request.

Also required:

Cross member,
see page 875.



Side panels for Modular front design

for TS
Attachment on the inside vertical enclosure frame member.
The TS 8106.235 side panel retainers (page 853) could conflict with the partial door fasteners.

Material:
1.5 mm sheet steel

Surface finish:
Dip-coat primed, powder-coated on the outside
Textured RAL 7035.

Protection category:
IP 55 to EN 60 529/10.91

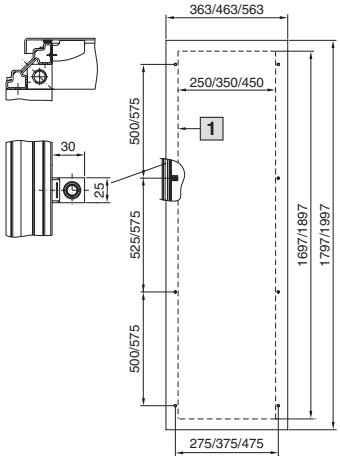
Supply includes:
2 side panels,
16 retainers with automatic potential equalisation.

Note:
Can also be used in enclosures without modular front design!

1 Usable interior area

For enclosure		Model No. TS
Height mm	Depth mm	
2000	600	**8106.512**
2000	800	**8108.512**

For RAL 7032 design, use order extension .212.
Delivery times on request.





Support stay

for trim panel, hinged at the top
5 pitch pattern positions up to a maximum opening of approx. 85°.

Material:
Sheet steel, zinc-plated, passivated.

Packs of	Model No. TS
2	**8801.260**



System windows

To conceal display and operating instruments or cutouts, and to protect against dirt and liquids as well as unauthorised access.

Consisting of the following components:

1. Base frame:
- Easily screw-fastened to the door thanks to modified dimensions (tubular door frame may be used as a drilling template).
- Readily height-adjustable.
- Stabilises the door cutout.
- Conceals the cut edge.
- The rain canopy
  – prevents dirt from landing on the seal,
  – protects the glass from being lifted out,
  – prevents the ingress of dirt and moisture when opening the window.

2. Viewing window:
- Made from single-pane safety glass:
  – high level of resistance to solvents and scratches,
  – anti-static,
  – reduced risk of injury if broken.
- Integral cam lock with double-bit insert, easily exchanged for all standard lock inserts and semi-cylinders in the Ergoform-S lock system (not with FT 2735.500 and .560).
- Hinge with 180° opening angle, easily inserted.

Material:
System windows:
Extruded aluminium sections with die-cast zinc corner pieces and single-pane safety glass.

Surface finish:
Base frame:
powder-coated in RAL 7035.
Hinge and lock section:
natural anodised.

Protection category:
IP 54 to EN 60 529/10.91.

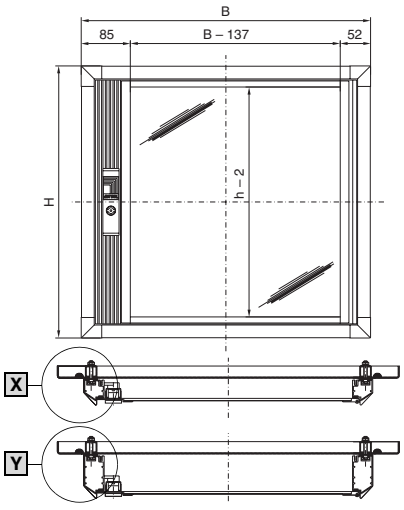
To fit TS, ES, IW with width mm	Window size (mm) exterior B	exterior H	internal b	internal h	Model No. FT 30 section	Model No. FT 60 section
600	500	270	430	200	**2735.500**	–
		370		300	**2735.510**	**2736.510**
		470		400	**2735.520**	**2736.520**
		570		500	**2735.530**	**2736.530**
		670		600	**2735.540**	**2736.540**
800	700	270	630	200	**2735.560**	–
		370		300	**2735.570**	–
		470		400	**2735.580**	**2736.580**
		570		500	**2735.590**	**2736.590**
		670		600	**2735.250**	**2736.500**
Other sizes[1)]					**2735.509**	**2736.509**

Lock systems

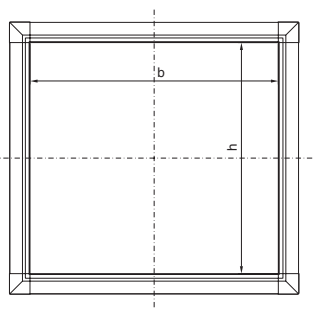
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, version A, see page 888 and Ergoform-S lock system (except H = 270 mm), see page 885.

[1)] Please also specify the external dimensions of the viewing window. Delivery times available on request.

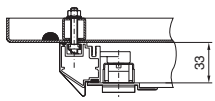
Example:
System window (30 profile) to fit door width 500 mm
with width B = 400 mm x height H = 480 mm (b x h = 330 mm x 410 mm)
Model No. FT 2735.509/W x H = 400 x 480 mm.



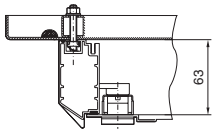
Viewing area (W – 137) offset by 16.5 mm towards the hinge side.



View X
for profile height 30



View Y
for profile height 60



Viewing panels/operating panels





Viewing window

For mounting on
- AE instead of door
- Surfaces

Material:
Frame: Aluminium, natural anodised.
Glass panel: Acrylic

Protection category:
IP 54 to EN 60 529/10.91

Supply includes:
Plastic handle with lock insert no. 3524 E.

For use as door variant with AE	Width mm	Height mm	Model No. FT	
			Depth = 34 mm	Depth = 60 mm
1039.500 1339.500 1009.500	599	377	**2730.000**	**2760.000**
1050.500 1350.500 1007.500	499	497	**2733.000**	**2763.000**
1010.500 1060.500 1360.500	599	597	**2731.000**	**2761.000**
1012.500 1076.500 1376.500	599	757	**2732.000**	**2762.000**
for 3 U subrack	599	197	**2734.000**	–

Max. installation depth: (depth – 4 mm)
Visible area:
(width – 60 mm) x (height – 60 mm)

Note:
Other sizes available on request.



Horizontally hinged FT stay

A gas pressurised spring holds the viewing window securely open (top or side).
When the viewing window is closed, the gas pressurised spring disappears into the frame section.

Packs of	Model No. FT
2	**2772.000**



Acrylic glazed cover

With security lock, lock no. 3524 E

Material:
Frame:
Extruded aluminium sections with die-cast corner pieces
Glass panel: Smoked acrylic

Protection category:
IP 54 to EN 60 529/10.91

Acrylic glazed covers, 482.6 mm (19″)

U	Width mm	Height mm	Depth mm	Model No. FT
3	320	158	47.5	**2780.000**
3	534	158	47.5	**2781.000**
6	534	291.5	47.5	**2782.000**
9	534	425	47.5	**2796.000**

Max. installation depth: 43 mm
Visible area:
(width – 40 mm) x (height – 20.5 mm)

Metric acrylic glazed covers

Width mm	Height mm	Depth mm	Model No. FT
400	200	47.5	**2784.000**
400	400	47.5	**2785.000**
500	200	47.5	**2786.000**
500	400	47.5	**2787.000**
600	200	47.5	**2788.000**
600	400	47.5	**2789.000**

Max. installation depth: 43 mm
Visible area:
(width – 40 mm) x (height – 20.5 mm)





Viewing panel

Stainless steel
Fitted as standard with internal 130° hinges and all-round seal.
Standard double-bit lock insert may be exchanged for 27 mm lock inserts, type A and Ergoform-S handle SZ 2452.000.

Material:
Stainless steel 1.4301
Single-pane safety glass

Protection category:
IP 54 to EN 60 529/10.91

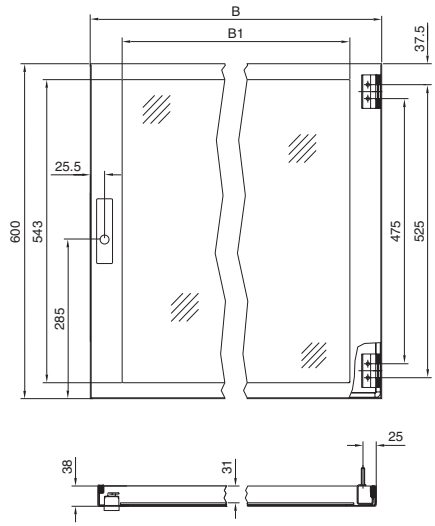
Supply includes:
Assembly parts.

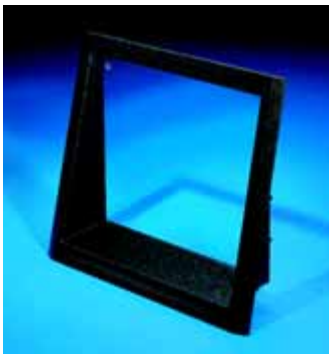
Width (B) mm	Height mm	Depth mm	B1 mm	Model No. FT
522	600	38	408	**2793.560**
722	600	38	608	**2793.760**

Note:
Other sizes available on request.

Accessories:

Lock inserts 27 mm, version A,
see page 888.
Ergoform-S handle SZ 2452.000,
see page 885.





Monitor frame

For door width 600 and 800 mm
For covering a door cutout, for all standard monitors up to 482.6 mm (19″).

Protection category:
IP 54 to EN 60 529/10.91

Supply includes:
Security glass pane.

Monitor frame	Model No. SZ	
	2305.000	
Dimensions	Width mm	Height mm
External dimensions	470	430
Viewing area	375	325
Cutout required	415	375

German registered design
No. M 93 03 143



Identification strips

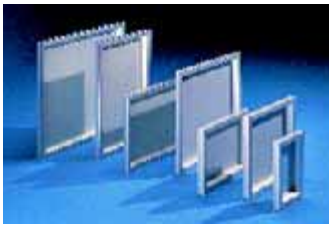
For individual field identifiers on the door, including transparent cover and assembly parts.
For labels:
Width: Enclosure width minus 150 mm
Height: 29 mm
Thickness: 0.75 mm.

Colour:
RAL 7033

For enclosure width mm	Model No. SZ
600	**2403.000**
800	**2404.000**

German registered design
No. M 92 02 456
IR reg. design no. DM/023 581
with validity for DE, FR, IT

Viewing panels/operating panels





Operating panel

For mounting on:
- AE instead of door
- Surfaces

Frame construction with corner connectors on the inside, 3 mm aluminium plate secured from the inside and sealed against the frame

Material:
Aluminium, natural anodised.

Protection category:
IP 54 to EN 60 529/10.91

Supply includes:
Aluminium frame, display panel, hinges, brackets.

German patent no. 28 47 994
European patent no. 0 010 763
with validity for AT, BE, CH, FR, GB, NL, SE

For use as door variant for AE	Width mm	Height mm	Depth mm	Model No. FT
1002.500 1032.500 1035.500	199	297	34	**2740.000**[1]
1004.500 1030.500 1031.500	379	297	34	**2741.000**
1006.500 1380.500	379	377	34	**2742.000**
1008.500 1038.500 1338.500	379	597	34	**2743.000**
1007.500 1013.500 1050.500 1350.500	499	497	34	**2745.000**
1009.500 1039.500 1339.500	599	377	34	**2744.000**
1010.500 1060.500 1360.500	599	597	34	**2746.000**

[1] With AE, only for use on the rear panel

Area available for population:
(width – 70 mm) x (height – 70 mm)

Dimensions of aluminium plate:
(width – 54 mm) x (height – 54 mm)

Note:
Other sizes available on request.

Accessories:

Cam lock FT 2749.000,
see page 880.



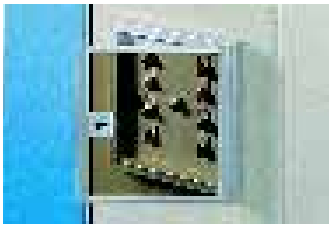
Cam lock

May be retrofitted to the operating area or enclosure panel of operating panels.
Standard double-bit lock insert may be exchanged for type C lock inserts and type C plastic handle.

Packs of	Model No. FT
1	**2749.000**

Accessories:

Lock inserts, type C,
see page 888.
and plastic handle, type C,
see page 886.



Viewing window

for operating panel
For the protection of display and control components. With a build height of max. 35 mm.

Material:
Frame: Aluminium, natural anodised.
Glass panel: Smoked acrylic.

Supply includes:
Lock insert no. 3524 E.

For operating panel	Model No. FT
FT 2741.000	**2791.000**
FT 2742.000	**2792.000**

Note:
Other sizes available on request.



The Rittal comfort handle

The door area can be used to optimum effect for installed equipment, because the handle does not take up any of the swivel area, thanks to its folding action.

Material:
Die-cast zinc

Surface finish:
Powder-coated

German patent no. 198 01 720
German registered design no. M98 00 539
IR reg. design no. DM/045 065 with validity for BE, CH, ES, FR, IT, NL, HU, LU
Austrian design no. 32290
Czech design no. 28278
UK reg. design no. 2 075 910
Swedish design no. 64 750
South Korean design no. 241,505
Israel. design no. 30 123
Slovenian design no. 98 500 73
Russian design no. 46307
South African design no. 98/0865
Finnish design no. 20461
Chinese design no. 983 03439
Australian design no. 13887
US design patent no. 428,322
Brazilian design no. DI 5801235-4
Jap. design no. 1 081 561
Taiwanese design no. 68683
European patent no. 1 049 842 with validity for FR, GB, IT
Jap. patent no. 3 485 892
US patent no. 6,418,762



Comfort handle

for lock inserts
Prepared for the installation of lock inserts, safety and push-button inserts, see page 881.
Length: 295 mm.

Design	Model No. TS
RAL 7032	**8611.010**
RAL 7035	**8611.020**
RAL 8019	**8611.250**
RAL 9005	**8611.350**
Matt nickel-plated	**8611.330**

Also required:

Handle adaptor for mounting on a TS glazed door, PC-TS bottom door, IW designer door see page 869.



Comfort handle

for padlock and lock inserts
Prepared for the installation of lock inserts, safety and push-button inserts, and with additional shackle (hole diameter 8 mm) for a padlock.
Length: 295 mm.

Design	Model No. TS
RAL 7032	**8611.030**
RAL 7035	**8611.290**
RAL 8019	**8611.260**

Also required:

Handle adaptor for mounting on a TS glazed door, PC-TS bottom door, IW designer door, see page 869.



Lock inserts

For comfort handles and standard TS lock (in exchange for the standard double-bit lock insert).

Design	Model No. TS
7 mm square	**8611.100**
8 mm square	**8611.110**
6.5 mm triangular	**8611.220**
7 mm triangular	**8611.120**
8 mm triangular	**8611.130**
Screwdriver	**8611.140**
Daimler	**8611.150**
3 mm double-bit	**8611.160**
Fiat	**8611.170**



Lock and push-button inserts

For installation in the comfort handles for lock inserts.

Design	Model No. TS
Security lock insert no. 3524 E	**8611.180**[1)]
Push-button insert	**8611.190**
Push-button and lock inserts Lock no. 12321; No other lock is possible	**8611.200**[1)]

[1)] with 2 keys

Lock systems




Comfort handle

With security lock insert E1
Only for use with **VW, Audi, SEAT, SkodaAuto.**
Supplied without key.
Length: 295 mm.
Other VW locks available on request.

Design	Model No. TS
RAL 7032	**8611.040**
RAL 7035	**8611.045**

Also required:

Handle adaptor for mounting on a TS glazed door, PC-TS bottom door, IW designer door, see page 869.




Comfort handle

for semi-cylinder
Prepared for the installation of commercially available semi-cylinders, 40 or 45 mm total length, to DIN 18 254, and lock and push-button inserts, see page 882.
Length: 302 mm.

Design	Model No. TS
RAL 7032	**8611.060**
RAL 7035	**8611.070**
RAL 8019	**8611.270**
RAL 9005	**8611.360**
Matt nickel-plated	**8611.340**

Also required:

Handle adaptor for mounting on a TS glazed door, PC-TS bottom door, IW designer door, see page 869.



Lock and push-button inserts

For installation in
- comfort handle for semi-cylinder, see above,
- Ergoform-S standard see page 885,
- CM hinged handle

Design	Model No. SZ
Security lock insert no. 3524 E	**2467.000**[1)]
Push-button insert	**2468.000**
Lock and puch-button inserts, Lock no. 2123 E; No other lock is possible	**2469.000**[1)]

[1)] with 2 keys




Comfort handle

Prepared for ASSA lock system.
Length: 302 mm.

Design	Model No. TS
RAL 7032	**8611.050**
RAL 7035	**8611.280**

Also required:

Handle adaptor for mounting on a TS glazed door, PC-TS bottom door, IW designer door, see page 869.





Security handle

with code

Flexible access opportunities with

- individual 3-digit code without key
  or
- with the master key function via an additional semi-cylinder of 40 or 45 mm to DIN 18 254, irrespective of the code.

Design with	Model No. DK
Comfort handle TS, FR(i)	**7200.800**
Ergoform-S handle	**7200.810**

Accessories:

Lock and push-button inserts,
see page 882.





Adjacent door locking

for TS, CL

For optimum operation of the adjacent door from the outside if the handle on the inside is difficult to access due to swing frames or 482.6 mm (19″) installed equipment. Retrospective conversion of the adjacent door is easily achieved using the supplied drilling template.
The handle on the inside is no longer required.

Supply includes:
Assembly parts.

Packs of	Model No. TS
1	**8611.370**

Accessories:

Standard double-bit lock insert may be exchanged for 27 mm lock inserts, version A,
see page 888.





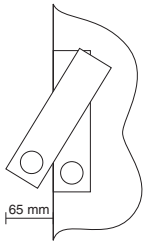
Swivel handle

for sheet steel door TS, CL

With lock insert, lock no. 3524 E.
The use of semi-cylinders is not possible.
Length: 150 mm.

Note:
When used in a bayed enclosure suite, the hinges must be on the same side.

Design	Model No. DK
RAL 7035	**7829.300**



Lock systems





Locking bar latch to CNOMO[1)]

To fit all locking bars in TS doors and glazed doors with standard lock or comfort handle.
The latch prevents the locking bars from moving when the door is open.
For mounting on the bolt of the bar guide.

[1)] CNOMO is a specification by the French automobile industry. For safety reasons, it must not be possible to lock the handle whilst the door is open.

Packs of	Model No. TS
10	**8611.210**

Also required:

For CNOMO[1)]
6.5 mm triangular insert TS 8611.220,
see page 881.





Spring washer

When dismantling the TS or CL locking rods the spring washers cannot be used again.

Material:
Spring steel, zinc-plated, passivated

Packs of	Model No. TS
100	**8800.070**



Assembly tool

for spring washers
For simple pressing-on of the spring washers via inlet ring magnets.

Packs of	Model No. TS
1	**8800.270**









Mini-comfort handle

for use in all 3-part EL enclosures
Prepared for the installation of lock inserts and for the installation of commercially available 40 or 45 mm semi-cylinders, and of lock and push-button inserts.

Material:
Die-cast zinc

Colour:
RAL 7035

Design	Model No. DK
For lock inserts[1)]	**7705.110**
For semi-cylinder[2)]	**7705.120**

Accessories:

[1)] Lock inserts,
see page 881.
[2)] Lock and push-button inserts,
see page 882.



The Ergoform S lock system

The unlocked handle folds down forwards and is swivelled to open the lock.

Material:
Die-cast zinc

Surface finish:
Powder-coated



Ergoform standard

Prepared for the installation of semi-cylinders with a total length of 40 or 45 mm (to DIN 18 254) and all 27 mm lock inserts, version A, see page 888.

Design	Model No. SZ
RAL 7032 With brown handle	**2450.000**
Brown	**2451.000**
Matt nickel-plated	**2452.000**
RAL 7032	**2454.000**
RAL 7035	**2435.000**
RAL 7032[1)] With brown handle and bracket	**2455.000**

[1)] Hole diameter = 7 mm for padlock



To fit **KS plastic enclosures.** Prepared for the installation of semi-cylinders with a total length of 40 mm (to DIN 18 254), all 27 mm lock inserts, version A, and lock and push-button inserts, see page 882.

Design	Model No. KS
RAL 7032 With brown handle	**1490.000**



1



2



3

Ergoform special

1 **With lock insert, lock E1.**
Only for use with **VW, Audi, SEAT, SkodaAuto.**
Supplied without key.
Other lock systems available on request.

E1	Model No. SZ
RAL 7035 With brown handle	**2456.500**

2 **Prepared for ASSA lock system.**

ASSA	Model No. SZ
Completely brown	**2453.000[1)]**

[1)] to fit plastic enclosures KS on request.

3 **To fit all ES enclosures with CNOMO lock, 6.5 mm.**
Triangular lock insert. The handle can only be locked if the door is completely closed **(French motor car industry).** Not suitable for glazed doors.

CNOMO	Model No. SZ
RAL 7035 With brown handle	**2421.500**



Ergoform padlock handle system

for CS Outdoor
With an additional shackle for a padlock.
Hole diameter of shackle: 9 mm.
Prepared for the installation of 40 mm semi-cylinders (length: 10/30 mm).

Packs of	Model No. CS
1	**9785.030**

Lock systems



Plastic handles

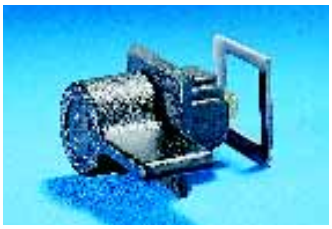
with cylinder insert.
Lock no. 3524 E including assembly parts, seal and 2 keys.

Note:
The universal lock systems allows the installation of a suitable handle to suit almost any application or customer specification. The relevant product ordering page shows which handles can be fitted into each particular assembly.



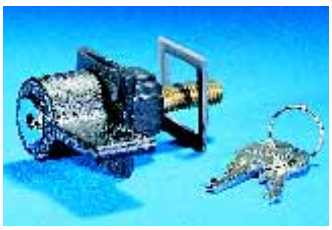
Version B

Colour	Model No. SZ
RAL 9011	**2576.000**
RAL 7030	**2439.000**



Version B,
but without cylinder insert.

Colour	Model No. SZ
RAL 9011	**2533.000**



Version G

Colour	Model No. SZ
RAL 9011	**2599.000**



Version C

Colour	Model No. SZ
RAL 9011	**2485.000**



Version C,
but without cylinder insert.

Colour	Model No. SZ
RAL 9011	**2485.100**



Version E

Colour	Model No. KS
RAL 9011	**1484.000**

T handles

Material:
Die-cast zinc, chrome-plated

Supply includes:
Seal and 2 keys.



Version B

Design	Model No. SZ
With lock insert, lock no. 3524 E	**2575.000**
Without lock insert	**2572.000**



Version C

Design	Model No. SZ
With lock insert, lock no. 3524 E	**2535.000**
Without lock insert	**2536.000**

Cam locks



Housing made of die-cast zinc, nickel-plated

	Model No. SZ
With double-bit insert[1)]	**2520.000**
With lock insert, lock no. 3524 E	**2530.000**

[1)] exchangeable for lock inserts, Version C, see page 888.



Housing of fibre-glass reinforced polyamide, also as a replacement for compact enclosures AE.

	Model No. SZ
With double-bit insert[1)]	**2420.000**
With lock insert, lock no. 3524 E	**2430.000**

[1)] exchangeable for cylinder inserts, Version B, see page 889 and 27 mm lock inserts, version A, see page 888.



Housing of fibre-glass reinforced polyamide, also as a replacement for compact enclosures AE.

With lock no. E1.
Only for use with **VW, SEAT, Audi, Skoda Auto.**
Supplied without key.
Other lock systems available on request.

Colour	Model No. SZ
RAL 7032	**2540.000**
RAL 7035	**2540.500**



Entirely of stainless steel 1.4301.
For AE compact enclosures, stainless steel (with cam lock).

	Model No. SZ
With double-bit insert	**2304.000**

Stainless steel design 1.4404 (AISI 316L) available on request.

Lock inserts

Note:
The universal lock systems allows the installation of a suitable handle to suit almost any application or customer specification. The relevant product ordering page shows which handles can be fitted into each particular assembly.



Version A

Material:
Die-cast zinc

Length 27 mm	Model No. SZ
7 mm square	**2460.000**
8 mm square	**2461.000**
7 mm triangular	**2462.000**
8 mm triangular	**2463.000**
Screwdriver	**2464.000**
Daimler insert	**2465.000**
3 mm double-bit	**2466.000**
Fiat	**2307.000**
6.5 mm triangular (CNOMO)	**2460.650**



Version C

Material:
Die-cast zinc

Length 41 mm	Model No. SZ
7 mm triangular	**2527.000**
8 mm triangular	**2528.000**
7 mm square	**2523.000**
8 mm square	**2526.000**
Daimler insert	**2522.000**
3 mm double-bit	**2483.000**



Version D

Material:
Die-cast zinc

Length 47 mm	Model No. SZ
7 mm triangular	**2555.000**
8 mm triangular	**2556.000**
7 mm square	**2557.000**
8 mm square	**2558.000**
Daimler insert	**2554.000**
3 mm double-bit	**2484.000**



Version E

Material:
Plastic

	Model No. KS
7 mm triangular	**1485.000**
8 mm triangular	**1486.000**
7 mm square	**1487.000**
8 mm square	**1488.000**
Screwdriver	**1489.000**
Double-bit	**1492.000**

Cylinder inserts

Material:
Die-cast zinc



Version B

Lock no. 3524 E with 2 keys.

Packs of	Model No. SZ
1	**2571.000**



Version C

Lock no. 3524 E with 2 keys.

Packs of	Model No. SZ
1	**2525.000**





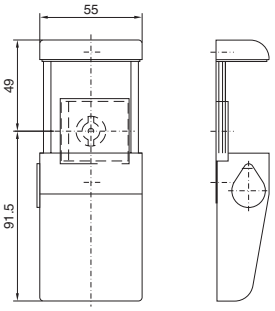
Semi-cylinder lock

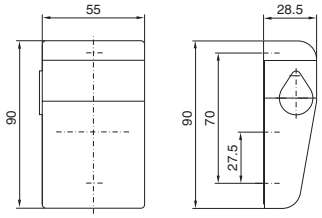
for compact enclosures AE
For retro-fitting to single-door enclosures with cam lock.
The cover plate is locked by semi-cylinders 40/45 mm total length (to DIN 18 254). An additional cover protects the cylinder against dirt.
The protection category of the enclosure is not impaired.
Supplied without semi-cylinder.

Material:
Die-cast zinc

Design	Model No. SZ
RAL 7035	**2534.100**
RAL 7032	**2534.000**
Nickel-plated (matt)	**2534.500**

German patent no. 195 12 280
European patent no. 0778 913
with validity for GB, FR, IT
US patent no. 5,916,282
Jap. patent no. 3.088.465





Lock systems



Lock cover

for padlocks or multiple locks
For retrospective mounting on all compact enclosures AE, of sheet steel and with cam lock.

Material:
Die-cast zinc, nickel-plated, passivated

Packs of	Model No. SZ
1	**2493.000**



Multiple lock

for 6 cam locks
The the ideal solution in cases where individual access for several persons is required for maintenance and repair purposes.

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. SZ
2	**2493.500**



Lock cover

prepared for lead seal
For all enclosure types with Rittal-specific locks, such as AE, EB and AP.

Material:
Polyamide

Colour	Packs of	Model No. SZ
RAL 7035	2	**2476.000**

German registered design no. M 92 07 062



Security lock

Fitted to doors, to protect against contact with live electrical equipment whilst the main switch is ON.

Function:
- Locks the door when the main switch is ON.
- Mains power (voltage) is only enabled whilst the door is closed.
- Monitoring of the lock magnet via an additional closing contact.

Supply includes:
Lock, actuator, angle bracket, assembly parts.

Connection voltage for lock magnet	Model No. SZ
230 V AC 11 VA	**2416.000**
24 V DC 8 W	**2418.000**
120 V AC 8 VA	**2419.000**

Also required:

For twin-door enclosures (for the overlapping door, for the message “enclosure door closed”), Rittal door-operated switch PS 4127.000, see page 956.



Enclosure key

For lock inserts (one double-bit key is supplied with every enclosure).

Design	Model No. SZ
Double-bit key no. 5	**2531.000**
Security key no. 3524 E	**2532.000**
7 mm triangular	**2545.000**
8 mm triangular	**2546.000**
7 mm square	**2547.000**
8 mm square	**2548.000**
Daimler key	**2521.000**
Fiat key	**2308.000**



Universal enclosure key

Double-bit, 8 mm square, 8 mm triangular (also for 7 mm inserts), with integral screwdriver.

Packs of	Model No. SZ
1	**2549.000**



Spare key

for QuickBox/FR(i)

Spare key for standard lock no. 12321.

Packs of	Model No. QB
2	**7526.050**



Quick-release fastener

for QuickBox

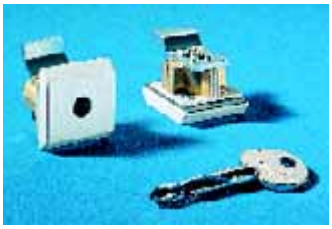
The quick-release fastener provides optimum access, even when used in problem areas. To facilitate locking, the quick-release fastener is screw-fastened to the mounting bracket at the front. This enables the QuickBox to be locked even when the fasteners of the sides are opened, allowing the enclosure cover to be attached and removed easily.

Packs of	Model No. QB
2	**7502.220**

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

Supply includes:
2 mounting brackets, mounting material and quick-release fasteners



Lock “15”

For retro-fitting in all FM/fibre-optic small distributors (Zeiss-Ikon “15”).
For cross-bit keys.

Colour:
RAL 7035

Lock	Packs of	Model No. DK
“15”	2	**7059.035**

Extended delivery times.

Key “15”

Cross-bit key for security lock (Zeiss Ikon “15”).
Two keys are required for a small distributor.

Key	Packs of	Model No. DK
“15”	1	**7059.100**

Extended delivery times.

Lock systems



1

Door locking for bayed suites

For extending the door locking of **commercially available main switches** to bayed suites TS. Adjacent door cannot be opened until the main door has been opened.

The main switch can be positioned anywhere in the suite; its function is independent from the door hinge position.
Subsequent locking of the adjacent doors in the suite is possible: they are thus automatically included in locking operation.



2

1 Operating mechanism
(Fitted in the enclosure with main switch and additionally in every fourth adjacent enclosure)

	Model No. TS
Operating mechanism	**4912.000**

2 Adjacent door locking
(Installation in adjacent enclosure)

	Model No. TS
Adjacent door locking	**4911.000**



3

3 Interconnecting rods
To extend locking from the main enclosure to the adjacent enclosures of a bayed suite. An interconnecting rod corresponding to the width of the enclosure is required for each adjacent enclosure.

For enclosure width mm	Packs of	Model No. TS
600	10	**4916.000**
800	10	**4918.000**
1200	10	**4920.000**



Isolator door locking (USA version)

For safety locking of enclosures and bayed suites according to USA specifications, only in conjunction with **the following types of main switches:**

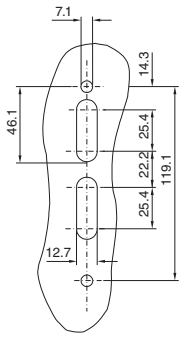
- Allen Bradley 1494 V-H1 (actuating lever)
- Square D 9422 A1
- ITE Siemens Max-Flex series/FHOH (only available in the USA)
- General Electric TDA Typ 1 and 2.

For assembly, a main door lock plus adjacent cubicle latch mechanisms are required, together with interconnecting rods to match the bayed enclosures.

Note!
On configuration of bayed suites, it must be noted that the isolator main enclosures can only be attached to the right side (USA version).

Main door locking	Model No. TS
for TS	**8611.310**

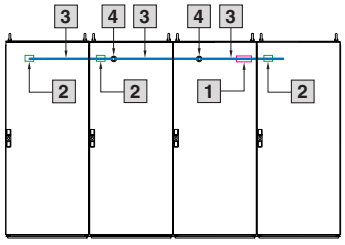
Cutout for main switch



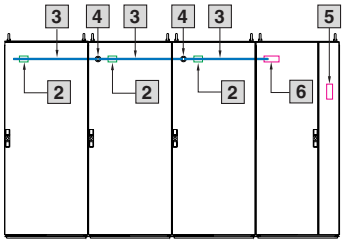




Door locking for TS bayed suites (commercially available main switches)



Isolator door locking (USA version)



1 Operating mechanism, installation in enclosure with main switch

2 Adjacent door locking, installation in adjacent enclosure

3 Interconnecting rod

4 Connection component (included in the supply of interconnecting rod)

5 Main door lock (for isolator door locking, USA version)

6 Operating mechanism, installation in the main enclosure (included in the supply of the main door lock pos. 5)



Hinges 130°

for ES
For retrofitting a sheet steel door instead of the rear panel.

Material:
Die-cast zinc

Supply includes:
Assembly screws.

Packs of	Model No. PS
6	**4190.000**

Note:
Lock components for frame should be ordered separately:

Packs of	Model No. ES
8 sets	**4167.000**



Hinges 130°

for TS
For retrofitting a sheet steel door instead of the rear panel.

Material:
Die-cast zinc

Supply includes:
Assembly screws.

Packs of	Model No. TS
4	**8800.020**

Also required:
Lock components for frame TS 8800.040,
see page 869.



Hinges 180°

for TS, CL
For retrospective conversion of sheet steel doors with 130° hinges.

One-man assembly:
- Exchange the hinge parts on the frame side for 180° hinges (4 screws).
- Drill the door at the pre-marked points.
- Screw-fasten the hinge parts onto the door.
- Locate the door.
- Press in the captive hinge pins.

Material:
Die-cast zinc

Supply includes:
Assembly screws.

Version	Packs of	Model No. TS
RAL 7035	4	**8800.190**
RAL 7032	4	**8800.030**
RAL 8019	4	**8800.230**
Matt nickel-plated	4	**8701.180**

Note:
Door assemblies such as the comfort handle may restrict the door opening angle.

The hinge pins may only be actuated and the door removed with the door open.
The hinge cannot be dismantled from the outside with the door closed (access protection).



Hinges 180°

for TS bayed enclosure suites with comfort handle
In TS bayed enclosure suites with comfort handle for semi-cylinder, the following door opening angles may be achieved:
Sheet steel door: max. 180°
Glazed door: max. 140°

Material:
Die-cast zinc

Colour:
RAL 7035/RAL 9005

Supply includes:
Assembly screws.

Version for	Packs of	Model No. TS	
		RAL 7035	RAL 9005
Sheet steel door	4	**7824.520**	**7824.522**
Glazed door	4	**7824.525**	–

Note:
- The protection category of the enclosure may be reduced.
- Not for divided doors.
- Door hinge remains the same within a bayed enclosure suite.
- Not suitable for use with TS designer glazed doors.



Rear panel bracket

For:
- Premium Panel
- Premium Line KL, from height 200 mm

For fitting on the inside, so that there are no exterior surfaces where substances could accumulate and pose a potential threat to hygiene. Holds the rear panel against the enclosure when it is flipped down; easily removed if required.

Packs of	Model No. CP
1 set	**6682.000**

Material:
Stainless steel 1.4301

Supply includes:
Assembly parts.

Hinges

Hinges 180°

For retrospective conversion of standard doors with 130° hinges.
Including assembly parts.



For ES, TE

Material:
Aluminium

Surface finish:
Powder-coated in RAL 8019

Packs of	Model No. PS
6	4189.000



For ES

Material:
Stainless steel 1.4301

Packs of	Model No. PS
6	4156.000



For AK, AP

Material:
Sheet steel

Packs of	Model No. SZ
6	2579.000



For AE

Material:
Die-cast zinc

Packs of	Model No. SZ
2	2449.000

For CM

Packs of	Model No. CM
2	5001.000



Cover hinge

for KL cover
The cover hinge is simply screwed to the box protection channel and to the edge fold.

Packs of	Model No. KL
6	1592.000



Hinge pin remover

For safe and easy removal of hinge pins.

For enclosure	Model No. SM
AP/AK	2431.000
AE/FM	2432.000

Support strips

For attachment of
- Cable ducts
- Cable conduit holders
- Contact hazard protection covers
- Equipment installed on the door
- Cable clamping and attachment

4.5 mm diameter hole on a 25 mm DIN pitch pattern.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Packs of 20,
including screws

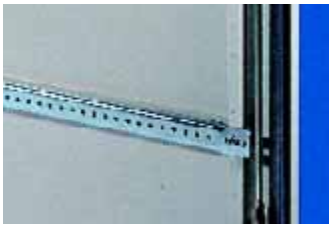
Accessories:

Screws and self-tapping screws M5,
see page 937.



For TS, CM, CL, ES

For door width mm	Model No. SZ
400	**4594.000**
500	**4309.000**
600	**4596.000**
800	**4598.000**
900	**4579.000**
1000	**4599.000**



For AE

For enclosures AE	Model No. SZ
1007.500[2], 1013.500[2] 1018.500[2], 1019.500[2] 1050.500[1], 1057.500 1100.500, 1110.500 1114.500[1], 1130.500 1213.500[1], 1350.500[1]	**2325.000**
1009.500[2], 1010.500[2] 1012.500[2], 1039.500 1058.500, 1060.500 1076.500, 1090.500 1260.500[1], 1339.500 1360.500, 1376.500	**2326.000**
1014.500[2], 1073.500 1077.500,	**2327.000**
1016.500[2], 1017.500[2] 1180.500, 1280.500[1]	**2328.000**

[1] For these AE models, the door rails should be cut to length.
[2] Only in conjunction with perforated mounting strips. (see page 896).



Cross brace

for TS, CM, CL, ES doors
To stabilise heavy equipment installed on and in the door.
With slots for enclosure duct connector,
see page 1035.
Frame connector, adjustable,
see page 907 and
enclosure surface connector,
see page 1034.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts for screw-fastening to the tubular door frame.

For door width mm	Model No. TS
600	**8800.960**
800	**8800.980**

Door, internal



Perforated mounting strip

For AE stainless steel, AP universal console[1)]
For vertical mounting on the threaded bolts of the door, for attaching
- Door rails AE
- Door stays SZ 2519.000, see page 898.

3.7 mm diameter hole on a 25 mm DIN pitch pattern.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Packs of 20,
including nuts and serrated washers.

To match AE	Length mm	Model No. SZ
1005.500, 1006.500 1009.500	318	**2310.038[1)]**
1012.500, 1014.500	698	**2310.076**
1016.500, 1018.500	938	**2310.100**
1017.500, 1019.500	1138	**2310.120**

[1)] for door at top

Accessories:
Screws,
see page 937.



Utility lectern

For programming units etc. Prepared for mounting on the tubular door frame of TS, CM, CL, ES, PC or on any sufficiently large surface.
When required for servicing, it folds down quickly with a maximum support area, and after use is stowed between the tubular door frames in a space-saving design.
Load capacity: max. 30 kg.

Material:
Sheet steel

Colour:
RAL 7035

Support area mm		For door width mm	Model No. TS
Width	Depth		
413	400	600	**4638.600**
613	400	800	**4638.800**





Wiring plan lectern

Holds wiring plans during fault finding and maintenance work.
The wiring plan lecterns can be bayed according to the door width.
For mounting on the tubular door frame.

Material:
Utility lectern: Polypropylene
Mounting bracket: Die-cast zinc

Colour:
Similar to RAL 7035

Supply includes:
Wiring plan lectern (width 210 mm).
Assembly parts.

For enclosures	Packs of	Model No. TS
For TS, CM, CL, ES, PC	1	**4120.000**

For door width mm	Required/possible number of wiring plan lecterns	
	min.	max.
400	1	1
500	1	1
600	2	2
800	2	3
1000	3	3



CD/disk box

For fixing to all flat, clean surfaces with double-sided adhesive tape.

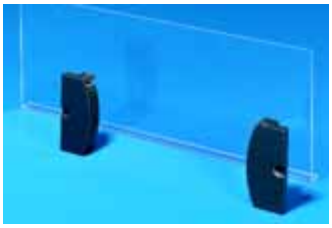
Capacity:
max. 10 CDs/DVDs,
or 18 (3 1/2″) disks.

Material:
Polyamide

Colour:
RAL 7033

Packs of	Model No. SZ
1	**2446.000**

German registered design
No. M 92 07 061
U.K. reg. des. no. 2 029 365
IR reg. design no. DM/025 474
with validity for FR, IT







Wiring plan pocket made of plastic

for AE

For installation options, refer to table

- B = Screw-fastened to the perforated door strip on both sides
- E = Screw-fastened on one side, other side stuck with adhesive

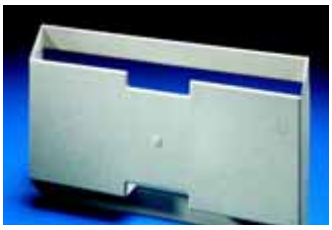
or stuck entirely with adhesive

Supply includes:
2 holders with double-sided adhesive tape,
plexiglass pane,
assembly parts.

Note:
The plexiglass pane may be shortened to any required size for shorter doors.

Model No. SZ		2514.500	2514.600	2514.800
Usable width mm		340	415	615
Usable depth mm		18	18	18
Height of plexiglass panel mm		167	167	167
Installation options				
For Model No. AE	Width mm			
1050.500	500	B	–	–
1057.500	500	B	–	–
1058.500	600	E	E	–
1060.500	600	E	E	–
1073.500	760	E	E	–
1076.500	600	E	E	–
1077.500	760	E	E	–
1090.500	600	E	E	–
1100.500	1000	B	–	–
1110.500	1000	B	–	–
1114.500	1000	B[1)]	–	–
1130.500	1000	B	–	–
1180.500	800	E	E	E
1213.500	1000	B[1)]	–	–
1260.500	600	E	B	–
1280.500	800	E	E	B
1350.500	500	B	–	–
1360.500	600	E	E	–
1376.500	600	E	E	–

[1)] Prepared for the installation in the l/h side door; for installation in the r/h side door, the acrylic glazed pane can be shortened.



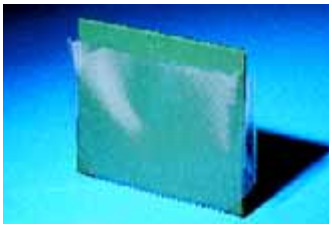
Wiring plan pockets made of plastic

For affixing to the inside surfaces of doors.

Material:
Polystyrene with self-adhesive fastening strips.

Colour:
Similar to RAL 7035

For Format	Clearance openings mm			Model No. SZ
	W (B)	H	D	
A3 landscape	438	287	45	**2513.000**
A4 portrait	228	256	17	**2514.000**
A5 landscape	228	176	17	**2515.000**

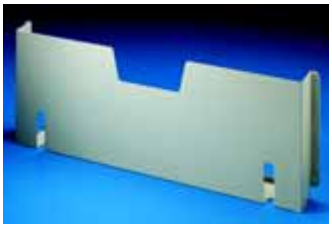


Wiring plan pockets with transparent pouch

With welded-on transparent pouch and self-adhesive backing.

For format	Model No. SZ
DIN A4	**2510.000**
DIN A3	**2512.000**

Door, internal



Wiring plan pockets of sheet steel

for TS, CM, CL, ES, PC
For fastening to tubular door frames at any height.

Colour:
RAL 7035

Supply includes:
Assembly screws

To fit door width mm	Clearance openings mm			Model No. TS
	W (B)	H	D	
400	255	260	90	**4114.000**
500	355	260	90	**4115.000**
600	455	260	90	**4116.000**
800	655	260	90	**4118.000**
900	755	260	90	**4123.000**
1000	855	260	90	**4124.000**



Wiring plan pockets of sheet steel

for AK
For screw-fastening on the left or right of the perforated door strip in any height.
The opposite side is fastened with adhesive tape.

Colour:
RAL 7035

For format	Clearance openings mm			Model No. SZ
	W (B)	H	D	
DIN A4	298	260	58	**2516.000**
A3 landscape	434	260	58	**2517.000**[1)]

[1)] Not for AK 1647.XXX, AK 1650.XXX



Door stay

To secure the door in the open position.

For	Packs of	Model No.
TS, CL, ES, PC	5	**4583.000**
AK, AP pedestals (not illustrated)	5	**2518.000**
AE (except AE 1032.500 and AE 1035.500) and all AE stainless steel enclosures[1)] can only be mounted at the top (not illustrated)	5	**2519.000**
AE IP 69K	1	**1101.800**
Outdoor compact enclosures	1	**1616.110**

[1)] With AE stainless steel, only in conjunction with perforated mounting strip, see page 896.



Ride-up roller

for TS, ES, PC
Lifts the door with heavy installed equipment (e.g. cooling unit) as a closing aid. For attaching to the tubular door frame.

Packs of	Model No. TS
10	**4538.000**





Transport and mounting handle

for TS, CL, ES doors
For secure attachment and dismantling of the door and for movement into the workshop. The matching hinge pin removal tool for 130° hinges is pre-integrated, and supplied loose for 180° hinges.

Packs of	Model No. SM
1	**2415.100**

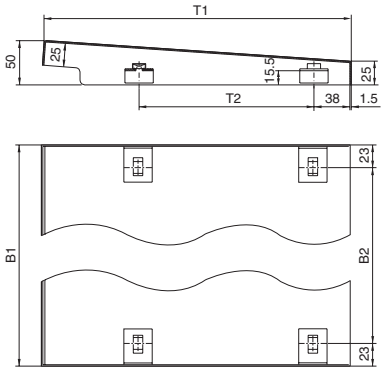


Rain canopies

for AE
Reliable protection for outside siting – with water run-off to the rear. Easily retro-fitted.

Supply includes:
Assembly parts.

Note:
For outdoor siting, we generally recommend a rain canopy above the enclosure or the gap between the door or screw-fastened rear panel and the enclosure, in order to protect against water and UV radiation.
The tests of IP protection categories for water protection (2nd code number to EN 60 529) cannot be compared with an enclosure sited outdoors or under similar conditions.
Upon request, rain canopies of sheet steel, stainless steel or aluminium can also be produced for other enclosures.



B = Width
T = Depth

Sheet steel version

For AE enclosures	B1	B2	T1	T2	Model No. SZ
1031.500 1038.500 1380.500	391	340	235	120	**2501.500**
1039.500 1060.500 1076.500	611	560	235	95	**2502.500**
1339.500 1360.500 1376.500	611	560	375	235	**2511.500**

Stainless steel version

For AE enclosures	B1	B2	T1	T2	Model No. SZ
1002.600 1035.500	211	160	180	65	**2470.000**
1005.600 1033.500 1034.500	311	260	235	120	**2361.000**
1004.600 1030.500	391	340	180	65	**2471.000**
1006.600 1008.600 1031.500 1038.500 1380.500	391	340	235	120	**2472.000**
1007.600 1050.500	511	460	235	120	**2362.000**
1009.600 1010.600 1012.600 1039.500 1060.500 1076.500	611	560	235	95	**2473.000**
1014.600 1073.500	771	720	325	185	**2474.000**
1016.600 1017.600 1180.500 1280.500	811	760	325	185	**2475.000**
1018.600 1019.600 1110.500 1114.500 1130.500 1213.500	1011	960	325	185	**2363.000**

Accessories:

Condensate discharge,
see page 852.



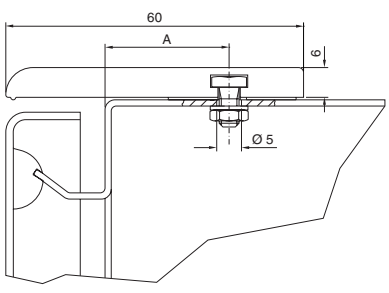
Dust guard trim

for AE, AK, EB, KL and BG
To protect against deposits on the upper edge of the door and between the enclosure and the door/lid. Cut the door protection strip to length according to the enclosure width. Drill the enclosure and mount the strip using the adhesive strips and screws.

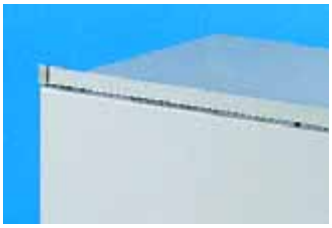
Material:
Plastic, UV-resistant

Colour:
Similar to RAL 7024

For enclosure	Length mm	A mm	Model No. SZ
AE	1200	25	**2426.500**
AK		15	
KL, EB, BG		20.5	



Roof



Dust guard trim

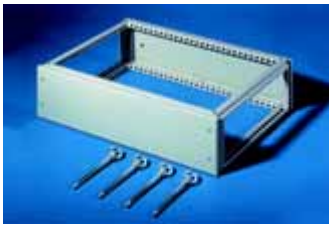
for TS, ES, FR(i)
To protect against dust deposits on the upper edge of the door and between the door and upper horizontal enclosure section. The dust guard trim provides space to accommodate texts or company logos.

Colour:
RAL 7035

Supply includes:
Clear plastic strip for text labels (Height 29.5 mm).

Length mm	Model No. SZ
600	**2424.100**
800	**2425.100**
1000	**2427.100**
1200	**2426.100**

Note:
Also suitable for use in conjunction with baying cover top,
see page 867.





Top mounting module

for TS, FR(i)
As a cable chamber for cable infeed from above or for power distribution with busbar systems across bayed enclosures. The TS cover plate is used as standard to finish off at the top. The enclosure height is increased by 200 mm with the top mounting module fitted.
The top baying cover cannot be fitted. Installation accessories for top and bottom, see diagram and explanations below.

Material:
Sheet steel, 1.5 mm

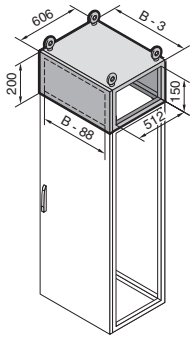
Surface finish:
Spray-finished in textured RAL 7035/RAL 7032

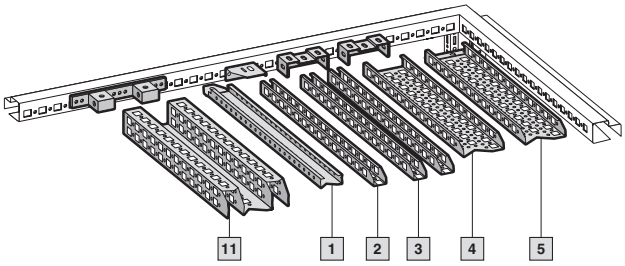
Protection category:
IP 55 to EN 60 529/10.91
Complies with NEMA 12
(in conjunction with side panel for top mounting module, see page 901).

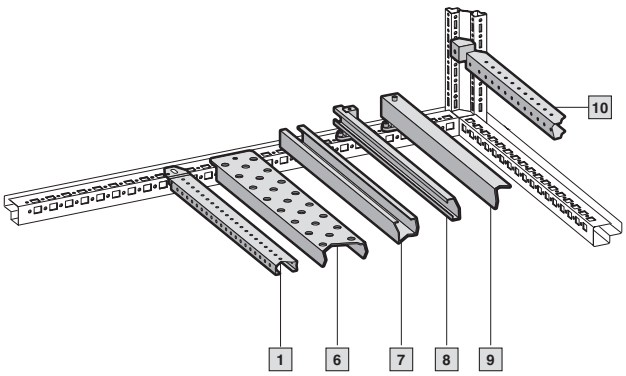
For enclosures		Model No. TS	
Width (B) mm	Depth mm	RAL 7032	RAL 7035
400	600	**8801.720**[1)]	**8801.725**
600	600	**8801.730**[1)]	**8801.735**
800	600	**8801.740**[1)]	**8801.745**
1000	600	**8801.750**[1)]	**8801.755**
1200	600	**8801.760**[1)]	**8801.765**

[1)] Delivery times available on request.

Supply includes:
1 frame module,
2 trim panels (front and rear),
8 holders
with automatic potential equalisation,
4 tapped rods with eyebolts.







Accessories:

Description	Page
1 TS punched rail 18 x 38 mm	923
2 PS punched rail 23 x 23 mm with angle bracket	925
3 PS punched rail 23 x 23 mm with support bracket PS	925
4 PS punched section without mounting flange, 23 x 73 mm with support bracket PS	925
5 PS punched section with mounting flange 23 x 73 mm	926
6 Support rail	927
7 System support rails	926
8 C rail 30/15 with support bracket or spacer	928
9 Cable clamp rail	979
10 TS punched rail 25 x 38 mm	923
11 TS punched section without mounting flanges, 45 x 88 mm	922





Side panel

for top mounting module
To finish off the side of a top mounting module or bayed suite.

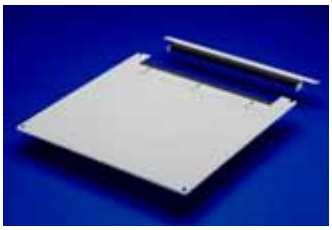
Material:
Sheet steel, 1.5 mm

Surface finish:
Spray-finished in textured RAL 7035/RAL 7032

Supply includes:
2 side panels,
8 holders
with automatic potential equalisation.

Version	Packs of	Model No. TS
RAL 7035	2	**8801.775**
RAL 7032	2	**8801.770**[1)]

[1)] Delivery times available on request.





Roof plate

for cable entry, two-piece
for TS, FR(i)
In exchange for the standard roof. Equipped with a sliding angular bracket in the rear section. Rubber cable clamp strip on both sides for attaching cable bundles and bunched cables.
Thanks to the symmetrical design of the TS 8 frame, side cable entry can also be achieved by rotating the roof plate.
The two-piece design additionally allows easy retro-fitting, by simply removing the front part of the plate for retrospective cable entry.
For active ventilation, a fan mounting plate may be fitted in the front section of the enclosure (only for TS, not in conjunction with the 482.6 mm (19″) mounting frame). To this end, the roof plate must be raised by at least 20 mm with spacers.

Material:
Sheet steel

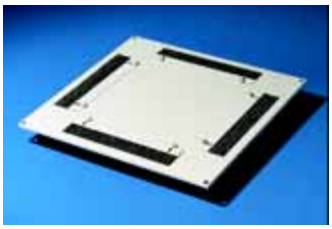
Colour:
RAL 7035

For enclosures		Model No. DK
Width mm	Depth mm	
600	400	**7826.645**
600	600	**7826.665**
600	800	**7826.685**
600	900	**7826.695**
600	1000	**7826.605**
800	400	**7826.845**
800	600	**7826.865**
800	800	**7826.885**
800	900	**7826.895**
800	1000	**7826.805**
1200	400	**7826.245**

Accessories:

Fan mounting plate,
see page 649.
Spacers,
see page 904.

Detailed drawing,
available on the Internet.



Roof plate

for cable entry on all sides
for TS, FR(i)
The roof plate has sliding plates for cable entry on all four sides, and therefore allows individual selection of cable routing tailored to the specific requirements. After cable entry, the sliding plate is closed again as far as possible, and the rubber cable clamp strips supplied loose then seal the cable entry area.

Material:
Sheet steel

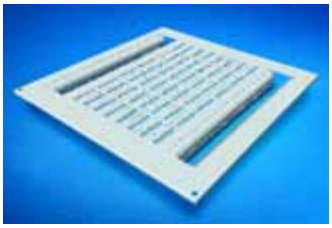
Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosures		Model No. DK
Width mm	Depth mm	
800	800	**7826.588**
800	900	**7826.589**

Detailed drawing,
available on the Internet.

Roof



Cable management roof plate

for TS, FR(i)
In exchange for the standard roof plate. Thanks to the rounded side cutouts, large quantities of cables may be routed into the rack whilst preserving the bend radii. The roof has system punchings for the attachment of cables with nylon tape or cable ties.

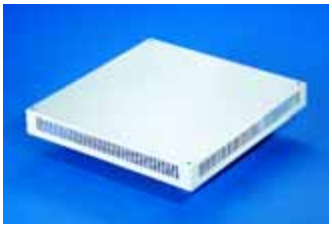
Material:
Sheet steel

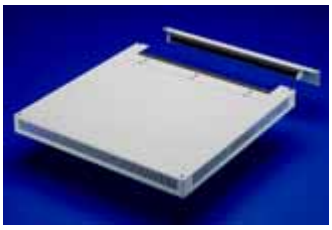
Colour:
RAL 7035

For enclosures		Model No. DK
Width mm	Depth mm	
800	600	**7826.864**
800	800	**7826.884**
800	900	**7826.894**

Other sizes available on request.

Detailed drawing,
available on the Internet.





Roof plate, vented

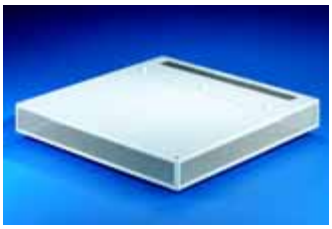
for TS, FR(i)
In exchange for the standard roof.

Variant 1:
72 mm high roof plate, all-round vent slots, optionally with clamp strip for cable entry. The two-piece design with cable entry allows easy retro-fitting, by simply removing the front part of the plate. The cables are held in position via a guide at the side.

Material:
Sheet steel

Colour:
RAL 7035

For enclosures		Model No. DK	
Width mm	Depth mm	One-piece without cable entry	Two-piece with cable entry
600	600	**7826.766**	**7826.669**
600	800	**7826.768**	**7826.689**
600	900	**7826.769**	**7826.699**
600	1000	**7826.760**	**7826.609**
800	600	**7826.786**	**7826.869**
800	800	**7826.788**	**7826.889**
800	900	**7826.789**	**7826.899**
800	1000	**7826.780**	**7826.809**



Variant 2:
Ventilation holes (Ø 3 mm) are incorporated all-round into the 97 mm high roof plate. In conjunction with the vented glazed and sheet steel door, the roof plate matches the door design to perfection.

Material:
Sheet steel

Colour:
RAL 7035

For enclosures		Model No. DK
Width mm	Depth mm	
800	600	**7826.866**
800	800	**7826.886**
800	900	**7826.896**
800	1000	**7826.806**

Accessories:

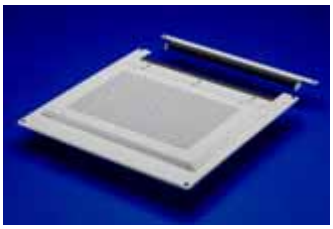
Fan mounting plate for active ventilation.
see page 649.

Detailed drawing,
available on the Internet.



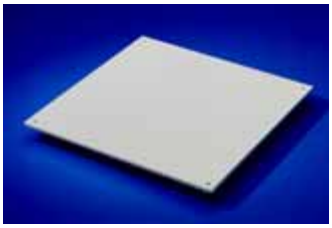
Roof-mounted fans

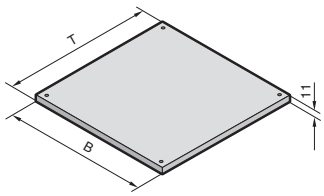
for TS, FR(i)
For the office sector,
see page 648.



Fan roof, modular, two-piece

for TS, FR(i)
see page 651.





Roof/gland plate, solid

for TE
To conceal the entire roof or base area.
The roof/gland plate may be raised with spacers to support passive climate control.

Material:
Sheet steel

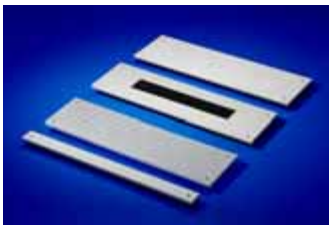
Colour:
RAL 7035, on request in RAL 9005

Supply includes:
Assembly parts.

Width (B) mm	Depth (T) mm	Model No. TE
450	450	**7526.770**
450	650	**7526.780**
650	450	
650	650	**7526.820**

Accessories:

Spacers,
see page 904.



Module plates

for TE
The module plates allow the roof or base area of the TE 7000, in exchange for the existing roof plate, to be varied as required.
The module plates may be raised with spacers to support passive climate control.

Material:
Sheet steel

Colour:
RAL 7035, on request in RAL 9005.

Supply includes:
Assembly parts.

Note:
Configuration details,
see below.

Version	Width mm	Depth mm	Model No. TE
Solid	450	200	**7526.760**
	650	200	**7526.800**
With brush strip	450	200	**7526.850**
	650	200	**7526.860**
Vented	450	200	**7526.829**
	650	200	**7526.834**
Compensating plate	450	50	**7526.750**
	650	50	**7526.790**

Also required:

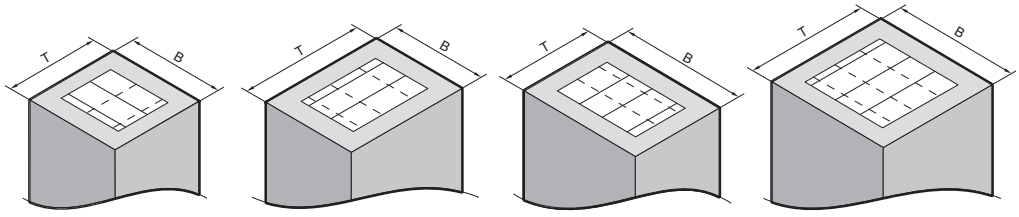
For a completely sealed roof/base assembly, a compensating plate is required.

Accessories:

Spacers,
see page 904.

Configuration: Roof frame, base frame, TE 7000 network enclosures

Enclosure dimensions mm					
	W (B)	600	600	800	800
	D (T)	600	800	600	800
Installation position/ enclosure		2 x module plates in the width or depth plus 1 x compensating plate each	3 x module plates in the width or 2 x module plates in the depth plus 1 x compensating plate each	2 x module plates in the width or 3 x module plates in the depth plus 1 x compensating plate each	3 x module plates in the width or depth plus 1 x compensating plate each



Roof



Roof mounting screw

For screw-fastening the roof plate instead of eye-bolts. With the TS 8, the contact washers for potential equalisation may be taken from the eye-bolts included with the supply of the enclosures.

Material:
Sheet steel, zinc plated, passivated

Packs of	Model No. PS
20	**4198.000**





Spacers

for roof plate
To raise the TS 8 roof for ventilation purposes, in three different heights.
Not suitable for crane transportation!

Height mm	Packs of	Model No. SZ/DK
10	4	**2422.000**
20	4	**2423.000**
50	4	**7967.000**



Spacers

for module plates TE
To assist passive ventilation, spacers may be used to raise the module plates.

Material:
Hexagonal sectional steel, zinc plated, passivated.

Supply includes:
Assembly parts.

Height mm	Packs of	Model No. TE
20	4	**7526.963**



Eyebolts

for TS, ES
For crane transportation of enclosures, may already be included in the supply.
Thread: M12

Packs of	Model No. PS
4	**4568.000**



Eyebolts

for AE, AK
For crane transportation of enclosures, with reinforcement plate to be inserted underneath.
Thread: M12

Supply includes:
Eyebolts, reinforcement plates.

Packs of	Model No. SZ
4	**2509.000**



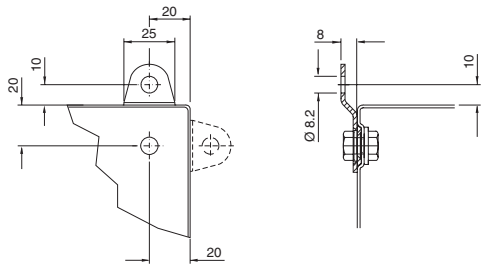
Wall mounting bracket

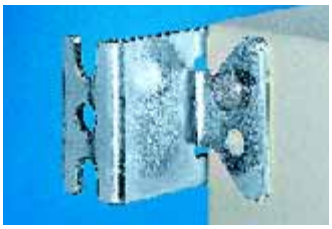
For the attachment of KL, EB, BG and EL enclosures as well as DK and FM wall-mounted distributors.

Supply includes:
Assembly parts for mounting on the enclosure.

Note:
For hygiene reasons, and in view of the protection category, the stainless steel enclosures do not have any drilled holes for the wall mounting brackets.

Material	Wall distance mm	Packs of	Model No. KL
Brass nickel-plated	8	4	**1580.000**
Sheet steel zinc-plated, passivated	8	4	**1590.000**
Stainless steel 1.4301	8	4	**1594.000**





Wall mounting bracket

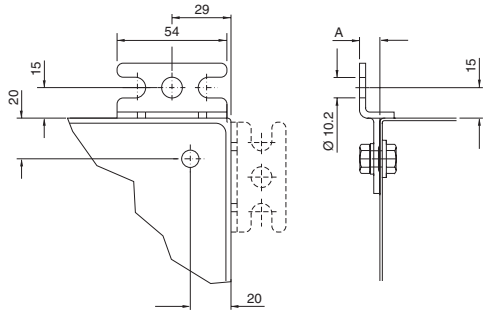
For the attachment of KL, EB, BG, AE, CM and EL enclosures as well as DK and FM wall-mounted distributors.

Supply includes:
Assembly parts for mounting on the enclosure.

Note:
For hygiene reasons, and in view of the protection category, the stainless steel enclosures do not have any drilled holes for the wall mounting brackets.

Material	Wall distance (A) mm	Packs of	Model No. SZ
Sheet steel zinc-plated, passivated	40	1	**2503.000**[1]
		4	**2503.010**
	10	1	**2508.000**[1]
		4	**2508.010**
Stainless steel 1.4301	10	4	**2433.000**

[1] Without assembly parts.





Wall mounting bracket

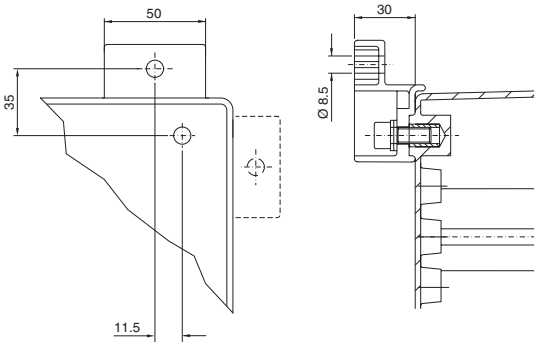
for KS
For attachment to the wall, only possible from the outside of the enclosure.

Material:
Fibreglass-reinforced polyamide[1]

Supply includes:
Assembly parts for mounting on the enclosure.

Colour	Packs of	Model No. KS/KE
Sim. to RAL 7032	4	**1483.000**
Sim. to RAL 9011	4	**9266.000**[1]

[1] With graphite additive for Ex applications.



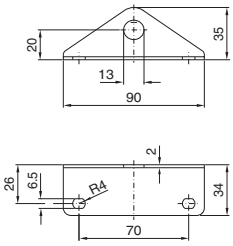
Wall mounting



Wall angle

For compact enclosures (additional holes required in the enclosure).

Material	Colour	Packs of	Model No. SZ
Sheet steel	RAL 7035	1	**2505.500**
	RAL 7032	1	**2505.200**
Stainless steel 1.4301	–	1	**2583.000**





Wall bracket

For wall attachment of TS and ES enclosures at the roof, e.g. with heavy components on the door.

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. PS
4	**4595.000**

Possible alternative:

With TS 8 inside the enclosure (without mounting plate), baying bracket TS 8800.470, see page 866.

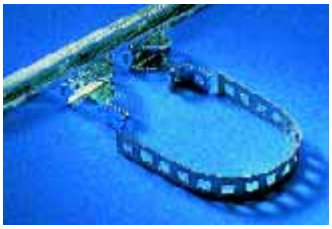


Wall mounting bracket

for CS wall-mounted enclosures
For mounting on a wall or panel.

Material:
Stainless steel 1.4301

Packs of	Model No. CS
4	**9765.120**



Pole clamp

For reliable, convenient fastening to round or square poles.

For pole diameter/size:
Ø from 40 to 190 mm
□ from 50 to 150 mm

Material:
Mounting angles, clamping section:
Sheet steel, zinc-plated, passivated
Clamping strap: Stainless steel 1.4301



For KL, EB, BG, AE, KS

Supply includes:
2 mounting angles, 600 mm long,
4 clamping sections,
2 clamping straps,
4 clamping brackets,
4 screws and nuts M8
for attachment to the enclosure.

Packs of	Model No. SZ
1 set	**2584.000**



For CS wall-mounted enclosures

Supply includes:
4 clamping sections,
2 clamping straps,
4 clamping brackets.

Packs of	Model No. CS
1 set	**9765.125**



Enclosure connectors

adjustable
Between Command Panels, terminal boxes, compact enclosures
and
horizontal or vertical surfaces.
Pre-mount the connector halves on both sides, screw together and secure with a locking screw, and/or adjust the angle of rotation.

Rotation range:
±105° with 7.5° stepped increments.

Material:
Die-cast zinc, powder-coated

Colour:
RAL 7035

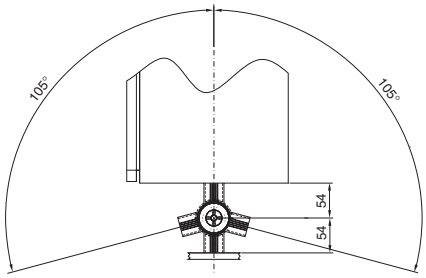
Supply includes:
Assembly parts for both sides.

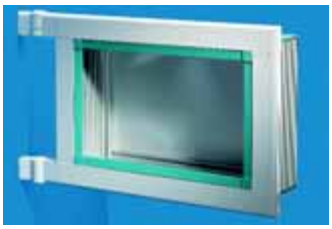
Packs of	Model No. CP
1 set	**6016.200**

Note:
The locking screws may be exchanged for standard, commercially available clamping levers (M10 x 50 mm).

Also required:

Cross-brace for door,
see page 895.





Frame connector

adjustable
Between the Command Panel VIP 6000 with wide front frame
and
horizontal or vertical surfaces.
Pre-mount the connector halves on both sides, screw together and secure with a locking screw, and/or adjust the angle of rotation.

Rotation range:
±105° with 7.5° stepped increments.

Material:
Die-cast zinc, powder-coated

Colour:
RAL 7035

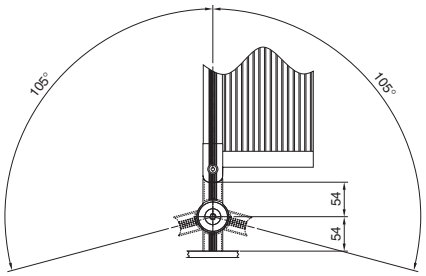
Supply includes:
Assembly parts for both sides.

Packs of	Model No. CP
1 set	**6016.100**

Note:
The locking screws may be exchanged for standard, commercially available clamping levers (M10 x 50 mm).

Also required:

Cross-brace for door,
see page 895.



Wall mounting





Wall mounting bracket

vertically hinged
Between the Compact Panel
and
horizontal or vertical surfaces.

Rotation range:
180° adjustable on a 7.2° pitch pattern.

Material:
Wall mounting bracket: Sheet steel
Locking screw: Steel with plastic knurled handle

Supply includes:
Locking screw and assembly parts for mounting on the Compact Panel.

Packs of	Model No. CP
1 set	**6341.000**





Console

for wall mounting, for RNC
With space for optimum cable routing in the wall area.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts

For RNC enclosures 42 HP (1/2 19″)		Model No. DK
Width mm	Depth mm	
342	280	**7870.700**

For RNC tower enclosures 84 HP (19″) vertical		Model No. DK
Width mm	Depth mm	
342	400	**7870.705**





Angle bracket

for RNC
With space for optimum cable routing in the wall area.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts

For RNC enclosures 42 HP (1/2 19″)		Packs of	Model No. DK
Width mm	Depth mm		
342	280	2	**7870.701**

For RNC tower enclosures 84 HP (19″) vertical		Packs of	Model No. DK
Width mm	Depth mm		
342	400	2	**7870.706**



Mounting plates

for KL
For component installation outside of the enclosure. Assembly screws included as accessories with the enclosure.

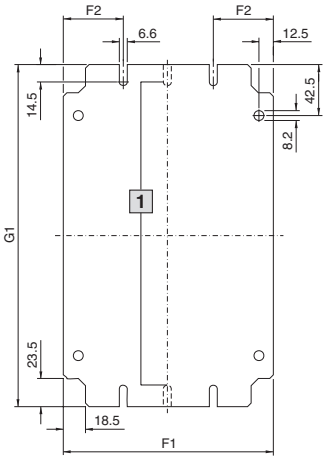
Material:
Sheet steel, 2 mm, zinc-plated, passivated

Accessories:

Self-tapping screws SZ 2487.000,
see page 937.

Possible alternative:

Support rails,
see page 927.



1 Attachment in the centre only for 125 mm wide plates

For size mm	For Model No. KL	Dimensions in mm			Model No. KL
		G1	F1	F2	
150 x 150	1500.510, 1514.510, 1521.010	135	125	–	**1560.700**
200 x 150	1528.510, 1529.510	185	125	–	**1575.700**
300 x 150	1501.510, 1515.510, 1522.010, 1530.510	285	125	–	**1561.700**
400 x 150	1589.510	385	125	–	**1576.700**
200 x 200	1502.510, 1516.510, 1523.010	185	175	50	**1562.700**
300 x 200	1503.510, 1517.510, 1524.010, 1531.510	285	175	50	**1563.700**
400 x 200	1504.510, 1518.510, 1525.010, 1532.510	385	175	50	**1564.700**
500 x 200	1505.510, 1533.510	485	175	50	**1565.700**
600 x 200	1506.510, 1519.510, 1534.510	585	175	50	**1566.700**
800 x 200	1527.510, 1542.510	785	175	50	**1574.700**
300 x 300	1507.510, 1526.010, 1535.510	285	275	50	**1567.700**
400 x 300	1508.510, 1536.510	385	275	50	**1568.700**
500 x 300	1509.510, 1537.510	485	275	50	**1569.700**
600 x 300	1510.510, 1538.510	585	275	50	**1570.700**
400 x 400	1511.510, 1539.510	385	375	62.5	**1571.700**
600 x 400	1512.510, 1540.510	585	375	62.5	**1572.700**
800 x 400	1513.510, 1541.510	785	375	62.5	**1573.700**



Mounting plate

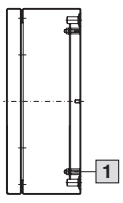
for Premium KL
For installing at a distance from the rear panel.

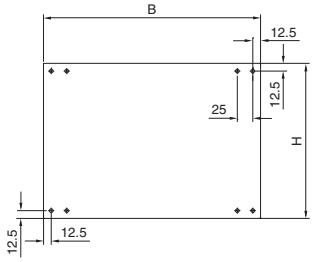
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Spacer bolts
and assembly parts.

For KL enclosures	W (B) mm	H mm	Packs of	Model No. KL
1024.010 1024.020	100	100	1	**1024.910**
1024.030	250	150	1	**1024.920**
1024.040	350	250	1	**1024.930**

Mounting plate attachment





1 Spacer bolts M5 x 15



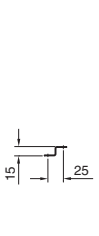
Mounting bracket

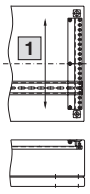
for Premium KL
For variable attachment of support rails on a 12.5 mm pitch pattern.

Material:
Stainless steel 1.4301

Supply includes:
Assembly parts.

For KL enclosures	L	N	Packs of	Model No. KL
1024.010 1024.020	85	6	2	**1024.810**
1024.030	135	10	2	**1024.820**
1024.040	235	18	2	**1024.830**





1 Variable to mounting bracket

Mounting plates

Mounting plate attachment

For additional clamping and to reduce potential vibration of the mounting plate. Select according to mounting position, installation type and enclosure.

Material:
Sheet steel, zinc plated, passivated

Supply includes:
Assembly parts.



For TS
Installation options:
- Side, at half height in conjunction with mounting plate infill
- In the penultimate position
- Set forward (supplied state)

Advantage:
No impairment to the mounting surface, but mounting is only possible from the enclosure rear.

Packs of	Model No. TS
10	8800.630

Accessories:

Mounting plate infill,
see page 912.



For TS
Installation options:
- Side
- Rear, flush with enclosure frame

Advantage:
No impairment to the mounting surface, but mounting is only possible from the enclosure rear.

Packs of	Model No. TS
10	8800.610



For TS
Installation options:
- Side
- Rear, flush with enclosure frame
- Set forward on a 25 mm pitch pattern

Advantage:
No impairment to the mounting surface.
May optionally used for attachment or screw fastening.

Packs of	Model No. TS
10	8800.090

Also required:

Punched section with mounting flange 17 x 73 mm for the inner mounting level,
see page 921 (with Fig. 3).



1

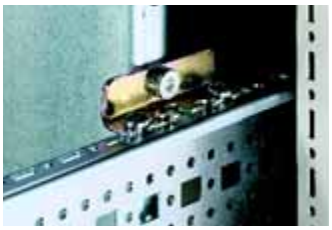


2

1 Mounting plate screw-fastened in the rearmost installation position.

2 Mounting plate screw-fastened from the rear in the rearmost installation position.

3 Mounting plate in a set forward position, either attached or screw-fastened (not shown).



3



For TS
Installation options:
- Side
- Rear, flush with enclosure frame

Slide over the plate at the side and secure with screws. Additionally, the mounting plate may be drilled and screw-fastened at the rear C-edge.

Packs of	Model No. TS
10	8800.050

Mounting plate attachment

For additional clamping and to reduce potential vibration of the mounting plate. Select according to mounting position, installation type and enclosure.

Material:
Sheet steel, zinc plated, passivated

Supply includes:
Assembly parts.



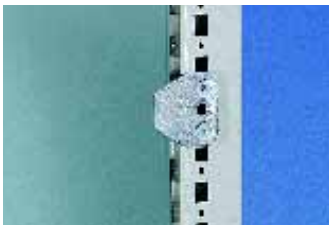
For TS, ES
Installation options:
- All-round
- Set forward on a 25 mm pitch pattern

Slide in between the bar and plate from below or above or from the side, and secure with screws.

Packs of	Model No. TS
10	4593.000

Also required:

Support strip (with TS for inner level), see page 924 or
punched section with mounting flange (with TS for inner level), illustration see page 921 or
punched rails and punched sections, see page 925.



For TS, ES
Installation options:
- On the top and bottom of the mounting plate (with ES all-round)
- Rear, flush with enclosure frame

Screw in the clip behind the plate and secure with screws.

Packs of	Model No. TS
10	4576.000

Installation kit







For mounting plates TS, back-to-back
Thanks to a minimum distance between the two mounting plates, a maximum installation depth is achieved for installed equipment on both sides.

Material:
Sheet steel, zinc-plated, passivated

Note:
Build height front and rear
with central installation =
(enclosure depth minus 48 mm) : 2
Example:
TS 8806.521 = Depth 600 mm
Build depth = 2 x 276 mm

Packs of	Model No. TS
1 set	8800.280

Rittal service:

Enclosures with 2 mounting plates (mounted in the centre unless otherwise specified) and door(s) on both sides may be ordered as complete units.
Model No.: TS 8xxx.521

Hinge attachment





for mounting plate TS, ES

In enclosures with width 600 and 800 mm.
Hinge pin with adjusting screws
– May be unlatched by hand for installation/ removal
– Secured via a screw

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. TS
1 set	8800.810

Also required:

Two PS support rails according to the enclosure width, see page 927.

Mounting plates



Mounting plate infill

for TS
For a continuous mounting surface in bayed suites where the mounting plate is set forward.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure height mm	Model No. TS
1800	**4590.700**
2000	**4591.700**
2200	**4592.700**



Mounting plate adjustment bracket

for KS
Infinitely adjustable.
Other equipment can also be installed in this way, instead of the mounting plate.

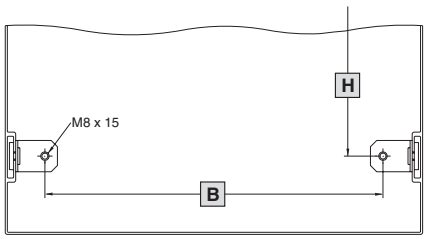
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosures KS	Packs of	Model No. KS
1423.600, 1432.600 1434.600, 1444.600 1446.600, 1448.600 1449.600, 1466.600 1467.600	4	**1481.000**
1453.600, 1454.600 1468.600, 1469.600 1479.600, 1480.600 1400.600	4	**1491.000**

B Enclosure width:
– 76 mm (KS 1481.000)
– 104 mm (KS 1491.000)

H Enclosure height:
– 150 mm



B = Width





Cross-brace for mounting plates

for TS, CL, ES
Additional horizontal rigidity for vibration resistance and/or stabilisation of wide mounting plates. This brace may also be used as an attachment aid for heavy components.

Material:
Sheet steel, zinc plated, passivated

Supply includes:
2 sections,
4 clamps,
4 grub screws M10 x 16 mm.

For enclosure width mm	Model No. TS
1200	**4333.120**
1600	**4333.160**
1800	**4333.180**

Other widths available on request.



Transport handles for mounting plates

for TS, CL, ES
Suitable for use in any position of the side C-fold.
Benefits include:
- Can be used by people of different heights
- Optimised force transmission
- Easy handling

Packs of	Model No. SZ
2	**2415.500**





Partial mounting plates

for TS, CL, CS Toptec

For

- Universal interior installation, also in conjunction with punched sections with mounting flanges and support strips. Defective assemblies are quickly and easily replaced
- Additional mounting levels

Partial mounting plates are fastened directly onto the vertical enclosure sections with the inner mounting level using the assembly parts supplied loose. In this mounting position (in both the width and the depth) they form one level with TS punched sections with mounting flanges 17 x 73 mm and TS support strips for the inner mounting level.

Material:
Sheet steel, 2.5 mm, zinc-plated, passivated

Supply includes:
Assembly parts.

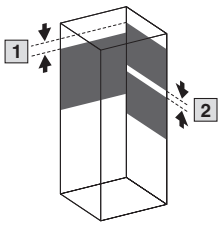
Accessories:

TS punched section with mounting flange 17 x 73 mm for the outer mounting level, see page 921.
TS support strip, see page 924.
Hinge attachment, see page 914.
Self-tapping screws, SZ 2487.000, see page 937.
Adaptor for CS Toptec, width 650 mm, see page 916.

For installation in									Size mm	Packs of	Model No. TS
Enclosure width mm					Enclosure depth (side) mm						
400	600	800	1000	1200	400	500	600	800			
■	■				■		■		500 x 300	1	**8614.640**[2]
	■					■	■		500 x 400	1	**8614.650**[2]
	■						■		500 x 500	1	**8614.660**[2]
	■	■					■	■	500 x 700	1	**8614.680**[2]
	■						■		500 x 775	1	**8614.675**[1][2]
■		■			■			■	700 x 300	1	**8614.840**
		■				■		■	700 x 400	1	**8614.850**
		■						■	700 x 700	1	**8614.880**
■			■		■				900 x 300	1	**8614.040**
			■			■			900 x 400	1	**8614.050**
	■		■				■		900 x 500	1	**8614.060**[2]
■				■	■				1100 x 300	1	**8614.240**
				■		■			1100 x 400	1	**8614.250**
	■			■			■		1100 x 500	1	**8614.260**[2]

[1] Also suitable for installing in
- PC enclosures based on TS behind the lower front door
- IW enclosures, height 900 and 1000 mm

[2] In conjunction with adaptor CS 9765.195 may also be installed in 650 mm wide/deep CS Toptec, see page 916.

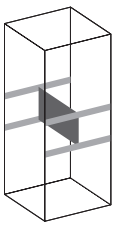


When **installing around corners** due to collision between the assembly components

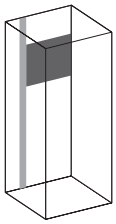
1 At least 75 mm (adjustable on a 25 mm pitch pattern).

Maximum space utilisation

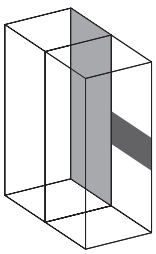
2 1 mm (adjustable on a 25 mm pitch pattern).



Set forward installation position
Quickly and easily achieved wtih four TS punched sections with mounting flanges 17 x 73 mm for the outer mounting level, see page 921.



Partial installation
Partial utilisation of the enclosure depth or width is also possible. In this example, using a PS punched section without mounting flange 23 x 73 mm, see page 925.



Continuously flush
In bayed enclosures, the partial mounting plate is in the rearmost position flush with the standard mounting plate. This facilitates continuous component mounting.

Mounting plates



Hinge attachment

for partial mounting plate TS

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. TS
1 set	**8614.100**

Also required:

Depending on the installation position
1 Divider kit for swing frame, small,
for enclosure width
600 mm, Model No. SR 2377.860,
800 mm, Model No. SR 2377.880,
see page 994.
2 PS punched section without mounting flange
23 x 73 mm according to the enclosure depth,
see page 925.
Support brackets TS 8800.330,
see page 933.

Side installation:
In conjunction with hinge, for side panel,
see page 854, for an enclosure depth of
600 or 800 mm, side installation is identical to
installation parallel to the front.

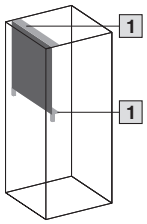




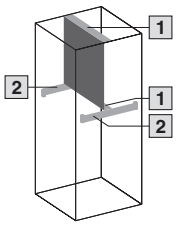
Examples

In the highest or lowest position

Front

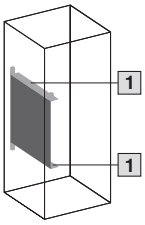


Set back

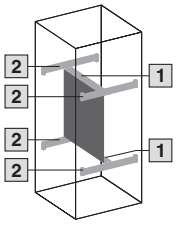


In a central position

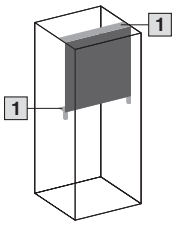
Front

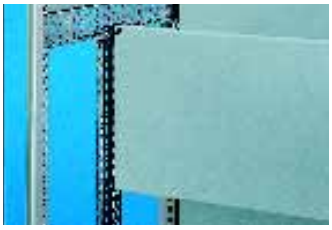


Set back



Side installation





Partial mounting plates

for ES, CS Basic and modular enclosures
For additional mounting levels.

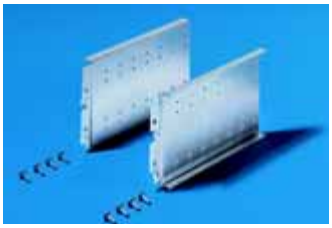
Material:
Sheet steel 2.5 mm, zinc-plated

Supply includes:
Assembly parts.

For enclosure width mm	Width x height mm	Packs of	Model No. PS
600	492 x 173	2	**4130.700**
600	492 x 373	2	**4131.700**
600	492 x 573	2	**4132.700**
800	692 x 173	2	**4135.700**
800	692 x 373	2	**4136.700**
800	692 x 573	2	**4137.700**
1200	1092 x 373	2	**4141.700**
1200	1092 x 573	2	**4142.700**

Accessories:

Self-tapping screws, SZ 2487.000,
see page 937.





Support rail, locatable

for TS, CM, CL, PC-TS

To fit:
- Internal mounting behind the mounting compartment, small, of the PC enclosure,
- Mounting on the vertical TS enclosure section,
- Mounting in CM, CL on a rail for internal installation.

Integral 25 mm pitch pattern of holes
To accommodate:
– Mounting plate, small
– PS punched section without mounting flange via support brackets PS
as a second mounting level if due to an installed:
– Mounting plate infill
– Cable duct, vertical
no punched sections or other assemblies can be mounted in the depth.

Static load: max. 15 kg

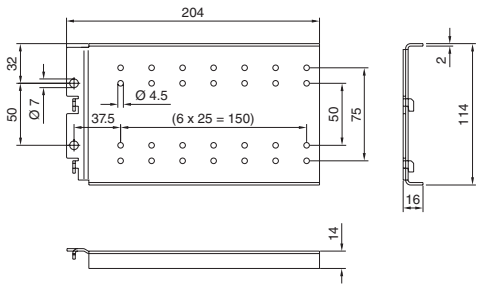
Material:
Sheet steel, 2.0 mm,
Zinc-plated, passivated

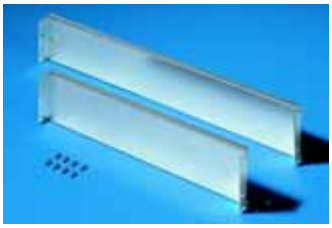
Supply includes:
Assembly parts.

Packs of	Model No. TS
1 set	**8612.200**

Accessories:

PS punched section without mounting flange, see page 925.





Mounting plate, small

For external mounting on:
- Support rail TS, locatable, depth-adjustable on a 25 mm pitch pattern,
- Punched sections with mounting flanges, attached to the outer mounting level.

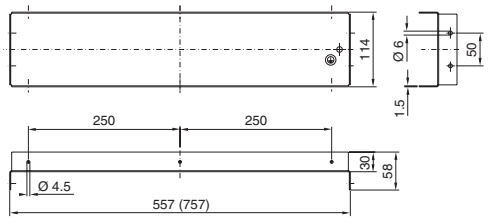
Material:
Sheet steel, 1.5 mm,
Zinc-plated, passivated

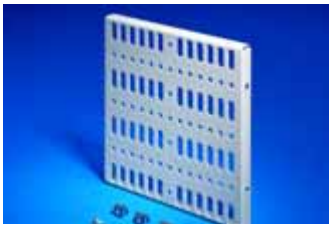
Supply includes:
Assembly parts.

Enclosure width mm	Packs of	Model No. TS
600	1	**8612.600**
800	1	**8612.800**

Accessories:

TS punched section with mounting flange, see page 921.
Self-tapping screws, SZ 2487.000, see page 937.







Mounting plate

for RNC, RiCase

Slotted, for the attachment of cables or small equipment.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

W x H mm	Model No. DK
178 x 178	**7870.740**

Mounting plates




Mounting plate

for compact enclosures, Outdoor
In two versions:
- Sheet steel, 3 mm, zinc-plated
  – for contacted (EMC) assemblies
  – including assembly screws
- MDF, 15 mm
  – for insulated assembly
  – including 2 mounting brackets and assembly screws

For compact enclosures, Outdoor	Model No.	
	Sheet steel	MDF
1620.000, 1620.100	**1616.200**	**1616.230**
1621.000, 1621.100	**1616.210**	
1622.000, 1622.100	**1616.220**	**1616.240**



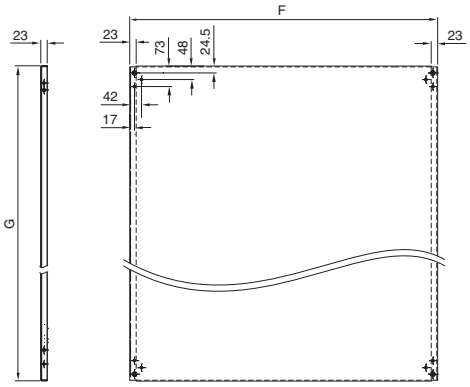

Mounting plates

for CS Toptec, Basic and modular enclosures
For the configuration of mounting levels.
The mounting plates are depth-adjustable on a 25 mm pitch pattern.

Material:
Aluminium, 3 mm

Supply includes:
Assembly parts.

Note:
For an enclosure depth of 1200 mm partial installation with one or two 600 mm wide mounting plates is possible.



For enclosure		F	G	Model No. CS
Width mm	Height mm			
600	800	499	696	**9765.090**
600	1000	499	896	**9765.091**[1)]
600	1200	499	1096	**9765.092**
600	1400	499	1296	**9765.098**
600	1600	499	1496	**9765.093**
650	1200	549	1096	**9765.193**
650	1600	549	1496	**9765.194**
800	800	699	696	**9765.097**
800	1000	699	896	**9765.094**[1)]
800	1200	699	1096	**9765.095**
800	1400	699	1296	**9765.099**
800	1600	699	1496	**9765.096**
1200	800	1099	696	**9765.190**[1)]
1200	1200	1099	1096	**9765.191**
1200	1400	1099	1296	**9765.192**

[1)] Delivery times available on request.

Adaptor

for the attachment of partial mounting plates
In CS Toptec, width or depth 650 mm.

Packs of	Model No. CS
4	**9765.195**

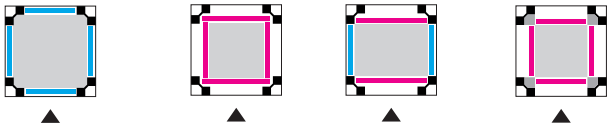



Self-tapping screws

Order information may be found on page 937.

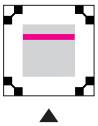
Overview of TS installation systems

Clearance width
Depending on attachment, the following values apply to the clearance between the mounting levels:
- Outer mounting level = Enclosure width and depth minus 42 mm
- Inner mounting level = Enclosure width and depth minus 88 mm



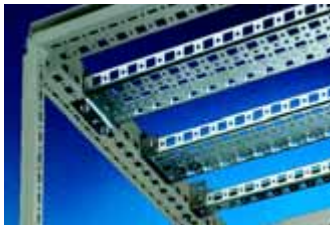
External level | Internal level | External and internal level | PS-compatible installation

Cover installation



Installation with:
- PS punched section with mounting flange
- PS punched section without mounting flange
- PS punched rail in three mounting variants
- TS punched rails
- TS punched sections without mounting flanges
- TS punched sections with mounting flanges



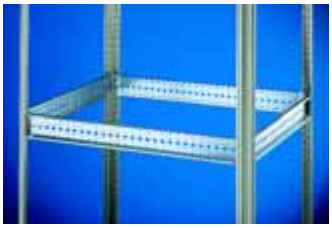


TS 8 rails for the outer level



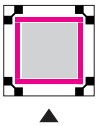
- TS punched sections with mounting flanges
- TS mounting bar
- TS punched rail

Benefits:
- Largest clearance width
- May be installed directly, on one level all round





TS 8 rails, PS rail for the inner level



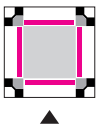
- TS punched sections with mounting flanges
- TS mounting bar
- PS punched section without mounting flange, with support bracket TS

Benefits:
- Use of a second level
- Height-offset mounting all-round

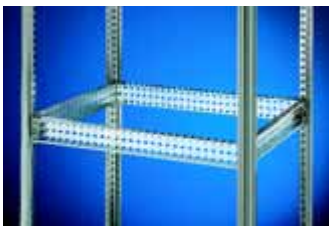




With adaptor rail for PS compatibility

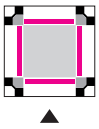


On one level all round with:
- PS punched section without mounting flange, with support bracket PS
- PS punched rail with angle bracket, mounting bracket or support bracket PS

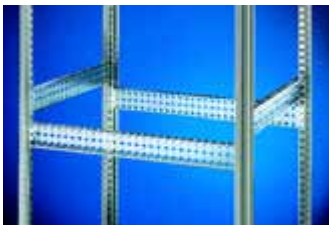




With adaptor rail for PS compatibility

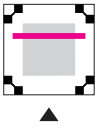


Height-offset in the width and depth with:
- PS punched section with mounting flange
- PS punched rail with mounting bracket
- TS punched rail

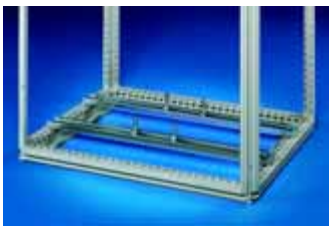


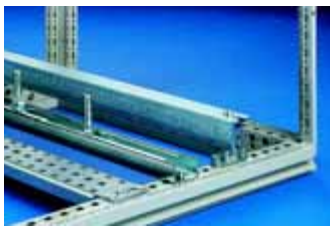


Base installation

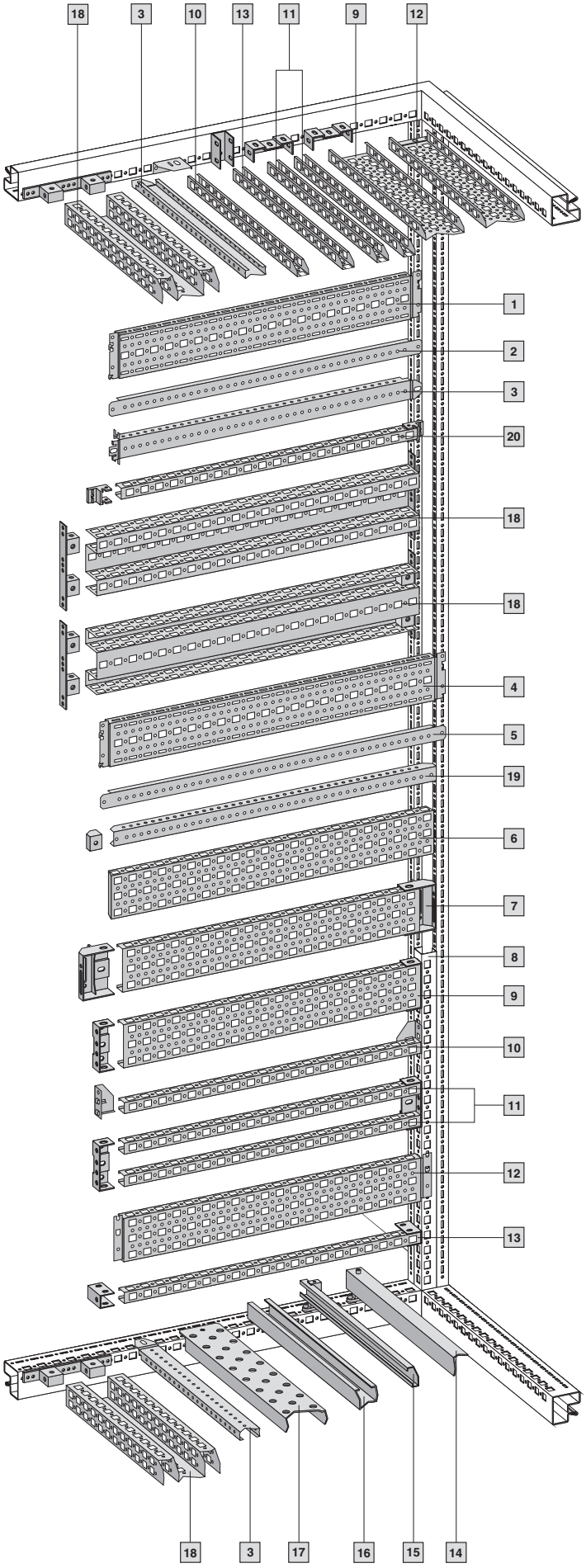


Installation with:
- Cable clamp rails
- C rails 30/15 with bracket/spacer
- System support rails
- Support rail
- TS punched rails





Rail systems



Cover installation

Punched sections and rails may be mounted on the horizontal enclosure sections in both the width and depth.

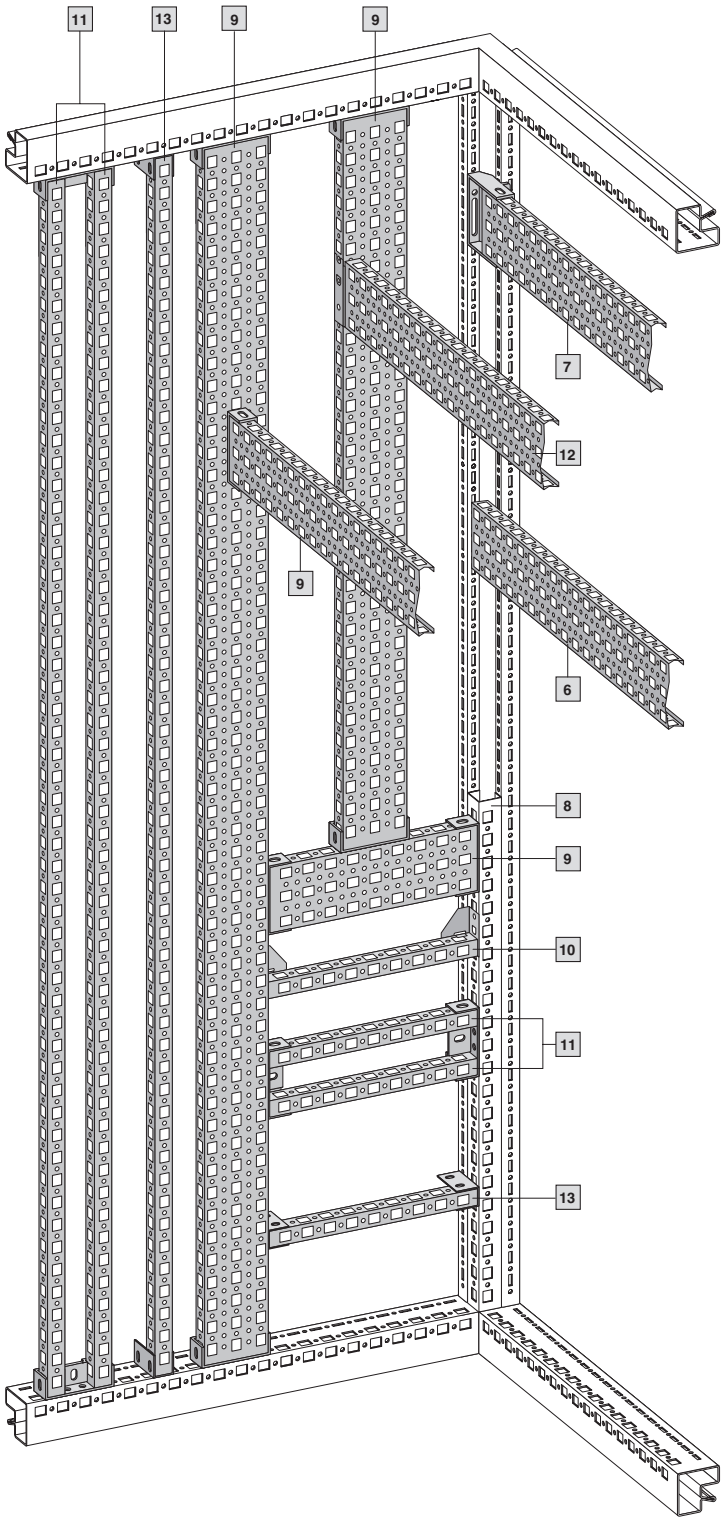
Installation accessories	Page
1 TS punched section with mounting flange, 17 x 73 mm for the outer level	921
2 TS support strip for the outer level	924
3 TS punched rail 18 x 38 mm[1] for the ● outer level ● horizontal enclosure sections ● adaptor rail for PS compatibility	923
4 TS punched section with mounting flange, 17 x 73 mm for the inner level	921
5 TS support strip for the inner level	924
6 TS punched section with mounting flange, 23 x 73 mm for the inner level	922
7 PS punched section without mounting flange 23 x 73 mm with support bracket TS (alternatively with one or two punched rails 23 x 23 mm)	925
8 Adaptor rail for PS compatibility	924
9 PS punched section without mounting flange, 23 x 73 mm with support bracket PS	925
10 PS punched rail 23 x 23 mm with angle bracket	925
11 PS punched rails 23 x 23 mm with support bracket PS (alternatively with one or two punched rails 23 x 23 mm)	925
12 PS punched section with mounting flange 23 x 73 mm	926
13 PS punched rail 23 x 23 mm with mounting bracket PS	925
14 Cable clamp rail	979
15 C rails 30/15 with support bracket or spacer	928
16 System support rails	926
17 Support rail	927
18 TS punched sections without mounting flanges, 45 x 88 mm	922
19 TS punched rail 25 x 38 mm with snap-on nut	923
20 PS punched rail 23 x 23 mm with mounting bracket TS	925

[1] Two TS punched rails 18 x 38 mm are included in the supply of enclosures with a mounting plate. After installing the mounting plate, the TS punched rail may be inserted, as shown here.

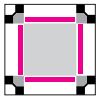
Base installation

Punched sections and rails may be mounted on the horizontal enclosure sections in both the width and depth.

Attachment may be made at any point in the TS 8 enclosure space. Not only with horizontal rail installations directly between the TS sections, but by combining vertical and horizontal rails, any given mounting level in the width, height and depth may be achieved.

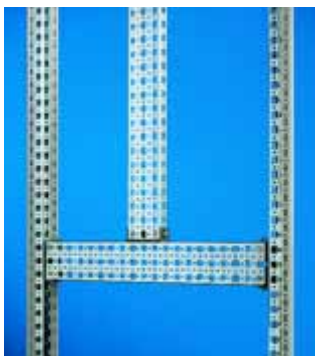


Vertical mounting levels – PS-compatible



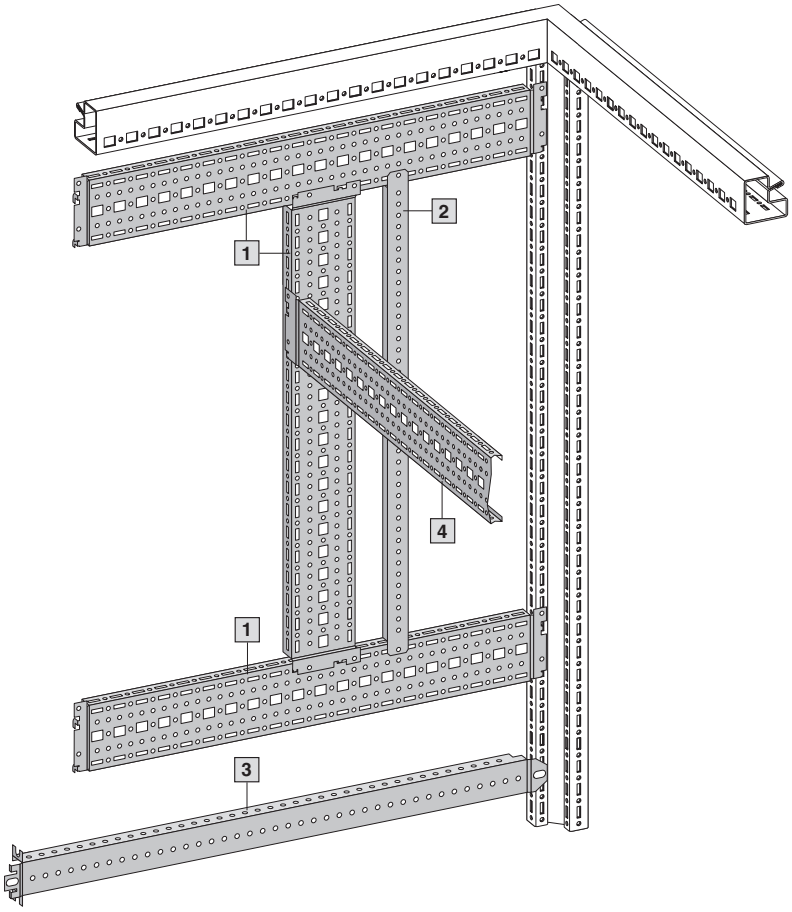
The basis for a second mounting level across the entire enclosure height is quickly achieved, e.g. with two PS punched sections without mounting flanges 23 x 73 mm **9.** Between these two sections, configuration may be achieved with PS punched rails **10, 11** and **13,** with PS punched sections without mounting flanges **9** and PS punched sections with mounting flanges **12.** When using the adaptor rail for PS compatibility **8,** installation is easily achieved across a suitable sub-height, or with suitable enclosure dimensions, across a sub-width or sub-depth.

Installation accessories (Consecutive numbering in accordance with diagram on page 918)	**Page**
6 TS punched section with mounting flange, 23 x 73 mm for the inner level	921
7 PS punched section without mounting flange, 23 x 73 mm with support bracket TS (alternatively with one or two punched rails 23 x 23 mm)	925
8 Adaptor rail for PS compatibility	924
9 PS punched section without mounting flange, 23 x 73 mm with support bracket PS	925
10 PS punched rail 23 x 23 mm with angle bracket	925
11 PS punched rails 23 x 23 mm with support bracket PS (alternatively with one or two punched rails 23 x 23 mm)	925
12 PS punched section with mounting flange 23 x 73 mm	926
13 PS punched rail 23 x 23 mm with mounting bracket PS	925



If PS punched rails or PS punched sections without mounting flanges are installed vertically on roof or base frames, a PS rail is also required for horizontal sub-division.

Rail systems



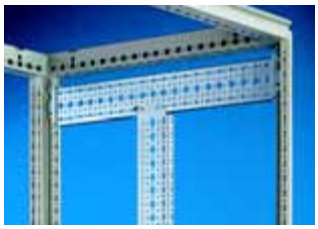
Vertical outer mounting level



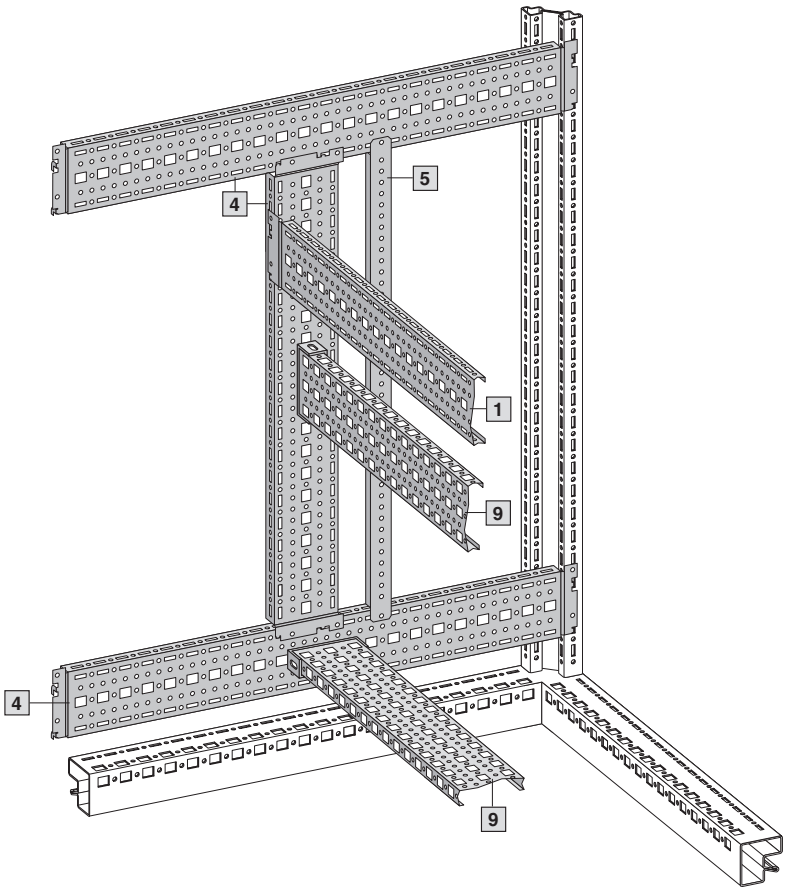
Optimum space utilisation and super-fast assembly by mounting the TS punched section with mounting flange directly onto the outer level of the TS 8 vertical section. Simply snap into position and secure!

Installation accessories (Consecutive numbering in accordance with diagram on page 918)	**Page**
1 TS punched section with mounting flange, 17 x 73 mm for the outer level	921
2 TS support strip for the outer level	924
3 TS punched rail 18 x 38 mm[1] for the ● outer level ● horizontal enclosure sections ● adaptor rail for PS compatibility	923
4 TS punched section with mounting flange, 17 x 73 mm for the inner level	921

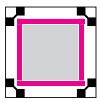
[1] Two TS punched rails 18 x 38 mm are included in the supply of enclosures with a mounting plate. After installing the mounting plate, the TS punched rail may be inserted, as shown here.



German patent no. 196 47 802

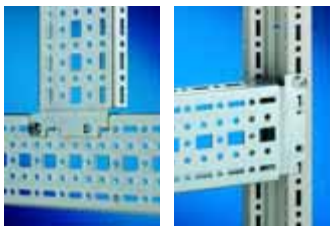


Vertical inner mounting level



Separate utilisation of the inner level of the TS 8 vertical section, irrespective of the outer level, creates additional opportunities. Even in one enclosure, all installation systems may complement one another perfectly for brand new, customer-specific solutions. Endless possibilities! Simply snap into position, secure, and voila! Super-fast assembly by mounting the TS punched section with mounting flange directly onto the inner level of the TS 8 vertical section.

Installation accessories (Consecutive numbering in accordance with diagram on page 918)	**Page**
1 TS punched section with mounting flange, 17 x 73 mm for the outer level	921
4 TS punched section with mounting flange, 17 x 23 mm for the inner level	921
5 TS support strip for the inner level	924
9 Punched section without mounting flange, 23 x 73 mm with support bracket PS	925

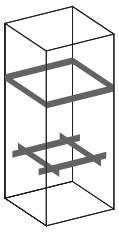


German patent no. 196 47 802

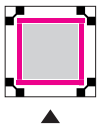












TS punched section with mounting flange, 17 x 73 mm

Variable, with 5 rows of holes for universal skeleton structures or partial assembly. Simply locate into the TS punchings and secure.

Installation options:
- On the vertical TS enclosure section
  - On the outer mounting level, all-round, at the same height
  - On the inner mounting level, all-round, height-offset
- In CM, CL via rail for interior installation
  - In the depth, for outer mounting level
  - In the width, for innner mounting level

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

German patent no. 196 47 802

Also required:

For installation in CM, CL:
Rail for interior installation,
see page 133.

Accessories:

Screws,
see page 937.
Cable tie for quick assembly SZ 2597.000,
see page 982.

For the outer mounting level[1)]

For enclosure width/depth mm	Packs of	Model No. TS
300	4	**8612.130**
400	4	**8612.140**
500	4	**8612.150**
600	4	**8612.160**
650	4	**8612.165**
800	4	**8612.180**
1000	4	**8612.100**
1200	4	**8612.120**

1) Note:
In conjunction with plug-in side panels, notched punched sections are required.

For the inner mounting level

For enclosure width/depth mm	Packs of	Model No. TS
400	4	**8612.040**
500	4	**8612.050**
600	4	**8612.060**
650	4	**8612.065**
800	4	**8612.080**
900	4	**8612.090**
1000	4	**8612.000**
1200	4	**8612.020**



TS punched section with mounting flange, 17 x 73 mm

Notched version
For enclosures with plug-in side panels.
Variable, with 5 rows of holes for universal skeleton structures or partial assembly. Simply locate into the TS punchings and secure.

Installation options:
- On the vertical TS enclosure section
  - On the outer mounting level, all-round, at the same height

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

For the outer mounting level; Notched version

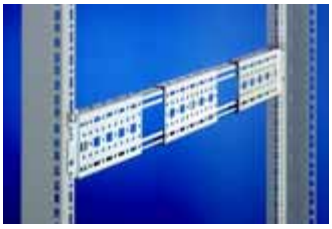
For enclosure width/depth mm	Packs of	Model No. TS
600	4	**7828.064**
800	4	**7828.084**
900	4	**7828.094**
1000	4	**7828.104**

Accessories:

Screws, see page 937.
Cable tie for quick assembly SZ 2597.000,
see page 982.

German patent no. 196 47 802





TS punched section with mounting flange, 17 x 73 mm

depth-variable for mounting frames for DK-TS, FR(i), TE
For designing flexible interior installation, and/or to accommodate additional built-in components.
The punched sections with mounting flanges may be located in the enclosure depth between two mounting frames. An additional screw fastening secures the unit.
The depth variability of the rails facilitates flexible adaptation of their length to the existing attachment distance between the two 482.6 mm (19″) mounting frames. An additional punched section centre piece may be slid flexibly along the rail in the depth and secured to slots. This facilitates flexible attachment at any point between the mounting frames in the enclosure depth.

19″ distance between levels mm	Packs of	Model No. TE
420 – 590	2	**7000.676**
650 – 820	2	**7000.678**

Material:
Sheet steel, zinc-plated, passivated

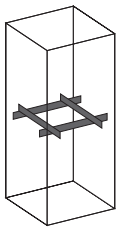
Supply includes:
2 variable punched sections with mounting flanges,
including one sliding centre part each,
including assembly parts.

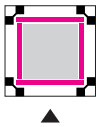
Rail systems











TS punched section with mounting flange, 23 x 73 mm

The alternative to the TS punched section with mounting flange 17 x 73 mm, see page 921, with punchings for captive nuts/threaded blocks instead of the slotted holes top and bottom. Simply locate and secure.

Installation options:
- On the vertical TS enclosure section

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

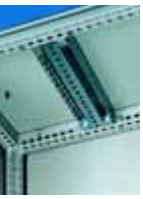
For the inner mounting level

For enclosure width/depth mm	Packs of	Model No. TS
500	4	**8612.550**
600	4	**8612.560**
800	4	**8612.580**
900	4	**8612.590**
1000	4	**8612.500**
1200	4	**8612.520**

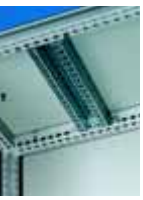
Accessories:

Screws,
see page 937.
Threaded blocks, captive nuts,
see page 936.

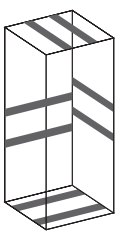


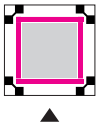












TS punched section without mounting flange, 45 x 88 mm

Heavy top-mounted equipment mounted directly on the internal surfaces (e.g. roof) is supported. Mounted on the side or rear, the enclosure can then be screw-fastened securely to the machine. The twin profile with 11 rows of holes offers numerous additional opportunities for interior installation.

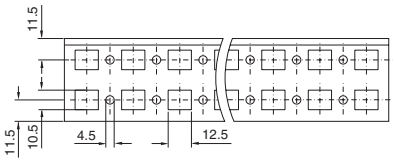
Installation options:
- On the vertical and horizontal TS enclosure section

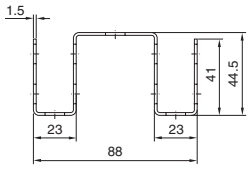
Material:
Sheet steel, zinc-plated, passivated.

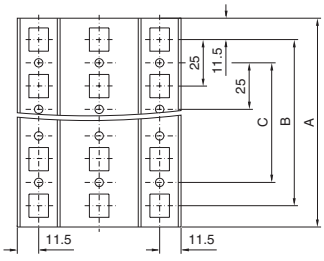
Supply includes:
Assembly parts.

For enclosure width/depth mm	Packs of	Model No. TS
500	2	**8612.650**
600	2	**8612.660**
800	2	**8612.680**

Side punchings







For enclosure width/depth mm	A	B	C
500	398	375	350
600	498	475	450
800	698	675	650







TS punched rail 25 x 38 mm

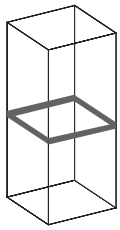
For heavy installations, with attachment holes.

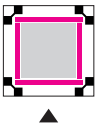
Installation options:
- On the vertical TS enclosure section

With 9 mm round holes all round on a 25 mm pitch pattern, for the configuration of:
- Support rails, see page 927
- System support rails, see page 926
- C rails 30/15, see page 928
- Cable clamp rails (right angle section), see page 979
- Own assemblies

Material:
Sheet steel 3.0 mm, zinc-plated, passivated

Supply includes:
Assembly screws.





For enclosure width/depth mm	Packs of	Model No. TS
400	2	**8612.740**
500	2	**8612.750**
600	2	**8612.760**
800	2	**8612.780**

Also required:

Snap-on nut M8, TS 8800.808,
see page 931.

Note:
In conjunction with the snap-on nut, particularly well-suited for dynamic connections.







TS punched rail 18 x 38 mm

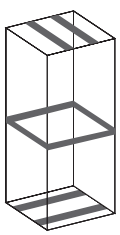
Simply locate and secure with a screw. The location system makes assembly and dismantling easier. It only needs to be secured on one side, but may be secured on both sides if required.

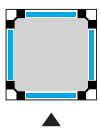
Installation options:
- On the vertical TS enclosure section
  – On the outer mounting level
- On the horizontal TS enclosure section

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

Note:
In enclosures with a mounting plate, 2 punched rails are already included with the supply.





For enclosure width/depth mm	Packs of	Model No. TS
400	4	**8612.240**
500	4	**8612.250**
600	4	**8612.260**
800	4	**8612.280**

German patent no. 197 37 673
European patent no. 0 940 067
with validity for FR, GB, IT, SE
US patent no. 6,145,943
Chinese patent no. ZL 971 995 32.X
Australian patent no. 725 979

Accessories:

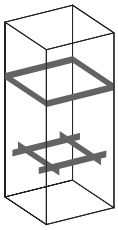
Screws,
see page 937.
Cable tie for quick assembly SZ 2597.000,
see page 982.
Cable clamps,
see page 981.

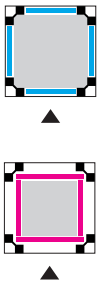
Rail systems











TS support strips

Installation options:
- On the vertical and horizontal TS enclosure section
  - On the outer mounting level, all-round, at the same height
  - On the inner mounting level, all-round, height-offset
- On the tubular door frame TS, CL, ES
- On the perforated door strip CM
- On the ES system punchings, in the enclosure depth

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

For the outer mounting level

For enclosure width/depth mm	Length mm	Packs of	Model No. TS
400	340	20	**4694.000**
500	440	20	**4695.000**
600	540	20	**4696.000**
800	740	20	**4697.000**

Accessories:

Screws,
see page 937.
Cable tie for quick assembly SZ 2597.000,
see page 982.

For the inner mounting level and for mounting on doors

For enclosure width/depth mm	For door width mm	Length mm	Packs of	Model No. TS
–	400	290	20	**4594.000**
400	500	390	20	**4309.000**
500	600	490	20	**4596.000**
600	–	590	20	**8800.130**
–	800	690	20	**4598.000**
800	900	790	20	**4579.000**
–	1000	890	20	**4599.000**





Adaptor rail

for PS compatibility
Installation in the vertical TS enclosure sections (across the entire enclosure height or in sub-sections) to create compatibility with:
- PS punched rail 23 x 23 mm
- Punched section without mounting flange, 23 x 73 mm
- PS punched section with mounting flange, 23 x 73 mm

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

German patent no. 19 647 781
European patent no. 0 939 990
with validity for FR, GB, IT, SE
US patent no. 6,206,494
Australian patent no. 727 880
Chinese patent no. ZL 971 997 31.4

For enclosure height mm	Packs of	Model No. TS
1800	4	**8800.380**
2000	4	**8800.300**
2200	4	**8800.320**

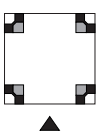
Accessories:

Screws,
see page 937.

Possible alternative:

Snap-on nut,
see page 931.





TS assembly block

Installation in the vertical TS enclosure sections for mounting PS-compatible individual components.

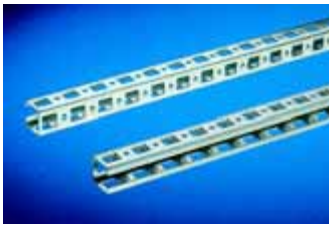
Material:
Die-cast zinc

Supply includes:
Assembly screws.

Packs of	Model No. TS
4	**8800.310**

Possible alternative:

Snap-on nut,
see page 931.









TS punched rails 23 x 23 mm

Installation options:

- On the vertical enclosure section
  - Directly via support brackets TS
  - Via adaptor rail for PS compatibility in conjunction with angle brackets, mounting brackets or support brackets PS
- On the horizontal enclosure section
  - Directly via angle brackets, mounting brackets or support brackets PS

Material:
Sheet steel, zinc-plated, passivated

Length mm	For WHD mm	Packs of	Model No. PS
295	400	12	**4169.000**
395	500	12	**4170.000**
495	600	12	**4171.000**
695	800	12	**4172.000**
895	1000	12	**4173.000**
1095	1200	6	**4174.000**
1295	1400	6	**4393.000**
1495	1600	6	**4175.000**
1695	1800	6	**4176.000**
1895	2000	6	**4177.000**
2095	2200	6	**4178.000**

Also required:

U nuts,
see page 936.
Mounting brackets TS/PS,
see page 932
or
Angle brackets, support brackets TS/PS,
see page 933.

Accessories:

Cable attachment,
see page 982.
Screws,
see page 937.
Cable tie for quick assembly SZ 2597.000,
see page 982.









PS punched section without mounting flange, 23 x 73 mm

Installation options:

- On the vertical enclosure section
  - Directly via support brackets TS
  - Via adaptor rail for PS compatibility in conjunction with support brackets PS
- On the horizontal enclosure section
  - Directly via support brackets PS

Material:
Sheet steel, zinc-plated, passivated

Length mm	For WHD mm	Packs of	Model No. PS
295	400	4	**4374.000**
395	500	4	**4375.000**
495	600	4	**4376.000**
695	800	4	**4377.000**
895	1000	4	**4382.000**
1095	1200	4	**4378.000**
1695	1800	4	**4379.000**
1895	2000	4	**4380.000**
2095	2200	4	**4381.000**

Also required:

Support brackets PS/TS,
see page 933.

Accessories:

Screws,
see page 937.
Cable tie for quick assembly SZ 2597.000,
see page 982.
U nuts,
see page 936.

Rail systems







PS punched section with mounting flange, 23 x 73 mm

Variable, with 5 rows of holes for universal skeleton structures or partial assembly. Simply locate into the system punchings and secure.

Installation options:
- On the vertical TS enclosure section
  – Via adaptor rail for PS compatibility
- On the horizontal TS enclosure section
- On the ES system punchings, in the enclosure depth

Material:
Sheet steel, zinc-plated, passivated

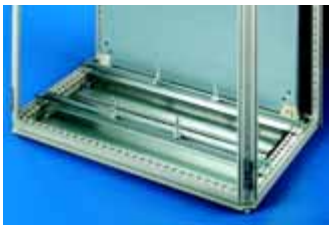
Supply includes:
Assembly screws.

Installation in enclosure width/depth TS mm	Packs of	Model No. PS
400	4	**8800.640**
500	4	**8800.650**
600	4	**4364.000**
800	4	**4365.000**
1000	4	**4373.000**
1200	4	**4367.000**

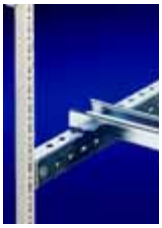
Installation in enclosure depth ES, AP universal console, CS modular enclosures mm	Packs of	Model No. PS
400	4	**4369.000**
500	4	**4370.000**
600	4	**4371.000**
800	4	**4372.000**

Also required:

Adaptor rail for PS compatibility
(when mounting on the vertical TS enclosure section), see page 924.







System support rails

For heavy installed equipment such as transformers. T-head screw and slot in the support rail for any mounting position.

Installation options:
- On the vertical TS enclosure section
  – Via snap-on nut TS 8800.808 (Fig. left)
  – Via adaptor rail for PS compatibility
  – Offset in the height, via TS punched rail 25 x 38 mm (Fig. right)
- On the horizontal TS enclosure section
  – In the width
  – In the depth (without mounting plate)
- On the ES system punchings, in the enclosure depth

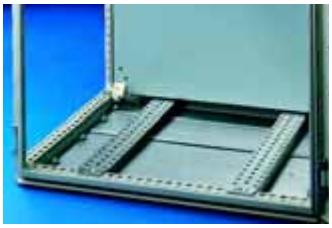
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
2 system support rails (45 x 25 mm),
4 T-head screws M12 x 60 mm,
and assembly parts.

For enclosure width mm	Packs of	Model No. PS
600	2	**4361.000**
800	2	**4362.000**
1000	2	**4347.000**
1200	2	**4363.000**

Accessories:

Width divider e.g. for the installation of 2 system support rails (for 600 mm width) in 1200 mm wide enclosures,
see page 850.
Snap-on nut M8, TS 8800.808,
see page 931.
Adaptor rail,
see page 924.
TS punched rail 25 x 38 mm
see page 923.







Support rails

For heavy installations, with attachment holes. Particularly suitable for the installation of base isolators.

Installation options:

- On the vertical TS enclosure section
  - Via snap-on nut TS 8800.808 (Fig. left)
  - Via adaptor rail for PS compatibility
  - Offset in the height, via TS punched rail 25 x 38 mm (Fig. right)
- On the horizontal TS enclosure section
  - In the width
  - In the depth
- On the ES system punchings, in the enclosure depth

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure width/depth mm	Packs of	Model No. PS
400	4	**4394.000**
500	4	**4395.000**
600	4	**4396.000**
800	4	**4398.000**

Accessories:

Snap-on nut M8, TS 8800.808,
see page 931.
Adaptor rail,
see page 924.
TS punched rail 25 x 38 mm
see page 923.

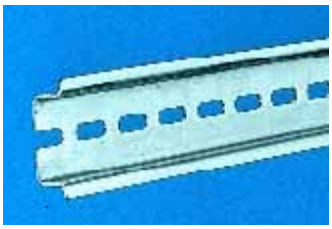


Support rails TS 35/15

to EN 50 022
for TS, ES

Mounting on the TS vertical section via snap-on nut M8, TS 8800.808, see page 931, assembly block see page 924 or adaptor rail, see page 924.

For enclosure width/ depth mm	Support rails length mm	Packs of	Model No. PS
500	455	6	**4933.000**
600	555	6	**4934.000**
800	755	6	**4935.000**
1200	1155	6	**4937.000**



Support rails TS 35/7.5 and TS 35/15

to EN 50 022
for KL, AE

Length sized to the enclosure width

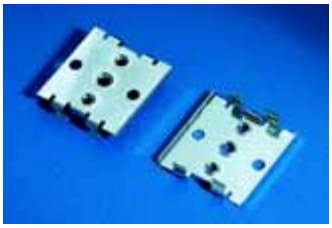
For enclosure width mm	Support rails length mm	Version	Packs of	Model No. SZ
150	137	TS 35/7.5	10	**2314.000**
200	187		10	**2315.000**
300	287		10	**2316.000**
400	387		10	**2317.000**
500	487	TS 35/15	10	**2318.000**
600	587		10	**2319.000**

Support rails

to EN 50 022
for AE

Fixed length 2 m

Version	Length	Packs of	Model No. SZ
TS 35/15	2 m	6	**2313.150**
TS 35/7.5	2 m	6	**2313.750**



Mounting clip

for support rails
For fast, secure attachment of:

- Cable trunking
- Mounting plates
- Mounting angles

on support rail TS 35/7.5 and TS 35/15 to EN 50 022.
Simply pre-assemble the mounting clip on the part to be installed, then snap into position on the support rail.

Packs of	Model No. SZ
30	**2309.000**

German patent no. 195 44 083
European patent no. 0 776 077
with validity for ES, FR, IT, SE

Rail systems







C rails 30/15

to EN 60 715
for TS, ES

Installation options:
- On the vertical TS enclosure section
  – Via snap-on nut TS 8800.808 (Fig. left)
  – Via adaptor rail for PS compatibility
- On the horizontal TS enclosure section (Fig. right)
- On the ES system punchings

Material:
Sheet steel, zinc-plated, passivated

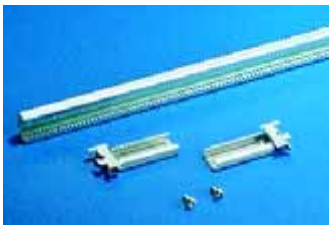
For enclosure width/ depth mm	Length mm	Packs of	Model No. PS
500	455	6	**4943.000**
600	555	6	**4944.000**
800	755	6	**4945.000**
1000	955	6	**4946.000**
1200	1155	6	**4947.000**

Accessories:

Cable clamps, see page 981.
Support bracket or spacer, see page 934.
Quick-assembly block, see page 934.
Snap-on nut M8, TS 8800.808, see page 931.
Adaptor rail, see page 924.

Possible alternative:

Rail for EMC shielding bracket and strain relief, see page 957.



C rails

for DK-TS, CS Toptec

For direct mounting on the vertical enclosure section.
Thanks to the universally designed attachment piece, the C rails may optionally be attached to the inner or outer level of the TS 8 frame.

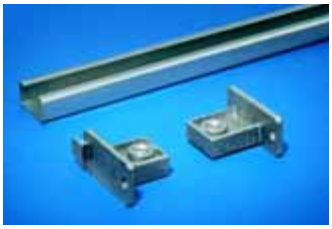
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure width/depth mm	Length mm	Packs of	Model No. DK
400	298	4	**7828.040**
500	398	4	**7828.050**
600	498	4	**7828.060**
650	548	4	**7794.120**
800	698	4	**7828.080**
900	798	4	**7828.090**
1000	898	4	**7828.100**

Accessories:

Cable clamps,
see page 981.







C rails

for TS, ES

Installation options:
- On the horizontal enclosure sections
- On the vertical TS enclosure section via adaptor rail for PS compatibility

Material:
Sheet steel, zinc-plated, passivated
Bracket: Die-cast zinc

Supply includes:
Assembly parts.

For enclosure width/depth mm	Length mm	Packs of	Model No. DK
400	290	6	**7091.000**
500	390	6	**7092.000**
600	490	6	**7095.000**
800	690	6	**7096.000**
1000	900	6	**7100.000**
1200	1100	6	**7102.000**

German patent no. 39 30 161
US patent no. 5,052,565
GB patent no. 2 236 374
French patent no. 2 651 954
Italian patent no. 0 124 3002

Also required:

Adaptor rail for PS compatibility
(when mounting on the vertical TS enclosure section), see page 924.

Accessories:

Cable clamps,
see page 981.



C rails

for EL
For infinite adjustment of the mounting angles in the depth.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For centre part depth mm	Packs of	Model No. EL
216	4	**2238.000**
316	4	**2239.000**
416	4	**2237.000**

German patent no. 39 30 161

Accessories:

Cable clamps,
see page 981.





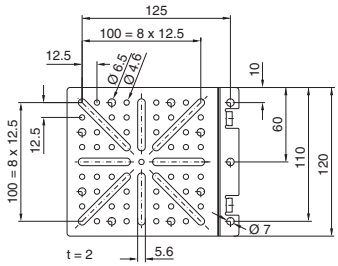
Mounting plates

Locatable
On the vertical TS enclosure section or
TS punched section with mounting flange
17 x 73 mm on the inner and outer mounting level.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

Packs of	Model No. TS
4	**8612.400**







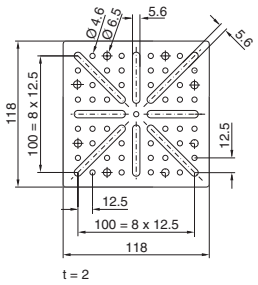
Mounting plates

Screw-fastened, large
On all enclosures and mounting parts with system punchings on a 25mm pitch pattern.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

Packs of	Model No. TS
4	**8612.410**





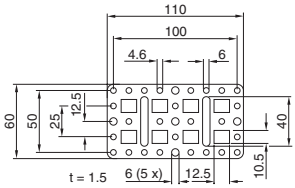
Mounting plates

Screw-fastened, small

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws.

Packs of	Model No. PS
4	**4532.000**



Rail systems



Mounting bracket

Screw-fastened on all enclosures and mounting parts with system punchings on a 25 mm pitch pattern.

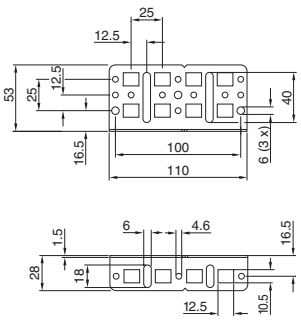
Material:
Sheet steel, zinc-plated, passivated

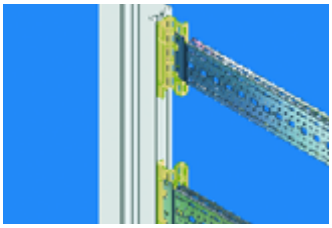
Supply includes:
Assembly screws.

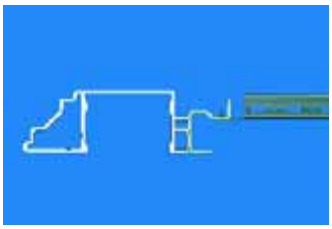
Packs of	Model No. PS
4	**4597.000**

Accessories:

Screws,
see page 937.
Cable tie for quick assembly SZ 2597.000,
see page 982.







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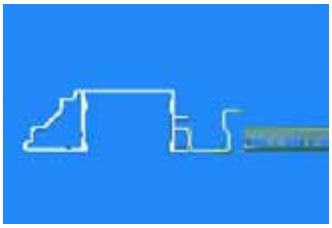


2

System adaptor

for FR(i)

By using the system adaptor, the principle of two TS 8 attachment levels within this enclosure system is easily achieved. This supports the integration of all rail systems which are attached to the outer enclosure level, and therefore offers a diverse choice of installation options. The inner attachment level may be emulated by simply rotating the system adaptor, and therefore creates the requirements for perfect cable management and completely flexible interior installation. Rail systems attached between the front and rear frame section must be 200 mm shorter than the external enclosure dimensions.

1 Installation position, outer level

2 Installation position, inner level

Packs of	Model No. FR(i)
8	**7856.760**

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.



Snap-on nut TS

Metric thread for vertical TS enclosure section. To install, insert into slot and clip into position. The snap-on nut is then secure. By tightening the screw, it is securely tightened against the section, and potential equalisation is automatically created.

Installation options:

- On the vertical TS enclosure section
  - with metric thread M6 or M8
  - the alternative to metal screws
  - particularly well-suited for dynamically loaded connections.

Material:
Precision-cast stainless steel

Thread	Packs of	Model No. TS
M6	20	**8800.806**
M8	20	**8800.808**

German patent no. 101 49 599

Accessories:

Allen screw M6 x 12 or M8 x 12,
see page 937.



1



2



3



4



5

Accessories for interior installation

1 Support rails,
see page 927

2 Cable clamp rails,
see page 979

3 C rails 30/15,
see page 928

4 System support rails,
see page 926

5 TS punched rail 25 x 38 mm,
see page 923



Adaptor bracket TS

For external mounting of

- System lights
- Cable duct

on the vertical TS enclosure section.

Material:
Sheet steel, zinc plated, passivated

Supply includes:
Assembly screws.

Packs of	Model No. TS
6	**8800.360**





Assembly components



Mounting bracket TS

Offers variable mounting opportunities for the mounting angle 23 x 23 mm.
E.g. for supporting external surfaces or creating an additional internal level.

Material:
Die-cast zinc

Supply includes:
24 metal screws BZ 5.5 x 13 mm.

Packs of	Model No. TS
24	**8800.370**

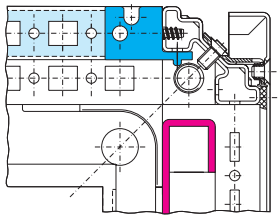
Accessories:

U nuts for punched rails (recommended: M6), see page 936.

Installation options:
- On the vertical TS enclosure section
  – flush with the outer edge of the enclosure or
  – flush with the enclosure clearance width.



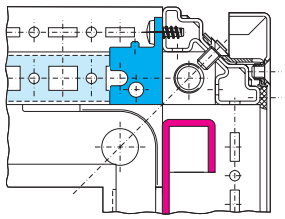
1



1 Support of the external surfaces with two mounting options:
- Without mounting plate (photo)
- With mounting plate (drawing)



2

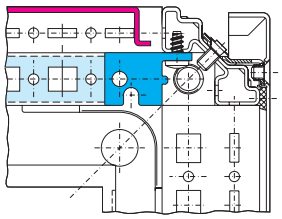


Two installation options for the inner mounting level:

2 If there is no divider panel fitted.



3



3 With a divider panel fitted, with or without mounting plate in a set forward position.





Mounting bracket PS

For variable attachment of punched rails 23 x 23 mm.

Installation options:
- Optionally flush with:
  – Outer enclosure edge or
  – Enclosure clearance width
- On the vertical TS enclosure section via
  – Adaptor rail for PS compatibility
  see page 924
- On the horizontal TS enclosure section
- On enclosures and rails with square system punchings 12.5 x 10.5 mm.

Material:
Die-cast zinc

Supply includes:
1 set =
1 mounting bracket,
1 screw M6 x 12 mm,
1 cage nut M6.

Packs of	Model No. PS
24 sets	**4182.000**

Also required:

U nuts for punched rails (recommended): M6, see page 936.
Multi-tooth screws M6 x 12 mm, see page 937.





Angle bracket PS

For quick attachment of punched rails 23 x 23 mm.

Installation options:
- On the vertical TS enclosure section via
  – Adaptor rail for PS compatibility
  see page 924
- On the horizontal TS enclosure section
- On enclosures and rails with square system punchings 12.5 x 10.5 mm.

Material:
Sheet steel, zinc plated, passivated

Supply includes:
1 set =
1 angle bracket, left,
1 angle bracket, right,
2 screws BZ 5.5 x 13 mm.

Packs of	Model No. PS
12 sets	**4181.000**

Also required:

U nuts for punched rails (recommended): M6, see page 936.
Multi-tooth screws M6 x 12 mm, see page 937.




Support bracket TS

For fastening
punched sections without mounting flanges 23 x 73 mm or
punched rails 23 x 23 mm.

Installation options:
- On the vertical and horizontal TS enclosure section
  – on a 25 mm pitch pattern
  – in 2 mm increments

Material:
Die-cast zinc

Supply includes:
1 set =
1 support bracket,
1 stay,
3 screws BZ 5.5 x 13 mm.

Packs of	Model No. TS
6 sets	**8800.330**

German patent no. 199 37 892

Also required:

U nuts for punched rails (recommended): M6, see page 936.
Multi-tooth screws M6 x 12 mm, see page 937.





Support bracket PS

For fastening
punched sections without mounting flanges 23 x 73 mm or punched rails 23 x 23 mm.

Installation options:
- On the vertical TS enclosure section via
  – Snap-on nut TS 8800.806, see page 931, or
  – Adaptor rail for PS compatibility
  see page 924
- On the horizontal TS enclosure section
- On enclosures and rails with square system punchings 12.5 x 10.5 mm.

Material:
Die-cast zinc

Supply includes:
1 set =
1 support bracket,
2 countersunk screws,
2 serrated lock washers.

Packs of	Model No. PS
24 sets	**4183.000**

Also required:

U nuts for punched rails (recommended): M6, see page 936.
Multi-tooth screws M6 x 12 mm, see page 937.
Adaptor rail for PS compatibility (when mounting on the vertical enclosure section), see page 924.

Assembly components






Support bracket or spacer

For fastening C rails, punched rails or cable clamp rails (angle section). On the sides, to accommodate square sections or tubes (Ø 20 mm).
Attachment points with M8 thread.

Installation options:
- On the vertical TS enclosure section via
  – Snap-on nut TS 8800.808, see page 931, or
  – Adaptor rail for PS compatibility see page 924
- On the horizontal TS enclosure section
- On enclosures and rails with square system punchings 12.5 x 10.5 mm.

Material:
Die-cast zinc

Supply includes:
1 set =
1 bracket or spacer,
2 screws M8 x 16 mm,
2 spring lock washers,
2 captive nuts M8,
2 serrated lock washers,
2 screws.

Packs of	Model No. TS
6 sets	4199.000

Accessories:

Angle piece TS 4134.000, see page 934.




Quick-assembly block

For a variety of installation options.

Installation options:
- On the vertical TS enclosure section via
  – Snap-on nut TS 8800.808, see page 931, or
  – Adaptor rail for PS compatibility see page 924
- On the horizontal TS enclosure section
- On enclosures and rails with square system punchings 12.5 x 10.5 mm.

Material:
Die-cast zinc

Supply includes:
12 quick-assembly blocks,
12 threaded blocks M8,
24 screws M8 x 12 mm,
24 square nuts M8.

Packs of	Model No. TS
12	4133.000

German patent no. 42 33 205




Angle piece

For assembling punched rails and mounting surfaces with a 45° incline.

Installation options:
- On the vertical TS enclosure section via
  – Snap-on nut TS 8800.806, see page 931, or
  – Adaptor rail for PS compatibility see page 924
- On the horizontal TS enclosure section
- On enclosures and rails with square system punchings 12.5 x 10.5 mm.

Material:
Angle pieces: Die-cast zinc
Insulating pieces: Plastic

Supply includes:
1 set =
1 angle piece,
1 insulating piece,
1 insulating screw and
2 assembly screws,
1 threaded block M6.

Packs of	Model No. TS
12 sets	4134.000







Universal bracket

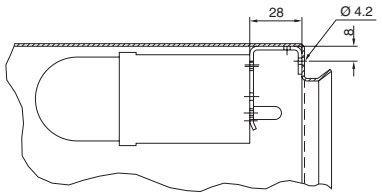
For installing
- Enclosure lights in
  – Compact enclosures AE and AK
  – Console systems AP
- Door-operated switches in
  – Compact enclosures AE
  – Console systems AP
- Cable conduit holder SZ 2593.000 and SZ 2591.000 in
  – Compact enclosures AE
  – Console systems AP
- Support rails for terminals in
  – Operating housings and command panel housings with door.

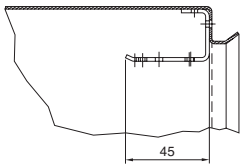
Mounting screws are concealed when the door is closed. Existing holes for mounting blocks or hinges may be used with AE.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. SZ
6	**2373.000**









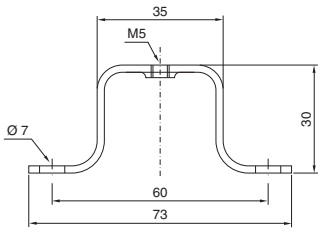
Rail mounting bracket

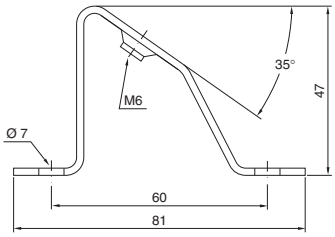
for individual rail mounting.

Material:
Sheet steel, zinc-plated, passivated

Mounting bracket	Packs of	Model No. SZ
Flat	20	**2365.000**
Inclined	20	**2366.000**









Mounting block

for AE

As an accessory for additional interior installation, e.g. mounting of cable ties, PS punched rails, top hat rails and C rails (e.g. for a second pair of mounting angles).

Supply includes:
Assembly parts.

Packs of	Model No. SZ
20	**2574.000**

Assembly components




U nuts

For
- Punched rail 23 x 23 mm
- Punched section without mounting flange, 23 x 73 mm
- Punched section without mounting flange, 45 x 88 mm
- Punched section with mounting flange, 23 x 73 mm

For mounting punched rails and punched sections without mounting flanges on angle brackets, mounting brackets and support brackets, we recommend U nuts with M6 thread (PS 4179.000).

Thread	Packs of	Model No. PS
M4	20	**4119.000**
M5	20	**4157.000**
M6	20	**4179.000**
M8	20	**4180.000**

Accessories:

Multi-tooth screws M6 x 12 mm, (for PS 4179.000), see page 937.

Cage nuts/threaded blocks

Installation options:
On enclosures and rails with square system punchings 12.5 x 10.5 mm, for example on:
- TS enclosure section
  – vertical, via adaptor rail for PS compatibility
  – horizontal, direct
- ES enclosure body, all-round
- Punched rails 23 x 23 mm
- Punched sections without mounting flanges, 23 x 73 mm
- Punched sections without mounting flanges, 45 x 88 mm
- Punched sections with mounting flanges, 23 x 73 mm

Possible alternative:

On the vertical TS enclosure section TS snap-on nut, see page 931.




Cage nuts
The compression spring designed as an insertion aid ensures reliable, mechanical and electrical connection in the system punchings.

Thread	Packs of	Model No. TS
M6	50	**4164.000**
M8	50	**4165.000**




Threaded blocks
With snap-off insertion aid, die-cast zinc.

Thread	Packs of	Model No. TS
M6	50	**4162.000**
M8	50	**4163.000**




Cage nuts
The nuts are inserted from the same side as screw-fastening takes place. Consequently, attachment points in the same height or width may also be used around corners.
The spring cage also ensures electrical connection in the system punchings.

Thread	Packs of	Model No. TS
M6	50	**8800.340**
M8	50	**8800.350**

German patent no. 198 60 434



Spring nut M5

For
- Optipanel from an installation depth of 100 mm
- VIP 6000 from an installation depth of 185 mm

The spring ensures reliable protection against unintentional displacement.
Other interior installation, e.g. with mounting bracket PS 4597.000 (see page 930).

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. CP
50	**6108.000**



Threaded inserts M6

for KS
For securing installed equipment to the moulded bosses in the door and in the enclosure rear panel.
Screw length available for insertion: 8 mm.

Packs of	Model No. KS
20	**1482.000**



Multi-tooth screws

M6 x 12 to fit:
- Snap-on nut (TS 8800.806)
- U nuts for punched rails (PS 4179.000)
- Cage nuts (PS 4164.000)
- Threaded blocks (TS 4162.000)

M6 x 12 to fit:
- Snap-on nut (TS 8800.808)



Multi-tooth screws

For the round holes 4.5 mm diameter in the enclosure section, punched rails and punched sections without mounting flanges.



Self-tapping screws

For the round holes 4.5 mm diameter in the enclosure section, punched rails and punched sections without mounting flanges.



Self-tapping screws

Mark, drill and tighten in a single operation using electric or pneumatic tools.

For metal thickness: 0.8 – 3 mm
Length: 16 mm
Usable length: 9.5 mm
Width across flats: 8 mm

Multi-tooth drive for optimum transmission of torques, an extended tool life and increased safety and reliability when tightening and loosening screw connections.

Type of screw	Dimensions mm	Packs of	Model No. SZ
Multi-tooth screws	M6 x 12 M8 x 12	300 300	**2504.500** **2504.800**
Multi-tooth screws	BZ 5.5 x 13	300	**2486.500**
Multi-tooth screws for stainless steel	BZ 5.5 x 13	300	**2486.300**
Self-tapping screws:			
• Hex screws	M5 x 10	500	**2504.000**
• Posidrive raised countersunk screws	M5 x 12	500	**2488.000**
• Pan head screws, posidrive	M5 x 12	500	**2489.000**
• Pan-head screws, multi-tooth	M5 x 12	500	**2489.500**
Self-tapping screws	ST 4.8 x 16	300	**2487.000**

Assembly components

TS adaptor for wiring systems



Adaptior rail
for the Lütze LSC wiring system.

Supply includes:
1 set =
6 adaptor rails,
24 spring lock washers,
24 screws BZ 5.5 x 13 mm.

Note:
Mounting parts for the LCS wiring system not included with the supply.

For enclosure depth mm	Packs of	Model No. TS
400	1 sets	**8800.140**
500		**8800.150**
600		**8800.160**
800		**8800.180**



Installation kit
for the Moeller MR 25 wiring system.

Supply includes:
1 set =
2 mounting brackets,
4 mounting rails,
including assembly parts.

For enclosure depth mm	Packs of	Model No. TS
400	1 sets	**8800.240**
500		**8800.250**
600		**8800.260**

Kit



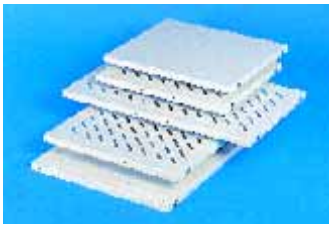


for separate frame TS
Every TS 8 frame is easily converted to a rack suitable for dismantling. To this end, the frame sections in the roof and base frame are separated, optionally in the width or depth. The four connection components are inserted into the frame section and screw-fastened. The external dimensions of the frame remain unchanged.

Supply includes:
Assembly parts.

Note:
The IP water protection of the enclosure system is lost once the frame is separated.

Packs of	Model No. DK
4	**7829.400**



Component shelf for frame attachment

Enclosure width 600 mm or between two 482.6 mm (19″) mounting frames

Maximum depth of component shelves with enclosure frame attachment = Enclosure depth minus 100 mm.

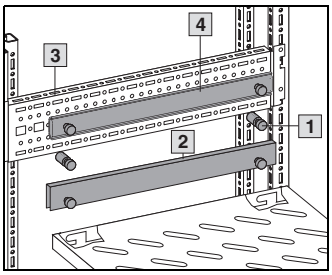
Technical specifications:
Mounting bolts or mounting rails may be installed on a 25 mm pitch pattern in the enclosure depth. Mounting hole for handles provided.

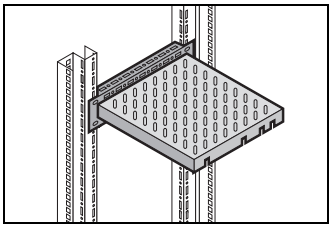
Load capacity:
50 kg/100 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.





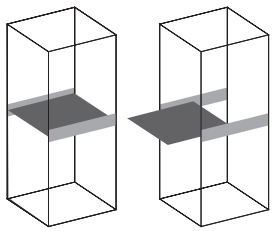
1 Fastening bolts
2 Mounting rails
3 Divider kit
4 Telescopic slides

Also required:

TS punched section with mounting flange, 17 x 73 mm, as divider kit for component shelves, see page 949.
For FR(i) plus system adaptor, see page 930.

Load capacity kg	50				100			
Component shelf depth mm	400	500	600	700	400	500	600	700
Component shelf height mm	29				45			
Model No. DK, slotted	**7164.035**	**7165.035**	**7166.035**	**7166.735**	**7464.035**	**7465.035**	**7466.035**	**7466.735**
Model No. DK, unslotted	**7264.035**	**7265.035**	**7266.035**	–	–	–	–	–

Mounting on a 600 mm wide enclosure frame



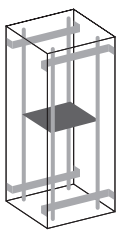
Additionally required:

For TS TS punched sections with mounting flanges 17 x 73 mm as divider kit for enclosure depth mm	600	8612.060
	800	8612.080
	900	8612.090
	1000	8612.000
For FR(i) TS punched sections with mounting flanges 17 x 73 mm as divider kit for enclosure depth mm	600	8612.140
	800	8612.160
	1000	8612.180
	1200	8612.100
	System adaptor	7856.760

Accessories:

Telescopic slides see page 951	7061.000	7081.000	7161.000	7161.700	7064.000	7065.000	7066.000	7066.700
Handles for component shelves see page 953	3636.010							

Mounting on the 482.6 mm (19″) mounting frame[1)]



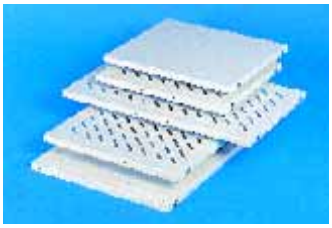
482.6 mm (19″) distance between levels, minimal	495	595	695	895	495	595	695	895

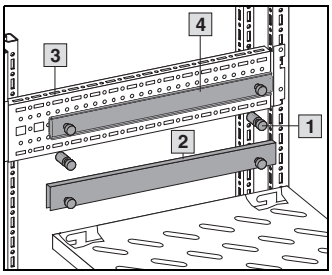
Additionally required:

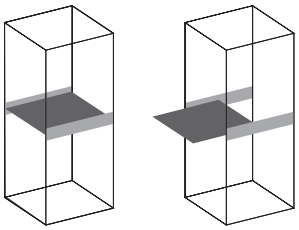
TS punched sections with mounting flanges 17 x 73 mm as divider kit in the enclosure depth between the 482.6 mm (19″) mounting frames	8612.040	8612.050	8612.060	8612.080	8612.040	8612.050	8612.060	8612.080

[1)] **Note:**
Combination with telescopic slides is not possible.

Component shelves for frame attachment







Component shelf for frame attachment

Enclosure width 800 mm

For installation in enclosures **without** 482.6 mm (19″) accommodation.

Maximum depth of component shelves with enclosure frame attachment = Enclosure depth minus 100 mm.

Technical specifications:
Mounting bolts or mounting rails may be installed on a 25 mm pitch pattern in the enclosure depth. Mounting hole for handles provided.

Load capacity:
50 kg/100 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

1 Fastening bolts
2 Mounting rails
3 Divider kit
4 Telescopic slides

Also required:

TS punched section with mounting flange, 17 x 73 mm, as divider kit for component shelves, see page 949.
For FR(i) plus system adaptor, see page 930.

Load capacity kg	50				100			
Component shelf depth mm	400	500	600	700	400	500	600	700
Component shelf height mm	29				45			
Model No. DK, slotted	**7184.035**	**7185.035**	**7186.035**	**7186.735**	**7484.035**	**7485.035**	**7486.035**	**7486.735**

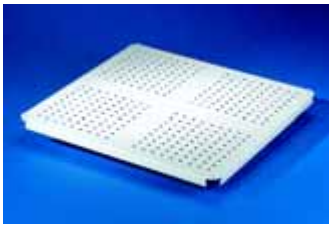
Additionally required:

For TS TS punched section with mounting flange, 17 x 73 mm as divider kit for enclosure depth mm	600	8612.060
	800	8612.080
	900	8612.090
	1000	8612.000
For FR(i) TS punched section with mounting flange, 17 x 73 mm as divider kit for enclosure depth mm	600	8612.140
	800	8612.160
	1000	8612.180
	1200	8612.100
	System adaptor	7856.760

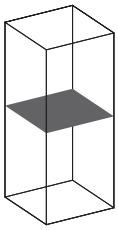
Accessories:

Telescopic slides see page 951	7061.000	7081.000	7161.000	7161.700	7064.000	7065.000	7066.000	7066.700
Handles for component shelves see page 953	3636.010							

Component shelves for frame attachment







Component shelf, static installation

for TS, CS Toptec

Locate the mounting pieces in the frame and attach the component shelf. Attachment in the TS enclosure section offers the greatest possible support surface.

Dimensions:
Height: 25 mm
Width: Enclosure width – 44 mm
Depth: Enclosure depth – 44 mm

Load capacity:
75 kg surface load, static

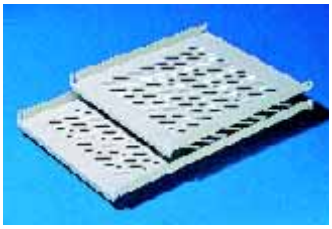
Material:
Sheet steel

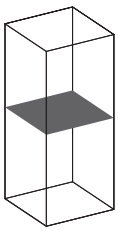
Colour:
RAL 7035

Supply includes:
Assembly parts.

For enclosures		Model No. DK
Width mm	Depth mm	
600	600	**7828.660**
600	800	**7828.680**
600	900	**7828.690**
600	1000	**7828.600**
650	650	**7794.210**
800	600	**7828.680**
800	650	**7794.220**
800	800	**7828.880**
800	900	**7828.890**
800	1000	**7828.800**

Note:
Combined use with vertically divided doors is not possible.
Not suitable for combination with telescopic slides.





Component shelf, static installation

for PC-ES

For direct mounting on the enclosure frame. Simply locate into the 4 screws, tighten, and voilà!

Load capacity:
40 kg surface load, static

Material:
Sheet steel

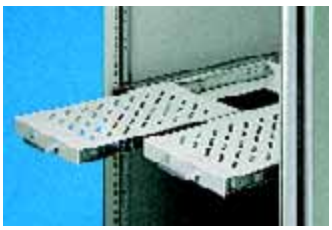
Colour:
RAL 7035

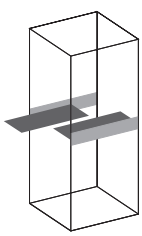
Supply includes:
Assembly parts.

For enclosures		Support area		Model No. PC
Width mm	Depth mm	Width mm	Depth mm	
600	650	510	555	**4619.660**
600	850	510	755	**4619.680**

Accessories:

Mounting bolts for slotted component shelves DK 7115.000,
see page 953.





Component shelf, two-piece

with telescopic extension and handles for TS, FR(i)

For attaching to the enclosure frame. The component shelves can be pulled out independently of one another on telescopic slides.

Load capacity:
25 kg surface load per shelf, static

Material:
Sheet steel

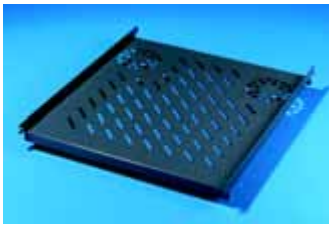
Colour:
RAL 7035

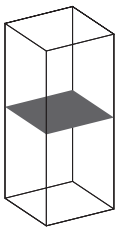
For enclosure width mm	Dimensions of component shelf			Packs of	Model No. DK
	Width mm	Depth mm	Height mm		
600	220	500	35	2	**7183.205**
800	320	500	35	2	**7183.215**

Also required:

TS punched section with mounting flange 17 x 73 mm for the inner mounting level,
see page 949.
For FR(i): TS punched section with mounting flange for the outer mounting level plus system adaptor FR(i),
see page 930, as divider kit for component shelves.

Component shelves for frame attachment





Component shelf, static installation

for TS, PC-TS, IW
prepared for fan expansion kit
For direct mounting on the vertical TS enclosure section. Simply located into 4 pre-fitted screws and secure.

Load capacity:
40 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7015

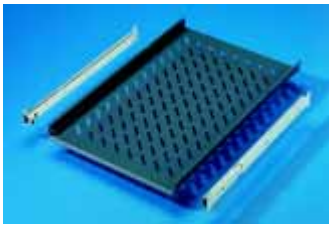
Supply includes:
Assembly parts.

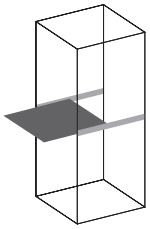
For enclosures		Support area		Model No. PC
Width mm	Depth mm	Width mm	Depth mm	
600	600	507	550	**8800.900**
600	800	507	750	**8800.910**

[1] For enclosures without a mounting plate.

Accessories:

Fan expansion kit DK 7980.000,
see page 652.





Component shelf, pull-out

for TS, PC-TS, IW
For direct mounting on the vertical TS enclosure section.

Load capacity:
40 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7015

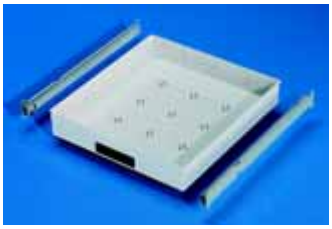
Supply includes:
2 telescopic slides.

For enclosures[1]		Support area		Model No. IW
Width mm	Depth mm	Width mm	Depth mm	
600	600	465	545	**6902.960[2]**
600	800	465	745	**6902.980**

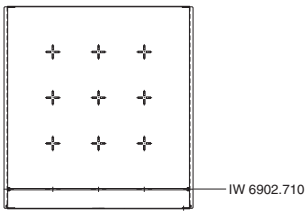
[1] For enclosures without a mounting plate.
[2] May also be installed in 800 mm deep enclosures based on TS (pull-out rear attachment).

Also required:

When installing more than one pull-out component shelf/drawer tray, we recommend that for reasons of work safety to DIN EN 349, a drawer extension lock should be used, see page 952.







Drawer tray

pull-out
For enclosures with TS frame construction in series IW, PC-TS, DK.
Width 600 mm and depth 600 – 800 mm.
Individual sub-division is possible via the use of cross members.
Tray height: 83 mm

Load capacity:
40 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
2 telescopic slides.

Note:
Suitable for installation in all enclosures, without mounting plate, with W x D 600 x 600/800 mm based on TS (rear attachment of telescopic slides extendible).

When sub-dividing the drawer tray, one cross member is always needed for the entire width (IW 6902.710).

Packs of	Model No. IW
1	**6902.700**

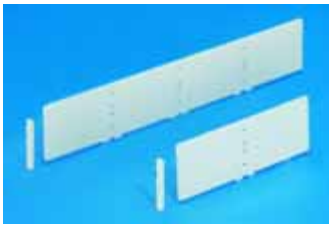
Also required:

When installing more than one pull-out component shelf/drawer tray, we recommend that for reasons of work safety to DIN EN 349 a drawer extension lock should be used, see page 952.

Accessories:

Cross members,
see page 943.

Component shelves for frame attachment



Cross members

for drawer tray
For individual sub-division.

Material:
Aluminium, 3 mm

Colour:
RAL 7035

Supply includes:
Plastic holder.

For subdivision in	Packs of	Model No. IW
the full width	4	**6902.710**
half the width	6	**6902.720**

Note:
When sub-dividing the drawer tray, one cross member is always needed for the entire width (IW 6902.710).



Telescopic slides

For location into the vertical TS frame section. Additional punched sections are not required. Fully extendible.

Load capacity:
40 kg per pair

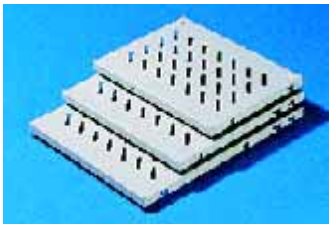
Material:
Sheet steel, zinc-plated, passivated

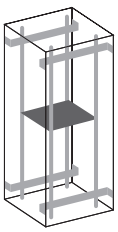
Supply includes:
Assembly parts.

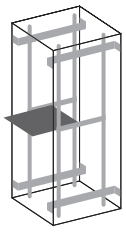
Packs of	Model No. IW
2	**6902.800**

Note:
Suitable for installation in all enclosures, without mounting plate, with W x D 600 x 600/800 mm based on TS (rear attachment of telescopic slides extendible).

Component shelves for attachment to the 482.6 mm (19″) frame









Component shelf, 482.6 mm (19″) installation

For enclosures with two 482.6 mm (19″) mounting levels.

Depending on their depth, the component shelves have several attachment points, so the distance between the 482.6 mm (19″) mounting angles is variable within certain limits. Each component shelf secured in this way can be retrospectively upgraded to full withdrawal using telescopic slides. For this purpose, the telescopic slides are screw-fastened in place of the spacers.

Load capacity:
50 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Note:
For installation in one 482.6 mm (19″) level:
In conjunction with 3 U side parts, mounting on only one 482.6 mm (19″) level is possible.
30 kg surface load, static.

Also required:

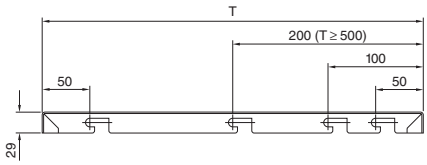
Adaptor for L-shaped mounting angles TS, see page 950.
Divider kit, depth-variable, for installation on mounting frames and L-shaped mouning angles, see page 949.

Accessories:

Telescopic slides, see page 951.
Cable support, hinged, see page 951.
Side parts 3 U, see page 950.

Possible alternative:

Component shelf, heavy duty, for 482.6 mm (19″) population, see page 945 – 946.



T = Depth

Component shelf width mm	409					Page
Component shelf depth mm	300	400	500	600	700	
Distance between levels (X)	298	348/398	348/448/498	448/548/598	548/648/698	
Model No. DK	**7143.035**	**7144.035**	**7145.035**	**7145.635**	**7145.735**	

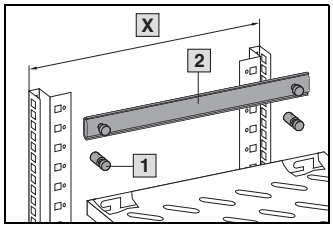
Accessories:

Telescopic slides for 50 kg	7051.000	7061.000	7081.000	7161.000	7161.700	951
Handles for component shelf	3636.010	3636.010	3636.010	3636.010	3636.010	953

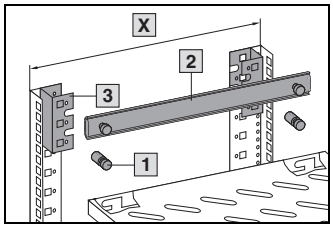
Component shelf version in RAL 7032 available on request.

1 Spacers
2 Telescopic slides
3 Adaptor
4 Divider kit, depth-variable
X Distance between levels

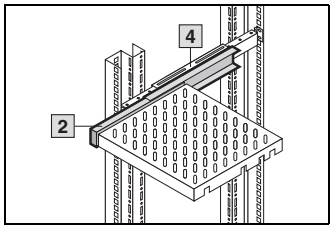
Note for installation in network enclosures based on TS, cranked mounting angle:
The component shelves are mounted on the sides of the 482.6 mm (19″) cranked mounting angle with spacers on a U pitch pattern.



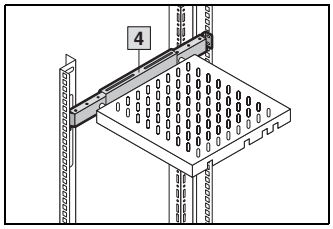
Note for installation in network enclosures based on TS, L-shaped mounting angle:
If L-shaped mounting angles are used, adaptor DK 7827.300 is required.



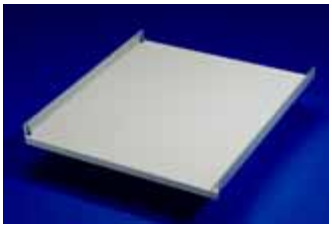
Note for installation between two mounting frames or L-shaped mounting angles:
May be mounted directly on the 482.6 mm (19″) system punchings using the depth-variable divider kit.

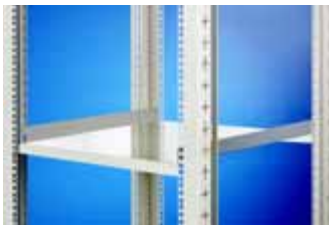


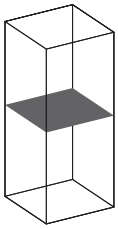
Note for installation between mounting angles and mounting frames:
May be mounted directly on the 482.6 mm (19″) system punchings using the depth-variable divider kit.



Component shelves for attachment to the 482.6 mm (19″) frame







Component shelf, static installation

on the 482.6 mm (19″) mounting frame
The component shelf is attached directly to the front and rear 482.6 mm (19″) mounting frame.

Load capacity:
30 kg surface load, static

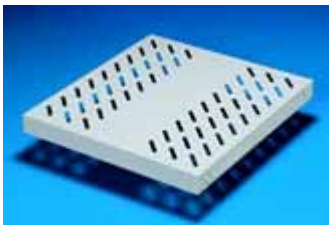
Material:
Sheet steel

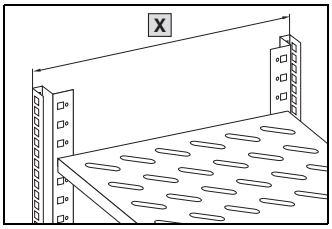
Colour:
RAL 7035

Supply includes:
Assembly parts.

Width mm	Height mm	Depth mm	19″ distance between levels mm	Model No. DK
512	22	412	495	**7000.620**

Note:
Combination with telescopic slides is not possible.





Component shelf, heavy duty

for network enclosures TS with cranked mounting angles
For static installation between two 482.6 mm (19″) mounting levels.
The component shelf is located directly onto the **cranked** mounting angles.

Zinc-plated version:
Load capacity:
75 kg surface load, static

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Spray-finished version:
Load capacity:
100 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Zinc-plated version:

Dimensions			Distance between levels (X) mm	Model No. DK
Width mm	Height mm	Depth mm		
452.5	20	478	498	**7828.950**
452.5	20	578	598	**7828.960**
452.5	20	678	698	**7828.970**

Spray-finished version:

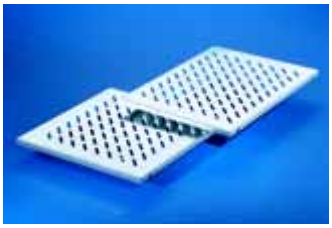
Dimensions			Distance between levels (X) mm	Model No. DK
Width mm	Height mm	Depth mm		
453	44	470	498	**7145.535**

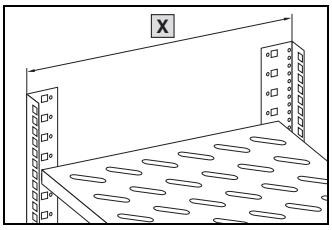
Note:
Not suitable for combination with telescopic slides.

Possible alternative:

Component shelf, heavy duty, for 482.6 mm (19″) population, may be combined with telescopic slides, see page 946.

Component shelves for attachment to the 482.6 mm (19″) frame/system punchings





Component shelf, heavy duty

for network enclosures TS with L-shaped mounting angles
For static installation between two 482.6 mm (19″) mounting levels.
The component shelf is located directly onto the **L-shaped** mountin angles (not with TS server enclosures DK 7831.xxx).

Load capacity:
75 kg surface load, static

Material:
Sheet steel, zinc-plated, passivated

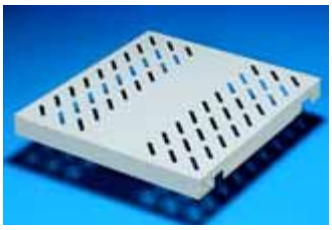
Supply includes:
Assembly parts.

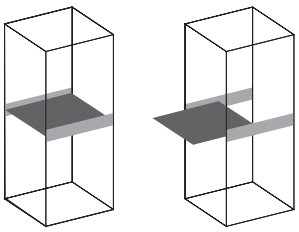
Note:
Not suitable for combination with telescopic slides.

Dimensions			Distance between levels (X) mm	Model No. DK
Width mm	Height mm	Depth mm		
507.5	20	478	498	**7828.951**
507.5	20	578	598	**7828.961**
507.5	20	678	698	**7828.971**

Possible alternative:

Component shelf, heavy duty, for 482.6 mm (19″) population, may be combined with telescopic slides, see page 946.





Component shelf, heavy duty

482.6 mm (19″)
For
- L-shaped mounting angles
- Mounting frame 482.6 mm (19″)

Load capacity:
100 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035/RAL 9005

Supply includes:
Assembly parts.

Component shelf depth mm	Model No. DK	
	RAL 7035	RAL 9005
500	**7063.895**	**7063.835**
700	**7063.897**	**7063.837**

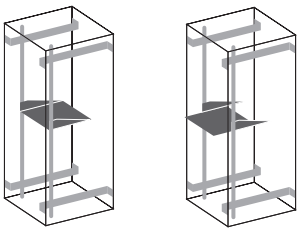
Also required:

Divider kit, depth-variable DK 7063.890, see page 949.

Accessories:

Telescopic slides (100 kg) for 482.6 mm (19″) component shelf, see page 951.





Component shelf 2 U

482.6 mm (19″)
Suitable for installation in all enclosures with only one 482.6 mm (19″) mounting level and all swing frames with flange mounting, 482.6 mm (19″).

Load capacity:
25 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

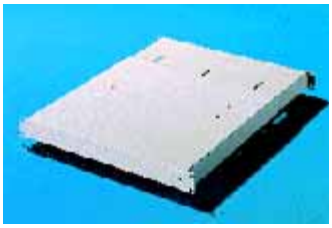
Width mm	Depth mm	Model No. DK
390	300	**7148.035**

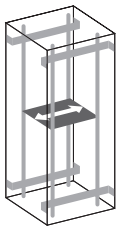
To order the version in RAL 7032, please add extension .000 to the Model No.
Delivery times available on request.

Accessories:

Telescopic slides for component shelves, see page 951.
Handles, see page 953.

Component shelves for attachment to the 482.6 mm (19″) system punchings





Component shelf, 1 U, depth-variable

482.6 mm (19″)
For mounting between the front and rear 482.6 mm (19″) levels. The component shelf is infinitely depth-adjustable from 488 mm to 750 mm.

Load capacity:
50 kg surface load, static

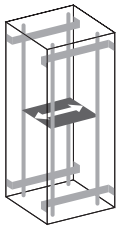
Material:
Sheet steel

Colour:
RAL 7035

Distance between levels mm	Model No. VR
488 – 750	**3861.580**

Note:
Not suitable for combination with telescopic slides.





Component shelf, 1/2 U, depth-variable

482.6 mm (19″)
This space-saving component shelf is screw-fastened to the front and rear 482.6 mm (19″) mounting angles. It is infinitely depth-adjustable and may be fitted independently from the enclosure.

Load capacity:
50 kg surface load, static

Material:
Sheet steel

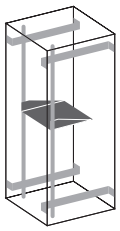
Colour:
RAL 7035

Supply includes:
Assembly parts.

Distance between levels mm	Model No. DK
400 – 600	**7063.710**
600 – 900	**7063.720**

Note:
Not suitable for combination with telescopic slides.





Component shelf 1 U, static installation

482.6 mm (19″)/535 mm (metric)
The ideal support surface for small active components such as modems or mini-hubs in 482.6 mm (19″) or metric levels.

Load capacity:
10 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035

Component shelf depth mm	Model No. DK	
	482.6 mm (19″)	Metric
140	**7119.140**	**7119.155**

Also required:

Cage nuts,
see page 1020.
Screws,
see page 1019.

Component shelves for attachment to the 482.6 mm (19″) system punchings



Component shelf 1 U, static installation

42 HP (1/2 19″)
The ideal support surface for small active components such as modems or mini-hubs.

Material:
Sheet steel

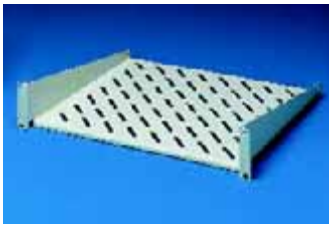
Colour:
RAL 7035

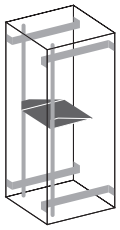
Note:
Combination with telescopic slides is not possible.

Component shelf depth mm	Model No. DK
140	**7502.600**

Also required:

Cage nuts,
see page 1020.
Screws,
see page 1019.





Component shelf 2 U, static installation

482.6 mm (19″)/535 mm (metric)
If only one 482.6 mm (19″) or metric mounting level is available for mounting a component shelf, this variant offers a particularly cost-effective solution.

Load capacity:
25 kg surface load, static

Material:
Sheet steel

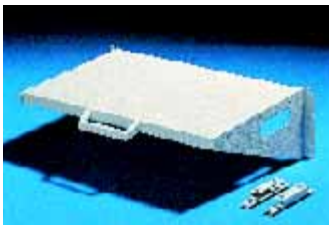
Colour:
RAL 7035

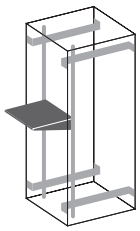
Note:
Combination with telescopic slides is not possible.

Component shelf depth mm	Model No. DK	
	482.6 mm (19″)	Metric
250	**7119.250**	**7119.255**
400	**7119.400**	**7119.455**

Also required:

Cage nuts,
see page 1020.
Screws,
see page 1019.





Utility table

for location in the 482.6 mm (19″) level
The utility table may be attached directly between the 482.6 mm (19″) mounting angles without any additional assembly work. The utility table has a height of 3 U and a support area of 450 x 295 mm; it can be used as a support for measuring devices or splicing equipment during maintenance and wiring work.

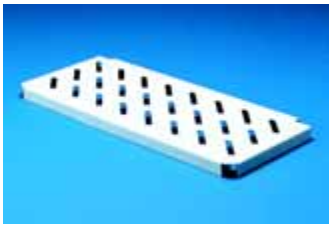
Material:
Sheet steel

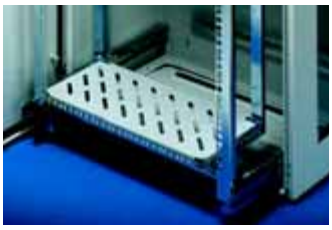
Colour:
RAL 7035

Supply includes:
Assembly parts.

Support surface mm	Model No. DK
450 x 295	**7183.100**

Component shelves for attachment to the 482.6 mm (19″) system punchings/divider kits





Shelf

for AE with pull-out frame
The vented shelf is inserted into the pull-out frame of wall-mounted distributor DK 7644.000 and may additionally be screw-fastened. In this way, an additional support surface can be created with very little effort. Cage nuts may be clipped into the punchings of the frame, even after the shelf has been inserted.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Width mm	Depth mm	Model No. DK
430	195	**7644.400**



TS punched section with mounting flange, 17 x 73 mm

as divider kit for component shelves
Simply locate and secure. One pack is sufficient for 2 component shelves.

Load capacity:
100 kg surface load, static

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Installation in enclosure depth mm	Packs of	Model No. TS	
		for TS	for FR(i)
500	4	**8612.050**	**–**
600	4	**8612.060**	**8612.140**
800	4	**8612.080**	**8612.160**
900	4	**8612.090**	**–**
1000	4	**8612.000**	**8612.180**
1200	4	**–**	**8612.100**





Installation kit, depth-variable

for 482.6 mm (19″) component shelf
In conjunction with
- L-shaped mounting angles or
- Mounting frame 482.6 mm (19″)

Infinitely adjustable to the spacing between the two 482.6 mm (19″) levels.
Suitable for all 482.6 mm (19″) component shelves in 409 mm width.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
1 set =
2 mounting rails including assembly parts.

Length mm	Load capacity	Model No. DK
400 – 600	50 kg	**7063.858**
600 – 850	50 kg	**7063.860**
610 – 900	100 kg	**7063.891**[1)]
710 – 1000	100 kg	**7063.890**

[1)] Only in conjunction with 500 mm deep component shelves

Accessories:

Telescopic slides,
see page 951.

Divider kits for component shelves



Adaptor for L-shaped mounting angles

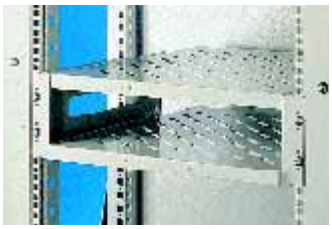
for TS network enclosures
For mounting component shelves and slide rails on L-shaped mounting angles.

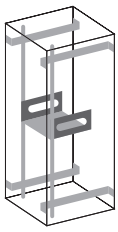
Material:
Sheet steel, zinc-plated, passivated

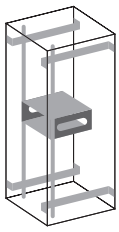
Supply includes:
Assembly parts.

Packs of	Model No. DK
4	**7827.300**









Side parts 3 U

for static installation of component shelves, 482.6 mm (19″)
For the attachment of component shelves to a single pair of 482.6 mm (19″) mounting angles. The component shelves are screw-fastened to the 3 U side part.
Either one or two component shelves may be secured.

Load capacity:
30 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
2 side parts.

Note:
Combination with telescopic slides is not possible.

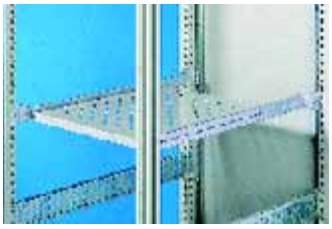
Depth of side parts mm	For component shelves DK	Component shelf depth mm	Model No. DK
300	7143.035	300	**7146.035**
400	7143.035	300	**7147.035**
400	7144.035	400	
400	7145.035	500	

To order the version in RAL 7032, please add extension .000 to the Model No.
Delivery times available on request.

Accessories:

Component shelves, 482.6 mm (19″),
see page 944.





Divider kit

for component shelves and drawers, 482.6 mm (19″) installation in TS
For installation between the front and rear adaptor sections or adaptor pieces, 482.6 mm (19″) in 600 mm wide enclosures.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure depth mm	Packs of	Model No. TS
500	1 set	**8800.550**
600	1 set	**8800.560**
800	1 set	**8800.580**

Max. depth of component shelves = Enclosure depth – 100 mm

Also required:

Mounting angles, 482.6 mm (19″),
see page 1003.
Adaptor pieces 482.6 mm (19″),
see page 1004.

Accessories for component shelves





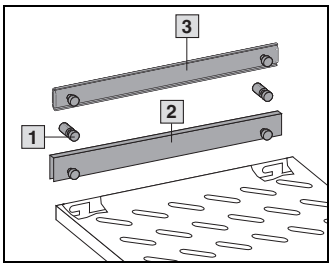
Telescopic slides

for component shelves
Fixed component shelves are easily retro-converted to full withdrawal. For this purpose, the existing fastening bolts or mounting rails (heavy-duty version) are exchanged for the telescopic slides.

Technical specifications:
For installation and locking on a 25 mm pitch pattern in the enclosure depth.

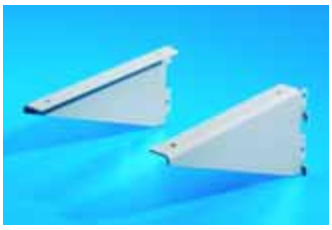
Load capacity:
50 kg/100 kg per set

Material:
Sheet steel, zinc-plated, passivated



For component shelf depth mm	Packs of	Model No. DK	
		50 kg	100 kg
300	2	**7051.000**	**–**
400	2	**7061.000**	**7064.000**
500	2	**7081.000**	**7065.000**
600	2	**7161.000**	**7066.000**
700	2	**7161.700**	**7066.700**

1 Fastening bolts
2 Mounting rails
3 Telescopic slides

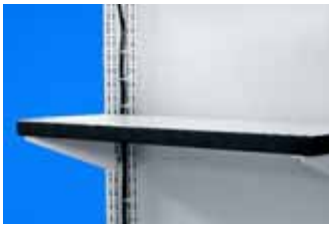


Bracket, locatable

for shelves
Simply locate into the vertical TS section. May be additionally secured with screws.
Support surface for shelves: 200 mm.

Material:
Sheet steel

Colour:
RAL 7035



Packs of	Model No. IW
3 pairs	**6902.690**



Cable support

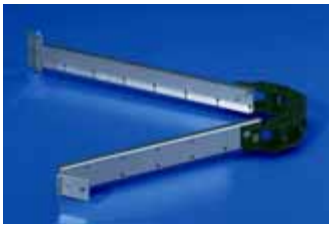
hinged, with clamp
For secure routing of connection cables from the component shelf to the clamping point.
The attachment may be released on both sides thanks to clamps.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure depth mm	Model No. DK
< 600	**7163.500**
> 600	**7163.550**

Accessories for component shelves





Cable support

hinged, with anti-kink device and clamp
For secure routing of connection cables from the component shelf to the clamping point. Kink-free cable routing in the central part via mobile chain links. The attachment may be released on both sides, thanks to clamps.

Material:
Sheet steel, zinc-plated, passivated; plastic.

Supply includes:
Assembly parts.

For enclosure depth mm	Model No. DK
< 600	**7163.560**
> 600	**7163.565**



Drawer extension lock

for 600 mm wide enclosures based on TS 8
To increase work safety.
In conjunction with the stay, prevents simultaneous extension of up to 5 drawer trays or pull-out component shelves and thereby ensures stability.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
PS punched section with mounting flange 23 x 73 mm (to match the enclosure height) and assembly parts.

For enclosure height mm	Packs of	Model No. IW
900	1 set	**6902.730**
1000	1 set	**6902.740**

Note:
When installing more than one extendible component shelf/drawer tray, we recommend using the drawer extension lock for work safety reasons.
For installation in taller enclosures, one PS punched section with mounting flange 23 x 73 mm (to match the enclosure height) is required.

Accessories:

Stay for drawer extension lock.



Stay

for drawer extension lock

For	Packs of	Model No. IW
Drawers	5	**6902.750**
Component shelves	5	**6902.760**

Accessories for component shelves



Monitor shelf mounting kit

for ES
For inclined installation of a component shelf in the enclosure when used as a monitor shelf.

Supply includes:
2 holders for inclined installation,
2 wire clamps for monitor base,
2 fastening bolts for positioning the monitor base.

	Model No. SZ
Monitor shelf mounting kit	**2306.000**





Handles

for component shelves
All component shelves are prepared for the attachment of handles.

Material:
Die-cast zinc

Surface finish:
Spray-finished, silver-grey

Supply includes:
Assembly parts.

Packs of	Model No. RP
2	**3636.010**



Fastening bolts

for slotted component shelves
For non-slip attachment of your components. The bolts are screwed into the slots of the component shelf support surface. Consequently, they are infinitely adjustable and can be adapted to suit any appliance.

Packs of	Model No. DK
4	**7115.000**

System lights



System lights

With assembly parts for mounting:
- On the enclosure profile:
  For TS, horizontally (directly), or vertically in conjunction with an adaptor angle
- directly onto rail systems with 25 mm system punchings
- in AE, AK and AP using universal bracket SZ 2373.000.

Light:
Universal white

Protection category:
IP 20 to EN 60 529/10.91

Also required:

Connection accessories,
see page 956.

Accessories:

Adaptor bracket,
see page 931.
Universal bracket,
see page 935.

Components	Standard light	Courtesy light	Universal light	System light
Sockets and connectors for:				
– Power supply	■	■	■	■
– Through-wiring	■	■	■	■
– Facility for connecting a door-operated switch	■	■		■
Jack for normally open contact			■	■
Motion sensor			■	
Interference suppression via:				
– Radio interference suppression capacitor	■			
– Full-electronic ballast		■	■	
Additional manual switching with rocker or slide switch	■	■	■	■
Light cover		■	■	
Light cone adjustment			■	
Individual voltage supply 110 – 240 V		■	■	





Standard light

Technical specifications	Socket	Width mm	Height mm	Depth mm	**Model No. SZ**	Approvals
14 W, 230 V, 50 Hz	Yes	452	117	50	**4138.140**	ENEC
					4138.150[1)]	
18 W, 230 V, 50 Hz	Yes	682	117	50	**4138.180**	ENEC
					4138.190[1)]	
30 W, 230 V, 50 Hz	Yes	987	117	50	**4138.300**	ENEC
					4138.350[1)]	

With fluorescent lamp, socket G 13, length 375/604/908 mm
[1)] with door operated switch





Courtex light

Technical specifications	Socket	Width mm	Height mm	Depth mm	**Model No. SZ**	Approvals
14 W, 100 – 240 V, 50/60 Hz	Yes	452	117	50	**4139.140**	ENEC
					4139.150[1)]	
18 W, 100 – 240 V, 50/60 Hz	Yes	682	117	50	**4139.180**	ENEC
					4139.190[1)]	
30 W, 230 V, 50 Hz[2)]	Yes	987	117	50	**4139.300**	ENEC
					4139.350[1)]	

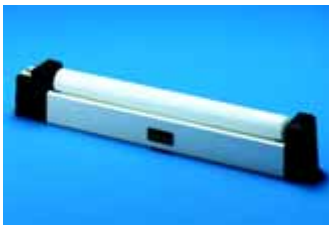
With fluorescent lamp, socket G 13, length 375/604/908 mm
[1)] with door operated switch
[2)] from April 2005 on: 100 – 240 V, 50/60 Hz



Universal light

Technical specifications	Socket	W mm	H mm	D mm	**Model No. SZ**	Approvals
26 W, 110 – 240 V, 50/-60 Hz	Yes	345	95	55	**4155.100**	VDE
	No	345	95	55	**4155.000**	VDE
	No	345	95	55	**4155.500**	UL

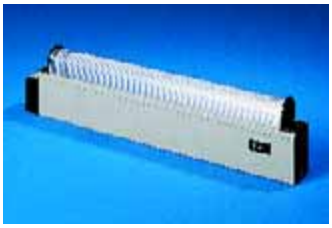
with compact fluorescent lamp, base G24q-3, length 174 mm



System light with filament tube (Linestra)

Technical specifications	Socket	W mm	H mm	D mm	**Model No. SZ**
35 W, 230 V AC/DC	No	380	59	41	**4103.350**[1)]
60 W, 230 V AC/DC	No	580	59	41	**4103.600**[2)]

with filament tube.
[1)] base 35 S14s, length 300 mm
[2)] base 60 S14s, length 500 mm

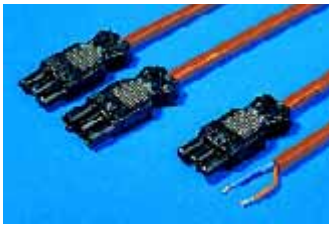


Enclosure light 48 V DC

Specifically designed for use in telecommunication when built-in equipment may require a battery back-up. For mounting on the 25 mm system punchings.

Technical specifications:
14 W, 48 V DC, rated current: 0.38 A

Width mm	Height mm	Depth mm	**Model No. CS**
452	117	50	**9765.100**



Connection cables

for enclosure light 48 V DC

For	Cable length m	Packs of	**Model No. CS**
Power supply	3	1	**9765.137**
Through-wiring	1	1	**9765.138**



Light 1 U

Complete ready-to-connect light for installation in the 482.6 mm (19″) mounting angles. The slot attachment additionally allows it to be fastened to the 25 mm system punchings.

Technical specifications:
8 W, 230 V, 50 Hz.
With mains switch and 2.5 m connection cable with fitted earthing-pin plug.

Material:
Aluminium, anodised,
plastic

Packs of	**Model No. DK**
1	**7109.200**

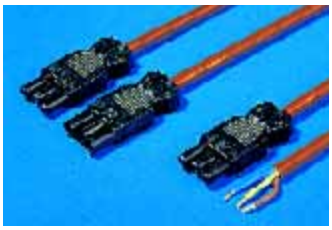
System lights

Connection accessories

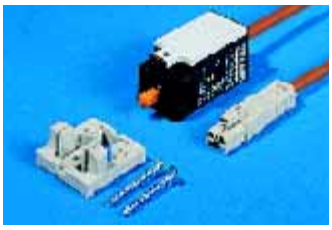
The following components can be used for time-saving and simple installation of the lights:

Accessories:

Cable ties for quick assembly,
see page 982.



Connection cable for	UL	Length mm	Packs of	Model No. SZ		
				orange	yellow	grey
Power supply (with socket, without connector)		3000	5	**4315.100**	**4315.110**	–
Power supply (with socket and strain relief, without connector)	■	3000	1	–	–	**4315.150**
Through-wiring (with socket and connector)	■	600	1	–	–	**4315.450**
Power supply via connection component/ through-wiring (with socket and connector)		600	5	**4315.400**	**4315.410**	–
		1000		**4315.200**	**4315.210**	–
		4000	1	**4315.600**	**4315.610**	–



Door-operated switch With mounting accessories	UL	Length mm	Packs of	Model No. SZ	
				orange	yellow
With connection cable		600	1	**4315.500**	**4315.510**
		1000		**4315.300**	**4315.310**
Without connection cable	■	–		**4127.000**	



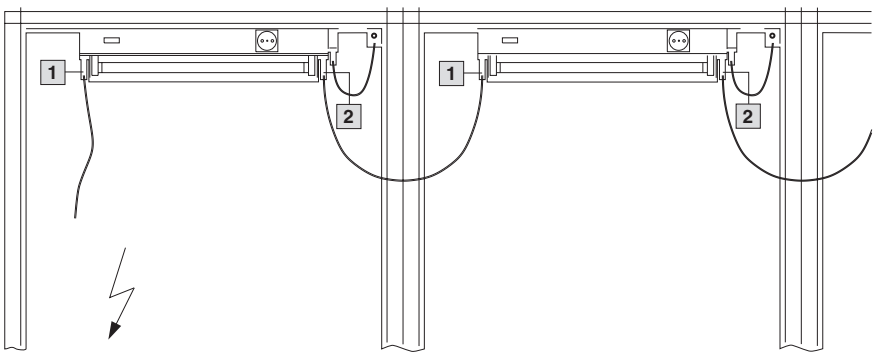
Door-operated switch With toggle	Technical specifications	Packs of	Model No. SZ
Without connection cable, for TS enclosures with installed large swing frame. The toggle is actuated via the tubular door frame of the sheet steel door, or in the case of glazed doors, via an adaptor included with the supply.	230 V AC, 6 A 24 V DC, 10 A	1	**4127.200**



Connection component with circuit-breaker 10 A	Packs of	Model No. SZ
Reduce assembly costs: Power is supplied rapidly and reliably to system lights and workstation via connection cables. For independently configured cables, connector SZ 2507.200 must be used. Connection component to be snapped onto the top hat rail.	1	**2507.500**



For self-assembly	Packs of	Model No. SZ
Sockets for power supply Through-wiring	5	**2507.100**
Connectors for connection component Through-wiring		**2507.200**
T distributor with 2 sockets, 1 connector		**2507.300**
Connector for door operated switch cable		**2507.400**



1 Connector
2 Socket





Rail

for EMC shielding bracket and strain relief
Combined rail for strain relief and EMC contacting of inserted cables.

Mounting options:
- On the horizontal/vertical TS, PC, ES enclosure section
- On a mounting plate

May also be fitted without a retaining bracket.
Additional contacting on the left or right of the rail via existing holes (9 mm diameter).

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Width mm	Packs of	Model No. SZ
600	1	**2388.600**
800	1	**2388.800**

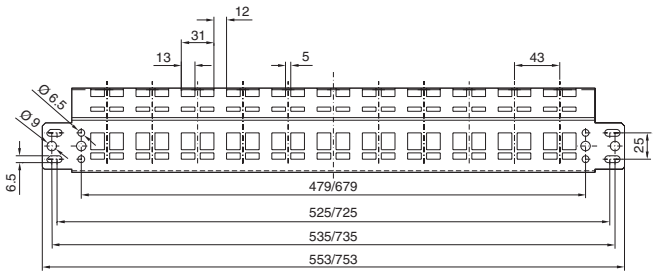
Also required:

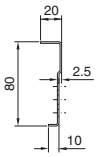
EMC shielding bracket,
see page 957.
Cable clamps for strain relief,
see page 957.

Accessories:

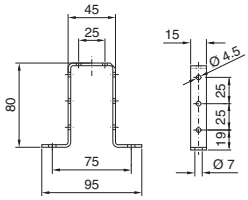
Earth straps,
see page 960.
Earthing strap,
see page 960.

Rail

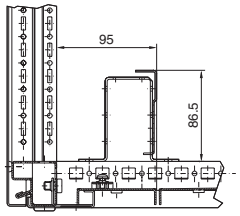




Retaining bracket



Mounting position





EMC shielding bracket

Diameter changes are compensated in full by the spring of the EMC shielding bracket.
Attachment without the use of tools:
Press the EMC shielding bracket against the cable shield and clip into the rail.

Material:
Sheet steel, zinc-plated, passivated

For shield diameter mm	Packs of	Model No. SZ
3 – 10	10	**2388.100**
4 – 15	10	**2388.150**
10 – 20	10	**2388.200**
15 – 28	10	**2388.280**



Cable clamps

Simply locate into the bottom of the rail and tighten the pressure plate for strain relief.

Material:
Sheet steel, zinc-plated, passivated

For cable diameter mm	Packs of	Model No. SZ
6 – 14	10	**2388.140**
12 – 18	10	**2388.180**
18 – 22	10	**2388.220**
22 – 26	10	**2388.260**
26 – 30	10	**2388.300**
30 – 34	10	**2388.340**

EMC



EMC gland plates

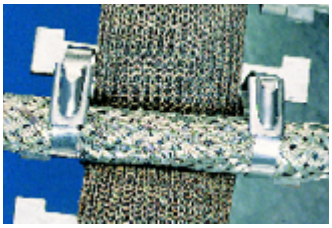
For shielded cables with a maximum diameter of 20 mm.
Combined EMC/IP seal provides low-resistance contact between cable shield and gland plate.
For all 400, 500, 600 and 800 mm deep enclosure in conjunction with standard gland plates.

Supply includes:
1 gland plate with twin hammer-head punching,
1 sliding gland plate,
2 IP/EMC gaskets.

Width mm	Packs of	Model No. TS
600	1 set	**8800.660**
800	1 set	**8800.680**
1000	1 set	**8800.600**[1)]
1200	1 set	**8800.620**[1)]

[1)] For one enclosure half only

German patent no. 196 04 219



Metal cable ties

For 360° contact of shielded cables on the EMC gland plate. The cable ties are not toothed, thereby eliminating the risk of damage to insulation and braided screens.

Material:
Stainless steel, anti-magnetic and rust-proof

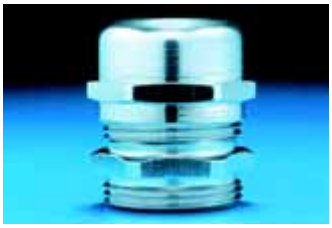
Length mm	Width mm	Packs of	Model No. SZ
125	4.6	50	**2598.125**
200	4.6	50	**2598.200**



Tightening tool

For simple tightening of the metal cable ties.

Packs of	Model No. SM
1	**2585.000**



EMC cable glands

The cable sheathing may optionally be interrupted at the contact point or removed completely inside the enclosure.
The cable shield in the enclosure is retained.
The supplied lock nut cuts automatically into the paint when screwed down, thus creating a conductive connection.

Protection category:
IP 68 to EN 60 529/10.91

Cable glands, metric

Size	Cable diameter mm	Minimum [1)] shield diameter mm	Packs of	Model No. SZ
M16	4.5 – 10	3	5	**2843.160**
M20	6 – 12	5	5	**2843.200**
M25	11 – 17	8	5	**2843.250**
M32	15 – 21	10	1	**2843.320**
M40	19 – 28	15	1	**2843.400**
M50	27 – 38	19	1	**2843.500**
M63	34 – 44	30	1	**2843.630**

Cable glands, PG

PG size	Cable diameter mm	Minimum[1)] shield diameter mm	Packs of	Model No. SZ
9	4 – 8	3	5	**2411.090**
11	5 – 10	4	5	**2411.110**
13.5	6 – 12	5	5	**2411.140**
16	10 – 14	8	5	**2411.160**
21	13 – 18	10	1	**2411.210**
29	18 – 25	15	1	**2411.290**

[1)] Minimum shield diameter =
Cable diameter minus cable sheathing.



EMC shield bus

Made of yellow passivated steel strip, 75 mm² cross section, for cable shield contact.

Supply includes:
Assembly parts.

Rail length mm	Connections	Packs of	Model No. SZ
375	10	1	**2413.375**
550	16	1	**2413.550**



EMC earth clamps

The clamps may be used directly on the consumer or operating equipment on the mounting plate for cable shield contact.

Material:
Sheet steel, zinc-plated, passivated

Size mm	Packs of	Model No. SZ
4	50	**2367.040**
6	50	**2367.060**
8	50	**2367.080**
12	50	**2367.120**
16	50	**2367.160**
20	25	**2367.200**[1)]
25	25	**2367.250**[1)]

[1)] 2 assembly brackets



EMC baying seal

for TS
For baying enclosure systems.
Seal with all-round, electrically conductive sheathing.

Cross-section mm	Model No. TS
6.3 x 6.3	**8800.690**

Packs of 1 set consisting of 3 units, Length 2 m each



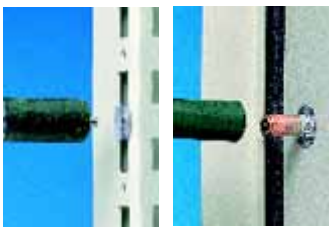
EMC divider panel seal

This seal ensures optimum contact in bayed EMC enclosure systems and when using a zinc-plated divider panel.

Material:
PU foam with electrically conductive sheathing.

Supply includes:
1 roll (12.7 x 12.7 x 5300 mm)

Packs of	Model No. SZ
1	**4348.000**



Contact cutter

The contact cutter enables EMC-compatible preparation of the contact point e.g. for earthing straps.
Plastic-bound abrasive with guide pin for round system punchings.
With location point for drill, grinder etc.

	Model No. SM
For frame section	**2414.000**
For earthing bolts[1)]	**2414.500**

[1)] not necessary with TS 8

Contact paint

Contact paint prevents the corrosion of conductive, unprotected contact points.

Contents:
12 ml

Packs of	Model No. SZ
1	**2415.000**

Earthing



Earth straps

For configuring a reliable earthing connection with perfect contact.

- With ring terminals in M6 and M8 to match the earthing screw
- Length-optimised and ready to install

For	Door/lid	Enclosures
KL, EB, AE 1032.XXX, AE 1035.XXX	M6	M6
AE, AP	M6	M8
TS, ES, PC, AP universal console, KE	M8	M8

Connection	Cross-section mm^2	Length mm	Packs of	Model No. SZ
M8 – M8	4	170	5	**2564.000**
M8 – M8	16	170	5	**2565.000**
M8 – M8	25	170	5	**2566.000**
M6 – M6	10	200	5	**2565.100**
M8 – M8	4	300	5	**2567.000**
M6 – M8	10	300	5	**2565.110**
M8 – M8	10	300	5	**2565.120**
M8 – M8	16	300	5	**2568.000**
M8 – M8	25	300	5	**2569.000**



Earthing strap

Tin-plated copper, in various lengths and cross-sections with press-fitted contact rings. Earthing straps counteract the current displacement effect at high frequencies, whilst at the same time offering highly flexible connection opportunities.

For	Cross-section mm^2	Length mm	Packs of	Model No. SZ
M6	10	200	10	**2412.210**
M8	16	200	10	**2412.216**
M8	25	200	10	**2412.225**
M6	10	300	10	**2412.310**
M8	16	300	10	**2412.316**
M8	25	300	10	**2412.325**



Assembly parts

For fastening the earth straps and earthing braids to:

- Horizontal TS enclosure sections
- RS rail system
- ES system punchings

Size	Packs of	Model No. SZ
M6	10 set	**2570.000**
M8	10 set	**2559.000**

Also required:

For mounting on the horizontal TS enclosure section:
Captive nut,
see page 936.



Contact washers

Toothed contact washers facilitate secure PE conductor connection. As a result, there is no need to manually strip paint in the connection area.

Size	Packs of	Model No. SZ
M5	100	**2343.000**
M6	100	**2334.000**
M8	100	**2335.000**



Central earthing point

For connecting
- Earth straps
- Earthing braids

to the vertical and horizontal enclosure profile.
The connection bracket is connected to the enclosure frame with 2 screws and is securely contacted.
Earth connection is carried out via the threaded bolt M8 x 20 mm.

Material:
Sheet steel, zinc-plated, passivated.

Supply includes:
1 connection bracket,
2 screws BZ 5.5 x 13 mm,
2 serrated washers,
1 nut M8,
1 contact washer M8,
1 washer.

Packs of	Model No. DK
1	**7829.200**



Earthing plate

For installation in:
- Command Panel
- VIP 6000
- Optipanel
- TS
- ES

One earthing cable can be screw-fastened to the threaded bolt and can be distributed to up to 8 components via 6.3 mm flat-pin connectors.

Supply includes:
Assembly parts.

Packs of	Model No. SZ
1	**2570.500**

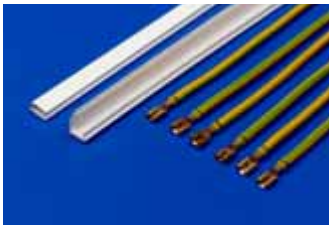


Complete earthing kit

for DK-TS
To DIN EN 60 950/VDE 0805, Ø 4 mm^2,
$I_{max.}$ 40 A.
For system-compatible earthing of all enclosure parts on the enclosure frame according to VDE.
The earth conductors are pre-assembled ready for connection with connectors and cut to the right length.

Supply includes:
Assembly parts.

Packs of	Model No. DK
1 set	**7829.150**



Complete earthing kit

for TE
To DIN EN 60 950/VDE 0805, Ø 4 mm^2,
$I_{max.}$ 40 A.
For system-compatible earthing of all enclosure parts on the enclosure frame according to VDE.
The earth conductors are pre-assembled ready for connection with connectors and cut to the right length.

Supply includes:
Assembly parts.

Packs of	Model No. TE
1 set	**7000.675**

Earthing





Earthing kit

for TC Rack

For star earthing. With the pre-assembled earth conductors, star potential equalisation is easily integrated.

Supply includes:
Earthing cables 4 mm², to DIN EN 60 950/ VDE 0805, $I_{max.}$ 40 A.
Assembly parts for earthing leads, earth rail.

Packs of	Model No. DK
1 set	**7277.000**



Earthing kit

for QuickBox

Earth straps in the appropriate lengths to match the enclosure depth are included in the earthin set, for earthing all enclosuore panels on the wall mounting part. The earth strap is a fast-end connector which is quickly disconnected and conveniently accessible when the door is open.
In this way, the enclosure cover can be removed completely.

Supply includes:
Assembly parts.

For enclosure depth mm	Packs of	Model No. QB
300/400	5	**7502.240**
500/600	5	**7502.260**



PE busbar

695 mm long PE busbar with pre-fitted screws, including terminal clamps up to 6 mm² (fine wire conductors), 10 mm² (single wire or multi-wire conductors) and main terminal clamp up to 35 mm².

Packs of	Model No. SZ
1	**2364.000**

Accessories:

Rail mounting bracket,
see page 935.



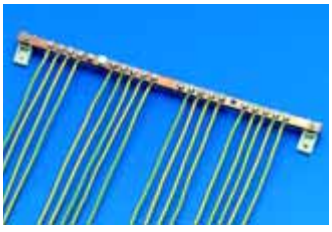
Earth rail, horizontal

Potential equalisation rail

Current carrying capacity approx. 200 A.

Supply includes:
Earth rail made from E-Cu 57 to DIN 1759, DIN 40 500, 15 x 5 mm,
20 connection points with M5 screws,
2 earth connections 25 mm²,
2 isolators, including assembly parts.

Length mm	Packs of	Model No. DK
450	1	**7113.000**



Earthing set, pre-assembled

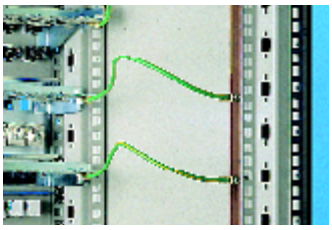
for DK-TS

For star earthing. With the pre-assembled earth conductors on a potential equalisation rail, star potential equalisation is easily integrated into network enclosures.

Supply includes:
Earthing leads 6 mm²,
2 isolators, including assembly parts.

For TS enclosures up to W x H x D mm	Packs of	Model No. DK
800 x 2000 x 800	1 set	**7829.100**
800 x 2200 x 1000	1 set	**7829.110**





Earth rail, vertical

Potential equalisation rails
for network enclosures. Easily fitted to the 25 mm DIN pitch pattern of distributors or to the 482.6 mm (19″) mounting angles. The supplied earth conductors facilitate star earthing of the cable clamp straps in the patch panels.
The earth terminals are fully adjustable.
Current carrying capacity of rail approx. 200 A.

Supply includes:
Earth rail made from E-Cu 57 to DIN 1759, DIN 40 500, 15 x 5 mm, 16 conductor connection clamps 2.5 – 16 mm^2, 15 earthing leads 6 mm^2, L = 500 mm, including assembly parts.

For enclosure height mm	Length mm	Packs of	Model No. DK
800	600	1 set	**7541.000**
1000	800	1 set	**7542.000**
1200	1000	1 set	**7543.000**
1400	1200	1 set	**7544.000**
1600	1400	1 set	**7545.000**
1800	1600	1 set	**7546.000**
2000	1800	1 set	**7547.000**
2200	2000	1 set	**7548.000**

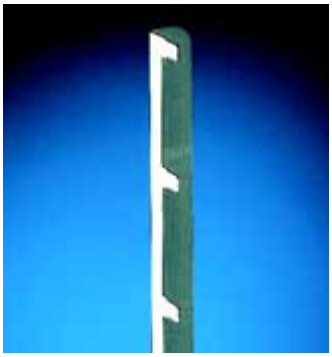


Expansion kit

for earth rail, vertical
For system-compatible expansion of the star earthing on the vertical potential equalisation rail.

Supply includes:
Earthing leads 6 mm^2, pre-configured, with ring terminals and wire end ferrules. L = 500 mm, with earth terminals 2.5 – 16 mm^2, including assembly parts.

Packs of	Model No. DK
10	**7549.000**



Vertical potential equalisation rail

with 6.3 mm flat-pin connector
Rail for mounting parallel to the mounting angle. With a short cable connection, any 482.6 mm (19″) device (e.g. patch panel) may be held at the same potential by connecting the flat-pin connector.

Material:
Sheet steel, zinc-plated, passivated.

Supply includes:
Potential equalisation rail, pre-assembled connection cable 350 mm, connection cable with 6.3 mm flat-pin connector and lugs with 6 mm drilled hole, including assembly parts.

For enclosure height mm	Packs of	Model No. DK
1800	1 set	**7548.200**



ESD connection point

During maintenance or conversion work on the enclosure, dangerously high potential differences can occur. To protect sensitive electronic components, this standardised connection point (push-button) provides potential equalisation. The connection point is directly conductively connected to the enclosure frame via two screws.

Material:
Sheet steel

Supply includes:
Assembly parts.

Packs of	Model No. DK
1	**7752.950**

Cable entry



Cable entry plates

for
- Cable entry grommets
- Connector grommets

instead of segments of the standard divided gland plates.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Suitable for installation in TS, CM, CL and PC enclosures based on TS

Enclosure width mm	Cutouts per plate	Packs of	Model No. TS
600	5	2	**8800.060**
800	8	2	**8800.080**
850	9	2	**8800.085**
1000	4	4	**8800.100**
1200	6	4	**8800.120**

Suitable for installation in ES, PC enclosures based on ES and in AP universal console, CS basic enclosure

Enclosure width mm	Cutouts per plate	Packs of[1)]	Model No. TS
600	5	2	**4320.700**
800	8	2	**4321.700**
1000	10	2	**4323.700**
1200[2)]	6	4	**4325.700**

[1)] incl. compensating plate
[2)] for CS basic enclosures, two TS 4320.700 are required.

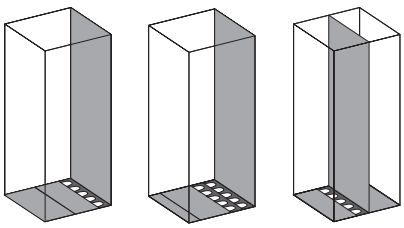
for TS stainless steel

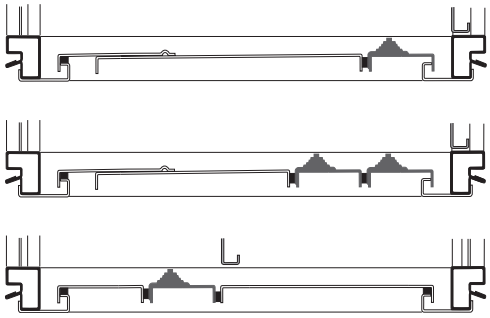
Material:
Stainless steel 1.4301

For installation in TS, stainless steel

Enclosure width mm	Cutouts per plate	Packs of	Model No. TS
600	5	2	**8700.600**
800	8	2	**8700.800**
1200	6	4	**8700.120**

Three examples from a wide range of possibilities
The diagrams show three TS examples for the positioning of cable entry plates instead of segments of the three-piece gland plates supplied as standard. This facilitates positioning to fit the mounting plate.
Thanks to the enclosure symmetry, where dimensions permit, cable entry plates may also be inserted in the enclosure depth, right and left, analogous to the gland plates.







Cable entry grommets

In conjunction with the cable entry plate, simple and fast sealing of cables inserted in the base area of enclosures.

Material:
Body: Polypropylene
Cover: Thermoplastic elastomer

Protection category:
IP 55 subject to correct mounting.

Cables per grommet	max. Ø mm	Packs of	Model No. PS
8	13	25	**4316.000**
3	21	25	**4317.000**
1	47	25	**4318.000**

German patent no. 42 07 281
European patent no. 0560119
with validity for FR, GB, IT, NL
Japanese paten no. 2533052
US patent no. 5,422,436



Connector grommets

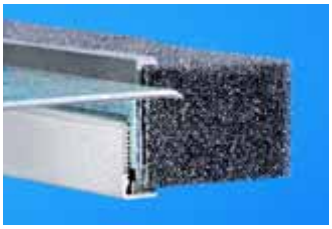
Suitable for cable diameters from 8 to 36 mm.

Material:
Outer cover: Polypropylene covered with thermo-plastic elastomer
Seal: Cellular rubber

Protection category:
IP 55 subject to correct mounting.

Packs of	Model No. PS
10	**4311.000**

German patent no. 44 05 328
Italian patent no. 0 127 3503
French patent no. 2 716 583





Section for cable entry

for TS, CM, CL

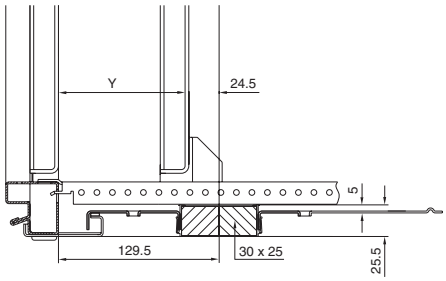
For mounting on top of the gland plates already in the enclosure. The better alternative to the foam rubber cable clamp strip, thanks to:

- Easier mounting
- Full-surface support
- High level of sealing of cables inserted into the enclosure.

Material:
Extruded aluminium section,
seal PU foam,
cross-section: 30 x 25 mm

Protection category:
IP 55 subject to correct mounting.

For Enclosure width mm	Packs of	Model No. TS
600	2	**8802.060**
800	2	**8802.080**
1000	4	**8802.100**
1200	4	**8802.120**



Y = Mounting plate depth-adjustable
on a 25 mm pitch pattern (final pitch 30 mm).



Foam rubber cable clamp strip

For sealing the cable entry between the gland plates. Particularly suitable for identical cable cross-sections.

Material:
Seal PU foam,
cross-section: 30 x 30 mm

Protection category:
IP 55 subject to correct mounting.

Packs of	Model No. SZ
3 m	**2573.000**

Gland plates



EMC gland plates

see page 958.



Plastic cable gland plates

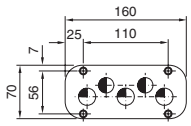
With prepunched PG holes for cable glands.
Used for sealing standard gland plates.
Temperature range:
suitable for use from –40°C to +70°C.

Material:
SZ 2560.000, SZ 2561.000 = PS
SZ 2562.000 = ABS
SZ 2563.000 = Polyamide, glass bead reinforced

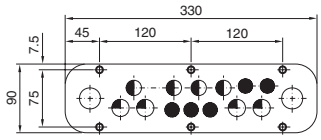
Colour:
RAL 7035

Size	For	Packs of	Model No. SZ
1	AE 1032.500, AE 1035.500	10	**2560.000**
3	AE 1030.500, AE 1031.500, AE 1380.500, AE 1038.500	10	**2561.000**
4	AE 1110.500, AE 1114.500, AE 1338.500, AE 1100.500, AE 1045.500, AE 1057.500, AE 1050.500, AE 1130.500, AE 1213.500, AE 1350.500, CS 9771.111, CS 9771.115, CS 9751.145, CS 9751.165, CS 9774.200, CS 9774.210, CS 9774.250, CS 9774.400, CS 9774.410, CS 9774.450,	5	**2562.000**
5	AE 1039.500, AE 1339.500, AE 1060.500, AE 1076.500, AE 1077.500, AE 1180.500, AE 1058.500, AE 1090.500, AE 1360.500, AE 1376.500, AE 1073.500, AE 1260.500, AE 1280.500, AE 1919.200, EL 1920.200, EL 1926.200, DK 7011.535, DK 7012.535, DK 7013.535, DK 7014.535, DK 7644.000, DK 7641.000, DK 7643.000, DK 7645.000, CS 9772.111, CS 9772.115,	5	**2563.000**

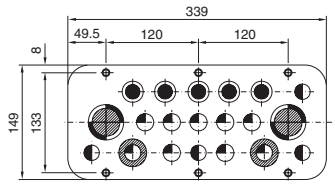
Size 1



Size 3



Size 4



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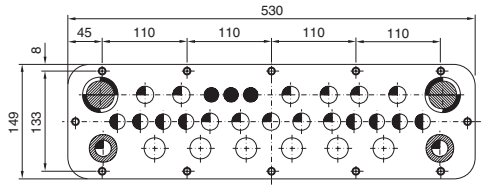
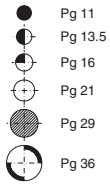
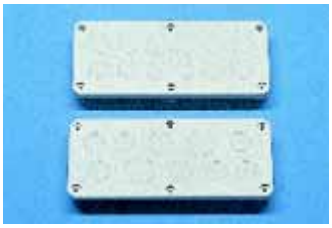








Plastic gland plates

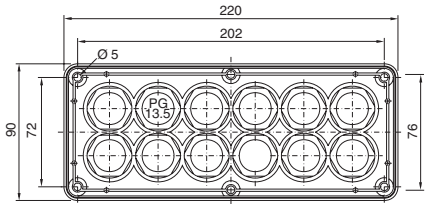
for KL and small fibre-optic distributors based on AE.
With prepunched PG holes for cable glands.
Used for sealing standard gland plates.
Temperature range:
suitable for use from –40°C to +70°C.

Material:
ABS

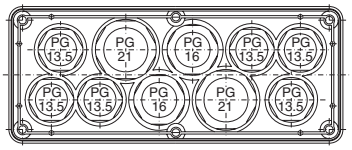
Colour:
RAL 7035

Size	PG	Number of	Packs of	Model No. KL
2	13.5	12	5	**1581.000**
	13.5 16 21	6 2 2	5	**1582.000**

KL 1581.000



KL 1582.000





Plastic gland plates

with membranes
for AE, EL, DK, CS
Simply pierce the plastic with a sharp object, and pull through the cable.

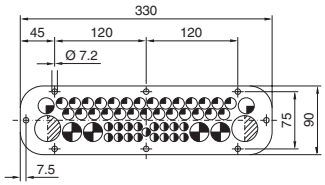
Material:
Plastic to UL 94-V2

Colour:
Similar to RAL 7035

Protection category:
IP 65 with careful cable entry.

Size	For	Packs of	Model No. SZ
3	AE 1030.500, AE 1031.500, AE 1038.500, AE 1380.500	1	**2561.500**
4	AE 1045.500, AE 1050.500, AE 1057.500, AE 1100.500, AE 1110.500, AE 1114.500, AE 1130.500, AE 1213.500, AE 1338.500, AE 1350.500, CS 9771.111, CS 9771.115, CS 9751.145, CS 9751.165, CS 9774.200, CS 9774.210, CS 9774.250, CS 9774.400, CS 9774.410, CS 9774.450,	1	**2562.500**
5	AE 1039.500, AE 1058.500, AE 1060.500, AE 1073.500, AE 1076.500, AE 1077.500, AE 1090.500, AE 1180.500, AE 1260.500, AE 1280.500, AE 1339.500, AE 1360.500, AE 1376.500, EL 1919.200, EL 1920.200, EL 1926.200, DK 7011.535, DK 7012.535, DK 7013.535, DK 7014.535, DK 7641.000, DK 7643.000, DK 7644.000, DK 7645.000, CS 9772.111, CS 9772.115	1	**2563.500**

Size 3



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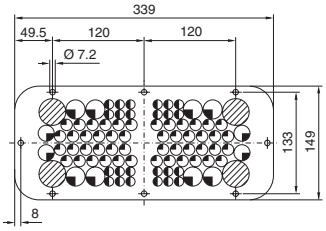

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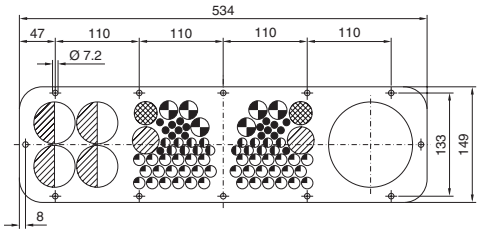


	Diameter mm	Number of cable entries for **Model No. SZ**		
		2561.500	**2562.500**	**2563.500**
●	5 – 9	–	–	18
◑	6 – 11	17	–	–
◐	7 – 12	–	24	16
◔	10 – 15	27	48	36
◒	15 – 21	2	4	–
◕	15 – 24	–	–	6
◒	15 – 25	–	8	–
◕	16 – 25	4	–	–
◑	19 – 34	2	–	–
▩	23 – 30	–	–	2
▨	26 – 35	–	4	2
◧	26 – 54	–	–	4
○	50 – 110	–	–	1

Gland plates



Metal gland plates

pre-punched
for AE, EL, DK, CS
Simply knock out the holes for the cable glands using a screwdriver.

Material:
Sheet steel

Colour:
RAL 7035

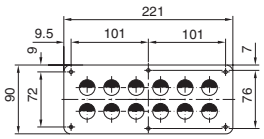
Protection category:
IP 66 when mounting in the usual position, bottom.

Size	For	Packs of	Model No. SZ
2	KL 1530.510, KL 1531.510, KL 1532.510, KL 1533.510, KL 1534.510, KL 1535.510, KL 1536.510, KL 1537.510, KL 1538.510, KL 1539.510, KL 1540.510, KL 1541.510, KL 1542.510	1	**1581.100**
3	AE 1030.500, AE 1031.500, AE 1038.500, AE 1380.500	1	**2561.100**
4	AE 1045.500, AE 1050.500, AE 1057.500, AE 1100.500, AE 1110.500, AE 1114.500, AE 1130.500, AE 1213.500, AE 1338.500, AE 1350.500, CS 9771.111, CS 9771.115, CS 9751.145, CS 9751.165, CS 9774.200, CS 9774.210, CS 9774.250, CS 9774.400, CS 9774.410, CS 9774.450	1 St.	**2562.100**
5	AE 1039.500, AE 1058.500, AE 1060.500, AE 1073.500, AE 1076.500, AE 1077.500, AE 1090.500, AE 1180.500, AE 1260.500, AE 1280.500, AE 1339.500, AE 1360.500, AE 1376.500, EL 1919.200, EL 1920.200, EL 1926.200, DK 7011.535, DK 7012.535, DK 7013.535, DK 7014.535, DK 7641.000, DK 7643.000, DK 7644.000, DK 7645.000, CS 9772.111, CS 9772.115	1	**2563.100**

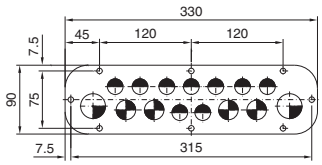
Accessories:

Cable glands made from polyamide or brass, see page 972.

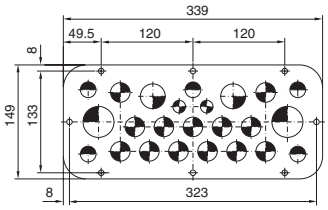
Size 2



Size 3



Size 4



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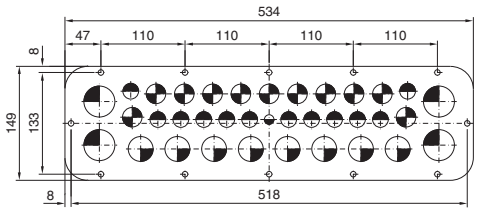
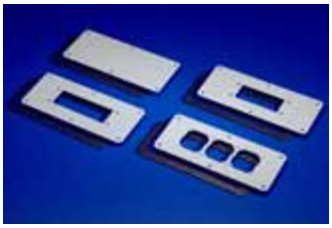


	Diameter	Number of cable entries for **Model No. SZ**			
		1581.100	**2561.100**	**2562.100**	**2563.100**
	M12	–	–	–	1
	M16	–	–	2	–
	M20	12	9	5	12
	M25	–	4	13	11
	M32	–	2	2	8
	M40	–	–	2	4



Metal gland plates

for
- KL terminal boxes, see page 109,
- CP pillar, see page 236,
- IW enclosures, see page 240 – 255.

Material:
Sheet steel, spray-finished

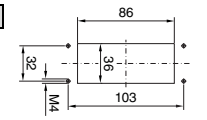
Colour:
RAL 7035

Cutout	Packs of	Model No. KL
Without	6	**1158.500**
1 x connector, 16-pole	6	**1158.560**
1 x connector, 24-pole	6	**1158.540**
3 x module plates	6	**1158.530**

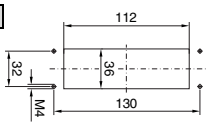
Accessories:

Module plates for individual cable entry, see page 969.

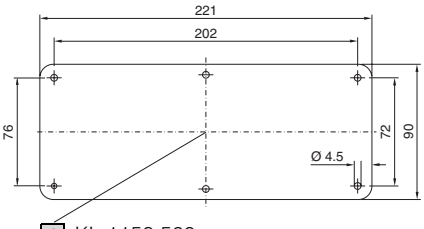
1 16-pole



2 24-pole

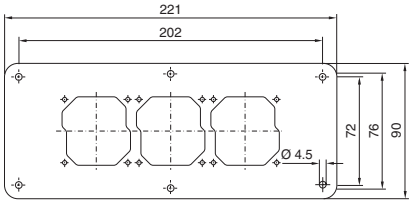


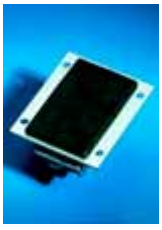
KL 1158.500



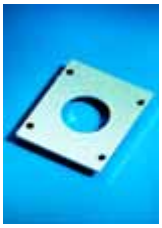
1 KL 1158.560
2 KL 1158.540

KL 1158.530





1



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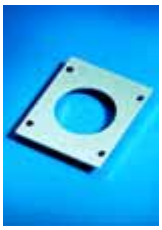

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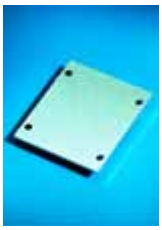


4



5



6

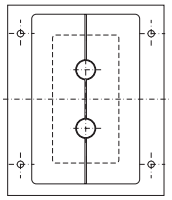
Module plates

for individual cable entry

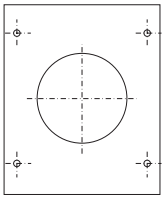
Fig.	Design		Material	Packs of	Model No. BG
1	With connector grommet for 2 cables with connectors up to d = 8.5 mm		Module plate: Sheet steel, zinc-plated, passivated Connector gland: (For details, see SZ 2400.300, page 975)	1	**1158.900**
2	Perforated for metric Cable gland	M25	Sheet steel, zinc-plated, passivated	10	**1158.910**
3		M32			**1158.920**
4	Solid				**1158.930**
5	For direct, IP-protected insertion of sensor/actuator cables	2 + 2[1)]	Plastic module plate with strain relief and flexible sealing membrane, including stoppers for any unused openings	1	**1158.940**
6		8[2)]			**1158.950**

To fit Ø
[1)] 2 cables from 6.8 to 8.8 mm and 2 cables from 7.8 to 10.7 mm
[2)] 8 cables from 3.8 to 6.3 mm

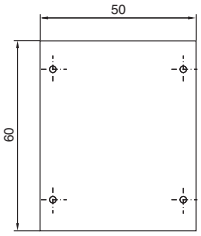
BG 1158.900



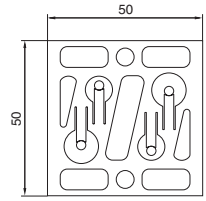
BG 1158.910 /.920



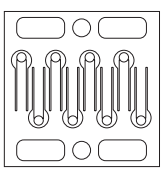
BG 1158.930



BG 1158.940



BG 1158.950



Gland plates



Gland plate

solid, for QuickBox
To conceal the cable entry openings. In exchange for the brush strip at the top and bottom that is used as standard.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Packs of	Model No. QB
2	7502.310



Gland plate

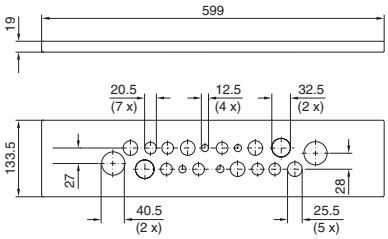
for metric cable glands, for EL
Multi-folded and welded gland plate with foamed-in seal and pre-punched, knock-out holes for metric cable glands M12, M20, M25, M32, M40.

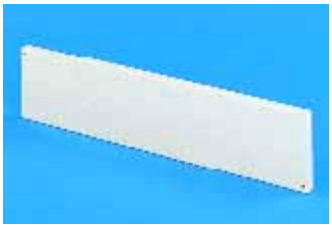
Material:
1.5 mm sheet steel

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/10.91

Packs of	Model No. DK
1	7705.235





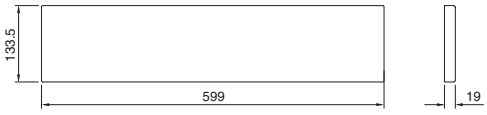
Gland plate

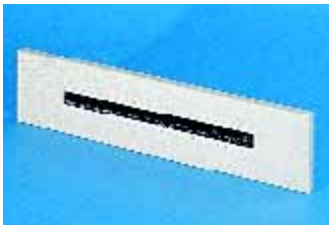
solid, for EL
Multi-fold and welded gland plate for the basic box, with foamed-in seal.

Material:
1.5 mm sheet steel

Colour:
RAL 7035

Packs of	Model No. EL
1	2235.135





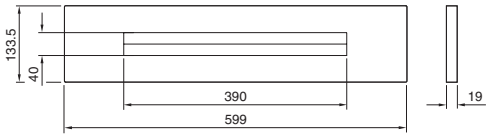
Gland plate

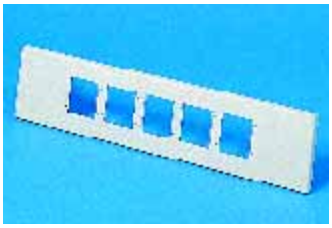
with brush insert, for EL
Multi-folded and welded gland plate with foamed-in seal and plastic brush inserts for simple cable entry.

Material:
1.5 mm sheet steel

Colour:
RAL 7035

Packs of	Model No. DK
1	7705.035





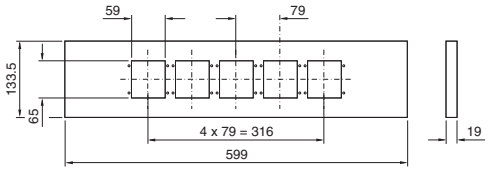
Gland plate

for PG segments, for EL
Multi-fold and welded gland plate with foamed-in seal and cut-outs for PG segments.

Material:
1.5 mm sheet steel

Colour:
RAL 7035

Packs of	Model No. EL
1	**2235.005**





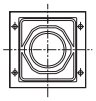
PG segments

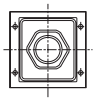
for EL
Plastic segments with pre-punched, knock-out holes for cable glands.
Suitable for retrospective screw-fastening to gland plate EL 2235.005.

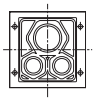
Material:
ABS, self-extinguishing to UL 94-V0

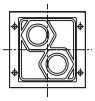
Colour:
RAL 7035

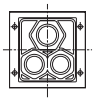
PG sizes	Packs of	Model No. EL
29	5	**2235.015**
21	5	**2235.025**
21/11	5	**2235.035**
16	5	**2235.045**
16/13.5	5	**2235.055**
13.5	5	**2235.065**
11	5	**2235.075**
neutral	5	**2235.085**

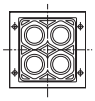
EL 2235.015 

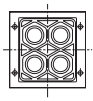
EL 2235.025 

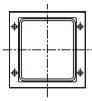
EL 2235.035 

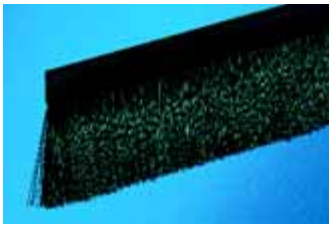
EL 2235.045 

EL 2235.055 

EL 2235.065 

EL 2235.075 

EL 2235.085 



Brush strip

For individual instalation of enclosure panels, gland plates and panels. Cut-outs for cable routing at any given positions in the side panel, rear panel, doors, roof and gland plate may be finished off attractively by simply attaching the brush strip.

Packs of	Model No. DK
2 m	**7072.200**

Technical specifications:
Bristle length: 30 mm
Plastic sheathing: 18 mm
Snap-on surface: 10 mm
Maximum cut-out height: 38 mm



Edge protector

For covering sharp edges of cut-outs. Provides protection from injuries and prevents damage to inserted cables. The edge protector is suitable for material thicknesses of approx. 1.0 – 2.0 mm, and may be cut to length individually.

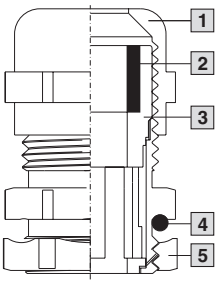
Material:
Plastic PVC

Colour:
Black

Packs of	Model No. DK
10 m	**7072.100**

Cable gland





Cable gland, brass

Benefits:

- Because the gland and lock nut are sold together in a single pack, this saves additional ordering work and storage locations.
- Clamping membranes for even tightening and strain relief which protects the cables.
- Insulation thanks to plastic insert.
- Optimum seal on the connection thread, thanks to O-ring.
- The lock nut cuts automatically into the spray-finish, thereby creating a conductive connection.

1 Top-hat nut
2 Neoprene seal
3 Plastic insert
4 O-ring
5 Lock nut

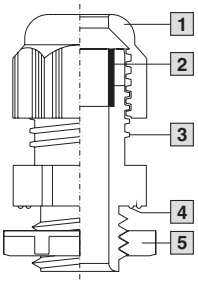
Size	Cable diameter mm	Packs of	Model No. SZ
M12 x 1.5	3 – 6.5	15	**2411.800**
M16 x 1.5	4.5 – 10	15	**2411.810**
M20 x 1.5	6 – 12	10	**2411.820**
M25 x 1.5	11 – 17	10	**2411.830**
M32 x 1.5	15 – 21	5	**2411.840**
M40 x 1.5	19 – 28	4	**2411.850**
M50 x 1.5	27 – 38	2	**2411.860**
M63 x 1.5	34 – 44	1	**2411.870**

Material:
Nickel-plated brass, neoprene seal

Protection category:
IP 68 (5 bar, 30 min.) to EN 60 529/10.91

Approval:
VDE tested to EN 50 262





Cable gland, polyamide

Benefits:

- Because the gland and lock nut are sold together in a single pack, this saves additional ordering work and storage locations.
- Clamping membranes for even tightening and strain relief which protects the cables.
- Spray-moulded sealing lip ensures an optimum seal against the enclosure.
- Trapezoid thread for secure screw-fastening of the top-hat nut.

1 Top-hat nut
2 Neoprene seal
3 Trapezoid thread
4 Sealing lip
5 Lock nut

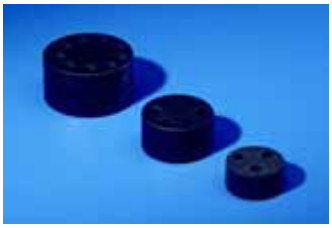
Size	Cable diameter mm	Packs of	Model No. SZ
M12 x 1.5	3 – 6.5	50	**2411.600**
M16 x 1.5	4.5 – 10	50	**2411.610**
M20 x 1.5	6 – 12	50	**2411.620**
M25 x 1.5	11 – 17	25	**2411.630**
M32 x 1.5	15 – 21	15	**2411.640**
M40 x 1.5	19 – 28	5	**2411.650**
M50 x 1.5	27 – 38	5	**2411.660**
M63 x 1.5	34 – 44	3	**2411.670**

Material:
Polyamide 6, neoprene seal

Colour:
RAL 7035

Protection category:
IP 68 (5 bar, 30 min.) to EN 60 529/10.91

Approval:
VDE tested to EN 50 262



Multi-seal inserts

For the secure entry of several individual cables into a single cable gland.

Material:
Neoprene

Size	Cable diameter mm	Number of cables	Packs of	Model No. SZ
M20	3	4	25	**2411.500**
	4	3	25	**2411.501**
	5	3	25	**2411.502**
	6	2	25	**2411.503**
M25	3	7	25	**2411.504**
	4	6	25	**2411.505**
	5	4	25	**2411.506**
	6	3	25	**2411.507**
M32	3	9	25	**2411.508**
	4	9	25	**2411.509**
	5	6	25	**2411.510**
	6	6	25	**2411.511**



Stoppers

For the reliable sealing of unused cable entries. Simply insert into the multi-seal inserts instead of a cable, and clamp via the cable gland.
Length 14 mm.

Material:
Polyamide 6

Diameter mm	Packs of	Model No. SZ
3	25	**2411.520**
4	25	**2411.521**
5	25	**2411.522**
6	25	**2411.523**





Double-membrane gland

for wall thicknesses from 1.5 to 4.5 mm
A high protection category can be achieved with cable entry, thanks to the double seal.

Material:
Plastic to UL 94-HB

Protection category:
IP 66 with careful cable entry.

For hole	Sealing range mm	Packs of	Model No. SZ
M16	5 – 9	50	**2898.160**
M20	7 – 12	50	**2898.200**
M25	9 – 16	50	**2898.250**
M32	14 – 21	25	**2898.320**





Stepped collar

for wall thicknesses from 1.5 to 4.5 mm
For cable entry, simply cut off at the required level to match the cable diameter.

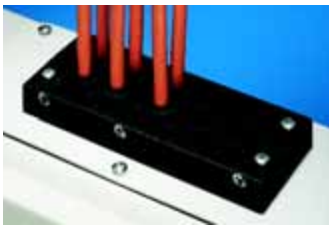
Material:
Plastic to UL 94-HB

Protection category:
IP 54 with careful cable entry.

For hole	Sealing range mm	Packs of	Model No. SZ
M20	5 – 16	100	**2899.200**
M25	5 – 21	50	**2899.250**
M32	13 – 26.5	25	**2899.320**
M40	13 – 34	20	**2899.400**

Cable gland





Connector gland

modular
For pre-assembled cables with connectors.
For mounting on 24-pole or 16-pole connector cutouts in:
- Module plates for TS divider panel
- Metal gland plates

Material:
Plastic to UL 94-V0

Protection category:
IP 54, provided the correct connector grommet is selected.

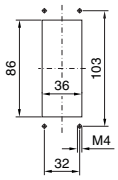
Supply includes:
Assembly parts.

Note:
Temperature range: –40°C to +120°C

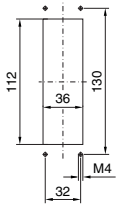
For Cutouts	For number of connector grommets	Model No. SZ
24-pole	10	**2400.700**
16-pole	8	**2400.710**

Accessories:

Module plates for TS divider panel,
see page 859.
Metal gland plates,
see page 969.



16-pole



24-pole



Connector grommets

To seal cables in conjunction with the connector gland and option of strain relief via cable ties.

Material:
Thermoplastic rubber

Protection category:
IP 54, provided the correct connector grommet is selected.

For cable diameter	Packs of	Model No. SZ
5 – 6 mm	10	**2400.720**
6 – 7 mm	10	**2400.730**
7 – 8 mm	10	**2400.740**
8 – 9 mm	10	**2400.750**
9 – 10 mm	10	**2400.760**
10 – 11 mm	10	**2400.770**
11 – 12 mm	10	**2400.780**
12 – 13 mm	10	**2400.790**
Solid	10	**2400.800**



Connector gland

for connector cutouts (24-pole)
For the entry of 2 pre-assembled cables in the connector cutout, without dismantling the connector.
For cable diameter from 8 – 36 mm.

Material:
Plastic
Clamp terminals: Sheet steel, zinc-plated, passivated

Supply includes:
1 set =
2 half-shells, including seals,
with fastening clamp.

Packs of	Model No. SZ
1 set	**2400.000**



Connector gland

For pre-assembled cables with connectors.
- For material thickness of up to 4 mm.
- Strain relief of the pre-assembled cables can be achieved with cable ties.

Material:
Plastic

Colour:
RAL 9005

Protection category:
IP 65 subject to correct mounting.

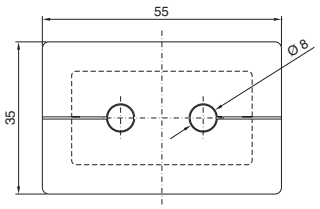
Supply includes:
Assembly parts.

To fit	Packs of	Model No. SZ
2 cables up to Ø 8 mm	1	**2400.300**
3 cables up to Ø 6 mm	5	**2400.500**

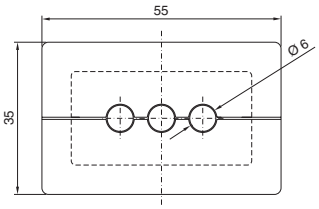
German patent no. 199 08 657

Rittal service:

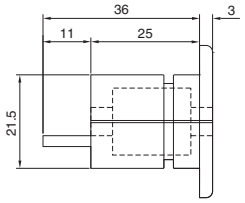
The cutouts may be made by our service centres.

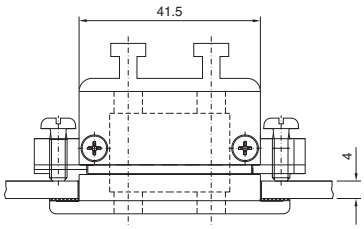


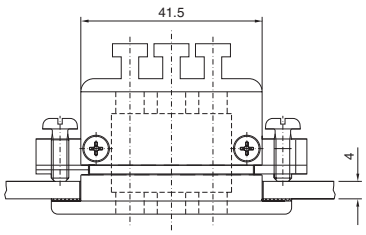
SZ 2400.300



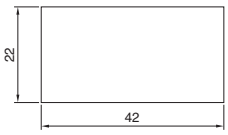
SZ 2400.500







Mounting cutout





Adaptor plate

for connector entry

To fit
- IW worktop, prepared for turntable or enclosure attachment
- Operating housing with mounting cutout CPL, round
- Surfaces.

With 4 studs M6 x 45 mm.

Material:
Sheet steel, zinc-plated, passivated.

Supply includes:
Seal and assembly parts.

Packs of	Model No. IW
1	**6902.660**

Also required:

Connector gland
SZ 2400.300 or SZ 2400.500,
see page 975.

Cable gland





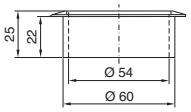
Cable gland

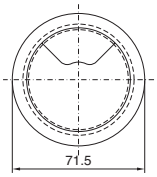
for IW worktops
To fit drilled holes 60 mm. For the entry of cables with pre-assembled connectors, the rotating flap and cover are easily removed.

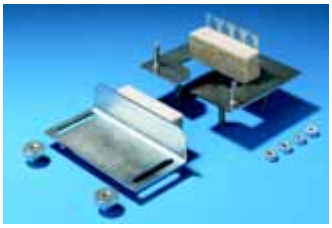
Material:
Plastic

Colour:
RAL 7035

Packs of	Model No. IW
1	6902.770









Cable gland module

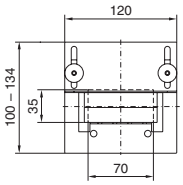
CP-L, Ø 130 mm
Use with the support arm cutout CP-L, round, only with enclosures mounted on the wall, for sealed cable entry. May also be mounted retrospectively with the cables already inserted.
Fitted with T-heads for cable clamping. Particularly well-suited to cables with identical cross-sections.

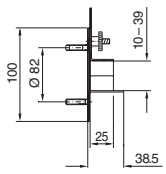
Material:
Sheet steel, zinc-plated, passivated.

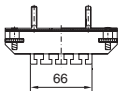
Supply includes:
Assembly parts.

Packs of	Model No. CP
1 unit	6052.500

Note:
Mounting cutout CP-L, Ø 130 mm,
see page 190.

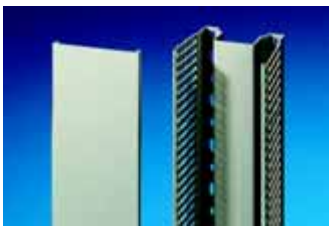














Cable duct

for vertical TS profile

For direct mounting on the vertical enclosure section.

Width 50 mm,
for assembly on a vertical enclosure section in the area of the side panel.

Width 100 mm,
for assembly on two bayed enclosure profiles in the baying area. Baying brackets and baying clamps which have already been fitted can be covered over with the cable duct.

The nominal break points of the members are also oriented towards combination with the cable ducts for mounting plates; in addition a further nominal break at the level of the mounting plate enables direct insertion into the cable duct.

The cable duct fastening points are co-ordinated with the TS system hole pattern; elaborate drilling, as in the case of DIN ducts, is dispensed with.

Width mm	Height mm	Packs of	Model No. TS
50	1600	8 sets	**8800.570**
50	1800	8 sets	**8800.520**
100	1600	4 sets	**8800.540**
100	1800	4 sets	**8800.510**

Technical specifications:
Depth: 80 mm
Length:
- 1,600 mm (for enclosure height 1,800 mm)
- 1,800 mm (for enclosure height 2,000 mm)

can be shortened for other enclosure sizes.
Member width: 5.5 mm
Slot width: 4.5 mm

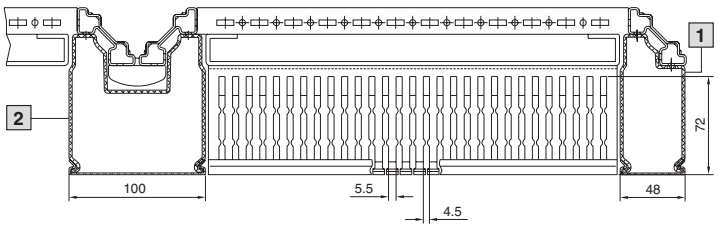
Material:
Hard PVC, hardly inflammable, self-extinguishing, temperature-resistant to +60°C.

Colour:
Similar to RAL 7030

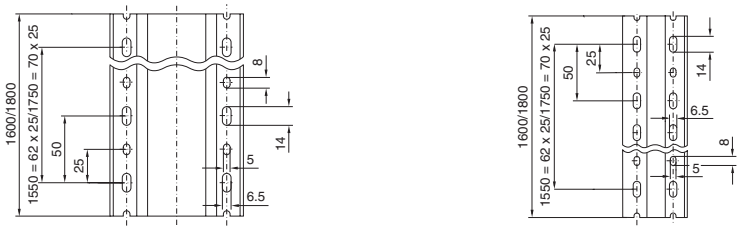
Supply includes:
1 set =
1 cable duct with cover.

Accessories:

Plastic rivet for attachment,
see page 978.

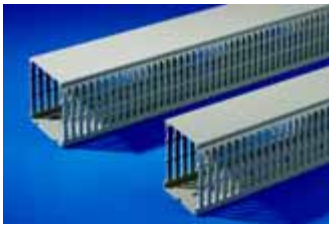


1 TS 8800.570/TS 8800.520
2 TS 8800.540/TS 8800.510



Length (L) mm	1600	1800
Width mm	**Model No. TS**	
48	**8800.570**	**8800.520**
100	**8800.540**	**8800.510**

Cable management





Cable duct

for mounting plate

- To fit the cable ducts for vertical TS profiles. If the TS mounting plate is installed in the rearmost position, the horizontally mounted cable ducts are flush with the vertical ones.
- For external mounting on surfaces

Technical specifications:
Depth 80 mm
Length:
- Sized to the width of the TS, CL and ES mounting plates
- 2,000 mm

Bar width: 5.5 mm
Slot width: 4.5 mm

Material:
Hard PVC, hardly inflammable, self-extinguishing, temperature-resistant to +60°C

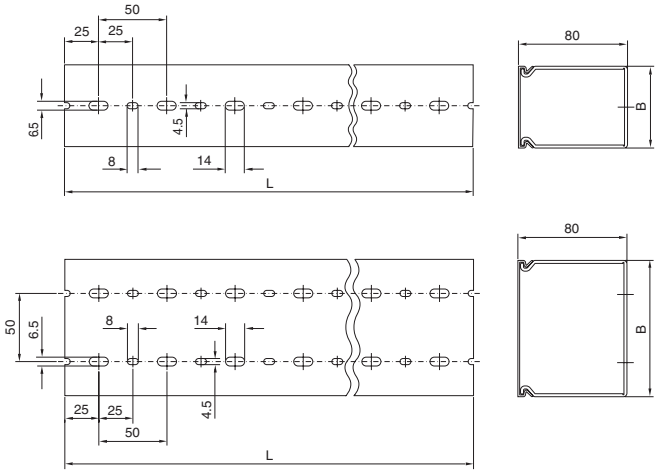
Colour:
Similar to RAL 7030

Supply includes:
1 set =
1 cable duct with cover.

Accessories:

Plastic rivet for attachment,
see page 978.

For enclosure width mm		600	800	1000	1200	Length 2,000 mm
Length (L) mm		499	699	899	1099	
Width mm	Packs of	Model No. TS				
30	24 sets	**8800.730**	**8800.735**	**8800.740**	**8800.745**	**8800.750**
40	20 sets	**8800.731**	**8800.736**	**8800.741**	**8800.746**	**8800.751**
60	18 sets	**8800.732**	**8800.737**	**8800.742**	**8800.747**	**8800.752**
80	12 sets	**8800.733**	**8800.738**	**8800.743**	**8800.748**	**8800.753**
100	12 sets	**8800.734**	**8800.739**	**8800.744**	**8800.749**	**8800.754**

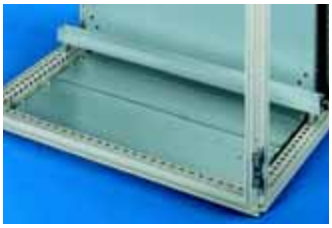




Plastic rivet

Easily mounted with a standard commercially available blind rivet tool.
For fastening the cable ducts in the
- TS system hole pattern
- Drilled hole Ø 4.5 mm

Packs of	Model No. TS
100	**8800.530**



Cable clamp rails

Right angle section
For strain relief with cable entry. Depth-variable mounting on a 25 mm pitch pattern on the horizontal enclosure section or in side base/plinth trim panels with assembly bolts.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For TS, ES, PC, AP universal console, base/plinths

Enclosure width mm	Length mm	Packs of	Model No. PS
400	385	2	**4193.000**
600	585	2	**4191.000**
800	785	2	**4192.000**
850	835	2	**4195.000**
1000	985	2	**4336.000**
1200	1185	2	**4196.000**
1600	1585	2	**4338.000**
1800	1785	2	**4339.000**

(may also be used for AP, AK and AE base/plinths)

Accessories:

Fastening bolts for baying base/plinth trim,
see page 838.
Cable clamp,
see page 979.







Cable clamps,

for cable clamp rails
For fastening the cables to the cable clamp rails.

Material:
Sheet steel, zinc-plated, passivated

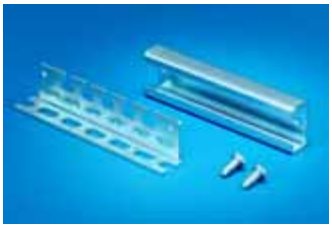
Supply includes:
Plastic insert.

For Cable diameter mm	Packs of	Model No. SZ
6 – 12	25	**2350.000**
12 – 16	25	**2351.000**
14 – 18	25	**2352.000**
18 – 22	25	**2353.000**
22 – 26	25	**2354.000**
26 – 30	25	**2355.000**
30 – 34	25	**2356.000**
34 – 38	25	**2357.000**
38 – 42	25	**2358.000**
42 – 46	25	**2359.000**
46 – 50	25	**2360.000**

Possible alternative:

Rail for EMC shielding bracket and strain relief,
see page 957.

Cable management





Cable clamping bracket

For installing in the operating housing with mounting cutout CP-L and CP-XL.
Cable clamping optionally via:

- Cable clamps
  or
- Cable tie SZ 2597.000
- Commercially available cable ties.

Bracket height = 25 mm with fitted C rail 40 mm.

Material:
Sheet steel, zinc-plated, passivated.

Supply includes:
C rail
and screws.

Packs of	Model No. CP
1 set	**6052.000**

Accessories:

Cable clamps,
see page 981.
Cable ties,
see page 982.



C rails

may be found under rail systems
from page 928.



Cable clamp rails

see page 983.





Combination rails

For cable clamping and routing.
Cables and leads can be fastened to the hammer heads top and bottom with cable ties. In addition, the C section of the combination rail will accommodate cable clamps with inserts.

Material:
Aluminium

Supply includes:
Assembly parts.

For Enclosure depth mm	Length mm	Packs of	Model No. QB
300/400	200	6	**7502.302**
500/600	400	6	**7502.304**

For Enclosure width mm	Length mm	Packs of	Model No. QB
600	400	6	**7502.304**

Accessories:

Cable ties,
see page 982.
Cable clamps,
see page 981.





Cascade cable routing

for frame attachent
for DK-TS, FR(i)
Professional cable routing system for cascading of cables in several levels of the enclosure depth. The cables are attached to the C rail by means of clamps. Suitable for installation on the inner enclosure level.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
6 mounting brackets and 3 C rails, including assembly parts.

For Enclosure width mm	Packs of	Model No. DK
600	3	**7831.570**
800	3	**7831.571**

Accessories:

TS punched section with mounting flange for the inner or outer attachment level,
see page 921.
PS punched section without mounting flange for vertical mounting in the enclosure frame,
see page 925.
Cable clamps,
see page 981.





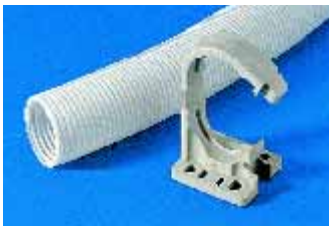
Cable clamps

for C rails
For attaching the cables to the C rails.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Plastic insert.

For Cable diameter mm	Packs of	Model No. DK
6 – 14	25	**7077.000**
12 – 18	25	**7078.000**
18 – 22	25	**7097.000**
22 – 26	25	**7097.220**
26 – 30	25	**7097.260**
30 – 34	25	**7097.300**
34 – 38	25	**7097.340**
38 – 42	25	**7098.000**
42 – 56	25	**7098.100**
56 – 64	25	**7099.000**





Cable conduit and cable conduit holder

For secure cable routing e.g. from the enclosure or mounting plate to the door. Option of attaching the cable conduit holder tailored to system punchings TS and to 482.6 mm (19″) pitch pattern with no drilling required.
Attachment facility for standard commercially available cable ties is provided on the cable conduit holder, so that cables may be attached upon entry to/exit from the cable conduit.

Material:
Cable conduit: Polythene
Cable conduit holder: Polyamide

Cable conduit holder:
German patent no. 37 60 110
European patent no. 0 257 367
with validity for DE, ES, FR, GB, IT
US patent no. 4,779,828

Cable conduit

Internal Ø mm	Packs of	Model No. SZ
16	25 m	**2595.000**
29	25 m	**2589.000**
36	25 m	**2596.000**
48	25 m	**2590.000**

Cable conduit holder

For cable conduit Ø mm	Packs of	Model No. SZ
16	20	**2593.000**[1)]
29	20	**2591.000**[1)]
36	20	**2594.000**
48	20	**2592.000**

[1)] Installation in compact enclosures AE with universal bracket SZ 2373.000,
see page 935.

Cable management





Cable fastening

For professional, secure fastening of cables and conduits.

For fastening:
- Slide into the mounting rail 23 x 23 mm
- screw-fasten onto the round punchings of the enclosures, as well as all punched rails and punched sections.

As the fastening attachments are bayable, several fastening attachments, even those of different sizes, can be assembled using just 2 screws.

Material:
Polyamide

For Cable diameter from – to mm	Packs of	Model No. PS
6 – 9	50	**4319.090**
9 – 12	50	**4319.120**
12 – 16	50	**4319.160**
16 – 20	50	**4319.200**

Also required:

Posidrive raised countersunk screw M5 x 12 mm, SZ 2488.000, for screw-fastening to the round system punchings,
see page 937.

Accessories:

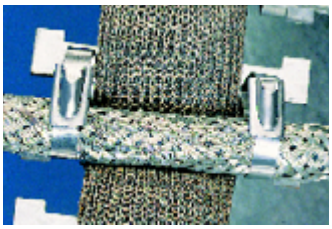
Punched rail 23 x 23 mm,
see page 925.



Cable ties

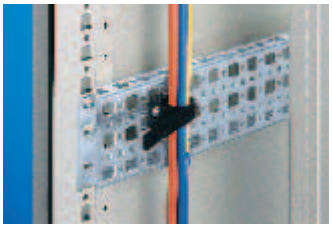
The super-fast solution for fastening cables to the enclosure profile or mounting system parts. Simply clip into the round system punchings.

Length mm	Packs of	Model No. SZ
150	100	**2597.000**



Metal cable ties

see page 958.



Nylon loop

With the nylon loop, secured cables are easily released, allowing individual cables to be added or removed. Ideal for sensitive data cables (fibre-optic/Cu), as it avoids indentations on the cable sheathing.
In addition, the nylon loop may be screw-fastened to the round system punchings.

Colour:
Black

Width mm	Length mm	Max. cable diameter mm	Packs of	Model No. DK
16	130	30	10	**7072.220**
16	200	50	10	**7072.230**
16	300	90	10	**7072.240**

Also required:

Screw SZ 2486.500 for screw-fastening to the round system punchings,
see page 937.







Cable tie fastener

for round system punchings and VIP 6000

For all commercially available cable ties up to a tie width of 4.8 mm.

Simply insert into the round system punchings or into the screw channel, and secure by hammering down the split rivet.

Material:
Polyamide 6.6

Packs of	Model No. CP
100	**6059.000**





Cable tie fastener

for Optipanel

For secure cable routing of all standard commercially available cable ties up to a tie width of 4.0 mm.

Secured in the T channel by rotating through 45°.

Material:
Polyamide 6.6

Packs of	Model No. CP
100	**6059.500**



Cable clamp rails

for TS and 482.6 mm (19″) mounting frames
The cables may be attached to the cable clamp rails with cable ties or nylon tapes. The cable clamp rails are simply located onto the frame section and may be additionally secured with a screw.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Accessories:

Cable ties, see page 982.
Nylon loop, see page 982.

For the inner mounting level

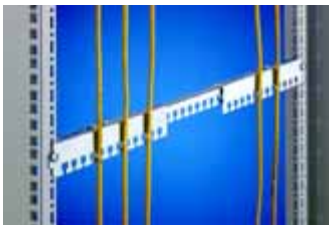
For enclosures		Packs of	Model No. DK
Width mm	Depth mm		
600	600	4	**7828.061**
800	800	4	**7828.081**
900	900	4	**7828.091**
1000	1000	4	**7828.101**

For the outer mounting level

For enclosures		Packs of	Model No. DK
Width mm	Depth mm		
600	600	4	**7828.062**
800	800	4	**7828.082**
900	900	4	**7828.092**
1000	1000	4	**7828.102**

Cable management





Cable clamp rails, depth-variable

for TS and 482.6 mm (19″) mounting frames
For strain relief of the routed cables. The cables may be attached to the cable clamp rails with cable ties or nylon tapes.
The cable clamp rails may be located directly on a 482.6 mm (19″) mounting frame horizontally at the rear or in the enclosure depth between two mounting frames. An additional screw-fastening secures the unit.
The depth variability of the rails facilitates flexible adaptation of their length to the existing attachment distance between the two 482.6 mm (19″) mounting frames.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

19″ distance between levels mm	Packs of	Model No. DK
445 – 695	4	**7858.160**
620 – 1015	4	**7858.162**

Accessories:

Cable ties,
see page 982.
Nylon loop,
see page 982.

Shunting ring, plastic

For flexible cable routing, in two materials and three size variants.
Option of mounting to the 482.6 mm (19″) enclosure and swing frame profile of the data distributor, to the system strips of FM distribution enclosures, to all patch panels, to the Rittal Data Rack and all components on a 25 mm DIN pitch pattern.



Polyamide version:
Infinitely variable mounting thanks to a longitudinal slot. The shunting ring DK 7218.035 may also be used on 1 U patch panels.

Colour:
RAL 7035

Material	Dimensions mm	Packs of	Model No. DK
Polyamide	70 x 44	10	**7218.035[1)]**
Polyamide	105 x 70	10	**7219.035[1)]**
Polycarbonate	95 x 50	10	**7228.035**

[1)] German patent no. 44 13 124



Polycarbonate version:
Variable mounting. With 45° attachment the cable shunting ring may be attached to a 1 U panel.

Colour:
RAL 7035

Possible alternative:

Cable management panel, 482.6 mm (19″), 1 U,
see page 989.



Cable shunting ring

For flexible, system-compatible cable routing at the side of the 482.6 mm (19″) mounting frame.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Dimensions mm	Packs of	Model No. DK
120 x 80	10	**7111.900**
120 x 60	10	**7111.000**
80 x 37	10	**7112.000**

German patent no. 38 13 002

Cable management





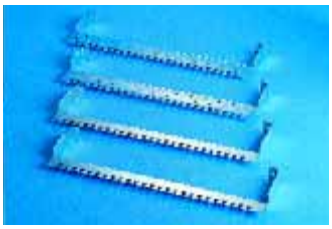
Shunting ring

To accommodate large quantities of cables. Shunting ring for side attachment to 482.6 mm (19″) sections and 482.6 mm (19″) mounting frames in 800 mm wide network enclosures. The ring is attached asymmetrically, with $^{1}/_{3}$ in front and $^{2}/_{3}$ behind the 482.6 mm (19″) front mounting angle. In this way, even large quantities of cables can be effectively managed.

Material:
Round steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Dimensions mm	Packs of	Model No. DK
300 x 90	4	**7220.600**



Cable clamp straps

for patch panels
To provide strain relief of incoming or outgoing data cables. Optionally available with spring brackets for accommodating and contacting the cable screen. Connection to the patch panel is by means of bolts on the panel itself.

Material:
Sheet steel 2 mm, zinc-plated, passivated

Supply includes:
Assembly parts.

Design	Model No. DK
Without cable screen contact	**7610.000**
With spring clips for contacting the cable screen	**7611.000**





Rail spacing brackets

for patch panels
For fastening punched rails PS 4170.000 with 2 U nuts PS 4179.000, as cable clamps or cable routing directly behind the panel.

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. DK
12	**7110.000**

Extended delivery times.

Accessories:

Mounting rails,
see page 925.
Sliding nut M6,
see page 936.

Cable management



Fibre-optic shunting rings

The inner body is grooved, and fibre-optic shunting or jumper cables can be inserted into these. A rubber ring holds different fibre-optic cables with diameters of up to 4.5 mm. Strain relief and bending radius are ensured. Length: 120 mm.

Material:
Plastic

Colour:
Outside: RAL 7035
Inner body: Black

Supply includes:
2 shunting rings,
2 rubber rings,
baying kit,
including mounting accessories.

Assembly:
The supplied mouting brackts are suitable for universal use; the fibre-optic cables can be routed to the patch panel in all directions in various mounting positions:



1



2



3



4

1 At the side, directly on the patch panel

2 In front of the patch panel

3 At the side next to the patch panel

4 Behind the patch panel

Packs of	Model No. DK
2	**7116.500**

German patent no. 196 48 489
German patent no. 196 48 490

Possible alternative:

Fibre-optic cable management panel 482.6 mm (19″) 1 U,
see page 992.



Cable route

For cable routing between two 482.6 mm (19″) mounting angles in bayed enclosure suites (enclosure width 800 mm, mounting angles fitted centrally). Suitable for L-shaped and cranked mounting angles.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Packs of	Model No. DK
1	**7827.050**



Surplus cable holder

For fastening at the rear area of the enclosure, or at the side of network enclosures. The surplus cable holder can be attached to all depth stays or to punched sections and rails with a 25 mm pitch pattern – mounting dimension 150 mm. Units may also be fastened to each other.

Material:
Sheet steel

Colour:
RAL 7035



W x H x D mm	Model No. DK
280 x 151 x 75	**7220.500**

Cable management



Cable management duct

for TS

For side cable routing. The cable management duct is attached to 482.6 mm (19″) mounting angles at the sides of the 800 mm wide TS network enclosure. For this purpose, the mounting angles must be mounted on installation brackets. Thanks to the removable front trim panel equipped with quick-release fasteners, cables can also be retrospectively removed or added.

Dimensions:
W x D: 95 x 94 mm

Material:
Sheet steel, spray-finished

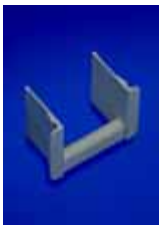
Colour:
RAL 7035

Supply includes:
Assembly parts.

U	For enclosure height mm	Model No. DK
31	1600	**7827.333**
36	1800	**7827.338**
40	2000	**7827.342**
45	2200	**7827.347**

Also required:

Installation brackets TS for mounting angles, see page 1009.





Cable routing components

for FR(i)

For snap-fastening into the vertical frame channel.

Type 1:
With horizontal bar for attaching the cables in the frame channel.





Type 2:
Additionally with semi-circular bead for kink-free cable entry and exit.

Type	Packs of	Model No. DK
1	10	**7218.100**
2	10	**7218.105**

Material:
Polycarbonate

Colour:
RAL 7035



Expansion kit

horizontal cable management
for FR(i)

Allows the enclosure frame to be extended in the depth by approximately 100 mm. The space thereby acquired may be used for horizontal cable management between bayed enclosures.

Expansion kit

Packs of	Model No. FR
1 set	**7856.740**

Note:
Combination of the extension kit with divided doors is not possible.



Material:
Sheet steel, spray-finished

Colour:
RAL 7035

Supply includes:
1 set =
8 spacer supports, including assembly parts.

Trim panels

Enclosure height mm	Packs of	Model No. FR
2000	2	**7856.743**
2200	2	**7856.746**

Note:
Upon request, trim panels may be inserted on the outer sides of the bayed enclosure suites to protect the enclosures against unauthorised access.

Cable management



Mounting/cable management panel

for QB 3 U, 6 U with vertical 482.6 mm (19″) level

For structured cable routing or for mounting small components or distributors (such as hubs, switches etc.). The cable management panel is easily fitted in the front of the rear panel from the front.

Material:
Sheet steel

Colour:
RAL 7035

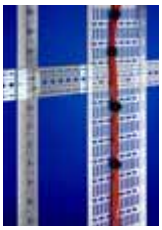
Supply includes:
Assembly parts.

Packs of	Model No. QB
1	**7502.270**

Accessories:

Nylon loop, see page 982.
Cable ties, see page 982.





Cable route

Universal cable tray. Ideal for network enclosures with large quantities of cable.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Width mm	Length mm	Packs of	Model No. DK
150	1700	1	**7858.150**
200	1700	1	**7858.152**
300	1700	1	**7858.154**

Accessories:

Nylon loop, see page 982.
Cable ties, see page 982.





Cable glands

for fibre-optic technology

The standard sizes PG 7 and PG 13.5 have a slotted inner seal. This allows super-easy cable entry. Ideal for routing break-out cables, as this eliminates unnecessary bending of the fibre-optic cables.

Material:
Cable gland: Brass, nickle-plated
Inner seal: Soft PVC insert

Fibre-optic cable glands	Packs of	Model No. DK
PG 7	12	**7455.010**
PG 13.5	12	**7455.030**



Cable management panel 1 U

42 HP (1/2 19″)
for RNC, RiCase
For horizontal cable routing.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Tray and 5 shunting rings.

U	Model No. DK
1	**7502.610**



Entry panel 1 U

42 HP (1/2 19″)
for RNC, RiCase
For system-compatible entry of patch cables which complies with the minimum bending radii. Cutout approximately 227 x 30 mm.

Material:
Sheet steel

Colour:
RAL 7035

Packs of	Model No. DK
2	**7870.730**

Cable management panel, 482.6 mm (19″), 1 U

482.6 mm (19″)
For horizontal management of the patching cables with 5 cable shunting rings, supplied loose.



Material:
Panel: Sheet steel
Ring: Polyamide

Colour:
RAL 7035

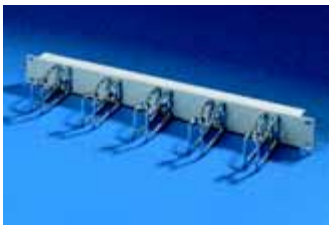
U	Ring size mm	Model No. DK
1	70 x 44	**7159.035**



Material:
Panel: Sheet steel
Ring: Polycarbonate

Colour:
RAL 7035

U	Ring size mm	Model No. DK
1	95 x 50	**7255.035**



Material:
Panel: Sheet steel
Ring: Sheet steel, zinc-plated, passivated

Colour:
RAL 7035

U	Ring size mm	Model No. DK
1	100 x 37	**7257.035**
2	120 x 80	**7257.100**

Cable routing 482.6 mm (19″)





Cable management panel, 2 U

482.6 mm (19″)
The cable routing chamber has cutouts from above, into which the patch cables can be inserted. The cable management panel is equipped with a flap and quick-release fasteners at the front, for optimum access to the cables. From the rear, the cables can be inserted via a cutout with brush strips. With accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

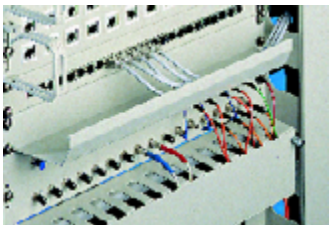
Material:
Sheet steel

Colour:
RAL 7035

U	Depth mm	Model No. DK
2	85	**7158.035**

Accessories:

Cable clamp straps,
see page 985.



Cable routing channel

482.6 mm (19″)
To hold the patching cables.

Material:
Sheet steel

Colour:
RAL 7035

U	Depth mm	Model No. DK
1	85	**7149.135**
3	100	**7149.035**

Other versions available on request.



Cable management panel, 2 U

To accommodated fibre-optic and copper cables. Fibres from the patch panels are placed into the tray via openings and may be distributed at the sides. Rounded openings protect the cable sheathing.

Material:
Sheet steel

Colour:
RAL 7035

U	Model No. DK
2	**7269.135**





Cable management duct, horizontal

482.6 mm (19″)

The duct facilitates concealed, simple cable routing of large quantities of cables to equipment within the 482.6 mm (19″) attachment level. Large cutouts ensure convenient, kink-free cable routing to the cables top and bottom.
For simple handling, the entire front panel may be removed via quick-release fasteners. After attaching the cables, these are held in position via nylon ties, whilst the duct may be resealed.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
5 nylon loops.

U	Model No. DK
2	**7158.100**
3	**7158.150**



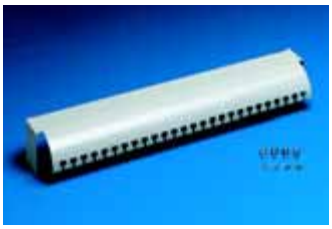
Cable tray, 2 U

For side routing and distribution of fibre-optic and copper cables. In this way, cables inserted into the roof area may be routed at the side of the mounting angles in the upper section of the rack. Depth 85 mm.

Material:
Sheet steel

Colour:
RAL 7035

U	Model No. DK
2	**7269.235**



Copper and fibre-optic cable management panel

The panel is attached between the cranked 482.6 mm (19″) mounting angles. The fibres are routed via the panel; minimum bend radii are maintained.
The hammer heads provide strain relief for individual cables.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

U	Model No. DK
2	**7269.335**

Other versions available on request.



Fibre-optic cable management panel, 2 U

482.6 mm (19″)

This panel supports routing of the fibre-optics whilst observing the minimum bend radii within horizontal and vertical cable management.

Material:
Sheet steel

Colour:
RAL 7035

U	Model No. DK
2	**7116.560**

Cable routing 482.6 mm (19″)



Fibre-optic cable management panel, 1 U

482.6 mm (19″)
The four fibre-optic cable shunting rings integrated into the front permit optimum management of up to 48 fibres.

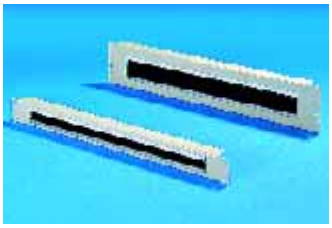
Material:
Panel: Sheet steel
Ring: Plastic

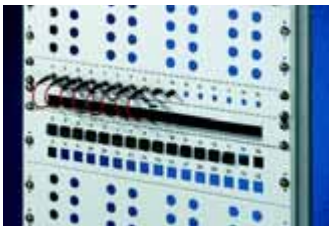
Colour:
Panel: RAL 7035
Cable shunting rings on the outside: RAL 7035
Black interior

U	Model No. DK
1	**7256.035**

Possible alternative:

Fibre-optic support guide DK 7116.500,
see page 986.





Cable entry panel

482.6 mm (19″)
Cutout 390 x 40 mm (2 U) or 390 x 20 mm (1 U) with brush insert. With accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel

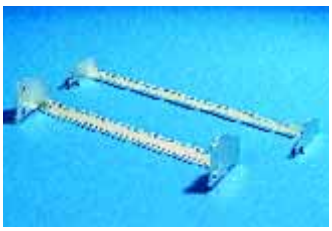
Colour:
RAL 7035

U	Model No. DK
1	**7140.535**
2	**7150.535**

Other versions available on request.

Accessories:

Cable clamp straps,
see page 985.





Cable routing across the 482.6 mm (19″) mounting level

There is a choice of five different cable clamping systems for system-compatible cable routing in 482.6 mm (19″) systems with one or two pairs of mounting angles:

C rail
for fastening across all 482.6 mm (19″) mounting angles.

Cable clamp rails
for fastening across all 482.6 mm (19″) mounting angles, for cable ties.

Cable clamp straps for large swing frames, and Data Rack,
the cable clamp straps are mounted on the frame at the rear, whilst the cables are clamped 250 mm behind the 482.6 mm (19″) mounting angles.

Cable clamp straps for DK-TS mounting angles,
with side lugs suspending from the cranked 482.6 mm (19″) mounting angles. Cable clamping is via cable ties.

Cable clamp strap for Rittal TC Rack,
for fastening across all 482.6 mm (19″) mounting angles, for cable ties.

Material:
Sheet steel, zinc-plated, passivated

C rail	Depth in mm	Model No. DK
482.6 mm (19″) mounting angles	–	**7016.100**

Cable clamp rail	Depth in mm	Model No. DK
482.6 mm (19″) mounting angles	–	**7016.110**

Cable clamp strap for	Depth in mm	Model No. DK/FR
Data Rack, and large swing frame	250	**7016.120**
DK-TS mounting angles	100	**7016.130**
TC rack mounting angles	100	**7875.400**[1)]

Packs of 6
[1)] Extended delivery times.

Also required:

With L-shaped TS mounting angles,
adaptor DK 7827.300 is additionally required,
see page 950.











Swing frame, small

for 600 mm and 800 mm wide TS enclosures
For mounting 482.6 mm (19″) equipment.
The front mounting situation, at the top or bottom of the enclosure frame, is achieved with the divider kit. The installation accessories required for other installation variants are described separately (see page 994).
With 800 mm wide enclosures, central or side-offset installation is possible.

Technical specifications:
Torsionally stiff frame, welded from rectangular tube and triple folded support section.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Cam with double-bit lock insert and parts for attaching to the divider kit.

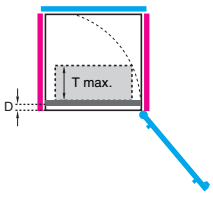
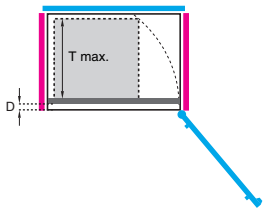
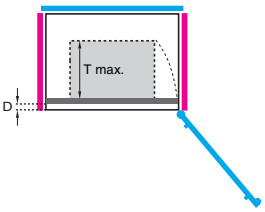
Also required:

Divider kit for swing frame, small,
see page 994.

Accessories:

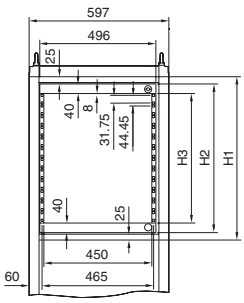
PS punched section without mounting flange
see page 925.
Support bracket TS,
see page 933.
Lock inserts, type D,
see page 888.
Plastic handle, type C,
see page 886.

Height units	3 U	6 U	9 U	12 U	15 U	18 U
Model No. SR	**2377.030**	**2377.060**	**2377.090**	**2377.120**	**2377.150**	**2377.180**
H1 mm	275	408	541	675	808	941
H2 mm	217	350	483	617	750	883
H3 mm	137	270	403	537	670	803

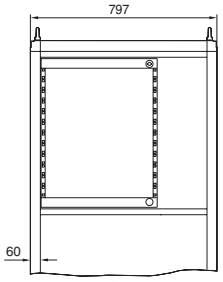
Installation depth T max. = mm with dimension D[1] of at least 45 mm			
Enclosure width mm	600	800	800
			
Installation	central	side	central
Enclosure depth mm 400 500 ≥ = 600	T max. 185 185 185	T max. 310 410 500	T max. 310 370 370

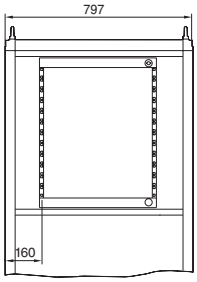
[1] D = Distance from the inner edge of the door to the front edge of the swing frame may be installed deeper on a 25 mm pitch pattern.

For 600 mm wide enclosures



For 800 mm wide enclosures optionally side or central

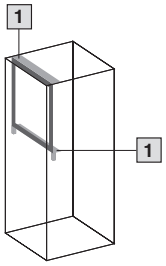




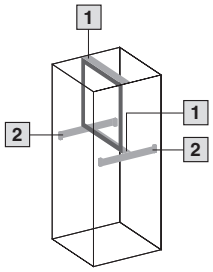
Swing frame

5 examples for TS

Partial installation in 600 and 800 mm wide enclosures,
in the foremost or rearmost position.

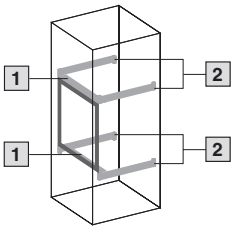


Front

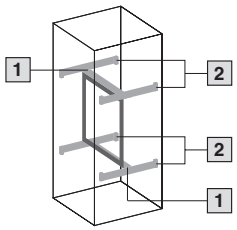


Set back

Partial installation, centre
in 600 and 800 mm wide enclosures.



Front



Set back

Also required:

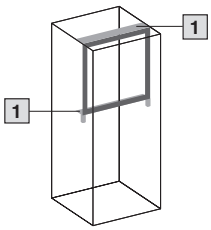
Depending on the installation position:

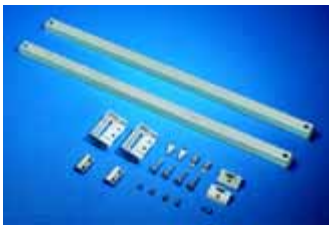
1 Divider kit for swing frame, small.

2 PS punched section without mounting flange 23 x 73 mm according to the enclosure depth in conjunction with 4 support brackets TS 8800.330 (2 included with the supply of the divider kit).

Note:
Height compensation between the 25 mm pitch pattern of holes in the enclosure and the height units of the swing frame is achieved by the support brackets TS (two are included with the supply of the divider kit).

Side installation
With an enclosure depth of 600 or 800 mm, side installation of a small swing frame is identical to installation parallel to the front.
For access to the swing frame we recommend the hinges for the TS side panel,
see page 854.





Divider kit

for swing frame, small, or hinge attachment for partial mounting plate in TS 8.

Material:
Cross member: Sheet steel, passivated
Support bracket TS: Die-cast zinc

Supply includes:
2 cross members,
including assembly parts.

Enclosure width mm	Model No. SR
600	**2377.860**
800	**2377.880**

Accessories:

Depending on the installation position
(see above):
Support brackets TS 8800.330,
see page 933,
and PS punched sections without mounting flanges to match the enclosure depth,
see page 925.



Divider kit

for swing frame, small in ES, AP universal console

Enclosure width mm	Packs of	Model No. SR
600	1 sets	**2377.460**

Accessories:

Depending on the installation position:
Support brackets PS 4183.000,
see page 933,
and PS punched sections without mounting flanges to match the enclosure depth,
see page 925.







Swing frame, large

without trim panel
for TS, ES, AK, AP universal console
For mounting 482.6 mm (19″) equipment.
The installation accessories required for other installation variants are described separately (see page 996).

Technical specifications:
Torsionally stiff frame, welded from rectangular tube and triple folded support section.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
2 cams with double-bit lock insert and parts for attaching to the divider kit.

Note:
If the enclosure height is not fully utilised by the swing frame, additional mounting accessories – see page 996 – will be required.

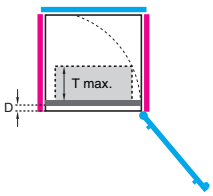
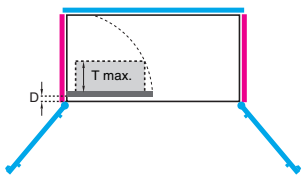
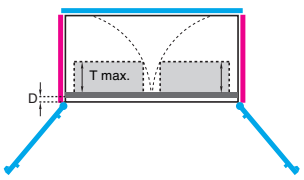
Also required:

Divider kit for swing frame, large,
see page 996.

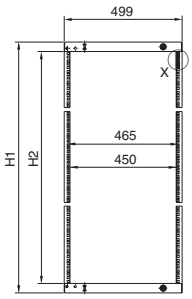
Accessories:

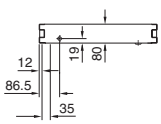
Depending on the installation position:
TS punched section with mounting flange, 23 x 73 mm,
see page 922.
TS punched rail 18 x 38 mm,
see page 923.
Punched sections with mounting flanges,
see page 926.
Width divider,
see page 850.
Lock inserts, type D,
see page 888.

Height units	22 U	31 U	36 U	40 U	45 U
Model No. SR	**2322.700**	**2331.700**	**2336.700**	**2340.700**	**2345.700**
for enclosure height mm (or higher)	1200	1600	1800	2000	2200
H1 mm	1061.5	1461.5	1684.5	1861.5	2084.0
H2 mm	981.5	1381.5	1604.0	1781.5	2004.0

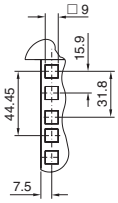
Installation depth T max. = mm with dimension D[1] of at least 49 mm			
Enclosure width mm	600	1200	1200
			
Installation	central	left or right	left and right
Enclosure depth mm	T max.	T max.	T max.
400	185	295	295
500	185	395	365
600	185	495	365
800	185	695	365

[1] D = Distance from the inner edge of the door to the front edge of the swing frame may be installed deeper on a 25 mm pitch pattern.





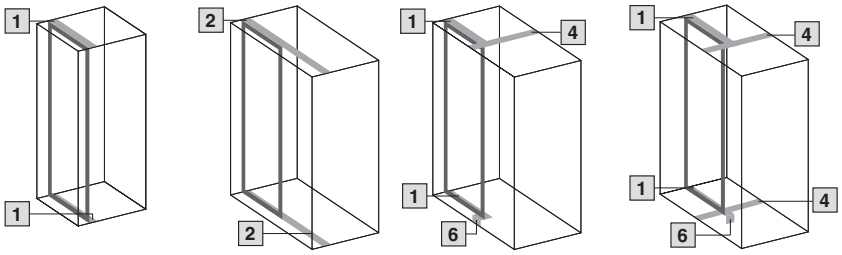
Cutout “X”



Swing frame

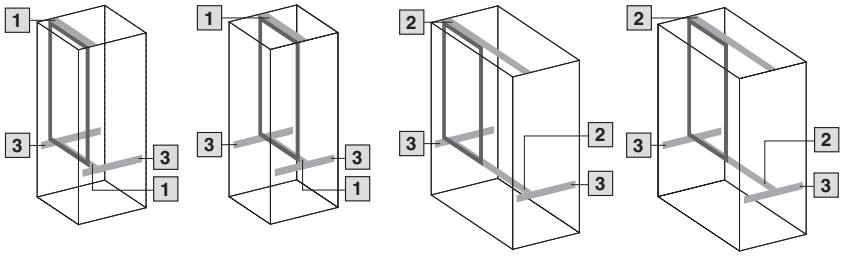
13 examples for TS

Full installation



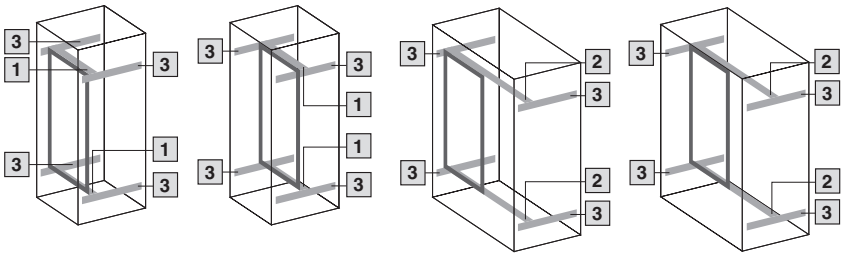
600 mm front | 1200 mm front | 1200 mm front with width divider | 1200 mm set back with width divider

Partial installation, top



600 mm front | 600 mm set back | 1200 mm front | 1200 mm set back

Partial installation, centre



600 mm front | 600 mm set back | 1200 mm front | 1200 mm set back

Also required:

Depending on the installation position:

1 Installation kit for 600 mm wide enclosures

2 Installation kit for 1200 mm wide enclosures

3 TS punched section with mounting flange 23 x 73 mm for the inner mounting level in the respective enclosure depth, for installation in ES = PS punched sections with mounting flanges

4 PS punched section without mounting flange in the respective enclosure depth in conjunction with support bracket PS

5 TS punched rail 18 x 38 mm in the corresponding enclosure depth[1)]

6 Width divider (left-hand or right-hand angle)[1)]

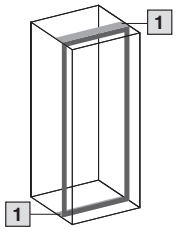
[1)] Not possible with ES, AK.

Notes:

- Height compensation between the 25 mm pitch pattern of holes in the enclosure and the height units of the swing frame is achieved by the upper divider kit.
- Partial installation at the bottom matches partial installation at the top.
- Only full installation at the front possible with AK.

Side installation

With an enclosure depth of 600 mm, side installation of a large swing frame is identical to installation parallel to the front.
For access to the swing frame we recommend the hinges for the TS side panel,
see page 854.





German patent
No. 38 13 004
Swedish patent
No. 505 069
Dutch patent
No. 193 708
(Patents do not apply to SR 1985.235/SR 1986.235)

Divider kits

for swing frame, large

With for 800 mm wide enclosures, the swing frame may also be installed in the centre or offset to the side.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Parts for attaching to the enclosure.

Accessories:

Swing frame stay,
see page 999.

Divider kits for swing frame, large without trim panel

For enclosure width mm	For enclosures			With 130° hinge			With 180° hinge		
				Mounting plate slide rail[1)]			Mounting plate slide rail[1)]		
				without < 800 N	with < 1500 N	without < 1500 N	without < 800 N	with < 1200 N	without < 1200 N
	TS	ES, AP Universal console	AK	**Model No. SR**	**Model No. SR**	**Model No. SR**	**Model No. SR**	**Model No. SR**	**Model No. SR**
600	■			**1994.835**	**1994.835**	**1994.635**	–	–	–
		■		**1994.835**	**1994.835**	–	–	–	–
			■	**1985.235**	–	–	–	–	–
800	■			**1995.235**	**1995.235**	**1995.835**	**1997.235**	**1997.235**	**1997.835**
		■		**1995.235**	**1995.235**	–	**1997.235**	**1997.235**	–
			■	**1986.235**	–	–	–	–	–
1200	■			–	–	**1996.535**	–	–	–
		■		**1996.835**	**1996.835**	–	–	–	–

[1)] For: TS screw-fastened, removable/ES welded/AK not possible.







Swing frame, large

with trim panel
for TS, ES, AK

For mounting 482.6 mm (19″) equipment.
The installation accessories required for other installation variants are described separately (see page 994).

Technical specifications:
Torsionally stiff frame, welded from rectangular tube and six-folded support section. The side trim panels are screw-fastened to the frame. The right-hand trim panel has a handle strip at the side and is equipped with a locking rod system.

Material:
Sheet steel

Surface finish:
Frame, zinc-plated, passivated
Trim panels spray-finished

Colour:
RAL 7035

Supply includes:
Locking rod system with double-bit lock insert and parts for attaching to the divider kit.

Note:
If the enclosure height is not fully utilised by the swing frame, additional mounting accessories – see page 998 – will be required.
For two-door enclosures with height 1800 and 2200 mm the next-smallest swing frame must be installed, due to collision with the lock.

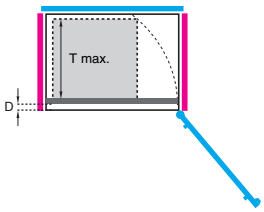
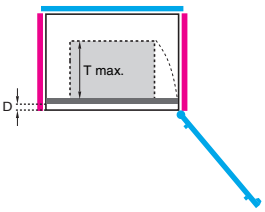
Also required:

Divider kit for swing frame, large,
see page 998.

Accessories:

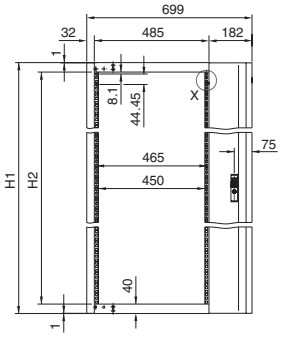
TS punched section with mounting flange, 23 x 73 mm,
see page 922.
Punched sections with mounting flanges,
see page 926.
Lock inserts, version A,
see page 888.
Ergoform S lock system,
see page 885.

Height units	22 U		31 U		36 U		40 U		45 U	
Trim panel	side	central	side	central	side	central	side	central	side	central
Model No. SR RAL 7035	**2323.235**	**2324.235**	**2332.235**	**2333.235**	**2337.235**	**2338.235**	**2341.235**	**2342.235**	**2346.235**	**2347.235**
for enclosure height mm (or higher)	1200		1600		1800		2000		2200	
H1 mm	1061.5		1461.5		1684.5		1861.5		2084.0	
H2 mm	981.5		1381.5		1604.0		1781.5		2004.0	

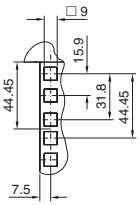
Installation depth T max. = mm with dimension D[1] of at least 49 mm with 130° hinge, 95 mm with 180° hinge			
Enclosure width mm	800		
			
Installation	side		central
Hinge	130°	180°	180°
Enclosure depth mm	T max.	T max.	T max.
400	295	252	252
500	395	352	345
600	470	428	345
800	470	428	345

[1] D = Distance from the inner edge of the door to the front edge of the swing frame may be installed deeper on a 25 mm pitch pattern.

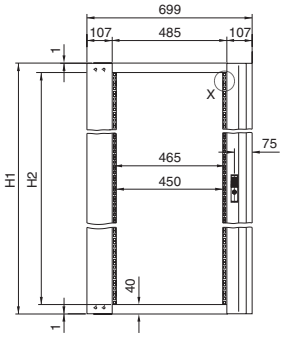
Installation components side



Cutout "X"



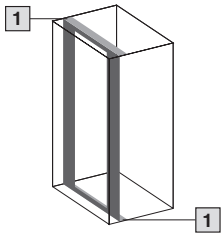
Installation components centre



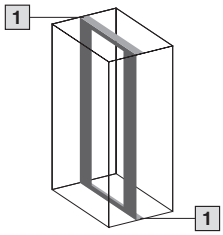
Swing frame

7 examples for TS

Full installation

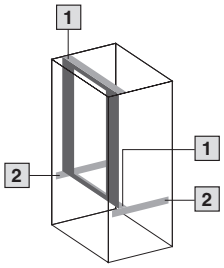


800 mm
front

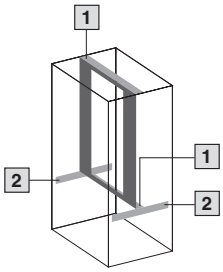


800 mm
set back

Partial installation, top

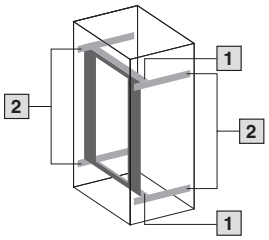


800 mm
front

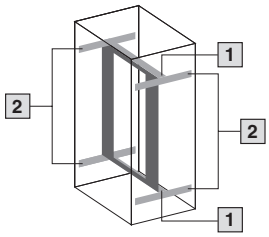


800 mm
set back

Partial installation, centre



800 mm
front



800 mm
set back

Also required:

Depending on the installation position:

1 Divider kit for 800 mm wide enclosures

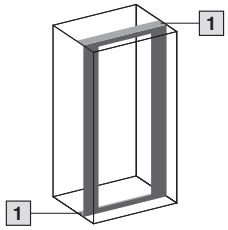
2 TS punched section with mounting flange 23 x 73 mm for the inner mounting level corresponding to the enclosure depth, for installation in ES = PS punched sections with mounting flanges

Notes:

- Height compensation between the 25 mm pitch pattern of holes in the enclosure and the height units of the swing frame is achieved by the upper divider kit.
- Partial installation at the bottom matches partial installation at the top.
- Only full installation at the front is possible with AK.

Side installation

With an enclosure depth of 800 mm, side installation of a large swing frame is identical to installation parallel to the front.
For access to the swing frame we recommend the hinges for the TS side panel,
see page 854.





German patent no. 38 13 004
Swedish patent no. 505 069
Dutch patent no. 193 708
(Patents do not apply to
SR 1986.235/SR 19878.235)

Divider kits

for swing frame, large

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Parts for attaching to the enclosure.

Accessories:

Swing frame stay,
see page 999.

Divider kits for swing frame, large with trim panel

For enclosure width mm	For enclosures			With 130° hinge			With 180° hinge		
				Mounting plate slide rail[1]			Mounting plate slide rail[1]		
				without < 800 N	with < 1500 N	without < 1500 N	without < 800 N	with < 1200 N	without < 1200 N
	TS	ES, AP Universal console	AK	**Model No. SR**	**Model No. SR**	**Model No. SR**	**Model No. SR**	**Model No. SR**	**Model No. SR**
800	■			**1995.235**	**1995.235**	**1995.835**	**1997.235**	**1997.235**	**1997.835**
		■		**1995.235**	**1995.235**	–	**1997.235**	**1997.235**	–
			■	**1986.235**	–	–	**1986.235 + 1978.200**	–	–

[1] For: TS screw-fastened, removable/ES welded/AK not possible.





Swing frame, 482.6 mm (19″)

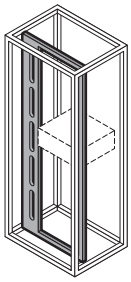
Heavy-duty version
for 800 mm wide enclosures, based on TS 8
The swing frame facilitates the accommodation of a wide range of 482.6 mm (19″) components up to a weight load of 350 kg. By swinging it out, access may be gained to the rear of the equipment and its cabling at any time.
At the side, the swing frame has a trim panel with integral handle strip and two-point locking bar. A semi-cylinder lock can be achieved by using the Ergoform-S handle system.
Several openings in the trim panel permit convenient cable routing from the rear of the swing frame in the front section. The openings may also be optionally top-mounted with standard commercially available plastic cable ducts.
An additional vertical row of holes integrated into the trim panel facilitates vertical and horizontal cable routing via cable shunting rings.
Installation is only possible in the form of full enclosure installation. The installation position may be varied in the enclosure depth.

U	For enclosure height mm	Model No. DK
40	2000	**7858.100**

Load capacity:
350 kg

Material:
Swing frame: Sheet steel, zinc-plated, passivated
Trim panel and divider kit: Sheet steel, spray-finished, RAL 7035

Supply includes:
Locking rod with double-bit lock insert, heavy-duty divider kit and assembly parts.





Swing frame stay

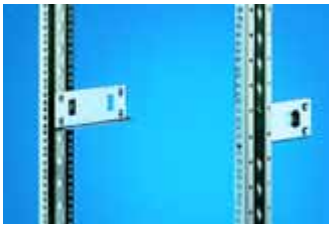
Holds the swing frame in the open position.

For mounting on:
Swing frame, large
- SR 1979.200, at the top of the enclosure
- SR 1980.200, at the bottom of the enclosure (with safety catch at 160°)



For mounting on:
Swing frame, small
- SR 1979.200, may be mounted at the top or bottom of the divider kit.

	Packs of	Model No. SR
With 130° hinge	5	**1979.200**
With 180° hinge	1	**1980.200**



Slide rails

To support heavy slide-in electronic equipment, 482.6 mm (19″) in the swing frame.

Material:
Sheet steel, zinc-plated, passivated

For equipment with a max. installation depth	Packs of	Model No. SR
T max. < 190 mm	10	**1962.200**
T max. > 190 mm	10	**1963.200**

Swing frame



Pull-out frame, 482.6 mm (19″)

For the installation of a pull-out 482.6 mm (19″) front. For 600 and 800 mm wide TS enclosures, from a depth of 800 mm.

Overall depth: 525 mm
Extension piece: 500 mm
Distance: 300 mm

Load capacity: 50 kg

Colour:
RAL 7035

Supply includes:
Telescopic slides and assembly parts.

German patent no. 39 07 471

For U	Height mm	Model No. DK
12	637	**7124.035**
18	903	**7125.035**
21	1037	**7126.035**

Also required:

Divider kit according to the enclosure width.
As divider kit for enclosure width 600 mm:
TS punched section with mounting flange, 17 x 73 mm,
see page 1000.
As divider kit for enclosure width 800 mm:
Depth stays,
see page 1000.



TS punched section with mounting flange as divider kit

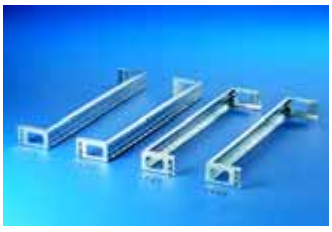
for pull-out frame

Installation in enclosure width 600 mm.
The divider kit comprises 4 TS punched sections with mounting flanges 17 x 73 mm.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosures		Packs of	Model No. TS
Width mm	Depth mm		
600	800	4	**8612.080**
600	900	4	**8612.090**
600	1000	4	**8612.000**



Depth stays as divider kit

for pull-out frame

Installation in enclosure width 800 mm.
The divider kit consists of 4 depth stays.

Material:
Sheet steel, zinc-plated, passivated

For enclosures		Packs of	Model No. TS
Width mm	Depth mm		
800	800	4	**7827.800**
800	900	4	**7827.900**
800	1000	4	**7827.000**



Vario swing frames

for ES, width 800 mm
For the installation of 482.6 mm (19″) equipment.

Technical specifications:
Torsionally stiff frame, welded from rectangular tube and triple-folded support section. Firmly linked extension panels on the left and right.

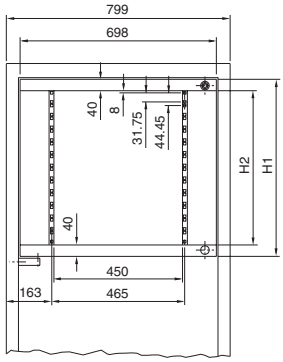
Material:
Sheet steel

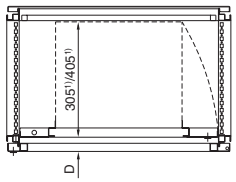
Colour:
RAL 7035

Supply includes:
Double-bit lock insert and assembly parts.

Accessories:

Lock insert 47 mm, type D,
see page 888.





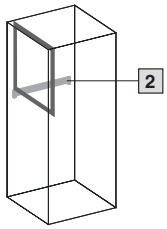
¹) at D 41.5 mm

For 800 mm wide enclosures

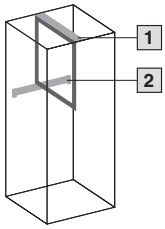
Height units		6 U	9 U	12 U	15 U	18 U
Model No. SR		**2004.235**	**2007.235**	**2008.235**	**2010.235**	**2011.235**
H1 mm		350	483	616,5	750	883
H2 mm		270	403	536,5	670	803
Max. installation depth for enclosure depth	400 mm	305 mm				
	500 mm	405 mm				
Dimension D mm		41.5 – 59.5 – 77.5 – 116.5 – 134.5 – 141.5 – 159.5				

Installation examples

Mounting accessories according to the installation position (swing frame in topmost position)



Front



Set back

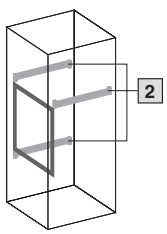
Also required:

Depending on the installation position:

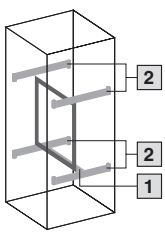
1 PS punched section with mounting flange for enclosure width 800 mm,
see page 926.

2 PS punched section with mounting flange to match the enclosure depth,
see page 926.

Mounting accessories according to the installation position (swing frame offset downwards)



Front



Set back



Compact swing frame

for AE, AP
For the installation of electronic equipment, 482.6 mm (19″) across the entire height.

Technical specifications:
Torsionally stiff frame, welded from rectangular tube and triple-folded support section.

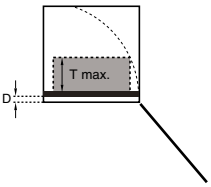
Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Double-bit lock insert and assembly parts.

Accessories:

41 mm lock insert, type C,
see page 888.



For AE

For compact enclosure AE			Height units	6 U	11 U	14 U
Enclosure		Max. installation depth (T max.) mm	**Model No. SR**	**2026.200**	**2027.200**	**2034.200**
Width mm	Depth mm		For enclosure height mm	380	600	760
			H1 (mm)	320	542	676
			H2 (mm)	270	492	626
600	210	145	Spray-finished	1039.500	1060.500	1076.500
			Stainless steel	1009.500	1010.500	1012.500
600	350	265	Spray-finished	1339.500	1360.500	1376.500
760	210	145	Spray-finished	–	–	1077.500
760	300	235	Spray-finished	–	–	1073.500
			Stainless steel	–	–	1014.500

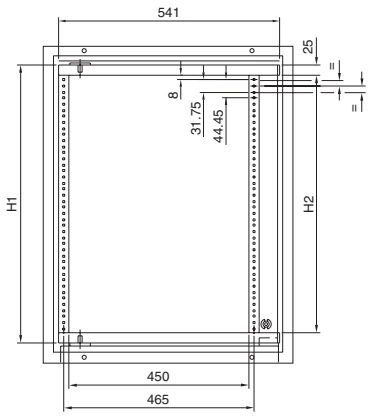
For AP

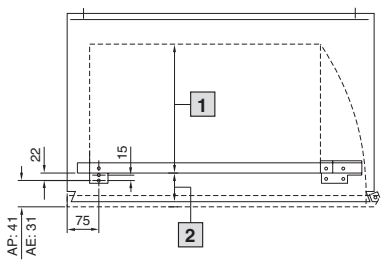
Height units	11 U
Model No. SR	**2027.200**
H1 mm	542
H2 mm	492

For pedestals AP	Max. installation depth (T max.) mm
2600.500 2610.500 2620.500 2640.500 2630.500 2650.500	315 (at D min. 38 mm)

For one-piece consoles AP	Max. installation depth (T max.) mm
2668.500	315
2672.500	315
2684.500	295[1)]
2686.500	295[1)]

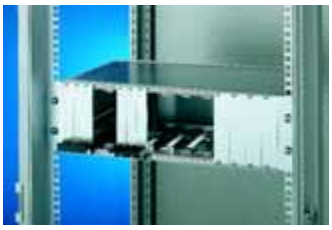
[1)] When fitting 2 swing frames





1 T = max. installation depth (see table)
2 D min. = 38 (53, 68, 83)





Mounting angles, 482.6 mm (19″)

For the installation of subracks and other equipment.
Mounting angles are easily shortened for partial assemblies.

Surface finish:
Conductive, corrosion-protected coating.

Supply includes:
Assembly parts.

Note:
Assembly example,
see page 1003.

Accessories:

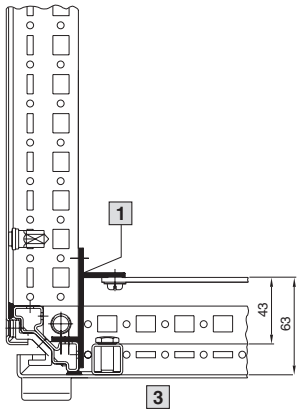
Infill panels,
see page 1014.
Captive nuts,
see page 1020.
Assembly screws,
see page 1019.
Slide rails with one-sided mounting,
see page 1010,
Slide rails with two-sided mounting,
see page 1010.

For enclosure height mm	Packs of	For enclosure system TS[1]		For enclosure system ES			
		U	Aluminium Extruded section	U	Aluminium Extruded section	Sheet steel, spray-finished RAL 7035	Sheet steel, zinc-plated, passivated
			Model No. TS		**Model No. PS**		
1600	4	33	**8613.060**	33	**4389.000**	–	–
1800	4	38	**8613.080**	37	–	–	–
2000	4	42	**8613.000**	42	**4391.000**	**4358.200**	–
2200	4	47	**8613.020**	46	–	–	**4358.700**
For PC enclosure[2]	4	17	**8613.070**	17	**4632.000**	–	–

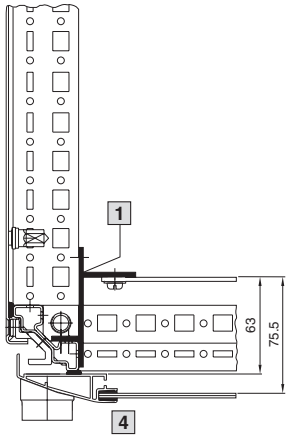
[1] For the rear of electronic enclosures, see page 1004.
[2] behind bottom door.

Assembly examples of TS:

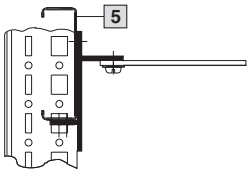
Drawing 1



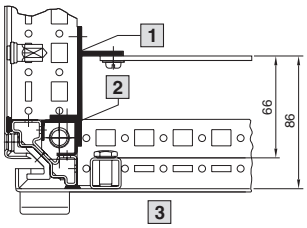
Drawing 2



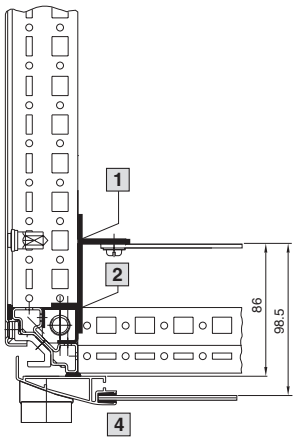
Drawing 3



Drawing 4



Drawing 5



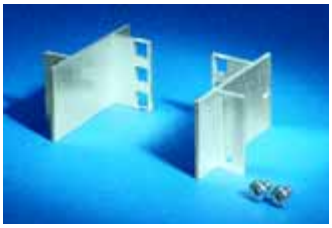
Drawing 1 and 2:
Mounting angle or adaptor piece fitted in the foremost installation position, directly on the vertical section.
When installing slide rails with two-sided mounting (see page 1010), the same mounting angles or adaptor pieces must also be mounted on the vertical section at the rear.

Drawing 3:
Mounting on two vertically installed PS punched sections permits fully flexible use of the enclosure depths,

Drawing 4 and 5:
Greater distance from the door is achieved by mounting on adaptor rails for PS compatibility.
In this position, the slide rails can be fitted with one-sided mounting.

1 Mounting angles/piece
2 Adaptor rail
3 TS sheet steel door
4 TS glazed door
5 Punched section without mounting flange

Mounting angles





Adaptor pieces, 482.6 mm (19″)

The “1 U” sub-section of mounting angles.
For the installation of individual subracks and other equipment.

Supply includes:
Assembly parts.

For	U	Packs of	Model No. TS	Model No. PS
TS	1	4	**8613.010**	**–**
ES	1	8	**–**	**4547.000**

Note:
Assembly example,
see page 1003.

Accessories:

Captive nuts,
see page 1020.
Assembly screws,
see page 1019.
Slide rails with one-sided mounting,
see page 1010.



Mounting angles, 482.6 mm (19″)

for rear installation in TS electronic enclosures
For installing subracks at the front and back, and for attaching the slide rails TS 8613.150, TS 8613.160 and TS 8613.180 (see page 1010).
Assembly is carried out on the inner mounting level.
The outer mounting level can, e.g. still be used for cable routing on depth-mounted TS punched sections with mounting flange.

Material:
Extruded aluminium section

Surface finish:
Conductive, corrosion-protected coating.

Supply includes:
Assembly parts.

For enclosure height mm	U	Packs of	Model No. TS
1600	33	2	**8613.360**
2000	42	2	**8613.300**

Note:
Design similar to mounting angles, 482.6 mm (19″) (see page 1003), but asymmetrical height, suitable for TS electronic enclosure.

Possible alternative:

Adaptor pieces, 482.6 mm (19″),
see above.





Mounting angles, 482.6 mm (19″)

for TS, CS Toptec

In two versions:

Cranked
The integral U markings in the front facilitate systematic assembly within the 482.6 mm (19″) attachment level.

L-shaped
The L-shaped mounting angles accommodate the installation kits of server systems. The integral U markings in the front facilitate systematic assembly within the 482.6 mm (19″) attachment level.

Technical specifications:
2 mm sheet steel, with integral 482.6 mm (19″) punchings and side round and square holes. Zinc-plated, passivated for conductive connection of the 482.6 mm (19″) installed equipment.

Supply includes:
Assembly parts.

Explanation of the fastening measurements for interior installations, see page 1020.

Full installation Rack height mm	U	Packs of	Model No. DK	
			Cranked	**L-shaped**
600	11	2	**–**	**7827.061**
800	15	2	**7827.080**	**7827.081**
1000	20	2	**7827.100**	**7827.101**
1200	24	2	**7827.120**	**7827.121**
1400	29	2	**7827.140**	**7827.141**
1600	33	2	**7827.160**	**7827.161**
1800	38	2	**7827.180**	**7827.181**
2000	42	2	**7827.200**	**7827.201**
2200	47	2	**7827.220**	**7827.221**

Note:
The mounting angles can also be used to accommodate 21″, 23″ and 24″ attachment dimensions.

Also required:

Punched sections without mounting flanges or depth stays for TS as installation kit for mounting angles,
see page 1008 – 1009.
For L-shaped mounting angle variant:
for mounting slide rails or component shelves:
adaptor DK 7827.300,
see page 950.



Mounting angles, 482.6 mm (19″)

for TS server enclosures
For front and rear mounting of 482.6 mm (19″) components.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Explanation of the fastening measurements for interior installations, see page 1020.

U	Packs of	Model No. DK
10	2	**7831.630**[1)]
21	2	**7831.635**[1)]
42	2	**7831.642**
47	2	**7831.647**

[1)] Delivery times available on request.



Mounting angles, 482.6 mm (19″)

for FR(i), width 600 mm
For the installation of 482.6 mm (19″) components in the foremost mounting position.
The mounting angle may be rotated through 180°, so as to create additional free space for cable routing in the front section. Side openings allow the hollow section of the enclosure frame to continue being used for cable routing.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Explanation of the fastening measurements for interior installations, see page 1020.

Enclosure height mm	Usable U with full installation	Packs of	Model No. FR(i)
600	11	2	**7856.800**
1200	24	2	**7856.803**
1800	38	2	**7856.806**
2000	42	2	**7856.809**
2200	47	2	**7856.812**



Mounting angles

for QuickBox
For installing 482.6 mm (19″)/metric 485 mm or 535 mm equipment.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Explanation of the fastening measurements for interior installations, see page 1020.

For Enclosure		Packs of	Model No. QB	
U	SU	2	482.6 mm (19″)	Metric
6	10	2	**7502.201**	**7502.211**
9	15	2	**7502.202**	**7502.212**
12	20	2	**7502.203**	**7502.213**
15	26	2	**7502.204**	**7502.214**
18	31	2	**7502.205**	**7502.215**
21	36	2	**7502.206**	**7502.216**



Mounting angle kit

for DK-EL
This mounting angle kit allows you to integrate a second 482.6 mm (19″) level into EL enclosures.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Explanation of the fastening measurements for interior installations, see page 1020.

U	Packs of	Model No. DK
6	2	**7705.706**
9	2	**7705.709**
12	2	**7705.712**
15	2	**7705.715**
18	2	**7705.718**
21	2	**7705.721**

Mounting angles



T-slot mounting angles, 482.6 mm (19″)/metric

for TS, FR(i)
With integral T-slot for U nuts. Holes on a U pitch pattern are integrated into the rear section of the T-slot. Round and square holes on a 25 mm DIN 43 660 pitch pattern of holes are provided for side attachment. The mounting angle may optionally be integrated using PS metric or 482.6 mm (19″) installation brackets. The surface finish is chromated for conductive connection to the metric/482.6 mm (19″) mounting components.

Material:
Extruded aluminium section, chromated

Supply includes:
Assembly parts.

Explanation of the fastening measurements for interior installations, see page 1020.

Full installation Rack height mm	U	SU	Packs of	Model No. DK
800	15	26	2	**7000.150**
1000	20	35	2	**7000.200**
1200	24	42	2	**7000.240**
1400	29	51	2	**7000.290**
1600	33	58	2	**7000.330**
1800	38	67	2	**7000.380**
2000	42	74	2	**7000.420**
2200	47	83	2	**7000.470**

Note:
In 600 mm wide enclosures, mounting angles may be alternatively depth-mounted on TS punched sections with mounting flanges.

Also required:

Punched secion with mounting flange as installation kit for mounting angles, see page 1008,
or
depth stay for PS, see page 1006.



Mounting angles, 482.6 mm (19″)

for CS modular and basic enclosures
For mounting 482.6 mm (19″) components in Outdoor enclosures. The mounting angles are depth-adjustable on a 25 mm pitch pattern. An installation bracket is required to attach the mounting angles.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Explanation of the fastening measurements for interior installations, see page 1020.

Enclosure height mm	U	Packs of	Model No. DK
800	15	2	**7685.000**
1200	24	2	**7688.000**
1400	29	2	**7689.000**
1600	33	2	**7690.000**

Also required:

Depth stay for PS, see page 1006.



Depth stay for PS

For
- T-slot mounting angles
- Mounting angles for CS modular and basic enclosures.

Material:
Sheet steel, zinc-plated, passivated

Enclosure width mm		600/1200[1]	800		
Standards		482.6 mm (19″)	482.6 mm (19″)/metric (465 mm)		metric (515 mm)
Installation position		central	central	side	central
Model No. DK	2	**7696.000**	**7698.000**	**7697.000**	**7000.100**

[1] 1200 mm wide CS modular and basic enclosures are divided in two fields of 600 mm.



Mounting angles, 482.6 mm (19″)

for CS modular and basic enclosures
For mounting 482.6 mm (19″) components. Mounting position on the front frame section, not depth adjustable. Easily retro-fitted.

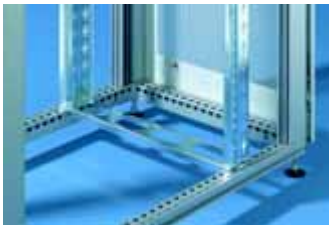
Material:
Sheet steel

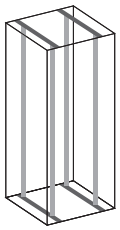
Supply includes:
Assembly parts.

Explanation of the fastening measurements for interior installations, see page 1020.

For enclosure dimensions		U	Packs of	Model No. CS	
Width mm	Height mm			spray-finished in RAL 7035	zinc-plated, passivated
600	800	15	4	**9785.001**	**9785.002**
600	1200	24	4	**9785.003**	**9785.004**
600	1400	29	4	**9785.005**	**9785.006**







Mounting frame, 482.6 mm (19″)

for TS, FR(i)
The welded 482.6 mm (19″) mounting frame may be attached with complete depth variability and is used to structure the front and rear 482.6 mm (19″) level.
The mounting frame has the same system punchings as the TS 8 enclosure section at the sides and rear, and therefore supports the mounting of various TS 8 system accessories such as cable clamp rails, cable shunting rings etc.

Load capacity:
Up to 1,000 kg static load, with even load distribution on two 482.6 mm (19″) mounting frames, with full installation.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Note:
A combination of 482.6 mm (19″) mounting frame plus fan mounting plate is not possible. For active ventilation, we recommend use with modular fan roof.

Explanation of the fastening measurements in interior installations, see page 1020.

For enclosures		U	Model No. FR(i)
Width mm	Height mm		
600	600	11	**7856.710**
600	1200	24	**7856.713**
600	1800	38	**7856.716**
600	2000	42	**7856.719**
600	2200	47	**7856.722**
800	1200	24	**7856.725**
800	1800	38	**7856.728**
800	2000	42	**7856.731**
800	2200	47	**7856.734**

Accessories:

Captive nuts,
see page 1020.
Assembly screws,
see page 1019.
Cable clamp rails TS,
see page 983.
C rails,
see page 928.
Slide rails, depth-variable,
see page 1010.
Component shelves,
see page 939 and page 944.
Fan roof, modular,
see page 651.



Mounting angles, metric

for TS
The L-shaped mounting angles accommodate metric assemblies and components. Depending on the installation kit, mounting dimensions 465 mm and 515 mm can be configured.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Explanation of the fastening measurements for interior installations, see page 1020.

Full installation Rack height mm	SU	Packs of	Model No. DK
–	17	2	**7831.611**
1000	37	2	**7831.621**
1200	42	2	**7794.420**
1600	58	2	**7794.740**
2000	76	2	**7831.631**
2200	84	2	**7831.641**

Also required:

Punched sections with mounting flange or depth stays for TS as installation kit for mounting angles,
see page 1008 – 1009.

Mounting kits for mounting angles





Mounting angles centre fastening attachment

for 800 mm wide TS network enclosures

The centre fastening attachment counteracts bending of the mounting angles mounted on installation brackets in case of unevenly distributed loads. It is attached directly to 482.6 mm (19″) mounting angles and to the punched section with mounting flange fitted in the depth (inner mounting level).

Material:
Sheet steel, zinc-plated, passivated

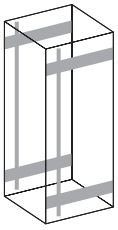
Supply includes:
Assembly parts.

Packs of	Model No. DK
2	**7284.135**

Also required:

TS punched section with mounting flange, see page 921 – 922.





TS punched section with mounting flange as installation kit

for

- **Mounting angles, 482.6 mm (19″)**
- **Mounting angles, metric, Mounting dimension 465 mm**

Installation in enclosure width 600 mm

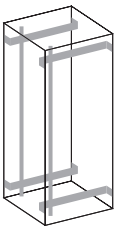
The installation kit consists of 4 TS punched sections with mounting flange 17 x 73 to accommodate mounting angles. One pack is sufficient for installing one or two 482.6 mm (19″) attachment levels. For exceptionally heavy installed equipment, we recommend the installation of additional punched sections.

For enclosures		Packs of	Model No. TS
Width mm	Depth mm		
600	600	4	**8612.060**
600	800	4	**8612.080**
600	900	4	**8612.090**
600	1000	4	**8612.000**

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.





Depth stays as installation kit

for

- **Mounting angles, 482.6 mm (19″)**

Installation in enclosure width 650 mm
Installation in enclosure width 800 mm

One installation kit consists of 4 depths stays to accommodated mounting angles. One pack is sufficient for installing one or two 482.6 mm (19″) attachment levels. For exceptionally heavy installed equipment, we recommend the installation of an additional depth stay in the centre. The front cutout makes cable routing easier with full configuration (cutout only at a width of 800 mm).

Material:
Sheet steel, zinc-plated, passivated

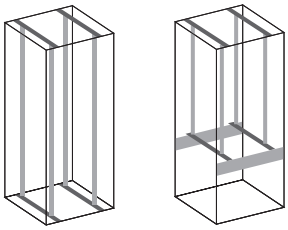
Supply includes:
Assembly parts.

For enclosures		Packs of	Model No. DK
Width mm	Depth mm		
650	650	4	**7794.165**
800	600	4	**7827.600**
800	650	4	**7794.280**
800	800	4	**7827.800**
800	900	4	**7827.900**
800	1000	4	**7827.000**

Possible alternative:

Installation brackets TS for mounting angles, see page 1009.





Depth stay for TS

for

- **Mounting angles, 482.6 mm (19″)**

Installation in enclosure width 800 mm

Installation brackets are screw-fastened to the enclosure frame in the enclosure width. The mounting angle is attached to the bracket at the top and bottom. The bracket ensures optimum clearance at the sides for cable routing. For partial enclosure configuration, the installation brackets may be attached to the TS punched sections with mounting flanges 17 x 73 mm on the outer attachment level of the enclosure frame. Fully depth-variable attachment is facilitated by the attachment slots. Either cranked or L-shaped mounting angles may be used.

Material:
Sheet steel, zinc-plated, passivated

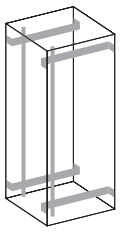
Supply includes:
Assembly parts.

Packs of	Model No. DK
2	**7827.480**

Accessories:

For partial installation,
TS punched section with mounting flange,
17 x 73 mm,
see page 921 – 922.





Depth stays as installation kit

for

- **Mounting angles, metric, Mounting dimension 515 mm**
- **Mounting angles, 482.6 mm (19″), Mounting dimension 21″**

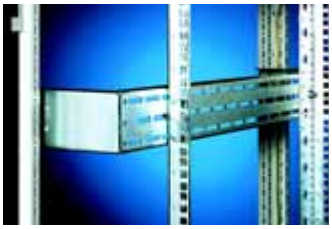
Installation in enclosure width 650 mm
Installation in enclosure width 800 mm

One installation kit consists of 4 depths stays to accommodated mounting angles. One pack is sufficient for installing one or two 482.6 mm (19″) attachment levels. For exceptionally heavy installed equipment, we recommend the installation of an additional depth stay at the centre. The front cutout makes cable routing easier with full configuration (cutout only at a width of 800 mm).

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosures		Packs of	Model No. DK
Width mm	Depth mm		
650	650	4	**7794.300**
800	650	4	**7794.320**
800	800	4	**7794.330**



Depth stays as installation kit

for

- **Mounting angles, 482.6 mm (19″), Mounting dimensions 23″ and 24″**

Installation in enclosure width 800 mm

When using depth stays in 800 mm wide enclosures, attachment spacings of 23″ and 24″ are achieved. Either cranked or L-shaped, 482.6 mm (19″) mounting angles may be used.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosures		Model No. DK	
Width mm	Depth mm	Design	
		23″	24″
800	800	**7827.823**	**7827.824**
800	900	**7827.923**	**7827.924**
800	1000	**7827.023**	**7827.024**

Slide rails



Slide rails

With one-sided mounting on the 482.6 mm (19″) mounting angles.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Length mm	Packs of	Model No. PS
185	10	**4530.000**
270	10	**4531.000**

Also required:

Mounting angles, 482.6 mm (19″),
see page 1003.



Slide rails

With two-sided mounting between the 482.6 mm (19″) front and rear mounting angles or 482.6 mm (19″) adaptor pieces.

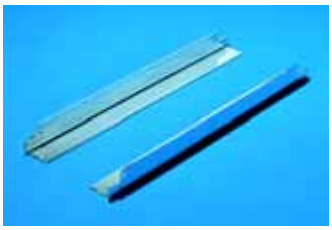
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure depth mm	Packs of	Model No. TS	Model No. PS
500	10	**8613.150**	–
600	10	**8613.160**	**4546.000**
800	10	**8613.180**	**4549.000**

Also required:

Mounting angles, 482.6 mm (19″),
see page 1003.
Adaptor pieces, 482.6 mm (19″),
see page 1004.





Slide rails, heavy-duty

for TS network enclosures
with two mounting levels
To support extremely heavy installed equipment. The slide rails are simply located into the cranked mounting angles and secured with screws. We recommend combined use with additional depth stays or, in case of 800 mm wide enclosures, the mounting angle centre attachment.

Load capacity:
80 kg, static load

Material:
Sheet steel, zinc-plated, passivated

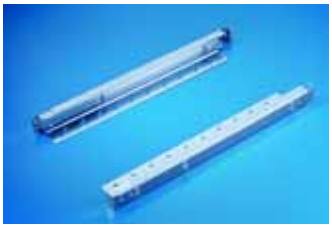
Supply includes:
Assembly parts.

Distance between 19″ levels mm	Contact surface		Packs of	Model No. DK
	Width mm	Depth mm		
298	40	261	2	**7492.300**
398	40	361	2	**7492.400**
498	40	461	2	**7492.500**

Note:
Not suitable for use in 482.6 mm (19″) mounting frames.

Also required:

For fastening to L-shaped TS mounting angles:
Adaptor DK 7827.300,
see page 950.



Depth-variable slide rails 1 U

for TS, FR(i), TE
with L-shaped mounting angles or 482.6 mm (19″) mounting frame
The slide rail facilitates integration of 482.6 mm (19″) components without loss of installation height.
Installation of the slide rail is independent from the chosen distance between levels, since the installation length may be flexibly adapted.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Length mm	Load capacity	Contact surface		Packs of	Model No. DK
		Width mm	Depth mm		
390 – 600	80 kg	50	330	2	**7063.878**
590 – 930	80 kg	50	525	2	**7063.880**
590 – 930	150 kg	50	525	2	**7063.884**



Slide rails, vented

for TS network enclosures with two 482.6 mm (19″) levels

To support heavy 482.6 mm (19″) network components. The slide rails are simply located into the cranked mounting angles and secured with screws. Thanks to the option of side ventilation, hot spots with active equipment are avoided with the side climate control concept.

Load capacity:
50 kg, static load

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Distance between 19″ levels mm	Contact surface		Packs of	Model No. DK
	Width mm	Depth mm		
–	50	152[1)]	2	**7063.000**
298	50	261	2	**7063.300**
398	50	361	2	**7063.400**
498	50	461	2	**7063.500**
598	50	561	2	**7063.600**
698	50	661	2	**7063.700**

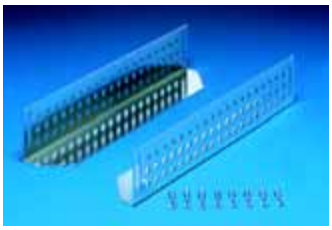
[1)] Only fasten to the front or rear mounting angles.

Also required:

For fastening to L-shaped TS mounting angles: Adaptor DK 7827.300,
see page 950.

Possible alternative:

If the depth of the 482.6 mm (19″) mounting levels is variable, we recommend the use of slide rail, depth-variable, see page 1010.



Slide rails

for FR(i), TE

For mounting between a front and a rear pair of mounting angles. The slide rails can be used to support heavy 482.6 mm (19″) components.

Load capacity:
80 kg, static load

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Distance between 19″ levels mm	Contact surface		Packs of	Model No. DK
	Width mm	Depth mm		
395	85	324	2	**7963.310**
495	85	424	2	**7963.410**
595	85	524	2	**7963.510**
695	85	624	2	**7963.610**

Possible alternative:

Slide rail, depth-variable,
see page 1010.



Slide rails

for EL

For the installation of heavy slide-in equipment.

Material:
Sheet steel, zinc-plated, passivated

For centre part depth mm	Packs of	Model No. EL
216	10	**2240.000**
316	10	**2250.000**
416	10	**2260.000**

Server integration



Universal server installation kit, 482.6 mm (19″)

for TS, FR(i)

The universal server installation kit is ideally suited for integrating most standard server types into Rittal enclosures with L-shaped mounting angles and a minimum enclosure depth of 900 mm. The installation kit is specially designed to ensure free access to the 482.6 mm (19″) level, for securing the individual servers in the retracted position using the screws (M5) provided.
Distance between angles: 750 mm

For	Packs of	Model No. DK
all common server types	1 kit	**7063.100**

Load capacity:
80 kg, static load

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Also required:

Mounting adaptor depending on the server type.
For FR(i) and enclosures with two 482.6 mm (19″) mounting frames:
Installation kit DK 7063.102,
see page 1012.



Mounting adaptor

The adaptors (additionally required) allow servers to be secured to the universal installation kit using the original installation kits supplied by the server manufacturers. The adaptor should be chosen according to the server type being installed. This specific mounting adaptor allows problem-free configuration of combined systems and facilitates flexible use of the individual enclosures in future.

For server types	Packs of	Model No. DK
With front 482.6 mm (19″) server attachment	1 set	**7063.110**
With side attachment (SUN)	1 set	**7063.120**
With side attachment (HP rack system/E)	1 set	**7063.130**

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
1 set of mounting adaptors, sufficient for integration of an individual server, including assembly parts.



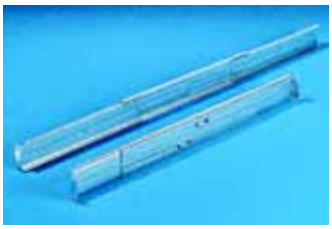
Installation kit

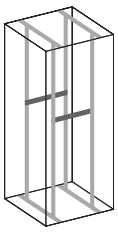
for FR(i) and 482.6 mm (19″) mounting frames

This installation kit makes it possible to mount the universal server installation kit DK 7063.100 both in FR(i) server racks and on two 482.6 mm (19″) mounting frames.

Material:
Sheet steel, zinc-plated, passivated

Packs of	Model No. DK
1 set	**7063.102**





Server rails, 482.6 mm (19″)

for TS network enclosures
with two 482.6 mm (19″) levels
Mounting is infinitely adjustable

Allows servers or active network components to slide into the enclosures, which can be screwed to the server rail via telescopic rails. The length of the server rails is fully adjustable between 550 to 850 mm.

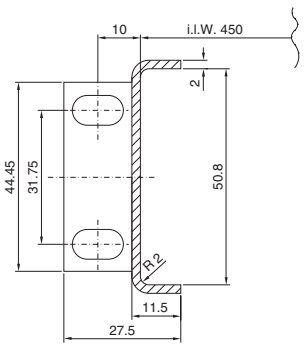
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

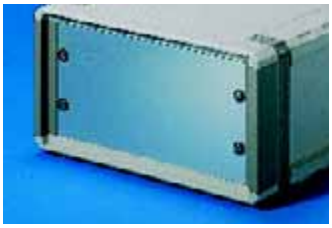
Note:
Alternatively, the server rail may also be used as a depth-variable installation kit for 409 mm wide, 482.6 mm (19″) component shelves on both L-shaped and cranked mounting angles.

Distance between 19″ levels mm	Packs of	Model No. DK
550 – 850	2	**7063.850**

German patent no. 197 10 023



482.6 mm (19″)/metric installation

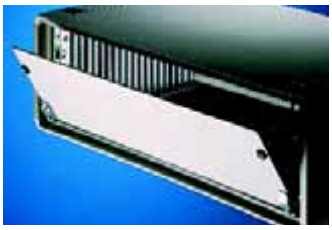


Blanking plate, 482.6 mm (19″)

For the installation in electronic enclosures or housings.

Material:
Aluminium, natural anodised.

U	Packs of	Model No. VC	
		269.2 mm (1/2 19″)	482.6 mm (19″)
1	3	**3746.000**	**1931.200**
2	3	**3747.000**	**1932.200**
3	3	**3748.000**	**1933.200**
4	3	**3749.000**	**1934.200**
6	3	–	**1936.200**
7	3	–	**1935.200**
9	3	–	**1939.200**
12	3	–	**1937.200**



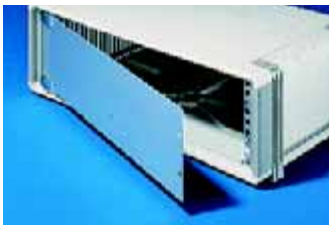
Horizontally hinged blanking plate

For the installation in electronic enclosures or housings.

Material:
3 mm aluminium, natural anodised.
Hinge: Die-cast zinc, zinc-plated

Supply includes:
Assembly parts.

Width	U	Packs of	Model No. EL
482.6 mm (19″)	3	2	**1944.000**
482.6 mm (19″)	6	2	**1945.000**



Vertically hinged blanking plate

For the installation in electronic enclosures or housings.

Material:
3 mm aluminium, natural anodised.
Hinge: Die-cast zinc, zinc-plated

Supply includes:
Assembly parts.

Width	U	Packs of	Model No. EL
482.6 mm (19″)	3	2	**1940.000**
482.6 mm (19″)	6	2	**1941.000**



Hinge

for blanking plates

Material:
Die-cast zinc, zinc-plated

Supply includes:
Assembly parts.

Packs of	Model No. EL
2	**1950.000**

German patent no. 40 04 264



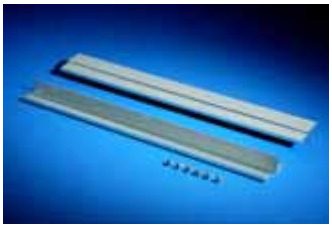
Ventilation front panels

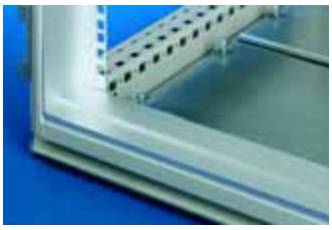
For venting enclosures and cases.

Material:
Aluminium, natural anodised.

Width	U	Packs of	Model No. EL
482.6 mm (19″)	1	3	**2231.000**
482.6 mm (19″)	2	3	**2232.000**
482.6 mm (19″)	3	3	**2233.000**

482.6 mm (19″)/metric installation





Infill panels, 482.6 mm (19″), horizontal

for TS electronic enclosure
To infill between installed 482.6 mm (19″) equipment positioned in the full enclosure height and the enclosure clearance height.

Material:
Extruded aluminium section

Surface finish:
Conductive, corrosion-protected coating

Supply includes:
Assembly parts.

For enclosure height mm	Packs of	Model No. TS
1600/2000	2	**8613.040**
1800/2200	2	**8613.030**



Aluminium cross rail

for TS electronic enclosure
for sub-division of the front.

Material:
Extruded aluminium section

Colour:
RAL 7035

Supply includes:
Assembly parts.

Height	Model No. TS
1 U	**8613.240**



Infill panel, hinged

for 800 mm wide TS network enclosures
To conceal the side cable chamber.
In order to off-set the infill panel in the enclosure depth, it may be alternatively fastened to the side of TS punched section with mounting flange.
Cable routing from the enclosure sides to the front is easily achieved.

Material:
Sheet steel

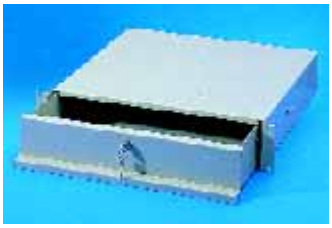
Colour:
RAL 7035

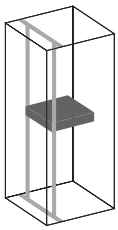
Supply includes:
Assembly parts.

For enclosure height mm	Packs of	Model No. DK
1800	2	**7827.518**
2000	2	**7827.520**
2200	2	**7827.522**

Accessories:

TS punched section with mounting flange,
see page 921 – 922.





Drawer, 2 U, 3 U

for a 482.6 mm (19″) attachment level
For front attachment to mounting angles, 482.6 mm (19″). With cover and telescopic slides to accommodate assignment lists, operating manuals and small parts. The small version of the 2 U variant is also suitable for mounting inside a swing frame.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Fully assembled, assembly parts.

Height	Clearance openings		Installed components mm	Model No. DK
	Width mm	Depth mm		
2 U	411	250	427	**7282.135**
2 U	411	419	427	**7282.035**
3 U	411	419	427	**7283.035**



Drawer for 482.6 mm (19″)

with shelf
For keyboards, operating manuals etc. The perforated plate in the base helps air to circulate in the enclosure. Load capacity 50 kg. The 1 U drawer can be istalled rotated through 180° , allowing it to be used as a utility table.

Material:
Drawer: Aluminium, anodised.
Telescopic slides:
Sheet steel, zinc-plated, passivated

Supply includes:
Telescopic slides.

U	Model No. PS
1	**4541.000**
3	**4542.000**

Also required:

Drawer assembly kit, corresponding to the chosen enclosure system,
see page 1016.



Drawer for 482.6 mm (19″)

Frame open at the bottom
For keyboards up to 440 mm width and maximum 350 mm depth.

Material:
Drawer: Aluminium
Telescopic slides:
Sheet steel, zinc-plated, passivated

Supply includes:
Telescopic slides.

U	Model No. PS
2	**4548.000**

Also required:

Drawer assembly kit, corresponding to the chosen enclosure system,
see page 1016.

482.6 mm (19″)/metric installation



Drawer assembly kit

for TS with mounting angles
For the installation between the front and rear 482.6 mm (19″) mounting angles or 482.6 mm (19″) adaptor pieces.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure depth mm	Packs of	For enclosure system	
		TS	ES
		Model No. TS	**Model No. PS**
500	1	**8800.550**	**–**
600	1	**8800.560**	**4544.000**
800	1	**8800.580**	**–**

Also required:
Mounting angles, 482.6 mm (19″), or adaptor pieces, 482.6 mm (19″), see page 1004.



Drawer assembly kit

for TS with mounting angles
Depending on the distance between the two 482.6 mm (19″) mounting levels, the assembly kit is screw-fastened in the depth between the cranked mounting angles.

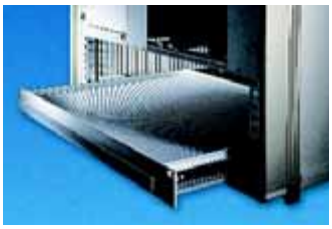
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Length mm	Distance between angles mm	Packs of	Model No. DK
255	298	2	**7229.200**[1)]
355	398	2	**7229.300**[1)]
455	498	2	**7229.400**

[1)] Delivery time approx. 4 weeks.

Also required:
In conjunction with L-shaped TS mounting angles: Adaptor DK 7827.300, see page 950.



Drawer assembly kit

for Vario-Case iS
Minimum depth of Vario-Case iS enclosures: 500 mm

Packs of	Model No. VC
4	**3793.000**

Also required:
Threaded inserts, see page 564.





Adaptor, 3 U

Depth offset 100 mm
This adaptor is used to recess 482.6 mm (19″) mounting of equipment inside enclosures with 19″ installation in the foremost position, such as server or electronic enclosures. In this way, sufficient space can be gained in front of the mounting equipment to integrate patch panels or switches, whilst at the same time exploiting the maximum enclosure depth.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. DK
2	**7246.400**

482.6 mm (19″)/metric installation





Mounting kit, 2 U

For 482.6 mm (19″) equipment
Facilitates fast, simple integration of additional 2 U mounting space within an enclosure by attaching to the enclosure frame or to the existing mounting angles at the sides. The flexible slot fastening of the brackets means that the distance between the two installation brackets may be freely selected, so that other 482.6 mm (19″) attachment dimensions may be implemented. The second row of holes is used for the optional configuration of additional mounting surfaces.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. DK
2	**7246.420**





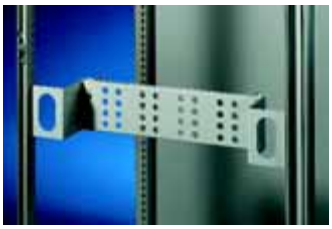
Adaptor, metric/482.6 mm (19″) 21″/19″

With this adaptor, 482.6 mm (19″) assemblies may be fastened to metric (535 mm) mounting angles, or combined systems may be configured.

Material:
Extruded aluminium section

Supply includes:
Assembly parts.

SU	U	Packs of	Model No. DK
2	1	2	**7246.010**
6	3	2	**7246.030**
11	6	2	**7246.060**





Adaptor kit 3 U/5 SU

for 800 mm wide TS enclosures
For fastening individual 482.6 mm (19″) or metric (535 mm) components, or as an additional mounting facility at the rear of the enclosure. The mounting level in the adaptor angle can be adjusted by 100 mm in the depth, leaving sufficient space for baying where patch panels or splicing boxes are used.

Material:
Sheet steel

Height	Mounting position	Model No. DK	
		Spray-finished RAL 7035	Zinc-plated, passivated
3 U	482.6 mm (19″), centre	**7246.100**	**7246.150**[1)]
3 U	482.6 mm (19″), side	**7246.200**[1)]	**7246.250**[1)]
5 SU	Metric, centre	**7246.300**[1)]	**7246.350**[1)]

[1)] Delivery time approx. 2 weeks.

Also required:

Adaptor rail,
see page 924 or
Assembly block,
see page 924.

482.6 mm (19″)/metric installation





Mounting frame 54 U

for TS, FR(i)

The mounting frame allows configuration of a side-offset 482.6 mm (19″) level with 42 U useful installation space plus the additional integration of a further 12 U for vertical installation. The additional side extension is divided into three installation levels arranged on top of one another, each with 4 U.
The mounting frame may be installed at either the front or rear.

Material:
Sheet steel

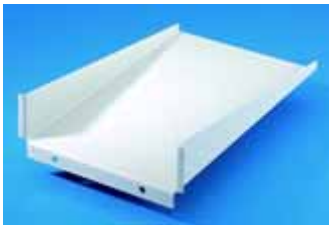
Colour:
RAL 7035

Supply includes:
12 U mounting trim at the side .

For enclosures		Additional vertical installation area	Model No. DK
Width mm	Height mm		
800	2000	12 U	**7827.554**

Also required:

2 mounting angles, 482.6 mm (19″),
see page 1004.



Component shelf

for mounting frame 54 U

For alternative attachment of small equipment, component shelves may optionally be attached within the individual 4 U wide mounting surfaces.

Load capacity:
10 kg

Material:
Sheet steel

Colour:
RAL 7035

Contact surface		Model No. DK
Width mm	Depth mm	
175	300	**7827.555**



Mounting aid

For simple handling when installing network components or subracks. May be fitted to any 482.6 mm (19″) level using quick-release screws. Mounting equipment can securely be inserted and screw-fastened to the 482.6 mm (19″) mounting angles.
Mounting aids can still be easily removed.
It is advisable to commence component mounting from the top.

Material:
Sheet steel, zinc-plated, passivated

Build height	Packs of	Model No. DK
1 U	2	**7094.900**

German patent no. 199 17 290

482.6 mm (19″)/metric installation




Adaptor

for RNC
For installing 10″ components in 296.2 mm (1/2 19″) enclosures.

Material:
Sheet steel

Colour:
RAL 7035

U	Model No. DK
1	**7870.760**
4	**7870.765**



Spring nuts with screws

M5 x 10 mm/M6 x 10 mm for T-slot mounting angle
The spring nuts ensure flexible, secure mounting of accessory components on the T-slot of the FR(i) frame and on the T-slot mounting angles.

Supply includes:
50 spring nuts,
50 spring nuts, 10 mm, self-locking.

Design	Packs of	Model No. DK
Phillips-head, M6	50	**7000.990**
Multi-tooth 25, M5	50	**7856.755**



Assembly screws

M5 x 16 mm/M6 x 16 mm
For electronic equipment, 482.6 mm (19″) installed components and blanking plates.

Supply includes:
Plastic washers.

Design	Packs of	Model No. EL
Phillips-head screw M5	100	**2099.500**
Cheese-head screw M6	100	**2093.200**
Phillips-head screw M6	100	**2089.000**



Multi-tooth screw

M5 x 16 mm/M6 x 16 mm
For optimum transmission of torques, an extended tool life and increased safety and reliability when tightening and loosening screw connections.

Supply includes:
Plastic washers.

	Bit size	Packs of	Model No. DK
M5	Multi-tooth 25	100	**7094.500**
M6	Multi-tooth 30	100	**7094.600**

482.6 mm (19″)/metric installation





Captive nuts M5/M6

For the attachment of rack-mounted electronic equipment, 482.6 mm (19″) installed equipment and blanking plates to mounting angles, 482.6 mm (19″).
For use with metal thickness from 0.8 – 2.0 mm. In areas of narrow tolerance, captive nuts for metal thicknesses of 1.2 – 1.5 mm should be used. Optionally with or without contact of the installed equipment to the 482.6 mm (19″) section/enclosure.

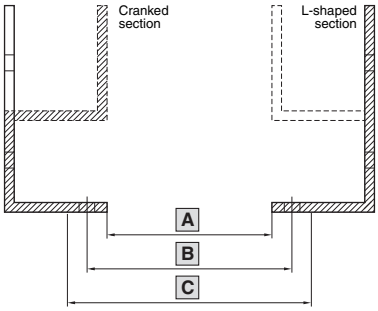
Captive nut M5

Design	For metal thicknesses mm	Packs of	Model No. EL
With contact	0.8 – 2.0	50	**2094.500**
Without contact	0.8 – 2.0	50	**2092.500**

Captive nut M6

Design	For metal thicknesses mm	Packs of	Model No. EL
With contact	0.8 – 2.0	50	**2094.200**
Without contact	0.8 – 2.0	50	**2092.200**
With contact	1.2 – 1.5	50	**2094.300**
Without contact	1.2 – 1.5	50	**2092.300**

Explanation of the fastening dimensions in interior installations



A = Clearance width
B = Mounting dimension
C = External dimension of the rack-mounted equipment or of the front panels

Installation width	A mm	B mm	C mm
19″	450	465	482.6
21″	500	515	533.4
23″	552	567	584.2
24″	577	592	609.6
10″/39 HP	221.4	236	254
1/2 19″/42 HP	236.6	251.2	269.2
9.5″	208.7	223.3	241.3
18 SU	450	465	485
20 SU	500	515	535



Telephone and data distributor

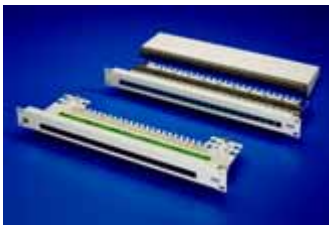
1 U (1/2 19″) 42 HP
Modular system
Mini patch panels, fitted with RJ 45 snap-in trhough-connectors (for top-hat rails to DIN 50 002) with earth connection.

Version	Cat.	Packs of	Model No. DK
8 ports, UTP, modular, 2 x RJ 45, including 8 patch cables 0.25 m, blue	3	1	**7870.800**
		6	**7870.580**
8 ports, UTP, modular, 2 x RJ 45, including 8 patch cables 0.25 m, yellow	5	1	**7870.820**
		6	**7870.595**

LSA-plus system
Telephone distributor:
10 x RJ 45 jacks, unshielded, without cover, suitable for 4-pole assignment, with strain relief and earth connection.

Data distributor:
8 x RJ 45 jacks, shielded, cover with quick-release fastener, suitable for 4-pole assignment, with strain relief and earth connection.

Version	Cat.	Packs of	Model No. DK
10 ports, UTP, RJ 45/LSA, including 8 patch cables 0.25 m, blue	3	1	**7870.802**
		6	**7870.582**
8 ports, UTP, RJ 45/LSA, including 8 patch cables 0.25 m, yellow	5	1	**7870.822**
		6	**7870.597**



Telephone and data distributor

1 U (19″) 84 HP
LSA-plus system
Telephone distributor:
25 x RJ 45 jacks, unshielded, without cover, suitable for 4-pole assignment, with strain relief and earth connection.

Version	Cat.	Packs of	Model No. DK
25 ports, UTP, RJ 45/LSA, including 12 patch cables 0.6 m, blue	3	1	**7870.810**
		6	**7870.590**

Data distributor:
24 x RJ 45 jacks, shielded, cover with quick-release fastener, with strain relief and earth connection.

Version	Cat.	Packs of	Model No. DK
24 ports, STP, RJ 45/LSA, including 12 patch cables 0.6 m, yellow	6	1	**7870.830**
		6	**7870.600**

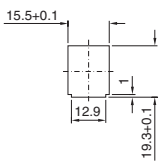


Top-hat rail module

Top-hat rail module with mounting clip for top-hat rails to DIN 50 002, robust metal housing, with strain relief.
Cat. 6, 2 x RJ 45, System Corning Future Com S 250 (cables are attached without the use of tools).

Version	Cat.	Packs of	Model No. DK
2 x Corning Future Com S 250	6	3	**7870.614**





To accommodate 48 RJ 11 – 45 (modular jacks)

With accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel

Colour:
RAL 7035

U	Number locations	Model No. DK
2	48	**7194.535**

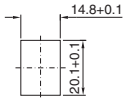
Other versions available on request.

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 985.

Patch panels for copper technology





For shielded RJ 45 modular jacks

To accommodate screened RJ 45 jacks.
Cutouts and rear of patch panels electrically conductive to contact the fitted jacks with the patch panel and the zinc-plated, passivated 482.6 mm (19″) mounting angles.
With accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel, zinc-plated, passivated

Colour:
Front: RAL 7035
Rear: zinc-plated, passivated.

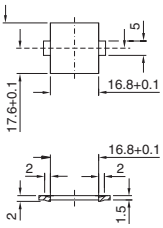
U	Number locations	Model No. DK
1	16	**7394.035**
2	32	**7395.035**
3	48	**7300.435**[1)]

[1)] Extended delivery times.
Other designs available on request.

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 985.





For RJ 45 Brand AT&T/Lucent

To accommodate 16 or 32 RJ 45 built-in jacks and with accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel

Colour:
RAL 7035

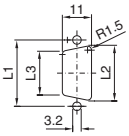
U	Number locations	Model No. DK
1	16	**7397.535**
2	32	**7398.535**[1)]

[1)] Extended delivery times.
Other designs available on request.

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 985.





For 24 V interfaces

For the installation of 16 sub-D (trapezoid) jacks and connectors.
With accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

L1 mm	L2 mm	L3 mm	
25	21	16.5	9-pole
33.3	29.2	24.7	15-pole
47	43	38.5	25-pole

Material:
Sheet steel

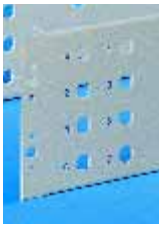
Colour:
RAL 7035

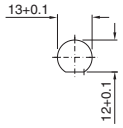
U	For no. of poles	No. of locations	Model No. DK
2	9	16	**7087.535**
2	15	16	**7086.535**
2	25	16	**7089.535**

Other versions available on request.

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 985.





To accommodate BNC jacks (version E)

With accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel

Colour:
RAL 7035

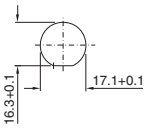
U	No. of locations	Model No. DK
3	32	**7069.535**

Other versions available on request.

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 985.





To accommodate BNC jacks (version F)

With accommodation for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel

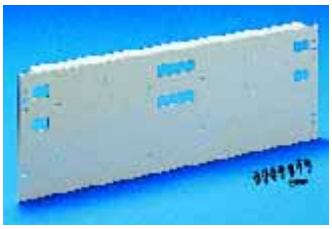
Colour:
RAL 7035

U	Number of locations	Model No. DK
3	32	**7071.535**[1)]

[1)] Extended delivery times.
Other designs available on request.

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 985.



To accommodate the AT & T Connector System 110

For the attachment of 2 wiring blocks each with 100 paired wires and accommodation facility for 2 cable holders (backboards). With rear accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel

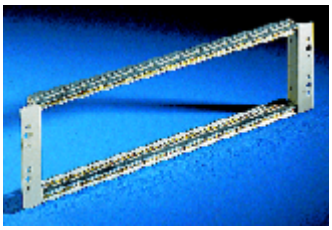
Colour:
RAL 7035

Supply includes:
12 quick-release fasteners for wiring blocks and cable holders.

U	Paired wires (DA)	Model No. DK
4	200	**7049.035**

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 985.



Module panel, 482.6 mm (19″) 3 U/84 HP

To accommodate various partial front plates and hence for individual assembly of a patch panel with any given combination of data connectors and couplings. The useful width is 84 HP.

Material:
Aluminium

Colour:
RAL 7035

Supply includes:
Two 482.6 mm (19″) flanges,
2 horizontal rails,
including 2 tapped strips.

Packs of	Model No. DK
1	**7330.035**

Also required:

Partial front plates, see page 1023.



Partial front plates

To accommodate various data connectors and couplings in the module panel DK 7330.035.

Material:
Sheet steel

Colour:
RAL 7035

For socket/ coupling	No. of locations	HP	Packs of	Model No. DK
ST	4	4	2	**7334.035**
SC, E-2000	6	6	2	**7336.105**[1)]
E-2000 duplex	3	6	2	
SC duplex	2	4	2	**7336.115**[1)]
BNC-E	4	6	2	**7339.035**
D-Sub 9-pole	3	4	2	**7342.035**
D-Sub 15-pole	2	4	2	**7343.035**
D-Sub 25-pole	1	4	2	**7344.035**
RJ 11 – 45	4	8	2	**7349.035**
Blanking plate	–	4	2	**7355.035**
Blanking plate	–	6	2	**7356.035**
Blanking plate	–	8	2	**7357.035**
Blanking plate	–	24	1	**7359.035**
Blanking plate	–	42	1	**7360.035**

Other versions available on request.
[1)] Extended delivery times

Note:
For drawings of the cutouts, see page 1021 – 1025.

Patch panels for fibre-optic technology





To accommodate F-SMA 6.5 mm fibre-optic couplings

With accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel

Colour:
RAL 7035

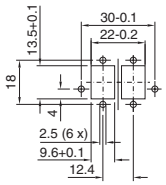
U	Number locations	Model No. DK
2	32	**7632.035**

Extended delivery times.
Other designs available on request.

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 985.





To accommodate E-2000, E-2000 duplex or SC fibre-optic couplings

For 1 U with accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel

Colour:
RAL 7035

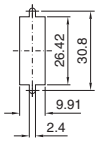
U	Number locations single/duplex	Model No. DK
1	16/8	**7433.035**
2	48/24	**7133.248**

Other versions available on request.

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 985.





To accommodate SC duplex fibre-optic couplings

With accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel

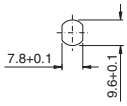
Colour:
RAL 7035

U	Number locations	Model No. DK
1	12	**7154.035**
2	24	**7155.035**

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 985.





To accommodate ST fibre-optic couplings

With accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel

Colour:
RAL 7035

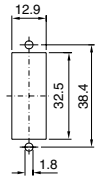
U	Number locations	Model No. DK
1	16	**7437.035**
2	24	**7137.535**
2	32	**7637.035**[1)]

[1)] Extended delivery times.
Other designs available on request.

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 985.





To accommodate ST duplex fibre-optic couplings

With accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel

Colour:
RAL 7035

U	Number locations	Model No. DK
2	12	**7142.535**

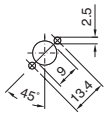
Other versions available on request.

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 985.

Patch panels for fibre-optic technology





To accommodate FC-PC fibre-optic couplings

With accommodation facility for cable clamp straps DK 7610.000 or DK 7611.000.

Material:
Sheet steel

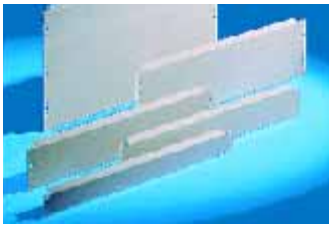
Colour:
RAL 7035

U	Number locations	Model No. DK
1	16	**7439.035**

Extended delivery times.
Other designs available on request.

Accessories:

Cable clamp strap DK 7610.000 or DK 7611.000, see page 985.



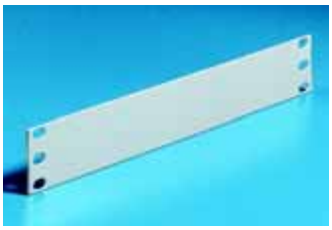
Blanking panel, 482.6 mm (19″)

As an extension cover or for population as required.

Material:
Sheet steel

Colour:
RAL 7035

U	Installation height mm	Packs of	Model No. DK
1	44	2	**7151.035**
1.5	66	2	**7157.035**
2	88	2	**7152.035**
3	132.5	2	**7153.035**
6	266	2	**7156.035**



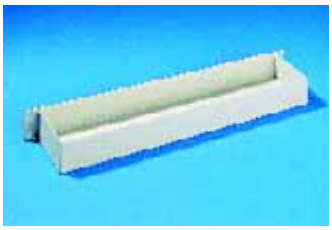
Blanking panel 1 U, 42 HP ($^1/_2$ 19″)

for RNC and RiCase
As an extension cover.

Material:
Sheet steel

Colour:
RAL 7035

Packs of	Model No. DK
2	**7870.720**



Panel 1 U, 482.6 mm (19″)

with solid tray
For the stroage of fibre-optic coupling covers or assembly parts.
Depth: 100 mm

Material:
Sheet steel

Colour:
RAL 7035

U	Model No. DK
1	**7300.335**



Identification strips

for patch panels
For individual labelling of different slots, self-adhesive.
Length: 210 mm, height: 10 mm.

Packs of	Model No. DK
32	**7167.000**

Splicing boxes



Splicing cassette holder

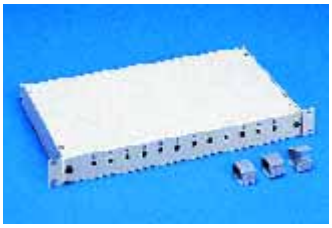
To accommodate differently sized splicing cassettes with variable cassette accommodation. Up to 8 splicing cassettes may be fitted in one holder. The splicing cassette holder can be flexibly secured to any mounting surface, and is particularly suitable for retro-fitting tor small fibre-optic distributors without patch panels.
One extra holder may be fitted in small fibre-optic distributor DK 7452.035
→ max.: 16 splicing cassettes.
Two extra holders may be fitted in small fibre-optic distributor DK 7453.035
→ max.: 32 splicing cassettes.

Height		Model No. DK
Overall height mm	Threaded bolts mm	
93	85	**7450.035**

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Holder with threaded bolts,
variable angle bracket, cassette cover,
knurled nut and assembly parts.





Fibre-optic splicing box, depth-variable

The 482.6 mm (19″) splicing box is designed to accommodate splicing cassettes and can be installed in any network distributor with 482.6 mm (19″) accommodation and used as a fibre-optic termination or distributor. The variable cassette fixture permits twist-proof installation of all standard splicing cassettes. The rear section of the splicing box is completely open for cable entry; a rubber cable clamp strip provides protection against dust. The fibre-optic cables can be secured with cable ties or cable clamps.
The splicing box is infinitely depth-adjustable up to 100 mm within the 482.6 mm (19″) flanges. In addition, the splicing box may be fully withdrawn from the 482.6 mm (19″) flanges. Two strain relief clips and cable routing clips for the fibre stock provide a solution to suit any fibre-optic wiring system.

U	Maximum no. of splicing cassettes	Model No. DK
1	2	**7241.005**
2	4	**7242.005**

Other versions available on request.

German patent no. 196 08 385

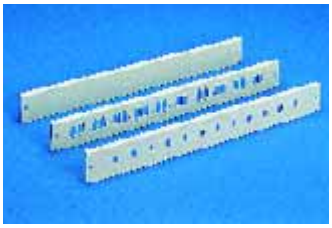
Installation depth:
302 mm

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Splicing box, cable routing clips and cassette cover and assembly parts for patch panel.

Note:
Supplied without patch panel and splicing cassettes.



Patch panels

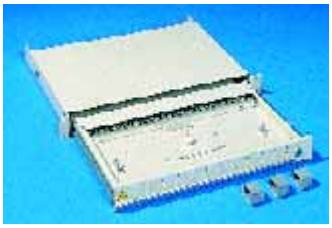
for fibre-optic splicing box, depth-variable
There is a choice of 9 panels with appropriate cutouts for the installation of various fibre-optic couplings, together with 2 blanking panels for individual population or as a cover.
The patch panels are fastened to the splicing box with quick-release fasteners.

Material:
Sheet steel

Colour:
RAL 7035

For coupling	No. of installation positions	Model No. DK 1 U	No. of installation positions	Model No. DK 2 U
ST	12	**7241.015**	24	**7242.015**
	16	**7241.065**		
E-2000, E-2000 Duplex[2] or SC	24	**7241.024**	48	**7242.024**
FDDI	6	**7241.035**	12	**7242.035[1]**
SC duplex	12	**7241.045**	24	**7242.045[1]**
Blanking panel	–	**7241.055[1]**	–	**7242.055[1]**

Other versions available on request.
[1] Delivery time approx. 2 weeks.
[2] For E-2000 Duplex only half of the locations are available.



Fibre-optic splicing box with telescopic pull-out

lockable

The 482.6 mm (19″) splicing box is designed to accommodate splicing cassettes and can be installed in any network distributor with 482.6 mm (19″) accommodation and used as a fibre-optic termination or distributor. The telescopic pull-out provides optimum access to the splicing cassettes and cable clamp. The variable cassette fixture permits twist-proof installation of all standard splicing cassettes. The security lock fitted at the front protects against unauthorised access. The rear section of the splicing box is completely open for cable entry; a rubber cable clamp strip provides protection against dust. The fibre-optic cables can be secured with cable ties or cable clamps; two strain relief clips and cable routing clips for the fibre stock provide a solution to suit any fibre-optic wiring system.

U	Maximum no. of Splicing cassettes	Model No. DK
1	2	**7170.535**
2	4	**7470.535**
3	6	**7570.535**[1)]

Other versions available on request.
[1)] **German patent no. 44 13 136**

Installation depth:
363 mm

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Splicing box, cable routing clips, security lock and cassette cover,
incl. assembly parts for patch panel.

Note:
Supplied without patch panel and splicing cassettes.



Patch panels

for fibre-optic splicing box, lockable

There is a choice of 20 panels with appropriate cutouts for the installation of various fibre-optic couplings, together with 3 blanking panels for individual population or as a cover.

Material:
Sheet steel

Colour:
RAL 7035

For coupling	No. of installation positions	Model No. DK 1 U	No. of installation positions	Model No. DK 2 U	No. of installation positions	Model No. DK 3 U
F-SMA 6.5 mm	12	**7171.535**[1)]	24	**7471.535**[1)]	48	**7571.535**[1)]
DIN 47 256	12	**7173.535**	24	**7473.535**[1)]	48	**7573.535**[1)]
ST	12	**7174.535**	24	**7474.535**	48	**7574.535**
	16	**7174.135**				
FC-PC	12	**7175.535**[1)]	24	**7475.535**[1)]	48	**7575.535**[1)]
E-2000, E-2000 Duplex[2)] or SC	20	**7178.535**	24	**7478.535**	48	**7578.535**
			40	**7491.535**[1)]		
SC duplex	12	**7169.535**	24	**7469.535**	36	**7569.535**
Blanking panel	–	**7179.535**	–	**7479.535**[1)]	–	**7579.535**[1)]

Other versions available on request.
[1)] Delivery time approx. 2 weeks.
[2)] For E-2000 Duplex only half of the locations are available.



Cover panel

for fibre-optic cutouts

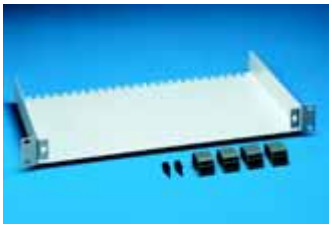
To cover unused cutouts in patch panels.

Material:
Nylon

Colour:
Black

	Packs of	Model No. DK
SC, E-2000	20	**7300.230**
E-2000 Duplex	20	
SC duplex	20	**7300.240**
ST	20	**7300.250**

Splicing boxes



Fibre-optic breakout box 1 U

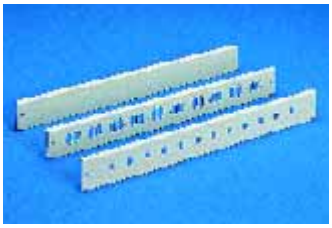
For splice-free cabling of fibre-optic breakout cables.
Cable bundles may be clamped on the hammer heads at the rear. 4 self-adhesive cable clips are are supplied loose for cable clamping and for storing excess lengths inside the box.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Breakout box,
cable routing clips,
assembly parts for patch panel.

Installation depth	Model No. DK
250 mm	**7241.500**



Patch panels

for fibre-optic breakout box 1 U
There is a choice of 5 panels for the breakout box with appropriate cutouts for the installation of various fibre-optic couplings, together with 1 blanking panel for individual population or as a cover.

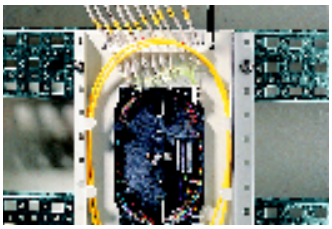
Material:
Sheet steel

Colour:
RAL 7035

For Coupling	No. of installation positions	Model No. DK
ST	12	**7241.015**
ST	16	**7241.065**
E-2000, E-2000 Duplex[2] or SC	24	**7241.024**
FDDI	6	**7241.035**
SC duplex	12	**7241.045**
Blanking panel	–	**7241.055[1]**

Other versions available on request.
[1] Delivery time approx. 1 week.
[2] 10 installation positions are available for E-2000 Duplex.





Fibre-optic splicing distributor

Unlike the splicing box, the splicing distributor may optionally be installed inside or outside of network distribution enclosures.
The splicing distributor is designed to accommodate fibre-optic splicing cassettes. These are mounted individually between mounting trays which can be stacked on top of one another as required. Strain relief for the cables and individual fibres is provided by cable ties.
The basic unit can accommodated a total of 2 packs of 4 extension units DK 7381.035.

Dimensions:
W x H x D: 190 x 250 x 90 mm

Threaded bolts:
75 mm

	Model No. DK
Fibre-optic splicing distributor	**7380.035**

German patent no. 40 08 840

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Base including one pair of mounting trays, lid and assembly parts.



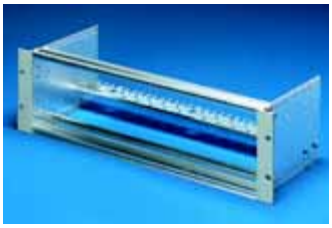
Fibre-optic splicing distributor extension unit

Additional pairs of mounting trays, each of which can accommodate one splicing cassette and the fibre stock, are used to extend the splicing distributor.

Material:
Sheet steel

Colour:
RAL 7035

Packs of	Model No. DK
2	**7381.035**



Fixture with rods, 3 U

for LSA strips
To accommodate
15 LSA profile dividing strips 2/10 on
2 rods, Ø 12 mm.
The fixture unit may be integrated in all 482.6 mm (19″) mounting levels. With cable clamp rail at the rear.

Dimensions:
W x H x D:
482.6 mm (19″) x 132.5 mm (3 U) x 175 mm

U	Model No. DK
3	**7050.200**

Material:
Side panels: Aluminium plates
482.6 mm (19″) side panels/cross rail:
Extruded aluminium section

Supply includes:
Fixture with rods as modular system.



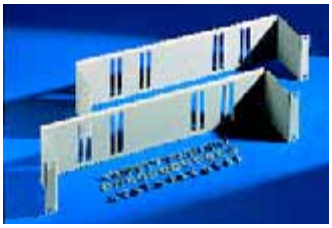
3 U support unit

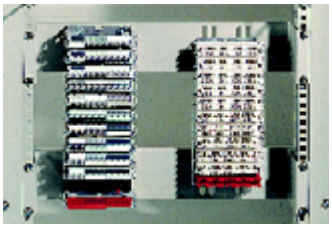
for LSA-Plus strips, max. 150 paired wires
To accommodate a maximum of 15 LSA-Plus strips (each with 10 paired wires). 3 x 5 LSA-Plus connection strips 2/10, series 2, may be installed horizontally. Strip length 124 mm, height pitch pattern 22.5 mm. The support unit may be integrated in all 482.6 mm (19″) mounting levels. The mounting level is recessed 100 mm behind the 482.6 mm (19″) flanges. Integral shunting rings enable tidy routing and distribution of the telecommunication cables.

U	Model No. DK
3	**7050.100**

Material:
Stainless steel

Supply includes:
Support unit, 8 shunting rings.





2 U accommodation system

for LSA installation kit
To accommodate LSA mounting troughs/cable retainers on the 482.6 mm (19″) mounting angle.

Dimensions:
Total depth: 98.5 mm
Height: 2 U

Material:
Sheet steel

Colour:
RAL 7035

U	Packs of	Model No. DK
2	2	**7050.035**

Accessories:

FM universal mounting bracket,
see page 811.

Handles, external mounting accessories



Clipboard

For securing operating instructions or plans (A4 size) at eye level.
Prepared for mounting on the right-hand side; mounting on the left is also possible by unscrewing and moving the clip part.
For mounting purposes, a straight tube length of ≥ 200 mm, 25 mm dia. is required.

Material:
Sheet steel, RAL 7035
Clip part: Aluminium, natural anodised.

Width mm	Height mm	Model No. CP
225	315	**6013.000**

Clipboard in conjunction with command panel VIP 6000:
European patent no. 0 839 093 with validity for DE, FR, GB, IT

Also required:

Handle set SZ 2389.000, see page 1030
or
Handle set VIP 6000, see page 1033
or
Handle set for Optipanel, see page 1031
or
U handle CP 6107.200, see page 1032.



Ring board

The alternative for attaching paper or plastic covers in A4 format, in either landscape or portrait format.
Board folded over on three sides and punched for mounting the assembly parts on the handle tube (length ≥ 200 mm, Ø 25 mm).

Material:
Sheet steel, RAL 7035
Ring strip, 16 mm: Sheet steel, plated

Width mm	Height mm	Model No. CP
225	315	**6013.500**

Also required:

Handle set SZ 2389.000, see page 1030
or
Handle set VIP 6000, see page 1033
or
Handle set for Optipanel, see page 1031
or
U handle CP 6107.200, see page 1032.



Display board with wall bracket

To accommodate test plans, documents etc. in A4 format.

Assembly:
- on surfaces,
- on a 25 mm pitch pattern of the TS frame or rail system,
- on the handle set.

Packs of	Model No. CP
1	**6013.100**

Supply includes:
10 display boards,
wall brackets and assembly parts.

Accessories:

Handle set SZ 2389.000, see page 1030
or
Handle set VIP 6000, see page 1033
or
Handle set for Optipanel, see page 1031
or
U handle CP 6107.200, see page 1032.





Handle set

For vertical and horizontal mounting on all surfaces.
Overall length: 420 mm.

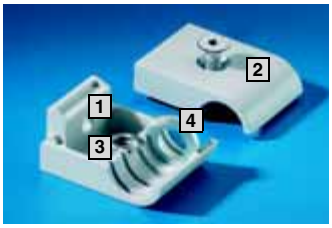
Material:
Handle tube: Aluminium, natural anodised.
Conduit holder: Die-cast zinc, RAL 7035

Supply includes:
1 set =
4 rail holders,
2 handle tubes.

Packs of	Model No. SZ
1 set	**2389.000**

Accessories:

Clipboard, ringboard, display board, see page 1030.







Rail holder

For mounting on surfaces, horizontal or vertical, also suitable for height-adjustable and/or swivel mounting of enclosures.
For 25 mm dia. sections made from
- Steel, seamless DIN 2448
- Aluminium to DIN 1795

as a handle or for limiting support surfaces.

Consisting of:

1 Assembly tray with one drilled hole and M8 screw and two pins as anti-twist guard.

2 Clamping tray with tolerance compensation and screw for tightening the rails.

3 Washer, small, prevents tensioning of the rails e.g. should it become necessary to remove the fitted ring board.

4 Washer, large, secures the uninhibited, rotating rail between the two trays to prevent it from falling out.

Material:
Die-cast zinc

Colour:
RAL 7035

Packs of	**Model No. SZ**
2	**2389.100**





Handle set

for Optipanel
For external mounting on corner pieces, also suitable for retro-fitting.

Material:
Handle tube: Aluminium, natural anodised.
Handle holder: Die-cast zinc, powder-coated in RAL 7035
Covers: Polyamide, RAL 7024

Note:
Shorter heights and widths can be achieved by cutting the handle tube to length.

For enclosures with 100 mm depth, cannot be mounted on the same side as the
- Support arm connection
- Interface flap
  (SZ 2482.200, see page 1059)

Accessories:

Clipboard, ringboard, display board
see page 1030.

For horizontal mounting

With front panel width	Packs of	**Model No. CP**
482.6 mm (19″)	1 set	**6385.010**
As specified	1 set	**6385.019**[2)]

Supply includes:
Handle tube, Ø 25 mm,
2 handle holders,
2 covers.

For vertical mounting

With front panel height	Packs of	**Model No. CP**
7 U	1 set	**6385.020**
7 U + 2 x 3.5 U[1)]	1 set	**6385.030**
As specified	1 set	**6385.029**[2)]

[1)] Divided by 2 cross members for Optipanel.

[2)] Please additionally state when ordering:
– Number/dimensions of front panels
– Number of cross members/sealing bars or
– Model Number of enclosure

Supply includes:
2 handle tubes, Ø 25 mm,
4 handle holders,
4 covers.

Handles, external mounting accessories

Handles

For horizontal or vertical attachment to the enclosure panel of:
- VIP 6000 with combined or narrow front frame,
- Optipanel,
- other enclosures or
- surfaces.

Mounting holes and surfaces without fins are required for assembly purposes. For VIP 6000 version with fins, corresponding milling work can be carried out. With the operating/keyboard housing, please specify “Prepared for handle set CP 6107.XXX”.

Material:
Handle holder: Die-cast zinc, RAL 7035
Cover bungs: Plastic, similar to RAL 7035
Handle tube: Aluminium, powder-coated similar to RAL 9006.

German patent no. 19 937 966
French patent no. 2 797 555
Italian patent no. 0 131 8210
US patent no. 6,507,978



Corner handle

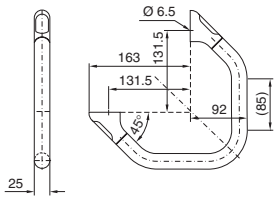
Supply includes:
4 handle holders,
2 handle tubes,
assembly parts.

Packs of	Model No. CP
1 set	**6107.000**

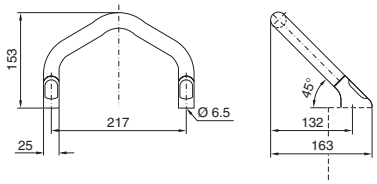




Mounting on enclosure corner



Mounting on straight surfaces
(90° rotation of handle holder)





U handle

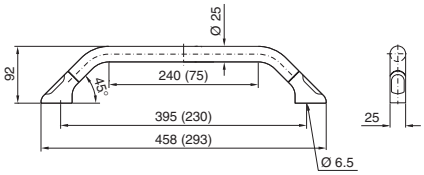
Supply includes:
2 handle holders,
1 handle tube,
assembly parts.

For front panel size	Packs of	Model No. CP
≥ 7 U	1 set	**6107.100**
482.6 mm (19″)	1 set	**6107.200**

Accessories:

For CP 6107.200:
Clipboard, ringboard, display board,
see page 1030.





Note:
Dimensions in brackets for CP 7 U.



Display board with wall bracket

see page 1030.



Handle set VIP

for VIP 6000 with wide frame

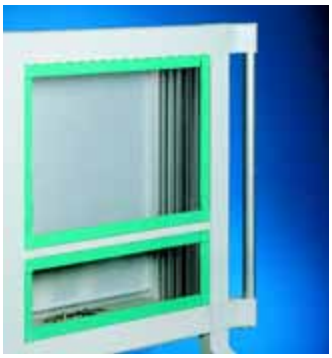
For mounting on the corner connectors of the enclosure frame.

Material:
Handle tube: Extruded aluminium section, natural anodised
Handle holder: Die-cast zinc, powder-coated in RAL 7035

Note:
Shorter heights and widths can be achieved by cutting the handle tube to length.

Accessories:

Clipboard, ringboard, display board,
see page 1030.



For horizontal mounting

With front panel width	Packs of	Model No. CP
482.6 mm (19″)	1 set	**6101.000**
As specified	1 set	**6101.009**[2)]

Supply includes:
2 handle holders,
1 handle tube,
2 screws.

For vertical mounting

With front panel height	Packs of	Model No. CP
7 U	1 set	**6102.000**
7 + 3.5 U[1)]	1 set	**6103.000**
As specified	1 set	**6102.009**[2)]

[1)] Divided by cross member for VIP 6000.

[2)] Please additionally state when ordering:
– Number/dimensions of front panels
– Number of cross members/sealing bars or
– Model Number of enclosure

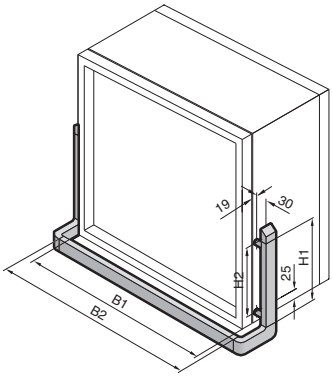
Supply includes:
4 handle holders,
2 handle tubes,
4 screws.



Handle frame

for operating housing with display panel front

For operating housing with display panel front	CP 6442.500 CP 6462.500	CP 6552.500	CP 6662.500
Model No. CP	**6191.000**	**6192.000**	**6190.000**
Operating housing width (B1) mm	380	500	600
Width of the horizontal rectangular tube (B2 = B1 + 48) mm	428	548	648
Height of the vertical rectangular tube (H1) mm	345	465	299
Hole distance between the assembly holes (H2) mm	295	415	249



Colour:
RAL 8019

Supply includes:
Square aluminium tube,
plastic corner bracket,
end caps,
assembly parts.

Connection components





Connector

for compact enclosures
Between
- Compact enclosure AE from depth 210 mm (see page 118)
- Operating housings from depth 210 mm (see page 185)

and
- Terminal boxes from depth 80 mm (see page 108)
- E-Boxes EB from depth 80 mm (see page 110)

Material:
Sheet steel

Colour:
RAL 7024

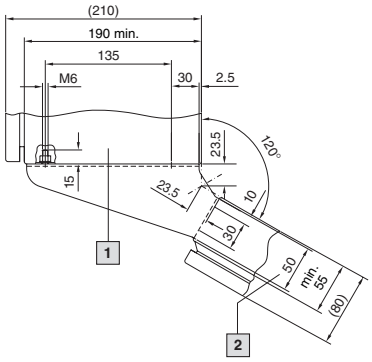
Supply includes:
Assembly parts.

Packs of	Model No. CP
1 set	6005.100

Note:
During retrofitting, appropriate mounting holes are required for assembly purposes.

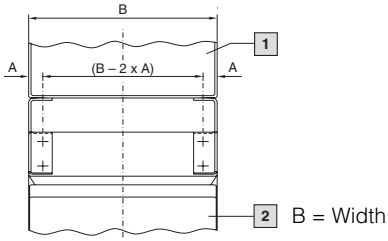
Rittal service:

Terminal box, E-Box and compact enclosure available on request with front panel and handle strips mounted on the rear panel.

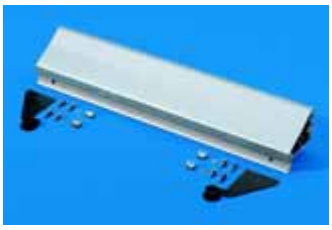


1 e.g. AE
2 e.g. KL/EB

Drilling pattern for attaching the connector to both enclosures



Handle strips	min. dimension A mm
Without	15
With	35





Enclosure surface connector

To accommodate:
- Support for keyboards (SM 2383.000)
- Optipanel keyboard housing for front panel width = 482.6 mm (19″) CP 6384.009. Please state front panel height and installation depth (50 or 100 mm) in addition to Model No.

Material:
Extruded aluminium section, natural anodised
Side cover, sheet steel RAL 7024.

Supply includes:
Assembly parts.

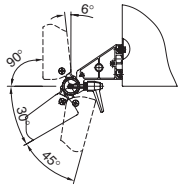
Packs of	Model No. SM
1 set	2383.010

Note:
Other widths available on request.

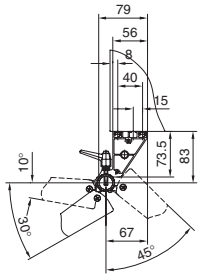
Also required:

Cross-brace for door,
see page 895.

Mounting on surfaces



Mounting underneath surfaces





Enclosure duct connector

for VIP 6000

To fit narrow and combined frames in conjunction with the keyboard housing 105 mm deep.

- The angle between the operating and keyboard housing is 120°.
- At the same time, the duct connector is used for cable routing from the operating housing to the keyboard housing.

Material:
Aluminium

Colour:
RAL 7035

Supply includes:
Assembly parts.

Weight kg	Packs of	Model No. CP
2.0	1 set	**6006.000**

Delivery times on request.

Note:
When retro-fitting, appropriate mounting holes and cutouts must be made in the operating and keyboard housings for assembly purposes.

Also required:

Cross-brace for door,
see page 895.



Cable tube, flexible

for VIP 6000

Suitable for cable routing from the operating housing to the keyboard housing.
Suitable for use with

- Frame connector, adjustable
- Hinged frame connector
- Frame connector, rigid
- Enclosure bar connector

May be mounted on the following keyboard housings:

- Keyboard housing: 105 mm
- Keyboard housing: 44 mm
- Keyboard housing: 27 mm
  with connection for flexible cable conduit (design 4.1, see page 166).

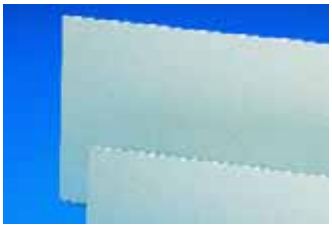
Corresponding cutouts are required for connecting the cable tube in the operating and keyboard housing.

A cable tube is included with the supply to selection 4.5, see page 169.

Colour:
RAL 7035

Supply includes:
Assembly parts.

for keyboard housings	Model No. CP
CP 6351.009 Designs **4.1, 2 and 4**	**6017.100**
Others	**6017.000**



Front panels

for VIP 6000 and Optipanel

Material:
3 mm aluminium, natural anodised

Note:
If more than one front panel is used a cross member is required,
see page 1037.

Width mm	Height mm	Model No. CP	
		with mounting holes	with threaded bolts M5
482.6 (19″)	155.0 (3.5 U)	**6027.000**	**6027.010**
482.6 (19″)	177.0 (4 U)	**6019.000**	–
482.6 (19″)	310.3 (7 U)	**6028.000**	**6028.010**
482.6 (19″)	493.8[1)]	**6029.000**	–

[1)] For VIP 6000, this corresponds to the height of two front panels (7 + 3.5 U) and of one cross member (285 mm).

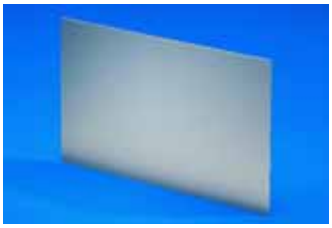
Also required:

Mounting kit CP 6053.000 or CP 6053.500,
see page 1037.

Rittal service:

Other sizes and versions with threaded bolts, cutouts and engravings available on request.

Front assembly

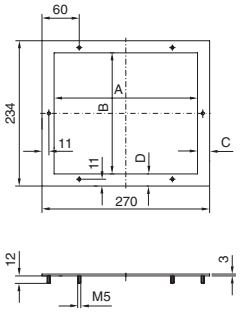


Front panels
for Optipanel CP 6380.100
With threaded bolts M5.

Dimensions:
270 x 234 mm

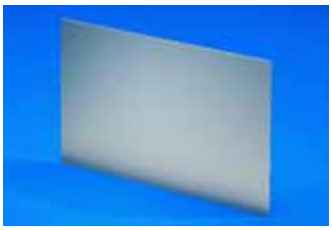
Material:
3 mm aluminium, natural anodised

Supply includes:
Mounting kit.



Mounting cutout	Packs of	Model No. CP
Without	1	**6027.500**
For Siemens Simatic OP 17	1	**6027.510**
For Siemens Simatic TP 170 A/B	1	**6027.520**
Acc. to specifications	1	**6027.509**

Model No. CP	A	B	C	D
6027.510	231.0	195.0	19.5	19.5
6027.520	197.5	141.5	36.25	46.25

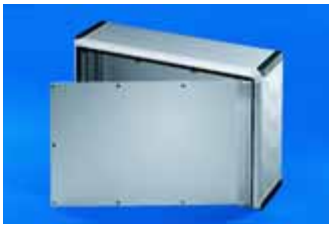


Front panels
for Compact Panel

Material:
3 mm aluminium, natural anodised

Size W x H mm	To fit Compact Panel	Model No. CP
178 x 200	CP 6340.0X0	**6028.500**
178 x 350	CP 6340.1X0	**6028.510**
178 x 482.6	CP 6340.2X0	**6028.520**
252 x 200	CP 6340.3X0	**6028.530**
252 x 350	CP 6340.4X0	**6028.540**





Front panels, hinged
for VIP 6000 and Optipanel

Dimensions:
19″ x 7 U
(482.6 x 310.3 mm)

Opening angle:
Optipanel: 125°
VIP 6000: 95°

Material:
Front panel: 3 mm aluminium, natural anodised
Extruded aluminium section: Natural anodised

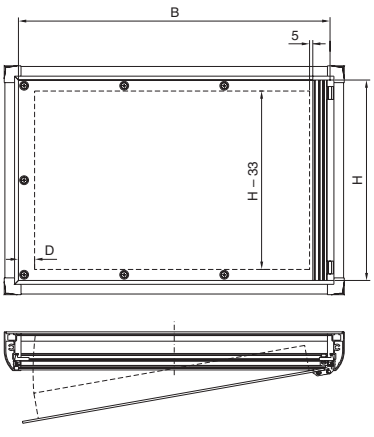
Supply includes:
Hinge section, hinge strip,
2 end trims and assembly parts.

Front panel for	Design	Model No. CP
Optipanel	Screw-fastened from the outside	**6027.100**
	Screw-fastened from the inside	**6027.110**
	With cam	**6027.120**
VIP 6000	Screw-fastened from the outside[1)]	**6027.200**
	Screw-fastened from the inside[1)]	**6027.210**
	With cam[1)]	**6027.220**

Delivery times on request.
For other sizes, please add the extension .XX9 to the Model No.
[1)] When ordering, please specify the colour of the required end trim (see page 163).

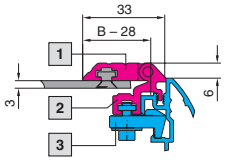
Required distance from edge “D” to avoid collisions

Installation depth	Dimension “D”
Optipanel 50 mm	25 mm
Optipanel 100 mm	34 mm
Optipanel 150 mm	48 mm
VIP 6000 44 mm	25 mm
VIP 6000 105 mm	36 mm
VIP 6000 155 mm	52 mm

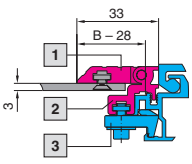


B = Width

Mounting position Optipanel



Mounting position VIP 6000



1 Hinge strip
2 Hinge section
3 Retaining claw




Mounting kit

for VIP 6000 and Optipanel
For installing
- Aluminium front plates
- Command panels
- Keyboards




For holes

For Front panels	Thread	Model No. CP
Others	M4	**6058.000**
Rittal and others	M5	**6053.000**

Supply includes:
Packs of
30 retaining claws, captive nuts, screws and sealing washers.

For bolts

Thread	Model No. CP
M4	**6058.500**
M5	**6053.500**

Supply includes:
Packs of
10 retaining claws and cap screws.

For screw clamp

For direct installation of	Model No. CP
Siemens Sinumerik OP010, OP010C, OP012, OP015, MCP, PP012, Querty 19″	**6053.210**
Siemens Simatic Panel PC 670: 12″-Touch, 15″-Touch, 10″ keys, 12″ keys, 15″ keys Panel PC 870: 12″-Touch, 15″-Touch, 10″ keys, 15″ keys	

The mounting set can only be installed vertically.
Mounting in VIP 6000 is only possible in conjunction with end trim.

Supply includes:
Packs of
4 pressure plates,
4 attachment strips.



Sealing bar

for VIP 6000 and Optipanel
For horizontal and/or vertical division of operating housings.
The “slot-free” division produces a height gain of 28 mm (VIP 6000) or 22 mm (Optipanel) respectively.

Material:
Aluminium section 8 x 20 mm

Supply includes:
Assembly parts.

Note:
Sealing bar may not be used in conjunction with spacer trim.

For front panel width mm	Model No. CP
482.6 (19″)	**6015.500**
As specified[1)]	**6015.509**

[1)] Please specify width of front panel.

Detailed drawing,
see page 1097.



Cross member

for VIP 6000 and Optipanel
For horizontal and/or vertical division of the command panel front.
With mounting channel on both sides to accommodate mounting kits.

Material:
Extruded aluminium section

Supply includes:
2 retainig claws,
2 screws with washers,
2 trim sections.



For front panel width mm	Model No. CP	
	for VIP 6000[2)]	for Optipanel
482.6 (19″)	**6015.000**	**6386.000**
As specified[1)]	**6015.009**	**6386.009**

[1)] Please specify width/height of front panel.
[2)] Trim type and trim colour, see page 163. Please state on the order.

Accessories:

Mounting kit,
see page 1037.

Detailed drawing,
for VIP 6000,
see page 1097.
For Optipanel,
see page 1101.

Front assembly







Spacer panel and built-in trim panel

for VIP 6000 and Optipanel

For additional space with cable entry and for installing

- Switches/indicator lamps
- Emergency-off switches/key switches
- CD-ROM/disk drives
- Interfaces

etc.

For mounting (horizontally or vertically) on the enclosure, snap into position and screw-fasten from behind.
Other spacer panels and built-in trim panels, front panels and operator panels may be installed without an additional cross member.

Material:
Extruded aluminium section, natural anodised

Supply includes:
Assembly parts and end trim (VIP 6000), spacer trim (Optipanel).

For VIP 6000

For front panel width mm	Model No. CP[2)]
482.6 (19″)	**6015.300**
As specified[1)]	**6015.309**

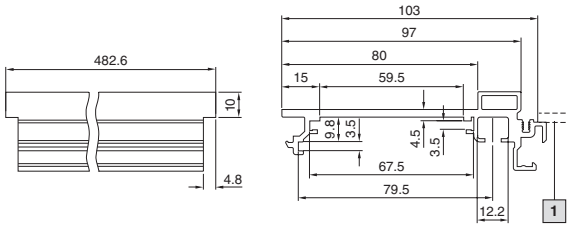
Height corresponding to a front panel height of 103 mm.
[1)] Please specify width of front panel.
[2)] Trim colour see page 163.
Please state on the order.

For Optipanel

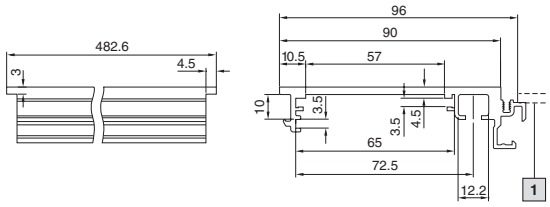
For front panel width mm	Model No. CP
482.6 (19″)	**6386.300**
As specified[1)]	**6386.309**

Height corresponding to a front panel height of 96 mm.
[1)] Please specify width of front panel.

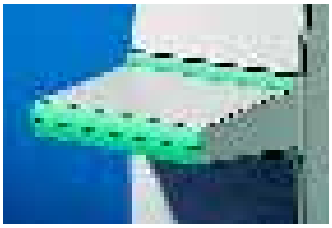
VIP 6000

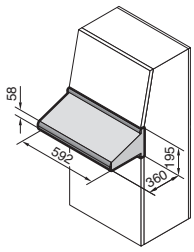


Optipanel



1 Another spacer panel and built-in trim panel, front plate or operator panel





Desk section

for AP universal console

Solid sides and front, removable plates for top and bottom. May optionally be attached with the inclined or straight edge on top, by rotating through 180°

Material:
Sheet steel

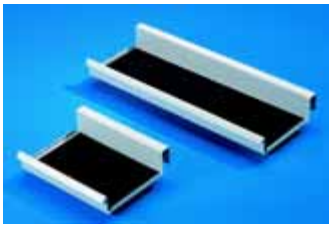
Colour:
RAL 7035,
design strip RAL 5018

Protection category:
IP 55 to EN 60 529/10.91,
Complies with NEMA 12.

Supply includes:
Assembly parts.

Packs of	Model No. AP
1	**2696.500**

To order versions in RAL 7032, please use order number extension .200.
Delivery times on request.





Utility shelf

screw-fastened

With support mat for:
Measuring tools, writing equipment, mouse, scanner, small parts etc.

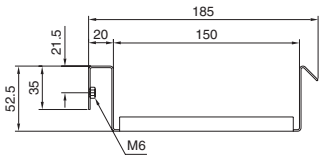
For mounting
- Underneath:
  – VIP 6000
  – Optipanel
  – Command panel housings with door
  – Operating housings
  – IW worktop
  For visual reasons, not drilled for assembly.
- On surfaces (doors, rear panels) via rear assembly holes
- To TS punched section with mounting flange 17 x 73 mm, locatable, without screw-fastening,
  – for servicing work on the enclosure.

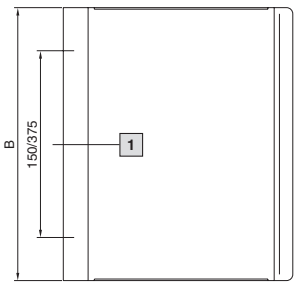
Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Width (B) mm	Model No. CP
220	**6514.110**
450	**6514.100**





1 Additional central thread only for CP 6514.100

General accessories



Cover plate

for support arm connection
For secure sealing of a support arm connection in the enclosure which is not required.

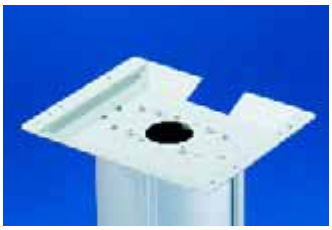
Material:
Sheet steel

Supply includes:
Seal and assembly parts.

Note:
If with
- VIP 6000
- Optipanel
- Compact panel

command panels there are already 2 support arm cutouts provided, a cover plate is included with the supply of the enclosure.

Support arm connection	Surface finish	**Model No. CP**
CP-S	Spray-finished 7024	**6505.200**
CP-L, Ø 130 mm	Zinc-plated, passivated	**6505.500**
CP-L, ▭ 120 x 65 mm	Zinc-plated, passivated	**6505.100**





Worktop attachment

for pedestal and support arm system
For mounting worktops on:
- Lifting pillar, electric
- Enclosure attachment CP-L, round
- Housing coupling CP-L, round
- Enclosure attachment CP-XL, round
- Housing coupling CP-XL

Material:
Sheet steel

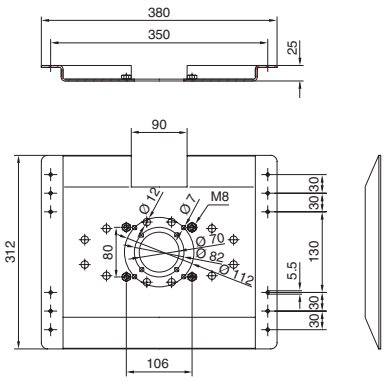
Colour:
RAL 7035

Supply includes:
Assembly parts.

Packs of	**Model No. IW**
1	**6902.780**

Accessories:

Accessories	Model No. CP	see page
Lifting pillar, electric	6142.000	229
Enclosure attachment, CP-L, Ø 130 mm	6525.5X0	206
Housing coupling, CP-L, Ø 130 mm	6525.0X0	212
Enclosure attachment, CP-XL, round	6130.600	222
Housing coupling, CP-XL	6130.000	223





Aluminium strip

for
- AP
- Surfaces

Prevents wiring plans etc. from slipping.

For console	Length mm	Packs of	**Model No. AP**
AP 2611.500 AP 2613.500 AP 2668.500	783	3	**2678.000**
AP 2641.500 AP 2643.500 AP 2672.500	1183	3	**2682.000**
AP 2666.500	583	3	**2676.000**

May be cut to length for other dimensions.



Signal pillar, LED compact

red, yellow, green

Benefits:
- Complete, ready-to-connect solution
- Minimal build height of just 177 mm
- Extremely long service life of the LEDs (at least 70,000 h) – therefore maintenance-free
- Minimal assembly work and warehousing costs

Technical specifications:
Operating voltage: 24 V AC/DC
Electrical connection: Screw terminals
Light: LED
Transmission angle: 3 x 120°
Operating temperature: –20 to +70°C
Flashing function: Controllable via SPC
Cable entry: Metric cable gland
M12 x 1.5 for cable diameter 3.0 – 6.5 mm

Packs of	Model No. SG
1	2372.100

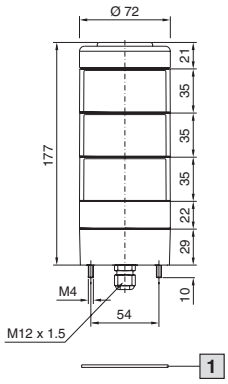
Protection category:
IP 65 to EN 60 529/10.91

Note:
- Design with acoustic component
- 1 to 4-stage version in various colour combinations
- Version with magnetic base

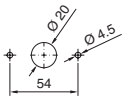
available upon request.

Also required:

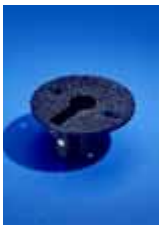
For wall/base mounting:
Bracket for wall mounting,
see page 1044.
For conduit mounting/support arm systems:
Busbar connection adaptor,
see page 1041.



Mounting cutout



1 Seal





Busbar connection adaptor

for signal pillar, LED compact
For conduit mounting and mounting on support arm systems.

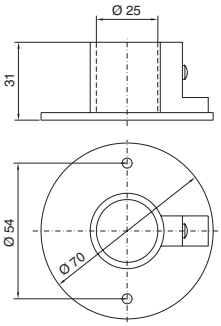
Material:
Plastic

Colour:
Black

Packs of	Model No. SG
1	2372.120

Accessories:

Mounting components for conduit mounting,
see page 1045.
Mounting components for support arm systems,
see page 1045.



Modular



Signal pillars, modular

Benefits:

- Simple assembly and contact via bayonet fastener.
- Configuration of up to five components with the same voltage.
- The incandescent lamps are replaced in seconds – no need for tools.
- Components are available in a range of colours and voltages.

For modular configuration from:

- Connection components
- Optical components
- Incandescent lamps/LED lamps
- Acoustic components
- Label panel



Connection component

for signal pillars, modular

Optionally for conduit or wall/base mounting. Screw terminals in the connection component. With cover for optical components. Contact hazard protection to VDE.

Material:
Enclosure of polyamide

Colour:
Black

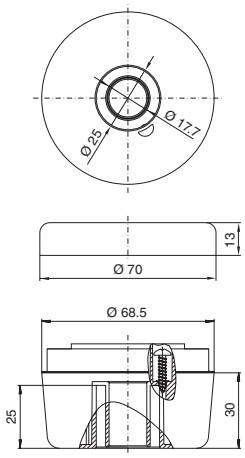
Protection category:
IP 54

Connection component	Model No. SG
For conduit mounting	**2368.000**
For wall/base mounting	**2368.010**

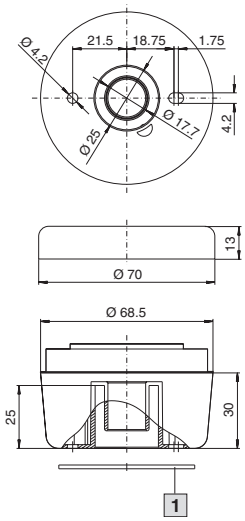
Accessories:

Mounting components for wall/base mounting, see page 1044.
Mounting components for conduit mounting, see page 1045.
Mounting components for support arm systems, see page 1045.

Connection component for conduit mounting
SG 2368.000



Connection component for wall/base mounting
SG 2368.010



1 Seal



1



2



3



4

Optical components

for signal pillars, modular
With 360° signal transmission thanks to optimised prism system.
Possible number of levels = 5 components, with the same voltage.
115 V components available on request.

Material:
Enclosure: polyamide
Cap: transparent polycarbonate

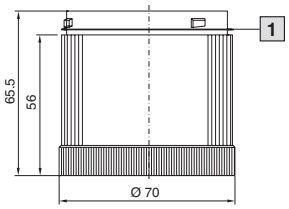
Protection category:
IP 54 if a cover or acoustic component is fitted at the top.

Also required:
Incandescent or LED lamps for steady and flashing light component,
see page 1043.

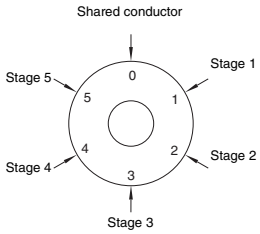
Optical components	Model No. SG				
Colour	Red	Green	Yellow	Clear	Blue
1 Steady light component[1)] 12 – 240 V AC/DC	**2369.000**	**2369.010**	**2369.020**	**2369.030**	**2369.040**
2 Flashing light component[1)] 24 V AC/DC, 125 mA/225 mA	**2370.000**	**2370.010**	**2370.020**	**2370.030**	**2370.040**
2 Flashing light component[1)] 230 V AC/DC, 15 mA	**2370.050**	**2370.060**	**2370.070**	**2370.080**	**2370.090**
3 Stroboscopic light component 24 V DC, 125 mA/225 mA	**2371.000**	**2371.010**	**2371.020**	**2371.030**	**2371.040**
3 Stroboscopic light component 230 V AC, 15 mA	**2371.050**	**2371.060**	**2371.070**	**2371.080**	**2371.090**
4 LED steady light component 24 V AC/DC, 60 mA	**2372.000**	**2372.010**	**2372.020**	**2372.030**	**2372.040**

[1)] Incandescent or LED lamps not included with the supply.

1 Preconfigured seal



Connection diagram





Incandescent lamps

for steady and flashing light components
With BA 15d base/plinth.
For new orders or replacements.

Incandescent lamp	Packs of	Model No. SG
24 V, 5 W	3	**2374.060**
230 V, 5 W	3	**2374.070**



LED lamp

for steady and flashing light components
The energy-saving alternative with a long service life.
The LEDs have a trasnmission angle of 2 x 180°.

LED lamp	Packs of	Model No. SG				
Colour		Red	Green	Yellow	Clear	Blue
24 V AC/DC	1	**2374.200**	**2374.210**	**2374.220**	**2374.230**	**2374.240**
		For steady and flashing light components from SG 2369.000 to SG 2370.040				
230 V AC	1	**2374.300**	**2374.310**	**2374.320**	**2374.330**	**2374.340**
		For steady light components SG 2369.000 to SG 2369.040				

Mounting components



Acoustic components

for signal pillars, modular
To indicate warnings or malfunctions. The sound pressure is 85 dB/100 dB. Mounting only on the upper end of the optical components or directly on the connection component.

Material:
Enclosure: polyamide

Colour:
Black

Acoustic components	Model No. SG	
	24 V AC/DC	230 V AC
85 dB[1] max. 25 mA	**2376.000**	**2376.020**
100 dB[2] max. 25 mA	**2376.010**	**2376.030**

[1] Continuous tone or pulsating
[2] Volume and 8 tones may be set



Label panel

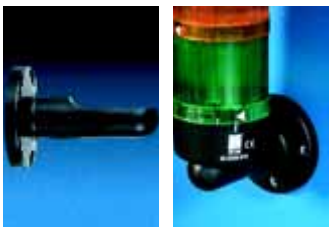
for signal pillars, modular
For text additions for a maximum of 5 optical components, with break point for any fields that are not required (50 x 150 mm), including clamping section for base or tube with a diameter of 25 mm.

Material:
Acrylic, transparent

Label panel	Model No. SG
For 5 optical components	**2374.150**



1



2



3

Mounting components

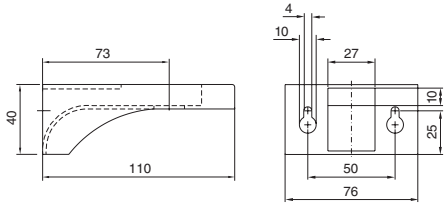
For wall/base mounting

Fig.	Mounting component	Colour	Suitable for signal pillar		Model No. SG
			LED compact	modular	
1	Bracket for wall mounting, including rubber gland for concealed cable routing	Black	■		**2372.110**
2	Bracket for connection component	Black		■[1]	**2374.040**
3	For side cable outlet	Black		■[1]	**2374.080**

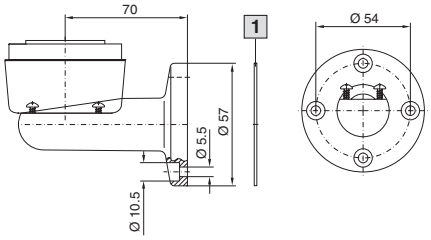
Also required:

[1] Connection component SG 2368.010, see page 1042.

Bracket for wall mounting

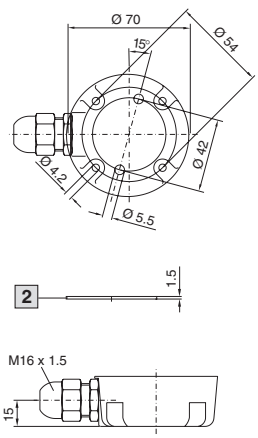


Bracket for connection component



1 Seal
2 Flat seal

For side cable outlet



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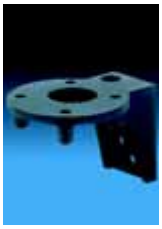
5



6




7

Mounting components

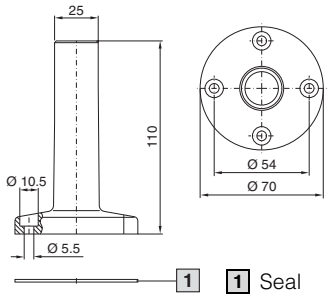
for conduit mounting

Fig.	Mounting component	Colour	Suitable for signal pillar		Model No. SG
			LED compact	modular	
4	Base with integral conduit, Ø 25 mm, 110 mm long	Black	■[1]	■[2]	**2374.000**
5	Individual base	Black	■	■	**2374.010**
6	Single conduit, 250 mm long	Aluminium	■[1]	■[2]	**2374.020**
	Single conduit, 400 mm long	Aluminium	■[1]	■[2]	**2374.030**
7	Angle bracket for conduit mounting	Black	■	■	**2374.050**

Also required:

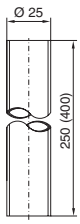
[1] Busbar connection adaptor SG 2372.120, see page 1041.
[2] Connection component SG 2368.000, see page 1042.

Base with integral conduit

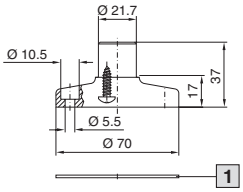


1 Seal

Single conduit

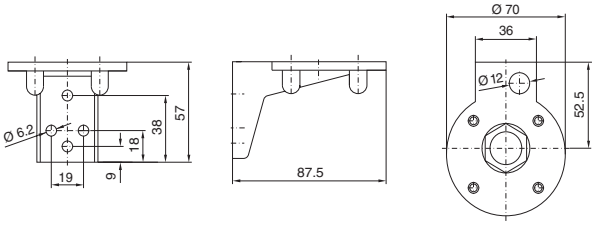


Individual base



1 Seal

Angle bracket for conduit mounting






8




9




10

Mounting components

for support arm systems

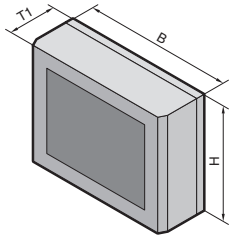
Fig.	Mounting component	Colour	Suitable for signal pillar		Model No. SG
			LED compact	modular	
8	for support arm system CP-L – Angle piece CP 6524.0X0 – Angle coupling CP 6526.0X0	RAL 9017 (traffic black)	■[1]	■[2]	**2375.000**
9	for support arm system CP-L – Intermediate hinge CP 6523.0X0 – Wall mounted hinge CP 6521.0X0 – Top mounted joint CP 6522.0X0	RAL 9017 (traffic black)	■[1]	■[2]	**2375.020**
10	for support arm system CP-S – Angle piece 90° CP 6501.140	RAL 7024 (graphite grey)	■[1]	■[2]	**2375.030**

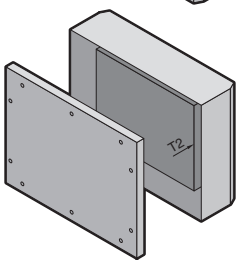
Also required:

[1] Busbar connection adaptor SG 2372.120, see page 1041.
[2] Connection component SG 2368.000, see page 1042.

Monitors, keyboards







Premium TFT 17″, IP 69K

This high pressure cleaner-resistant complete solution is particularly well-suited for use in the food and hygiene sectors.

Technical specifications:
Resolution max.:
17″: 1280 x 1024 pixels,
VGA + SXGA non-interlaced
Colours: 16.7 million
Brightness: 250 cd/m²
Reading angle: 130° horizontal, 110° vertical
Contrast ratio: 300 : 1
MTBF backlight: 50,000 h
Voltage: 12 V DC
On Screen Display (OSD) at rear
VGA input: 15 pin D-Sub
Operating temperature: 0°C to +50°C

Material:
Stainless steel 1.4301

Surface finish:
Brushed, grain 240

Protection category:
IP 69K to DIN 40 050-9/5.93

Support arm connection	W (B) mm	H mm	D (T1) mm	D (T2) mm	Model No. SM
Bottom	530	360	120	70	**6450.100**
Top	530	360	120	70	**6450.110**

To order version in stainless steel 1.4404 (AISI 316L) please use Model No. SM 6450.5XX.
Delivery times on request.

Accessories:

Rear panel holder CP 6682.000,
see page 893.
Power pack SM 6450.050 and
connection cable SM 6450.060,
see page 1047,
if an operating voltage of 100 – 240 V AC is only available instead of 12 V DC.



TFT monitor

Installation variant for surfaces and command panels.
Particular benefits:
- High-quality industrial design
- Reduced installation work thanks to integral front frame
- No additional ventilation required
- Very small installation depth (73 mm).

Resistive touchscreen for operation with a pen, finger and glove.

Technical specifications:
Resolution max.:
15″: 1024 x 768 pixels, VGA + XGA non-interlaced
17″: 1280 x 1024 pixels, VGA + SXGA non-interlaced
Colours: 16.7 million
Brightness: 250 cd/m²
Reading angle: 130° horizontal, 110° vertical
Contrast ratio: 300 : 1
MTBF backlight: 50,000 h
Voltage: 12 V DC
On Screen Display (OSD) at rear
VGA input: 15 pin D-Sub
Operating temperature: 0°C to +50°C

Front frame:
Dimensions:
15″: W/H 430 x 343 mm
17″: W/H 482.6 x 354.8 mm
Aluminium, powder-coated in RAL 7035
Rear threaded bolts M5 (14 units)

Protection category:
IP 65 to EN 60 529/10.91, front

Supply includes:
Seal and hex nuts (for installation in surfaces) and VGA cables. Touchscreen with additional 5 V adaptor cable and driver CD-ROM.

	Model No. SM
Monitor 15″ [1]	**6450.010**
Monitor 17″ [1]	**6450.020**
Touchscreen 15″	**6450.030**
Touchscreen 17″	**6450.040**

[1] With anti-reflection coated safety glass screen

Also required:

Mounting kit CP 6053.500
(for installation in VIP 6000 and Optipanel),
see page 1037.
Power pack SM 6450.050 and
connection cable SM 6450.060,
see page 1047,
if an operating voltage of 100 – 240 V AC is only available instead of 12 V DC.

Rittal service:

Matching Optipanel operating hounsings,
see page 178.
Mounted in command panels,
see page 173.

Possible alternative:

Unit consisting of TFT monitor and Premium Panel, specificly designed for the food industry,
see page 1046.



Power pack

for TFT monitor and touchscreen

- With IEC 320 socket,
- With connection cable (1.5 m) and connector for connecting to the TFT monitor.

Dimension: 107 x 30 x 59 mm.

Technical specifications:
Input voltage: 100 – 240 V AC
Output voltage: 12 V DC

Packs of	Model No. SM
1	6450.050

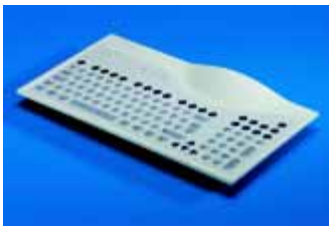
Material:
Enclosure: Plastic

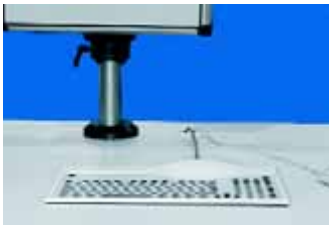


Connection cable

for power pack
With IEC connector at one end,
length: 1.5 m.

Packs of	Model No. SM
1	6450.060





Desktop keyboard IP 65

Particularly well-suited to all areas with dusty or damp industrial atmospheres and places where hygiene is particularly crucial, such as in the food industry or medical technology.

- Sealed, wipeable surface finish.
- High level of mechanical and chemical resistance to DIN 42 115.
- Lenticular key caps and minimal typing force for optimum finger guidance and fast operation.

This makes it ideally suited for workstations where it is necessary to input large quantities of data.

Supply includes:
Connection cable with PS/2 connector,
length 1.8 m.

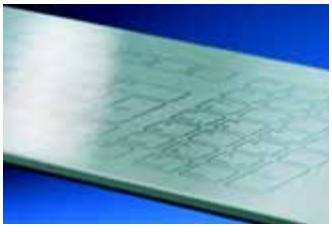
	Model No. SM
Desktop keyboard	6446.000

Technical specifications:
Dimensions: 410 x 220 x 25 mm
105 keys
Actuation travel/force: 0.4 mm/2 N
Service life: ≥ 1 million switching cycles
Operating temperature: –20°C to +70°C
German layout

Rittal service:

Country-specific layout and USB connection available on request.





Stainless steel keyboard 19″/4 U

based on the piezo system.
With this innovative technology, merely tapping lightly with your finger is sufficent to initiate switching. There are no edges, cracks or hollows, as with conventional keyboards. This makes it particularly suitable for use in the food industry.

Technical specifications:
Dimensions of front panel:
482.6 x 177 x 3.7 mm
Installation depth 25 mm
105 keys
Actuation travel/force: 0 mm/0.7 N
Service life: ≥ 10 million switching cycles
Keypad: Abrasion-resistant electrolyte lettering
Operating temperature: –25°C to +75°C
PS/2 and USB connection
German layout

Material:
Stainless steel 1.4301

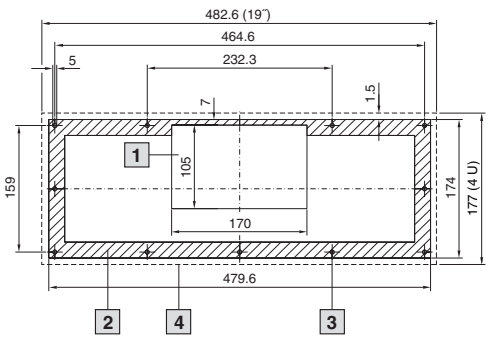
Protection category:
IP 69K to DIN 40 050/5.93

Supply includes:
1 connection cable, length 1.8 m,
with PS/2 connector and hex nuts.

	Model No. SM
Stainless steel keyboard	6446.010

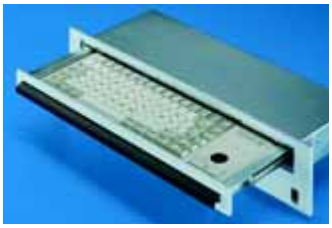
Rittal service:

Country-specific layout available on request.



1 Front panel cutout
2 Seal
3 Holes for fastening bolts
4 Contact surface

Monitors, keyboards





Keyboard, pull-out

with integral trackball
Super-slimline keyboard with cursor keys and trackball.

For installation in:
- Command panels VIP 6000 (see page 161) and Optipanel (see page 173) from installation depth 150 mm
- 482.6 mm (19″) systems
- Any sufficiently large surface (e.g. door, side panel)

Technical specifications:
- Keyboard:
  – 84 short-stroke keys, IBM-AT compatible (MF2), including cursor keys
  – With integral 16 mm trackball
  – German layout
  – Interface: 2 x 6-pole PS/2 DIN connector
  – Operating temperature: +5°C to +50°C
  – Storage temperature: –10°C to +60°C
  – Humidity: max. 95 % (no condensation)
- Front panel made from aluminium, with film similar to RAL 7035

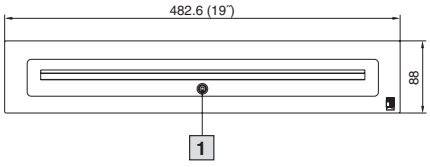
Protection category:
IP 65 (at the front, closed)
to EN 60 529/10.91

	Packs of	Model No. CP
Without lock	1	**6002.100**
With lock	1	**6002.110**

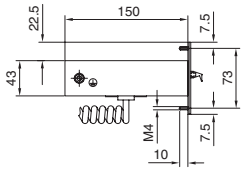
Note:
For sub-division of the operating front, a cross member is required for:
- VIP 6000 (see page 162, version 3.2). At the same time, the end trim (see page 163, version 3.4) must be selected.
- Optipanel (see page 174, version 2.2).

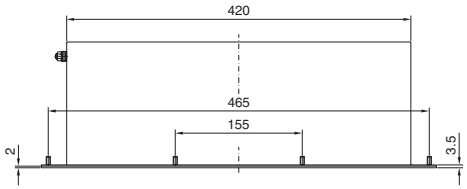
Accessories:

Standard double-bit lock insert may be exchanged for 27 mm lock inserts, version A, see page 888, and lock cylinders, version B, see page 889.

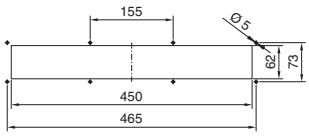


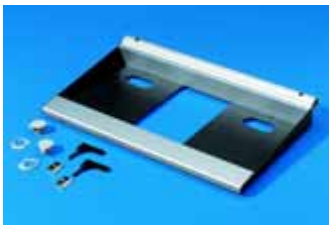
1 Optional lock (CP 6002.110)





Mounting cutout







Support

for keyboards
for max. 473 x 210 mm.
Prepared for
- Cable gland
- Support for mousepad, vertically hinged (SM 2383.020)

Material/surface finish:
Side parts: Sheet steel, RAL 7024
Front and rear:
Extruded aluminium section, natural anodised

Supply includes:
2 clamping screws, end stoppers, cover plate, cable entry grommet and nylon loop tape.

Rittal service:

Other widths available on request.
Fully mounted on the VIP 6000 (see page 160) or the Optipanel (see page 173) via the design code number.

Packs of	Model No. SM
1 set	**2383.000**

Also required:

For mounting on surfaces: enclosure surface connector, see page 1034.

Accessories:

Support for mousepad, vertically hinged, see page 1055.

Detailed drawing
for VIP 6000, see page 1100, for Optipanel, see page 1102.





Utility bars, vertically hinged

To support standard keyboards during programming and servicing work:
- min. width 300 mm
- max. depth 210 mm

For mounting beneath:
- VIP 6000 with narrow or combined frame
- Optipanel
- Command panel
- Command panel housing with door
- Adequately large surfaces (e.g. worktops IW)

to:
- Vertical services (doors/side panels)

After use, the utility bars fit securely and neatly under the mounting surface, thus giving the operator more space to move around.

Packs of	Model No. CP
1 set	**6514.200**

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.





Fold-out tray

for keyboard and mouse
For installation in
- 600 and 800 mm wide doors
- 482.6 mm (19″) swing frames and enclosures

Standard double-bit lock insert which may be exchanged for lock inserts 27 mm, version A, see page 888 and for lock cylinder SZ 2571.000, see page 889.

Material:
Cover: Sheet steel
Side parts: Cast aluminium
Tray: Extruded aluminium section

Surface finish:
Cover, side parts: RAL 7035
Tray: Natural anodised

Protection category:
IP 55 to EN 60 529/10.91

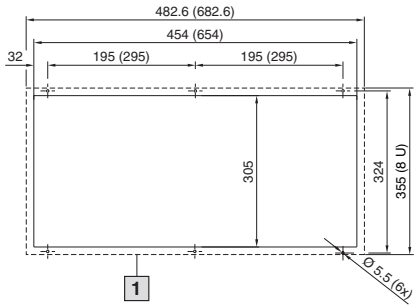
Accessories:

Mousepad support, pull-out, see page 1056.

Rittal service:

Other widths available on request.

Mounting cutout



1 Contact surface

For door width mm	External dimensions WHD mm	Installation depth mm	Max. keyboard size WHD mm	Model No. SZ
600	482.6 (19″) x 355 (8 U) x 126	93	405 x 50 x 250 405 x 50 x 195[1)]	**2379.600**
800	682.6 x 355 (8 U) x 126	93	605 x 50 x 250 605 x 50 x 195[1)] 475[1)] x 50 x 250	**2379.800**

[1)] Maximum keyboard size with holder for mouse.



Panel for monitors

for monitors with screen diagonals of up to 17″
For mounting between 482.6 mm (19″) mounting angles. Fitted with safety glass.

Material:
Sheet steel

Colour:
RAL 7035

U	Model No. DK
9	**7300.135**

Extended delivery times.

Monitors, keyboards



Keyboard rack, 482.6 mm (19″)

- 482.6 mm (19″) rack-mounted chassis 1 U, 430 mm deep
- Prepared for the installation of 482.6 mm (19″) keyboards with touchpad or trackball with the following dimensions:
  max. height: 39 mm,
  max. width: 417 mm,
  max. depth: 210 mm
- Solid, lockable front
- Telescopic slides with integral clamp
- Prepared for installation of a mousepad

Material:
Sheet steel

Packs of	Model No. RP
1	**3659.520**

Colour:
RAL 7035

Supply includes:
482.6 mm (19″) chassis **excluding keyboard,**
connection cable,
mounting bracket for 800 and 900 mm enclosure depth,
assembly parts.



Mousepad

for keyboard drawer

- For optional mounting on the left, right or front of the keyboard drawer (fold-away design)
- Maybe folded into the keyboard drawer after use
- Only suitable for use in conjunction with 482.6 mm (19″) keyboards with a total height of max. 39 mm (Model No. RP 3659.590)

Material:
Sheet steel

Packs of	Assembly	Model No. RP
1	right/left	**3659.620**
1	front	**3659.630**

Colour:
RAL 7035

Supply includes:
Assembly parts.



Keyboard, 482.6 mm (19″)

- Keyboard for installation in the 482.6 mm (19″) keyboard drawer in conjunction with the touch-pad mouse
- German keyboard layout
- 38.9 mm high keys facilitate installation in 1 U keyboard drawers
- PS/2 connector
- IP 20
- Touch-sensitive technology
- W x H x D = 405 x 38.9 x 180 mm
- 105 keys (including WIN 95 keys)
- Actuating force 0.6 N/4.0 mm
- Operating temperature: 0°C to 50°C

Packs of	Model No. RP
1	**3659.590**

Supply includes:
Connection cable.



TFT display, 15″

- 482.6 mm (19″) front panel 7 U, RAL 7035
- TFT LCD 15.1″
- Automatic brightness control depending on the ambient light
- Anti-reflection coated safety glass screen
- Brightness: 250 cd/m²
- On-screen display
- Colours: 16.7 million
- Power pack: Input voltage: 100 – 240 V AC, output: 12 V DC/3.75 A
- OSD membrane keyboard and infrared sensor
- VGA + SVGA, non-interlaced
- Maximum resolution 1024 x 768 pixels
- Contrast ratio: 300 : 1
- Viewing angle: 160° (H+V)
- Video input 15-pin D-SUB (analog RGB)
- RS 232 monitor interface

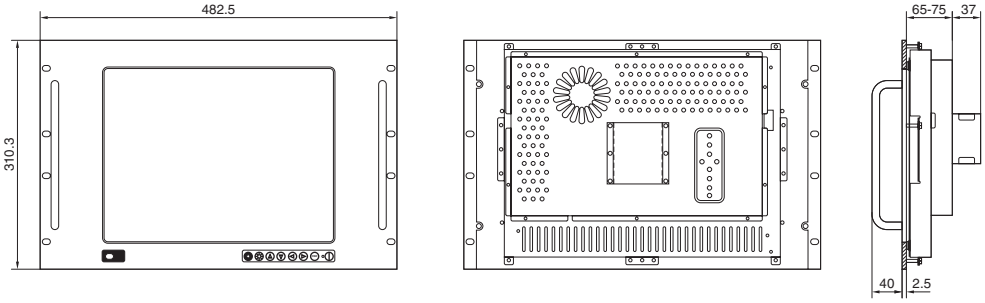
Packs of	Model No. RP
1	**3659.530**

Material:
Front panel: Aluminium, powder-coated

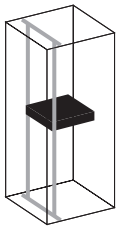
Colour:
RAL 7035

Protection category:
Tested to EN 60 950 and
EMC directive 89/336/EEC.

Note:
Depth varies according to the display design (protective glass, touchscreen etc.).







Keyboard drawer 2 U

for one 482.6 mm (19″) attachment level
For keyboards up to 430 mm wide and 250 mm deep with the front panel folded over.

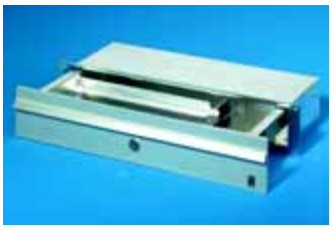
Material:
Sheet steel with aluminium front

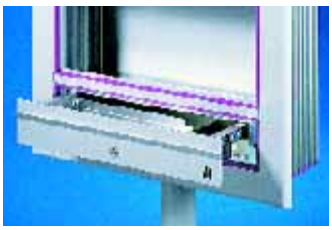
Colour:
RAL 7035

Supply includes:
Lockable drawer with handles,
folding front,
pull-out mousepad,
mouse support,
practical cable entry
and strain relief.

Height	Model No. DK
2 U	**7281.035**

To order in RAL 7032, please add the extension .000 to the Model No.
Delivery times available on request.
Installation depth: 390 mm.





Drawer 482.6 mm (19″)/2 U

for keyboard and mouse

For installation in:
- VIP 6000 command panel[1] (all installation depths **1** to **9**, see page 161).
- Optipanel Command Panel[1] (installation depth **3** = 150 mm, see page 173).
- Any sufficiently large surface. (e.g. door, side panel).
- 482.6 mm (19″) systems.

Suitable for
- Accommodation of keyboards up to a maximum of 390 x 32 x 139 mm.
- Support of standard commercially available mouse or trackball.

Design:
- Drawer:
  – with stay
- Font panel
  – with security lock (lock no. 12321)
  – with handle strip

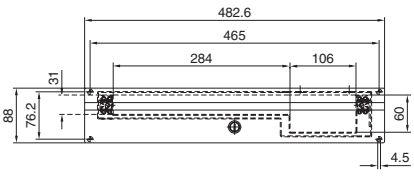
Width mm	Height	Depth mm	Model No. CP
482.6 (19″)	2 U	150	**6002.000**

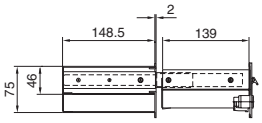
Material:
Drawer housing:
Sheet steel, zinc-plated, passivated
Drawer and front panel:
Aluminium, natural anodised.

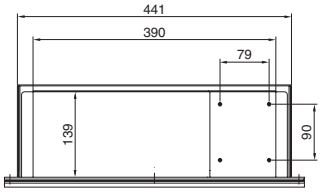
Supply includes:
Assembly parts for installation in
VIP 6000/Optipanel command panels.

Also required:

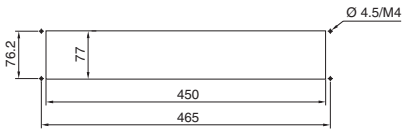
[1] For sub-division of the operating front:
- With VIP 6000, a cross member (recommended) or sealing bar is required (see page 162, version 3.2).
  At the same time, the end trim (see page 163, version 3.4) must be selected.
- With Optipanel, a cross member (see page 174, version 2.2) is required.



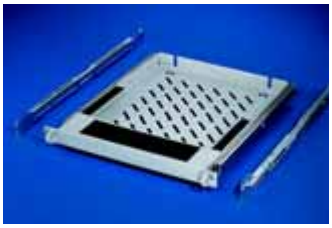




Mounting cutout
(for installation in surfaces)



Drawers for keyboards



Drawer 482.6 mm (19″)

for keyboard
For attaching to the 482.6 mm (19″) mounting angles front and rear. Suitable for standard keyboards larger than 482.6 mm (19″). Keyboard support with non-slip base, plus wrist support. Depth-variable installation from 610 – 950 mm. Clearance opening W x H x D:
408 x 40 x 550 mm.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts, excluding keyboard..

Packs of	Model No. DK
1	**7063.888**





Keyboard drawer 1 U

for 482.6 mm (19″) attachment level
This space-saving keyboard drawer is screw-fastened to the front and rear 482.6 mm (19″) attachment level. The installation spacing is infinitely adjustable from 460 – 800 mm.
It is fully extendible, lockable, with strain relief and hinged cable support.
The drawer is suitable to accommodate 482.6 mm (19″) keyboards.

Interior dimensions:
W x H x D approx. 420 x 40 x 220 mm

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts, excluding keyboard.

Distance between levels mm	Model No. DK
460 – 800	**7281.200**

Accessories:

482.6 mm (19″) long-stroke keyboard with numeric keypad and touchpad, connection cable (approx. 1.15 m) and PS/2 connector, colour RAL 7035.

W x H x D mm	Keyboard layout	Model No. DK
415 x 37 x 193	German	**9004.400**
	US English	**9004.402**
	French	**9004.403**
	Spanish	**9004.404**
	Finnish	**9004.406**
	Swedish	**9004.407**



Drawer for keyboard

For a max. keyboard width of 500 mm.
Drawer with mousepad at the front.
A high level of protection is retained, even with the flap open.

Material:
Sheet steel

Colour:
RAL 7035

Protection category:
IP 55 to EN 60 529/10.91,
Complies with NEMA 12.

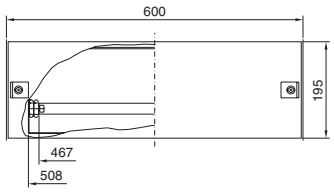
Supply includes:
Assembly parts.

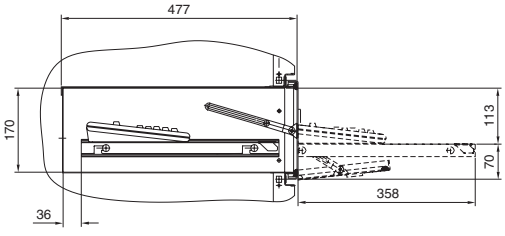
Note:
Only suitable for installation without mounting plate.

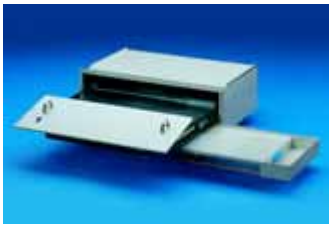
For universal console AP 2694.500	Model No. AP
	4757.500

Accessories:

Standard double-bit lock insert may be exchanged for 27 mm lock inserts, version A, see page 888.
Plastic handles, version B, see page 886.









Drawer for keyboard and mouse

with mousepad support

For installation in:
- VIP 6000 Command Panel[1)] (installation depth **4**, **6** or **8**, see page 161, 3.1)
- Any sufficiently large surface (e.g. door, side panel)

Suitable for accommodating
- Keyboards up to a maximum of 460 x 42 x 170 mm
- IP 67 mouse and mousepad
- Standard mouse and mousepad

Design:
- Drawer and enclosure
  – with side pull-out mousepad support and tray
- Font panel
  – with 3 mm double-bit lock insert
  – folds out as a wrist support

Width mm	Height	Depth mm	Model No. CP
482.6 (19″)	3.5 U	261	**6003.000**

Material:
Keyboard and drawer: Sheet steel
Front panel: Aluminium, natural anodised.

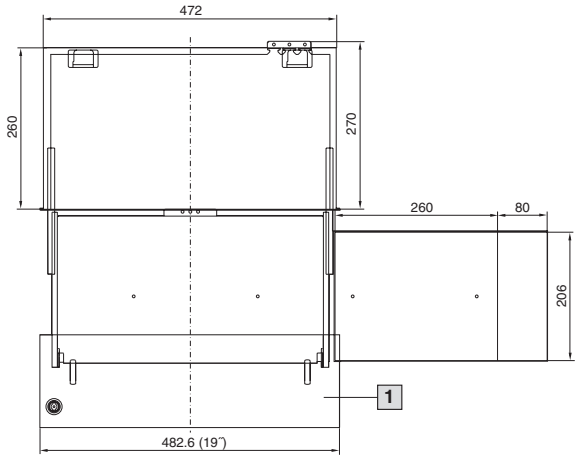
Supply includes:
Assembly parts for installation in VIP 6000 Command Panel.

Also required:

[1)] For sub-division of the operating front a cross member (see page 162, version 3.2) is required. At the same time, the end trim (see page 163, version 3.4) must be selected.

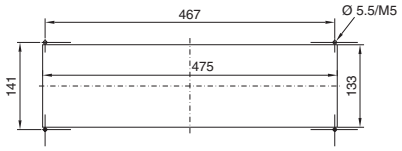
Accessories:

Mouse, mousepad IP 67, see page 1054.
Standard double-bit lock insert may be exchanged for 27 mm lock insert, version A, see page 888.



1 Front trim panel

Mounting cutout
for installation in surfaces







Drawer for keyboard and mouse

Bottom-mounting
Lockable with mousepad support, may be extended to the left and right, and hinged cable support for safe, pinch-free cable routing. Sealed cable entry for 3 cables (up to Ø 6 mm).

For mounting beneath
- Worktop
- Sufficiently large surfaces

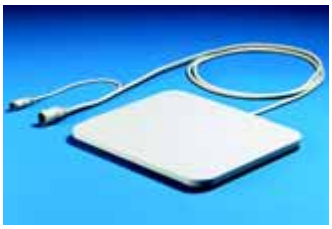
Material:
Drawer housing:
Sheet steel, spray-finished in RAL 7035.
Drawer trim panel:
Plastic to UL 94-V0
in RAL 7035, 7015, 9006.

Protection category:
IP 55 to EN 60 529/10.91,
complies with NEMA 12.

Packs of	Model No. IW
1	**6902.910**

Mouse, mousepad





Mouse, mousepad IP 67

An ideal input device for all areas where heavy contamination is unavoidable, or where exceptional standards of hygiene are required, for example in the food industry or medical technology.
Because the mouse detects positions inductively, there is no need for a trackball, and the housing can be completely sealed with a protective film. This achieves a high protection category of IP 67. The mouse will only work in conjunction with the inductive mousepad IP 67.

Technical specifications:
PS/2 connection
Temperature range: 0°C to +55°C
Power consumption: < 20 mA
Cable lengths: 2000 mm

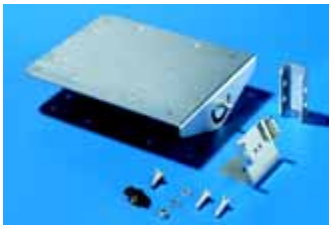
Material:
Mousepad: Plastic PBT
Mouse: Plastic ABS 9006.

Accessories:

Connector gland (SZ 2400.500),
see page 975.
Support for mousepad,
see page 1054.

	W x H x D mm	Colour RAL	Model No. SM
Inductive mousepad IP 67 PS/2 interface	250 x 205 x 15	similar to 7035	**6444.500[1)]**
Mouse IP 67 for mousepad SM 6444.500	–	similar to 7032	**6445.000**

[1)] German patent no. 198 51 619







Support for mousepad

for command panels and surfaces
To fit IP 67 mousepad SM 6444.500.
The angle of the mousepad support is individually adjustable.
Two holes are needed on the enclosure for attachment purposes.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Weight kg	Model No. SM
1.0	**2381.000**

Also required:

Vertical handle set for wide frame (for mounting on VIP 6000 with wide front frame),
see page 1033.

Accessories:

Holder for mouse,
see page 1055.
Mouse, mousepad IP 67,
see page 1054.





Holder for mouse

To match the mousepad support and for secure accommodation of a standard mouse or the IP 67 mouse SM 6445.000.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Weight kg	Model No. SM
0.3	**2382.000**

Also required:

Support for mousepad,
see page 1054.





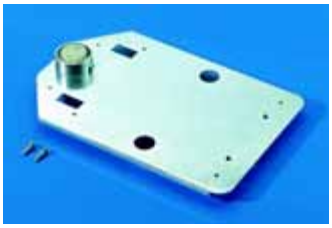
Mousepad, passive

For installing in PC enclosures based on ES.
Pulls out to the front or on the left or right.

For folding keyboard of PC enclosure/case	Model No. PC
4603.920 4617.920	**4613.000**

German patent no. 43 30 926

For drawer of PC enclosure/case	Model No. PC
4603.603 4603.913 4609.703 4617.703	**4614.000**





Support for mousepad, vertically hinged

For mounting on the left/right, beneath support for keyboards. Latches home automatically, both when retracted and extended.
With attachment holes for:
- Mousepad IP 67 (SM 6444.500)
- Mouse holder (SM 2382.000) to accommodate the IP 67 mouse.

With cutouts for cable routing and holes for attachment via cable ties, for fast assembly (SZ 2597.000).

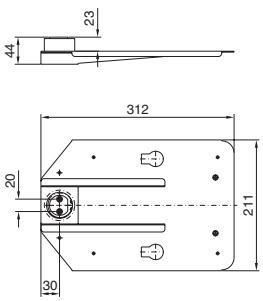
Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. SM
1	**2383.020**

Accessories:

Mouse, mousepad IP 67,
see page 1054.
Holder for mouse,
see page 1055.
Cable ties,
see page 982.



Mobile workstation



Support for mousepad, pull-out

with mouse holder

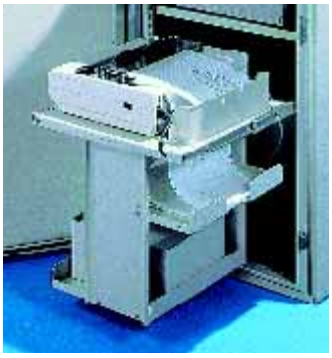
For screw-fastening into the fold-out tray SZ 2379.600/SZ 2379.800. To fit all standard mousepads up to 250 x 205 mm.

Note:
When installing the fold-out tray into the swing frame, the swing frame must be open in order to pull the mousepad out of the fold-out tray.

Packs of	Model No. SZ
1 set	**2379.900**

Accessories:

Mouse, mousepad IP 67,
see page 1054.



Printer rack

For installation in enclosures with
- 600 mm width
- 600 and 800 mm depth

Load capacity: 25 kg
Surface for printer (A4) 375 x 471 mm.

Material:
Sheet steel

Colour:
RAL 7035

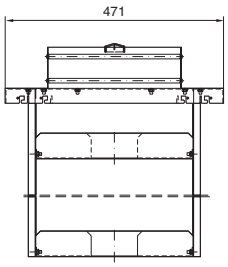
Supply includes:
Shelf for printer with telescopic slides,
paper tray and paper guide,
base for paper supply,
hinged cable support.

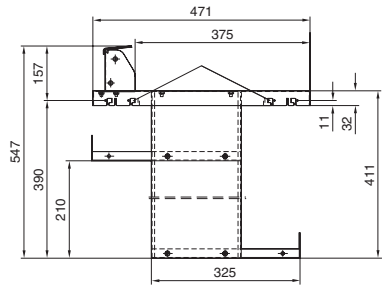
Packs of	Model No. PS
1	**4635.000**

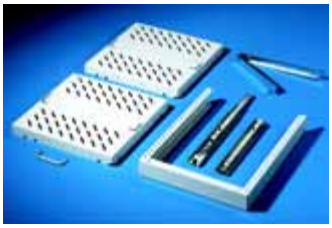
German patent no. 41 08 379
IR reg. design no. DM/016 439
with validity for BE, CH, DE, ES, FR, IT, LU, NL
French patent no. 2 660 534
GB patent no. 2 243 069

Also required:

For enclosure depth mm	For installation in TS, PC based on TS, 2 punched sections with mounting flanges, see page 921	ES, PC based on ES, 2 punched sections without mounting flanges, see page 925
600	TS 8612.060	PS 4376.000
800	TS 8612.080	PS 4377.000









Mobile workstation

for tower PCs, printers, UPS, servers etc.

Load capacity: 75 kg

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
1 mounting frame,
2 shelves, top/bottom,
1 set of telescopic slides,
1 handle,
1 cable support, hinged,
assembly parts.

Packs of	Model No. PC
1	**4641.000**

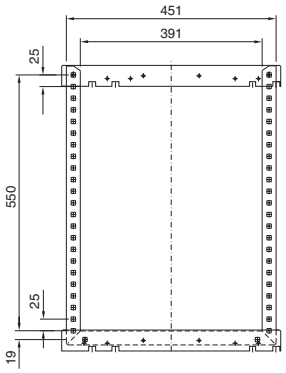
Also required:

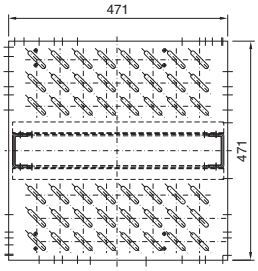
For enclosure depth mm	For installation in TS, PC based on TS, IW 2 punched sections with mounting flanges, see page 921	For installation in ES, PC based on ES 2 punched sections without mounting flanges[1], see page 925
600	TS 8612.060	PS 4376.000
800	TS 8612.080	PS 4377.000

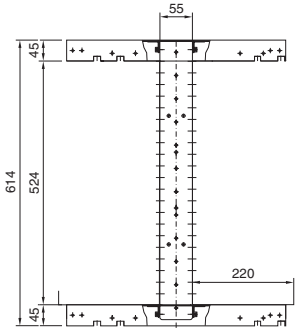
[1] plus:
4 support brackets, PS 4183.000, see page 933,
8 threaded blocks M6, PS 4162.000, see page 936,
8 screws M6, PS 2504.500, see page 937.

Accessories:

Fastening bolts DK 7115.000,
see page 953.
Shelf,
see page 1057.









Shelf

for mobile workstation
For additional equipment such as modems, power packs etc. or simply as a paper tray.
Installation heigth-adjustable on a 25 mm pitch pattern.

Material:
Sheet steel

Colour:
RAL 7035

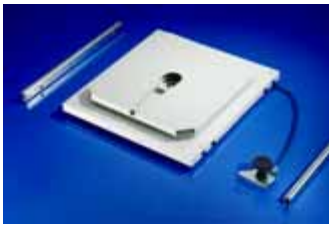
Supply includes:
Assembly parts.

Packs of	Model No. PC
1	**4642.000**

Accessories:

Fastening bolts DK 7115.000,
see page 953.

Printer accessories





Printer base, swivel

Operation of the printer for servicing purposes is possible, even in enclosures which are only accessible from the front.

Load capacity: 20 kg.
Surface for printer 340 x 360 mm.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Component shelf,
turntable with cable routing and stay,
telescopic slides.

To fit TS width x depth mm	Model No. IW
600 x 600	**6902.990**

Also required:

2 TS punched sections with mounting flages for enclosure depth of 600 mm,
see page 921.

Accessories:

Paper tray,
see page 1058.





Paper tray

for laser printers with rear output.
Printed pages are routed to the outside and collated. The door only needs to be opened for servicing purposes. This protects the printer against dust, humidity and theft. The paper tray may be mounted on surfaces with a width of 600 mm or more (e.g. door, side panel) and accommodates up to 20 pages of standard A4 paper.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Assembly parts.

Width x height x depth mm	Model No. IW
270 x 390 x 122	**6903.000**

Accessories:

Printer base, swivel,
see page 1058.

Rittal service:

Installation in doors and side panels on request.



Base

for tubular door frame
The space-saving alternative instead of component shelves to accommodate tower PCs (maximum 40 kg).
For screw-fastening to the tubular door frame of 600 mm wide enclosures based on TS.

Load capacity: 40 kg.

Material:
Sheet steel, spray-finished

Colour:
RAL 7015

Supply includes:
Retaining strap and assembly parts.

Width x height x depth mm	Model No. IW
495 x 159 x 230	**6902.950**

Also required:

Support strips for direct screw-fastening to the tubular door frame, see page 924.



Interface box

For secure accommodation for all common computer ports, 3½″ disk drives and sockets. The lockable metal cover provides a high mechanical load-bearing capacity, protects against unauthorised access and ensures an increased shielding effect for the installed equipment.

Modifications such as
- Other sizes
- Acrylic covers
- Cutouts for connectors etc.

are possible.

Material:
Frame:
Extruded aluminium section, powder-coated
Mounting tray:
Sheet steel, 1.5 mm, powder-coated
Flap:
Aluminium, 3.0 mm, natural anodised

Colour:
RAL 7035

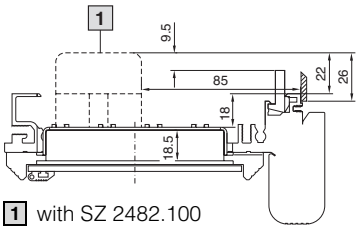
Supply includes:
Frame with hinged flap,
cam with security lock (No. 12321).
Mounting tray including seal and assembly parts.

Earthing-pin socket	Weight kg	Model No. SZ
Without	0.8	**2482.000**
With	0.8	**2482.100**

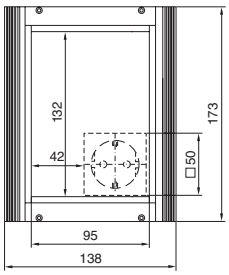
Rittal service:

Upon request, the interface box can be supplied with customer-specific cutouts, pre-installed in the operating housing. If required, please specify the desired treatment and installation position.

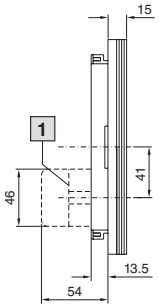
Mounting example in the VIP 6000:

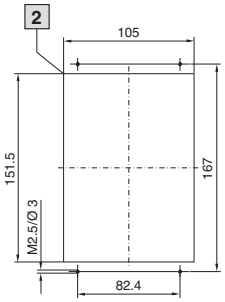


1 with SZ 2482.100
2 max. R3



Mounting cutout









Interface flap

The compact alternative to the interface box.
For secure accommodation of all standard sockets, computer ports, 3½″ or CD-ROM drives.
The cast aluminium flap ensures a high mechanical load-bearing capacity, and guards against unauthorised access.

For:
- Optipanel from D = 100 mm
- Any sufficiently large surface.

Standard double-bit insert may be exchanged for lock inserts, see page 881.

Material:
Flap: Cast aluminium, finely textured
Cover plate: Sheet steel 2 mm, zinc-plated, passivated

Colour:
RAL 7035

Protection category:
IP 65 to EN 60 529/10.91

Supply includes:
Seal and assembly parts.

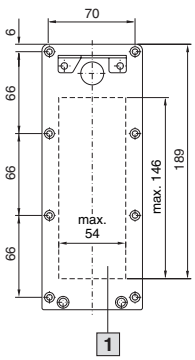
Packs of	Model No. SZ
1	**2482.200**

Note:
For side mounting in 100 mm deep Optipanels, a handle set (CP 6385.0XX, see page 1031), may be mounted, although not in the same place.

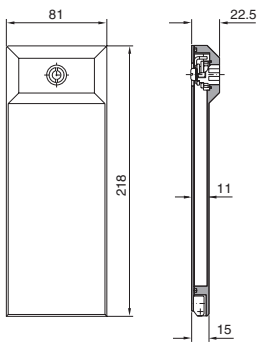
Rittal service:

Cutouts are possible in the cover plate and enclosure.
Available without cover plate on request.

View without flap



View with flap



1 Surface for interface cutouts

Planning/project management/selection



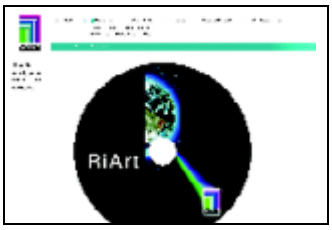
Rittal on the Internet

With innovations, product summaries, jobs and many other topics available on our homepage, Rittal's customers always have access to the very latest information. Product data, contract tender texts, dimensions and assembly instructions in Acrobat Reader format and demo versions of the Rittal software are available at any time for downloading from www.rittal.com. Want to order brochures via the Internet? No problem, with our special brochure request feature on our home-page. Rittal can also be contacted by e-mail.

New Internet services:
- Online college
- Online PDF of our product pages
- FAQs on our products

Extensive product search facilities

More detailed information can be found on the Internet.



RiArt

The electronic price list with product catalogue offers you:
- Data sheets in HTML, text and PDF format
- Excel price list
- DATANORM/ELDANORM component database
- Catalogues to eCl@ss/ETIM/BMEcat
- Shopping basket with Excel interface
- Component data for SV-Plan and EPLAN
- Contract tender texts
- DWG catalogue drawings
- Assembly instructions
- Quick climate calculation
- Software demo
- PDF pages from our latest brochures
- Accessory assignment

System requirements (minimum):
- Processor Pentium 233
- Internet Browser Version 4 or higher
- Adobe Acrobat Reader version 4 or above

Installation:
- Installation is not necessary. The program launches automatically when the CD is inserted.
- For a manual launch, click on the file microweb.exe.

Note:
Please order your free copy from **www.rittal.de**

German language only.



PlanIT 1.0

From Rittal's extensive range of products and solutions, we have compiled the information that is specifically relevant for the planning of IT enclosures, IT infrastructure and data centres.

The following applications are contained on this CD:
- Product overview
- Product search
- Documentation
- Enclosure monitoring software
- Drawings (VISIO)
- Brochures
- Contract tender texts (TXT, DOC, PDF, GAEB format)
- Contacts and contact deatils
- Lists of materials

In order to help you find your way around the CD, we have adapted the interface of the planning software to our website.

System requirements (minimum):
- Windows 98/NT/2000/XP
- Adobe Acrobat Reader version 4.x or above
- Visio

Note:
The software PlanIT 1.0 is sent free of charge on CD. Request from **info@rittal.de**

German language only.

Planning/project management/selection





Rittal SV-Plan

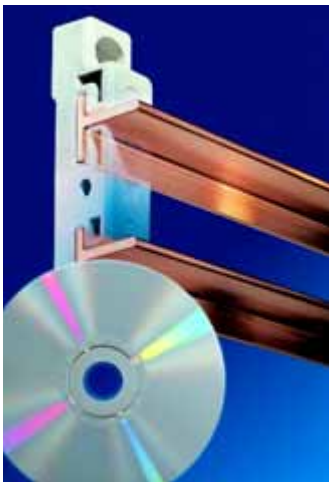
Rittal SV-Plan is an innovative tool for simple, time-saving project planning of Rittal SV busbar systems.
The network-compatible, multi-lingual software package includes the following functions:

- Planning certainty, thanks to logical allocation e.g. of standard commercially available power circuit-breakers to Rittal component adaptors.
- Detailed system and product information in the form of tender texts, product information, assembly instructions, CAD drawings etc.
- Integration of Rittal Power-Plan.
- Integration of a CAD interface based on Eplan View.
- Project documentation with calculations, parts lists and CAD system assembly drawing.
- Interfaces to all standard Windows applications such as Microsoft Word.
- Compatible with Eplan 5.

Supply includes	
CD-ROM	
Operating manual	
Language: German/English	
Model No. SV	**3020.100**

System requirements (minimum):

- Windows 95/98/NT/2000/XP
- RAM: 128 MB
- Hard disk capacity: at least 125 MB



Rittal Power-Plan

Rittal Power-Plan supports the calculation and documentation of busbar system assemblies with reference to the valid international test provisions. The network-compatible software provides a comprehensive database of power circuit-breakers.

The following calculations may be performed with Rittal Power-Plan:

- Testing the short-circuit resistance of the entire system assembly to IEC 60 865-1 or DIN VDE 0103.
- Testing the rated current load limit of the busbar system to DIN 43 671.
- Testing the heat loss of the entire system assembly, for D/NH fuse inserts to VDE 0636.
- Testing all data inputs for plausibility with corresponding, clear error messages.
- Calculations/documentation in accordance with IEC 60 439-1/EN 60 439 and DIN VDE 0660 part 500.

Supply includes	
CD-ROM	
Operating manual	
Language: German/English	
Model No. SV	**3020.000**

System requirements (minimum):

- Windows 95/98 or NT
- RAM: 8 MB
- Memory space required: 20 MB



ISV order software

for distribution enclosures

The ISV order software gives peace of mind when preparing a bill of materials, thanks to its logic. Specifically, this means that all the essential and optional accessory components are available to choose from a broad selection, and can be added to your shopping basket with a click of the mouse. Drawings support the user when selecting components.

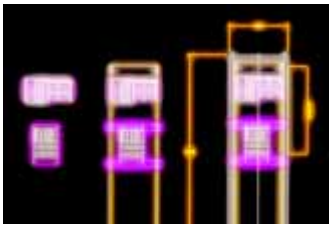
System requirements (minimum):

- Windows 98/ME/NT/2000/XP
- Pentium 90
- RAM: 16 MB
- Memory space required: 11 MB
- Resolution 800 x 600 pixels or higher
- Internet Explorer 4.0 or higher
- For the use of all functions, MS Excel and a CAD program with DXF import function are also required.

Language: German/English

Note:
Please download free of charge from
www.rittal.com/Service/Downloads/Software

Planning/project management/selection



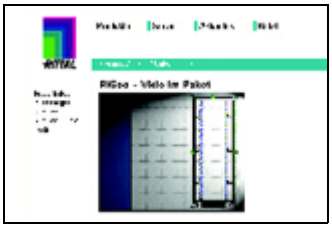
RiGeo

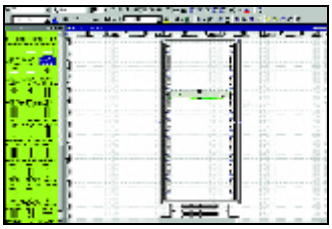
From the design into the CNC machine
With the RiGeo CD-ROM, Rittal offers an extensive library of geometry data for virtually all Rittal products in a variety of views and data formats. The files on the CD-ROM are divided into directories based on individual product groups to simplify the search process. It also supports a database search function.
Installation on the hard disk is not necessary, since the data may be read directly from the CD-ROM into your CAD system.

Features in brief:
- No unnecessary, memory-consuming storage on the hard disk.
- Simple positioning of accessory components.
- The correct format to suit every application.
- Representation to scale, suitable for CNC machining.

Supply includes	
CD-ROM	
Language: German/English/French/Dutch	
Model No. SZ	**2406.100**

System requirements (minimum):
- AutoCAD from Release 12 or LT for DOS or Windows or CAD with DXF interface





RiGeo + Visio package

The benefit to you:
The combination of the Visio program and the drawing library RiGeo offers perfect documentation of your projects in the shortest possible time.

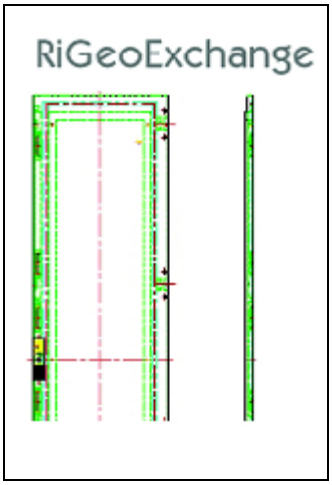
Features in brief:
- Carry out design and project planning work quickly and easily.
- No lengthy training needed.
- All Visio and DXF drawings are readily integrated.

Supply includes:
The package comprises:
- Several thousand DWG and DXF drawings of Rittal components.
- Visio drawings of TS network enclosures and accessories.
- The CAD drawing program “Visio 2000 Technical International Edition (English)”.

Drawing library and program for the preparation of precise technical drawings
With the drawing program “Visio 2000 Technical Edition”, technicians and engineers have at their disposal all the drawing tools needed to produce precise two-dimensional drawings and diagrams. Existing CAD drawings may be inserted into Visio 2000 Technical Edition drawings. You can cut and move the drawings, and show or mask out individual layers.

Supply includes	
CD-ROM	
Language: German/English	
Model No. SZ	**7700.200**

System requirements (minimum):
- Pentium 166 MHz, 64 MB RAM
- 125 MB free memory on the hard disk for Visio
- 400 MB free space for RiGeo



RiGeo Exchange

CAD components library for data exchange
The software offers significant benefits for all designers and technicians when preparing technical drawings of the Rittal enclosure and case systems AE, KL and TS.
- Rapid access to all essential drawings. RiGeo Exchange will immediately make the required detailed drawings available in the CAD file formats DWG and DXF for all standard CAD programs.
- Perfect generation of individual designs. Our customers receive all the necessary details to position cutouts and holes correctly on the electronic drawing board.
- Shorter delivery times. Depending on the type of modifications, drawing data may be forwarded directly into our machines for laser-cutting, nibbling and punching.

Note:
The software RiGeo Exchange is sent free of charge on CD.
Order your copy at **info@rittal.com**



RiDiag II

RiDiag II is a tool for diagnosing the operating behaviour of Comfort controller-regulated cooling units. By connecting a PC, it is possible to retrieve error messages, temperatures and capacity utilisation levels of the cooling units which are stored in the Comfort controller. The system includes integrated temperature measurement from four sensors in the cooling unit, and also features graphical representation of the temperature development over time.

Supply includes	
CD-ROM	
Connection cable	
Language: German/English/Italian	
Model No. SZ	**3159.100**

System requirements (minimum):
- Windows 95/98/2000/NT



CMC-TC Manager

For detailed information, see page 789.

Note:
The CMC-TC Manager may be downloaded free of charge from the Internet at **www.rittal.com, www.cmc-tc.com**.



CMC-TC Configurator

For detailed information, see page 788.

Note:
The CMC-TC Configurator may be downloaded free of charge from the Internet at **www.rittal.com, www.cmc-tc.com**.



Therm Software

Rittal Therm is a calculation program for climate control of enclosures.
All electrical and electronic components have a certain power loss which is dissipated to the environment in the form of heat. Because an increasing number of components are now being housed in ever smaller spaces, the heat produced can soon reach levels which are harmful to electronic components and may severely curtail their useful lives.
The Therm software package takes care of the complex calculation of climate control requirements. A user-friendly interface guides the operator to the most suitable, correctly dimensioned climate control component. All evaluations are closely based on the requirements of IEC/TR 60 890 AMD 1/02.95 and DIN3168 for enclosure cooling units.
Rittal Therm contains 15 languages.

Supply includes	
CD-ROM	
Model No. SK	**3121.000**

System requirements (minimum):
- Windows 95/98/ME/NT/2000/XP
- Adobe Acrobat Reader version 4.x or above

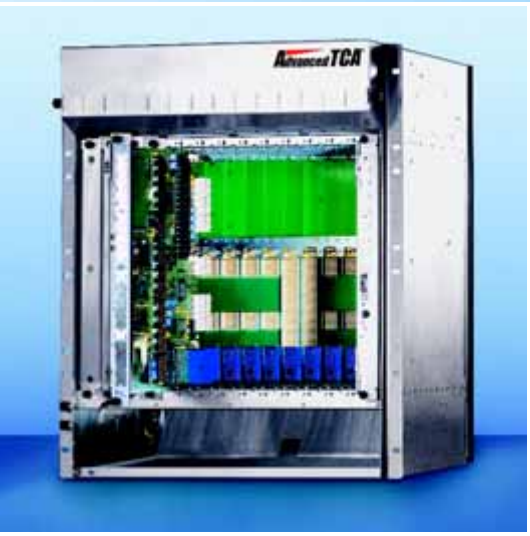
Note:
Your 30-day trial version may be downloaded free of charge from **www.rittal.com**

System integration

Rittal IT solutions – a broad spectrum of services for individual, complete packages.

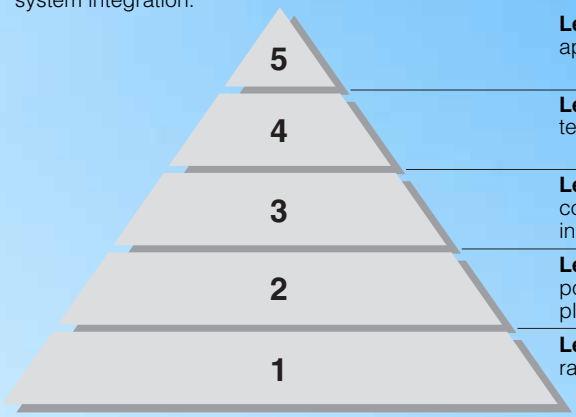
Thanks to **modular, mass-produced system components,** Rittal is able to achieve the optimum individual solution for every client, **quickly and cost-effectively.** Complete solutions, with no ifs or buts.

The extensive Rittal range, including climate control components, control and monitoring technology, system accessories and hardware components such as monitors and keyboards, is available for the configuration of individual solutions. **The benefits of system integration are as follows:** Only one project partner, significantly reduced planning and assembly work, and minimal logistics and procurement input. Rittal IT solutions – Simple and complete.



Rittal system integration up to Level 4

This is the cumulative result of extensive in-depth consultations and precision planning. For example, with climate control, power supply and security management through to Level 4 system integration.



Level 5: Level 4 with I/O and application software, tested

Level 4: Level 3 with integral boards, tested

Level 3: Integration, wiring of various components (e.g. MPS systems including backplane, power pack)

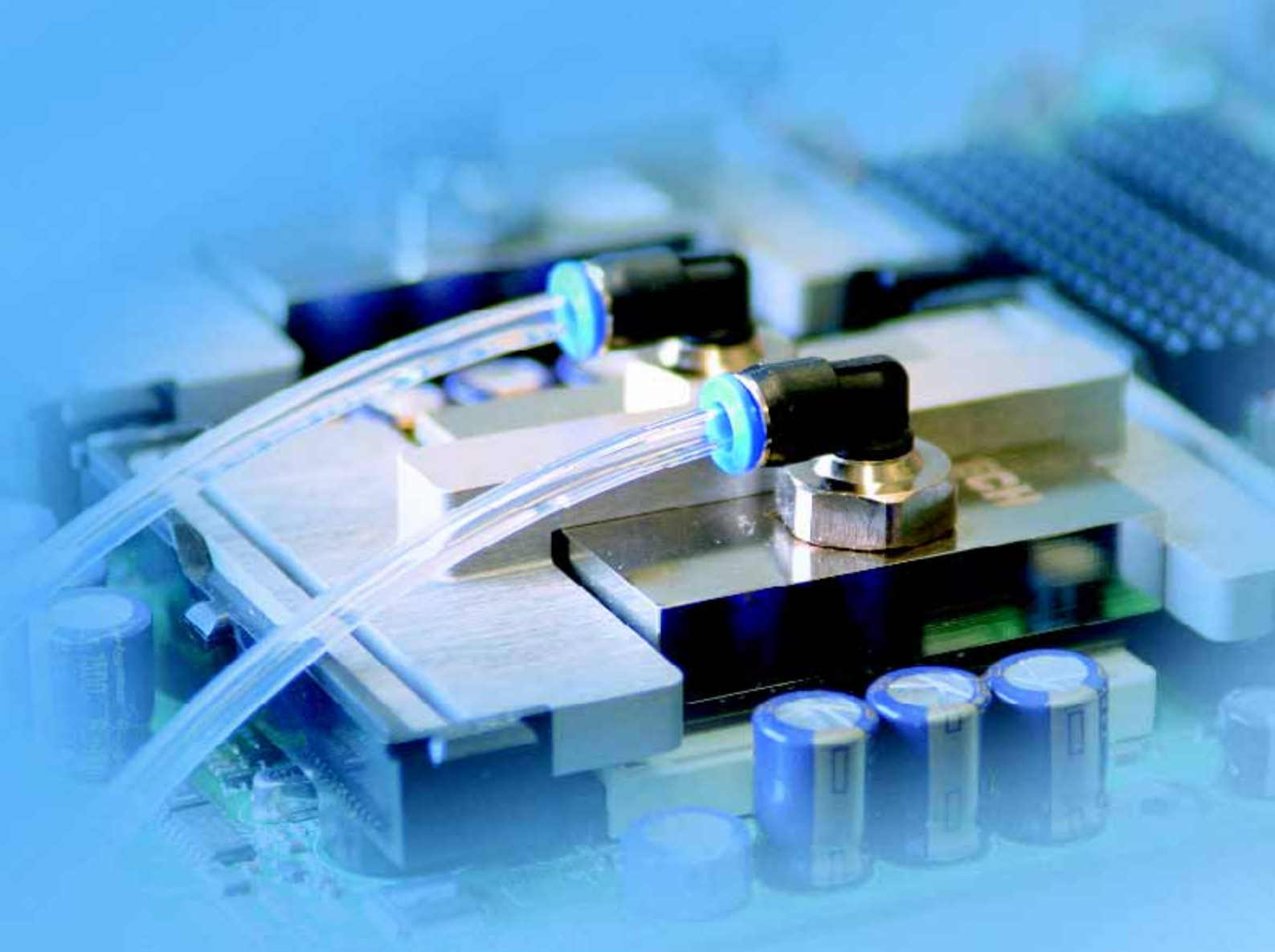
Level 2: Pre-configuration, population (e.g. subracks, backplanes, front panels)

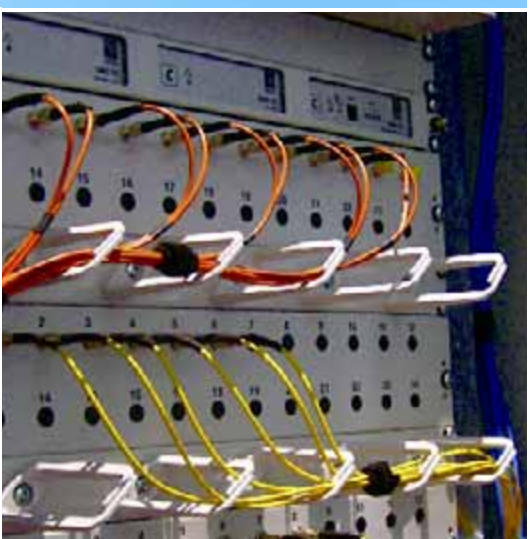
Level 1: Components (e.g. guide rails, connectors, etc.)

The complete Rittal IT solutions know-how for products and services is a coordinated, integrative system. It comprises advice, planning, prototype construction, individual production and assembly, as well as distribution tailored to customer requirements.











To suit your applications

Rittal views every customer requirement as a challenge. The **extensive product portfolio** with the matching system accessories and the **comprehensive range of services ensures that your requirements** are met.

2



3



4



Top quality ex-works

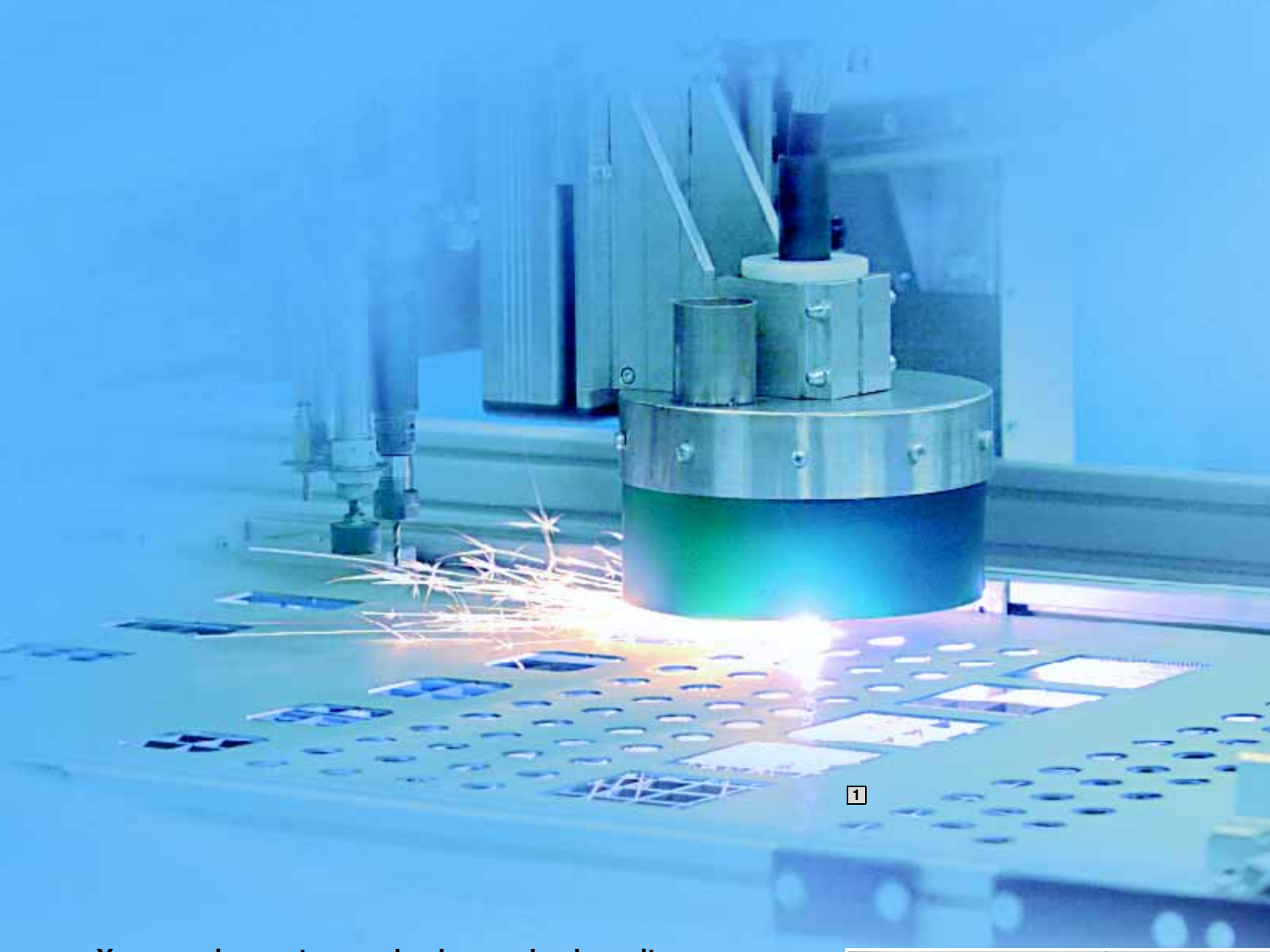
Rittal combines mass production with customisation in a variety of ways, to your benefit.

1 **Mass-produced individuality**
Cutouts and holes are made in the factory, prior to surface coating. The advantage: Unrestricted corrosion resistance.

2 Modified **dimensions**
With the Optipanel command panel, individual sizes come as standard.
Special sizes can also be produced for our other product series.

3 **Mounting of accessories**
The comprehensive range of Rittal system accessories and assembly ex-works offer cost advantages.

4 **Project-specific production**
...such as this rack for mobile railway technology.



Your requirements can also be resolved on site

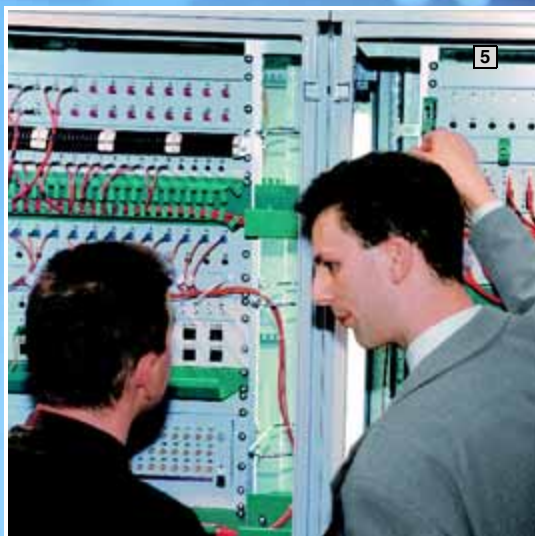
We put our good advice into practice. Impressive solutions, achieved with partners in your proximity. Availability and service combine to create convincing results. Fast and cost-effective.

5 Advice, exhibitions, training
Get your product information hands-on! Discover new routes to practical, inexpensive solutions.

6 Preparing cutouts
Cutouts and drilled holes for climate control components, switches, instruments and monitors. Take the easy option.

7 Plug and play with system accessories
Opt for the ready-made solution. Opt to install base/plinths, side panels, fan-and-filter units, lights, punched sections, earth rails, CMC monitoring systems and many other modules from our extensive range of accessories.

This service offers substantial time and money savings.









1 **Herborn** is the collation point for outstanding ideas from all the world's markets, as well as being our research and development site.
Compact enclosures are also produced in Herborn.

2 **Rittershausen –** Rittal's birthplace, and the production site for all large enclosure systems. New techniques have been developed here for manufacturing the "ri-volutionary" profile of the new Top enclosure system TS 8, the system platform for a broad, future-oriented application range.

3 The factory in **Burbach** concentrates on the production of large enclosures (free-standing enclosures and bayed systems) and accessory components.







Rittal in Germany

Rittal draws on the technological expertise of entire regions. At the heart of Rittal's success are innovations consistently tailored to market requirements, encompassing the product range, the production techniques and our services. Specialist expertise is concentrated at each of our sites, using state-of-the-art production techniques. Each day, we produced thousands of products whose quality and perfection are a constant source of delight to our customers worldwide.

4 Climate control is a decisive safety factor in modern factory automation. In order to meet these growing requirements, the Rittal climate control factory in **Rennerod** has been fitted according to the very latest criteria.

5 Rittal **Wissenbach** specialises in the production of stainless steel enclosures and cases. The requirement profiles are corrosion protection and hygiene – particularly for the chemicals and food production industries.

6 Rittal **Bad Köstritz** utilises its knowledge of steel processing for the versatile components of enclosure interior installation. Customer-specific solutions are also realised here.









7 The new Rittal logistics centre in **Haiger** boasts an ideal location, with excellent motorway and rail links. CS Outdoor enclosures, with an emphasis on mobile communications applications, are developed and produced here.

Rittal in Asia and Australia

China is a key market for Rittal. The domestic market is booming, the regional proximity to Japan also offers a host of benefits, and the presence of multinational companies is constantly growing. For this reason, we also manufacture in China according to popular international standards, in one of the most modern enclosure and case production plants in the world.

The Indian economy is likewise showing impressive growth rates. In order to ensure that products are available within the shortest possible time, we have been producing enclosures and climate control components to international standards in India since 1997, for distribution throughout Asia and Australia.

1





1 Since November 2000, Rittal **Shanghai, China** has supplied the Chinese market, which already has a successfully established distribution network. Apart from industrial enclosures and cases, the focus is also on products for the IT market.

2 At the Rittal production site in **Doddaballapur, India** standardised enclosures and cases are mass-produced for the large Asian market. Here too, Rittal offers its renowned international customer service, as well as local advice and expertise.



3 Since 1998, a Rittal subsidiary in **Japan** has been offering customised solution diversity. The modification centre with state-of-the-art machinery and a flexible assembly team achieves customised requirements with speed and perfection, as well as offering integration of system accessories. Four locations with more than 6000 m^2 of storage space ensure market proximity and availability.

4 At the modification centre in Rittal **Australia**, mechanical modifications are carried out, and special panels and spray finishes are produced. These services are a perfect representation of the Rittal concept, “individual solutions on the basis of standard modules”.



Rittal in Europe and the USA

Europe: In Plymouth, England, the main focus is on enclosure technologies for electronics. Effective cooling is the theme of our plant in Valeggio, Italy. There, recooling systems with cooling outputs of up to 172 kW leave the factory, either as standard products or manufactured to individual specifications. With its favourable location, the Ertop plant in France supplies high-tech application sectors with packaging products. Meanwhile, in the USA: State-of-the-art, sales-oriented production plants in Urbana and Springfield serve the markets on the American continent. Here, the emphasis is on speed and meeting customer-specific requirements.

1 Rittal products for modern electronic packaging leave the Rittal plant in **Plymouth,** England for distribution around the world.

2 System climate control is the theme of the Rittal plant in **Valeggio,** Italy.
In 2003 a brand new production line commenced operation, producing recooling systems, cooling units, heat exchangers and fan-and-filter units on an area of 9500 m^2. One particular strength is the production of customised recooling systems.

3 On a production and administration site of 8700 m^2, products for discerning applications are manufactured, as well as providing a comprehensive customer service. Integral 482.6 mm (19″) solutions and enclosures for the aviation and aerospace industries are just some of the specialities of the Rittal plant in **Ertop,** France.

4 The Rittal production and distribution centre at **Springfield,** USA serves the entire American market with modern, sales-oriented production and distribution control.

5 Rittal's largest distribution and production site outside of Europe is the plant in **Urbana,** USA. Here, predominantly large enclosures, PC enclosure systems and Top-Therm cooling units are produced on a site of around 20000 m^2. The affiliated logistics centre serves the entire US market.









5



4



To ensure a perfect solution, the final element needed is **technical background information.** Here, we supplement the order information with detailed drawings, load curves, parts lists and performance diagrams. Additional **information and download options** such as approvals, CAD drawings or assembly instructions are available from **www.rittal.com.**

The CD-ROM has the same content as the Catalogue – with added user-friendliness. Cross-references help you to arrive quickly at the desired solution.

What is more, whilst online, any Model Number will take you directly to further information in the Rittal database on the Internet.

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Surface protection

The triple treatment of outer surfaces – phosphating, electrophoretic dipcoat-priming and textured powder-coating – provides optimum corrosion protection for enclosures such as TS, AE, KL. In order to ensure optimum corrosion protection in all climatic zones, the materials aluminium or zinc-plated metal with subsequent zinc phosphating and powder-coating are used for outdoor enclosures.

The standard coating is resistant to:

- Mineral oils
- Lubricants
- Machining emulsions
- Solvent (briefly e.g. for cleaning)
- Weak acids and alkalines.

This has been tested and confirmed by various independent test institutes.

Quality is ensured by continuous process monitoring.

Priming or powder coating suitable for overpainting

After careful cleaning of the surface, the standard coating may be overpainted with:

- DD gloss paints
- Single and dual-component gloss paints
- Car repair paints
- Powder paints
- Water-based paints

If in doubt, perform a compatibility test. Always follow the paint manufacturer's instructions. When overpainting, take care not to exceed 180°C and a baking time of 15 minutes.

Special coatings

Tropical coating:
For high corrosion resistance in warm, damp climates, also suitable for outdoor and long-term use.

Chemical paint:
For the best possible resistance to organic and anorganic substances that can be achieved with paint.

Outdoor use of enclosures

In order to guarantee satisfactory long-term function of enclosures in outdoor use, the relevant environmental factors need to be taken into account.

These include:

- UV radiation, the corrosive action of air pollution, rain, icing, snow, wind or other factors in special climatic conditions.

Influence of weather conditions on the outer coating
It is necessary to ensure the UV and corrosion resistance of components exposed to the weather. A special 3-phase paint finish is suitable for outdoor siting in European climates. For outdoor siting of an enclosure, a rain canopy should be provided to protect the seal against permanent humidity and UV radiation.

Condensation inside the enclosure
Condensation needs to be prevented by means of appropriate measures, e.g. by venting or heating the enclosure.

Protection category
The enclosure is exposed to extreme weather conditions during outdoor use.
Long periods of rain, snow, ice, high winds and temperature fluctuations place particularly high demands on the enclosure sealing. Often, the protection category for outdoor weather exposure prescribed in DIN VDE 0100, part 737, point 5.2, IP X3 is insufficient to provide permanent protection of electrical installations.

Standard IEC 60 529 offers the option of labelling with the supplementary letter "W". Enclosures thus labelled are suitable for use in weather conditions agreed between the manufacturer and the user, and are equipped with additional protective features or techniques (e.g.: rain canopy, special spray finish, special colour shade).

The three-phase coating process for enclosures

Coating procedures	Technical properties	Technical specifications	
Degreasing, iron phosphating, rinsing	Used for passivation, as a temporary corrosion protection, and to improve paint adhesion.		
Anodic dipcoat priming	Even layer formation on all surfaces, edges and in cavities, which produces a high level of corrosion protection even at the assembly stage.	Coat thickness	approx. 20 µm
		Erichsen cupping DIN EN ISO 20 482	≥ 4 mm
		Buchholz hardness DIN EN ISO 2815	≥ 80
		Cross cutting DIN EN ISO 2409	Gt 0
	The primer is readily overpainted and free from heavy metals, chromate and silicone.		
Stove enamelling			
Textured powder coating	Powder coating is distinguished by a high level of mechanical resistance, excellent corrosion protection, good resistance to chemicals, temperature and weather, and its facility for decontamination.	Outer coating thickness	60 µm . . . 110 µm
		Erichsen cupping DIN EN ISO 20 482	≥ 4 mm
		Buchholz hardness DIN EN ISO 2815	≥ 80
		Cross cutting DIN EN ISO 2409	Gt 0
	The powder coating is readily overpainted and is free from heavy metals, chromate and silicone.		
Stove enamelling		Overall outer coating thickness	Ø 80 µm . . . 135 µm

Protection categories to IEC 60 529

The IP protection category is characterised by 2 numbers.

Example of protection category: e.g. IP 43:

Code letters	
IP	
First characteristic numeral	Second characteristic numeral
4	3

Degrees of protection for protection against contact and foreign bodies: First characteristic numeral			**Degrees of protection for protection against water: Second characteristic numeral**		
First characteristic numeral	Degree of protection		Second characteristic numeral	Degree of protection	
	Description	Definition		Description	Definition
1	Protected against solid foreign objects with a diameter of 50 mm and greater	The object probe, a sphere 50 mm in diameter, must not penetrate fully[1].	1	Protected against vertically falling water drops	Vertically falling drops shall have no harmful effects.
2	Protected against solid foreign objects with a diameter of 12.5 mm and greater	The object probe, a sphere 12.5 mm in diameter, must not penetrate fully[1]. The articulated test finger may penetrate up to its length of 80 mm, but adequate distance must be adhered to.	2	Protected against vertically falling water drops when the enclosure is tilted up to 15°	Vertically falling drops must not have any harmful effects when the enclosure is tilted up to 15° in both directions from the vertical.
3	Protected against solid foreign objects with a diameter of 2.5 mm and greater	The object probe, a sphere 2.5 mm in diameter, must not penetrate at all[1].	3	Protected against spraying water	Water sprayed at an angle of up to 60° on either side of the vertical must have no harmful effects.
4	Protected against solid foreign objects with a diameter of 1.0 mm and greater	The object probe, a sphere 1.0 mm in diameter, must not penetrate at all[1].	4	Protected against splashing water	Water splashed on the enclosure from every direction must not have any adverse effects.
5	Dust-protected	The ingress of dust is not fully prevented, but dust may not enter to such an extent as to impair satisfactory operation of the device or safety.	5	Protected against water jets	Water splashed on the enclosure from every direction must not have any adverse effects.
6	Dust-tight	No ingress of dust at a partial vacuum of 20 mbar inside the enclosure.	6	Protected against powerful water jets	Water splashed on the enclosure from every direction in a powerful jet must not have any adverse effects.
			7	Protected against the effects of temporary immersion in water	Water must not ingress to such an extent as to cause harmful effects when the enclosure is temporarily immersed in water under standardised pressure and time conditions.
			9K[2]	Water with high-pressure/steam-jet cleaning[2]	Water directed at the enclosure from every direction under greatly increased pressure must not have any adverse effects.

[1] The full diameter of the object probe must not pass through an opening of the enclosure.
[2] This test is not regulated by EN 60 529, but by DIN EN 40 050, part 9.
Extracts from BS EN 60 259: 1991 are reproduced with the permission of BSI. Complete editions of the standards can be obtained by post from BSI Customer Services, 889 Chiswick High Road, London W4 4AL

NEMA

The **N**ational **E**lectrical **M**anufacturers **A**ssociation (NEMA) is a standards organisation in Washington, USA, which publishes a number of technical standards but does not test or certify products itself.

The following NEMA classification outlines the protection of individuals from unintentional contact with equipment and the protection of an enclosure from external factors.

Further information on protection categories may be found on the Internet at: **www.rittal.com**

UL/NEMA Type	Intended use and description
1	Enclosures for use predominantly inside. Protection against the penetration of foreign bodies.
3	Enclosures for use predominantly inside. Protection against the penetration of solid bodies, protection against the ingress of rain and dust and damage caused by icing.
3R	Enclosures for use predominantly inside. Protection against the penetration of solid bodies, protection against the ingress of rain and dust and damage caused by icing.
3S	Enclosures for use predominantly inside. Protection against rain, snow and foreign bodies. External mechanisms remain usable despite being coated in ice.
4	Enclosures for indoor or outdoor use. Protection against rain, foreign bodies, splashed water and hosed water and against damage caused by icing on the exterior of the enclosure.
4x	Enclosures for indoor or outdoor use. Protection against rain, foreign bodies, splashed water and hosed water and against damage caused by icing on the exterior of the enclosure.
12, 12K	Enclosures for use predominantly inside. Protection against dust deposits, foreign bodies and non-corrosive dripping liquids.
13	Enclosures for use predominantly inside. Protection against dust deposits, sprayed water, oil, and non-corrosive coolants.

The UL classifications are not directly comparable with IP protection categories, since both the test conditions and the evaluation of the test results are different.

Approvals and permits

Product certifications and approvals are key requirements for the global acceptance of industrial products.

Rittal products meet the highest internationally recognised quality yardsticks. All components are subjected to the most stringent testing in accordance with international standards and regulations.

The consistently high product quality is ensured by a comprehensive quality management system. Regular production inspections by external test institutes also guarantee compliance with global standards.

A precise allocation of products to marks of conformity can be found on our product and service pages on the Internet. **www.rittal.com**



Enclosure designs guaranteeing hygiene and effective cleaning

Special applications require special solutions – in terms of materials, design and security.

This is all the more true for applications in the foods and hygiene sector and in sensitive fields such as medical technology and pharmaceuticals.

Consequently, Rittal has been looking intensively at the quality standards in these branches and has subjected its products to stringent testing.

The CE symbol

All Rittal products subject to an EU Directive which envisages labelling are labelled CE.

Up-to-date manufacturer declarations for the respective products are available on the Internet at: **www.rittal.com**

Note:
The CE symbol is not a quality symbol. Conformity is certified by the manufacturer on an independent basis. This distinguishes CE labelling from approvals, which are issued by independent bodies.

Earthing

The earthing must be designed by the manufacturer of switchgear in accordance with the relevant VDE provisions or local regulations.

The enclosure packs generally contain earthing materials (screws, nuts, washers). The assembly instructions contain recommendations on installing a protective earth.

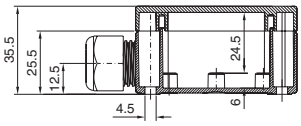
The pre-assembled earth straps available in various cross-sections and lengths, are intended to make assembly of a PE conductor easier.

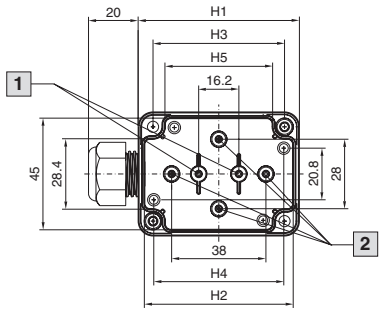
Further information can be found in our technical documentation “PE conductor connection, current carrying capacity”.

1.1 Polycarbonate enclosures PK

with cable gland Page 100

Model No. PK with cable gland	H1	H2	H3	H4	H5
9530.000	52	47	40	39.4	30.4
9531.000	65	60	53	52.4	43.4





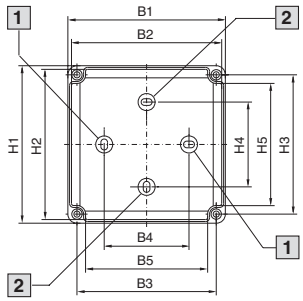
1 does not apply to PK 9531.000

2 does not apply to PK 9530.000

1.1 Polycarbonate enclosures PK

Page 100 – 101

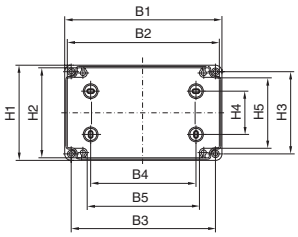
Version A



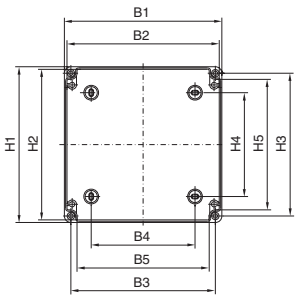
1 Does not apply to PK 9500.000, PK 9501.000

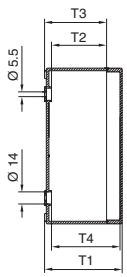
2 Does not apply to PK 9502.000, PK 9503.000

Version B



Version C





B1 = Enclosure width
B2 = Usable width
B3 = Centre/centre wall attachment outside the seal
B4 = Centre/centre wall attachment in the enclosure
B5 = Clearance width

H1 = Enclosure height
H2 = Usable height
H3 = Centre/centre wall attachment outside the seal
H4 = Centre/centre wall attachment in the enclosure
H5 = Clearance height

T1 = Overall depth
T2 = Usable enclosure depth
T3 = Enclosure depth
T4 = Clearance height available for installation

Model No. PK		Version	Width dimensions mm					Height dimensions mm					Depth dimensions mm			
Grey lids	Transparent lids		B1	B2	B3	B4	B5	H1	H2	H3	H4	H5	T1	T2	T3	T4
9500.000	–	A	65	59	50	–	36	65	59	50	25	36	57	33	41	45
9501.000	–	A	65	59	50	–	36	65	59	50	25	36	81	33	41	69
9502.000	–	A	94	88	79	50	64	65	59	50	–	36	57	33	41	45
9503.000	–	A	94	88	79	50	64	65	59	50	–	36	81	33	41	69
9504.000	**9504.100**	A	94	88	79	50	64	94	88	79	50	64	57	33	41	45
9505.000	–	A	94	88	79	50	64	94	88	79	50	64	81	33	41	69
9506.000	**9506.100**	A	110	104	95	65	80	110	104	95	65	80	66	42	50	53
9507.000	**9507.100**	A	110	104	95	65	80	110	104	95	65	80	90	42	50	77
9508.000	**9508.100**	A	130	124	115	90	101	94	88	79	50	64	57	33	41	45
9509.000	**9509.100**	A	130	124	115	90	101	94	88	79	50	64	81	33	41	69
9510.000	**9510.100**	A	130	124	115	70	101	130	124	115	70	101	75	51	59	63
9511.000	**9511.100**	A	130	124	115	70	101	130	124	115	70	101	99	51	59	87
9512.000	**9512.100**	A	180	174	165	120	150	94	88	79	50	64	57	33	41	45
9513.000	**9513.100**	A	180	174	165	120	150	94	88	79	50	64	81	33	41	69
9514.000	**9514.100**	B	180	173	165	120	128	110	103	95	50	80	90	63	71	75
9515.000	**9515.100**	B	180	173	165	120	128	110	103	95	50	80	111	63	71	97
9516.000[1)]	**9516.100**	B	180	173	165	120	128	110	103	95	50	80	165	63	71	150
9517.000	**9517.100**	C	182	175	167	120	152	180	173	165	120	128	90	63	71	75
9518.000	**9518.100**	C	182	175	167	120	152	180	173	165	120	128	111	63	71	97
9519.000[1)]	**9519.100**	C	182	175	167	120	152	180	173	165	120	128	165	63	71	150
9520.000	**9520.100**	C	254	247	239	190	224	180	173	165	120	128	90	63	71	75
9521.000	**9521.100**	C	254	247	239	190	224	180	173	165	120	128	111	63	71	97
9522.000[1)]	**9522.100**	C	254	247	239	190	224	180	173	165	120	128	165	63	71	150
9523.000	**9523.100**	B	360	355	346	240	309	254	248	239	190	224	111	63	71	97
9524.000[1)]	**9524.100**	B	360	355	346	240	309	254	248	239	190	224	165	63	71	150

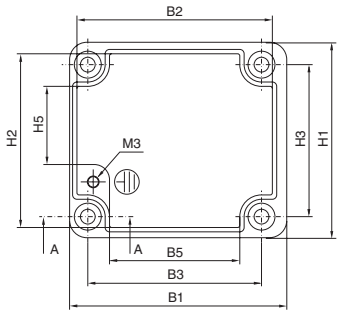
[1)] with slanted lid

Small enclosures

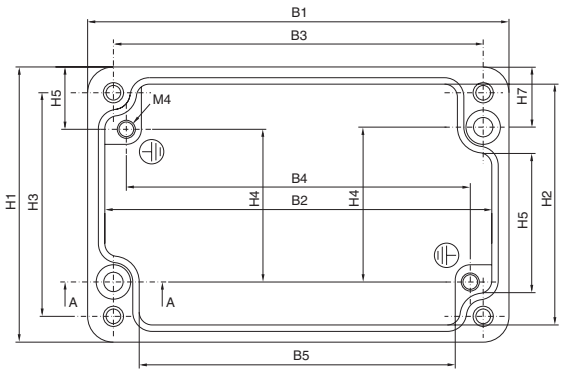
1.1 Cast aluminium enclosures GA

Page 104

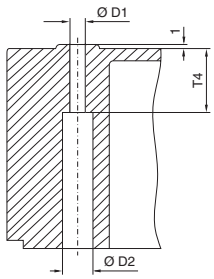
Version A



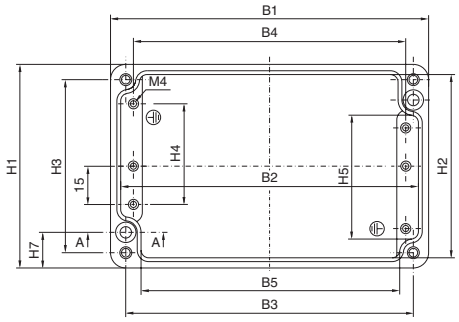
Version B



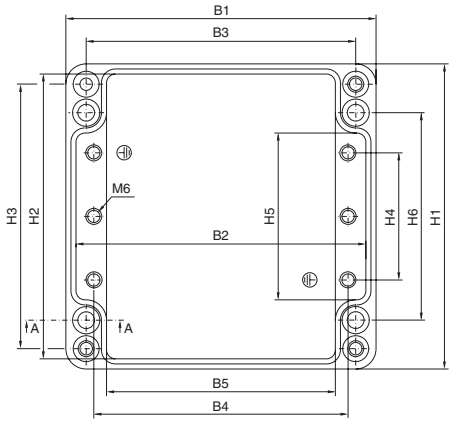
Section A – A

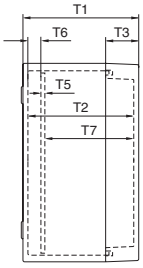


Version C



Version D





Note:
For installations manufactured by the customer, the width and height dimensions of the mounting plate (see page 105) must not be exceeded. For enclosures where no mounting plate is available, the following dimensions shall apply analogously:

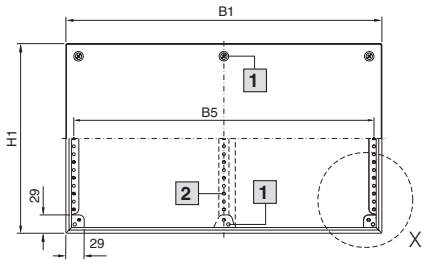
Model No. GA	Width (B) mm	Height mm
9100.210	43	38
9101.210	48	54
9102.210	88	54
9103.210	140	54
9104.210	64	69

Model No. GA	Version	Width dimensions mm					Height dimensions mm							Depth dimensions mm							Diameter mm	
		B1	B2	B3	B4	B5	H1	H2	H3	H4	H5	H6	H7	T1	T2	T3	T4	T5	T6	T7	D1	D2
9100.210	A	50	45	40	–	30	45	40	35	–	18	–	–	30	25	6	5.5	–	–	–	4.2	7.5
9101.210	B	58	50	46	40	34	64	56	52	35	32	–	14	36	29	10	9	–	–	–	4.5	8
9102.210	B	98	90	86	80	75	64	56	52	35	32	–	14	36	29	10	8	–	–	–	4.5	8
9103.210	B	150	142	138	132	126	64	56	52	35	32	–	14	36	29	10	9	–	–	–	4.5	8
9104.210	C	75	67	63	57	52	80	72	68	39	48	–	14	57	50	15	11.5	–	–	–	4.5	9
9105.210	C	125	117	113	106	99	80	72	68	39	48	–	14	57	50	15	10	1.5	7	41.5	4.5	8.5
9106.210	C	175	167	163	156	152	80	72	68	39	48	–	14	57	50	15	10.5	1.5	6	42.5	4.5	9
9107.210	C	250	242	238	231	226	80	72	68	39	48	–	14	57	50	15	10	1.5	6	42.5	4.5	8
9108.210	D	122	113	106	95	90	120	111	104	52	64	82	–	80	72	20	18	1.5	9	61.5	6.5	10.8
9110.210	D	220	211	204	195	183	120	111	104	50	64	82	–	90	82	30	15	1.5	9	69.5	6.8	11
9111.210	D	360	349	344	333	326	120	111	106	52	64	82	–	80	72	20	19	2	9	61	7	10.8
9112.210	D	160	151	140	130	120	160	151	140	76	90	110	–	90	82	20	20.5	2	9	71	6.2	12.5
9113.210	D	260	251	240	230	220	160	151	140	76	90	110	–	90	82	20	18	2	9	71	6.3	14
9114.210	D	360	351	340	330	316	160	151	140	74	84	110	–	90	82	20	19	2	9	71	7.1	14
9116.210	D	200	191	180	170	160	230	221	210	144	160	180	–	110	102	20	19	2	9	91	7.3	14
9117.210	D	280	271	260	250	240	230	221	210	144	160	180	–	110	102	20	24	2	9	91	6.2	14.2
9118.210	D	330	321	310	300	290	230	221	210	144	160	180	–	110	102	20	24.5	2	9	91	6.2	14.2
9119.210	D	330	321	310	300	290	230	221	210	144	160	180	–	180	172	20	14	2	10	160	7.5	12.5

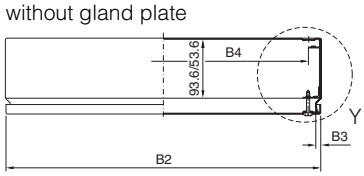
1.1 Terminal boxes KL

Spray-finished Page 107 – 109

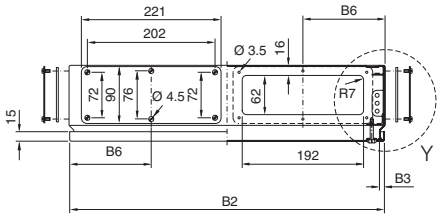
Stainless steel Page 270



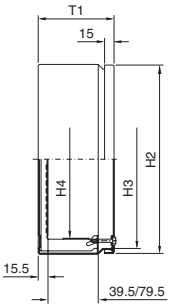
without gland plate



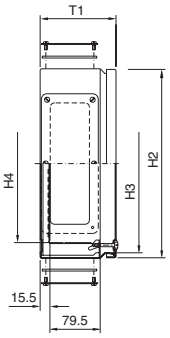
with gland plate



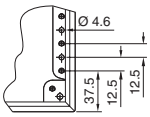
without gland plate



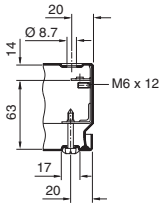
with gland plate



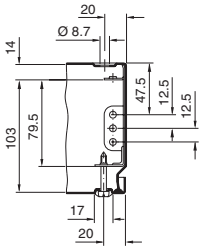
Detail X



Detail Y
T1 = 80



Detail Y
T1 = 120



B1 = Overall width
B2 = Cover width
B3 = Clearance width of enclosure
B4 = Clearance frame/width between profile strips
B5 = Distance between axes of the mounting holes in the profile strips
B6 = Distance from outer edge of enclosure to centre of gland plate

H1 = Overall height
H2 = Cover height
H3 = Clearance height of enclosure
H4 = Clearance frame/height between profile strips

T1 = Overall depth

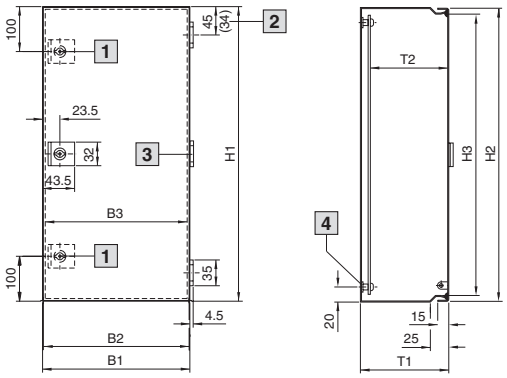
1 Only with B ≥ 600 mm
2 Only with B = 800 mm

Model No. KL			Width dimensions mm						Height dimensions mm				Depth dimensions mm
Without gland plate	With gland plate	Stainless steel without gland plate	B1	B2	B3	B4	B5	B6	H1	H2	H3	H4	T1
1514.510	**–**	**1521.010**	150	148	132	109	125	–	150	148	132	–	80
1528.510	**–**	**–**	200	198	182	159	175	–	150	148	132	–	80
1516.510	**–**	**1523.010**	200	198	182	159	175	–	200	198	182	–	80
1515.510	**–**	**1522.010**	300	298	282	259	275	–	150	148	132	–	80
1517.510	**–**	**1524.010**	300	298	282	259	275	–	200	198	182	–	80
1518.510	**–**	**–**	400	398	382	359	375	–	200	198	182	–	80
1519.510	**–**	**–**	600	598	582	559	575	–	200	198	182	–	80
1500.510	**–**	**–**	150	148	132	109	125	–	150	148	132	100	120
1529.510	**–**	**–**	200	198	182	159	175	–	150	148	132	100	120
1502.510	**–**	**–**	200	198	182	159	175	–	200	198	182	150	120
1501.510	**1530.510**	**–**	300	298	282	259	275	150	150	148	132	100	120
1503.510	**1531.510**	**–**	300	298	282	259	275	150	200	198	182	150	120
1507.510	**1535.510**	**1526.010**	300	298	282	259	275	150	300	298	282	250	120
1589.510	**–**	**–**	400	398	382	359	375	–	150	148	132	100	120
1504.510	**1532.510**	**1525.010**	400	398	382	359	375	200	200	198	182	150	120
1508.510	**1536.510**	**–**	400	398	382	359	375	200	300	298	282	250	120
1511.510	**1539.510**	**–**	400	398	382	359	375	200	400	398	382	350	120
1505.510	**1533.510**	**–**	500	498	482	459	475	130	200	198	182	150	120
1509.510	**1537.510**	**–**	500	498	482	459	475	130	300	298	282	250	120
1506.510	**1534.510**	**–**	600	598	582	559	575	150	200	198	182	150	120
1510.510	**1538.510**	**–**	600	598	582	559	575	150	300	298	282	250	120
1512.510	**1540.510**	**–**	600	598	582	559	575	150	400	398	382	350	120
1527.510	**1542.510**	**–**	800	798	782	759	775	150	200	198	182	150	120
1513.510	**1541.510**	**–**	800	798	782	759	775	150	400	398	382	350	120

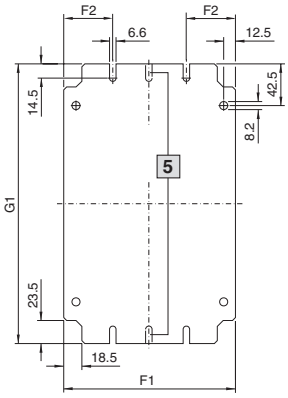
Small enclosures

1.1 E-Box EB

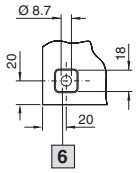
Page 110



Mounting plate



View A
for
wall mounting



1 For EB 1557.500/
EB 1578.500/EB 1579.500
two locks

2 For EB 1551.500 and
EB 1553.500

3 Only for EB 1579.500

4 View A

5 For 125 mm wide mounting
plates, attachment is in the
centre only

6 2 mm recessed

B1 = Overall width
B2 = Door width
B3 = Clearance width

H1 = Overall height
H2 = Door height
H3 = Clearance height

T1 = Overall depth
T2 = Clearance depth available
for installation

F1 = Mounting plate width
F2 = Outer edge to centre of
mounting holes

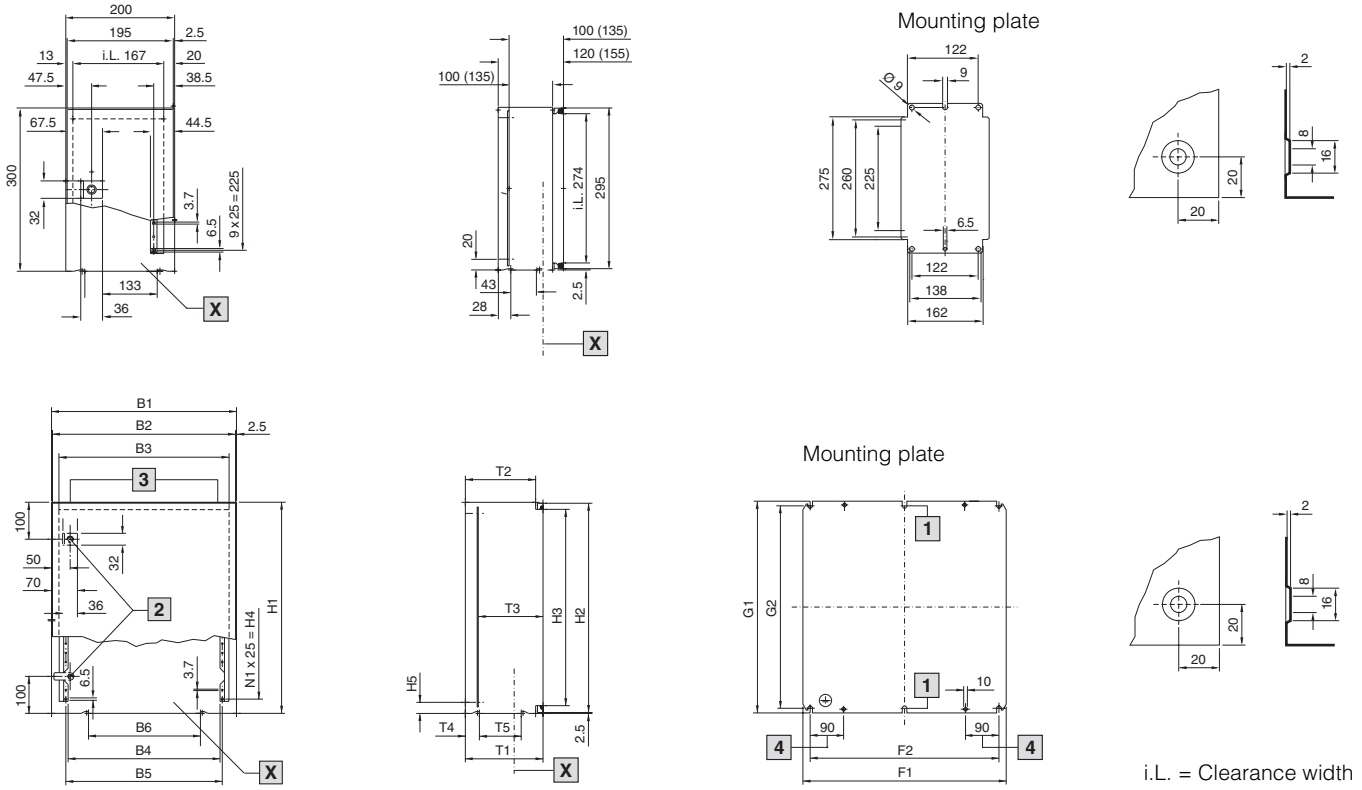
G1 = Mounting plate height

Model No. EB	Width dimensions mm			Height dimensions mm			Depth dimensions mm		Mounting plate dimensions mm		
	B1	B2	B3	H1	H2	H3	T1	T2	F1	F2	G1
1551.500	150	148	132	150	148	132	80	65	125	62.5	135
1545.500	150	148	132	300	298	282	80	65	125	62.5	285
1546.500	200	198	182	200	198	182	80	65	175	50	185
1552.500	200	198	182	300	298	282	80	65	175	50	285
1547.500	200	198	182	400	398	382	80	65	175	50	385
1553.500	150	148	132	150	148	132	120	105	125	62.5	135
1548.500	150	148	132	300	298	282	120	105	125	62.5	285
1549.500	200	198	182	200	198	182	120	105	175	50	185
1554.500	200	198	182	300	298	282	120	105	175	50	285
1550.500	200	198	182	400	398	382	120	105	175	50	385
1555.500	300	298	282	300	298	282	120	105	275	50	285
1556.500	300	298	282	400	398	382	120	105	275	50	385
1557.500	200	198	182	500	498	482	120	105	175	50	485
1577.500	300	298	282	400	398	382	155	140	275	50	385
1578.500	300	298	282	600	598	582	155	140	275	50	585
1579.500	300	298	282	800	798	782	155	140	275	50	785

1.2 Compact enclosures AE

Spray-finished Page 118 – 119

AE 1032.500 (AE 1035.500)



i.L. = Clearance width

X Door interior view

1 Only for AE 1180.500

2 From 500 mm high with 2 cam locks, less than 500 mm with 1 cam lock in the centre

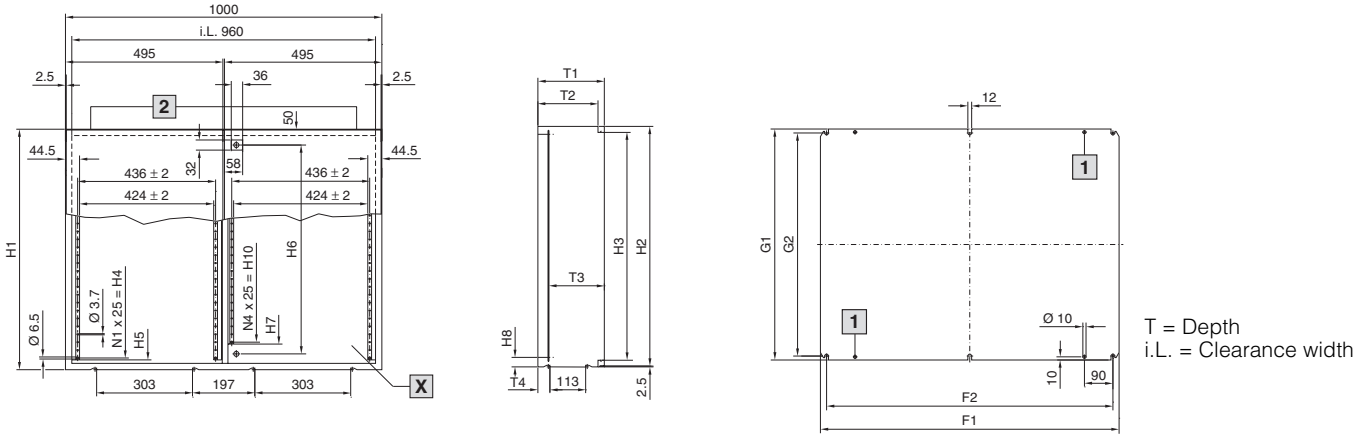
3 AE 1090.500 and AE 1180.500 with holes for eyebolts, see page 1084.

4 (50) for AE 1033.500 and AE 1034.500

Model No. AE	Width dimensions mm						Height dimensions mm						Depth dimensions mm					Mounting plates mm			
Spray-finished	B1	B2	B3	B4	B5	B6	H1	H2	H3	H4	H5	N1	T1	T2	T3	T4	T5	F1	F2	G1	G2
1033.500	300	295	260	211	223	233	300	295	260	225	27,5	9	210	190	168 – 184	33	45	254	215	275	250
1034.500	300	295	260	211	223	233	400	395	360	325	27,5	13	210	190	168 – 184	33	45	254	215	375	350
1030.500	380	375	340	291	303	303	300	295	260	225	27,5	9	155	132	113 – 129	33	63	334	295	275	250
1031.500	380	375	340	291	303	303	300	295	260	225	27,5	9	210	190	168 – 184	33	63	334	295	275	250
1380.500	380	375	340	291	303	303	380	375	340	275	27,5	11	210	190	168 – 184	33	63	334	295	355	330
1039.500	600	595	560	511	523	500	380	375	340	275	27,5	11	210	190	168 – 184	38	113	549	510	355	330
1339.500	600	595	560	511	523	500	380	375	340	275	27,5	11	350	330	308 – 324	38	113	549	510	355	330
1038.500	380	375	340	291	303	303	600	595	560	525	30	21	210	190	168 – 184	33	63	334	295	570	545
1338.500	380	375	340	291	303	303	600	595	560	525	30	21	350	330	308 – 324	84	113	334	295	570	545
1045.500	400	395	360	311	323	303	500	495	460	425	30	17	210	190	168 – 184	38	113	354	315	475	450
1050.500	500	495	460	411	423	303	500	495	460	425	30	17	210	190	168 – 184	38	113	449	410	470	445
1350.500	500	495	460	411	423	303	500	495	460	425	30	17	300	280	258 – 274	38	113	449	410	470	445
1057.500	500	495	460	411	423	303	700	695	660	625	30	25	250	230	208 – 224	38	113	449	410	670	645
1060.500	600	595	560	511	523	500	600	595	560	525	30	21	210	190	168 – 184	38	113	549	510	570	545
1360.500	600	595	560	511	523	500	600	595	560	525	30	21	350	330	308 – 324	38	113	549	510	570	545
1076.500	600	595	560	511	523	500	760	755	720	675	30	27	210	190	168 – 184	38	113	549	510	730	705
1376.500	600	595	560	511	523	500	760	755	720	675	30	27	350	330	308 – 324	38	113	549	510	730	705
1058.500	600	595	560	511	523	500	800	795	760	725	30	29	250	230	208 – 224	38	113	549	510	770	745
1090.500	600	595	560	511	523	500	1000	995	960	925	35	37	250	230	208 – 224	38	113	539	500	955	930
1077.500	760	755	720	671	683	500	760	755	720	675	30	27	210	190	168 – 184	38	113	704	665	730	705
1073.500	760	755	720	671	683	500	760	755	720	675	30	27	300	280	258 – 274	38	113	704	665	730	705
1180.500	800	795	760	711	723	500	1000	995	960	925	35	37	300	280	258 – 274	70	113	739	700	955	930

1.2 Compact enclosures AE

Spray-finished Page 120



T = Depth
i.L. = Clearance width

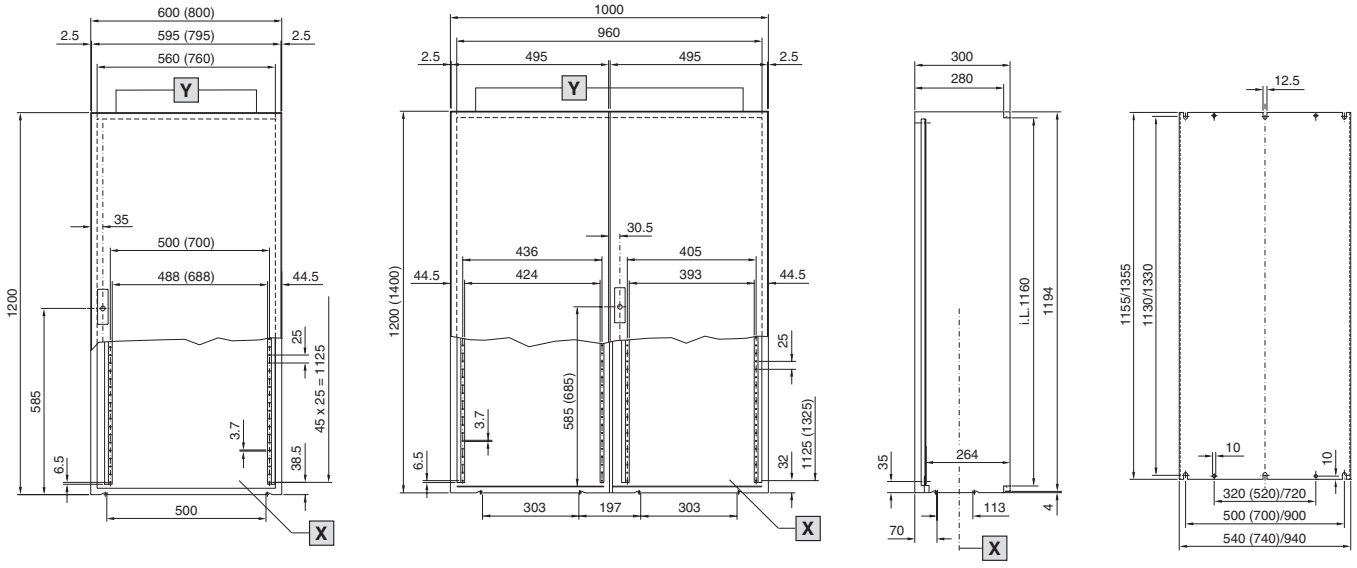
X Door interior view

1 Only for AE 1100.500

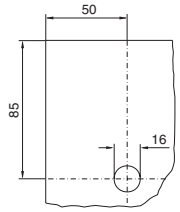
2 AE 1110.500 with holes for eyebolts, see page 1084.

Model No. AE Spray-finished	H1	H2	H3	H4	H5	H6	H7	H8	H10	N1	N4	T1	T2	T3	T4	F1	F2	G1	G2
1100.500	760	755	720	675	698	660	598	30	575	27	23	210	190	168 – 184	38	944	905	730	705
1130.500	760	755	720	675	698	660	598	30	575	27	23	300	280	258 – 274	70	944	905	730	705
1110.500	1000	995	960	925	938	900	838	35	825	37	33	300	280	258 – 274	70	939	900	955	930

Spray-finished Page 120



Detail Y



X Door interior view

Y Hole for eyebolts

Model No. AE Spray-finished	W	H	D	Door(s)
1260.500	600	1200	300	1
1280.500	800	1200	300	1
1213.500	1000	1200	300	2
1114.500	1000	1400	300	2

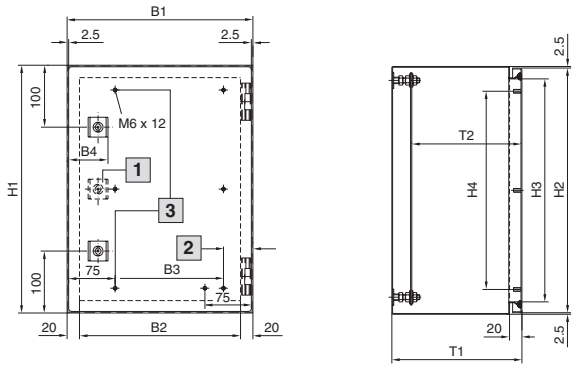
i.L. = Clearance width

1.2 Compact enclosures AE

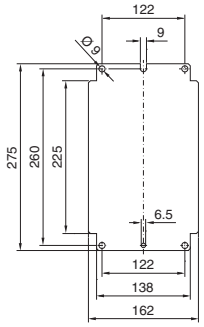
Width: 200 – 1000, height: 300 – 1200, stainless steel Page 273

Mounting plates

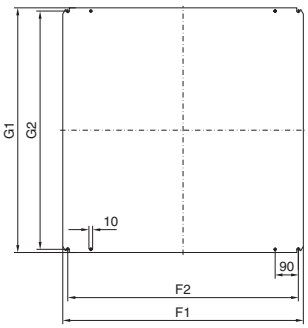
AE 1002.600, AE 1016.600



AE 1002.600



AE 1004.600 – AE 1016.600



Installation position of the mounting plate is rotated through 90° for AE 1005.600.

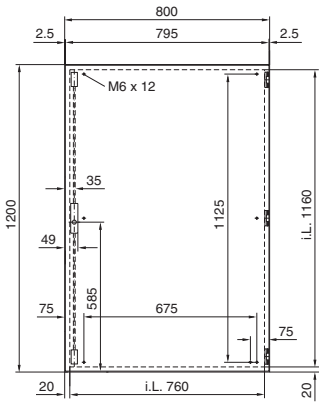
1 For AE 1002.600, AE 1004.600, AE 1005.600, AE 1006.600, AE 1009.600 only one cam lock in the centre and without bolts in the centre

2 50 for AE 1002.600

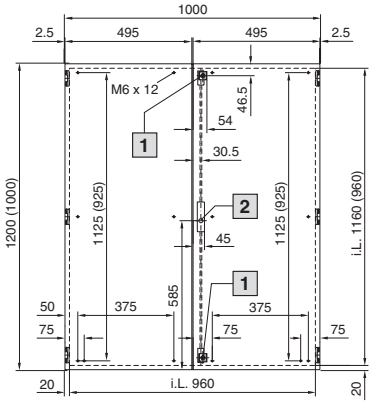
3 Does not apply to AE 1002.600

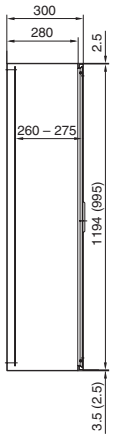
Mounting plates

AE 1017.600



AE 1018.600/AE 1019.600





1 Cam lock for AE 1018.600

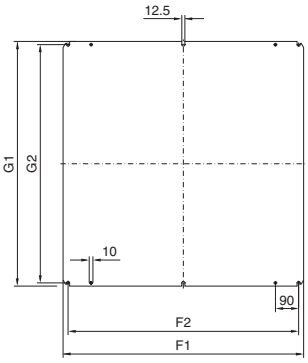
2 Locking rod for AE 1019.600

Dimensions in brackets for AE 1018.600.

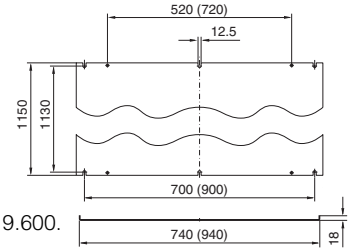
i.L. = Clearance width

Mounting plates

AE 1018.600



AE 1017/AE 1019.600

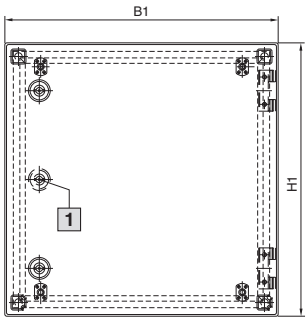


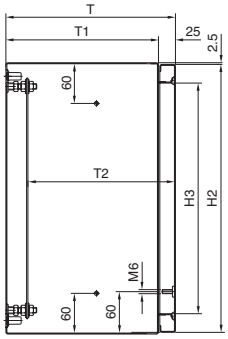
Dimensions in brackets for AE 1019.600.

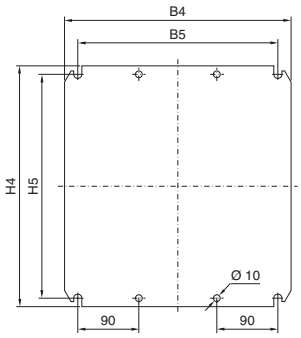
Model No. AE	Width dimensions mm				Height dimensions mm				Depth dimensions mm		Mounting plates mm				Material thickness mm		
Stainless steel	B1	B2	B3	B4	H1	H2	H3	H4	T1	T2	G1	G2	F1	F2	Enclosures	Door	Mounting plate
1002.600	200	167	–	56	300	295	274	225	155	135	–	–	–	–	1.25	1.5	2.0
1004.600	380	340	250	66	300	295	260	225	155	113 – 129	275	250	334	295	1.38	1.5	2.0
1005.600	300	260	175	66	380	375	340	275	210	168 – 184	275	250	334	295	1.38	1.5	2.0
1006.600	380	340	250	66	380	375	340	275	210	168 – 184	355	330	334	295	1.38	1.5	2.5
1007.600	500	460	375	66	500	495	460	425	210	168 – 184	470	445	449	410	1.38	1.5	2.5
1013.600	500	460	375	66	500	495	460	425	300	258 – 274	470	445	449	410	1.50	1.5	2.5
1008.600	380	340	250	66	600	595	560	525	210	168 – 184	570	545	334	295	1.38	1.5	2.5
1009.600	600	560	475	66	380	375	340	275	210	168 – 184	355	330	549	510	1.38	1.5	2.5
1010.600	600	560	475	66	600	595	560	525	210	168 – 184	570	545	549	510	1.38	2.0	2.5
1012.600	600	560	475	66	760	755	720	675	210	168 – 184	730	705	549	510	1.38	2.0	3.0
1014.600	760	720	625	66	760	755	720	675	300	258 – 274	730	705	704	665	1.50	2.0	3.0
1016.600	800	760	675	66	1000	955	960	925	300	258 – 274	955	930	739	700	1.50	2.0	3.0
1017.600	800	–	–	–	1200	–	–	–	300	–	–	–	–	–	1.50	2.0	3.0
1018.600	1000	–	–	–	1000	–	–	–	300	–	955	930	939	900	1.50	2.0	3.0
1019.600	1000	–	–	–	1200	–	–	–	300	–	–	–	–	–	1.50	2.0	3.0

1.2 Compact enclosures AE

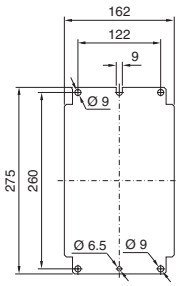
Protection category IP 69K Page 121



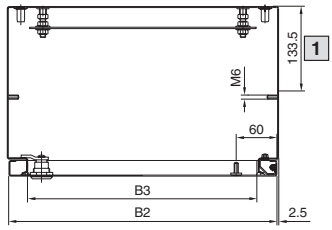




Mounting plate
AE 1101.010



1 With AE 1101.010 one cam lock



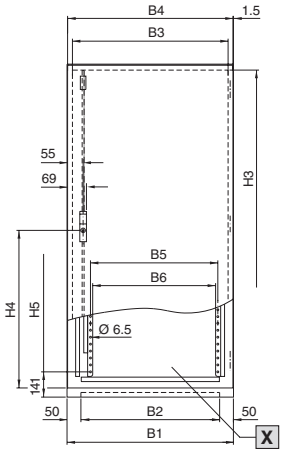
1 58.5 for AE 1101.010

Model No. AE	1101.010	1101.020	1101.030	1101.040
Width (B1) mm	230	400	400	650
Height (H1) mm	330	400	650	650
Depth (T) mm	155	250	250	250
Door width (B2) mm	225	395	395	645
Door height (H2) mm	325	395	645	645
Clearance width (B3) mm	170	340	340	590
Clearance height (H3) mm	270	340	590	590
Enclosure depth (T1) mm	130	225	225	225
Installation depth (T2) mm	135	208 – 224	208 – 224	208 – 224
Mounting plate width (B4) mm	–	334	334	549
Centre-to-centre spacing of the attachment holes (B5) mm	–	295	295	510
Mounting plate height (H4) in mm	–	355	570	570
Centre-to-centre spacing of the attachment holes (H5) mm	–	330	545	545
Mounting plate thickness mm	2	2	2.5	2.5

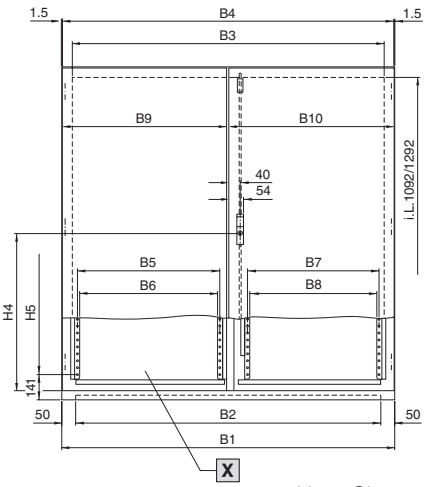
1.2 Compact enclosures AK

Page 122

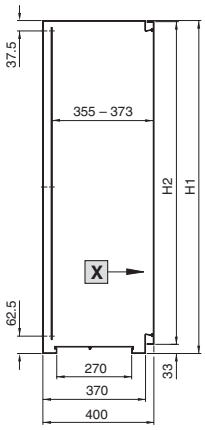
AK 1646.500
AK 1648.500



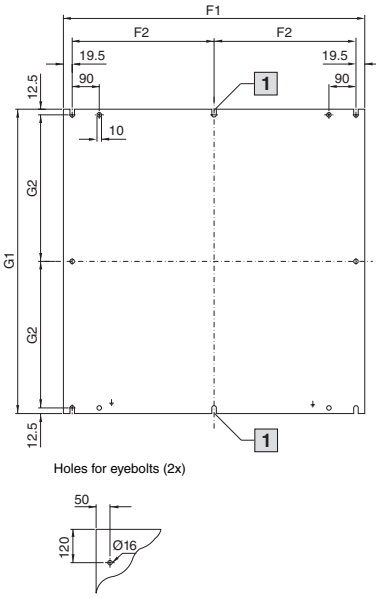
AK 1652.500
AK 1650.500



AK 1647.500



Mounting plate



X Door interior view

1 Only for 1647.500/1650.500/ 1652.500

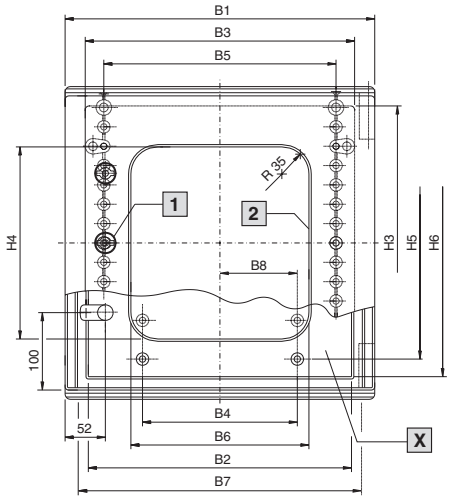
i.L. = Clearance width

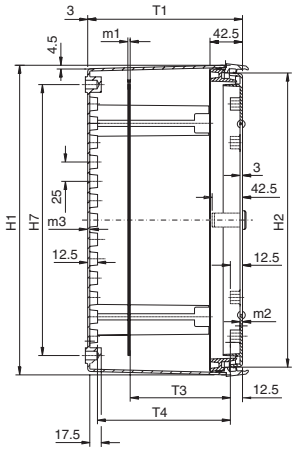
Model No. AK	Width dimensions mm										Height dimensions mm					Mounting plates mm			
	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	H1	H2	H3	H4	H5	F1	F2	G1	G2
1646.500	600	500	524	597	459	443	–	–	–	–	1200	1166	1092	568	38 x 25 = 950	514	–	1125	550
1648.500	800	700	724	797	659	643	–	–	–	–	1200	1166	1092	568	38 x 25 = 950	714	–	1125	550
1652.500	1200	1100	1124	1197	513	497	477	461	595	597	1200	1166	1092	568	38 x 25 = 950	1114	537.5	1125	550
1650.500	1000	900	924	997	413	397	377	361	495	497	1200	1166	1092	568	38 x 25 = 950	914	437.5	1125	550
1647.500	1000	900	924	997	413	397	377	361	495	497	1400	1366	1292	668	46 x 25 = 1150	914	437.5	1325	650

1.2 Plastic enclosures KS

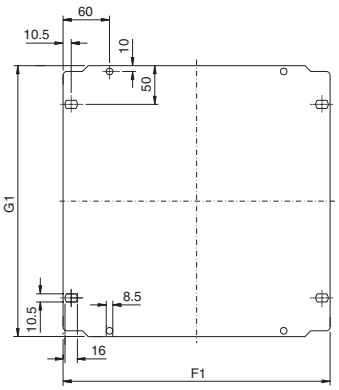
Page 123

KS 1423.600 and KS 1432.600 with only one cam lock in the centre





Mounting plate



B7 = Separation width for wall mounting hole

H7 = Separation height for wall mounting hole

1 Only for KS 1423.600 and KS 1432.600

2 Viewing window only with KS 1448.600, KS 1449.600, KS 1454.600, KS 1467.600

X Door interior view

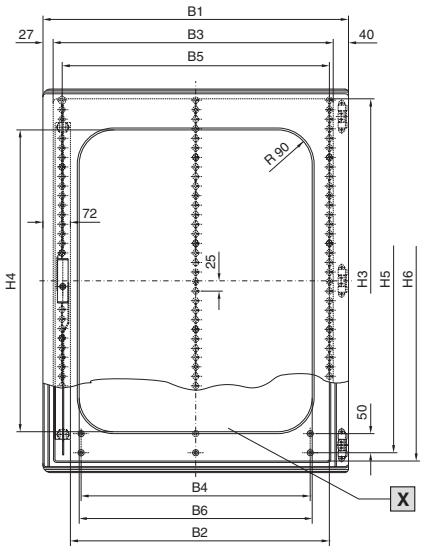
Model No. KS	Width dimensions mm								Height dimensions mm							Depth dimensions mm			Mounting plates mm				
	B1	B2	B3	B4	B5	B6[1)]	B7	B8	H1	H2	H3	H4[1)]	H5	H6	H7	T1	T3	T4	m1	m2	m3	F1	G1
1423.600	200	140	150	–	100	–	150	25	300	280	256	–	200	245	250	150	80 – 110/117	119	2.0	3.0	3.0	145	250
1432.600	250	190	200	75	150	–	200	50	350	330	306	–	250	295	300	150	80 – 110/117	119	2.0	3.0	3.0	195	300
1434.600	300	240	249	100	200	–	250	50	400	380	355	–	300	345	350	200	80 – 160/167	169	2.0	3.0	3.0	245	350
1444.600/ 1448.600	400	340	348	200	300	230	350	100	400	380	354	250	300	345	350	200	80 – 159/166	168.5	2.5	3.2	3.2	345	350
1446.600/ 1449.600	400	340	348	200	300	230	350	100	600	580	554	450	500	545	550	200	80 – 158/165	168	2.5	3.5	3.5	345	550
1466.600/ 1467.600	600	540	548	400	500	430	550	200	600	580	554	450	500	545	550	200	80 – 158/165	168	2.5	3.5	3.5	545	550
1453.600/ 1454.600	500	440	434	300	400	330	450	150	500	480	454	350	400	445	450	300	80 – 258/265	268	2.5	3.5	3.5	417	450

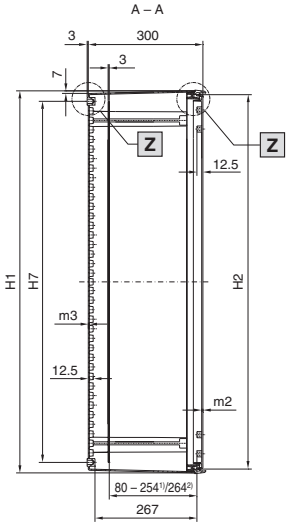
[1)] Only in enclosures with viewing window.

1.2 Plastic enclosures KS

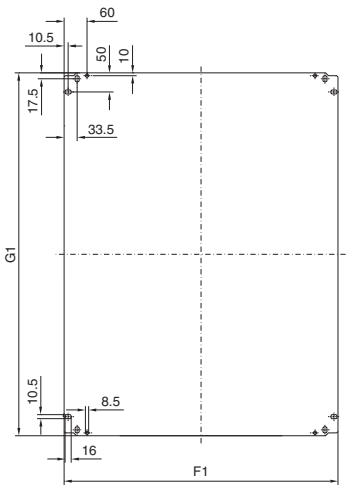
Page 124

KS 1469.600/KS 1479.600
KS 1468.600/KS 1480.600 without viewing window

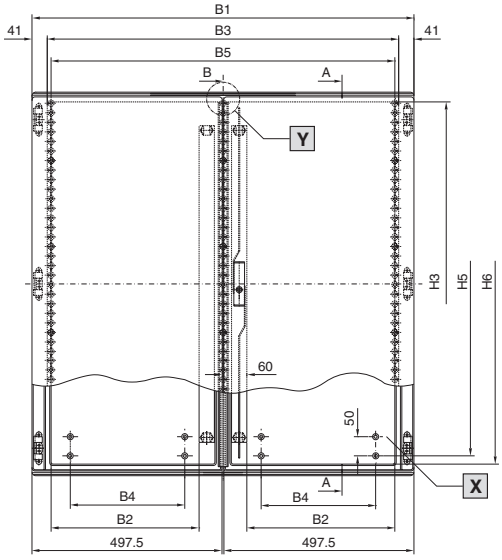




Mounting plate



KS 1400.600



1) Infinitely variable with mounting plate depth adjuster KS 1491.000

2) When mounting on studs directly on the threaded insert

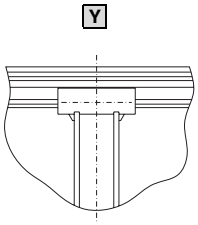
B7 = Separation width for wall mounting hole

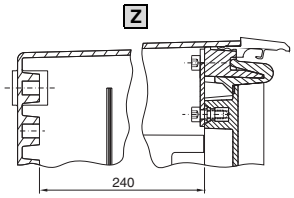
H7 = Separation height for wall mounting hole

X Door interior view

Y Screw-fastened centre bar for KS 1400.000

Z Distance from mounting insert to centre bar





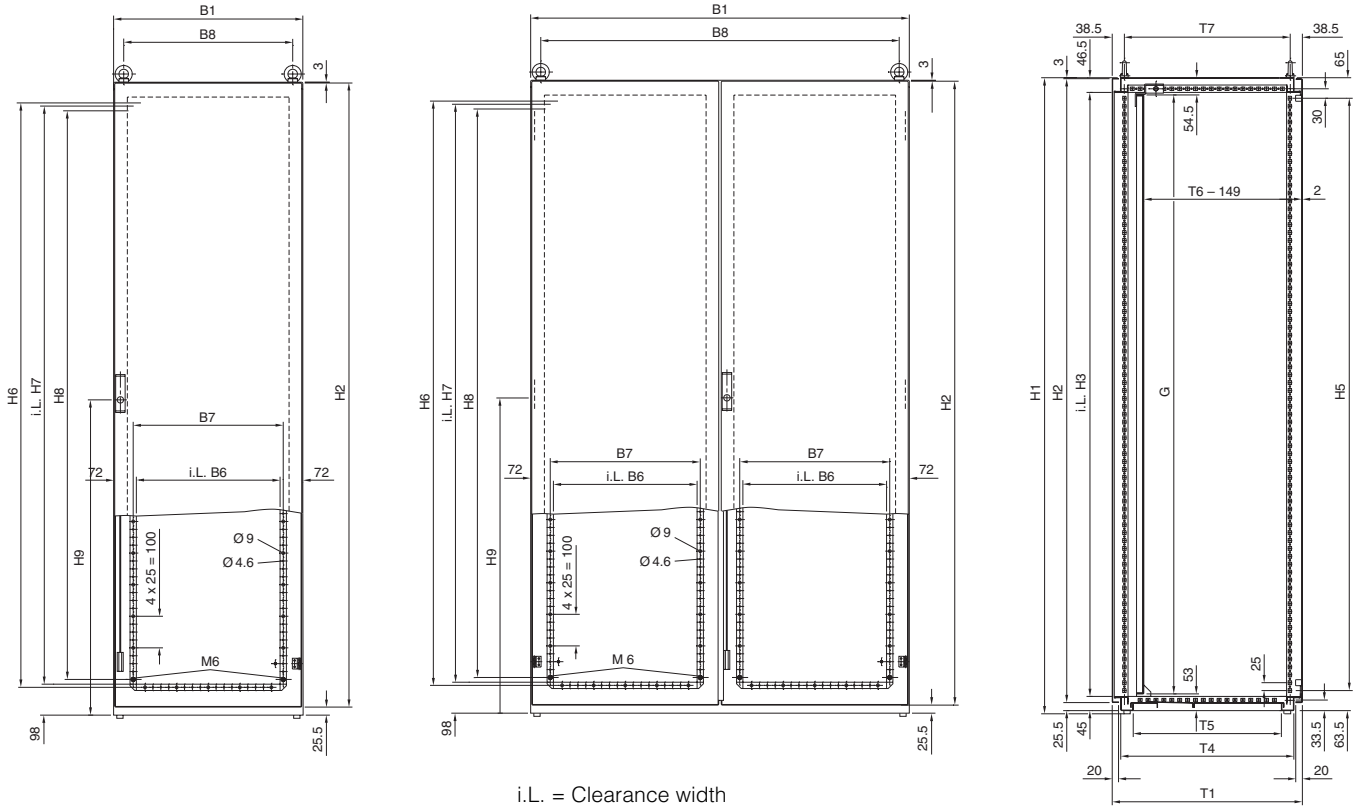
Model No. KS	Width dimensions mm							Height dimensions mm							Mounting plates mm			
	B1	B2	B3	B4	B5	B6[1]	B7	H1	H2	H3	H4[1]	H5	H6	H7	m2	m3	G1	F1
1468.600/1469.600	600	485	533	400	500	410	550	780	753	590	700	740	750	600	3.7	3.7	750	517
1479.600/1480.600	800	685	733	600	700	610	750	980	953	790	900	940	950	800	3.7	4.0	950	717
1400.600	1000	387	918	300	900	–	950	980	952	–	900	940	950	1000	3.5	4.0	950	917

[1] Only in enclosures with viewing window.

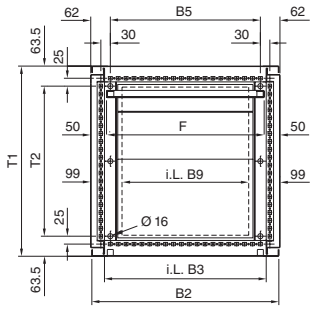
1.4 Free-standing enclosure ES 5000

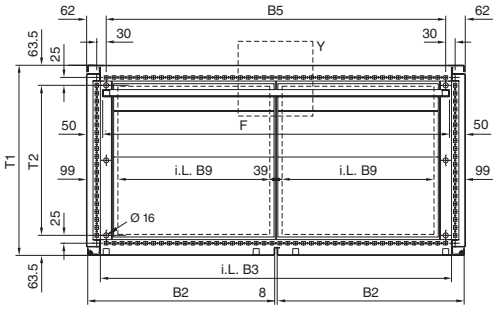
Spray-finished Page 136, 137

Stainless steel Page 285

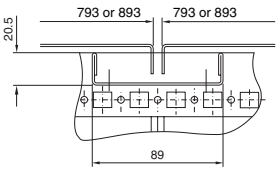


i.L. = Clearance width





Detail Y
(only with ES 5784.500
and ES 5905.500)



Double-door

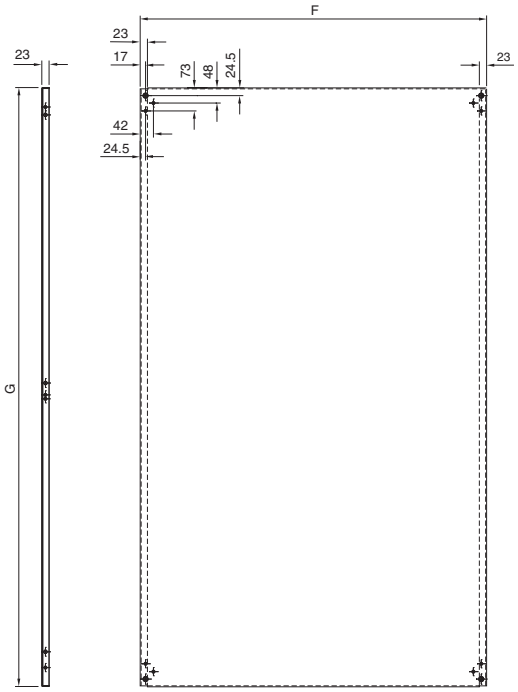
Model No. ES		Width dimensions mm								Height dimensions mm								Depth dimensions mm						Mounting plates mm	
Spray-finished	Stainless steel	B1	B2	B3	B5	B6	B7	B8	B9	H1	H2	H3	H5	H6	H7	H8	H9	T1	T2	T4	T5	T6	T7	F	G
5080.500	–	999	492	912	875	355	375	935	801	1810	1775	1712	1675	1650	1630	1600	898	402	275	349	269	349	325	899	1696
5265.500	–	1199	592	1112	1075	455	475	1135	481	1610	1575	1512	1475	1450	1430	1400	798	502	375	449	369	449	425	1099	1496
5284.500	–	1199	592	1112	1075	455	475	1135	481	1810	1775	1712	1675	1650	1630	1600	898	402	275	349	269	349	325	1099	1696
5205.500	**5455.600**	1199	592	1112	1075	455	475	1135	481	2010	1975	1912	1875	1850	1830	1800	998	502	375	449	369	449	425	1099	1896
5784.500	–	1599	792	1512	1475	655	675	1535	681	1810	1775	1712	1675	1650	1630	1600	898	402	275	349	269	349	325	1499	1696
5905.500	–	1799	892	1712	1675	755	775	1735	781	2010	1975	1912	1875	1850	1830	1800	998	502	375	449	369	449	425	1699	1896

1.4 Free-standing enclosure ES 5000

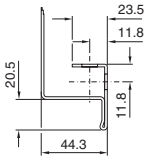
Spray-finished Page 136, 137

Stainless steel Page 285

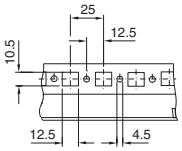
Mounting plate



Cross-section



Pitch pattern of holes



Enclosure

B1 = Overall width
B2 = Width of door
B3 = Clearance between enclosure frame sections
B5 = Section length of system punchings/hole distance of base and plinth attachment
B6 = Clearance between the tubular door frame sections
B7 = Distance between the rows of tubular door frame holes
B8 = Spacing between eyebolts
B9 = Clearance in base aperture

H1 = Overall height
H2 = Height of rear panel and door
H3 = Clearance between enclosure frame sections
H5 = Section length of system punchings
H6 = Distance between the rows of tubular door frame holes
H7 = Clearance between the tubular door frame sections
H8 = Spacing of tubular door frame fastening bolts
H9 = Distance from base to centre of lock

T1 = Overall depth
T2 = Section length of system punchings/hole distance of base and plinth attachment
T4 = Depth of base frame
T5 = Clearance in base aperture
T6 = Possible mounting depth (mounting plate assembly) up to 149 mm, depth-adjustable on a 25 mm pitch pattern
T7 = Centre-to-centre distance between eyebolts

Mounting plate

F = Overall width
G = Overall height

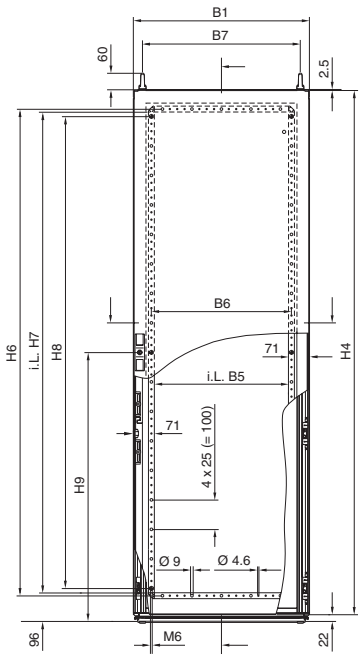
Single-door

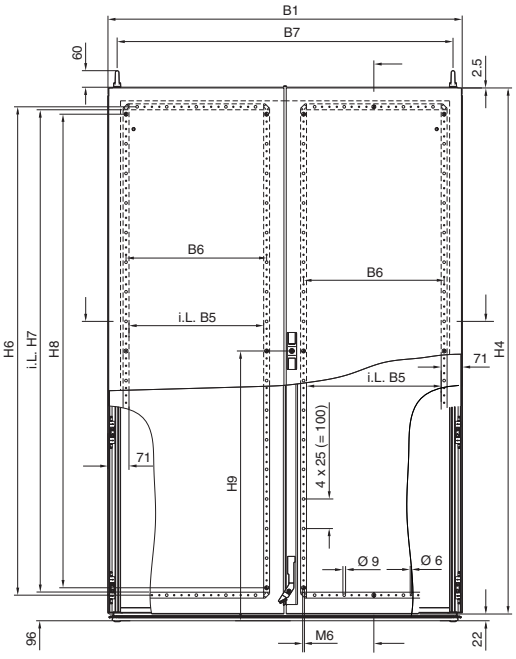
Model No. ES		Width dimensions mm								Height dimensions mm								Depth dimensions mm						Mounting plates mm	
Spray-finished	Stainless steel	B1	B2	B3	B5	B6	B7	B8	B9	H1	H2	H3	H5	H6	H7	H8	H9	T1	T2	T4	T5	T6	T7	F	G
–	**5450.600**	599	592	512	475	455	475	535	401	1610	1575	1512	1475	1450	1430	1400	798	402	275	349	269	349	325	499	1496
5665.500	–	599	592	512	475	455	475	535	401	1610	1575	1512	1475	1450	1430	1400	798	502	375	449	369	449	425	499	1496
5684.500	–	599	592	512	475	455	475	535	401	1810	1775	1712	1675	1650	1630	1600	898	402	275	349	269	349	325	499	1696
–	**5451.600**	599	592	512	475	455	475	535	401	1810	1775	1712	1675	1650	1630	1600	898	502	375	449	369	449	425	499	1696
5605.500	–	599	592	512	475	455	475	535	401	2010	1975	1912	1875	1850	1830	1800	998	502	375	449	369	449	425	499	1896
5865.500	–	799	792	712	675	655	675	735	601	1610	1575	1512	1475	1450	1430	1400	798	502	375	449	369	449	425	699	1496
5884.500	–	799	792	712	675	655	675	735	601	1810	1775	1712	1675	1650	1630	1600	898	402	275	349	269	349	325	699	1696
5805.500	–	799	792	712	675	655	675	735	601	2010	1975	1912	1875	1850	1830	1800	998	502	375	449	369	449	425	699	1896
5084.500	**5454.600**	999	992	912	875	855	875	935	801	1810	1775	1712	1675	1650	1630	1600	898	402	275	349	269	349	325	899	1696
–	**5452.600**	799	792	712	675	655	675	735	601	1810	1775	1712	1675	1650	1630	1600	898	502	375	449	369	449	425	699	1696
–	**5453.600**	799	792	712	675	655	675	735	601	2010	1975	1912	1875	1850	1830	1800	998	602	475	549	469	549	525	699	1896

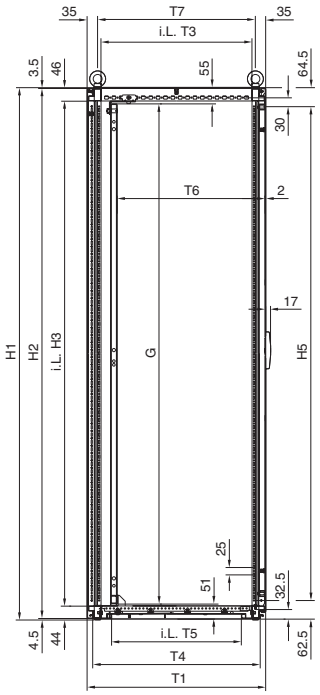
1.4 Baying system TS 8

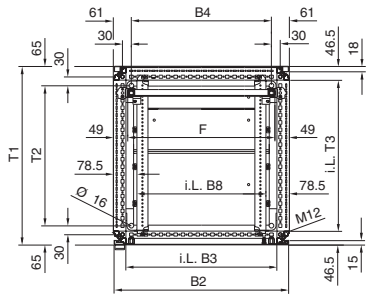
Spray-finished Page 138 – 147

Stainless steel Page 284

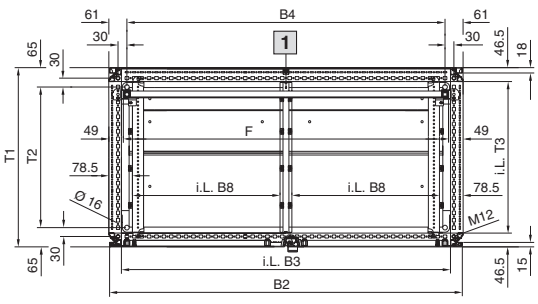








Base/plinth mounting: B4 x T2



Base/plinth mounting: B4 x T2

Note:
With fitted side panels, the overall width (B1) is increased by 9 mm. Between bayed enclosures, allow 3 mm for the seal.

1 Does not apply to TS 8880.500/TS 8881.500

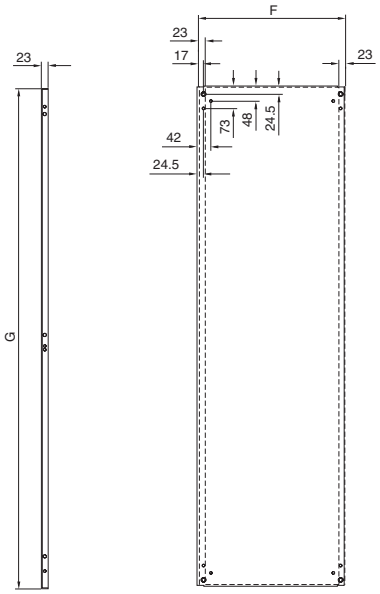
i.L. = Clearance width

Double-door

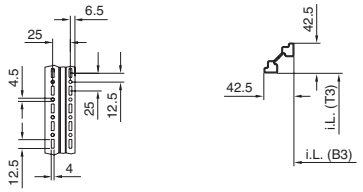
Model No. TS		Width dimensions mm								Height dimensions mm									Depth dimensions mm							Mounting plates mm	
Spray-finished	Stainless steel	B1	B2	B3	B4	B5	B6	B7	B8	H1	H2	H3	H4	H5	H6	H7	H8	H9	T1	T2	T3	T4	T5	T6	T7	F	G
8245.500	–	1197	1192	1112	1075	455	475	1135	500	1405	1397	1312	1377.5	1275	1250	1230	1200	711	505	375	412	468	340	130 – 455	435	1099	1296
8080.500	–	997	992	912	875	355	375	935	400	1805	1797	1712	1777.5	1675	1650	1630	1600	911	405	275	312	368	240	130 – 355	335	899	1696
8284.500	**8456.600**	1197	1192	1112	1075	455	475	1135	500	1805	1797	1712	1777.5	1675	1650	1630	1600	911	405	275	312	368	240	130 – 355	335	1099	1696
8880.500	–	797	792	712	675	255	275	735	640	1805	1797	1712	1777.5	1675	1650	1630	1600	911	505	375	412	468	340	130 – 455	435	699	1696
8285.500	**8453.600**	1197	1192	1112	1075	455	475	1135	500	1805	1797	1712	1777.5	1675	1650	1630	1600	911	505	375	412	468	340	130 – 455	435	1099	1696
8881.500	–	797	792	712	675	255	275	735	640	1805	1797	1712	1777.5	1675	1650	1630	1600	911	605	475	512	568	440	130 – 555	535	699	1696
8286.500	–	1197	1192	1112	1075	455	475	1135	500	1805	1797	1712	1777.5	1675	1650	1630	1600	911	605	475	512	568	440	130 – 555	535	1099	1696
8204.500	–	1197	1192	1112	1075	455	475	1135	500	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	405	275	312	368	240	130 – 355	335	1099	1896
8005.500	–	997	992	912	875	355	375	935	400	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	505	375	412	468	340	130 – 455	435	899	1896
8205.500	–	1197	1192	1112	1075	455	475	1135	500	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	505	375	412	468	340	130 – 455	435	1099	1896
8006.500	–	997	992	912	875	355	375	935	400	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	605	475	512	568	440	130 – 555	535	899	1896
8206.500	**8451.600**	1197	1192	1112	1075	455	475	1135	500	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	605	475	512	568	440	130 – 555	535	1099	1896
8208.500	–	1197	1192	1112	1075	455	475	1135	500	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	805	675	712	768	640	130 – 755	735	1099	1896
8226.500	–	1197	1192	1112	1075	455	475	1135	500	2205	2197	2112	2177.5	2075	2050	2030	2000	1111	605	475	512	568	440	130 – 555	535	1099	2096
8265.500	–	1197	1192	1112	1075	455	475	1135	500	1605	1597	1512	1577.5	1475	1450	1430	1400	–	505	375	412	468	340	130 – 455	435	1099	1496

Large enclosures

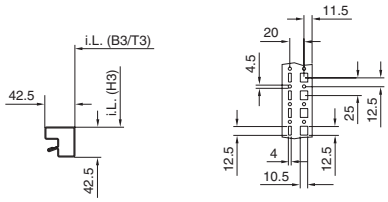
Mounting plate



Cross-sections
vertical



horizontal



i.L. = Clearance width

Enclosure

B1 = Overall width
B2 = Width of door
B3 = Clearance between enclosure frame sections
B4 = Section length of system punchings/hole distance of base and plinth attachment
B5 = Clearance between the tubular door frame sections
B6 = Distance between the rows of tubular door frame holes
B7 = Spacing between eyebolts
B8 = Clearance in base aperture

H1 = Overall height
H2 = Height of rear panel
H3 = Clearance between enclosure frame sections
H4 = Height of door
H5 = Section length of system punchings
H6 = Distance between the rows of tubular door frame holes
H7 = Clearance between the tubular door frame sections
H8 = Spacing of tubular door frame fastening bolts
H9 = Distance from base to centre of lock

T1 = Overall depth
T2 = Section length of system punchings/hole distance of base and plinth attachment
T3 = Clearance between enclosure frame sections
T4 = Depth of base frame
T5 = Clearance in base aperture
T6 = Possible mounting depth (mounting plate assembl), depth-adjustable on a 25 mm pitch pattern
T7 = Centre-to-centre distance between eyebolts

Mounting plate

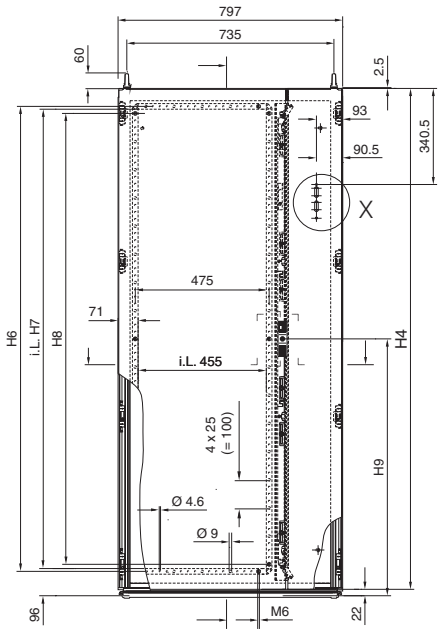
F = Overall width
G = Overall height

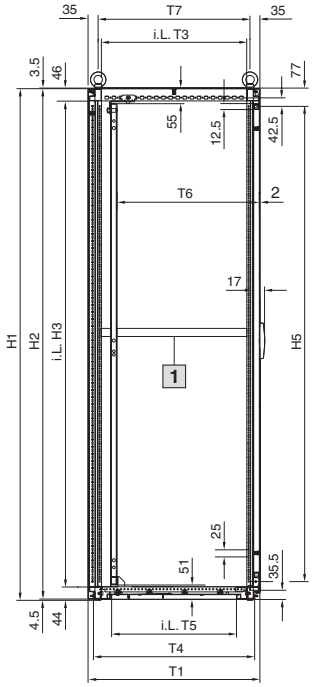
Single-door

Model No. TS		Width dimensions mm								Height dimensions mm									Depth dimensions mm							Mounting plates mm	
Spray-finished	Stainless steel	B1	B2	B3	B4	B5	B6	B7	B8	H1	H2	H3	H4	H5	H6	H7	H8	H9	T1	T2	T3	T4	T5	T6	T7	F	G
8645.500	–	597	592	512	475	455	475	535	440	1405	1397	1312	1377.5	1275	1250	1230	1200	711	505	375	412	468	340	130 – 455	435	499	1296
8845.500	–	797	792	712	675	655	675	735	640	1405	1397	1312	1377.5	1275	1250	1230	1200	711	505	375	412	468	340	130 – 455	435	499	1296
8684.500	–	597	592	512	475	455	475	535	440	1805	1797	1712	1777.5	1675	1650	1630	1600	911	405	275	312	368	240	130 – 355	335	499	1696
8884.500	**8454.600**	797	792	712	675	655	675	735	640	1805	1797	1712	1777.5	1675	1650	1630	1600	911	405	275	312	368	240	130 – 355	335	699	1696
8084.500	–	997	992	912	875	855	875	935	840	1805	1797	1712	1777.5	1675	1650	1630	1600	911	405	275	312	368	240	130 – 355	335	899	1696
8485.510	–	397	392	312	275	255	275	335	240	1805	1797	1712	1777.5	1675	1650	1630	1600	911	505	375	412	468	340	130 – 455	435	–	–
8685.500	**8457.600**	597	592	512	475	455	475	535	440	1805	1797	1712	1777.5	1675	1650	1630	1600	911	505	375	412	468	340	130 – 455	435	499	1696
8885.500	**8455.600**	797	792	712	675	655	675	735	640	1805	1797	1712	1777.5	1675	1650	1630	1600	911	505	375	412	468	340	130 – 455	435	699	1696
8486.510	–	397	392	312	275	255	275	335	240	1805	1797	1712	1777.5	1675	1650	1630	1600	911	605	475	512	568	440	130 – 555	535	–	–
8686.500	–	597	592	512	475	455	475	535	440	1805	1797	1712	1777.5	1675	1650	1630	1600	911	605	475	512	568	440	130 – 555	535	499	1696
8886.500	–	797	792	712	675	655	675	735	640	1805	1797	1712	1777.5	1675	1650	1630	1600	911	605	475	512	568	440	130 – 555	535	699	1696
8604.500	–	597	592	512	475	455	475	535	440	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	405	275	312	368	240	130 – 355	335	499	1896
8804.500	–	797	792	712	675	655	675	735	640	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	405	275	312	368	240	130 – 355	335	699	1896
8405.510	–	397	392	312	275	255	275	335	240	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	505	375	412	468	340	130 – 455	435	–	–
8605.500	–	597	592	512	475	455	475	535	440	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	505	375	412	468	340	130 – 455	435	499	1896
8805.500	–	797	792	712	675	655	675	735	640	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	505	375	412	468	340	130 – 455	435	699	1896
8406.510	–	397	392	312	275	255	275	335	240	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	605	475	512	568	440	130 – 555	535	–	–
8606.500	**8452.600**	597	592	512	475	455	475	535	440	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	605	475	512	568	440	130 – 555	535	499	1896
8806.500	**8450.600**	797	792	712	675	655	675	735	640	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	605	475	512	568	440	130 – 555	535	699	1896
8608.500	–	597	592	512	475	455	475	535	440	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	805	675	712	768	640	130 – 755	735	499	1896
8808.500	–	797	792	712	675	655	675	735	640	2005	1997	1912	1977.5	1875	1850	1830	1800	1011	805	675	712	768	640	130 – 755	735	699	1896
8626.500	–	597	592	512	475	455	475	535	440	2205	2197	2112	2177.5	2075	2050	2030	2000	1111	605	475	512	568	440	130 – 555	535	499	2096
8826.500	–	797	792	712	675	655	675	735	640	2205	2197	2112	2177.5	2075	2050	2030	2000	1111	605	475	512	568	440	130 – 555	535	699	2096
8665.500	–	597	592	512	475	455	475	535	440	1605	1597	1512	1577.5	1475	1450	1430	1400	–	505	375	412	468	340	130 – 455	435	499	1496
8865.500	–	797	792	712	675	655	675	735	640	1605	1597	1512	1577.5	1475	1450	1430	1400	–	505	375	412	468	340	130 – 455	435	699	1696

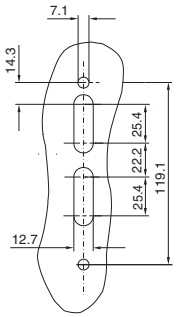
1.4 Baying system TS 8

For isolator door locking Page 150



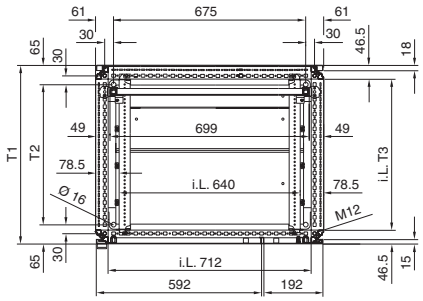


Detail X



1 Only for TS 8906.500

i.L. = Clearance width



Enclosure

H1 = Overall height
H2 = Height of rear panel
H3 = Clearance between enclosure frame sections
H4 = Height of door and trim panel
H5 = Section length of system punchings
H6 = Distance between the rows of tubular door frame holes
H7 = Clearance between the tubular door frame sections
H8 = Spacing of tubular door frame fastening bolts
H9 = Distance from base to centre of lock

T1 = Overall depth
T2 = Section length of system punchings/ hole distance of base and plinth attachment
T3 = Clearance between enclosure frame sections
T4 = Depth of base frame
T5 = Clearance in base aperture
T6 = Possible mounting depth (mounting plate assembly)
T7 = Centre-to-centre distance between eyebolts

Note:
The cutouts in the right trim piece are suitable for the following isolator actuators: Allen Bradley 1494 V-H11, Square D9422A1, ITE Siemens[1)] Max-Flex Serie/F HOH, General Electric TDA Type 1 and 2.

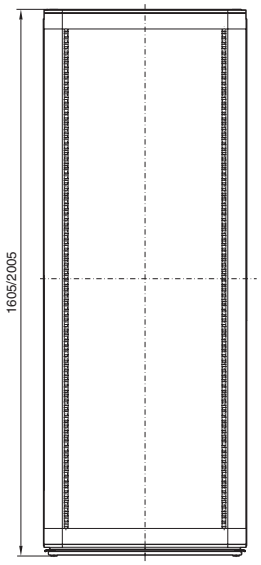
[1)] Available in USA only.

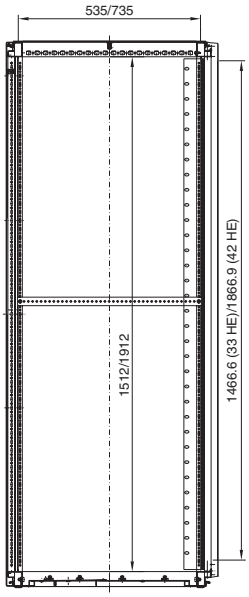
Model No. TS	Height dimensions mm									Depth dimensions mm						
	H1	H2	H3	H4	H5	H6	H7	H8	H9	T1	T2	T3	T4	T5	T6	T7
8984.500	1805	1797	1712	1778	1650	1650	1630	1600	911	405	275	312	368	240	130 – 355	335
8985.500	1805	1797	1712	1778	1650	1650	1630	1600	911	505	375	412	468	340	130 – 455	435
8905.500	2005	1997	1912	1978	1850	1850	1830	1800	1011	505	375	412	468	340	130 – 455	435
8906.500	2005	1997	1912	1978	1850	1850	1830	1800	1011	605	475	512	568	440	130 – 555	535

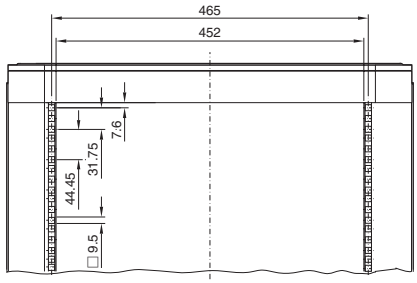
Large enclosures

1.4 Baying system TS 8

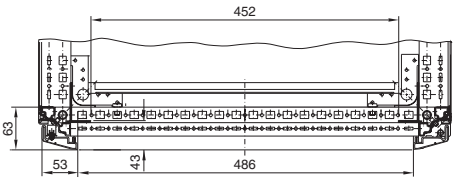
Electronic enclosures Page 148

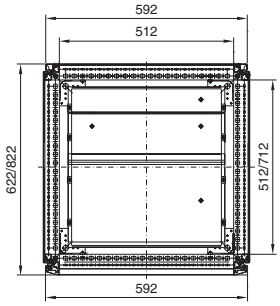






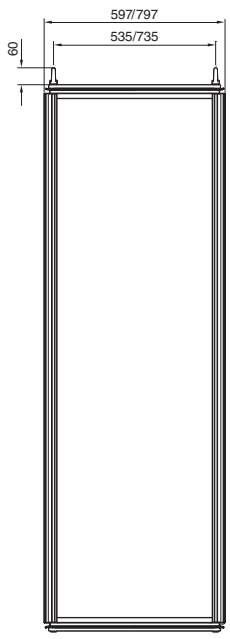
HE = U

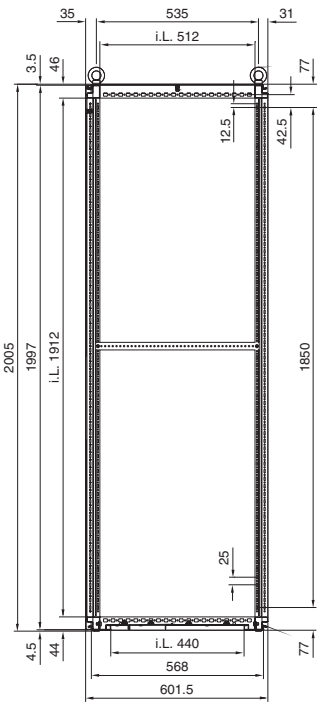


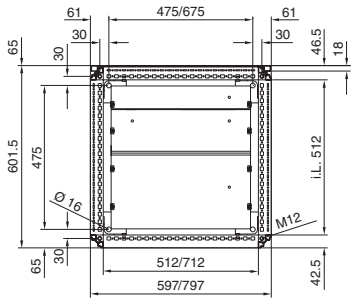


1.4 Baying system TS 8

For modular front design Page 149

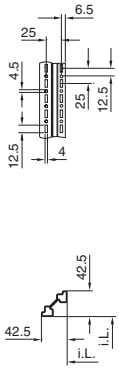




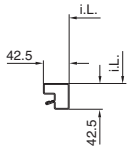


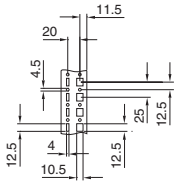
Cross-sections

vertical



horizontal



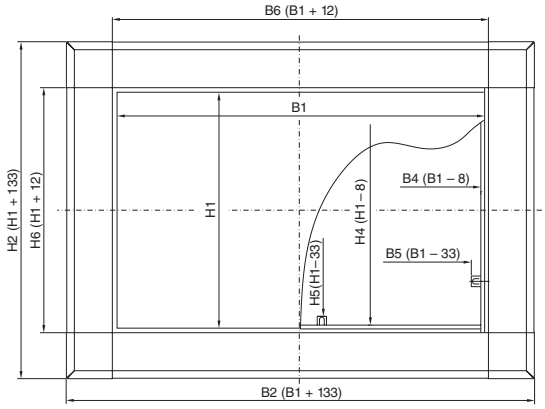


i.L. = Clearance width

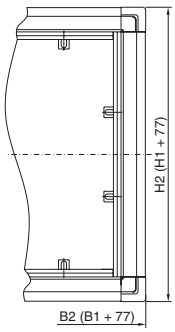
1.5 Rittal Command Panel VIP 6000

3.1 Installation depth Page 161

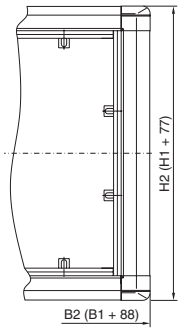
Front frame, wide



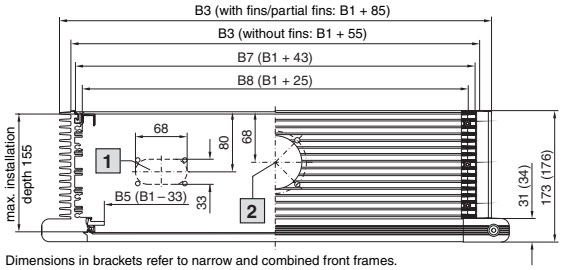
Narrow



Combined



1 155 mm



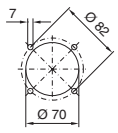
Dimensions in brackets refer to narrow and combined front frames.

1 Cross section of the cable duct

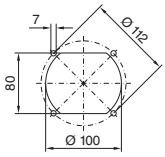
2 Support arm cutout for CP-L system, Ø 130 mm

Support arm connections

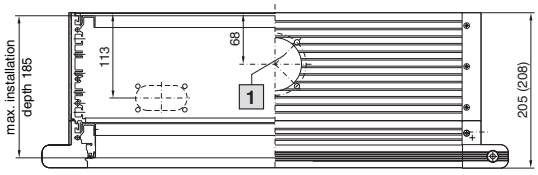
CP-L, Ø 130 mm



CP-XL



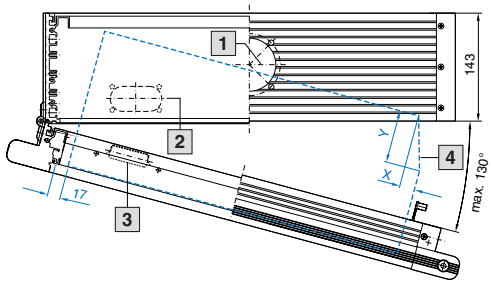
2 185 mm, screw-fastened



Dimensions in brackets refer to narrow and combined front frames.

1 Support arm connection for system Ø 130 mm

3 185 mm, hinged



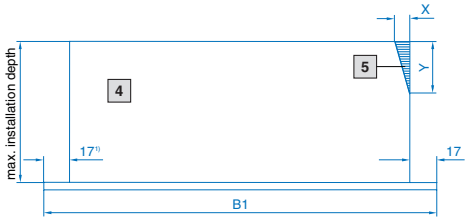
1 Support arm connection for CP-L system, Ø 130 mm

2 Only for CP 6392.109, CP 6392.209

3 Only for CP 6392.009

4 Max. installation space for hinged enclosures

5 Collision zone



1) see page 160.

Width dimensions:

B1 = Width of the front panel

B2 = Overall width

B3 = Enclosure width

B4 = Clearance width between enclosure sections

B5 = Clearance width between retaining claws of the mounting kit

B6 = Clearance width between the front frames

B7 = Width of the rear panel

B8 = Internal clearance of enclosure, width

Height dimensions:

H1 = Height of the front panel

H2 = Overall height

H3 = Enclosure height (with fins: H1 + 85, without fins: H1 + 55)

H4 = Clearance height between enclosure sections

H5 = Clearance height between retaining claws

H6 = Clearance height between front frames

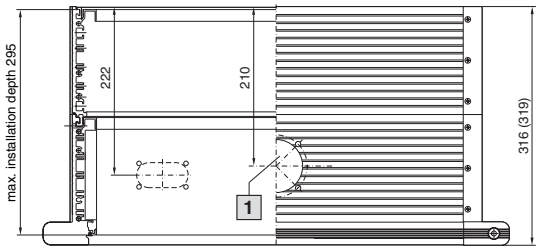
H7 = Height of the rear panel (H1 + 43)

H8 = Internal clearance of enclosure, height (H1 + 25)

1.5. Command Panel VIP 6000

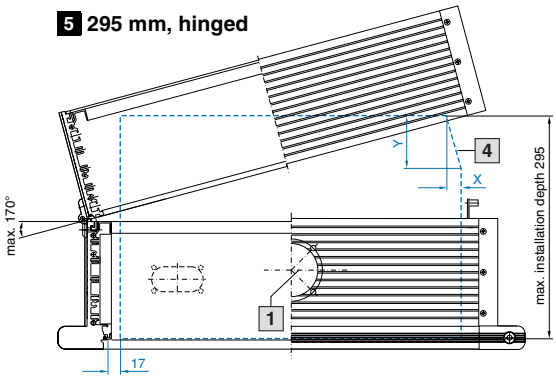
3.1 Installation depth Page 161

4 295 mm, screw-fastened

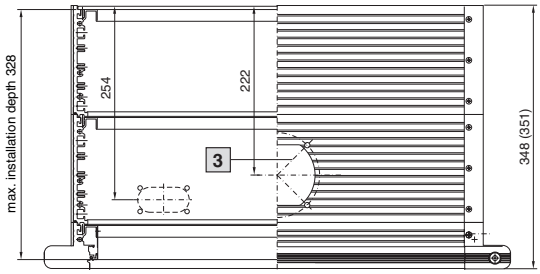


Dimensions in brackets refer to narrow and combined front frames.

5 295 mm, hinged

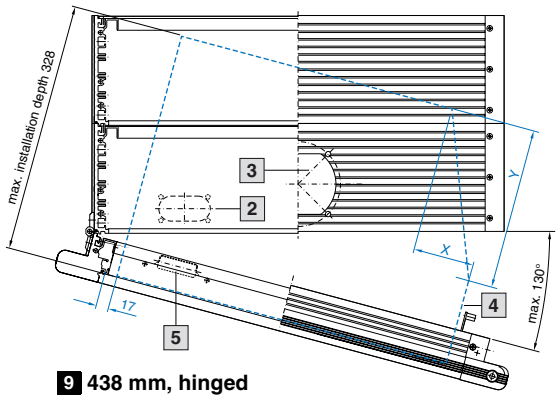


6 328 mm, screw-fastened

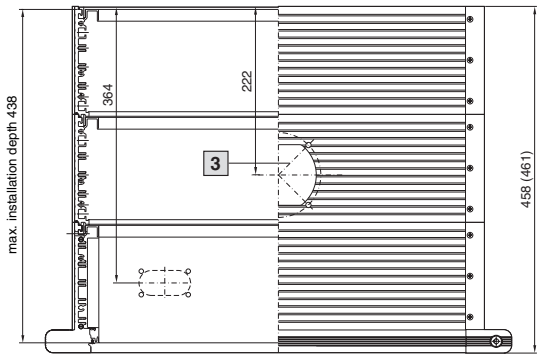


Dimensions in brackets refer to narrow and combined front frames.

7 328 mm, hinged

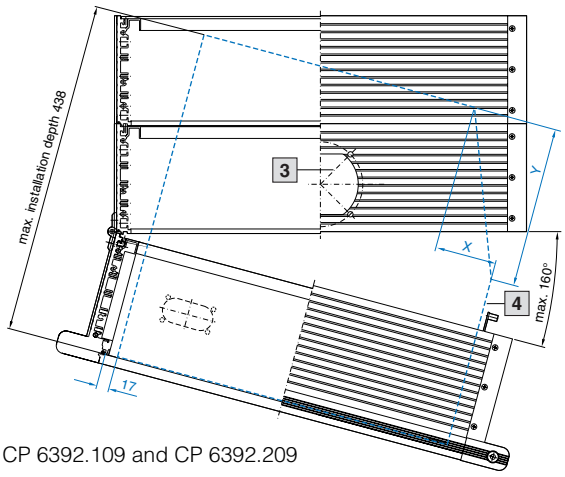


8 438 mm, screw-fastened



Dimensions in brackets refer to narrow and combined front frames.

9 438 mm, hinged



1 Support arm cutout for CP-L system, Ø 130 mm

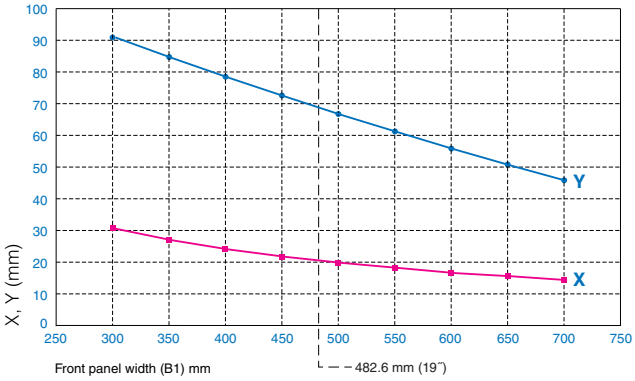
4 Max. installation space for hinged enclosures

3 Support arm connection for system CP-XL

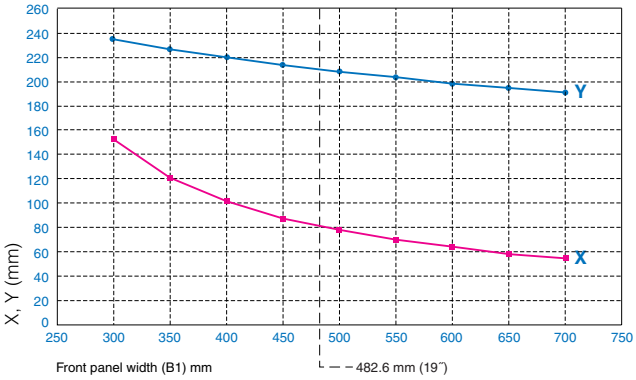
2 Only for CP 6392.109 and CP 6392.209

5 Only for CP 6392.009

Calculating the swivel mounting space (for installation depth 185 mm und 295 mm, hinged)



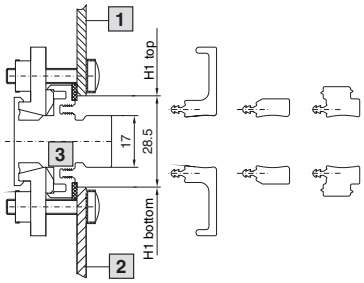
Calculating the swivel mounting space (for installation depth 328 mm und 438 mm, hinged)



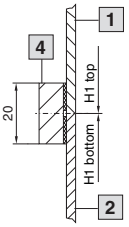
1.5 Rittal Command Panel VIP 6000

3.2 Front design Page 162

1 3 5 Cross member



2 4 5 Sealing bar



1 Front panel 1
2 Front panel 2
3 Cross member
4 Sealing bar

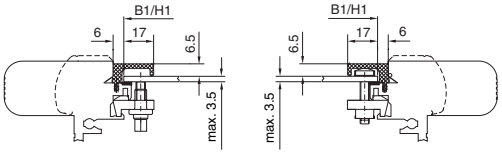
Minimum front panel width (B1)
Depending on the
- Installation depth of the operating housing
- Connection between the operating housing/keyboard housing
- Position of the support arm connection

Dimensions in mm		Installation depth of operating housing (see page 161)				
		155	185	295	328	438
Prepared for the external mounting of keyboard housing (see design code number 3.7, page 164)	Support arm/ wall-mounted and pedestal connection (see design code number 3.6, page 164)	1	2 Screw-fastened 3 Hinged	4 Screw-fastened 5 Hinged	6 Screw-fastened 7 Hinged	8 Screw-fastened 9 Hinged
		Minimum front panel width				
0 None	**0** to **3** top or bottom	169	265	169	265	265
1 Frame connector or **4** hinged frame connector	**1** top	169	265	169	265	
	2 and **3** bottom	339[1)]	445[1)]	339[1)]	445[1)]	
2 Enclosure duct connector	**1** top	189	265	189	265	
	2 and **3** bottom	339	445	339	445	
3 Enclosure bar connector	**1** top	169	265	169	265	
	2 and **3** bottom	397[1)]	445[1)]	397[1)]	445[1)]	

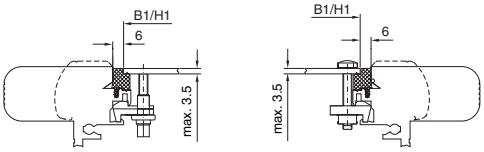
[1)] Smaller front panel widths for asymmetrical support arm connection available on request.

3.4 Trim types Page 163

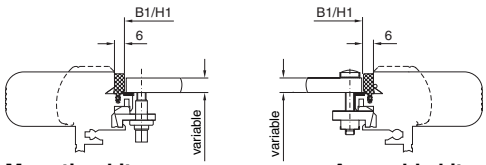
1 Cover trim
Front panel recessed, screws concealed



3 Spacer trim
Front panel flush



2 End trim
Front panel recessed



Mounting kit for threaded bolts:
M5: CP 6053.500
M4: CP 6058.500

Mounting kit for screw clamp:
CP 6053.210

Mounting kits,
see page 1037.

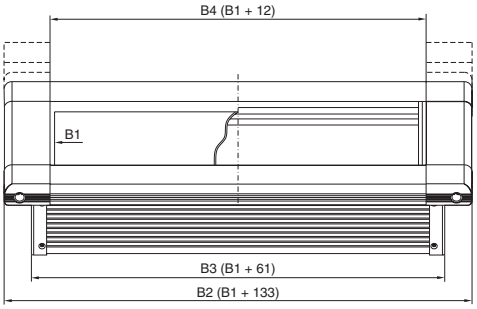
Assembly kit for holes:
M5: CP 6053.000
M4: CP 6058.000
M6: CP 6053.000/6058.000
+ EL 2092.200
+ screws M6 x 25

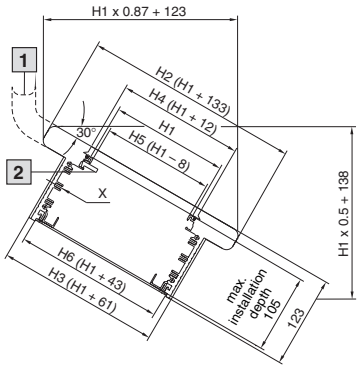
1.5 Rittal Command Panel VIP 6000

4.1 Keyboard housing Page 166

1 Installation depth 105 mm

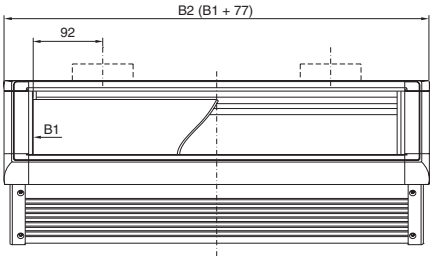
Front frames
Wide

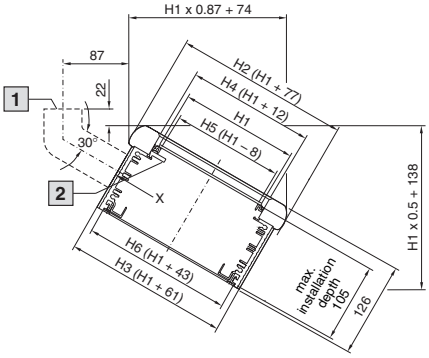




1 Frame connector, rigid/adjustable
2 CP 6058.XXX: M4
CP 6053.XXX: M5

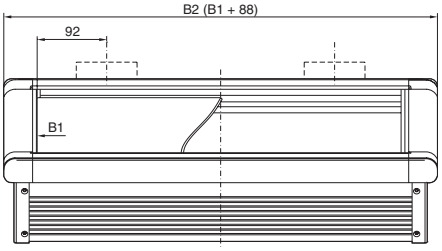
Narrow

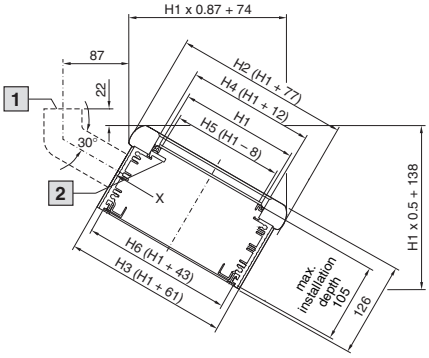




1 Enclosure duct connector
2 CP 6058.XXX: M4
CP 6053.XXX: M5

Combined





1 Enclosure duct connector
2 CP 6058.XXX: M4
CP 6053.XXX: M5

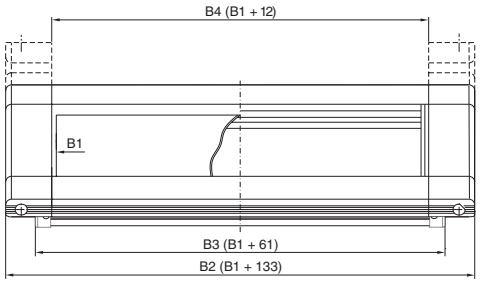
B = Width

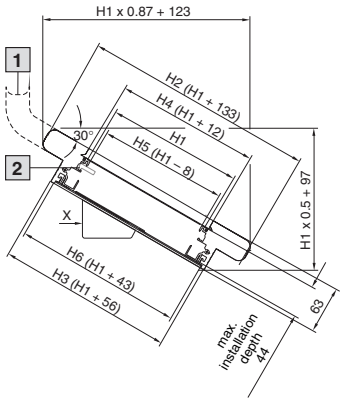
1.5 Command Panel VIP 6000

4.1 Keyboard housing Page 166

2 Installation depth 44 mm

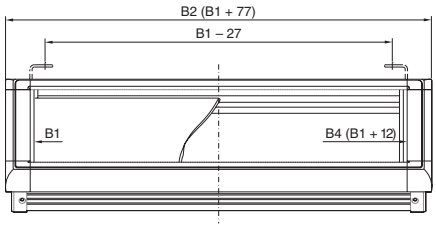
Front frames
Wide

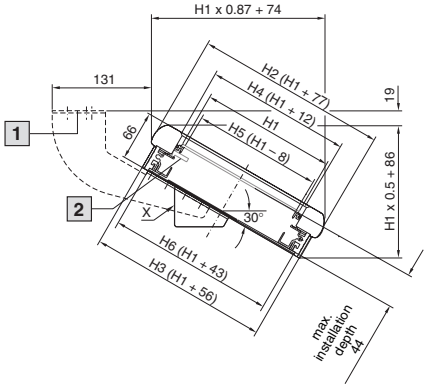




1 Frame connector, rigid/adjustable
2 CP 6058.XXX: M4
CP 6053.XXX: M5

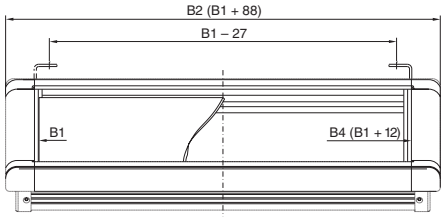
Narrow

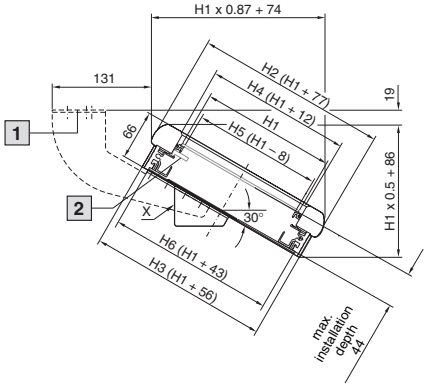




1 Enclosure bar connector
2 CP 6058.XXX: M4
CP 6053.XXX: M5

Combined





1 Enclosure bar connector
2 CP 6058.XXX: M4
CP 6053.XXX: M5

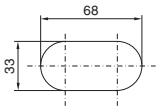
Width dimensions:

B1 = Width of the front panel
B2 = Overall width
B3 = Enclosure width
B4 = Clearance width between front frames
B6 = Width of the rear panel
B7 = Distance between rear panel holes, width

Height dimensions:

H1 = Height of the front panel
H2 = Overall height
H3 = Enclosure height
H4 = Clearance height between front frames
H5 = Clearance height between enclosure sections
H6 = Height of rear panel
H7 = Distance between rear panel holes, width

X = Cross-section of cable tube connection

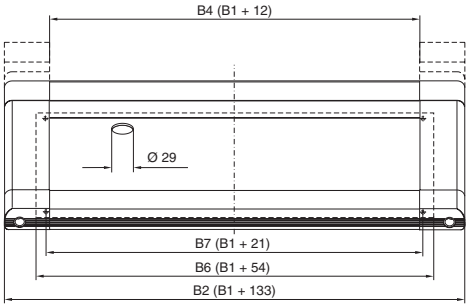


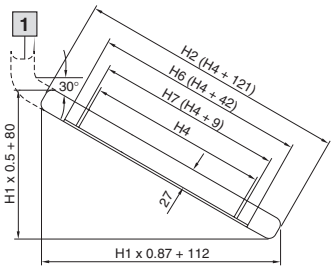
1.5. Command Panel VIP 6000

4.1 Keyboard housing Page 166

3 Depth 27 mm

**Front frame, wide,
with cable entry grommet**

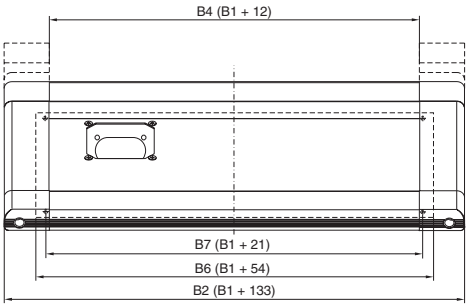


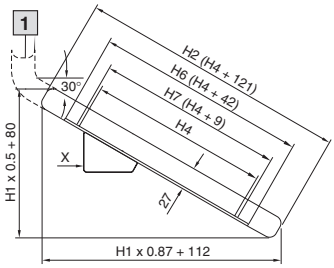


1 Frame connector, rigid/adjustable

4 Depth 27 mm

**Front frame, wide,
for cable tube, flexible**

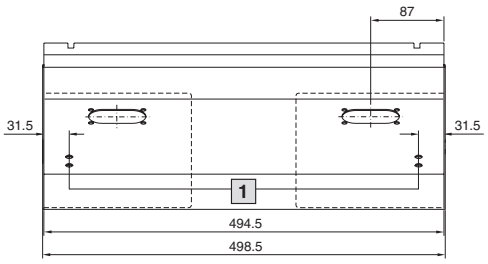




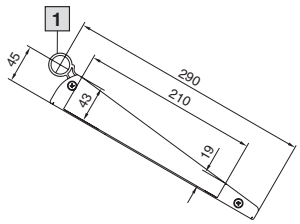
1 Frame connector, rigid/adjustable

5 Support for keyboards

**Narrow front frame and
combined with cable entry grommet**

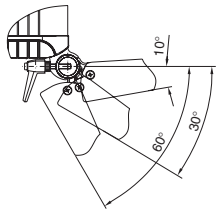


1 Prepared for the support for mousepad, vertically hinged SM 2383.020



1 Hinged frame connector

Rotation range



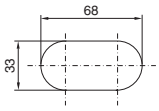
Width dimensions:

B1 = Width of the front panel
B2 = Overall width
B3 = Enclosure width
B4 = Clearance width between front frames
B6 = Width of the rear panel
B7 = Distance between rear panel holes, width

Height dimensions:

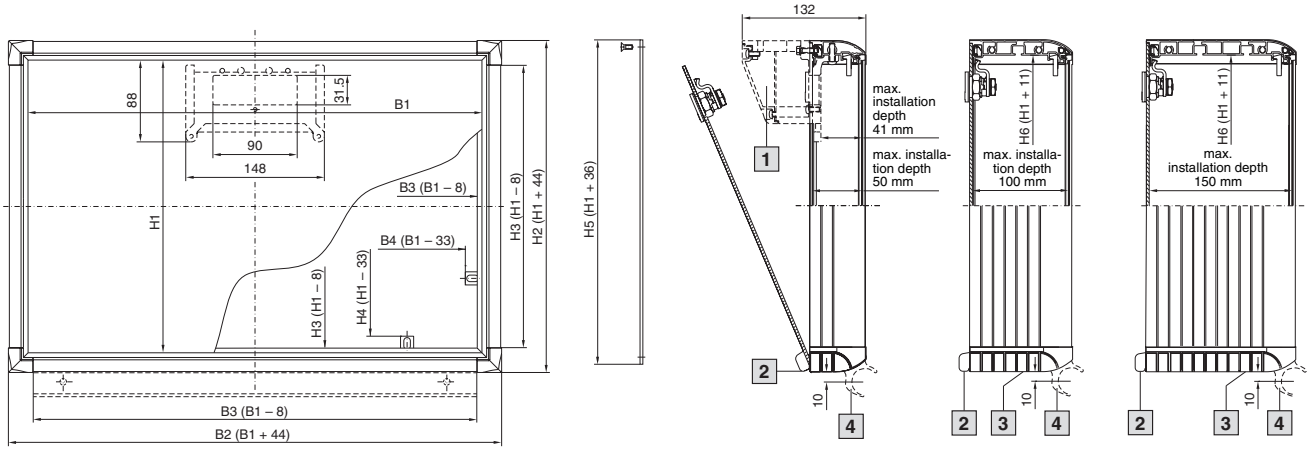
H1 = Height of the front panel
H2 = Overall height
H3 = Enclosure height
H4 = Clearance height between front frames
H5 = Clearance height between enclosure sections
H6 = Height of rear panel
H7 = Distance between rear panel holes, width

X = Cross-section of cable tube connection

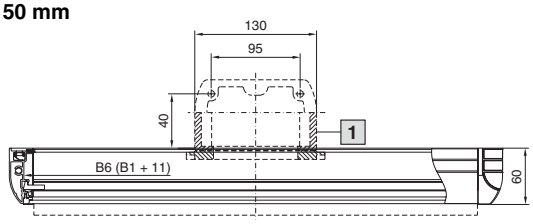


1.5 Optipanel

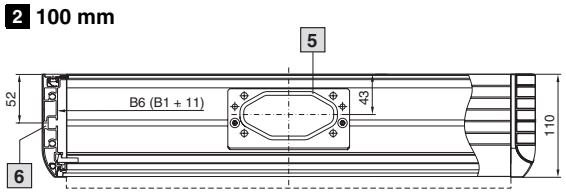
2.1 Installation depth Page 173



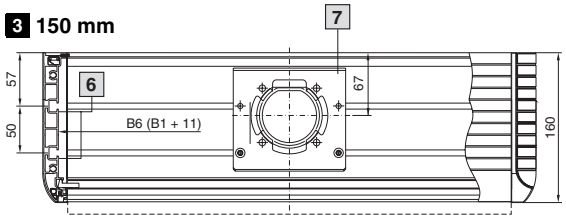
1 50 mm



2 100 mm



3 150 mm



1 When preparing for rear support arm connection CP-L, ▭ 120 x 65 mm
2 Hinge
3 Cable tube
4 When preparing for keyboard housings
5 Prepared for CP-L, ▭ 120 x 65 mm
6 Channels for inserting the spring nuts M5
7 Prepared for CP-L, Ø 130 mm

Width dimensions:

B1 = Width of the front panel
B2 = Overall width
B3 = Clearance width between enclosure sections
B4 = Clearance width between the retaining claws of the mounting kit
B5 = Width of rear panel (B1 + 36)
B6 = Clearance width for assembly

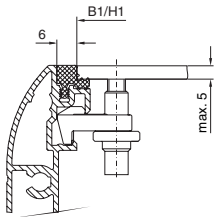
Height dimensions:

H1 = Height of the front panel
H2 = Overall height
H3 = Clearance height between enclosure sections
H4 = Clearance height between the retaining claws of the mounting kit
H5 = Height of rear panel
H6 = Clearance height for assembly

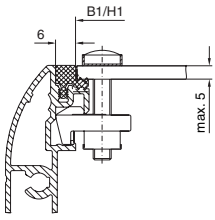
1.5 Optipanel

2.2 Front design Page 174

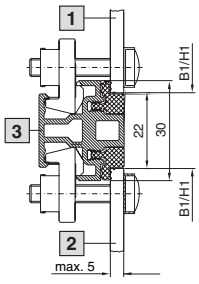
Front panel screw-fastened from the inside



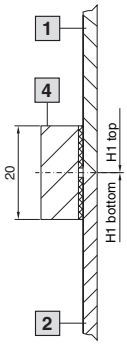
Front panel screw-fastened from the outside



Cross member



Sealing bar

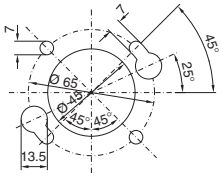


1 Front panel 1
2 Front panel 2
3 Cross member
4 Sealing bar

1.5 Command Panel VIP 6000/Optipanel

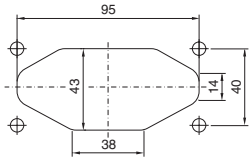
3.6/2.3 Support arm/wall and pedestal connection Page 164/175

CP-S
For installation depths 100/150 mm



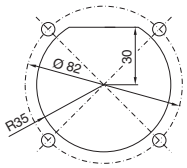
External mounting of support arm connections, see page 192.

CP-L, ▭ 120 x 65 mm
For installation depths 100/150 mm



External mounting of support arm connections, see page 200.

CP-L, Ø 130 mm
For installation depth 150 mm

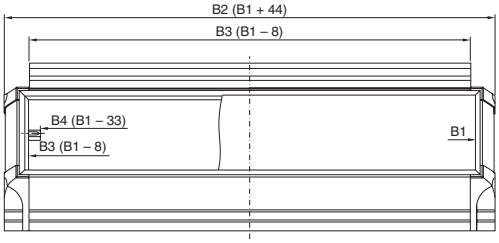


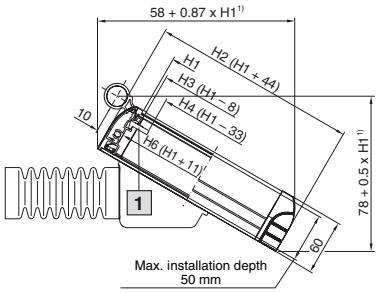
External mounting of support arm connections, see page 200.

1.5 Optipanel

2.5 Keyboard housing Page 177

1 Installation depth 50 mm

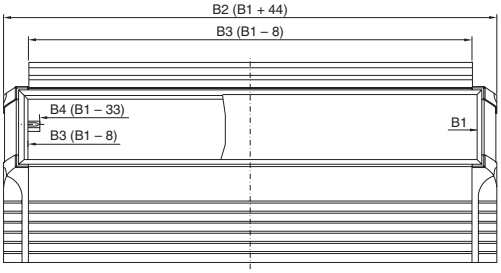


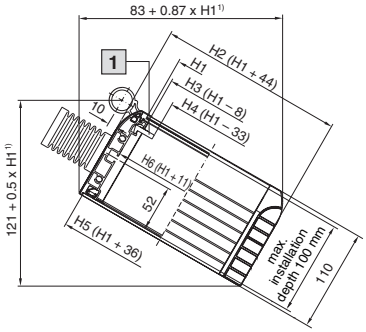


1 CP 6053.XXX: M5
CP 6058.XXX: M4

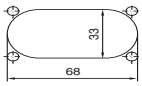
1) Applies to a tilting angle of 30° to the horizontal.

2 Installation depth 100 mm



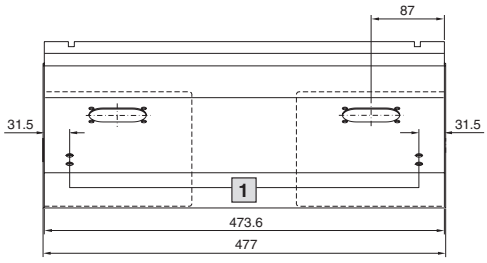


Cross-section
Cable duct connection

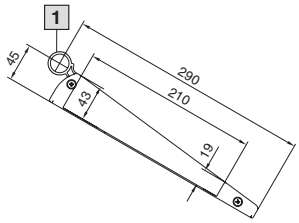


3 Support for keyboards

Narrow front frame and
combined with cable entry grommet

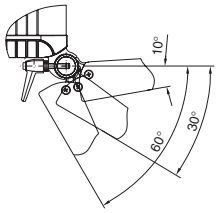


1 Prepared for the support for mousepad, vertically hinged SM 2383.020



1 Hinged frame connector

Rotation range



Width dimensions:

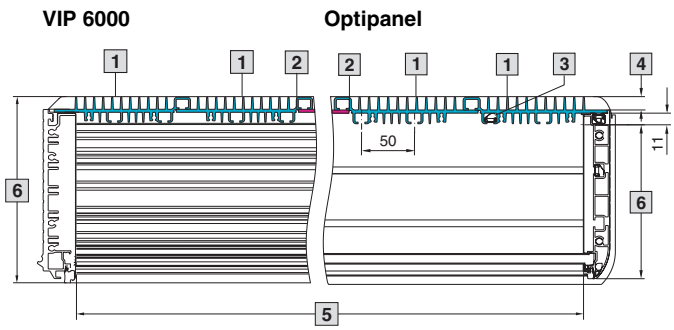
B1 = Width of the front panel
B2 = Overall width
B3 = Clearance width between enclosure sections
B4 = Clearance width between the retaining claws of the mounting kit
B5 = Width of rear panel (B1 + 36)
B6 = Clearance width for assembly

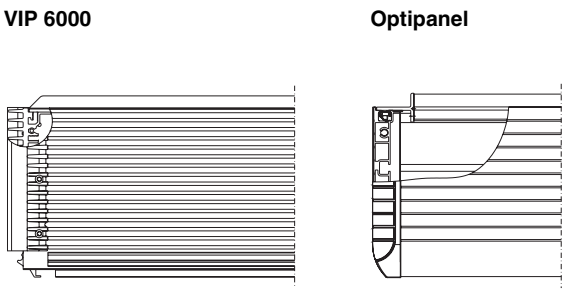
Height dimensions:

H1 = Height of the front panel
H2 = Overall height
H3 = Clearance height between enclosure sections
H4 = Clearance height between the retaining claws of the mounting kit
H5 = Height of rear panel
H6 = Clearance height for assembly

1.5 Command Panel VIP 6000/Optipanel

Rear cooling panel Page 165/176





1 Rear cooling panel section, unless otherwise specified the cooling fins are arranged vertically.

2 Width compensating panel, mounted in the centre with an even number of heat sinks, or on the right with an uneven number. By rotating the entire rear panel through 180°, this position may be modified individually.

3 Spring nut M5, CP 6108.000 for interior installation on screw channels.

4 The total depth of the enclosure is increased by 13 mm.

5 Front panel width for determining the cooling modules and compensating panel.

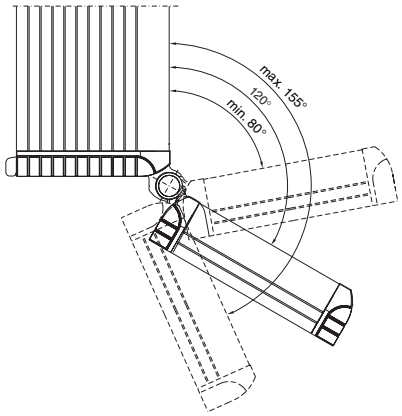
6 Installation depth is reduced by 11 mm.

Recommendation:
The minimum front panel width for the installation of at least 2 heat sink sections is 240 mm and should not be undercut, if possible.

1.5 Optipanel

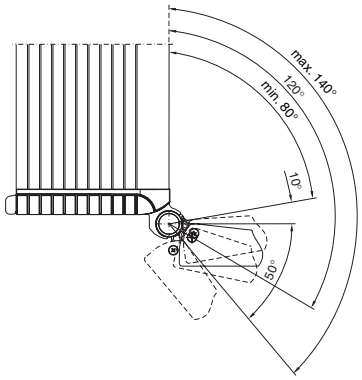
Keyboard housing connection Page 168

1 2 Hinged frame connector with Optipanel keyboard housing



Tilting angle infinitely ajustable from 80° to 155°.

3 Hinged frame connector with support for keyboards



Tilting angle infinitely ajustable from 80° to 140°.

Minimum front panel width (B1):
Depending on the
- Installation depth of the operating housing
- With or without keyboard housing
- Position of the support arm connection

		Installation depth of operating housing (see page 173)		
Keyboard housing (see page 177)	Position of the support arm connection (see page 175)	50 mm	100 mm	150 mm
		Minimum front panel width (mm)		
0 without	**0** to **8** top, bottom or rear	160 (265)	150	150
1 and **2** with	**1, 4, 7, 8** top or rear			
	2, 3, 5, 6 at bottom	378[1)]	339[1)]	339[1)]

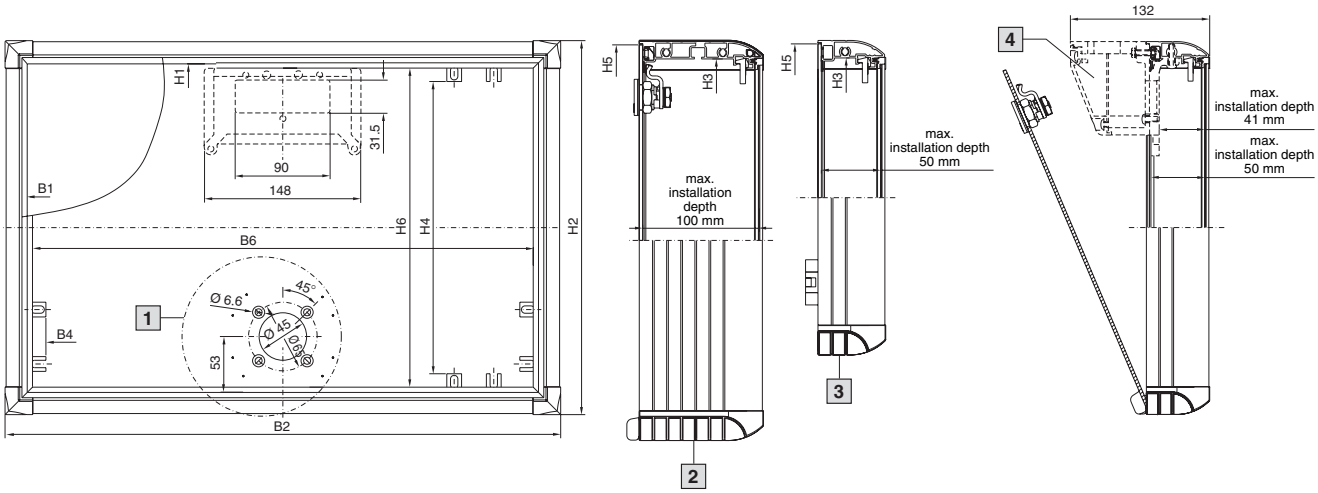
( ) Figures in brackets:
Only with the hinged rear panel combination (see page 176) version **2** and **4** with connection rear panel (see page 175) version **7** and **8.**

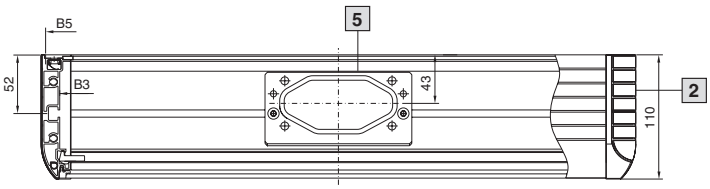
[1)] Smaller front panel widths for asymmetrical support arm connection available on request.

Operating housings

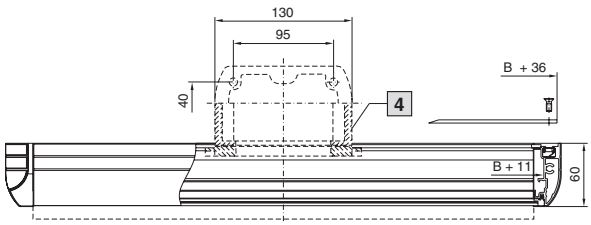
1.5 Optipanel

Standard sizes Page 178

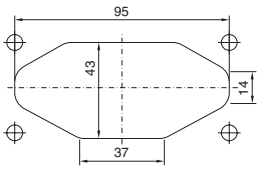








Prepared for CP-L, ▭ 120 x 65 mm
for CP 6380.000



1 Only for CP 6380.100
2 CP 6380.000, CP 6380.020, CP 6380.040
3 CP 6380.100
4 When preparing for rear support arm connections CP 6380.010, CP 6380.030
5 Prepared for CP-L, ▭ 120 x 65 mm

Model No. CP	6380.100	6380.000	6380.010	6380.020	6380.030	6380.040
B1 = Width of front panel mm	270	482.6	430	430	482.6	482.6
H1 = Height of front panel mm	234	310.3	343	343	354.8	354.8
Max. installation depth mm	50	100	50	100	50	100
Overall depth mm	60	110	60	110	60	110
B2 = Overall width mm	314	527	475	475	527	527
B3 = Clearance width between enclosure sections mm	281	494	441	441	494	494
B4 = Clearance width between the retaining claws of the mounting kit mm	237	450	397	397	450	450
B5 = Width of rear panel mm	306	519	466	466	519	519
B6 = Clearance width for assembly mm	262	475	422	422	475	475
H2 = Overall height mm	278	354	387	387	399	399
H3 = Clearance height between enclosure sections mm	245	321	354	354	365	365
H4 = Clearance height between the retaining claws of the mounting kit mm	201	277	310	310	321	321
H5 = Height of rear panel mm	270	346	379	379	391	391
H6 = Clearance height for assembly mm	226	302	335	335	347	347

1.5 Compact Panel

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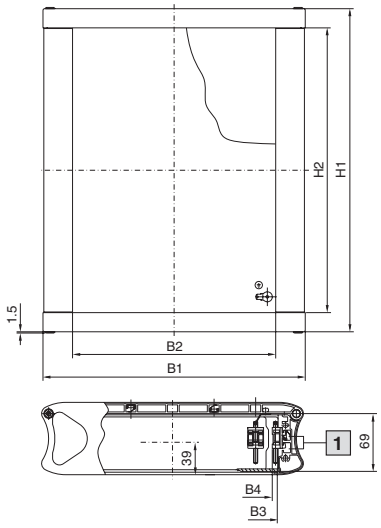
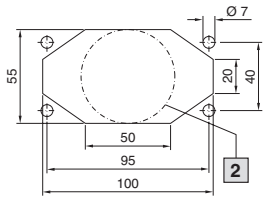
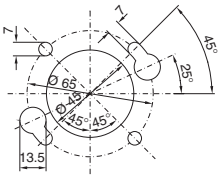


Mounting cutouts

CP-L, ▭ 120 x 65 mm



CP-S



1 Channels for M5 spring nuts

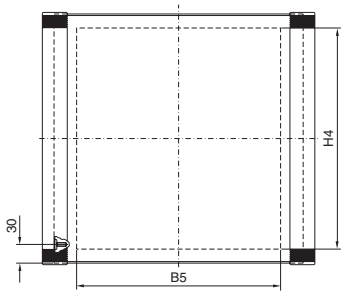
2 Alternative max. Ø 55

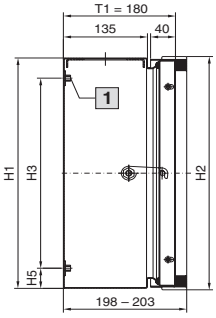
Model No. CP (with support arm connection CP-S)	**6340.000**	**6340.100**	**6340.200**	**6340.300**	**6340.400**
Model No. CP[1)] (with support arm connection CP-L, ▭ 120 x 65 mm)	**6340.010**	**6340.110**	**6340.210**	**6340.310**	**6340.410**
Model No. CP[1)] (without support arm connection)	**6340.020**	**6340.120**	**6340.220**	**6340.320**	**6340.420**
Width (B1) in mm	241	241	241	315	315
Height (H1) in mm	238	388	521	238	388
Depth (T1) in mm	87	87	87	87	87
B2 = Enclosure clearance width	170	170	170	244	244
B3 = Front panel width	178	178	178/4 U	252	252
B4 = Clearance width between screw clamps	164	164	164	238	238
H2 = Enclosure clearance height	192	342	475	192	342
H3 = Front panel height	200	350	482.6/19″	200	350
H4 = Clearance height between screw clamps	186	336	469	186	336

[1)] Delivery time approx. 2 weeks.

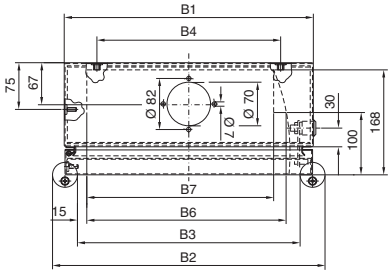
1.5 Command panel housing with door

based on AE Page 184





Top view

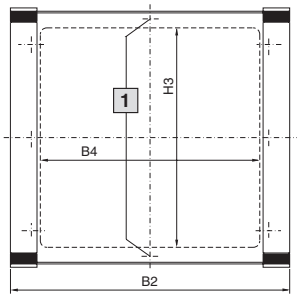


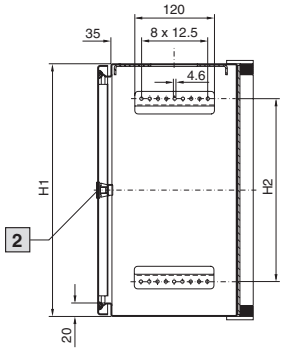
1 Welded nut M8 for the attachment of mounting plates or support rails

Model No. CP	1	**6534.000**	**6535.000**	**6537.000**	**6536.000**	**6538.000**	**6544.000**
Width (B1) in mm	Packs of	300	300	300	400	400	500
Height (H1) in mm		200	300	400	300	400	500
Depth (T1) in mm		180	180	180	180	180	180
B2 = Enclosure width with handle strips		338	338	338	438	438	538
B3 = Clearance opening, front		258	258	258	358	358	458
B4 = Spacing of mounting plate attachment		260	215	215	295	295	410
B5 = Max. front cutout, width		227	227	227	327	327	427
B6 = Hinged width for depth 100 mm		220	220	220	320	320	420
B7 = Hinged width for depth 168 mm		200	200	200	300	300	400
H2 = Enclosure height with handle strips		205	305	405	305	405	505
H3 = Spacing of mounting plate attachment		122	250	350	250	330	445
H4 = Max. front cutout, height		155	255	355	255	355	455
H5 = Distance from base – mounting plate attachment		39	25	25	25	35	27.5

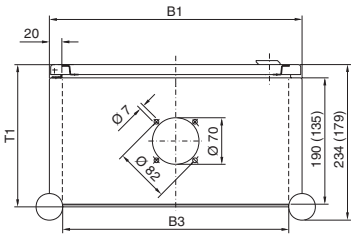
1.5 Operating housings

based on AE Page 185





Top view



1 Only for CP 6532.200 and CP 6533.200

2 For CP 6532.200 2 cams

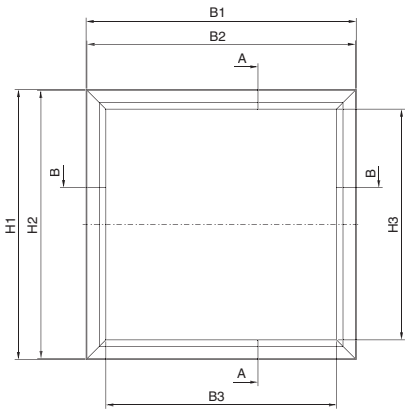
Note:
Dimensions in brackets for CP 6540.200.

Model No. CP	1	**6540.200**[1)]	**6531.200**	**6530.200**	**6532.200**	**6533.200**
Width (B1) in mm	Packs of	300	380	380	500	600
Height (H1) in mm		200	300	380	500	380
Depth (T1) in mm		155	210	210	210	210
B2 = Enclosure width with handle strips		340	420	420	540	640
B3 = Clearance opening, front		260	340	340	460	560
B4 = Cutout, in enclosure		250	330	330	450	550
H2 = Hole distance of side mounting angles		75	175	275	375	275
H3 = Cutout, in enclosure		150	250	330	450	330

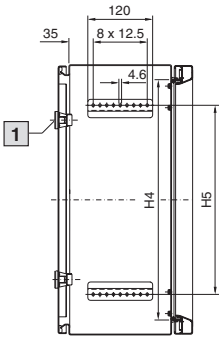
[1)] Support arm connection and door hinge at the bottom.

1.5 Operating housing

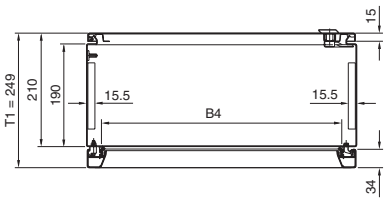
based on AE with display panel front Page 186



Section A – A



Section B - B



1 For CP 6442.500 only 1 cam in the centre.

Model No. CP	1	**6442.500**	**6462.500**	**6552.500**	**6662.500**
Width (B1) in mm	Packs of	380	380	500	600
Height (H1) in mm		380	600	500	600
Depth (T1) in mm		249	249	249	249
B2 = Width of display panel front		379	379	499	599
B3 = Clearance opening, front		309	309	429	529
B4 = Width of front panel		323	323	443	543
H2 = Height of display panel front		377	597	497	597
H3 = Clearance opening, front		307	527	427	527
H4 = Height of front panel		321	541	441	541
H5 = Hole distance of side mounting angles		250	450	350	450

1.5 Pedestal

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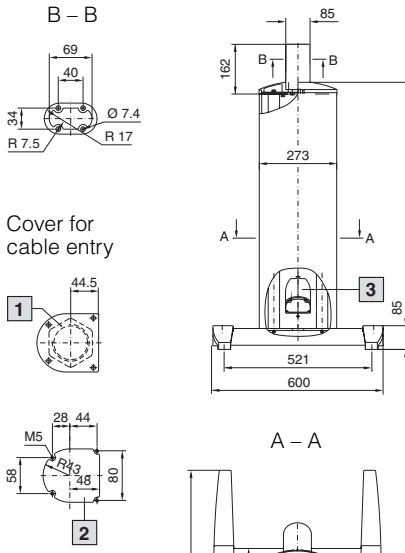
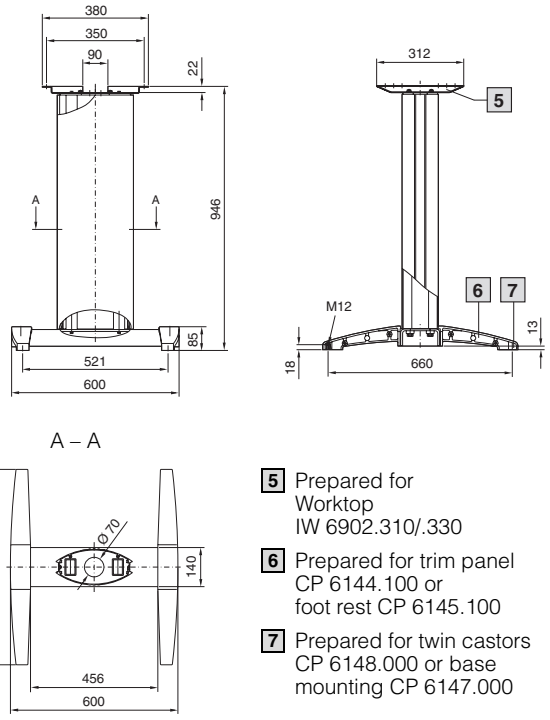
for Command Panel



for IW worktops



1 Max. PG 48/M50

2 Cross-section cable entry

3 Cutout only for CP 6141.100

4 Cable conduit adaptor only for CP 6141.100

5 Prepared for Worktop IW 6902.310/.330

6 Prepared for trim panel CP 6144.100 or foot rest CP 6145.100

7 Prepared for twin castors CP 6148.000 or base mounting CP 6147.000

1.5 Pedestal mobile

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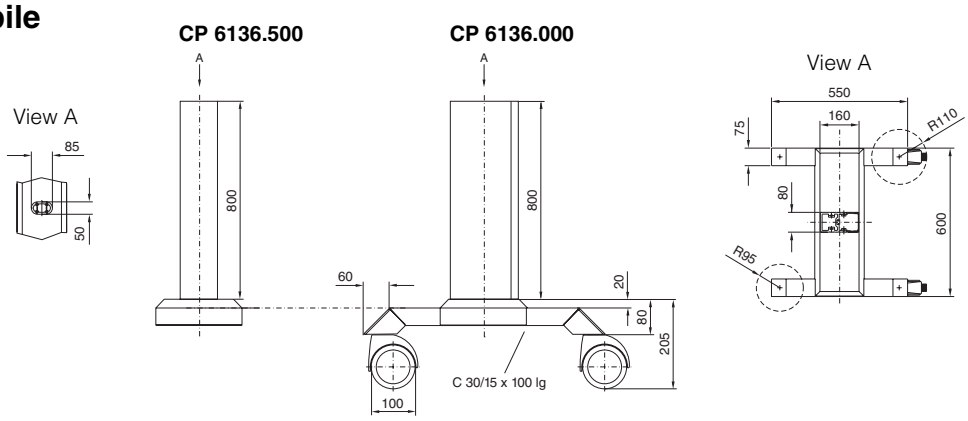
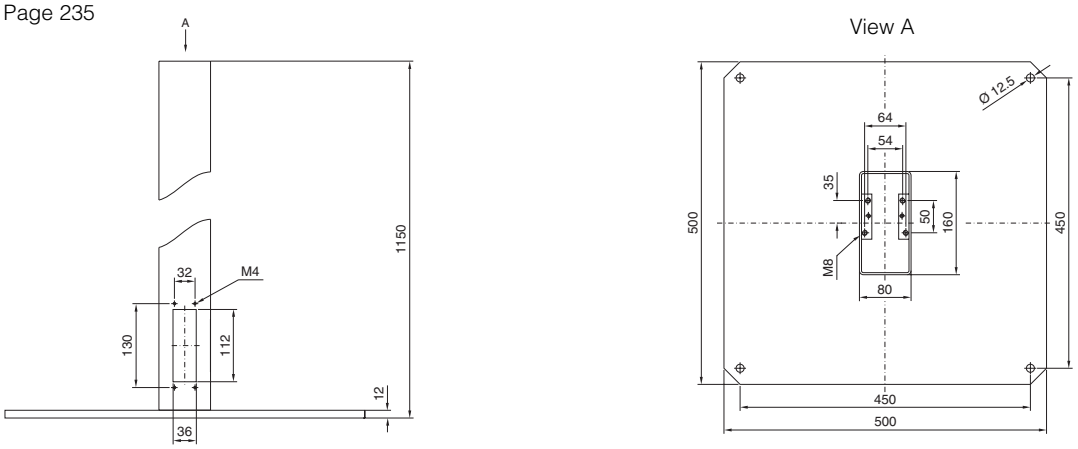


1.5 Pillar, small

Page 235



1.5 Cross member/base plate

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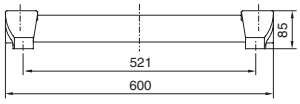
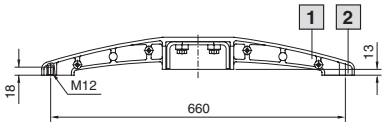
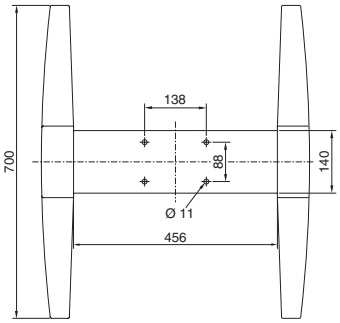
Cross member with cast feet





Pedestal base plate, large

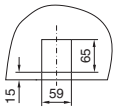




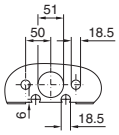
1 Prepared for trim panel CP 6144.100 or foot rest CP 6145.100

2 Prepared for twin castors CP 6148.000 or base mounting CP 6147.000

View A



View B

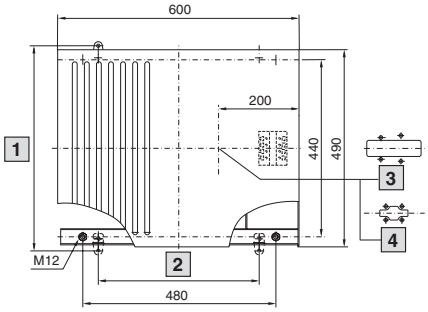


1 510 for floor anchoring with KL 1580.000, KL 1590.000

400 for floor anchoring with KL 1580.000, KL 1590.000

3 Cutout for CP 6137.035

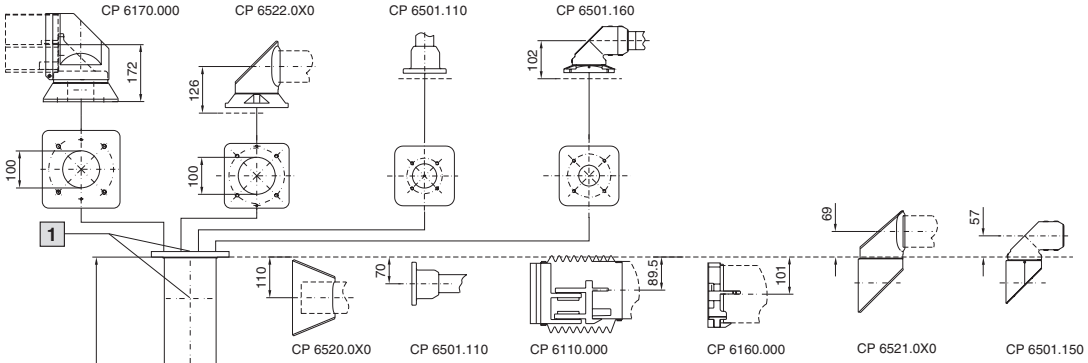
4 Cutout for CP 6137.535

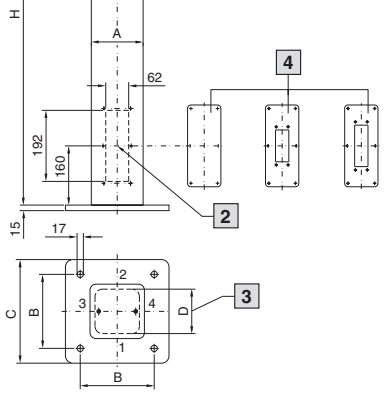


1.5 Pillar

Page 236

Model No. CP	A	B	C	D
6214.XX0	140	200	280	120
6220.XX0	200	300	400	180





1 Support arm connection according to the design code number

2 Cutout for cable entry according to the design code number

3 Cutout in base plate

4 Metal gland plate, see page 969.

1.5 Enclosures

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		Model No. IW	W/D mm 600/600	6900.000	6900.100	6900.200	6900.400	6900.410	6900.600	6901.000	6901.100	6901.200
			H mm	900	900	900	900	900	900	1000	1000	1000
Supply includes	**Version**	**Material**	**Colour RAL**									
Enclosures	Frame construction with side panels, screw-fastened from the inside	Sheet steel, 1.5 mm	7035 textured	■	■	■	■	■	■	■	■	■
	Base with gland plate for cable entry											
	Levelling feet to compensate for floor irregularities											
Trim panel, top	To finish off the enclosure at the top	Plastic to UL 94-V0	7035/ 7015						■		■	■
Keyboard drawer	Drawer housing	1.5 mm sheet steel	7035								■	■
	Extension piece with cable support, hinged, plus pull-out mouse-pad and keyboard cradle											
	Trim panel with recessed handle, folded as handrest, with lock no. 3524 E	Plastic to UL 94-V0	7035/ 7015/ 9006									
Drawer section	Drawer tray, fitted with drawer trim panel and telescopic slides	Sheet steel, 1.5 mm	7035				■					
	Extension piece with cable support, hinged, plus pull-out mouse-pad	Sheet steel, 1.5 mm	7035					■				
	Drawer trim panel with handle recess, with lock no. 3524 E	Plastic to UL 94-V0	7035/ 7015/ 9006				■	■				
Designer door	Vertical bars with locking rod and double-bit insert, hinged on right-hand side	Aluminium section	7035	■	■		■	■		■	■	■
	Door or installation plate, folded	Sheet steel, 1.5 mm	7015									
Glazed door	Vertical decorative trim panels	Plastic to UL 94-V0	7035									
	Pane with screen-printed mask	Safety glass 4.0 mm	7015			■						
Drawer front	Drawer tray, slotted all round for cross member retainers, 1x with low trim piece, 2x with high trim piece, each with handle recess, telescopic slides	Sheet steel, 1.5 mm	7035/ 7015/ 9006						■			
Worktop	Solid	Chipboard, plastic-laminated on both sides, with edge strip	similar to 7035 Edge strip: similar to 7015								■	
Roof	Edged, screw-fastened from the inside	Sheet steel, 1.5 mm	7035 textured									■
Rear panel	Screw-fastened from the inside	Sheet steel, 1.5 mm	7035 textured	■					■			
	Screw-fastened from the outside									■		
Rear door	With locking rod and double-bit, insert, r/h hinge	Sheet steel, 1.5 mm	7035 textured		■	■	■	■			■	■

1.5 Enclosures

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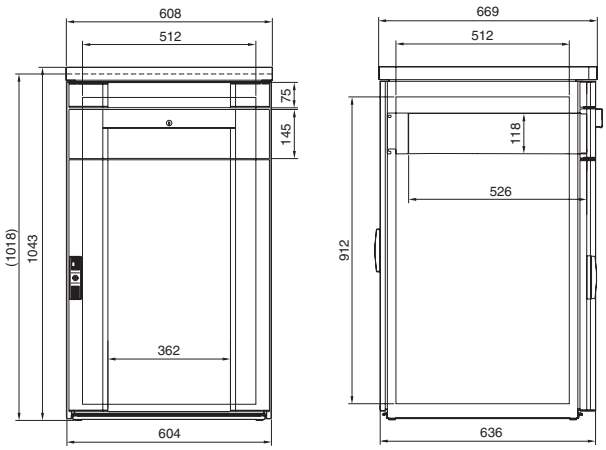
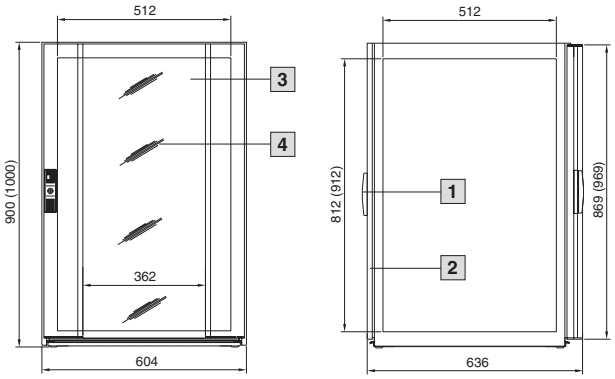
Enclosure
IW 6901.100
IW 6901.200



Dimensions in brackets for IW 6901.200.

Enclosure
IW 6900.000
IW 6901.000
IW 6900.100
IW 6900.200



Dimensions in brackets for IW 6901.000.

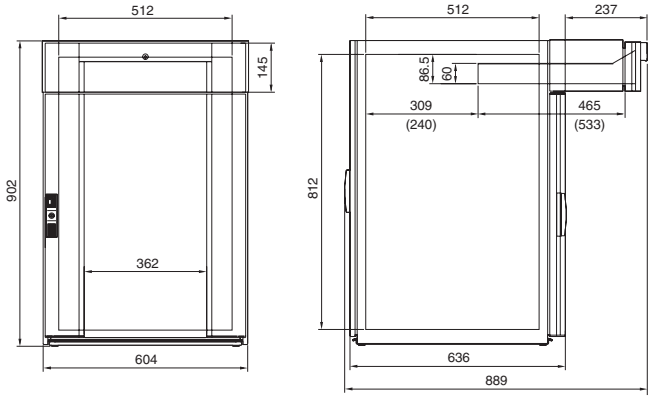
[1] Rear panel for IW 6900.100 and IW 6900.200

[2] Rear panel for IW 6900.000 and IW 6901.000

[3] Design door for IW 6900.000, IW 6901.000 and IW 6900.100

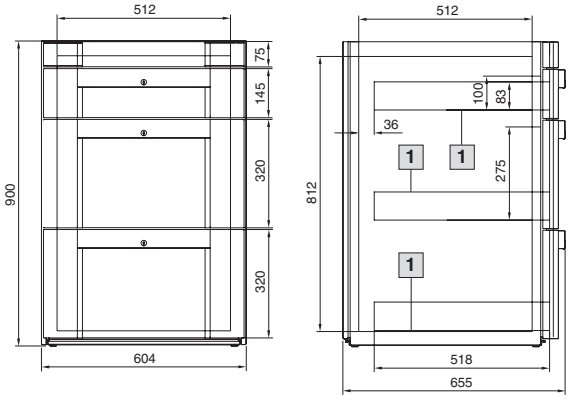
[4] Glazed door for IW 6900.200

Enclosure
IW 6900.400
IW 6900.410



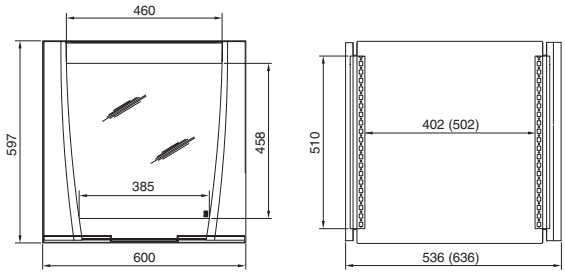
Dimensions in brackets for IW 6900.410.

Enclosure
IW 6900.600



[1] Shelves with punchings for cross members

Monitor housing
IW 6902.500
IW 6902.510



Dimensions in brackets only for IW 6902.XXX.

1.5 Worktops

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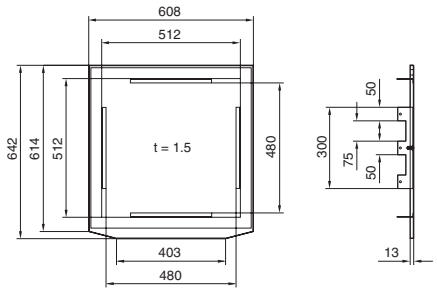
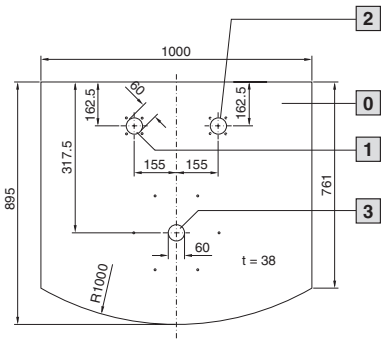
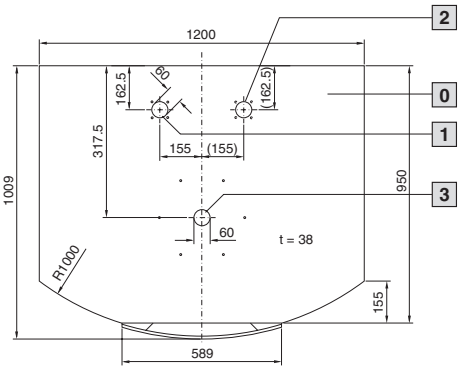
Roof
IW 6902.400



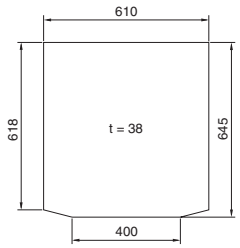
Worktop, without handle,
IW 6902.100
IW 6902.110
IW 6902.120
IW 6902.130



Worktop, with handle,
IW 6902.000
IW 6902.010
IW 6902.020
IW 6902.030



Worktop
IW 6902.300



0 Without mounting cutout for IW 6902.100

1 Mounting cutout, l/h (left hand) side, for enclosure attachment, only for CP 6902.120

2 Mounting cutout, r/h (right hand) side, for enclosure attachment, only for CP 6902.130

3 Mounting cutout prepared for turntable, only for CP 6902.110

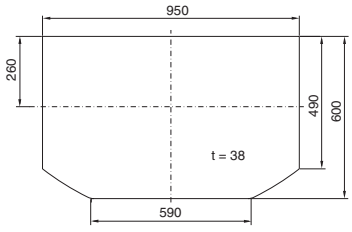
0 Without mounting cutout for IW 6902.000

1 Mounting cutout, l/h side, for enclosure attachment, only for CP 6902.020

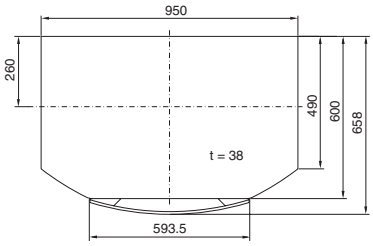
2 Mounting cutout, r/h side, for enclosure attachment, only for CP 6902.030

3 Mounting cutout prepared for turntable, only for CP 6902.010

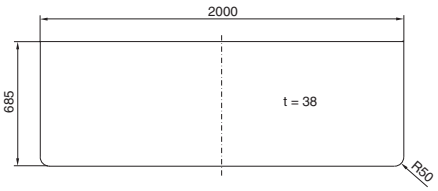
Worktop
IW 6902.310



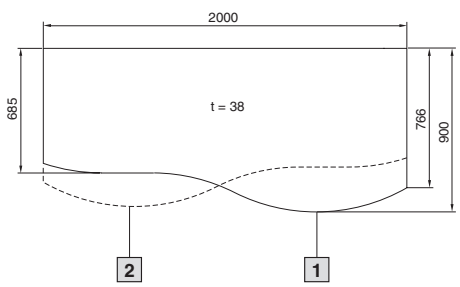
Worktop
IW 6902.320



Worktop
IW 6902.200



Worktop
IW 6902.210



1 IW 6902.210

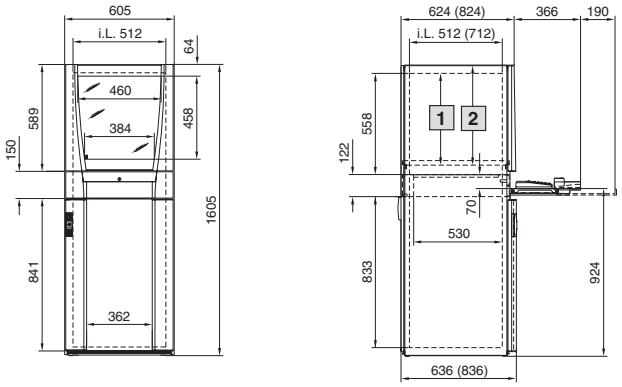
2 IW 6902.220 (arranged as mirror)

PC enclosure systems

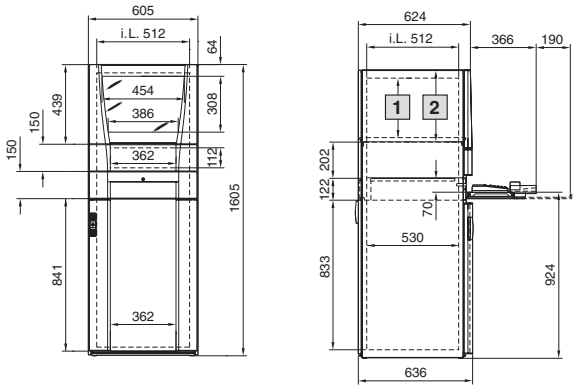
1.5 Based on TS 8

with keyboard drawer Page 257

With drawer
PC 8366.000, PC 8368.000



With mounting compartment, small and drawer
PC 8366.300



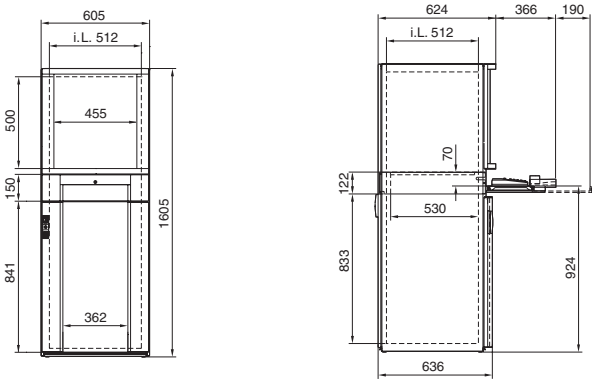
1 max. 505, adjustable on a 25 mm pitch pattern

2 max. 549, adjustable on a 25 mm pitch pattern

1 max. 355, adjustable on a 25 mm pitch pattern

2 max. 397, adjustable on a 25 mm pitch pattern

With mounting compartment, large and drawer
PC 8366.400



i.L. = Clearance width

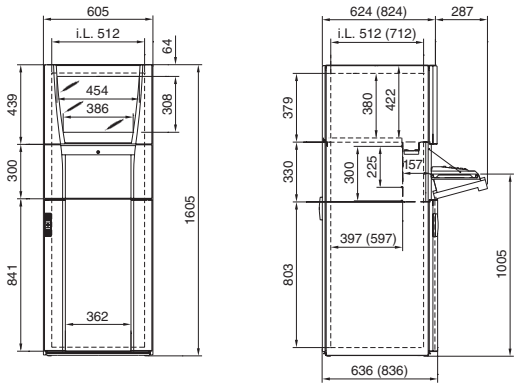
				Model No. PC		
			Depth 636 mm	**8366.000**	**8366.300**	**8366.400**
			Depth 836 mm	**8368.000**	–	–
Supply includes	**Design**	**Material**	**Colour RAL**			
Enclosure	Frame construction with side panels and roof secured from the inside	Sheet steel 1.5 mm	7035 textured	■	■	■
	Gland plates, three-part	Sheet steel 1.5 mm	Zinc-plated			
Rear door	With locking rod and double-bit insert, hinged on the right-hand side	Sheet steel 2.0 mm	7035 textured	■	■	■
Glazed door, top	With support frame latched from the inside[1], r/h hinge	Sheet steel 1.5 mm	7015	■	■	
	Vertical decorative trim panels	Plastic to UL 94-V0	7035			
	Pane with screen-printed mask	Safety glass 4.0 mm	7015			
Mounting compartment, large, top	Vertical bars, latched from the inside[1], r/h hinge	Aluminium section	7035			■
	Installation plate	Sheet steel 1.5 mm	7015			
	Trim strip top/bottom	Plastic to UL 94-V0	7035			
Component shelf for monitor	Slotted, permanently installed	Sheet steel 1.5 mm	7015	■	■	
Drawer for keyboard	Enclosure	Sheet steel 1.5 mm	7035	■	■	■
	Keyboard extension piece with cable support, hinged mousepad extension piece and keyboard cradle	Sheet steel 1.5 mm	7035			
	Trim panel with recessed handle, folded as handrest, with lock no. 3524 E	Plastic to UL 94-V0	7035/7015/9006			
Mounting compartment, small	R/h hinge, screw-fastened from the inside on left, folded installation plate	Sheet steel 1.5 mm	7015		■	
	Decorative side trim panels	Plastic to UL 94-V0	7035			
Bottom door	Vertical bars with locking rod and double-bit insert, hinged on right-hand side	Aluminium section	7035	■	■	■
	Door or installation plate folded	Sheet steel 1.5 mm	7015			

[1] With unlatching for glazed door, top.

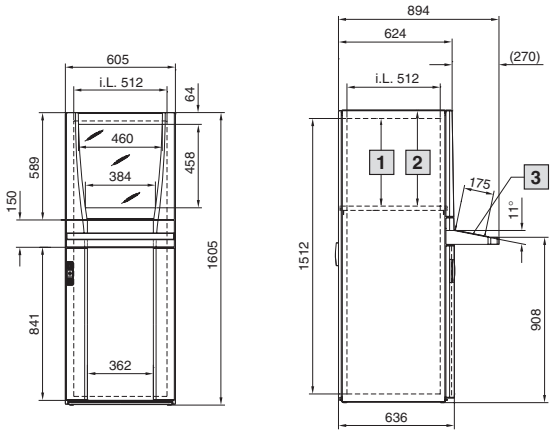
1.5 Based on TS 8

with folding keyboard or desk section Page 258

With fold-out tray
PC 8366.100, PC 8368.100



With desk section
PC 8366.200



1 max. 505, adjustable on a 25 mm pitch pattern
2 max. 549, adjustable on a 25 mm pitch pattern
3 max. installation area 540 x 175 mm

i.L. = Clearance width

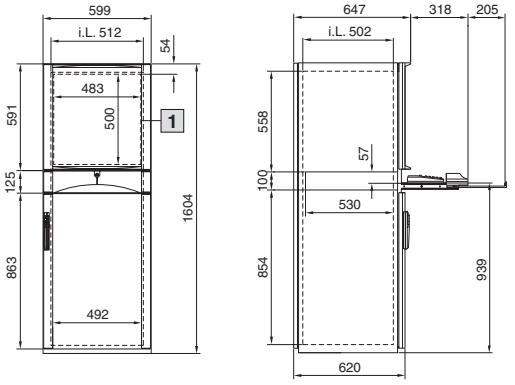
				Model No. PC	
			Depth 636 mm	**8366.100**	**8366.200**
			Depth 836 mm	**8368.100**	**–**
Supply includes	**Design**	**Material**	**Colour RAL**		
Enclosure	Frame construction with side panels and roof secured from the inside	Sheet steel 1.5 mm	7035 textured	■	■
	Gland plates, three-part	Sheet steel 1.5 mm	Zinc-plated		
Rear door	With locking rod and double-bit insert, r/h hinge	Sheet steel 2.0 mm	7035 textured	■	■
Glazed door, top	With support frame latched from the inside[1], r/h hinge	Sheet steel 1.5 mm	7015	■	■
	Vertical decorative trim panels	Plastic to UL 94-V0	7035		
	Pane with screen-printed mask	Safety glass 4.0 mm	7015		
Component shelf for monitor	Slotted, permanently installed	Sheet steel 1.5 mm	7015	■	■
Fold-out tray for keyboard	Enclosure with mouse holder and cutout in the rear panel, width 482.6 mm (19″) x height 4 U, for rear attachment	Sheet steel 1.5 mm	7035	■	
	Trim panel hinged at the bottom, with 2 retaining cords, with lock no. 3524 E	Plastic to UL 94-V0	7035/7015/9006		
	Keyboard support with mousepad extension piece and 2 nylon bands for keyboard	Sheet steel 1.5 mm	7035		
Desk section	Enclosure with removable cover top and bottom	Sheet steel 1.5 mm/2.0 mm	7035		■
	Trim strip, top and handle strip	Plastic to UL 94-V0	7035/7015/9006		
Bottom door	Vertical bars with locking rod and double-bit insert, r/h hinge	Aluminium section	7035	■	■
	Door or installation plate folded	Sheet steel 1.5 mm	7015		

[1] With unlatching for top glazed door.

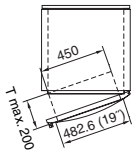
1.5 Based on ES

with keyboard drawer Page 259

With mounting compartment, large and drawer
PC 4603.603

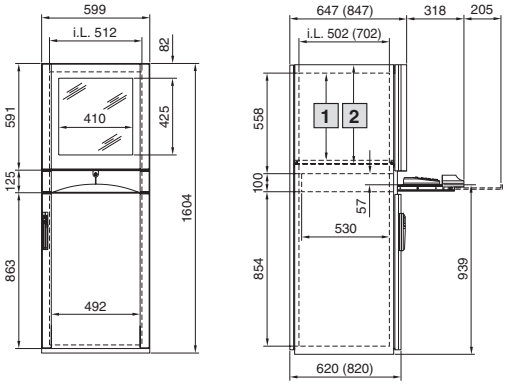


1 External surface available for population



i.L. = Clearance width

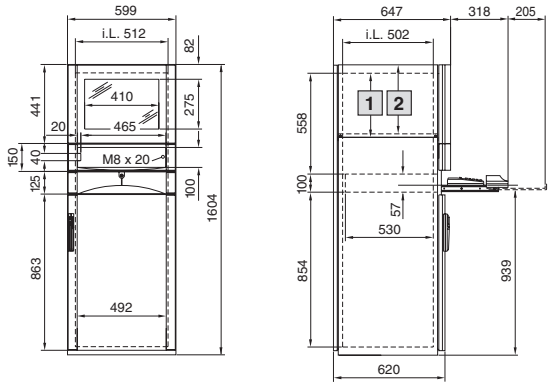
With drawer
PC 4603.703, PC 4609.703



1 max. 505, adjustable on a 25 mm pitch pattern

2 max. 547, adjustable on a 25 mm pitch pattern

With mounting compartment, small and drawer
PC 4603.913



1 max. 355, adjustable on a 25 mm pitch pattern

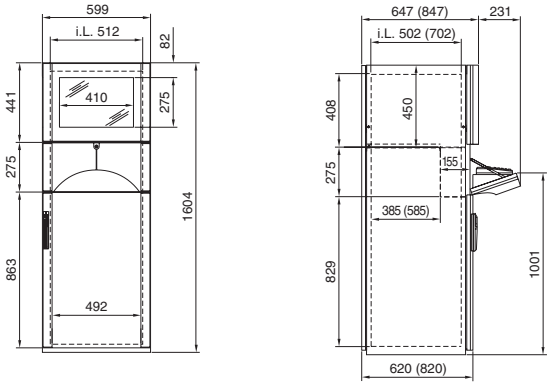
2 max. 397, adjustable on a 25 mm pitch pattern

Supply includes	Design	Material	Colour RAL	PC 4603.603	PC 4603.703 PC 4609.703	PC 4603.913
Enclosure	Solid, open at bottom	Sheet steel 1.5 mm	7035 textured	■	■	■
	Gland plates, three-part	Sheet steel 1.5 mm	Zinc-plated			
Rear door	With locking rod and double-bit insert, r/h hinge	Sheet steel 2.0 mm	7035 textured	■	■	■
Mounting compartment, large, top	Vertical bars, latched from the inside[1], hinged on right-hand side	Aluminium section	5018	■		
	Folded installation plate	Sheet steel 1.5 mm	7035			
	Trim strip top/bottom	Plastic to UL 94-V0	7035			
Glazed door top	Vertical bars, latched from the inside[2], r/h hinge	Aluminium section	5018		■	■
	Trim strip top/bottom	Plastic to UL 94-V0	7035			
	Pane with screen-printed mask	Safety glass 4.0 mm	7015			
Component shelf for monitor	Slotted, permanently installed	Sheet steel 1.5 mm	7035		■	■
Drawer for keyboard	Enclosure	Sheet steel 1.5 mm	7035	■	■	■
	Keyboard extension piece with 1 pair of telescopic slides	Sheet steel 1.5 mm	7035			
	Trim panel with recessed handle, folded as handrest, with lock no. 3524 E	Plastic to UL 94-V0	7035			
	Decorative side trim panels	Aluminium section	5018			
	2 spacers for slimline keyboards	Cellular rubber				
	[1] With unlatching for top glazed door					
Mounting compartment, small	R/h hinge, screw-fastened from the inside on left, folded installation plate	Sheet steel 1.5 mm	7035			■
	Trim strip at the bottom	Plastic to UL 94-V0	7035			
	Vertical bars	Aluminium section	5018			
Bottom door	Vertical bars with locking rod, Ergoform-S handle and double-bit insert, r/h hinge	Aluminium section	5018	■	■	■
	Door or installation plate folded	Sheet steel 1.5 mm	7035			
	[2] With unlatching for top glazed door with desk section					

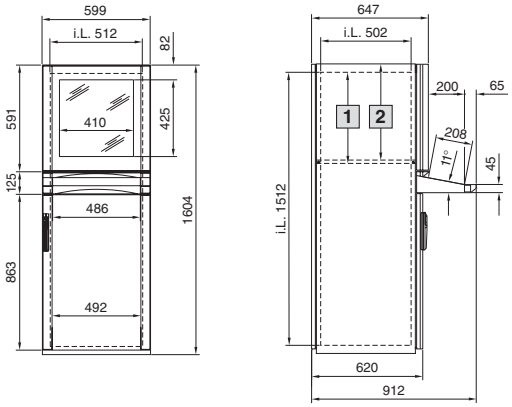
1.5 Based on ES

with folding keyboard or desk section Page 260

With fold-out tray
PC 4603.920, PC 4609.920



With desk section
PC 4603.704



i.L. = Clearance width

1 max. 505, adjustable on a 25 mm pitch pattern

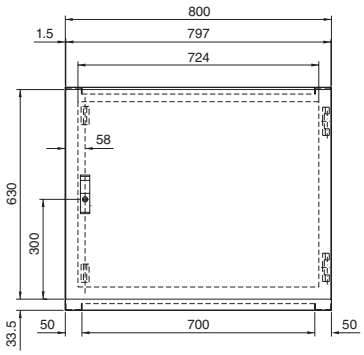
2 max. 547, adjustable on a 25 mm pitch pattern

Supply includes	Design	Material	Colour RAL	PC 4603.920 PC 4609.920	PC 4603.704
Enclosure	Solid, open at bottom	Sheet steel 1.5 mm	7035 textured	■	■
	Gland plates, three-part	Sheet steel 1.5 mm	Zinc-plated		
Rear door	With locking rod and double-bit insert, r/h hinge	Sheet steel 2.0 mm	7035 textured	■	■
Glazed door, top	Curved outwards, vertical bars, latched on the inside[1], r/h hinge	Aluminium section	5018	■	■
	Trim strip top/bottom	Plastic to UL 94-V0	7035		
	Pane with screen-printed mask	Safety glass 4.0 mm	7015		
Component shelf for monitor	Slotted, permanently installed	Sheet steel 1.5 mm	7035	■	■
Fold-out tray for keyboard	Enclosure with cutout in rear panel, width 19″ x height 4 U, with screw-fastened lid	Sheet steel 1.5 mm	7035	■	
	Trim panel hinged at the bottom with 2 retaining shears, with lock no. 3524 E	Plastic to UL 94-V0	7035		
	Decorative side trim panels	Aluminium section	5018		
	Keyboard support, with 2 nylon loops for keyboard	Sheet steel	7035		
	[1] With unlatching for top glazed door				
Desk section	Enclosure with removable lid top and bottom.	Sheet steel 1.5 mm/2.0 mm	7035		■
	Trim strip, top and handle	Plastic to UL 94-V0	7035		
	Decorative side trim panels	Aluminium section	5018		
Bottom door	Vertical bars with locking rod, Ergoform-S handle and double-bit insert, r/h hinge	Aluminium section	5018	■	■
	Door or installation plate folded	Sheet steel 1.5 mm	7035		
	[1] With unlatching for top glazed door with desk section				

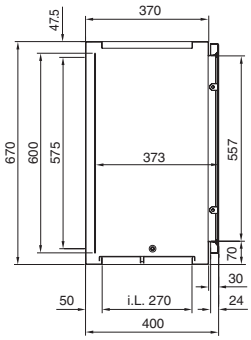
1.5 Pedestals

Page 265

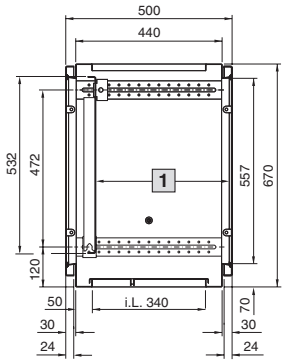
W x H 800 x 670 mm
AP 2600.500, AP 2610.500



D 400 mm
AP 2600.500, AP 2620.500, AP 2630.500



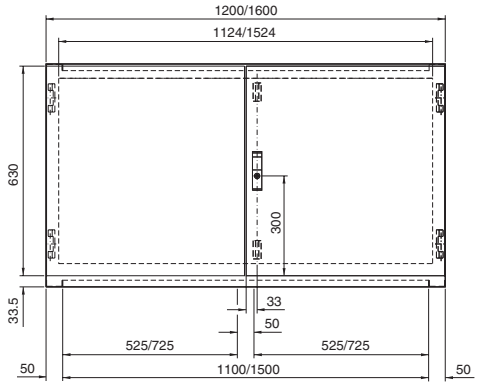
D 500 mm
AP 2610.500, AP 2640.500, AP 2650.500



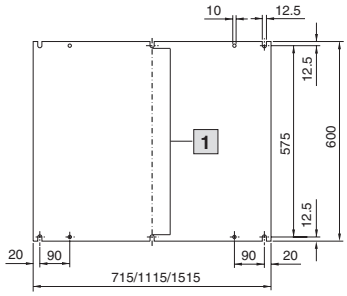
1 max. 407

i.L. = Clearance width

W x H 1200/1600 x 670 mm
AP 2620.500, AP 2630.500, AP 2640.500, AP 2650.500

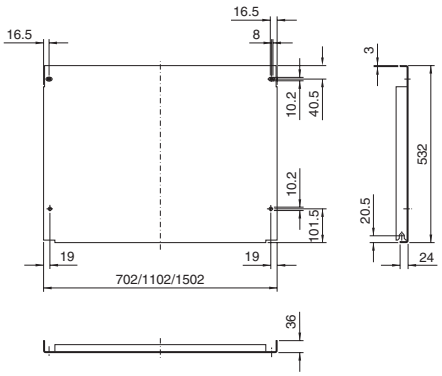


Mounting plate for D 400 mm

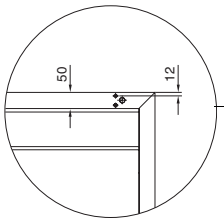


1 Does not apply to AP 2600.500

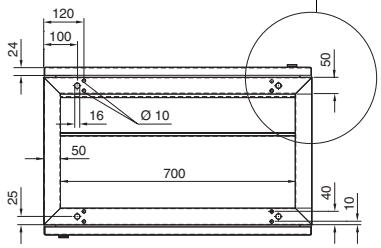
Mounting plate for D 500 mm



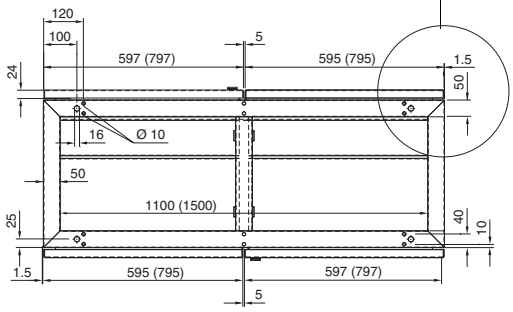
D 400 mm
without rear door AP 2600.500, AP 2620.500, AP 2630.500



D 500 mm
AP 2610.500



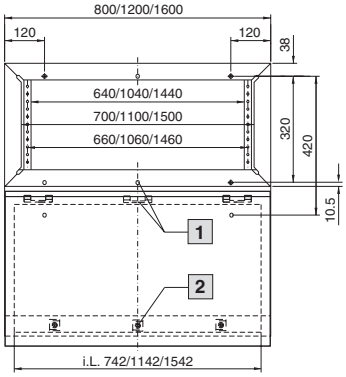
D 500 mm
AP 2640.500, AP 2650.500



1.5 Desk units

Page 264

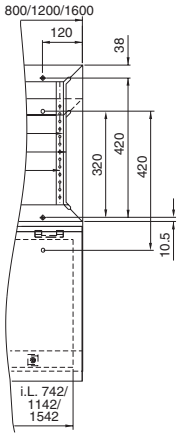
H x D 200 x 850 mm
AP 2611.500, AP 2641.500, AP 2651.500



1 Does not apply to AP 2611.500

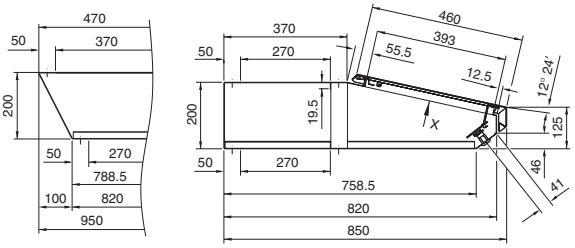
2 Does not apply to AP 2611.500, AP 2641.500

H x D 200 x 950 mm
AP 2613.500, AP 2643.500, AP 2653.500

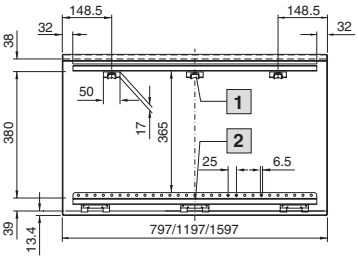


i.L. = Clearance width

Side view



View in X direction



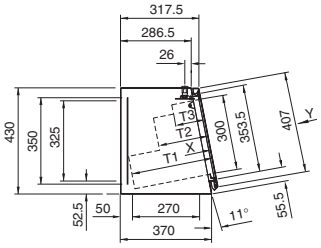
1 Does not apply to AP 2611.500, AP 2613.500, AP 2641.500, AP 2643.500

2 Does not apply to AP 2611.500, AP 2613.500

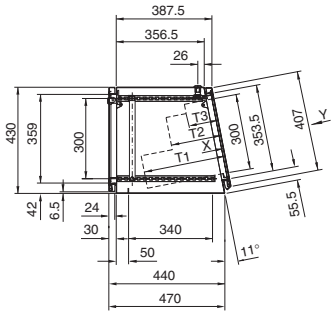
1.5 Consoles

Page 264

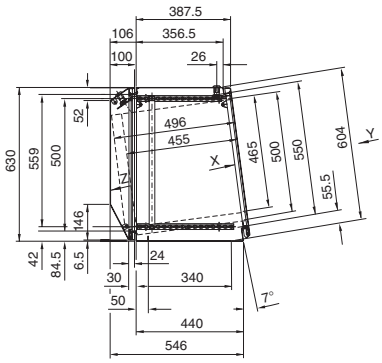
H x D 430 x 400 mm
AP 2612.500, AP 2642.500, AP 2652.500



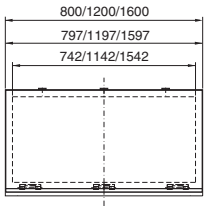
H x D 430 x 500 mm
AP 2614.500, AP 2644.500, AP 2654.500



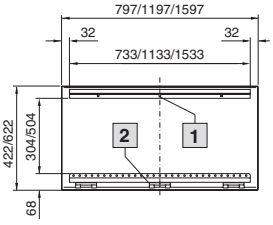
H x D 630 x 500 mm with deep rear door
AP 2647.500, AP 2648.500, AP 2649.500



View in Y direction



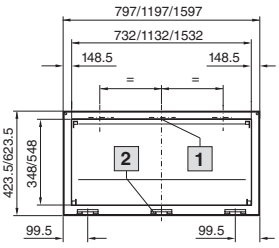
View in X direction



1 Only for AP 2649.500, AP 2652.500, AP 2654.500, AP 2664.500

2 Does not apply to AP 2612.500, AP 2614.500, AP 2647.500, AP 2662.500

View in Z direction

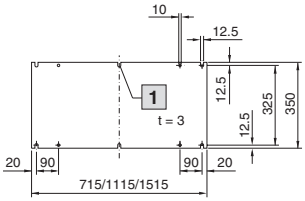


1 Only for AP 2649.500

2 Only for AP 2648.500/ AP 2649.500

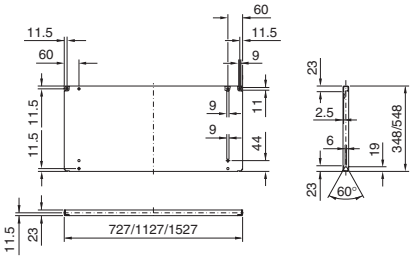
	Depth 400	Depth 500
T1 = vertically hinged 3 U	300	
T2 = vertically hinged 6 U	195	
T3 = vertically hinged, max.	110	
T1 = static, max.	300	400

Mounting plate for D 400 mm



1 Does not apply to AP 2612.500

Mounting plate for D 500 mm

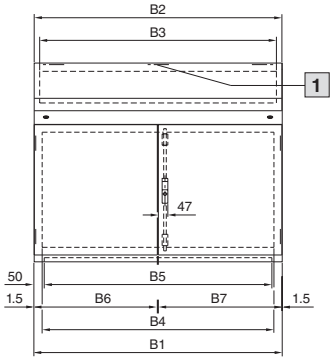


Consoles AP

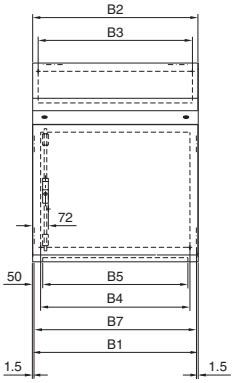
1.5 One-piece consoles AP

Sheet steel Page 266

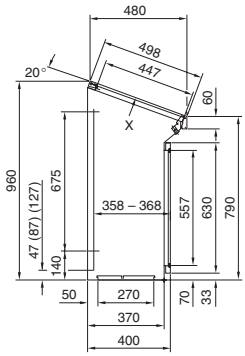
Stainless steel Page 282

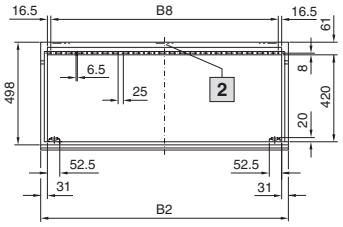


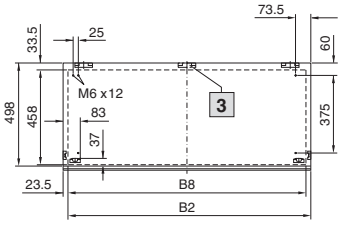
Sheet steel – view in X direction

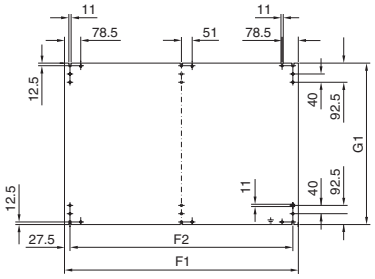


Stainless steel – view in X direction









1 Hinge does not apply to AP 2670.500, 2685.600

2 Hinge does not apply to AP 2666.500, 2668.500

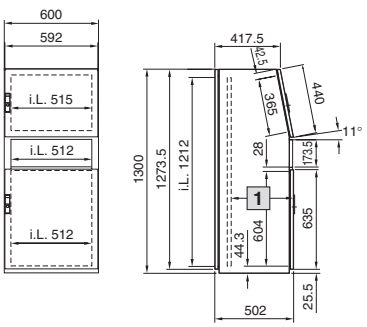
3 Hinge does not apply to AP 2683.600, 2684.600

Model No. AP, sheet steel	**2666.500**	**2668.500**	**2670.500**	**2672.500**
Model No. AP, stainless steel	**2683.600**	**2684.600**	**2685.600**	**2686.600**
Width (B1) in mm	600	800	1000	1200
Height in mm	960			
Depth in mm	400/480			
B2 = Width	597	797	997	1197
B3 = Clearance width	544	744	944	1144
B4 = Clearance width, front	524	724	924	1124
B5 = Clearance width, bottom	500	700	900	1100
B6 = Wide adjacent door	–	–	495	595
B7 = Wide lockable door	597	797	497	597
B8 = Punched length	500	700	900	1100
F1 = Mounting plate width	530	730	930	1130
F2 = Distance between mounting holes	475	675	875	1075
G1 = Mounting plate height	780	780	780	780

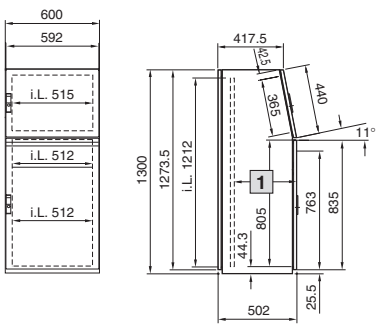
1.5 Universal consoles AP

Sheet steel Page 267

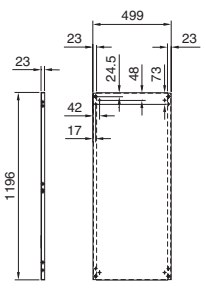
with short front door
AP 2694.500



with tall front door
AP 2695.500



Mounting plate



1 Adjustable from 200 to 400 mm on a 25 mm pitch pattern.

i.L. = Clearance width

1.6 Terminal boxes KL/Ex enclosures KEL with screw-fastened lid

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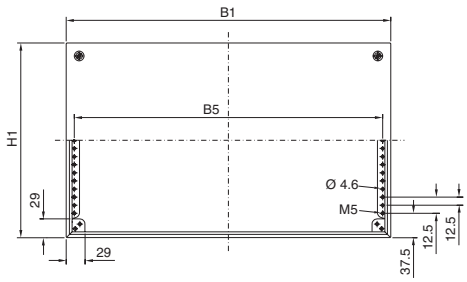
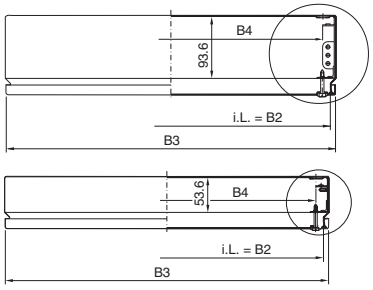
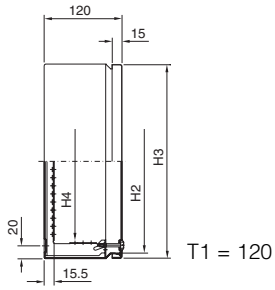
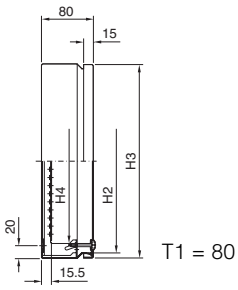
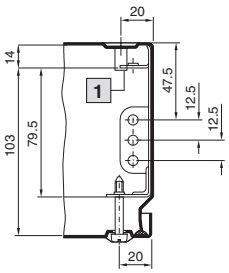




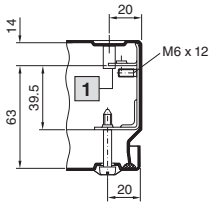




Detail X, T1 = 120



Detail Y, T1 = 80



i.L. = Clearance width

With internal thread M8 x 10

1 Only for KEL

Model No. KL	1521.010	1522.010	1523.010	1524.010	1525.010	1526.010
Model No. KEL	**9301.000**	**9302.000**	**9303.000**	**9304.000**	**9305.000**	**9306.000**
Width (B1) in mm	150	300	200	300	400	300
Height (H1) in mm	150	150	200	200	200	300
Depth (T1) in mm	80	80	80	80	120	120
B2 = Clearance opening width	132	282	182	282	382	282
B3 = Cover width	148	298	198	298	398	298
B4 = Clearance width between profile strips	109	259	159	259	359	259
B5 = Hole-centre distance of profile strips	125	275	175	275	375	275
H2 = Clearance opening height	132	132	182	182	182	282
H3 = Cover height	148	148	198	198	198	298
H4 = Clearance height between profile strips	100	100	150	150	150	250

1.6 Premium Line KL

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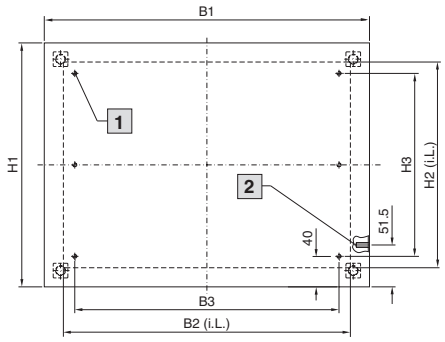

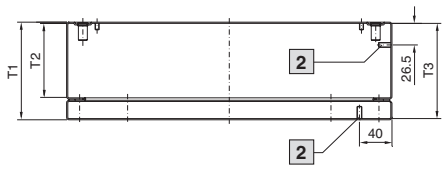

1 Welded stud M5 x 8 (6x)

2 Earthing bolts M6 x 15

i.L. = Clearance width

Model No. KL	1024.010	1024.020	1024.030	1024.040
B1 = Overall width in mm	150	150	300	400
H1 = Overall height in mm	150	150	200	300
T1 = Overall depth in mm	80	120	120	120
B2 = Clearance width of enclosure	103	103	253	353
B3 = Distance between axes of bolts	75	75	225	325
H2 = Clearance height of enclosure	103	103	153	253
H3 = Distance between axes of bolts	75	75	125	225
T2 = Clearance depth, enclosure only	51.5	91.5	91.5	91.5
T3 = Clearance depth	77	117	117	117
Possible mounting depth: T4 = Mounting plate configuration, see mounting plate	60	100	100	100
T5 = Support rail configuration, see mounting bracket	69.5/54.5	109.5/94.5	109.5/94.5	109.5/94.5

1.6 Compact AE/Ex enclosures KEL with hinged door

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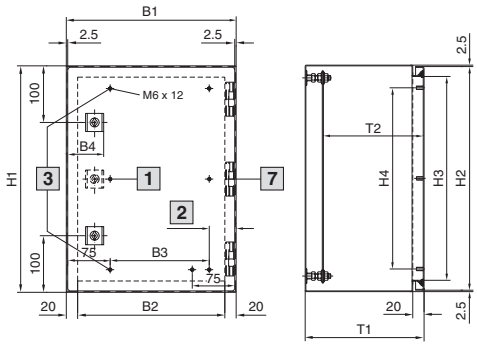
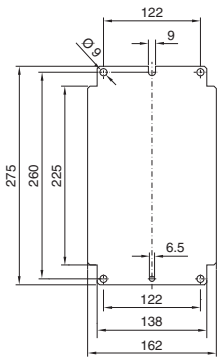
AE 1002.600 – AE 1016.600
KEL 9401.600 – KEL 9409.600

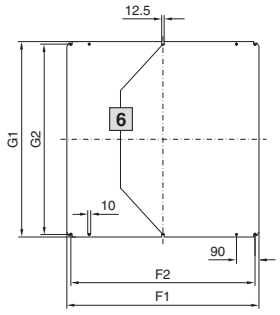


Mounting plates

AE 1002.600
KEL 9401.600

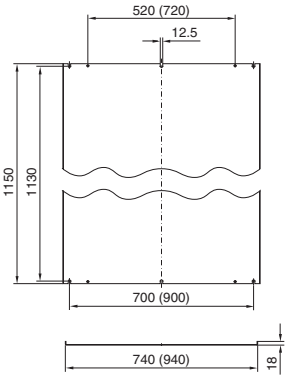


AE 1004.600 –
AE 1016.600, AE 1018.600
KEL 9402.600 –
KEL 9409.600



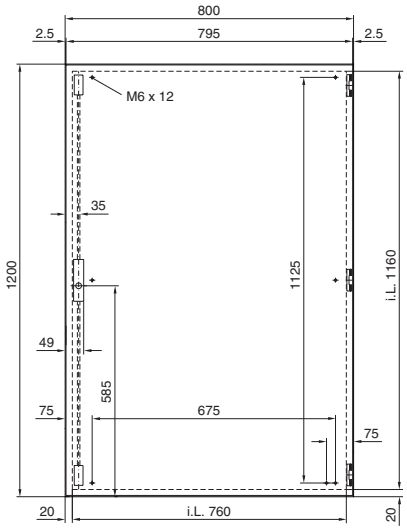
Installation position of the mounting plate is rotated through 90° for AE 1005.600, KEL 9409.600.

AE 1017.600,
AE 1019.600

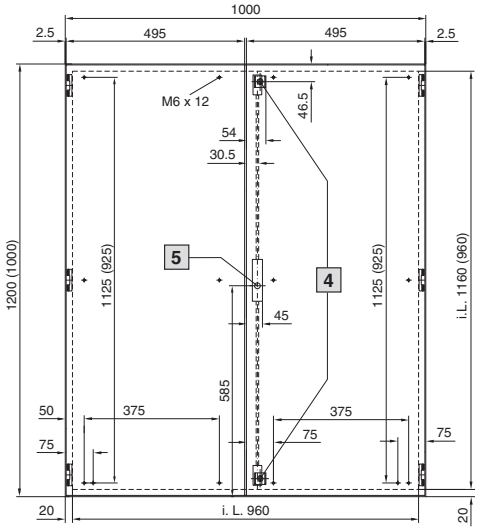


Dimensions in brackets for AE 1019.600.

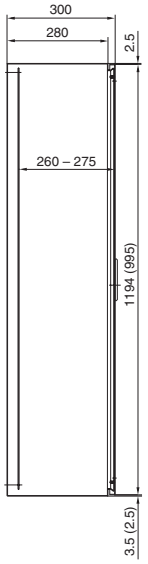
AE 1017.600

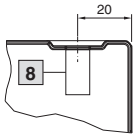


AE 1018.600, AE 1019.600



Dimensions in brackets for AE 1018.600.





With internal thread M8 x 20

8 Only for KEL

1 For H1 = 300/380 only one cam in the centre and without central bolt

2 50 for AE 1002.600

3 Does not apply to AE 1002.600

4 Cam lock for AE 1018.600

5 Locking rod for AE 1019.600

6 Only AE 1018.600

7 Only KEL 9408.600

i.L. = Clearance width

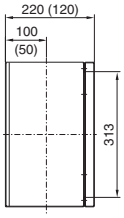
Compact AE stainless steel/Ex enclosures KEL with hinged door

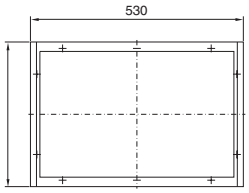
Model No.		Dimensions of enclosures										Dimensions of mounting plate				Material thicknesses in mm		
AE	KEL	B1	B2	B3	B4	H1	H2	H3	H4	T1	T2	G1	G2	F1	F2	Enclosure	Door	Mounting plate
1002.600	**9401.600**	200	167	–	56	300	295	274	225	155	135	–	–	–	–	1.25	1.5	2.0
1004.600	**9402.600**	380	340	250	66	300	295	260	225	155	113 – 129	275	250	334	295	1.38	1.5	2.0
1005.600	**9409.600**	300	260	175	66	380	375	340	275	210	168 – 184	275	250	334	295	1.38	1.5	2.0
1006.600	**9403.600**	380	340	250	66	380	375	340	275	210	168 – 184	355	330	334	295	1.38	1.5	2.5
1007.600	**–**	500	460	375	66	500	495	460	425	210	168 – 184	470	445	449	410	1.38	1.5	2.5
1013.600	**–**	500	460	375	66	500	495	460	425	300	258 – 274	470	445	449	410	1.50	1.5	2.5
1008.600	**9404.600**	380	340	250	66	600	595	560	525	210	168 – 184	570	545	334	295	1.38	1.5	2.5
1009.600	**–**	600	560	475	66	380	375	340	275	210	168 – 184	355	330	549	510	1.38	1.5	2.5
1010.600	**9405.600**	600	560	475	66	600	595	560	525	210	168 – 184	570	545	549	510	1.38	2.0	2.5
1012.600	**9406.600**	600	560	475	66	760	755	720	675	210	168 – 184	730	705	549	510	1.38	2.0	3.0
1014.600	**9407.600**	760	720	625	66	760	755	720	675	300	258 – 274	730	705	704	665	1.50	2.0	3.0
1016.600	**9408.600**	800	760	675	66	1000	955	960	925	300	258 – 274	955	930	739	700	1.50	2.0	3.0
1017.600	**–**	800	–	–	–	1200	–	–	–	300	–	–	–	–	–	1.50	2.0	3.0
1018.600	**–**	1000	–	–	–	1000	–	–	–	300	–	955	930	939	900	1.50	2.0	3.0
1019.600	**–**	1000	–	–	–	1200	–	–	–	300	–	–	–	–	–	1.50	2.0	3.0

1.6 Premium Panel

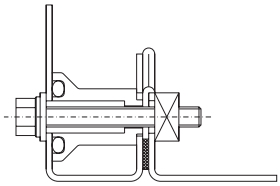
Protection category IP 69K Page 274

Operating housing

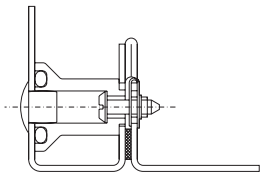




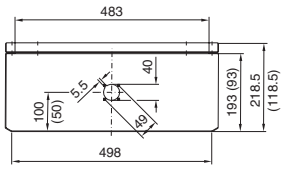
Hex screws, exposed



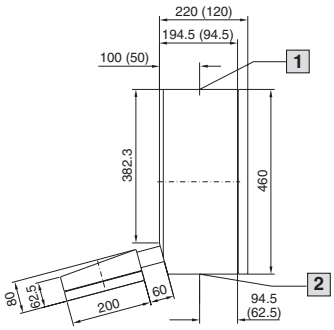
Internal screw with plastic stoppers

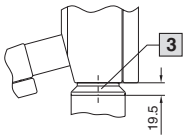


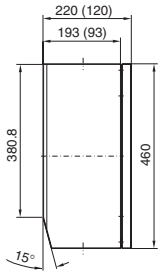
Support arm connection at the bottom, by rotating the enclosure. Dimensions in brackets for CP 6681.000.

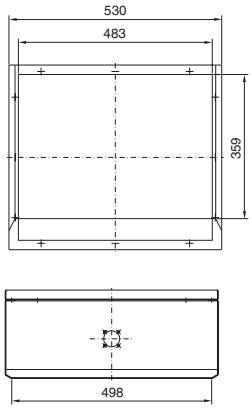


Operating and keyboard housing









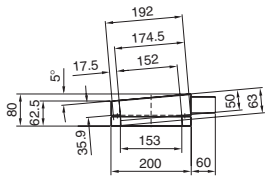
1 Support arm connection at the top only for CP 6680.000, CP 6680.100

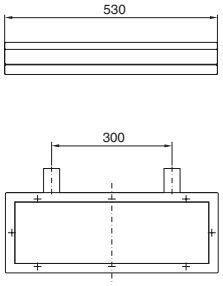
2 Support arm connection at the bottom only for CP 6680.010 (see **3**), CP 6680.110

Dimensions in brackets for CP 6680.010.

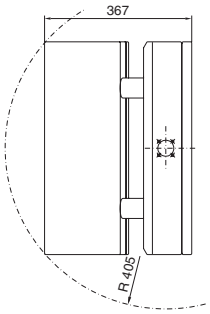
3 Connector pieces for CP 6680.010 included in the supply.

Keyboard housing

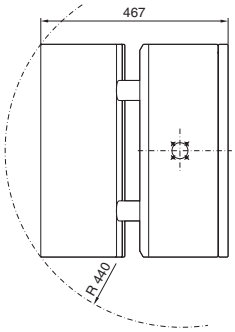




Top view
Depth 120 mm



Top view
Depth 220 mm



Stainless steel

1.6 Command panel

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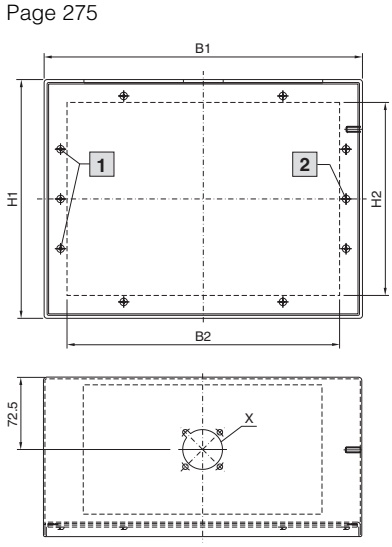
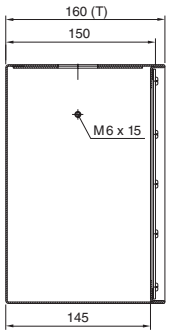
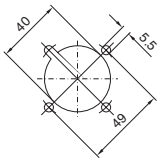
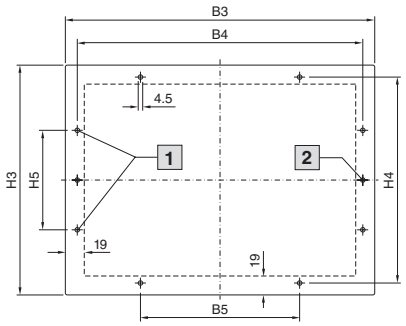




X = Mounting cutout





1 Does not apply to CP 6670.000
2 Does not apply to CP 6672.000

Model No. CP	6670.000	6672.000
Width (B1) in mm	320	400
Height (H1) in mm	240	320
Depth (T) in mm	160	
B2 = Clearance in width	275	355
B3[1)] = Width of front panel	313	393
B4 = Hole spacing	288	368
B5 = Hole spacing	180	220
H2 = Clearance in height	195	275
H3[1)] = Height of front panel	233	313
H4 = Hole spacing	208	288
H5 = Hole spacing	–	180

[1)] Other sizes and machining of the front panel available on request.

1.6 Command panel housing with door

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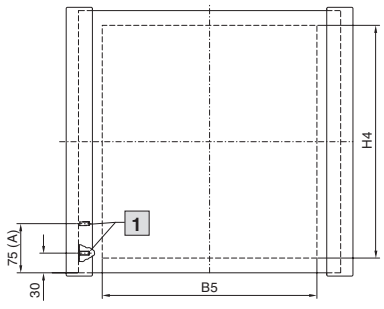
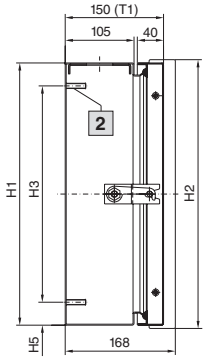
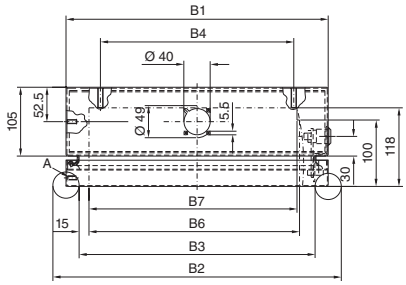




1 Welded studs M6 x 15
2 Welded studs M8 x 30



Model No. CP	6535.010	6536.010	6538.010	6539.010
Width (B1) in mm	300	400	400	600
Height (H1) in mm	300	300	400	400
Depth (T1) in mm	150	150	150	150
B2 = Enclosure width with handle strips	340	440	440	640
B3 = Clearance opening, front	260	360	360	560
B4 = Spacing of mounting plate attachment	215	295	295	510
B5 = Max. front cutout, width	225	325	325	525
B6 = Hinged width for depth 100 mm	220	320	320	520
B7 = Hinged width for depth 118 mm	212	317	317	519
H2 = Enclosure height with handle strips	310	310	410	410
H3 = Spacing of mounting plate attachment	250	250	330	330
H4 = Max. front cutout, height	255	255	355	355
H5 = Distance from base – mounting plate attachment	25	25	35	35

1.6 Modular pedestal CP-S

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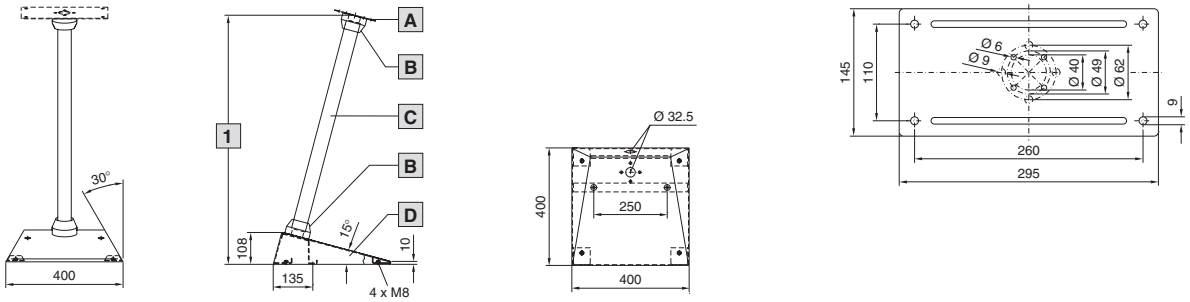


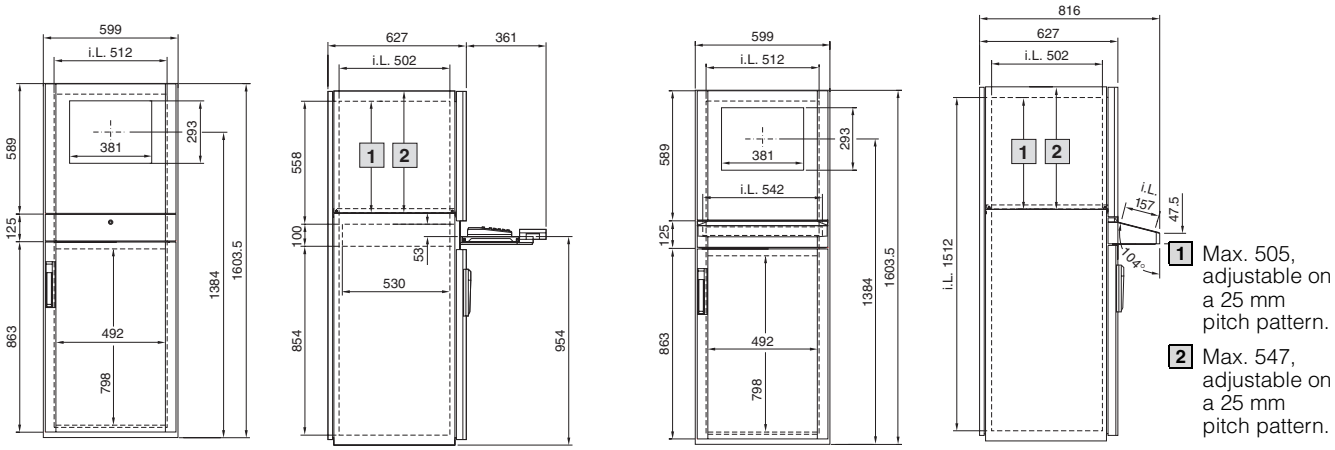
1 1104 mm for support section length 1000 mm

1.6 PC enclosure system

Page 283

With keyboard drawer
PC 4650.000

With desk section
PC 4650.704



i.L. = Clearance width

				Model No. PC	
				4650.000[1]	4650.704[2]
			Width in mm	600	
			Height in mm	1600	
			Depth in mm	620	620/820
Supply includes	**Design**	**Material**	**Surface finish/Colour**		
Enclosure	Solid top and sides, open at the bottom	Stainless steel 1.4301, 1.8 mm	Brushed, grain size 240	■	■
	Gland plates, three-part	Stainless steel 1.4301, 1.5 mm			
Rear door	With locking rod and double-bit insert, hinged on the right-hand side	Stainless steel 1.4301, 2.0 mm	Brushed, grain size 240	■	■
Glazed door, top	Latched from the inside[3], r/h hinge	Stainless steel 1.4301, 1.5 mm	Brushed, grain size 240	■	■
	Viewing window	Safety glass 4.0 mm			
Component shelf	Slotted, permanently installed	Sheet steel ST 1203, 1.5 mm	RAL 7035	■	■
Drawer	Enclosure	Sheet steel ST 1203, 1.25 mm	RAL 7035	■	
	Keyboard extension piece with cable support, hinged, plus pull-out mousepad and keyboard cradle	Sheet steel ST 1203, 1.5 mm	RAL 7035		
	Trim panel, folded as handrest, with fastener, lock no. 3524 E	Stainless steel 1.4301, 1.25 mm	Brushed, grain size 240		
	[3] With unlatching for top glazed door			■	
Desk section	Enclosure with cover plate top and bottom	Stainless steel 1.4301, 1.5 mm	Brushed, grain size 240		■
	Design strip	Plastic approved for use with foodstuffs	RAL 5002		
Bottom door	With locking rod and double-bit insert, r/h hinge	Stainless steel 1.4301, 1.5 mm	Brushed, grain size 240	■	■
	[3] With unlatching for glazed door with desk section				■

[1] Enclosures in stainless steel 1.4404 (AISI 316L) please add the extension .500 to the Model No. Delivery times on request.
[2] Enclosures in stainless steel 1.4404 (AISI 316L) please add the extension .504 to the Model No. Delivery times available on request.

Short-circuit resistance diagrams

2.1 Mini-PLS busbar support

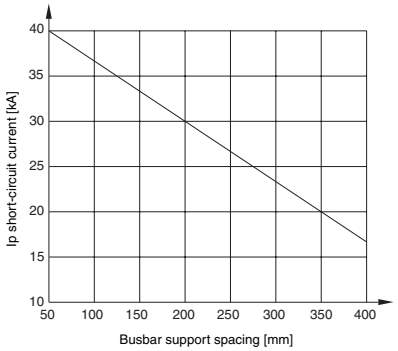
up to 250 A, 3-pole Page 302

Model No.: SV 9600.000

40 mm bar centre distance.
Rated current up to 250 A,
rated operating voltage up
to 690 V AC,
50/60 Hz to VDE 0660.

Basis of test:
VDE 0660, part 500/IEC 60 439.

Test implemented:
Dynamic short-circuit resistance
to IEC 60 439.



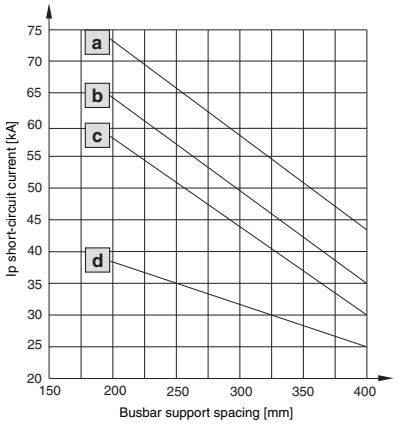
2.1 Busbar support

up to 360 A, 3-pole Page 308

Model No.: SV 9350.000

40 mm bar centre distance.
Rated current up to 360 A,
rated operating voltage up
to 690 V AC,
50/60 Hz to VDE 0660.

Calculation basis:
VDE 0103/IEC 60 865.



Busbar E-Cu (mm)	Rated curent up to (A)	Curve
12 x 5	210	d
12 x 10	340	b
15 x 5	260	c
15 x 10	360	a

2.2 Busbar supports

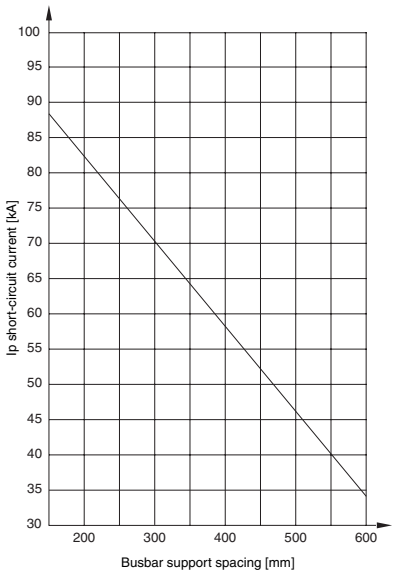
up to 450 A, 3-pole Page 318

Model No.: SV 3066.000

60 mm bar centre distance.
Rated current up to 450 A,
rated operating voltage up
to 1000 V AC,
50/60 Hz to VDE 0660.
Bar accommodation 30 x 5 mm.

Basis of test:
VDE 0660, part 500/IEC 60 439.

Test implemented:
Dynamic short-circuit resistance
to IEC 60 439.



2.2 Busbar supports

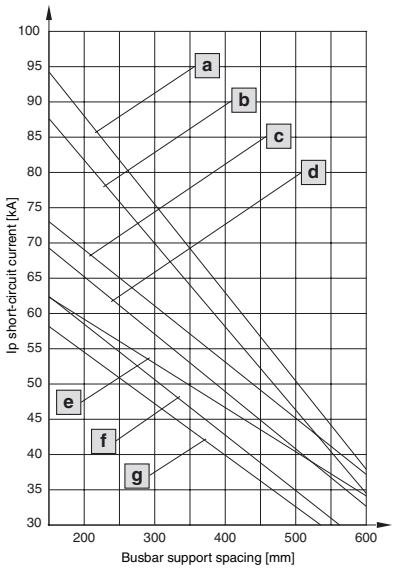
up to 800 A Page 318

Model No.: SV 3000.000 (3-pole), SV 3050.000 (2-pole), SV 3064.000 (4-pole)

60 mm bar centre distance.
Rated current up to 800 A,
rated operating voltage up
to 1000 V AC,
50/60 Hz to VDE 0660.

Basis of test:
VDE 0660, part 500/IEC 60 439.

Test implemented:
Dynamic short-circuit resistance
to IEC 60 439.



Busbar E-Cu (mm)	Rated curent up to (A)	Curve
12 x 5	210	g
12 x 10	340	f
15 x 3	187	f
15 x 4	210	f
15 x 5	260	f
16 x 3	198	f
16 x 4	225	f
16 x 5	280	f
16 x 8	397	e
20 x 5	319	e
20 x 10	497	c
25 x 5	384	d
30 x 5	447	b
30 x 10	800	a

Busbar E-Cu mm (inches)	Rated current up to (A)	Curve
9.53 x 25.40 ($^3/_8$ x 1″)	599	a
6.35 x 25.40 ($^1/_4$ x 1″)	449	d
4.76 x 25.40 ($^3/_{16}$ x 1″)	349	d
3.18 x 25.40 ($^1/_8$ x 1″)	299	d
9.53 x 19.05 ($^3/_8$ x $^3/_4$″)	449	a
6.35 x 12.70 ($^1/_4$ x $^1/_4$″)	249	f

2.2 PLS busbar supports

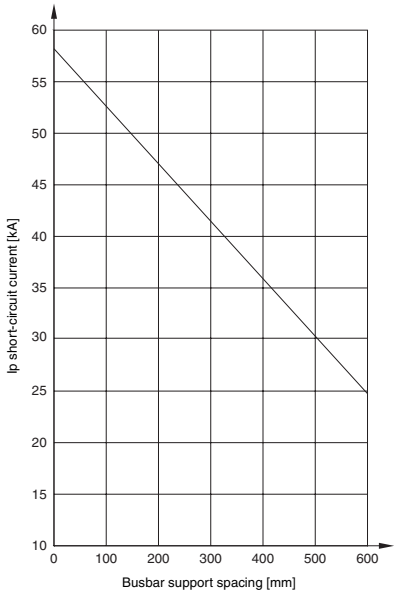
up to 800 A/1600 A, 3-pole Page 320

Model No.: SV 3500.000
Rated current up to 800 A

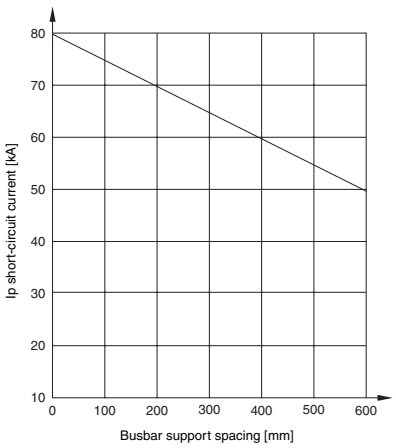
60 mm bar centre distance.
Rated operating voltage up
to 1000 V~,
50/60 Hz to VDE 0660.

Basis of test:
VDE 0660, part 500/IEC 60 439.

Test implemented:
Dynamic short-circuit resistance
to IEC 60 439.



Model No.: SV 3510.000
Rated current up to 1600 A



Short-circuit resistance diagrams

2.3 Busbar supports

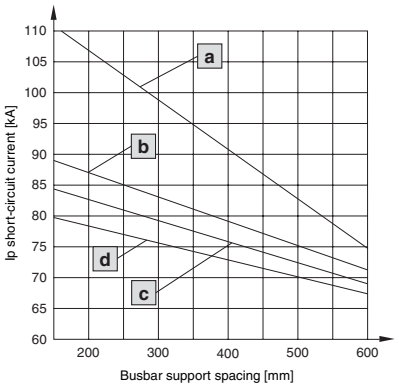
up to 1250 A, 3-pole Page 343

Model No.: SV 3073.000

100 mm bar centre distance.
Rated current up to 1250 A,
rated operating voltage up
to 1000 V AC,
50/60 Hz to VDE 0660.

Basis of test:
VDE 0660, part 500/IEC 60 439.

Test implemented:
Dynamic short-circuit resistance
to IEC 60 439.



Busbar E-Cu (mm)	Rated curent up to (A)	Curve
30 x 10	800	d
40 x 10	850	c
50 x 10	1000	b
60 x 10	1250	a

2.4 Busbar supports

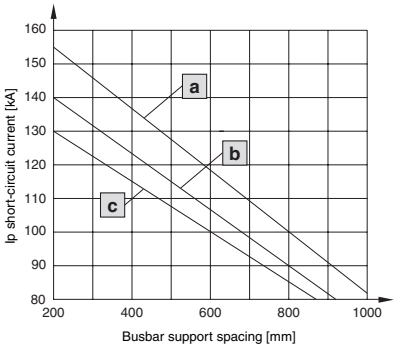
up to 1600 A, 3-pole Page 351

Model No.: SV 3052.000

185 mm bar centre distance.
Rated current up to 1600 A,
rated operating voltage up
to 1000 V AC,
50/60 Hz to VDE 0660.

Basis of test:
VDE 0660, part 500/IEC 60 439.

Test implemented:
Dynamic short-circuit resistance
to IEC 60 439.



Busbar E-Cu (mm)	Rated curent up to (A)	Curve
50 x 10	1000	c
60 x 10	1250	b
80 x 10	1600	a

2.5 Busbar supports

up to 2500 A/3000 A, 3-pole Page 355

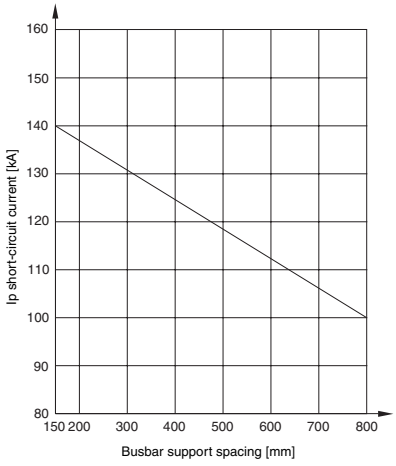
Model No.: SV 3055.000
Rated current up to 2500 A,
busbar accommodation
3 x 2 x 80 x 10 mm.

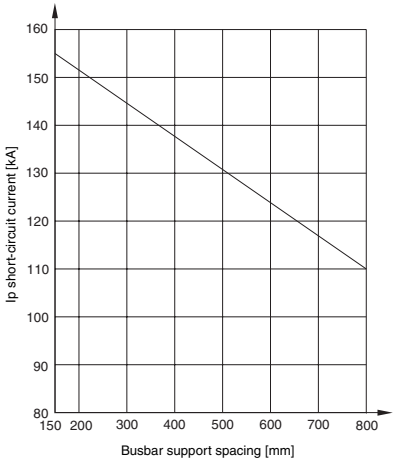
Model No.: SV 3057.000
Rated current up to 3000 A,
busbar accommodation
3 x 2 x 100 x 10 mm.

150 mm bar centre distance.
Rated operating voltage up
to 1000 V AC,
50/60 Hz to VDE 0660.

Basis of test:
VDE 0660, part 500/IEC 60 439.

Test implemented:
Dynamic short-circuit resistance
to IEC 60 439.







2.7 Laminated copper bars Rittal Flexibar “S”

Page 361

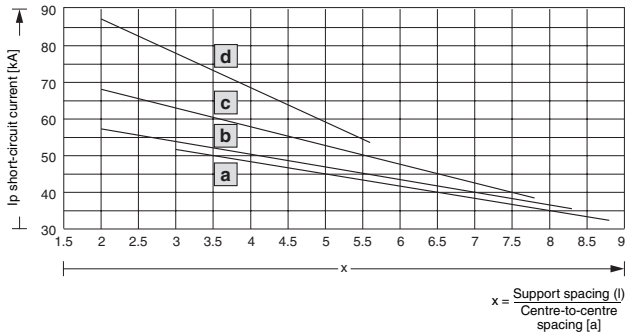
Configuration[1] mm	I_n for 50 K[2]	I_n for 30 K[2]	I_n for 10 K[2]	Curve (short-circuit resistance)	Installation type	**Model No. SV**
6 x 9.0 x 0.8	250 A	220 A	120 A	–	–	3565.000
6 x 13.0 x 0.5	200 A	150 A	110 A	–	–	3566.000
4 x 15.5 x 0.8	300 A	210 A	140 A	–	–	3567.000
6 x 15.5 x 0.8	350 A	290 A	170 A	a	1	3568.000
10 x 15.5 x 0.8	450 A	350 A	190 A	a	1	3569.000
5 x 20.0 x 1.0	400 A	300 A	180 A	a	1	3570.000
5 x 24.0 x 1.0	450 A	370 A	230 A	a	1	3571.000
10 x 24.0 x 1.0	800 A	600 A	340 A	b	1	3572.000
5 x 32.0 x 1.0	550 A	470 A	280 A	b	2/3	3573.000
10 x 32.0 x 1.0	1000 A	800 A	460 A	c	2/3	3574.000
5 x 40.0 x 1.0	800 A	600 A	340 A	b	2/3	3575.000
10 x 40.0 x 1.0	1200 A	950 A	500 A	c	2/3	3576.000
5 x 50.0 x 1.0	900 A	700 A	400 A	b	2/3	3577.000
10 x 50.0 x 1.0	1400 A	1000 A	600 A	c	2/3	3578.000
10 x 63.0 x 1.0	1600 A	1240 A	715 A	d	2/3	3579.000

[1] Number of lamina x lamina width x lamina thickness
[2] The conductor temperature of the laminated copper bar is derived from the sum total of the ambient temperature and the temperature increase.
Example:
SV 3565.000 loaded with 220 A, i.e. the temperature increases by 30 K. At an ambient temperature of 35°C, this produces a resultant conductor temperature of 35°C + 30 K = 65°C.

Short-circuit resistance diagrams

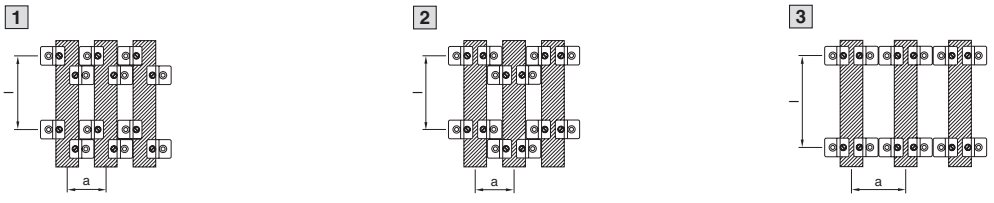
Basis of test:
VDE 0660, part 500/IEC 60 439-1.
Test implemented:
Dynamic short-circuit resistance to IEC 60 439-1.

The dimensions for the support spacing (l) and for the centre-to-centre spacing (a) must be within the specified min./max. limits. The quotients of l/a can be used to determine the permissible short-circuit current I_p by using curves a to d. The prescribed installation type must be taken into account.



Curve	Support spacing (l) mm		Centre-to-centre spacing (a) mm	
	min.	max.	min.	max.
a	150	300	34	60
b	150	350	42	85
c	200	400	51	85
d	200	450	81	100

Type of assembly with universal support SV 3079.000



Overview of power circuit-breakers/starter combinations

Current carrying capacity of connection cables

Page 304 and 306, 312 – 315, 325 – 332

Current carrying capacity of insulated PVC cables at an ambient temperature of +40°C, installation type E (DIN EN 60 204-1:1998-11)	
Nominal cross-section (mm^2)	Current capacity (A)
1.5	16
2.5	22
4	30
6	37
10	52
16	70
25	88
35	114

Conversion factors for the load capacity of cables (DIN EN 60 204-1:1998-11)	
Ambient temperature (°C)	Factor
30	1.15
35	1.08
40	1.00
45	0.91
50	0.82
55	0.71
60	0.58

2.1 Busbar systems up to 250 A (40 mm)

Mini-PLS component adaptors 12 A/25 A Page 304

Make/model	Model No. SV	
ABB		
MS25-TM-..	9614.000	9615.000
MS116-..	9614.100	9615.100
MS225-..	9614.000	9615.000
MS325-..	9614.000	9615.000
MS450-.. (max. 25 A)	9615.000	–
MS451-.. (max. 25 A)	9615.000	–
AEG		
Mbs25	9614.100	9615.100
Mbs28	9614.000	9615.000
Allen Bradley		
103-...R	9614.100	9615.100
107-...R	9629.010	–
140M-...-...	9614.100	9615.100
140-MN-...	9614.100	9615.100
190-M1-...	9615.100[1]	–
190-M2-...	9615.100[1]	–
Moeller Electric		
PKM0...	9614.100	9615.100
PKZM0-...	9614.100	9615.100
PKZM0-...T	9614.100	9615.100
PKZM0-../E-10-D	9614.100	9615.100
PKZM0-../0.-	9614.100	9615.100
PKZM0-../S00-11	9614.100	9615.100
PKZM0-../SE00-11	9614.100	9615.100
PKZ2/ZM-... (max. 25 A)	9625.000	9626.000
PKZ2/ZM-...-8 (max. 25 A)	9625.000	9626.000
PKZM0-.../E01-G-W	9629.010	–
PKZM0-.../.-..-W	9629.010	–
PKZM0-.../.-..WMF	9629.030	–
PKZM4-... (max. 25 A)	9615.000	–

Make/model	Model No. SV	
Siemens		
S0		
3RA11 20...2.-0...	9614.100[1]	–
3RA12 20-....-...	9629.020	–
3RV1. 21-...1.	9614.100	9615.100
3RW30 2.-1AB..	9614.100	9615.100
S00		
3RA11 10..0.1.-1...	9614.100[1]	–
3RA12 10-...-...	9629.010	–
3RV10 11-..A1.	9614.100	9615.100
3RW30 1.-1CB.4	9614.100	9615.100
S00 Cage Clamp		
RV10 11-..A20	9614.110	–
S2		
3RV1. 31-4..10 (max. 25 A)	9615.000	–
3RW30 3.-1AB.. (max. 25 A)	9615.000	–
Telemecanique		
GK3-EF.. (max. 25 A)	9626.000	–
GV2-....	9614.100	9615.100
GV2-M..K1..	9614.100	9615.100
GV2-M..K2..	9629.010	–
GV2-P..D2..	9629.030	–
GV2-P..D1..	9615.100[1]	–
GV3-M...	9626.000	–
LD1-L.030 (max. 25 A)	9615.100	–
LH4-N1....7	9614.100	9615.100
LH4-N2....7	9629.010	–

[1] Support rail must be offset

Mini-PLS quick-fit component adaptors 25 A (32 A) Page 305

Make/model	Model No. SV
ABB	
MS25-TM-..	9622.000
AEG	
Mbs25	9618.000
Allen Bradley	
140M-...-...	9620.000
General Electric	
SFKO1	9618.000
Moeller Electric	
PKM0...	9619.000
PKZM0-...	9619.000
PKZM0-...T	9619.000
PKZM0-../S00-11	9620.000
PKZM0-../SE00-11	9620.000

Make/model	Model No. SV
Schiele	
MSU-K	9618.000
Siemens	
S0	
3RA11 20...2.-0...	9622.000
3RV1. 21-...1.	9622.000
Telemecanique	
GV2-LE	9621.000
GV2-M	9621.000
GV2-P	9622.000

2.1 Busbar systems up to 250 A (40 mm)

Mini-PLS component adaptors 40 A/100 A Page 306

Make/model	Model No. SV		Accessories Model No. SV
ABB			
MS450-.. (max. 40 A)	9617.000	–	–
MS450-..	9629.000	–	9320.120
MS451-.. (max. 40 A)	9617.000	–	–
MS451-..	9629.000	–	9320.120
MS495-..	9629.000	–	9320.120
MS496-..	9629.000	–	9320.120
MS497-..	9629.000	–	9320.120
LNA 32	9629.000	–	–
LNA 63	9629.000	–	–
LNA 100	9629.000	–	–
Tmax			
T1	9629.000	–	–
T2	9629.000	–	–
AEG			
Mbs100	9629.000	–	9320.120
Allen Bradley			
140M-F8.-... (max. 40 A)	9616.000	9617.000	–
140-CMN-....	9629.000	–	9320.120
Merlin Gerin			
Compact NS 80H-MA	9629.000	–	–

Make/model	Model No. SV		Accessories Model No. SV
Moeller Electric			
NZM 1	9629.000	–	–
PKZ2/ZM-...	9627.000	9628.000	–
PKZ2/ZM-...-8	9627.000	9628.000	–
PKZ2/ZM-.../SE1A/11	9628.000	–	–
PKZ2/ZM-.../S	9628.000	–	–
PKZ2/SE1A/11	9628.000	–	–
PKZ2/S	9628.000	–	–
PKZM4-... (max. 40 A)	9617.000	–	–
PKZM4-...	9629.000	–	9320.120
Siemens			
S2			
3RV1. 31-4..10 (max. 40 A)	9617.000	–	–
3RV1. 31-4..10	9629.000	–	9320.120
3RW30 3.-1AB.. (max. 40 A)	9617.000	–	–
3RW30 3.-1AB..	9629.000	–	9320.120
S3			
3RV1. 4.-4..10	9629.000	–	9320.120
3RW30 4.-1AB..	9629.000	–	9320.120
Telemecanique			
GK3-EF.. (max. 40 A)	9628.000	–	–
GK3-EF..	9629.000	–	9320.120
GV3-M... (max. 40 A)	9628.000	–	–
GV3-M...	9629.000	–	9320.120

2.1 Busbar systems up to 360 A (40 mm)

Multi-functional component adaptor 12 A/25 A Page 312 and 313

Make/model	SV 3431.000 5 mm Model No. SV	SV 3431.000 10 mm Model No. SV	Accessories Model No. SV
ABB			
MS116-..	9350.100	9350.110	–
AEG			
Mbs25	9350.100	9350.110	–
Allen Bradley			
103-...R	9350.100	9350.110	–
107-...R	9350.280	9350.290	–
140M-...-...	9350.100	9350.110	–
140-MN-...	9350.100	9350.110	–
190-M1-...	9350.260	9350.270	–
190-M2-...	9350.260	9350.270	–
Moeller Electric			
PKM0...	9350.100	9350.110	–
PKZM0-...	9350.100	9350.110	–
PKZM0-...T	9350.100	9350.110	–
PKZM0-../0.-.	9350.100	9350.110	–
PKM0.../E01-G-W	9350.280	9350.290	–
PKZM0-../E-10-D	9350.100	9350.110	–
PKZM0-../S00-11	9350.100	9350.110	9320.140
PKZM0-../SE00-11	9350.100	9350.110	9320.140
PKZM0-.../.-..-W	9350.280	9350.290	–
PKZM0-.../.-..-WMF	9350.320[1]	9350.330[1]	–

Make/model	SV 3431.000 5 mm Model No. SV	SV 3431.000 10 mm Model No. SV	Accessories Model No. SV
Siemens			
S0			
3RA11 20-...2.-0...	9350.100	9350.110	9320.140
3RA12 20-....-...	9350.300	9350.310	–
3RV1. 21-...1.	9350.100	9350.110	–
3RW30 2.-1AB..	9350.100	9350.110	–
S00			
3RA11 10..0.1.-1...	9350.100	9350.110	9320.140
3RA12 10-....-...	9350.280[2]	9350.290[2]	9320.140
3RV10 11-..A1.	9350.100	9350.110	–
3RW30 1.-1CB.4	9350.100	9350.110	–
S00 Cage Clamp			
3RV10 11-..A20	9350.080	9350.090	–
Telemecanique			
GV2-....	9350.100	9350.110	–
GV2-M..K1..	9350.100	9350.110	–
GV2-M..K2..	9350.280	9350.290	–
GV2-P..D1..	9350.260	9350.270	–
GV2-P..D2..	9350.320[1]	9350.330[1]	–
LD1-L.030 (max. 25 A)	9350.100	9350.110	–
LH4-N1....7	9350.100	9350.110	–
LH4-N2....7	9350.280	9350.290	–

[1] Moeller: The bottom support rail is eliminated
Telemecanique: The upper support rail is offset at a distance of 125 mm from the lower support rail (support rail centre-to-centre spacing)
[2] Support rail must be offset

Overview of power circuit-breakers/starter combinations

2.1 Busbar systems up to 360 A (40 mm)

Multi-functional component adaptor 40 A Page 315

Component adaptor 100 A Page 315

Make/model	SV 3431.000	
	5 mm **Model No. SV**	10 mm **Model No. SV**
ABB		
DLA..-30	9350.200[1)]	9350.210[1)]
MS25-TM-..	9350.200[2)]	9350.210[2)]
MS225-..	9350.200[2)]	9350.210[2)]
MS325-..	9350.200[2)]	9350.210[2)]
MS450-.. (max. 40 A)	9350.340	9350.350
MS450-..	9350.420	9350.430
MS451-.. (max. 40 A)	9350.340	9350.350
MS451-..	9350.420	9350.430
MS495-..	9350.420	9350.430
MS496-..	9350.420	9350.430
MS497-..	9350.420	9350.430
LNA 32/63/100	9350.420	9350.430
AEG		
Mbs28	9350.200[2)]	9350.210[2)]
Mbs100	9350.420	9350.430
Allen Bradley		
140M-F8.-... (max. 40 A)	9350.200[2)]	9350.210[2)]
140-CMN-...	9350.420	9350.430
Merlin Gerin		
Compact NS 80H-MA	9350.420	9350.430

Make/model	SV 3431.000	
	5 mm **Model No. SV**	10 mm **Model No. SV**
Moeller Electric		
NZM 1	9350.420	9350.430
PKZM4-... (max. 40 A)	9350.340	9350.350
PKZM4-...	9350.420	9350.430
Siemens		
S2		
3RV1. 31-4..10 (max. 40 A)	9350.340	9350.350
3RV1. 31-4..10	9350.420	9350.430
3RW30 3.-1AB.. (max. 40 A)	9350.340	9350.350
3RW30 3.-1AB..	9350.420	9350.430
S3		
3RV1. 4.-4..10	9350.420	9350.430
3RW30 4.-1AB..	9350.420	9350.430
Telemecanique		
GK3-EF..	9350.420	9350.430
GV3-M...	9350.420	9350.430

[1)] The top support rail is eliminated
[2)] The bottom support rail is eliminated

2.2 Busbar systems up to 800 A/1600 A (60 mm)

Multi-functional component adaptor 12 A/25 A Page 325 and 326

Make/model	SV 3431.000		**Accessories**
	5 mm **Model No. SV**	10 mm **Model No. SV**	**Model No. SV**
ABB			
MS116-..	9320.180	9320.190	–
AEG			
Mbs25	9320.180	9320.190	–
Allen Bradley			
103-...R	9320.180	9320.190	–
107-...R	9320.380	9320.390	–
140M-...-...	9320.180	9320.190	–
140-MN-...	9320.180	9320.190	–
190-M1-...	9320.440	9320.450	–
190-M2-...	9320.440	9320.450	–
Moeller Electric			
PKM0...	9320.180	9320.190	–
PKZM0-...	9320.180	9320.190	–
PKZM0-...T	9320.180	9320.190	–
PKZM0-../0.-.	9320.180	9320.190	–
PKZM0.../E01-G-W	9320.380	9320.390	–
PKZM0-../E-10-D	9320.180	9320.190	–
PKZM0-../S00-11	9320.180	9320.190	9320.140
PKZM0-../SE00-11	9320.200	9320.210	–
PKZM0-.../.-..-W	9320.380	9320.390	–
PKZM0-.../.-..WMF	9320.420[1)]	9320.430[1)]	–

Make/model	SV 3431.000		**Accessories**
	5 mm **Model No. SV**	10 mm **Model No. SV**	**Model No. SV**
Siemens			
S0			
3RA11 20-...2.-0...	9320.180	9320.190	9320.140
3RA12 20-....-...	9320.400	9320.410	–
3RV1. 21-...1.	9320.180	9320.190	–
3RW30 2.-1AB..	9320.180	9320.190	–
S00			
3RA11 10..0.1.-1...	9320.180	9320.190	9320.140
3RA12 10-....-...	9320.380[1)]	9320.390[1)]	9320.140
3RV10 11-..A1.	9320.180	9320.190	–
3RW30 1.-1CB.4	9320.180	9320.190	–
S00 Cage Clamp			
3RV10 11-..A20	9320.160	9320.170	–
Telemecanique			
GV2-....	9320.180	9320.190	–
GV2-M..K1..	9320.180	9320.190	–
GV2-M..K2..	9320.380	9320.390	–
GV2-P..D1..	9320.440	9320.450	–
GV2-P..D2..	9320.420[2)]	9320.430[2)]	–
LD1-L.030 (max. 25 A)	9320.180	9320.190	–
LH4-N1....7	9320.180	9320.190	–
LH4-N2....7	9320.380	9320.390	–

[1)] The bottom support rail is eliminated
[2)] The upper support rail is offset at a distance of 125 mm from the lower support rail (support rail centre-to-centre spacing)

2.2 Busbar systems up to 800 A/1600 A (60 mm)

Multi-functional component adaptor 40 A Page 327

Make/model	SV 3431.000 5 mm **Model No. SV**	SV 3431.000 10 mm **Model No. SV**
ABB		
MS25-TM-..	9320.300[1)]	9320.310[1)]
MS225-..	9320.300[1)]	9320.310[1)]
MS325-..	9320.300[1)]	9320.310[1)]
MS450-.. (max. 40 A)	9320.460	9320.470
MS451-.. (max. 40 A)	9320.460	9320.470
DLA..-30	9320.300[2)]	9320.310[2)]
AEG		
Mbs28	9320.300[1)]	9320.310[1)]
Allen Bradley		
140M-F8.-... (max. 40 A)	9320.300[1)]	9320.310[1)]

Make/model	SV 3431.000 5 mm **Model No. SV**	SV 3431.000 10 mm **Model No. SV**
Moeller Electric		
PKZM4-... (max. 40 A)	9320.460	9320.470
Siemens		
S2		
3RV1. 31-4..10 (max. 40 A)	9320.460	9320.470
3RW30 3.-1AB.. (max. 40 A)	9320.460	9320.470

[1)] The bottom support rail is eliminated
[2)] The top support rail is eliminated

Component adaptor 50 A Page 328 and 329

Make/model	SV 3431.000 5 mm **Model No. SV**	SV 3431.000 10 mm **Model No. SV**
ABB		
MS25-TM-..	3540.000	3541.000
MS225-..	3540.000	3541.000
MS325-..	3540.000	3541.000
AEG		
Mbs28	3540.000	3541.000
Allen Bradley		
140M-F8.-...	3540.000	3541.000
Moeller Electric		
PKZ2/ZM-...	3544.000	3545.000
PKZ2/ZM-...-8	3544.000	3545.000
PKZM0-.../.-..WMF	3042.000[1)]	3043.000[1)]

Make/model	SV 3431.000 5 mm **Model No. SV**	SV 3431.000 10 mm **Model No. SV**
Siemens		
S2		
3RA11 30-..0.3.-0...	3040.000[2)]	3041.000[2)]
3RV10 31-....	3069.000	3070.000
Telemecanique		
GV2-P..D2..	3042.000[2)]	3043.000[2)]

[1)] The bottom support rail must be offset
[2)] One support rail must be offset

Component adaptor 63 A Page 330 and 331

Make/model	SV 3431.000 5 mm **Model No. SV**	SV 3431.000 10 mm **Model No. SV**
ABB		
MS25-TM-..	3445.000	3445.000
MS25-TM-..	3446.000	3446.000
MS225-..	3445.000	3445.000
MS225-..	3446.000	3446.000
MS325-..	3445.000	3445.000
MS325-..	3446.000	3446.000
MS450-..	3036.000	3037.000
MS450-..	3445.000	3445.000
MS451-..	3036.000	3037.000
MS451-..	3445.000	3445.000
MS495-.. (max. 63 A)	3067.000	3068.000
MS496-.. (max. 63 A)	3067.000	3068.000
MS497-.. (max. 63 A)	3067.000	3068.000
AEG		
Mbs28	3445.000	3445.000
Mbs28	3446.000	3446.000
Allen Bradley		
140M-F8.-...	3445.000	3445.000
140M-F8.-...	3446.000	3446.000

Make/model	SV 3431.000 5 mm **Model No. SV**	SV 3431.000 10 mm **Model No. SV**
Moeller Electric		
PKZ2/S	3046.000	3047.000
PKZ2/SE1A/11	3046.000	3047.000
PKZ2/ZM-.../S	3046.000	3047.000
PKZ2/ZM-.../SE1A/11	3046.000	3047.000
PKZM0-../0-SD	3048.000[1)]	3049.000[1)]
PKZM0../00(A)-SD	3048.000[1)]	3049.000[1)]
PKZM0-../E-10-SD	3048.000[1)]	3049.000[1)]
PKZM0-../E-10-G-SD	3048.000[1)]	3049.000[1)]
PKZM4-...	3036.000	3037.000
PKZM4-...	3445.000	3445.000
Siemens		
S2		
3RV1. 31-4..10	3036.000	3037.000
3RV1. 31-4..10	3445.000	3445.000
3RW30 3.-1AB..	3036.000	3037.000
3RW30 3.-1AB..	3445.000	3445.000
S3		
3RV1. 4-4..10 (max. 63 A)	3067.000	3068.000
3RW30 4.-1AB.. (max. 63 A)	3067.000	3068.000
Telemecanique		
GK3-EF.. (max. 63 A)	3067.000	3068.000
GV3-M... (max. 63 A)	3067.000	3068.000
LD1-L.030	3067.000	3068.000
LD4-L..30	3067.000	3068.000

[1)] One support rail is eliminated



NH isolators, size 000

Page 307, 311, 337, 358

- Thanks to a specially developed locking mechanism, the fuse inserts are easily and quickly installed.
- A special switching aid pre-stresses the lyre contact when the isolator lid is closed. This means that the fuse insert slides reliably into its final position without damaging the contact.
- Microswitches for monitoring the lid position are readily integrated on the right and left.
- The unit can be protected from unauthorised switching via the readily accessible sealing device on the front of the unit.
- The spaciously designed viewing window of the isolator lid allows easy monitoring of the fuse insert indicators.
- Test holes drilled in the viewing window allow direct measurement access to the contact parts of the fuse inserts.



NH isolator, sizes 00 to 3

Page 338 – 341, 345 – 348, 358 and 359

- Easy assembly with removable push-in isolator lid and top mounted contact hazard protection cover.
- Two-part contact hazard protection cover plate with service-friendly central unlocking facility allows connection in accordance with BGV-A2 (VBG 4), even whilst the supply end is live.
- Apart from its protective function, the design of the NH on-load isolator facilitates the activation and deactivation of electrical equipment and system components.
- The units may be actuated whilst live (see table below).
- Microswitches to indicate the switching position of the isolator lid are easily installed via snap-mounting on the left and right.
- The viewing window integrated into the lid unit has test holes which can be opened by sliding the viewing window, for direct measurement access to the contact parts of the fuse inserts (see photograph).

Technical specifications to VDE 0660, part 107/IEC 60 947-3						
Size (NH fuse inserts to DIN 43 620)		000	000/00	1	2	3
Rated operating current I_e Conventional thermal current I_{th}		100 A 160 A[1)]	160 A 160 A	250 A 250 A	400 A 400 A	630 A 630 A
Rated operating voltage U_e		AC 690 V	AC 690 V			
Rated insulation voltage U_i		690 V	800 V			
Rated surge voltage resistance U_{imp}		6 kV	8 kV			
Conditional rated short-circuit current when protected with fuses		80 kA	50 kA	50 kA	50 kA	50 kA
Rated breaking capacity to VDE 0660, part 107/IEC 60 947-3 (utilisation category)	400 V	AC-22B I_e = 100 A	AC-22B I_e = 160 A	AC-22B I_e = 250 A	AC-22B I_e = 400 A	AC-22B I_e = 630 A
	690 V	AC-21B I_e = 100 A	AC-22B I_e = 160 A	AC-21B I_e = 250 A	AC-21B I_e = 400 A	AC-21B I_e = 630 A
	440 V[2)]	DC-21B I_e = 100 A	DC-21B I_e = 160 A	DC-21B I_e = 250 A	DC-21B I_e = 400 A	DC-21B I_e = 630 A
Mechanical life (switching cycles)		2000	1600	1000	600	600
Permissible ambient temperature		–25°C to +55°C				
Fire protection corresponding to		UL 94-V0				
$P_{v\,max}$/fuse insert		7.5 W (9 W [1)])	12 W	23 W	34 W	48 W

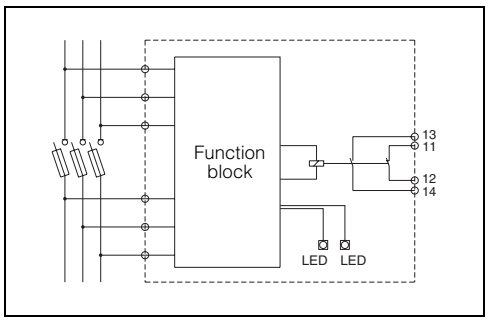
[1)] For 95 mm² connection cross-section (95 mm² connection pieces available on request)
[2)] With population of phases L_1 and L_3.

Electronic fuse monitoring

- No separate auxiliary voltage required.
- Automatic activation following fault rectification.
- Reliable functioning, thanks to surge-proof microelectronics.
- Readily accessible connector facilitates service-friendly connection of the signal tracks.
- Rapid response behaviour in the event of a fault.

Electronic fuse monitoring may be used in 50/60 Hz three-phase circuits ranging from 400 V AC to 690 V AC (max. +5 %). The auxiliary voltage required for operation is obtained from the mains voltage (supply end) via live puller lugs.

Consequently, this function is only available with the mains voltage connected and the isolator lid closed. If one or more of the NH fuse inserts is switched due to a malfunction, an error signal is generated. Evaluation is achieved by comparing the voltage on the puller lugs with the NH fuse inserts used (differential voltage ≥ 75 V). In the event of a fault, a corresponding signal message for further processing is provided via the separate relay contacts. Additionally, malfunctions are visually indicated by a red LED display, whilst a green LED indicates that the sytem is operational.

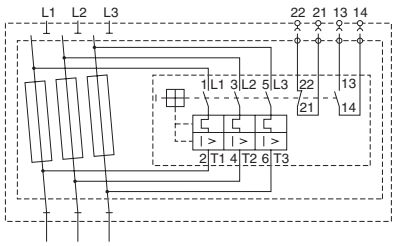


Electromechanical fuse monitoring

The connection clamps of the floating switch contacts which serve as indicators are arranged on the top of the isolator base. This arrangement guarantees extremely simple installation.

The isolator lids can be removed without disconnecting any pilot wires, in the same way as NH isolators without fuse monitoring. Unlike an electronic monitor, this system operates without auxiliary power, yet still performs the same functions.

Wiring diagram



Technical specifications	Electromechanical fuse monitoring	Electronic fuse monitoring
Rated operating voltage U_e	AC 24 V to AC 690 V (50/60 Hz) DC 24 V to DC 250 V	AC 400 V to AC 690 V (50/60 Hz)
Rated surge voltage resistance U_{imp}	6 kV	6 kV
Response time	< 2 s	< 0.5 s
Auxiliary contacts	1 normally closed contact, 1 normally open contact	1 normally closed contact, 1 normally open contact, bounce-free
Load capacity of auxiliary contacts	1.5 A	2 A
Permissible ambient temperature	–25°C to +55°C	–25°C to +55°C
Displays	“I” switch dial position (operational) “0” switch dial position (error message)	1 green LED (operational) 1 red LED (error message)
Connection of auxiliary contacts	Terminal up to 1.5 mm²	4-pole rack connector up to 1.5 mm²
NH fuse inserts	with contacted, live puller lugs	

Technical information

NH fused isolators, sizes 00 to 3

Page 336, 349, 353

- The cable outlet – top or bottom – is selected directly during assembly on the same device. The switch cover unit is simply rotated through 180° (sizes 1 to 3).
- Reliable isolated or off-load position of the switch cover unit, thanks to the integral multi-function key.
- Switch locking can be achieved via the installation of padlocks in the closed and isolated position.
- For inspection purposes, there are viewing windows with integral holes in the switch cover unit or sliding viewing windows.
- Simple external/internal mounting of microswitches to indicate the switch position of the NH unit (lid unit).

Technical specifications to VDE 0660, part 107/IEC 60 947-3					
Size (NH fuse inserts to DIN 43 620)		00	1	2	3
Rated operating current I_e Conventional thermal current I_{th}		160 A 160 A	250 A 250 A	400 A 400 A	630 A 630 A
Rated operating voltage U_e		AC 690 V			
Rated insulation voltage U_i		800 V			
Rated surge voltage resistance U_{imp}		8 kV			
Conditional rated short-circuit current when protected with fuses		50 kA	50 kA	50 kA	50 kA
Rated breaking capacity to VDE 0660, part 107/IEC 60 947-3 (utilisation category)	400 V	AC-22B I_e = 160 A	AC-22B I_e = 250 A	AC-22B I_e = 400 A	AC-22B I_e = 630 A
	690 V	AC-21B I_e = 160 A	AC-21B I_e = 250 A	AC-21B I_e = 400 A	AC-21B I_e = 630 A
Mechanical life (switching cycles)		1600	1000	1000	1000
Permissible ambient temperature		–25°C to +55°C			
Fire protection corresponding to		UL 94-V0			
$P_{v\ max.}$/fuse insert		12 W	23 W	34 W	48 W

Use of semi-conductor fuses in Rittal NH switchgear

The overload and short-circuit protection of semi-conductor components places very high demands on the fuse inserts, due to the time pattern for effective protection of the defective or damaged sub-circuit. Because semi-conductor components have a low thermal capacity, the integral disconnect value (I^2t-value) of the semi-conductor fuse inserts type aR, gR or gRL must match the integral limit value of the semi-conductor cell being protected. Consequently, the tripping characteristic of the fuse inserts must be very fast, and overvoltage during the disconnection process (switching or arc voltage) must be as minimal as possible. Compared with fuse inserts for cable and line protection and transformer protection, the particular features of semi-conductor fuse inserts produce a comparatively high heat loss. The high heat loss is dissipated to the environment in the form of thermal energy. Because NH switchgear only has a limited capacity to dissipate thermal energy to the environment, the maximum heat loss ($P_{v\ max.}$/fuse insert) is listed in the technical specifications of the NH switchgear. If the values exceed the heat loss specified by the manufacturer, the rated current should be reduced in accordance with the table opposite, or the minimum connection cross-section increased accordingly to encourage heat dissipation.

Semi-conductor fuses type aR/gR/gRL				Minimum cross-section (Cu) [mm²]	Reduction factor for rated current
Size	I_N [A]	Operating category	Heat loss [W]		
00	25	gR	6	4	1.00
00	35	gR	9	6	1.00
00	50	gR	12	10	0.87
00	63	gR	15	16	0.87
00	80	aR	19	25	0.85
00	100	aR	21	35	0.85
00	125	aR	26	50	0.80
00	160	aR	34	70	0.75
1	160	gR	24	70	1.00
1	200	gR	27	95	1.00
1	250	gR	30	120	1.00
2	250	aR	105	120	0.77
2	315	aR	120	185	0.75
2	450	aR	140	2 x (30 x 5)	0.75
3	150	gR	40	70	0.90
3	200	gR	55	95	0.90
3	250	gR	72	120	0.88
3	350	gR	95	240	0.81
3	500	gR	130	2 x 150	0.76

NH bus-mounting on-load isolator, size 2

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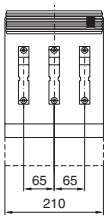
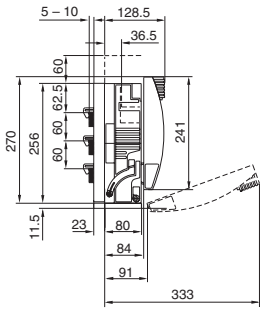
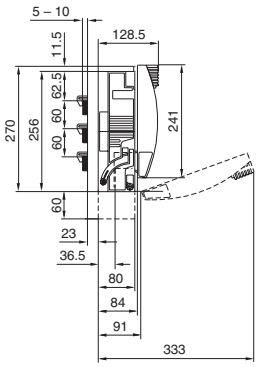
SV 3415.020

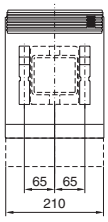


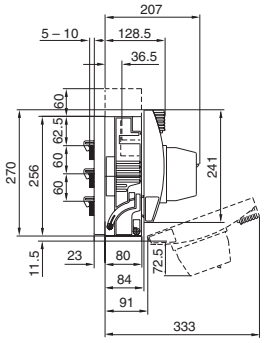


SV 3415.030

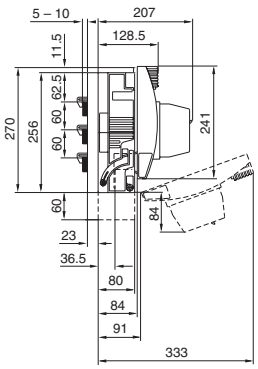


SV 3415.120

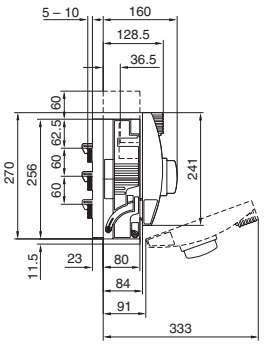




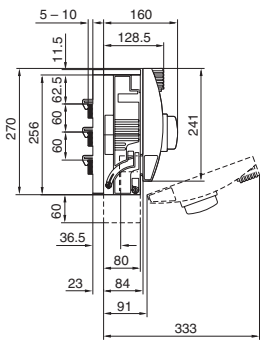
SV 3415.130



SV 3415.210



SV 3415.230



NH bus-mounting on-load isolator, size 3

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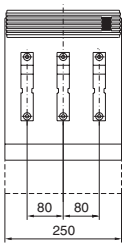
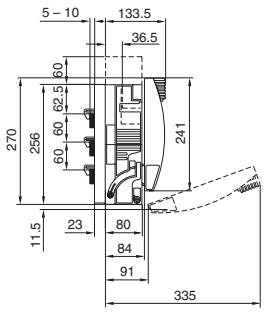
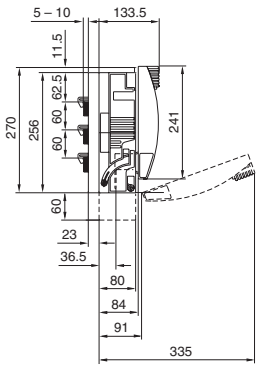
SV 3095.020

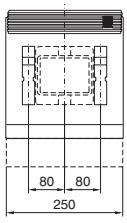


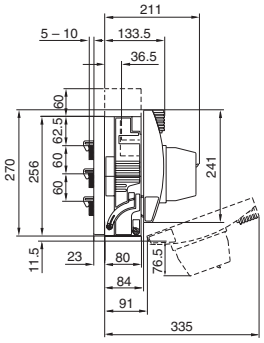


SV 3095.030

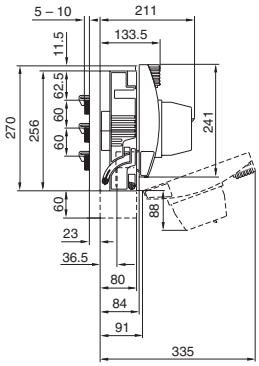


SV 3095.120





SV 3095.130



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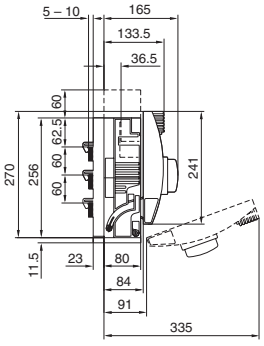
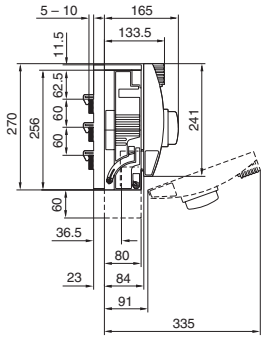


SV 3095.230

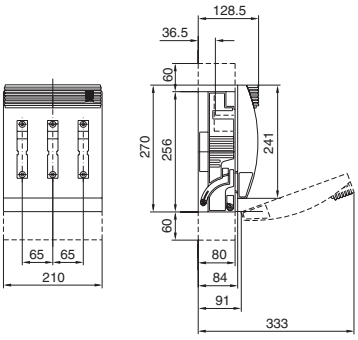


Technical information

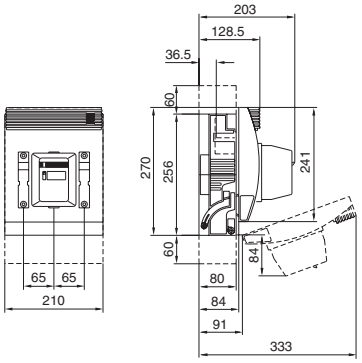
NH on-load isolator, size 2

Page 347 and 359

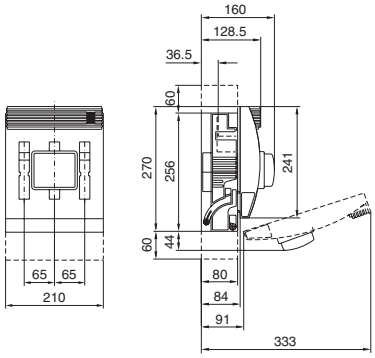
SV 3415.010



SV 3415.110



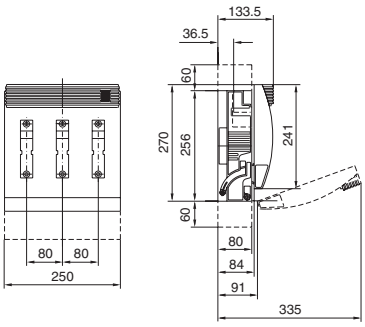
SV 3415.310



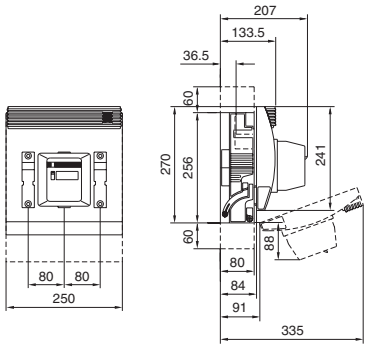
NH on-load isolator, size 3

Page 348 and 359

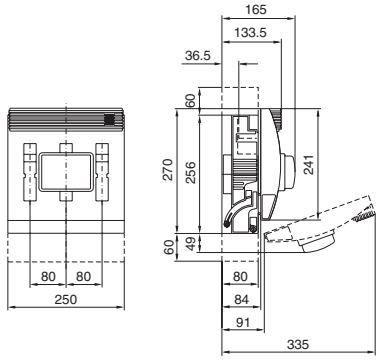
SV 3095.010



SV 3095.110



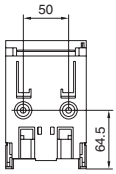
SV 3095.310



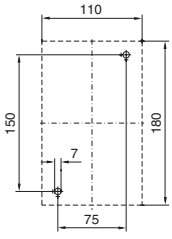
NH on-load isolator, size 000 to 3

Hole size Page 358 and 359

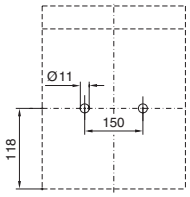
SV 3431.000



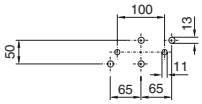
SV 3488.000, SV 3488.310,
SV 3489.000, SV 3489.310



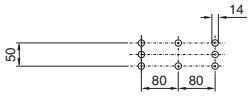
SV 3409.000,
SV 3409.310



SV 3415.010
SV 3415.110
SV 3415.310



SV 3095.010
SV 3095.110
SV 3095.310



Rated currents of busbars E-Cu (DIN 43 671)

DIN 43 671 specifies the continuous currents of busbars at an ambient temperature of 35°C and an average busbar temperature of 65°C. The continuous currents specified in the following table may be adjusted to alternative operating temperatures using a correction factor (k_2).

For safe operation with thermal reserve, it is desirable to limit the busbar temperature to a maximum of 85°C. However, the decisive factor is the lowest permissible continuous temperature of the components which directly contact the busbar system (fuse bases, outgoing cables etc.). The ambient air temperature of the busbars or the busbar system should not be more than 40°C; an average of 35°C maximum is recommended.

For the continuous temperatures specified in the table, an emission level of 0.4 applies, equivalent to an oxidating copper bar. In modern busbar systems – built into enclosures with a protection category of IP 54 and above – a more favourable emission level can be assumed. The lower emission level facilitates an additional increase in continuous currents compared with the figures in DIN 43 671, irrespective of the specified air and busbar temperature. Experience has shown an increase in the continuous current of 6 – 10 % compared with the table figures for bare copper bars, and 60 % for surface-oxidised copper bars.

Example:
For a Cu bar 30 x 10 mm (E-Cu F30), DIN 43 671 specifies a continuous current of I_{N65} = 573 A.
The correction factor diagram for square cross-sections indicates a correction factor k_2 = 1.29 at an air temperature of 35°C and a busbar temperature of 85°C. Thanks to the favourable emission level, the continuous current is increased by a further 6 – 10 %. In this example, a mean value of 8 % is used. Compared with the table figure from DIN 43 671, the Rittal rated current specification for a Cu bar 30 x 10 mm is:

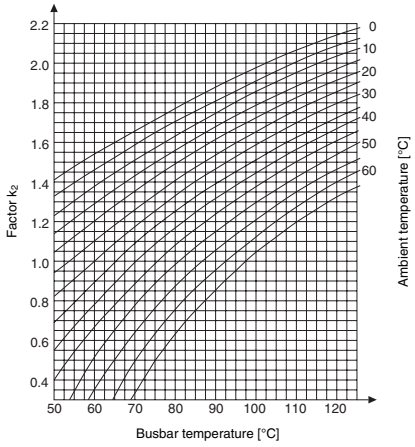
$$I_{N85} = I_{N65} \cdot k_2 + 8\ \%$$
$$= 573\ A \cdot 1.29 \cdot 1.08$$
$$I_{N85} = 800\ A$$

Continuous currents for busbars
Made from E-Cu with square cross-section in indoor locations at 35°C air temperature and 65°C bar temperature, vertical position or horizontal position of the bar width.

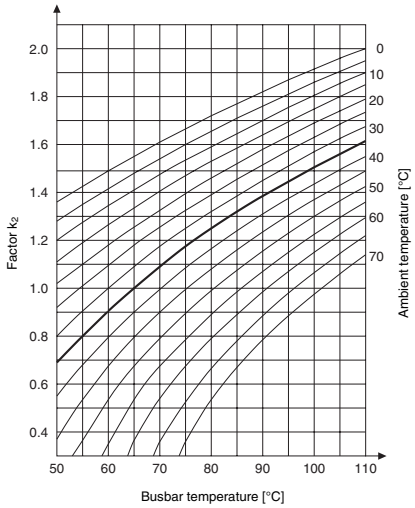
Width x Thickness mm	Cross-section mm²	Weight[1]	Material[2]	Continuous current in A			
				AC current up to 60 Hz		DC current + AC current 16 Hz	
				Bare bar	Coated bar	Bare bar	Coated bar
12 x 2	23.5	0.209		108	123	108	123
15 x 2	29.5	0.262		128	148	128	148
15 x 3	44.5	0.396		162	187	162	187
20 x 2	39.5	0.351		162	189	162	189
20 x 3	59.5	0.529		204	237	204	237
20 x 5	99.1	0.882		274	319	274	320
20 x 10	199.0	1.770		427	497	428	499
25 x 3	74.5	0.663		245	287	245	287
25 x 5	124.0	1.110		327	384	327	384
30 x 3	89.5	0.796		285	337	286	337
30 x 5	149.0	1.330	E-Cu F30	379	447	380	448
30 x 10	299.0	2.660		573	676	579	683
40 x 3	119.0	1.060		366	435	367	436
40 x 5	199.0	1.770		482	573	484	576
40 x 10	399.0	3.550		715	850	728	865
50 x 5	249.0	2.220		583	697	588	703
50 x 10	499.0	4.440		852	1020	875	1050
60 x 5	299.0	2.660		688	826	696	836
60 x 10	599.0	5.330		985	1180	1020	1230
80 x 5	399.0	3.550		885	1070	902	1090
80 x 10	799.0	7.110		1240	1500	1310	1590

[1] Calculated with a density of 8.9 kg/dm³
[2] Reference basis for the continuous current levels (figures taken from DIN 43 671)

Correction factor diagram to DIN 43 671



Correction factor diagram for PLS



Rittal PLS current load
According to DIN 43 671, the correction factor k_2 (correction factor diagram) is used to correct the basic rated current with reference to the existing temperatures of the ambient air and the busbar.
In accordance with DIN 43 671, the load figures of the Rittal PLS special bars have been determined on the basis of measurement trials, as follows:

PLS special busbars	Basic rated current WS 50/60 Hz	
	for 35/75°C	for 35/65°C
E-Cu 800 A	800 A	684 A
E-Cu 1600 A	1600 A	1368 A

2.8 System components

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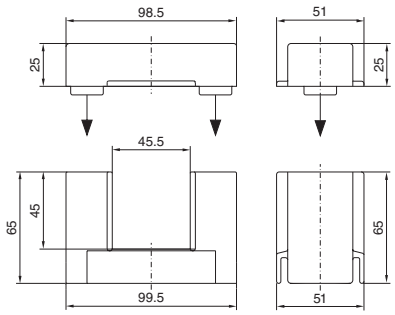
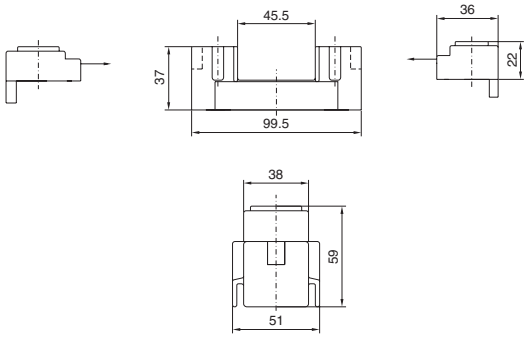
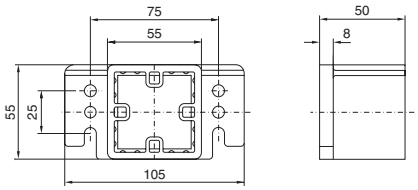
Busbar supports
Model No. SV 9640.000, SV 9649.000



Busbar support, suitable for top mounting
Model No. SV 9640.160



End supports
Model No. SV 9640.010, SV 9649.010



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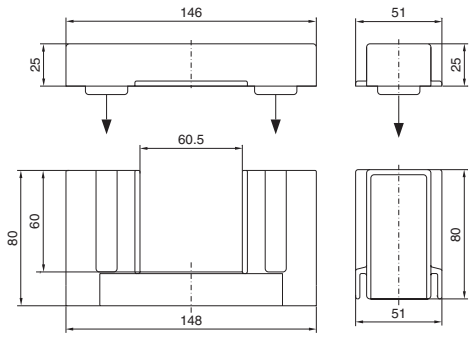
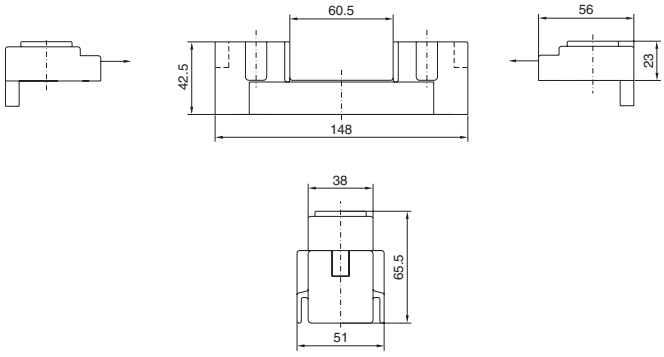
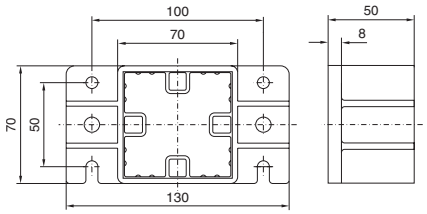
Busbar supports
Model No. SV 9650.000, SV 9659.000



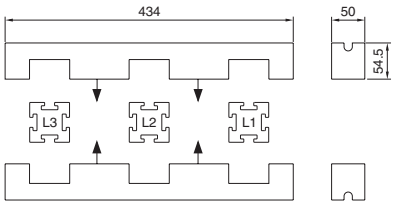
Busbar support, suitable for top mounting
Model No. SV 9650.160



End supports
Model No. SV 9650.010, SV 9659.010



Stabiliser
Model No. SV 9650.140



2.8 Connection components

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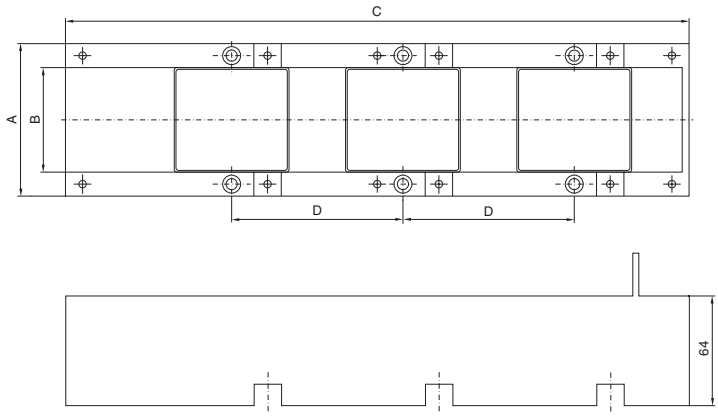
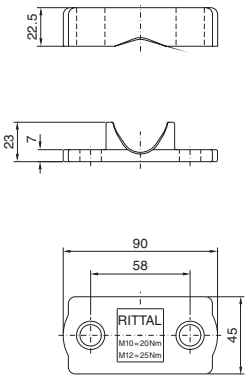
Isolator chassis

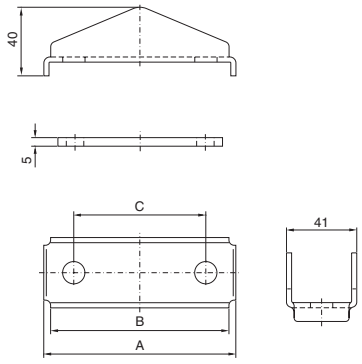


Model No. SV	A	B	C	D	E
9640.020	89	61	346	100	89
9650.020	89	61	479	150	94
9650.030	129	101	479	150	94

Connection clamp
Model No. SV 9640.320,
SV 9650.320

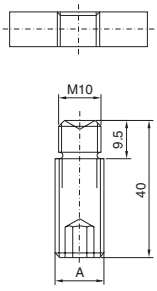


Connection plates



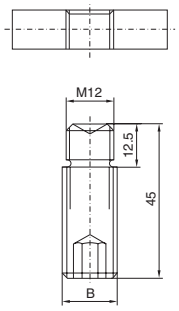
Model No. SV	Size	A	B	C	T-head screws	Tightening torque
9640.330	1	81	73	46	M10	20 Nm
9640.340	2	112	104	77	M10	25 Nm
9640.350	3	149	141	114	M10	30 Nm
9650.330	1	81	73	46	M12	25 Nm
9650.340	2	112	104	77	M12	30 Nm
9650.350	3	149	141	114	M12	35 Nm

Terminal studs
(2000 A)

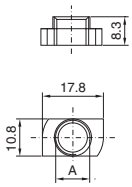


Model No. SV	A	B
9640.370	M12	–
9640.380	M16	–
9650.370	–	M12
9650.380	–	M16

Terminal studs
(3200 A)

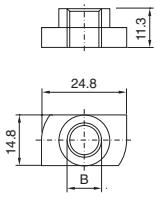


Sliding nuts
(2000 A)



Model No. SV	A	B
9640.900	M6	–
9640.910	M8	–
9640.920	M10	–
9650.900	–	M6
9650.910	–	M10
9650.920	–	M12

Sliding nuts
(3200 A)

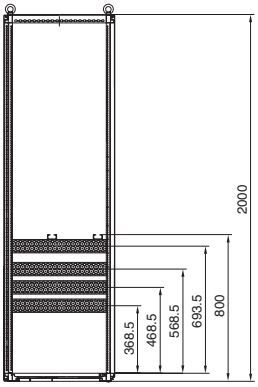


Rittal Maxi-PLS

2.8 SV-TS 8 enclosures

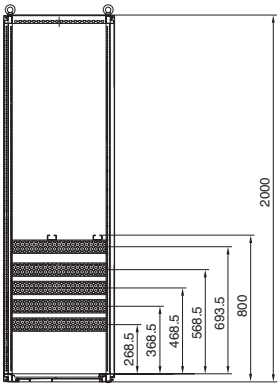
for incoming/outgoing circuit 3-pole, page 392, 4-pole, page 393

3-pole



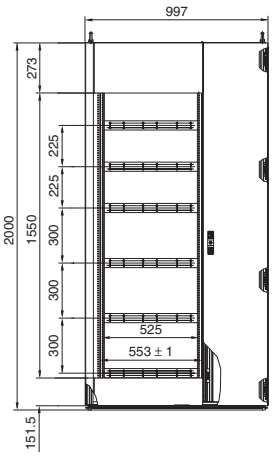
Model No. SV	Width mm	Depth mm	Door(s)
9660.665	600	600	1
9660.675	600	600	3
9660.865	800	600	1
9660.875	800	600	3

4-pole

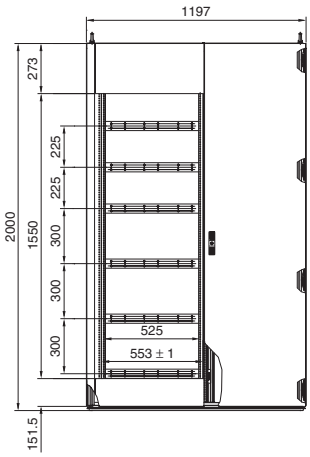


Model No. SV	Width mm	Depth mm	Door(s)
9649.625	800	600	1
9649.635	800	600	3
9659.625	800	800	1
9659.635	800	800	3

for NH fused isolators 3-pole, page 396



Model No. SV	Depth mm	For[1)]
9660.515	600	A
9660.415	600	B

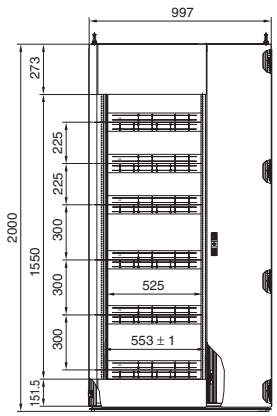


Model No. SV	Depth mm	For[1)]
9660.545	600	A
9660.445	600	B

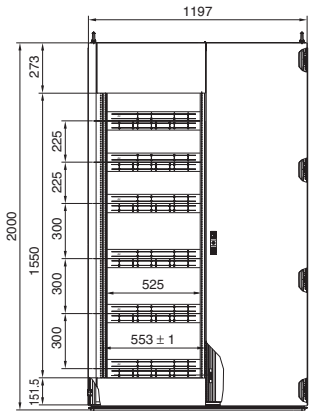
[1)] NH fused isolators brand
A = ABB SlimLine
B = Jean Müller SASIL

2.8 SV-TS 8 enclosures

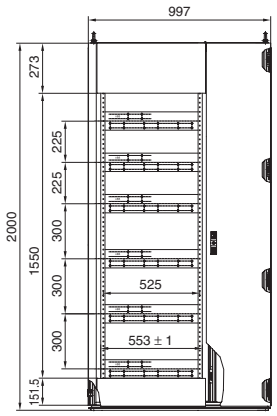
for NH fused isolators 4-pole, page 397



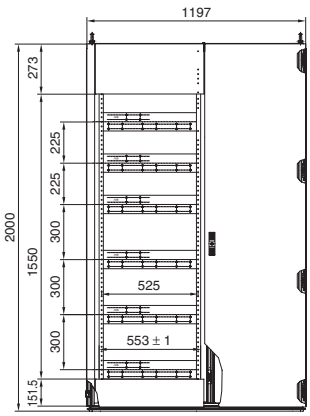
Model No. SV	Depth mm	For[1)]
9649.645	600	B
9659.645	800	B



Model No. SV	Depth mm	For[1)]
9649.655	600	B
9659.655	800	B



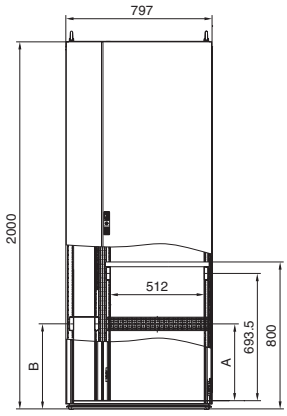
Model No. SV	Depth mm	For[1)]
9649.665	600	A
9659.665	800	A



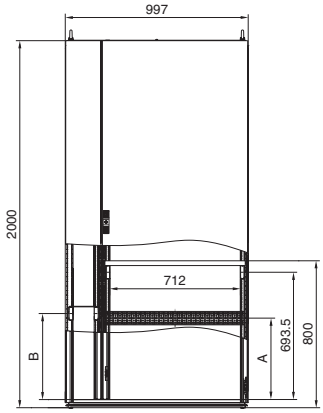
Model No. SV	Depth mm	For[1)]
9649.675	600	A
9659.675	800	A

[1)] NH-fused isolators brand A = ABB SlimLine, B = Jean Müller SASIL

for coupling sets Page 399



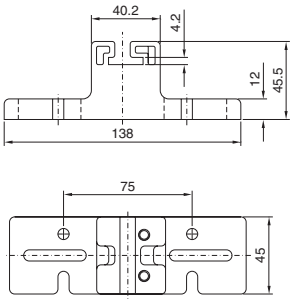
Model No. SV	Depth mm	A mm	B mm
9660.305	600	418.5	418.5



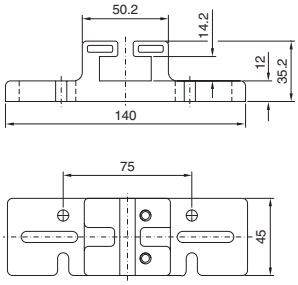
Model No. SV	Depth mm	A mm	B mm
9660.355	600	443.5	468.5
9649.685	600	418.5	418.5
9659.695	800	443.5	468.5

System components for NH fused isolators panels Page 398

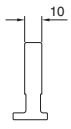
T-bar supports up to 800 A
Model No. SV 9660.000/.010,
SV 9649.100/.110



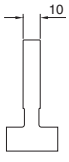
T-bar supports up to 1600 A
Model No. SV 9660.100/.110,
SV 9659.100/.110



T-busbars E-Cu up to 800 A
Model No. SV 9660.020/.030,
SV 9649.120/.130



T-busbars E-Cu
up to 1600 A
Model No. SV 9660.120/.130
SV 9659.120/.130



2.8 SV-TS 8 enclosures

for incoming/outgoing circuit Page 392

Maxi-PLS 2000 A (incoming panel)

Electrical characteristics	Rated voltage	Rated insulation voltage U_i	1000 V	EN 60 439-1
		Rated operating voltage U_e	690 V	
		Rated surge voltage resistence U_{imp}	8 kV	
		Overvoltage category	IV	
		Level of contamination	3	
		Rated frequency	50 Hz	
	Rated current (main busbar)	Rated operating current I_e	1700 A	For IP 54
			2000 A	For IP 2X[1]
		Rated surge current resistance I_{pk}	110 kA	
		Rated short-time current resistance I_{cw}	50 kA	
Mechanical characteristics	Dimensions	Enclosure width: 600 and 800 mm, enclosure height: 2000 mm², enclosure depth: 600 mm[2]		EN 50 298
		Pitch pattern	25 mm	
	Protection category		Max. IP 54	
	Design		1	EN 60 439-1
	Surface protection/ Material	Enclosure frame	Dipcoat-primed	
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside	
		System attachment	Stainless steel	
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated	
	Busbar	Material	E-Cu, bare	
		External dimensions (cross-section)	45 x 45 mm (1380 mm²)	
Operating and ambient conditions	Ambient temperature	Short-term peak	+40°C	EN 60 439-1
		Maximum on a 24 h average	+35°C	
		Low	–5°C	
	Atmospheric conditions	Normal climatic stress		EN 60 439-1
		Relative humidity	50 % at 40°C	
			Operation up to 1000 m above sea level	

[1] Using outlet filter SK 3326.207 and roof plate SV 9660.235/.245
[2] Other sizes available on request.

Maxi-PLS 3200 A (incoming panel)

Electrical characteristics	Rated voltage	Rated insulation voltage U_i	1000 V	EN 60 439-1
		Rated operating voltage U_e	690 V	
		Rated surge voltage resistence U_{imp}	8 kV	
		Overvoltage category	IV	
		Level of contamination	3	
		Rated frequency	50 Hz	
	Rated current (main busbar)	Rated operating current I_e	2100 A	For IP 54
			2600 A	For IP 2X[1]
			3000 A	For IP 2X[2]
			3200 A	[3]
		Rated surge current resistance I_{pk}	165 kA (264 kA)[4]	
		Rated short-time current resistance I_{cw}	70 kA (124 kA)[4]	
Mechanical characteristics	Dimensions	Enclosure width: 600 and 800 mm, enclosure height: 2000 mm[5], enclosure depth: 600 mm[5]		EN 50 298
		Pitch pattern	25 mm	
	Protection category		Max. IP 54	
	Design		1	EN 60 439-1
	Surface protection/ Material	Enclosure frame	Dipcoat-primed	
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside	
		System attachment	Stainless steel	
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated	
	Busbar	Material	E-Cu, bare	
		External dimensions (cross-section)	60 x 60 mm (2700 mm²)	
Operating and ambient conditions	Ambient temperature	Short-term peak	+40°C	EN 60 439-1
		Maximum on a 24 h average	+35°C	
		Low	–5°C	
	Atmospheric conditions	Normal climatic stress		EN 60 439-1
		Relative humidity	50 % at 40°C	
			Operation up to 1000 m above sea level	

[1] Using outlet filter SK 3326.207 and roof plate SV 9660.235/.245 [2] Using fan-and-filter unit SK 3327.107 (700 m³/h) and roof plate SV 9660.235/.245
[3] Busbars in open frame (free air convection) or special climate control measures to maintain the enclosure internal temperature
[4] Using stabiliser SV 9650.140 [5] Other sizes available on request

2.8 SV-TS 8 enclosures

for NH fused isolators Page 394

Maxi-PLS 2000 A (185 mm busbar system in the rear section of the enclosure)

Electrical characteristics	Rated voltage	Rated insulation voltage U_i	1000 V	EN 60 439-1
		Rated operating voltage U_e	690 V	
		Rated surge voltage resistence U_{imp}	8 kV	
		Overvoltage category	IV	
		Level of contamination	3	
		Rated frequency	50 Hz	
	Rated current (main busbar)	Rated operating current I_e	1700 A	For IP 54
			2000 A	For IP 2X[1]
		Rated surge current resistance I_{pk}	143 kA[2]	
		Rated short-time current resistance I_{cw}	65 kA[2]	
Mechanical characteristics	Dimensions	Enclosure width: 600, 800, 1000 and 1200 mm, enclosure height: 2000 mm[3], enclosure depth: 500, 600 und 800 mm		EN 50 298
		Pitch pattern	25 mm	
	Protection category		Max. IP 54	
	Design		1	EN 60 439-1
	Surface protection/ Material	Enclosure frame	Dipcoat-primed	
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside	
		System attachment	Stainless steel	
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated	
	Busbar	Material	E-Cu, bare	
		External dimensions (cross-section)	45 x 45 mm (1380 mm²)	
Operating and ambient conditions	Ambient temperature	Short-term peak	+40°C	EN 60 439-1
		Maximum on a 24 h average	+35°C	
		Low	–5°C	
	Atmospheric conditions	Normal climatic stress		EN 60 439-1
		Relative humidity	50 % at 40°C	
			Operation up to 1000 m above sea level	

Maxi-PLS 3200 A (185 mm busbar system in the rear section of the enclosure)

Electrical characteristics	Rated voltage	Rated insulation voltage U_i	1000 V	EN 60 439-1
		Rated operating voltage U_e	690 V	
		Rated surge voltage resistence U_{imp}	8 kV	
		Overvoltage category	IV	
		Level of contamination	3	
		Rated frequency	50 Hz	
	Rated current (main busbar)	Rated operating current I_e	2100 A	For IP 54
			2600 A	For IP 2X[1]
			3000 A	For IP 2X[4]
			3200 A	[5]
		Rated surge current resistance I_{pk}	176 kA[6]	
		Rated short-time current resistance I_{cw}	80 kA[6]	
Mechanical characteristics	Dimensions	Enclosure width: 600, 800, 1000 and 1200 mm, enclosure height: 2000 mm[3], enclosure depth: 500, 600 und 800 mm		EN 50 298
		Pitch pattern	25 mm	
	Protection category		Max. IP 54	
	Design		1	EN 60 439-1
	Surface protection/ Material	Enclosure frame	Dipcoat-primed	
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside	
		System attachment	Stainless steel	
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated	
	Busbar	Material	E-Cu, bare	
		External dimensions (cross-section)	60 x 60 mm (2,700 mm²)	
Operating and ambient conditions	Ambient temperature	Short-term peak	+40°C	EN 60 439-1
		Maximum on a 24 h average	+35°C	
		Low	–5°C	
	Atmospheric conditions	Normal climatic stress		EN 60 439-1
		Relative humidity	50 % at 40°C	
			Operation up to 1000 m above sea level	

[1] Using outlet filter SK 3326.207 and roof plate SV 9660.235/.245/.255/.265 [2] Using busbar support, suitable for top mounting SV 9640.160
[3] Enclosure height 1800 and 2200 mm available on request [4] Using fan-and-filter unit SK 3327.107 (700 m³/h) and roof plate SV 9660.235/.245/.255/.265
[5] Busbars in open frame (free air convection) or special climate control measures to maintain the enclosure internal temperature
[6] Using busbar support, suitable for top mounting SV 9650.160

Rittal Maxi-PLS – Technical information

2.8 SV-TS 8 enclosures

for NH fused isolators Page 396

T-bar system 800 A

Electrical characteristics	Rated voltage	Rated insulation voltage U_i	1000 V	EN 60 439-1
		Rated operating voltage U_e	690 V	
		Rated surge voltage resistence U_{imp}	8 kV	
		Overvoltage category	IV	
		Level of contamination	3	
		Rated frequency	50 Hz	
	Rated current (main busbar)	Rated operating current I_e	1000 A	For IP 3X
		Rated surge current resistance I_{pk}	110 kA	
		Rated short-time current resistance I_{cw}	50 kA	
Mechanical characteristics	Dimensions	Enclosure width: 1000 and 1200 mm, enclosure height: 2000 mm[1], enclosure depth: 600 mm[1]		EN 50 298
		Pitch pattern	25 mm	
	Protection category		IP 3X	
	Design		1	EN 60 439-1
	Surface protection/ Material	Enclosure frame	Dipcoat-primed	
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside	
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated	
		System attachment	Stainless steel	
	Busbar	Material	E-Cu, bare	
		Width contact strip	10 mm	
		Cross-section	470 mm²	
Operating and ambient conditions	Ambient temperature	Short-term peak	+40°C	EN 60 439-1
		Maximum on a 24 h average	+35°C	
		Low	–5°C	
	Atmospheric conditions	Normal climatic stress		EN 60 439-1
		Relative humidity	50 % at 40°C	
			Operation up to 1000 m above sea level	

[1] Other sizes available on request

T-bar system 1600 A

Electrical characteristics	Rated voltage	Rated insulation voltage U_i	1000 V	EN 60 439-1
		Rated operating voltage U_e	690 V	
		Rated surge voltage resistence U_{imp}	8 kV	
		Overvoltage category	IV	
		Level of contamination	3	
		Rated frequency	50 Hz	
	Rated current (main busbar)	Rated operating current I_e	1600 A	For IP 3X
		Rated surge current resistance I_{pk}	110 kA	
		Rated short-time current resistance I_{cw}	50 kA	
Mechanical characteristics	Dimensions	Enclosure width: 1000 and 1200 mm, enclosure height: 2000 mm[1], enclosure depth: 600 mm[1]		EN 50 298
		Pitch pattern	25 mm	
	Protection category		IP 3X	
	Design		1	EN 60 439-1
	Surface protection/ Material	Enclosure frame	Dipcoat-primed	
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside	
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated	
		System attachment	Stainless steel	
	Busbar	Material	E-Cu, bare	
		Width contact strip	10 mm	
		Cross-section	910 mm²	
Operating and ambient conditions	Ambient temperature	Short-term peak	+40°C	EN 60 439-1
		Maximum on a 24 h average	+35°C	
		Low	–5°C	
	Atmospheric conditions	Normal climatic stress		EN 60 439-1
		Relative humidity	50 % at 40°C	
			Operation up to 1000 m above sea level	

[1] Other sizes available on request

2.8 SV-TS 8 enclosures

for coupling sets Page 399

Maxi-PLS 2000 A (coupling section)

Electrical characteristics	Rated voltage	Rated insulation voltage U_i	1000 V	EN 60 439-1
		Rated operating voltage U_e	690 V	
		Rated surge voltage resistence U_{imp}	8 kV	
		Overvoltage category	IV	
		Level of contamination	3	
		Rated frequency	50 Hz	
	Rated current (main busbar)	Rated operating current I_e	1700 A	For IP 54
			2000 A	For IP 2X[1]
		Rated surge current resistance I_{pk}	110 kA	
		Rated short-time current resistance I_{cw}	50 kA	
Mechanical characteristics	Dimensions	Enclosure width: 800 mm[2], enclosure height: 2000 mm[2], enclosure depth: 600 mm[2]		EN 50 298
		Pitch pattern	25 mm	
	Protection category		Max. IP 54	
	Design		1	EN 60 439-1
	Surface protection/ Material	Enclosure frame	Dipcoat-primed	
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside	
		System attachment	Stainless steel	
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated	
	Busbar	Material	E-Cu, bare	
		External dimensions (cross-section)	45 x 45 mm (1380 mm²)	
Operating and ambient conditions	Ambient temperature	Short-term peak	+40°C	EN 60 439-1
		Maximum on a 24 h average	+35°C	
		Low	–5°C	
	Atmospheric conditions	Normal climatic stress		EN 60 439-1
		Relative humidity	50 % at 40°C	
			Operation up to 1000 m above sea level	

[1] Using outlet filter SK 3326.207 and roof plate SV 9660.245
[2] Other sizes available on request

Maxi-PLS 3200 A (coupling section)

Electrical characteristics	Rated voltage	Rated insulation voltage U_i	1000 V	EN 60 439-1
		Rated operating voltage U_e	690 V	
		Rated surge voltage resistence U_{imp}	8 kV	
		Overvoltage category	IV	
		Level of contamination	3	
		Rated frequency	50 Hz	
	Rated current (main busbar)	Rated operating current I_e	2100 A	For IP 54
			2600 A	For IP 2X[1]
			3000 A	For IP 2X[2]
			3200 A	[3]
		Rated surge current resistance I_{pk}	110 kA	
		Rated short-time current resistance I_{cw}	50 kA	
Mechanical characteristics	Dimensions	Enclosure width: 1000 mm[4], enclosure height: 2000 mm[4], enclosure depth: 600 mm[4]		EN 50 298
		Pitch pattern	25 mm	
	Protection category		Max. IP 54	
	Design		1	EN 60 439-1
	Surface protection/ Material	Enclosure frame	Dipcoat-primed	
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside	
		System attachment	Stainless steel	
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated	
	Busbar	Material	E-Cu, bare	
		External dimensions (cross-section)	60 x 60 mm (2700 mm²)	
Operating and ambient conditions	Ambient temperature	Short-term peak	+40°C	EN 60 439-1
		Maximum on a 24 h average	+35°C	
		Low	–5°C	
	Atmospheric conditions	Normal climatic stress		EN 60 439-1
		Relative humidity	50 % at 40°C	
			Operation up to 1000 m above sea level	

[1] Using outlet filter SK 3326.207 and roof plate SV 9660.255 [2] Using fan-and-filter unit SK 3327.107 (700 m³/h) and roof plate SV 9660.255
[3] Busbars in open frame (free air convection) or special climate control measures to maintain the enclosure internal temperature
[4] Other sizes available on request

Rittal Maxi-PLS – Technical information

Planning and project management in line with regulations

As a general principle, low-voltage switchgear and distributors should be planned to meet the operating conditions of their final installation site. To this end, the operator of the plant, in collaboration with the manufacturer, should stipulate the operating and ambient conditions. Moreover, as a general rule, the operator or planning office should also supply the manufacturer with full electrical specifications of both the mains supply end and the distributor outlet end. This makes it possible to plan and manufacture a cost-effective system with optimum adaptation to the technical requirements.

Important operating and ambient conditions

- Rated operating voltage U_e
- Mains frequency f_N
- Rated insulation voltage U_i
- Busbar rated current I_{sas}
- Rated current for the supply end I_{zu}
- Rated surge current resistance I_{pk}
- Rated short-time current resistance I_{cw}
- Ambient temperature condition ϑ
- Atmospheric climatic stress, specifying the relative humidity and temperature
- Protection category of the overall system IP . . .
- Specification to DIN EN 60 529
- Protection category

Important basic data for planning and project management

- Applicable regulations and standards, both regional and international
- Electricity supply company conditions
- Operator-specific regulations
- Mains-specific protective measures/mains type
- Rated voltage and frequency
- Rated current with due regard for the number of conductors (infeed and busbars)
- Rated insulation voltage
- Short-circuit current at the point of installation
- Location of incoming cables, from above or below
- Number of incoming cables and wires, specifying the type and cross-section
- Number of outlets, specifying the operating load and the envisaged outgoing cables with type and cross-section
- For the outlet side, specification of the simultaneity factor and rated load factor of the relevant equipment items

Rated load factor

The rated load factor of a switchgear enclosure or part thereof (e.g. a field) comprising several main circuits refers to the ratio between the largest sum total of all currents anticipated at any given time in the affected main circuits and the sum total of the rated currents of all main circuits of the switchgear enclosure or observed part thereof.

Number of main circuits	Load factor
2 and 3	0.9
4 and 5	0.8
6 and 7	0.7
10 or more	0.6

Rated currents and short-circuit currents of standard transformers

Rated voltage U_N = 400 V	400 V		
Short-circuit voltage U_k		4 %[1]	6 %[2]
Power consumption S_{NT} [kVA]	Rated current I_N [A]	Short-circuit current $I_{k''}$[3] [kA]	
50	72	1.89	1.20
100	144	3.61	2.41
160	230	5.77	3.85
200	288	7.22	4.81
250	360	9.02	6.01
315	455	11.36	7.58
400	589	14.43	9.62
500	722	18.04	12.03
630	910	22.73	15.15
800	1156	28.86	19.24
1000	1444	36.08	24.05
1250	1805	45.09	30.06
1600	2312	57.72	38.48
2000	2882	72.15	48,10

[1] U_k = 4 % standardised to DIN 42 503 for S_{NT} = 50 . . . 630 kVA
[2] U_k = 6 % standardised to DIN 42 511 for S_{NT} = 100 . . . 1600 kVA
[3] $I_{k''}$ = Initial symmetrical short-circuit current of transformer when connecting to a mains supply with unlimited short-circuit lead

Design differences between TTA and PTTA

The following regulation applies to the manufacture of low-voltage switchgear and distributors with Rittal SV technology:
DIN EN 60 439-1 (DIN VDE 0660 part 500)
Low-voltage switchgear enclosures – requirements for type-tested and partially type-tested enclosures.

This standard makes a distinction between
- type-tested switchgear enclosures (TTA) and
- partially type-tested switchgear enclosures (PTTA).

This refers to the following:
Type-tested switchgear enclosures (TTA)
are switchgear enclosures or parts thereof (e.g. functional units, assemblies) which match the switchgear enclosure type-tested under the standard, without any major deviations from the original type or system.

Partially type-tested switchgear enclosures (PTTA)
are switchgear enclosures which are manufactured individually or in small quantities for specific application conditions and which contain both type-tested and non-type-tested assemblies, provided the latter are derived from type-tested assemblies (e.g. by means of calculation) which have passed the appropriate tests.

There are no quality differences defined between the two design variants TTA and PTTA. In other words, they are deemed to be of equal value.
However, both design variants require different proof and tests.

The following proof and tests must be provided for system configurationin line with regulations and evidence of CE conformity:

TTA/PTTA to DIN EN 60 439-1
- Compliance with the limit overtemperature
- Dielectric strength
- Short-circuit resistance
- Effectiveness of the PE conductor
- Creepage distances and clearance
- Mechanical function
- IP protection categories
- Wiring, electrical function
- Insulation
- Protective measures

Amongst type-tested switchgear enclosures TTA, this evidence is provided by one-off type testing and unit testing following assembly.

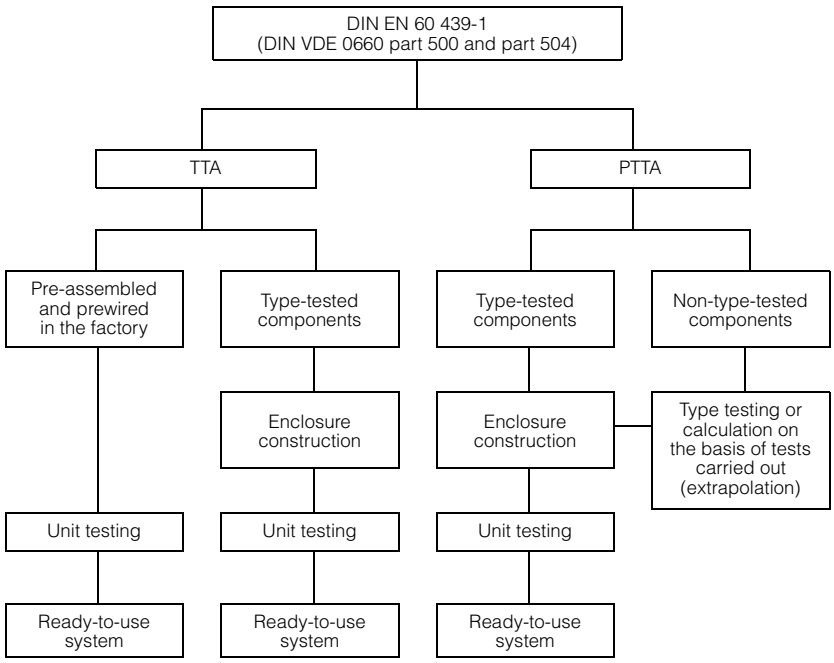
In the case of partially type-tested switchgear enclosures PTTA, complete evidence must be provided for each system installed, either by means of testing or by means of calculation based on the tests performed.

For details of the scope of testing for both design variants, please refer to table 7 in DIN EN 60 439-1 which contains references to the standard section number.

This standard specifies that random variation e.g. of switchgear and protective devices of different makes or models within a switchgear installation is no longer possible without evidence of testing or calculation. This evidence can only be supplied by the manufacturer/workshop.

Special consideration must be made for this fact, both when planning and when purchasing switchgear and distributors.

Difference between TTA and PTTA



Unit testing (final inspection of installations)

According to DIN VDE 0100 part 610 (original inspection), low-voltage installations, including switchgear and distributors, should be subjected to an original inspection prior to commissioning and handover to the customer.

On-site inspection of the customer's system is not necessary for switchgear and distributors, provided an inspection record from the manufacturer/workshop is available.

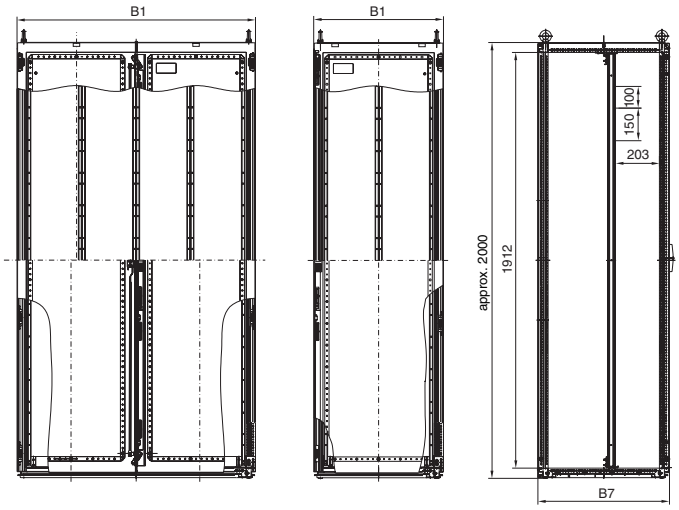
This cost-saving variant should be the norm in all cases where no retrospective modifications have been implemented on site.

ISV distribution enclosure

2.9 ISV-TS 8 enclosures

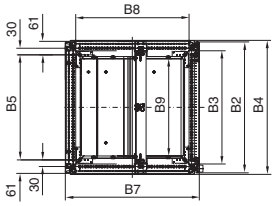
for ISV installation distribution enclosure up to 630 A Page 409

Technical specifications		
Rated current up to	400 A	630 A
Rated surge current resistance I_{pk} at a maximum busbar support centre distance of 300 mm	30 kA	45 kA
Rated insulation voltage U_i to VDE 0110	690 V AC	
cos phi	0.3	
Cross-section of phase conductor L1 – L3	30 x 5 mm	30 x 10 mm
Cross-section of neutral conductor N	25 x 10 mm	25 x 10 mm
Cross-section of PE conductor	12 x 10 mm	12 x 10 mm
Protective measures	Protection category 1 (with PE conductor)	
Overvoltage category	3	3
IP protection category	IP 20 without door, IP 55 with door	



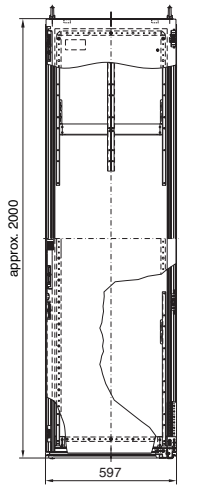
Width measurements									Model No. SV
B1	B2	B3	B4	B5	B6	B7	B8	B9	
597	592	512	606	475	455	605	512	440	**9665.905**
847	842	762	856	725	705	605	512	690	**9665.915**
1097	1092	1012	1106	975	955	605	512	940	**9665.925**
597	592	512	606	475	455	405	312	440	**9665.945**
847	842	762	856	725	705	405	312	690	**9665.955**
1097	1092	1012	1106	975	955	405	312	940	**9665.965**

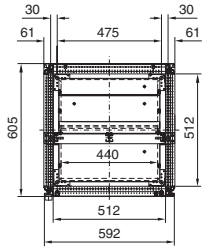
Top view with side panels shown (B4).



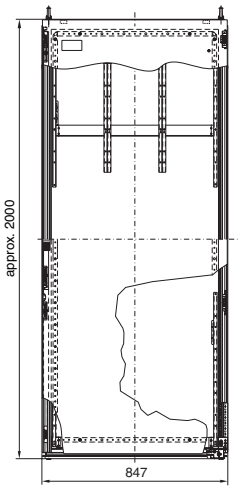
for ISV distribution enclosures up to 1600 A Page 410

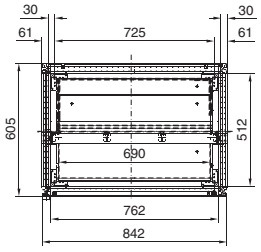
SV 9665.975

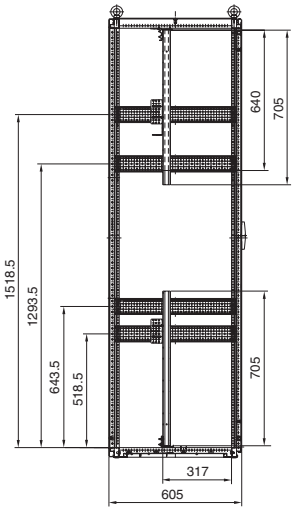




SV 9665.985



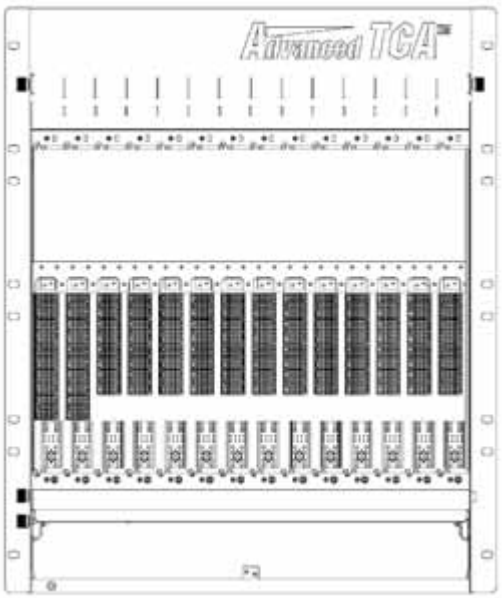




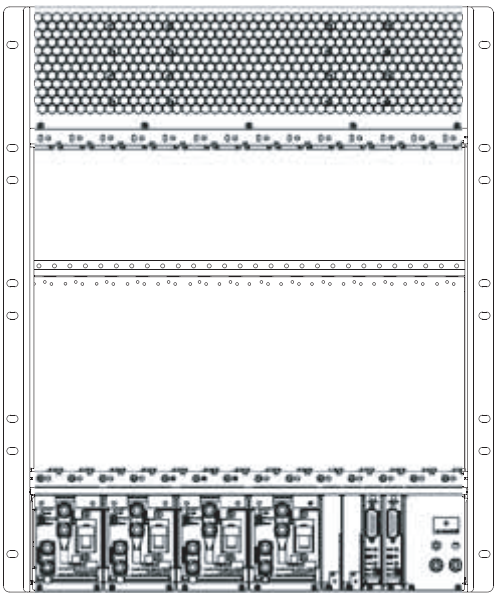
3.1 ATCA

AdvancedTCA Shelf Page 426/427

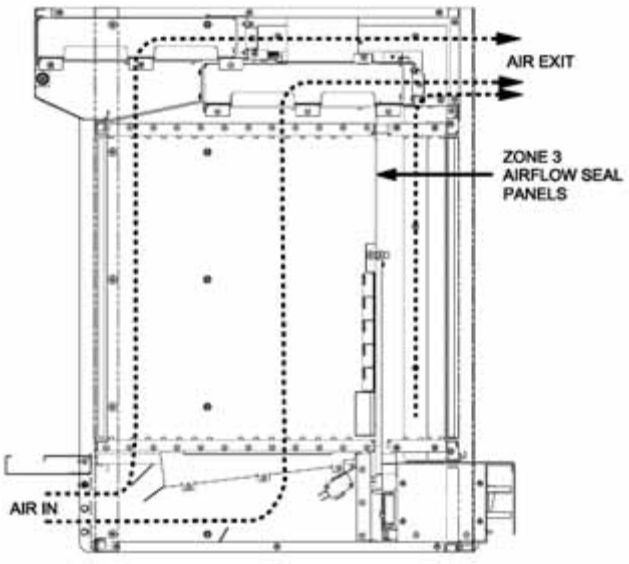
Front view, version VA



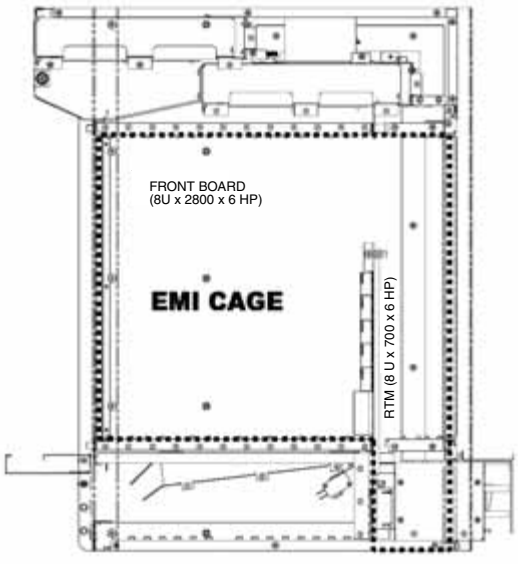
Rear view, version VA/VB



Air routing, version VA/VB



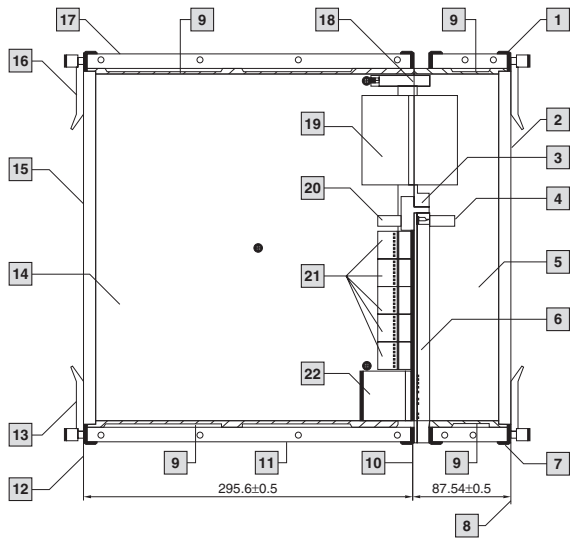
EMC provision, version VA/VB



3.1 ATCA

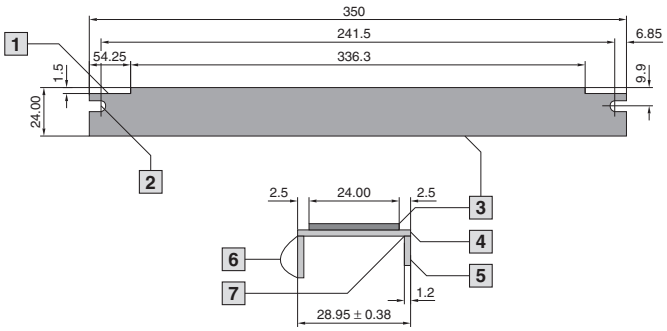
AdvancedTCA Shelf Page 426/427

Subrack side view



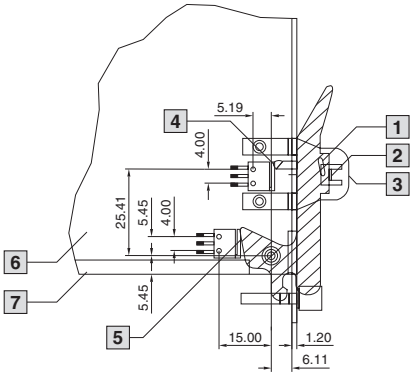
1 RTM upper support member
2 RTM panel
3 Backplane support bar
4 RTM alignment feature
5 RTM
6 Backplane
7 RTM lower support member
8 RTM attachment plane
9 Guide rail
10 Backplane datum
11 Front board lower support member
12 Front board attachment plane
13 Bottom handle
14 Front board
15 Front board face plate
16 Top handle
17 Front board upper support member
18 Zone 3 air flow seal
19 Zone 3 connector
20 Zone 1 and 2 alignment and keying feature
21 Zone 2 fabric and data connectors
22 Zone 1 power connector

Face plate Page 428



1 Handle clearance
2 7.00 dia 2 x screw positions
3 Overlay
4 External R 2.2
5 Contact face
6 EMI gasket
7 Internal R 1.0

Handle/microswitch Page 429



1 Stage 2 “RCSI”
2 Stage 1 “Locking”
3 Locking latch
4 Switch actuates between 1° – 2° handle rotation
5 Switch actuates between 3° – 4° handle rotation
6 Side 2 cover
7 PCB

3.4 Power supply units

Ripac power supply units – Open Frame 250 and 400 W Page 479

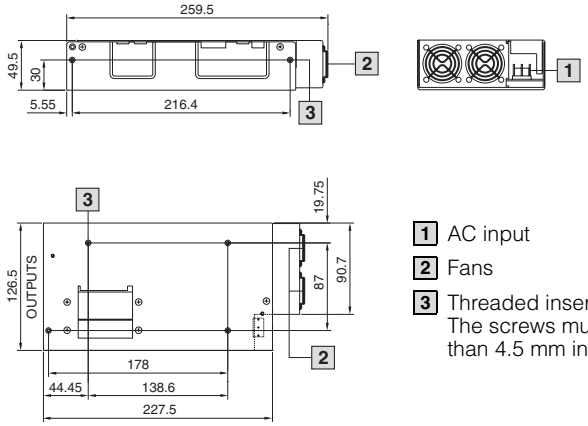
General specifications

	250 watts	400 watts
Model No. RP 35 A	**3686.622**	**–**
Model No. RP 60 A	**–**	**3686.623**
Model No. RP 85 A	**–**	**3686.629**
Operating temperature range	0°C to +70°C (derating from 50°C)	0°C to +70°C (derating from 50°C, 2.5 %/K)
Storage temperature	–40°C to +85°C	–40°C to +85°C
Mains buffering time (min. at 90 V AC)	16 ms minimum	15 ms minimum
Cooling	Fan-cooled	Fan-cooled
Isolation voltages	Input – output: 4350 V DC Input – enclosure: 2350 V DC Output – enclosure: 100 V DC	Input – output: 3000 V AC Input – enclosure: 1500 V AC Output – enclosure: 500 V DC
Radio interference suppression	EN 55 022 curve B	EN 55 022 curve B
Immunity to interference/emmission	EN 61 000-4-2 (level 4) EN 61 000-4-3 (level 3) EN 61 000-4-4 (level 4) EN 61 000-4-5 (level 3) EN 61 000-4-6 (level 3) EN 61 000-4-11 compliant	EN 61 000-4-2 (level 4) EN 61 000-4-3 (level 3) EN 61 000-4-4 (level 4) EN 61 000-4-5 (level 3) EN 61 000-4-6 (level 3) EN 61 000-4-11 compliant
Approvals	UL 1950, VDE 0805, EN 60 950, CSA 22.2, CE	EN 60 950, UL 1950, CSA 22.2 no. 234, CE

[1] All outputs short-circuit resistant to a maximum of 30 seconds.

Ripac power supply unit
Open Frame 250 W

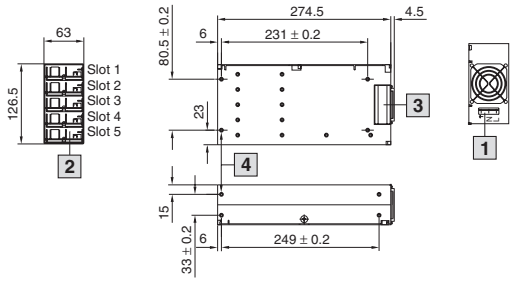
- On/off controller with three outputs
- Design: Solid
- 85 – 265 V AC/120 – 340 V DC
- Radio interference suppressed to EN 55 022 curve B, FCC curve B
- Approvals: EN 60 950, UL 1950, VDE 0805, CSA 22.2/CE



1 AC input
2 Fans
3 Threaded inserts M4 for fastening. The screws must not protrude more than 4.5 mm into the unit.

Ripac power supply unit
Open Frame 400 W

- Modular power supply unit
- 3 outputs
- Wide-range input (85 – 253 V AC)
- Power factor in accordance EN 61 000-3-2
- Radio interference suppressed to EN 55 022 curve B
- Immunity to interference in acccordance with EN 61 000-4-3, -5, -6 (level 3) EN 61 000-4-2, -4 (level 4) EN 61 000-4-11 compliant
- FASTON connectors mean faster installation in the terminal equipment
- Tested to EN 60 950, UL 1950 and CSA 22.2 no. 234



1 AC input
2 DC outputs
3 Fans
4 Threaded inserts M4 for fastening. The screws must not protrude more than 4.5 mm into the unit.

3.4 Power supplies

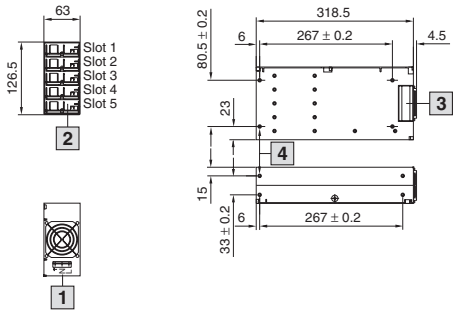
Ripac power supply units – Open Frame 600 and 1000 W Page 479

General specifications

	600 watts	1000 watts
Model No. RP 85 A	**3686.624**	**–**
Model No. RP 110 A	**–**	**3686.625**
Operating temperature range	0°C to +70°C (derating from 50°C, 2.5 %/K)	0°C to +70°C (derating from 50°C, 2.5 %/K)
Storage temperature	–40°C to +85°C	–40°C to +85°C
Mains buffering time (min. at 90 V AC)	15 ms minimum	13 ms minimum
Cooling	Fan-cooled	Fan-cooled
Isolation voltages	Input – output: 3000 V AC Input – enclosure: 1500 V AC Output – enclosure: 500 V DC	Input – output: 3000 V AC Input – enclosure: 1500 V AC Output – enclosure: 500 V DC
Radio interference suppression	EN 55 022 curve B	EN 55 022 curve A
Immunity to interference/emmission	EN 61 000-4-2 (level 4) EN 61 000-4-3 (level 3) EN 61 000-4-4 (level 4) EN 61 000-4-5 (level 3) EN 61 000-4-6 (level 3) EN 61 000-4-11 compliant	EN 61 000-4-2 (level 4) EN 61 000-4-3 (level 3) EN 61 000-4-4 (level 4) EN 61 000-4-5 (level 3) EN 61 000-4-6 (level 3) EN 61 000-4-11 compliant
Approvals	EN 60 950, UL 1950, CSA 22.2 no. 234, CE	EN 60 950, UL 1950, CSA 22.2 no. 234, CE

Ripac power supply unit Open Frame 600 W

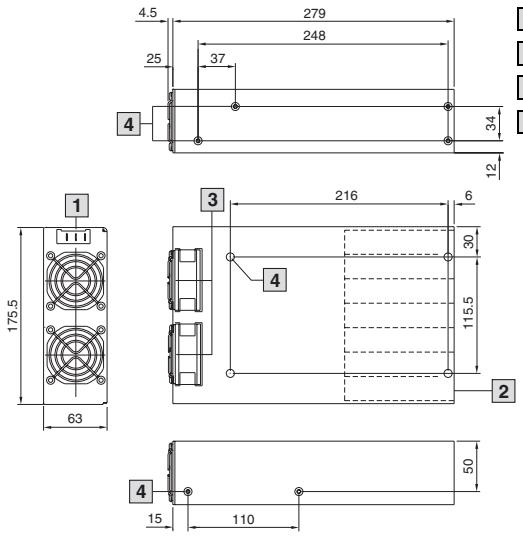
- Modul power supply unit
- 3 outputs
- Long-range input (85 – 253 V AC)
- Power factor in accordance EN 61 000-3-2
- Radio interference suppressed to EN 55 022 curve B
- Immunity to interference in acccordance with EN 61 000-4-2, -5, -6 (level 3) EN 61 000-4-2, -4 (level 4) EN 61 000-4-11 compliant
- FASTON connectors mean faster installation in the terminal equipment
- Tested to EN 60 950, UL 1950 and CSA 22.2 no. 234



1 AC input
2 DC outputs
3 Fans
4 Threaded inserts M4 for fastening. The screws must not protrude moe than 4.5 mm into the unit.

Ripac power supply unit Open Frame 1000 W

- Ultra-compact units with 3 outputs
- Suitable for universal applications, as the outputs can be set with in a broad range
- No base load required
- Peak current may be loaded for start-up operation of drives (up to 3 times the rated current for 10 seconds)
- Immunity to interference in acccordance with EN 61 000-4-2, -5, -6 (level 3) EN 61 000-4-2, -4 (level 4) EN 61 000-4-11 compliant
- Power factor correction to EN 61 000-3-2
- Long-range input: 85 – 265 V AC
- Radio interference suppressed to EN 55 022 curve A
- EN 60 950, EN 41 003, IEC 950, UL 1950, CSA 234 M 90, BS 6301
- SELV (all models < 48 V U_A)
- 48 V DC input for telecom applications available on request



1 AC input
2 DC outputs
3 Fans
4 Threaded inserts M4 for fastening. The screws must not protrude more than 4.5 mm into the unit.

3.4 Power supply units

Ripac power supply units for VME, plug-in Page 480

General specifications

Height	3 U		6 U	
Width (HP)	10	12	8	12
Model No. RP power supply	**3686.469**	**3686.470**	**3686.471**	**3685.306**
Model No. RP front panel	**3685.304**	**3685.305**	**3686.472**	**3685.307**
Operating temperature range	0°C to +70°C with free convection		0°C to +70°C with free convection	
Storage temperature	–20°C to +85°C		0°C to +85°C	
Output reduction	3 %/K from +50°C		3 %/K from +50°C	
Size/weight	10 HP: 0.7 kg, 12 HP: 0.8 kg		8 HP: 1.2 kg, 12 HP: 2 kg	
Mains buffering	> 20 ms at 100 % load		> 20 ms at 100 % load	
Radio interference suppression	EN 50 081-1, EN 55 011/EN 55 022 curve B Interfering radiation depending on installation		EN 50 081-1, EN 55 011/EN 55 022 curve B Interfering radiation depending on installation	
Immunity to interference/emmission	EN 50 082-2 EN 61 000-4-2 level 4 EN 61 000-4-3 EN 61 000-4-4 level 4 EN 61 000-4-5 level 4 EN 61 000-4-11 compliant		EN 50 082-2 EN 61 000-4-2 level 4 EN 61 000-4-3 EN 61 000-4-4 level 4 EN 61 000-4-5 level 4 EN 61 000-4-11 compliant	
Connection	Connector H15, IEC 60 603-2 keyable		2 connectors H15, IEC 60 603-2 keyable	
Approvals LGA design-tested	IEC 950/EN 60 950/VDE 0805 Protection category I/VDE 0100 EN 61 000-4-3 interference level 10 V/m EN 61 000-4-11		IEC 950/EN 60 950/VDE 0805 Protection category I/VDE 0100 EN 61 000-4-3 interference level 10 V/m EN 61 000-4-11	

- 482.6 mm (19″) module to IEC 60 297-3.
- Automatice changeover 115/230 V AC.
- All outputs are continuously short-circuit resistant.
- Overtemperature protection.
- AC-FAIL and SYSRESET signals.
- Integrated VME bus signals (AC-FAIL, SYSRESET).
- Design-tested: EN 60 950/VDE 0805 protection category I, VDE 0100.
- EMC standards EN 50 081-1 and 50 082-2.

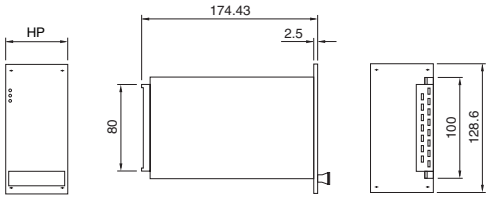
PE earthing contact:
Must be connected to the PE conductor of the mains supply network!
L1/N: Mains conductors
L: Load connection
F: Sensor connection (sense)
0 VL: Common ground for outputs 1 – 3.

With sensor lead operation (5 V only):
Max. voltage compensation per lead 0.25 V.
The sensor lead must be connected to the load.

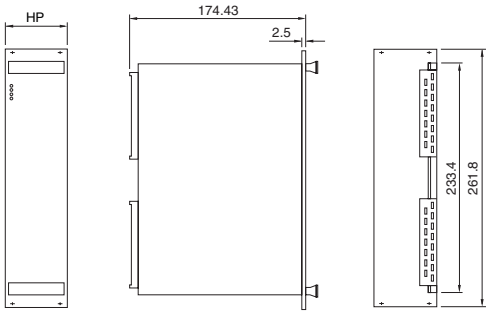
Without sensor lead operation:
For safe operation of the unit, +5 VL must be connected to +5 VF and 0 VL to 0 VF.

Caution:
Fire protection must be provided via the superordinate enclosure system!

3 U

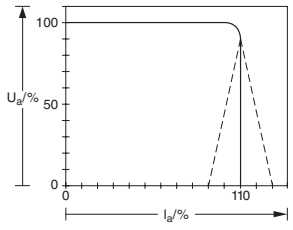


6 U

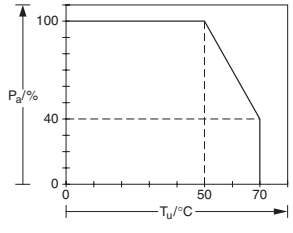


Connector assignment H15, IEC 60 603-2 (DIN 41 612)

	3 U	6 U	
Pin	Function	Function (P1)	Function (P2)
4	+5 VF	+5 VL	AC-FAIL
6	0 VF	+5 VL	SYSRESET
8	+5 VF	+5 VL	assigned internally
10	0 VF	+5 VL	assigned internally
12	+5 VF	+5 VF	assigned internally
14	0 VL	+5 VF	assigned internally
16	SYSRESET	–12 VL	assigned internally
18	0 VL	0 VL	mains-related
20	+12 VL	0 VL	mains-related
22	–12 VL	0 VL	mains-related
24	AC-FAIL	0 VL	mains-related
26	assigned internally (mains-related)	0 VL	mains-related
28	L1	+12 VL	L1
30	N	+12 VL	N
32	PE	0 VF	PE



Current limiting characteristic



Temperature-dependent power reduction

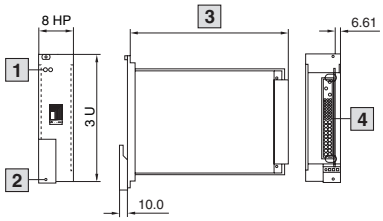
3.4 Power supply units

Ripac power supply units for CPCI, plug-in Page 481

General specifications

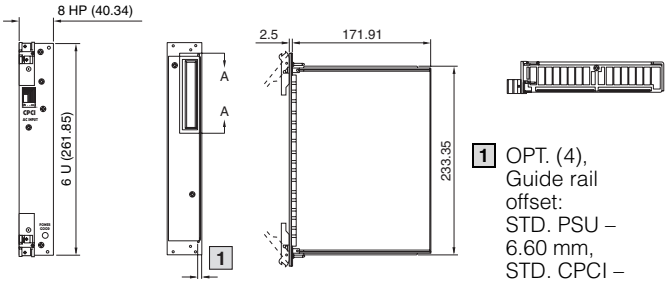
Height	3 U			6 U
Width (HP)	8 HP			8 HP
Model No. RP AC power supply	**3688.534**	**3688.694**	**3688.695**	**3688.528**
Model No. RP DC power supply	**3688.537**	**3688.655**	**3688.696**	**3688.530**
Current splitting/N+1 with parallel connection (redundancy)	U_1, U_2 and U_3, internal diodes, "hotswap"-compatible			
Operating temperature range	0° to 70°C (0° – 50°C full load) 50° to 70°C, linear derating			
Cooling	Min. 15 cfm for full load			Min. 90 cfm for full load
Storage temperature	–40°C to +85°C			
Rel. humidity	< 90 % non-condensed			
Weight	approx. 1 kg			approx. 2.4 kg
MTBF	150,000 h at an ambient temperature of 25°C			
Handle	Type VII, Model No. RP 3686.135			
Guide rail	2.54 mm offset, Model No. RP 3687.832			
EMC	FCC Level B, EN 55 022 Level B (conducted)			FCC Level A, EN 55 022 Level A
Connector	Positronic 47-pin, PICMG 2.11			
Approvals	EN 60 950 A1 – A4, CSA 22.2, UL 1950, CE			

3 U



1 LED display
2 Injector/extractor handle IEEE 1101.10-compatible
3 For 160 mm insertion depth
4 Power supply connector Positronic

6 U



1 OPT. (4), Guide rail offset: STD. PSU – 6.60 mm, STD. CPCI – 4.06 mm

Connector assignment 3 U

Pin#	SEQ[1)]	FUNCTION	
01 – 04	2	+5.0 V	V 1 Output
05 – 12	2	GND	V 1 + V 2 Return
13 – 18	2	+3.3 V	V 2 Output
19	2	GND	V 3 Return
20	2	+12.0 V	V 3 Output
21	2	–12.0 V	V 4 Output
22	2	RTN	Signal Return
23	2	N/C	No Connection (Reserved)
24	2	GND	V 4 Return
25, 26	2	N/C	No Connection (Reserved)
27	3	R/EN	Remote Enable, Close circuit to GND
28, 29	2	N/C	No Connection (Reserved)
30	2	+ S 1	+5.0 V (V 1) Remote Sense
31, 32	2	N/C	No Connection (Reserved)
33	2	+ S 2	+3.3 V (V 2) Remote Sense
34	2	S-RTN	Sense Return for V 1, V 2, V 3
35	3	N/C	No Connection (Reserved)
36	2	+ S 3	+12.0 V (V 3) Remote Sense
37	2	N/C	No Connection (Reserved)
38	2	DEG	Overtemperature
39	2	R/INH	Remote Inhibit, Close circuit to GND
40	2	N/C	No Connection (Reserved)
41	3	N/C	No Connection (Reserved)
42	2	PF	Power Fail Signal
43	2	N/C	No Connection (Reserved)
44	3	N/C	No Connection (Reserved)
45	1	PE	Protective Earth (chassis) Safety Ground
46	2	ACC	Neutral (N) AC Power Input[3)]
47	2	AC	Line (L) AC Power Input[3)]

[1)] Contact mating sequence
1 = First to make/Last to break
[3)] DC to DC version

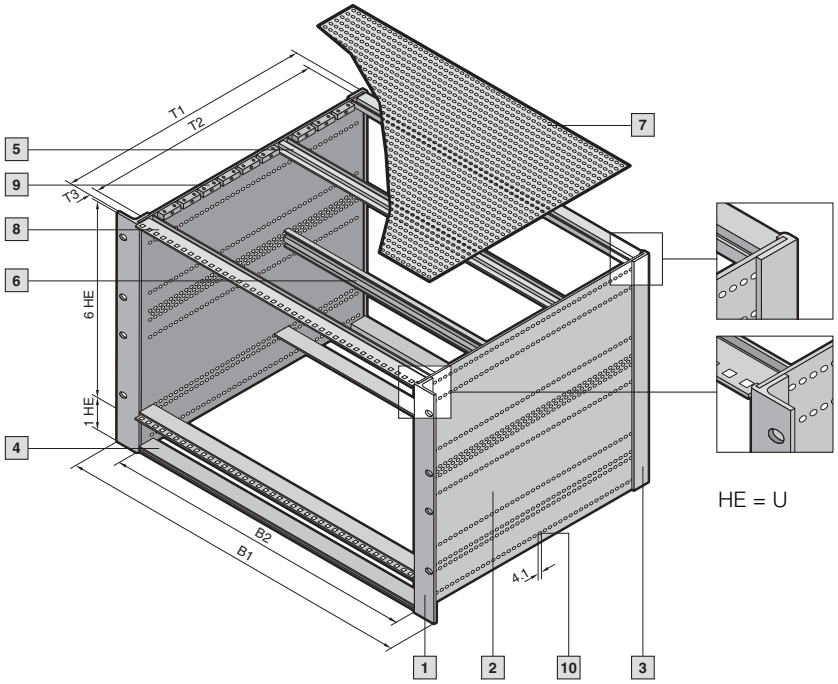
Connector assignment 6 U

Pin#	SEQ[1)]	FUNCTION	
01 – 04	2	+5.0 V	V 1 Output
05 – 12	2	GND	V 1 + V 2 Return
13 – 18	2	+3.3 V	V 2 Output
19	2	GND	V 3 Return
20	2	+12.0 V	V 3 Output
21	2	–12.0 V	V 4 Output
22	2	RTN	Signal Return
23	2	N/C	No Connection (Reserved)
24	2	GND	V 4 Return
25, 26	2	N/C	No Connection (Reserved)
27	3	R/EN	Remote Enable, Close circuit to GND
28	2	N/C	No Connection (Reserved)
29	2	V 1-ADJ	+5.0 V Remote Voltage Adjust
30	2	+ S 1	+5.0 V (V 1) Remote Sense
31	2	N/C	No Connection (Reserved)
32	2	V 2-ADJ	+3.3 V Remote Voltage Adjust
33	2	+ S 2	+3.3 V (V 2) Remote Sense
34	2	S-RTN	Sense Return for V 1, V 2, V 3
35	3	ISHR-1	+5.0 V (V 1) Current Share
36	2	+ S 3	+12.0 V (V 3) Remote Sense
37	2	N/C	No Connection (Reserved)
38	2	DEG	Overtemperature
39	2	R/INH	Remote Inhibit, Close circuit to GND
40	2	N/C	No Connection (Reserved)
41	3	ISHR-2	+3.3 V (V 2) Current Share
42	2	PF	Power Fail Signal
43	2	N/C	No Connection (Reserved)
44	3	ISHR-3	+12.0 V (V 3) Current Share
45	1	PE	Protective Earth (chassis) Safety Ground
46	2	ACC	Neutral AC Power Input[3)]
47	2	AC	Line AC Power Input[3)]

[3)] DC to DC version

3.5 Subracks

Key to all Ripac subrack drawings Page 488 – 494

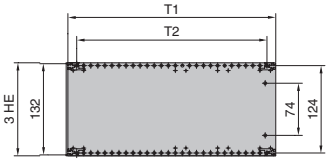


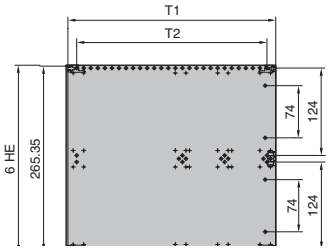
Ripac Vario EMC 7 U taken as an example

B1	482.6 mm (19″)
B2	HP horizontal pitch (with 19″: 84 HP)
T1	Side panel depth
T2	Mounting position depth
T3	12.5 mm (position of the front horizontal rail)
10	Attachment holes Ø 4.1 mm for screws M4 x 12

Ripac ECO 3 U, 6 U – supply includes Page 488

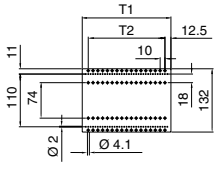
Height units U					3	6	Page
			D (T1) mm	D (T2) mm	Packs of			
2	Side panels		175	150	1	3688.100	3688.102	496
			235	210	1	3688.101	3688.103	
1		Flanges 3 U		3688.110	1	2	–	497
		Flanges 6 U		3688.111	1	–	2	
2		Side panels		see above	1	2	2	496
4	A	Horizontal rails, front		3684.562	1	2	2	499
	I	Threaded inserts		3684.610	1	4	4	504
5	C4	Horizontal rails, rear		3688.104	1	2	2	501
6	D1	Horizontal rails, rear, centre		3684.582	1	–	1	502
10		Assembly screws M4 x 12		3684.881	1	8	10	–



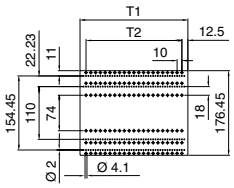


Ripac Vario, Ripac Vario EMC Page 489 – 492

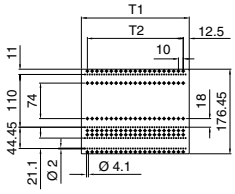
3 U



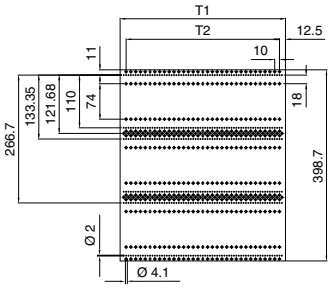
4 U (3 + 2 x 1/2)



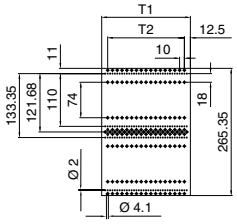
4 U (3 + 1)



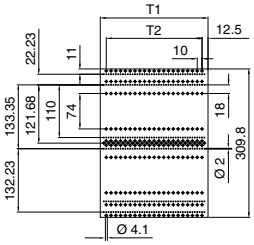
9 U



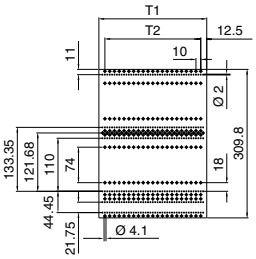
6 U



7 U (8 + 2 x 1/2)



7 U (6 + 1)



3.5 Subracks

Ripac Vario, Ripac Vario EMC 3 U, 4 U, 6 U, 7 U, 9 U – supply includes Page 489 – 492

Height units U		D (T1) mm	D (T2) mm	Packs of	3	6	9	4 (3 + 1)	4 (3 + 2 x 1/2)	7 (6 + 1)	7 (6 + 2 x 1/2)	Page
2	Side panels	185	160	1	3684.511	3684.529	–	–	–	–	–	495
		225	200	1	3684.512	3684.530	3685.797	3685.793	3685.890	3685.896	3685.893	
		245	220	1	3684.513	3684.531	–	3685.850	3685.891	3685.897	3685.894	
		285	260	1	3684.514	3684.532	–	3684.523	3684.526	3685.743	3685.895	
		305	280	1	3684.515	3684.533	3685.798	3685.794	–	–	–	
		345	320	1	3684.516	3684.534	3684.547	3684.524	3684.527	3685.744	3685.745	
		365	340	1	3684.517	3684.535	3685.799	3685.795	–	–	–	
		405	380	1	3684.518	3684.536	3684.548	3684.525	3684.528	3684.541	3684.543	
		425	400	1	3684.519	3684.537	–	–	–	–	–	
		465	440	1	3684.520	3684.538	3684.549	3685.796	3685.892	3684.542	3684.544	
		525	500	1	3684.521	3684.539	3684.550	–	–	3685.898	3685.959	
		585	560	1	3684.522	3684.540	3684.551	–	–	–	–	

Subrack Ripac Vario

	PT		Model No.	P. of	BP	C	BP	C	BP	C	BP	C	BP	C	BP	C	Page
1		Flanges	–	1	3684.615		3684.617		3684.619		3684.616				3684.618		496
					2	2	2	2	2	2	2	2	2	2	2	2	
2		Side panels	see above	1	2	2	2	2	2	2	2	2	2	2	2	2	495
4	A	Horizontal rails, front	3684.562	1	2	2	2	2	2	2	2	2	2	2	2	2	499
	I	Threaded inserts	3684.610	1	2	2	2	2	2	2	2	2	2	2	2	2	504
5	C1	Horizontal rails, rear	3684.572	1	2	–	2	–	2	–	2	–	2	–	2	2	500
6	D1	Horizontal rails, rear, centre	3684.582	1	–	–	1	–	2	–	–	–	–	–	1	1	502
	G	Insulating strips 21 HP	3684.611	1	8	–	16	–	24	–	8	–	8	–	16	16	505
	C3	Horizontal rails, rear, with Z rails	3686.159	1	–	2	–	2	–	2	–	2	–	2	–	–	501
	D2	Horizontal rails, rear, centre, with integral Z rails	3687.602	1	–	–	–	1	–	2	–	–	–	–	–	–	503
10		Assembly screws M4 x 12	3684.881	1	8	8	10	10	12	12	8	8	8	8	10	10	–

Subrack Ripac Vario EMC

	PT		Model No.	P.of	BP	BP[1)]	BP	BP[1)]	BP	BP[1)]	BP	BP[1)]	BP	BP[1)]	BP	BP[1)]	BP	BP[1)]	Page
1		Flanges	–	1	3684.615		3684.617		3684.619		3684.616				3684.618				496
					2	2	2	2	2	2	2	2	2	2	2	2	2	2	
3		Trim sections, rear	–	1	3684.634		3684.636		3684.638		3684.635				3684.637				497
					2	2	2	2	2	2	2	2	2	2	2	2	2	2	
2		Side panels	see above	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	495
		EMC gaskets, vertical	–	1	3686.975		3686.977		3686.979		3686.976				3686.978				506
					4	4	4	4	4	4	4	4	3	3	4	4	3	3	
7		Covers, vented	see below	1	2	2	2	2	2	2	2	2	–	–	2	2	–	–	515
		Covers, L-shaped, 1/2 U, top solid/bottom vented at front	see below	1	–	–	–	–	–	–	–	–	1/1	1/1	–	–	1/1	1/1	517
9		Mounting blocks	3684.234	10	Depending on depth														507
	K	EMC gaskets for covers	3684.245	10	4	4	4	4	4	4	4	4	2	2	4	4	2	2	507
4	A	Horizontal rails, front	3684.562	1	4	3	4	2	4	2	6	5	4	3	6	4	4	2	499
	I	Threaded inserts	3684.610	1	4	4	4	4	4	4	6	6	4	4	6	6	4	4	504
8	B	Front horizontal rails with 10 mm extension	3684.567	1	–	1	–	2	–	2	–	1	–	1	–	2	–	2	499
5	C1	Horizontal rails, rear	3684.572	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	500
6	D1	Horizontal rails, rear, centre	3684.582	1	–	–	1	1	2	2	–	–	–	–	1	1	1	1	502
	G	Insulating strips 21 HP	3684.611	1	8	8	16	16	24	24	8	8	8	8	16	16	16	16	505
10		Assembly screws M4 x 12	3684.881	1	12	12	14	14	16	16	16	16	12	12	18	18	14	14	–

Covers for Ripac Vario EMC

Height units U		D (T1) mm	Packs of	3	6	9	4 (3 + 1)	4 (3 + 2 x 1/2)	7 (6 + 1)	7 (6 + 2 x 1/2)	Page
7	Covers	245	1		3684.695		–	–	–	–	515 – 517
		285	1		3684.696		3684.696	3684.732/ 3684.726[2)]	3684.696	3684.732/ 3684.726[2)]	
		305	1		3685.852		–	–	–	–	
		345	1		3684.698		3684.698	3684.733/ 3684.727[2)]	3684.698	3684.733/ 3684.727[2)]	
		405	1		3684.700		3684.700	3684.734/ 3684.728[2)]	3684.700	3684.734/ 3684.728[2)]	
		465	1		3684.701		–	–	3684.701	3684.735/ 3684.729[2)]	
		525	1		3684.702		–	–	–	–	
		585	1		3684.703		–	–	–	–	

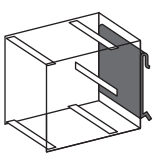
BP = for backplane C = for DIN connector PT = rail type
[1)] Front horizontal rails with 10 mm extension for injector/extractor handles (B) [2)] vented/not vented

3.5 Subracks

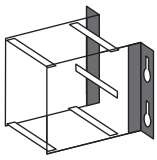
Ripac Compact, 3 U, 6 U – supply includes Page 493

											EMC version						Page
Height units U					**3**	**3**	**3**	**3**	**6**	**3**	**3**	**3**	**3**	**6**	
Horizontal pitch HP					**21**	**21**	**42**	**42**	**42**	**21**	**21**	**42**	**42**	**42**	
		D (T1) mm	D (T2) mm	Packs of	HS	MP	HS	MP	MP	HS	MP	HS	MP	MP	
2	Side panels	225	200	x	3684.512				3684.530	3684.512				3684.530	495
		285	260	x	3684.514				3684.532	3684.514				3684.532	
	PT	Attachment		Packs of	For backplane										
2		Side panels	see above	x	2	2	2	2	2	1	1	1	1	1	495
		Side panels for cable entry		x	–	–	–	–	–	1	1	1	1	1	–
		EMC PG cable gland		x	–	–	–	–	–	1	1	1	1	1	–
3		Trim sections, rear		x	4	2	4	2	2	4	2	4	2	2	497
1		Flanges with keyhole		x	–	2	–	2	2	–	2	–	2	2	–
		EMC front/rear panels		x	–	–	–	–	–	–	1	–	1	1	–
		EMC rear panel for rail adaptor		x	–	–	–	–	–	1	–	1	–	–	–
		Rear panel for rail adaptor		x	1	–	1	–	–	–	–	–	–	–	–
		Rail adaptor		x	1	–	1	–	–	1	–	1	–	–	–
		EMC gaskets, vertical		x	–	–	–	–	–	3	3	3	3	3	506
7		Covers, vented	see below	x	–	–	–	–	–	2	2	2	2	2	517
4	A	Horizontal rails, front		x	4	2	4	2	2	4	4	4	4	4	499
5	C1	Horizontal rails, rear		x	2	2	2	2	2	2	2	2	2	2	500
	I	Threaded inserts		x	4	2	4	2	2	4	4	4	4	4	504
	G	Insulating strips 21 HP		x	2	2	4	4	8	2	2	4	4	8	505
6	D1	Horizontal rails, rear, centre		x	–	–	–	–	1	–	–	–	–	1	502
Covers for Ripac Compact															
			LP mm	Packs of	**3**	**3**	**3**	**3**	**6**	**3**	**3**	**3**	**3**	**6**	Page
7		Covers, vented	160	1	3687.624		3687.625			3687.624[1)]		3687.625[1)]			517
		Covers, vented	220	1	3687.692		3687.677			3687.692[1)]		3687.677[1)]			517
	F	Z rails IEC 60 603-2 (DIN 41 612)		1	3684.599		3684.600			3684.599		3684.600			504

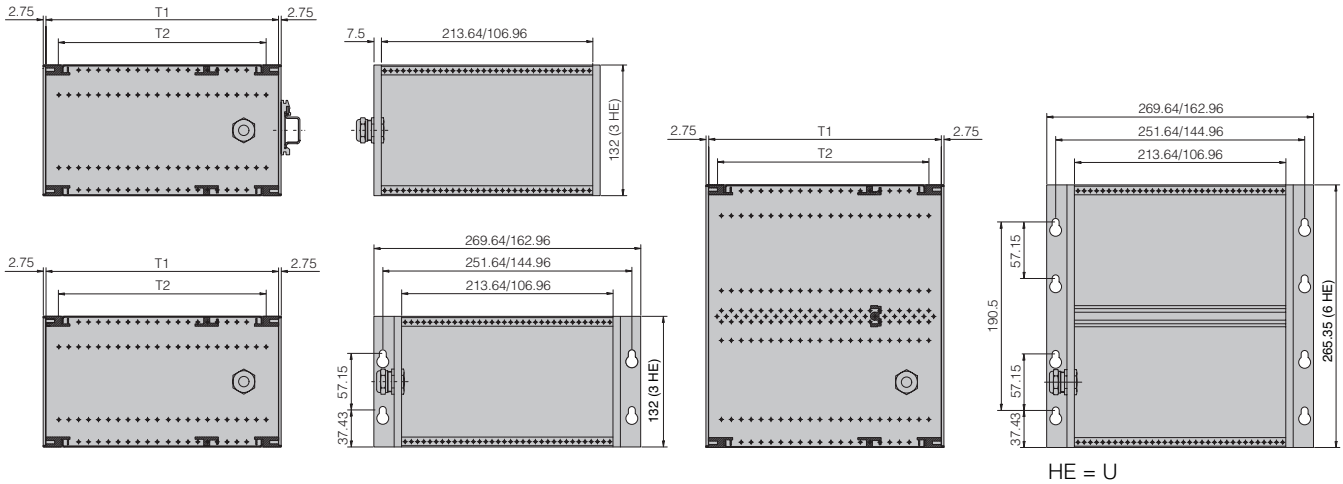
HS = top hat rail MP = mounting plate PT = rail type LP = PCB depth
[1)] Included with the supply



For top hat rail



For mounting plate



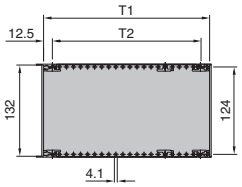
HE = U

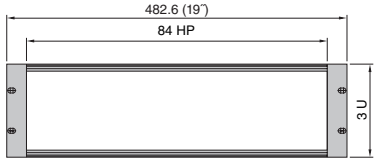
3.5 Subracks

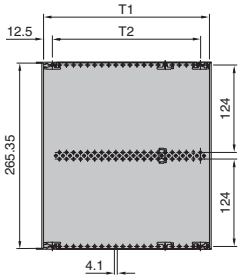
Ripac Vario Mobil 3 U, 6 U – supply includes Page 494

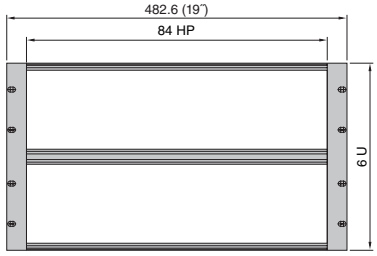
							EMC				EMC	Page
Height units U					**3**	**3**	**3**	**6**	**6**	**6**	
			D (T1) mm	D (T2) mm	Packs of	BP	C	BP	BP	C	BP	
2	Side panels		245	220	1		3684.513			3684.531		495
	PT			Model No.	Packs of							
1		Flanges		–	1		3684.615			3684.617		496
						2	2	2	2	2	2	
3		Trim sections, rear		–	1	–	–	2 3684.634	–	–	2 3684.636	497
2		Side panels		see above	1	2	2	2	2	2	2	495
		EMC gaskets, vertical		–	1	–	–	2 3686.975	–	–	2 3686.977	506
7		Covers, vented		3684.695	1	–	–	2	–	–	2	515
9		Mounting blocks		3684.234	10	–	–	20	–	–	20	507
	K	EMC gaskets for covers		3684.245	10	–	–	4	–	–	4	507
4	A	Horizontal rails, front		3684.562	1	4	4	4	4	4	4	499
	I	Threaded inserts		3684.610	1	4	4	4	4	4	4	504
5	C1	Horizontal rails, rear		3684.572	1	2	–	2	2	–	2	500
6	D1	Horizontal rails, rear, centre		3684.582	1	–	–		1	–	1	502
	G	Insulating strips 21 HP		3684.611	1	8	–	8	16	–	16	505
	C3	Horizontal rails, rear, with integral Z rails		3686.159	1	–	2	–	–	2	–	501
	D2	Horizontal rails, rear, centre, with integral Z rails		3687.602	1	–	–	–		1	–	503
		Assembly screws M4 x 12		3684.881	1	12	12	12	14	14	14	–
		Assembly screws M3 x 6		3684.883	1	–	–	60	–	–	60	–

BP = for backplane C = for DIN connector PT = rail type





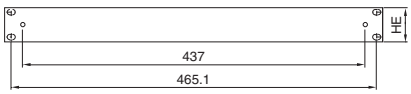


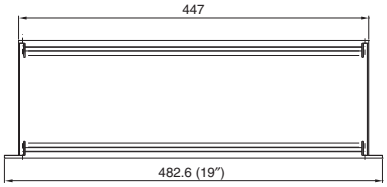


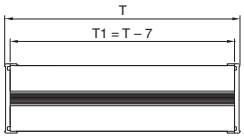
3.6 Instrument cases/system enclosures

RiBox system enclosures 1 U Page 554

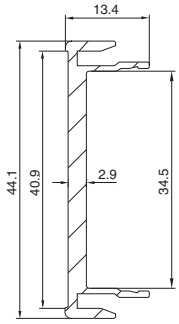
482.6 mm (19″) rack mount



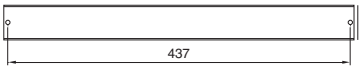


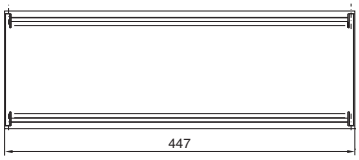


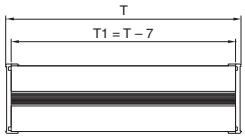
HE = U



Instrument cases







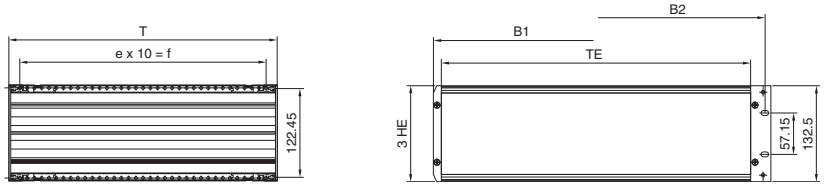
Model No. RP			D (T) mm
Instrument cases	19″ rack mount	19″ rack mount[1)]	
3687.819	**3687.814**	**–**	150
3687.820	**3687.815**	**–**	200
3687.821	**3687.816**	**3684.072**	250
3687.822	**3687.817**	**–**	300
3687.823	**3687.818**	**3684.073**	350

[1)] including assembly kit for double Euroboards

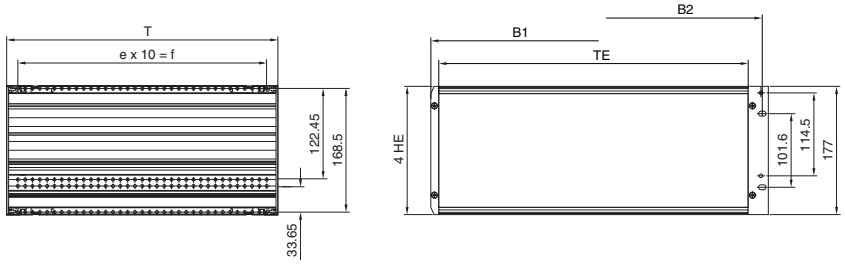
3.6 Instrument cases/system enclosures

Ripac Vario-Module Page 555 – 558

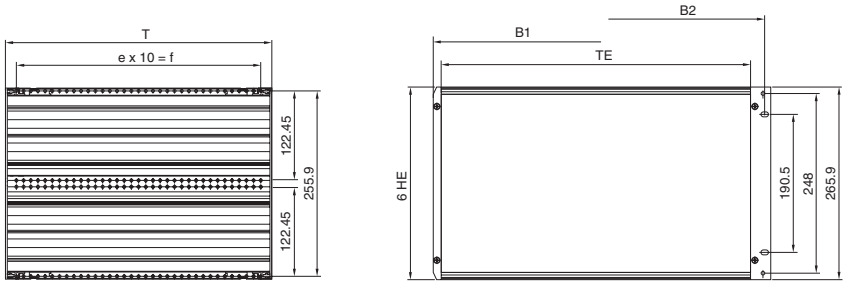
3 U



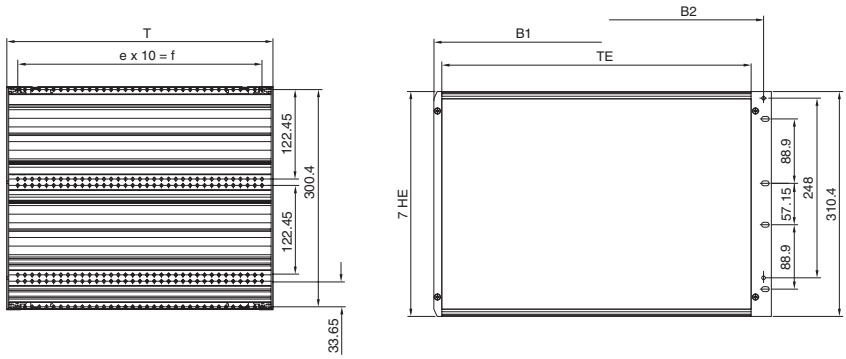
4 U



6 U



7 U



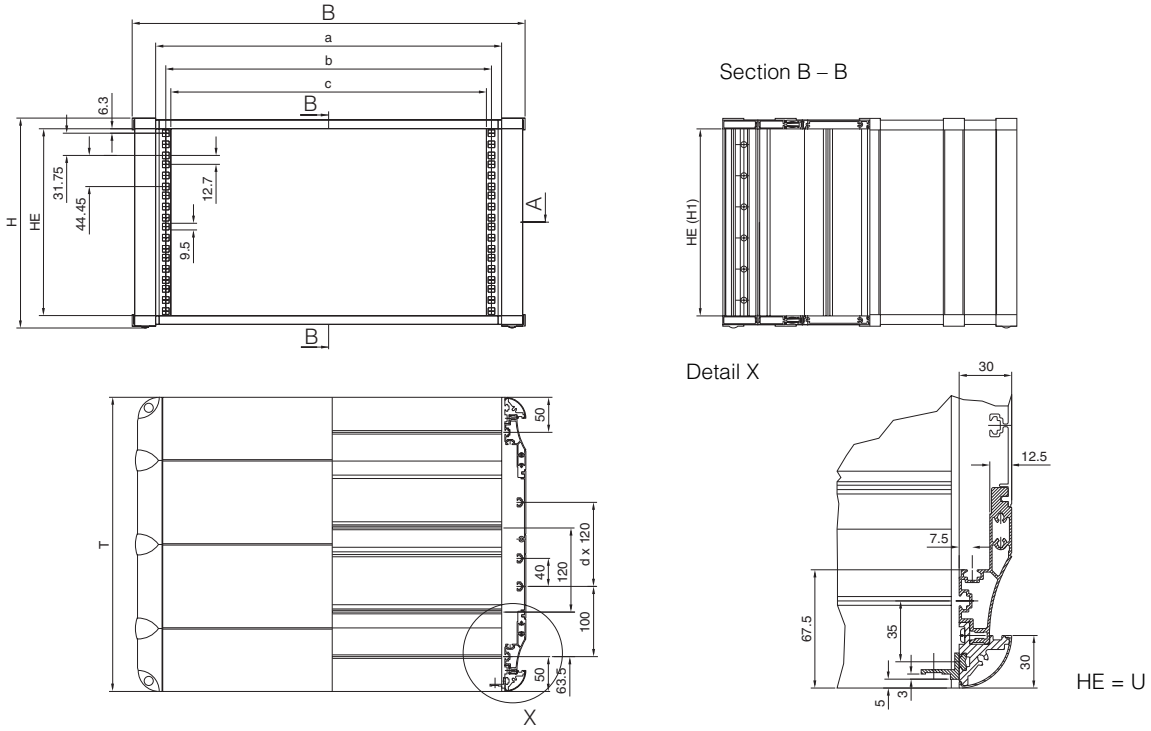
Model No. VM	U (HE)	HP (TE)	D (T) mm	e	W (B1) mm	W (B2) mm
3982.040	3	42	250.4	22	235.6	251.6
3982.070	3	42	310.4	28	235.6	251.6
3982.050	3	63	250.4	22	342.3	358.3
3982.080	3	63	310.4	28	342.3	358.3
3982.060	3	84	250.4	22	449.0	465.1
3982.090	3	84	310.4	28	449.0	465.1
3982.100	3	84	370.4	34	449.0	465.1
3982.110	4	84	250.4	22	449.0	465.1
3982.120	4	84	310.4	28	449.0	465.1
3982.130	4	84	370.4	34	449.0	465.1
3982.140	6	84	310.4	28	449.0	465.1
3982.150	6	84	370.4	34	449.0	465.1
3982.160	6	84	430.4	40	449.0	465.1
3982.170	7	84	310.4	28	449.0	465.1
3982.190	7	84	430.4	40	449.0	465.1

Model No. VM (EMC)	U (HE)	HP (TE)	D (T) mm	e	W (B1) mm	W (B2) mm
3983.040	3	42	250.4	22	235.6	251.6
3983.070	3	42	310.4	28	235.6	251.6
3983.050	3	63	250.4	22	342.3	358.3
3983.080	3	63	310.4	28	342.3	358.3
3983.060	3	84	250.4	22	449.0	465.1
3983.090	3	84	310.4	28	449.0	465.1
3983.100	3	84	370.4	34	449.0	465.1
3983.110	4	84	250.4	22	449.0	465.1
3983.120	4	84	310.4	28	449.0	465.1
3983.130	4	84	370.4	34	449.0	465.1
3983.140	6	84	310.4	28	449.0	465.1
3983.150	6	84	370.4	34	449.0	465.1
3983.160	6	84	430.4	40	449.0	465.1
3983.170	7	84	310.4	28	449.0	465.1
3983.190	7	84	430.4	40	449.0	465.1

3.6 Instrument cases/system enclosures

Rittal RiCase 269.2 mm (1/2 19″) Page 562

Rittal RiCase 482.6 mm (19″) Page 563



Rittal RiCase 269.2 mm (1/2 19″)

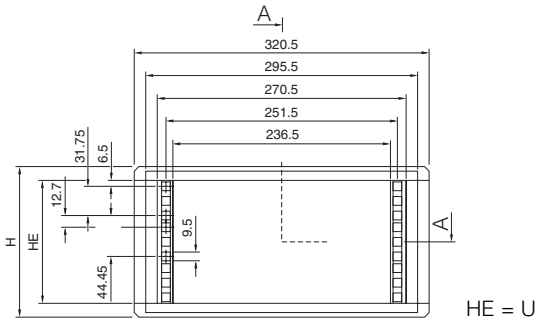
Not vented									
Model No. RC, RAL 5018	**3750.100**	**–**	**3750.200**	**–**	**3750.210**	**3750.300**	**–**	**3750.400**	**–**
Model No. RC, RAL 5012	**3750.102**	**–**	**3750.202**	**–**	**3750.212**	**3750.302**	**–**	**3750.402**	**–**
Model No. RC, RAL 7030	**3750.104**	**–**	**3750.204**	**–**	**3750.214**	**3750.304**	**–**	**3750.404**	**–**
Vented									
Model No. RC, RAL 5018	**–**	**3750.110**	**–**	**3750.220**	**–**	**3750.350**	**3750.360**	**–**	**3750.450**
Model No. RC, RAL 5012	**–**	**3750.112**	**–**	**3750.222**	**–**	**3750.352**	**3750.362**	**–**	**3750.452**
Model No. RC, RAL 7030	**–**	**3750.114**	**–**	**3750.224**	**–**	**3750.354**	**3750.364**	**–**	**3750.454**
U	1		2		3			4	
Width (B) mm	348.6	348.6	348.6	348.6	348.6	348.6	348.6	348.6	348.6
Height (H) mm	77.5	77.5	121.9	121.9	166.4	166.4	166.4	210.8	210.8
H1 (HE) mm	45.0	45.0	89.4	89.4	133.8	133.8	133.8	178.3	178.3
Depth (T) mm	300.0	420.0	300.0	540.0	300.0	420.0	540.0	420.0	540.0
a	280.6	280.6	280.6	280.6	280.6	280.6	280.6	280.6	280.6
b	251.6	251.6	251.6	251.6	251.6	251.6	251.6	251.6	251.6
c	237.2	237.2	237.2	237.2	237.2	237.2	237.2	237.2	237.2
d	–	1	–	2	–	1	2	1	2

Rittal RiCase 482.6 mm (19″)

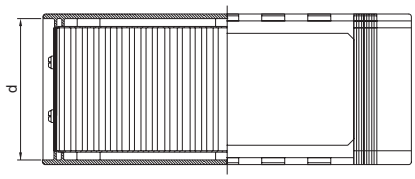
Not vented												
Model No. RC, RAL 5018	**3750.310**	**3750.320**	**3750.410**	**3750.420**	**3750.600**	**3750.610**	**3750.620**	**3750.700**	**3750.710**	**3750.900**	**3750.910**	**3750.000**
Model No. RC, RAL 5012	**3750.312**	**3750.322**	**3750.412**	**3750.422**	**3750.602**	**3750.612**	**3750.622**	**3750.702**	**3750.712**	**3750.902**	**3750.912**	**3750.002**
Model No. RC, RAL 7030	**3750.314**	**3750.324**	**3750.414**	**3750.424**	**3750.604**	**3750.614**	**3750.624**	**3750.704**	**3750.714**	**3750.904**	**3750.914**	**3750.004**
Vented												
Model No. RC, RAL 5018	**3750.330**	**3750.340**	**3750.430**	**3750.440**	**3750.630**	**3750.640**	**3750.650**	**3750.720**	**3750.730**	**3750.920**	**3750.930**	**3750.030**
Model No. RC, RAL 5012	**3750.332**	**3750.342**	**3750.432**	**3750.442**	**3750.632**	**3750.642**	**3750.652**	**3750.722**	**3750.732**	**3750.922**	**3750.932**	**3750.032**
Model No. RC, RAL 7030	**3750.334**	**3750.344**	**3750.434**	**3750.444**	**3750.634**	**3750.644**	**3750.654**	**3750.724**	**3750.734**	**3750.924**	**3750.934**	**3750.034**
U	3		4		6			7		9		12
Width (B) mm	562.0	562.0	562.0	562.0	562.0	562.0	562.0	562.0	562.0	562.0	562.0	562.0
Height (H) mm	166.4	166.4	210.8	210.8	299.7	299.7	299.7	344.2	344.2	433.1	433.1	566.5
H1 (HE) mm	133.8	133.8	178.3	178.3	267.2	267.2	267.2	311.7	311.7	400.6	400.6	534.0
Depth (T) mm	300.0	420.0	300.0	420.0	300.0	420.0	540.0	420.0	540.0	420.0	540.0	540.0
a	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0	494.0
b	465.0	465.0	465.0	465.0	465.0	465.0	465.0	465.0	465.0	465.0	465.0	465.0
c	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6	450.6
d	–	1	–	1	–	1	2	1	2	1	2	2

3.6 Instrument cases/system enclosures

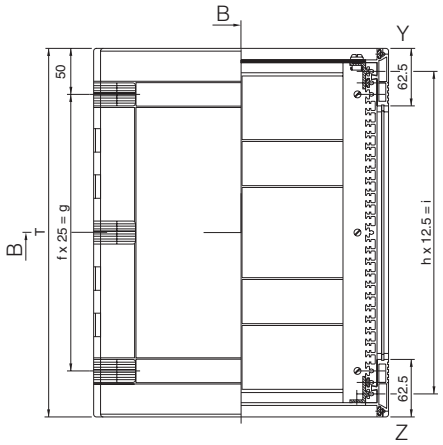
Rittal Vario-Case iS 269.2 mm (1/2 19″) Page 569



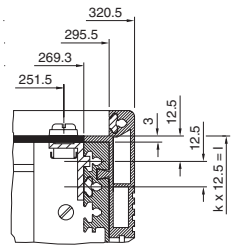
Section B – B



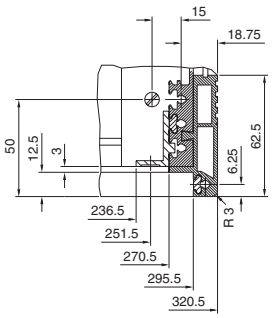
Section A – A



Detail Y



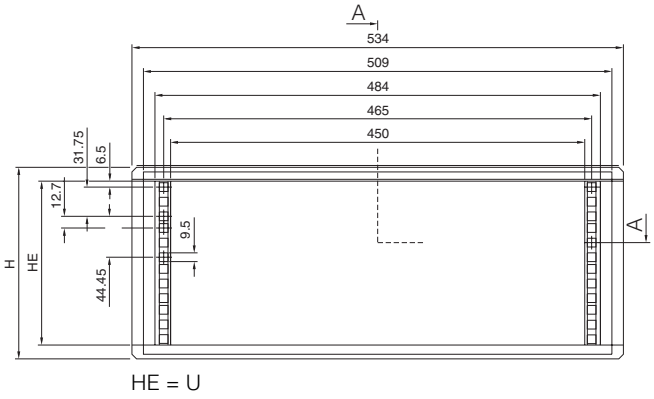
Detail Z



Model No. VC without vent slots	3710.000	3720.000	3730.000	3731.000	3740.000	3741.000
U	1	2	3		4	
Depth (T) mm	300	300	300	400	300	400
Height (H) mm	74.75	119.20	163.65	163.65	208.10	208.10
d	64.75	109.20	153.65	153.65	198.10	198.10
f	8	8	8	12	8	12
g	200	200	200	300	200	300
h	20	20	20	28	20	28
i	250	250	250	350	250	350
k	22	22	22	30	22	30
l	275	275	275	375	275	375

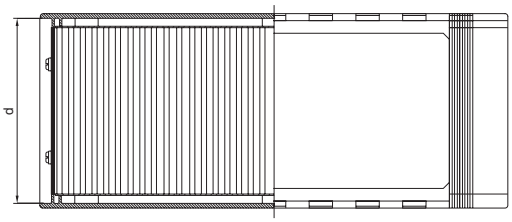
3.6 Instrument cases/system enclosures

Rittal Vario-Case iS 482.6 mm (19″) Page 570 – 571.

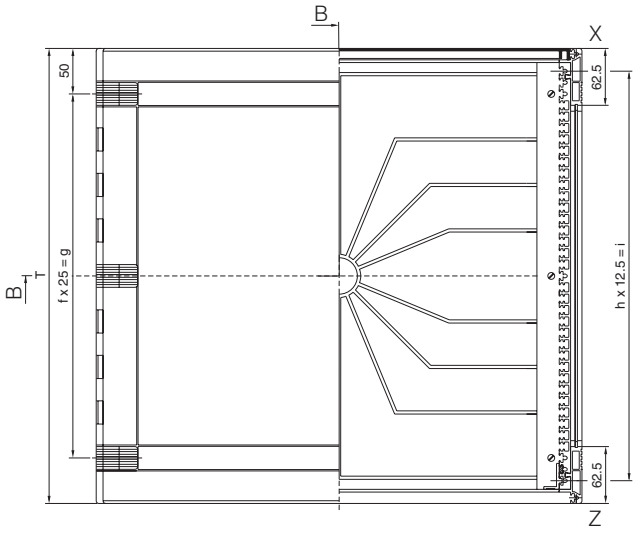


HE = U

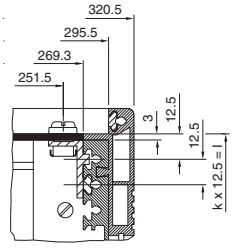
Section B – B



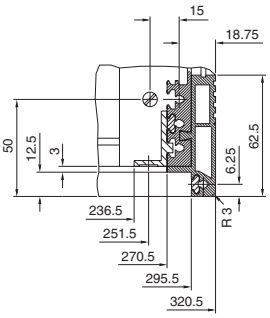
Section A – A



Detail Y



Detail Z



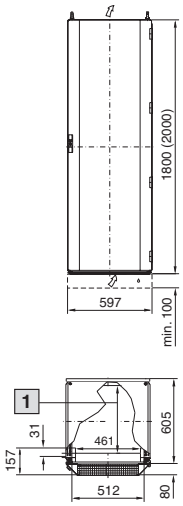
Model No. VC without vent slots	3713.000	3714.000	3743.000	3744.000	3745.000	3774.000	3775.000
Model No. VC with vent slots	**3713.200**	**3714.200**	**3743.200**	**3744.200**	**3745.200**	**3774.200**	**3775.200**
U	1		4			7	
Depth (T) mm	300	400	300	400	500	400	500
Height (H) mm	74.75	74.75	208.10	208.10	208.10	341.40	341.40
d	64.75	64.75	198.10	198.10	198.10	331.40	331.40
f	8	12	8	12	16	12	16
g	200	300	200	300	400	300	400
h	20	28	20	28	36	28	36
i	250	350	250	350	450	350	450
k	22	30	22	30	38	30	38
l	275	375	275	375	475	375	475

Model No. VC without vent slots	3733.000	3734.000	3735.000	3763.000	3764.000	3765.000	3794.000	3795.000
Model No. VC with vent slots	**3733.200**	**3734.200**	**3735.200**	**3763.200**	**3764.200**	**3765.200**	**3794.200**	**3795.200**
U	3			6			9	
Depth (T) mm	300	400	500	300	400	500	400	500
Height (H) mm	163.65	163.65	163.65	297.00	297.00	297.00	430.50	430.50
d	153.65	153.65	153.65	287.00	287.00	287.00	420.50	420.50
f	8	12	16	8	12	16	12	16
g	200	300	400	200	300	400	300	400
h	20	28	36	20	28	36	28	36
i	250	350	450	250	350	450	350	450
k	22	30	38	22	30	38	30	38
l	275	375	475	275	375	475	375	475

4.1 Climate controlled enclosures

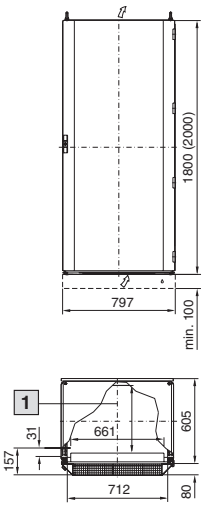
single-door, useful cooling output 1100/1500 W Page 582

1100 W



1 max. installation depth = 478

1500 W

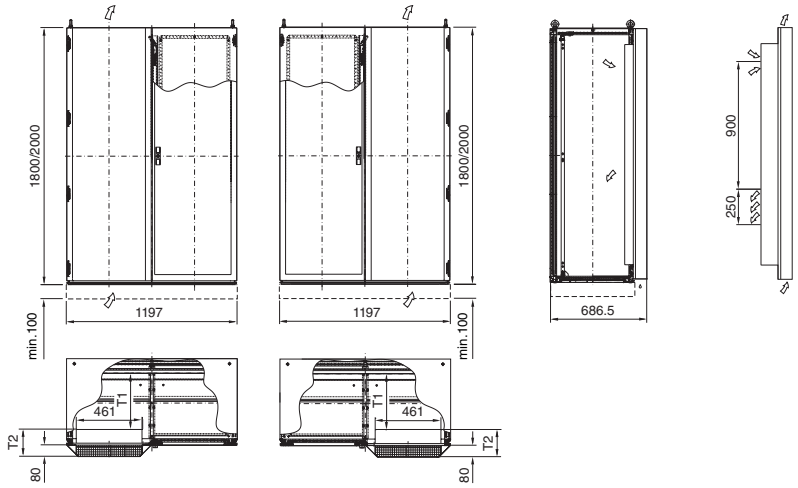


1 max. installation depth = 478

two-door, useful cooling output 2000/2500 W Page 583

Device position left

Device position right



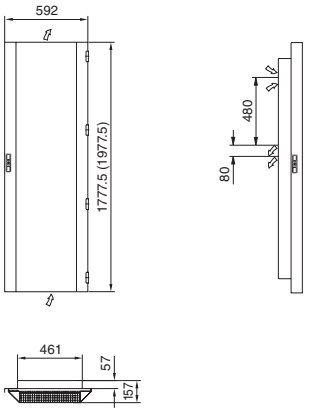
	2000 W	2500 W
D (T1) max.	445	415
D (T2)	190	220

4.1 Climate control doors

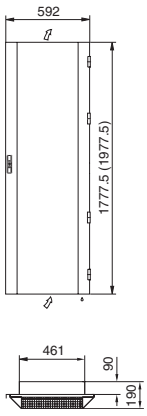
for installing in 600 mm wide TS 8 enclosures, useful cooling output 1100/1500 W Page 584

for installing in 600 mm wide TS 8 enclosures, useful cooling output 2000/2500 W Page 586

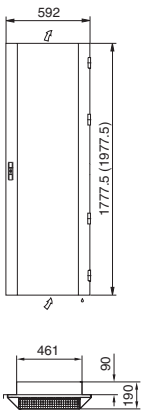
1100 W



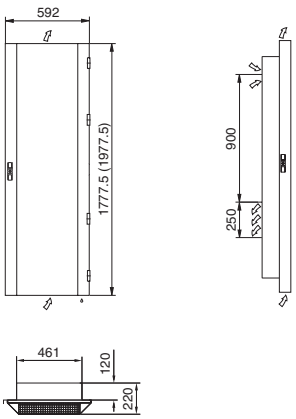
1500 W



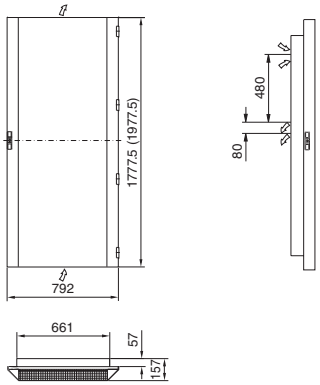
2000 W



2500 W



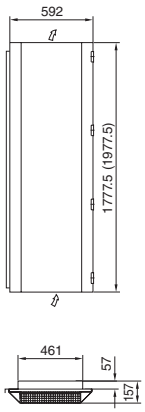
for installing in 800 mm wide TS 8 enclosures, useful cooling output 1500 W Page 585



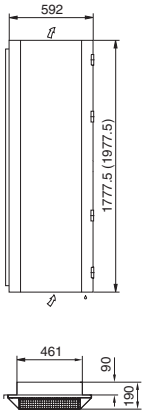
for installing in 1200 mm wide TS 8 enclosures, useful cooling output 1100/1500 W Page 587

for installing in 1200 mm wide TS 8 enclosures, useful cooling output 2000/2500 W Page 588

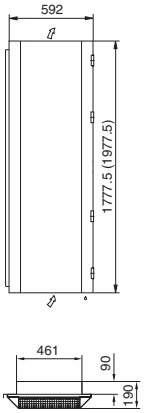
1100 W



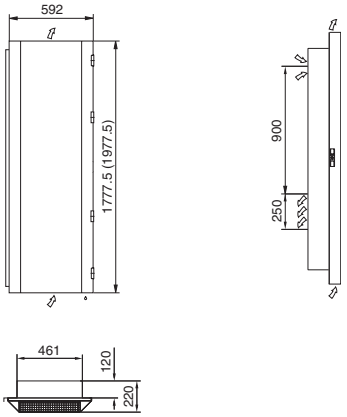
1500 W



2000 W



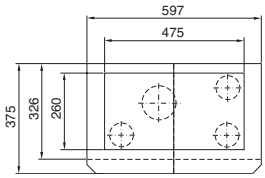
2500 W

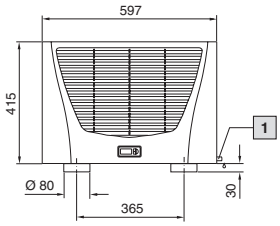


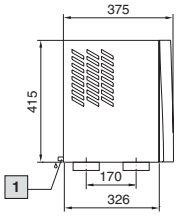
4.1 Roof-mounted cooling units

Useful cooling output 500/750 W Page 590

Mounting cutout







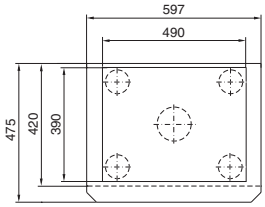
1 Condensate discharge 1/2″, flexible

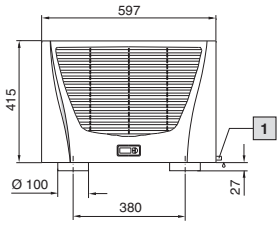
Useful cooling output 1000 W Page 591

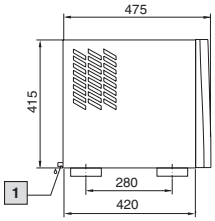
Useful cooling output 1100 W Page 592

Useful cooling output 1500/2000 W Page 593

Mounting cutout



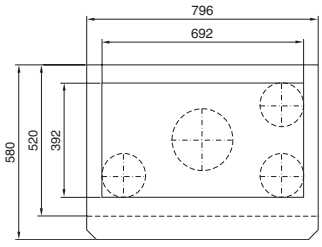


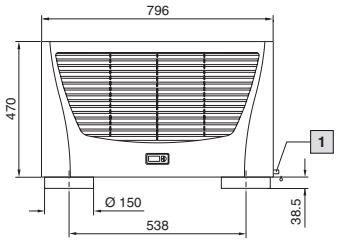


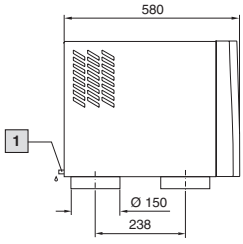
1 Condensate discharge 1/2″, flexible

Useful cooling output 3000/4000 W Page 594

Mounting cutout





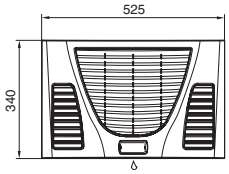


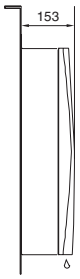
1 Condensate discharge 1/2″, flexible

4.1 Wall-mounted cooling units

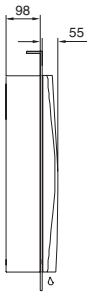
Mini in horizontal format, useful cooling output 300 W Page 596

External mounting

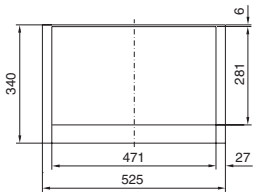




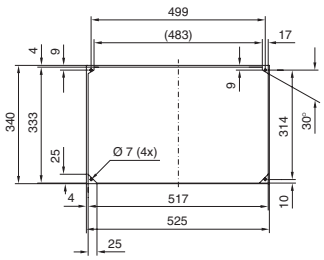
Internal mounting



Mounting cutout External mounting

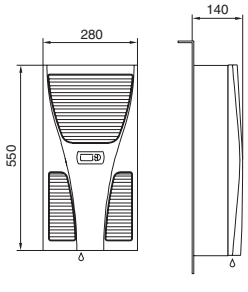


Mounting cutout Internal mounting

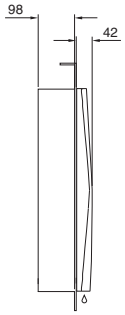


Useful cooling output 300 W Page 597

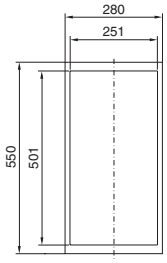
External mounting



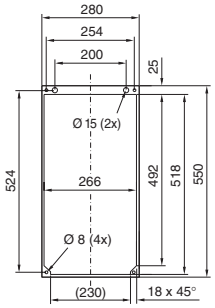
Internal mounting



Mounting cutout External mounting



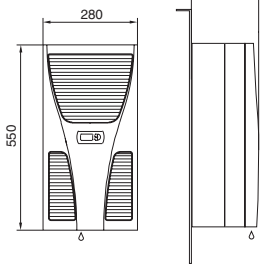
Mounting cutout Internal mounting



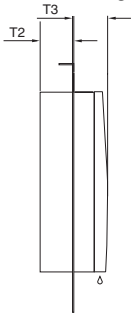
Useful cooling output 500 W Page 597

Useful cooling output 750 W Page 598

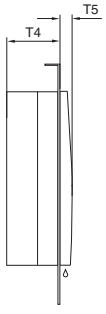
External mounting



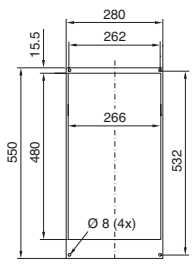
Partial internal mounting



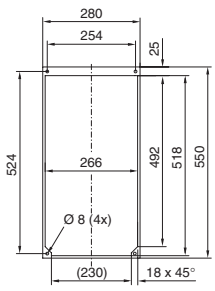
Internal mounting



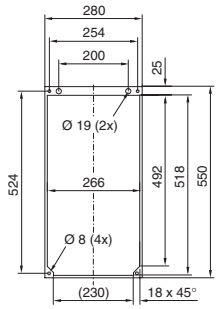
Mounting cutout External mounting



Mounting cutout Partial internal mounting



Mounting cutout Internal mounting



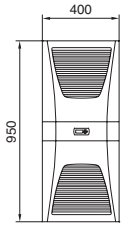
	D (T1)	D (T2)	D (T3)	D (T4)	D (T5)
500 W	200	100	100	158	42
750 W	280	125	155	235	45

Wall-mounted cooling units

4.1 Wall-mounted cooling units

Useful cooling output 1500/2000 W Page 599

External mounting

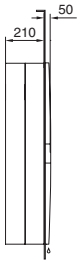




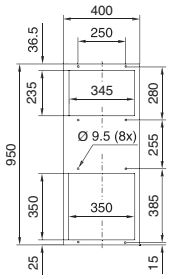
Partial internal mounting



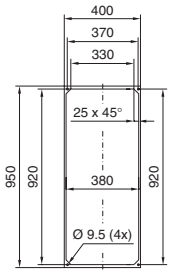
Internal mounting



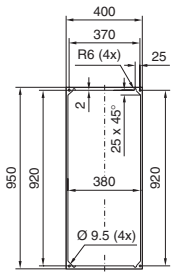
Mounting cutout External mounting



Mounting cutout Partial internal mounting

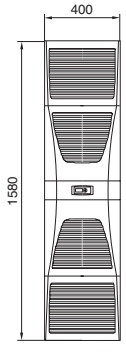


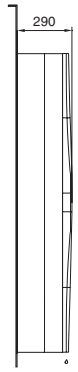
Mounting cutout Internal mounting



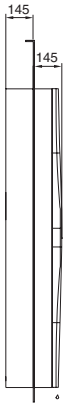
Useful cooling output 1500/2000 W Page 600

External mounting

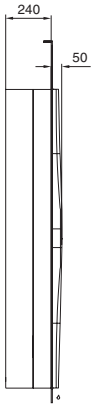




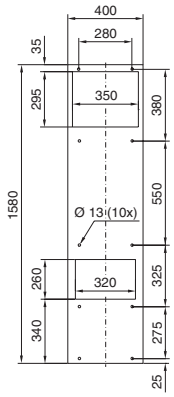
Partial internal mounting



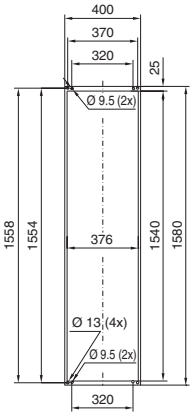
Internal mounting[1)]



Mounting cutout External mounting



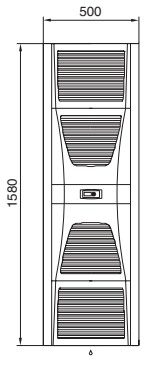
Mounting cutout Partial internal mounting, internal mounting

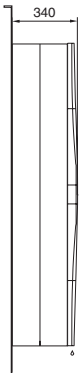


[1)] For installation in 600 mm wide doors, move the mounting cutout from the centre of the door to the hinged side by at least 10 mm.

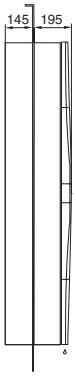
Useful cooling output 4000 W Page 601

External mounting

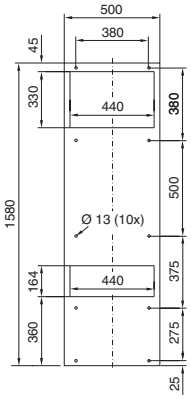




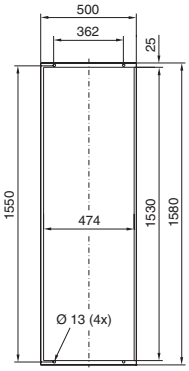
Partial internal mounting



Mounting cutout External mounting

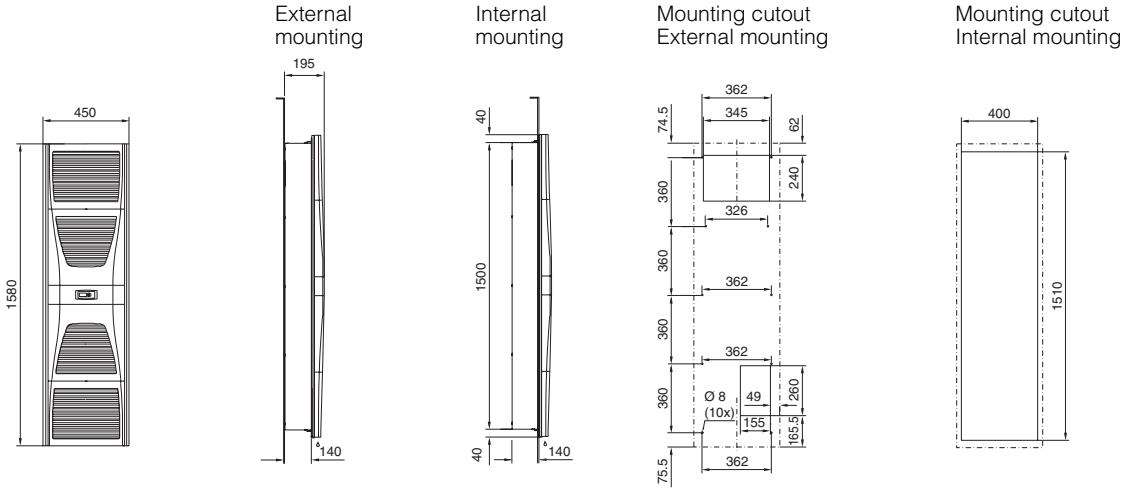


Mounting cutout Partial internal mounting

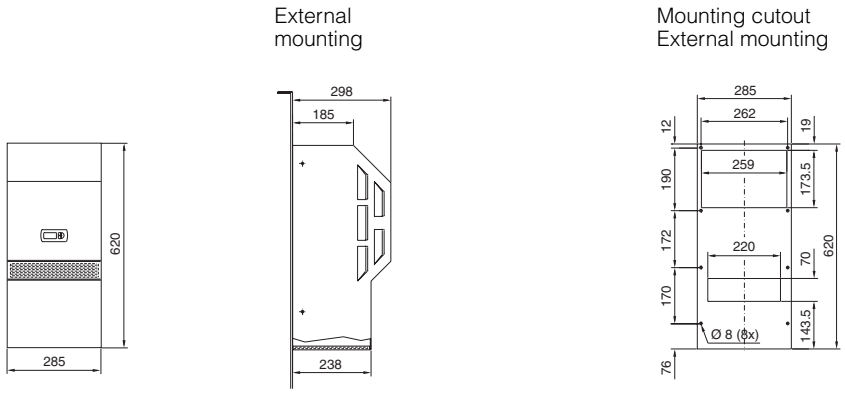


4.1 Wall-mounted cooling units

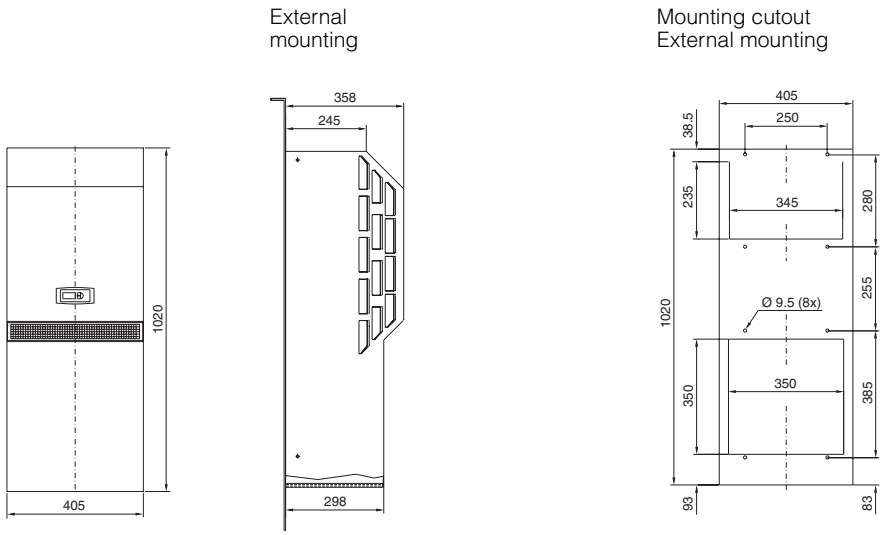
Useful cooling output 1500 W Page 602
(SK 3366.XXX and SK 3377.XXX)



Design NEMA 4x, useful cooling output 500 W Page 603



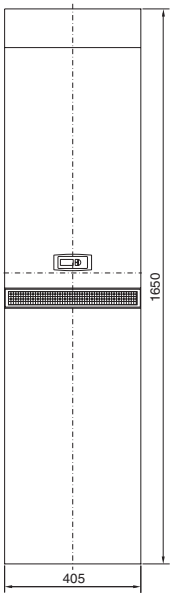
Design NEMA 4x, useful cooling output 1000/1500 W Page 603

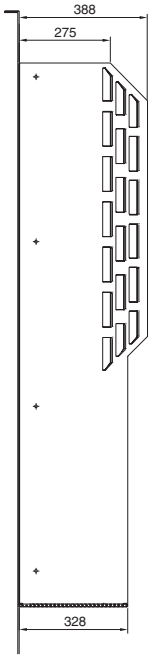


4.1 Wall-mounted cooling units

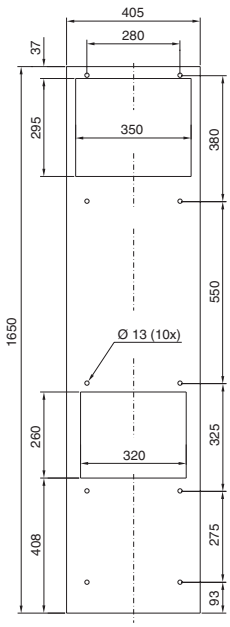
Design NEMA 4x, useful cooling output 2000/2500 W Page 604

External mounting





Mounting cutout
External mounting



4.2 Options for recooling systems

	Pressure-sealed system	Open system with tank	Designed as a once-through cooler without tank	Hot gas bypass control in the cooling circuit	More powerful pump(s)	Heater in the tank (1000 W)	Water level switch	Flow monitor	Water filter/oil filter	Water-cooled condenser	Upstream pipework, free from non-ferrous metals	Automatic tank filling	Fault signal with individual messages	Ambient temperature control	Automatic bypass	Manual bypass	Harting connector	Outdoor siting	Special spray finish	Special voltage	Metal filter mat	Castors	Refrigerant R134a	Double pump unit	Filter mat monitoring	Base tray	Tank (stainless steel 1.4301)	Additional medium connections
Recooling systems Mini and Mini for wall mounting																												
SK 3318.600	■	–	■	–	□	–	–	■	–	□	□	–	–	□	–	□	□	□	□	□	□	□	■	–	■	–	–	–
SK 3318.610	–	■	–	–	□	–	–	■	–	□	□	–	–	□	–	□	□	□	□	□	□	□	■	–	■	–	–	–
SK 3319.600	■	–	■	–	□	–	–	■	–	□	□	–	–	□	–	□	□	□	□	□	□	□	■	–	■	–	–	–
SK 3319.610	–	■	–	–	□	–	–	■	–	□	□	–	–	□	–	□	□	□	□	□	□	□	■	–	■	–	–	–
SK 3320.600	–	■	–	□	□	□	□	■	–	□	□	–	–	□	□	□	□	□	□	□	□	□	■	–	■	–	■	–
SK 3334.600	–	■	–	□	□	□	□	■	–	□	□	–	–	□	□	□	□	□	□	□	□	□	■	–	■	–	■	–
SK 3360.100	–	■	–	□	□	–	□	■	–	□	□	–	–	□	–	□	□	–	□	□	□	–	■	–	■	–	–	–
SK 3360.250	–	■	–	□	□	–	□	■	–	□	□	–	–	□	–	□	□	–	□	□	□	–	■	–	■	–	–	–
SK 3360.400	–	■	–	□	□	–	□	■	–	□	□	–	–	□	–	□	□	–	□	□	□	–	■	–	■	–	–	–
Recooling systems in floor-standing enclosure and industrial enclosure																												
SK 3336.100	–	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	–	–	–	■	□
SK 3336.200	–	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	–	–	–	■	□
SK 3336.300	–	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	–	–	–	■	□
SK 3336.500	–	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	–	–	–	■	□
SK 3336.600	–	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	–	–	–	■	□
SK 3336.650	–	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	–	–	–	■	□
SK 3336.700	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3336.710	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3336.720	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3336.730	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3336.740	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3336.750	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3339.100	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3339.200	–	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	■	□
SK 3339.300	■	–	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	–	□
SK 3339.400	■	–	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	–	□
SK 3339.500	■	–	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–	–	–	–	–	□
Recooling systems in a floor standing enclosure for oil																												
SK 3337.200	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.300	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.500	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.600	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.650	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.700	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.710	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.720	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.730	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.740	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
SK 3337.750	■	□	■	□	□	□	–	□	□	–	–	–	□	□	–	–	□	□	□	□	□	□	–	–	–	–	□	□
Recooling systems in the TS 8 Top enclosure system																												
SK 3335.060	–	■	–	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–
SK 3335.075	–	■	–	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–
SK 3335.100	–	■	–	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–
SK 3335.120	–	■	–	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–
SK 3335.150	–	■	–	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–
SK 3335.200	–	■	–	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–
SK 3335.250	–	■	–	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	–

■ Standard
□ Optional

Recooling systems

4.2 Options for recooling systems

	Water-cooled condenser	Radial fan	Hot gas bypass control in the cooling circuit	Harting connector	Special spray finish	Special voltage	Ambient temperature control	Control voltage 24 V DC	Liquid injection valve	Fault signal "Filter mat dirty"	Immersion depth 650 mm	Immersion depth 750 mm	Immersion depth 850 mm	Immersion depth 1000 mm
Immersible recooling systems														
SK 3338.020	□	□	□	□	□	□	□	■	□	□	□	□	□	□
SK 3338.040	□	□	□	□	□	□	□	■	□	□	□	□	□	□
SK 3338.060	□	□	□	□	□	□	□	■	□	□	□	□	□	□
SK 3338.080	□	□	□	□	□	□	□	■	□	□	□	□	□	□
SK 3338.100	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.120	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.140	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.160	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.180	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.200	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.220	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.220	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.240	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.260	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.280	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.300	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.320	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.340	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.360	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.500	□	□	□	□	□	□	□	■	□	□	□	□	□	□
SK 3338.520	□	□	□	□	□	□	□	■	□	□	□	□	□	□
SK 3338.540	□	□	□	□	□	□	□	■	□	□	□	□	□	□
SK 3338.560	□	□	□	□	□	□	□	■	□	□	□	□	□	□
SK 3338.580	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.600	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.620	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.640	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.660	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.680	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.700	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.720	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.740	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.760	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.780	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.800	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.800	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.820	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.840	□	□	□	□	□	□	□	□	□	□	□	□	□	□

■ Standard
□ Optional

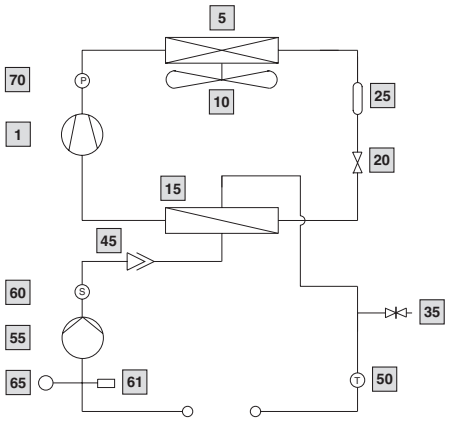
4.2 Recooling systems

Mini, cooling output 960/1490 W Page 608

Key to the adjacent drawing:

- 1 Compressor
- 5 Condenser
- 10 Condenser fan
- 15 Evaporator coil
- 20 Expansion valve
- 25 Filter dryer
- 35 Filling
- 45 Vent valve
- 50 Temperature sensor
- 55 Pump
- 60 Flow monitor
- 61 Overpressure valve
- 65 Pressure relief valve
- 70 High-pressure switch

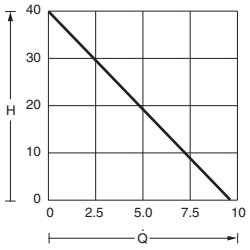
Layout diagram



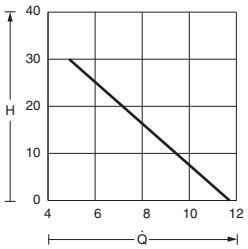
Note:
With a lockable external cooling cycle, a bypass (overpressure valve) should be provided in the external water pipes.

Characteristic curves of pump
Model No. SK
3318.600/3318.610/
3319.600/3319.610

50 Hz



60 Hz



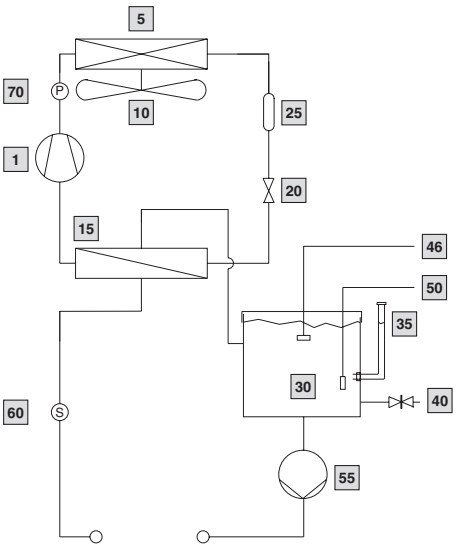
H = Delivery head H [m]
Q̇ = Delivery flow Q [l/min]

Mini, cooling output 3000/4500 W Page 609

Key to the adjacent drawing:

- 1 Compressor
- 5 Condenser
- 10 Condenser fan
- 15 Evaporator coil
- 20 Expansion valve
- 25 Filter dryer
- 30 Tank
- 35 Filling
- 40 Tank drain
- 46 Water level switch, optional
- 50 Temperature sensor
- 55 Pump
- 60 Flow monitor
- 70 High-pressure switch

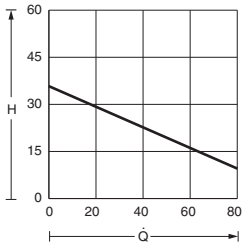
Layout diagram



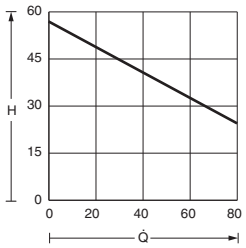
Note:
With a lockable external cooling cycle, a bypass (overpressure valve) should be provided in the external water pipes.

Characteristic curves of pump
Model No. SK
3320.600/3334.600

50 Hz



60 Hz



H = Delivery head H [m]
Q̇ = Delivery flow Q [l/min]

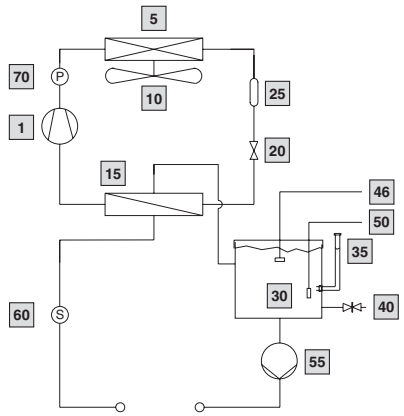
4.2 Recooling systems

Mini, for wall mounting, cooling output 1000/2500/4000 W Page 610

Key to the adjacent drawing:

- 1 Compressor
- 5 Condenser
- 10 Condenser fan
- 15 Evaporator coil
- 20 Expansion valve
- 25 Filter dryer
- 30 Tank
- 35 Filling
- 40 Tank drain
- 46 Water level switch, optional
- 50 Temperature sensor
- 55 Pump
- 60 Flow monitor
- 70 High-pressure switch

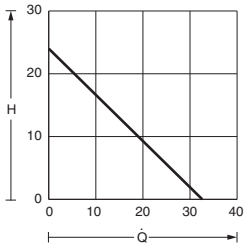
Layout diagram



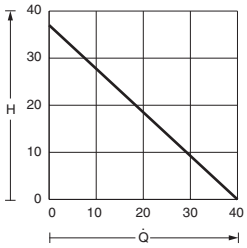
Note:
With a lockable external cooling cycle, a bypass (overpressure valve) should be provided in the external water pipes.

Characteristic curves of pump
Model No. SK 3360.100/3360.250/ 3360.400

50 Hz



60 Hz



H = Delivery head H [m]
Q̇ = Delivery flow Q [l/min]

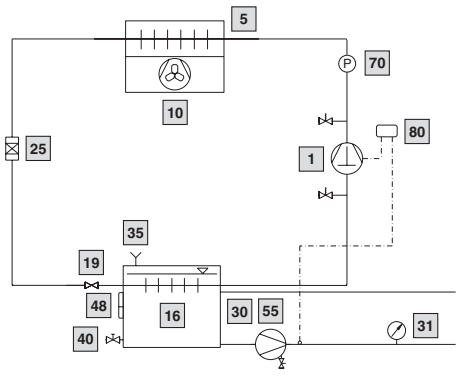
In floor-standing enclosure, cooling output 2100 to 7700 W Page 611

Key to the adjacent drawing:

- 1 Compressor
- 5 Condenser
- 10 Condenser fan
- 16 Multi-coil vaporiser
- 19 Capillary tube/expansion valve[1)]
- 25 Filter dryer
- 30 Tank
- 31 Manometer
- 35 Filling
- 40 Tank drain
- 48 Level indicator
- 55 Pump
- 70 High-pressure switch
- 80 Thermostat

[1)] from SK 3336.500

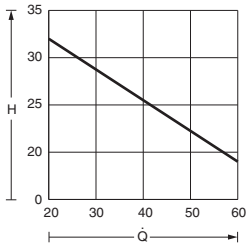
Layout diagram



Note:
With a lockable external cooling cycle, a bypass (overpressure valve) should be provided in the external water pipes.

Characteristic curves of pump
Model No. SK 3336.100/3336.200/3336.300/ 3336.500/3336.600/3336.650

50 Hz



H = Delivery head H [m]
Q̇ = Delivery flow Q [l/min]

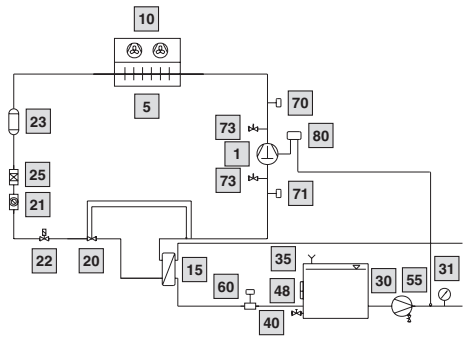
4.2 Recooling systems

In floor-standing enclosure, cooling output 10000 to 25200 W Page 612

Key to the adjacent drawing:

1 Compressor
5 Condenser
10 Condenser fan
15 Evaporator coil
20 Expansion valve
21 Inspection glass
22 Magnetic valve
23 Liquid collector
25 Filter dryer
30 Tank
31 Manometer
35 Filling
40 Tank drain
48 Level indicator
55 Pump
60 Flow monitor
70 High-pressure switch
71 Low-pressure switch
73 Shut-off valve
80 Thermostat

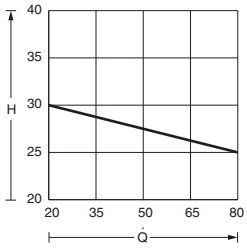
Layout diagram



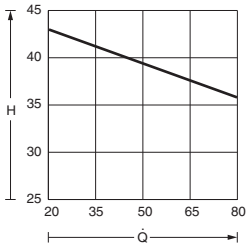
Note:
With a lockable external cooling cycle, a bypass (overpressure valve) should be provided in the external water pipes.

Characteristic curves of pump
Model No. SK
3336.700/3336.710/3336.720

50 Hz

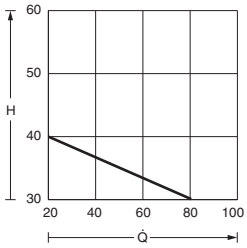


60 Hz

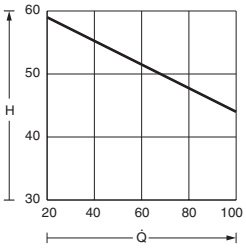


Model No. SK
3336.730/3336.740/3336.750

50 Hz



60 Hz



H = Delivery head H [m]
Q̇ = Delivery flow Q [l/min]

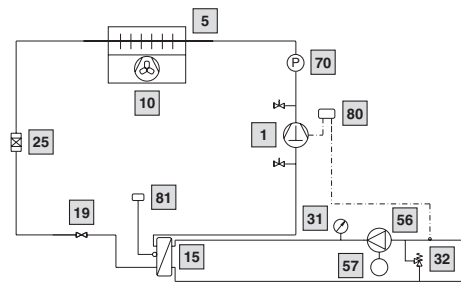
In floor-standing enclosure for oil, cooling output 2550 to 7900 W Page 613

Key to the adjacent drawing:

1 Compressor
5 Condenser
10 Condenser fan
15 Evaporator coil
19 Capillary tube/expansion valve[1)]
25 Filter dryer
31 Manometer
32 Automatic bypass valve
56 Oil pump
57 Motor for oil pump
70 High-pressure switch
80 Thermostat
81 Anti-frost thermostat

[1)] from SK 3337.500

Layout diagram



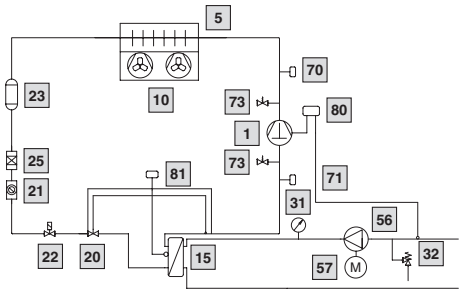
4.2 Recooling systems

In floor-standing enclosure for oil, cooling output 10600 to 26100 W Page 614

Key to the adjacent drawing:

- 1 Compressor
- 5 Condenser
- 10 Condenser fan
- 15 Evaporator coil
- 20 Expansion valve
- 21 Inspection glass
- 22 Magnetic valve
- 23 Liquid collector
- 25 Filter dryer
- 31 Manometer
- 32 Automatic bypass valve
- 56 Oil pump
- 57 Motor for oil pump
- 70 High-pressure switch
- 71 Low-pressure switch
- 73 Shut-off valve
- 80 Thermostat
- 81 Anti-frost thermostat

Layout diagram

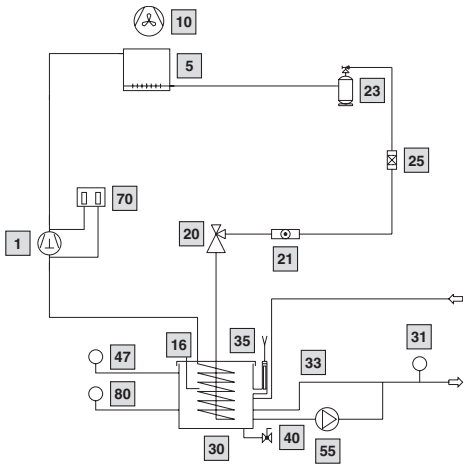


In TS 8 Top enclosure system, cooling output 6000/7500 W Page 615

Key to the adjacent drawing:

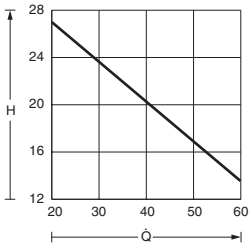
- 1 Compressor
- 5 Condenser
- 10 Condenser fan
- 16 Multi-coil vaporiser
- 20 Expansion valve
- 21 Inspection glass
- 23 Liquid collector
- 25 Filter dryer
- 30 Tank
- 31 Manometer
- 33 Fixed pump bypass
- 35 Filling
- 40 Tank drain
- 47 Level switch
- 55 Pump
- 70 High-pressure switch
- 80 Thermostat

Layout diagram



Characteristic curves of pump
Model No. SK 3335.060/3335.075

50 Hz



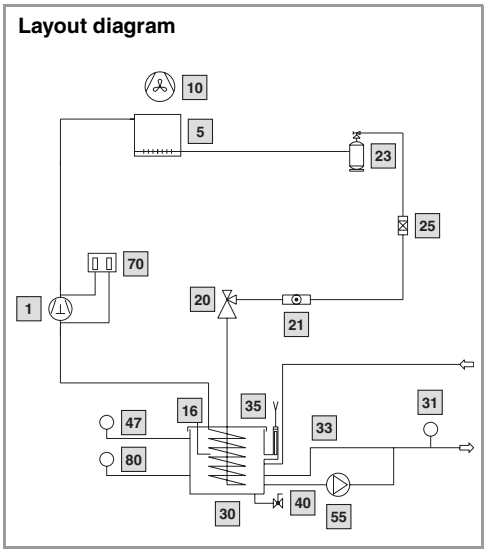
H = Delivery head H [m]
Q̇ = Delivery flow Q [l/min]

In TS 8 Top enclosure system, cooling output 10000 to 25000 W Page 616

Key to the adjacent drawing:

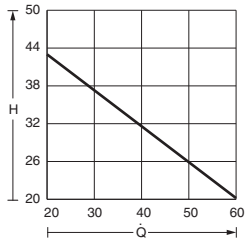
- 1 Compressor
- 5 Condenser
- 10 Condenser fan
- 16 Multi-coil vaporiser
- 20 Expansion valve
- 21 Inspection glass
- 23 Liquid collector
- 25 Filter dryer
- 30 Tank
- 31 Manometer
- 33 Fixed pump bypass
- 35 Filling
- 40 Tank drain
- 47 Level switch
- 55 Pump
- 70 High-pressure switch
- 80 Thermostat

Layout diagram

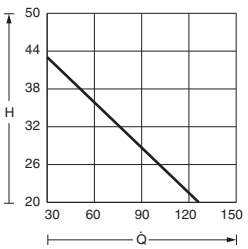


Characteristic curves of pump
Model No. SK

50 Hz 3335.100/3335.120/ 3335.150



50 Hz 3335.200/3335.250



H = Delivery head H [m]
Q̇ = Delivery flow Q [l/min]

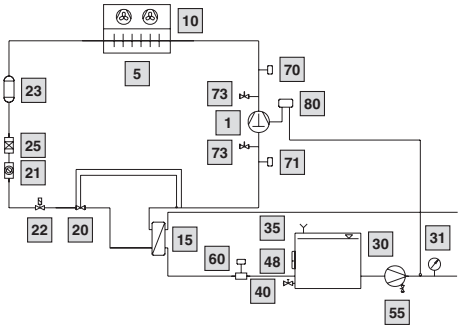
4.2 Recooling systems

In industrial enclosure, cooling output 32 kW to 172 kW Page 617

Key to the adjacent drawing:

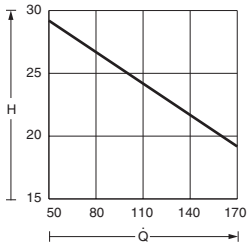
1 Compressor
5 Condenser
10 Condenser fan
15 Evaporator coil
20 Expansion valve
21 Inspection glass
22 Magnetic valve
23 Liquid collector
25 Filter dryer
30 Tank
31 Manometer
35 Filling
40 Tank drain
48 Level indicator
55 Pump
60 Flow monitor
70 High-pressure switch
71 Low-pressure switch
73 Shut-off valve
80 Thermostat

Layout diagram SK 3339.100/200[1)]

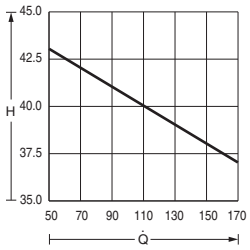


Characteristic curves of pump
Model No. SK

50 Hz 3339.100/3339.200

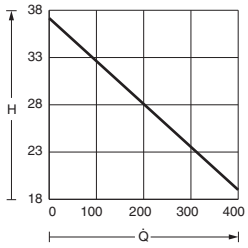


60 Hz 3339.100/3339.200

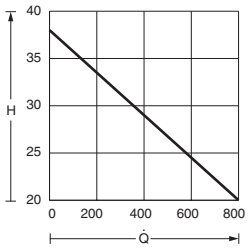


[1)] Layout diagram SK 3339.300 – .500 available on request.

50 Hz 3339.300/3339.400



50 Hz 3339.500



H = Delivery head H [m]
Q̇ = Delivery flow Q [l/min]

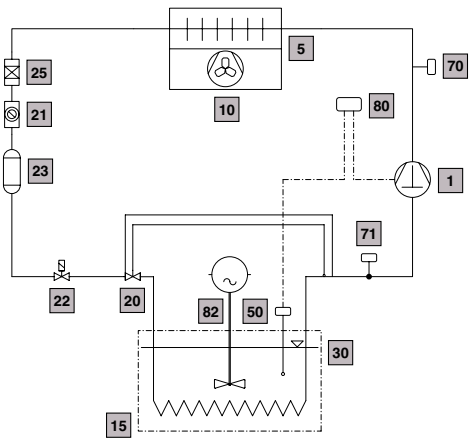
4.2 Immersible recooling systems

Useful cooling output 2400 to 77900 W Page 618 – 623

Key to the adjacent drawing:

1 Compressor
5 Condenser
10 Condenser fan
15 Evaporator coil
20 Expansion valve
21 Inspection glass
22 Magnetic valve
23 Liquid collector
25 Filter dryer
30 Tank, to be supplied by the customer
50 Temperature sensor
70 High-pressure switch
71 Low-pressure switch
80 Thermostat
82 Stirrer

Layout diagram



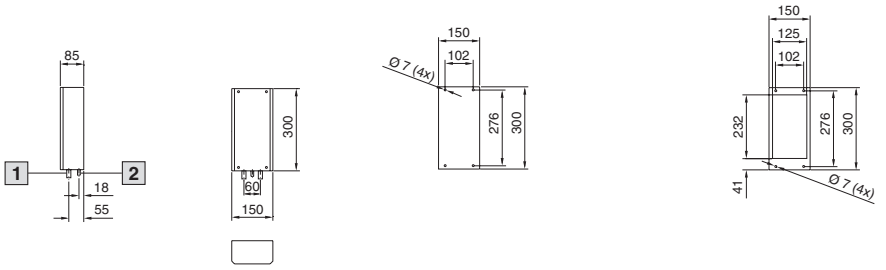
4.3 Air/water heat exchanger

Micro, wall-mounted, useful cooling output 300 W Page 626

Mounting holes for internal mounting

Mounting cutout for external mounting

1 Cooling water connection
2 Condensate discharge

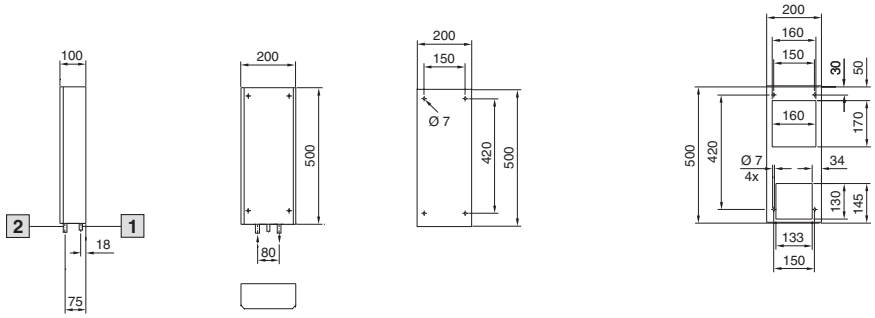


Wall mounting, useful cooling output 600 W Page 627

Mounting holes for internal mounting

Mounting cutout for external mounting

1 Condensate discharge 1/2″
2 Cooling water connection 1/2″

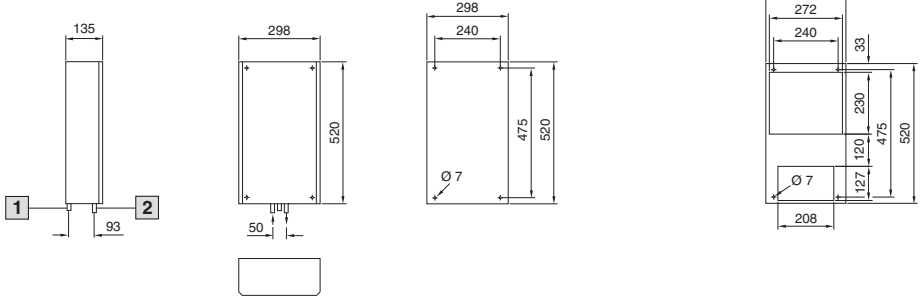


Wall mounting, useful cooling output 1000 W Page 627

Mounting holes for internal mounting

Mounting cutout for external mounting

1 Condensate discharge 1/2″
2 Cooling water connection 1/2″



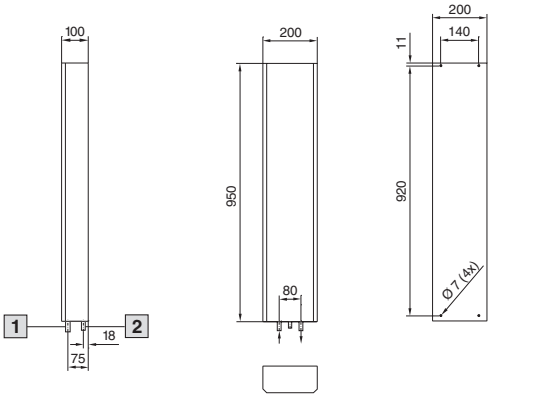
4.3 Air/water heat exchanger

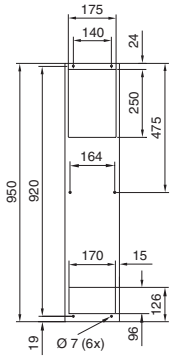
Wall mounting, useful cooling output 1250 W Page 628

Mounting holes
for internal mounting

Mounting cutout
for external mounting

1 Condensate discharge 1/2″
2 Cooling water connection 1/2″



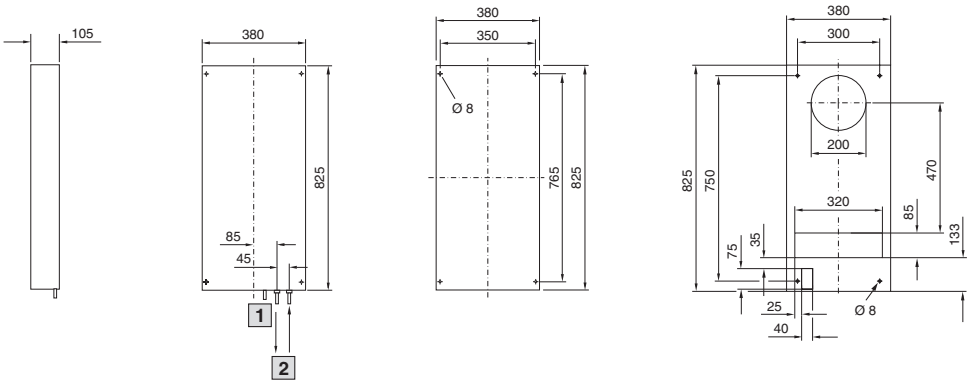


Wall mounting, useful cooling output 1540 W Page 628

Mounting holes
for internal mounting

Mounting cutout
for external mounting

1 Condensate discharge 1/2″
2 Cooling water connection 1/2″

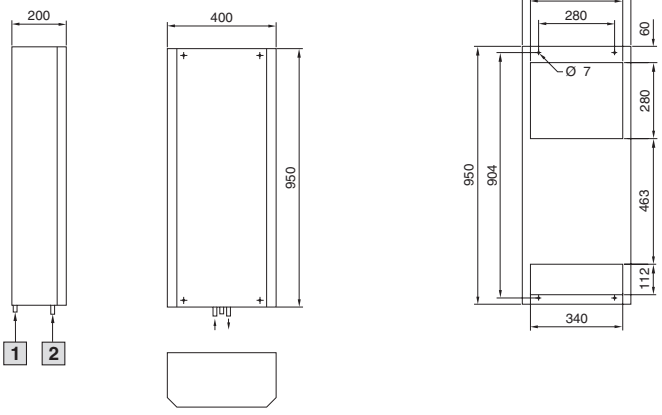


Wall mounting, useful cooling output 2250/3000 W Page 629

Mounting cutout
for external/internal mounting

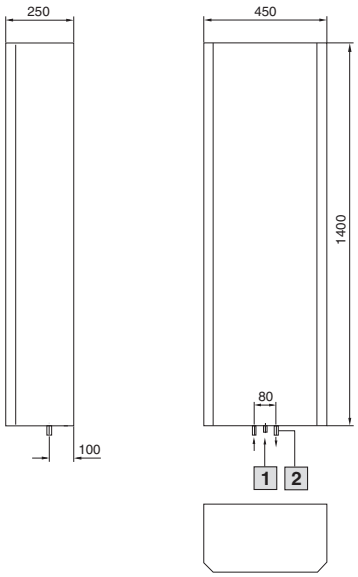
Only the 4 mounting holes, 7 mm diameter, are required for internal mounting.

1 Condensate discharge 1/2″
2 Cooling water connection 1/2″

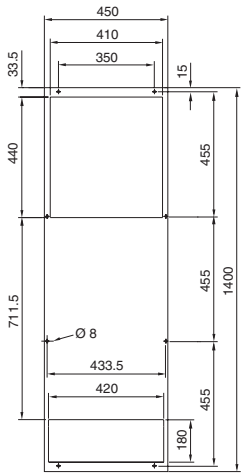


4.3 Air/water heat exchangers

Wall mounting, useful cooling output 4500 W Page 629

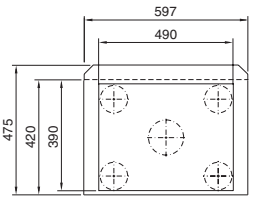


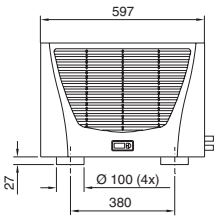
Mounting cutout
for external mounting

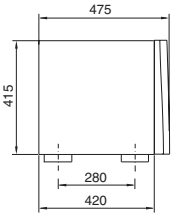


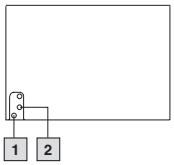
1 Condensate discharge 1/2″
2 Cooling water connection 1/2″

Roof-mounted, useful cooling output 2500 W Page 630
Roof-mounted, useful cooling output 4000 W Page 631





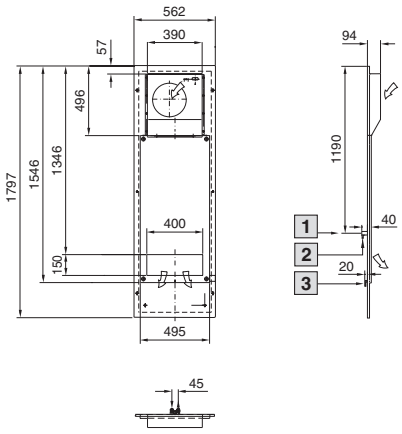




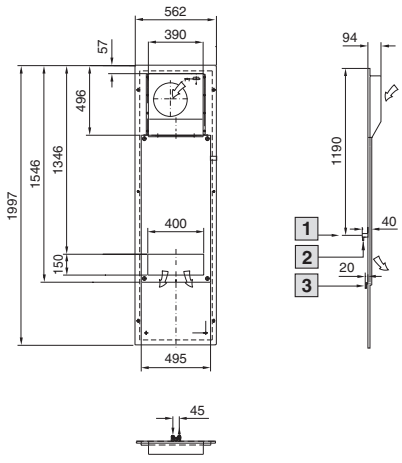
1 Condensate discharge 1/2″
2 Cooling water connection 1/2″

As a side panel for 600 mm deep TS 8 enclosures, useful cooling output 700 W Page 632

SK 3316.180



SK 3316.200

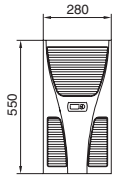


1 Water connections
2 Hose 10 mm diameter
3 Condensate discharge

4.3 TopTherm air/air heat exchanger

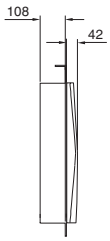
Wall mounted, specific thermal output 17.5 W/K Page 633

External mounting

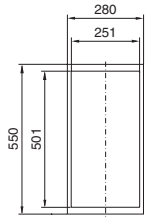




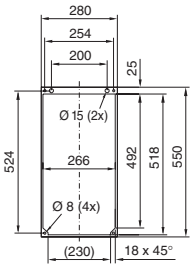
Internal mounting



Mounting cutout for external mounting

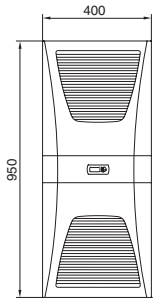


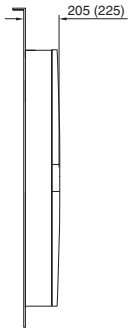
Mounting cutout for internal mounting



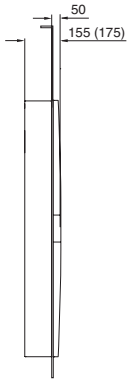
Wall mounting, specific thermal output 30 – 60 W/K Page 633

External mounting

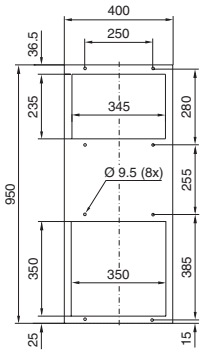




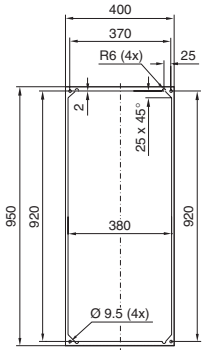
Internal mounting



Mounting cutout for external mounting



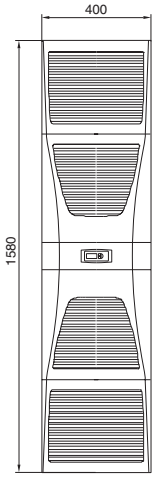
Mounting cutout for internal mounting



Dimensions in brackets for 45 W/K and 60 W/K

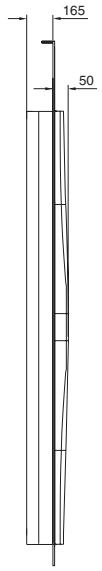
Wall mounted, specific thermal output 90 W/K Page 634

External mounting

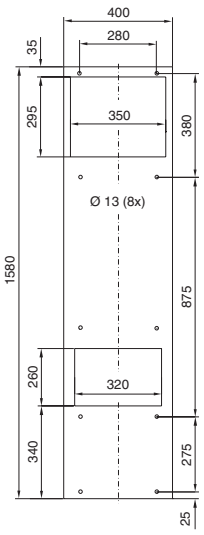




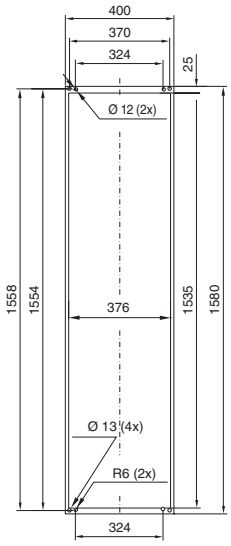
Internal mounting



Mounting cutout for external mounting



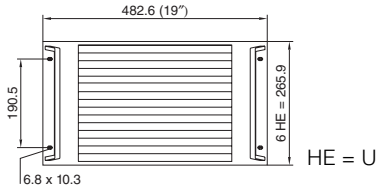
Mounting cutout for internal mounting



Rack-mounted climate control

4.5 Rack-mounted cooling unit

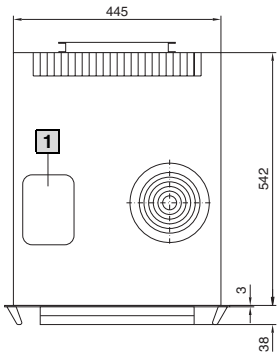
for 482.6 mm (19″), useful cooling output 1000 W Page 644



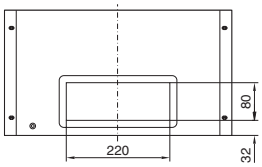
HE = U



Air duct, extendible to any length



View of the rear of the unit

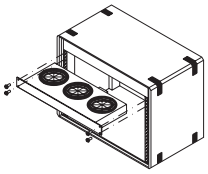


1 Service flap (thermostat)

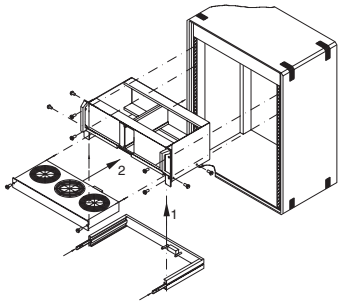
4.5 Rack-mounted fan

for 482.6 mm (19″), air throughput 320/480 m³/h Page 645

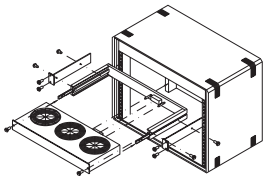
Rack-mounted fan mounted between a pair of 482.6 mm (19″) mounting angles



Vario rack-mounted fan mounted in subracks 84 HP

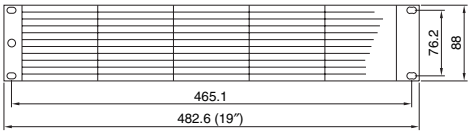


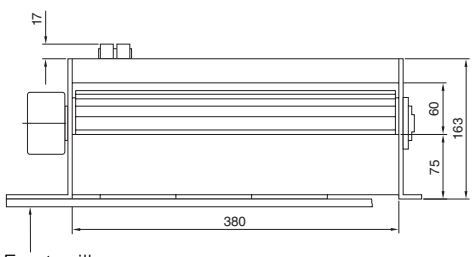
Vario rack-mounted fan mounted between a pair of 482.6 mm (19″) mounting angles



4.5 Centrifugal fan

Air throughput 320 m³/h Page 646



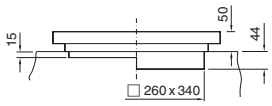


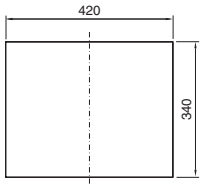
Front grille

4.5 Roof-mounted fan

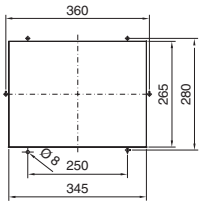
Air throughput 360 m³/h Page 647

Without fan With fan



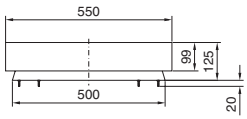


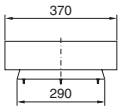
Mounting cutout



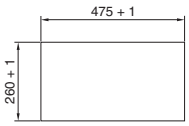
4.5 Roof-mounted fan and vent attachment

Air throughput (unimpeded air flow) 400/800 m³/h Page 647



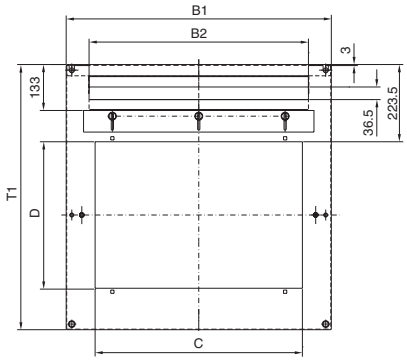


Mounting cutout



4.5 Fan roof, modular, two-piece for TS/FR(i)

Air throughput per fan (unimpeded air flow) 160/180 mm³/h at 50/60 Hz Page 651

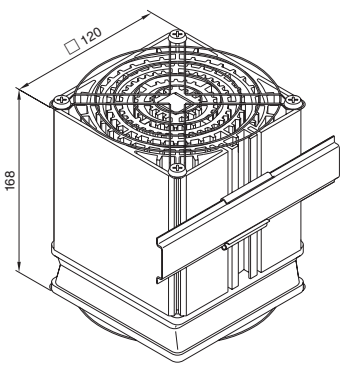


For enclosures		Cover plate		Roof dimensions			C	D	Model No. TS
W (B) mm	D (T) mm	Solid	Vented	W (B1) mm	W (B2) mm	D (T1) mm			
600	600	2102.180	2102.400	567.5	435	567.5	400	224	**7826.366**
600	800	2102.190	2102.410	567.5	435	767.5	400	424	**7826.368**
600	900	2102.190	2102.410	567.5	435	867.5	400	424	**7826.369**
600	1000	2102.190	2102.410	567.5	435	967.5	400	424	**7826.360**
800	600	7885.100	7885.200	767.5	635	567.5	600	224	**7826.486**
800	800	7886.100	7886.200	767.5	635	767.5	600	424	**7826.488**
800	900	7886.100	7886.200	767.5	635	867.5	600	424	**7826.489**
800	1000	7886.100	7886.200	767.5	635	967.5	600	424	**7826.480**

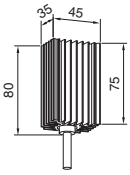
4.6 Enclosure heaters

Continuous thermal output 10 – 300 W Page 655

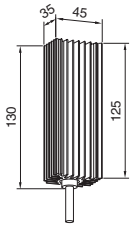
SK 3102.000
including fan



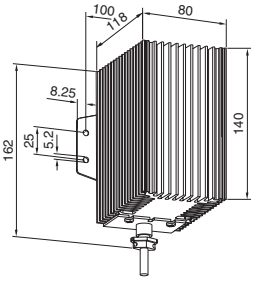
SK 3105.000



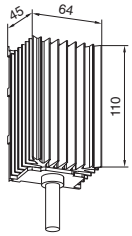
SK 3106.000



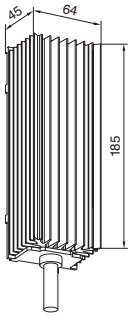
SK 3107.000



SK 3115.000



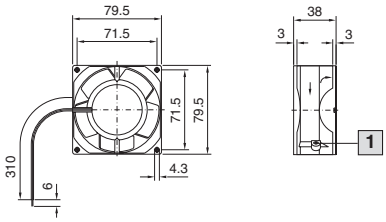
SK 3116.000



Accessories for system climate control

4.6 Axial fan

for heater SK 3107.000 Page 655

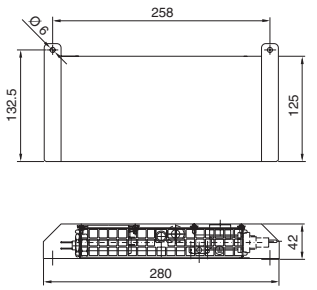


1 Earthing lug for M4 or 8 – 32 UNC

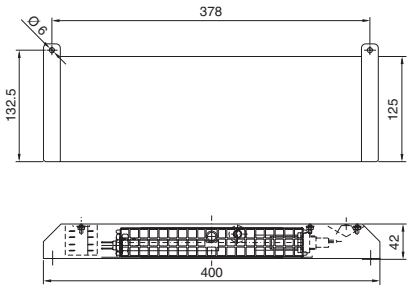
4.7 Electronic condensate evaporator

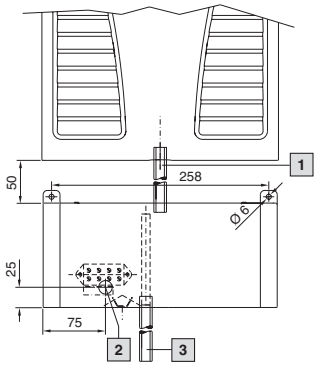
Page 665

SK 3301.560/.580



SK 3301.570/.590

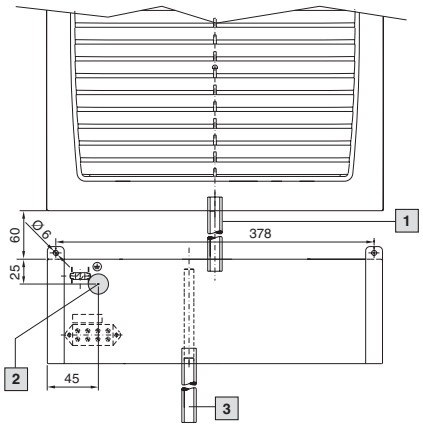




1 Condensate hose
SK 3301.608 for SK 3302.XXX
SK 3301.610 for SK 3303.XXX

2 Suggestion for position of cable entry

3 Hose
Length as required



1 Condensate hose SK 3301.612

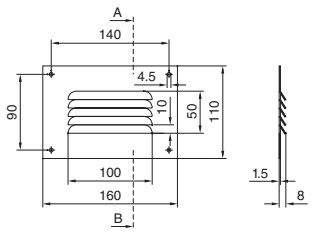
2 Suggestion for position of cable entry

3 Hose
Length as required

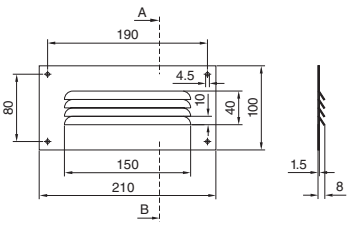
4.7 Integrated louvres

Page 666

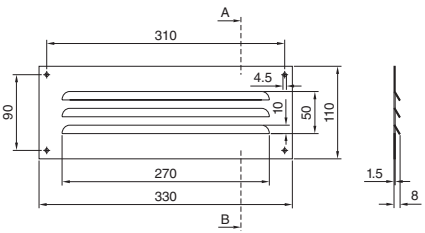
SK 2541.235



SK 2542.235



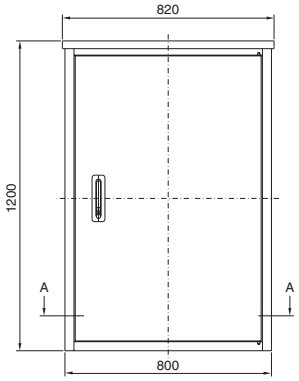
SK 2543.235



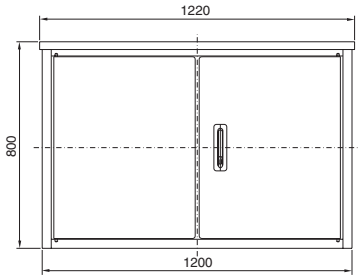
6.1 Compact enclosures, Outdoor

Page 820

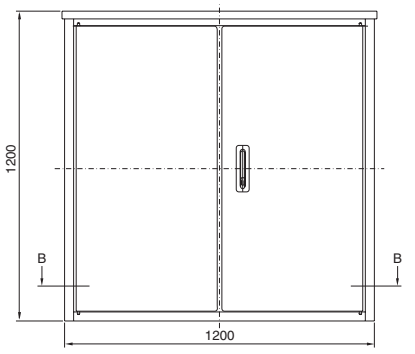
1620.000, 1620.100

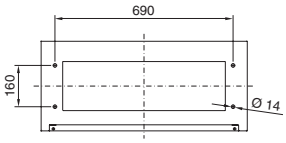


1621.000, 1621.100



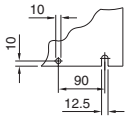
1622.000, 1622.100

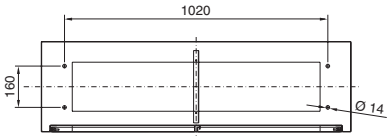




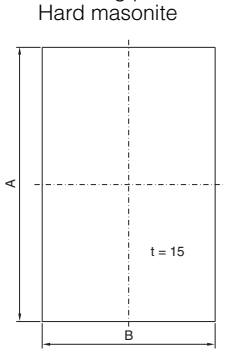
Mounting plate
Sheet steel

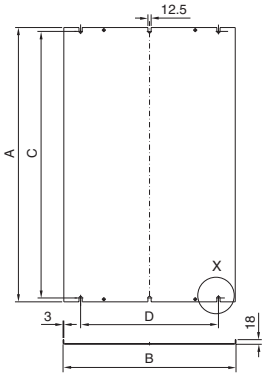
Detail X





Mounting plate
Hard masonite

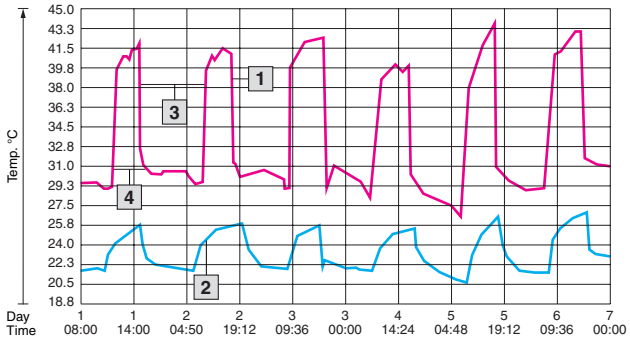




Model No.	A	B	C	D
1616.200	1133	670	1103	534
1616.210	733	1070	703	934
1616.220	1133	1070	1103	934
1616.230	1070 ±1	670 ±1	–	–
1616.240	1070 ±1	1070 ±1	–	–

6.2 Geothermal heat exchanger

Terravent Page 831



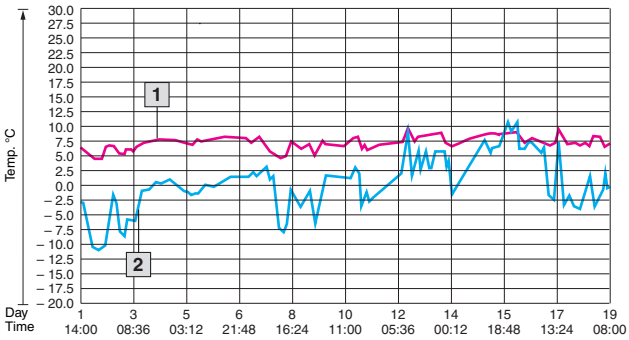
1 Internal temperature = Terravent inlet temperature

2 Terravent outlet temperature

3 Night-time operation

4 Day-time operation

Operating status – cooling:
1300 W heat loss from 8 am – 4 pm
800 W heat loss from 4 pm – 8 am
CS Outdoor modular enclosure, thermally insulated
Enclosure size: W x H x D = 800 x 1200 x 500 mm



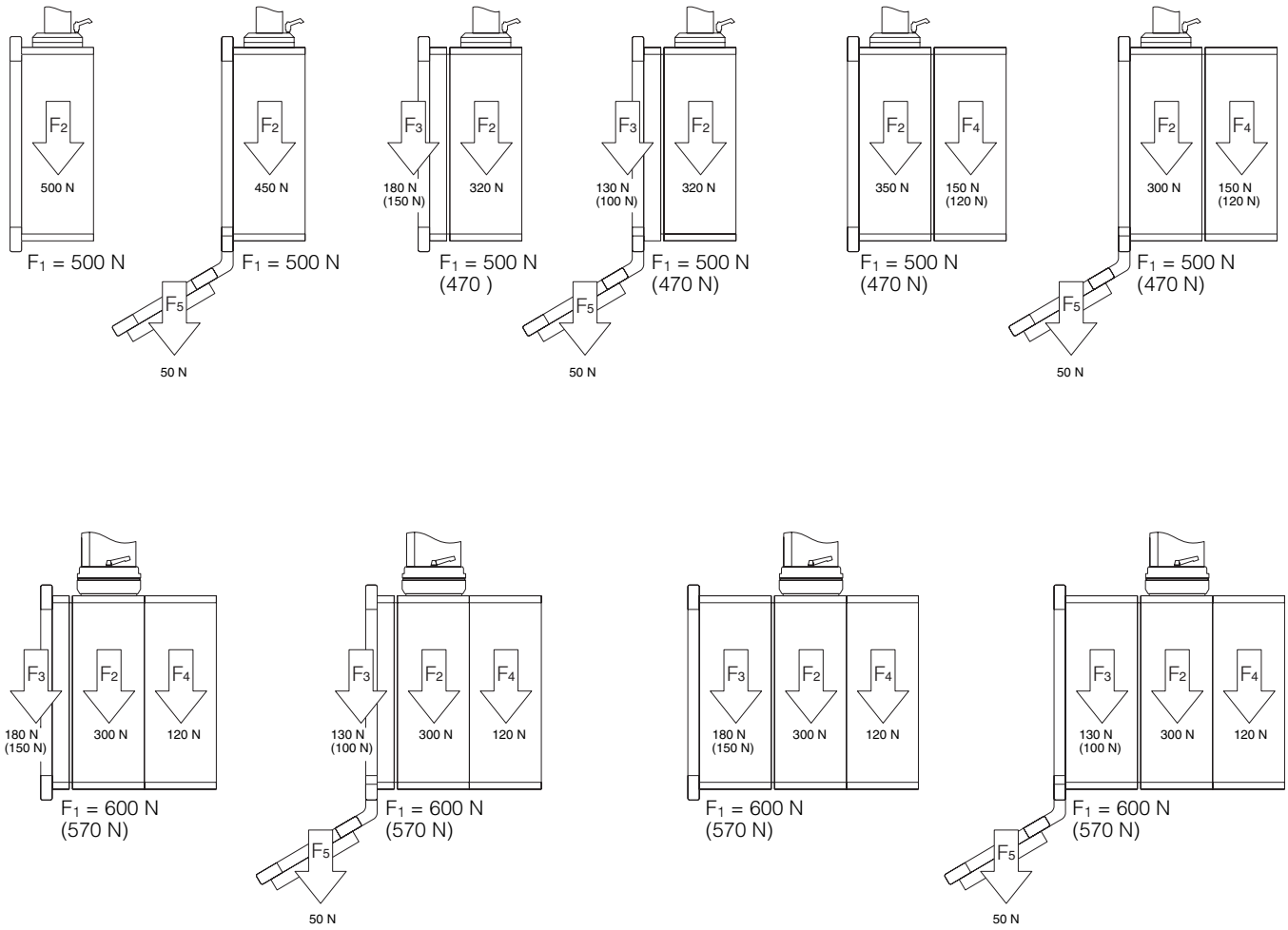
1 Internal temperature = Enclosure internal temperature

2 External temperature

Operating status – heating:
No heat loss installed in the enclosure
External temperature below –10°C
CS Outdoor modular enclosure, not thermally insulated
Enclosure size: W x H x D = 800 x 1200 x 500 mm

1.5 Command Panel VIP 6000

Load specifications for installed equipment Page 160



Permissible installed weight

F_1 = Total

F_2 = Enclosure part (with support arm connection)

F_3 = Front part

F_4 = Rear part

F_5 = Keyboard housing

Figures in brackets are for hinged version (see 3.1 installation depth, page 161).
Enclosures for larger weights available on request.

1002.600 to 2364.000

Model No.	Page
1000	
1002.600	273
1004.600	273
1005.600	273
1006.600	273
1007.600	273
1008.600	273
1009.600	273
1010.600	273
1012.600	273
1013.600	273
1014.600	273
1016.600	273
1017.600	273
1018.600	273
1019.600	273
1024.010	271
1024.020	271
1024.030	271
1024.040	271
1024.810	909
1024.820	909
1024.830	909
1024.910	909
1024.920	909
1024.930	909
1030.500	118
1031.500	118
1032.500	118
1033.500	118
1034.500	118
1035.500	118
1038.100	295
1038.500	119
1039.100	295
1039.500	118
1039.750	290
1045.100	295
1045.500	119
1050.100	295
1050.500	119
1050.900	114
1057.100	295
1057.500	119
1058.100	295
1058.500	119
1060.100	295
1060.500	119
1060.750	290
1073.100	295
1073.500	119
1076.100	295
1076.500	119
1077.100	295
1077.500	119
1090.100	295
1090.500	119
1100.100	295
1100.500	120
1101.010	121
1101.020	121
1101.030	121
1101.040	121
1101.800	898
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1101.920	873
1101.930	873
1101.940	873
1110.100	295
1110.500	120

Model No.	Page
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1130.100	295
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1350.500	119
1360.100	295
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1376.100	295
1376.500	119
1380.100	295
1380.500	118
1380.750	290
1400.600	124
1423.600	123
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1434.600	123
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1448.600	123
1449.600	123
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1490.000	885

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1567.700	909

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1605.510	112
1605.520	112
1606.510	112
1606.520	112
1609.510	114
1611.510	113
1616.110	898
1616.200	916
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1616.220	916
1616.230	916
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1616.310	842
1620.000	125, 820
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1647.500	122
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1652.500	122
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1931.200	1013
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1933.200	1013
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1937.200	1013
1939.200	1013

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1997.835	996, 998
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2008.235	1001
2010.235	1001
2011.235	1001
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2034.200	1002
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2094.300	1020
2094.500	1020
2099.500	1019
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2102.320	651
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2102.410	651
2102.490	651
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2232.000	1013
2233.000	1013
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2235.025	971
2235.035	971
2235.045	971
2235.055	971
2235.065	971
2235.075	971
2235.085	971
2235.135	970
2237.000	929
2238.000	929
2239.000	929
2240.000	1011
2243.605	730
2243.705	292
2246.605	730
2246.705	292
2249.605	730
2249.705	292
2250.000	1011
2252.605	730

Model No.	Page
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2256.705	292
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2259.605	731
2259.705	292
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2261.605	730
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2306.000	953
2307.000	888
2308.000	891
2309.000	927
2310.038	896
2310.076	896
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2310.120	896
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2313.750	927
2314.000	927
2315.000	927
2316.000	927
2317.000	927
2318.000	927
2319.000	927
2322.700	995
2323.235	997
2324.235	997
2325.000	895
2326.000	895
2327.000	895
2328.000	895
2331.700	995
2332.235	997
2333.235	997
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RAL colours

	Colour RAL	Designation
	3001	signal red
	5002	ultramarine blue
	5005	signal blue
	5018	turquoise blue
	7015	slate grey
	7022	umbra grey
	7024	graphite grey
	7030	stone grey
	7032	pebble grey
	7033	cement grey
	7035	pale grey
	7044	silky grey
	8019	grey brown
	9005	jet black
	9006	white aluminium
	9011	graphite black
	9017	traffic black

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