

Electronic Packaging Catalogue.

ELECTRONICS

The complete know-how.





Product diversity



Knowledge transfer



MPS expertise



Globalisation



Integrative thinking

Our customers' requirements are many and varied.



Our product range is specifically designed to accommodate them.

MPS systems
482.6 mm (19") components
Subracks
Instrument cases
Climate control
Control systems
Keyboard/drawer solutions
and much more



Rittal Electronic Systems offers you "complete know-how" in the electronic packaging sector, from various subrack systems, to a range of enclosure solutions, operating, monitoring and controlling solutions, power supply units, climate control solutions, a versatile selection of accessories, through to complete microcomputer packaging systems.

Once the framework of your enclosure solution has been defined, we are happy to accommodate all individual requirements. What kind of door handle would you like? With or without access control? Should the climate control solution be designed with a view to the future integration of cooling modules? Do you require a control system for monitoring temperature, humidity and access? Is expandability important? Can operation and monitoring be achieved in a space-saving solution on site? From the tiniest accessory through to fully assembled and wired solutions, all questions are answered to your complete satisfaction, using products which are fully coordinated and tailored to your individual requirements. This gives you the flexibility your customers demand when devising your solutions. That is why we talk of "complete know-how".





Product diversity



Knowledge transfer



MPS expertise



Globalisation



Integrative thinking

We seek every opportunity to enhance our knowledge so



that we can pass it on to our customers.

International trade fair presence
Involvement in standards
Consultative guidance
Seminar and training structures
and much more besides.



We consider expertise to be a matter of give and take. Through our involvement in the marketplace, we are constantly learning new things. We pass this knowledge on to our customers, by incorporating it into our products.

As well as being a showcase for manufacturers, trade fairs also provide an important forum for entire industries. We take advantage of this opportunity to exchange the very latest information for your benefit, by incorporating our new-found knowledge into our work with you. The subsequent findings are later channelled into future developments. In order to maintain very high standards of knowledge throughout the company, we are firm believers in the on-going advanced training of our staff. This ensures that our "complete know-how" is shared with our customers at meetings, training courses and seminars. As you can see, we don't just have the knowledge – we also know what to do with it.



Product diversity



Knowledge transfer



MPS expertise



Globalisation



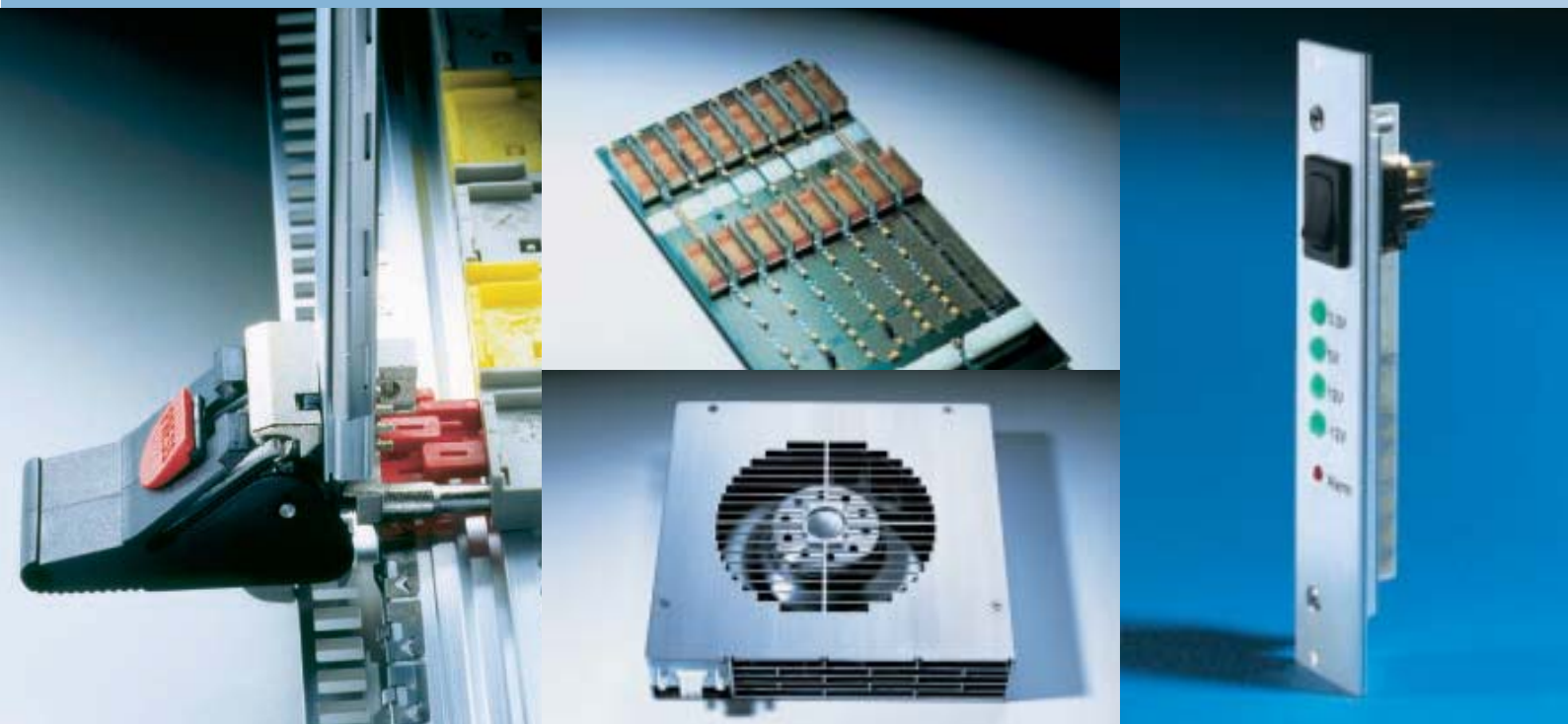
Integrative thinking

Our approach to MPS system solutions is 100 % customer-oriented.



In other words, fully assembled, wired and tested
– by us.

Complete solutions for:
Microcomputer packaging systems
“Plug & play”
CPCI expertise
Fibre-optic systems
Detail innovations
and much more besides.



There is a growing demand for “plug and play” solutions in the field of Microcomputer Packaging Systems (MPS). Rittal Electronic Systems has responded by integrating a diverse range of components into complete systems for telecommunications, medical technology and automation, to name but a few examples.



MPS complete solutions are another interpretation of our “complete know-how”. We design and integrate to your requirements. For example, we use user-friendly hot swap-components, high-speed fibre-optic systems and versatile CPCI backplanes. The latter reflect Rittal’s CPCI expertise, which is available together with a range of other solutions from your one-stop suppliers. To find out more, why not arrange a consultation with us to get the full picture?



Product diversity



Knowledge transfer



MPS expertise



Globalisation



Integrative thinking

Is your company a global player? If so, our paths are bound



to cross.

19 factories, 42 subsidiaries and more than 70 branch offices on 5 continents.
Global distribution of more than 8,000 standard products.
Active involvement in standardisation committees.
And much, much more besides.



As global players, we draw on many years of experience in international markets.
Our specific market knowledge benefits our customers and is helped by a finely-tuned distribution system.

Wherever in the world you choose to develop and implement solutions for yourself and your customers, you can be sure that Rittal is on hand to assist you.

This is particularly true in markets which are governed by electronics. Our own branch offices, production sites, and partner companies are available to support your activities. We are also actively involved in key standardisation committees. Our 19 factories supply 42 subsidiaries and more than 70 branch offices.

This extensive distribution network means that over 8,000 standard products are available to you anytime, anywhere. So you can rest assured that the right solution is always close at hand.





Product diversity



Knowledge transfer



MPS expertise



Globalisation



Integrative thinking

Rittal supplies solutions from a single source. But we draw on



many different sources of expertise.

All from Rittal.
Everything our customers need:
Electronic Systems
IT Solutions
CS Outdoor
Industrial PCs
and much, much more besides.



We have a large range of enclosures available for immediate delivery. But that's not all. Many years of involvement in a variety of market sectors have given us a wealth of expertise and enabled us to specialise. Our customers can benefit from this extensive know-how, in the form of integrated solutions. The principal concept behind our enclosures remains intact: Expertly designed protection with a wealth of ideas inside.

Whether you require a terminal with touchscreen monitor for a theatre foyer, an outdoor enclosure with climate control technology for the desert landscapes of Dubai, a vibration damping electronic rack for high-speed trains, or a fold-out monitor/keyboard drawer for tough industrial environments, our solutions unite the wide-ranging expertise of all our divisions. Why not put Rittal to the test?



- Industrial Enclosures
- Electronic Packaging
- System Climate Control
- Power Distribution
- IT Solutions
- Communication Systems



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System solutions at a high level.



Microcomputer systems.

Microcomputer systems

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Rittal supplies complete plug-and-play solutions for VME and CompactPCI applications at a high level (up to Level 4). The systems are supplied fully assembled, wired and tested, including power supply unit and backplane, to the customer's individual specifications.

Consideration is also given to aspects such as ESD and EMC protection, climate control and the coding of board type plug-in units. Customer satisfaction is guaranteed, thanks to competent advice at every stage of the process, from the initial consultation, to application engineering, through to prototype production. We also offer an extensive selection of products for industrial PCs based on the ATX standard, ranging from 482.6 mm (19") rack-mounted versions in 1, 2 and 4 U through to solutions for direct mounting on mounting plates.



Systems for the configuration of industrial computers to CompactPCI specification. The Slim-Box system shown here offers the option of installing two plug-in boards per U at the front and rear, and includes high-speed CPCI backplanes. Optionally available with H.110 bus.



Microcomputer systems based on tried-and-tested VMEbus technology, e.g. for horizontal or vertical installation of VMEbus boards and drives.



482.6 mm (19") rack-mounted system for the configuration of industrial PCs to the ATX standard. This version has a pull-out inner enclosure and electronics for automatic restart following a mains failure.

Overview of Rittal systems for CompactPCI

CPCI "Slim-Box"



1, 2, 3, 4 U/2, 4, 6, 8 slots
Model No. see page 20 – 23

Applications

Configuration of 482.6 mm (19") industrial computer systems to the CompactPCI specifications for

- Telecommunications
- Automation

Design features

- 482.6 mm (19") rack-mounted system for horizontal installation of computer boards at the front, and I/O boards at the rear
- 1 U, 2 U, 3 U, 4 U, 300 mm deep
- Standard cooling from left to right
- Sheet steel, spray-finished (black)
- Including backplane and fan
- Fully assembled, wired and tested
- Configuration for CPCI boards to CompactPCI Spec. 2.0



User benefits

- Horizontal installation of double Euroboards
- Maximum installation with minimal space requirements
- 2/4/6/8 slots at the front for 160 mm and at the rear for 80 mm boards
- Hot swap-compatible power supply units, optionally AC or DC
- EMC and ESD protection
- Fully assembled, wired and tested
- Integral cooling from left to right
- Complies with CompactPCI Spec. 2.0, IEC 60 297-3 to -5 and IEEE 1101.1/1101.10/1101.11

Ripac CPCI systems



3 U, 5 slots/4 U, 7 slots horizontal
Model No. see page 24/25

Applications

Configuration of 482.6 mm (19") industrial computer systems to CompactPCI specifications for

- Telecommunications
- Automation

Design features

- 482.6 mm (19") rack-mounted system for horizontal installation of double Euroboards
- 3 or 4 U, 405 mm deep
- Clear chromated aluminium
- Including backplane and power supply unit
- Fully assembled, wired and tested
- Horizontal installation space for double Euroboards: 5 or 7 slots
- Configuration for CPCI boards to CompactPCI Spec. 2.0



User benefits

- Horizontal installation of double Euroboards
- EMC and ESD protection
- Fully assembled, wired and tested
- Targeted air routing from front to rear
- Keyable guide rails
- Complies with CompactPCI Spec. 2.0, IEC 60 297-3 to -5 and IEEE 1101.1/1101.10

Ripac CPCI systems



4 U/7 U, 8 slots
Model No. see page 26/27

Applications

Configuration of 482.6 mm (19") industrial computer systems to CompactPCI specifications for

- Telecommunications
- Automation

Design features

- 482.6 mm (19") rack-mounted system for vertical installation of Euroboards/double Euroboards
- 4 or 7 U, 405 mm deep
- Clear chromated aluminium
- Including backplane and power supply unit
- Fully assembled, wired and tested
- Installation space for Euroboards/double Euroboards: 8 slots
- Configuration for CPCI boards to CompactPCI Spec. 2.0



User benefits

- Vertical installation of Euroboards/double Euroboards
- EMC and ESD protection
- Fully assembled, wired and tested
- Targeted air routing from bottom to top
- Keyable guide rails
- Complies with CompactPCI Spec. 2.0, IEC 60 297-3 to -5 and IEEE 1101.1/1101.10

Ripac CPCI systems



7 U, 8 slots

Model No. see page 28/29

Applications

Configuration of 482.6 mm (19") industrial computer systems to CompactPCI specifications for

- Telecommunications
- Automation

Design features

- 482.6 mm (19") rack-mounted system for vertical installation of Euroboards/ double Euroboards
- 7 U, 405 mm deep
- Clear chromated aluminium
- Including backplane and power supply unit
- Fully assembled, wired and tested
- Installation space for plug-in boards: 8 slots
- Configuration for CPCI boards to CompactPCI Spec. 2.0



User benefits

- Vertical installation of double Euroboards
- EMC and ESD protection
- Fully assembled, wired and tested
- Targeted air routing from front to rear
- Keyable guide rails
- Complies with CompactPCI Spec. 2.0, IEC 60 297-3 to -5 and IEEE 1101.1/ 1101.10

Ripac CPCI systems



9 U, 12 slots with RiCool and Rear I/O

Model No. see page 30/31

Applications

Configuration of 482.6 mm (19") industrial computer systems to CompactPCI specifications for

- Telecommunications
- Automation

Design features

- 482.6 mm (19") rack-mounted system for vertical installation of double Euroboards
- 9 U, 290.5 mm deep, at rear for I/O modules
- Clear chromated aluminium
- Including backplane, power supply unit and 2 radial fans
- Fully assembled, wired and tested
- Installation space for plug-in boards: 8 slots
- Configuration for CPCI boards to CompactPCI Spec. 2.0



User benefits

- Vertical installation of double Euroboards
- EMC and ESD protection
- Fully assembled, wired and tested
- Targeted air routing
- Rear I/O transition modules
- Keyable guide rails
- Effective ventilation with two RiCool blowers (204 m³/h)
- Complies with CompactPCI Spec. 2.0, IEC 60 297-3 to -5 and IEEE 1101.1/ 1101.10/1101.11

Ripac CPCI, "Compact-I"



Order information see page 32/33

Applications

Configuration of 482.6 mm (19") industrial computer systems to CompactPCI specifications for

- Telecommunications
- Automation
- Data communications
- Computer telephony

Design features

- 482.6 mm (19") rack-mounted system for vertical installation of double Euroboards
- Outer enclosure made from 1 mm sheet steel
- Pull-out interior enclosure made from aluminium
- Customer-specific configuration

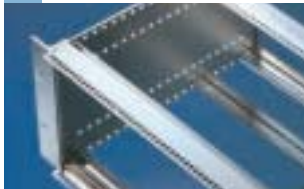
User benefits

- Customised system production
- Cost-effective production for large quantities

In detail: Rittal systems for CompactPCI

Based on the PCI bus architecture, the CompactPCI bus was developed as an industry-compatible version for tough industrial applications. It uses the tried-and-trusted single and double Euroboard format. The mechanical requirements conform to IEEE 1101.1/10/11, which means simple insertion and withdrawal of connectors with a large number of pins, an ESD concept, as well as coding of the board-type plug in units. Based on the Ripac subrack system, Rittal offers complete standardised systems, including power supply unit and backplane, fully assembled, wired and tested. In addition to the preassembled systems shown here, individual solutions can also be configured to suit specific requirements. We will be happy to assist you at every stage of the process, from consultancy and development right through to production.

1 Design features



Side panels and flanges of clear chromated aluminium.



10 mm pitch pattern of holes in the side panels facilitates individual system configuration.



Keyable red guide rails for defined positioning of the CPU.



Horizontal rails with 10 mm extension for injector/extractor handles.

2 EMC measures



Conductive surface finish of all system components.

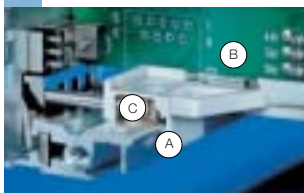


EMC gaskets of stainless steel make contact with the individual components.

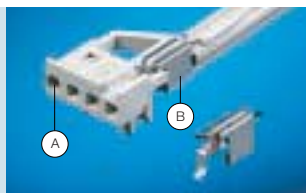


EMC front panels with EMC gaskets ensure reliable contact.

3 ESD protection



ESD protection
ESD pin (C) and ESD contact in the guide rail (A) to discharge static charges before making contact with the board type plug-in unit.

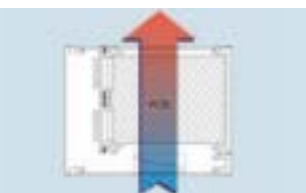


ESD contact
in the PCB guide (B) ensures permanent, direct discharge via the PCB.

4 Climate control



Maximum air flow due to the narrow design of the guide rails and horizontal rails.



Individual air flow management
ensures controlled air flow and optimum heat dissipation, optionally from bottom to top or from front to rear.



RiCool flat-pack blower
ensures optimum ventilation. 1 U, hot swap-compatible, 204 m³/h, including speed control and fault alarm signal.

Product information

Rittal systems for CompactPCI



- Systems for the configuration of industrial computers to CompactPCI specification
- Fully assembled, wired and tested, including backplane and power supply unit
- Individual ventilation concepts
- Conforms to IEC 60 297-3 to -5 and IEEE 1101.1/10/11, as well as CompactPCI Spec. 2.0 (PICMG)



5 System configuration



Backplanes
High-speed CompactPCI backplanes. Optionally with H.110 and connectors for bridges.



Power supply units
Various inputs/outputs, plug-in type or open frame.



Insertion/extraction handles
to reliably overcome high insertion/extraction forces.



Live insertion
Micro-switches in the insertion/extraction handles de-activate the board type plug-in unit before starting the disconnection process, and activate during insertion.

Order information

Slim-Box rack-mounted system, 1 U / 2 U for CPCI

		Model No. RP MPS system	Model No. RP MPS system	Page
U		1	2	
Depth		300 mm	300 mm	
For PCB depth				
- front		160 mm	160 mm	
- rear		80 mm	80 mm	
		3689.177	3689.178	
Mechanical supply includes				
Description	Material			
482.6 mm (19") rack-mounted enclosure with	Sheet steel,	1	1	
- front/rear slots for boards	spray finished	2	4	
- front slots for PSU		1	2	
Guide rails, keyable	Polycarbonate	10	20	
Electrical/electronic supply includes				
	Tech. specifications			
Monolithic backplane CPCI	64 bit/66 MHz and H.110	1	1	
Power input module with power switch, line filter and fuse		1	1	
DC fan, left	see opposite	3	2	
DC fan, right	see opposite	4	3	
Accessories				
AC power supply unit	175 W	3688.534	3688.534	116
AC power supply unit	200 W	3688.694	3688.694	116
AC power supply unit	250 W	3688.695	3688.695	116
EMC front panel	6 U, 4 HP	3685.186	3685.186	193
EMC front panel	6 U, 8 HP	3685.190	3685.190	193
EMC front panel	3 U, 4 HP	3685.178	3685.178	193
EMC front panel	3 U, 8 HP	3685.182	3685.182	193
H.110, 48 V connection cable		3688.697	3688.697	



**Technical specifications:**

- 1 or 2 U rack-mounted enclosure with 482.6 mm (19") mounting brackets (may be set back approximately 100 mm to the rear)
- 2/4 slots for CPCI boards at the front and rear
- Enclosure cooling from left to right
- EMC and ESD-compatible configuration
- Integral Monolithic CPCI backplane 64 bit/66 MHz with H.110 bus on J4
- Power input module
- Including fan:
 - for 1 U: 12 VDC, 21 m³/h,
 - for 2 U: 12 VDC, 74 m³/h
- Optional: Hot swap-compatible power supply units with current sharing for redundancy operation (2 U)
- Other versions available on request
- Conforms to IEEE 1101.1/10/11, CompactPCI Spec. 2.0



Power supply unit
175 W, hot swap-compatible,
Model No. see page 116/117.



Monolithic CPCI backplane
with H.110 bus (from 2 U).



Power input module

Order information

Slim-Box rack-mounted system, 3 U / 4 U for CPCI

		Model No. RP MPS system	Model No. RP MPS system	Page
U		3	4	
Depth		300 mm	300 mm	
For PCB depth				
- front		160 mm	160 mm	
- rear		80 mm	80 mm	
		3689.179	3689.180	
Mechanical supply includes				
Description	Material			
482.6 mm (19") rack-mounted enclosure with	Sheet steel,	1	1	
- front/rear slots for boards	spray finished	6	8	
- front slots for PSU		3	4	
Guide rails, keyable	Polycarbonate	30	40	
Electrical/electronic supply includes				
	Tech. specifications			
Monolithic backplane CPCI	64 bit/33 MHz and H.110	1	1	
Power input module with power switch, line filter and fuse		1	1	
DC fan, left	see opposite	1	4	
DC fan, right	see opposite	1 + 1	6	
Accessories				
AC power supply unit	175 W	3688.534	3688.534	116
AC power supply unit	200 W	3688.694	3688.694	116
AC power supply unit	250 W	3688.695	3688.695	116
EMC front panel	6 U, 4 HP	3685.186	3685.186	193
EMC front panel	6 U, 8 HP	3685.190	3685.190	193
EMC front panel	6 U, 12 HP	3685.192	3685.192	193
EMC front panel	6 U, 16 HP	3685.349	3685.349	193
EMC front panel	3 U, 4 HP	3685.178	3685.178	193
EMC front panel	3 U, 8 HP	3685.182	3685.182	193
EMC front panel	3 U, 12 HP	3685.184	3685.184	193
EMC front panel	3 U, 16 HP	3685.348	3685.348	193
H.110, 48 V connection cable		3688.697	3688.697	



**Technical specifications:**

- 3 or 4 U rack-mounted enclosure with 482.6 mm (19") mounting brackets (may be set back approximately 100 mm to the rear)
- 6/8 slots for CPCI boards at the front and rear
- Enclosure cooling from left to right
- EMC and ESD-compatible configuration
- Integral Monolithic CPCI backplane 64 bit/33 MHz with H.110 bus on J4
- Power input module
- Including fan:
 - for 3 U: 12 VDC, 195 m³/h or 74 m³/h,
 - for 4 U: 12 VDC, 74 m³/h
- Optional: Hot swap-compatible power supply units with current sharing for redundancy operation
- Other versions available on request
- Conforms to IEEE 1101.1/10/11, CompactPCI Spec. 2.0



Power supply units,
redundant,
Model No. see page 116/117.



Fan
in the side panel.



Monolithic CPCI backplane
with H.110 bus.

Order information

Ripac rack-mounted system for CPCI 3 U, 5 slots/4 U, 7 slots horizontal

			Model No. RP MPS system	Model No. RP MPS system	Page
U			3	4	
Side panel depth (mm)	Wiring chamber (t) mm	For PCB	For CPCI	For CPCI	
405	210	3 U x 160 mm	3687.717	3687.718	
Mechanical supply includes					
Item	Description	Material	Quantity		
①	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear chromated/stainless steel	–	1	
②	EMC covers, solid	1 mm aluminium	2	2	166
	Air block panel	Epoxy	1	1	173
	EMC shielding plate for fan	Aluminium, clear chromated	1	1	177
③	Horizontal mounting kit for 6 U PCBs	Aluminium, clear chromated	1	1	159
④	Trim frame for horizontal mounting kit	2.5 mm aluminium, clear chromated	1	1	159
⑤	Plastic guide rails, keyable	Polycarbonate UL 94-V0	8	12	161
	Plastic guide rails, keyable, red	Polycarbonate	2	2	161
⑥	EMC front panel 3 U/5 HP for switches/LED	2.5 mm aluminium, clear chromated	1	–	34
	EMC front panel 4 U/5 HP for switches/LED	2.5 mm aluminium, clear chromated	–	1	34
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					
		Tech. specifications			
⑧	DC fan	48 m³/h, per fan (UL, CSA, VDE) optional speed control	1	1	176
⑨	ATX power supply unit, PS/2 (3687.793)	300 W with switch connection cable	1	1	120
⑩	CPCI backplane	6.5 U, 5 slots	1	–	41
	CPCI backplane	6.5 U, 7 slots	–	1	41
	LED display module with on/off switch	For 3.3 V, + 5 V, ± 12 V, fan failure	1	1	34
⑪	Filter module for DC fan	Interference voltage filter	1	1	34
⑫	DC cable chamber		X	X	



Ripac rack-mounted system for CompactPCI 3 U, 5 slots horizontal



Ripac rack-mounted system for CompactPCI 4 U, 7 slots horizontal

Ripac rack-mounted system for CPCI 3 U, 5 slots/4 U, 7 slots horizontal

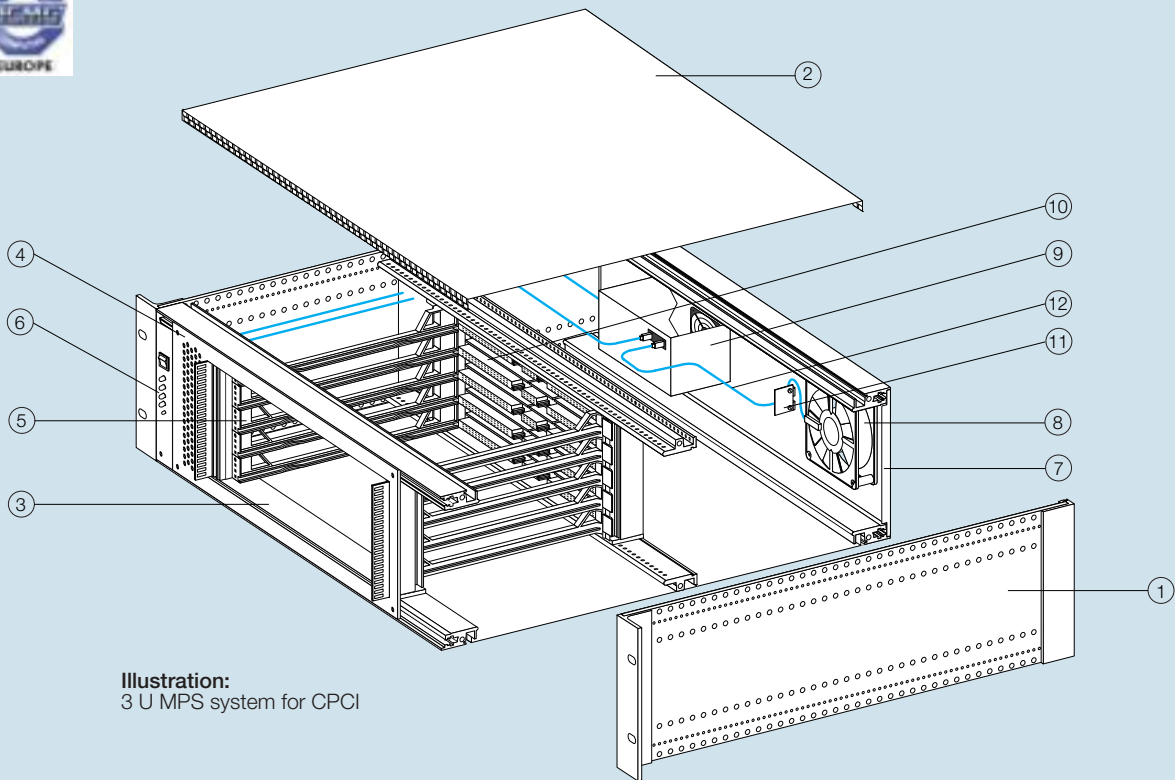


Illustration:
3 U MPS system for CPCI

Technical description:

Subrack with solid covers, 405 mm deep, for installation in 482.6 mm (19") enclosures or cases. Prepared to accommodate CPCI boards and drives. Complies with IEC 60297-3 to -5 and IEEE 1101.1/1101.10.

	3 U	4 U
For the horizontal installation of double Euroboards: 5 slots (20 HP)	●	
For the horizontal installation of double Euroboards: 7 slots (28 HP)		●
For the vertical installation of drives: 16 HP	●	●
Integral power supply unit 300 W	●	●
Including CPCI backplane, 6.5 U, 5 slots	●	
Including CPCI backplane, 6.5 U, 7 slots		●
Front horizontal rails with 10 mm extension	●	●
Keyable plastic guide rails	●	●
Red plastic guide rails for system slot	●	●
Cooling from front to rear	●	●
Forced ventilation with 1 DC fan, optional speed control	●	●
EMC protection, due to conductive surface finish on all components and EMC gaskets	●	●
Fully assembled, pre-wired and tested	●	●

Accessories:

- Backplanes
- Front panels/box type plug-in units
- Power supply units
- Air block panel for plastic guide rails
- PCB cover

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Type IVs injector/extractor
handles

ensure optimum leverage for connectors with a large number of pins. Including push-button for locking and unlocking of the board type plug-in unit.

Electronic service

Modifications or individual system solutions can be achieved within a short space of time. The Rittal system specialists will assist you with planning and configuration.



Backplanes

for CompactPCI including bridges and H.110 bus. Model No. see page 38 – 47

Order information

Ripac rack-mounted system for CPCI 4 U/7 U, 8 slots

			Model No. RP MPS system	Model No. RP MPS system	Page
U			4 (3 U + 1 U)	7 (6 U + 1 U)	
Side panel depth (mm)	Wiring chamber (t) mm	For PCB	For CPCI	For CPCI	
405	210	3 U/6 U x 160 mm	3687.719	3687.720	
Mechanical supply includes					
Item	Description	Material	Quantity		
①	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear chromated/ stainless steel	1	1	
②	EMC covers, vented	Aluminium, unplated	2	2	166
③	Finger guard	Polyamide	3	3	177
④	Fan mounting plate	1 mm aluminium, anodised	1	1	172
⑤	Plastic guide rails, keyable	Polycarbonate UL 94-V0	14	14	161
	Plastic guide rails, keyable, red	Polycarbonate	2	2	161
⑥	EMC front panel 1 U/84 HP, for switches and LED	2.5 mm aluminium, clear chromated	1	1	
	EMC front panel 4 U/84 HP, horizontally hinged with connector cutout	2.5 mm aluminium, clear chromated	1	–	
⑦	EMC front panel 7 U/84 HP, horizontally hinged with connector cutout	2.5 mm aluminium, clear chromated	–	1	
Electrical/electronic supply includes					
		Techn. specifications			
⑧	DC fan	140 m³/h, per fan (VDE, UL, CSA) optional speed control	3	3	176
⑨	Combined unit with integral filter and IEC socket	6 A (VDE, UL, CSA)	1	1	35
⑩	Open frame power supply unit	400 W, 3.3 V/25 A, 5 V/25 A, 12 V/8 A, -12 V/7 A (VDE, UL, CSA)	–	1	121
	ATX power supply (for 4 U) (3687.793)	300 W with switch connection cable	1	–	120
	CPCI backplane	3.5 U, 8 slots	1	–	40
⑪	CPCI backplane	6.5 U, 8 slots	–	1	41
	LED display module with on/off switch	For 3.3 V, + 5 V, ± 12 V, fan failure	1	–	34
⑫	DC cable harness		X	X	
⑬	AC cable harness		X	X	
⑭	Filter module for DC fan	Interference voltage filter	3	3	34



Ripac rack-mounted system for CompactPCI
4 U, 8 slots



Ripac rack-mounted system for CompactPCI
7 U, 8 slots

Ripac rack-mounted system for CPCI 4 U/7 U, 8 slots

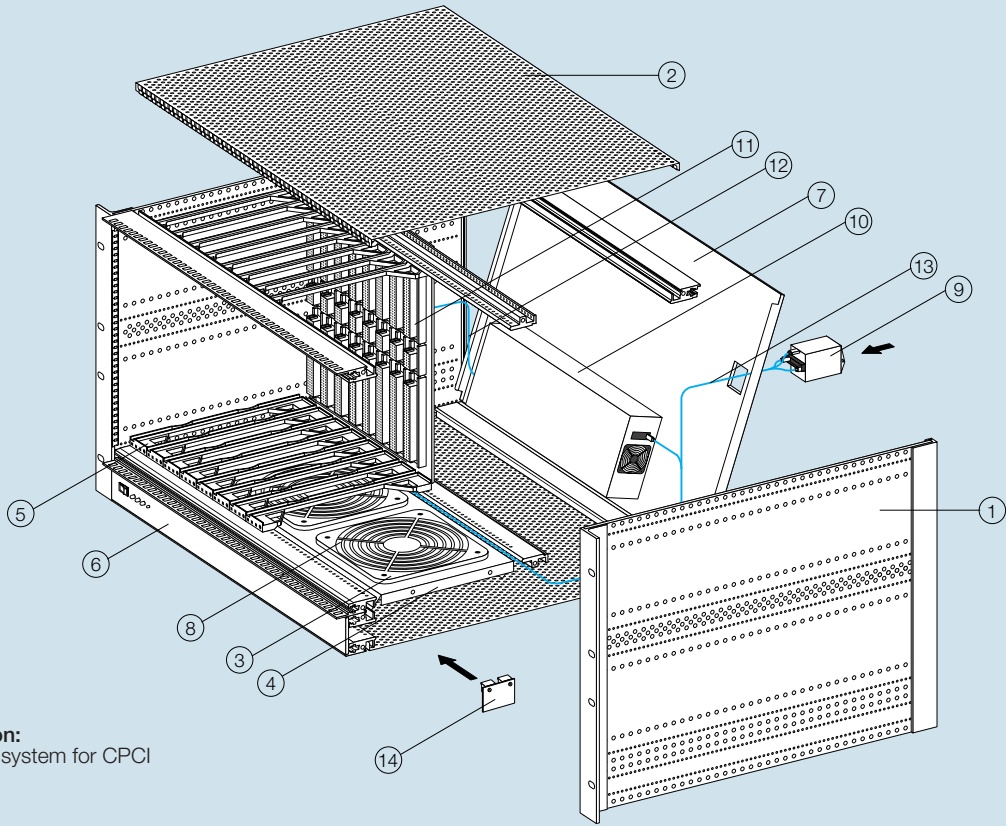


Illustration:
7 U MPS system for CPCI

Technical description:

Subrack, vented, 405 mm deep, for installation in 482.6 mm (19") enclosures or cases. Prepared to accommodate CPCI boards and drives. Complies with IEC 60297-3 to -5 and IEEE 1101.1/1101.10.

	4 U	7 U
Option of installing 8 double Euroboards (6 U x 160 mm)		•
Option of installing 8 Euroboards (3 U x 160 mm)	•	
For the installation of drives: 52 HP	•	•
Integral power supply unit 400 W		•
Integral power supply unit 300 W	•	
Including CPCI backplane, 3.5 U, 8 slots	•	
Including CPCI backplane, 6.5 U, 8 slots		•
Front horizontal rails with 10 mm extension for injector/extractor handles	•	•
Keyable plastic guide rails	•	•
Red plastic guide rails for system slot	•	•
Cooling from bottom to top	•	•
Forced ventilation with 3 DC fans	•	•
EMC protection, due to conductive surface finish on all components and EMC gaskets	•	•
Fully assembled, wired and tested	•	•

Accessories:

- Backplanes
- Front panels / box type plug-in units
- Power supply units
- Air block panel for plastic guide rails
- PCB covers

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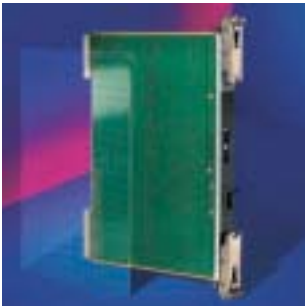


Electronic service

Modifications or individual system solutions can be achieved within a short space of time. Rittal system specialists will assist you with planning and configuration.



Sample application showing the diversity of Ripac system solutions.



PCB covers

for mechanical protection of the solder side.
Model No. see page 35

Order information

Ripac rack-mounted system for CPCI 7 U, 8 slots

			Model No. RP MPS system	Page
U			7 (6 + 2 x 1/2)	
Side panel depth (mm)	Wiring chamber (t) mm	For PCB	For CPCI	
405	210	6 U x 160 mm	3687.721	
Mechanical supply includes				
Item	Description	Material	Quantity	
①	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear chromated/ stainless steel		
②	Cover with 1/2 U edge fold and cutouts for LED/switches	1 mm aluminium, unplated	1	16
③	L-shape cover with 1/2 U edge fold, vented at front	1 mm aluminium, unplated	1	168
	EMC rear panel for fan	Aluminium, clear chromated	3	177
④	Air baffle plate	1 mm aluminium, anodised	1	173
⑤	Air block panel, 1/2 U	Epoxy	1	173
⑥	Plastic guide rails, keyable	Polycarbonate UL 94-V0	14	161
	Plastic guide rails, keyable, red	Polycarbonate UL 94-V0	2	161
⑦	EMC rear panel, horizontally hinged, 7 U, with fan and connector cutout	2.5 mm aluminium, clear chromated	1	
Electrical/electronic supply includes				
		Techn. specifications		
⑧	DC fan	140 m³/h per fan (UL, CSA, VDE) optional speed control	3	176
⑨	Combined unit with integral filter and IEC socket	6 A (VDE, UL, CSA)	1	35
⑩	Open frame power supply unit	400 W, 3.3 V/25 A, 5 V/25 A, 12 V/8 A, – 12 V/7 A (VDE, UL, CSA)	1	121
⑪	CPCI backplane	6.5 U, 8 slots	1	41
	LED display module with on/off switch	For 3.3 V, +5 V, ±12 V, fan failure	1	34
⑫	Filter module for DC fan	Interference voltage filter	3	34
⑬	AC cable harness		X	
⑭	DC cable harness		X	



Ripac rack-mounted system for CompactPCI
7 U (6 + 2 x 1/2), 8 slots

Ripac rack-mounted system for CPCI 7 U, 8 slots

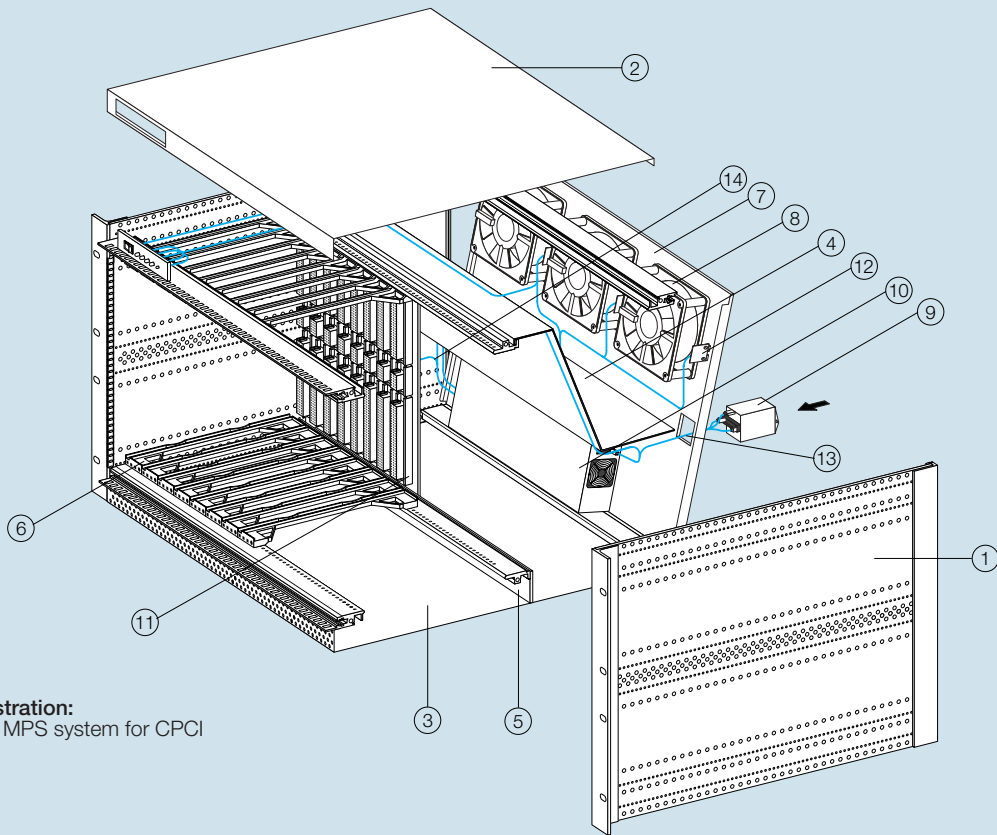


Illustration:
7 U MPS system for CPCI

Technical description:

Subrack, 405 mm deep, for installation in 482.6 mm (19") enclosures or cases. Prepared to accommodate CPCI boards and drives. Complies with IEC 60297-3 to -5 and IEEE 1101.1/1101.10.

	7 U
Option of installing 8 double Euroboards (6 U x 160 mm)	●
For the installation of drives: 52 HP	●
Integral power supply unit 400 W	●
Integral CPCI backplane, 6.5 U, 8 slots	●
Front horizontal rails with 10 mm extension for injector/extractor handles	●
Keyable plastic guide rails	●
Red plastic guide rails for system slot	●
Cooling from front to rear	●
Forced ventilation with 3 DC fans	●
EMC protection, due to conductive surface finishes on all components as well as all-round EMC gaskets	●

Accessories:

- Backplanes
- Front panels / box type plug-in units
- Power supply units
- Air block panel for plastic guide rails
- PCB covers

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Type VII handle – telecom
Specifically for use in telecommunications applications. Metal version also available.
Model No. see page 187

Electronic service

Modifications or individual system solutions can be achieved within a short space of time. Rittal system specialists will assist you with planning and configuration.



Sample application showing the diversity of Ripac system solutions.

Order information

Ripac rack-mounted system for CPCI 9 U, 8 slots, with RiCool radial fan

			Model No. RP MPS system	Page
U			9 (6 + 2 x 1 1/2)	
Side panel depth (mm)	Wiring chamber (w) mm	For PCB	For CPCI	
290.50	85.5	6 U x 160 mm	3687.723	
Mechanical supply includes				
Item	Description	Material	Quantity	
①	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear chromated/stainless steel	1	
②	Covers	1 mm aluminium, clear chromated	2	166
⑤	EMC rear panel 6 U/28 HP + 8 HP	2.5 mm aluminium, clear chromated	1	
⑥	EMC contact strip	Aluminium, clear chromated	1	146
⑦	Plastic guide rails, keyable	Polycarbonate UL 94-V0	14	161
	Plastic guide rails, keyable, red	Polycarbonate	2	161
⑧	Plastic guide rails for transition modules	Polycarbonate UL 94-V0	–	161
	Plastic guide rails for power supply unit	Polycarbonate	2	161
⑨	Front panel 1 1/2 U/84 HP, horizontally hinged	2.5 mm aluminium, clear chromated	1	
⑩	Front panel 1 1/2 U/84 HP, vented, horizontally hinged, for switch/LED	2.5 mm aluminium, clear chromated	1	
⑪	EMC rear panel 1 1/2 U/84 HP, vented	2.5 mm aluminium, clear chromated	1	
⑫	EMC rear panel 1 1/2 U/84 HP with IEC connector cutout	2.5 mm aluminium, clear chromated	–	
⑬	Filter mat 84 HP, 160 mm, for slide-in fastening		1	
⑭	Mounting plate for RiCool	1 mm steel	1	
Electrical/electronic supply includes				
		Techn. specifications		
⑮	RiCool DC fan, may be pulled out individually (SK 3344.024), incl. fault alarm system, speed control	204 m³/h, 48 W	2	
⑯	Combined unit with integral filter and IEC socket	6 A (VDE, UL, CSA)	1	35
⑰	Power supply unit, plug type, 6 U/8 HP	350 W	1	116
	Backplane CPCI	6.5 U, 8 slots	1	41
	LED display module with on/off switch	For +3.3 V, +5 V, ±12 V, fan failure	1	34
⑱	Backplane CPCI power supply		1	
⑲	AC cable harness		X	
⑳	DC cable harness		X	



Ripac rack-mounted system for CompactPCI 9 U (6 + 2 x 1 1/2), 8 slots, with RiCool radial fan



Installation facility at rear for I/O transition module

Ripac rack-mounted system for CPCI 9 U, 8 slots, with RiCool radial fan

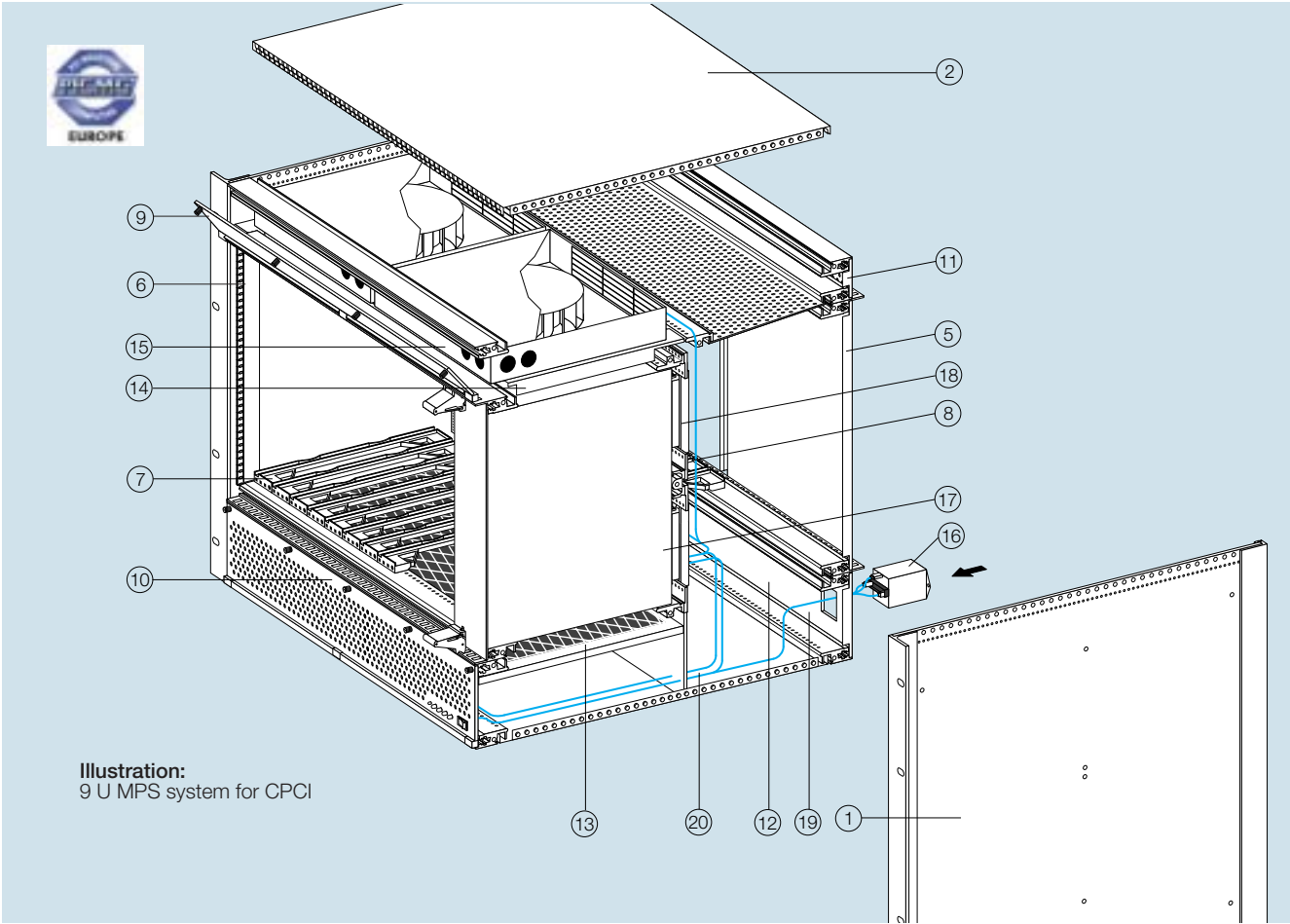


Illustration:
9 U MPS system for CPCI

Technical description:

Vented 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 60297-3 to -5 and IEEE 1101.1/1101.10.

	9 U
Option of installing 8 double Euroboards (6 U x 160 mm)	●
For the installation of drives or additional power supply unit: 52 HP	●
Integral power supply unit, plug-in type, 6 U/8 HP, 350 W	●
Integral CPCI backplane, 6.5 U, 8 slots	●
Option of installing 8 I/O modules at the rear	●
Front horizontal rails with 10 mm extension for injector/extractor handles	●
Keyable plastic guide rails	●
Red plastic guide rails for system slot	●
Cooling from front to rear	●
Forced ventilation with 2 RiCool radial fans, 12 V/48 W	●
EMC protection, due to conductive surface finishes on all components and EMC gaskets	●
Fully assembled, wired and tested	●

Accessories:

- Backplanes
- Front panels / box type plug-in units
- Power supply units
- Air block panel for plastic guide rails
- PCB covers

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Electronic service

Modifications or individual system solutions can be achieved within a short space of time. Rittal system specialists will assist you with planning and configuration.



RiCool hot swap fan
Maximum output of 204 m³/h with just 1 U installation space.



Sample application showing the diversity of Ripac system solutions.

Compact-I system

The Compact-I system was specifically developed for use in telecommunications, data communications and computer telephony applications. The design, based on a sheet steel outer enclosure with a pull-out aluminium subrack, facilitates cost-effective mass production. As you would expect, all the requirements of CompactPCI have been incorporated into the development. The basic variants shown here are merely a selection of typical application examples, and can be configured to suit the customer's specific requirements. The systems are supplied fully assembled and prewired including backplane and power supply unit.

Technical specification

- Outer enclosure made from 1 mm sheet steel, zinc-plated, passivated, optionally spray-finished
- Pull-out rack-mounted enclosure made from aluminium, clear chromated
- Optional installation of PCBs from the front or front/rear
- Basic versions for the installation of 6 or 9 U printed circuit boards
- EMC construction
- Fully assembled and prewired
- Optional depth-adjustable installation in the enclosure
- Customer-specific design

System configuration

- High-speed CPCI backplanes
 - Optionally with H.110 bus and bridges
 - Development of customer-specific backplanes
- Individual air flow management
- RiCool flat pack fan (204 m³/h) for heat losses ranging from 500 W to 1.5 kW
- Power supply units to PICMG specification 2.11
 - Plug-type
 - Switch mode
 - PS/2

Standards

Compliance with standards such as CPCI and IEEE is a key requirement for global use of the products. Thanks to its pioneering involvement in the principal standardisation committees, Rittal incorporates this knowledge in the development phase.

The Compact-I system conforms to the following standards:

- PICMG specification 2.0, "CPCI Core"
- PICMG specification 2.1, "CPCI Hot swap"
- PICMG specification 2.10, "CPCI Keying"
- PICMG specification 2.11, "CPCI Power Interface"
- IEEE standard 1101.10, Injector/extractor handles, EMC, ESD, coding and solder side covers
- IEEE standard 1101.11, I/O modules, protective earthing for I/O modules
- VITA 30, 2 mm connectors
- IEC standard 61076-4-101, metric 2 mm connectors
- IEC 60 297-3
- All plastics conform to UL 94-V0



Define your requirements, and we will work with you to develop your own individual configuration!





Examples of possible application solutions



13 U Compact-I system with horizontally installed drives.



10 U Compact-I system with horizontally installed drives.



12 U Compact-I system with vertically installed drives.



12 U Compact-I system with increased air space and power supply unit mounted in the base



12 U Compact-I system for 9 U printed circuit boards

Accessories

CPCI systems

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
- Insulation 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 230 V



Power is supplied via the connection cable.

Technical specifications:

230 V, 50/60 Hz, PVC cable, 3-pole with earthing-pin plug and IEC 320 cable coupler (non-heating appliances) with CEE22 contact protection

Supply includes:

1 connection cable 230 V, length 2.5 m

Design	Packs of	Model No. DK
D/F/B	1	7200.210
GB	1	7200.211
CH	1	7200.213

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

Legend for LEDs	Model No. RP 3 U	Model No. RP 4 U
+ 3.3 V + 5 V ± 12 V Alarm	3687.712	3687.714

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 a 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:

1 board
2 plug-in connections

Packs of	Model No. RP
1	3687.716

Combination unit for mains input



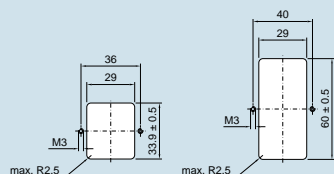
Combination module consisting of IEC 320 socket, line filter and 5 x 20 mm fuse holder to IEC 320 and IEC 950.

Technical specifications:

Metal enclosure for screw fastening
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

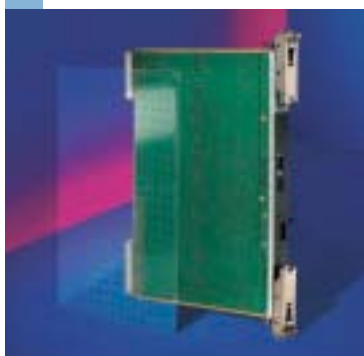
Supply includes:

Enclosure, with integrated IEC 320 socket, line filter



	Combination unit with switch Model No. RP	Combination unit without switch Model No. RP
	3687.709	3687.710
Mains voltage max.	250 VAC	250 VAC
Leakage current	2 x 0.32 mA	≤ 500µA
Max. current	6 A	6 A
Mounting holes	40 mm	36 mm
Install. 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 CPCI printed circuit boards

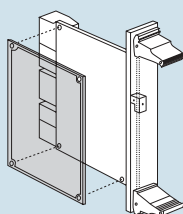


Covers for mechanical protection of the solder or second component side. Optionally available as a perforated or solid version. Fastening clips are required for mounting the perforated covers.

Material:

0.3 mm plastic, antistatic
*0.5 mm plastic UL 94-V0, antistatic

For PCBs	Packs of	perforated* Model No. RP	solid* Model No. RP	solid Model No. RP
3 U x 160 mm	1	3687.932	3686.572	3685.966
6 U x 160 mm	1	3687.934	3686.574	3685.967
6 U x 80 mm	1	3687.933	3686.573	3686.037
Fastening clips	100	3687.955	-	-



Other accessories



Backplanes	Page 36 – 47
Power supply units	Page 108 – 121
Partial front plates/handles	Page 180 – 195
Box type plug-in units	Page 196 – 201
Plastic guide rails	Page 160 – 165
Keys	Page 164
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Rack-mounted fans	Page 178 – 179

Overview of backplanes for CompactPCI

CompactPCI backplanes



3.5/6.5 U, 2 – 8 slots
Model No. see page 40 – 41

Applications

Installation in CompactPCI computer systems for power and signal distribution for plug-in boards and assemblies, e.g. for

- Telecommunications
- Automation

Design features

- Fibreglass epoxy to IEC 60 249 (type FR 4)
- 3.5 U and 6.5 U, 2 – 8 slots
- 132/264 Mbytes, 32 bit/64 bit
- 8 layer multi-layer
- System slot on right
- Power input via ATX-compatible connectors



User benefits

- High-speed backplane
- Extendible to a maximum of 21 slots via bridge modules
- Complies with PCI 2.1 and PICMG 2.0 (CompactPCI spec.)

CompactPCI backplanes



7 U with H.110
Model No. see page 42

Applications

Installation in CompactPCI computer systems for power and signal distribution for plug-in boards and assemblies, e.g. for

- Telecommunications
- Computer telephony
- Automation

Design features

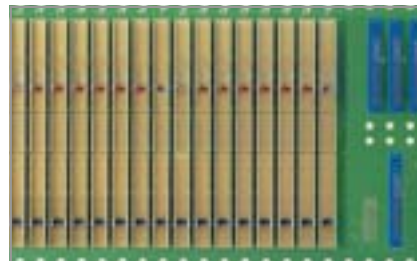
- Fibreglass epoxy to IEC 60 249 (type FR 4)
- 7 U, 3 – 8 slots
- 132/264 Mbytes, 32/64 bit (for CPCI)
- Including H.110 bus
- 8 layer multi-layer
- System slot on right
- Power input via ATX-compatible connectors



User benefits

- High-speed backplane
- Including H.110 bus
- Extendible to a maximum of 21 slots via bridge modules
- Hot swap-compatible
- Conforms to PCI 2.1, PICMG 2.0 (CompactPCI Spec.), PICMG 2.1 (hot swap), PICMG 2.5 (CCI Computer Telephony)

CompactPCI backplanes



7 U, Switch Fabric PICMG 2.16
Model No. see page 43

Applications

Installation in CompactPCI computer systems for power and signal distribution for plug-in boards and assemblies, e.g. for

- Telecommunications
- Computer telephony

Design features

- Fibreglass epoxy to IEC 60 249 (type FR 4)
- 6 U/7 U, 8, 16, 21 slots
- 264 Mbytes, 64 bit (for CPCI)
- Optionally including H.110 bus
- For plug-type CPCI power supply units

User benefits

- High-speed backplane
- H.110 bus optional
- Up to 21 slots
- Hot swap-compatible
- Supports Ethernet
- Conforms to PCI 2.1, PICMG 2.0 (CompactPCI Spec.), PICMG 2.1 (hot swap), PICMG 2.5 (CCI Computer Telephony), PICMG 2.16

CompactPCI bridge



**CPCI bridge/
low profile bridge**
Model No. see page 44

Applications

CPCI bridge to extend the bus by up to nx7 additional slots in each case. Connects the CPCI backplanes 3.5 and 6.5 U and handles all communications between the individual bus segments.

Design features

- Fibreglass epoxy to IEC 60 249 (type FR 4)
- May be connected to the rear of CPCI backplanes
- 64 bit DEC 21 15
- Low profile bridge for 32 and 64 bits



User benefits

- Bus extension by up to nx7 additional slots
- Supports the 64 bit PCI bus
- Complies with PCI 2.1, CPCI
- Low profile bridge without loss of slots

CPCI power supply backplane



3.5 U, 16 HP
Model No. see page 45

Applications

Backplane to accommodate a maximum of two power supply units up to 250 W in conjunction with CPCI backplane 3.5 U and 6.5 U.

Design features

- Fibreglass epoxy to IEC 60 249 (type FR 4)
- 3.5 U, 16 HP
- Accommodates a maximum of two power supply units (up to 250 W)
- Power input via ATX-compatible connectors

User benefits

- Accommodates a maximum of two power supply units (up to 250 W)
- The second power supply unit can be used for redundancy or to increase the current
- Complies with PICMG 2.0, PICMG 2.11

CPCI power supply backplane



6.5 U, 8 and 16 HP
Model No. see page 47

Applications

Backplanes to accommodate a maximum of two power supply units up to 500 W in conjunction with CPCI backplanes 3.5 U, 6.5 U and H.110.

Design features

- Fibreglass epoxy to IEC 60 249 (type FR 4)
- 6.5 U, 8 and 16 HP
- Accommodates one or two power supply units (up to 500 W)
- Power input via ATX-compatible connectors

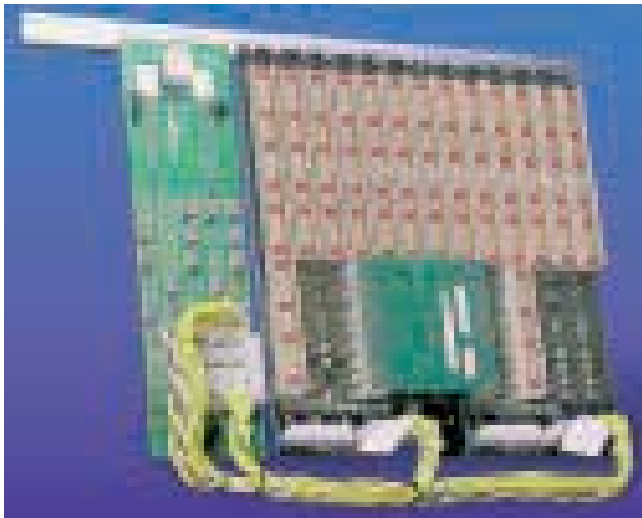


User benefits

- Accommodates one or two power supply units (up to 500 W)
- Complies with PICMG 2.0, PICMG 2.11

Technical Specifications

CompactPCI backplanes



Rittal offers an extensive range of powerful backplanes for CompactPCI.

- Modular construction facilitates expansion up to a maximum of 21 slots
- Connection to the individual segments via CPCI or H.110 bridge modules
- Power input 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, right (left on request)

Modular assembly

Versions RP13xx, RP14xx and RP44xx in a 32 or 64-bit design permit the assembly of CPCI systems ranging from 2 to 21 slots, due 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.

When 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, whilst the remaining segments will have 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 between two and eight 3 U or 6 U slots (32 or 64 bit).

Data transfer rate

132/264 Mbytes for 32/64 bit version
+5V, 33/66 MHz PCI bus interface, hot swap-compatible

264/512 Mbytes for 32/64 bit version
+ 3.3 V, 66 MHz PCI bus interface (max. 5 slots)

PCI bridges

Single backplanes do not require bridges. For each additional backplane, however, a bridge must be fitted at the rear.

Power supply

Power input via one or more ATX connectors.

Control connector

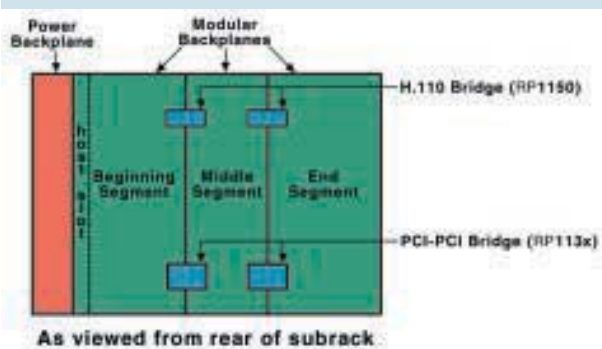
Each backplane has a control connector where voltages of +3.3, +5, +/–12 V can be picked off, e.g. for the connection of power LEDs.

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 specification)
- PICMG 2.1, (Hot swap specification)
- IEEE 1101.1, mechanical system
- IEEE 1101.10, mechanical system
- IEEE 1101.11, mechanical system



32-bit pin assignment

P2 CONNECTOR*

PIN	Z ⁽⁶⁾	A	B	C	D	E	F
22	GND	GA4 ⁽⁵⁾	GA3 ⁽⁵⁾	GA2 ⁽⁵⁾	GA1 ⁽⁵⁾	GA0 ⁽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

32-bit and 64-bit backplane

Technical specifications:

The CPCI specification defines 32-bit versions as well as 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 connector may optionally be populated at the rear using 16 mm long pins with an adaptor frame. Signals can be picked off at the rear, or I/O boards connected.

64-bit pin assignment

P2 CONNECTOR*

PIN	Z ⁽⁷⁾	A	B	C	D	E	F
22	GND	GA4 ⁽⁶⁾	GA3 ⁽⁶⁾	GA2 ⁽⁶⁾	GA1 ⁽⁶⁾	GA0 ⁽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

Signals in bold are only implemented in the system slot

¹⁾ "Early mate" pin, ²⁾ "Late mate" pin, ³⁾ +3.3V or +5V, ⁴⁾ Earthed with system slot, ⁵⁾ GND for 33 MHz backplane, bussed in 66 MHz systems, ⁶⁾ Each slot may have its own address code (see CPCI specifications), ⁷⁾ Not for daughterboards, ⁸⁾ Not for CPCI boards after Version 1.0

P1 CONNECTOR*

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(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 ⁽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

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.

*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.

P1 CONNECTOR*

PIN	Z ⁽⁷⁾	A	B	C	D	E	F
25	GND	AD(1)	5 V	V(I/O) ⁽³⁾	AD(0)	ACK64#	GND
24	GND	3.3 V	AD(4)	AD(3)	5 V	AD(2)	GND
23	GND	AD(7)	GND	3.3 V	AD(6)	AD(5)	GND
22	GND	3.3 V	AD(9)	AD(8)	M66EN ⁽⁴⁾⁽⁵⁾	C/BE(0)	GND
21	GND	AD(12)	GND	V(I/O) ⁽³⁾	AD(11)	AD(10)	GND
20	GND	3.3 V	AD(15)	AD(14)	GND	AD(13)	GND
19	GND	SERR#	GND	3.3 V	PAR	C/BE(1)#	GND
18	GND	3.3 V	SDONE	SBO#	GND	PERR#	GND
17	GND	DEVSEL#	GND	V(I/O) ⁽¹⁾⁽³⁾	STOP#	LOCK#	GND
16	GND	3.3 V	FRAME#	IRDY#	GND ⁽²⁾⁽³⁾	TRDY#	GND
15			KEY AREA		O		
12-14							
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)	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

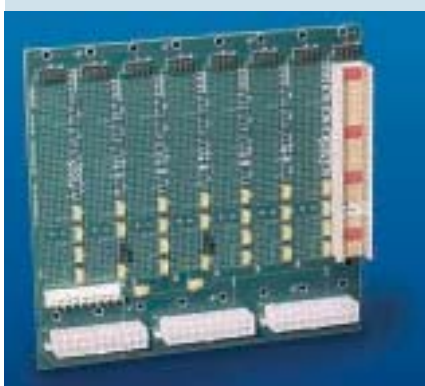
Order information

CompactPCI backplanes

Backplanes 3.5 U



Front view



Rear view

Number of layers	8
Layer structure	2 GND layers
PCB thickness	3.2 mm
Data transfer rate	132/264 Mbytes/32, 64 bit
Power supply	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	Right (left on 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
Connector	J1, J2 32 or 64 bit No rear I/O
Operating temperature range	0° – 70 °C
Relative humidity	90 %, no condensation
Geographical addressing	64 bit versions

Material:

Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:

1 backplane, fully populated

Slot	Design	Model No. RP 32 bit	Model No. RP 64 bit
2	SE	–	3687.864
3	SE	3687.865	3686.578
4	SE	3687.863	3686.576
5	SE	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

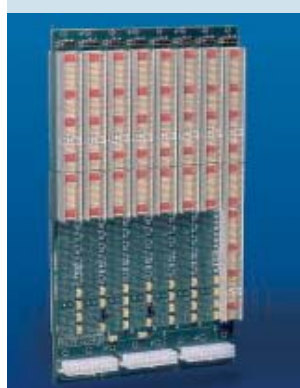
Accessories:

Terminator board, Model No. RP 3686.554
(only for 8 slots, for a board which is not fully populated)
CPCI/CPCI bridge, Model No. RP 3686.571, see page 44
(to connect individual segments)
Accessories for backplane mounting – see page 153

Backplanes 6.5 U



Front view



Rear view

Number of layers	8
Layer structure	2 GND layers
PCB thickness	3.2 mm
Data transfer rate	132/264 Mbytes/32, 64 bit
Power supply	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	Right (left on 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
Connector	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 %, no condensation
Geographical addressing	64 bit versions

Material:

Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:

1 backplane, fully populated

Standard backplanes

Slot	Design	Model No. RP 32 bit	Model No. RP 64 bit
2	SE	–	3687.871
3	SE	3686.581	3686.580
4	SE	3687.870	3686.579
5	SE	3687.869	3686.552
6	SBME	3687.868	3686.551
7	SBME	3687.867	3686.550
8	S	3687.866	3686.549

Accessories:

CPCI/CPCI bridge, Model No. RP 3686.571, see page 44

Accessories for backplane mounting, see page 153

Backplanes for low profile bridges

Slot	Design	Model No. RP 32 bit	Model No. RP 64 bit
3	SBE	–	3689.205
4	SBME	–	3689.206
5	SBE	–	3689.207
6	SBE	–	3689.208
7	SBE	–	3689.209

Accessories:

CPCI/CPCI low profile bridge, see page 44

Accessories for backplane mounting, see page 153

S = Stand alone

B = Beginning segment

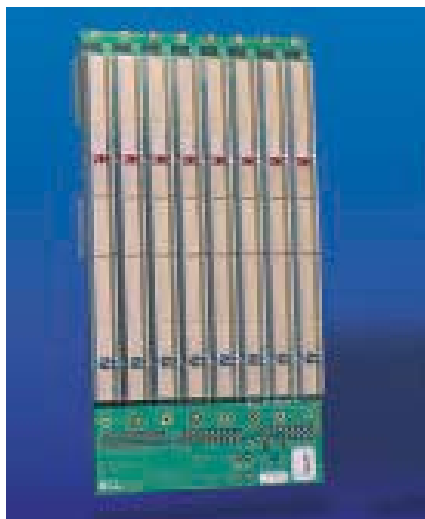
M = Middle segment

E = Ending segment

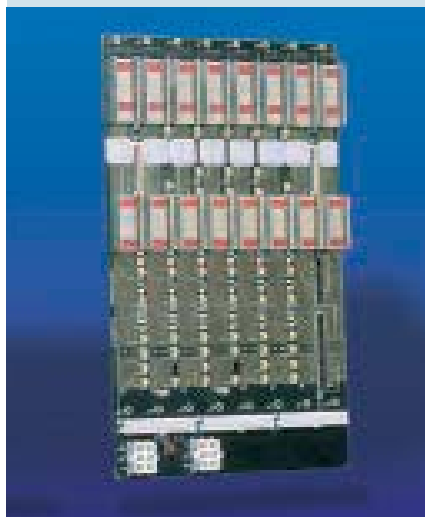
Order information

CompactPCI backplanes

Backplanes 7 U with H.110



Front view



Rear view

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 supply	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
Connector	J1, J2 64-bit J3 rear I/O J4 H.110
Operating temperature range	0 – 70 °C
Relative humidity	90 %, no condensation
Geographical addressing	yes

Material:

Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:

1 backplane, fully populated

Slot	Design	H.110 connected to system slot Model No. RP	H.110 not connected to system slot Model No. RP
3	SE	3688.508*	–
4	SE	3688.507*	–
5	SB	3687.875*	3688.506*
6	SBME	3687.874*	3688.505*
7	SBE	3687.873*	3688.504*
8	S	3687.872	9805.494

* May be extended with bridges

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

Accessories:

CPCI/CPCI bridge,
Model No. RP 3686.571
H.110/H.110 bridge,
Model No. RP 3687.880

Key to J4 pin assignment

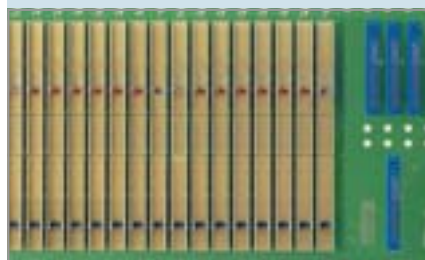
CT_name	= H.110 TDM bus signals
+ 5 V	= + 5 V power
+ 3.3 V	= + 3.3 V power
GND	= Logic Round
V (I/O)	= I/O cell power
FG	= Frame ground
RSVD	= reserved for future use
NP	= a pin and pad REQUIRED to be not populated to meet safety regulations
IN/C	= No connect required for safety agency insulation requirements
-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

J4 pin assignment

Pos.#	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							
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	+ 5V	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

Backplanes 7 U, Switch Fabric to PICMG 2.16

The "Switch Fabric" backplanes conform to PICMG specification 2.16. They support telecom applications and systems with a high level of availability in which CompactPCI is combined with Ethernet for high-speed applications.



Front

1	System (CPU) Card
2	Node Card
3	Node Card
4	Node Card
5	Node Card
6	Node Card
7	Node Card
8	Fabric Card A
9	System (CPU) Card
10	Node Card
11	Node Card
12	Node Card
13	Node Card
14	Node Card
15	Node Card
16	Fabric Card B
17	Blank
18	Power Supply 1
19	Power Supply 2
20	Power Supply 3
21	Blank

Rear

1	System RTC
2	Node RTC
3	Node RTC
4	Node RTC
5	Node RTC
6	Node RTC
7	Node RTC
8	Fabric A RTC
9	System RTC
10	Node RTC
11	Node RTC
12	Node RTC
13	Node RTC
14	Node RTC
15	Node RTC
16	Fabric B RTC
17	Alarm Card
18	PEM 1
19	PEM 2
20	
21	

Power supply	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 with 3686.396, 3689.186)
Distance between slots	4 HP
Operating temperature range	0 – 70 °C
Relative humidity	90 %, no condensation
Geographical addressing	yes

Technical specifications:

- 7 U, 84 HP/32 HP
- Conforms to PICMG 2.1, fully hot swap-compatible
- Selectable voltage V(I/O) (3.3 V or 5 V), provided it is configured for 33 MHz CompactPCI
- Integral Schottky diode bus terminator
- Prepared for up to four backplane stiffeners to prevent bending during card insertion
- H.110 CT bus conforms to specification PICMG 2.5 at all node slots
- Supports 8 HP system cards by relinquishing a node slot
- Dual redundant support for Switch Fabric (2 Fabric and 12 basic nodes), as specified in PICMG 2.16
- Supports rear transition modules for 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 current signals
- ATX power connector for auxiliary power input/output
- Two power inlets for fans with a voltage of 12 V and control functions
- System control bus (SMBus) conforms to PICMG 2.9 R1.0 and supports all cards, power supply units, power infeed modules, fans and alarm cards
- Support of the I²C bridge function on the alarm card for >19 SMBus nodes

Material:

Fibreglass epoxy to IEC 60 249 (type FR4)

Supply includes:

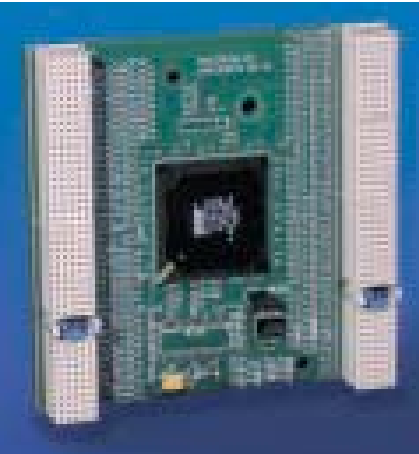
1 backplane, fully populated

Width	Number slots	Slot description	Model No. RP
32 HP	8	1 Fabric slot 6 node slots with CPCI and H.110 1 host slot	3689.188
32 HP	8	See 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 supply units	3686.396
84 HP	16	See 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
84 HP	21	See 3686.397, but without H.110	3689.190
84 HP	21	See 3686.397, but without CPCI	3689.191

Order information

CompactPCI backplanes

Modular CPCI bridge



The CPCI bridge, may be connected at 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 left free 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.

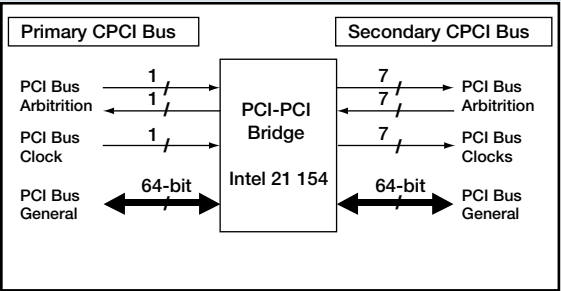
Material:
Fibreglass epoxy to IEC 60 249 (FR4)

Supply includes:
1 bridge, fully populated

- Technical specifications:**
- May be connected at the rear of CPCI backplanes
 - PCI bridge
 - 64-bit "High performance" Intel 21 154
 - For use with all Rittal CPCI backplanes (not with Low Profile backplanes)
 - Complies with PCI specification 2.1
 - Complies with CPCI
 - CPCI bridge connects CPCI backplanes from right to left (viewed from the front), i.e. the "left-hand" connector acts as the host board



Description	Model No. RP
64-bit CPCI bridge	3686.571
Extended delivery times	



Modular low profile bridge



32-bit version

The CPCI bridge for rear connection allows you to extend by up to a maximum of 7 additional slots, **without losing any slots**. Optionally available as a 32-bit or 64-bit version. Only suitable for use in conjunction with designated backplanes, see page 41.

Version	bit	Model No. RP
left-right	32	3689.210
right-left	32	3689.211
left-right	64	9810.637
right-left	64	9812.625

Material:
Fibreglass epoxy to IEC 60 249 (FR4)

Supply includes:
1 bridge, fully populated



64-bit version

Power supply backplane 3.5 U



- Board 3.5 U, 16 HP
- For use in conjunction with Rittal CPCI backplane
- Accommodates up to two 250 W power supply units
- AC/DC connection is made via two 2 x 3-pole connectors
- Output voltages to supply one or more CPCI backplanes are available via 3 ATX-compatible connectors
- Complies with PICMG 2.0, PICMG 2.11

Material:
Fibreglass epoxy to IEC 60 249 (FR4)

Supply includes:
1 board, fully populated

Technical specifications:

Accommodates 2 x 3 U, 8 HP CPCI power supply units 250 W.

The second power supply unit may be used for redundancy (with current sharing) or to increase the current via parallel connection.

Input voltages:

- AC input via 2 x 3-pole AMP Mate-N-Lok (AMP # 350732-1), connector J12
- connected with pins 45, 46, 47 type Positronic for PSU
- Max. current load per pin 25 A, mating connector for cable harness AMP # 350715
- DC input via 2 x 3-pole AMP Mate-N-Lok (AMP # 350732-1), connector J5 connected with pins 46, 47 type Positronic for PSU
- Max. current load per pin 25 A, mating connector for cable harness AMP # 350715

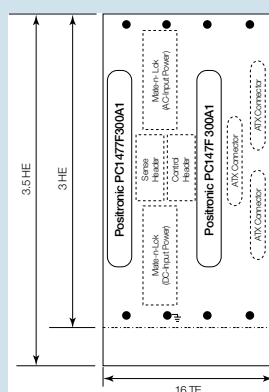
Output voltage:

- Three 20-pole ATX-compatible connectors for cable harness ATX (connection from power supply board to CPCI backplane)

Description	Model No.
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

Note:
Plug-in power supplies for CPCI, see page 116/117.

Connector pin assignment



3688.603

HE = U
TE = HP

Pin		Pin		Pin	
1	+ 5 V	17	+ 3.3 V	33	+ 3.3 V Sense
2	+ 5 V	18	+ 3.3 V	34	0 V Sense
3	+ 5 V	19	0 V (shared)	35	unused
4	+ 5 V	20	+ 12 V	36	unused
5	0 V (shared)	21	0 V	37	unused
6	0 V (shared)	22	0 V (shared)	38	DEG#
7	0 V (shared)	23	unused	39	INH#
8	0 V (shared)	24	0 V (shared)	40	unused
9	0 V (shared)	25	unused	41	unused
10	0 V (shared)	26	unused	42	FAL#
11	0 V (shared)	27	R/EN	43	unused
12	0 V (shared)	28	unused	44	unused
13	+ 3.3 V	29	unused	45	Chassis GND
14	+ 3.3 V	30	+ 5 V Sense	46	AC Neutral
15	+ 3.3 V	31	unused	47	AC Line
16	+ 3.3 V	32	unused		

Order information

CompactPCI backplanes

Power supply backplane 6.5 U



- Board 6.5 U, 8 HP
- For use in connection with Rittal CPCI backplanes 3.5 U, 6.5 U, H.110
- Accommodates one power supply of 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

Material:
Fibreglass epoxy to IEC 60 249 (FR4)

Supply includes:
1 board, fully populated

Technical specifications:
Accommodates one 6 U CPCI power supply of up to 500 W.
Input voltages:
– AC input via 3-pole AMP Mate-N-Lok connector
Max. current load per pin 25 A
– DC input via 3-pole AMP Mate-N-Lok connector
Max. current load per pin 25 A
Output voltage:
– Three 20-pole ATX-compatible connectors for ATX cable harness (connection from power supply board to CPCI backplane) or special power terminals

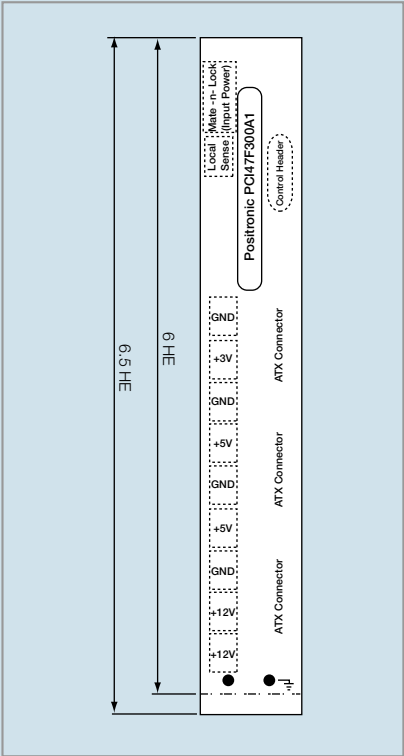
Description	Model No.
Board for plug-in power supply with Positronic connector 47-pin	3688.607
ATX (12") cable harness	9810.337
ATX (16") cable harness	3686.570
ATX (20") cable harness	9810.338

Extended delivery times

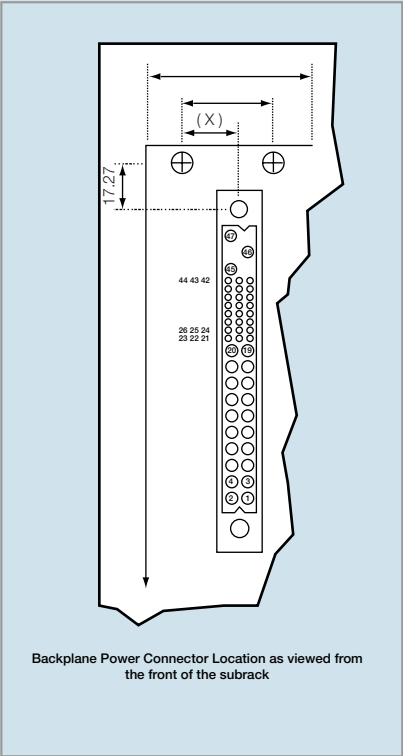
Note:
Plug-in power supplies for CPCI, see page 116/117.

Connector pin assignment

Pin		Pin	
1	+ 5 V	25	unused
2	+ 5 V	26	unused
3	+ 5 V	27	R/EN
4	+ 5 V	28	unused
5	0 V (shared)	29	unused
6	0 V (shared)	30	+ 5 V Sense
7	0 V (shared)	31	unused
8	0 V (shared)	32	unused
9	0 V (shared)	33	+ 3,3 V Sense
10	0 V (shared)	34	0 V Sense
11	0 V (shared)	35	unused
12	0 V (shared)	36	unused
13	+ 3.3 V	37	unused
14	+ 3.3 V	38	DEG#
15	+ 3.3 V	39	INH#
16	+ 3.3 V	40	unused
17	+ 3.3 V	41	unused
18	+ 3.3 V	42	FAL#
19	0 V (shared)	43	unused
20	+ 12 V	44	unused
21	0 V	45	Chassis GND
22	0 V (shared)	46	AC Neutral
23	unused	47	AC Line
24	0 V (shared)		



3688.607



Backplane Power Connector Location as viewed from the front of the subrack

HE = U

Power supply board 6.5 U



- Board 6.5 U, 16 HP
- For use in conjunction with Rittal CPCI backplanes 3.5 and 6.5 U
- Accommodates two power supplies of up to 500 W each.
- AC/DC connection is made via two 2 x 3-pole connections
- Output voltages to supply one or more CPCI backplanes are available at 5 ATX-compatible connectors or at special power terminals

Material:
Fibreglass epoxy to IEC 60 249 (FR4)

Supply includes:
1 board, fully populated

Technical specifications:

Accommodates 2 x 6 U CPCI power supply of up to 500 W.

Input voltages:

- AC input via 2 x 3-pole AMP Mate-N-Lok connector
Max. current load per pin 25 A
- DC input via 2 x 3-pole AMP Mate-N-Lok connector
Max. current load per pin 25 A

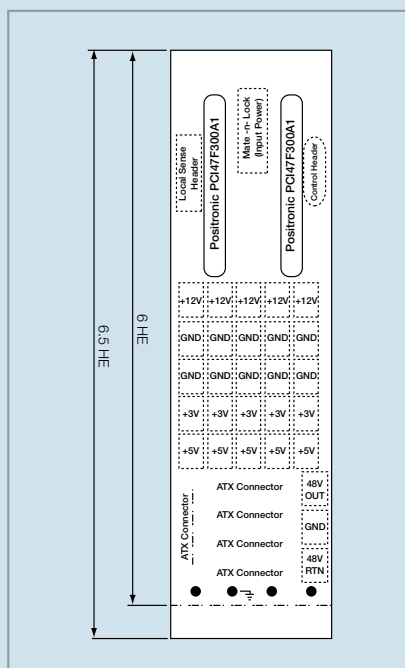
Output voltage:

- Five 20-pole ATX-compatible connectors for ATX cable harness (connection from power supply board to CPCI backplane) or special power terminals

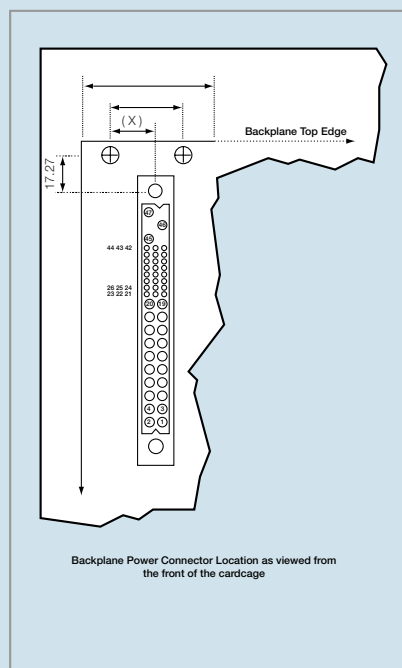
Description	Model No.
Board for 2 x plug-in power supply units with Positronic connector 47-pin	3688.608
ATX (12") cable harness	9810.337
ATX (16") cable harness	3686.570
ATX (20") cable harness	9810.338

Extended delivery times

Note:
Plug-in power supply units
see page 116/117.



3688.608



HE = U

Overview of Rittal systems for VMEbus

Ripac VME/VME64x systems



3 U, 5 slots/4 U, 7 slots horizontal
Model No. see page 52/53

Applications

Configuration of 482.6 mm (19") computer systems to VME specifications for

- Process control
- Traffic management technology
- Image processing
- Automation

Design features

- 482.6 mm (19") rack-mounted system for horizontal installation of double Euroboards
- 3 or 4 U, 405 mm deep
- Clear chromated aluminium
- Includes backplane and power supply unit
- Fully assembled, wired and tested
- Horizontal installation chamber for double Euroboards: 5 or 7 slots
- Installation of VME or VME64x boards to VME specification



User benefits

- Horizontal installation of double Euroboards
- EMC version
- Fully assembled, wired and tested
- Targeted air routing from front to rear
- ESD protection
- Keyable guide rails
- Complies with IEC 60 297-3 to -5 and IEEE 1101.1/1101.10

Ripac VME/VME64x systems



4 U/7 U, 12 slots
Model No. see page 54/55

Applications

Configuration of 482.6 mm (19") computer systems to VME specifications for

- Process control
- Traffic management technology
- Image processing
- Automation

Design features

- 482.6 mm (19") rack-mounted system for vertical installation of Euroboards/double Euroboards
- 4 or 7 U, 405 mm deep
- Clear chromated aluminium
- Includes backplane and power supply unit
- Fully assembled, wired and tested
- Installation chamber for double Euroboards: 12 slots
- Installation of VME or VME64x boards to VME specification



User benefits

- Vertical installation of double Euroboards
- EMC version
- Fully assembled, wired and tested
- Targeted air routing from bottom to top
- ESD protection
- Keyable guide rails
- Complies with IEC 60 297-3 to -5 and IEEE 1101.1/1101.10

Ripac VME/VME64x systems



7 U, 12 slots
Model No. see page 56/57

Applications

Configuration of 482.6 mm (19") computer systems to VME specifications for

- Process control
- Traffic management technology
- Image processing
- Automation

Design features

- 482.6 mm (19") rack-mounted system for vertical installation of double Euroboards
- 7 U, 405 mm deep
- Clear chromated aluminium
- Includes backplane and power supply unit
- Fully assembled, wired and tested
- Installation chamber for double Euroboards: 12 slots
- Installation of VME or VME64x boards to VME specification



User benefits

- Vertical installation of double Euroboards
- EMC version
- Fully assembled, wired and tested
- Targeted air routing from front to rear
- ESD protection
- Keyable guide rails
- Complies with IEC 60 297-3 – -5 and IEEE 1101.1/1101.10

Ripac VME/VME64x systems



9 U, 12 slots with RiCool
Model No. see page 58/59

Applications

Configuration of 482.6 mm (19") computer systems to VME specifications for

- Process control
- Traffic management technology
- Image processing
- Automation

Design features

- 482.6 mm (19") rack-mounted system for vertical installation of double Euroboards
- 9 U, 290.5 mm deep, at the rear for I/O modules
- Clear chromated aluminium
- Includes backplane and power supply unit
- Fully assembled, wired and tested
- Installation chamber for double Euroboards: 12 slots
- Installation of VME or VME64x boards to VME specification
- Including 2 radial fans; max. output: 204 m³/h, hot swap, speed control



User benefits

- Vertical installation of double Euroboards
- EMC version
- Fully assembled, wired and tested
- Targeted air routing from front to rear
- ESD protection
- I/O transition modules at the rear
- Keyable guide rails
- Effective ventilation with 2 radial fans RiCool
- Complies with IEC 60 297-3 – -5 and IEEE 1101.1/1101.10/1101.11

In detail: Rittal systems for VMEbus

Based on tried-and-trusted VMEbus technology, Rittal offers complete microcomputer assembly systems for the configuration of VMEbus computers. The systems are supplied complete with power supply unit and backplane, fully assembled, pre-wired and tested. In addition to the pre-configured computer shown here, individual solutions can also be configured for specific requirements. We will be happy to assist you at every stage of the process, from the initial consultancy and development, through to production.

1 Design features



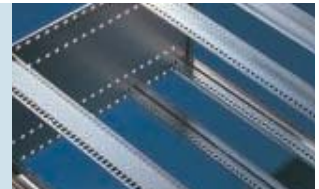
Side panels and covers made from clear chromated aluminium.



10 mm pitch pattern of holes in the side panels permits individual system configuration.



Keyable guide rails for the installation of coding keys.



Horizontal rails with 10 mm extension for injector/extractor handles.

2 EMC measures



Conductive connections between all system components.

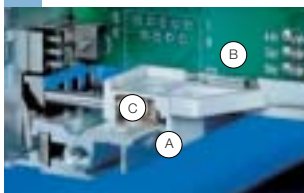


EMC gaskets made from stainless steel make contact with the individual components.

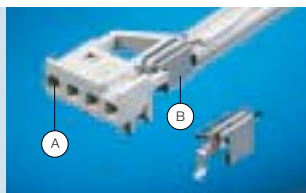


EMC front panel with EMC gaskets ensures reliable contact.

3 ESD protection



ESD protection
ESD pin (C) and ESD clip in the guide rail (A) to discharge static charges before contacting the board type plug-in unit.

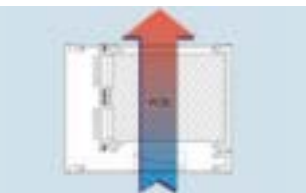


ESD clip in the PCB guide (B) ensures permanent direct discharge via the printed circuit board.

4 Climate control



Maximum air flow thanks to the slimline design of the guide rails and horizontal rails.



Individual ventilation concepts ensure controlled air flow and optimum heat dissipation. Optionally from bottom to top and/or from front to back



RiCool flat-pack blower ensures optimum ventilation. 1U, hot swap-compatible, 204 m³/h, including speed control and fault alarm signal.

Product information

Rittal systems for VMEbus



- Systems for the configuration of industrial computers to VME specifications
- Fully assembled, pre-wired and tested, including backplane and power supply unit
- Individual cooling concepts
- Conforms to IEC 60 297-3 to -5 as well as IEEE 1101.1/1101.10 and 1101.11

5 System installation



Backplanes
High-speed backplanes to VME/VME64x specifications.



Power supply units
in various outputs with plug-in or open frame.



Injector/extractor handles
To reliably overcome high insertion/extraction forces.



Live insertion
Micro-switches in the injector/extractor handles deactivate the board type plug-in unit prior to disconnection, and activate it during insertion.

Order information

Ripac rack-mounted system for VMEbus 3 U, 5 slots/4 U, 7 slots horizontal

			Model No. RPMPS system	Model No. RPMPS system	Model No. RPMPS system	Model No. RPMPS system	Page
U			3	3	4	4	
Side panel depth (mm)	Wiring chamber (w) mm	For PCB	For VME	For VME64x	For VME	For VME64x	
405	210	6 U x 160 mm	3687.698	3687.699	3687.700	3687.696	
Mechanical supply includes							
Item	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	Covers, solid	1 mm aluminium, clear chromated	2	2	2	2	166
③	Air block panel	Epoxy	1	1	1	1	173
④	Horizontal subrack height/width splitting	Aluminium, clear chromated	1	1	1	1	159
⑤	Trim frame for subrack height/width splitting	2.5 mm aluminium, clear chromated	1	1	1	1	159
⑥	Mounting base for power supply unit	2 mm aluminium, anodised	1	1	1	1	112
	EMC cover plate for fan	Aluminium, clear chromated	1	1	1	1	177
⑦	Plastic guide rails	PC UL 94-V1	10	–	14	–	160
⑦a	Keyable plastic guide rails	PC UL 94-V0	–	10	–	14	161
⑧	EMC front panel 3 U or 4U/8 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							
		Tech. spec.					
⑩	DC fan	48 m³/h per fan (UL, CSA, VDE) Optional speed control	1	1	1	1	176
⑪	Combined unit with integral filter and IEC socket	6 A (VDE, UL, CSA)	1	1	1	1	61
⑫	Open frame power supply unit	250 W, 5 V/35 A, + 12 V/8 A, - 12 V/8 A, (VDE, UL, CSA)	1	1	1	1	110
⑬	VME backplane	J1, 5 slots, IN-board passive, ADC	1	–	–	–	69
	VME64x backplane	J1/J2, 5 slots (without P0)	–	1	–	–	67
	VME backplane	J1, 7 slots, IN-board passive, ADC	–	–	1	–	69
	VME64x backplane	J1/J2, 7 slots	–	–	–	1	67
	LED display module with on/off switch	For + 5 V, ± 12 V, fan failure	1	1	1	1	60
⑭	AC cable harness		X	X	X	X	
⑮	DC cable harness		X	X	X	X	
⑯	Filter module for DC fan	Interference voltage filter	1	1	1	1	60

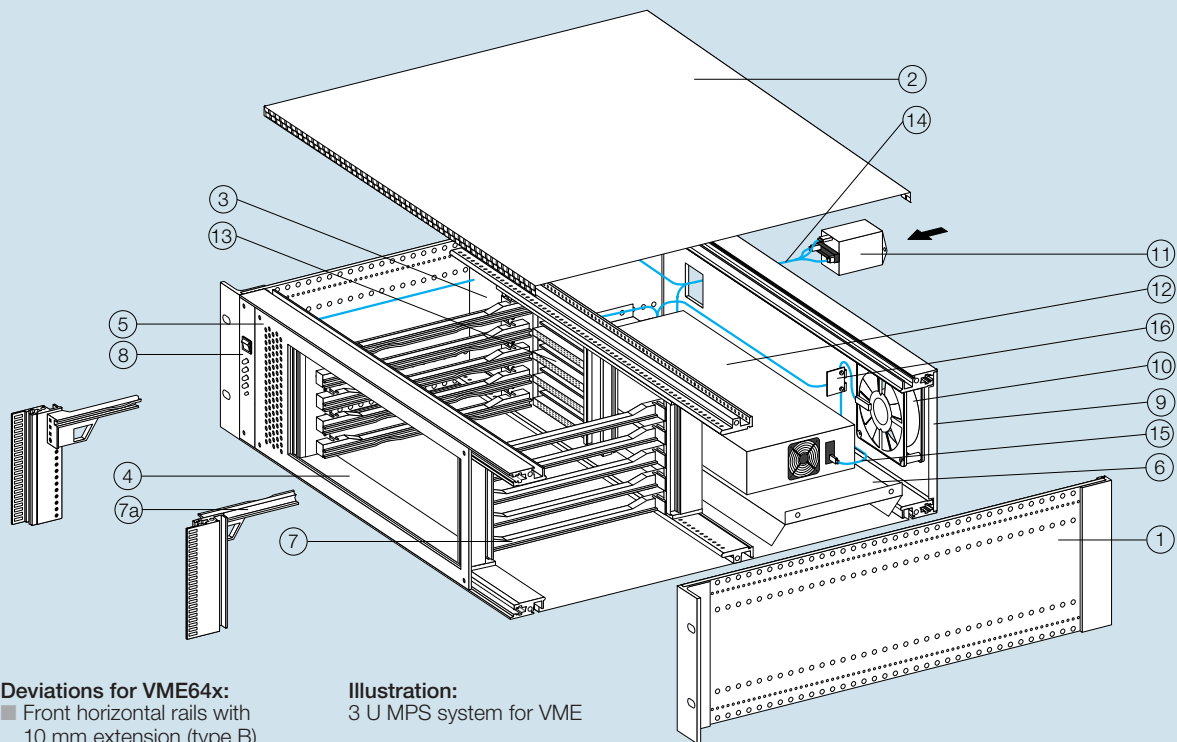


Ripac rack-mounted system for VMEbus (VME, VME64x) 3 U, 5 slots, horizontal



Ripac rack-mounted system for VMEbus (VME, VME64x) 4 U, 7 slots, horizontal

Ripac rack-mounted system for VMEbus 3 U, 5 slots/4 U, 7 slots horizontal



Deviations for VME64x:

- Front horizontal rails with 10 mm extension (type B)
- Plastic guide rail, keyable
- Backplane J1/J2 (6 U)

Illustration:

3 U MPS system for VME

Technical description:

Subrack with solid covers, 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 to -5 and IEEE 1101.1/1101.10.

	3 U	4 U
For the horizontal installation of double Euroboards: 5 slots (20 HP)	●	
For the horizontal installation of double Euroboards: 7 slots (28 HP)		●
For the vertical installation of drives: 16 HP	●	●
Integral power supply unit, 250 W, with automatic range changeover	●	●
Including VME or VME64x backplane, 5 slots	●	
Including VME or VME64x backplane, 7 slots		●
Front horizontal rails with 10 mm extension for injector/extractor handles (with VME64x)	●	●
Keyable plastic guide rails (for VME64x)	●	●
Cooling from front to rear	●	●
Forced ventilation with 1 DC fan, optional speed control	●	●
EMC protection due to conductive surface finish on all components and EMC gaskets	●	●
Fully assembled, pre-wired and tested	●	●

Accessories:

- Backplanes
- Front panels / box type plug-in units
- Power supply units
- Air block panel for plastic guide rails
- PCB covers

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Electronic service

Modifications or individual system solutions can be achieved within a short space of time. Rittal system specialists will assist you with planning and configuration.



Keys

For keying board type plug-in units.
Model No. see page 164



Sample application showing the diversity of Ripac system solutions.

Order information

Ripac rack-mounted system for VMEbus 4 U/7 U, 12 slots (VME/VME64x)

			Model No. RP MPS system	Model No. RP MPS system	Model No. RP MPS system	Page
U			4 U (3 U + 1 U)	7 U (6 U + 1 U)	7 U (6 U + 1 U)	
Side panel depth (mm)	Wiring chamber (t) mm	For PCB	For VME	For VME	For VME64x	
405	210	3 U/6 U x 160 mm	3687.702	3687.703	3687.704	
Mechanical supply includes						
Item	Description	Material	Quantity			
①	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear chromated/ stainless steel	1	1	1	
②	Covers, vented	1 mm aluminium, unplated	2	2	2	166
③	Finger guard	Polyamide	3	3	3	177
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	–	159
⑥	Fan mounting plate	1 mm aluminium, anodised	1	1	1	172
⑦	Plastic guide rails	PC UL 94-V1	24	24	–	160
⑦a	Plastic guide rails, keyable	PC UL 94-V0	–	–	24	
⑧	EMC front panel 1 U/84 HP, for switch/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						
		Tech. specifications				
⑩	DC fan	140 m³/h per fan (VDE, UL, CSA) optional speed control	3	3	3	176
⑪	Combined unit with integral filter and IEC socket	6 A (VDE, UL, CSA)	1	1	1	61
⑫	Open frame power supply unit	400 W, 5 V/80 A, + 12 V/8 A, – 12 V/8 A, (VDE, UL, CSA)	1	1	–	110
⑫a	Open frame power supply unit	400 W, 3,3 V/25 A, + 5 V/25 A, + 12 V/8 A, – 12 V/7 A (VDE, UL, CSA)	–	–	1	110
⑬	VME backplane	J1, 12 slots, IN-board passive, ADC	1	1	–	69
	VME64x backplane	J1/J2, 12 slots	–	–	1	67
	LED display module with on/off switch	For (3,3 V) +5 V, ±12 V, fan failure	1	1	1	60
⑭	AC cable harness		X	X	X	
⑮	DC cable harness		X	X	X	
⑯	Filter module for DC fan	Interference voltage filter	3	3	3	60

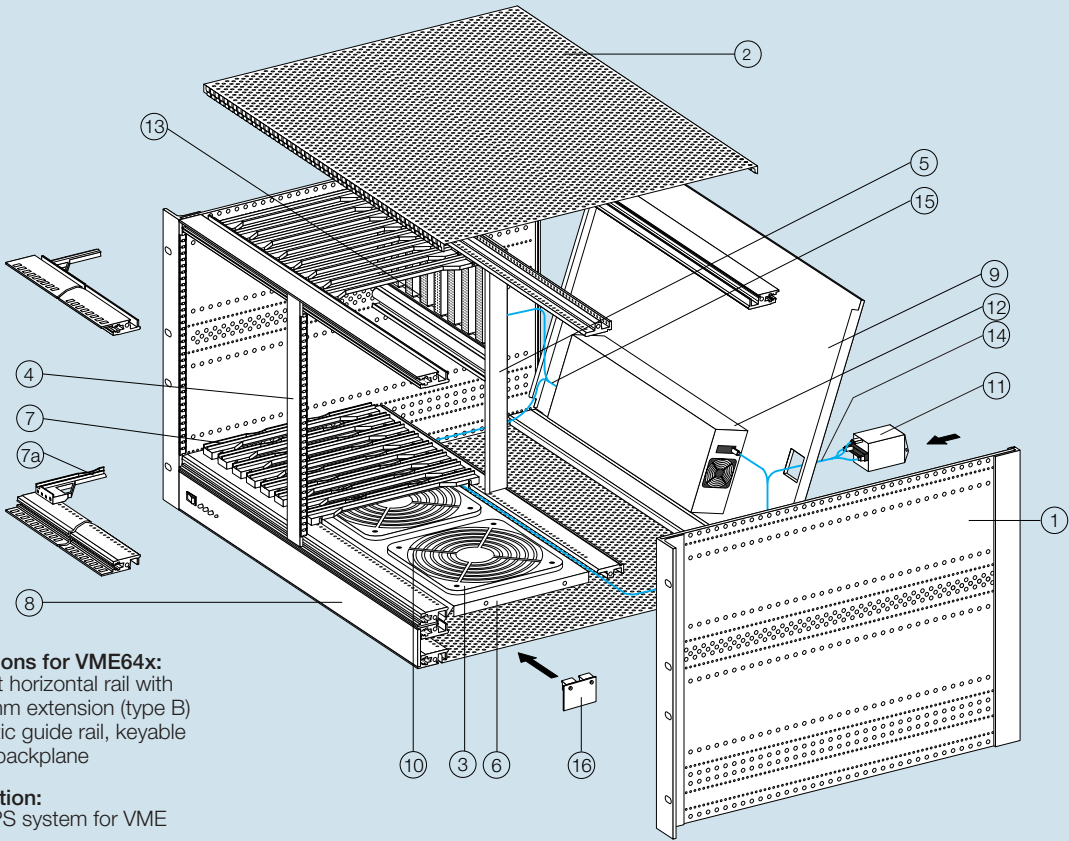


Ripac rack-mounted system for VMEbus
(VME) 4 U (3 + 1), 12 slots



Ripac rack-mounted system for VMEbus
(VME, VME 64x) 7 U (6 + 1), 12 slots

Ripac rack-mounted system for VMEbus 4 U/7 U, 12 slots (VME/VME64x)



Technical description:

Vented subrack, 405 mm deep, for installation in 482.6 mm (19") enclosures or cases. Prepared to accommodate VMEbus boards and drives. Complies with IEC 60297-3 to -5 and IEEE 1101.1/1101.10.

	4 U	7 U
Option of installing 12 Euroboards (3 U x 160 mm)	●	
For the installation of drives: 36 HP	●	
Option of installing 12 double Euroboards (6 U x 160 mm)		●
For the installation of drives: 32HP, 36HP (for VME64x)		●
Integral 400 W power supply with wide-range input	●	●
Including VME J1 backplane, 12 slots	●	●
Includes VME64x J1/J2 backplane, 12 slots		●
Front horizontal rails with 10 mm extension for injector/extractor handle (with VME64x)		●
Keyable plastic guide rails (for VME64x)		●
Cooling from bottom to top	●	●
Forced ventilation with 3 DC fans	●	●
EMC protection, due to conductive surface finish on all components and EMC gaskets	●	●
Fully assembled, wired and tested	●	●

Accessories:

- Backplanes
- Front panels / box type plug-in units
- Power supply units
- Air block panel for plastic guide rails
- PCB covers

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Electronic service

Modifications or individual system solutions can be achieved within a short space of time. Rittal system specialists will assist you with planning and configuration.



Sample application (RiCase instrument case with system configuration) illustrating the diversity of Ripac system solutions.



Ripac box type plug-in units to accommodate PCBs. Model No. see page 196 – 201

Order information

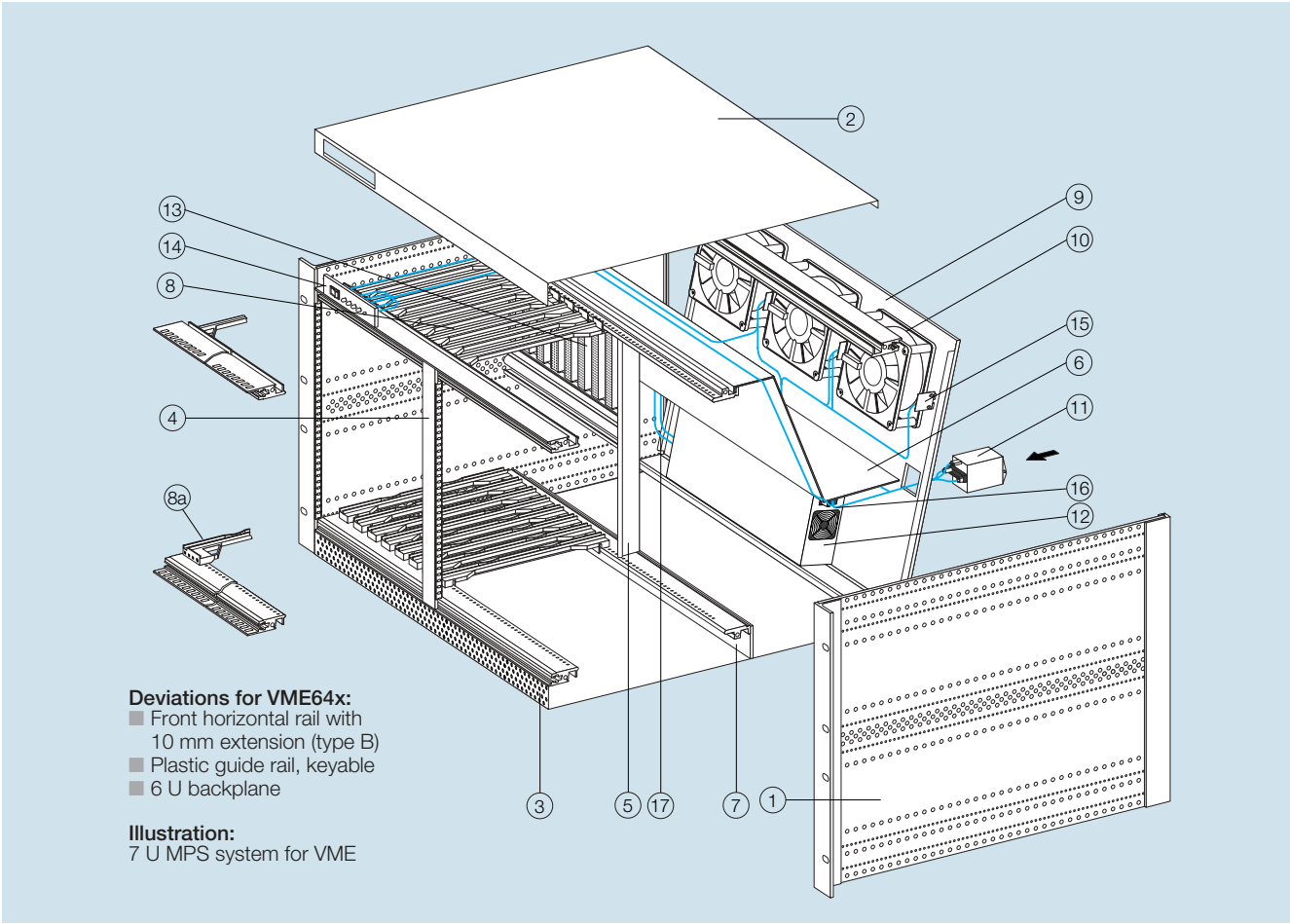
Ripac rack-mounted system for VMEbus 7 U, 12 slots (VME, VME64x)

			Model No. RP MPS system	Model No. RP MPS system	Page
U			7 (6 + 2 x 1/2)	7 (6 + 2 x 1/2)	
Side panel depth (mm)	Wiring chamber (t) mm	For PCB	For VME	For VME64x	
405	210	6 U/160 mm	3687.705	3687.706	
Mechanical supply includes					
Item	Description	Material	Quantity		
①	Ripac basic subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear chromated/ stainless steel	1	1	
②	Cover plate with 1/2 U edge fold and cutouts for switches/LEDs	1 mm aluminium, clear chromated	1	1	16
③	L-shape cover with 1/2 U edge fold, vented at front	1 mm aluminium, unplated	1	1	16
④	EMC front panel, 6 U/4 HP	2.5 mm aluminium, clear chromated	1	–	
	EMC cover plate for fans	Aluminium, clear chromated	3	3	177
⑤	Vertical support	Aluminium, clear chromated	1	–	159
⑥	Air baffle plate	1 mm aluminium, anodised	1	1	173
⑦	Air block panel, 1/2 U	Epoxy	1	1	173
⑧	Plastic guide rails	PC UL 94-V1	24	–	160
⑧a	Keyable plastic guide rails for VME64x	PC UL 94-V0	–	24	161
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					
		Technical specifications			
⑩	DC fan	140 m³/h per fan (UL, CSA, VDE) optional speed control	3	3	176
⑪	Combined unit with integral filter and IEC socket	6 A (VDE, UL, CSA)	1	1	61
⑫	Open frame power supply unit	400 W, 5 V/80 A, + 12 V/8 A, - 12 V/8 A (VDE, UL, CSA)	1	–	110
	Open frame power supply unit	400 W, 3.3 V/25 A, + 5 V/25 A, + 12 V/8 A, - 12 V/7 A (VDE, UL, CSA)	–	1	110
⑬	VME backplane	J1, 12 slots, IN-board passive, ADC	1	–	69
	VME64x backplane	J1/J2, 12 slots (without P0)	–	1	67
⑭	LED display module with on/off switch	For (3.3 V) + 5 V, ± 12 V, fan failure	1	1	60
⑮	Filter module for DC fan	Interference voltage filter	3	3	60
⑯	AC cable harness		X	X	
⑰	DC cable harness		X	X	



Ripac rack-mounted system for VMEbus
(VME, VME64x) 7 U (6 + 2 x 1/2), 12 slots

Ripac rack-mounted system for VMEbus 7 U, 12 slots (VME, VME64x)



Technical description of subrack:

Solid subrack, 405 mm deep, for installation in 482.6 mm (19") enclosures or cases. Prepared to accommodate VMEbus boards and drives. Complies with IEC 60297-3 to -5 and IEEE 1101.1/1101.10.

	7 U
Option of installing 12 double Euroboards (6 U x 160 mm)	●
For the installation of drives: 32 HP/36 HP (for VME64x)	●
Integral 400 W power supply with wide-range input	●
Including VME or VME64x backplane, 12 slots	●
Front horizontal rails with 10 mm extension (for VME64x)	●
Keyable plastic guide rails (for VME64x)	●
Cooling from front to rear	●
Forced ventilation with 3 DC fans	●
EMC protection, due to all-round EMC gaskets	●
Fully assembled, wired and tested	●

Accessories:

- Backplanes
- Front panels / box type plug-in units
- Power supply units
- Air block panel for plastic guide rails
- PCB covers

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Page 180 – 201
Page 108 – 121
Page 163
Page 61



Electronic service

Modifications or individual system solutions can be achieved within a short space of time. Rittal system specialists will assist you with planning and configuration.



Plastic cover
For mechanical protection of the PCB solder side and EMC gaskets.
Model No. see page 61



Air block panel
For guide rails, to prevent air flow on unused slots.
Model No. see page 163

Order information

Ripac rack-mounted system for VMEbus 9 U, 12 slots (VME64x) with RiCool blower

			Model No. RP MPS system	Page
U			9 (6 + 2 x 1 1/2)	
Side panel depth (mm)	Wiring chamber (t) mm	For PCB	For VME64x	
290.5	85.5	6 U x 160 mm	3687.708	
Mechanical supply includes				
Item	Description	Material	Quantity	
①	Ripac subrack system (side panels, horizontal rails, flanges, EMC gaskets)	Aluminium, clear chromated/ stainless steel	1	
②	EMC covers	1 mm aluminium	2	166
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	146
⑥	Plastic guide rails, keyable	Polycarbonate UL 94-V0	24	161
	Plastic guide rails for power supply unit	Polycarbonate UL 94-V0	2	161
⑥a	Plastic guide rails for I/O transition modules	Polycarbonate UL 94-V0	24	161
⑦	EMC rear panel 6 U/36 HP	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 switches/LEDs	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, slide-in		1	
⑬	Mounting plate for RiCool	1 mm aluminium, anodised	1	
Electrical/electronic supply includes				
		Technical specifications		
⑭	RiCool DC fan (may be pulled out forwards individually)	204 m³/h, 48 W	2	
⑮	Combined unit with integral filter and IEC connector	6 A (VDE, UL, CSA)	1	61
⑯	Power supply unit, plug-in type, 6 U/12 HP	270 W, 5 V/35 A, + 12 V/6 A, - 12 V/2 A (VDE, IEC)	1	114
	VME64x backplane	J1/J2, 12 slots	1	67
	LED display module with on/off switch	For + 5 V, ± 12 V, fan failure	1	60
⑰	Female connector for power supply unit	H15	2	
⑱	AC cable harness		X	
⑲	DC cable harness		X	



Ripac rack-mounted system for VMEbus
(VME64x) 9 U (6 + 2 x 1 1/2), 12 slots, with RiCool blower



Installation facility at rear for I/O transition modules

Ripac rack-mounted system for VMEbus 9 U, 12 slots (VME64x) with RiCool blower

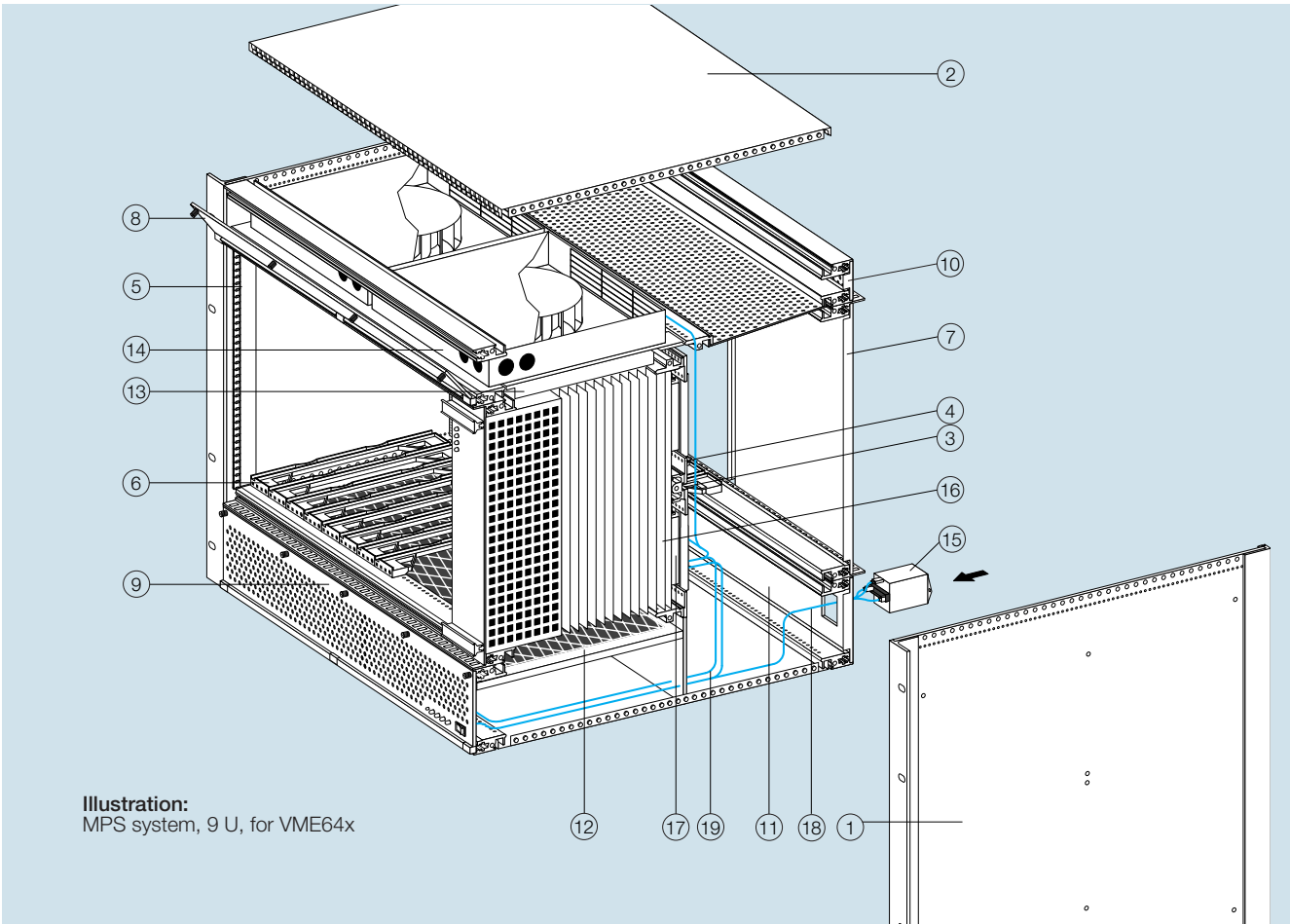


Illustration:
MPS system, 9 U, for VME64x

Technical description:
Vented 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 60297-3 to -5 and IEEE 1101.1/1101.10.

	9 U
Option of installing 12 double Euroboards (6 U x 160 mm), recessed	•
For the installation of drives or additional power supply units: 24 HP	•
Integral power supply unit, plug-in type, 6 U/12 HP, 270 watts	•
Including VME64x backplane, 12 slots	•
Option of installing 12 I/O modules at the rear	•
Front horizontal rails with 10 mm extension for injector/extractor handles	•
Keyable plastic guide rails	•
Cooling from front to rear	•
Forced ventilation with 2 RiCool blowers, 12 V/48 W (may be pulled out forwards)	•
EMC protection, due to conductive surface finish on all components and EMC gaskets	•
Fully assembled, wired and tested	•

Accessories:

- Backplanes
- Front panels / box type plug-in units
- Power supply units
- Air block panel for plastic guide rails
- PCB covers

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Page 61



Electronic service

Modifications or individual system solutions can be achieved within a short space of time. Rittal system specialists will assist you with planning and configuration.



RiCool hot swap blower
Maximum output of 204 m³/h with just 1 U installation space.



Front panel
with switch module and display board with LEDs.

Accessories

VME systems

On/off 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
- Insulation 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 230 V



Connection cable for power supply.

Technical specifications:

230 V, 50/60 Hz, PVC cable, 3-pole with earthing-pin plug and IEC 320 cable coupler (non-heating appliances) with CEE22 contact protection.

Supply includes:

1 connection cable 230 V, length 2.5 m

Design	Packs of	Model No. DK
D/F/B	1	7200.210
GB	1	7200.211
CH	1	7200.213

Front panel with LED and on/off switch



Front panel with switch module and display board with LEDs.

Supply includes:

EMC partial front panel, 5 HP
Rocker switch
Display board with LEDs:
+ 3.3 V/+ 5 V/+ 12 V/- 12 V/fan failure
Assembly parts

Legend for LEDs	Model No. RP 3U	Model No. RP 4 U
+ 3.3 V + 5 V ± 12 V Alarm	3687.712	3687.714
+ 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 a 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:

1 board,
2 plug-in connections

Packs of	Model No. RP
1	3687.716

Combination unit for mains input



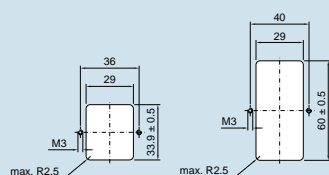
Combination module consisting of IEC 320 socket, line filter and 5 x 20 mm fuse holder to IEC 320 and IEC 950.

Technical specifications:

Metal enclosure for screw fastening.
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.

Supply includes:

Enclosure, with integrated IEC 320 socket, line filter



	Combination unit with switch Model No. RP	Combination unit without switch Model No. RP
	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
Install. depth	90 mm	56 mm
Cutout	60 x 29 mm	33.9 x 29 mm
Approvals	VDE, SEMKO, SEV, UL, CSA	VDE

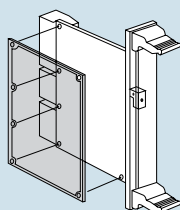
Plastic cover for PCBs (VME)



Cover for mechanical protection of the solder side of the PCB and the EMC gaskets.

Material:

0.3 mm plastic, antistatic



For PCB	Packs of	Model No. RP
3 U x 160 mm	1 5	3685.626 3685.279
3 U x 220 mm	1 5	3685.805 3685.266
6 U x 160 mm	1 5	3685.627 3685.280
6 U x 220 mm	1 5	3685.824 3685.000
6 U x 80 mm	1	3686.146

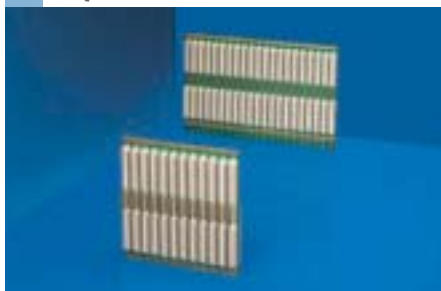
Other accessories



Backplanes	from page 62
Power supply units	from page 108
Partial front plates/handles	from page 180
Box type plug-in units	from page 196
Plastic guide rails	from page 160
Coding keys	page 164
Fans	page 176
Rack-mounted fans	page 178

Overview of Rittal backplanes for VME

System bus VME64x



Model No. see page 67

Application areas

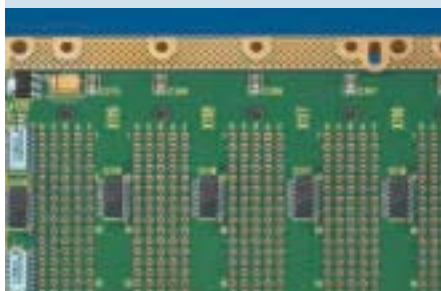
Installation in VME computer systems for power and signal distribution, for plug-in boards and assemblies for

- Process control
- Traffic guidance systems
- Image processing
- Automation

Especially suitable for data transfer using fast drivers

Design features

- High-speed VME system bus
- Fibreglass epoxy to IEC 60 249 (type FR 4)
- 6 U and 6.5 U with 64-bit data width
- 5, 7, 9, 10, 12, 21 slots
- Automatic daisy chaining
- 10 layer multilayer
- With or without P0 connector



User benefits

- High-speed backplane
- Conforms to ANSI/VITA 1.1 and IEEE 1101
- Automatic daisy chaining
- Optionally available with or without P0 connector

System bus VME J1/J2 monolithic



Model No. see page 68

Application areas

Installation in VME computer systems for power and signal distribution, for plug-in boards and assemblies for

- Process control
- Traffic guidance systems
- Image processing
- Automation

Design features

- High-speed VME system bus
- Fibreglass epoxy to IEC 60 249 (type FR 4)
- 6 U with 32-bit data width
- 2 – 21 slots
- Automatic daisy chaining
- 6 layer multilayer
- ON/IN board passive or active termination



User benefits

- High-speed backplane
- Conforms to ANSI/VITA 1.1 and IEEE 1101
- Automatic daisy chaining
- Passive or active termination

System bus VME J1



Model No. see page 69

Application areas

Installation in VME computer systems for power and signal distribution, for plug-in boards and assemblies for

- Process control
- Traffic guidance systems
- Image processing
- Automation

Design features

- High-speed VME system bus
- Fibreglass epoxy to IEC 60 249 (type FR 4)
- 3 U with 16-bit data width
- 3 – 21 slots
- Automatic daisy chaining
- 6 layer multilayer
- ON/IN board passive termination



User benefits

- High-speed backplane
- Conforms to ANSI/VITA 1.1 and IEEE 1101
- Automatic daisy chaining
- Passive termination

Expansion bus VME J2



Model No. see page 69

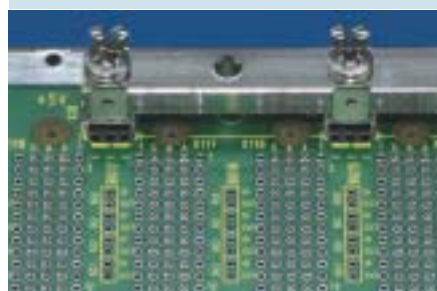
Application areas

Installation in VME computer systems for power and signal distribution, for plug-in boards and assemblies for

- Process control
- Traffic guidance systems
- Image processing
- Automation

Design features

- High-speed VME expansion bus
- Fibreglass epoxy to IEC 60 249 (type FR 4)
- 3 U with 16-bit data width
- 3 – 21 slots
- 2 layer multilayer
- ON/IN board passive termination



User benefits

- High-speed backplane
- Conforms to ANSI/VITA 1.1 and IEEE 1101
- Passive termination

Technical specifications

VMEbus

General technical data for the VMEbus

The VMEbus, based on standard IEEE 1014 and IEC 821, has become established worldwide as an industry standard.

The VME64 is an extension to the VME family according to ANSI/VITA 1-1994, and supports 64-bit data traffic. VME64x is an addition to the VME family according to ANSI/VITA 1.1-1997 and is available with an optional 133-pin, 2 mm J0 connector. 160-pin connectors are used for VME64x. This system remains backward-compatible, so that assemblies with 96-pin connectors to DIN 41612 can still be used. All Rittal VME-bus boards are of a HIGH SPEED DESIGN. Minimum reflections are achieved, due to even surge impedance on the signal track. Consistent shielding of every signal trace ensures minimum coupling and therefore guarantees problem-free operation, even with an expansion to 64-bit mode with the 2e protocol (160Mbyte/s).

Daisy chain connection

For daisy chain connections, a distinction is made between manual daisy chaining and automatic daisy chaining. Automatic daisy chaining eliminates the need for jumper connection, and time-consuming insertion and extraction are eliminated. Furthermore, possible mis-connections 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 caused by reflections at the open track end, these must be terminated with the VMEbus. Termination may be either ON/IN board (on the backplane) or OFF board (external). There are two types of termination - passive and active. The advantage of active termination lies in its lower closed-circuit current consumption, whilst passive termination is distinguished by a superior frequency response and a wider temperature range.

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

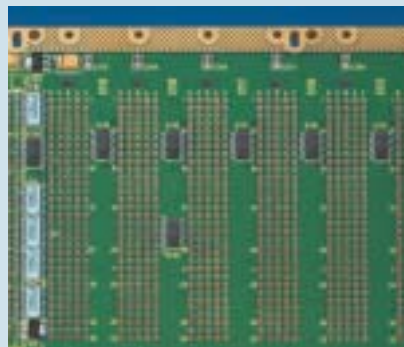
Pin assignment for J2 connector, VME64x

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



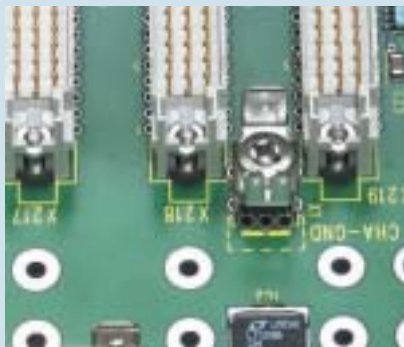
Automatic daisy chaining J1 and J1/J2

Due to the use of connectors with integral mechanical switches, the contact is automatically opened when the daughterboard is inserted, and closed again when it is extracted.



Automatic daisy chaining VME64x

In this case, the second option for automatic daisy chaining is achieved with an "or" logic integrated onto the backplane. When the daughterboard is extracted, the logic closes the daisy chain.



CHASSIS GND connection

A continuous, electrically conductive chassis GND plane is connected to the backplane mounting points on the subrack. This facilitates EMC-sealed mounting of the backplane on the subrack. In the case of VME64x, the subrack and system earth are RF-coupled by means of capacitors (10nF, 200 V on each slot). Static charges are discharged via a resistor ($\geq 1M\Omega$). A combined connection component is available for connecting the enclosure earth (screw M4 and FASTON 2.8 or 6.3 x 0.8 mm).



Power connections

Infeed of the main operating voltage + 5 V/ + 3.3 V and GND is achieved via busbars with an M6 screw connection. The auxiliary operating voltages are supplied via double-FASTONS with an additional M4 screw terminal. The arrangement of the feed modules on the backplane ensures optimum power supply to the daughterboards for problem-free operation.

Utility connector

Special signals to the power supply unit and to external LEDs are routed on a separate connector on the backplanes.

Depending on the backplane type, a 7-pin, 10-pin or 14-pin 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)

Technical specifications

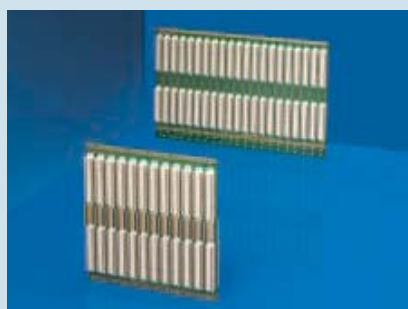
VMEbus

Geographical Address Pin Assignments (VME64x)

Slot Number	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 Number	ROW Z	ROW A	ROW B	ROW C	ROW D	ROW E	ROW F
1	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND
2	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND
3	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND
4	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND
5	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND
6	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND
7	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND
8	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND
9	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND
10	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND
11	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND
12	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND
13	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND
14	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND
15	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND
16	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND
17	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND
18	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND
19	GND	User Defined	User Defined	User Defined	User Defined	User Defined	GND



Technical specifications:

Number of layers	10
Layer structure	Optimised for best RF protection. Outer layers designed as shielding surface
PCB thickness	4.3 mm
Ohmic resistance of signal lines	< 1.5 Ohm
Surge impedance Z of signal lines	50 Ohm
Basic current consumption with termination on two sides	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-pin 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
ON/IN board termination	active
Installation height	6 U/6.5 U
Distance between slots	4 HP
Connector	Press-fit system, quality category 2, 400 connection cycles 160 pins compatible with C96 J0 optional, style 2 mm, 95/133 pins
Operating temperature range	Active termination 0°... +70 °C Passive termination -40°...+85 °C
Relative humidity	90%, non-condensing

Material:

Glass epoxy to IEC 60 249 (type FR 4)

Supply includes:

1 backplane, fully populated



VME64x 6 U

Slot	Dimensions (H x W) mm	Model No. RP without P0 connector	Model No. RP with P0 connector
5	261.6 x 100	3687.608	3687.609
7	261.6 x 161.5	3687.610	3687.611
9	261.6 x 181.5	9904.930	9904.932
10	261.6 x 202	9904.931	9904.933
12	261.6 x 242.5	3686.634	3686.473
21	261.6 x 425.5	3686.635	3686.474



VME64x 6.5 U

Slot	Dimensions (H x W) mm	Model No. RP without P0 connector	Model No. RP with P0 connector
5	283.7 x 100	9910.012	9910.007
7	283.7 x 161.5	9910.013	9910.008
9	283.7 x 181.5	9910.014	9910.009
10	283.7 x 202	9904.928	9904.929
12	283.7 x 242.5	9910.015	9910.010
21	283.7 x 425.5	9910.016	9910.011

Accessories for backplane mounting, see page 153

Order information

Backplanes VME J1/J2 monolithic



Technical specifications:

Number of layers	6
Layer structure	Optimised for best RF protection. Outer layers designed as shielding surface
PCB thickness	3.2 - 4.0 mm
Ohmic resistance of signal lines	< 1.5 Ohm
Surge impedance Z of signal lines	60 Ohm
Basic current consumption with termination on two sides	active: < 0.1 A passive: < 1.4 A
Power supply:	
- Busbar with M6 screw terminal	x
- M4 screw terminal and Faston 6.3 x 0.8 mm	x
- < 5 slots	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-pin 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
ON/IN board termination	passive or active
Installation height	6 U
Distance between slots	4 HP
Connector	Press-fit system, quality category 2, 400 connection cycles C96
Operating temperature range	Active termination 0°... +70 °C Passive termination -40°...+85 °C
Relative humidity	90%, non-condensing

Material:

Glass epoxy IEC 60 249 (FR 4)

Supply includes:

1 backplane, fully populated

VME J1/J2 monolithic

Slot	Dimensions (H x W) mm	Model No. RP passive	Model No. RP active
2	261.7 x 39.5	3686.475	3686.495
3	261.7 x 59.5	3686.476	3686.496
4	261.7 x 80	3686.477	3686.497
5	261.7 x 100	3686.478	3686.498
6	261.7 x 120.5	3686.479	3686.499
7	261.7 x 141	3686.480	3686.500
8	261.7 x 161.5	3686.481	3686.501
9	261.7 x 181.5	3686.482	3686.502
10	261.7 x 202	3686.483	3686.503
11	261.7 x 222.5	3686.484	3686.504

VME J1/J2 monolithic

Slot	Dimensions (H x W) mm	Model No. RP passive	Model No. RP active
12	261.7 x 242.5	3686.485	3686.505
13	261.7 x 263	3686.486	3686.506
14	261.7 x 283	3686.487	3686.507
15	261.7 x 303.5	3686.488	3686.508
16	261.7 x 324	3686.489	3686.509
17	261.7 x 344	3686.490	3686.510
18	261.7 x 364.5	3686.491	3686.511
19	261.7 x 385	3686.492	3686.512
20	261.7 x 405	3686.493	3686.513
21	261.7 x 425.5	3686.494	3686.514

Accessories for backplane mounting, see page 153

VME J1 system bus



Slot	Dimensions (H x W) mm	Model No. RP	Slot	Dimensions (H x W) mm	Model No. RP
3	128.4 x 59.5	3686.555	12	128.4 x 242.5	3686.563
4	128.4 x 80	3686.556	13	128.4 x 263	3686.564
5	128.4 x 100	3686.557	14	128.4 x 283	3686.565
6	128.4 x 120.5	3686.558	15	128.4 x 303.5	3686.566
7	128.4 x 141	3686.559	18	128.4 x 364.5	3686.567
8	128.4 x 161.5	3686.560	20	128.4 x 405	3686.568
9	128.4 x 181.5	3686.561	21	128.4 x 425.5	3686.569
10	128.4 x 202	3686.562			

Accessories for backplane mounting, see page 153

Material:
Glass epoxy to IEC 60 429 (FR 4)

Supply includes:
1 backplane, fully populated

Technical specifications:

	VME J1	VME J2
Number of layers	6	2
Layer structure	Optimised for best RF protection. Outer layers designed as shielding surface	
PCB thickness	3.2 mm	3.2 mm
Ohmic resistance of signal lines	< 1.5 Ohm	< 1.5 Ohm
Surge impedance Z of signal lines	60 Ohm	60 Ohm
Basic current consumption with termination on two sides	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-pin 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
ON/IN board termination	passive	passive
Installation height	3 U	3 U
Distance between slots	4 HP	4 HP
Connector	Press-fit system, quality category 2, 400 connection cycles C96	Press-fit system, quality category 2 400 connection cycles C96
Operating temperature range	Passive termination -40°...+85 °C	Passive termination -40°...+85 °C
Relative air humidity	90%, non-condensing	90%, non-condensing

VME J2 expansion bus



Slot	Dimensions (H x W) mm	Model No. RP	Slot	Dimensions (H x W) mm	Model No. RP
3	128.4 x 59.5	3686.585	12	128.4 x 242.5	3686.593
4	128.4 x 80	3686.586	13	128.4 x 263	3686.594
5	128.4 x 100	3686.587	14	128.4 x 283	3686.595
6	128.4 x 120.5	3686.588	15	128.4 x 303.5	3686.596
7	128.4 x 141	3686.589	18	128.4 x 364.5	3686.597
8	128.4 x 161.5	3686.590	20	128.4 x 405	3686.598
9	128.4 x 181.5	3686.591	21	128.4 x 425.5	3686.599
10	128.4 x 202	3686.592			

Accessories for backplane mounting, see page 153

Material:
Glass epoxy to IEC 60 249 (FR 4)

Supply includes:
1 backplane, fully populated

Overview of Rittal systems for ATX and storage devices

Ripac ATX, aluminium



Model No. see page 74

Applications

- 482.6 mm (19") enclosures and cases
- Configuration of industrial PCs for ATX, Mini-ATX or Micro-ATX boards
- Office and industrial environments

Design features

- Chassis made from chromated aluminium
- Pull-out interior case
- Assembled and pre-wired
- Including fan and power pack
- EMC prepared
- Including electronics for automatic restart following a mains failure



User benefits

The leading aluminium model for configuration of an industrial PC in ATX format. Its top feature is the extremely maintenance-friendly design. The interior case can be pulled out like a drawer, offering optimum access to all components.

ATX 1, 2 and 4 U, sheet steel



Model No. see page 78 – 81

Applications

- 482.6 mm (19") enclosures and cases
- Server enclosures
- Configuration of industrial PCs for ATX, Mini-ATX or Micro-ATX boards
- Office and industrial environments

Design features

- Enclosure made from sheet steel
- Space-saving version in 1 and 2 U
- 4 U version suitable for slide rail installation
- Assembled and pre-wired
- Including fan and power pack
- EMC prepared



User benefits

This space-saving solution, particularly in the server sector, supports the use of industrial PCs in 1 and 2 U heights. Alternatively, there is a 4 U version. The neutral design blends in well with existing equipment.

AT/ATX (Vario) Economy with front door



Model No. see page 84 – 87

Applications

- 482.6 mm (19") enclosures and cases
- Configuration of industrial PCs for ATX, Mini-ATX or Micro-ATX boards and AT boards
- Industrial environments

Design features

- Enclosure made from sheet steel
- Horizontally hinged, lockable front door
- Suitable for telescopic slide installation
- EMC prepared
- ATX Economy, fully assembled and pre-wired including fan and power pack
- AT/ATX Vario Economy, may be individually upgraded



User benefits

When stability and security requirements are high, this robust sheet steel construction is ideal for tough industrial environments. Available in two versions: ATX Economy, fully assembled and pre-wired, or AT/ATX Vario Economy as a basic chassis for individual configuration – e.g. for AT or ATX applications.

ATX with front connections



Model No. see page 88 – 91

Applications

- 482.6 mm (19") enclosures and cases
- Mounting plate configuration
- Configuration of industrial PCs for ATX, Mini-ATX or Micro-ATX boards
- Industrial environments

Design features

- Enclosure made from sheet steel
- For installation in 482.6 mm (19") enclosures or on a mounting plate
- Suitable for telescopic slide or slide rail installation
- EMC prepared
- Fully assembled and pre-wired
- Including fan and power pack



User benefits

Flexibility for all applications, such as minimal space requirements, or for connection to other systems, or if I/O connections need to be accessible from the front. Available as a 482.6 mm (19") version for mounting in the enclosure, or suitable for direct mounting on the mounting plate.

Systems for storage devices



Model No. see page 94 – 101

Applications

- 482.6 mm (19") enclosures and cases
- Configuration of storage systems, also in conjunction with ATX boards
- Data protection

Design features

- Enclosure made from sheet steel
- For installation of storage devices plus an ATX board
- EMC prepared
- Fully assembled
- Power pack optional



User benefits

Secure enclosure solutions for storage devices to meet growing data security requirements. The Rittal RAID systems provide protection for storage devices under tough conditions. Available in three variants. An ATX board may optionally be installed.

482.6 mm (19") control units



Model No. see page 260 – 263

Applications

- 482.6 mm (19") enclosures and cases
- Office and industrial environments

1 U monitor/keyboard drawer



7 U TFT display



User benefits

Convenient, direct, on-site computer access: the monitor/keyboard unit, including keyboard and TFT display, in a 1 U drawer. As an alternative to this, we also offer the 482.6 mm (19") keyboard rack, which may be combined with a separate 7 U TFT display.

In detail: Ripac ATX 4 U, aluminium

Ripac ATX is a 482.6 mm (19") rack-mounted system for the configuration of industrial PCs for ATX and Mini-ATX boards. Its mechanical structure is derived from the basic components of the Ripac aluminium subrack system, and is exceptionally maintenance-friendly.

This is because the interior case can be pulled out backwards like a drawer for installation and servicing purposes. Meanwhile, standard electronics ensure automatic restart in the event of a power failure.

1 Design features



Pull-out interior case
offers optimum access to all components.



Horizontally hinged, lockable front panel
offers rapid access to drives and control components and protects against unauthorised access.



Simple replacement
of the filter mat, even during operation.

2 EMC measures



Enclosure body
of clear chromated aluminium (conductive).



Horizontal and vertical EMC gaskets



EMC gaskets for unused slot covers
and conductive attachment of the motherboard.

3 Drives and hard disks



Option of space
to install three 5 1/4" drives and one 3 1/2" drive, allows external population. Drive covers (accessory) for unused panels.



Drive holder
for optimum installation of up to four additional 3 1/2" hard disks behind the fan (accessory).

4 Security



Height adjustable card retainers
ensure that the slot cards are securely held, even in the event of vibration (accessory).



Front fan
with filter ensures targeted ventilation.



Integral electronics
for automatic restart following a mains failure.

Product information

Industrial PC Ripac ATX, 4 U aluminium



- Aluminium construction, chromated
- EMC prepared
- Integral fan, air filter and power pack
- Electronics for automatic restart of the PC following a power failure
- Pull-out interior case

5 Power supply



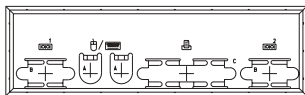
ATX power supply unit with CE symbol. Redundant power pack optional.

Order information

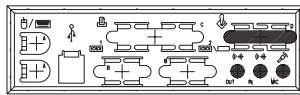
Industrial PC Ripac ATX 4 U, aluminium

Ripac ATX 4 U, aluminium	Material	P. of	Model No. RP	Page
Width: 482.6 mm (19")				
Height: 177.0 mm				
Depth: 440.0 mm				
① Model No. RP Basic system	Aluminium/sheet steel, clear chromated/zinc-plated	1	3659.000	
Accessories				
⑫ Card retainer	Plastic	7 sets	3659.010	104
⑬ Unused slot cover	Sheet steel	5	3659.030	103
⑭ ATX I/O covers*:				
Type "Aurora Marl"	Sheet steel	1	3659.040	
Type "Tucson"/"Venus"	Sheet steel	1	3659.130	
Type "Providence"	Sheet steel	1	3659.140	
Covers for 5 1/4" drives	Aluminium, anodised	1	3659.050	103
⑮ Drive holder	Sheet steel, zinc-plated	2	3659.060	104
Spare filter mat		1	3659.070	
UPS		1	3659.080	103

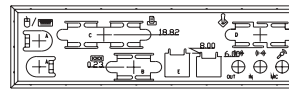
* Other versions available on request, please specify the type of mainboard



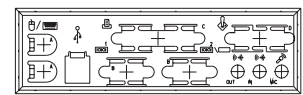
Type "Aurora Marl"



Type "Venus"



Type "Providence"



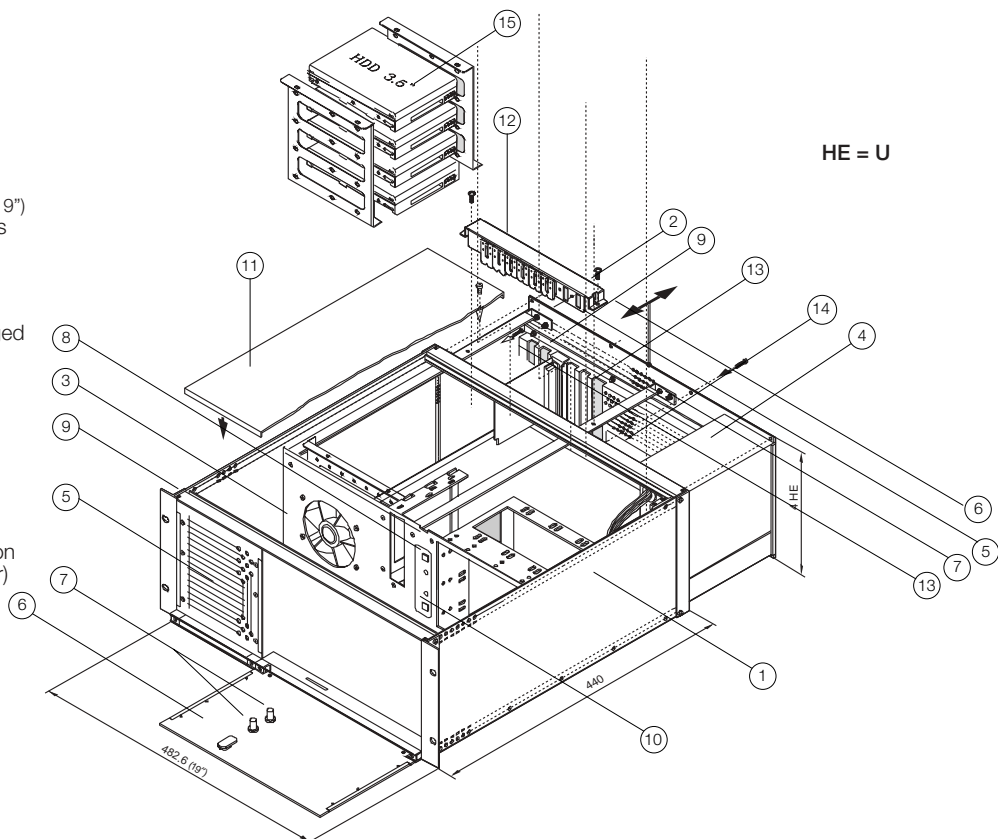
Type "Tucson"

Supply includes:

- ① Rack-mounted system 4 U, 440 mm deep, 482.6 mm (19") wide, including drive chassis
- ② PC internal cassette
- ③ 1 fan with filter
- ④ 250 W power pack¹⁾
- 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

1) Output of power pack:

250 W max.
 3.3 V/ 14.0 A
 5.0 V/ 30.0 A
 +12.0 V/ 13.0 A
 -12.0 V/ 0.5 A





Technical specifications:
482.6 mm (19") rack-mounted system for the installation of ATX/Mini-ATX or Micro-ATX boards as well as 3 x 5 1/4" and 1 x 3 1/2" drives.
Width: 482.6 mm (19")
Height: 4 U (177.0 mm)
Overall depth: 440 mm, to DIN 41 494, part 5, IEC 60 297-3 and ATX specification 2.01

Material:
Side panels:
Aluminium, clear chromated
Front panels:
Aluminium, clear chromated
Covers:
1.0 mm aluminium, clear chromated
PC internal cassette:
Sheet steel, zinc-plated

Accessories:
see page 102 – 105

UPS Technical specifications:

Output: 300 VA/180 W
Input/output voltages:
220, 230, 240 V AC $\pm 15\%$
Input frequency: 50 Hz $\pm 5\%$
Output frequency: 50 Hz ± 1 Hz
Switch-over time: < 4 ms
Charging time: 6 – 8 hours (to 90 % capacity)
Operating environment:
Temperature 0 °C – 40 °C,
Humidity 0 – 90 %
Status display: LED for mains operation, back-up, low battery, over-temperature.
Acoustic alarms: Mains interruption (signal sounds every 5 sec.), low battery (signal sounds every second)
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.

- Fully assembled
- Power pack and fan included
- EMC prepared
- Includes electronics for automatic restart following a power failure
- Special designs available on request



Drive holder
Holder for mounting up to 4 additional hard disks behind the fan.



Uninterruptible power supply
Guarantees a continuous supply of power even in the event of a mains failure.

In detail: ATX 1, 2 and 4 U, sheet steel

The right solution for minimum space requirements. The 1 and 2 U 482.6 mm (19") racks are particularly well-suited for use in network and server systems. They facilitate the configuration of complex industrial PCs in ATX format. The 4 U version has provision for parallel installation of CPCI boards. The neutral sheet steel design ensures problem-free adaptation of existing peripheral equipment.

1 Design features 1 and 2 U



Enclosure made from sheet steel, spray-finished in RAL 7035 with separate 482.6 mm (19") flanges.



Lockable front panel protects against unauthorised access.



Replaceable filter mat



Riser card for 1 slot or 2 slots.



Telescopic slide installation for 2 U version.

2 EMC measures



Uncoated contact points to ensure that reliable contact is made.



EMC gaskets in the drive slot (for 1 U version only).

3 Power supply



ATX power supply 200 or 300 watts with PFC (power factor correction) active.

4 Ventilation



Front fan with filter mat, ensures targeted ventilation.

5 Drives



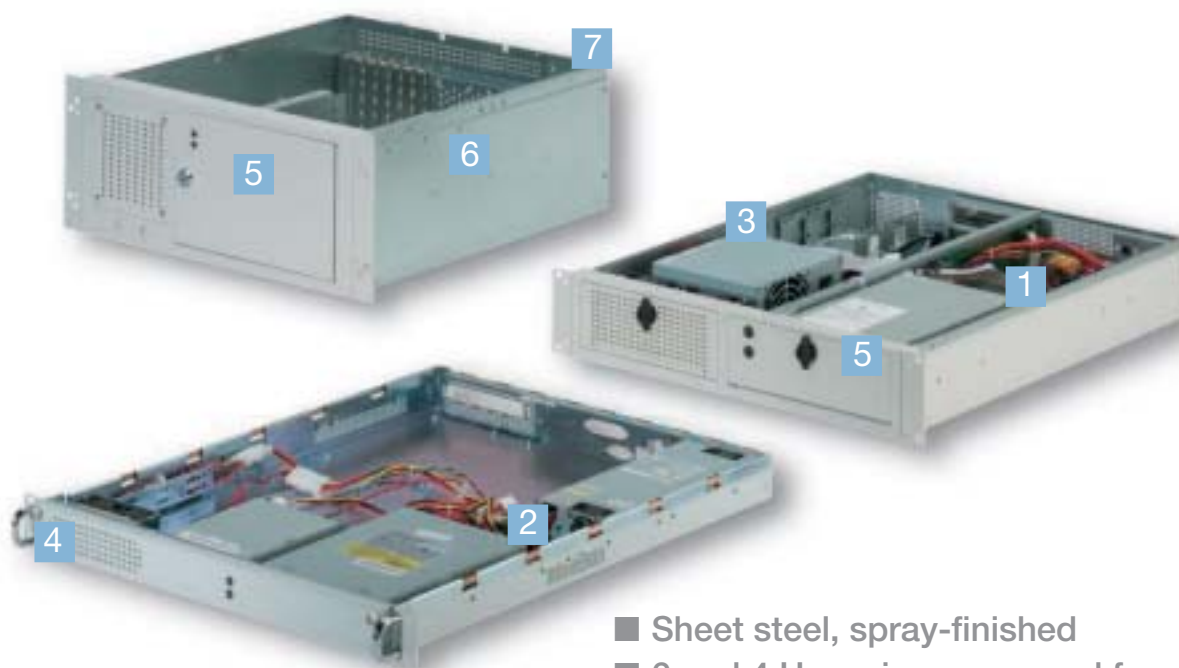
Drive installation (1 and 2 U): Installation of 1 x 5 1/4" and 1 x 3 1/2" drives.



Drive installation (4 U): Installation of 3 x 5 1/4" and 1 x 3 1/2" drives.

Product information

ATX industrial PC 1, 2 and 4 U, sheet steel



- Sheet steel, spray-finished
- 2 and 4 U versions prepared for mounting on telescopic slides
- EMC prepared
- Fully assembled, including riser card, fan, air filter and power pack
- Slide rail installation

6 Design features 4 U



Enclosure made from sheet steel
spray-finished in RAL 7035 with separate 482.6 mm (19") flanges.



Lockable front panel
protects against unauthorised access.



Filter mat and fan
exchangeable from the front.



Slide rail installation
without loss of height, due to the reduced height of the side panel.



Telescopic slide installation

7 EMC measures



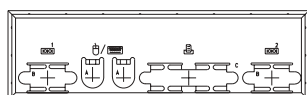
Unpainted contact points
to ensure that reliable contact is made.

Order information

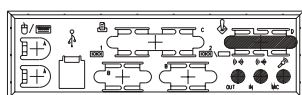
ATX industrial PC 1 U and 2 U, sheet steel

ATX 1 U/2 U, sheet steel		Material	Packs of	Model No. RP		Page
				1 U	2 U	
Width: 482.6 mm (19")						
Height: 1 U (44.0 mm)/2 U (88.0 mm)						
Depth: 530.0 mm						
①	Model No. RP Basic system	Sheet steel, zinc-plated/ spray finished in RAL 7035	1	3659.500	3659.600	
Accessories						
	Unused slot cover	Sheet steel	5	3659.030	3659.030	103
ATX I/O covers*:						
	Type "Aurora Marl"	Sheet steel	1		3659.040	
	Type "Tucson"/"Venus"	Sheet steel	1		3659.130	
	Type "Providence"	Sheet steel	1		3659.140	
	Covers for 5 1/4" drive	Sheet steel, spray finished	1 set	3659.110	3659.110	103
	Covers for 3 1/2" drive	Sheet steel, spray finished	1 set	3659.410	3659.410	103
	UPS		1	3659.080	3659.080	103
	Telescopic slides for 600 mm incl. depth	Sheet steel, spray finished	1 set		3659.180	104
	Telescopic slides for 800 mm incl. depth	Sheet steel, spray finished	1 set		3659.190	
	Front handles for ATX 1 U	Steel, plated	2	3659.540		104
	Front handles for ATX 2 U	Steel, plated	2		3659.020	104
	Fan 12 V DC, 60 mm for the rear panel		2		3659.250	105

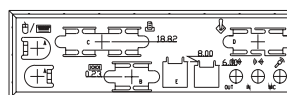
* Other versions available on request; please specify the type of mainboard



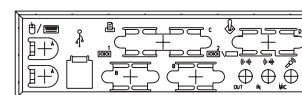
Type "Aurora Marl"



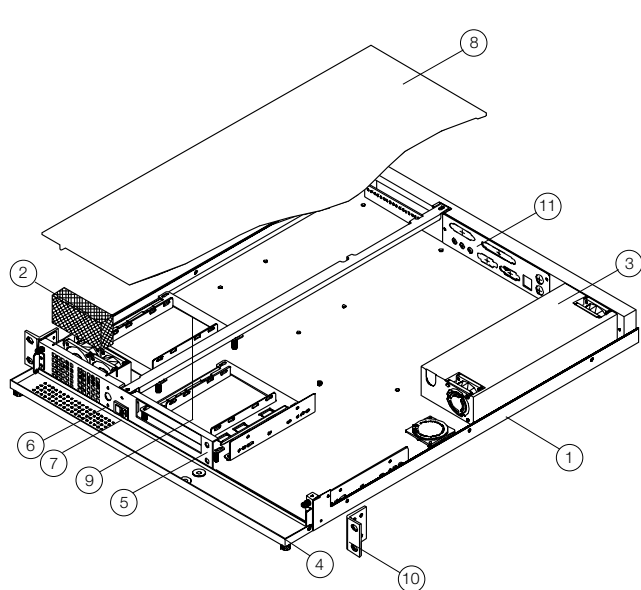
Type "Venus"



Type "Providence"



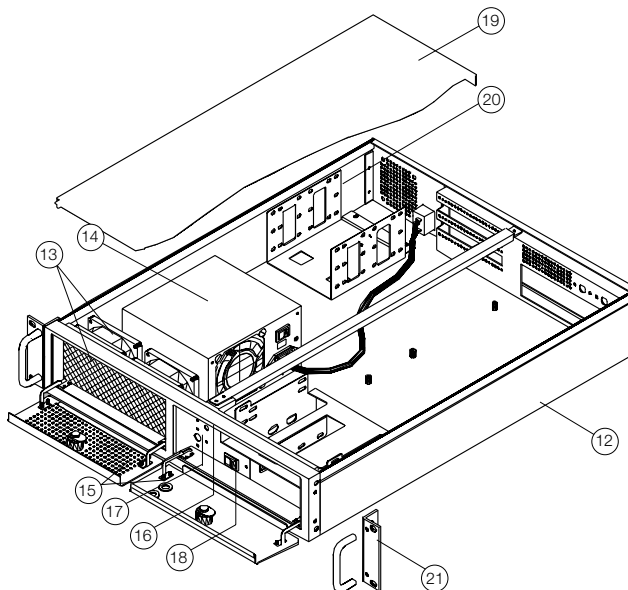
Type "Tucson"



Supply includes ATX 1 U:

- ① Rack-mounted system 1 U, 530 mm deep, 482.6 mm (19") wide incl. drive chassis for the installation of 1 x 5 1/4" and 1 x 3 1/2" drive
- ② 2 x 40 mm fans and filter mat
- ③ ATX power pack 200 W, PFC active
- ④ Front door, horizontal hinge
- ⑤ LED displays, speakers
- ⑥ Reset button
- ⑦ ON/OFF switch
- ⑧ Covers
- ⑨ Drive holder for one 3 1/2" hard disk
- ⑩ 482.6 mm (19") flanges
- ⑪ Rear panel with integral I/O shield, type "Venus"

Riser card, 1 x PCI slot, 32 bit



Supply includes ATX 2 U:

- ⑫ Rack-mounted system 2 U, 530 mm deep, 482.6 mm (19") wide incl. drive chassis for the installation of 1 x 5 1/4" and 1 x 3 1/2" drive
- ⑬ 2 x 80 mm fans and filter mat
- ⑭ ATX power pack 300 W with mains cable, PFC active
- ⑮ Front door, horizontal hinge, lockable
- ⑯ LED displays, speakers
- ⑰ Reset button
- ⑱ ON/OFF switch
- ⑲ Covers
- ⑳ Drive holder for three 3 1/2" hard disks
- ㉑ 482.6 mm (19") flanges

Bus and data connection cable
Riser card, 2 x PCI slot, 32 bit



Technical specifications:

482.6 mm (19") rack-mounted system for the installation of ATX/Mini-ATX or Micro-ATX boards as well as 1 x 5 1/4" and 1 x 3 1/2" drive.

Width: 482.6 mm (19")

Height: 1 U and 2 U

Overall depth: 530 mm, complies with DIN 41 494, part 5, IEC 60 297-3 and ATX specification 2.01

Material/Surface finish:

Case:

1.2 mm sheet steel, zinc-plated/spray finished in RAL 7035

Cover:

1.2 mm sheet steel, zinc-plated/spray finished in RAL 7035

Front door:

1.2 mm sheet steel, spray finished in RAL 7035

Accessories:

see page 102 – 105

- Fully assembled
- Includes power pack and fan
- EMC prepared
- Special designs available on request



Telescopic slides

The 2 U ATX enclosures are prepared for the installation of telescopic slides.



Riser card

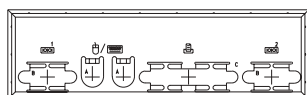
for 1 or 2 slots included.

Order information

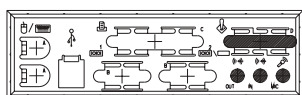
ATX industrial PC 4 U, sheet steel

	Rittal ATX 4 U, sheet steel	Material	Packs of	Model No. RP	Page
	Width: 482.6 mm (19")				
	Height: 177.0 mm/174.0 mm				
	Depth: 442.5 mm/440.0 mm				
①	Model No. RP Basic system	Sheet steel, zinc-plated, painted in RAL 7035	1	3659.900	
	Accessories				
	Card retainer	Plastic	7 sets	3659.010	104
	Mounting bar for card retainer	Sheet steel, zinc-plated	1	3659.090	104
	Unused slot cover	Sheet steel	5	3659.030	103
	ATX I/O covers*:		1		
	Type "Aurora Marl"	Sheet steel	1	3659.040	
	Type "Tucson"/ "Venus"	Sheet steel	1	3659.130	
	Type "Providence"	Sheet steel	1	3659.140	
	Covers for 5 1/4" drives	Sheet steel, spray finished	1 set	3659.110	103
	Covers for 3 1/2" drives	Sheet steel, spray finished	1 set	3659.410	103
	UPS		1	3659.080	103
	Telescopic slides for 600 mm enclosure depth	Sheet steel, spray finished	1 set	3659.180	104
	Telescopic slides for 800 mm enclosure depth	Sheet steel, spray finished	1 set	3659.190	104
⑩	Front handles for 4 U	Sheet steel, plated	2	3659.240	104

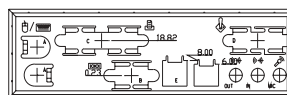
* Other versions available on request, please specify the type of mainboard



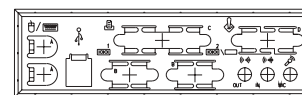
Type "Aurora Marl"



Type "Venus"



Type "Providence"



Type "Tucson"

Supply includes:

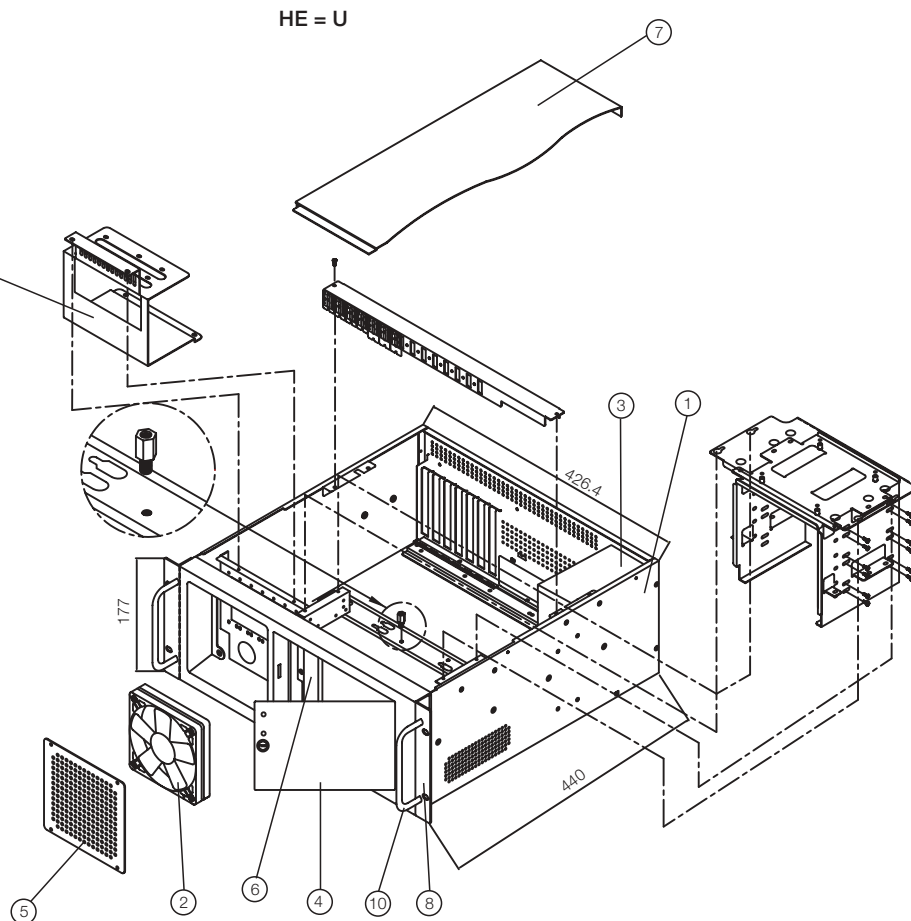
- ① Rack-mounted system 4 U, 440 mm deep, 482.6 mm (19") wide, incl. drive chassis for the installation of 3 x 5 1/4" and 1 x 3 1/2" drives
- ② 1 x fan 120 mm and filter mat, exchangeable at the front
- ③ 300 W ATX power pack¹⁾, 180 VAC – 230 VAC, PFC active
- ④ Front door, vertically hinged, lockable
- ⑤ Front panel with vent slots and filter mat
- ⑥ LED displays, speakers, Reset button, ON/OFF switch
- ⑦ Cover
- ⑧ 482.6 mm (19") flanges
- ⑨ Drive holder for 4 x 3 1/2" hard disks

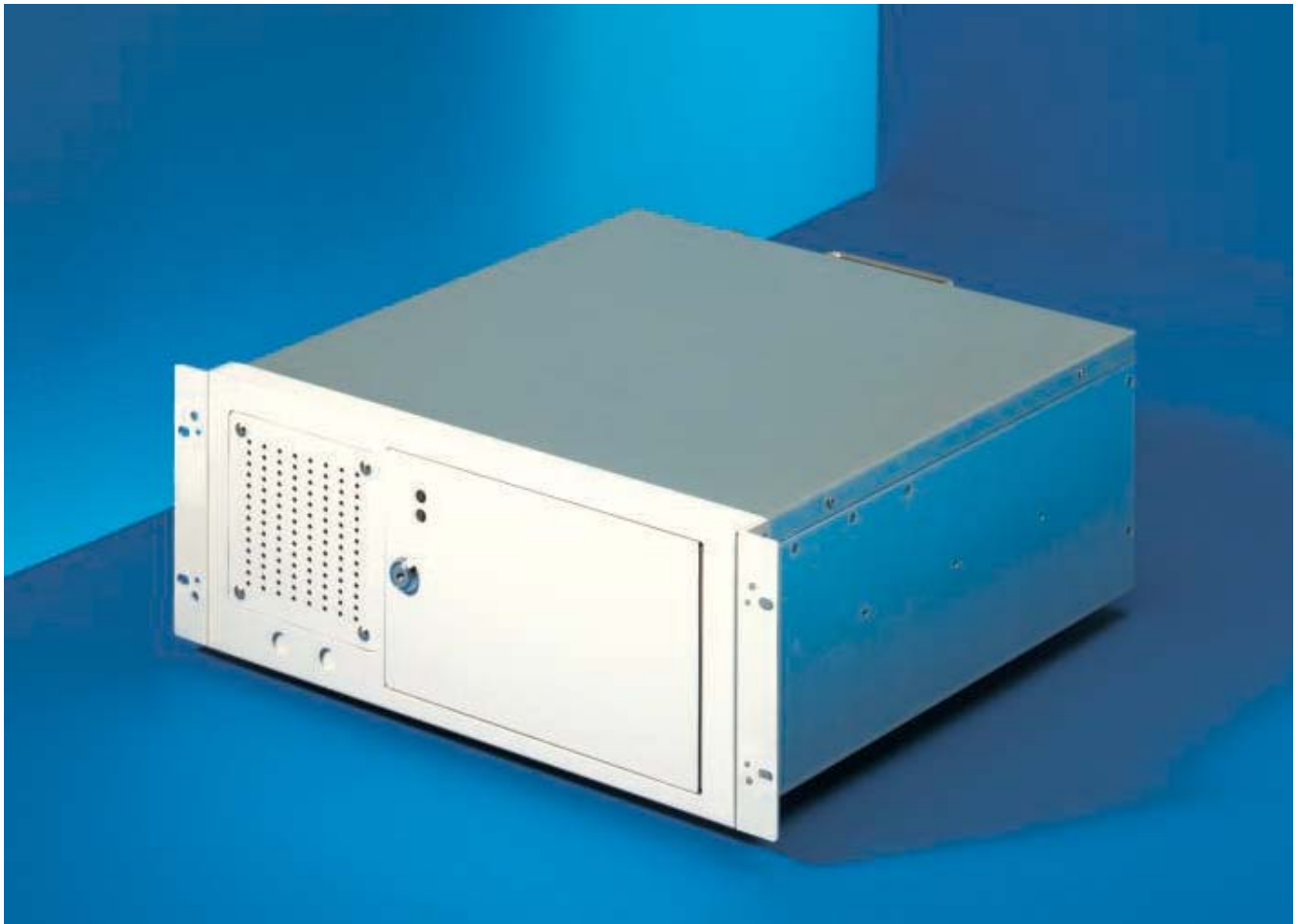
¹⁾ Output of power pack:

300 W max.

- 3.3 V/ 28.0 A
- 5.0 V/ 28.0 A
- 5.0 V/ 0.3 A
- +12.0 V/ 13.0 A
- 12.0 V/ 0.8 A
- +3.3 V/ +5.0 V/+12 V max. 280 W
- +3.3 V/ +5.0 V max. 180 W

(Model No. 3688.129)





Technical specifications:

482.6 mm (19") rack-mounted system for the installation of ATX/Mini-ATX or Micro-ATX boards as well as 3 x 5 1/4" and 1 x 3 1/2" drives.

Width: 482.6 mm (19")

Height (4 U):

Flanges: 177.0 mm

Side panels: 174.0 mm

Overall depth: 442.5 mm

Suitable for mounting on slide rails

Complies with DIN 41 494, part 5, IEC 60 297-3 and ATX specification 2.01

Material/Surface finish:

Case:

1.2 mm sheet steel, painted in RAL 7035

Covers:

1.2 mm sheet steel, painted in RAL 7035

Front panels:

1.2 mm sheet steel, painted in RAL 7035

Zinc-plated contact points

Accessories:

see page 102 – 105

- Fully assembled
- Including power pack
- Suitable for mounting on slide rails
- EMC prepared
- Special designs available on request



Slide rail installation
due to reduced side panel height.



Telescopic slides and handles
ensure fast access (available as accessories).

In detail: ATX Economy, AT/ATX Vario Economy

These 482.6 mm (19") rack-mounted systems are suitable for the configuration of industrial PCs in accordance with AT or ATX specifications. The robust sheet steel structure provides adequate stability in tough industrial environments. ATX Economy is supplied fully populated and assembled, whilst AT/ATX Vario Economy is available as a basic chassis for individual population, e.g. for AT or ATX applications.

1 Design features



Enclosure made of sheet steel spray-finished/zinc-plated, ensures a high level of stability.



Simple removal of the drive chassis, for external population.



Variable keyboard connection at the front or rear.



Handling prepared for mounting telescopic slides and front handles (accessory).



Card retainer for secure attachment of cards up to a depth of 327 mm.



Lockable front door protects against unauthorised access and contamination.

2 EMC measures



EMC gaskets between the slot cutouts.



Enclosure made from sheet steel, zinc-plated.

3 Power supply



ATX power supply unit with power factor correction (PFC), wide-range input and CE label.

4 Ventilation



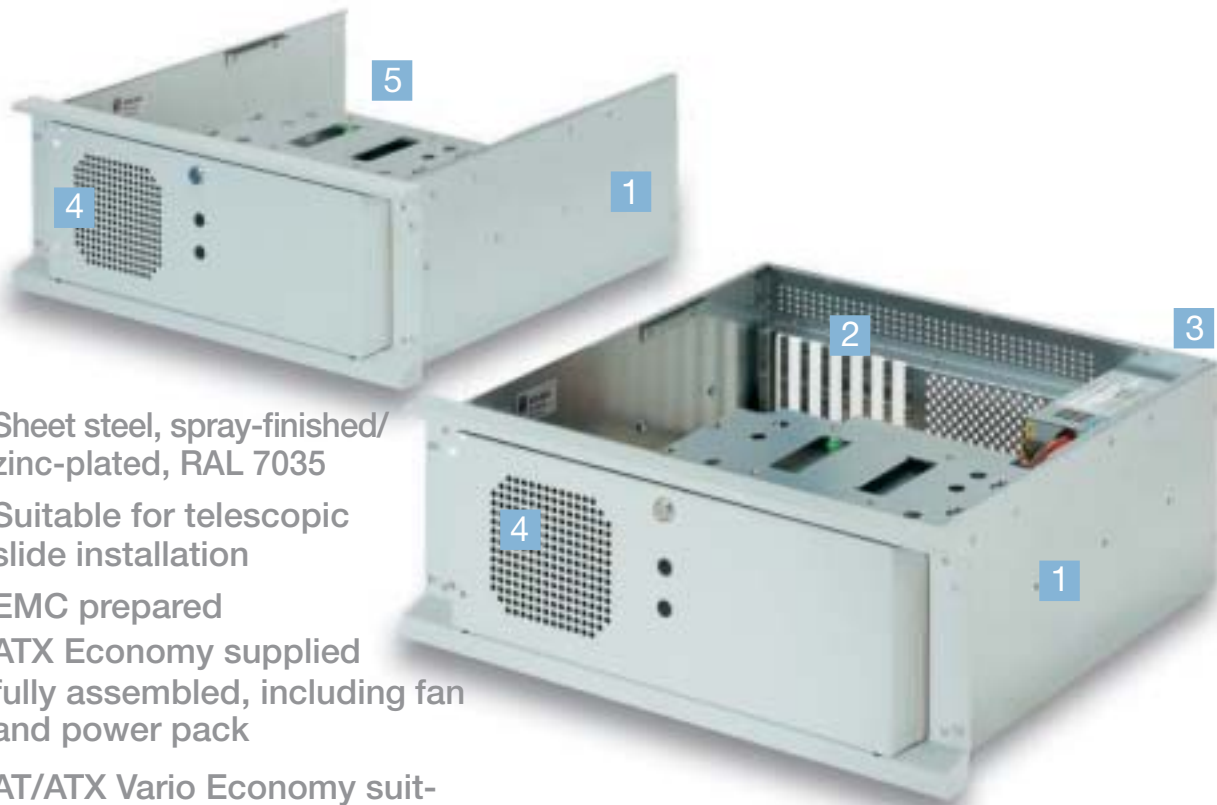
Front fan with air filter, ensures targeted ventilation.



Rear panel prepared for mounting two additional fans, 60 mm.

Product information

Industrial PC ATX Economy, AT/ATX Vario Economy with front door, 4 U, sheet steel



- Sheet steel, spray-finished/zinc-plated, RAL 7035
- Suitable for telescopic slide installation
- EMC prepared
- ATX Economy supplied fully assembled, including fan and power pack
- AT/ATX Vario Economy suitable for individual configuration

5 Drives and hard disks



Option of installing three 5 1/4" drives and one 3 1/2" drive.



Drive holder for installation of up to four additional 3 1/2" hard disks behind the fan.

6 Accessories for the configuration of AT/ATX Vario Economy

The AT/ATX Vario Economy modular system can be individually configured for both AT and ATX applications. The basic chassis can be upgraded to suit the required application via the addition of rear panels, slotted rear panels, front trim panels and various power supply units (see page 105).



Slotted rear panels optionally for AT 8 + 4 or 14 slots and ATX 7 slots.



Rear panels optionally for AT, ATX or redundant power supply in the PS/2 design.



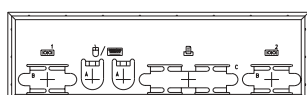
Front trim panels for AT or ATX version with optional electronics for automatic restart.

Order Information

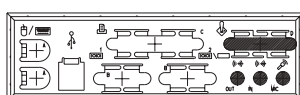
ATX Economy industrial PC with front door 4 U, sheet steel

Rittal ATX Economy 4 U, sheet steel		Material	Packs of	Model No. RP	Page
Width: 482.6 mm (19")					
Height: 177.0 mm					
Depth: 430.0/415.0 mm					
①	Model No. RP Basic system	Sheet steel, zinc-plated, spray finished in RAL 7035	1	3659.100	
Accessories					
⑨	Card retainer	Plastic	7 sets	3659.010	104
	Mounting bar for card retainer	Sheet steel, zinc-plated	1	3659.090	104
	Unused slot cover	Sheet steel	5	3659.030	103
	ATX I/O covers*:				
	Type "Aurora Marl"	Sheet steel	1	3659.040	
	Type "Tucson"/"Venus"	Sheet steel	1	3659.130	
	Type "Providence"	Sheet steel	1	3659.140	
	Covers for 5 1/4" drives	Sheet steel, spray finished	1 set	3659.110	103
	Covers for 3 1/2" drives	Sheet steel, spray finished	1 set	3659.410	103
⑩	Drive holder	Sheet steel, zinc-plated	2	3659.230	104
⑪	Spare filter mat		1	3659.120	
	UPS		1	3659.080	103
	Telescopic slides for 600 mm enclosure depth	Sheet steel, spray finished	1 set	3659.180	104
	Telescopic slides for 800 mm enclosure depth	Sheet steel, spray finished	1 set	3659.190	104
⑫	Front handles 4 U	Steel, plated	2	3659.240	104

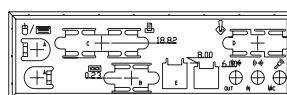
* Other versions available on request; please specify the type of mainboard



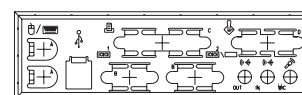
Type "Aurora Marl"



Type "Venus"



Type "Providence"



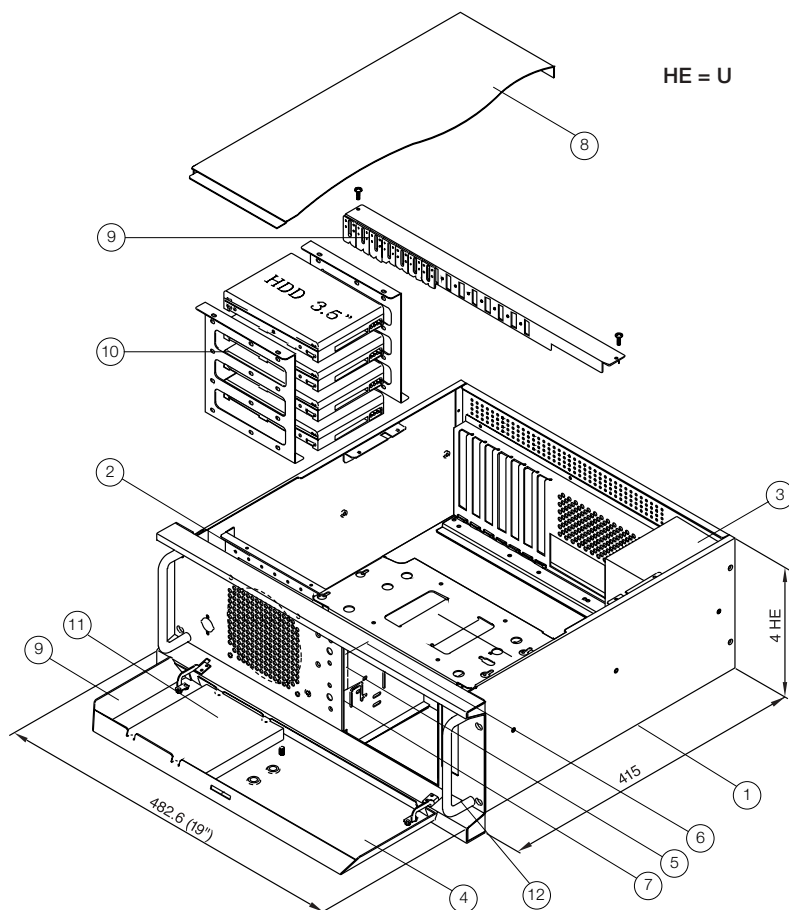
Type "Tucson"

Supply includes:

- ① Rack-mounted system 4 U, 430 mm deep, 482.6 mm (19") wide, incl. drive chassis
- ② 1 fan
- ③ 250 W power pack¹⁾, PFC active, with switch
- ④ Front door, horizontally hinged, lockable
- ⑤ LED displays, speakers
- ⑥ Reset button
- ⑦ ON/OFF switch
- ⑧ Cover

1) Output of power pack:

250 W max.
 3.3 V/ 14.0 A
 5.0 V/ 30.0 A
 +12.0 V/ 15.0 A
 -12.0 V/ 0.5 A
 Temperature-controlled



ATX Economy industrial PC with front door 4 U, sheet steel

**Technical specifications:**

482.6 mm (19") rack-mounted system for the installation of ATX/Mini-ATX or Micro-ATX boards as well as 3 x 5¹/₄" and 1 x 3¹/₂" drives.

Width: 482.6 mm (19")

Height: 4 U (177.0 mm)

Overall depth: 430 mm, complies with DIN 41 494, part 5, IEC 60 297-3 and ATX specification 2.01

- Fully assembled
- Includes power pack and fan
- EMC prepared
- Special designs available on request

Material/Surface finish:

Case:

1.2 mm sheet steel, zinc-plated

Cover:

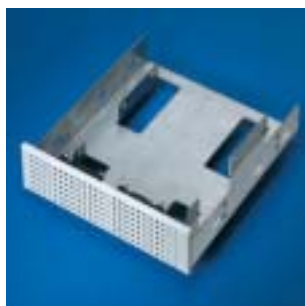
1.2 mm sheet steel, zinc-plated, passivated

Front door:

1.2 mm sheet steel, spray finished in RAL 7035

Accessories:

see page 102 – 105



Adaptor
for the installation of 3¹/₂" hard disks in 5¹/₄" (accessory).



Height adjustable card retainer
to hold the slotted cards securely (accessory).



Rear panel
prepared for mounting an additional two 60 mm fans (accessory).

Order information

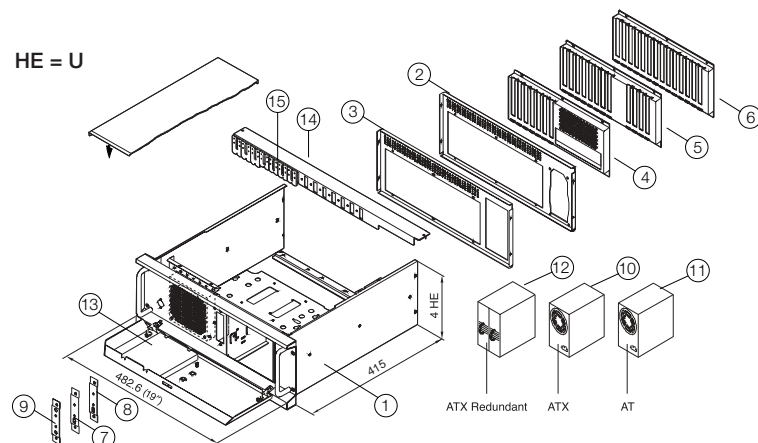
AT/ATX Vario Economy modular system with front door 4 U, sheet steel

	Modular system for AT/ATX Vario Economy with front door	Packs of	PC for AT/ATX power pack (PS/2)			PC for redundant power pack (PS/2)			Page
			ATX	AT 8 + 4 slots	AT 14 slots	ATX	AT 8 + 4 slots	AT 14 slots	
①	Basic enclosure	1	3659.400	3659.400	3659.400	3659.400	3659.400	3659.400	
	Rear:								
②	Rear panel for AT/ATX power supply	1	3659.290	3659.290	3659.290				105
③	Rear panel for redundant power supply	1				3659.310	3659.310	3659.310	105
④	Slotted rear panel for ATX, 7 slots	1	3659.320			3659.320			105
⑤	Slotted rear panel, 8 + 4 slots for AT	1		3659.330			3659.330		105
⑥	Slotted rear panel, 14 slots for AT	1			3659.340			3659.340	105
	Front:								
⑦	Front trim panel ATX with 2 x LED, reset, switch	1 set	3659.350			3659.350			105
⑧	Front trim panel AT with 2 x LED, reset, switch	1 set		3659.360	3659.360		3659.360	3659.360	105
⑨	Front trim panel ATX with automatic restart, 2 x LED, reset, power on switch	1 set	3659.370			3659.370			105
	Power supplies (see page 102/103):								
⑩	ATX power supply 250 W, passive PFC, temperature-controlled	1	3688.121						102
	ATX power supply 300 W, active PFC	1	3688.129						102
	ATX power supply 400 W, active PFC	1	3688.128						102
⑪	AT power supply 300 W, passive PFC	1		3688.118	3688.118				102
⑫	Redundant power supply (PS/2)	1				3688.123	3688.123	3688.123	102
	Fan 12 V DC, 60 mm, with 2 connectors (for the rear panel)	2	3659.250	3659.250	3659.250	3659.250	3659.250	3659.250	105
⑬	Spare filter mat	1	3659.120	3659.120	3659.120	3659.120	3659.120	3659.120	
	Accessories:								
⑭	Mounting bar for card retainers	1	3659.090	3659.090	3659.090	3659.090	3659.090	3659.090	104
⑮	Card retainers	7	3659.010	3659.010	3659.010	3659.010	3659.010	3659.010	104
	Unused slot cover	5	3659.030	3659.030	3659.030	3659.030	3659.030	3659.030	103
	Drive holder	1 set	3659.230	3659.230	3659.230	3659.230	3659.230	3659.230	104
	I/O shield "Aurora Marl"	1	3659.040	3659.040	3659.040	3659.040	3659.040	3659.040	84
	I/O shield "Tucson"/"Venus"	1	3659.130	3659.130	3659.130	3659.130	3659.130	3659.130	84
	I/O shield "Providence"	1	3659.140	3659.140	3659.140	3659.140	3659.140	3659.140	84
	Tel. slides for 600 mm enclosure depth	1 set	3659.180	3659.180	3659.180	3659.180	3659.180	3659.180	104
	Tel. slides for 800 mm enclosure depth	1 set	3659.190	3659.190	3659.190	3659.190	3659.190	3659.190	104
	Covers for 5 1/4" drives	1	3659.110	3659.110	3659.110	3659.110	3659.110	3659.110	103
	Covers for 3 1/2" drives	1	3659.410	3659.410	3659.410	3659.410	3659.410	3659.410	103
	UPS	1	3659.080	3659.080	3659.080	3659.080	3659.080	3659.080	103
	Adaptor for installing 3 1/2" floppy disks in 5 1/4"	1	3659.280	3659.280	3659.280	3659.280	3659.280	3659.280	104
	Adaptor for installing 3 1/2" hard disks in 5 1/4"	1	3659.270	3659.270	3659.270	3659.270	3659.270	3659.270	104
	Front handles 4 U	2	3659.240	3659.240	3659.240	3659.240	3659.240	3659.240	104

Basic enclosure supply includes:

- ① 4 U subrack, 430 mm deep, incl. assembly parts, covers, drive chassis, fan, front door, horizontally hinged, air filter.

The modular principle of AT/ATX Vario facilitates population in line with individual requirements. The basic subrack can be equipped with a corresponding selection of rear panels, power supply units and front trim panels for both AT and ATX applications. Normally supplied for self assembly; also available fully assembled and wired on request.



AT/ATX Vario Economy modular system with front door 4 U, sheet steel

**Technical specifications:**

482.6 mm (19") rack-mounted system for the installation of ATX/Mini-ATX, Micro-ATX boards or AT/Baby-AT boards as well as 3 x 5 1/4" and 1 x 3 1/2" drives.
 Width: 482.6 mm (19")
 Height: 4 U (177.0 mm)
 Overall depth: 430 mm, complies with DIN 41 494, part 5
 IEC 60 297-3 and ATX specification 2.01

Material/Surface finish:

Case:
 1.2 mm sheet steel, zinc-plated, passivated
 Cover:
 1.2 mm sheet steel, zinc-plated, passivated
 Front door:
 1.2 mm sheet steel, spray finished

Accessories:

see page 102 – 105

- Basic enclosure assembled
- Order rear panel, front trim panel and power pack separately (for self assembly)
- For AT or ATX applications
- Special sizes and designs available on request



Slot rear panels
 for AT 8 + 4 or 14 slots and ATX 7 slots (see page 105).



Front trim panels
 for AT or ATX version. With optional electronics for automatic restart (see page 105).



Rear panels
 for AT, ATX or redundant power the PS/2 style (see page 105).

In detail: ATX with front connections

These two systems are used in situations where I/O connections cannot be attached at the rear for reasons of space, or because they need to be accessible from the front. Both systems are suitable for the configuration of industrial PCs to ATX specifications. Here too, users can depend on the high level of stability afforded by the sheet steel structure, which is suitable for robust applications in industrial environments. The systems are optionally available for 482.6 mm (19") installation or on a mounting plate.

ATX for 482.6 mm (19") installation

1 Design features/EMC measures



Enclosure made of sheet steel spray-finished/zinc-plated, ensures a high level of stability.



I/O connections at the front for ease of access from the front.



Slide rail installation due to the reduced side panel height.



Rear panel with cutout for PS/2 power pack.



Handling prepared for mounting telescopic slides and front handles.

2 Ventilation



Vent holes in the front panel.



Front panel for mounting 2 fans.

3 Drives



Option of installing one 5 1/4" and one 3 1/2" drive.

4 Power supply



ATX power supply unit with power factor correction (PFC), long-range input and CE label.

5 EMC measures



Uncoated contact points ensure conductive connection.

Product information

ATX industrial PC with front connections, 4 U, sheet steel



- Sheet steel spray-finished/ zinc-plated, RAL 7035
- For installation in 482.6 mm (19") enclosures or on mounting plates
- Suitable for telescopic slide or slide rail installation
- EMC prepared
- Fully assembled, including power pack



ATX for wall mounting

6 Design features/EMC measures



Sheet steel enclosure with zinc-plated surface finish ensures good contact.



Flange with "key" holes for surface mounting.



I/O connections at the front for ease of access from the front.



Lockable front panel protects against unauthorised access.

7 Ventilation



Front panel for mounting 2 fans.

8 Drives



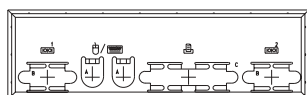
Option of installing three 5 1/4" drives and one 3 1/2" drive.

Order information

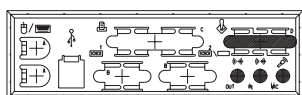
ATX industrial PC with front connections for 482.6 mm (19") installation

ATX with front connections		Material	Packs of	Model No. RP	Page
Width: 482.6 mm (19")					
Height: 177.0 mm (flanges); 174.0 mm (side panels)					
Depth: 442.5 mm/440.0 mm					
①	Model No. RP Basic system	Sheet steel, zinc-plated, painted in RAL 7035	1	3659.700	
Accessories					
	Card retainer	Plastic	7 sets	3659.010	104
	Unused slot cover	Sheet steel	5	3659.030	103
	ATX I/O-covers*:		1		
	Type "Aurora Marl"	Sheet steel	1	3659.040	
	Type "Tucson"/"Venus"	Sheet steel	1	3659.130	
	Type "Providence"	Sheet steel	1	3659.140	
	Covers for 5 1/4" drives	Sheet steel, spray finished	1 set	3659.110	103
	Covers for 3 1/2" drives	Sheet steel, spray finished	1 set	3659.410	103
	Telescopic slides for 600 mm enclosure depth	Sheet steel, spray finished	1 set	3659.180	104
	Telescopic slides for 800 mm enclosure depth	Sheet steel, spray finished	1 set	3659.190	104
⑩	Front handles for 4 U	Steel, plated	2	3659.240	104

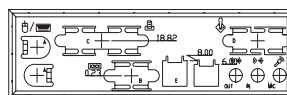
* Other versions available on request, please specify the type of mainboard



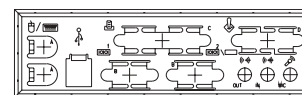
Type "Aurora Marl"



Type "Venus"



Type "Providence"



Type "Tucson"

Supply includes:

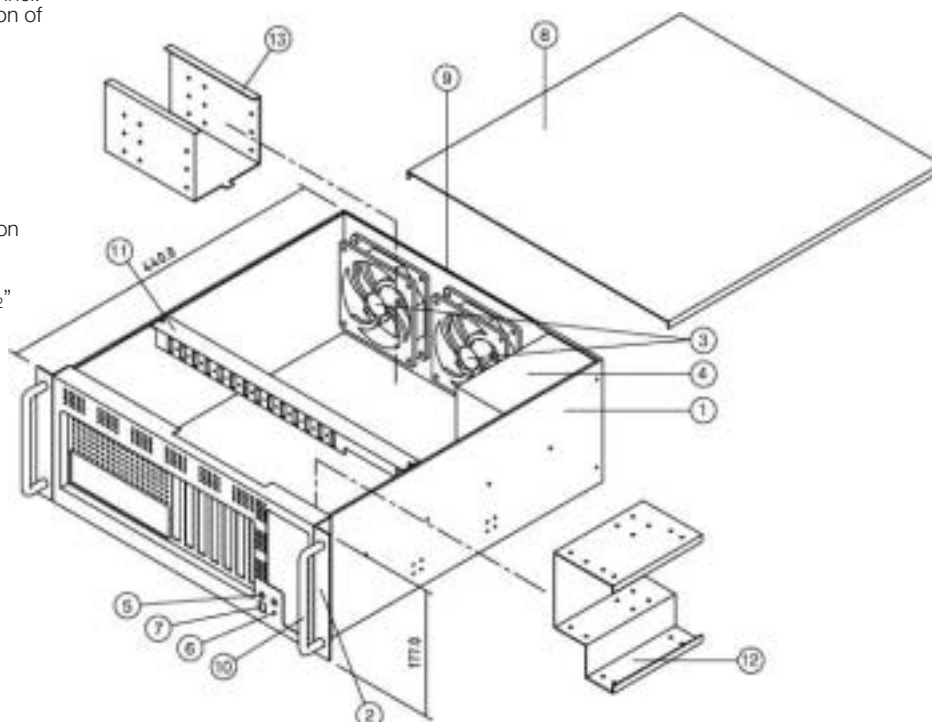
- ① Rack-mounted system 4 U,
440 mm deep, 482.6 mm (19") wide, incl.
drive chassis for the vertical installation of
1 x 5 1/4" and 1 x 3 1/2" drives
- ② 482.6 mm (19") flanges
- ③ 2 fans
- ④ 250 W power pack¹⁾
- ⑤ LED displays
- ⑥ Reset button
- ⑦ ON/OFF switch
- ⑧ Cover
- ⑨ Rear panel with cutout and connection
for power pack
- ⑪ Mounting bar for card retainer
- ⑫ Drive holder for 1 x 5 1/4" and 1 x 3 1/2"
- ⑬ Drive holder for 3 x hard disks 3 1/2"

¹⁾ Output of power pack:

250 W max.

- 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
- +3.3 V/ +5.0 V/+12 V max. 230 W
- +3.3 V/ +5.0 V max. 150 W

(Model No.: RP 3688.127)



ATX industrial PC with front connections for 482.6 mm (19") installation

**Technical specifications:**

482.6 mm (19") rack-mounted system for the installation of ATX/Mini-ATX or Micro-ATX boards as well as 1 x 5 1/4" and 1 x 3 1/2" drives.

Width: 482.6 mm (19")

Height: 4 U

Flanges: 177.0 mm

Side panels: 174.0 mm

Overall depth: 440 mm

Connections for I/O at the front

Suitable for mounting on slide rails

Complies with DIN 41 494,

part 5, IEC 60 297-3 and ATX specification 2.01

Material/Surface finish:

Case:

1.2 mm sheet steel,
painted RAL 7035

Covers:

1.2 mm sheet steel,
painted RAL 7035
Zinc-plated contact points

Accessories:

see page 102 – 105

- Fully assembled
- Including power pack
- Suitable for mounting on slide rails
- EMC prepared
- Special designs available on request



Front connections
for I/Os.



Slide rail installation
due to reduced side panel height.



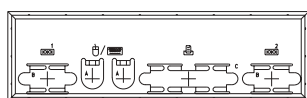
Telescopic slides
for installation in 600/800 mm
enclosures (accessory).

Order information

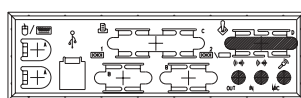
ATX industrial PC with front connections for surface mounting

Rittal ATX with front connections		Material	Packs of	Model No. RP	Page
Width: 380 mm					
Height: 330 mm					
Depth: 290 mm					
①	Model No. RP Basic system	Sheet steel, zinc-plated	1	3659.710	
Accessories					
	Unused slot covers	Sheet steel	5	3659.030	103
ATX I/O covers*:					
	Type "Aurora Marl"	Sheet steel	1	3659.040	
	Type "Tucson"/"Venus"	Sheet steel	1	3659.130	
	Type "Providence"	Sheet steel	1	3659.140	
	Covers for 5 1/4" drives	Sheet steel, spray finished	1 set	3659.110	103
	Covers for 3 1/2" drives	Sheet steel, spray finished	1 set	3659.410	103
	UPS		1	3659.080	103

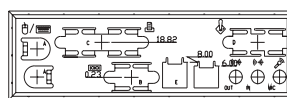
* Other versions available on request, please specify the type of mainboard



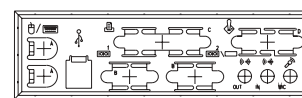
Type "Aurora Marl"



Type "Venus"



Type "Providence"



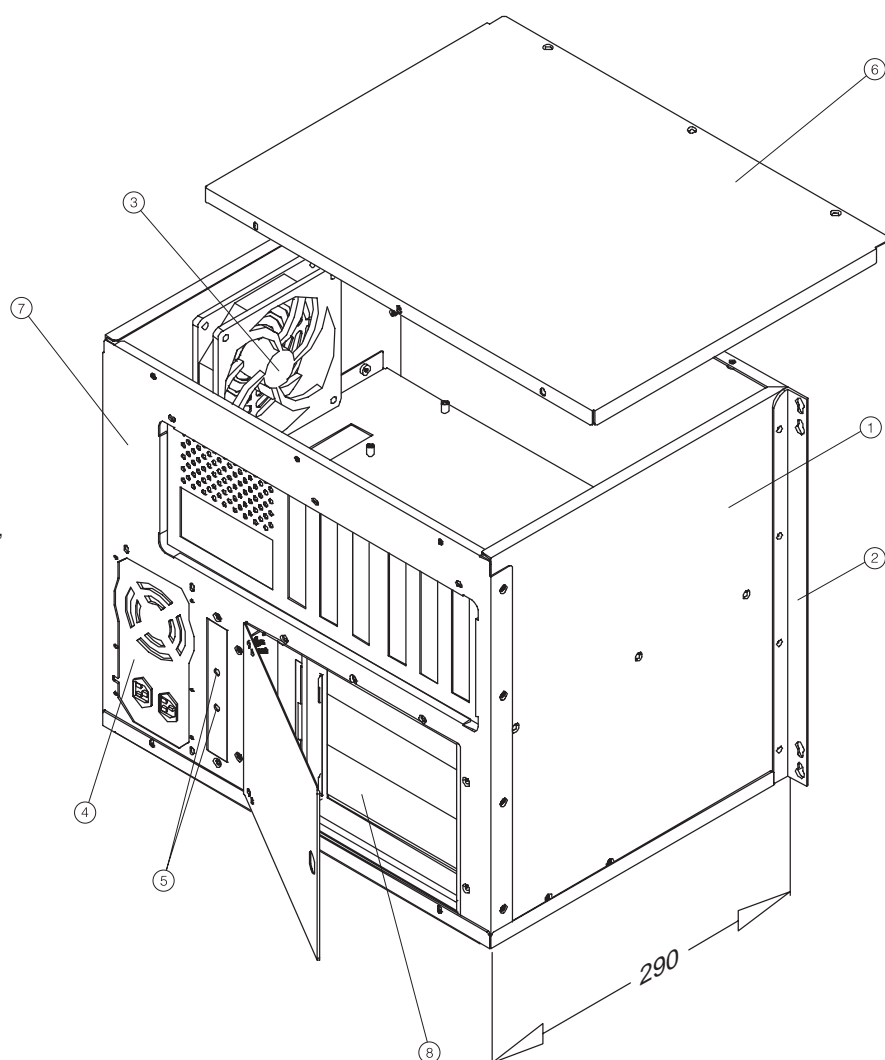
Type "Tucson"

Supply includes:

- ① Rack-mounted system
290 mm deep, incl. drive chassis for the
vertical installation of 3 x 5 1/4" and 1 x 3 1/2"
drives
- ② Flange for wall mounting
- ③ 1 fan
- ④ 250 W power pack¹⁾
- ⑤ LED displays
- ⑥ Cover
- ⑦ Front panel
- ⑧ Drive holder for 3 x 5 1/4" and 1 x 3 1/2"

¹⁾ Output of power pack:

250 W max.
 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
 +3.3 V/+5.0 V/+12 V max. 230 W
 +3.3 V/+5.0 V max. 150 W



ATX industrial PC with front connections for surface mounting

**Technical specifications:**

System for the installation of ATX/Mini-ATX or Micro-ATX boards as well as 3 x 5 $\frac{1}{4}$ " and 1 x 3 $\frac{1}{2}$ " drives.
 Width: 380 mm
 Height: 330 mm
 Overall depth: 290 mm
 I/O connections at the front
 Suitable for mounting on mounting plates
 Complies to DIN 41 494, part 5, IEC 60 297-3 and ATX specification 2.01

- Fully assembled
- Including power pack
- EMC prepared
- Special designs available on request

Material/Surface finish:

Case:
 1,2 mm sheet steel
 Cover:
 1,2 mm sheet steel
 Zinc-plated contact points

Accessories:

see page 102 –105



Front connections for I/Os.



Flanges with "key" holes for surface mounting.



Option of installing three 5 $\frac{1}{4}$ " drives and one 3 $\frac{1}{2}$ " drive.

In detail: Raid subrack

Specifically designed to accommodate growing data protection requirements, this enclosure solution is ideal for storage devices. The RAID subrack offers reliable protection even under tough conditions, due to the steel enclosure and EMC preparation. There is a choice of three versions for individual applications, which are supplied fully assembled. An ATX board may optionally be installed in some versions.

1 Design features



Enclosure made from sheet steel
spray finished/zinc-plated.



Rear panel with cutout
for PS/2 power pack.



Telescopic slides
and front handles facilitate optimum handling.



Installation
of an ATX board (in some versions).



Horizontally hinged,
lockable front panel with filter mat.



Drive modules, removable,
facilitate external mounting of the storage systems.

2 Ventilation



Interior fan
(ATX 9 drive system).



Fans
in the rear panel.

3 Drives



Horizontal installation
of six 5 1/4" storage systems.



Installation of
6 x 5 1/4" vertically and 3 x 5 1/4" horizontally (ATX 9 drive system).

Product information

Systems for storage devices



- Sheet steel enclosure
- For the installation of storage devices and ATX boards
- EMC prepared
- Fully assembled
- Power pack optional

4 EMC

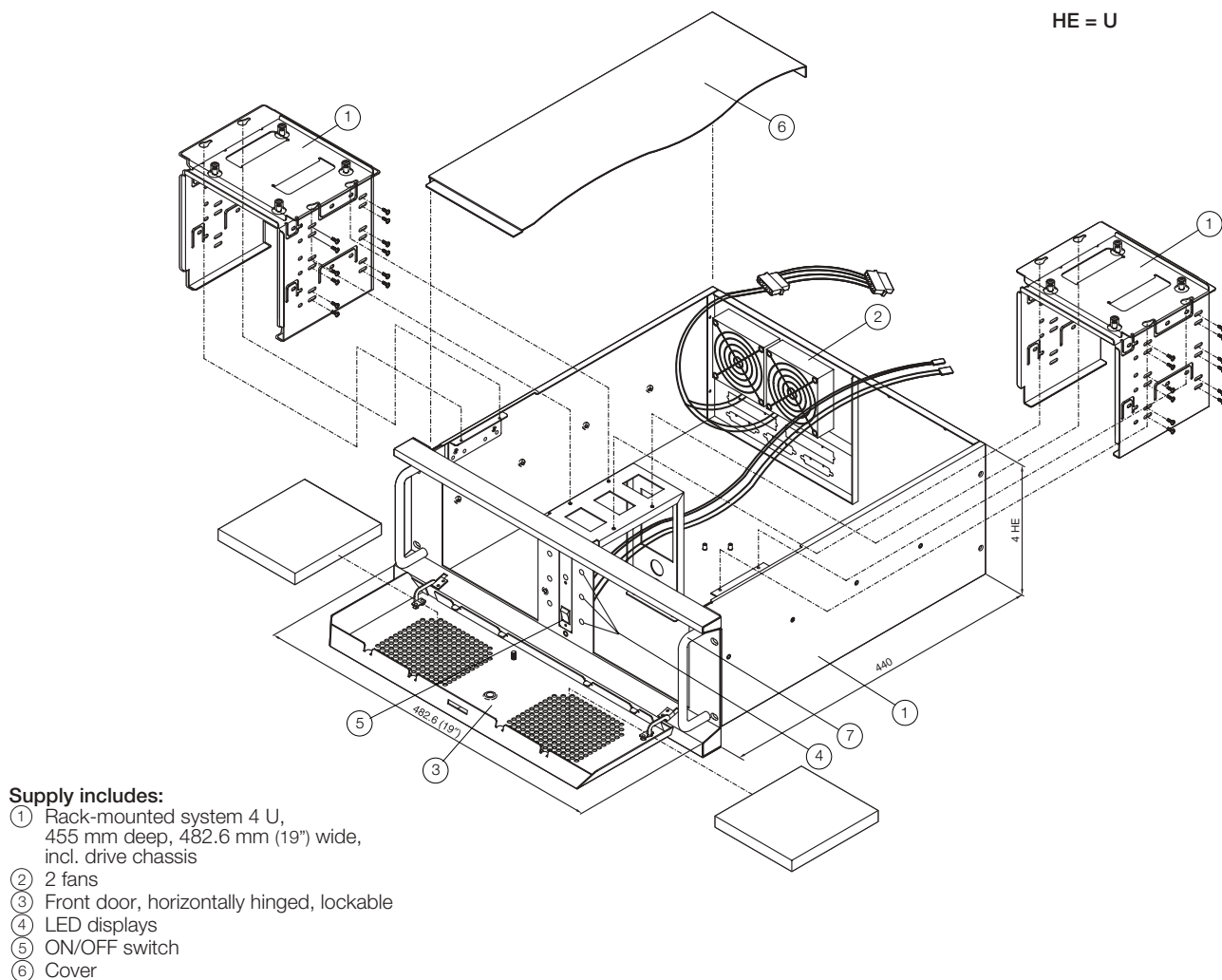


Unpainted contact points ensure conductive connection.

Order information

482.6 mm (19") RAID subrack system for storage devices

	Rittal 482.6 (19") RAID subrack	Material	Packs of	Model No. RP	Page
	Width: 482.6 mm (19")				
	Height: 177.0 mm				
	Depth: 455.0 mm/440.0 mm				
①	Model No. RP Basic system	Sheet steel, zinc-plated spray finished RAL 7035	1	3659.300	
Accessories					
⑦	Front handles	Steel, plated	2	3659.240	104
	Redundant power supply for RAID (2 x 300 W) PFC active		1	3688.125	102
	AT power supply for Raid, 300 W, passive PFC		1	3688.119	102
	Telescopic slides for 600 mm enclosure depth	Sheet steel	1 set	3659.180	104
	Telescopic slides for 800 mm enclosure depth	Sheet steel	1 set	3659.190	104
	Adaptor for installation of 3 1/2" hard disks in 5 1/4"	Sheet steel, zinc-plated	1	3659.270	104
	Adaptor for installation of 3 1/2" floppy disks in 5 1/4"	Sheet steel, zinc-plated	1	3659.280	104
	Covers for 5 1/4" drives	Sheet steel, spray finished	1	3659.110	103



482.6 mm (19") RAID subrack system for storage devices

**Technical specifications:**

482.6 mm (19") rack-mounted system for the installation of 5 $\frac{1}{4}$ " or 3 $\frac{1}{2}$ " storage devices.
 Width: 482.6 mm (19")
 Height: 4 U (177.0 mm)
 Overall depth: 455 mm,
 complies with DIN 41 494,
 part 5, and IEC 60 297-3

Material/Surface finish:

Case:

1.2 mm sheet steel,
 zinc-plated, passivated

Cover:

1.2 mm sheet steel,
 zinc-plated, passivated

Front door:

1.2 mm sheet steel,
 spray finished

Accessories:

see page 102 – 105

- Fully assembled
- Order power pack separately
- EMC prepared
- Special designs available on request



Front handles,
 flanges with holes for the
 attachment of front handles.



Option of installing
 six 5 $\frac{1}{4}$ " storage devices or
 CD-ROMs.



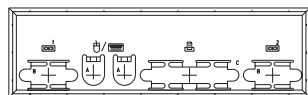
Drive modules suitable for
 removal
 to facilitate external mounting.

Order information

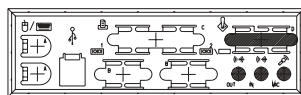
482.6 mm (19") ATX RAID subrack system for storage devices, 6 drive

	Rittal ATX RAID subrack, 6 drive	Material	Packs of	Model No. RP	Page
	Width: 482.6 mm (19")				
	Height: 177.0 mm				
	Depth: 450.0 mm/435.0 mm				
①	Model No. RP Basic system	Sheet steel, zinc-plated, spray-finished in RAL 7035	1	3659.420	
	Accessories				
⑧	Front handles 4 U	Steel, plated	2	3659.240	
⑨	Card retainer	Plastic	7 sets	3659.010	104
⑩	Mounting bar for card retainer	Sheet steel, zinc-plated	1	3659.090	104
	AT power supply unit 300 W, passive PFC		1	3688.118	102
	ATX power supply unit 250 W, passive PFC, temperature-controlled		1	3688.121	102
	ATX power supply unit 300 W, active PFC		1	3688.129	102
	ATX power supply unit 250 W, active PFC		1	3688.127	102
	Redundant power supply unit (PS/2)		1	3688.120	103
②	Fans 12 V DC, 60 mm, with 2 connectors		2	3659.250	105
	Telescopic slides for 600 mm enclosure depth	Sheet steel	1 set	3659.180	104
	Telescopic slides for 800 mm enclosure depth	Sheet steel	1 set	3659.190	104
	Adaptor for installing 3 1/2" hard disks in 5 1/4"		1	3659.270	104
	Adaptor for installing 3 1/2" floppy disks in 5 1/4"		1	3659.280	104
	Covers for 5 1/4" drives	Sheet steel, spray finished	1 set	3659.110	103
	Unused slot cover	Sheet steel	5	3659.030	103
	ATX I/O covers*:				
	Type "Aurora Marl"	Sheet steel	1	3659.040	
	Type "Tucson"/"Venus"	Sheet steel	1	3659.130	
	Type "Providence"	Sheet steel	1	3659.140	
	Front trim panel ATX with automatic restart, 2 x LED, reset, power on switch	Sheet steel, spray finished	1	3659.370	105

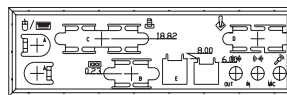
* Other versions available on request, please specify the type of mainboard



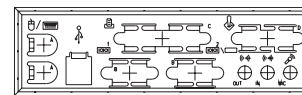
Type "Aurora Marl"



Type "Venus"



Type "Providence"

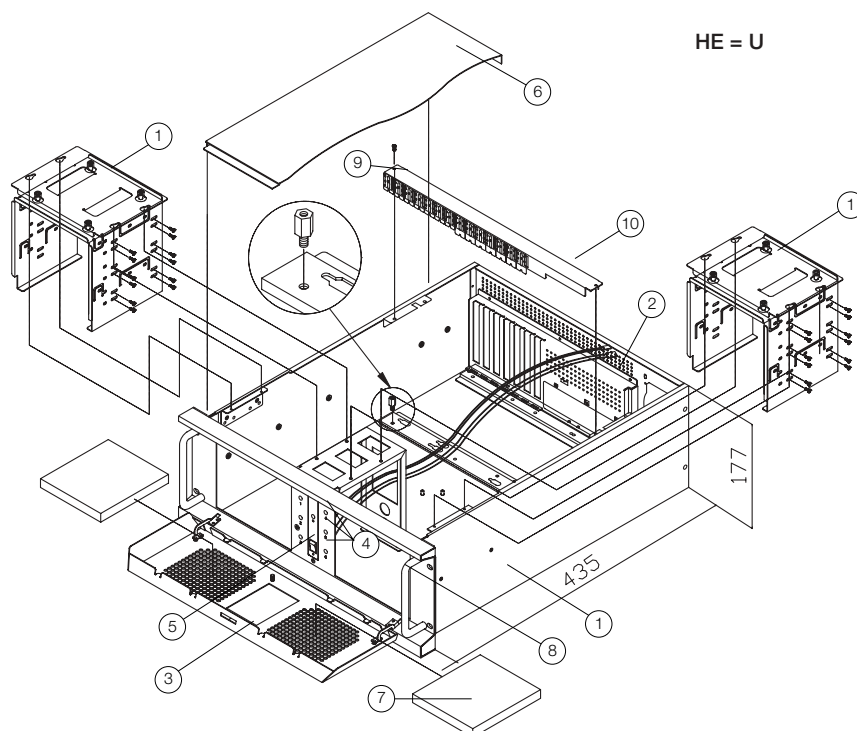


Type "Tucson"

Supply includes:

- ① Rack-mounted system 4 U,
450 mm deep, 482.6 mm (19") wide,
incl. drive chassis for the horizontal
installation of six 5 1/4" or 3 1/2" storage
devices.
- ② 2 fans
- ③ Front door, horizontally hinged, lockable
- ④ LED displays
- ⑤ ON/OFF switch
- ⑥ Cover
- ⑦ Filter mat

The 6 drive ATX RAID subrack is suitable for horizontal installation of 6 storage devices plus an ATX board.



482.6 mm (19") ATX RAID subrack system for storage devices, 6 drive

**Technical specifications:**

482.6 mm (19") rack-mounted system for the horizontal installation of six 5¹/₄" or 3¹/₂" storage devices and an ATX board.
 Width: 482.6 mm (19")
 Height: 4 U (177.0 mm)
 Overall depth: 450 mm, complies with DIN 41 494, part 5, IEC 60 297-3 and ATX specification 2.01

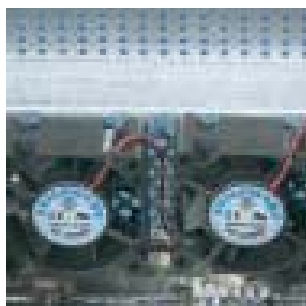
Material/Surface finish:

Case:
 1.2 mm sheet steel, zinc-plated
 Cover:
 1.2 mm sheet steel, zinc-plated
 Front door:
 spray finished in RAL 7035

Accessories:

see page 102 – 105

- Fully assembled
- Order power pack separately
- EMC prepared
- Facility for installation of an ATX board
- Special variants available on request



Rear panel
 including two fans, 60 mm



Height adjustable card retainers
 ensure that the slot cards are securely held, even in the event of vibration (accessory).

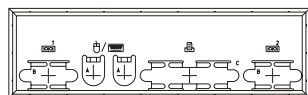


Front trim panels
 for AT or ATX version. With the option of electronics for automatic restart (accessory).

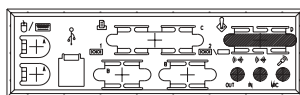
Order information

482.6 mm (19") ATX RAID subrack systems for storage devices, 9 drive

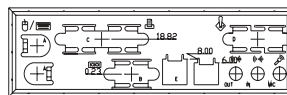
	Rittal 482.6 mm (19") ATX RAID subrack, 9 drive	Material	Packs of	Model No. RP	Page
	Width: 482.6 mm (19")				
	Height: 177.0 mm				
	Depth: 690.0 mm				
①	Model No. RP Basic system	Sheet steel, zinc-plated, spray-finished in RAL 7035	1	3659.430	
	Accessories				
	Front handles 4 U	Steel, plated	2	3659.240	104
⑥	Card retainer	Plastic	7 sets	3659.010	104
⑦	Mounting bar for card retainer	Sheet steel, zinc plated	1	3659.090	104
	AT power supply unit 300 W, passive PFC		1	3688.118	102
	ATX power supply unit 250 W, passive PFC, temperature-controlled		1	3688.121	102
	ATX power supply unit 300 W, active PFC		1	3688.129	102
	ATX power supply unit 250 W, active PFC		1	3688.127	102
	Redundant power supply unit PS/2, See pages 102/103 for more power packs		1	3688.120	103
	Telescopic slides for 800 mm enclosure depth	Sheet steel	1 set	3659.190	104
	Adaptor for inst. of 3 1/2" hard disk in 5 1/4"		1	3659.270	104
	Adaptor for inst. of 3 1/2" floppy disk in 5 1/4"		1	3659.280	104
	Covers for 5 1/4" drives	Sheet steel, spray finished	1 set	3659.110	103
	Unused slot cover	Sheet steel	5	3659.030	103
	ATX I/O covers*:				
	Type "Aurora Marl"	Sheet steel	1	3659.040	
	Type "Tucson"/"Venus"	Sheet steel	1	3659.130	
	Type "Providence"	Sheet steel	1	3659.140	
	* Other versions available on request, please specify the type of mainboard				



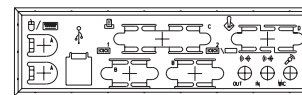
Type "Aurora Marl"



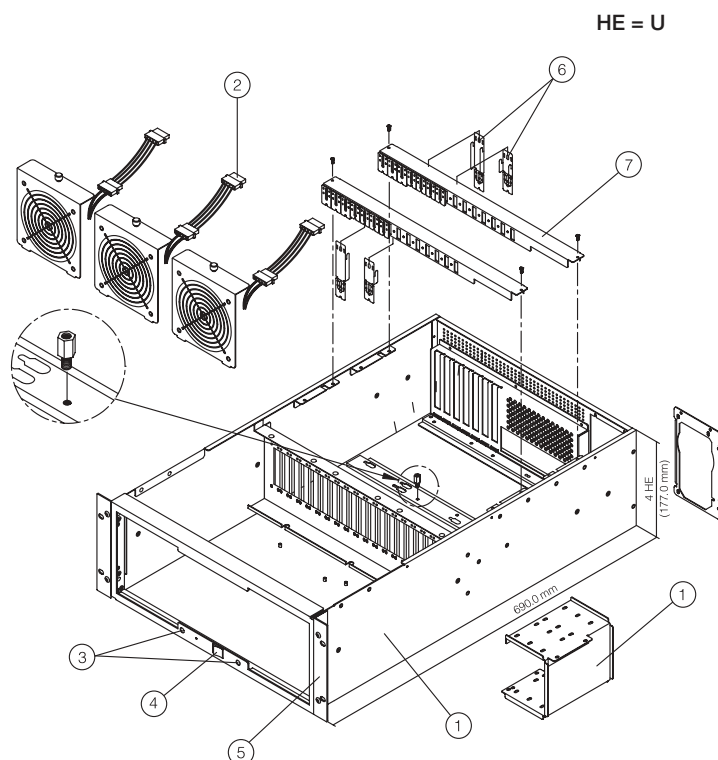
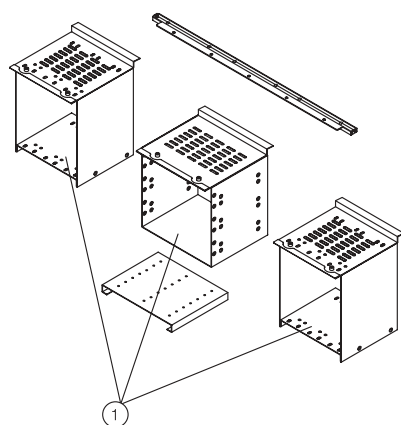
Type "Venus"



Type "Providence"



Type "Tucson"



Supply includes:

- ① Rack-mounted system 4 U,
690.0 mm deep, 482.6 mm (19") wide,
incl. drive chassis for the internal installation of
nine 5 1/4" and 3 x 3 1/2" storage devices.
- ② 3 fans
- ③ LED displays
- ④ ON/OFF switch
Cover
- ⑤ Two 482.6 mm (19") flanges

The 9 drive ATX RAID subrack is suitable for horizontal and vertical installation of 9 storage devices plus an ATX board. The rear panel is prepared for the installation of PS/2 or redundant power packs.

482.6 mm (19") ATX RAID subrack systems for storage devices, 9 drive

**Technical specifications:**

482.6 mm (19") rack-mounted system for installing 6 x 5 1/4" storage devices vertically and 3 x 5 1/4" horizontally, plus an ATX board.

Width: 482.6 mm (19")

Height: 4 U (177.0 mm)

Overall depth: 690.0 mm, complies with DIN 41 494, part 5, IEC 60 297-3 and ATX specification 2.01

Material/Surface finish:

Case:

1.2 mm sheet steel, spray finished in RAL 7035

Cover:

1.2 mm sheet steel, spray finished in RAL 7035

Front trim panel:

spray finished in RAL 7035

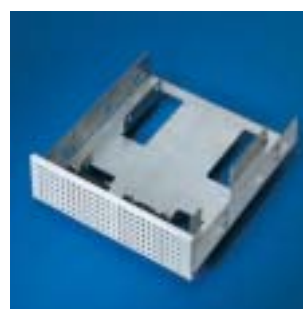
Accessories:

see page 102 – 105

- Fully assembled
- Order power pack separately
- EMC prepared
- Facility for installation of an ATX board
- Special variants available on request



Front handles
for mounting on the 482.6 mm (19") flanges (accessory).



Adaptor
for the installation of 3 1/2" hard disks in 5 1/4" (accessory).



Height adjustable card retainers
ensure that the slot cards are securely held, even in the event of vibration (accessory).

Accessories

Power supply

AT/ATX power supply unit



- PS/2 model
- Built-in fan
- Short circuit-protected
- CSA-approved
- On/off switch
- Active PFC
- W x H x D = 86 x 150 x 140 mm

Supply includes:
1 power supply unit with connection cable

Version	Output	P. of	Model No. RP
AT	300 W	1	3688.118
AT for Raid	300 W	1	3688.119
ATX	250 W	1	3688.121*
ATX	250 W	1	3688.127
ATX	300 W	1	3688.129
ATX	400 W	1	3688.128

* temperature-controlled

Technical specifications:

3688.118	3688.119	3688.121	3688.127	3688.129	3688.128
300 W max./ 230 VAC	300 W max./ 230 VAC	250 W max./ 230 VAC	250 W max./ 110 – 220 VAC	300 W max./ 110 – 240 VAC	400 W max./ 110 – 240 VAC
5.0 V/30.0 A	5.0 V/16.0 A	3.3 V/14.0 A	3.3 V/20.0 A	3.3 V/ 28.0 A	3.3 V/28.0 A
-5.0 V/ 0.5 A	-5.0 V/ 1.0 A	5.0 V/30.5 A	5.0 V/25.0 A	5.0 V/ 30.0 A	5.0 V/40.0 A
12.0 V/12.0 A	12.0 V/18.0 A	-5.0 V/ 0.5 A	-5.0 V/ 0.3 A	-5.0 V/ 0.3 A	-5.0 V/ 0.3 A
-12.0 V/ 0.5 A	-12.0 V/ 1.0 A	12.0 V/15.0 A	12.0 V/13.0 A	+5 VSB/2 A	12.0 V/15.0 A
passive PFC	passive PFC	-12.0 V/ 0.5 A	-12.0 V/ 0.8 A	12.0 V/13.0 A	-12.0 V/ 0.8 A
		passive PFC	+5 VSB/2 A	-12.0 V/ 0.8 A	+5 VSB/2 A
			3.3 V and 15 V max. 150 W	3.3 V and 15 V max. 180 W	3.3 V and 5 V max. 235 W
			3.3 V, 5 V and 12 V max. 230 W	3.3 V, 5 V and 12 V max. 280 W	3.3 V, 5 V and 12 V max. 380 W

ATX power supply unit, 1 U



- 2 built-in fans
- Short circuit-protected
- On/off switch
- Active PFC
- W x H x D = 85 x 40 x 230 mm

Supply includes:
1 power supply unit with connection cable

Version	P. of	Model No. RP
ATX	1	3688.130

Technical specifications:

200 W max./ 100 – 240 VAC	-12.0 V/0.8 A
3.3 V/ 14.0 A	+5 VSB/2 A
5.0 V/ 20.0 A	+3.3 V and 5 V max. 120 W
-5.0 V/ 0.3 A	+3.3, 5 V, 12 V max. 180 W
12.0 V/ 6.0 A	

Redundant power supply unit for RAID



- Built-in fan
- Hot swap version
- 90 – 264 VAC
- 47 – 63 HZ
- Individual power module can also be ordered separately
- Active PFC
- W x H x D = 190 x 170 x 183 mm

Supply includes:
1 power supply unit with connection cable

Version	P. of	Model No. RP
RAID (dual)	1	3688.125
Power module	1	3688.126

Technical specifications:

2 x 300 W	5.0 V/ 25.0 A
	12.0 V/ 14.0 A
	-5.0 V/ 0.5 A
	-12.0 V/ 0.5 A

Redundant power supply unit for ATX



- PS/2 model, 2 switches, 1 connector
- Built-in fan
- Hot swap version
- 90 – 264 VAC
- 47 – 63 Hz
- Active PFC
- Individual power module can also be ordered separately
- W x H x D = 86 x 150 x 185 mm

Supply includes:
1 power supply unit with connection cable

Version	P. of	Model No. RP
ATX (dual)	1	3688.123
Power module (spare)	1	3688.124

Technical specifications:

2 x 300 W	12.0 V/16.0 A
3.3 V/ 20.0 A	max. 20 A
5.0 V/ 25.0 A	-12.0 V/0.5 A
5 VSB/ 1.5 V	5 V, 3.3 V and 12 V max. 285 W

Redundant power supply unit for ATX



- PS/2 model, 2 switches, 2 connectors
- Built-in fan
- Hot swap version
- 90 – 264 VAC
- 47 – 63 Hz
- Active PFC
- Individual power module can also be ordered separately
- W x H x D = 86 x 160 x 220 mm

Supply includes:
1 power supply unit with connection cable

Version	P. of	Model No. RP
ATX	1	3688.120
Power module (spare)	1	3688.122

Technical specifications:

2 x 300 W
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 and 12.0 V max. 285 W

Uninterruptible power supply unit



- Guarantees a continuous supply of power even in the event of a mains failure
- May be installed in a 5 1/4" drive slots
- Floating contacts (DB-9) for UPS communication indicate the following operating states: mains OK/mains failure/ battery flat/input for UPS de-activation signal
- Integral, maintenance-free batteries
- CE-certified, tested to EN 60 950 (LVD/EMC)

Note:

The UPS does not have an RS 232 interface. An adaptor cable is available upon request, and is supplied with CD-ROM including shutdown drivers to automatically terminate program routines and shut down the system for Windows, Netware and Linux.

Packs of	Model No. RP
1	3659.080

Technical specifications:

Output 300 VA/180 W
Input/output voltages: 220, 230, 240 V AC $\pm 15\%$
Input frequency: 50 Hz $\pm 5\%$
Output frequency: 50 Hz $\pm 1\%$
Switch-over time: < 4 ms
Charging time: 6 – 8 hours (to 90 % capacity)
Operating environment:
Temp. 0 °C – 40 °C
Humidity 0 – 90 %

Status display: LED for mains operation, back-up, low battery, over-temperature
Acoustic alarms: Mains interruption (signal sounds every 5 sec.), battery low (signal sounds every second)
Test function: Test switch on the front panel to check the UPS
Approvals: CE, EN 60950 tested (LVD/EMC)
Hold up time: 6 min.

Unused slot cover



Screw-on cover to conceal any slot cutouts which are not required.

Material:
Sheet steel

Surface finish:
Zinc-plated, passivated

Supply includes:
5 slot covers, assembly parts

Packs of	Model No. RP
5	3659.030

Cover for drives



To cover 3 1/2" or 5 1/4" drive slots.

Material:
Sheet steel, zinc-plated/spray finished in RAL 7035

Supply includes:
1 drive cover, assembly parts

Version	P. of	Model No. RP
3 1/2"	1	3659.410
5 1/4"	1	3659.110

Accessories

Telescopic slides



These guarantee optimum access to units, even when built in. The telescopic slides are suitable for installation in 600 mm and 800 mm deep enclosures. Only possible in conjunction with L-shaped 482.6 mm (19") mounting angles!

Material:
Sheet steel

Load capacity:
30 kg

Supply includes:
1 pair of telescopic slides, installation kit, assembly parts

For encl. depth	P. of	Model No. RP
600 mm	1 set	3659.180
800 mm	1 set	3659.190

Max. pull-out:
511.2 mm/596.4 mm

Handles



The handles are mounted on the 482.6 mm (19") flanges. They allow the units to be pulled out of the cabinet easily.

Material:
Steel, plated

Supply includes:
2 handles, assembly parts

For enclosure height (U)	P. of	Model No. RP
1	2	3659.540
2	2	3659.020
4	2	3659.240

Drive holder



Drive holders are used to accommodate up to four additional 3 1/2" hard disks. They are fitted in the unit behind the fan.

Material:
Sheet steel, zinc-plated

Supply includes:
1 set of drive holders, assembly parts

For system	Packs of	Model No. RP
ATX Economy	1 set	3659.230
ATX Ripac	1 set	3659.060

Card retainer



For reliable securing and stabilisation of slot cards, even under vibration. The card retainers are height-adjustable, which means that even cards of different heights can be reliably secured.

A mounting bar is required in order to mount the card retainers (already included in the Ripac ATX).

Material card retainer:
Plastic

	P. of	Model No. RP
Card retainer	7	3659.010
Mounting bar	1	3659.090

Mounting bar:
Sheet steel, zinc-plated

Adaptor



For the installation of 3 1/2" hard or floppy disks in 5 1/4" slots.

Material:
Sheet steel, zinc-plated, front trim panel spray finished in RAL 7035.

Supply includes:
1 adaptor, assembly parts

Version	P. of	Model No. RP
for 3 1/2" hard disks	1	3659.270
for 3 1/2" floppy disks	1	3659.280

DC fan for rear panel

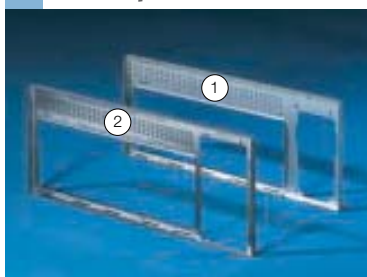


Fan 12 V DC, 60 mm, for mounting on the rear panel, including two 4-pole connectors with supply cable.

Supply includes:
2 fans with cable, assembly parts

Packs of	Model No. RP
2	3659.250

Rear panels



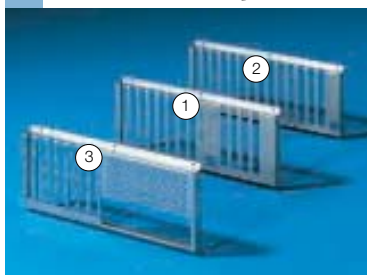
For configuration of AT/ATX Economy. Optionally with cutout for AT/ATX power pack or redundant power supply unit.

Material:
Sheet steel, zinc-plated

Supply includes:
1 rear panel, assembly parts

Version	P. of	Model No. RP
For AT/ATX power pack PS/2	1	3659.290 ^①
For redundant power supply unit PS/2	1	3659.310 ^②

Slotted rear panels



For the configuration of AT/ATX Economy, for mounting on the rear panels. Optionally for AT (8+4 or 14 slots) or ATX (7 slots).

Material:
Sheet steel, zinc-plated

Supply includes:
1 rear panel, assembly parts

Version	P. of	Model No. RP
AT 4 + 8 slots	1	3659.330 ^①
AT 14 slots	1	3659.340 ^②
ATX 7 slots	1	3659.320 ^③

Front trim panels

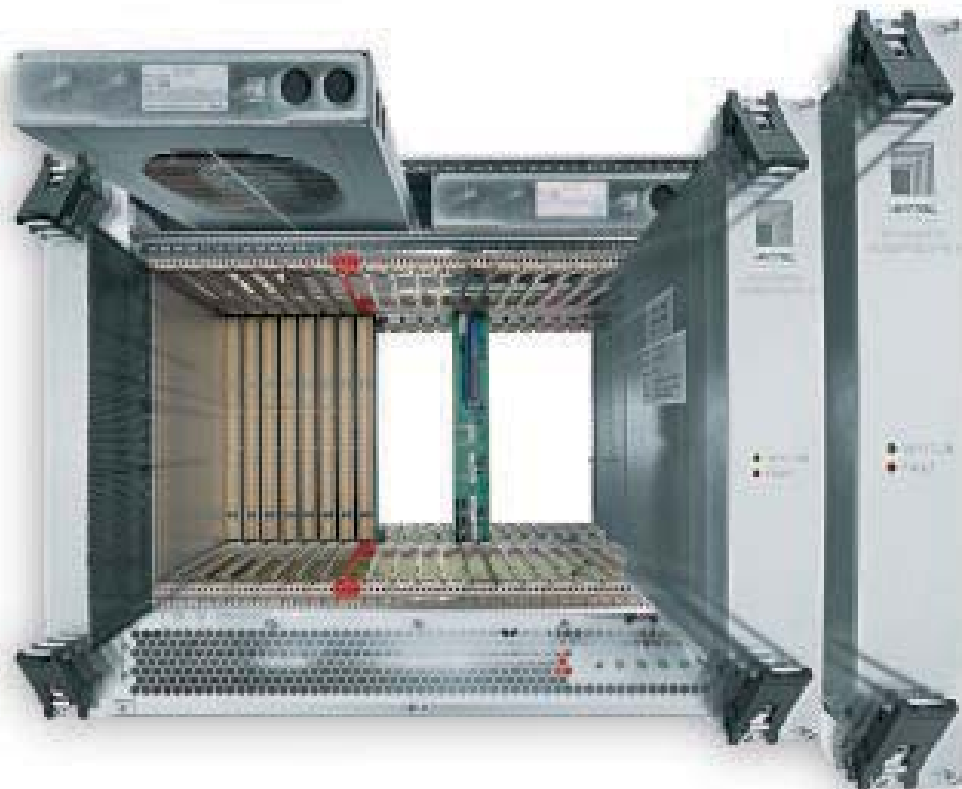


For the configuration of AT/ATX Economy, for mounting on the front of the enclosures. Optionally for:

- AT (2 x LEDs, reset switch)
- ATX (2 x LEDs, reset switch)
- ATX (2 x LEDs, reset switch), electronics for automatic restart following a mains failure

Version	P. of	Model No. RP
AT	1	3659.360 ^①
ATX	1	3659.350 ^②
ATX (with electronics)	1	3659.370 ^③

Constant power.



Rittal power supply units.

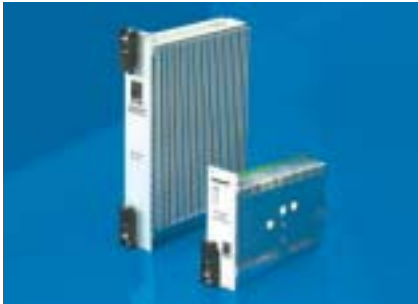
Power supply units

Open frame power supply units for VME	110 – 113
Plug-in type power supply units for VME	114/115
Plug-in type power supply units for CompactPCI	116/117
Open frame power supply unit for CompactPCI	120
PS/2 power supply units	118 – 121
Uninterruptible power supply	119

Power supply units are used in many different areas, for supplying DC current to controllers, systems, plant etc. Output, function and design requirements vary according to the chosen application field. Rittal offers an extensive range of power supply units in various designs, including 482.6 mm (19") compatible designs, open frame versions, and PS/2 models.



Power supply units in a compact open frame design. With 250, 400, 600 or 1000 watt output.



Plug-in type power supply units for CompactPCI. 3 or 6 U with a PCB depth of 160 mm. Ideally suited for installation in microcomputer systems.



Choose from an extensive range of power supply units based on the PS/2 system. Suitable for universal use, these units are ideal for installation in industrial computers, for example.



Even in the event of a mains failure, the uninterruptible power supply ensures a power supply for up to 6 minutes.

Overview of power supply units

Open Frame (VME)



250 watts/400 watts
Model No. see page 110/111

Applications

Power supply units for VMEbus systems

Design features

- 250 or 400 watts
- Open Frame design
- Mounting on mounting base or subrack rear panel
- Cooling via fans
- Wide range input
- Aluminium housing
- 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
- Compact design

Open Frame (VME)



600 watts/1000 watts
Model No. see page 112/113

Applications

Power supply units for VMEbus systems

Design features

- 600 or 1000 watts
- Open Frame design
- Mounting on mounting base or subrack rear panel
- Cooling via fans
- Wide range input
- Aluminium housing
- 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
- Compact design

3 U, 6 U plug-in (VME)



130/160/270 watts
Model No. see page 114/115

Applications

Plug-in power supply units for VMEbus systems with integral VMEbus signalling.

Design features

- 130, 160 or 270 watts
- 482.6 mm (19") module to IEC 60 207-3
- Installation depth 160 mm
- Mounting in the subrack with the aid of guide rails
- Connection via DIN 41 612 H15 connectors
- 3 outputs



User benefits

- 482.6 mm (19") compatible
- Easily exchanged
- Approvals: EN 60 950, VDE 0805 and IEC 950

3 U, 6 U plug-in (CPCI)



175/200/250/350 watts
Model No. see page 116/117

Applications

Plug-in power supply unit for CompactPCI systems.

Design features

- 175/200/250 or 350 watts
- 482.6 mm (19") module to IEC 60 207-3
- Installation depth 160 mm
- Mounting in the subrack with the aid of guide rails
- Connection via Positronic connector 47-pin, PICMG 2.9
- 4 outputs



User benefits

- 482.6 mm (19") compatible
- Easily exchanged
- Approvals: EN 60 950 A1 - A4, CSA 22.2, UL 1950, C
- Complies with PICMG specifications

PS/2 design (ATX)



250/300/400 watts
Model No. see page 118 – 120

Applications

Power supply units for ATX and CPCI systems.

Design features

- 250/300 or 400 watts
- Open Frame design
- Mounting on mounting base or subrack rear panel
- Integral fan
- Sheet steel enclosure
- PFC active or passive
- Optional redundant design



User benefits

- Universal applications
- Approvals: CSA

UPS



Order information, see page 119

Applications

Uninterruptible power supply unit for installation in 5 1/4" vertical drive mountings. Ensures power supply in the event of a mains failure (6 minutes).

Design features

- Installation in 1 or 2 standard 5 1/4" floppy disk drive holders
- Integral batteries



User benefits

- Minimal space requirements
- Approvals: CE, EN 60 950

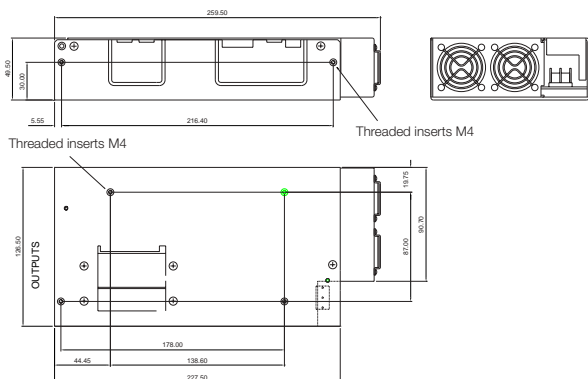
Order information

Ripac power supply units – Open frame, 250 and 400 watts

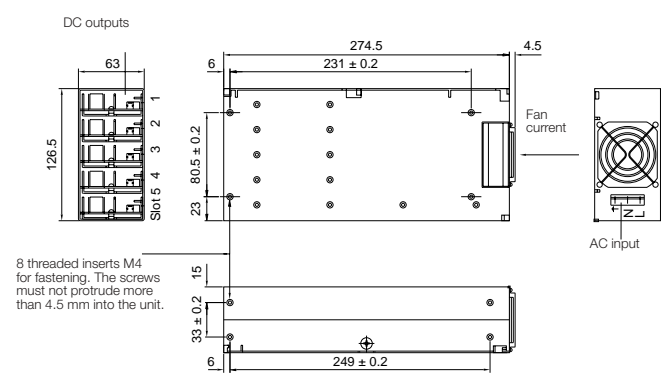
	250 watts			400 watts		
Model No. RP 32 A	3686.622			–		
Model No. RP 60 A	–			3686.623		
Model No. RP 80 A	–			3686.629		
Output factors						
	Output 1	Output 2	Output 3	Output 1	Output 2	Output 3
Output voltage	5 V	+ 12 V	- 12 V	5 V	+ 12 V	- 12 V
Output current	35 A	8 A	8 A	60 A	8 A	8 A
				80 A	8 A	8 A
Maximum power output	250 watts			400 watts		
Setting range of output voltage	5 – 5.5 V	11 – 15 V	11 – 15 V	4.5 – 5.5 V	5 – 16 V	5 – 16 V
Load compensation (load variation 0 – 100%)	50 mV	± 3 %		< 100 mV	< 240 mV	< 240 mV
Mains compensation (U _{e min} – U _{e max})	± 50 mV or ± 3 %			< 25 mV	< 60 mV	< 60 mV
Base load	10 %	–	–	–		
Supply line compensation (sense)	0.5 V	0.5 V	–	0.5 V	1 V	1 V
Residual ripple (max.)	1 %			100 mVss	300 mVss	300 mVss
Temperature coefficient	0.02 % / °C			0.03 % / °C		
Overvoltage protection	yes	yes	yes	yes	yes	yes
Overload protection*	yes			Thermal cutout		
Input factors						
Mains voltage U _e	85 – 265 VAC; 120 – 340 VDC			90 – 264 VAC		
Mains frequency	45 – 65 Hz			47 – 63 Hz		
Power factor	EN 61000-3-2			EN 61000-3-2		
Start-up current limitation	< 40 A (cold start)			< 50 A		
Efficiency (typical)	70 %			75 %		
General specifications						
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 VAC)	16 ms minimum			15 ms minimum		
Cooling	Fan-cooled			Fan-cooled		
Isolation voltages	Input – output: 4350 VDC Input – enclosure: 2350 VDC Output – enclosure: 100 VDC			Input – output: 3000 VAC Input – enclosure: 1500 VAC Output – enclosure: 500 VDC		
Radio interference suppression	EN 55022 curve B			EN 55022 curve B		
Transient response	IEC 1000-4-2, -3, -4, -5, -6, -8			IEC 1000-2, -4, -5		
Approvals	UL 1950, VDE 0805, EN 60950, CSA 22.2, CE-Mark			EN 60 950, UL 1950, CSA 22.2 no. 234		
*All outputs short-circuit resistant to a maximum of 30 seconds.						

*All outputs short-circuit resistant to a maximum of 30 seconds.

**Ripac
open frame
power supply unit
250 watts**



**Ripac
open frame
power supply unit
400 watts**



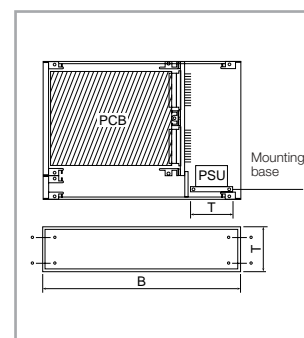
Ripac power supply units – Open frame, 250 and 400 watts

**250 watts**

- On/off controller with three outputs
- Design: Solid
- 85 – 265 VAC / 120 – 340 VDC
- Radio interference suppressed to EN 55 022 curve B, FCC curve B
- Approvals: EN 60 950, UL 1950, VDE 0805, CSA 22.2/CE-Mark

400 watts

- Modular power supply unit
- 3 outputs
- Long-range input (90 – 253 VAC)
- Power factor in accordance with EN 61 000-3-2
- Radio interference suppressed to EN 55 022 curve B
- Immunity to interference in accordance with EN 61 000-4-2/4/5 level 3 (formerly IEC 801-2/4/5)
- FASTON connectors mean faster installation in the terminal equipment (approx. 30 seconds)
- Tested to EN 60 950, UL 1950 and CSA 22.2 no. 234



Mounting base for power supply units
For fastening to the subrack side panel

Material:
2 mm aluminium

Surface finish:
Clear chromated

Supply includes:
1 mounting base
Assembly parts



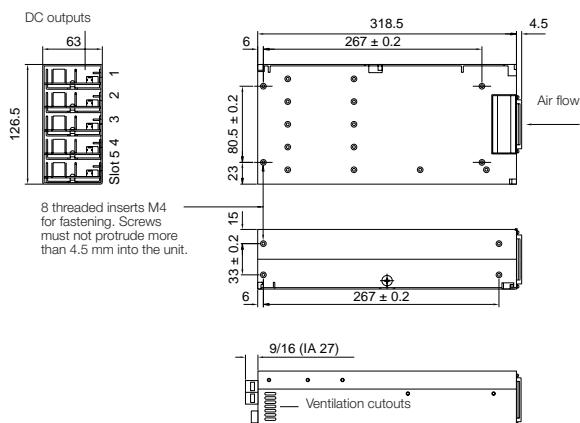
W (B) mm	D (T) mm	Model No. RP
431.8	100	3684.323
431.8	130	3684.324

Order information

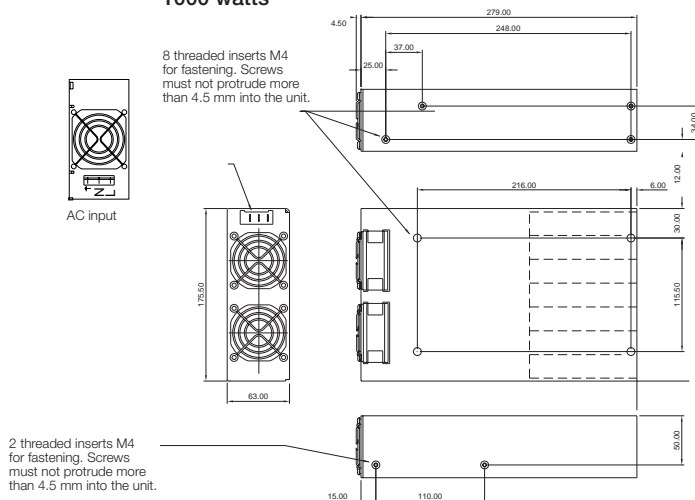
Ripac power supply units – Open frame, 600 and 1000 watts

	600 watts			1000 watts		
Model No. RP 85 A	3686.624			–		
Model No. RP 110 A	–			3686.625		
Output factors						
	Output 1	Output 2	Output 3	Output 1	Output 2	Output 3
Output voltage	5 V	+ 12 V	- 12 V	5 V	+ 12 V	- 12 V
Output current	85 A	8 A	8 A	110 A	14 A	5 A
Maximum power output	600 watts			1000 watts		
Setting range of output voltage	± 10 %			4.5 – 5.5 %	9 – 16 %	5 – 16 %
Load compensation (load variation 0 – 100%)	< 100mV	< 240 mV	< 240 mV	2 %		
Mains compensation (U _{e min} – U _{e max})	< 25 mV	< 60 mV	< 60 mV	2 %		
Base load	–			–		
Supply line compensation (sense)	0.5 V	1 V	1 V	max. 0.5 V		
Residual ripple (max.)	100 mVss	300 mVss	300 mVss	peak to peak 2 %		
Temperature coefficient	0.03 %/°C			0.03 %/°C		
Overvoltage protection	yes			yes		
Overload protection	yes			yes		
Thermal overload protection	With fan failure or overtemperature			With fan failure or overtemperature		
Electronic overload protection	At 132 % U _{rated} or short-circuit			Yes, each module separately		
Input factors						
Mains voltage U _e	90 – 264 VAC			85 – 264 VAC		
Mains frequency	47 – 63 Hz			47 – 63 Hz		
Power factor correction	EN 61000-3-2			EN 61000-3-2		
Start-up current limitation	< 50 A			< 50 A		
Operating efficiency (typical)	75 %			72 %		
General specifications						
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 VAC)	15 ms minimum			13 ms minimum		
Cooling	Fan-cooled			Fan-cooled		
Isolation voltages	Input – output: 3000 VAC Input – enclosure: 1500 VAC Output – enclosure: 500 VDC			Input – output: 3000 VAC Input – enclosure: 1500 VAC Output – enclosure: 500 VDC		
Radio interference suppression	EN 55022 curve B			EN 55022 curve A		
Transient response	IEC 1000-2, -4, -5			EN 61000-4-2, -3, -4, -5, -6 (Level 4)		
Approvals	EN 60950, UL 1950, CSA 22.2 no. 234			EN 60 950, UL 1950, CSA 22.2 no. 234		

Ripac open frame power supply unit 600 watts



Ripac open frame power supply units 1000 watts



Ripac power supply units – Open frame, 600 and 1000 watts

**600 watts**

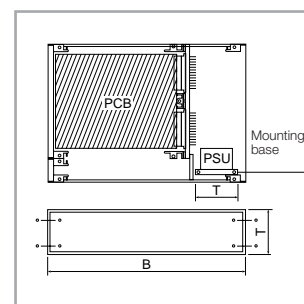
- Modular power supply unit
- 3 outputs
- Long-range input (90 – 253 VAC)
- Power factor in accordance with EN 61 000-3-2
- Radio interference suppressed to EN 55 022, curve B
- Immunity to interference in accordance with EN 61 000-4-2/4/5, level 3 (formerly IEC 801-2/4/5)
- FASTON connectors mean faster installation in the terminal equipment (approx. 30 seconds)
- Tested to EN 60 950, UL 1950 and CSA 22.2 no. 234

1000 watts

- Ultra-compact units with three outputs
- Suitable for universal applications, as the outputs can be set within 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)
- Mains transient and surge resistance in accordance with IEC 1000-4-2, 3, 4, 5 level 3 (formerly IEC 801)
- Power factor correction to IEC 1000-3-2 (EN 60 555-2)



- Long-range input: 85 – 265 VAC
- Radio interference suppressed to EN 55 022, curve A
- EN 60 950, EN 41 003, IEC 950, UL 1950, CSA 234 M90, BS 6301
- SELV (all models < 48 V UA)
- 48 VDC input for telecom applications available on request

**Mounting base for power supply units**

For fastening to the subrack side panel

Material:

2 mm aluminium

Surface finish:

Clear chromated

Supply includes:

1 mounting base
Assembly parts



W (B) mm	D (T) mm	Model No. RP
431.8	100	3684.323
431.8	130	3684.324

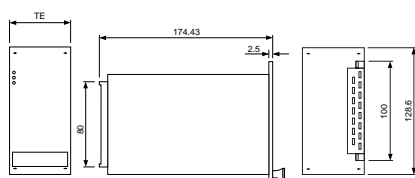
Order information

Ripac power supply units – 3 U, 6 U, plug-in

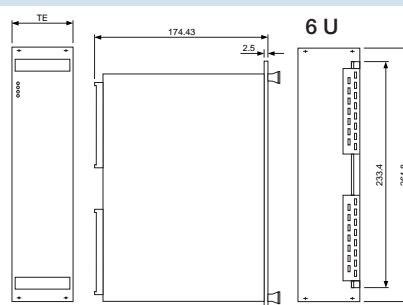
Height	3 U			6 U		
Width (HP)	10	12		8	12	
Model No. RP power supply unit	3686.469	3686.470		3686.471	3685.306	
Model No. RP front panel	3685.304	3685.305		3686.472	3685.307	
Output factors						
	Output 1	Output 2	Output 3	Output 1	Output 2	Output 3
Output voltage	5 V	+ 12 V	- 12 V	5 V	+ 12 V	- 12 V
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 %	< 1 %	< 0.1 %	< 1 %	< 1 %
Mains compensation (U _{e min} – U _{e max})	< 0.2 % at 99 – 138/187 – 264 VAC			< 0.2 % at 230 VAC + 15 % – 19 %		
Base load	–			–		
Compensation time	< 1 ms at I _a 20 – 80 %			< 1 ms at I _a 20 – 80 %		
Supply line compensation (sense)	± 0.25 V	–	–	± 0.25 V	–	–
Residual ripple (max.)	< 35 mV	< 35 mV	< 20 mV	< 45 mVss	< 30 mVss	< 15 mVss
Interference voltage	50 mVpp typ. (band width 20 MHz)			< 80 mVpp typ. (band width 20 MHz)		
Temperature coefficient	0.025 %/K			0.025 %/K		
Overvoltage protection (automatic recovery)	125 % + 5 %	125 % + 10 %	125 % + 10 %	125 % ± 5 %	120 % ± 10 %	120 % ± 10 %
Overload protection	typ. 110 % I _{a rated} , U/I characteristic acting on all outputs, outputs permanently short-circuit resistant			typ. 110 % I _{a rated} , U/I characteristic acting on all outputs, outputs permanently short-circuit resistant		
Overtemperature protection	Cuts out if the internal temperature is too high, re-activation with hysteresis			Cuts out if the internal temperature is too high, re-activation with hysteresis		
AC-FAIL, SYSRESET	TTL signals with 48 mA driver current, active low			TTL signals with 48 mA driver current, active low		
ON delay	< 0.5 s			–		
Ramp-up time	< 50 ms			–		
Input factors						
Mains voltage U _e	AC 210 – 240 V – 11 % + 10 %, 50/60 Hz with automatic changeover to AC 110 – 120 V – 10 % + 15 %			AC 210 – 240 V – 11 % + 10 %, 50/60 Hz with automatic changeover to AC 110 – 120 V – 10 % + 15 % or DC 325 V – 19 % + 7 %		
Mains frequency	47 – 63 Hz			47 – 63 Hz		
Typical operating ratio	80%			81%		
Start-up current limitation	< 10 As typ. (cold) < 15 As typ. (warm)			< 25 As typ. (cold) < 35 As typ. (warm)		
Fuse	4 AT			8 AT		
General specifications						
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/ission	EN 50 082-2 EN 61 000-4-2 severity 4 ENV 50 140 severity 3 EN 61 000-4-4 severity 4 EN 61 000-4-5 severity 4 VDE0160 (with cutout and restart)			EN 50 082-2 EN 61 000-4-2 severity 4 ENV 50 140 severity 3 EN 61 000-4-4 severity 4 EN 61 000-4-5 severity 4 VDE0160 (with cutout and restart)		
Connection	Connector H15, DIN 41 612 codable			2 connectors H15, DIN 41 612 codable		
Approvals LGA design-tested	IEC 950/EN 60 950/VDE 0805 Protection category I/VDE 0100			IEC 950/EN 60 950/VDE 0805 Protection category I/VDE 0100		

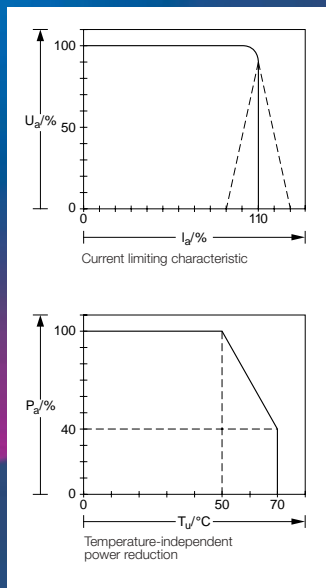
TE = HP

3 U



6 U





- 482.6 mm (19") module to DIN 41 494, part 5
- Automatic changeover 115/230 VAC
- 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

Accessories:
see page 121

PE earthing contact: Must be connected to the PE conductor of the mains supply network!
L1/N: Mains phase/zero conductor
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!

Connector assignment H15, DIN 41 612

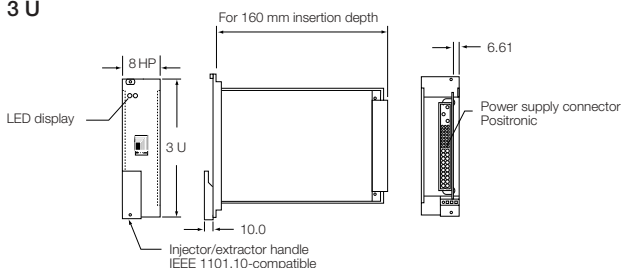
	3 U	6 U	
Pin	Function	Function (P1)	Function (P2)
4	+ 5 VF	+ 5 VL	AC-FAIL
6	0 VF	+ 5 VL	SYSRESET
8	+ 5 VF	+ 5 VL	assigned internally
10	0 VF	+ 5 VL	assigned internally
12	+ 5 VF	+ 5 VF	assigned internally
14	0 VL	+ 5 VF	assigned internally
16	SYSRESET	– 12 VL	assigned internally
18	0 VL	0 VL	mains-related
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

Order information

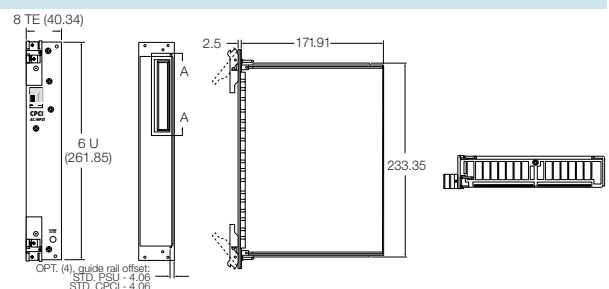
Ripac power supply for CPCI – 3 U, 6 U, plug-in

Height	3 U												6 U			
Width (HP)	8 HP												8 HP			
Model No. RP power supply AC	3688.534				3688.694				3688.695				3688.528			
Model No. RP power supply DC	3688.537				3688.655				3688.696				3688.530			
Output factors	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	3.3V	12V	-12V	5 V	3.3V	12V	-12V	5 V	3.3V	12V	-12V	5 V	3.3V	12V	-12V
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
Output current U ₁ and U ₂	30 A max.								38 A max.							
Maximum power output	175 W				200 W				250 W				350 W			
Base load (U ₁ only)	5 %				5 %				5 %				none			
Load compensation (dyn.)	< 3 % at 25 % load variation (1A/μs) 1 % after 300 μs															
Mains compensation	< ± 1 % (90 – 264 VAC)												< ± 1 % (90 – 264 VAC) U ₁ , U ₂ , U ₃			
Supply line 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 mVss or 1 % (band width 20 MHz)															
Temperature coefficient	< ± 0.02 %/K (0° – 50 °C) after 20 min. warm-up period															
Overvoltage protection	125 % ± 10 %, reset by switching on again															
Overload protection	Current limiting of all outputs, automatic recovery at normal load															
Overtemperature protection	Internal sensing shuts down all outputs; automatic recovery at normal temperature															
Input factors																
Mains voltage or DC input	90 – 264 VAC, 47 – 63 Hz, 3.2 A max. 36 – 72 VDC, 7.9 A												90 – 264 VAC, 47 – 63 Hz, 7 A 40 – 72 VDC, 14 A			
Power factor	0.99 at VAC 115 V, full load															
Start-up current	15 As (115 VAC) cold start, 30 As (230 VAC) cold start															
Fuse	3.15 A, 250 VAC or 10 A, DC												10 A, 250 VAC or 20 A, DC			
Signals and control connections																
Power Fail (Pin 42)	Input failure causes TTL signal > 4 ms before output out of control range. PF also triggered by under voltage on any output															
DEG (Pin 38)	In case of excess temperature												–			
Remote Enable (Pin 27)	Installation logic “0” (TTL level)															
Remote Inhibit (Pin 39)	Installation logic “1” (TTL level)															
LED displays, two-colour	Green: “Power ON” and output voltages available Amber: Malfunction												Green: “Power ON” and output voltages available Red: Malfunction			
General specifications																
Current splitting /N+1 with parallel connection (redundancy)	U ₁ , U ₂ and U ₃ , internal diodes, “hotswap”-compatible															
Operating temperature range	0° – 70 °C (0° – 50 °C full load) 50° – 70 °C, linear derating															
Cooling	Min. 15 cfm for full load												Min. 90 cfm for full load			
Storage temperature	40 °C up 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, 3686.135															
Guide rail	2.54 mm offset, Model No. 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 60950 A1 – A4, CSA 22.2 UL 1950, CE															

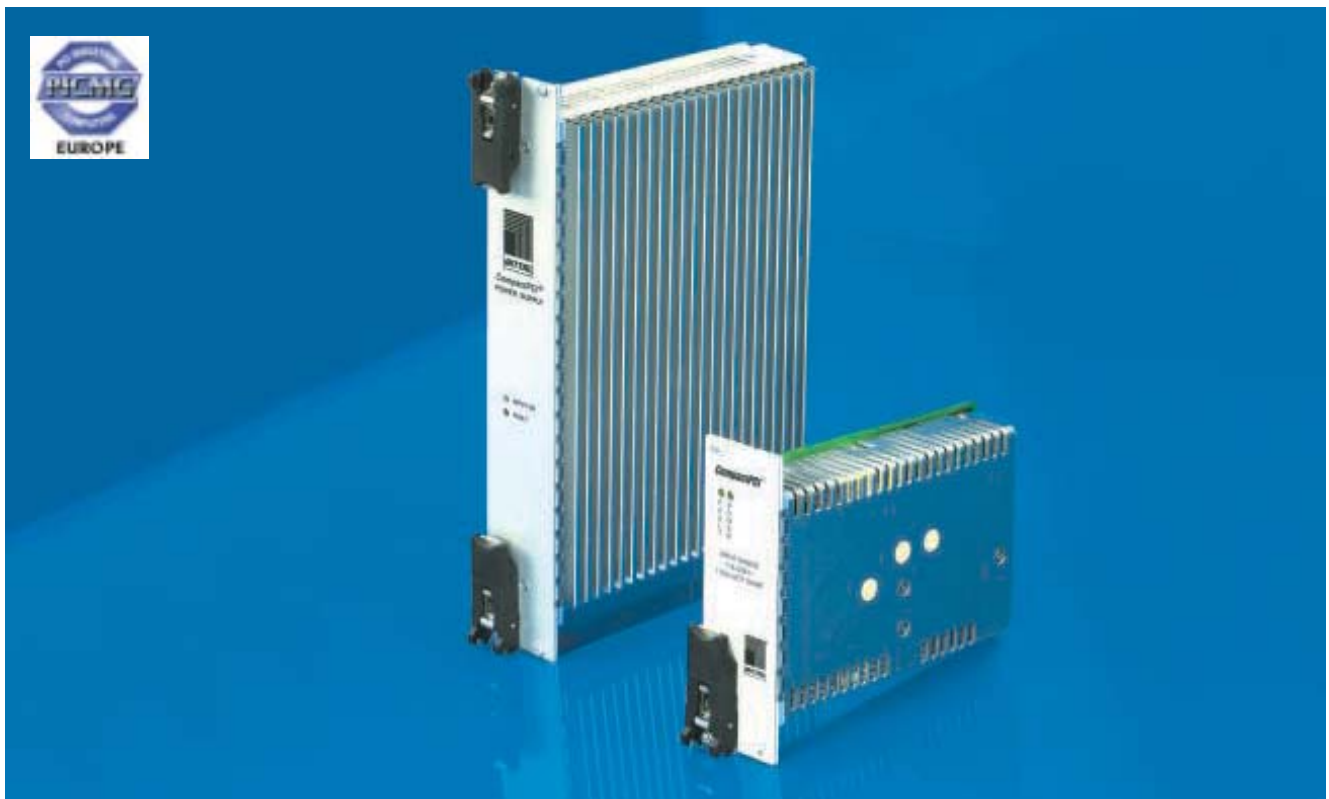
3 U



6 U



Ripac power supply for CPCI – 3 U, 6 U, plug-in



Connector pin 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 *
47	2	AC Line (L) AC Power Input *

(1) Contact mating sequence 1 = First to make/Last to break
 * DC to DC version

Connector pin 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 Primary Earth (chassis) Safety Ground
46	2	ACC Neutral AC Power Input *
47	2	AC Line AC Power Input *

* DC to DC version

Accessories

Power supply

AT/ATX power supply unit



- PS/2 model
- Built-in fan
- Short circuit-protected
- CSA-approved
- On/off switch
- Active PFC
- W x H x D = 86 x 150 x 140 mm

Supply includes:
1 power supply unit with connection cable

Version	Output	P. of	Model No. RP
AT	300 W	1	3688.118
AT for Raid	300 W	1	3688.119
ATX	250 W	1	3688.121*
ATX	250 W	1	3688.127
ATX	300 W	1	3688.129
ATX	400 W	1	3688.128

* temperature-controlled

Technical specifications:

3688.118

300 W max./
230 VAC
5.0 V/30.0 A
-5.0 V/ 0.5 A
12.0 V/12.0 A
-12.0 V/ 0.5 A
passive PFC

3688.119

300 W/
230 VAC
5.0 V/16.0 A
-5.0 V/ 1.0 A
12.0 V/18.0 A
-12.0 V/ 1.0 A
passive PFC

3688.121

250 W max./
230 VAC
3.3 V/14.0 A
5.0 V/30.5 A
-5.0 V/ 0.5 A
12.0 V/15.0 A
-12.0 V/ 0.5 A
passive PFC

3688.127

250 W max./
110 – 220 VAC
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 A
3.3 V and 5 V
max. 150 W
3.3 V, 5 V & 12 V
max. 230 W

3688.129

300 W max./
110 – 240 VAC
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 and 5 V
max. 180 W
3.3 V, 5 V & 12 V
max. 280 W

3688.128

400 W max./
110 – 240 VAC
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 A
3.3 V and 5 V
max. 235 W
3.3 V, 5 V & 12 V
max. 380 W

ATX power supply unit, 1 U



- 2 built-in fans
- Short circuit-protected
- On/off switch
- Active PFC
- W x H x D = 85 x 40 x 230 mm

Supply includes:
1 power supply unit with connection cable

Version	P. of	Model No. RP
ATX	1	3688.130

Technical specifications:

200 W max./
100 – 240 VAC
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 and 5 V
max. 120 W
+3.3, 5 V, 12 V
max. 180 W

Redundant power supply unit for RAID



- Built-in fan
- Hot swap version
- 90 – 264 VAC
- 47 – 63 HZ
- Individual power module can also be ordered separately
- Active PFC
- W x H x D = 190 x 170 x 183 mm

Supply includes:
1 power supply unit with connection cable

Version	P. of	Model No. RP
RAID (dual)	1	3688.125
Power module	1	3688.126

Technical specifications:

2 x 300 W
5.0 V/ 25.0 A
12.0 V/ 14.0 A
-5.0 V/ 0.5 A
-12.0 V/ 0.5 A

Redundant power supply unit for ATX



- PS/2 model, 2 switches, 1 connector
- Built-in fan
- Hot swap version
- 90 – 264 VAC
- 47 – 63 Hz
- Active PFC
- Individual power module can also be ordered separately
- W x H x D = 86 x 150 x 185 mm

Supply includes:
1 power supply unit with connection cable

Version	P. of	Model No. RP
ATX (dual)	1	3688.123
Power module (spare)	1	3688.124

Technical specifications:

2 x 300 W
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
max. 285 W

Redundant power supply unit for ATX



- PS/2 model, 2 switches, 2 connectors
- Built-in fan
- Hot swap version
- 90 – 264 VAC
- 47 – 63 Hz
- Active PFC
- Individual power module can also be ordered separately
- W x H x D = 86 x 160 x 220 mm

Supply includes:

1 power supply unit with connection cable

Version	P. of	Model No. RP
ATX	1	3688.120
Power module (spare)	1	3688.122

Technical specifications:

2 x 300 W
 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 and 12.0 V max. 285 W

Uninterruptible power supply unit



- Guarantees a continuous supply of power even in the event of a mains failure
- For installation in a 5 1/4" drive holder
- Floating contacts (DB-9) for UPS communication indicate the following operating states: mains OK/mains failure/ battery flat/input for UPS de-activation signal
- Integral, maintenance-free batteries
- CE-certified, tested to EN 60 950 (LVD/EMC)

Note:

The UPS does not have an RS 232 interface. An adaptor cable is available upon request, and is supplied with CD-ROM including shutdown drivers to automatically terminate program routines and shut down the system for Windows, Netware and Linux.

Packs of	Model No. RP
1	3659.080

Technical specifications:

Output 300 VA/180 W
 Input/output voltages:
 220, 230, 240 V AC \pm 15 %
 Input frequency: 50 Hz \pm 5 %
 Output frequency: 50 Hz \pm 1 %
 Switch-over time: < 4 ms
 Charging time: 6 – 8 hours
 (to 90 % capacity)
 Operating environment:
 Temp. 0 °C – 40 °C
 Humidity 0 – 90 %

Status display: LED for mains operation, back-up, low battery, over-temperature
 Acoustic alarms: Mains interruption (signal sounds every 5 sec.), battery low (signal sounds every second)
 Test function: Test switch on the front panel to check the UPS
 Approvals: CE, EN 60950 tested (LVD/EMC)
 Hold up time: 6 min.

Accessories

Power supply

ATX power supply unit



For installation in sub racks.

- Built-in fan
- Short circuit-protected
- CSA-approved
- Connection cable for 5 1/4" and 3 1/2" disk drives, hard disk and motherboard

Supply includes:
1 power supply unit

Packs of	Model No. RP
1	3687.793

Technical specifications:

300 W/230 VAC
 + 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 together 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

Front panel for ATX power supply unit



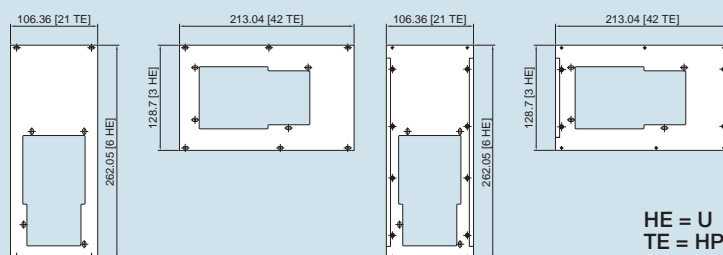
Front panel with cutouts for mounting the ATX power supply unit in the sub rack.

Material:
Aluminium

Surface finish:
Clear chromated

Supply includes:
1 front panel, assembly gaskets,
EMC gaskets (for EMC version)

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



CPCI power supply unit



- Plug-in, 180 W
- Partial subrack, 3 U, 12 HP, plug-in
- Plug-in connector M24/8 / DIN 41 612
- Automatic switching 120/230 VAC
- All outputs permanently short circuit resistant
- Outputs SELV to EN 60 950
- Primary and secondary overvoltage protection

- 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 class I, VDE 0100

Supply includes:
1 power supply unit

	Output 1	Output 2	Output 3	Output 4
Output voltage	+ 5.1 V	+ 3.3 V	+ 12 V	- 12 V
Output current	0 - 20 A	0 - 14 A	0 - 2 A	0 - 1 A

Detailed data sheet on request

Height U	Width HP	Model No. RP Power supply unit	Model No. RP Front panel for power supply unit
3	12	3686.682	3685.330

CPCI power supply unit open frame, 400 watts



- Long-range input (90 – 253 VAC)
- 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)
- Fast installation in the terminal equipment (approx. 30 seconds), thanks to the use of FASTON connectors
- Tested to EN 60 950, UL 1950 and CSA 22.2 No. 234

H (mm)	W (mm)	L (mm)	Model No. RP
126	63	279	3687.695

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

Female connector version M24/8, DIN 41 612



- Female connector for pluggable CPCI power supply units
- Quality level 2 to DIN 41 612
- Optional 20 A high current contacts for straight conductor connection, either for crimping or soldering
- Volume resistance max. 1.5 mΩ
- Max. rated current: 40 A

Type of connection	P. of	Model No. RP
Solder	1 set	3687.665
Crimp	1 set	3687.666

Technical specifications:

1 female connector housing,
5 connection sockets (crimp or solder)

Note:

For installation in the subrack, a Z rail is additionally required.
Model No. see page 152

Guide rails, plastic



- To guide the plug-in power supply unit:
- For snap-type and screw fastening
- For snap-type fastening

Material:
Fibreglass-reinforced polycarbonate
(UL 94 V-1), RAL 7032

PCB depth	P. of	Model No. RP Snap-type/ screw fastening	Model No. RP Snap-type fastening
160 mm	1	3684.657	3684.654

Keyable guide rails (plastic)



Guide rails 4 HP, keyable.
Green guide rails with 1/2 HP offsets are prescribed in the CompactPCI standard for the installation of power packs (PICMG 2.11).

Material:
Polycarbonate,
Basic material to UL94-V0

PCB depth	P. of	Model No. RP without offset	Model No. RP with 1/2 HP offset
160 mm	1	3688.055	3687.832

Female connector version H15, DIN 41 612



- Connector female
 - For plug-in power supply units
 - 15 A/pin (at 20 °C ambient temperature)
 - Flat-pin connector or screw connection
- Drawing see page 207

Type of connection	Model No. RP	
	Faston (A)	Screw-fastened (B)
Population 15 pins	3686.789	3686.790

Ripac – The system basis for every application.



Subrack systems.



Ripac mechanics for VMEbus and CPCI are shown on pages 16 to 45. Needless to say, the systems shown in this catalogue can also be varied, supplemented or completely modified to suit your requirements.

Subracks

Subracks Ripac ECO	128/129
Subracks Ripac Vario	130 – 133
Subracks Ripac Vario EMC	134 – 137
Subracks Ripac Compact	138/139
Subracks Ripac Vario Mobil	140/141
Side panels/flanges	142 – 146
Horizontal rails	147 – 153
EMC gaskets	154/155
Assembly kits	158/159
Guide rails	160 – 165
Covers	166 – 169
Climate control	170 – 179
Front panels/handles	180 – 195
Box type plug-in units	196 – 201
Connectors	202 – 207
Assembly parts	208/209

The Ripac subrack system is the key to perfect accommodation of high-quality electronics. This single system basis can solve any task. Whether you require a particularly cost-effective system, a system for exceptionally high mechanical requirements or one with RF shielding, Ripac will always guarantee a top quality solution with perfect handling. Even if you require a complete microcomputer system, including multi-layer backplane technology, high-performance power pack and effective heat dissipation, Ripac is a cost-effective solution.

One of Rittal's main tasks is to develop and test individual systems, then supply these fully assembled and tested in any required configuration and quantity. Rittal electronics – always one idea ahead!



Ripac Compact
This system was specifically designed for situations where there are no 482.6 mm (19") mounting angles available in the enclosure. It may be mounted directly on the mounting plate or to mounting rails in the enclosure.



Ripac Vario EMC
A subrack system for use in applications with EMC requirements. Integral EMC gaskets ensure conductive connection of all metal components.

Overview of Rittal Ripac subrack systems

Ripac ECO



For standard applications
Model No. see page 128/129

Applications

Subrack system for standard applications. Suitable for the installation of standardised PCBs or board-type plug-in units 160 and 220 mm deep.

Design features

- 482.6 mm (19") rack-mounted system to DIN 41 494, part 5 / IEC 60 297-3 – -5, EIA 310-D
- 3 and 6 U
- For board formats 160 and 220 mm deep
- Side panels of sheet steel, zinc-plated
- Prescribed mounting positions for horizontal rails
- Installation of backplanes/midplanes. Optional connector mounting
- Separate 482.6 mm (19") flanges



User benefits

- Simple, fast mounting
- Low-cost version
- Upgradable for backplane or connector mounting

Ripac Vario



For standard applications or complex configurations
Model No. see page 130 – 133

Applications

Subrack system for standard applications or complex configurations. Suitable for the installation of standardised PCBs or board-type plug-in units up to 400 mm deep.

Design features

- 482.6 mm (19") rack-mounted system to DIN 41 494, part 5 / IEC 60 297-3 – -5, EIA 310-D
- 3, 4, 6, 7 and 9 U
- For board formats up to 400 mm deep
- Side panels of aluminium, clear chromated
- Mounting positions for horizontal rails on a 10 mm pitch pattern
- Installation of backplanes/midplanes or connectors
- Separate 482.6 mm (19") flanges



User benefits

- Side panels with 10 mm pitch pattern of holes for variable system installation
- EMC upgradable
- 482.6 mm (19") flange may optionally be mounted on the front or rear
- Many size variants available as standard
- For backplane or connector mounting

Ripac Vario EMC



For EMC applications
Model No. see page 134 – 137

Applications

Subrack system for EMC applications or complex configurations. Suitable for the installation of standardised PCBs or board-type plug-in units up to 400 mm deep.

Design features

- 482.6 mm (19") EMC rack-mounted system to DIN 41 494, part 5 / IEC 60 297-3 – -5, EIA 310-D
- 3, 4, 6, 7 and 9 U
- For board formats up to 400 mm deep
- Side panels of aluminium, clear chromated
- Mounting positions for horizontal rails on a 10 mm pitch pattern
- Installation of backplanes/midplanes or connectors
- Separate 482.6 mm (19") flanges
- Includes EMC gaskets



User benefits

- EMC version
- Side panels with 10 mm pitch pattern of holes for variable system installation
- 482.6 mm (19") flange may optionally be mounted on the front or rear
- Many size variants available as standard
- For backplane or connector mounting

Ripac Compact



For mounting plates or top hat rails
Model No. see page 138/139

Applications

Subrack system for direct mounting in the enclosure.
May optionally be mounted on a rail or mounting plate.
Suitable for the installation of standardised PCBs or board type plug-in units.

Design features

- Rack-mounted system to DIN 41 494, part 5 /IEC 60 297-3 – -5, EIA 310-D
- Prepared for mounting on top hat rails or directly on the mounting plate
- 3 and 6 U
- For board formats up to 160 mm deep
- Installation width: 21 and 42 HP
- Side panels of aluminium, clear chromated
- Installation of backplanes/midplanes
- EMC versions available



User benefits

- Direct mounting on mounting plates or rails
- Variable cable entry from below or above
- Side panels with 10 mm pitch pattern of holes for variable system installation
- For backplane mounting

Ripac Vario Mobil



For mobile applications
Model No. see page 140/141

Applications

Subrack system for use in rail vehicles.
Suitable for the installation of standardised PCBs or board type plug-in units.

Design features

- 482.6 mm (19") rack-mounted system to DIN 41 494, part 5 /IEC 60 297-3 – -5, EIA 310-D
- Tested to EN 50 155 (Electronic Equipment in Rail Vehicles)
- 3 and 6 U
- For board formats up to 220 mm deep
- Side panels of aluminium, clear chromated
- Installation of backplanes/midplanes or connectors
- Fully assembled



User benefits

- Suitable for use in rail vehicles
- EMC version optional
- Side panels with 10 mm pitch pattern of holes for variable system installation
- Fully assembled
- For backplane and connector mounting

In detail: Ripac subrack systems

The modular concept of Rittal subracks permits a wide range of applications with the minimum number of components, since all Ripac subracks are based on the same horizontal rails and system components. The difference lies in the design of the side panels and configuration variants. Equipped with a backplane and power supply, a standard subrack can be rapidly upgraded to an MPS system, for example. The subracks are shock and vibration-tested and conform to IEC 60 297-3 to -5 and IEEE 1101.1/1101.10.

1 Design features of Ripac Vario, Ripac Vario EMC and Ripac Vario Mobil



Side panels and flanges
of clear chromated aluminium.
Optional front horizontal rails
with 10 mm extension.



10 mm pitch pattern
in the side panels permits depth-
variable system configuration.



Complex application options
A wide choice of size variants is
available as standard. Also up-
gradable for complex applica-
tions.



EMC shielding
due to horizontal and vertical
EMC gaskets. Also suitable for
retro-fitting.

2 Design features of Ripac Compact



Side panels and flanges
of clear chromated aluminium.
10 mm pitch pattern for variable
system installation.



Rail mounting
Rear adaptor permits easy
snap-fitting directly onto the rail.



Mounting on mounting plates
Machined keyholes for direct
mounting onto mounting plates.



EMC version
optional.

3 Design features of Ripac ECO

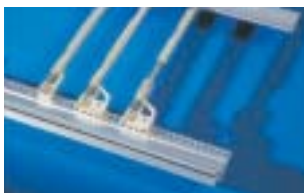


Side panels
of sheet steel, zinc-plated.
Flanges of clear chromated alu-
minium. Prescribed mounting
positions for 160 and 220 mm
board formats.



Cover plate mounting
The cover plates simply slide into
the horizontal rails.

System configuration, accessories



Guide rails
made of plastic, aluminium or
keyable.
Model No. see page 160 – 165



Covers
vented or solid, snap-type or
screw-fastening.
Model No. see page 166 – 169



ESD equipment
ESD clips for guide rails to dis-
charge static charges.
Model No. see page 163



Keys
For keying the board type
plug-in units.
Model No. see page 164

Product information

Rittal Ripac subrack systems



- Subrack systems for individual configuration
- 5 basic versions for different application areas
- Horizontal rails and accessories to match all variants
- EMC upgradable
- Fully assembled and wired upon request

System configuration, accessories



Front panels
in various designs e.g. with handles, vented or for EMC applications.
Model No. see page 180 – 195



Front panel handles
self locking, made from plastic or aluminium.
Model No. see page 186 – 191



DIN 41 612 connector
in various designs.
Model No. see page 202 – 207

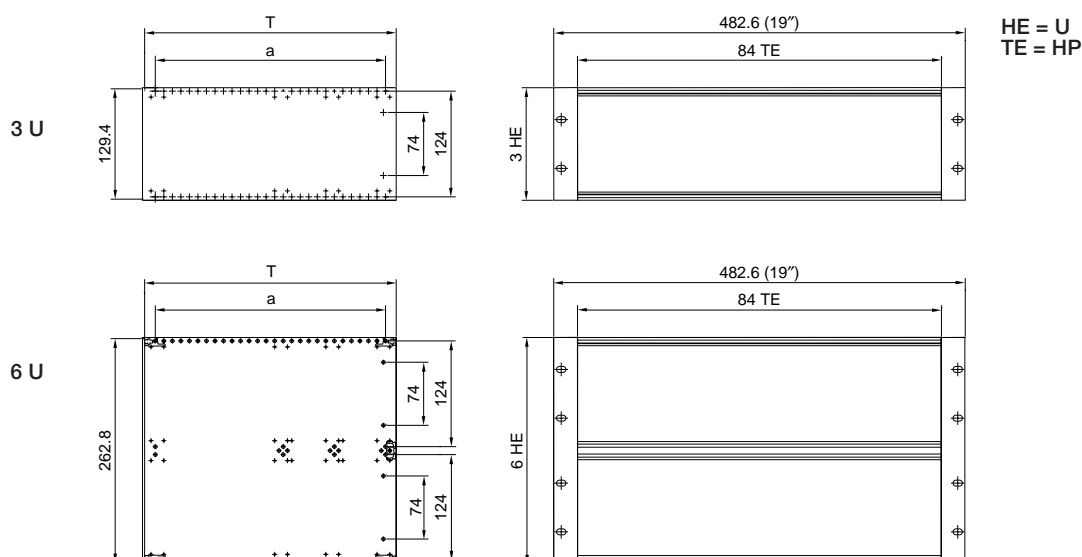


Assembly kits
for combined installation of Euroboards and double Euroboards, horizontal or vertical.
Model No. see page 158/159

Order information

Ripac ECO subracks 3 U, 6 U – sheet steel

				Model No. Sub-rack Ripac ECO	Model No. Side panels	Model No. Sub-rack Ripac ECO	Model No. Side panels	Page
	U			3	3	6	6	
	Side panel depth (T) mm	a mm	Max. card depth mm					
	175	150	160	3688.114	3688.100	3688.116	3688.102	
	235	210	220	3688.115	3688.101	3688.117	3688.103	
Subrack supply includes (unassembled) for backplane mounting								
	U			3		6		
			Model No.		Quantity			
	Side panels		see above	2		2		144
	Flange 3 U		3688.110	2		–		144
	Flange 6 U		3688.111	–		2		144
A	Front horizont. rails		3684.562	2		2		148
C4	Rear horizont. rails		3688.104	2		2		149
D1	Rear horiz. rails, centre		3684.582	–		1		150
	Threaded inserts		3684.610	4		4		152
	Assembly screws M4 x 12		3684.881	8		10		208
Accessories for additional configuration (order separately)								
	U			3		6		
			Model No.		Quantity required			
	Trim section, rear 3 U		3688.112	2		–		145
	Trim section, rear 6 U		3688.113	–		2		145
F	Z rail		3684.602	2		4		152
C5	Rear horizont. rails with integr. Z rail		9901.991	2		2		150
G	Insulating strips		3684.611	8		16		153
	Cover vented for 175 mm side panel		3688.105	2		2		169
	Cover vented for 210 mm side panel		3688.106	2		2		169
	Cover solid for 175 mm side panel		3688.107	2		2		169
	Cover solid for 210 mm side panel		3688.108	2		2		169
	Mounting block for cover		3688.109	variable		variable		168
	Assembly screws for cover		9902.188	variable		variable		169





Technical specifications:

Overall depth: 175, 235 mm
 Installation width: 84 HP
 Height: 3 U, 6 U
 EMC upgradable
 Designed for backplane mounting, or optionally, for connector mounting.
 Suitable for PCB depth 160 and 220 mm

Material/Surface finish:

Side panels:
 1.5 mm sheet steel,
 zinc-plated
 Flanges/horizontal rails:
 Extruded aluminium section,
 clear chromated

Tests:

Vibration and shock-tested to:
 DIN IEC 68-2-6 test Fc
 DIN IEC 68-2-27 test Ea

Standards:

The Ripac subracks are based on system dimensions to
 DIN 41 494, part 5 and
 IEC 60 297-3 to -5, EIA 310-D.

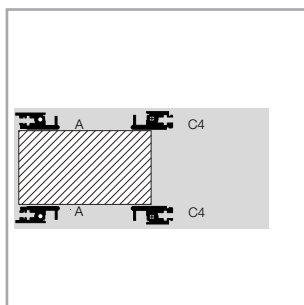
Accessories:

Handles/front panels/
 box type plug-in units,
 from page 182

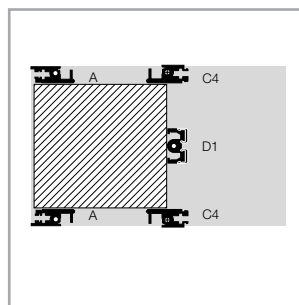
Configuration/
 climate control,
 from page 146

Connectors,
 from page 202

Horizontal rail configurations:



Ripac ECO 3 U
 for backplane.



Ripac ECO 6 U
 for backplane.



Simple assembly of the covers.

Order information

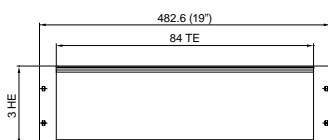
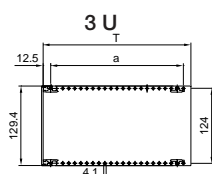
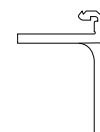
Ripac Vario sub racks 3 U, 6 U, 9 U

				Model No. Subrack Ripac Vario		Model No. Side panels	Model No. Subrack Ripac Vario		Model No. Side panels	Model No. Subrack Ripac Vario		Model No. Side panels	Page
	U			3	3	3	6	6	6	9	9	9	
	Side panels (T) mm	a mm	Max. PCB depth mm	For backplane	For connector DIN 41 612	For subrack Ripac Vario	For backplane	For connector DIN 41 612	For subrack Ripac Vario	For backplane	For connector DIN 41 612	For subrack Ripac Vario	
	185	160	160	3684.020	3684.034	3684.511	3684.043	3684.056	3684.529	–	–	–	
	225	200	160	3684.021	3684.035	3684.512	3684.044	3684.057	3684.530	–	–	–	
	245	220	220	3684.022	3684.036	3684.513	3684.045	3684.058	3684.531	–	–	–	
	285	260	220	3684.023	3685.281	3684.514	3684.046	–	3684.532	–	–	–	
	305	280	280	3685.231	3685.233	3684.515	3685.238	3685.240	3684.533	–	–	–	
	345	320	280	3684.024	–	3684.516	3684.047	–	3684.534	3684.051	3684.059	3684.547	
	365	340	340	3685.232	3685.234	3684.517	3685.239	–	3684.535	–	–	–	
	405	380	340	3684.025	–	3684.518	3684.048	–	3684.536	3684.052	3684.060	3684.548	
	465	440	400	3684.026	–	3684.520	3684.049	–	3684.538	3684.053	3684.061	3684.549	
	525	500	400	3684.027	–	3684.521	3684.050	–	3684.539	3684.054	–	3684.550	
	585	560	400	–	–	3684.522	–	–	3684.540	3684.055	–	3684.551	

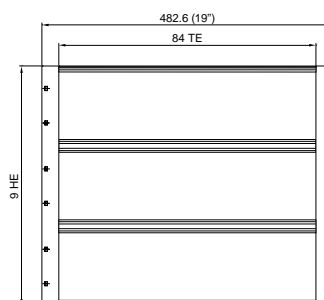
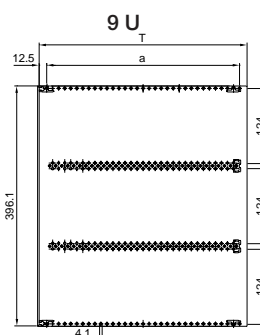
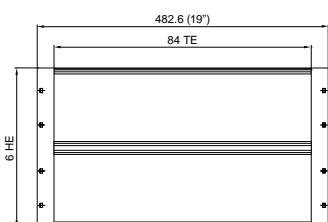
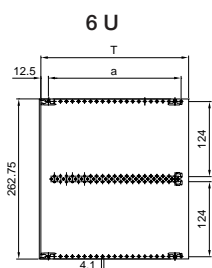
Subrack supply includes (unassembled)

	U			3	3	3	6	6	6	9	9	9	
Rail type				For backplane	For connector	Model No. Flanges	For backplane	For connector	Model No. Flanges	For backplane	For connector	Model No. Flanges	
		Model No.											
	Flanges	–		2	2	3684.615	2	2	3684.617	2	2	3684.619	143
	Side panels	see above		2	2		2	2		2	2		142
A	Horiz. rails, front	3684.562		2	2		2	2		2	2		148
I	Threaded inserts	3684.610		2	2		2	2		2	2		152
C1	Horiz. rails, rear	3684.572		2	–		2	–		2	–		149
D1	Horiz. rails, rear, centre	3684.582		–	–		1	–		2	–		150
G	Insulation strips, 21 HP	3684.611		8	–		16	–		24	–		153
C3	Horiz. rails, rear, with integral Z rails	3686.159		–	2		–	2		–	2		150
D2	Horiz. rails, rear, centre with integral Z rails	3687.602		–	–		–	1		–	2		151
	Assembly screws M4 x 12	3684.881		8	8		10	10		12	12		208

Flange



HE = U
TE = HP





Technical specifications:

Overall depth: 185, 225, 245, 285, 305, 345, 365, 405, 465, 525, 585 mm

Installation width: 84 HP

Height: 3 U, 6 U, 9 U

May be upgraded to EMC version with additional EMC gaskets.

Material:

Side panels:
2.5 mm aluminium sheet
482.6 mm (19") flanges
and horizontal rails:
Extruded aluminium

Surface finish:

Clear chromated

Tests:

Vibration and shock-tested to:

DIN IEC 68-2-6 test Fc

DIN IEC 68-2-27 test Ea

Standards:

The Ripac subrack is based on system dimensions to
DIN 41 494, part 5 and
IEC 60 297-3 to -5, EIA 310-D.

Accessories:

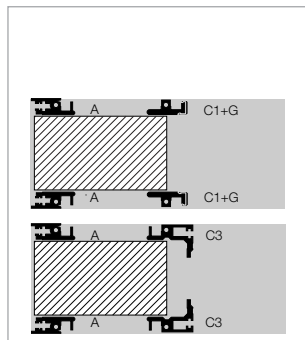
EMC accessories,
from page 154

Handles/front panels/
box type plug-in units,
from page 182

Configuration/
climate control,
from page 146

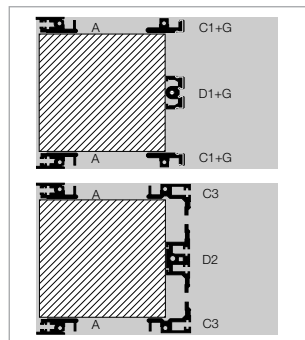
Connectors,
from page 202

Horizontal rail configurations:



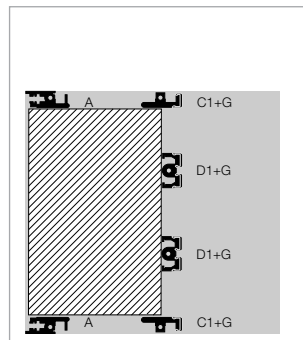
Ripac Vario 3 U

Top: For backplane
Bottom: For connector



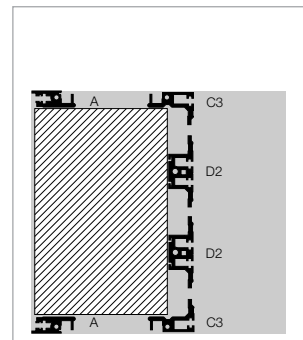
Ripac Vario 6 U

Top: For backplane
Bottom: For connector



Ripac Vario 9 U

for backplane.



Ripac Vario 9 U

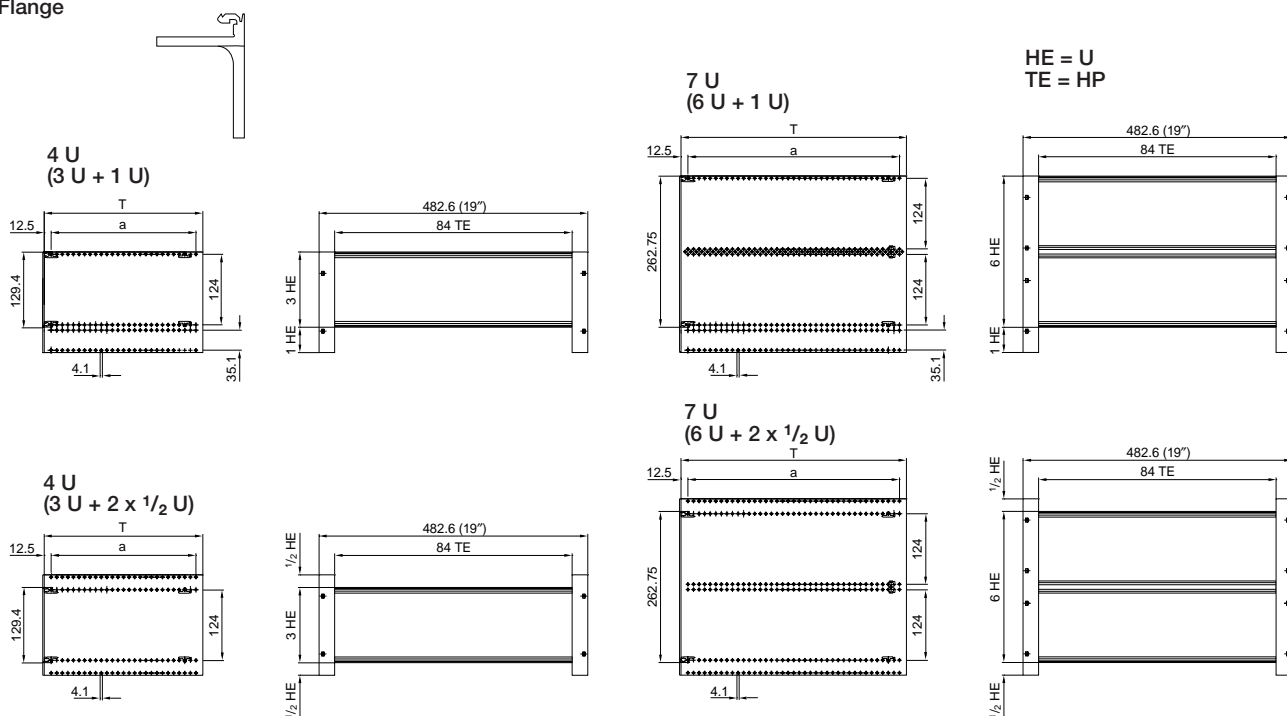
for connector.

Order information

Ripac Vario subracks 4 U, 7 U

				Model No. Subrack Ripac Vario		Model No. Side panels	Model No. Subrack Ripac Vario		Model No. Side panels	Model No. Subrack Ripac Vario	Model No. Side panels	Model No. Subrack Ripac Vario	Model No. Side panels	Page
	U			4 (3 + 1)	4 (3 + 1)	4 (3 + 1)	4 (3 + 2x1/2)	4 (3 + 2x1/2)	4 (3 + 2x1/2)	7 (6 + 1)	7 (6 + 1)	7 (6 + 2x1/2)	7 (6 + 2x1/2)	
	Side panel depth (T) mm	a mm	Max. PCB depth mm	For back- plane	For connector DIN 41 612	For subrack Ripac Vario	For back- plane	For connector DIN 41 612	For subrack Ripac Vario	For back- plane	For subrack Ripac Vario	For back- plane	For subrack Ripac Vario	
	245	220	220	3685.235	–	3685.850	–	–	3685.891	–	3685.897	–	3685.894	
	285	260	220	3684.028	3684.037	3684.523	3684.031	3684.040	3684.526	–	3685.743	–	3685.895	
	305	280	280	3685.236	–	3685.794	–	–	–	–	–	–	–	
	345	320	280	3684.029	3684.038	3684.524	3684.032	3684.041	3684.527	–	3685.744	–	3685.745	
	365	340	340	3685.237	–	3685.795	–	–	–	–	–	–	–	
	405	380	340	3684.030	3684.039	3684.525	3684.033	3684.042	3684.528	3684.064	3684.541	3684.062	3684.543	
	465	440	400	–	–	3685.796	–	–	3685.892	3684.065	3684.542	3684.063	3684.544	
Subrack supply includes (unassembled)														
Rail type	U			4 (3 + 1)	4 (3 + 1)	4 (3 + 1)	4 (3 + 2x1/2)	4 (3 + 2x1/2)	4 (3 + 2x1/2)	7 (6 + 1)	7 (6 + 1)	7 (6 + 2x1/2)	7 (6 + 2x1/2)	
				For back- plane	For connector	Model No. Flange	For back- plane	For connector	Model No. Flange	For back- plane	Model No. Flange	For back- plane	Model No. Flange	
		Model No.												
	Flange	–		2	2	3684.616	2	2	3684.616	2	3684.618	2	3684.618	143
	Side panels	see above		2	2		2	2		2		2		142
A	Horiz. rails, front	3684.562		2	2		2	2		2		2		148
I	Threaded inserts	3684.610		2	2		2	2		2		2		152
C1	Horiz. rails, rear	3684.572		2	–		2	–		2		2		149
D1	Horiz. rails, rear, centre	3684.582		–	–		–	–		1		1		150
G	Insulating strips 21 HP	3684.611		8	–		8	–		16		16		153
C3	Horiz. rails, rear with integral Z rails	3686.159		–	2		–	2		–		–		150
D2	Horiz. rails, rear, centre, with integral Z rails	3687.602		–	–		–	–		–		–		151
	Ass. screws M4 x 12	3684.881		8	8		8	8		10		10		208

Flange





Technical specifications:

Overall depth: 245, 285, 305, 345, 365, 405, 465 mm
Installation width: 84 HP
Height: 4 U, 7 U

May be upgraded to EMC version with additional gaskets.

Material:

Side panels:
2.5 mm aluminium sheet
482.6 mm (19") flanges
and horizontal rails:
Extruded aluminium

Surface finish:

Clear chromated

Tests:

Vibration and shock-tested to:
DIN IEC 68-2-6 test Fc
DIN IEC 68-2-27 test Ea

Standards:

The Ripac subrack is based on system dimensions to
DIN 41494 494, part 5 and
IEC 60 297-3 to -5, EIA 310-D.

Accessories:

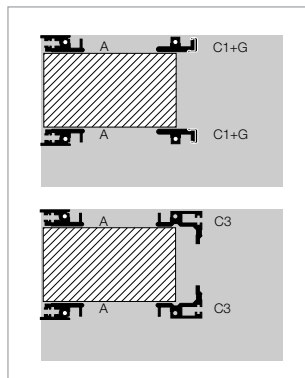
EMC accessories,
from page 154

Handles/front panels/
box type plug-in units,
from page 182

Configurations/
climate control,
from page 146

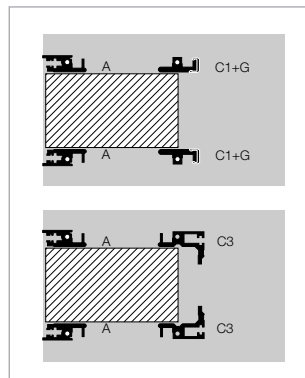
Connectors,
from page 202

Horizontal rail configurations:



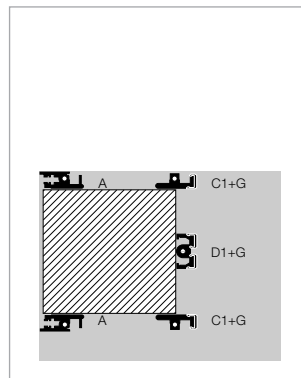
Ripac Vario 4 U
(3 U + 1 U)

Top: For backplane
Bottom: For connector



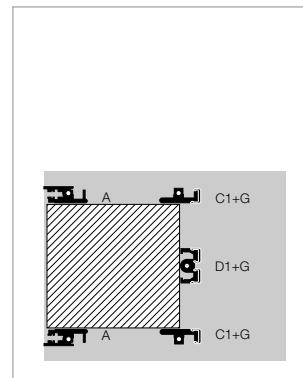
Ripac Vario 4 U
(3 U + 2 x 1/2 U)

Top: For backplane
Bottom: For connector



Ripac Vario 7 U
(6 U + 1 U)

for backplane.



Ripac Vario 4 U
(6 U + 2 x 1/2 U)

for backplane.

Order information

Ripac Vario EMC subracks 3 U, 6 U, 9 U

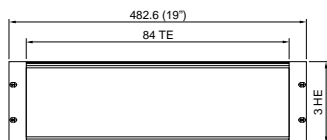
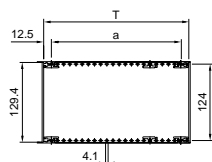
				Model No. Subrack Ripac Vario EMC		Model No. Side panels	Model No. Subrack Ripac Vario EMC		Model No. Side panels	Model No. Subrack Ripac Vario EMC		Model No. Side panels	Page
U				3	3	3	6	6	6	9	9	9	
Side panel depth (T) mm	a mm	Max. card depth mm	For back- plane	For back- plane*	For subrack Ripac Vario EMC	For backplane	For back- plane*	For subrack Ripac Vario EMC	For back- plane	For back- plane*	For subrack Ripac Vario EMC	For back- plane	
245	220	160	3684.128	3684.142	3684.513	3684.156	3684.169	3684.531	–	–	–	–	
285	260	220	3684.129	3684.143	3684.514	3684.157	3684.170	3684.532	–	–	–	–	
305	280	220	3685.241	3685.243	3684.515	3685.242	3685.244	3684.533	–	–	–	–	
345	320	280	3684.130	3684.144	3684.516	3684.158	3684.171	3684.534	3684.162	3684.175	3684.547	–	
405	380	340	3684.131	3684.145	3684.518	3684.159	3684.172	3684.536	3684.163	3684.176	3684.548	–	
465	440	400	3684.132	3684.146	3684.520	3684.160	3684.173	3684.538	3684.164	3684.177	3684.549	–	
525	500	400	3684.133	3684.147	3684.521	3684.161	3684.174	3684.539	3684.165	3684.178	3684.550	–	
585	560	400	–	–	3684.522	–	–	3684.540	3684.166	3684.179	3684.551	–	

*Front horizontal rails with 10 mm extension for type IV or VII injector/extractor handles

Subrack supply includes (unassembled)

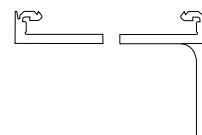
Subrack supply includes (and assembly)			3	3	3	6	6	6	9	9	9	
Rail type			For back-plane	For back-plane*	Model No. Flange/ EMC gasket	For back-plane	For back-plane*	Model No. Flange/ EMC gasket	For back-plane	For back-plane*	Model No. Flange/ EMC gasket	
		Model No.	Quantity									
	Flanges	–	2	2	3684.615	2	2	3684.617	2	2	3684.619	143
	Trim sections	–	2	2	3684.634	2	2	3684.636	2	2	3684.638	145
	Side panels	see above	2	2		2	2		2	2		142
	EMC gaskets, vertical	–	4	4	3686.975	4	4	3686.977	4	4	3686.979	146
	Covers, vented	–	2	2		2	2		2	2		166
	Mounting blocks	3684.884	Depending on depth									168
K	EMC gaskets for covers	3684.807	4	4		4	4		4	4		166
A	Front horiz. rails	3684.562	4	3		4	2		4	2		148
I	Threaded inserts	3684.610	4	4		4	4		4	4		152
B	Front horiz. rails with 10 mm exten.	3684.567	–	1		–	2		–	2		148
C1	Rear horiz. rails	3684.572	2	2		2	2		2	2		149
D1	Rear horiz. rails, centre	3684.582	–	–		1	1		2	2		150
G	Insulating strips 21 HP	3686.611	8	8		16	16		24	24		153
	Assembly screws M4 x 12	3684.881	12	12		14	14		16	16		208

3 U

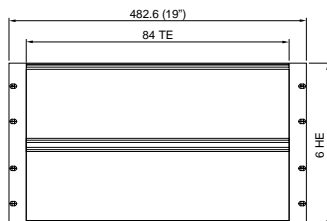
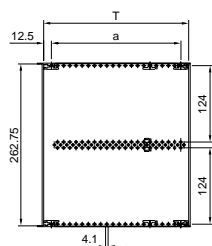


$$\begin{aligned} HE &= U \\ TE &= HP \end{aligned}$$

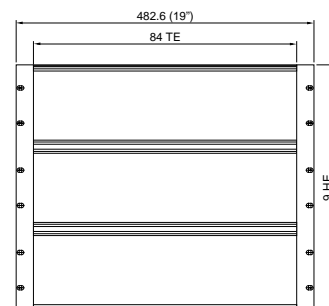
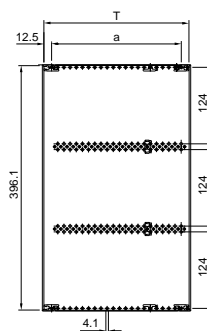
Flange/ trim section

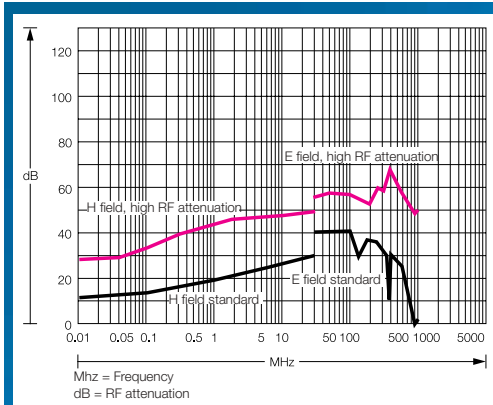


6 U



9 U





Technical specifications:
Overall depth: 245, 285, 305, 345, 405, 465, 525, 585 mm
Installation width: 84 HP
Height: 3 U, 6 U, 9 U

Material:
Side panels:
2.5 mm aluminium sheet
Flanges and horizontal rails:
Extruded aluminium
Covers: Aluminium

Surface finish:
Clear chromated

Tests:
Vibration and shock-tested to:
DIN IEC 68-2-6 test Fc
DIN IEC 68-2-27 test Ea

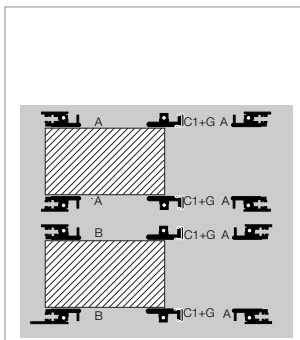
Standards:
The Ripac subrack is based on system dimensions to
DIN 41 494, part 5 and
IEC 60 297-3 to -5, EIA 310-D.

Accessories:
Handles/front panels/
box type plug-in units,
from page 182

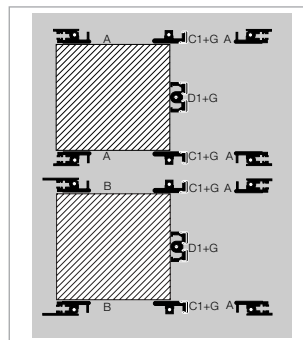
Configurations/
climate control,
from page 146

Connectors,
from page 202

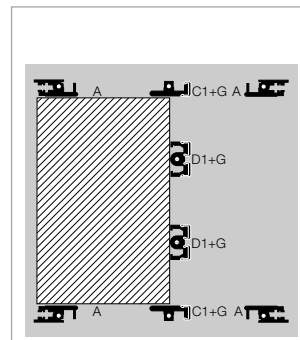
Horizontal rail configurations



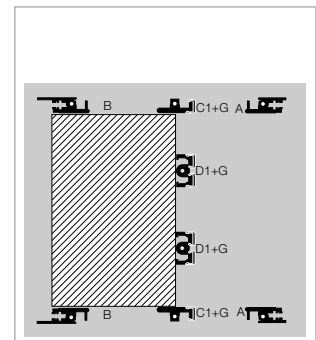
Ripac Vario EMC 3 U
Top: For backplane
Bottom: For backplane/front
horizontal rails with 10 mm
extension.



Ripac Vario EMC 6 U
Top: For backplane
Bottom: For backplane/front
horizontal rails with 10 mm
extension.



Ripac Vario EMC 9 U
for backplane.



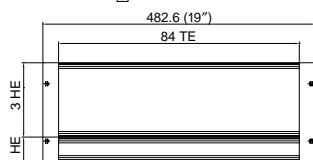
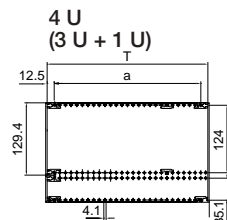
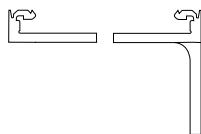
Ripac Vario EMC 9 U
for backplane/front
horizontal rails with 10 mm
extension.

Order information

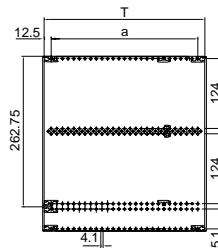
Ripac Vario EMC subracks 4 U, 7 U

				Model No. Subrack Ripac Vario EMC		Model No. Subrack Ripac Vario EMC		Model No. Subrack Ripac Vario EMC		Model No. Subrack Ripac Vario EMC		Page
	U			4 (3 + 1)	4 (3 + 1)	4 (3 + 2x1/2)	4 (3 + 2x1/2)	7 (6 + 1)	7 (6 + 1)	7 (6 + 2x1/2)	7 (6 + 2x1/2)	
	Side panel depth (T) mm	a mm	Max. card depth mm	For back- plane	For back- plane*	For back- plane	For back- plane*	For back- plane	For back- plane*	For back- plane	For back- plane*	
	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	
*Front horizontal rails with 10 mm extension for type IV or VII injector/extractor handles												
Subrack supply includes (unassembled)												
Rail type	U			4 (3 + 1)	4 (3 + 1)	4 (3 + 2x1/2)	4 (3 + 2x1/2)	7 (6 + 1)	7 (6 + 1)	7 (6 + 2x1/2)	7 (6 + 2x1/2)	
				For back- plane	For back- plane*	For back- plane	For back- plane*	For back- plane	For back- plane*	For back- plane	For back- plane*	
		Model No.										
	2 flanges					3684.616				3684.618		143
	2 trim sections, rear					3684.635				3684.637		145
	2 side panels 285 mm deep					3684.523	3684.526		3685.743	3685.895		142
	2 side panels 345 mm deep					3684.524	3684.527		3685.744	3685.745		142
	2 side panels 405 mm deep					3684.525	3684.528		3684.541	3684.543		142
	2 side panels 465 mm deep					3685.796	3685.892		3684.542	3684.544		142
	EMC gaskets, vertical			4	4	3	3	4	4	3	3	146
	Covers, flat, vented			2	2	–	–	2	2	–	–	166
	Covers, L-shaped, 1/2 U, top solid, bottom vented at front (1 set)			–	–	2	2	–	–	2	2	168
	Mounting blocks	3684.884				Depending on depth						168
K	EMC gaskets for covers	3684.807		4	4	2	2	4	4	2	2	166
A	Front horizontal rails	3684.562		6	5	4	3	6	4	4	2	148
I	Threaded inserts	3684.610		6	6	4	4	6	6	4	4	152
B	Front horizontal rails with 10 mm extension	3684.567		–	1	–	1	–	2	–	2	148
C1	Rear horizontal rails	3684.572		2	2	2	2	2	2	2	2	149
D1	Rear horizontal rails, centre	3684.582		–	–	–	–	1	1	1	1	150
G	Insulating strips 21 HP	3684.611		8	8	8	8	16	16	16	16	153
	Assembly screws M4 x 12	3684.881		16	16	12	12	18	18	14	14	208

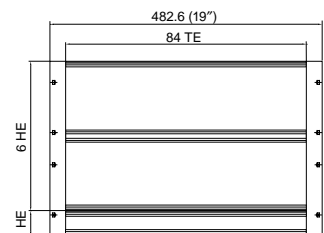
Flange/
trim section



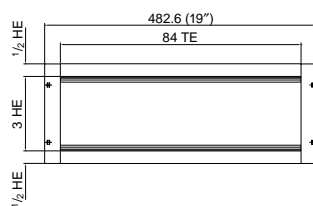
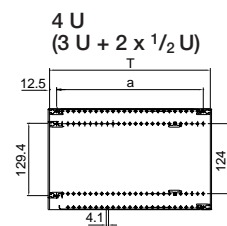
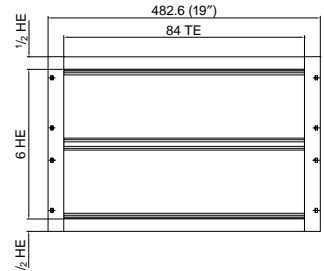
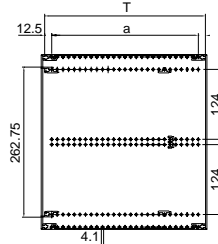
7 U
(6 U + 1 U)

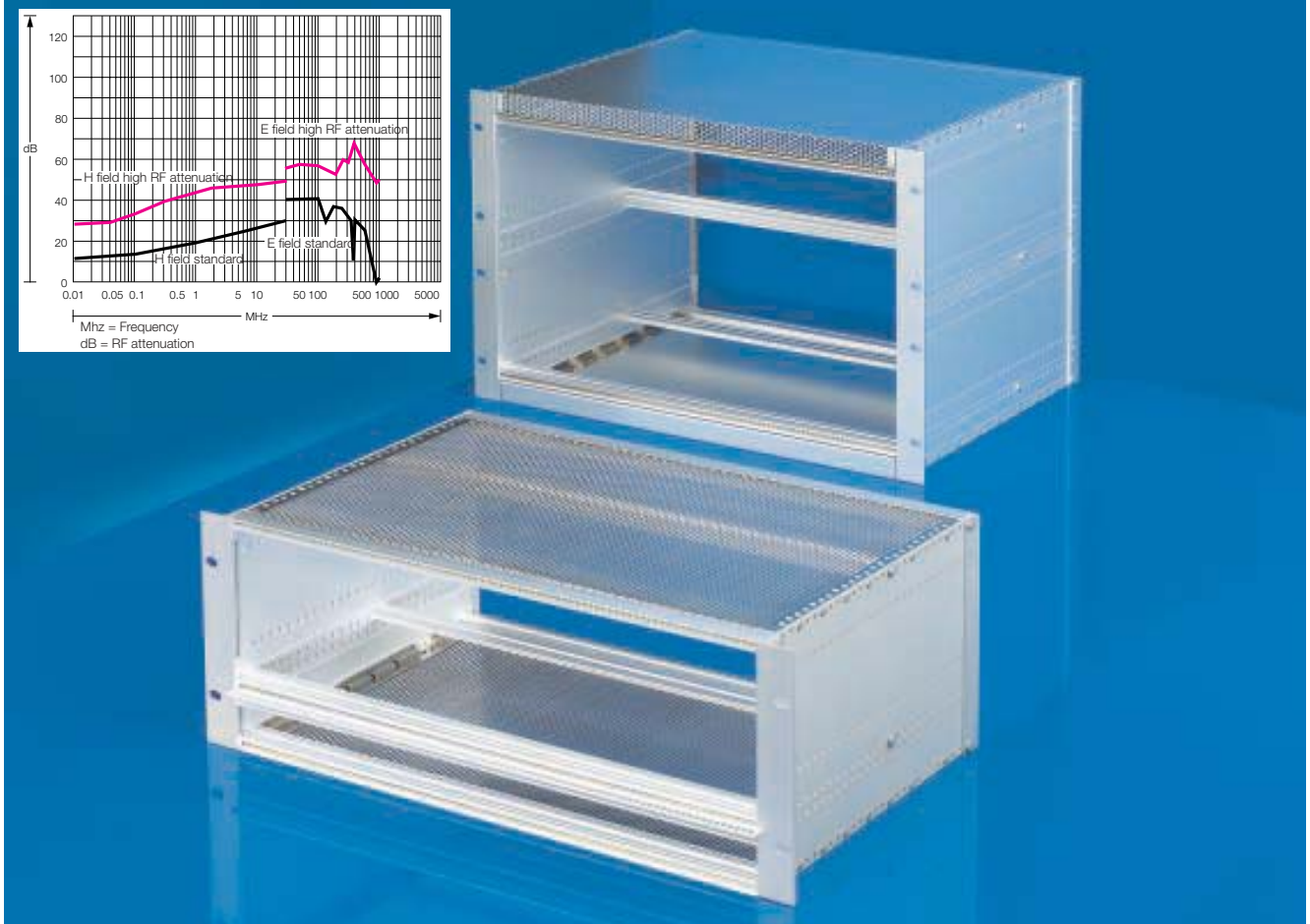
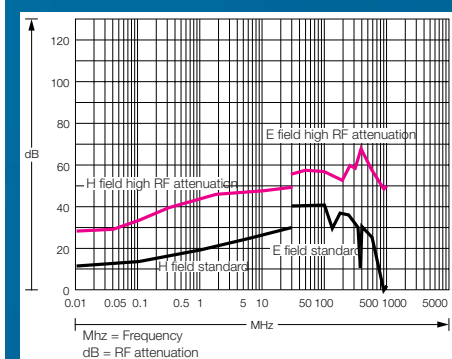


HE = U
TE = HP



7 U
(6 U + 2 x 1/2 U)





Technical specifications:

Overall depth:
285, 345, 405, 465 mm
Installation width: 84 HP
Height: 4 U, 7 U

Material:

Side panels:
2.5 mm aluminium sheet
Flanges and
horizontal rails:
Extruded aluminium
Covers: Aluminium

Surface finish:

Clear chromated

Tests:

Vibration and shock-tested to:
DIN IEC 68-2-6 test Fc
DIN IEC 68-2-27 test Ea

Standards:

The Ripac subrack is based on
system dimensions to
DIN 41 494, part 5, IEC 60 297-3
to -5, IEEE 1101.1 and 1101.10,
EIA 310-D.

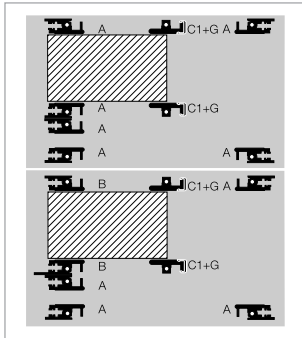
Accessories:

Handles/front panels/
box type plug-in units,
from page 182

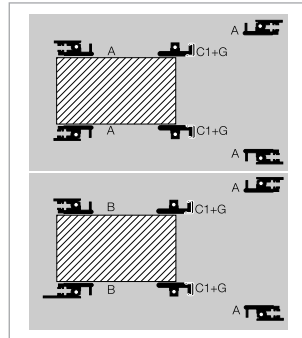
Configuration/
climate control,
from page 146

Connectors,
from page 202

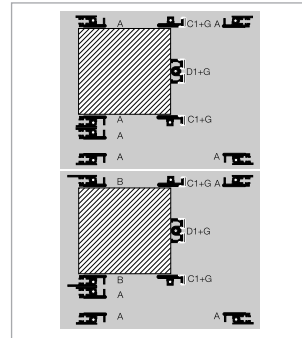
Horizontal rail configurations:



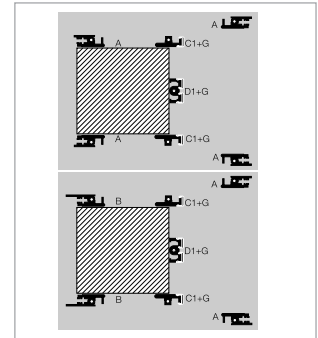
4 U (3 U + 1 U)
Top: For backplane
Bottom: For backplane/front
horizontal rails with 10 mm
extension.



4 U (3 U + 2 x 1/2 U)
Top: For backplane
Bottom: For backplane/front
horizontal rails with 10 mm
extension.



7 U (6 U + 1 U)
Top: For backplane
Bottom: For backplane/front
horizontal rails with 10 mm
extension.



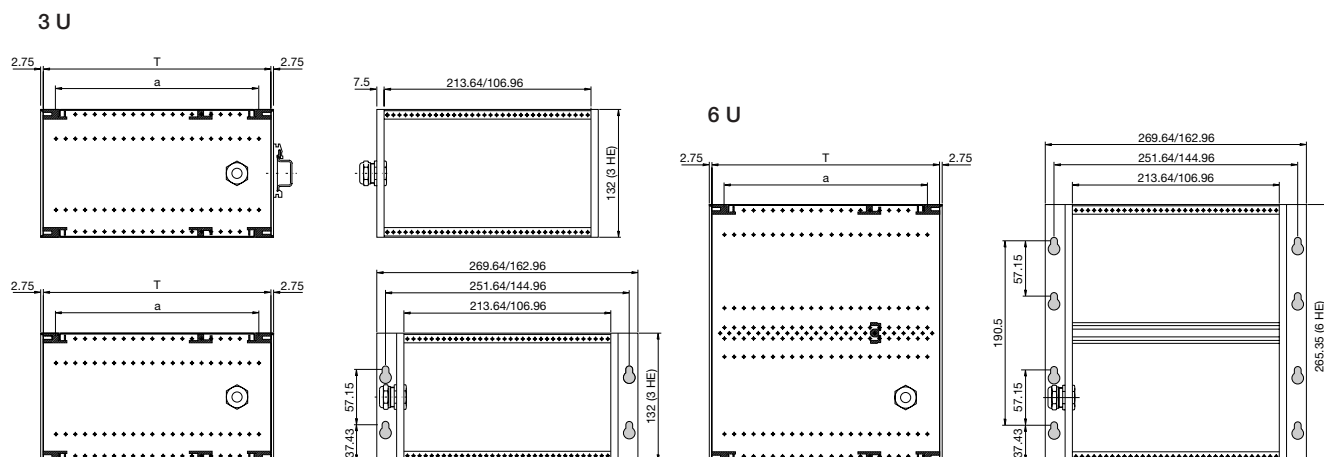
7 U (6 U + 2 x 1/2 U)
Top: For backplane
Bottom: For backplane/front
horizontal rails with 10 mm
extension.

Order information

Ripac Compact subracks 3 U, 6 U

				Model No. subrack					Model No. EMC subrack					Page
	U			3	3	3	3	6	3	3	3	3	6	
	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 depth (T) mm	a mm	Max. PCB depth mm	For back-plane	For back-plane	For back-plane	For back-plane	For back-plane	For back-plane	For back-plane	For back-plane	For back-plane	For back-plane	
	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	
Rail type	Subrack supply includes (unassembled) for backplane mounting													
	Side panels			2	2	2	2	2	1	1	1	1	1	142
	Side panels for cable entry			–	–	–	–	–	1	1	1	1	1	
	EMC cable entry			–	–	–	–	–	1	1	1	1	1	
	Trim sections			4	2	4	2	2	4	2	4	2	2	145
	Flange with keyhole			–	2	–	2	2	–	2	–	2	2	
	EMC front/rear panels			–	–	–	–	–	–	1	–	1	1	192
	EMC rear panels for rail adaptor			–	–	–	–	–	1	–	1	–	–	
	Rear panel for rail adaptor			1	–	1	–	–	–	–	–	–	–	
	Rail adaptor			1	–	1	–	–	1	–	1	–	–	
	EMC gaskets, vertical			–	–	–	–	–	X	X	X	X	X	146
	Covers, vented			–	–	–	–	–	2	2	2	2	2	166
A	Front horizontal rails			4	2	4	2	2	4	4	4	4	4	148
C1	Rear horizontal rails			2	2	2	2	2	2	2	2	2	2	149
I	Threaded inserts			4	2	4	2	2	4	4	4	4	4	152
G	Insulating strips 21 HP			2	2	4	4	8	2	2	4	4	8	153
D1	Rear horizontal rails, centre			–	–	–	–	1	–	–	–	–	1	150
Accessories														
	Guide rails			see page 160 – 165										
	Vented covers for 160 PCB			3687.624	3687.624	3687.625	3687.625	3687.625	included in supply					169
	Vented covers for 220 PCB			3687.692	3687.692	3687.677	3687.677	3687.677	included in supply					169
F	Z rails, DIN 41 612			3684.599	3684.599	3684.600	3684.600	3684.600	3684.599	3684.599	3684.600	3684.600	3684.600	152

HE = U





Cable gland:

EMC version: Side cable entry through EMC PG screwed cable gland in the side panel.
Non-EMC version: Cable entry from above/below

Standards:

Ripac subracks are based on the system dimensions to DIN 41 494, part 5 and IEC 60 297-3 to -5, IEEE 1101.1 and 1101.10.

Technical specifications:

Overall depth: 225, 285 mm
For PCB depth: 160 mm and 220 mm
Installation width: 21 and 42 HP
Height: 3 U, 6 U
Prepared for mounting on DIN rail or mounting plate

Material:

Side panels: 2.5 mm aluminium
Flanges and horizontal rails: Extruded aluminium

Surface finish:

Clear chromated

Tests:

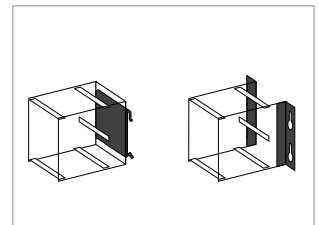
Vibration and shock-tested to:
DIN IEC 68-2-6 test Fc
DIN IEC 68-2-27 test Ea

Accessories:

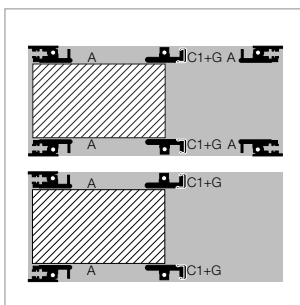
Handles/front panels/
box type plug-in units,
from page 182

Configuration/
climate control,
from page 146

Connectors,
from page 202

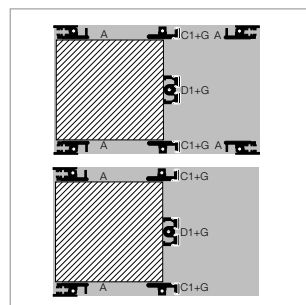


Horizontal rail configurations



3 U

Top: For mounting rail
Bottom: For mounting plate



6 U

Top: For mounting rail
Bottom: For mounting plate



Rail installation

Simply snap onto the rail using special adaptors.



Mounting plate installation

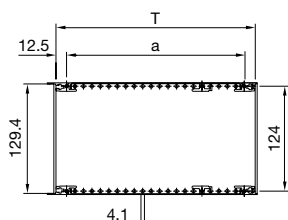
by using flanges with machined keyholes.

Order information

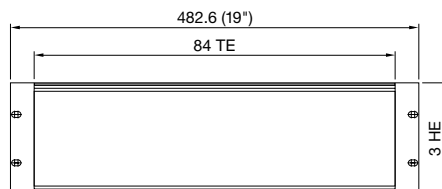
Ripac Vario Mobil 3 U, 6 U – for mobile use

				Model No. Subrack Ripac Vario Mobil		Model No. Side panels	Model No. Subrack Ripac Vario Mobil EMC	Model No. Subrack Ripac Vario Mobil		Model No. Side panels	Model No. Subrack Ripac Vario Mobil EMC	Page
	U			3	3	3	3	6	6	6	6	
	Side panel depth (T) mm	a mm	Max. card depth mm	For backplane	For connector DIN 41 612	For subrack Ripac Vario	For back- plane	For back- plane	For connector DIN 41 612	For subrack Ripac Vario	For back- plane	
	245	220	220	3687.782	3687.780	3684.513	3687.784	3687.783	3687.781	3684.531	3687.785	
Subrack supply includes (assembled)												
	U			3	3	3	3	6	6	6	6	
Rail- type				For back- plane	For con- nector		For back- plane	For back- plane	For con- nector		For back- plane	
		Model No.		Quantity								
	Flanges	–		2	2	3684.615	2	2	2	3684.617	2	143
	Trim section	–		–	–	3684.634	2	–	–	3684.636	2	145
	Side panels	See above		2	2	–	2	2	2	–	2	142
	EMC gaskets, vertical	–		–	–	3686.975	2	–	–	3686.977	2	146
	Covers, vented	3684.695		–	–	–	2	–	–	–	2	166
	Mounting blocks	3684.884		–	–	–	20	–	–	–	20	168
K	EMC gaskets for covers	3684.807		–	–	–	4	–	–	–	4	166
A	Front horizontal rails	3684.562		4	4	–	4	4	4	–	4	148
I	Threaded inserts	3684.610		4	4	–	4	4	4	–	4	152
C1	Rear horizontal rails	3684.572		2	–	–	2	2	–	–	2	149
D1	Rear horizontal rails, centre	3684.582		–	–	–	–	1	–	–	1	150
G	Insulating strips 21 HP	3684.611		8	–	–	8	16	–	–	16	153
C3	Rear horizontal rails with integral Z rails	3686.159		–	2	–	–	–	2	–	–	150
D2	Rear horizontal rails, centre with integral Z rails	3687.602		–	–	–	–	–	1	–	–	150
	Assembly screws M4 x 12	3684.881		12	12	–	12	14	14	–	14	208
	Assembly screws M3 x 6	3684.883		–	–	–	60	–	–	–	60	208

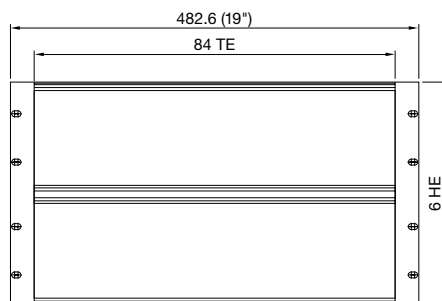
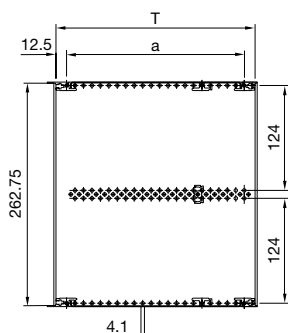
3 U
(EMC
version)



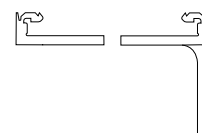
TE = HP
HE = U



6 U
(EMC
version)



Flange/
trim section





Technical specifications:

Overall depth: 245 mm
Installation width: 84 HP
Height: 3 U, 6 U

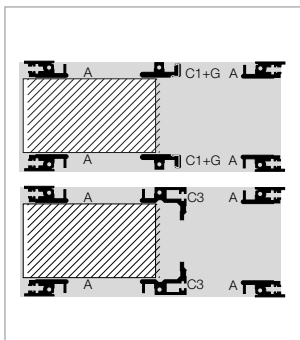
Material:

Side panels:
2.5 mm aluminium sheet
482.6 mm (19") flanges and
horizontal rails:
Extruded aluminium
Covers: Aluminium

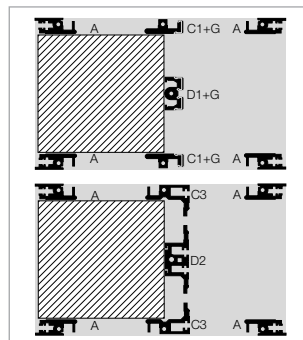
Surface finish:

Clear chromated

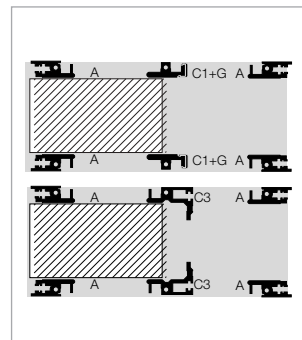
Horizontal rails configuration:



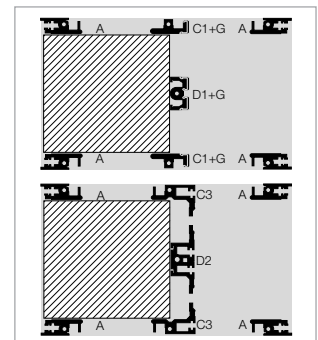
Ripac Vario Mobil EMC 3 U
Top: For backplane
Bottom: For connector



Ripac Vario Mobil EMC 6 U
Top: For backplane
Bottom: For connector



Ripac Vario Mobil 3 U
Top: For backplane
Bottom: For connector



Ripac Vario Mobil 6 U
Top: For backplane
Bottom: For connector

Tests:

Vibration and shock-tested to:
DIN IEC 68-2-6 test Fc
DIN IEC 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 (electronic
equipment for rail vehicles).
The configuration subracks
conform to IEC 61587-1.

Accessories:

Handles/front panels/
box type plug-in units,
from page 182

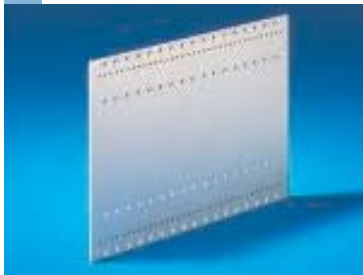
Configuration/
climate control,
from page 146

Connectors,
from page 202

Individual subrack components

Side panels and flanges

Side panels for Ripac Vario, Ripac Vario EMC, Ripac Compact and Ripac Vario Mobil



Attachment holes and anti-twist half shears on a 10 mm pitch pattern.

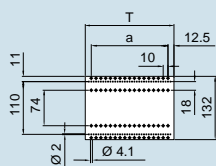
Material:
2.5 mm aluminium panels

Surface finish:
Clear chromated

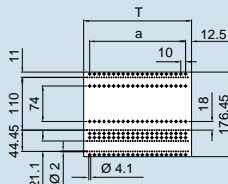
Accessories:
Mounting flanges,
see page 143
Trim section,
see page 145

D (T) mm	a mm	Packs of	Height (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
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

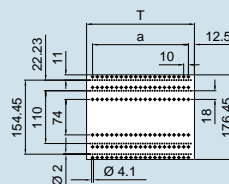
3 U



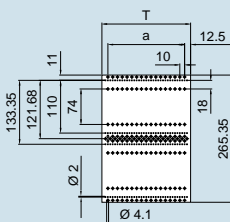
4 U (3 U + 1 U)



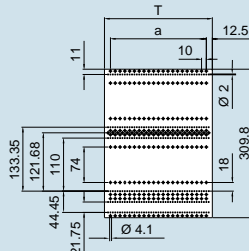
4 U (3 U + 2 x 1/2 U)



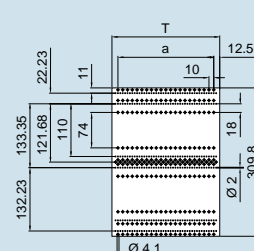
6 U



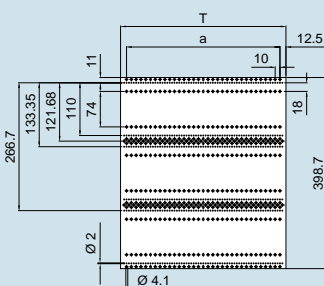
7 U (6 U + 1 U)



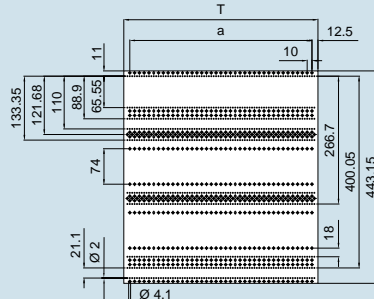
7 U (6 U + 2 x 1/2 U)



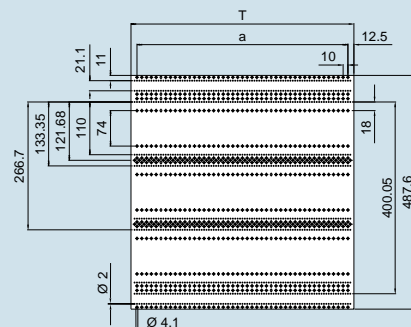
9 U



10 U



11 U



482.6 mm (19") mounting flange



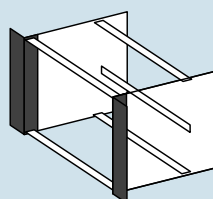
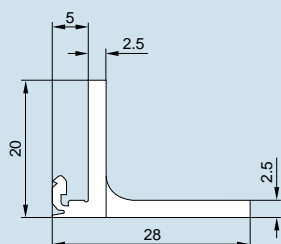
For all Ripac Vario subracks, Ripac Vario, Ripac Vario EMC, Ripac Vario Compact and Ripac Vario Mobil.

Material:
Extruded aluminium

Surface finish:
Clear chromated

Supply includes:
1 mounting flange

Accessories:
EMC gaskets, vertical,
see page 146



U	Packs of	Model No. RP with handle holes	Model No. RP 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

482.6 mm (19") front flange with T channel



To fit all Ripac Vario, Ripac Vario EMC, Ripac Vario Compact and Ripac Vario Mobil subracks. The T-slot can be used for the attachment of components, for strain relief or for cable routing. EMC gaskets may be fitted for EMC applications.

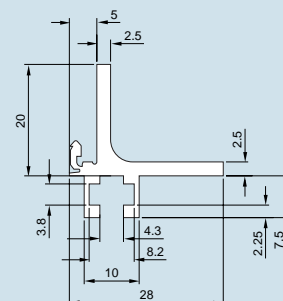
Material:
Extruded aluminium

Surface finish:
Clear chromated

Supply includes:
1 front flange

Accessories:
EMC gaskets, vertical,
see page 146

U	P. of	Model No. RP
3	1	3686.192
6	1	3686.193
9	1	3686.194



482.6 mm (19") mounting flange, set back

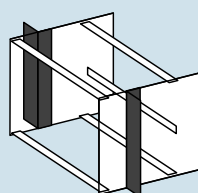
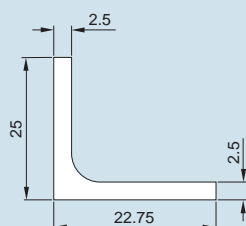


To fit all Ripac Vario, Ripac Vario EMC, Ripac Vario Compact and Ripac Vario Mobil subracks. For recessed mounting in the enclosure.

Material:
Extruded aluminium

Surface finish:
Clear chromated

Supply includes:
1 mounting flange



U	P. 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

Note:
Assembly screws, nuts and washers should be ordered separately.

Packs of	Model No. RP
4 sets	3687.015

Accessories:
EMC gaskets, vertical,
see page 146

Individual subrack components

Side panels and flanges

Side panels for Ripac ECO



Attachment holes for 160/220 mm PCB installation. Continuous pitch pattern of holes top and bottom for cover attachment.

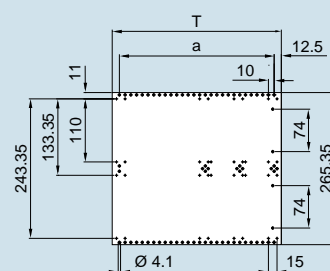
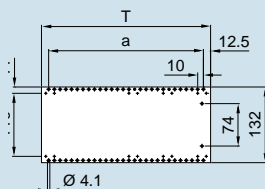
Accessories:
Mounting flanges
see page 143

Material:
1.5 mm sheet steel

Surface finish:
Zinc-plated

Supply includes:
1 side panel

D (T) mm	a mm	Packs of	Max. board depth mm	Height (U) Model No. RP	
				3	6
175	150	1	160	3688.100	3688.102
235	210	1	220	3688.101	3688.103



482.6 mm (19") mounting flanges



To fit Ripac ECO subracks.

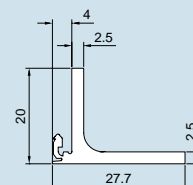
Material:
Extruded aluminium

Surface finish:
Clear chromated

Supply includes:
1 flange

Accessories:
EMC gaskets, vertical
see page 146

U	P. of	Model No. RP
3	1	3688.110
6	1	3688.111



Handles for subracks



The handles are mounted on the flanges via handle holes.

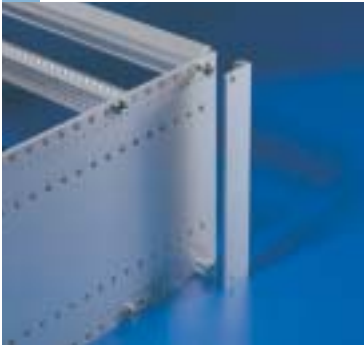
Material:
Die-cast aluminium

Surface finish:
Spray-finished, silver-grey

Supply includes:
2 handles, assembly parts

U	P. of	Model No. RP
3	2	3636.010
4	2	3636.010
6	2	3666.010
7	2	3666.010

Trim section rear



To fit all subrack versions. Guarantees an 84 HP trim on the rear of the subrack. Integral profile to accommodate EMC gaskets.

Material:
Extruded aluminium

Surface finish:
Clear chromated

Supply includes:
1 trim

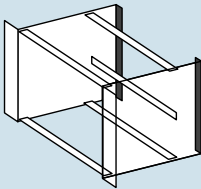
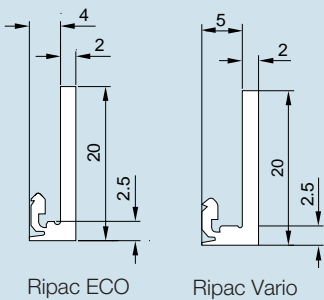
For all subracks Ripac Vario, Ripac Vario EMC, Ripac Compact and Ripac Vario Mobil

U	Model No. RP Packs of 1	Model No. RP 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	–

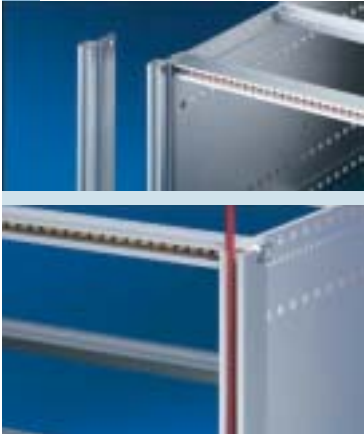
For subrack Ripac ECO

U	Model No. RP Packs of 1
3	3688.112
6	3688.113

Accessories:
EMC gaskets, vertical,
see page 146



Trim section rear with T channel



To fit all subrack versions. Guarantees an 84 HP trim on the rear of the subrack. Additional T channels e.g. for cable routing, attachment of components or strain relief. EMC gaskets may be fitted for EMC applications.

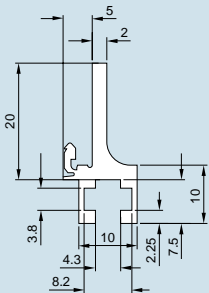
Material:
Extruded aluminium

Surface finish:
Clear chromated

Supply includes:
1 trim

U	P. of	Model No. RP
3	1	3686.195
6	1	3686.196
9	1	3686.197

Accessories:
EMC gaskets, vertical,
see page 146



Individual subrack components

EMC gaskets for side panels and flanges

EMC gaskets, vertical



Version 1



Version 2

To guarantee EMC protection between subrack sides and front and rear panels. There is a choice of two versions:
Version 1: Segmented
Version 2: One-piece

For mounting on:

- 482.6 mm (19") flanges
- Rear trim
- EMC contact strip
- U-shaped front panels
- Trims for Ripac Vario-Module
- Mounting flanges for Ripac Vario-Module

Material:
Stainless steel

Version 1:		
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

Version 2:	
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

EMC contact strip



To guarantee EMC protection when horizontal rails are set back. Integral groove to accommodate vertical EMC gaskets. 2 strips are required per subrack.

Material:
Extruded aluminium

Surface finish:
Clear chromated

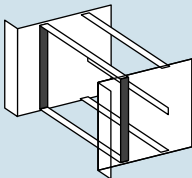
Supply includes:
1 contact strip

U	P. of	Model No. RP
3	1	3684.643
6	1	3684.644
9	1	3684.645












































Note:
Assembly screws should be ordered separately.

	P. of	Model No. RP
M3 x 6	100	3684.233

Also required:
EMC gaskets, vertical, see above

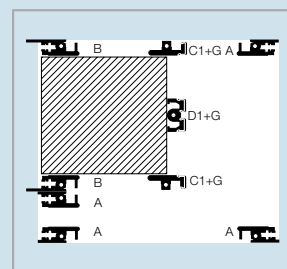
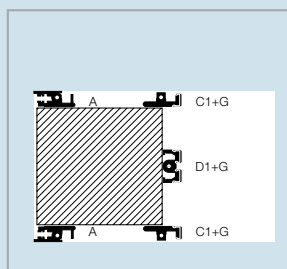
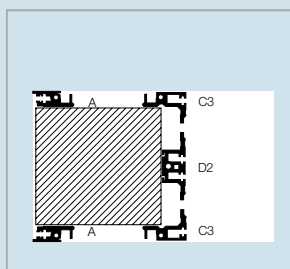


Ripac extrusion system: complete, simple and well-organised

Main 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 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
Additional extrusions										
E Rear adaptor rail, centre, to accommodate plastic guide rails	-	-	-	-	-	-	-	-		
F Z rail for connectors	-	-	-			-		-		-
G Insulating strip*	-	-	-			-		-		-
H Conductive strip*	-	-	-			-		-		-
I Threaded insert				-					-	
J Identification strip								-	-	-
K EMC gasket, horizontal				-	-	-		-	-	-

*For conductive or insulated attachment of backplanes

All system requirements are covered by just a few basic horizontal rail types. This is a well-organised, cost-effective range to fit all subrack systems and the instrument case/rack-mounted enclosure range Ripac Vario-Module.



Individual subrack components

Horizontal rails

Front horizontal rail (A)



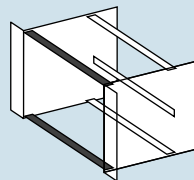
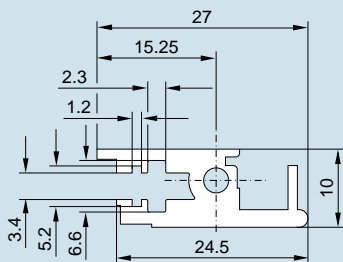
- For accommodation of guide rails and securing of front panels.
- HP pitch pattern of holes for exact mounting of guide rails
 - M4 thread at ends
 - Straight-through core hole
 - Horizontal rail 192 HP for cutting to length

Material:
Extruded aluminium section

Surface finish:
Clear chromated
2) Flash anodised

Note:
Order assembly screws separately:

	Packs of	Model No. RP
M4 x 12	100	3654.300



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

Front horizontal rail (B) with 10 mm extension for type IV and VII injector/extractor handle



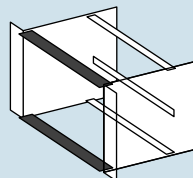
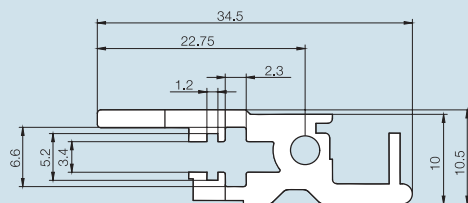
- For accommodation of guide rails and securing of front panels.
- Front projection and hole pattern based on IEEE 1101.10 when using type IV and VII injectors/extractors
 - HP pitch pattern of holes for exact mounting of guide rails
 - M4 thread at ends
 - Straight-through core hole
 - Horizontal rail 192 HP for cutting to length

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

Note:
Order assembly screws separately:

	Packs of	Model No. RP
M4 x 12	100	3654.300



Material:
Extruded aluminium

Surface finish:
Clear chromated
2) Flash anodised

Double front horizontal rail, with 10 mm extension (B1)



To accommodate guide rails and for the attachment of front panels.

Technical specifications:
See front horizontal rail (B)

Material/Surface finish:
Extruded aluminium
Clear chromated

Usable width (HP)	Packs of	Model No. RP
84	1	3687.724

Note:
Order assembly screws separately:

	Packs of	Model No. RP
M4 x 12	100	3654.300

Rear horizontal rail (C1)

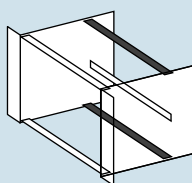
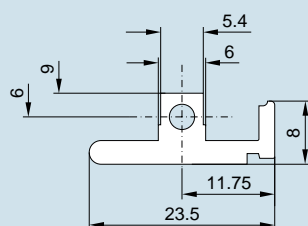


For accommodation of guide rails and securing of Z rails, insulating or contact strips.

- HP pitch pattern of holes for precise installation of guide rails
- M2.5 for fastening the Z rails, insulating or contact strips and backplanes
- M4 thread at ends
- Straight-through core hole
- Horizontal rail 192 HP for cutting to length

Material:
Extruded aluminium section

Surface finish:
Clear chromated
2) Flash 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

Note:
Order assembly screws separately:

	Packs of	Model No. RP
M4 x 12	100	3654.300

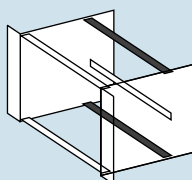
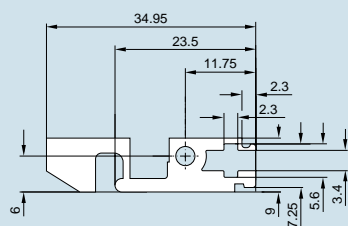
Rear horizontal rail, reinforced version (C2)



For high mechanical loads without backplanes/midplanes.

Material:
Extruded aluminium

Surface finish:
Clear chromated



Usable width (HP)	Packs of	Model No. RP
42	1	3687.604
63	1	3687.605
84	1	3687.606

Note:
Order assembly screws separately:

	Packs of	Model No. RP
M4 x 12	100	3654.300

Threaded inserts for reinforced version:

Usable width (HP)	Packs of	Model No. RP
42	1	3687.616
63	1	3687.617
84	2	3604.830

Rear horizontal rail with channel for Ripac ECO (C4)



To accommodate guide rails and for the attachment of Z rails, insulating strips or contact strips.

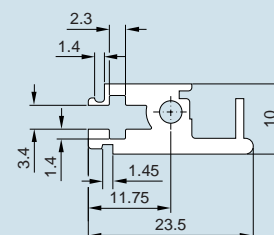
- HP pitch pattern of holes for precise installation of guide rails
- Channel to slide in covers
- Threaded inserts (RP 3684.610) are additionally required for mounting backplanes/Z rails
- M4 thread at ends
- Straight-through core hole
- Not suitable for mounting under covers

Material:
Extruded aluminium

Surface finish:
Clear chromated

Usable width (HP)	Packs of	Model No. RP
84	1	3688.104

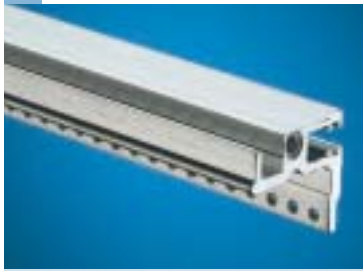
Note:
M4 x 12 assembly screws should be ordered separately, see above



Individual subrack components

Horizontal rails

Rear horizontal rail with integral Z rail (C3)

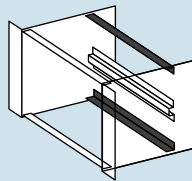
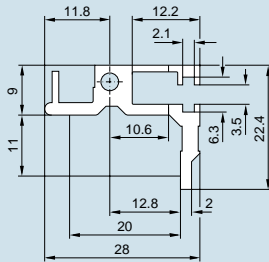


For accommodation of guide rails.
Integral Z rail for mounting of DIN 41 612 connectors.

- HP pitch pattern of holes for precise installation of guide rails
- 84 threaded holes M2.5 for fitting DIN 41 612 connectors
- M4 thread at ends
- Straight-through core hole

Material:
Extruded aluminium

Surface finish:
Clear chromated

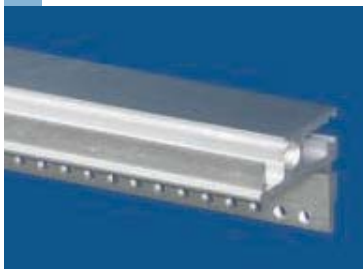


Usable width (HP)	Packs of	Model No. RP
42	1	3686.191
63	1	3686.919
84	1	3686.159

Note:
Order assembly screws separately:

	Packs of	Model No. RP
M4 x 12	100	3654.300

Rear horizontal rail with integral Z rail for Ripac ECO (C5)

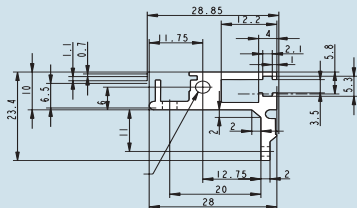


For accommodation of guide rails.
Integral Z rail for mounting of DIN 41 612 connectors.

- HP pitch pattern of holes for precise installation of guide rails
- 84 threaded holes M2.5 for fitting DIN 41 612 connectors
- M4 thread at ends
- Straight-through core hole

Material:
Extruded aluminium

Surface finish:
Clear chromated



Usable width (HP)	Packs of	Model No. RP
84	1	9901.991

Note:
Order assembly screws separately:

	Packs of	Model No. RP
M4 x 12	100	3654.300

Rear horizontal rail, centre (D1)

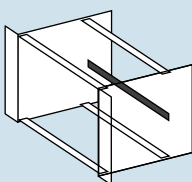
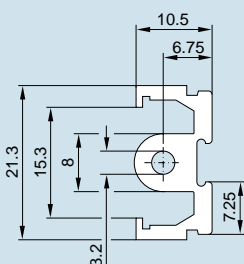


When using 6 U PCBs or modules.
Mounting facility for Z rails, insulating or contact strips and backplanes.

- 84 threaded holes M2.5
- M4 thread at ends
- Straight-through core hole
- Horizontal rail 192 HP for cutting to length

Material:
Extruded aluminium

Surface finish:
Clear chromated
2) Flash 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⁾
858.5 (mm)	1	3684.579
192	1	3688.003 ²⁾

¹⁾ Including 2 assembly screws

Note:
Order assembly screws separately:

	Packs of	Model No. RP
M4 x 12	100	3654.300

Rear horizontal rail, centre with integral Z rail (D2)



When using 6 U PCBs or modules. Integral Z rail for mounting connectors.

- 84 threaded holes M2.5
- M4 thread at ends
- Straight-through core hole

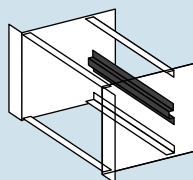
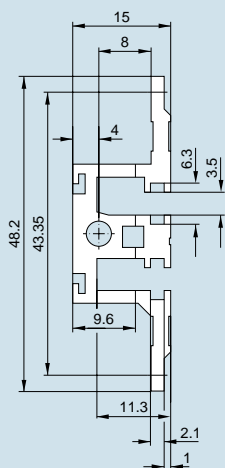
Material:
Extruded aluminium

Surface finish:
Clear chromated

Usable width (HP)	Packs of	Model No. RP
42	1	3687.600
63	1	3687.601
84	1	3687.602
858.5 mm	1	3687.603

Note:
Order assembly screws separately:

	Packs of	Model No. RP
M4 x 12	100	3654.300



Rear adaptor rail, centre (E)



When dividing 6 U into 2 x 3 U, the adaptor rail fastened to the centre horizontal rail accommodates the guide rails.

- HP pitch pattern of holes for precise installation of guide rails
- M4 and M2.5 thread at ends
- Straight-through core hole
- Horizontal rail 192 HP for cutting to length

Material:
Extruded aluminium

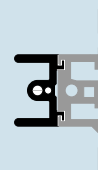
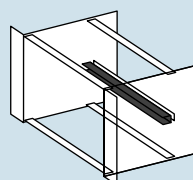
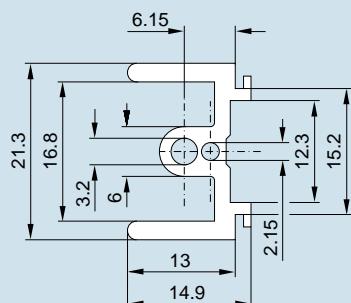
Surface finish:
Clear chromated
²⁾ Flash anodised

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⁾
858.5 mm	1	3684.584
192	1	3688.004 ²⁾

¹⁾ Including 2 assembly screws

Note:
Order assembly screws separately:

	Packs of	Model No. RP
M4 x 12	100	3654.300



Individual subrack components

Horizontal rails

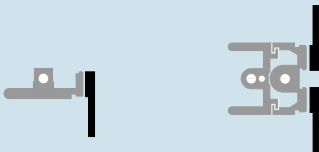
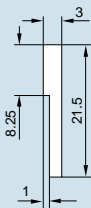
Z rail for connectors DIN 41 612 (F)



With 84 x M2.5 thread.

Material:
Extruded aluminium

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

Note:
Order assembly screws separately:

	Packs of	Model No. RP
M2.5 x 6	100	3654.340

Threaded inserts (I)



With M2.5 threaded holes in a 1 HP pitch pattern.
For pushing into all front horizontal rails and rear rails of Ripac ECO, type A and type B rear rails.

Material:
Steel

Surface finish:
Zinc-plated, passivated

Note:
The threaded inserts cannot be used with rear horizontal rails, reinforced version (see page 149).

Usable width (HP)	Packs of	Model No. RP
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
63	1	3684.609
84	1	3684.610

EMC gaskets, horizontal (K)



As horizontal EMC protection. For snapping onto the front horizontal rails.

Material:
Stainless steel



Usable width (HP)	Packs of	Model No. RP
For upper/lower horizontal rail		
40	1	3684.974
84	1	3684.808
84	10	3684.246
When dividing 6 U into 2 x 3 U, between two horizontal rails		
84	1	3685.789
84	10	3685.229

Identification strips (J)



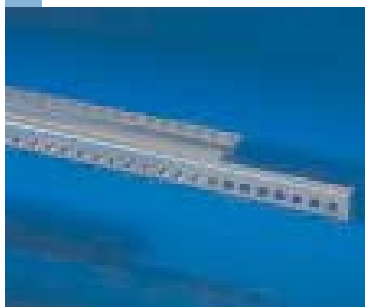
For identifying the installation positions on the subrack, self-adhesive.
The following versions are available:

- 4 mm wide:
For front rails, horizontal rails
- 4 mm wide:
For rear horizontal rails
- 2 mm wide:
For front of horizontal rails (groove)

Width	P. of	Labelling	Model No. RP
4 mm	1	1 ... 84	3687.575*
4 mm	1	1 ... 168	3687.577
4 mm	1	84 ... 1	3687.574*
2 mm	1	1 ... 84	3687.576*

* Extended delivery times

Contact strip (H)



For conductive mounting of backplanes.

- Length 84 HP
- Slides onto the rear horizontal rail

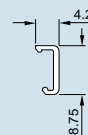
Material:

Aluminium

Surface finish:

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.

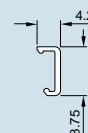
- Length 21 HP
- Snaps onto the rear horizontal rail

Material:

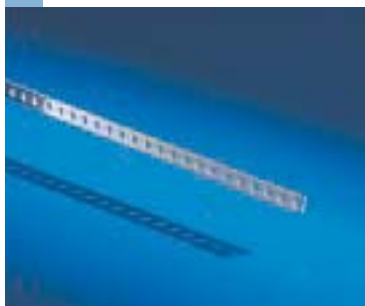
Plastic, self-extinguishing to UL 94-V0

Usable width (HP)	Packs of	Model No. RP
21	1	3684.611
21	8	3685.274

Rear horizontal rail equipped with insulating strip (top) and contact strip (bottom).



Perforated strip



Material:
Aluminium

Surface finish:
Clear chromated

Usable width (HP)	Packs of	Model No. RP
84	2	3685.275



Accessories

Components for EMC installation

EMC stands for electromagnetic compatibility, and describes the ability of an electrical device to function satisfactorily in its electromagnetic environment without inadmissibly influencing this environment. These requirements were taken into account when developing Rittal subracks. They are manufactured entirely from metal, and coated with a conductive surface finish.

EMC stainless steel gaskets between the individual components ensure conductive connection of the separate parts.

EMC gaskets, vertical (1)



Version 1

To guarantee EMC protection between subrack side panels and front/rear panels. There is a choice of two versions:
Version 1: Segmented
Version 2: One-piece

For mounting on:

- 482.6 mm (19") flanges
- Rear trim
- EMC contact strip
- U-shaped front panels
- Trims for Ripac Vario-Module
- Mounting flanges for Ripac Vario-Module

Material:
Stainless steel

Version 1:

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

Version 2:

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



Version 2



Version 1



Version 2

EMC contact strip



To guarantee EMC protection when horizontal rails are set back. Integral groove to accommodate vertical EMC gaskets. 2 contact strips are required per subrack.

Material:
Extruded aluminium

Surface finish:
Clear chromated

Supply includes:
1 contact strip

U	P. of	Model No. RP
3	1	3684.643
6	1	3684.644
9	1	3684.645

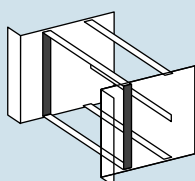
Note:

Assembly screws should be ordered separately.

	Packs of	Model No. RP
M3 x 6	100	3684.233

Also required:

EMC gaskets, vertical, see above





EMC gaskets, horizontal (2)



For horizontal EMC protection. Snap onto the front horizontal rails.

Material:
Stainless steel

EMC

Usable width (HP)	Packs of	Model No. RP
For upper/lower horizontal rail		
40	1	3684.974
84	1	3684.808
84	10	3684.246
When dividing 6 U into 2 x 3 U, between two horizontal rails		
84	1	3685.789
84	10	3685.229

EMC gaskets for cover plates (3)



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 (4)

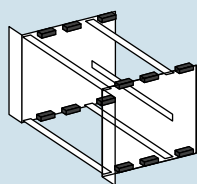


For mounting covers, versions 1 – 4, on the sub-rack side panel. For EMC applications, additional mounting blocks must be fitted over the entire subrack depth.

Material:
Die-cast zinc

Surface finish:
Nickel plated

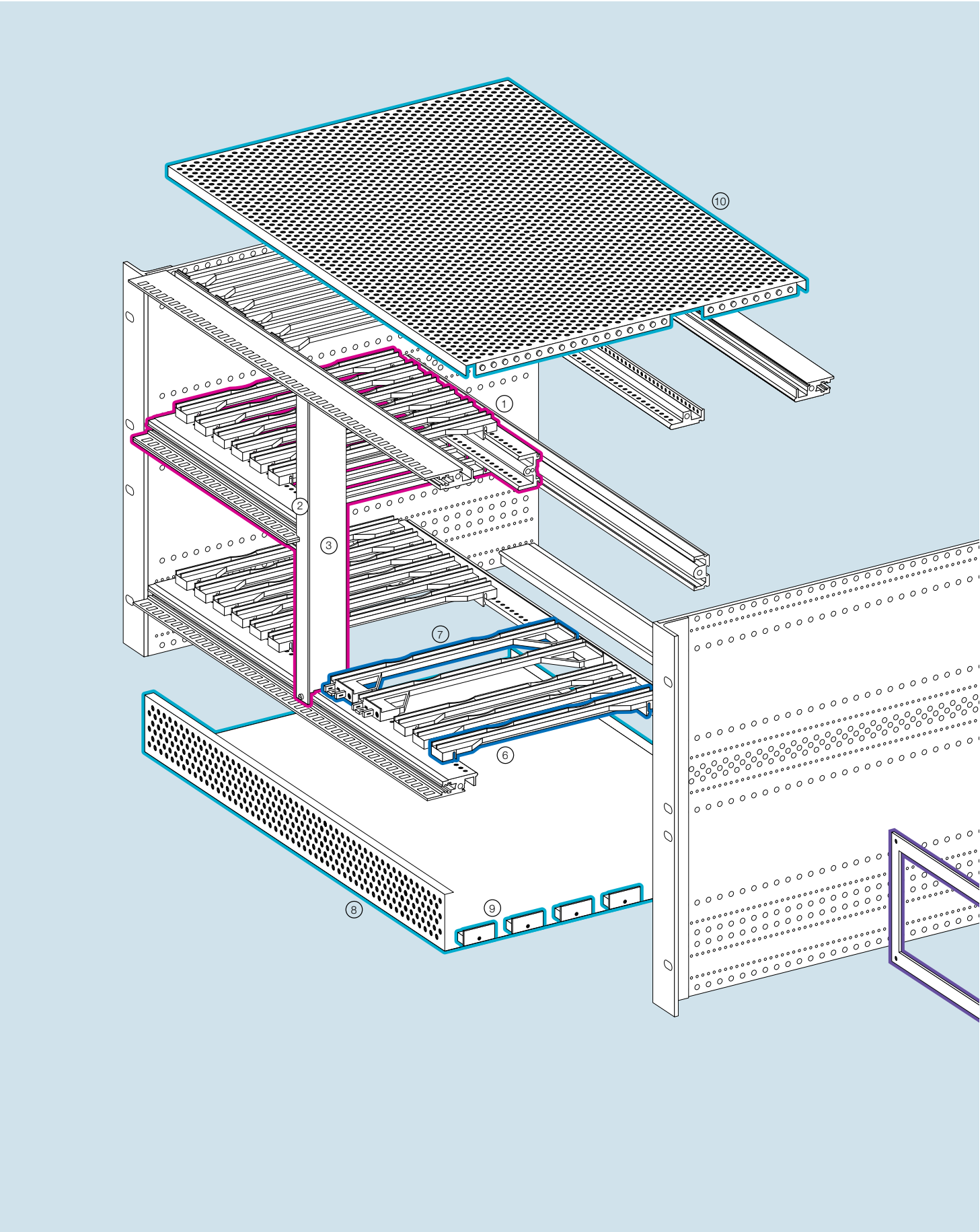
The table shows the number of mounting blocks required to install 1 cover with EMC shielding.



EMC

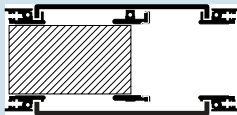
	Packs of	Model No. RP
Mounting blocks 28.5 mm long	10	3684.234
The following should be ordered separately:		
Assembly screws M3 x 6	100	3684.233
No. of mounting blocks for max. EMC protection	Multi-level cover depth (mm)	
4	142	
8	192	
10	212	
12	252	
14	272	
16	312	
18	332	
20	372	
24	432	
28	492	
32	552	

Ripac subrack installation

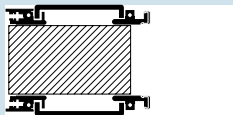


Covers

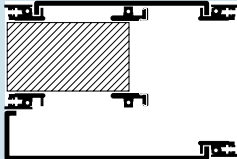
Version 1



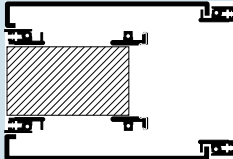
Version 2



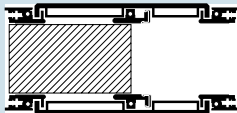
Version 3



Version 4



Version 5



Vertical divider kits

For combined installation of Euroboards and double Euroboards

* in 6 U subracks	158
① in 6 U subracks including guide rails	158
* in 9 U subracks recessed	158
* for 6 U PCBs in 9 U subracks	158
② Front panel as cover	158
③ Vertical support	159

Horizontal mounting kits

For horizontal installation of 6 U/9 U PCBs

④ in 3 U/4 U subracks	159
⑤ Trim frame	159
* Trim frame, vented	159
* Divider panels	

Guide rails

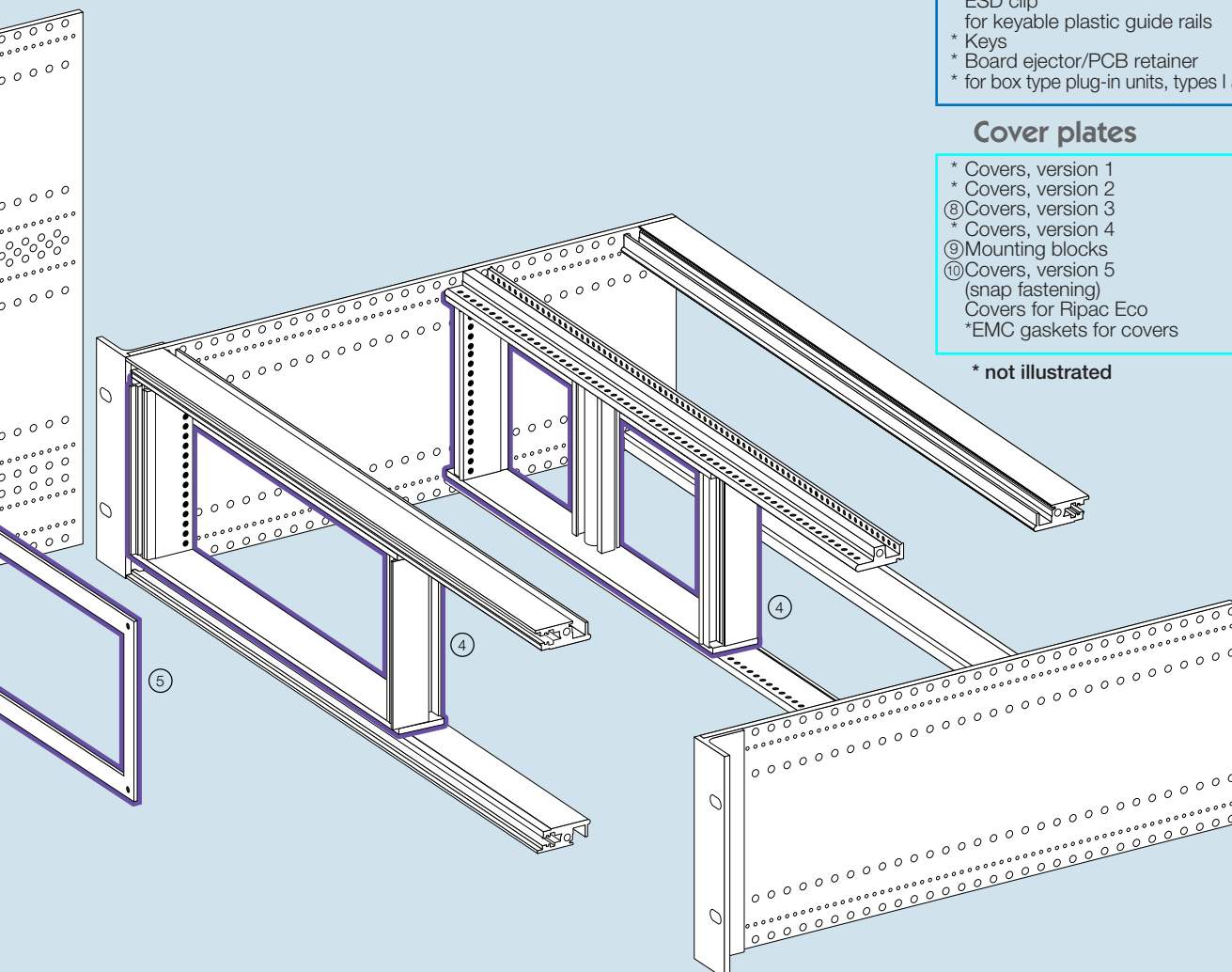
For 80, 160, 220 and 280 mm PCBs

⑥ Plastic	162
* Plastic for ESD clips	160
* Aluminium	160
⑦ Plastic, keyable	161
* for rear connection	161
* Aluminium, keyable	162
* with offset (telecom)	162
* ESD clip	
for keyable plastic guide rails	163
* Keys	164
* Board ejector/PCB retainer	165
* for box type plug-in units, types I and II	165

Cover plates

* Covers, version 1	166
* Covers, version 2	167
⑧ Covers, version 3	167
* Covers, version 4	168
⑨ Mounting blocks	168
⑩ Covers, version 5 (snap fastening)	169
Covers for Ripac Eco	169
* EMC gaskets for covers	166

* not illustrated



Accessories

Vertical divider kits

Divider kit



For combined installation of Euroboards and double Euroboards in 6 U and 9 U subracks.

Material:
Aluminium

Surface finish:
Clear chromated

Supply includes:
2 front horizontal rails
1 adaptor rail
2 threaded inserts
1 vertical support (from 12 HP)
Assembly parts

Accessories:
Front panels, see below
EMC gaskets, see page 154

6 U (2 x 3 U)

HP (B)	HP (A)	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

Divider kit incl. guide rails



For combined installation of Euroboards and double Euroboards in 6 U subracks.

Supply includes:
2 front horizontal rails
1 adaptor rail
2 threaded inserts
1 vertical support (from 12 HP)
2 guide rails per slot
Assembly parts

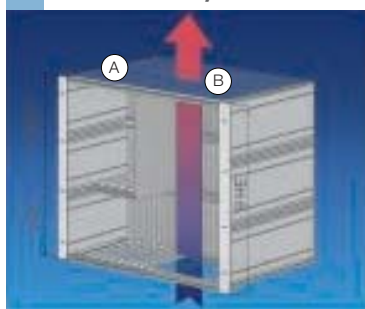
Accessories:
Front panels, see below
EMC gaskets, see page 154

6 U (2 x 3 U)

HP (B)	HP (A)	Number of slots 3 U	Model No. RP	Model No. RP*
80	4	1	3685.037	3685.137
76	8	2	3685.038	3685.138
70	12	3	3685.039	3685.139
66	16	4	3685.040	3685.140
62	20	5	3685.041	3685.141

* Front horizontal rail with 10 mm extension

Divider kit, recessed



For set back installation of 6 U PCBs in 9 U subracks.

Supply includes:
2 front horizontal rails
2 threaded inserts
2 guide rails per slot
Assembly parts

Accessories:
EMC gaskets, see page 154

9 U (6 U recessed)

HP (B)	HP (A)	Number of slots 6 U	Model No. RP	Model No. RP*
80	4	1	3685.058	3685.158
76	8	2	3685.059	3685.159
70	12	3	3685.060	3685.160
66	16	4	3685.061	3685.161
62	20	5	3685.062	3685.162

* Front horizontal rail with 10 mm extension

Front panel



To conceal the vertical rails of the divider kit; must be ordered in addition to the divider kit for Euroboards/double Euroboards.

Material:
Aluminium

Surface finish:
Clear chromated

Supply includes:
1 front panel
1 vertical EMC gasket (for EMC)
Assembly part

EMC

U	HP	Packs of	Model No. RP
6	2	1	3685.176
9	2	1	3685.286

EMC version

U	HP	Packs of	Model No. RP
6	2	1	3685.185
9	2	1	3685.193

Vertical divider kits/horizontal mounting kits

Vertical support



Required for combined installation of single, double & triple Euroboards in one subrack.

Material:
Extruded aluminium

Surface finish:
Clear chromated

U	Packs of	Model No. RP
6	1	3684.678
9	1	3684.679

Horizontal mounting kit



For horizontal installation of 6 U/9 U PCBs in 3 U/4 U subracks.

- Horizontal installation space: ①
3 U subrack: 20 HP (5 slots)
4 U subrack: 28 HP (7 slots)
- Vertical installation space: ②
(for double Euroboards only)
31 HP (without trim frame)
28 HP (with trim frame)

Material:
Aluminium, clear chromated

Supply includes:
2 front horizontal rails
2 rear horizontal rails
1/2 rear horizontal rails, centre
2 threaded inserts
4/6 insulating strips
4 connecting parts
Assembly parts

Horizontal mounting kits for backplane mounting with standard horizontal rail, front:

	3 U Model No. RP	4 U Model No. RP
6 U horizontal	3684.206	3684.208
9 U horizontal	3684.207	3684.209

Horizontal mounting kits for backplane mounting, front horizontal rail with 10 mm extension:

	3 U Model No. RP	4 U Model No. RP
6 U horizontal	3684.210	3684.212
9 U horizontal	3684.211	3684.213

Accessories:
Trim frame, see below

Trim frame for horizontal mounting kit



To cover the front rails of the horizontal mounting kit.

Material:
Aluminium

Surface finish:
Anodised

Supply includes:
1 trim frame

U horizon- tal	HP	For 3 U subracks Model No. RP	For 3 U subracks Model No. RP
6	56	3685.783	3685.785
9	84	3685.784	3685.786

Note:
Captive screws and plastic collars should be ordered separately:
Model No. RP 3658.160,
packs of 100

Trim frame for horizontal mounting kit, vented



To cover the front rails of the horizontal mounting kit. Ventilation holes prevent hot spots from developing on the printed circuit boards.

Material:
Aluminium

Surface finish:
Anodised,
clear chromated (EMC version)

Supply includes:
1 trim frame
EMC accessories (for EMC version)

EMC

U horizon- tal	HP	For 3 U subracks Model No. RP	For 4 U subracks Model No. RP
6	63	3685.787	3685.788

Note:
Captive screws and plastic collars should be ordered separately:
Model No. 3658.160,
packs of 100

EMC trim frame:

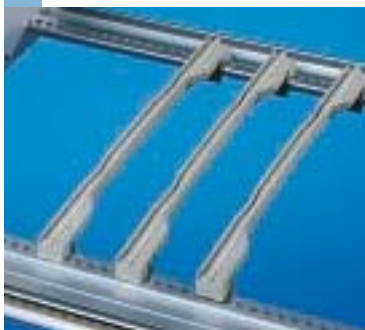
U horizon- tal	HP	For 3 U subracks Model No. RP	For 4 U subracks Model No. RP
6	63	3685.291	3685.292

Note:
Alignment screws should be ordered separately:
Model No. RP 3687.050 (slotted),
packs of 100.

Subrack accessories

Guide rails

Guide rails (plastic)



For 160, 220 and 280 mm PCBs up to a nominal thickness of 2 mm. 2 versions are available: for snap-in and screw fastening for snap-in fastening (see photo)

Material:
Fibreglass-reinforced polycarbonate (UL 94 V-1), RAL 7032

PCB depth	Packs of	Model No. RP snap-in/screw fastening*	Model No. RP snap-in fastening
160 mm	1	3684.657	3684.654
220 mm	1	3684.658	3684.655
280 mm	1	3684.659	3684.656

***Note:**
Order assembly screws separately:

Packs of	Model No. RP
100	3654.360

Guide rails (plastic) for ESD clip installation



For 160, 220 and 280 mm PCBs up to a nominal thickness of 2 mm. By installing ESD clips, an electrical connection can be made between the PCB and the subrack assembly.

Material:
Fibreglass-reinforced polycarbonate (UL 94 V-1), RAL 7032

Accessories:
ESD clips, see below

PCB depth	P. of	Model No. RP
160 mm	1	3684.660
220 mm	1	3684.661
280 mm	1	3684.662

ESD clips



To create an electrical connection between the PCB and subrack, or to discharge static charges of the PCB. May be installed in "guide rails for ESD clip installation" and "end pieces for guide rails".

Packs of	Model No. RP
10	3687.726

Guide rails (aluminium)



For extreme mechanical loads. Suitable for nominal PCB thicknesses of 1.6 mm. A distinction is made between guide rails with and without end pieces. Guide rails without end pieces are screwed directly onto the horizontal rail.

Material:
Aluminium

PCB depth	Packs of	Model No. RP without* end pieces	Model No. RP for end pieces
160 mm	1	3687.526	3684.663
220 mm	1	3687.527	3684.664
280 mm	1	3687.528	3684.665
1 metre	1	3684.666	–

***Note:**
Order assembly material separately:

	P. of	Model No. RP
Screw M2.5 x 6	100	3654.340
Nut M2.5	100	3654.370
Retaining cage M2.5	100	9901.417

End pieces for guide rails (aluminium)



Metal ESD clips, Model No. RP 3687.726 may be fitted in order to discharge static charges.

Material:
Fibreglass-reinforced polycarbonate, UL 94-V1

Accessories:
ESD clips, see above

	P. of	Model No. RP
End piece, front	1	3684.668
End piece, rear	1	3685.759
ESD clips	10	3687.726

Guide rails (plastic), keyable



Guide rails 4 HP, keyable, to IEEE 1101.10.

- For a nominal thickness of 1.6 – 2.0 mm
- Keying areas for the installation of keys (see page 164)
- Option of installing ESD clips to discharge static charges (see page 163)
- Narrow design for maximum air flow
- Colour variants for distinction between the slots:
 - red for CPU,
 - green for power supply,
 - yellow and grey for board type plug-in units slot identification

Only for use in conjunction with injector/extractor handles, types IV and VII (see page 185).

Material:

Polycarbonate, basic material to UL 94-V0

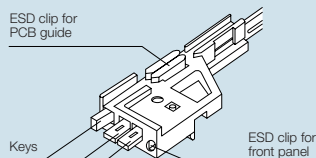
Accessories:

Keys, see page 164

ESD clips, see page 163



ESD clip for PCB guide



For PCB depth	Packs of	Grey	Red	Green	Yellow
		Model No. RP	Model No. RP	Model No. RP	Model No. RP
160 mm	10	3685.257	–	–	–
220 mm	10	3685.258	–	–	–
280 mm	10	3685.259	–	–	–
160 mm	1	3684.669	3686.063	3687.832* 3688.055	3689.089
220 mm	1	3684.953	–	–	3689.091
280 mm	1	3684.954	–	–	3689.093

* With 1/2 HP offset

Keyable guide rails for I/O assemblies



Guide rails 4 HP, keyable, to IEEE 1101.10.

Designed to accommodate a ground contact for assembly of a pluggable earth connection.

- For a nominal thickness of 1.6 – 2.0 mm.
- For 80 mm deep PCBs
- Keying areas for the installation of keys (see page 164)
- Option of installing ESD clips to discharge static charges (see page 163)
- Narrow design for maximum air flow
- For CPCI or VME applications

Colour	For PCB depth	P. of	Guide rail, top	Guide rail, bottom
			Model No. RP	Model No. RP
Grey	80 mm	1	3687.936	3687.937
Yellow	80 mm	1	3689.097	3689.098

Only for use in conjunction with injector/extractor handles, types IV and VII (see page 185).

Material:

Polycarbonate, basic material to UL 94-V0

Accessories:

Keys, see page 164

ESD clips, see page 163

Ground contact, see below

Ground contact



Ensures a pluggable ground connection.

Only for use with 80 mm guide rails for I/O board type plug-in units. UL recognised.

Material:

Die-cast zinc

Supply includes:

Housing, contact spring

	P. of	Model No. RP
Housing + contact spring	1 set	3689.036
Housing + contact spring	50 sets	3687.951
Assembly screw M3.5 x 12 mm	50	3684.109



Accessories

Guide rails

Keyable guide rails, with 1/2 HP offset



Guide rails with 1/2 HP offset. Guide part for use in telecommunications applications. This allows PCBs to be populated on both sides. Green guide rails with offset are prescribed in the CompactPCI standard for the installation of power packs (PICMG 2.11)

- For PCB thickness 1.6 – 2.0 mm
- 4 HP x 160/220 mm
- Narrow design for maximum air flow
- Keying areas for the installation of keys (see page 164)
- Option of installing ESD clips to discharge static charges (see page 163)

Only for use in conjunction with type IV and VII extractor handles with offset (see page 186).

For PCB depth	Packs of	Colour	Model No. RP
160 mm	1	Grey	3686.137
		Yellow	3689.090
		Green	3687.832
220 mm	1	Grey	3686.136
		Yellow	3689.092
		Green	–

Material:

Polycarbonate, self-extinguishing to UL94-V0

Supply includes:

1 guide rail

Accessories:

Keys, see page 164
ESD clips, see page 163
Extractor handles, type IV, VII with offset, see page 186/187

Keyable guide rails (aluminium), three-part



Guide rails, keyable, with aluminium centre part, for high mechanical loads. Suitable for a nominal thickness of 1.6 – 2.0 mm.

The guide rails comprise the following individual components:
2 end pieces,
1 aluminium centre part,
insulating centre part(s).

End pieces for three-part guide rails



For a PCB thickness of 1.6 – 2.0 mm.

Material:

Polycarbonate, self-extinguishing to UL94-V0

	P. of	Model No. RP
	10 pairs	3685.265
Front end piece	1	3685.790
Rear end piece	1	3684.670

Note:

When ordered individually, one front and one rear end piece is required for each guide rail.

Aluminium centre part for three-part guide rails



For a PCB thickness of 1.6 – 2.0 mm.

Material:

Aluminium

Surface finish:

Clear chromated

For PCB depth	Model No. RP Packs of 1	Model No. RP Packs of 10
220 mm	3684.673	3685.260
280 mm	3684.674	3685.261
340 mm	3684.675	3685.262
400 mm	3684.676	3685.263
1 metre	3684.672	–

Insulating centre part for three-part guide rails



The insulating centre part slides onto the aluminium centre part.
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	No. of insulating strips required
160 mm	1
220 mm	2
280 mm	3
340 mm	4
400 mm	5

Air block panel for unused slots



To conceal unused slots and prevent air flow. Snap-fastens onto keyable guide rails in unused slots. Suitable for all 4 HP x 160 mm standard guide rails (not offset).

Material:

Polycarbonate, self-extinguishing to UL 94-V0

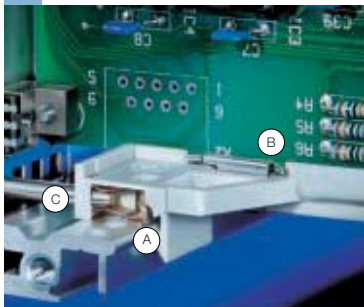
Colour:

Blue



For 4 HP plastic guide rail	Packs of	Model No. RP
160 mm	1	3687.924

ESD clip



For keyable guide rails. To discharge static charges.

■ **ESD clip for PCB guide (B)**

For permanent, direct discharge from the PCB before connector contact

■ **ESD clip for front panel (A)**

To discharge static charges in conjunction with an ESD pin (C). Inserted into the end piece of the guide rail

Only for use in conjunction with extractor handle with ESD pin (type IV, type VII).

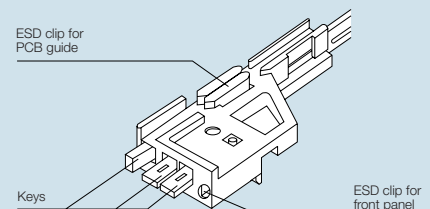
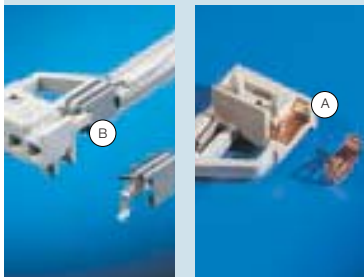
Packs of	Model No. RP ESD clip for PCB	Model No. RP ESD clip for front panel
50	3684.204	3684.205

Material:

Stainless steel

Supply includes:

50 ESD clips



Accessories

Keying

Keys



Keys are used for coding plug-type assemblies, and prevent them from being used in incorrect slots. The keys are inserted into the chambers of keyable guide rails and type IV and VII injector/extractor handles. There are 64 different keying options in total for each guide rail. When the upper and lower guide rail are both keyed, this produces a total of 4,096 different combinations.

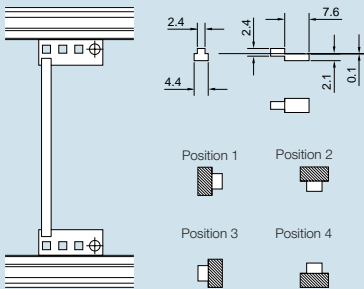
Standards:
IEEE 1101.10, IEC 60 297-5-1, PICMG 2.10A

Material:
Plastic, self-extinguishing to UL 94-V0

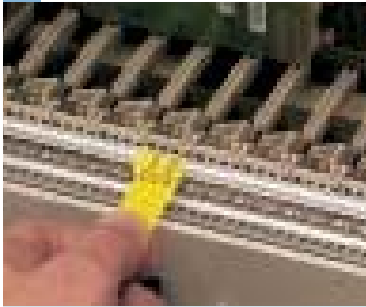
Supply includes:
100 keys

Accessories:
Keying tool for simple assembly of up to 3 coding keys

Colour	Packs of	Model No. RP
grey	100	3684.325
red	100	3684.326



Coding tool



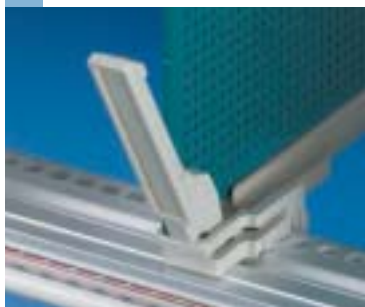
For simple assembly of coding keys. Up to 3 coding keys may be fitted simultaneously. An integral alignment pin makes positioning easier.

Material:
Plastic, UL 94-V0

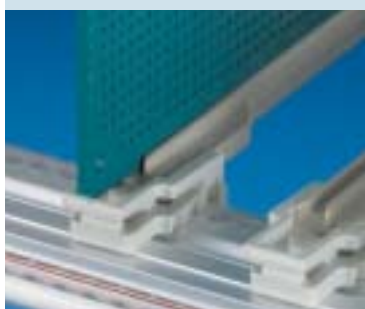
Supply includes:
1 keying tool

Packs of	Model No. RP
1	3687.956

PCB ejector/retainer



PCB ejector/retainer



PCB retainer

To secure and extract PCBs without a front panel. Fastens to the PCB. The retainer can be used on its own as a PCB retainer.

Material:
Fibreglass-reinforced polycarbonate
(UL 94-V0), RAL 7032

Packs of	Model No. RP PCB ejector/ retainer	Model No. RP PCB retainer only
10	3687.014	3687.052

Plastic guide rails for box type plug-in units



For PCB thickness 1.6 mm.
For use in conjunction with slotted covers
for box type plug-in units.
Model No. see page 201.

Material:
Noryl

Supply includes:
10 guide rails

For PCB depth	P. of	Model No. RP
160 mm	10	3606.140
220 mm	10	3606.200

Accessories

Covers

Covers Version 1



To fit all subracks Ripac Vario, Ripac Vario EMC, Ripac Compact and Ripac Vario Mobil. To cover the overall subrack depth (EMC application) or to protect connectors.

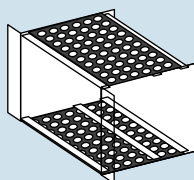
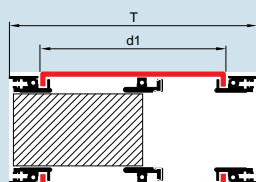
- Flat design top and bottom
- Optionally perforated or solid
- For mounting on the subrack side panel with the aid of mounting blocks. For EMC applications, additional mounting blocks must be fitted over the entire subrack depth

Material:
1.0 mm aluminium, hole diameter 4 mm in vented version

Surface finish:
Untreated

Set supply includes:
2 covers
8 mounting blocks at 28.5 mm
24 assembly screws

Single unit supply includes:
1 cover



HP	For side panel depth T (mm)	Cover depth d1 (mm)	Single unit		Set	
			Model No. RP		Model No. RP	
			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*	–	–

* The following should be ordered separately:

	P. of	Model No. RP
Mounting blocks	10	3684.234
Assembly screws	100	3684.233
EMC gaskets	10	3684.245

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

Covers Version 2



To fit all subracks Ripac Vario, Ripac Vario EMC, Ripac Compact and Ripac Vario Mobil.
To cover the PCB depth.

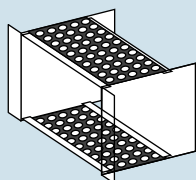
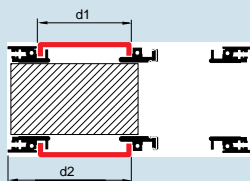
- Flat design top and bottom
- Optionally perforated or solid
- For mounting on the subrack side panel with the aid of mounting blocks

Material:
1.0 mm aluminium, hole diameter
4 mm in perforated version

Surface finish:
Untreated

Set supply includes:
2 covers
8 mounting blocks at 28.5 mm
24 assembly screws

Single unit supply includes:
1 cover



HP	For side panel depth d2 (mm)	Cover depth d1 (mm)	Single unit		Set	
			Model No. RP		Model No. RP	
			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*	—	—	—

* The following should be ordered separately:

	P. of	Model No. RP
Mounting blocks	10	3684.234
Assembly screws	100	3684.233

Covers Version 3



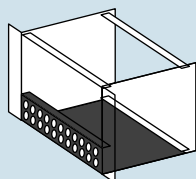
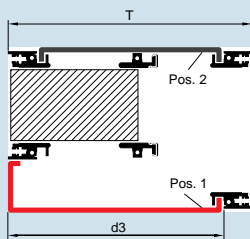
To fit all subracks Ripac Vario, Ripac Vario EMC and Ripac Mobil.
To cover the overall subrack depth (EMC application).

- Cover with 1 U fold (no. 1), to conceal the 1 U section in the subrack
- In addition, a flat cover (no. 2) is also required
- Front optionally perforated or solid
- Suitable for subracks 4 U (3 + 1), 7 U (6 + 1)
- For mounting on the subrack side panel with the aid of mounting blocks. For EMC applications, mounting blocks must be fitted over the entire subrack depth

Material:
1.0 mm aluminium, hole diameter
4 mm in perforated version

Surface finish:
Untreated

Single unit supply includes:
1 cover with 1 U fold



HP	For side panel depth T (mm)	Cover depth d3 (mm)	Single unit	
			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*

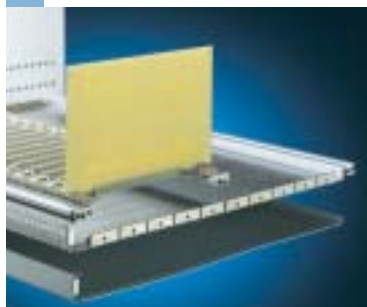
* The following should be ordered separately:

	P. of	Model No. RP
Mounting blocks	10	3684.234
Assembly screws	100	3684.233
EMC gaskets	10	3684.245

Accessories

Covers

Covers Version 4



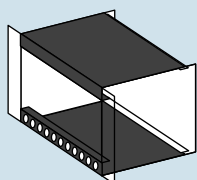
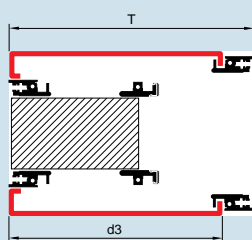
To fit subracks Ripac Vario, Ripac Vario EMC, and Ripac Vario Mobil.
To cover the overall subrack depth.

- Cover top/bottom with 1/2 U fold to cover the 1/2 U section in the subrack
- Front optionally perforated or solid
- Suitable for subracks 4 U (3 + 2 x 1/2) and 7 U (6 + 2 x 1/2)
- For mounting on the subrack side panel with the aid of mounting blocks.
For EMC applications, additional mounting blocks must be mounted across the entire depth

Material:
1.0 mm aluminium, hole diameter 4 mm in vented version

Surface finish:
Untreated

Single unit supply includes:
1 cover with 1/2 U edge fold



HP	For side panel depth T (mm)	Cover depth d3 (mm)	Single unit	
			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

The following should be ordered separately:

	P. of	Model No. RP
Mounting blocks	10	3684.234
Assembly screws	100	3684.233
EMC gaskets	10	3684.245

Mounting blocks



For mounting covers, versions 1 – 4, on the subrack side panel. For EMC applications, additional mounting blocks must be fitted across the entire subrack depth.

Material:
Die-cast

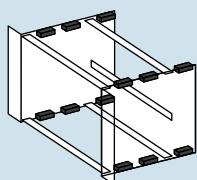
Surface finish:
Nickel-plated

The table shows the number of mounting blocks required to install 1 cover with EMC shielding.

	P. of	Model No. RP
Mounting blocks 28.5 mm long	10	3684.234

The following should be ordered separately:

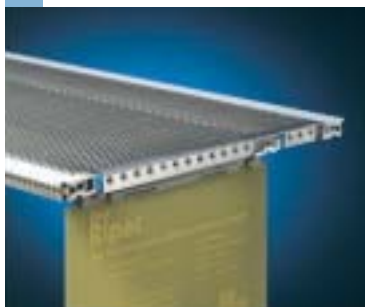
	P. of	Model No. RP
Assembly screws M3 x 6	100	3684.233



EMC

No. of mounting blocks for max. EMC protection	Cover depth (mm)
4	142
8	192
10	212
12	252
14	272
16	312
18	332
20	372
24	432
28	492
32	552

Covers (snap fastening) Version 5



To fit sub racks Ripac Vario, Ripac Vario EMC and Ripac Vario Mobil.

To cover the overall subrack depth or PCB depth.

Simple assembly:

- Side 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 perforated or solid

Material:

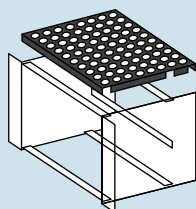
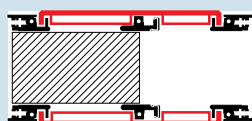
1.0 mm aluminium, hole diameter 4 mm in vented version

Surface finish:

Untreated

Supply includes:

1 cover
2 gaskets



HP	Position of side notches for horizontal rails	For side panel depth (mm)	Model No. RP	
			perforated	solid
21	160 mm	175/185	3687.624	–
21	160/220 mm	235	3687.692	–
42	160 mm	175/185	3687.625	–
42	160/220 mm	235	3687.677	–
42	160 mm	245	3687.640	–
84	160 mm	175/185	3687.641	3687.647
84	160 mm	245	3687.642	3687.648
84	160/220 mm	235	3687.643	3687.649
84	160/220 mm	285	3687.644	3687.650
84	160/220 mm	305	3687.645	3687.651
84	160/220/280 mm	345	3687.646	3687.652

Covers



For Ripac ECO sub racks.

Covers the entire subrack depth.

- Optionally perforated or solid
- Covers are inserted into the horizontal rails and secured at the sides
- Mounting clips may optionally be used for additional support

Material:

Sheet steel

Surface finish:

Zinc-plated

Supply includes:

1 cover

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, Model No. RP 3688.109, packs of 1

Assembly screws, Model No. RP 9902.188, packs of 1



In detail: subrack climate control

The built-up of heat from electronic components seriously impairs the performance of electronic systems and components. Particularly in modern industrial computers, heat loss levels are often on a par with those of room heaters. To make matters worse, the installation space inside the subracks is densely packed with electronic components. For this reason, effective heat dissipation is vital to prolong service life and operational reliability. Rittal's Ripac subrack system was designed with these aspects in mind. The slimline design of the horizontal rails and guide rails permits unrestricted air flow between the PCBs. This is supplemented with forced air movement devices for optional cooling performance.

1 Vertical cooling



Rack-mounted fan
installed below the subrack in the enclosure. It 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.

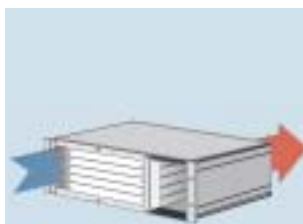
2 Front to back cooling



Air baffle plate
and...

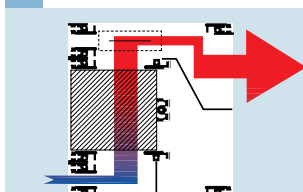


Air block panel
ensure controlled air flow in the subrack.



Rear panels
with cutouts for the installation of 80 or 120 mm fans. The fan cut-outs may be covered with a finger guard or EMC filter.

3 Front to back cooling with the RiCool blowers



RiCool blowers
which combine max. output (204 m³/h unimp. air flow) with min. space requirements (1 U). The air is drawn in vertically, diverted through 90° and discharged to the rear. Recommended for high heat losses from approximately 700 W upwards (500 W in redundant mode).



Mounting
at the top, in the subrack on a mounting plate. Hot swap version standard.



Air filters
fitted beneath the board type plug-in units filter the air.

Product information

Subrack climate control

- Optimum air flow conditions in the subrack
- Detailed solutions for controlled air routing
- Innovative hot swap RiCool blower for very high heat losses, only occupying a space of 1 U
- Tailored air flow management



Rittal enclosure climate control

Naturally, all components in Rittal's world-leading enclosure climate control range are also available to protect sensitive microelectronics. This guaran-

tees enhanced operational reliability and longer service life. Our Catalogue 30 contains details of cooling units, heat exchangers, fan-and-filter units, heaters and

a wide range of useful and important accessories.



For rack-mounted cooling units
a service flap on top ensures problem-free access to the thermostat for adjusting the setpoint.



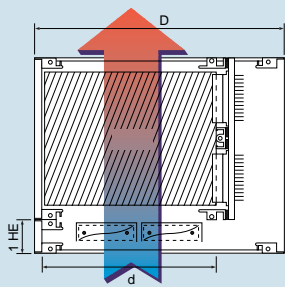
Centrifugal fans
as cross-flow blowers are distinguished from other blower and fan designs by their high air throughput in the most confined space, coupled with low-noise operation.

Please ask for detailed information and other accessories.

Accessories

Subrack cooling

Vertical cooling from bottom to top



- 1) Air flow via normal convection or forced air cooling devices in the enclosure or housing outside of the subrack.
- 2) 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, rack-mounted heat exchangers and rack-mounted cooling units are also available.

Fan mounting plate



For installing 120 mm fans in 4 U and 7 U subrack. For mounting on the subrack side panels.

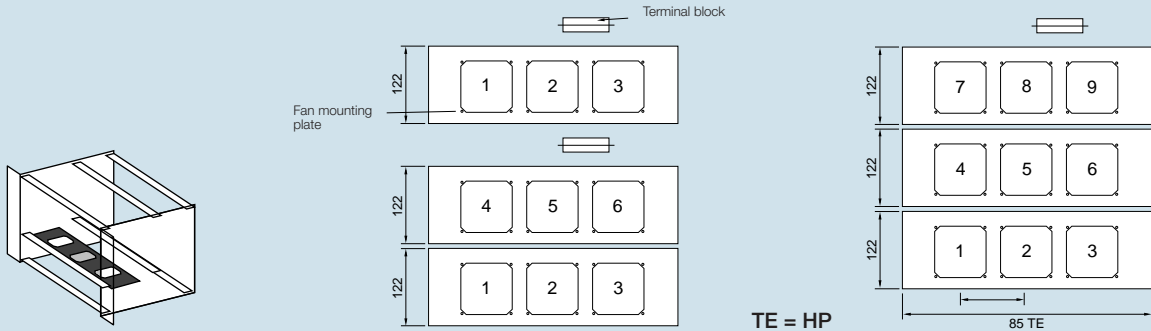
Material:
1.5 mm aluminium

Surface finish:
Anodised

Supply includes:
1 fan mounting plate

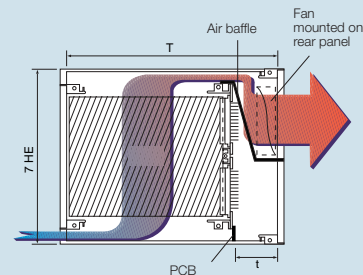
U	For PCB depth	No. of fan mounting plates required	HP	Model No. RP fan mounting plate	Model No. RP connection block
1	160 mm	1	85	3684.317	3686.805
	220 mm	1			
	280 mm	2			
	340 mm	2			
	400 mm	3			

Note:
1 terminal block, Model No. RP 3686.805 is also required for each subrack.



Diagonal cooling from front to back

HE = U, T = Depth



Diagonal air flow from front to back allows individual cooling of PCBs in both a vertical and horizontal installation position. An air baffle and air partition ensures controlled air flow.

Air baffle



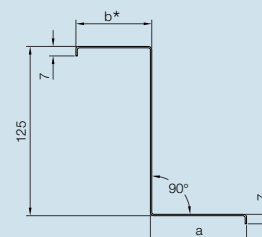
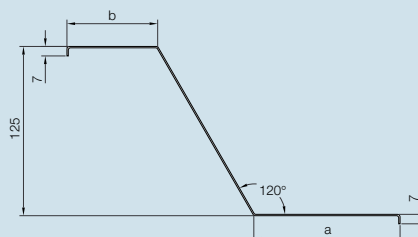
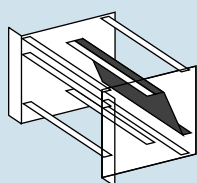
For controlled air flow in 7 U subracks.
For mounting on the subrack side panels with the aid of mounting blocks.

Material:
1 mm aluminium

Surface finish:
Anodised

Supply includes:
1 air baffle, assembly parts

Subrack depth (T) mm	Depth (t) mm	a	b	Model No. RP
285	90	71	56*	3685.302
345	150	48	67	3685.303
405	210	108	67	3684.320
465	270	168	67	3684.321
525	330	228	67	3684.322



Air partition

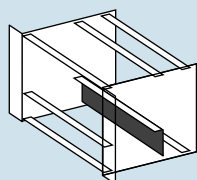


For controlled air flow in the subrack. The partitions are mounted on the horizontal rails together with the backplanes. Assembly screws and washers, Model No. 3684.019, Packs of 100 sets.

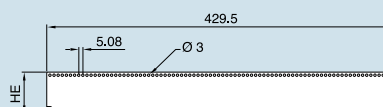
Material:
Epoxy

Supply includes:
1 air partition

U	Model No. RP
1/2	3684.870
1	3684.871
3	3684.872



HE = U



Air block for unused slots



To block unused slots and prevent air flow. The air block is mounted between the plastic guide rails by simply snap-fastening.

Material:
Polycarbonate, self-extinguishing to UL 94-V0

Colour:
Blue

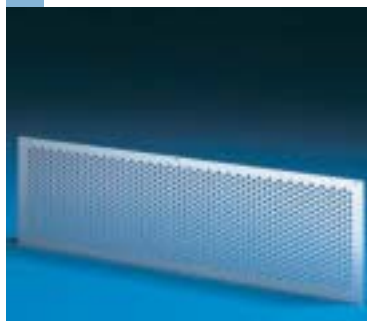
For plastic guide rail	Packs of	Model No. RP
160 mm	1	3687.924



Accessories

Ventilation – Front/rear panel

Front/rear panels for ventilation



Material:
2.5 mm aluminium

Surface finish:
Anodised

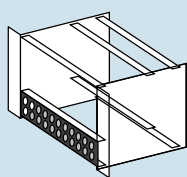
Supply includes:
1 front panel

U	HP	Model No. RP
1	84	3684.812
2	84	3684.813
3	84	3684.814

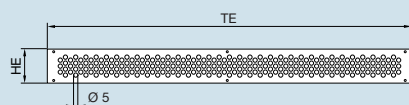
Note:

Captive screws should be ordered separately:

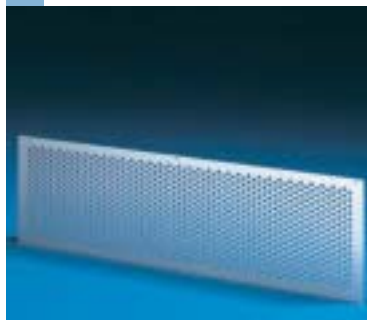
Type	Packs of	Model No. RP
slotted	100	3685.097



HE = U
TE = HP



EMC front/rear panels for ventilation



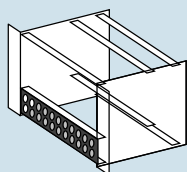
Material:
2.5 mm aluminium

Surface finish:
clear chromated

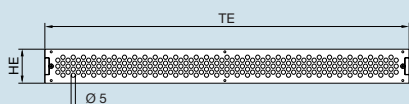
Supply includes:
1 front panel
1 contact strip
1 gasket strip
1 vertical EMC gasket
Assembly parts

U	HP	Model No. RP
1	84	3684.281
2	84	3684.282
3	84	3684.283

EMC



HE = U
TE = HP



Rear panels for fan installation



Material:
2.5 mm aluminium

Surface finish:
Anodised

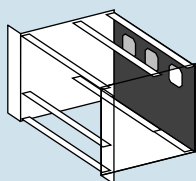
Supply includes:
1 rear panel

U	HP	For fan	Model No. RP
3	85	80 mm	3684.839
4	85	80 mm	3684.840
6	85	120 mm	3684.841
7	85	120 mm	3684.842
9	85	120 mm	3684.843
10	85	120 mm	3684.844
11	85	120 mm	3684.845

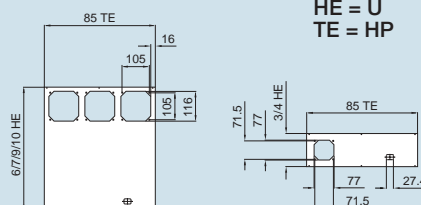
Note:

Captive screws should be ordered separately:

Type	Packs of	Model No. RP
slotted	100	3685.097



HE = U
TE = HP



Accessories:

Fans, see page 176

EMC rear panels for fan installation



Material:
2.5 mm aluminium

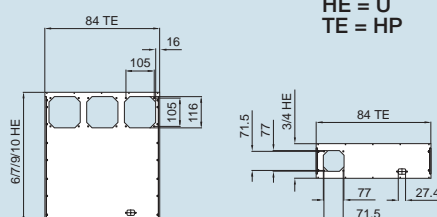
Surface finish:
Clear chromed

Supply includes:
1 rear panel
1 contact strip
1 gasket strip
1 vertical EMC gasket
Assembly parts

U	HP	For fans	Model No. RP
3	84	80 mm	3684.284
4	84	80 mm	3684.285
6	84	120 mm	3684.286
7	84	120 mm	3684.287
9	84	120 mm	3684.288
10	84	120 mm	3684.289
11	84	120 mm	3684.290

Accessories:

Fans, see page 176



HE = U
TE = HP

EMC

Rear panels, hinged for fan installation



Material:
2.5 mm aluminium

Surface finish:
Anodised

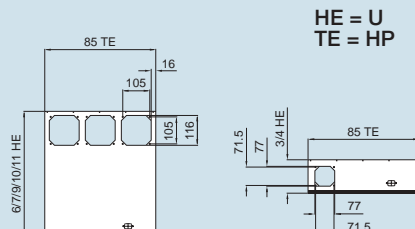
Supply includes:
1 rear panel
1 set of hinges incl. assembly parts

U	HP	For fans	Model No. RP
3	85	80 mm	3684.304
4	85	80 mm	3684.305
6	85	120 mm	3684.306
7	85	120 mm	3684.307
9	85	120 mm	3684.308
10	85	120 mm	3684.309
11	85	120 mm	3684.310

Note:

Captive screws should be ordered separately:

Type	Packs of	Model No. RP
slotted	100	3685.097



HE = U
TE = HP

Accessories:

Fans, see page 176

EMC rear panels, hinged for fan installation



Material:
2.5 mm aluminium

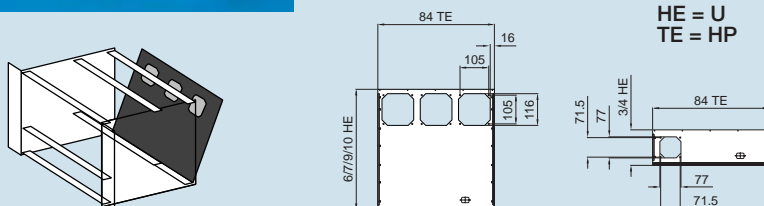
Surface finish:
Clear chromed

Supply includes:
1 rear panel
1 contact strip
1 gasket strip
1 vertical EMC gasket
1 set of hinges
Assembly parts

U	HP	For fans	Model No. RP
3	84	80 mm	3684.311
4	84	80 mm	3684.312
6	84	120 mm	3684.313
7	84	120 mm	3684.314
9	84	120 mm	3684.315
10	84	120 mm	3684.316

Accessories:

Fans, see page 176



HE = U
TE = HP

EMC

Accessories

Fans

AC fans



For subracks and microcomputer systems.

Supply includes:

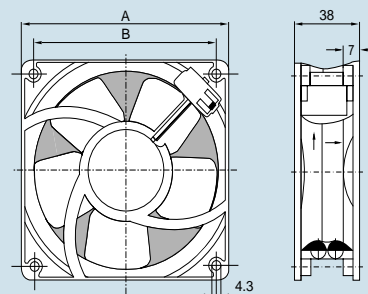
1 fan without connection cable

Note:

Assembly parts must be ordered separately. Model No. RP 3685.197, packs of 1 set (4 assembly screws)

Connection cable

Cable length	Packs of	Model No. RP
610 mm	1	3686.658
1000 mm	1	3686.659



AC fan

Dimensions (mm) of fan	A	B	Bearing	Rated voltage V(AC)/Hz	Wattage	Noise level dB (A)	Temperature range °C	Volume flow in m³/h	P. of	Model No. RP
80	79.5	71.5	Ball bearing	115/60	11.0	42	- 40...+ 95	57	1	3686.645
80	79.5	71.5	Ball bearing	230/50	12.0	37	- 40...+ 90	48	1	3686.646
120	119.0	105.0	Ball bearing	115/60	18.0	51	- 40...+ 90	180	1	3686.643
120	119.0	105.0	Ball bearing	230/50	19.0	47	- 40...+ 85	160	1	3686.644

DC fans



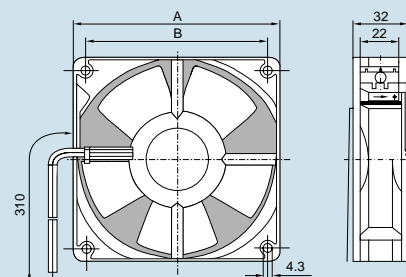
Including temperature-dependent speed control via additional temperature sensor.

Supply includes:

1 fan with connection cable (310 mm)

Note:

Assembly parts must be ordered separately. Model No. RP 3685.197, packs of 1 set (4 assembly screws)



DC fan with speed control and alarm signal

Dimensions (mm) of fan	A	B	Bearing	Rated voltage V(DC)	Voltage range Volt	Wattage	Noise level dB (A)	Temperature range °C	Max. temperature °C	Volume flow in m³/h	P. of	Model No. RP
80	79.5	71.5	Ball bearing	12	8.0 – 14.0	2.2	34	- 20...+ 65	65	48	1	3686.649
80	79.5	71.5	Ball bearing	24	21.6 – 26.4	2.4	36	- 20...+ 65	65	54	1	3686.650
120	119.0	104.8	Ball bearing	12	8.0 – 12.6	5.4	45	- 20...+ 65	65	170	1	3686.647
120	119.0	104.8	Ball bearing	24	21.0 – 27.0	5.4	45	- 20...+ 65	65	170	1	3686.648

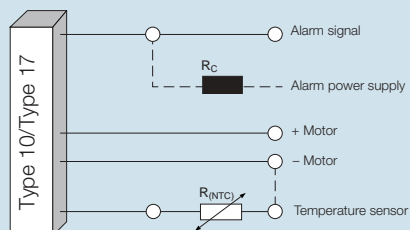
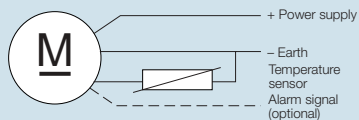
DC fan without speed control, with alarm signal

Dimensions (mm) of fan	A	B	Bearing	Rated voltage V(DC)	Voltage range Volt	Wattage	Noise level dB (A)	Temperature range °C	Max. temperature °C	Volume flow in m³/h	P. of	Model No. RP
80	79.5	71.5	Ball bearing	12	6.0 – 15.0	1.8	34	- 20...+ 75	75	48	1	3687.612
80	79.5	71.5	Ball bearing	24	12.0 – 28.0	2.1	34	- 20...+ 75	75	48	1	3687.613
120	119.0	104.8	Ball bearing	12	6.0 – 15.0	2.6	39	- 20...+ 75	75	140	1	3687.614
120	119.0	104.8	Ball bearing	24	12.0 – 28.0	2.6	39	- 20...+ 75	75	140	1	3687.615

Temperature sensor

For fans with speed control.

Supply includes:
1 temperature sensor



Voltage	Packs of	Model No. RP
12 V (DC)	1	3686.657
24 V (DC)	1	3686.657

Finger guard



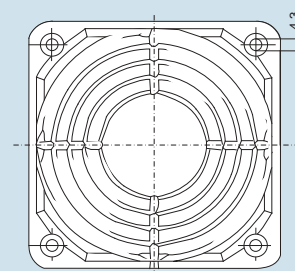
For AC/DC fans.

Material:
Polyamide, self-extinguishing to UL 94-V0

Colour:
Black

Supply includes:
1 finger guard

For fans	Packs of	Model No. RP
80 mm	1	3686.656
120 mm	1	3686.655



EMC shielding plate



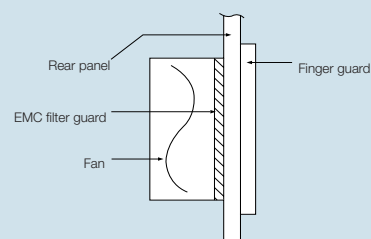
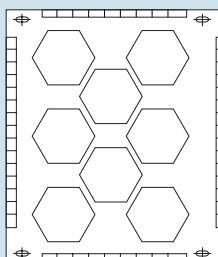
For AC/DC fans.

Material:
1 mm aluminium

Surface finish:
Clear chromated

Supply includes:
1 EMC shielding plate

For fans	Packs of	Model No. RP
80 mm	1	3686.359
120 mm	1	3686.329



Order information

Rack-mounted fans for 482.6 mm (19"), air throughput 320/480 m³/h

Two basic types provide universal applications, both for the ventilation of individual subracks and for enclosures and cases.

Technical description

Rack-mounted fans:

- Versions with a distance between axes
 - of 85 mm for 160 mm deep PCBs and
 - of 105 mm for 220 mm deep PCBs.
- Fan unit with speed control SK 3342.500: with fault evaluation via floating contact.

Technical description

Vario rack-mounted fan:

- Via an additional guide frame, may be used in:
 - Subracks 84 HP
 - 482.6 mm (19") mounting angles.
- The guide frame offers a high level of flexibility, i.e. simply slide in the fan insert, lock into position and voilà!
- Pre-configured connectors ensure secure, problem-free inter-connection.
- Fan unit with speed control SK 3352.500. Fault evaluation via floating contact.

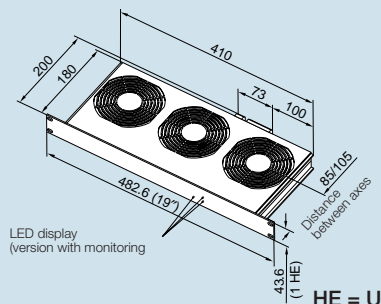
Supply includes:

Rack-mounted fan/Vario rack-mounted fan:

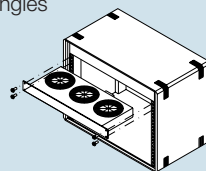
Fully wired unit ready for connection, including terminal strip and assembly parts.

Rack-mounted fan

May be fitted to 482.6 mm (19") mounting angles



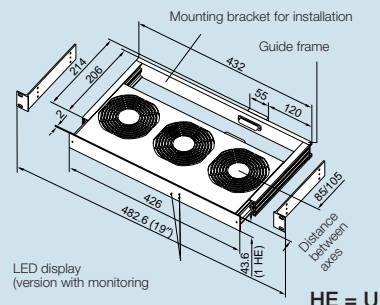
Mounted between a pair of 482.6 mm (19") mounting angles



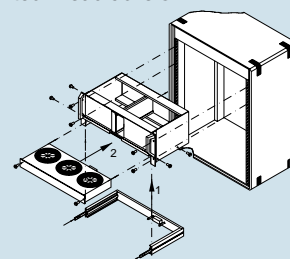
Vario rack-mounted fan

By means of additional guide frame, may be used in:

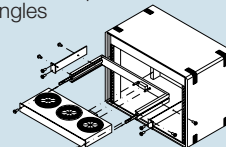
- Subrack 84 HP
- 482.6 mm (19") mounting level



Mounted in subracks 84 HP



Mounted between a pair of 482.6 mm (19") mounting angles



SK rack-mounted fan

Model No. SK

3340.024 ¹⁾	3340.115 ¹⁾	3340.230	–
3341.024 ¹⁾	3341.115	3341.230	–
3342.024	3342.115 ¹⁾	3342.230	3342.500 ²⁾
24 V (DC)	115 V (AC)	230 V (AC)	24 V (DC) 115-230 V (AC)
–	–	–	–

²⁾ Version with monitoring

3114.024	3114.115	3114.100	3114.024
3110.000			
3120.000	3120.115	3120.000	–

Vario SK rack-mounted fan

Model No. SK

3350.024 ¹⁾	3350.115 ¹⁾	3350.230	–
3351.024 ¹⁾	3351.115 ¹⁾	3351.230	–
3352.024 ¹⁾	3352.115 ¹⁾	3352.230	3352.500 ¹⁾²⁾
24 V (DC)	115 V (AC)	230 V (AC)	24 V (DC) 115-230 V (AC)
3356.100 ¹⁾	3355.100	3355.100	3357.100 ¹⁾

3114.024	3114.115	3114.100	3114.024
3110.000			
3120.000	3120.115	3120.000	–

Technical specifications

Model No. SK	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⁾
Rated operating voltage	AC 230 V	AC 115 V	DC 24 V	AC 230 V	AC 115 V	DC 24 V	DC 24 V AC 115-230 V 50/60 HZ
Frequency	50/60 Hz	50/60 Hz	–	50/60 Hz	50/60 Hz	–	
Rated current	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
Pre-fuse T	6 A						
Number of fans	2			3			
Air throughput, unimpeded air flow	320 m³/h			480 m³/h			
Operating temperature	- 10°C to + 55°C						
Noise level	51 dB (A)	52 dB (A)	51 dB (A)	51 dB (A)	52 dB (A)	51 dB (A)	

Rack-mounted fans for 482.6 mm (19"), air throughput 320/480 m³/h

Air throughput	320 m³/h			480 m³/H						
Voltage	24 V (DC)	115 V	230 V	24 V (DC)		115 V		230 V		24 V (DC) 115 – 230 V (AC)
No. of fans	2			3						
Distance between axes	85 mm			105 mm	85 mm	105 mm	85 mm	105 mm		
Model No. SK rack-mounted fan	3340.024	3340.115	3340.230	3341.024	3342.024	3341.115	3342.115	3341.230	3342.230	3342.500
Model No. Vario rack-mounted fan	3350.024	3350.115	3350.230	3351.024	3352.024	3351.115	3352.115	3351.230	3352.230	3352.500
Model No. Matching guide frame for Vario SK	3356.100	3355.100		3356.100		3355.100			3357.100	

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:
Order a guide frame to suit the application.

Approvals for all rack-mounted fans, see page 378

Note:
Rack-mounted fan with 48 V available on request

Ripac handles/front panels/box type plug-in units

Handles, front panels

Type I, II, IV, VII

* Flat front panels with extractor handle type I, II	182
* U-channel front panels with extractor handle type I, II, IV	182
1 PCB holder (die-cast)	188
* Plastic cover for PCBs	183
2 Flat front panels for extractor handles type I, II, IV, VII	184
3 U-channel front panels for extractor handles type I, II, IV, VII	184
4 EMC gaskets, vertical	188
5 Extractor handle type I	185
6 Extractor handle type II	185
7 Injector/extractor handle type IV	185/186
8 Injector/extractor handle type VII	186/187
9 Keys	188
10 Micro-switches	187

Type III

11 Front panels for extractor handle type III	189
12 Extractor handle type III	189
* Universal holder	189
* Holder to support front panels	189

Type V and VI

* Flat front panels with type V handle and PCB holder	190
13 Flat front panels for handles type V and VI	190
14 U-channel front panel for handles type V and VI	190
15 Handle type V (aluminium)	191
16 Handle type V (plastic)	191
* Identification strips	191
17 Handle type VI	191
18 PCB holder	192
19 Front panels as filler panels, flat	192
* Front panels as filler panels, U-channel	193
20 Front panels, hinged	194
* EMC front panels, hinged	194
* Rear panels for fan installation	174/175
21 Front panels for ventilation	174
* PMC front panels	195

Box type plug-in units

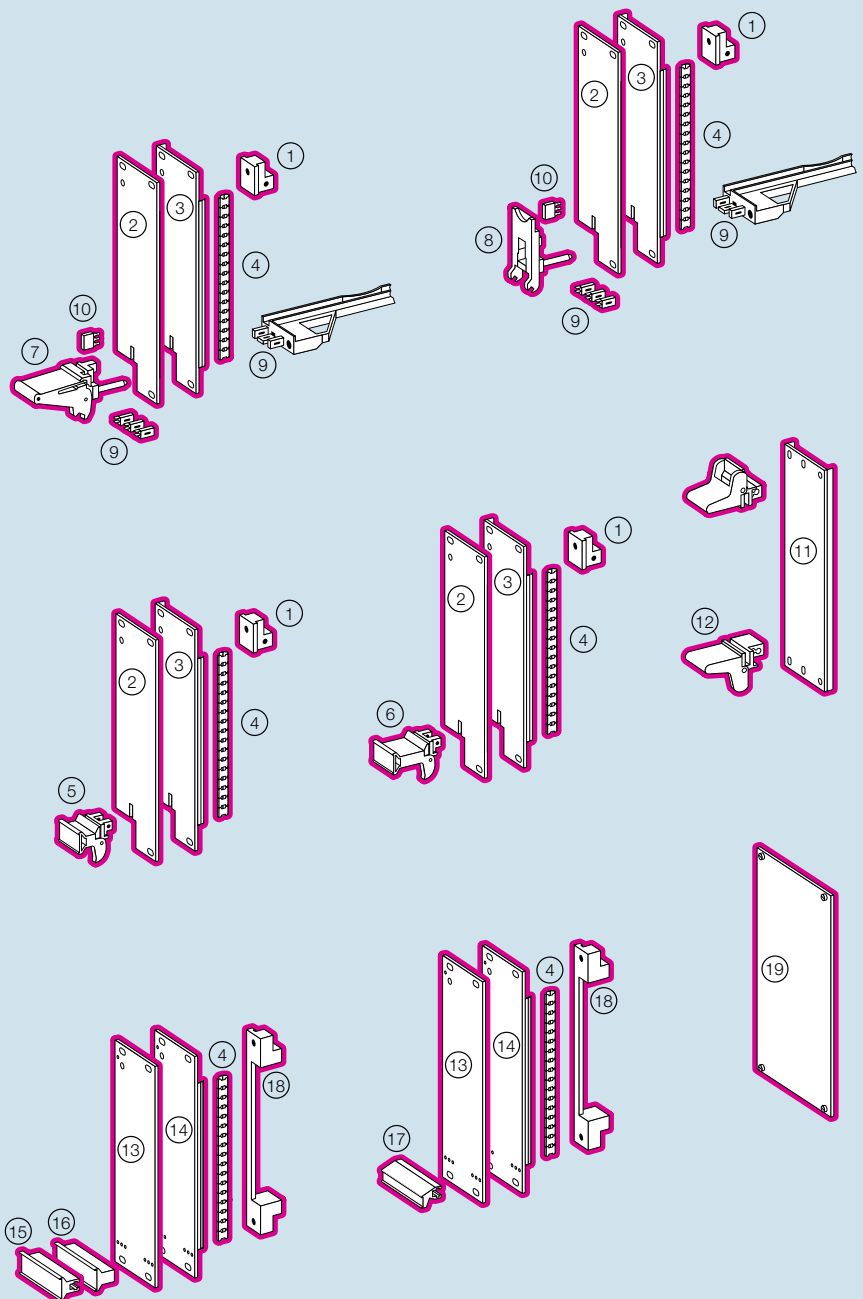
22 Ripac box type plug-in units	196 – 199
* Accessories for Ripac box type plug-in units	200/201
* Box type plug-in units for drive chassis	200

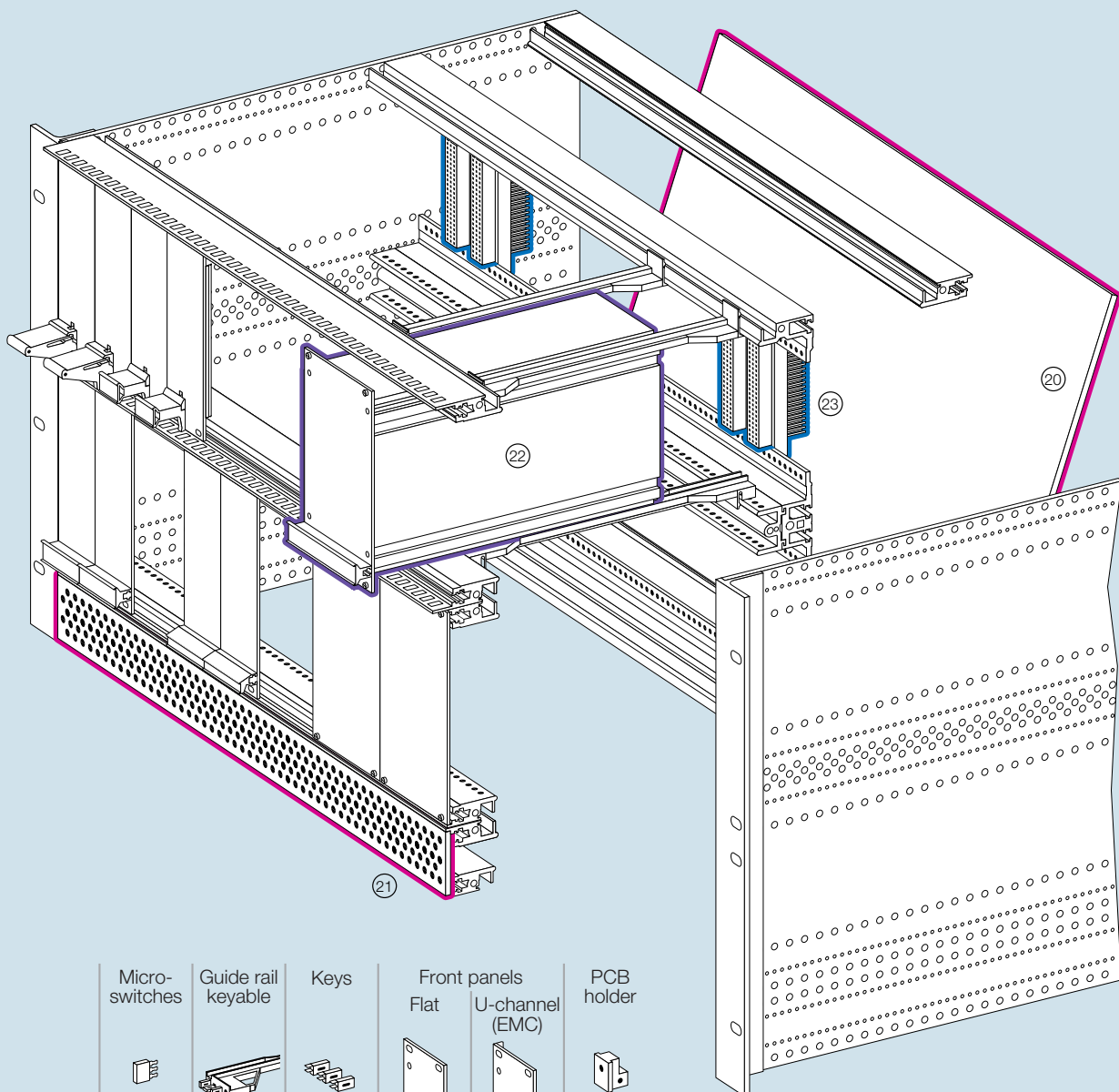
Connectors

23 Connectors	204 – 207
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The colour coding in the modular diagram opposite serves to distinguish between the systems. It bears no relation to the colour coding in the table of contents.

* Not illustrated





	Micro-switches	Guide rail keyable	Keys	Front panels Flat	U-channel (EMC)	PCB holder
Handles						
Type I	—	—	—	●	●	●
Type II	—	—	—	●	●	●
Type IV/IVs	●	●	●	●	●	●
	■	●	●	●	●	●
	●	●	●	●	●	●
Type VII	●	●	●	●	●	●

■ included with supply ● may be combined

	For type III U-channel	Flat	U-channel (EMC)	PCB holder
Handles				
Type III	●	—	—	—
Type V	—	●	●	●
Type VI	—	●	●	●

● may be combined

Accessories

Front panels – Complete sets: 3, 6, 9 U with extractor handle

Flat front panels with type I or II extractor handle



Type I handle



Type II handle

Material:
Front panel: 2.5 mm aluminium sheet
Handle: Plastic

Surface finish of front panel:
Anodised

Supply includes:
1 front panel,
2 (1 for 3 U) handles, black,
1 set of assembly parts,
1 PCB holder (for 3 U)

U	HP	a mm	Flat front panels with extractor handle	
			Model No. RP Type I	Model No. RP 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

U-channel front panels with type I or II extractor handle or type IV injector/extractor handle



Type I handle



Type II handle



Type IV handle

EMC

Material:
Front panel: Extruded aluminium
Handle: Plastic

Surface finish of front panel:
Clear chromated

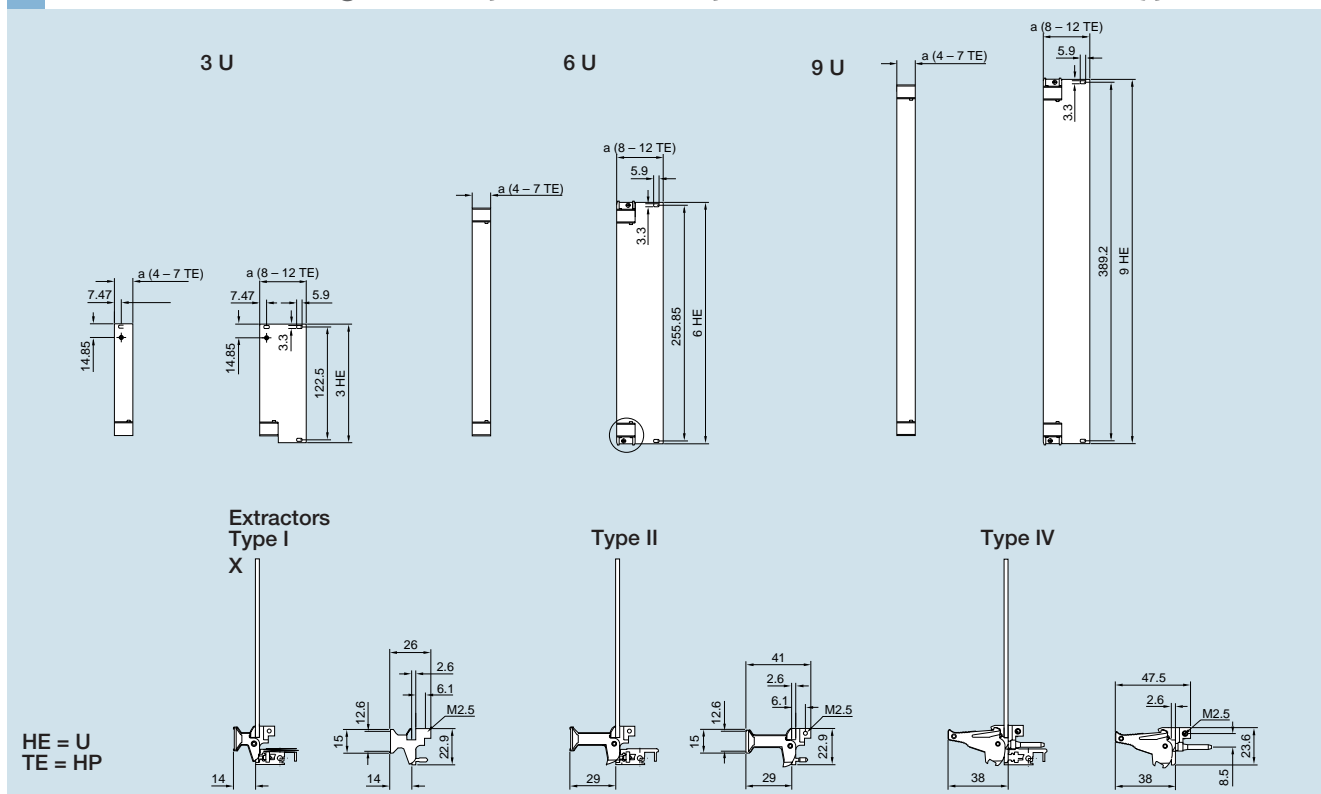
Supply includes:
1 front panel,
2 (1 for 3 U) handles, black,
1 EMC gasket, vertical,
1 set of assembly parts,
1 PCB holder (for 3 U)

U	HP	a mm	U-channel front panels with extractor handle		
			Model No. RP Type I	Model No. RP Type II	Model No. RP Type IV*
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

* Only in conjunction with front horizontal rails with 10 mm extension

Front panels – Complete sets: 3, 6, 9 U with extractor handle

Dimensional drawings for complete sets front panels with extractor handle, type I, II or IV



Identification strips



Identification strips for type I, II and IV extractor handles, 4 HP.

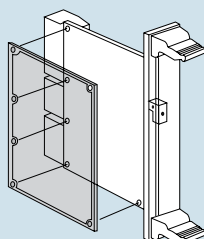
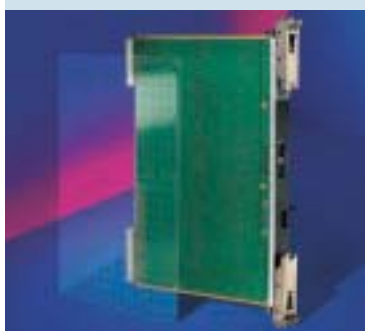
Packs of	Model No. RP
100	3684.328

Plastic cover for PCBs



Cover for mechanical protection of the solder side of the PCB and 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,
UL 94-V0, antistatic



Solid covers

For PCB	P. of	Model No. CPCI*	Model No. CPCI	Model No. VME
3 U x 160 mm	1 5	3686.572 —	3685.966 —	3685.626 3685.279
3 U x 220 mm	1 5	— —	— —	3685.805 3685.266
6 U x 160 mm	1 5	3686.574 —	3685.967 —	3685.627 3685.280
6 U x 220 mm	1 5	— —	— —	3685.824 3685.000
6 U x 80 mm	1	3686.573	3686.037	3686.146

Perforated covers

For PCB depth	P. of	Model No. CPCI*
6 U x 160 mm	1	3687.934
6 U x 80 mm	1	3687.933
3 U x 160 mm	1	3687.932
Fastening clips ¹⁾	100	3687.955

¹⁾ Required for mounting the perforated covers

Accessories

Front panels for handles, type I, II, IV, VII

Flat front panels for handles, types I, II, IV, IVs or VII



Material:
2.5 mm aluminium sheet

Surface finish:
Anodised

Supply includes:
1 front panel

Note:
From a front panel width of 4 HP (3 U) and 7 HP (6 U) upwards assembly parts should be ordered separately:

Collar screws and plastic collars,
Model No. RP 3658.160, packs of 100

HP (TE)	a mm	Flat front panels		
		Model No. RP 3 U	Model No. RP 6 U	Model No. RP 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

U-channel front panels for handles, types I, II, IV, IVs or VII



Material:
2.5 mm extruded aluminium

Surface finish:
Clear chromated

Supply includes:
1 front panel

EMC

Note:
From a front panel width of 4 HP (3 U) and 7 HP (6 U) upwards assembly screws should be ordered separately:

Alignment screws

Design	P. of	Model No. RP
Slotted	100	3687.050
Posidrive	100	3687.051

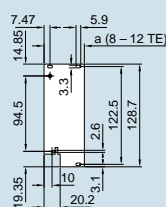
HP (TE)	a mm	U-channel front panels		
		Model No. RP 3 U	Model No. RP 6 U	Model No. RP 9 U
4	20.0	3685.524	3685.532	3685.540
5	25.1	3685.525	3685.533	3685.541
6	30.2	3685.526	3685.534	3685.542
7	35.3	3685.527	3685.535	3685.543
8	40.3	3685.528	3685.536	3685.544
10	50.5	3685.529	3685.537	3685.545
12	60.7	3685.530	3685.538	3685.546

3 U

6 U

9 U

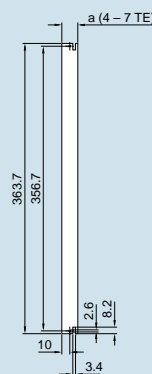
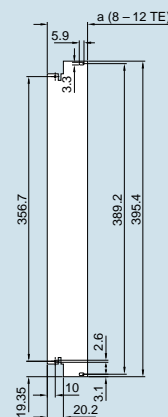
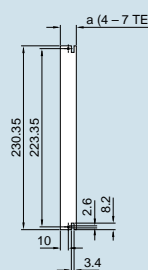
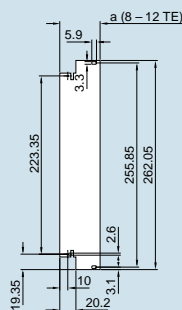
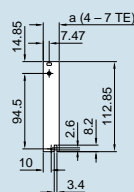
TE = HP
HE = U



Flat front panel



U-channel front panel



Front extractor handles and panels, type I, II, IV

Extractor handle type I and type II



- Suitable for all flat front panels/U-channel front panels
- With removal function
- May be used in combination with horizontal rails with 10 mm extension

Supply includes:

1 handle
Assembly parts

Type I extractor handle, 15 mm

Colour	Packs of	Model No. RP
grey	1	3685.587*
black	1	3685.589*

Type II extractor handle, 30 mm

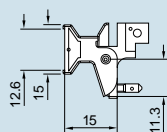
Colour	Packs of	Model No. RP
grey	1	3685.588*
black	1	3685.590*

* With 3 U, only one extractor handle is required at the bottom.

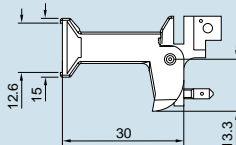
Accessories:

Identification strips
Model No. RP 3684.328, packs of 100
(see page 183)

Type I extractor handle



Type II extractor handle



Injector/extractor handle, type IV

**With micro-switch**

Injector/extractor handle for **insertion and withdrawal** of connectors with a large number of pins. Only for use in conjunction with front horizontal rails with a 10 mm extension and hole pattern to IEEE 1101.10 (see page 148).

- With insertion/removal function
- Incl. micro-switch for "live insertion" applications
- Self-activation of the micro-switch during insertion and removal
- ESD pin for discharging static charges prior to making contact with the connectors and for precise positioning of the board type plug-in units
- Keyable
- Integral PCB attachment
- Self-locking
- Bayable

Without micro-switch

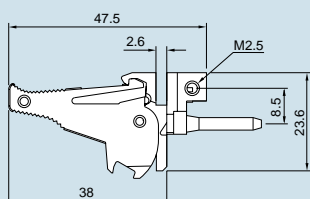
See above for description. Micro-switch may be retro-fitted (see page 187).

Supply includes:

1 handle
Assembly parts

Note:

With 3 U front panels, only one extractor handle is required.

**Supply includes:**

1 extractor handle, 1 micro-switch, assembly parts

Handles with micro-switch

Colour	Mounting	P. of	Model No. RP
grey	top	1	3686.905
grey	bottom	1	3686.904
black	top	1	3686.907
black	bottom	1	3686.906

Handles without micro-switch

Colour	Mounting	P. of	Model No. RP
grey	top	1	3686.901
grey	bottom	1	3686.900
black	top	1	3686.903
black	bottom	1	3686.902

Injector/extractor handle, type IV, 8 HP (side by side)



Suitable for two Ripac front panels 4 HP which need to be mechanically connected to one another.

Supply includes:

2 handles, connected side by side
Fully assembled

Colour	Mounting	P. of	Model No. RP
black	bottom	1	3686.908
black	top	1	3686.909

Connecting pin for side by side mounting
Model No. RP 3685.319, packs of 20

Accessories

Injector/extractor handles

Type IVs injector/extractor handle with push-button



Injector/extractor handle for the insertion and removal of rack connectors with a large number of pins. A metal insert ensures reliable functioning, even at forces of up to 815 N. The injector/extractor handles are only for use in conjunction with horizontal rails with a 10 mm extension (see page 148).

- 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 integral micro-switch for "live insertion" applications
- ESD pin to dissipate static charges before connecting the board type plug-in unit
- Keying areas to accommodate keys
- Integral PCB attachment

Material:
Plastic/metal

Supply includes:
Injector/extractor handle, assembly parts

Handles with 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 164
Keyable guide rails, see page 161
Keyable guide rails with offset, see page 162
Micro-switch, see page 187

Connection pin for injector/extractor handles, types IV/IVs



The connection pin can be used to connect injector/extractor handles, types IV und VII, side by side.

Material:
Steel

Packs of	Model No. RP
20	3685.319

Type VII injector/extractor handle, plastic (telecom)



Injector/extractor handle for **insertion and removal** of connectors with a large number of pins. This handle was specifically designed for use in telecom applications. **Only for use in conjunction with front horizontal rails with a 10 mm extension (see page 148).**

- Optionally with 1/2 HP offset PCB attachment, e.g. for component mounting on both sides
- Minimum space requirements, due to fold-up handle
- Option of installing keys (when using keyable guide rails)
- Optional integral micro-switch for "live insertion" applications
- ESD pin to dissipate static charges prior to making contact with the connectors and precise positioning of the board type plug-in unit
- Large labelling area on the front
- Optimum leverage for connectors with a large number of pins

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

Material:
Plastic

Supply includes:
Injector/extractor handle, assembly parts

Accessories:

Keys, see page 164
Keyable guide rails, see page 161
Keyable guide rails with 1/2 HP offset, see page 162
Micro-switch, see page 187

Injector/extractor handles, micro-switch

Type VII injector/extractor handle (telecom)



Metal injector/extractor handle for insertion and removal of connectors with a large number of pins (up to 835 N). This handle was specifically designed for use in telecom applications.

Only for use in conjunction with front horizontal rails with a 10 mm extension (see page 148)

- Optionally available with 1/2 HP offset
- Option of installing keys
- Optional integral micro-switch for "live insertion" applications
- ESD pin to dissipate static charges
- Metal design for use in aggressive atmospheres

Material:
Die-cast zinc

Supply includes:
Injector/extractor handle, assembly parts

Handles without offset

Installation	Packs of	Model No. RP
top	1	3688.790
bottom	1	3688.791

Handles with 1/2 U offset

Installation	Packs of	Model No. RP
top	1	3688.786
bottom	1	3688.787

Accessories:

Keys, see page 164
Keyable guide rails, see page 161
Keyable guide rails with offset, see page 162
Micro-switch, see below

Micro-switch

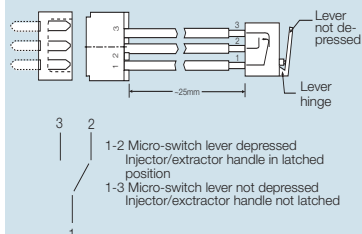


For "live insertion" applications.
For mounting in type IV and VII injector/extractor handles. May also be retro-fitted.

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

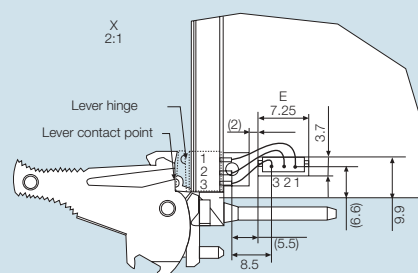
Micro-switch including cable and connector



For "live insertion" applications.
For mounting in type IV 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



Micro-switch mounting clip



Clip for mounting micro-switches in handles.

Packs of	Model No. RP
10	3684.411

Accessories

Front panels

Keys



Keys are used for keying plug-type assemblies, and prevent them from being used in incorrect slots. The pins are inserted into the chambers of keyable guide rails and type IV and VII injector/extractor handles. There are 64 different keying options in total for each guide rail.

When the upper and lower guide rails are both keyed, this produces a total of 4,096 different combinations.

Material:

Plastic, self-extinguishing to UL 94-V0

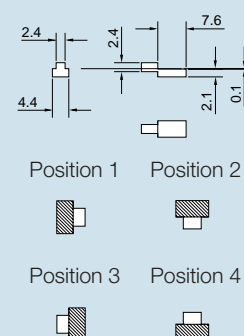
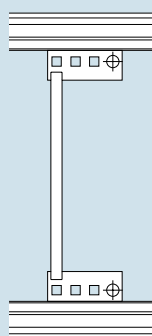
Supply includes:

100 keys

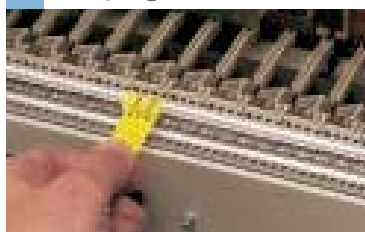
Accessories:

Keying tool for simple assembly of up to 3 keys

Colour	Packs of	Model No. RP
grey	100	3684.325
red	100	3684.326



Keying tool



For simple assembly of keys. Up to 3 keys may be fitted simultaneously. An integral alignment pin makes positioning easier.

Material:

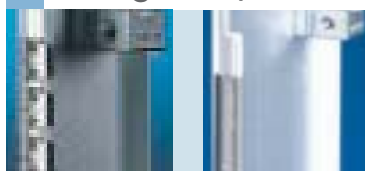
Plastic, UL 94-V0, self-extinguishing

Supply includes:

1 keying tool

Packs of	Model No. RP
1	3687.956

EMC gaskets, vertical



Version 1

Version 2

EMC

To ensure EMC protection between U-channel front panels and subrack side panel. There is a choice of two versions:

Version 1: Segmented

Version 2: One-piece

Version 1:

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

Material:

Stainless steel

Version 2:

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

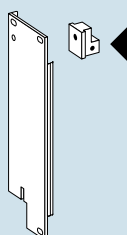
PCB holder kit



For attaching the PCB. Only required at the top of 3 U front panels.

Material:

Die-cast



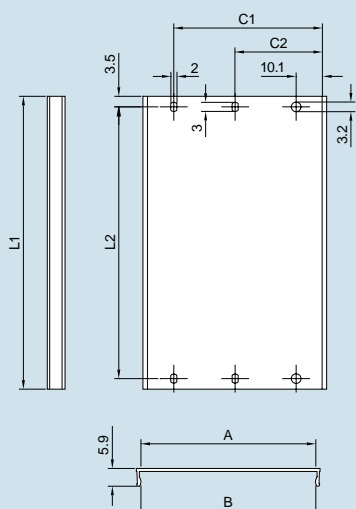
Packs of	Model No. RP
10	3685.198

Assembly screws should be ordered separately:

For attaching of	Packs of	Model No. RP
PCB to PCB holder	100	3654.320
Front panel to PCB holder	100	3685.282

Front panels with extractor handle, type III

Front panel for type III handle, extractor



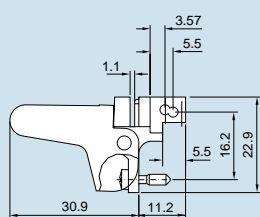
Material:
2.0 mm extruded aluminium section

Surface finish:
Untreated

Supply includes:
1 front panel

HP	A	B	C1	C2	Model No. RP 3 U	Model No. RP 6 U	Model No. RP 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					97.00	230.35	363.70
L2					90.00	223.35	356.70

Type III handle, extractor



Material:
Fibreglass-reinforced polycarbonate,
Base: Nickel-plated ABS

Colour:
Grey

Supply includes:
1 extractor handle

HP	Packs of	Model No. RP
3	1	3685.591
4	1	3685.592

Panel end pieces (w/o handles)



Material:
Fibreglass-reinforced polycarbonate

Supply includes:
2 end pieces

HP	W 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



Material:
Nickel-plated plastic

Supply includes:
1 universal bracket

HP	Packs of	Model No. RP Bracket for front panel support	Model No. RP Bracket for sub-miniature connector
3	1	–	3687.544
4	1	3687.545	–

Bracket for front panel support



Material:
Plastic

Supply includes:
1 bracket

HP	Packs of	Model No. RP
4	1	3687.547

Accessories

Front panels with handles

Front panels with type V handle and dual PCB holder



Complete kits

Material:

Front panel: 2.5 mm aluminium, natural anodised
Handle: Aluminium, natural anodised
PCB holder: Polycarbonate RAL 7032

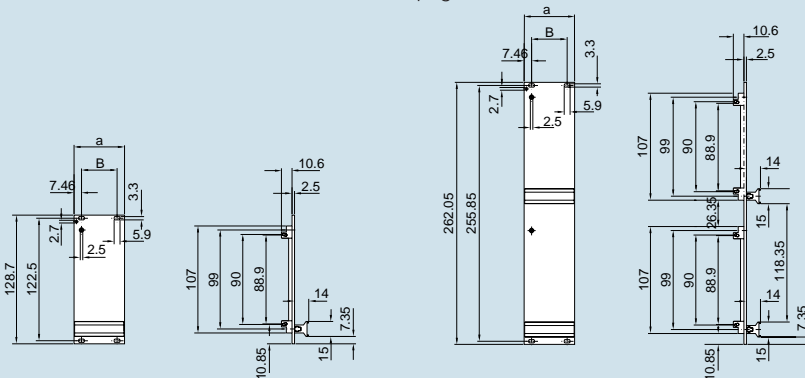
Supply includes:

1 front panel
1 (2) handle(s)
1 (2) PCB holder(s)
Assembly parts

Accessories:

For identification strips for handles, see page 191

HP	a	W (B)	Model No. RP 3 U H = 128.7	Model No. RP 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	–



Front panels for type V and VI handles

Material:

2.5 mm sheet aluminium

Supply includes:

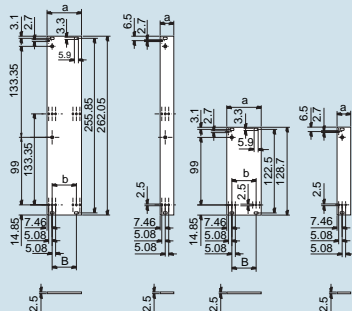
1 front panel

Surface finish:

Anodised

Accessories:

Handles, type V and VI, see page 191

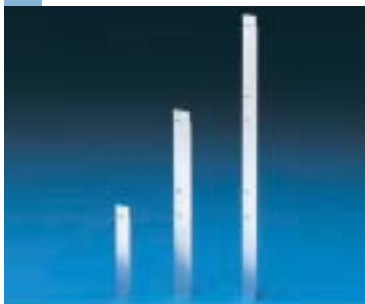


HP	a	B	b	Packs of	Model No. RP 3 U	Model No. RP 6 U
3	14.9	–	–	1	3685.569	3685.578
4	20.0	–	–	1	3685.570	3685.579
5	25.1	–	–	1	3685.571	3685.580
6	30.2	–	15.2	1	3685.572	3685.581
7	35.2	–	20.3	1	3685.573	3685.582
8	40.3	–	25.4	1	3685.574	3685.583
10	50.5	35.6	35.6	1	3685.575	3685.584
12	60.6	45.7	45.7	1	3685.576	3685.585
14	70.8	55.9	55.9	1	3685.577	3685.586

Note:

Captive screws and plastic collars should be ordered separately. Model No. RP 3658.160 (slotted), packs of 100 sets

U-shaped front panel for type V and VI handle



Material:

2.5 mm aluminium

Surface finish:

Clear chromated

Supply includes:

1 front panel
1 vertical EMC gasket

Accessories:

Handles, type V, see page 191
Handles, type VI, see page 191

EMC

HP	a	B	P. 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

Note:

Alignment screws should be ordered separately. Model No. RP 3687.050 (slotted), packs of 100

Type V handle, plastic



Material:
Plastic

Supply includes:
1 handle

Note:
Assembly kit should be ordered separately,
Model No. RP 3687.519, packs of 1 set
Identification strip, self-adhesive,
Model No. RP 3687.693, packs of 1, 0.5 m

HP	Colour	P. 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

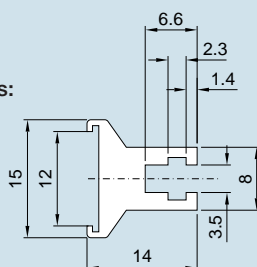
Type V handle, aluminium



Material:
Aluminium

Surface finish:
Anodised

Supply includes:
1 handle



HP	Model No. RP	HP	Model No. RP
3	3685.595	8	3685.600
4	3685.596	10	3685.601
5	3685.597	12	3685.602
6	3685.598	14	3685.603
7	3685.599	1 m	3685.604

Note:
Assembly kit should be ordered separately:
Model No. RP 3687.146, packs of 1 set
(1 fastening piece, 1 square nut, 1 cheese head screw).
2 packs are required for 6 HP.

Identification strips for type V handles, aluminium



For individual labelling of the handles.

Material:
0.5 mm aluminium

Surface finish:
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
1 m	1	3685.758
0.5 m	5	3606.300

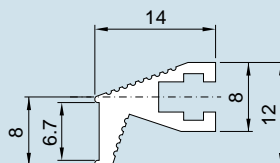
Type VI handle, aluminium



Material:
Aluminium

Surface finish:
Anodised

Supply includes:
1 handle



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

Note:
Assembly kit should be ordered
separately: Model No. RP 3687.146
See type V handle, aluminium, for details

Accessories

Front panels – Handle, type V, VI

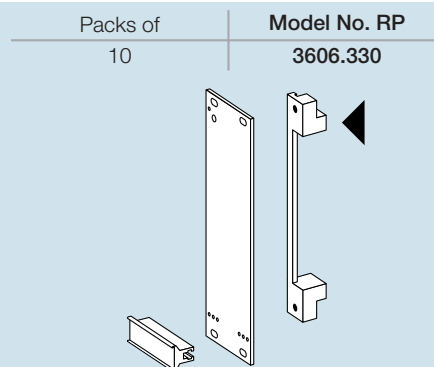
PCB holders on front panels



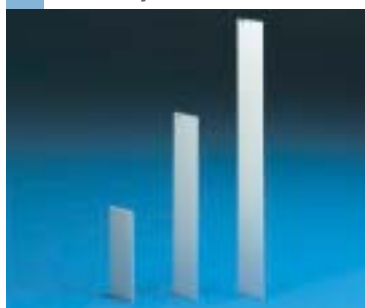
For securing PCBs to front panels.

Material:
Noryl

Supply includes:
PCB holder
Assembly parts



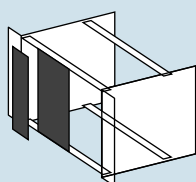
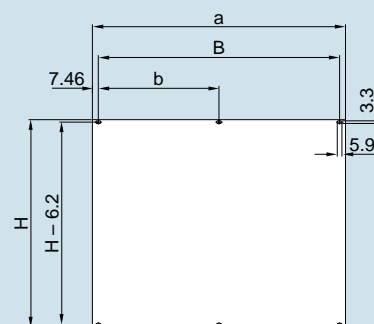
Filler panels



Material:
Filler panel 2.5 mm sheet aluminium, natural anodised

Supply includes:
1 front panel

Note:
Captive screws and plastic collars should be ordered separately.
Model No. RP 3658.160 (slotted), packs of 100.



HP	a	Width (B)	b	Model No. RP, 1 U H = 39.8	Model No. RP, 2 U H = 84.25	Model No. RP, 3 U H = 128.7	Model No. RP, 4 U H = 173.15	Model No. RP, 6 U H = 262.05	Model No. RP, 7 U H = 306.5	Model No. RP, 9 U H = 395.4	Model No. RP, 10 U H = 439.85	Model No. RP, 11 U H = 484.3
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	3684.753	3684.754
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	3684.751	3684.752
85	413.5	411.5	203.2	—	—	3684.744	3684.745	3684.746	3684.747	3684.748	3684.749	3684.750

Filler panels, U-shaped for EMC



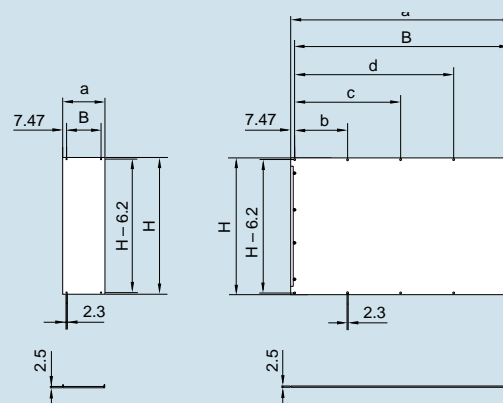
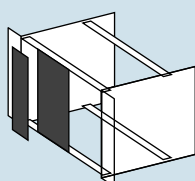
Material:
2.5 mm aluminium, extruded

Surface finish:
Clear chromated

Supply includes:
1 front panel, one-part or three-part
1 vertical EMC gasket
1 contact strip (three-part only)
1 gasket strip (three-part only)

Note:
Order alignment screws separately.
Model No. RP 3687.050 (slotted),
packs of 100.

EMC



HP	a	Width (B)	b	c	d	Model No. RP, 1 U, H=39.8	Model No. RP, 2 U H = 84.25	Model No. RP, 3 U H = 128.7	Model No. RP, 4 U H = 173.15	Model No. RP, 6 U H = 262.05	Model No. RP, 7 U H = 306.5	Model No. RP, 9 U H = 395.4	Model No. RP, 10 U H = 439.85	Model No. RP, 11 U H = 484.3
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	-	-	-	-
27	136.8	121.9	61.0	-	-	-	-	-	-	-	-	-	-	-
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	3684.270	3684.271

2 – 14 HP version, one-part; > 14 HP version, three-part

Accessories

Front panels, hinged

Front panels, hinged



Material:
2.5 mm aluminium

Surface finish:
Anodised

Supply includes:
1 front panel
1 set of hinges
Assembly parts

***Note:**
With rear mounting of 42 HP and 84 HP hinged panel, additional trim sections must be attached at the rear of the subrack.
(See page 145)

U	HP	Model No. RP vertically hinged	Model No. RP horizontally hinged
3	42*	3652.600	3652.500
3	84*	3652.610	3652.510
3	85	–	3684.291
4	85	–	3684.292
6	42*	3652.620	3652.520
6	84*	3652.630	3652.530
6	85	–	3684.293
7	85	–	3684.294
9	85	–	3684.295
10	85	–	3684.296
11	85	–	3684.297

EMC front panels, hinged



Material:
2.5 mm aluminium

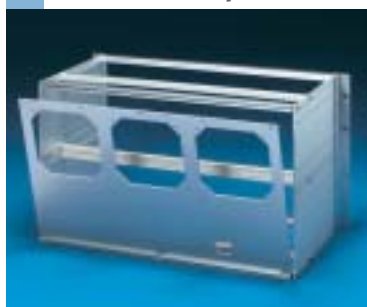
Surface finish:
Clear chromated

Supply includes:
1 front panel
1 set of hinges
1 contact strip
1 gasket strip
1 vertical EMC gasket
Assembly parts

EMC

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
10	84	3684.303

Note: Rear panels for fan installation



see page 174

Front/rear panels, for ventilation



see page 174

PMC front panels and covers

PMC front panels



For PCI mezzanine cards (PMC).

Conforms to IEEE 1386/1386.1

Material:
Die-cast zinc

Supply includes:
1 front panel

Packs of	Model No. RP
1	3688.659

Accessories:
EMC sealing ring and gasket – see below
Assembly screws M2.5 x 6,
Model No. 3688.665, packs of 100

PMC front panels



For PCI mezzanine cards (PMC).

Conforms to IEEE 1386/1386.1

Material/Surface finish:
Extruded aluminium, clear chromated

Supply includes:
1 front panel

Packs of	Model No. RP
1	3688.658

Accessories:
EMC sealing ring and gasket – see below
Assembly screws M2.5 x 6,
Model No. 3688.665, packs of 100

Support spacer



10 mm, for mounting mezzanine cards.

Supply includes:
1 support spacer

Packs of	Model No. RP
1	3688.663

Covers



To conceal unused mezzanine cutouts in 3 U and 6 U front panels. The covers are simply clipped into the cutouts.

Material:
Stainless steel

Packs of	Model No. RP
1	3688.660

EMC seals



For inserting into the all-round channel of the mezzanine front panels.

Material/Surface finish:
Sealing ring made from conductive carbon filled silicon,
sealing gasket made from stainless steel

Option	P. of	Model No. RP
Sealing ring	1	3688.661
Sealing gasket	1	3688.662

Assembly screws

Assembly parts for all PMC components are M2.5 x 6 mm screws.

Option	P. of	Model No. RP
M2.5 x 6	100	3654.340

Keying pin

To ensure use of correct voltage of mezzanine parent cards. The keying pins are bolted onto the parent boards.

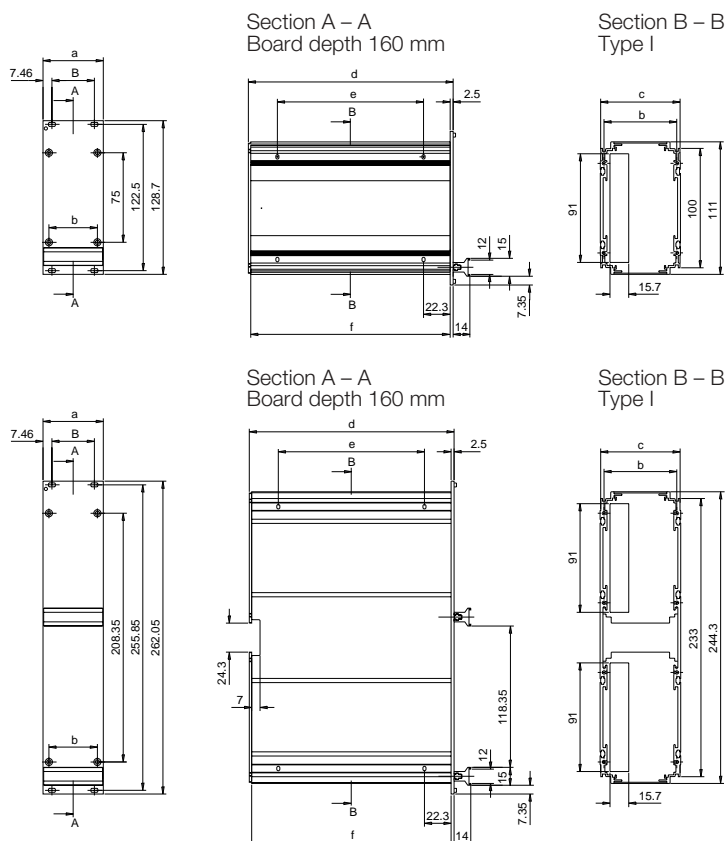
Packs of	Model No. RP
1	3688.664

Order information

Box type plug-in units, type I

HP	a	Width (B)	b	c	C	d	e	f	n	Model No. RP	Model No. RP	Page	
						Type I				Type I, 3 U	Type I, 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	10	3653.050	3653.130		
28	141.9	127.0	132.0	137.6	121.8	171.5	122	167	17	3653.060	3653.140		
42	213.1	198.1	203.2	208.8	193.0	171.5	122	167	31	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	10	3653.230	3653.330		
28	141.9	127.0	132.0	137.6	121.8	231.5	182	227	17	3653.240	3653.340		
42	213.1	198.1	203.2	208.8	193.0	231.5	182	227	31	3653.250	3653.350		
Supply includes:													
							*3653.000		3 U		6 U		
Front 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		
Accessories													
Covers												201	
Guide rails												201	
Threaded inserts												201	

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
Rear panel to accommodate
individual connectors

Material:

Front panel:
2.5 mm aluminium,
natural anodised
Rear panel:
2 mm aluminium, natural
Module sections:
Extruded aluminium section,
natural anodised
Handle: Aluminium,
natural anodised
PCB holder: Plastic

Box type plug-in units in
special sizes or with
printing available on request.



**Box type plug-in unit,
type I**

Standard rear panel with
cutout for connector.



Covers (accessory)

for box type plug-in units, vented
or unvented, slide-in or screw
fastening.
Model No. see page 201



EMC box type plug-in unit

with EMC front panel.
On request.



PCB holder

for securing PCBs.
Model No. see page 200

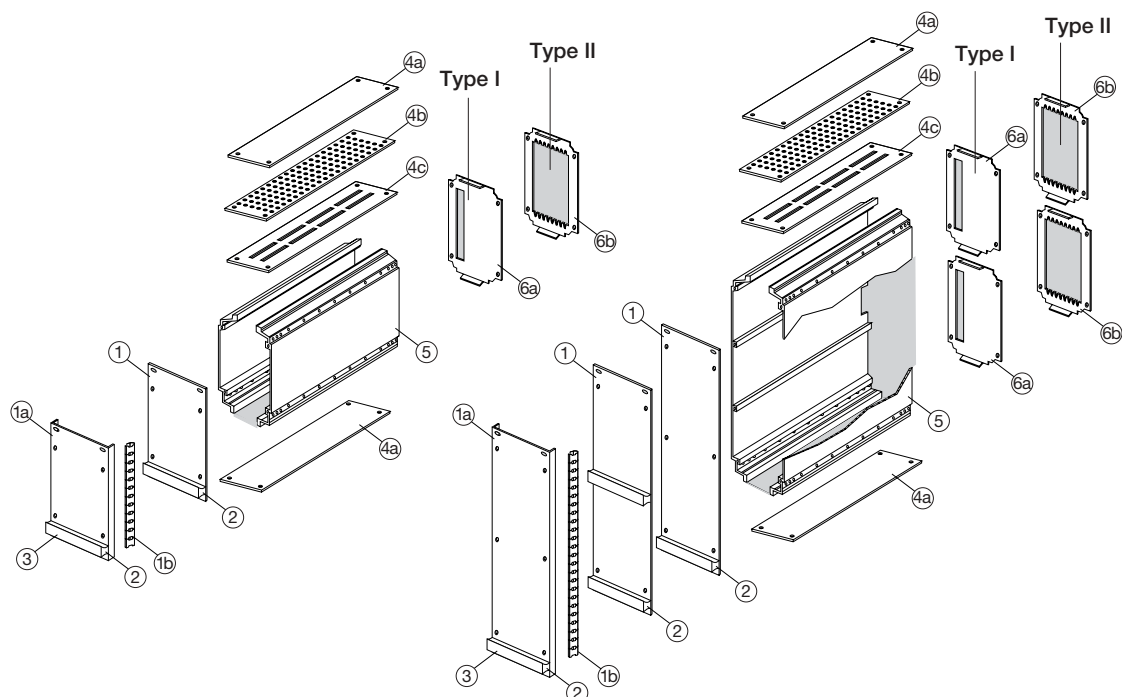
Accessories

Ripac box type plug-in units, individual components

Box type plug-in units, types I and II in 3 U and 6 U

Type I for one connector/Type II for several connectors

Index	Box type plug-in units, indiv. comp.	Type I	Type II	P.	8 HP	10 HP	12 HP	14 HP	21 HP	28 HP	42 HP	Page
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	
	for 6 U (for 1 handle)	●	●	1	3685.767	3685.633	3685.634	3685.635	3685.639	3685.640	3685.641	
	for 6 U (for 2 handle)	●	●	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 unit	●	●	1	–	–	3687.587	–	–	–	–	
	for 6 U/10 HP box type plug-in unit	●	●	1	–	–	3687.588	–	–	–	–	
EMC gaskets for front panels												
①b	for 3 U	●	●	1	–	–	3686.975	–	–	–	–	188
	for 6 U	●	●	1	–	–	3686.977	–	–	–	–	188
Handle type V												
②	of extruded aluminium section, anodised surface finish	●	●	1	3685.600	3685.601	3685.602	3685.603	3685.761	3685.762	3685.763	191
	of plastic	●	●	1	3685.492	–	3685.493	–	3685.494	–	–	191
Identification strips												
③	of 1.4 mm aluminium, anodised surface finish	●	●	1	3685.751	3685.752	3685.753	3685.754	3685.755	3685.756	3685.757	191
Covers of 1 mm aluminium, clear chromated/1.2 mm sheet steel, zinc-plated, passivated (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	201
	unvented, for board depth 220 mm	●	●	1	3687.562	3685.701	3685.702	3685.703	3685.704	3685.705	3685.706	201
④b	vented, for board depth 160 mm	●	●	1	3687.585	3685.683	3685.684	3685.685	3685.686	3685.687	3685.688	201
	vented, for board depth 220 mm	●	●	1	–	3685.695	3685.696	3685.697	3685.698	3685.699	3685.700	201
④c	vent slots for plastic guide rails, for board depth 160 mm	●	●	1	–	3687.556	3687.557	3687.558	3687.559	3687.560	3687.561	201
	vent slots for plastic guide rails, for board depth 220 mm	●	●	1	–	3687.563	3687.564	3687.565	3687.566	3687.567	3687.568	201
Side panel of extruded aluminium section, anodised												
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				
Rear panel of 2.0 mm aluminium, untreated/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	



Ripac box type plug-in units, individual components

Box type plug-in units, type V and type VI in 3 U and 6 U

Type V, with cover (unvented)/Type VI, with cover (vented)

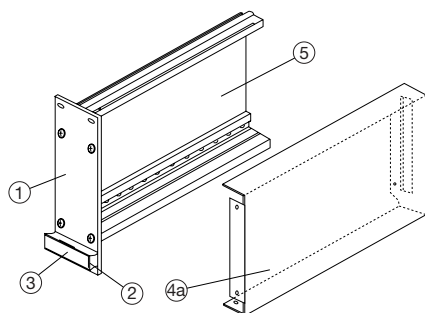
Index	Box type plug-in units, individual components	Type V	Type VI	P.	6 HP	7 HP	8 HP	10 HP	12 HP	14 HP	Page
Front panels of 2.5 mm aluminium, anodised surface finish											
①	for 3 U	●	●	1	3685.768	3685.628	3685.769	3685.629	3685.630	3685.631	
	for 6 U	●	●	1	3685.766	3685.632	3685.767	3685.633	3685.634	3685.635	
Handle type V											
②	of extruded aluminium section, anodised surface finish	●	●	1	3685.598	3685.599	3685.600	3685.601	3685.602	3685.603	191
	of plastic	●	●	1	–	–	3685.492	–	3685.493	–	191
Identification strips											
③	of 1.4 mm aluminium, anodised surface finish	●	●	1	3685.749	3685.750	3685.751	3685.752	3685.753	3685.754	191
Covers 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	unvented, 3 U, for board depth 160 mm		●	1	3685.770	3685.650	3685.772	3685.651	3685.652	3685.653	
	unvented, 3 U, for board depth 220 mm		●	1	3685.771	3685.666	3685.773	3685.667	3685.668	3685.669	
	unvented, 6 U, for board depth 160 mm		●	1	3685.713	3685.654	3685.715	3685.655	3685.656	3685.657	
	unvented, 6 U, for board depth 220mm		●	1	3685.714	3685.670	3685.716	3685.671	3685.672	3685.673	
Side panel of extruded aluminium section, anodised											
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 units, types I, II, V, VI

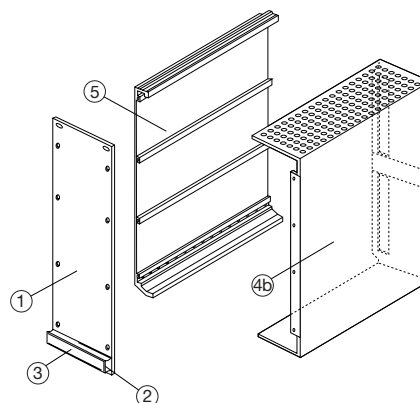
Description	For installation of:	Packs of	Model No.
Assembly kit for box type plug-in units, type I/II, 3 U	Box type plug-in units, type I/II, 3 U	1 set	3687.589
Assembly kit for box type plug-in units, type I/II, 6 U	Box type plug-in units, type I/II, 6 U	1 set	3687.590
Assembly kit for box type plug-in units, type V/VI	Box type plug-in units, type V/VI	1 set	3685.294
Assembly kit for box type plug-in units with EMC front p.	Box type plug-in units 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

For more screws, see page 208/209

Type V



Type VI



Accessories

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 and special sub-racks for drive chassis

- Optionally prepared for EMC or non-EMC
- Accommodation for 3 1/2" or 5 1/4" drives or CD-ROM, vertical
- Front panel and support plate integrated

Material:

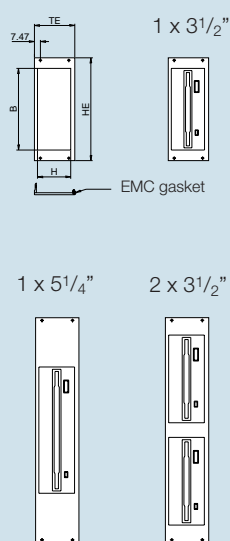
Front panel: 2.5 mm aluminium
Support plate: Aluminium

Surface finish:

Clear chromated

Supply includes:

1 front panel with support plate
1 EMC gasket (with EMC modules)
Assembly parts



Installation drives	Front panel		Approx. depth of drive	Front panel cutout		Model No. RP	
	U (HE)	HP (TE)		H	Width (B)	EMC	non-EMC
1 x 3 1/2"	3	8	160	20	102	3684.468	3685.077
	3	8	160	26	102	3684.469	3685.078
	3	8	160	31	102	3684.470	3685.079
	3	10	160	41.5	102	3684.471	3685.080
1 x 3 1/2"	4	8	160	20	102	3684.472	3685.081
	4	8	160	26	102	3684.473	3685.082
	4	8	160	31	102	3684.474	3685.083
	4	10	160	41.5	102	3684.475	3685.084
1 x 5 1/4"	4	10	220	41.5	147	3684.476	3685.085
2 x 3 1/2"	6	8	160	2 x 20	102	3684.477	3685.086
	6	8	160	2 x 26	102	3684.478	3685.087
	6	8	160	2 x 31	102	3684.479	3685.088
	6	10	160	2 x 41	102	3684.480	3685.089
1 x 5 1/4"	6	10	220	41.5	147	3684.481	3685.090
1 x 3 1/2"	3	8	160	–	–	–	3685.091
	3	10	160	–	–	–	3685.092
1 x 3 1/2"	4	8	160	–	–	–	3685.093
	4	10	160	–	–	–	3685.094
2 x 3 1/2"	6	8	160	–	–	–	3685.095
	6	10	160	–	–	–	3685.096

Guide rail for drive chassis



This ultra low profile guide rail has been developed for routing drive chassis in the Ripac Vario sub-rack for drive chassis. 2 guide rails are required for each drive chassis.

Supply includes:

1 guide rail including press-fit pin

For installation depth	Packs of	Model No. RP
160 mm	1	3686.989

Note:

Assembly screws should be ordered separately (2 assembly screws are required per guide rail)
Model No.3654.340, packs of 100

PCB holders in box type plug-in units type I, II, V, VI



For fastening PCBs in box type plug-in units.

Material:

PBT (Pocan 4235)

Packs of	Model No. RP
2 + assembly screws	3606.321

Ripac box type plug-in units/installation

Covers for type I and II box type plug-in units



Slide-in cover



Screw-fastened cover

Without vent slots. For slide-in fastening in the box type plug-in units. The cover plates with vent slots are suitable for the installation of plastic guide rails.

Material:

1.0 mm aluminium, clear chromated
(covers without vent slots)
1.2 mm sheet steel, zinc-plated, passivated
(covers with vent slots)

Assembly screws should be ordered separately:
Model No. 3685.289, packs of 100

Supply includes:

1 cover

Unit width	Packs of	Model No. RP vented	Model No. RP solid
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

EMC covers for type I and II box type plug-in units



Slide-in, with ventilation holes (EMC).

Material:

1.0 mm aluminium

Supply includes:

1 cover

Unit width	Packs of	Model No. RP 160 mm	Model No. RP 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 type I and II box type plug-in units



For guiding several PCBs in a single box type plug-in unit. May be installed in covers with vent slots.

Material:

Noryl

For PCB thickness 1.6 mm	Packs of	Model No. RP
160 mm	10	3606.140
220 mm	10	3606.200

Threaded inserts for box type plug-in units type I, II, V, VI



For securing accessories to the outside of the module side panel. The threaded inserts slide into the side section and the assembly is fastened with M2.5 set screws, Model No. RP 3687.020.

Material:

Steel

Surface finish:

Zinc-plated, passivated

Module depth	Packs of	Model No. RP
160 mm	4	3653.600
220 mm	4	3653.610

Accessories

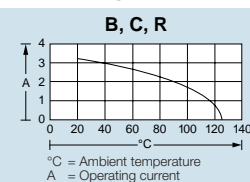
Connectors DIN 41 612

Male and female connectors to DIN 41 612 and IEC 630-2

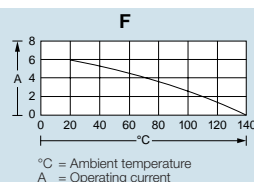
	Version B	Version C
Moulded body	Fibreglass-reinforced polyester, grey, self-exting. (UL 94-V0)	Fibreglass-reinforced polyester, grey, self-exting. (UL 94-V0)
Contacts	Male connector CuZn, female connector CuSn ₆ or CuSn ₈ optionally plated Au/2 µm Ni	Male connector CuZn, female connector CuSn ₆ or CuSn ₈ optionally plated Au/2 µm Ni
Connections	CuNi ₉ Sn ₂ , nickel-plated, optionally tin-plated Connection zones optionally plated Au/Ni	CuNi ₉ Sn ₂ , nickel-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 ... + 125°C	– 55°C ... + 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 Δ quality level II	400 Δ 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 AC (with 2.54 mm) VDE 0110, insulation category A	250 V AC (with 2.54 mm) VDE 0110, insulation category A
Min. clearance and creepage 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/polycarbonate, grey, self-exting. (UL 94-V0)
Contacts	Male connector CuZn, female connector CuSn ₆ or CuSn ₈ optionally plated Au/2 µm Ni	Male and female connector copper alloy, hard silver-plated	Male connector CuZn, female connector CuSn ₆ or CuSn ₈ optionally plated Au/2 µm Ni
Connections	CuNi ₉ Sn ₂ , nickel-plated, optionally tin-plated. Connection zones optionally plated Au/Ni	Tin-plated	CuNi ₉ Sn ₂ , nickel-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 ... + 125°C	– 65°C ... + 125°C	– 55°C ... + 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 Δ quality level II		400 Δ 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 AC (b, z), 250 V AC (d, z)	500 V, VDE 0110 insulation category C	250 V AC (with 2.54 mm) VDE 0110, insulation category A
Min. clearance and creepage distances	≥ 1.6 mm (≥ 3 mm for population rows d + z; ≥ 3.0 mm ≥ 5 mm for population 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)

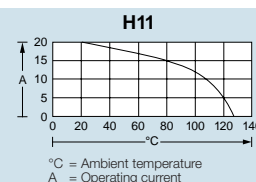
Derating curves



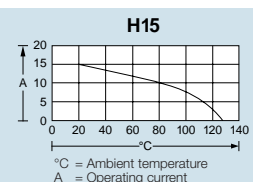
Series B, C, R
20°C – 3.20 A
70°C – 2.45 A
100°C – 1.65 A



Series F
20°C – 6.0 A
70°C – 4.0 A
100°C – 2.5 A



Series H11
20°C – 20.0 A
70°C – 16.0 A
100°C – 12.2 A

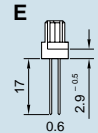
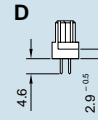
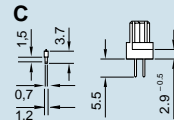
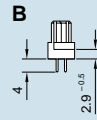
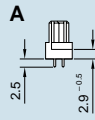


Series H15 R
20°C – 15.0 A
70°C – 11.0 A
100°C – 8.0 A

Female connector version B, DIN 41 612



- 3.2 A/pin
(at 20 °C ambient temperature)
- Solder or press-fit termination

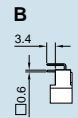
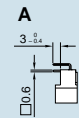


Type of connection		Model No. RP					No. of contacts
		Solder pin (A)	Solder pin (B)	Solder pin (C)	Press-fit pin (D)	Press-fit pin (E)	
Population	Row a 1, 2, 3 ...	3686.700	3686.703	3686.706	3686.709	3686.712	32
Population	Rows a + b Pin 2, 4, 6 ... 32	3686.701	3686.704	3686.707	3686.710	3686.713	32
Population	Rows a + b 1, 2, 3 ...	3686.702	3686.705	3686.708	3686.711	3686.714	64
Hole diameter for printed circuit boards		1±0.1	1±0.1	1±0.1	1 ^{+0.009} _{-0.006}	1 ^{+0.009} _{-0.006}	

Male connector version B, DIN 41 612



- 3.2 A/pin
(at 20 °C ambient temperature)
- Solder or press-fit termination

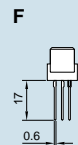
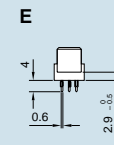
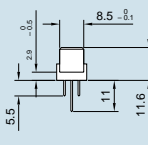
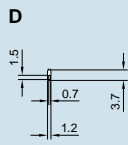
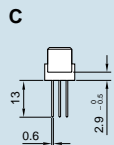
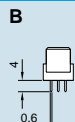
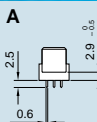


Type of connection		Model No. RP		No. of contacts
		Solder pin (A)	Press-fit pin (B)	
Population	Row a 1, 2, 3 ...	3686.715	3686.718	32
Population	Rows a + b Pin 2, 4, 6 ... 32	3686.716	3686.719	32
Population	Rows a + b 1, 2, 3 ...	3686.717	3686.720	64
Hole diameter for printed circuit boards		1±0.1	1 ^{+0.009} _{-0.006}	

Female connector version C, DIN 41 612



- 3.2 A/pin
(at 20 °C ambient temperature)
- Solder or press-fit termination



Type of connection		Model No. RP						No. of contacts
		Solder pin (A)	Solder pin (B)	Wrap post (C)	Solder lug (D)	Press-fit pin (E)	Press-fit pin (F)	
Population	Rows a Pin 2, 4, 6 ... 32	3686.721	3686.725	3686.729	3686.733	3686.737	3686.741	32
Population	Rows a + b + c Pin 2, 4, 6 ... 32	3686.722	3686.726	3686.730	3686.734	3686.738	3686.742	48
Population	Rows a + c	3686.723	3686.727	3686.731	3686.735	3686.739	3686.743	64
Population	Rows a + b + c	3686.724	3686.728	3686.732	3686.736	3686.740	3686.744	96
Hole diameter for printed circuit boards		1±0.1	1±0.1	1±0.1	1±0.1	1 ^{+0.009} _{-0.006}	1 ^{+0.009} _{-0.006}	

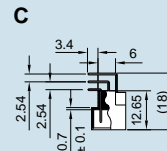
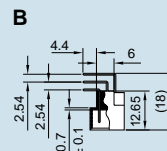
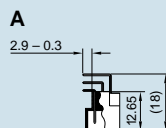
Accessories

Connectors DIN 41 612

Male connector version C, DIN 41 612



- 3.2 A/pin
(at 20 °C ambient temperature)
- Solder or press-fit termination

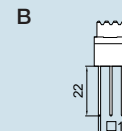
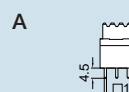


Type of connection		Model No. RP			No. of contacts
		Solder pin (A)	Solder pin (B)	Press-fit pin (C)	
Population	Rows a + c	3686.745	3686.749	3686.753	32
	Pin 2, 4, 6 ...32				
Population	Rows a + b + c	3686.746	3686.750	3686.754	48
	Pin 2, 4, 6 ...32				
Population	Rows a + c	3686.747	3686.751	3686.755	64
Population	Rows a + b + c	3686.748	3686.752	3686.756	96
Hole diameter for printed circuit boards		1±0.1	1±0.1	1 ^{+0.009} _{-0.006}	

Female connector version F, DIN 41 612



- 5.6 A/pin
(at 20 °C ambient temperature)
- Solder or press-fit termination

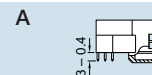


Type of connection		Model No. RP		No. of contacts
		Solder pin (A)	Wrap post (B)	
Population	Rows b, z	3686.814	3686.820	32
	Pin 2, 4, 6 ...32			
Population	Rows d, z	3686.815	3686.821	32
	Pin 2, 4, 6 ...32			
Population	Rows d, b, z	3686.816	3686.822	48
	Pin 2, 4, 6 ...32			
Hole diameter for printed circuit boards		1.6±0.1	1.6 ^{+0.009} _{-0.006}	

Male connector version F, DIN 41 612



- 5.6 A/pin
(at 20 °C ambient temperature)
- Solder or press-fit termination

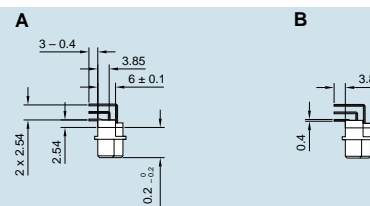


Type of connection		Model No. RP	
		Solder pin (A)	No. of contacts
Population	Rows b, z	3686.817	32
	Pin 2, 4, 6 ...32		
Population	Rows d, z	3686.818	32
	Pin 2, 4, 6 ...32		
Population	Rows d, b, z	3686.819	48
	Pin 2, 4, 6 ...32		
Hole diameter for printed circuit boards		1±0.1	

Female connector version R, DIN 41 612



- 3.2 A/pin
(at 20 °C ambient temperature)
- Solder or press-fit termination

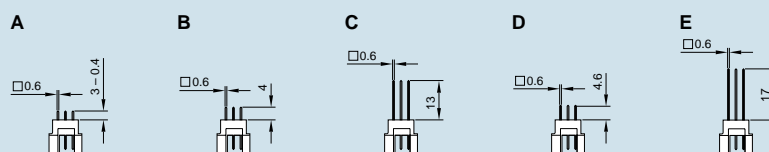


Type of connection		Model No. RP		
		Solder pin (A)	Wrap post (B)	No. of contacts
Population	Rows a + c Pin 2, 4, 6 ...32	3686.757	—	32
Population	Rows a + b + c Pin 2, 4, 6 ...32	3686.758	—	48
Population	Rows a + c	3686.759	3686.761	64
Population	Rows a + b + c	3686.760	3686.762	96
Hole diameter for printed circuit boards		1±0.1	1+0.009 -0.006	

Male connector version R, DIN 41 612



- 3.2 A/pin
(at 20 °C ambient temperature)
- Solder or press-fit termination

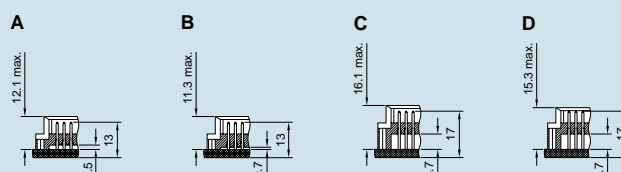


Type of connection		Model No. RP					No. of contacts
		Solder pin (A)	Solder pin (B)	Wrap post (C)	Press-fit pin (D)	Press-fit pin (E)	
Population	Rows a + c 2, 4, 6 ...32	3686.763	3686.767	3686.771	3686.775	3686.779	32
Population	Rows a + b + c Pin 2, 4, 6 ...32	3686.764	3686.768	3686.772	3686.776	3686.780	48
Population	Rows a + c	3686.765	3686.769	3686.773	3686.777	3686.781	64
Population	Rows a + b + c	3686.766	3686.770	3686.774	3686.778	3686.782	96
Hole diameter for printed circuit boards		1±0.1	1±0.1	1±0.1	1+0.009 -0.006	1+0.009 -0.006	

Male connector shroud type R, 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

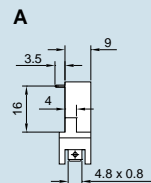
Accessories

Connectors DIN 41 612

Male connector version H11, DIN 41 612



- 15 A/pin
(at 20 °C ambient temperature)
- Solder pins

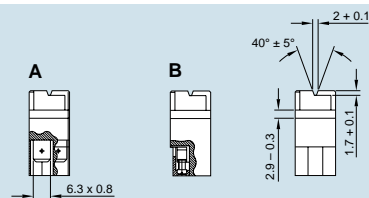


Type of connection	Model No. RP
	Solder pin (A)
Population 11 pins	3686.785
Population 10 + 1 pins	3686.786
Population 9 + 2 pins	3686.787

Female connector version H15, DIN 41 612



- 15 A/pin
(at 20 °C ambient temperature)
- 6.3 mm blade or screw connection

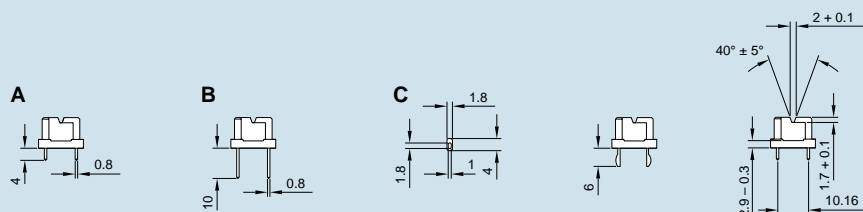


Type of connection	Model No. RP	
	Faston (A)	Screw termination (B)
Population 15 pins	3686.789	3686.790

Female connector version H15, DIN 41 612



- 15 A/pin
(at 20 °C ambient temperature)
- Solder pins or lugs

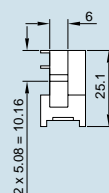


Type of connection	Model No. RP		
	Solder pin (A)	Solder pin (B)	Solder lug (C)
Population 15 pins	3686.791	3686.792	3686.793

Male connector version H15, DIN 41 612



- 15 A/pin
(at 20 °C ambient temperature)
- Solder pins

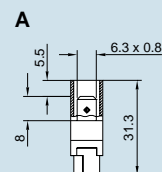


Type of connection	Model No. RP
	Solder pin
Population 15 pins	3686.794

Female connector version H11, DIN 41 612



- 15 A/pin
(at 20 °C ambient temperature)
- 6.3 mm blade terminals



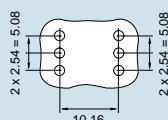
Type of connection	Model No. RP
Faston (A)	
Population 11 pins	3686.788

Screw/plug-in connections

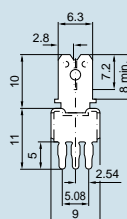
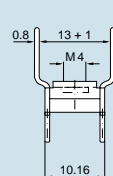


Press-fit technique.

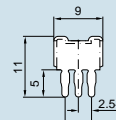
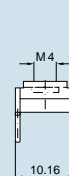
- With 6 pins
- 30 A rated current maximum



A



B



Type	Pins	Model No. RP
A	6	3686.801
B	6	3686.802

Faston

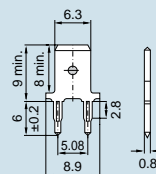
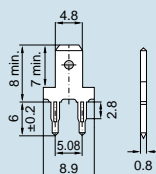
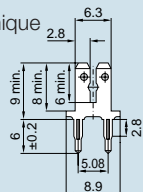


Press-fit or solder.

Technical specifications:

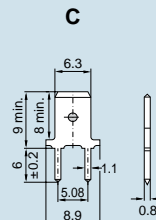
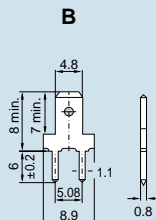
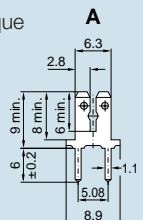
Material	CuSn ₆
Surface finish	min. 2 µm SnPb
Assembling force	max. 60 kg
Pin retention force	min. 12 kg
Drill bit	1.75 mm
Hole	1.6 ± 0.9 mm

Press-fit technique



Type	Model No. RP	
	Press-fit pin	Solder pin
A	3686.795	3686.798
B	3686.796	3686.799
C	3686.797	3686.800



















Solder technique

























Assembly parts

For fastening	Dimensions	Description	Packs of	Model No. RP
Connectors to Z rails	M2.5 x 6	Posidrive screw	100	3654.340
Connectors to PCBs	M2.5 x 12	Posidrive screw	100	3654.350

Assembly parts

For the attachment of:	Dimensions	Description	Model No.	Packs of	Model No. Packs of 1
Front panels to unit side panels	 M3 x 8	Panhead csk-screw ISO 7047-4.8-Z-A2F	3606.550	100	3685.826
Rear panels to box type plug-in units	 M3 x 8	Panhead screw ISO 7045-4.8-Z-A2F	3606.560	100	3685.825
PCB holders (plastic) to front panel, top	 M2.5 x 10	Panhead csk-screw ISO 7047-4.8-Z-A2F	3606.610	100	3685.831
- Horizontal rails to side panels - Divider panels to horizontal rails - Horizontal rails to vertical supports	 M4 x 12	Panhead self-locking screw similar to DIN ISO 7045-8.8-Z-A2F	3654.300	100	3684.881
- PCBs to PCB holder (die-cast with 3 U), top - PCBs to extractor handles with 6 U	 M2.5 x 8	Panhead screw ISO 7045-4.8-Z-A2F	3654.320	100	3685.828
- PCB holders (plastic) to type V/VI handles, bottom - PCBs to PCB holders (plastic)	 M2.5 x 10	Panhead screw ISO 7045-4.8-Z-A2F	3654.330	100	3685.830
- Connectors to Z rails - Z rails to horizontal rails - Type V/VI handles to partial front plates, bottom right for > = 5 HP - Aluminium guide rails to horizontal rails	 M2.5 x 6	Panhead screw ISO 7045-4.8-Z-A2F	3654.340	100	3685.827
Aluminium guide rails to horizontal rails (fastening of square nuts)	M2.5	Retaining cage	9901.417	100	9901.398
Type V handle (plastic) to front panels	M2.5 M2.5 x 16 M2.5 x 12 M2.5	Mounting kit for handles type V (plastic) Cover black Cover grey Hex nut Screw Screw Square nut DIN 502-11H-A2F	3687.519 - - - - - -	1 set	3687.584 3687.582 3685.834 3687.583 3685.833 3685.955
Connectors to PCBs	 M2.5 x 12	Panhead screw ISO 7045-4.8-Z-A2F	3654.350	100	3685.833
Guide rails (plastic) to horizontal rails	 M2.2 x 6	Screw for plastic WN 1413	3654.360	100	3685.838
- Flat front panels to handles type V, VI - Aluminium guide rails to horizontal rails	 M2.5	Square nut DIN 562-11H-A2F	3654.370	100	3685.955
Flat front panels to horizontal rails	 M2.5 x 11	Collar screws (cheese- head) and plastic collars	3658.160	100 sets	-
		Plastic collars	3687.021	100	3685.837
	 M2.5 x 11	Collar screws (cheese- head), slotted		100	3685.832
PCB to type III handle	 3.0 x 8	Screw for plastic WN 1412	3658.190	100	3686.035
- PCBs to PCB holders (plastic) - PCB holders to front panels, top	 M2.5	Hex nut ISO 4032-8	3658.210	100	3685.834
Backplanes to threaded inserts		Mounting kit for backplanes:	3684.019	100	-
	2.7	Washer, PE natural DIN 125	-		3685.835
Covers to mounting blocks	 M3 x 6	Csk-screw ISO 7046-1-4.8-Z-A2F	3684.233	100	3684.883
Covers to side panels		Mounting block	3684.234	10	3684.884
Type V/VI handles to front panels		Bracket	3684.435	100	3685.760
Female connector to PCB attachment	2.5 x 0.3 x 10	Pop rivet DIN 7340-B-CuZn	3684.482	100	3685.836

For the attachment of:	Dimensions	Description	Model No.	Packs of	Model No. Packs of 1
Type V handles (plastic) to front panels		Mounting kit	3687.519	1 set	–
Fans to fan mounting plate/rear panel		Mounting kit for fans:	3685.197	4 set	–
	 M 4 x 12	- Panhead screw ISO 7046-1-4.8-Z-A2F	–		3685.969
	 M 4	- Hex nut ISO 4032-8	–		3685.809
	 4.3	- Serrated washer DIN 6797-A-Fst	–		3685.808
Covers to side panels		Mounting kit for cover plates:	3685.256	24 sets	–
		Mounting block	3684.234	10	3684.884
	 M 3 x 6	- Csk-screw ISO 7046-1-4.8-Z-A2F	3684.233	100	3684.883
PCB holder (die-cast) to front panels, top	 M 2.5 x 8	Panhead csk-screw DIN ISO 7047-8.8-Z-A2F	3685.282	100	3685.829
- Covers/box type plug-in units type I/II - Contact/spring sections for 3-part front panels	 M 2.5 x 5	Csk-screw ISO 7046-1-4.8-Z-A2F	3685.289	100	3685.954
- Handles on front panels for box type plug-in units - Front panels to hinge strip	 M 2.5 x 6	Csk-screw ISO 7046-1-4.8-Z-A2F	3685.290	100	3685.953
To join two 4 HP extractor handles, type IV/type IVs/type VII	2 x 20	Cylinder pin ISO 2338-A-St	3685.319	20	3686.935
Holder (horizontal assembly kit), for backplane installation to horizontal rail	 M 2.5 x 5	Csk-screw similar to DIN ISO 7046-1-4.8-Z-A2F	3686.916	100	3686.914
- Holder (horizontal assembly kit), for horizontal rail - Vertical supports to horizontal rails	 M 2.5 x 8	Csk-screw similar to DIN ISO 7046-1-4.8-Z-A2F	3686.917	100	3686.915
Spring and contact sections on 3-part front panels without countersink	 M 2.5 x 5	Panhead screw DIN ISO 7046-4.8-Z-A2F	3686.924	100	3686.923
Recessed flanges to side panel		Mounting kit for recessed flanges:	3687.015	4 sets	–
	 M 4 x 8	- Panhead self-locking screw similar to DIN ISO 7045-8.8-Z-A2F	–		3684.882
	 M 4	- Hex nut ISO 4032-8	–		3685.809
	 4.3	- Washer	–		200.611
Fastening the threaded inserts in horizontal rails	 M 2.5 x 8	Grub screw ISO 7434-14H	3687.020	100	3686.015
Front panels to horizontal rails		Plastic collars	3687.021	100	3685.837
EMC front panels to horizontal rails	 M 2.5 x 11	Centering screw, slotted	3687.050	100	3686.002
EMC front panels to horizontal rails	 M 2.5 x 11	Centering screw, posidrive	3687.051	100	3686.001
Front panels to horizontal rails	 M 2.5 x 11	Collar screw, cheese-head, slotted	3685.097	100	3685.832
Type V/VI handles (aluminium) to front panels		Mounting kit for type V/VI handles	3687.146	1 set	–
	 M 2.5 x 6	- Panhead screw ISO 7045-1-4.8-Z-A2F	3654.340	100	3685.827
		- Bracket	3685.625	50	3685.760
	 M 2.5	- Square nut DIN 562-11H-A2F	3654.370	100	3685.955

Diversity in perfection.



Instrument cases/system enclosures.

As well as the classic Rittal Vario-Case instrument case, with its numerous application benefits, the RiCase instrument case will also impress you, with its modern design in numerous colour variants and, above all, its all-metal enclosure construction.

The Ripac Vario-Module system enclosure is fully compatible with the latest Ripac subrack range, making it ideal for individual installation and configuration as a microcomputer system. All in all, the design and function of this range are sure to impress.



RiBox
System enclosure for the horizontal installation of single boards or the installation of routers, hubs and modems.



Ripac Vario-Module
Shown left as an instrument case in 7 U. The 6 U subracks are cooled diagonally. The fans are located on the rear panel. Optionally also as a rack-mounted enclosure.

Instrument cases/ system enclosures

System enclosure RiBox	214/215
System enclosure Ripac Vario-Module	216 – 227
Instrument case RiCase	228 – 241
Instrument case Vario-Case iS	242 – 255



Rittal RiCase
The modular all-metal enclosure is a perfect “safe” for valuable electronics. The styling and colour add innovative design touches, emphasising the value of the electronics within.



Rittal Vario-Case iS
– the successful classic amongst Rittal instrument cases. Chassis, as well as modular assemblies and PCBs, are easily installed. The pitch pattern of channels on the side panels permits variable attachment of all installed equipment.

Overview of system enclosures and instrument cases

RiBox



System enclosures
Model No. see page 214 – 215

Applications

System enclosure for use as instrument case or as a rack-mounted enclosure. For the installation of Euroboards and double Euroboards (horizontal), bridges, hubs, routers or modems.

Design features

- 482.6 mm (19") system enclosure to IEC 60 297-1
- Optional use as instrument case or rack-mounted enclosure
- Height: 1 U
- Installation width: 84 HP
- Optionally includes a mounting kit for installing a double Euroboard
- Mounting plate (accessories) for individual population
- Extruded aluminium section
- Protection category IP 40



User benefits

- Minimum space requirements of just 1 U
- Simple and fast assembly
- May easily be changed from instrument case to rack-mounted enclosure
- EMC upgradable
- Individual finishing to customer wishes

Ripac Vario-Module



System enclosures
Model No. see page 216 – 227

Applications

System enclosure for use as instrument case or as a rack-mounted enclosure. For the installation of PCBs and board type plug-in units. Suitable for mobile and stationary applications.

Design features

- 482.6 mm (19") system enclosure to IEC 60 297-1
- Optional use as instrument case or rack-mounted enclosure
- Heights: 1 – 8 U
- Installation widths: 42, 63, 84 HP
- Depths: 250 – 370 mm
- Protection category IP 40
- Extruded aluminium section
- Depth-variable interior installation



User benefits

- May easily be changed from instrument case to rack-mounted enclosure
- EMC upgradable
- Depth-variable interior installation
- Wide range of accessories
- Neutral design

RiCase



Instrument cases
Model No. see page 228 – 241

Applications

Instrument case for the installation of 482.6 mm (19") slide-in equipment and components. Suitable for mobile and stationary applications.

Design features

- Instrument case to IEC 60 297-3
- Heights: 1 – 12 U
- Installation widths: 269.2 mm (1½ 19") and 482.6 mm (19")
- Depths: 300 – 540 mm
- Protection category IP 40
- Extruded aluminium section
- Symmetrical design
- Depth-/height-variable interior installation



User benefits

- High level of stability
- Optionally as Tower enclosure
- 3 colours as standard
- Ergonomic handle, feet and door variants
- For mobile and stationary use

Vario-Case iS



Instrument cases
Model No. see page 242 – 255

Applications

Instrument case for the installation of 482.6 mm (19") slide-in equipment, components and individual board type plug-in units. Suitable for mobile and stationary applications.

Design features

- Instrument case to IEC 60 297-3
- Heights: 1 – 9 U
- Installation widths: 269.2 mm (1½ 19") and 482.6 mm (19")
- Depths: 300 – 500 mm
- Protection category IP 40
- Extruded aluminium section
- Symmetrical design
- Depth-/height-variable interior installation



User benefits

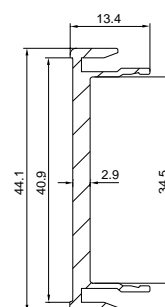
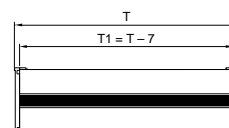
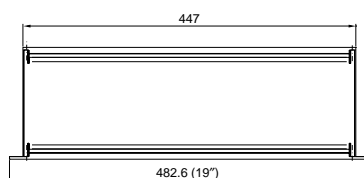
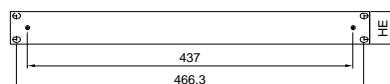
- Optionally as Tower enclosure
- Ergonomic handle, feet and door variants
- For mobile and stationary use
- Stackable
- For the installation of 482.6 mm (19") slide-in equipment or individual board type plug-in units

Order information

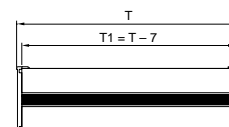
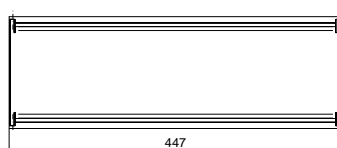
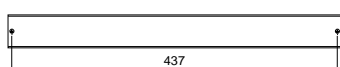
RiBox system enclosures 1 U

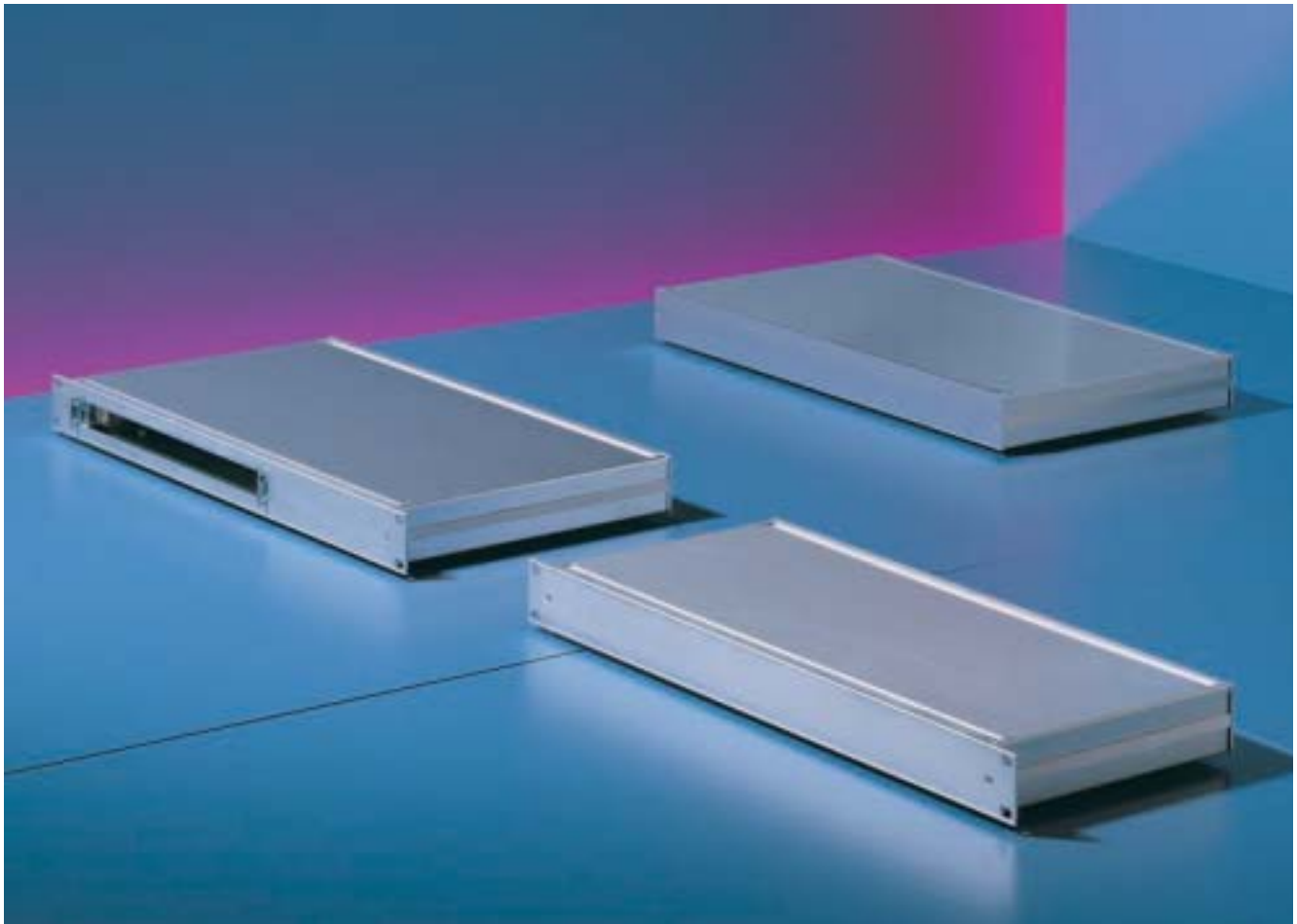
	Model No. 482.6 mm (19") rack mount					Model No. 482.6 mm (19") rack mount incl. mounting kit for double Euroboards	
U	1	1	1	1	1	–	–
Width (B) mm	482.6 (19")	482.6 (19")	482.6 (19")	482.6 (19")	482.6 (19")	482.6 (19")	482.6 (19")
Depth (T) mm	150	200	250	300	350	250	350
Model No.	3687.814	3687.815	3687.816	3687.817	3687.818	3684.072	3684.073
Supply includes							
Side panel	2	2	2	2	2	2	2
Front 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
	Model No. desktop housing						
U	1	1	1	1	1	–	–
Width (B) mm	447	447	447	447	447	–	–
Depth (T) mm	150	200	250	300	350	–	–
Model No.	3687.819	3687.820	3687.821	3687.822	3687.823	–	–
Supply includes							
Side panel	2	2	2	2	2	–	–
Front panel	1	1	1	1	1	–	–
Rear panel	1	1	1	1	1	–	–
Base/cover tray	2	2	2	2	2	–	–
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	–	–

482.6 mm (19") rack mount



Desktop housing





Technical specifications:

System enclosures 1 U, 150/
 200/250/300 or 350 mm deep
 Easy to assemble with just
 4 screws
 Optionally for use as an instru-
 ment case or rack-mounted
 enclosure
 Front panel to hold a cover film 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

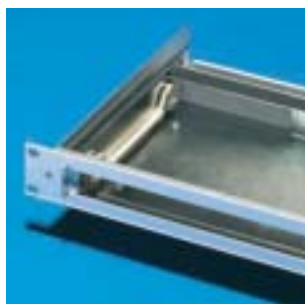
Material/Surface finish:

Side panels:
 Extruded aluminium section,
 untreated
 Base/cover trays:
 Aluminium, clear chromated
 Front/rear panel:
 Extruded aluminium section,
 clear chromated
 Mounting plate:
 Sheet steel

System enclosure 1 U to
 IEC 60 297-1.
 Optionally available for rack-
 mounting in the enclosure or as
 an instrument case version.

The RiBox housing system was designed for the horizontal mounting of
 single boards and board type plug-in units, and for the installation of
 routers, hubs or modems.

- Minimal space requirement of just 1 U
- Designed as either a desktop or rack unit
- Individual finishing to customer wishes
- Simple assembly with only 4 screws
- EMC upgrades available



Mounting kit and plate
 of sheet steel for individual
 installations.
 Model No. see table.



EMC set
 Model No. see table.



Horizontal circuit-board
 mounting.

In detail: System enclosure Ripac Vario-Module

The ideal enclosure solution for variable applications. The Ripac Vario-Module system enclosure can be used either as an instrument case or rack-mounted enclosure, due to the installation of corner trims or 482.6 mm (19") flanges in the front section, which allow it to be adapted to suit existing applications.

1 Design features



Front corner trim piece
for configuration as an instrument case.



Front flanges
for configuration as a rack-mounted enclosure.



Variable interior installation
with system components from the Ripac subrack range.

2 EMC/Earthing



Basic EMC protection
due to the all-metal enclosure with conductive contact points.



EMC expansion
flanges and corner trim panels prepared for the installation of EMC gaskets.



PE conductor set
for connecting the cover plates/gland plates to the side panels with Protective Earth conductors.

System accessories



Support stand/carrying handle
to fit all 3, 4 and 6 U enclosures. Adjustable on a 30° angle.



Rear adjustable feet
may be retro-fitted. They provide mechanical protection for the connection elements and allow power cables to be wound up during transportation.



Front handles
for mounting on the flanges (with mounting holes).



Microcomputer packaging system
with a backplane and power supply unit, the Ripac Vario-Module is easily upgraded to a complete MPS system.



Keyboard lid 4 U, 84 HP
for retrospective, front mounting on 4 U high, 84 HP wide enclosures. Prepared to accommodate mechanical or membrane key-boards.



Acrylic front doors, horizontally hinged
to protect the installed control components.

Product information

System enclosure Ripac Vario-Module



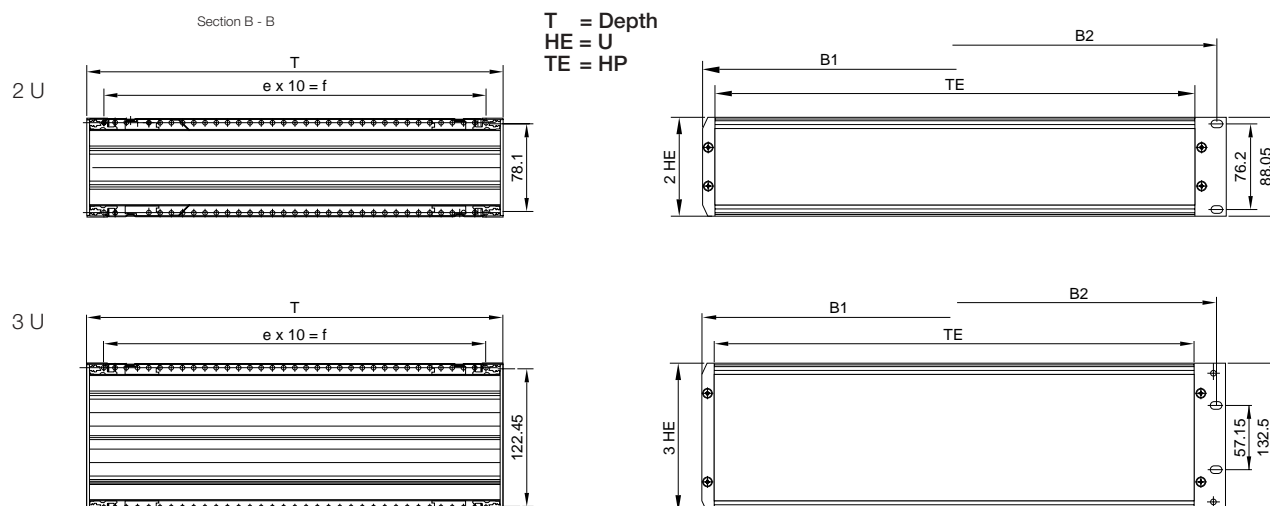
- May be used as an instrument case or rack-mounted enclosure
- Basic EMC protection, due to all-metal enclosure
- EMC-upgradable
- Portable

Order information

Ripac Vario-Module 2 U, 3U/42 HP, 63 HP

Rail type	Ripac Vario-Module	Packs of	2 U		3 U				Page
	Installation width (HP)		42	42	42	42	63	63	
	Depth (mm)		250.4	310.4	250.4	310.4	250.4	310.4	
	Enclosure Model No. VM without vent holes	1	3981.000	3981.020	–	–	–	–	
	Enclosure Model No. VM with vent holes	1	–	–	3981.040	3981.070	3981.050	3981.080	
	e		22	28	22	28	22	28	
	B1		235.6	253.6	235.6	235.6	342.3	342.3	
	B2		251.6	251.6	251.6	251.6	358.3	358.3	
Expansion accessories/Individual parts									
	Corner trim pieces for assembly as instrument case	2	3981.300	3981.300	3981.310	3981.310	3981.310	3981.310	226
	Mounting flanges for assembly as rack-mounted unit – without handle holes – with handle holes	2 2	3981.200 –	3981.200 –	3981.210 3981.260	3981.210 3981.260	3981.210 3981.260	3981.210 3981.260	226 226
A	Front horizontal rails (not suitable for depth-adjustable installation)	1	3684.560	3684.560	3684.560	3684.560	3684.561	3684.561	148
B	Front horizontal rails, with 10 mm extension for injector/extractor handles (not suitable for depth-adjustable installation)	1	3684.565	3684.565	3684.565	3684.565	3684.566	3684.566	148
C1	Rear horizontal rails	1	3684.570	3684.570	3684.570	3684.570	3684.570	3684.570	149
F	Z rail DIN 41 612	1	3684.600	3684.600	3684.600	3684.600	3684.601	3684.601	152
G	Insulating strips (21 HP)	1	3684.611	3684.611	3684.611	3684.611	3684.611	3684.611	153
H	Conductive strips (84 HP)	1	3684.612	3684.612	3684.612	3684.612	3684.612	3684.612	153
I	Threaded inserts	1	3684.608	3684.608	3684.608	3684.608	3684.609	3684.609	152
EMC expansion									
K	EMC gaskets, horizontal – for upper/lower horizontal rail	1	3684.974	3684.974	3684.974	3684.974	3684.808	3684.808	155
	– between covers and horizontal rails	10	3684.245	3684.245	3684.245	3684.245	3684.245	3684.245	166
	EMC gaskets, vertical	1	3686.974	3686.974	3686.975	3686.975	3686.975	3686.975	146
	Front/rear panel, EMC		see page 182 – 195						
Other accessories									
	Front/rear panels		see page 182 – 195						
	Carrying handles	2	3981.350	3981.360	3981.350	3981.360	3981.350	3981.360	227
	Front handles*	2	–	–	3636.010	3636.010	3636.010	3636.010	226
	Acrylic front door	1	–	–	3981.420	3981.420	3981.430	3981.430	227
	Rear adjustable feet	4	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	227

* Only in conjunction with mounting flanges with handle holes





Technical specifications:

May be used as a rack mounted unit or instrument case
 External dimensions to DIN 41 494, part 1 for installation in enclosures, 482.6 mm (19");
 Installation dimensions for board type plug-in units to DIN 41 494, part 5 and IEC 60 297-3 and IEEE 1101.1/1101.10

Protection category:

IP 40 for non vented version.

Material/Surface finish:

Side panels: Extruded aluminium section, spray finished in RAL 7035
 Horizontal rails: Extruded aluminium section, spray finished in RAL 7035
 Corner trim: Die-cast zinc, spray finished in RAL 7035
 Covers: Sheet steel, spray finished in RAL 7035
 Side trim: Extruded aluminium section, spray finished in RAL 7035
 Contact points: Conductive

Supply includes:

2 side panels
 1 top cover with/without vent holes
 1 bottom cover with/without vent holes
 4 horizontal rails
 4 threaded inserts
 2 rear corner trim pieces for EMC gaskets
 Assembly parts

Ripac Vario-Module accessories

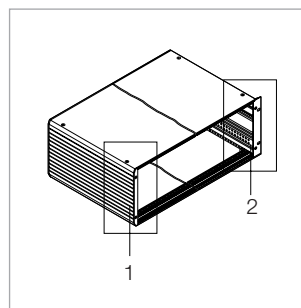
see page 226 – 227

Horizontal rails

from page 148



Corner trim pieces
 with channel to hold EMC gaskets.
 Model No. see page 226.



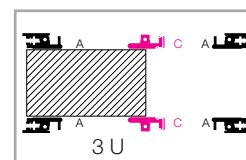
1) Equipped as an instrument case:

Front corner trim must be ordered separately.

2) Equipped as a rack-mounted unit:

Mounting flanges must be ordered separately.

Horizontal rail configuration



Included in the supply

To be ordered separately, depending on application.

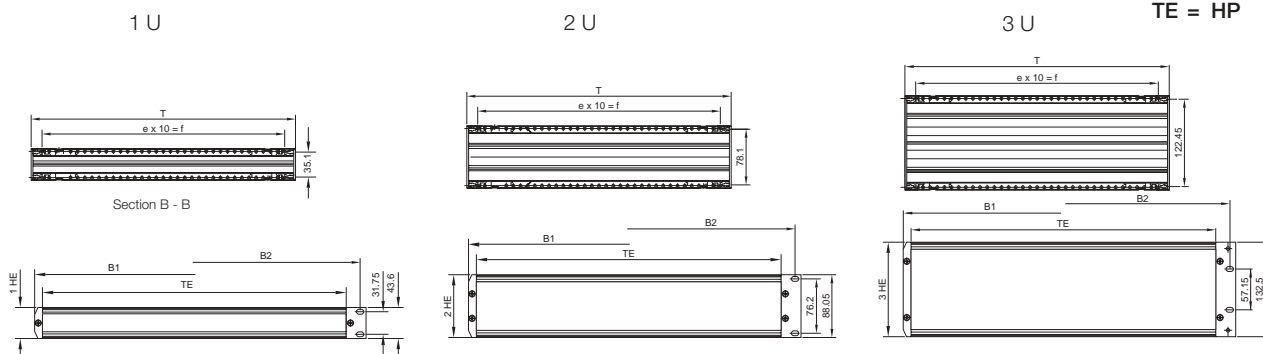
Order information

Ripac Vario-Module 1 U, 2 U, 3 U/84 HP

Rail type	Ripac Vario-Module	P. of	1 U			2 U		3 U			Page
	Installation width (HP)		84	84	84	84	84	84	84	84	
	Depth (mm)		250.4	310.4	370.4	250.4	310.4	250.4	310.4	370.4	
	Enclosure Model No. VM without vent holes	1	3981.001	3981.002	3981.003	3981.010	3981.030	–	–	–	
	Enclosure Model No. VM with vent holes	1	–	–	–	–	–	3981.060	3981.090	3981.100	
	e		22	28	34	22	28	22	28	34	
	B1		449.0	449.0	449.0	449.0	449.0	449.0	449.0	449.0	
	B2		465.1	465.1	465.1	465.1	465.1	465.1	465.1	465.1	
Expansion accessories/Individual parts											
	Top cover, non vented	1	–	–	–	3981.900	3981.910	3981.900	3981.910	3981.920	
	Top cover, vented	1	–	–	–	3981.940	3981.950	3981.940	3981.950	3981.960	
	Bottom cover, non vented	1	–	–	–	3981.700	3981.710	3981.700	3981.710	3981.720	
	Bottom cover, vented	1	–	–	–	3981.740	3981.750	3981.740	3981.750	3981.760	
	Corner trim pieces for assembly as instrument case	2	3981.570	3981.570	3981.570	3981.300	3981.300	3981.310	3981.310	3981.310	226
	Mounting flanges for assembly as rack-mounted unit – without handle holes	2	3981.580	3981.580	3981.580	3981.200	3981.200	3981.210	3981.210	3981.210	226
	– with handle holes	2	–	–	–	–	–	3981.260	3981.260	3981.260	226
A	Front horizontal rails (not suitable for depth-adjustable installation)	1	3684.562	3684.562	3684.562	3684.562	3684.562	3684.562	3684.562	3684.562	148
B	Front horizontal rails with 10 mm extension for injector/extractor handles (not suitable for depth-adjustable installation)	1	–	–	–	3684.567	3684.567	3684.567	3684.567	3684.567	148
C1	Rear horizontal rails	1	3684.572	3684.572	3684.572	3684.572	3684.572	3684.572	3684.572	3684.572	149
F	Z rail DIN 41 612	1	–	–	–	3684.602	3684.602	3684.602	3684.602	3684.602	152
G	Insulating strips (21 HP)	1	–	–	–	3684.611	3684.611	3684.611	3684.611	3684.611	153
H	Conductive strips (84 HP)	1	–	–	–	3684.612	3684.612	3684.612	3684.612	3684.612	153
I	Threaded inserts	1	3684.610	3684.610	3684.610	3684.610	3684.610	3684.610	3684.610	3684.610	152
EMC expansion											
K	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	152
	– between covers and horizontal rails	10	3684.245	3684.245	3684.245	3684.245	3684.245	3684.245	3684.245	3684.245	166
	EMC gaskets, vertical	1	3686.973	3686.973	3686.973	3686.974	3686.974	3686.975	3686.975	3686.975	146
	Front/rear panel, EMC		see page 182 - 195								
Other accessories											
	Front/rear panels		see page 182 – 195								
	Carrying handles	2	3981.350	3981.360	3981.370	3981.350	3981.360	3981.350	3981.360	3981.370	227
	Front handles*	2	–	–	–	–	–	3636.010	3636.010	3636.010	226
	Acrylic front door	1	–	–	–	–	–	3981.440	3981.440	3981.440	227
	Rear adjustable feet	4	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	227

* Only in conjunction with mounting flanges with handle holes

T = Depth
HE = U
TE = HP





Technical specifications:

May be used as a rack mounted unit or instrument case
 External dimensions to DIN 41 494, part 1 for installation in enclosures, 482.6 mm (19");
 Installation dimensions for board type plug-in units to DIN 41 494, part 5 and IEC 60 297-3 and IEEE 1101.1/1101.10

Protection category:

IP 40 for non vented version.

Material/Surface finish:

Side panels: Extruded aluminium section, spray finished in RAL 7035
 Horizontal rails: Extruded aluminium section, spray finished in RAL 7035
 Corner trim: Die-cast zinc, spray finished in RAL 7035
 Covers: Sheet steel, spray finished in RAL 7035
 Side trim: Extruded aluminium section, spray finished in RAL 7035
 Contact points: Conductive

Supply includes:

2 side panels
 1 top cover with/without vent holes
 1 bottom cover with/without vent holes
 4 horizontal rails
 4 threaded inserts
 2 rear corner trim pieces for EMC gaskets
 Assembly parts

Ripac Vario-Module accessories:

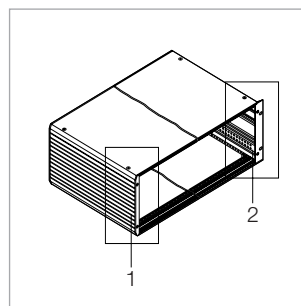
see page 226 – 227

Horizontal rails:

from page 148



Front horizontal rail with 10 mm extension
 For injector/extractor handles.
 Model No. see page 148.



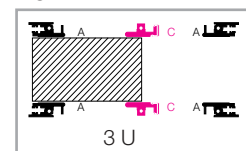
1) Equipped as an instrument case:

Front corner trim must be ordered separately.

2) Equipped as a rack-mounted unit:

Mounting flanges must be ordered separately.

Horizontal rail configuration



Included in the supply.

To be ordered separately, depending on application.

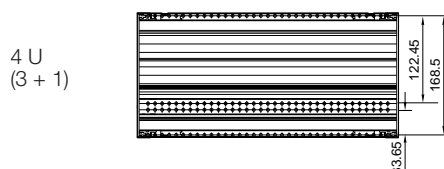
The front horizontal rails (A or B) and rear horizontal rails (C and D) are equipped as per the table on page 147.

Order information

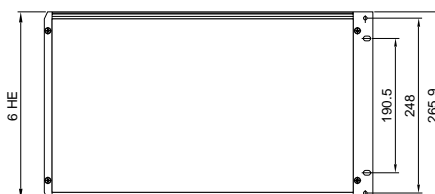
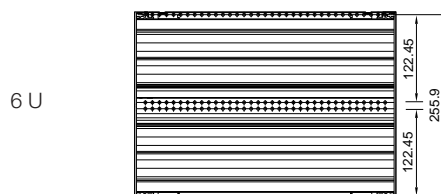
Ripac Vario-Module 4 U, 6 U

Rail type	Ripac Vario-Module	Packs of	4 U (3 + 1)			6 U			Page
	Installation width (HP)		84	84	84	84	84	84	
	Depth (mm)		250.4	310.4	370.4	310.4	370.4	430.4	
	Enclosure Model No. VM with vent holes	1	3981.110	3981.120	3981.130	3981.140	3981.150	3981.160	
	e		22	28	34	28	34	40	
	B1		449.0	449.0	449.0	449.0	449.0	449.0	
	B2		465.1	465.1	465.1	465.1	465.1	465.1	
Expansion accessories/Individual parts									
	Top cover, non vented	1	3981.900	3981.910	3981.920	3981.910	3981.920	3981.930	
	Top cover, vented	1	3981.940	3981.950	3981.960	3981.950	3981.960	3981.970	
	Bottom cover, non vented	1	3981.700	3981.710	3981.720	3981.710	3981.720	3981.730	
	Bottom cover, vented	1	3981.740	3981.750	3981.760	3981.750	3981.760	3981.770	
	Corner trim pieces for assembly as instrument case	2	3981.320	3981.320	3981.320	3981.330	3981.330	3981.330	226
	Mounting flanges for assembly as rack-mounted unit – without handle holes – with handle holes	2 2	3981.220 3981.270	3981.220 3981.270	3981.220 3981.270	3981.230 3981.280	3981.230 3981.280	3981.230 3981.280	226 226
A	Front horizontal rails (not suitable for depth-adjustable installation)	1	3684.562	3684.562	3684.562	3684.562	3684.562	3684.562	148
B	Front horizontal rails with 10 mm extension for injector/extractor handles (not suitable for depth-adjustable installation)	1	3684.567	3684.567	3684.567	3684.567	3684.567	3684.567	148
C1	Rear horizontal rails	1	3684.572	3684.572	3684.572	3684.572	3684.572	3684.572	149
D1	Rear horizontal rails, centre	1	–	–	–	3684.582	3684.582	3684.582	150
E	Rear adaptor rail, centre	1	–	–	–	3684.591	3684.591	3684.591	151
F	Z rail DIN 41 612	1	3684.602	3684.602	3684.602	3684.602	3684.602	3684.602	152
G	Insulating strips (21 HP)	1	3684.611	3684.611	3684.611	3684.611	3684.611	3684.611	153
H	Conductive strips (84 HP)	1	3684.612	3684.612	3684.612	3684.612	3684.612	3684.612	153
I	Threaded inserts	1	3684.610	3684.610	3684.610	3684.610	3684.610	3684.610	152
EMC expansion									
K	EMC gaskets, horizontal – for upper/lower horizontal rail	1	3684.808	3684.808	3684.808	3684.808	3684.808	3684.808	152
	– between covers and horizontal rails	10	3684.245	3684.245	3684.245	3684.245	3684.245	3684.245	166
	EMC gaskets, vertical	1	3686.976	3686.976	3686.976	3686.977	3686.977	3686.977	146
	Front/rear panel, EMC		see page 182 – 195						
Other accessories									
	Front/rear panels		see page 182 – 195						
	Carrying handles	2	3981.350	3981.360	3981.370	3981.360	3981.370	3981.380	227
	Front handles*	2	3636.010	3636.010	3636.010	3666.010	3666.010	3666.010	226
	Acrylic front door	1	3981.450	3981.450	3981.450	3981.460	3981.460	3981.460	227
	Rear adjustable feet	4	3901.000	3901.000	3901.000	3901.000	3901.000	3901.000	227

* Only in conjunction with mounting flanges with handle holes



T = Depth
HE = U
TE = HP





Technical specifications:

May be used as a rack mounted unit or instrument case.
 External dimensions to DIN 41 494, part 1 for installation in enclosures, 482.6 mm (19");
 Installation dimensions for board type plug-in units to DIN 41 494, part 5 and IEC 60 297-3 and IEEE 1101.1/1101.10.

Protection category:

IP 40 for solid version

Material/Surface finish:

Side panels: Extruded aluminium section, spray finished in RAL 7035
 Horizontal rails: Extruded aluminium section, spray finished in RAL 7035
 Corner trim: Die-cast zinc, spray finished in RAL 7035
 Covers: Sheet steel, spray finished in RAL 7035
 Side trim: Extruded aluminium section, spray finished in RAL 7035
 Contact points: Conductive

Supply includes:

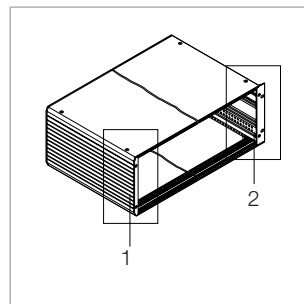
- 2 side panels
- 1 top cover with/without vent holes
- 1 bottom cover with/without vent holes
- 4 horizontal rails
- 4 threaded inserts
- 2 rear corner trim pieces for EMC gaskets
- 2 side trim pieces, centre
- Assembly parts

Ripac Vario-Module accessories

see page 226/227

Horizontal rails

from page 148



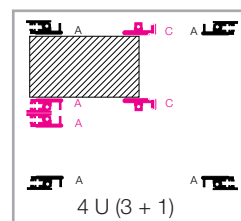
1) Equipped as an instrument case:

Front corner trim must be ordered separately.

2) Equipped as a rack-mounted unit:

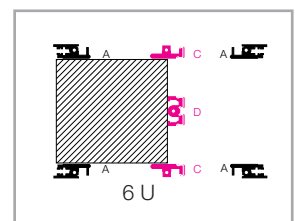
Mounting flanges must be ordered separately.

Horizontal rail configuration



■ Included in the supply

■ To be ordered separately, depending on application



Ripac Vario-Module 7 U, 8 U

* Only in conjunction with mounting flanges with handle holes





Technical specifications:

May be used as a rack mounted unit or instrument case.
External dimensions to DIN 41 494, part 1 for installation in enclosures, 482.6 mm (19"); Installation dimensions for board type plug-in units to DIN 41 494, part 5 and IEC 60 297-3 and IEEE 1101.1/1101.10.

Protection category:

IP 40 for non vented version.

Material/Surface finish:

Side panels: Extruded aluminium section, spray finished in RAL 7035
Horizontal rails: Extruded aluminium section, spray finished in RAL 7035
Corner trim: Die-cast zinc, spray finished in RAL 7035
Covers: Sheet steel, spray finished in RAL 7035
Side trim: Extruded aluminium section, spray finished in RAL 7035
Contact points: Conductive.

Supply includes:

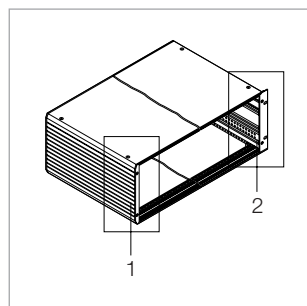
2 side panels
1 top cover with/without vent holes
1 bottom cover with/without vent holes
4 horizontal rails
4 threaded inserts
2 rear corner trim pieces for EMC gaskets
2 side trim pieces, centre
Assembly parts

Ripac Vario-Module accessories:

see page 226/227

Horizontal rails:

from page 148



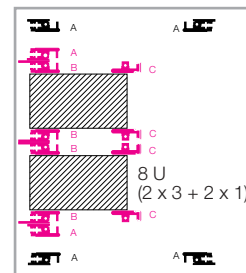
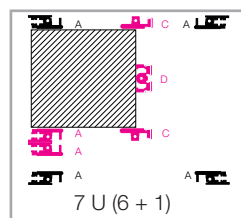
1) Equipped as an instrument case:

Front corner trim must be ordered separately.

2) Equipped as a rack-mounted unit:

Mounting flanges must be ordered separately.

Horizontal rail configuration



Included in the supply.

To be ordered separately, depending on application.

Accessories

Ripac Vario-Module

Enclosure population

System components from the Ripac range can be used for individual interior installation of the enclosures (see page 149).

Feet



With fold-out support stand.
Load capacity up to 20 kg.

Material:
Plastic, RAL 7035

Packs of	Model No. VM
2	3919.000

Front flanges



Required when the Ripac Vario-Module is to be used as a rack-mounted enclosure. The flanges have a channel to hold vertical EMC gaskets. Model No. see page 154

Material:
Aluminium, clear chromated

* without handle holes
** with handle holes

U	Packs of	Model No. VM*	Model No. VM**
1	2	3981.580*	-
2	2	3981.200*	-
3	2	3981.210*	3981.260**
4	2	3981.220*	3981.270**
6	2	3981.230*	3981.280**
7	2	3981.240*	3981.290**
8	2	3981.250*	3981.560**

Front corner trim pieces



Required when the Ripac Vario-Module is to be used as an instrument case. The corner trim pieces have a channel to hold vertical EMC gaskets. Model No. see page 154.

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

Front handles



Can only be used in conjunction with mounting flanges with handle holes.

Material:
Die-cast zinc, spray finished

For U	Packs of	Model No. UV
3 and 4	2	3636.010
6 and 7	2	3666.010

EMC gaskets



The enclosures can be fitted or retro-fitted to meet EMC requirements using EMC gaskets from the Ripac range.

EMC gaskets, vertical
Model No. see page 154

EMC gaskets, horizontal
Model No. see page 154

Front panels/rear panels



To cover the front and rear of the enclosure. Also available with hinges, vented for fan installation, or as an EMC version. Model No. see page 192 – 194

Carrying handles



For ergonomic transportation, even with stacked cases.
May also be used as a support stand.
Not suitable for use in conjunction with flanges.
Maximum load 350 N.

Material:
Die-cast zinc and extruded aluminium section, spray finished in RAL 7035

For enclosure depth	P. 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

German patent no. 40 34 773

Rear adjustable feet



For retro-fitting to the rear.
Dual function:
■ Mechanical protection of connection components
■ Also acts as a cable tidy during transportation

Material:
PA, colour RAL 7035 to UL 94-V0, self-extinguishing

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:
Green/yellow PE conductor cable, 1.5 mm², with washer, flat eyebolt and assembly parts

Packs of	Model No. VM
4	3900.000

Support stand/carrying handle



To fit all 3 U, 4 U and 6 U enclosures, adjustable on 30 degree increments.

Material:
Extruded aluminium section/die-cast, spray finished in RAL 7035

Supply includes:
1 support stand/carrying handle, assembly parts

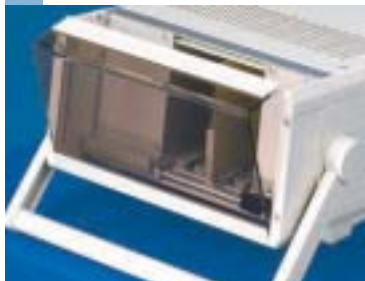
Note: Corner trim for support stands/carrying handles should be ordered separately

For Ripac Vario-Module	P. 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 VM	P. of	Model No. VM
3 U	2	3981.490
4 U	2	3981.500
6 U	2	3981.510

Acrylic front doors, hinged



To protect installed control components.

Material:
Side panels: Aluminium, spray finished in RAL 7035
Window: Smoked acrylic

Supply includes:
1 front door, 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

Keyboard lid 4 U, 84 HP



For retrospective, front mounting on a 4 U high, 84 HP wide Ripac Vario-Module.
Suitable for accommodating mechanical or sealed-membrane keyboards.

Material:
Aluminium, spray finished in RAL 7035

U	Packs	Model No. VM
4	1	3981.480

In detail: Rittal RiCase

Rittal RiCase, the all-metal enclosure, provides the perfect framework for valuable electronics. Extruded aluminium sections and die-cast components create an extremely robust yet lightweight enclosure. The screw fastenings are concealed by specially designed and protective elements. Mounting angles at the front and rear allow the installation of 482.6 mm (19") components. The RiCase desktop enclosure is supplied "flatpack", i.e. partially assembled with ready-made side panels, cover and base trays. Handles, a support stand/carrying handle, a folding keyboard or a glazed door are easily retrofitted.

1 Design features



A high level of stability and protection
due to extruded aluminium sections and die-cast components.



Stable, non-slip design
guaranteed by 10 mm high corner caps. The resulting gap to the desktop or lower enclosure offers good air flow and ventilation conditions.



Symmetrical layout
for 482.6 mm (19") population at front and rear. Mounting angles front and rear allow installation of 482.6 mm (19") components.



Depth- and height-variable installation
with the aid of slide-in strips. Simply slide into the desired channel and attach as required.



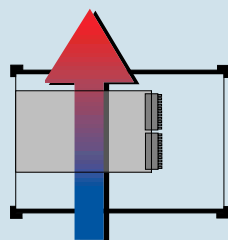
For door fitting
the slide-in strip without tapped holes can be exchanged for a slide-in strip with tapped holes.



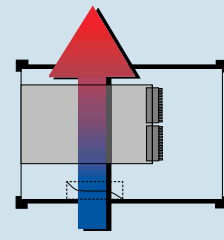
2 Cooling



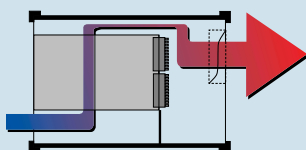
Vertical ventilation
Holes in the base and cover trays allow natural convection from bottom to top.



Ventilation can be additionally improved by fitting a rack-mounted fan.



Diagonal ventilation
Air inlet is at the front via a front panel with vent slots. The heated interior air is dissipated via a fan mounted on the rear door.



Product information

Rittal RiCase



3 Colour variants



RAL 5018



RAL 5012



Ral 7030

RiCase enclosures are supplied in three colour variants as standard. Other colours can also be supplied on request.

- Desktop enclosure for the installation of 482.6 mm (19") rack-mounted equipment and components
- All-metal design affords a high level of mechanical protection
- Ergonomic handle, base and door variants
- For mobile and stationary use
- 3 colour variants as standard

In detail: Rittal RiCase

RiCase enclosures can be configured individually to suit the application using doors, handles and front and rear panels.

1 Handling



Horizontal carrying handles allow easy transportation, even of populated enclosures.



Support stand/carrying handle for portable use, adjusts in 30° increments (Model No. see page 238).



Tower feet ensure stability of the enclosures, in vertical orientation.



Precise stackability is guaranteed, due to the designer corners of the bottom and top, which slot into one another in a non-slip, stable arrangement.

2 Doors and covers



The rear may be sealed with a blanking plate. However, the symmetrical arrangement also permits population from the rear (Model No. see page 240).



A hinged blanking plate improves handling and provides easier access to rear components (Model No. see page 241).



The hinged rear door (also for fan installation) is equipped with a security lock (Model No. see page 240).



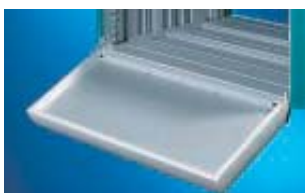
Depending on siting conditions, the horizontally hinged rear panel can prove particularly useful e.g. for use with the tower version (Model No. see page 241).



The front door – featuring acrylic glazing or aluminium plate with left-hand or right-hand hinge, as required – protects the display and control components. The painted aluminium frame section is equipped with a security lock. (Model No. see page 238)



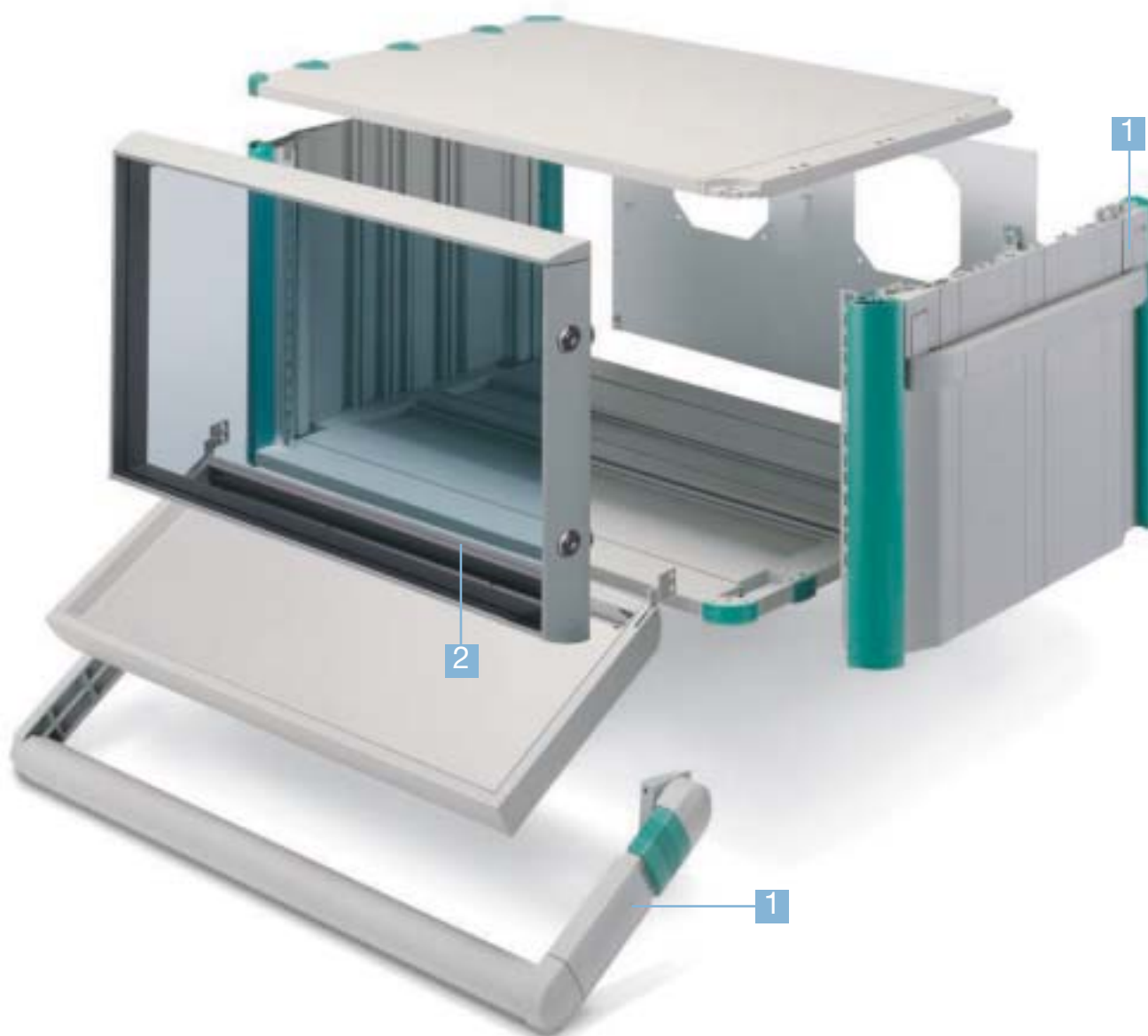
Tower version in conjunction with a corresponding front door and tower feet, RiCases may be configured as tower enclosures.



Keyboard lid suitable for the installation of 482.6 mm (19") keyboards. Horizontally hinged with security lock (Model No. see page 238).

Product information

Rittal RiCase



- Configuration as a tower version
- Front doors made from aluminium or acrylic glazing
- Stackable

Rittal RiCase 269.2 mm (1½ 19")/1 U, 2 U, 3 U, 4 U

* Extended delivery times



**Technical specifications:**

Depth:
300 mm, 420 mm, 540 mm
Installation width:
269.2 mm (1½ 19")
Installation options:
269.2 mm (1½ 19") slide-in equipment and modular assemblies to DIN 41 494, part 5 and IEC 60 297-3

Protection category:

IP 42 for non vented version.

Material/Surface finish:

Cover trays: Extruded aluminium section/die-cast, spray finished in RAL 7035
Side panels: Extruded aluminium section, spray finished in RAL 7035, colours RAL 5018/5012/7030*
Corner caps: Plastic, RAL 5018/5012/7030*
482.6 mm (19") mounting bracket: Extruded aluminium section, clear chromated

Supply includes:

2 side panels,
2 cover trays,
8 corner caps,
8/12/16 cover caps
(300/420/540 mm depth),
4 482.6 mm (19") mounting angles,
4 threaded inserts,
4 plain inserts,
1 rear panel.
Enclosures are supplied partially assembled

* RAL 5018: turquoise
RAL 5012: light blue
RAL 7030: stone grey

Special sizes and colours on request.

RiCase accessories
from page 236

Subrack systems
from page 128

**Hinged blanking plate**

Vertically hinged for installation into electronic enclosures or cases.

**The horizontal carrying handles**

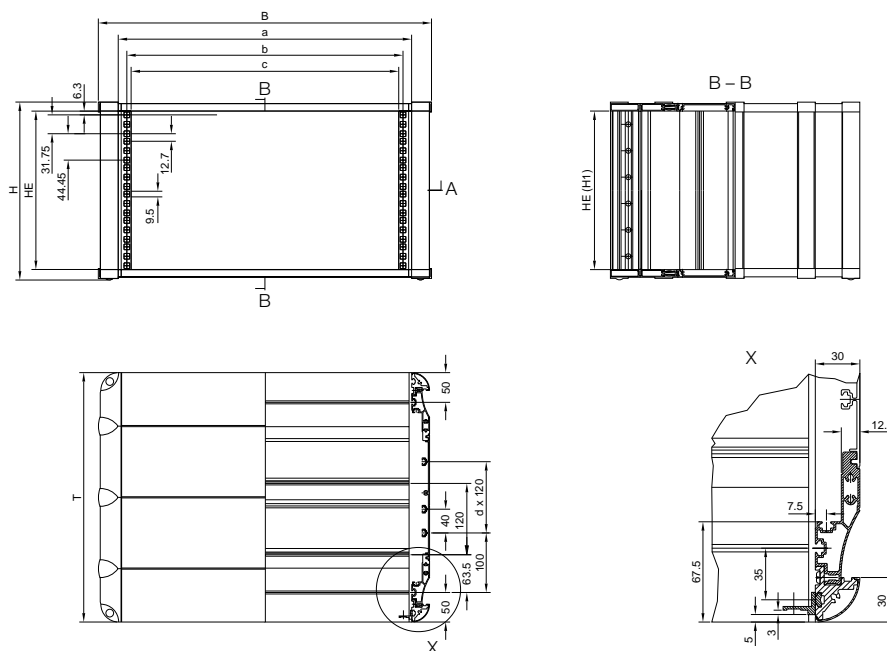
, with a load bearing capacity of up to 30 kg, are easily retro-fitted.

Order information

Rittal RiCase 482.6 mm (19")/3 U, 4 U, 6 U, 7 U

Enclosure for subracks width 482.6 mm (19")		P. of	3 U		4 U		6 U		7 U		9 U		12 U	Page	
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	
Model No. RC non vented, RAL 5018*		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 non vented, RAL 5012*		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 non vented, 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	
Model No. RC vented, RAL 5018*		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 vented, RAL 5012*		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 vented, 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	
H			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			133.8	133.8	178.3	178.3	267.2	267.2	267.2	311.7	311.7	400.6	400.6	534.0	
B			562.0	562.0	562.0	562.0	562.0	562.0	562.0	562.0	562.0	562.0	562.0	562.0	
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	
Weight (kg)	vented non vented		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															
Horiz. carrying handles		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	238
Support stand/ carrying handles	RAL 5018*	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	238
	RAL 5012*	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	238
	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	238
Blanking plate/rear panel		3	3751.600	3751.600	3751.610	3751.610	3751.620	3751.620	3751.620	3751.630	3751.630	3751.530	3751.530	3751.540	240
Rear door, solid		1	3751.100	3751.100	3751.110	3751.110	3751.120	3751.120	3751.120	3751.130	3751.130	–	–	–	240
Rear door, for fan		1	3751.150	3751.150	3751.160	3751.160	3751.170	3751.170	3751.170	3751.180	3751.180	–	–	–	240
Front door, vertic. hinged		1	3751.320	3751.320	3751.330	3751.330	3751.340	3751.340	3751.340	3751.350	3751.350	–	–	–	239
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	236
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	236
Threaded inserts		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	236
Trim 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	237

* Extended delivery times



**Technical specifications:**

Depth: 300 mm, 420 mm and 540 mm
 Installation width: 482.6 mm (19")
 Installation options: 482.6 mm (19") slide-in equipment and modular assemblies to DIN 41 494, part 5 and IEC 60 297-3

Protection category:

IP 42 for no vented version.

Material/Surface finish:

Cover trays: Extruded aluminium section/die-cast, spray finished in RAL 7035

Side panels: Extruded aluminium section, spray finished in RAL 7035,

colours RAL 5018/5012/7030*
 Corner caps: Plastic, RAL 5018/5012/7030*

482.6 mm (19") mounting angles:
 Extruded aluminium section, clear chromated

Supply includes:

2 side panels,
 2 cover trays,
 8 corner caps,
 8/12/16 cover caps
 (300/420/540 mm depth),
 2 482.6 mm (19") mounting angles,
 2 threaded inserts,
 4 plain inserts.
 Enclosures are supplied partially assembled

* RAL 5018: turquoise
 RAL 5012: light blue
 RAL 7030: stone grey

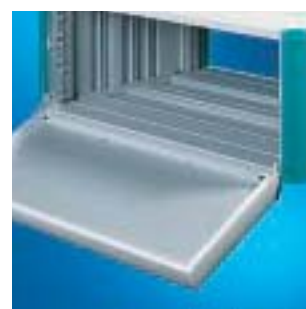
Special sizes and colours on request.

RiCase accessories
 from page 238

Subrack systems
 from page 128



The support stand/carrying handle, of solid aluminium, is adjustable on 30° increments.



The keyboard lid is designed for 482.6 mm (19") keyboards and has a security lock.

Accessories

Rittal RiCase – interior installation

Mounting angles for 482.6 mm (19")



For additional installation of subbracks.

Material:

Extruded aluminium section, clear chromated

Supply includes:

2 mounting angles
Assembly parts

Note:

1 pack of threaded inserts 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

Slide rails



To support heavy slide-in equipment.

Material:

1.5 mm sheet steel, yellow passivated

Supply includes:

2 slide rails, assembly parts

Note:

Threaded inserts should be ordered separately.

Enclosure depth	Packs of	Model No. RC
300 mm	2	3751.500
420 mm	2	3751.510
540 mm	2	3751.520

Threaded inserts



For fastening mounting angles, slide rails, mounting kits, cable trunking etc.
Slides into the grooves of the side panels.

Material:

Extruded aluminium section, clear chromated

Supply includes:

8 threaded inserts

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

Earthing set



For compliance with electrical protection measures; fits all Rittal RiCase enclosures.

Supply includes:

Insert strip, pointed grub screws, green/yellow connection lead, serrated washer, nut

Packs of	Model No. VC
4	3798.000

Mounting rails



- For depth-variable installation of the mounting angles.
- For static or pull-out installation of component shelves.

Material:

Aluminium, clear chromated

Supply includes:

2 mounting rails
Assembly part

For enclosure depth	Packs of	Model No. RC
420 mm	2	3751.410
540 mm	2	3751.420

Note:

Threaded inserts and spacers should be ordered separately.

Rittal RiCase – interior installation

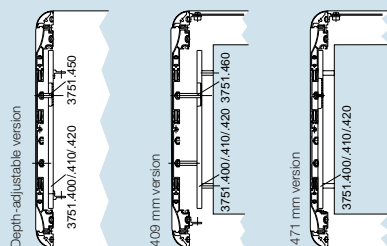
Spacers



For securing mounting rails. With 471 mm component shelves, the mounting rails are screwed directly to the side panel.

Supply includes:
4 spacers

Note:
Threaded inserts should be ordered separately.



Assembly kit for	Packs of	Model No. RC
depth-adjustable mounting angles	4	3751.450
component shelf installation 409 mm wide ¹⁾	4	3751.460
component shelf installation 471 mm wide ²⁾	Direct installation	

¹⁾ 482.6 mm (19") component shelves, see page 360

²⁾ Component shelves, see IT Catalogue, page 429

Trim section

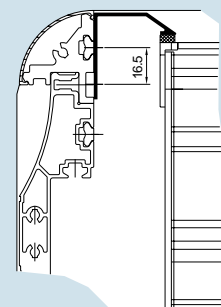


To cover the sides on the left and right of the subrack when no rear door or rear panel is used.

Material:
Extruded aluminium section, spray finished in RAL 7035

Supply includes:
2 trim sections
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



M6 assembly screws



For captive nuts, including plastic washers.

Description	Packs of	Model No. EL
Cheese-head screw	100	2093.200
Posidrive-head screw	100	2089.000

M6 captive nuts



For fastening accessories **with** contact of the subrack to the enclosure/frame.

For fastening accessories **without** contact of the subrack to the enclosure/frame.

Packs of	Model No. EL
50	2094.200
Packs of	Model No. EL
50	2092.200

Accessories

Rittal RiCase – external mounting

Horizontal carrying handles



- For easy, secure transportation
- May be retrofitted
- Load capacity 30 kg/pair

Material:

End pieces: Die-cast, spray finished in RAL 7035
Centre part: Extruded aluminium section, painted in RAL 7035

Supply includes:

2 carrying handles, assembly parts

For enclosure depth	Packs of	Model No. RC
300 mm	2	3751.250
420 mm	2	3751.260
540 mm	2	3751.270

Support stand/carrying handles



- Support stand/carrying handle adjustable in 30° increments
- Suitable for retro-fitting to 2 – 7 U
- For 269.2 mm (1 1/2 19") and 482.6 mm (19") wide enclosures
- Load capacity 30 kg

Material:

Hinged part: Die-cast, spray finished in RAL 7035, other colours RAL 5018/5012/7030
Centre part: Extruded aluminium section, spray finished in RAL 7035 with plastic coating

Supply includes:

1 support stand/carrying handle
Assembly parts



RAL 5018



RAL5012

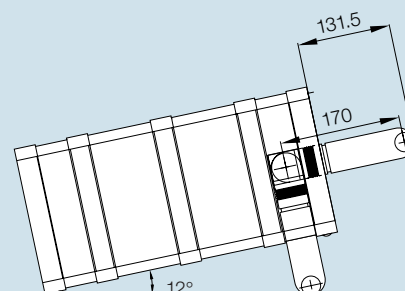


RAL7030

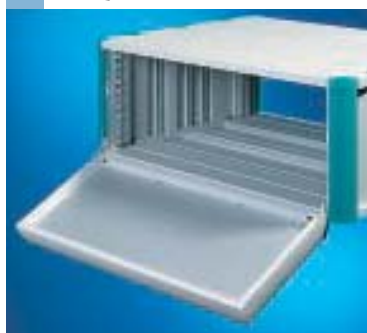
For enclosure width	Col. RAL	W mm	Model No. RC
269.2 mm (1 1/2 19")	5018*	392	3751.200
269.2 mm (1 1/2 19")	5012*	392	3751.202
269.2 mm (1 1/2 19")	7030	392	3751.204
482.6 mm (19")	5018*	605	3751.210
482.6 mm (19")	5012*	605	3751.212
482.6 mm (19")	7030	605	3751.214

W = total width handle

* 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 in RAL 7035
Base and cover plate: Aluminium, spray finished in RAL 7035

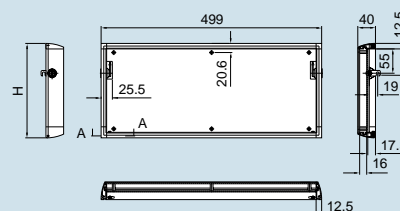
Supply includes:

1 keyboard lid, assembly parts

Note:

Only in conjunction with support stand/carrying handle

For enclosure width	H (U)	Packs of	Model No. RC
482.6 mm (19")	4	1	3751.800
482.6 mm (19")	6	1	3751.810



Front door, vertically hinged



For mechanical protection of built-in control components.

- Optional right-hand or left-hand hinges
- With security lock

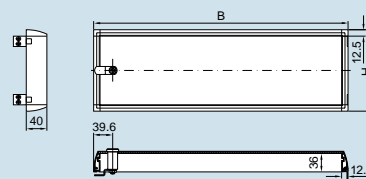
Material:

Frame section: Extruded aluminium section, spray finished in RAL 7035
 Corner pieces: Die-cast aluminium, spray finished in RAL 7035
 Window: Smoked acrylic

Supply includes:

1 front door, assembly parts

For enclosure width	W (B) mm	H (U)	Model No. RC
269.2 mm (1 1/2 19")	289	3	3751.300
269.2 mm (1 1/2 19")	289	4	3751.310
482.6 mm (19")	503	3	3751.320
482.6 mm (19")	503	4	3751.330
482.6 mm (19")	503	6	3751.340
482.6 mm (19")	503	7	3751.350



Aluminium front door, vertically hinged



For mechanical protection of built-in control components.

- Optional right-hand or left-hand hinges
- With security lock

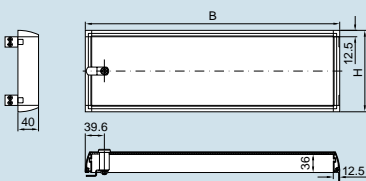
Material:

Frame section: Extruded aluminium section, spray finished in RAL 7035
 Corner pieces: Die-cast aluminium, spray finished in RAL 7035
 Aluminium plate

Supply includes:

1 front door, assembly parts

For enclosure width	W (B) mm	H (U)	Model No. RC
482.6 mm (19")	503	3	3751.360
482.6 mm (19")	503	4	3751.370
482.6 mm (19")	503	6	3751.380



Front door for tower



For mechanical protection of built-in control components.

- Optional right-hand or left-hand hinges
- With security lock

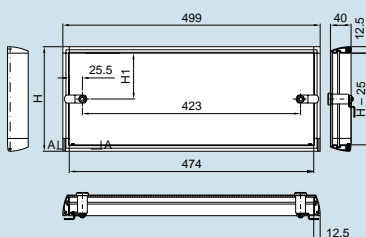
Material:

Frame section: Extruded aluminium section, spray finished in RAL 7035
 Corner pieces: Die-cast aluminium, spray finished in RAL 7035
 Window: Smoked acrylic

Supply includes:

1 front door, assembly parts

For enclosure width	W (B) mm	H (U)	Model No. RC
482.6 mm (19")	503	3	3751.390
482.6 mm (19")	503	4	3751.430



Tower feet



For vertical orientation of enclosures.
 May be retrofitted.

Material:

Plastic to UL 94-V0, self-extinguishing, RAL 5018/5012/7030

Supply includes:

4 tower feet, assembly parts

Colour RAL	P. of	Model No. RC
5018	1 set	3751.850
5012	1 set	3751.852
7030	1 set	3751.854



RAL5018



RAL5012



RAL7030

Accessories

Rittal RiCase - external mounting

Rear panel



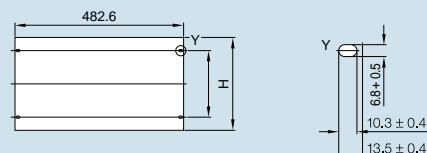
To cover the rear.
May be screw fastened, incl. mounting angles.

Material:
2/3 mm aluminium, natural anodised

Supply includes:
1 rear panel
2 482.6 mm (19") mounting angles
Assembly parts

For enclosure width 482.6 mm (19")

e1	e2	H (U)	Packs of	Model No. RC
57.15	-	3	1	3751.600
101.6	-	4	1	3751.610
190.5	-	6	1	3751.620
57.15	88.9	7	1	3751.630
120.6	101.6	9	1	3751.530
190.6	13.3	12	1	3751.540



Rear door, solid

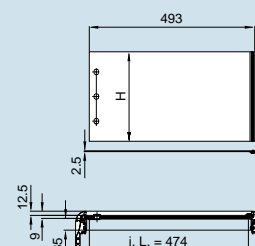


To cover the rear.
■ Hinged, with security lock
■ Optional right-hand or left-hand hinges

Material:
Aluminium, spray finished in RAL 7035

Supply includes:
1 rear door, hinged
Assembly parts

For enclosure width	H (U)	Packs of	Model No. RC
482.6 mm (19")	3	1	3751.100
482.6 mm (19")	4	1	3751.110
482.6 mm (19")	6	1	3751.120
482.6 mm (19")	7	1	3751.130



Rear door, for fan installation

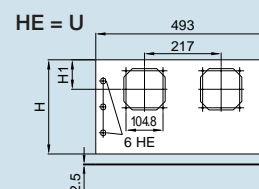


To cover the rear.
■ With security lock
■ Optional right-hand or left-hand hinges
■ For 120 mm fan

Material:
Aluminium, spray finished in RAL 7035

Supply includes:
1 rear door, hinged
Assembly parts

For enclosure width	H (U)	H1	Model No. RC
482.6 mm (19")	3	66.65	3751.150
482.6 mm (19")	4	88.90	3751.160
482.6 mm (19")	6	83.50	3751.170
482.6 mm (19")	7	83.50	3751.180



Fan expansion kit



With one fan, including assembly parts and connection cable (0.61 m).

Technical specifications:
Rated operating voltage: 230 V
Power consumption: 19/18 W at 50/60 Hz
Air throughput (unimpeded air flow):
140/165 m³/h, 50/60 Hz
Temperature range: -10°C to +55°C

	P. of	Model No. DK
Fan	1 set	7980.000

Blanking plates

**Material:**

3 mm aluminium, natural anodised
482.6 mm (19")
2 mm aluminium, natural anodised
269.2 mm (1 1/2 19")

Notes:

Order mounting angles for 482.6 mm (19")
blanking plates separately if used as rear panel.

U	Packs of	Model No. VC 269.2 mm (1 1/2 19")	Model No. EL 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

Ventilation front plates



For venting enclosures from front or rear.

Material:

3 mm aluminium, natural anodised

Width	U	P. 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

Blanking plate, vertically hinged



For installation in electronic enclosures or cases.

Material:

Hinges: Die-cast zinc, zinc-plated
Blanking plate: 3 mm aluminium, natural anodised

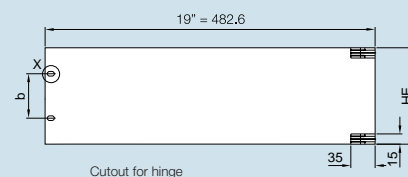
Supply includes:

2 hinges, 1 front plate, assembly parts

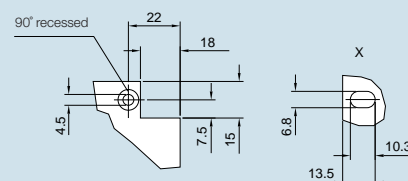
Note:

Order mounting angles for 482.6 mm (19") cases
separately if used as rear panel.

Width	U	b mm	Model No. EL
482.6 mm (19")	3	57.15	1940.000
482.6 mm (19")	6	190.50	1941.000



HE = U



Blanking plate, horizontally hinged



For installation in electronic enclosures or cases.

Material:

Hinges: Die-cast zinc, zinc-plated
Blanking plate: 3 mm aluminium, natural anodised

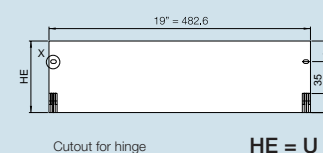
Supply includes:

2 hinges, 1 front plate, assembly parts

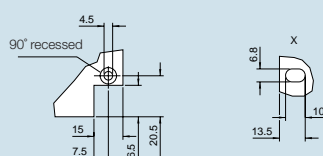
Note:

Order mounting angles for 482.6 mm (19") cases
separately if used as rear panel.

Width	U	b mm	Model No. EL
482.6 mm (19")	3	37.7	1944.000
482.6 mm (19")	6	37.7	1945.000



HE = U



In detail: Rittal Vario-Case iS

Function combined with an attractive design are the distinguishing features of the Rittal Vario-Case iS instrument case. It is suitable for the installation of complete slide-in equipment, as well as individual assemblies. The symmetrical construction guarantees simple, convenient handling. The continuous pitch pattern of channels in the side panels offers the ultimate in installation versatility.

1 Design features



Cover/base trays
of plastic, UL 94-V0, with or without vent slots.



Side panel with pitch pattern of channels made from extruded aluminium section
the robust basis for incorporating 482.6 mm (19") slide-in equipment and modular assemblies in a depth-variable manner.



Double fold-out enclosure feet
in the base trays enable two different angles of inclination.



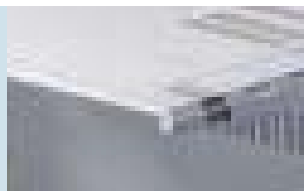
Threaded inserts
for depth- and height-variable mounting of system accessories (see page 250).



Slide rails
to support heavy installed equipment (see page 251).



Mounting kit
by using suitable horizontal rails, board type plug-in units may be installed directly (see page 250).



Concealed assembly screws
for a good appearance.



Stackable
due to integral enclosure feet and recepticals, even with different depths.

2 Handling



Support stand/carrying handle
to incline cases up to 30° or for convenient transportation (see page 253).



Handles
for horizontal or vertical mounting on the side panels (see page 253).



Recessed handle
in the side panels, for secure, convenient transportation.

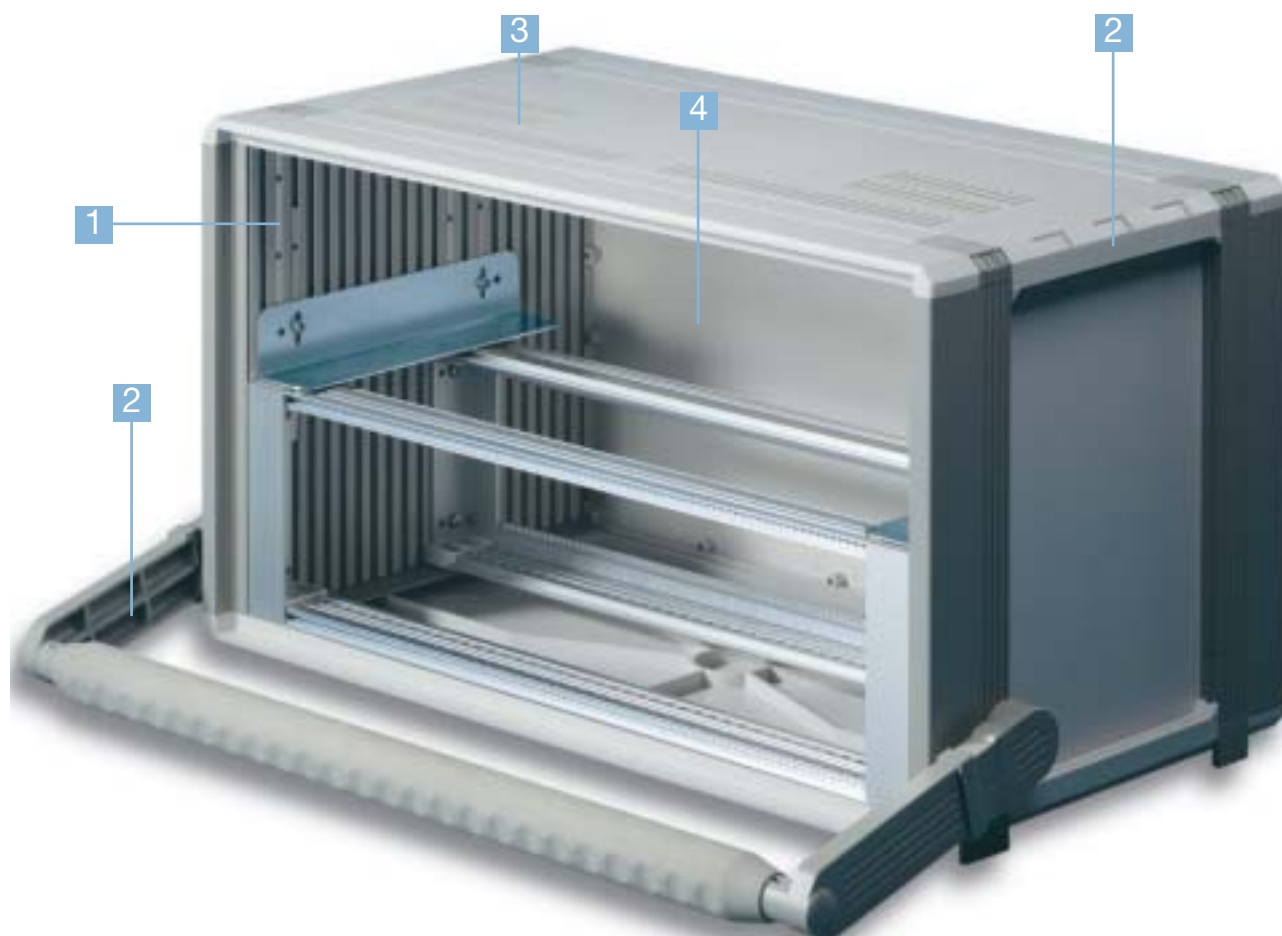
3 Climate control



Climate control
Individual ventilation concepts, e.g. front panels with vent slots, vented base/cover trays or rack-mounted fans.

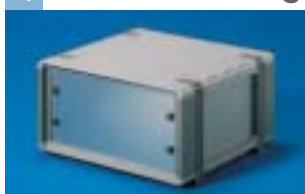
Product information

Rittal Vario-Case iS



- Instrument case for the installation of complete 482.6 mm (19") rack mounts or individual board type plug-in units
- Plastic roof/base trays
- Depth- and height-variable configuration
- For mobile and stationary use

4 Enclosure configuration



Blanking plates of anodised aluminium. Also available in a hinged version (horizontally or vertically hinged) (see page 254).



Front doors of acrylic, available both horizontally and vertically hinged. In addition, the vertically hinged version is also available with an aluminium plate instead of glass. A security lock is installed in all cases. See page 252 for further information.



Keyboard lid for installing 482.6 mm (19") keyboards. The aluminium trim plate is easily machined to order (see page 251).

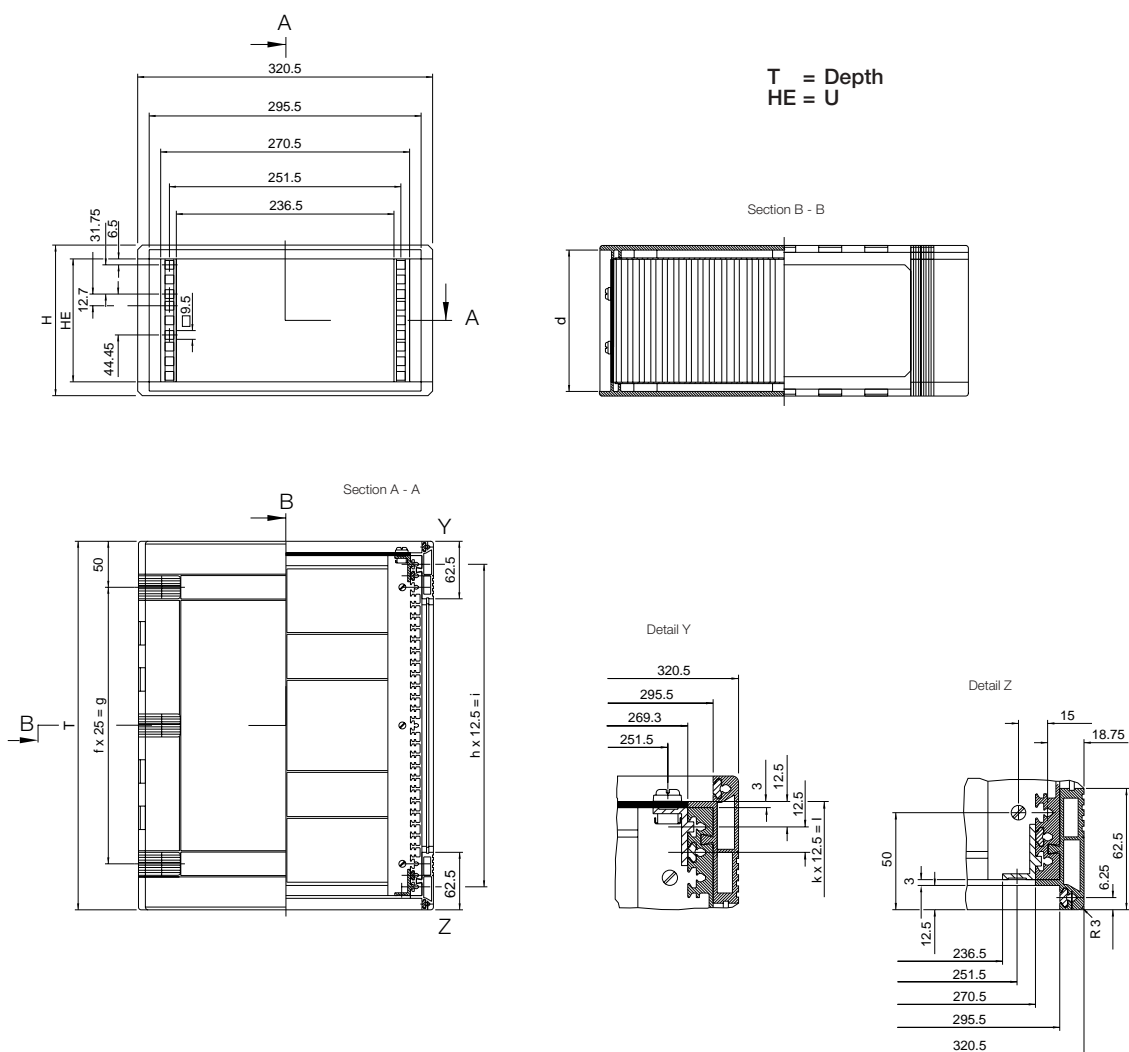


Drawers/utility table create a tidy working environment (see page 253).

Order information

Rittal Vario-Case iS, 269.2 mm (1 1/2 19")/1 U, 2 U, 3 U, 4 U

Enclosure for subrack width 269.2 mm (1½ 19")	Packs of	1 U	2 U	3 U		4 U		Page	
Depth (mm)		300	300	300	400	300	400		
Model No. without vent slots	VC	1	3710.000	3720.000	3730.000	3731.000	3740.00	3740.000	
H		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		
Accessories									
Mounting kit	VC	1	–	–	3780.000	3780.000	–	–	250
Carrying handles, vertical	VC	2	–	–	3785.000	3785.000	–	–	253
Carrying handles, horizontal	VC	2	3787.000	3787.000	3787.000	3788.000	3787.000	3788.000	253
Blanking plate/rear panel	VC	3	3746.000	3747.000	3748.000	3748.000	3749.000	3749.000	254
Slide rails	VC	4	3782.000	3782.000	3782.000	3783.000	3782.000	3783.000	251
Acrylic door, vertically hinged	VC	1	–	–	3700.000	3700.000	3701.000	3701.000	252
Other VC accessories	see page 250 – 255								



**Technical specifications:**

Total depth: 300 mm, 400 mm
 Installation width:
 269.2 mm (1½ 19")
 Installation facilities:
 269.2 mm (1½ 19") slide-in equipment and modular assemblies to DIN 41 494, part 5 and IEC 60 297-3

Material:

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 cover trays
 4 (6) enclosure feet and
 4 (6) covers
 2 side panels
 1 rear panel
 4 mounting angles
 4 threaded inserts
 4 plain inserts
 Assembly parts.
 Enclosures are supplied partially assembled.

Accessories:

see page 250 – 255

EMC version
 available on request

Special sizes and colours
 available on request



Support stand/carrying handle
 For Vario-Case enclosures.
 Model No. see page 253.



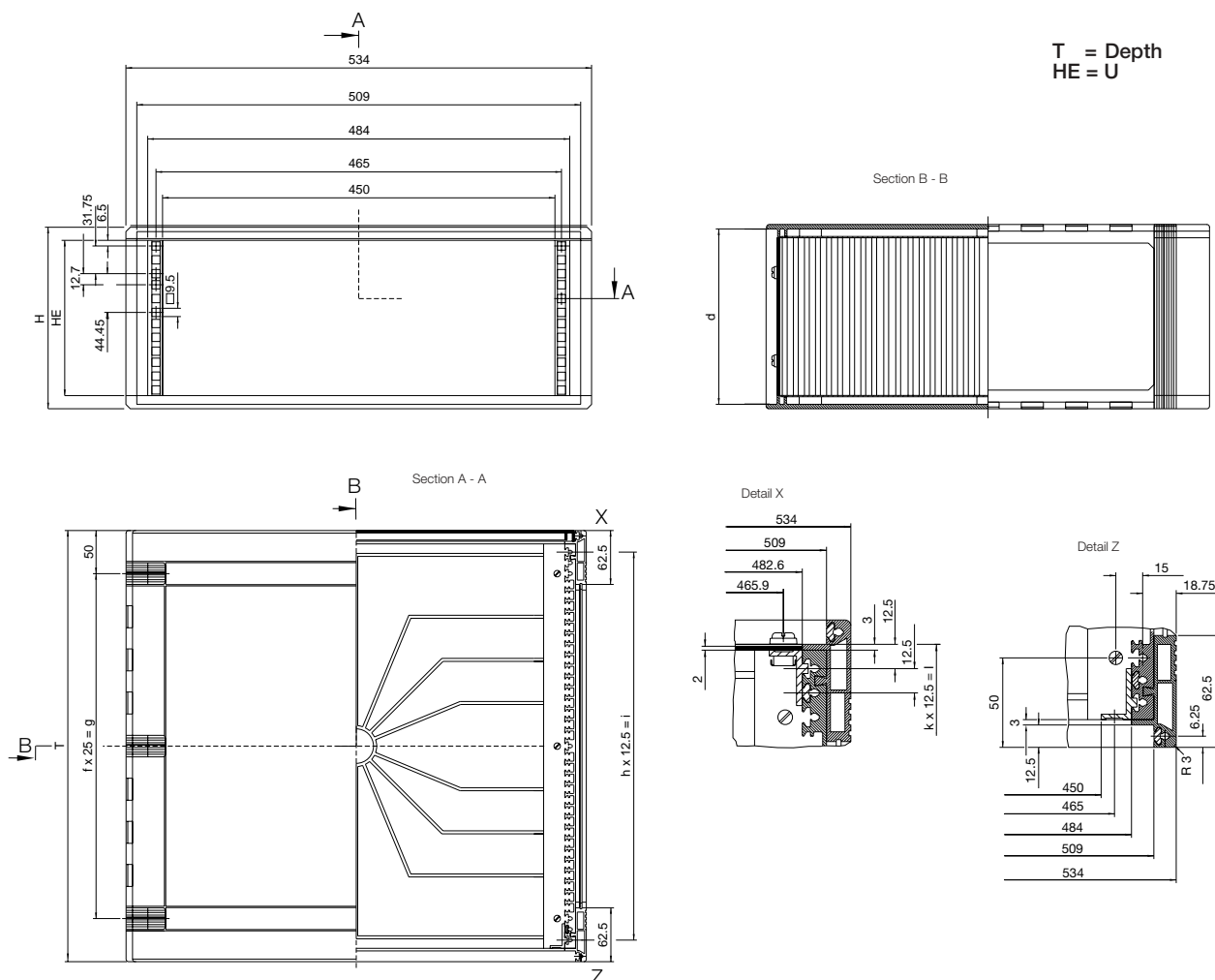
Blanking plate
 Serves as a cover for VC.
 Model No. see page 254.

Order information

Rittal Vario-Case iS, 482.6 mm (19")/1 U, 4 U, 7 U

Enclosure for subrack width 482.6 mm (19")	Packs of	1 U		4 U			7 U		Page
Depth (mm)		300	400	300	400	500	400	500	
Model No. without vent slots	VC	1	3713.000*	3714.000	3743.000	3744.000	3745.000*	3774.000	3775.000
Model No. with vent slots	VC	1	3713.200*	3714.200	3743.200	3744.200	3745.200*	3774.200	3775.200
H		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	
Accessories									
Carrying handles, horizontal	VC	2	3787.000	3788.000	3787.000	3788.000	3789.000	3788.000	3789.000
Support stand/carrying handle	VC	1	3797.000	3797.000	3797.000	3797.000	3797.000	3797.000	3797.000
Blanking plate/rear panel	EL	3	1931.200	1931.200	1934.200	1934.200	1934.200	1935.200	1935.200
Slide rails	VC	4	3782.000	3783.000	3782.000	3783.000	3784.000	3783.000	3784.000
Acrylic door, vertically hinged	VC	1	–	–	3703.000	3703.000	3703.000	3705.000	3705.000
Acrylic door, horizont. hinged	VC	1	–	–	3727.000	3727.000	3727.000	3729.000	3729.000
482.6 mm (19") 1 U drawer	PS	1	–	–	–	–	4541.000	–	4541.000
482.6 mm (19") 3 U drawer	PS	1	–	–	–	–	4542.000	–	4542.000
Other VC accessories			see page 250 – 255						

* Extended delivery times



**Technical specifications:**

Installation depth: 300 mm,
400 mm, 500 mm
Installation width: 482.6 mm (19")
Installation facilities:
482.6 mm (19") slide-in equip-
ment and modular assemblies
to DIN 41 494, part 5 and
IEC 60 297-3

Material:

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 cover trays
4 (6) enclosure feet and
4 (6) covers
2 side panels
1 rear panel, solid
4 mounting angles
4 threaded inserts
4 plain inserts
Assembly parts.
Enclosures are supplied partially
assembled.

Accessories:

see page 250 – 255

**EMC version available
on request**

**Special sizes and colours
available on request**



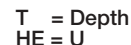
Vertical carrying handles
for easy transportation.
Model No. see page 253.



Ventilation front plate
in 1 U or 3 U.
Model No. see page 254.

Rittal Vario-Case iS, 482.6 mm (19")/3 U, 6 U, 9 U

see page 250 – 255



**Technical specifications:**

Installation depth: 300 mm,
400 mm, 500 mm
Installation width: 482.6 mm (19")
Installation facilities:
482.6 mm (19") slide-in equip-
ment and modular assemblies to
DIN 41 494, part 5 and
IEC 60 297-3

Material:

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 cover trays
4 (6) enclosure feet and
4 (6) covers
2 side panels
1 rear panel with vent slots
2 mounting angles
2 threaded inserts
2 plain inserts
Assembly parts.
Enclosures are supplied partially
assembled.

Accessories:

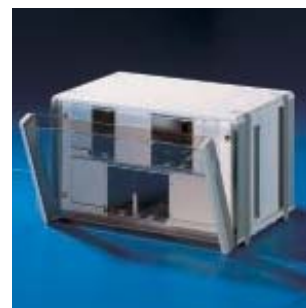
see page 250 – 255

**EMC version available
on request**

**Special sizes and colours
available on request**



Installation facility for **sub racks**
and modular **board type plug-in**
units.



Acrylic door, horizontally or
vertically hinged.
Model No. see page 252.

Accessories

Rittal Vario-Case iS

Mounting kit



For direct installation of board type plug-in units without using a subrack.

The vertical rails/adaptors of the assembly parts are used to fasten horizontal rails/horizontal rail sets in Rittal 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.

The horizontal rails/horizontal rail sets must be ordered separately.

For VC	Model No. VC
3 U	3780.000
6 U	3781.000

Horizontal rail sets



To equip Rittal Vario-Case iS enclosures for the direct installation of board type plug-in units, without subracks.

Accessories:

Guide rails,
see page 160

	Fitting 3 U, 84 HP		Fitting 6 U, 84 HP	
	without integrated Z rails for backplanes or female connectors to DIN 41 612 or 41 617 Z rails/insulating strips should be ordered separately	with integrated Z rails for female connectors to DIN 41 612	without integrated Z rails for backplanes or female connectors to DIN 41 612 or 41 617 Z rails/insulating strips should be ordered separately	with integrated Z rails for female connectors to 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

Threaded inserts M4



For fastening mounting angles, slide rails, cable trunking etc. to the side panels.

Material:

Aluminium, natural anodised

For VC	Packs of	Model No. VC
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

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 enclosures.
For depth-variable installation of subracks/slide-in equipment via threaded inserts.

Material:
Aluminium, natural anodised

Supply includes:
Sections, 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

Slide rails



To support heavy subracks/slide-in equipment.

Material:
1.5 mm sheet steel, passivated

Supply includes:
Slide rails, assembly screws

For enclosure	Packs of	Model No. VC
300 mm	4	3782.000
400 mm	4	3783.000
500 mm	4	3784.000

Note:
To secure the slide rails in the enclosure, threaded inserts should be ordered separately.

Earthing set



For compliance with electrical protection measures; fits all Rittal Vario-Case iS enclosures.

Supply includes:
Insert strip, pointed grub screws, green/yellow connection lead, serrated washer, nut

Packs of	Model No. VC
4	3798.000

Keyboard lid



Suitable for the installation of 482.6 mm (19") keyboards. Hinged, with security lock.

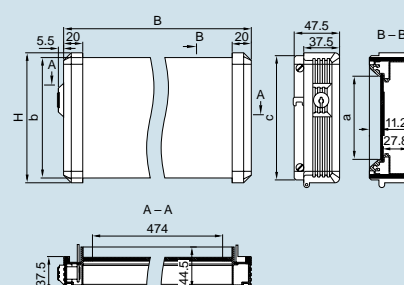
Supplied form:
Fitted keyboard lid, with solid aluminium plate on the inside (without keyboard)

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:
Keyboard lid, assembly parts

	P. of	4 U	6 U
Width (B)	1	534 mm	534 mm
H	1	203 mm	292 mm
a	1	155 mm	244 mm
b	1	193 mm	282 mm
c	1	197 mm	286 mm
Model No. VC		3722.000	3723.000

3 U available on request.



German patent no. 40 34 779
German registered design
no. M 91 03 320
IR registered design no.
DM/019 564 with validity for BE,
CH, ES, FR, IT, LU, NL

Accessories

Rittal Vario-Case iS

Front doors, vertically hinged



Aluminium or acrylic

- To protect installed control components
- Optional right-hand or left-hand hinges
- Generally fitted with a security cylinder
- May be used as a front or rear door

Material:

Side panels: Extruded aluminium section/
die-cast, spray finished in RAL 7030
Centre part: Aluminium, spray-finished
similar to RAL 7035

Supply includes:

1 front door, assembly parts



Aluminium door for VC	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

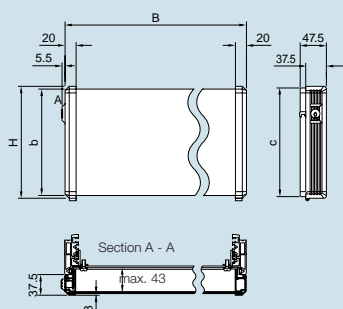
Material:

Side panels: Extruded aluminium section/
die-cast, spray finished in RAL 7030
Window: Smoked acrylic

Supply includes:

1 front door, assembly parts

Acrylic door for VC	U	W (B) mm	H mm	b mm	c mm	Model No. VC
269.2 mm (1 1/2 19")	3	320.5	157.5	147.0	151.5	3700.000
269.2 mm (1 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



German patent no. 3813 003

European patent no. 0 338 339

with validity for CH, GB, NL

German registered design no. 1 MR 371

IR registered design no. DM 011 876

with validity for BE, CH, DE, ES, FR, IT,
LU, NL

Front doors, horizontally hinged



Acrylic

- To protect installed control components
- Optional top or bottom hinges
- Generally fitted with lock and security cylinders

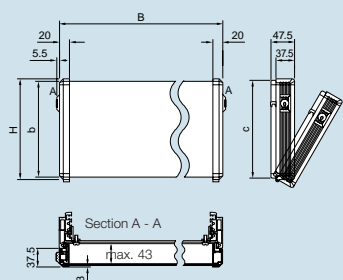
Material:

Side panels: Extruded aluminium section/die-
cast, spray finished in RAL 7030
Window: Smoked acrylic

Supply includes:

1 front door, assembly parts

For VC	U	W (B) mm	H mm	b mm	c mm	Model No. VC
269.2 mm (1 1/2 19")	3	320.5	157.5	147.0	151.5	3724.000
269.2 mm (1 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



German patent no. 3813 003

European patent no. 0 338 339

with validity for CH, GB, NL

German registered design no. 1 MR 371

IR registered design no. DM 011 876

with validity for BE, CH, DE, ES, FR, IT,
LU, NL

Support stand/carrying handle



- Suitable for retrofitting to 2 U – 6 U
- Support stand/carrying handle adjustable in 30° increments
- Load capacity up to 30 kg

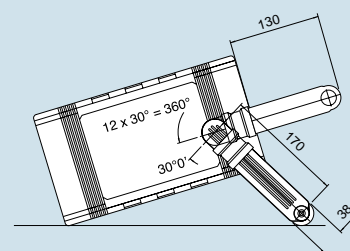
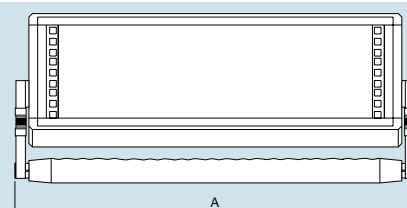
Material:

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:

1 support stand/carrying handle, assembly parts

For VC	A mm	Packs of	Model No. VC
269.2 mm	364.5	1	3796.000
482.6 mm	578.0	1	3797.000



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 similar to RAL 7035

Supply includes:

2 carrying handles, assembly parts

For VC	Packs of	Model No. VC
3 U	2	3785.000
6 U	2	3786.000

German patent no. 36 33 205

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 similar to RAL 7035

Supply includes:

2 carrying handles, 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

German patent no. 36 33 205

Rubber caps for VC feet



Designed for retrofitting to the feet of Vario-Case enclosures, these rubber caps prevent slipping on smooth surfaces.

Material:

Soft PVC, Shore hardness 60°, RAL 7030

Packs of	Model No. VC
12	3736.000

German patent no. 36 33 205

Drawer/utility table



For keyboards up to 440 mm wide, operating manuals.
Minimum depth of VC enclosures: 500 mm.

Material:

Aluminium

Supply includes:

1 drawer, 1 pair of telescopic slides, assembly parts

U	Model No. PS
1	4541.000
2	4548.000
3	4542.000

Accessories:

Installation kit,
Model No. VC 3793.000 (Packs of 4)
Strips should be ordered separately.
Model No. see page 250.

Accessories

Rittal Vario-Case iS

Blanking plates



Material:
3 mm aluminium, natural anodised
482.6 mm (19").
2 mm aluminium, natural anodised
269.2 mm (1 1/2 19").

U	Packs of	Model No. VC 269.2 mm (1 1/2 19")	Model No. VC 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

Ventilation front plates



For venting enclosures and cases.

Material:
3 mm 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

Blanking plate, vertically hinged

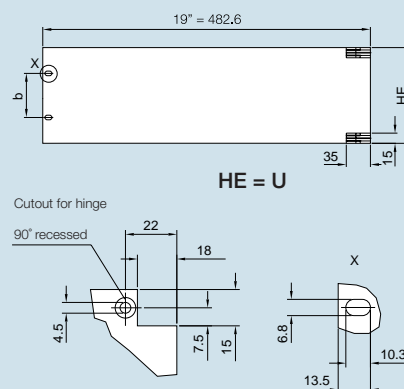


For installation in 482.6 mm (19") enclosures.

Material:
Hinges: Die-cast zinc, zinc-plated
Blanking plate: 3 mm aluminium, natural anodised

Supply includes:
2 hinges, 1 front plate, assembly parts

Width	U	b mm	Model No. EL
482.6 mm (19")	3	57.15	1940.000
482.6 mm (19")	6	190.50	1941.000



Blanking plate, horizontally hinged

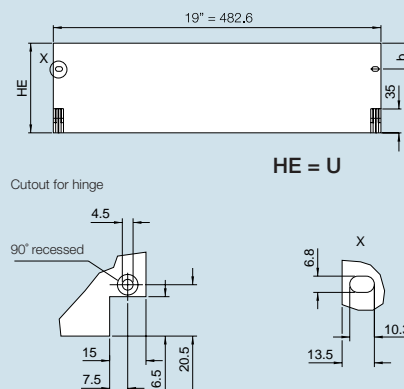


For installation in 482.6 mm (19") enclosures.

Material:
Hinges: Die-cast zinc, zinc-plated
Blanking plate: 3 mm aluminium, natural anodised

Supply includes:
2 hinges, 1 front plate, assembly parts

Width	U	b mm	Model No. EL
482.6 mm (19")	3	37.7	1944.000
482.6 mm (19")	6	37.7	1945.000



Hinge



For hinged blanking plates.

Material:
Die-cast zinc, zinc-plated

Packs of	Model No. EL
2	1950.000

German patent no. 40 04 264
UK patent no. 2 243 025

M6 x 16 assembly screws



For captive nuts, including plastic washers.

Description	Packs of	Model No. EL
Cheese-head screw	100	2093.200
Posidrive-head screw	100	2089.000

M6 captive nuts



For fastening accessories **with** contact of the subrack to the enclosure/frame.

Packs of	Model No. EL
50	2094.200

For fastening accessories **without** contact of the subrack to the enclosure/frame.

Packs of	Model No. EL
50	2092.200



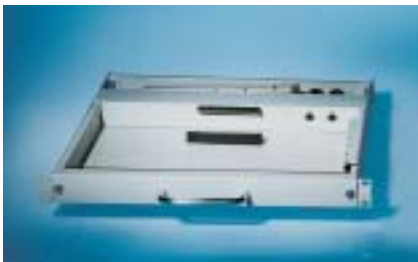
Ultimate ease of operation.
Reliable and controlled.



Operation, monitoring and controlling.



Apart from a keyboard, the monitor/keyboard drawer also contains a fold-out TFT display with 15" diagonal. The telescopic slides with locking feature allow it to be pulled out easily when required.



The combination of the 7 U TFT display and separate keyboard rack is ideal for a permanent available display panel. This setup requires just 1 U installation space and is suitable for the installation of standard 482.6 mm (19") keyboards.

Direct on-site computer access has just become easier. The monitor/keyboard drawer with integral TFT display and keyboard requires just 1 U for installation. The drawer pulls out easily on telescopic slides. The display can be flipped up, and closed down after use.



The patented mouse pad is used in conjunction with the keyboard drawer. Once your work is finished, the mouse pad is simply folded over the keyboard.

Operation, monitoring and controlling	Monitor/keyboard drawer	260/261
	7 U TFT monitor	262/263
	Keyboard drawer	262/263
	Monitoring unit SSC	264/265
	Monitoring unit CMC	266/267

The same applies to the keyboard drawer which is designed to accommodate standard 482.6 mm (19") keyboards. When combined with a 7 U TFT display, it is possible to configure a complete unit. The Rittal SSC allows several computers to be operated particularly cost-effectively using just one keyboard and just one monitor. The Rittal CMC ensures all-round monitoring of all potential interference factors. All relevant data for an enclosure and its environment can be monitored in this way.



The Rittal SSC allows several computers to be operated via a single input and display unit.



Rittal CMC ensures a high level of security due to all-round monitoring of all potential factors such as smoke, temperature, vibration, humidity or access control with enclosure applications.

In detail: Monitor/keyboard drawer

Specifically designed for use in 482.6 mm (19") enclosures for server or industrial use, with a variable installation depth from 600 – 900 mm. The space-saving 1 U sheet steel structure ensures ease of operation, even in tough environments. Telescopic slides allow the drawer to be pulled out safely and the 15" TFT display to be flipped up completely. The keyboard is optionally available with a touchpad mouse or trackball.

1 Design features/handling monitor/keyboard drawer



Stability

Sheet steel enclosure chassis ensures optimum protection, even in tough industrial environments.



Variable depth installation

in 482.6 mm (19") cases and enclosures, with depths ranging from 600 – 900 mm. Easy installation from the enclosure rear.



Accessibility

The drawer pulls out forwards and the screen flips up.



Connections

for video, mains voltage, keyboard and mouse, at the rear.



Telescopic slides

with safety lock to prevent unintentional insertion or withdrawal of the monitor. The rack-mounted chassis can also be pulled out separately for servicing and replaced.



Integral cable support

prevents damage to the cables when extended.



Power pack

may be switched off separately, i.e. no standby power consumption.



Lockable front



Colour variants

available on request.

2 TFT display



15" TFT display

with anti-reflection coated safety glass screen. Switches itself off automatically when closed.



Optional 17" TFT display

with anti-reflection coated safety glass screen. Switches itself off automatically when closed.

3 Keyboard



Keyboard

with touchpad mouse or trackball as standard. Country-specific versions available on request.

Product information

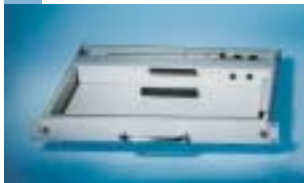
Operator interfaces



482.6 mm (19") keyboard drawer/7 U TFT display

The 482.6 mm (19") keyboard drawer requires just 1 U for installation. It is designed to accommodate standard 482.6 mm (19") keyboards with touchpad or trackball. The installation kit included with the supply supports variable depth installation in enclosures ranging from 600 – 900 mm deep. When closed, the drawer can be locked to guard against unauthorised access. When combined with the 7 U 15" TFT display, it is possible to configure a complete operation and data viewing unit.

4 Keyboard drawer



Stability

Sheet steel enclosure chassis ensures optimum protection, even in tough industrial environments.



Mouse pad

may optionally be mounted on the left or right.



Keyboard installation

prepared for the installation of 482.6 mm (19") keyboards with touchpad mouse or trackball.



Integral PS/2 connector
accessible from the front, for easy keyboard installation.

5 TFT display



Simple assembly

from the rear of the enclosure, even with pre-configured enclosures.



15" TFT display

dust-proof, splash-proof front (IP65), integrated into a 482.6 mm (19") 7 U blanking plate.



Connections

for video, infrared and brightness sensor at the rear.

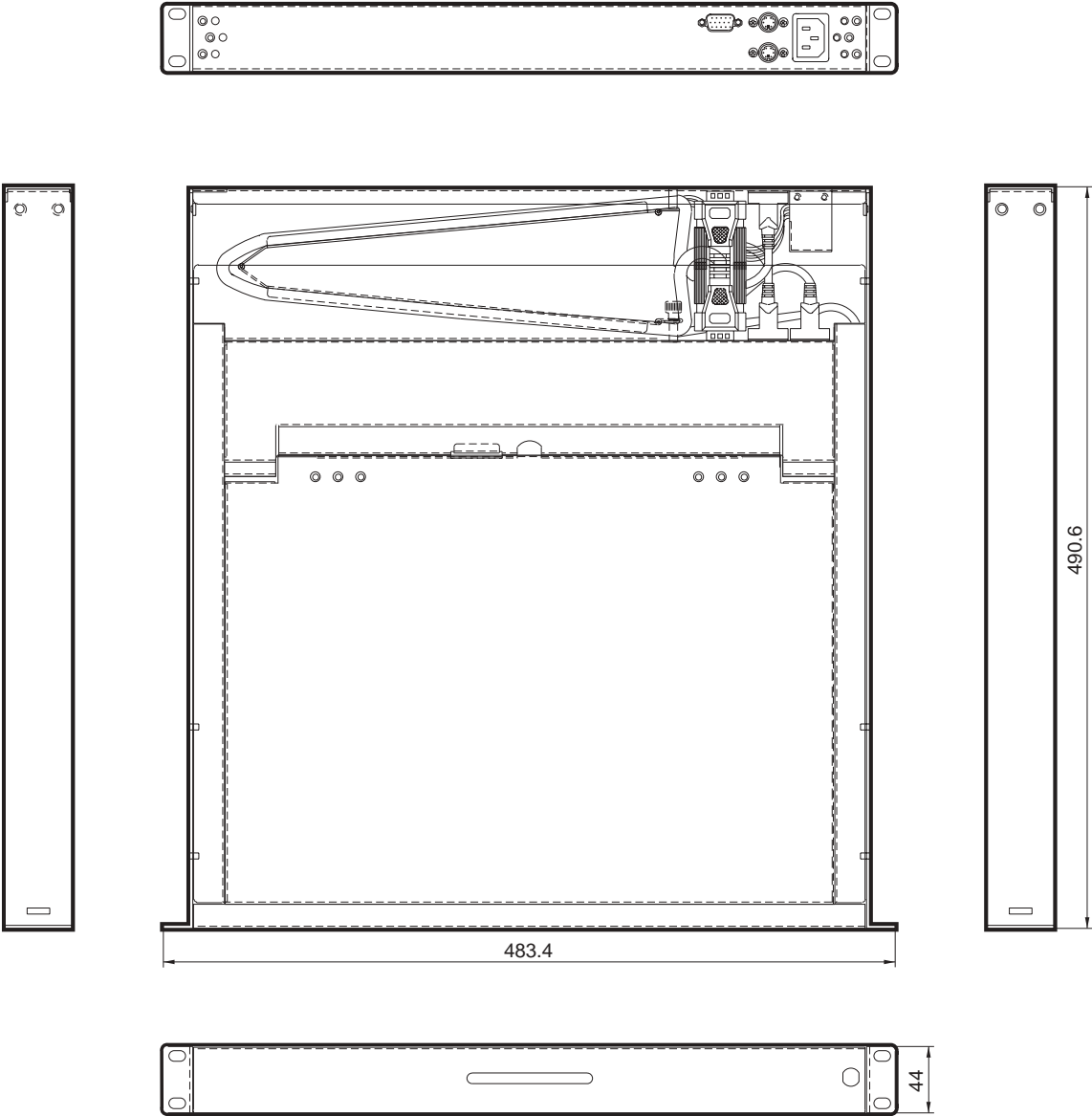
Order information

Monitor/keyboard drawer

Design	TFT	Keyboard layout	Colour	Packs of	Model No. RP
Touchpad mouse + number pad	15"	German	RAL 7035	1	3659.550
Touchpad mouse + number pad	15"	English	RAL 7035	1	3659.570
Touchpad mouse + number pad	15"	French	RAL 7035	1	3659.580
Trackball	15"	German	RAL 7035	1	3659.510
Without keyboard	15"		RAL 7035	1	3659.560*
Touchpad mouse + number pad	17"	German	RAL 7035	1	3659.610

Other local specific versions and colours available on request.

* Suitable for the installation of standard keyboards with trackball from Cherry, model G84-4400.





Technical specifications

TFT display:

15.1"/38.1 cm TFT display,
optionally 17" TFT display,
Anti-reflection coated safety
glass screen
Brightness: 250 cd/m²
On-screen display
Colours: 16.7 million
Mains voltage: 100 – 240 VAC,
48 – 62 Hz
VGA + SVGA, non-interlaced
Maximum resolution
1024 x 768 pixels
Contrast ratio: 350:1
Connections at rear:
– Mains voltage
(IEC 320 connection, jack)
– Video input (D-SUB 15-pole,
jack)
– Keyboard (PS/2 jack)
– Mouse (PS/2 jack)
Special colours available on
request
International keyboard layout
available on request

Supply includes:

Monitor/keyboard drawer, fully
configured including assembly
parts and cables for mains,
video, keyboard and mouse
connections.

Tested to EN 60950 and
EMC directive 89/336/EEC

Technical specifications

chassis:

482.6 mm (19") rack-mounted
chassis 1 U, 490 mm deep
Includes installation kit for
variable depth mounting in
enclosures/cases with depths
from 600 – 900 mm.
Keyboard/display is pulled out
from the front
Lockable front panel
Telescopic slides with integral
clamp
Material: Sheet steel,
paint finished in RAL 7035



Colour variants
available on request.



Keyboard
with touchpad mouse or trackball
as standard or without keyboard.
Local specific versions available
on request.

Order information

482.6 mm (19") keyboard drawer and 7 U TFT display

482.6 mm (19") keyboard drawer



- 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 mouse pad

Colour	Packs of	Model No. RP
RAL 7035	1	3659.520

Material:

Sheet steel, paint finished in RAL 7035

Supply includes:

482.6 mm (19") chassis **excluding keyboard**, connection cable, mounting bracket for 600 and 800 mm enclosure depth, assembly parts

Mouse pad for keyboard drawer



- For optional mounting on the left or right 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. 3659.590)

Packs of	Model No. RP
1	3659.620

Material:

Sheet steel, paint finished in RAL 7035

Supply includes:

Mouse pad, assembly parts

482.6 mm (19") keyboard



- 482.6 mm (19") keyboard for installation in the 482.6 mm (19") keyboard drawer in conjunction with the touchpad 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:

Keyboard and connection cable

15" TFT display



- 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 VAC, output: 12 VDC/3.75 A
- OSD membrane keyboard and infrared sensor

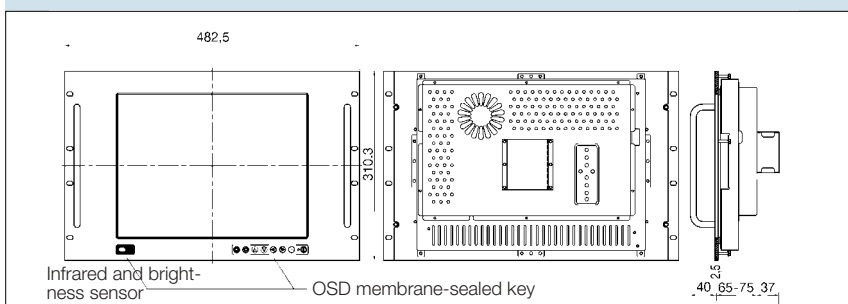
- VGA + SVGA, non-interlaced
- Maximum resolution 1024 x 768 pixels
- Contrast ratio: 300:1
- Viewing angle: 160° (H+V)
- Video input 15-pin D-SUB (analog RGB)
- RS232 monitor interface

Tested to EN 60950 and EMC directive 89/336/EEC

Packs of	Model No. RP
1	3659.530

Depth varies according to the display design (protective glass, touchscreen etc.)

Front panel aluminium
Surface finish: Powder-coated in RAL 7035



482.6 mm (19") keyboard drawer and 7 U TFT display



Connections
for video, infrared and brightness sensor on the rear of the TFT display.



Integral PS/2 connector
accessible from the front, for easy keyboard installation.



Keyboard installation
prepared for the installation of 482.6 mm (19") keyboards with touchpad mouse or trackball.

Order information

Monitoring system SSC

Rittal Server Switch Control SSC	SSCmini 4	SSCmulti 4	SSCmulti 8	SSCmulti 16
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
Integral remote console booster, Cat 5 port	–	●	●	●
Direct connection for local SUN operating consoles	–	●	●	●
Status displays	LEDs	OSD menu	OSD menu	OSD menu
On-screen menu (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 – 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
Model No. DK	7551.000	7551.010	7551.020	7551.030
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
Console cable kit for passive extension, 2, 5, 7, 10 m	on request	on request	on request	on request
Cable clamp strap (adaptor available on request)	7610.000	7610.000	7610.000	7610.000

²⁾ Adaptor for serial mouse and DIN5 keyboard enclosed.
 (●) In conjunction with a SSCmulti.

Using the Rittal SSC means that only one keyboard, one monitor and one mouse is required. Computer access becomes easier, more effective and more cost-efficient. Space and human resources are used to optimum effect. The new Rittal SSC generation offers individual design scope as well as investment security for the future. 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, a multi-talented all-rounder, additionally has 4/8/16 channels, an OSD menu, auto scan, auto skip and multi-platform capabilities. In this way, various different computer platforms can be connected without the need for converters. The multi-console capability permits 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. Installation is based on the plug

& play compatibility system by simply plugging in the cable. Complex programming of the cascades is therefore eliminated. The use of high-quality components ensures maximum video bandwidths for various resolutions, and also represents an investment in the future. The SSCmulti is ideal for use in differing server environments with a variety of different platforms such as PS/2 and IBM-compatible, HP 9000, sgi, SUN, RS 6000, DEC Alpha and laptops.

Processor-assisted keyboard and mouse emulation for each channel ensures fault-free start up and reliable switching between the various connected computers. The hot-plug capability allows the SSC system to be extended whilst the system is live.



The benefits at a glance:

- Cost-effectiveness
- Investment security
- Hot-plug capabilities
- Multi-platforming
- Multi-console capabilities
- Individually configurable
- Plug and play installation
- Uncompromising quality

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

Note:

More detailed information and other accessories can be found in the Rittal IT Catalogue.



OSD menu for direct access, name allocation, access rights and parameters.



Variable mounting brackets for mounting in the side panel or enclosure depth.



Cat 5 interface in SSCmulti for remote console in conjunction with Cat 5 receiver module.

The CMC-Top Concept

The CMC-Top Concept from Rittal is an innovative new rack monitoring system which adapts perfectly to your individual demands.

More flexibility: The modular layout and almost limitless extendibility allows the CMC-TC to grow along with your requirements.

More individuality: The CMC-TC can be fully tailored to your requirements, from decentralised monitoring via individual processing units, to control of the complete system by a master unit.

More compatibility: The CMC-TC is capable of communicating via all standard protocols.

And more profitability: The CMC-TC facilitates integration of the decentralised function blocks into your IT system, quickly and without incurring any unnecessary costs.



Master unit

The CMC-TC master offers high performance. Up to 10 processing units (PU) may be connected.

Processing unit

The processing unit (PU) forms the basis of the monitoring system. The compact unit can be attached to the enclosure frame in a space-saving configuration.

Sensor unit

Access unit

The access unit is used to control and monitor door systems.

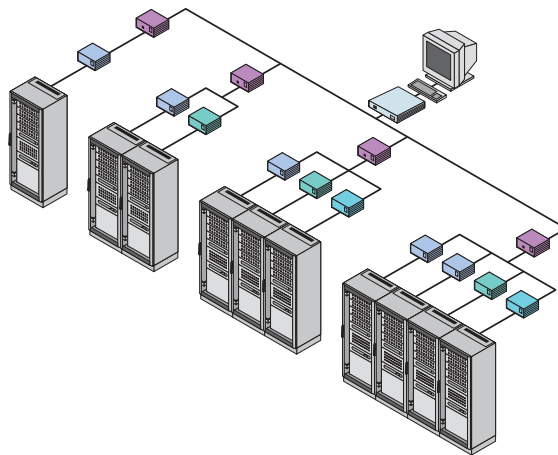
I/O unit

The I/O unit is the alarm and measurement module. Relay output modules may also be switched.

Climate unit

The climate unit is for fan control and for monitoring the fans.

Limitless extensibility



Master unit

- The CMC-TC master is required in all situations where large numbers of security-relevant factors must be monitored or where exacting demands are placed on technology.
- The CMC-TC master offers high performance and helps to conserve IP resources.
- The PU with the sensor units is always required for monitoring.
- Up to 10 processing units (PU) may be connected as a slave.
- The master offers a 10/100BaseT interface to the user network and summarises all monitoring variables on HTTP and SNMP.
- The system can be connected and operated directly via the Rittal SSC.



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 to enable configuration.
- 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 connected to the PU, and may therefore be flexibly selected.
- Up to 4 sensor units may be connected in any given combination (I/O, access, climate).



The sensor units

Universal I/O unit

- The I/O unit is the alarm and measurement 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 power supply to the electronics are provided in this way.



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 authorised individuals via a coded lock, magnetic card or smart card.

- 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.



Climate unit

- The climate unit serves to control the fan and thus regulate the temperature.
- The physical air flow of the fan is monitored by the controller.
- If no temperature sensor or air flow sensor is used, the two universal ports can also be fitted with other sensors.

- Simple fan connection via IEC jacks and connectors.
- The unit is designed for one fan system.
- The climate unit must be connected to the PU. Data exchange and power supply to the electronics are provided in this way.



More information can be found in our CMC-TC brochure.

One step ahead in installation and security.



Wall-mounted enclosures.

Rittal wall-mounted enclosures are cutting-edge products in enclosure technology. The three distinct concepts have one crucial factor in common – convenient access to all installed equipment for assembly and servicing purposes. This is achieved in quite different ways. Whereas all installed equipment in the Rittal QuickBox is accessible from five sides by removing the entire hood, the three-part Rittal electronic Kombi system EL offers optimum access for assembly and servicing with its vertically hinged centre part. Meanwhile, the two-part Rittal electronic Kombi system EL is easily accessible with its built-in swing frame. The latter two models will also impress you with their high protection category of IP 55.



Rittal electronic Kombi system EL, three-part
Equipped with mounting plate in the base box and a pair of depth-variable 482.6 mm (19") mounting angles in the vertically hinged centre part, this enclosure is particularly well-suited to accommodate electronic and switch components, even under extreme ambient conditions.



Rittal electronic Kombi system EL, two-part
The particular feature of this enclosure, produced from a single piece, is its high standard of security. In addition, the built-in swing frame guarantees optimum access to the installed components.



Rittal QuickBox
This two-part enclosure is extremely effective for the many applications which do not require a particular protection category. Simply open two locks, and the entire hood is removed. Thanks to its accessibility from five sides, the Rittal QuickBox is exceptionally assembly and service-friendly.

Wall-mounted enclosures	Wall-mounted enclosures QuickBox	272 – 277
	Wall-mounted enclosures EL 3-part	278 – 285
	Wall-mounted enclosures EL 3-part, EMC	286/287
	Wall-mounted enclosures EL 3-part, stainless steel	288/289
	Wall-mounted enclosures EL 2-part	290/291
	Accessories for wall-mounted enclosures	292 – 295

Overview of Rittal wall-mounted electronic enclosures

Rittal QuickBox



Model No. see page 272 – 277

Applications

Electronic wall-mounted enclosures for:

- Office environment
- Industrial environments

Design features

- Removable front cover
- Integral passive ventilation concept
- Support frame for wall mounting
- Depth-variable interior installation
- Glazed door or sheet steel door with security locks for finishing off the front
- Brush strips top and bottom for cable entry and integral cable clamp rail



User benefits

- Cover system provides complete accessibility for interior installation
- Convenient cable routing via brush strips
- Enclosure diversity in a wide range of basic sizes
- Protection from unauthorised access by a security lock on the door and the two side panels
- Passive or active ventilation as required
- Open cable entry for convenient installation

Electronic Kombi system EL, 3-part



Model No. see page 278 – 285

Applications

Electronic wall-mounted enclosures for:

- Wall-mounted distributors
- Corridor distributors
- Higher protection category requirements, up to IP 55
- Automation technology

Design features

- 3-part enclosure
- Modern design/designer door, vented or as glazed door
- Depth-variable 482.6 mm (19") mounting angles
- Mounting plate (several versions)
- Hinged centre part for uninhibited access to the operating and wiring level
- Robust construction and high protection category and all-round system punchings



User benefits

- Pre-configured solutions available off the shelf
- Vertically hinged individual components provide flexible access, coupled with a high protection category
- Integral passive climate control, active climate control may be retro-fitted (up to IP 43)
- Extensive interior installation with a versatile accessories package
- May be used as a mobile enclosure in conjunction with a base/plinth on castors

Electronic Kombi system EL, EMC



Model No. see page 286/287

Applications

Electronic wall-mounted enclosures for:

- EMC applications
- Industrial environments

Design features

- 3-part enclosure
- High level of EMC protection
- Shielded base box for cable entry and wall mounting
- Hinged centre part, shielded to accommodate 482.6 mm (19") installed equipment
- Glazed door of aluminium extrusion with shielded safety glass



User benefits

- EMC protection for the most demanding requirements
- Numerous approvals guarantee safety
- Enclosure parts can be swung out for access

Electronic Kombi system EL, stainless steel



Model No. see page 288/289

Applications

Electronic wall-mounted enclosures for:

- Applications with high demands on hygiene and corrosion resistance
- Textiles industry
- Off-shore sector
- Chemical industry
- Food industry

Design features

- 3-part enclosure of stainless steel
- Solid base box for wall mounting, produced from a single piece
- Hinged centre part for unrestricted access to the subrack front and rear
- Front door with and without viewing panel



User benefits

- Robust enclosure system for extreme requirements
- Individual solutions with a quality comparable to that of series production, thanks to the use of laser technology
- Numerous approvals guarantee safety

Electronic Kombi system EL, 2-part



Model No. see page 290/291

Applications

Electronic wall-mounted enclosures for:

- Wall-mounted distributors
- Corridor distributors
- Higher protection category requirements
- Automation technology

Design features

- 2-part assembly
- Depth-variable 482.6 mm (19") mounting angles
- Robust construction and high protection category
- Made from a single piece
- Integral swing frame



User benefits

- Flexible access despite high protection category, thanks to vertically hinged individual parts
- Integral passive climate control
- Integral cable clamping
- Extensive interior installation with a versatile accessories package
- May be used as a mobile enclosure in conjunction with a base/plinth on castors
- Maximum protection category IP 55

In detail: Wall-mounted enclosure Rittal QuickBox

The wall-mounted distributor Rittal QuickBox combines versatility with flexibility and efficiency. As a wall-mounted distribution enclosure with depth-adjustable 482.6 mm (19") mounting angles, the QuickBox is ideal for practical accommodation of electronics. Optionally, metric installation is possible using the accessories. Comprehensive size variants, with or without glazed door, to suit the most diverse applications, offer cost-effective, customer-oriented solutions. The QuickBox is available fully pre-configured, off-the-shelf.

1 Design features



The QuickBox is fast and versatile, thanks to its **two-part structure**:

- Fit the wall section
- Populate the interior
- Position the hood, lock, and it's ready!



Because **the enclosure cover** is easily removed, the engineer has fast, uninhibited access to all mounting points inside the enclosure.



Vent slots for heat dissipation via convection.

2 Security



The **glazed door** permits inspection at all times, coupled with rapid access.



To protect against unauthorised access, the QuickBox is equipped as standard with a total of **three security locks**, in the door and in the sides of the enclosure cover.

3 Wall-mounting



Wall bracket for cable routing behind the enclosure.



In this way, the QuickBox can be fitted just about anywhere. **Mounting holes** are provided for direct wall mounting or for use with the wall brackets.

4 Cable management



Mounting bracket with longitudinal slot cutouts for professional cable management.



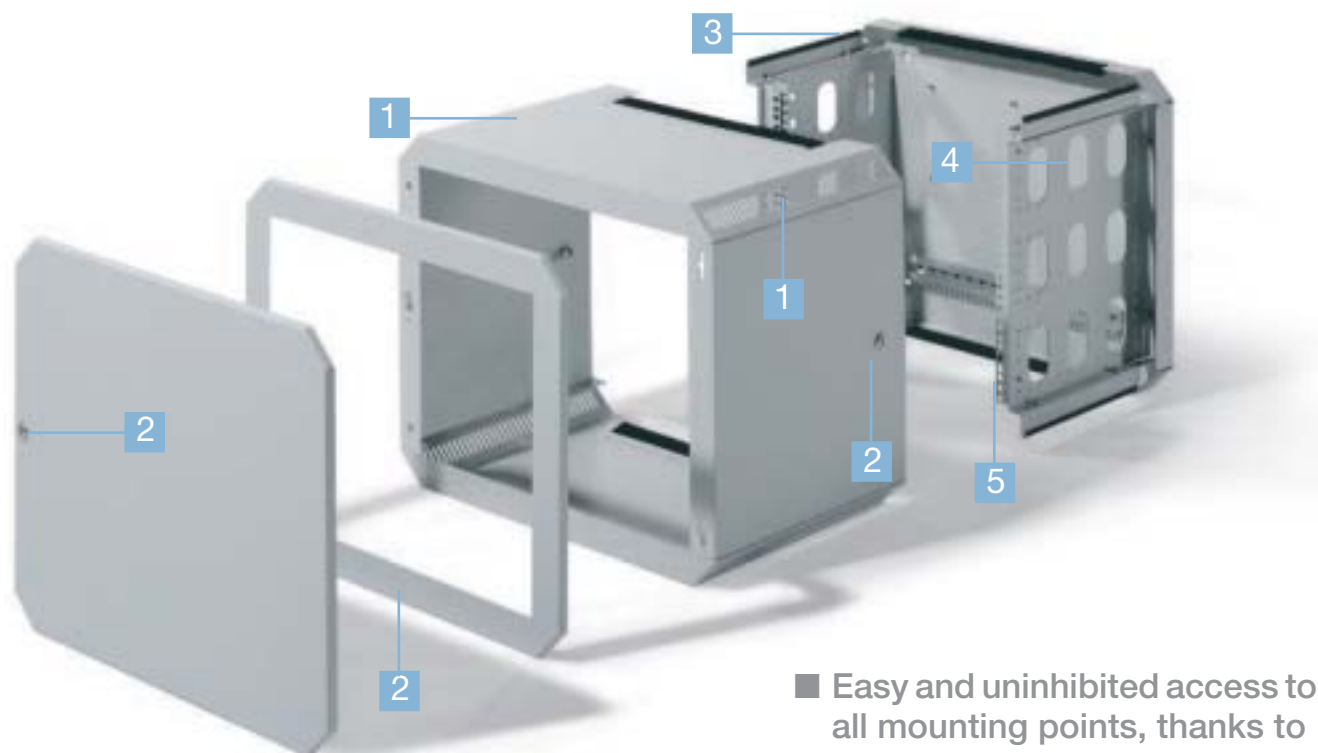
Mounting holes on a 25 mm pitch pattern support flexible accommodation of installation accessories.



Wall-mounting plate with **combination rail** for cable clamping as standard.



The **double T-head section** facilitates attachment using cable ties. Rittal cable clamps are inserted into the **integral channel**, for infinitely variable cable routing and attachment.



- Easy and uninhibited access to all mounting points, thanks to the cover system
- Brush strip and combination rail for cable clamping
- Security locks
- Integral ventilation concept
- Time-saving, cost-cutting assembly

5 Interior installation



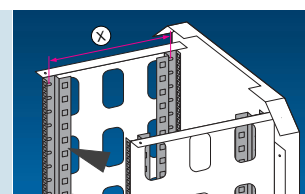
Mounting angles to accommodate 482.6 mm (19") installed equipment.



e.g. **shelves** to accommodate components.



e.g. **slide rails** to support heavy subracks.



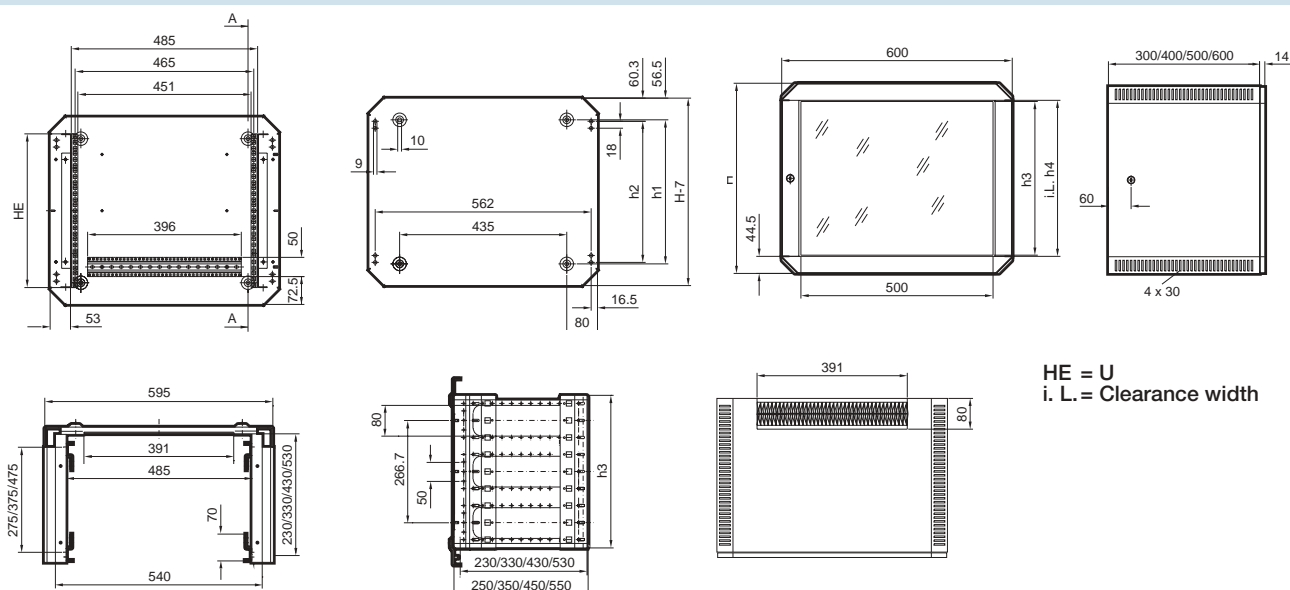
The **second pair of 482.6 mm (19") mounting angles** is required e.g. for installing component shelves and telescopic slides.

Wall-mounted enclosure based on Rittal QuickBox

Wall-mounted enclosure based on Rittal QuickBox									
U/SU	Width mm	Height mm	Depth mm	h1 (mm)	h2 (mm)	h3 (mm)	h4 (mm)	Model No. DK with glazed door	Model No. DK with sheet steel door
6/10	600	362	300	242	234	267	273	7502.013	–
	600	362	400	242	234	267	273	7502.014	7502.114
	600	362	600	242	234	267	273	7502.016	–
9/15	600	495	300	375	367	400	406	7502.023	7502.123
	600	495	400	375	367	400	406	7502.024	7502.124
	600	495	600	375	367	400	406	7502.026	7502.126
12/20	600	628	400	508	501	534	540	7502.034	7502.134
	600	628	500	508	501	534	540	7502.035	–
	600	628	600	508	501	534	540	7502.036	7502.136
15/26	600	762	400	642	634	667	673	7502.044	7502.144
	600	762	500	642	634	667	673	7502.045	–
	600	762	600	642	634	667	673	7502.046	7502.146
18/31	600	895	400	775	767	800	806	7502.054	–
	600	895	500	775	767	800	806	7502.055	–
	600	895	600	775	767	800	806	7502.056	–
21/36	600	1028	400	908	901	934	940	7502.064	–
	600	1028	600	908	901	934	940	7502.066	7502.166

Accessories

	Packs of	for enclosure						Page
		6 U	9 U	12 U	15 U	18 U	21 U	
Mounting angles, 482.6 mm (19")	2	7502.201	7502.202	7502.203	7502.204	7502.205	7502.206	277
Mounting angles, metric	2	7502.211	7502.212	7502.213	7502.214	7502.215	7502.216	277
Gland plate, solid	2	7502.310						276
Wall mounting bracket 10 mm	1	2508.000						276
Wall mounting bracket 40 mm	1	2503.000						276
Combination rail for enclosure width 600 mm	6	7502.304						277
Combination rail for enclosure depth	300/400 mm	6						277
	500/600 mm							277
Slide rails for enclosure depth	300 mm	2						277
	400 mm							277
	500/600 mm							277
Earthing set	1 set	7502.240/.260						277
Quick-release fastener	2	7502.220						276
Component shelves								359
482.6 mm (19") blanking plates								366



Wall-mounted enclosure based on Rittal QuickBox

**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

Surface finish:

Powder coated
Enclosure: RAL 7035

Supply includes:

1 wall section
with pre-configured mounting
brackets and brush insert for ca-
ble entry from above and below
1 combination rail
for cable clamping from below,
pre-fastened to the wall section
1 enclosure cover
consisting of a base and cover
tray with vent slots and brush in-
sert for cable entry from above
and below
2 security locks positioned on the
sides
1 sheet steel door/glazed door
1 pair of 482.6 mm (19") mounting
angles, fastened 50 mm from the
front, infinitely depth-adjustable
on the mounting bracket

Accessories:

see page 276/277

**Quick-release fastener**

simple fastening from the front
when there is no access to the
side locks of the enclosure cover.
Model No. see page 276

**Earthing kit**

for earthing all enclosure panels
on the wall section.
Model No. see page 277

Accessories

Rittal QuickBox

Quick-release fastener



The new 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 sides are unlocked, allowing the enclosure cover to be attached and removed easily.

Material:

Sheet steel, spray finished in RAL 7035

Supply includes:

2 mounting brackets, including assembly parts and quick-release fasteners

Packs of	Model No. QB
2	7502.220



Spare key for QR/QB



Spare key for QR standard lock 12321. This lock is also used in QuickBox enclosures.

Packs of	Model No. QB
2	7526.050

Solid gland plate



To conceal the cable entry holes. For use in place of the standard top and bottom brushes.

Material:

Sheet steel

Colour:

RAL 7035

Supply includes:

2 gland plates with assembly parts

Packs of	Model No. QB
2	7502.310

Wall mounting bracket 10/40 mm



For all AE and EL enclosures (except stainless steel) as well as DK/FM/QR/QB wall-mounted distributors.

For quick, secure wall mounting using the rear holes of the enclosure.

40 mm distance from the wall permits cable routing behind the enclosure to the gland plate.

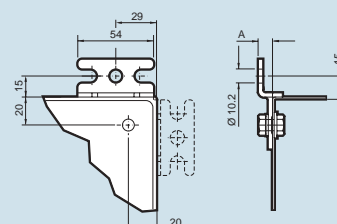
Material:

Sheet steel, passivated

Note:

Distance of rear panel holes = enclosure dimensions – 50 mm

Wall distance dimension A	Packs of	Model No. QB
40 mm	1	2503.000
10 mm	1	2508.000



Mounting angles 482.6 mm (19")/485 mm or 535 mm (metric)



For installing 482.6 mm (19")/metric equipment in the Rittal QuickBox.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
2 mounting angles, including assembly parts

For enclosures		Model No. QB	
U	SU	482.6 mm (19")	metric
6	10	7502.201	7502.211
9	15	7502.202	7502.212
12	20	7502.203	7502.213
15	26	7502.204	7502.214
18	31	7502.205	7502.215
21	36	7502.206	7502.216

Combination rail



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:
6 combination rails, including 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

Slide rail, vented for QB



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

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Slide rail including assembly parts

Length mm	Distance between 19" levels (mm)	Packs of	Model No. DK
152*	–	2	7063.000
261	298	2	7063.300
361	398	2	7063.400
461	498	2	7063.500

* Only fasten to the front or rear mounting angles.

Other sizes:
W x H: 55 x 72 mm

Earthing set



Earthing straps in appropriate lengths to match enclosure depth are included in the earthing set, for earthing all enclosure panels on the wall mounting part. The earth strap has 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:
5 earth straps, including assembly parts

For enclosure depth mm	Packs of	Model No. QB
300/400	1 set	7502.240
500/600	1 set	7502.260

In detail: Rittal electronic Kombi system EL, 3-part and 2-part

Electronic system EL is synonymous with the use of high-quality enclosure technology, proven a million times over. In conjunction with installation and accessory modules which are likewise mass-produced, we are able to achieve high quality at very reasonable prices. Rittal can even meet special requirements, such as high EMC protection or hygiene, with special models from our standard production. All standard products from the electronic Kombi system are available off the shelf, immediately. We also offer modification and assembly services at many locations.

1 Rittal electronic Kombi system EL, 3-part

The base box is mounted on the wall. The hinged centre part facilitates problem-free installation of 482.6 mm (19") equipment and access from the front and rear. An interesting solution: the door frame conceals the fastener of the centre part. In particular, the all-round knife edge guarantees an excellent seal (protection category IP 55 to EN 60 529/10.91).



Front door
with 3 mm safety glass or with perforated plate.



Lock
Semi-cylinders with a total length of 40 mm may be used in conjunction with the mini-comfort handle.



System punchings
Centre part with system punchings on a 25 mm pitch pattern.



Mounting angles,
482.6 mm (19")
infinitely depth-variable.



Blanking plates
in various heights, horizontally or vertically hinged.



Component shelves 2 U,
482.6 mm (19")
slotted, for static installation or full withdrawal with telescopic slide.



The cable gland plates
of the base box may be exchanged for gland plates with brush insert or with various cable glands.

Rittal electronic Kombi system EL, EMC



Shielded glass
provides visibility coupled with maximum shield attenuation.

High protection
The compact design of this 3-part electronic enclosure with front and rear knife edges on the centre part is ideal for applications requiring a high level of EMC protection. Additional EMC sealing gaskets and zinc-plated, passivated interior surfaces ensure slot-free contact without impairing the IP 55 protection category.



Low-resistance connection
between the glazed door and conductive sealing edge, for a high level of shielding and a high IP protection category.

Rittal electronic Kombi system EL, stainless steel



The welding technique
with subsequent brushing guarantees a perfect surface finish coupled with an attractive design. The perfect edge profile gives the enclosure its stability.



Individual solutions
Small batches with individual sizes and cutouts in the surfaces are achieved using laser cutting technology.

Product information

Rittal electronic Kombi system EL, 3-part and 2-part



- Enclosure technology proven a million times over
- Variants for EMC, in stainless steel or in the modular system as standard
- High Protection category IP 55
- Mounting angles depth-variable and vertically hinged
- Solution diversity through system accessories

2 Rittal electronic Kombi system EL, 2-part

The high standard of security is the outstanding feature of these enclosures. They are produced from a single piece and therefore offer exceptional stability and sealing (IP 55 to EN 60 529/10.91). The built-in swing frame ensures optimum access.



482.6 mm (19") swing frame
for variable attachment of slide-in equipment.



Cable gland plate
of 1.5 mm sheet steel, positioned at the bottom of the enclosure and removable; may be exchanged for plastic gland plate SZ 2563.000.

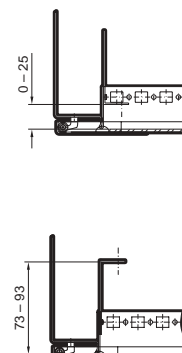
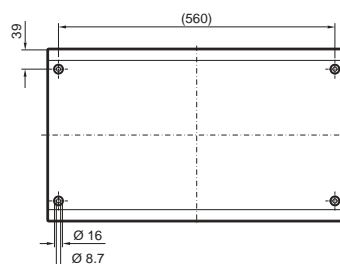
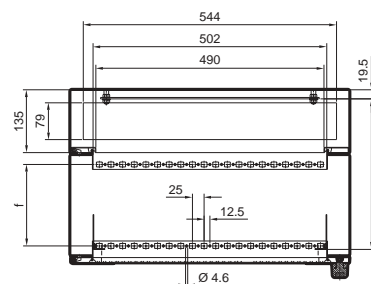
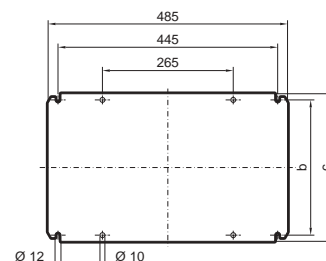
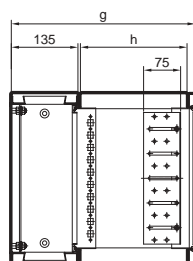
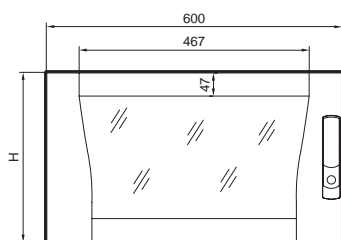


Wall mounting
Integral holes in the enclosure enable the attachment of wall mounting brackets. Model No. see page 292

Order information

Wall-mounted enclosures – Based on Rittal electronic Kombi system EL, 3-part

Electronic Kombi system EL, 3-part															
	Enclosure depth 373 mm							Enclosure depth 473 mm							P.
U	3 U	6 U	9 U	12 U	15 U	18 U	21 U	3 U	6 U	9 U	12 U	15 U	18 U	21 U	
Model No. EL	2243.605	2246.605	2249.605	2252.605	2255.605	2258.605	2261.605	2253.605	2256.605	2259.605	2262.605	2265.605	2268.605	2271.605	
W (mm)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	
H (mm)	212	345	478	612	746	878	1012	212	345	478	612	746	878	1012	
b (mm)	141	274	407	541	674	807	941	141	274	407	541	674	807	941	
c (mm)	165	299	432	565	699	832	965	165	299	432	565	699	832	965	
d (mm)	342	342	342	342	342	342	342	442	442	442	442	442	442	442	
e (mm)	360	360	360	360	360	360	360	460	460	460	460	460	460	460	
f (mm)	175	175	175	175	175	175	175	275	275	275	275	275	275	275	
g (mm)	372.5	372.5	372.5	372.5	372.5	372.5	372.5	472.5	472.5	472.5	472.5	472.5	472.5	472.5	
h (mm)	216	216	216	216	216	216	216	316	316	316	316	316	316	316	
Loaded capacity of hinged part	15 kg	30 kg	45 kg	60 kg	75 kg	75 kg	75 kg	15 kg	30 kg	45 kg	60 kg	75 kg	75 kg	75 kg	
Accessories															
Wall mounting bracket – 10 mm – 40 mm	2508.000 2503.000														292
Lock insert for mini-comfort handle – Push-button and lock No. 2123	8611.190 8611.200														
Gland plate – with brush insert – for cable glands	7705.000 2235.000														294
Cable glands	see page 294														
Slide rails	2240.000							2250.000							292
C rails	2238.000														292
Blanking plates	see page 295														



Wall-mounted enclosures – Based on Rittal electronic Kombi system EL, 3-part

**Material:**

Base box and centre part:
1.5 mm sheet steel
Mounting plate: 2.75 mm
sheet steel, zinc-plated,
passivated
Glazed door with 3 mm safety
glass

Surface finish:

Electrophoretic dipcoat-primed,
textured stove enamel
Enclosure RAL 7035
Glazed door RAL 7035/7015
(slate grey)

Protection category:

IP 55 to EN 60 529/10.91

Supply includes:

1 base box,
1 cable gland plate, at both the
top and bottom, solid,
1 centre part, vertically hinged
with 25 mm pitch pattern of
holes,
2 mounting angles, 482.6 mm
(19"), fitted,
1 designer glazed door,
including lock system with mini-
comfort handle and security lock
3542 E,
1 mounting plate supplied loose,
assembly parts

Accessories:

see page 292 – 295

**Special sizes and colours
available on request.**

■ With mounting plate



Gland plate
with cutouts for cable glands.
Model No. see page 294



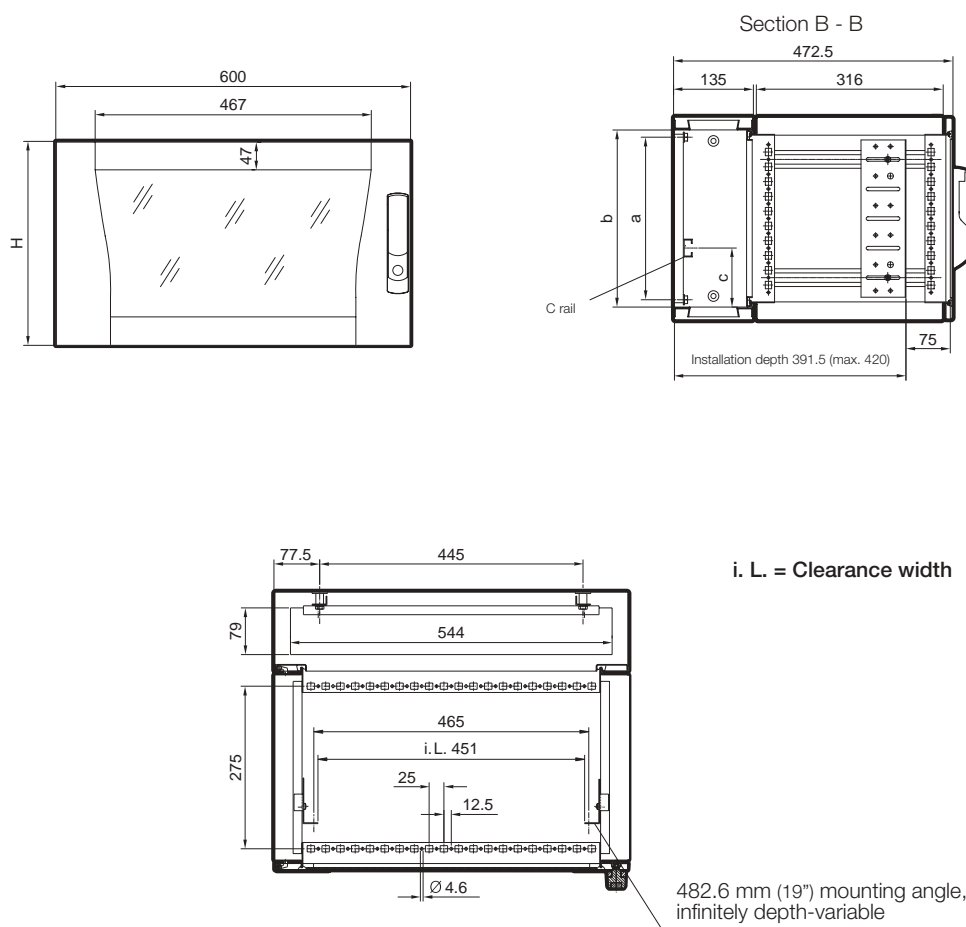
Blanking plates
in various heights, horizontally or
vertically hinged.
Model No. see page 295

Order information

Wall-mounted enclosures – Rittal electronic Kombi system EL, 3-part

Electronic Kombi system EL, 3-part	Enclosure depth = 473 mm						Page
U	6	9	12	15	18	21	
Width mm	600	600	600	600	600	600	
Height (H) mm	345	478	612	746	878	1012	
Depth mm	472.5	472.5	472.5	472.5	472.5	472.5	
a	274	407	540	674	807	941	
b	299	432	565	699	832	965	
c	99,5	103,5	120	124,5	128,5	133	
Model No. DK	7706.135	7709.135	7712.135	7715.135	7718.135	7721.135	
Special sizes (D = 373 mm, 573 mm)	②	②	②	②	②	②	
Designer glazed door with safety glass	①	①	①	①	①	①	
Sheet steel door, solid	②	②	②	②	②	②	
Accessories							
Gland plate with brush insert	7705.035	7705.035	7705.035	7705.035	7705.035	7705.035	294
Gland plate for cable glands	2235.005	2235.005	2235.005	2235.005	2235.005	2235.005	294
Wall mounting bracket, 40 mm	2503.000	2503.000	2503.000	2503.000	2503.000	2503.000	292
Lock insert with push-button	8611.190	8611.190	8611.190	8611.190	8611.190	8611.190	
Lock insert with push-button and lock no. 12321	8611.200	8611.200	8611.200	8611.200	8611.200	8611.200	
Earth rail, horizontal	7113.000	7113.000	7113.000	7113.000	7113.000	7113.000	
Component shelf 2 U, static installation and fully extendible	7148.035	7148.035	7148.035	7148.035	7148.035	7148.035	362
Component shelf 2 U, static installation	7119.250	7119.250	7119.250	7119.250	7119.250	7119.250	362
Component shelf 1 U, static install., 140 mm deep	7119.140	7119.140	7119.140	7119.140	7119.140	7119.140	359

① Included with the supply ② Available as a special order



Wall-mounted enclosures – Rittal electronic Kombi system EL, 3-part

**Material:**

Wall and centre part:
1.5 mm sheet steel
Designer glazed door: with 3 mm
safety glass

Surface finish:

Wall and centre 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:

1 wall section fitted with 2 vertical
punched rails and
1 C rail mounted horizontally for
cable clamping,
1 cable gland plate, at both the
top and bottom, solid,
4 wall mounting brackets,
10 mm,
1 centre part vertically hinged,
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,
1 designer glazed door including
lock system with mini-comfort
handle and security lock 3524 E

Accessories:

see page 292 – 295

- Without mounting plate
- Including C rail and
wall mounting bracket
- With designer glazed door



Gland plate with brush insert
for cable entry.
Model No. see page 294



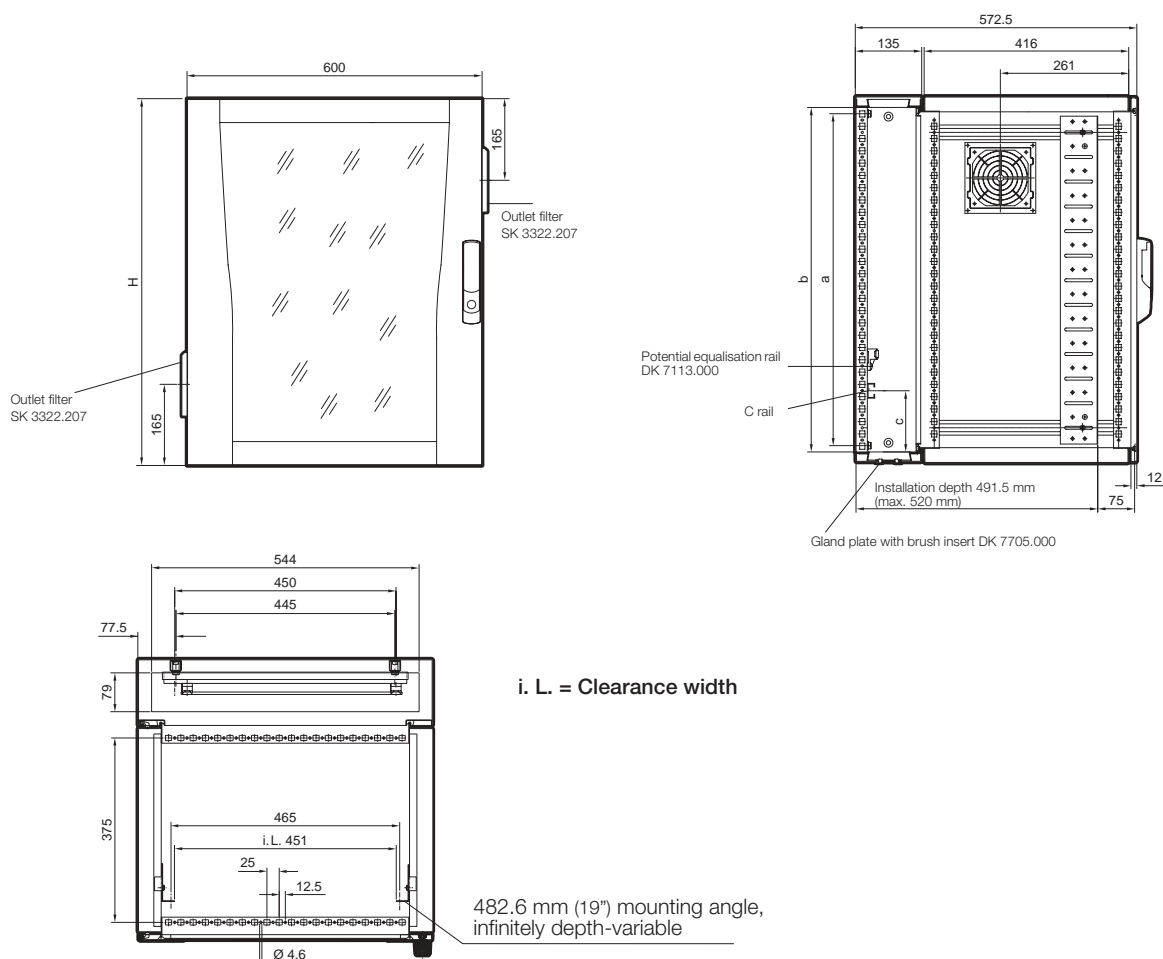
Component shelf 2 U
slotted, for static installation or
full withdrawal.
Model No. see page 362

Order information

Wall-mounted enclosures – Rittal electronic Kombi system EL, 3-part

Electronic Kombi system EL, 3-part	Packs of	Enclosure depth = 573 mm			Page
U		9	15	21	
Width mm		600	600	600	
Height (H) mm		478	746	1012	
Depth mm		572.5	572.5	572.5	
a		407	674	941	
b		432	699	965	
c		103.5	124.5	133	
Model No. DK (glazed door)	1	7709.735	7715.735	7721.735	
Model No. DK (vented door)	1	7709.835*	7715.835*	7721.835*	
Designer glazed front door with safety glass or perforated plate	1	①	①	①	
Sheet steel door, solid	1	②	②	②	
Accessories					
Gland plate, solid	1	2235.135	2235.135	2235.135	293
Gland plate with brush insert	1	7705.035	7705.035	7705.035	294
Gland plate for cable glands	1	2235.005	2235.005	2235.005	294
Fan extension kit, 230 V	1	7980.100	7980.100	7980.100	317
Spare filter mats	5	3322.700	3322.700	3322.700	317
Wall mounting bracket, 40 mm	1	2503.000	2503.000	2503.000	292
Lock insert with push-button	1	8611.190	8611.190	8611.190	
Lock insert with push-button and lock no. 12321	1	8611.200	8611.200	8611.200	
Component shelf 2 U, static installation or fully extendible, 300 mm deep	1	7148.035	7148.035	7148.035	362
Component shelf 2 U, static installation, 250 mm deep	1	7119.250	7119.250	7119.250	362

① Included in the supply ② Available as a special order * Extended delivery times



Wall-mounted enclosures – Rittal electronic Kombi system EL, 3-part

**Material:**

Wall and centre part:
1.5 mm sheet steel
Designer glazed door: with 3 mm
safety glass or perforated plate
with sheet steel sections

Surface finish:

Wall and centre part spray
finished in RAL 7035,
glazed door RAL 7035/7015
(slate grey)

Protection category:

IP 43 to EN 60 529/10.91
with DK 77XX.735

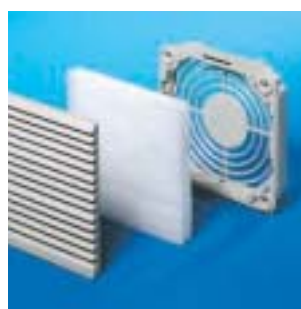
Supply includes:

1 wall section fitted with 2 vertical
punched rails and
1 C rail mounted horizontally for
cable clamping,
1 cable gland plate, top, solid,
1 cable gland plate, bottom,
with brush inserts,
1 earth rail with star earthing,
4 wall mounting brackets,
10 mm,
1 centre part vertically hinged,
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 on each side, left
and right, with the option of retro-
fitting a fan extension kit.
1 designer glazed door including
lock system with mini-comfort
handle and security lock 3524 E

Accessories:

see page 292 – 295

- Without mounting plate
- Including C rail and
wall mounting bracket
- Pre-assembled with earthing
and outlet filter
- With designer glazed door



Outlet filter, left and right,
fitted as standard in the central
hinged part.



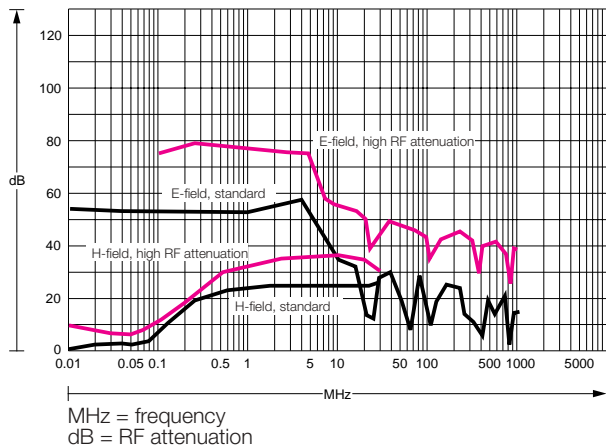
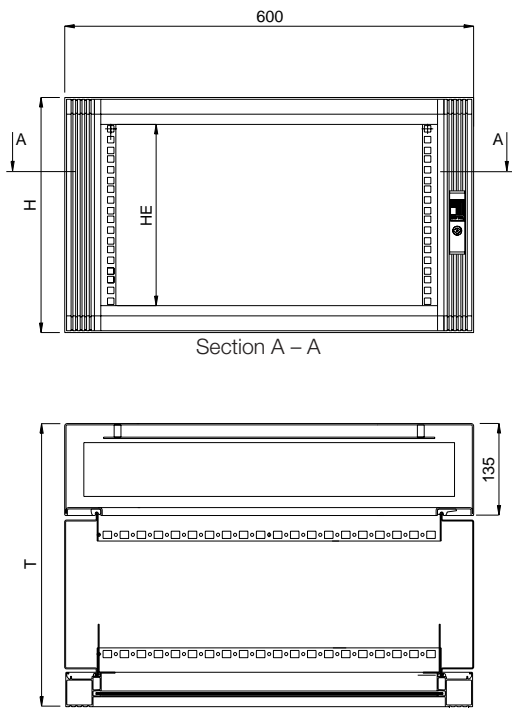
The outlet filter may be supple-
mented with the **fan extension
kit**.
Model No. see page 317

Order information

EMC wall-mounted enclosures – Rittal electronic Kombi systems EL, 3-part

EMC electronic Kombi systems EL, 3-part					
	U	Width mm	Hight (H) mm	Depth (T) mm	Model No. EL
	3	600	212	415	2243.700*
	6	600	345	415	2246.700*
	9	600	478	415	2249.700*
	6	600	345	515	2256.700*
	9	600	478	515	2259.700*
	15	600	746	515	2265.700*
	21	600	1012	515	2271.700*

* Extended delivery times



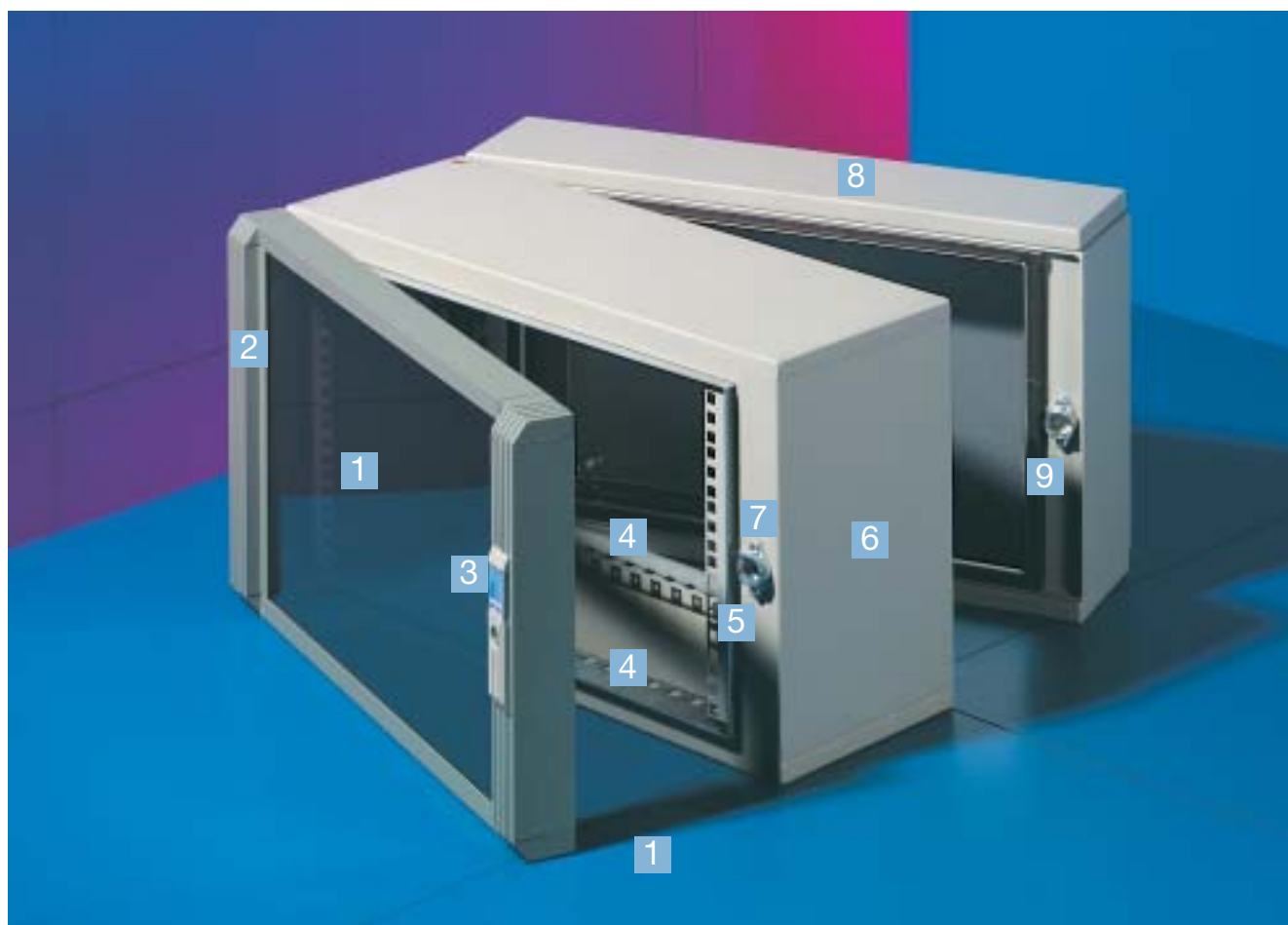
T = Depth
HE = U

EMC electronic Kombi system EL has the following approvals:

- TÜV
- Norske Veritas
- Russian Maritime Register of Shipping
- Lloyds Register of Shipping
- VDE
- UL-Underwriters Laboratories Inc. For USA and Canada



EMC wall-mounted enclosures – Rittal electronic Kombi systems 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 cor-
ner connectors, 4 mm safety
glass, with EMC mesh.

Surface finish:

Textured stove enamel
Enclosures RAL 7032
Interior surfaces zinc plated and
yellow 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, hinged
2 x 482.6 mm (19") mounting
angles, fitted
1 mounting plate, zinc-coated,
passivated, conductive, supplied
loose
1 front door with EMC safety
glass

Accessories:

see page 292 – 295

1 Front door with EMC safety
glass.

2 Aluminium door frame.

3 Lock system, may be ex-
changed for Ergoform-Mini
handle.

High protection

The compact design of this
3-part electronic enclosures with
front and rear knife edges on the
centre part is ideal for high EMC
requirements. Additional EMC
seals and yellow passivated inter-
ior surfaces ensure slot-free
contact without impairing the
IP 55 protection category.

4 25 mm pitch pattern of
holes continuous front and
back.

5 Continuous knife edge.

6 Centre part of 1.5 mm
sheet steel, multi-folded,
yellow passivated on the
inside.

7 Wall unit locked from the
front.

8 Removable cable gland
plate top and bottom.

9 Bonded EMC seal for pro-
tection category IP 55.

**Shielded glass**

allows the user to see through,
whilst at the same time ensuring
good attenuation.

**Low-resistance connection**

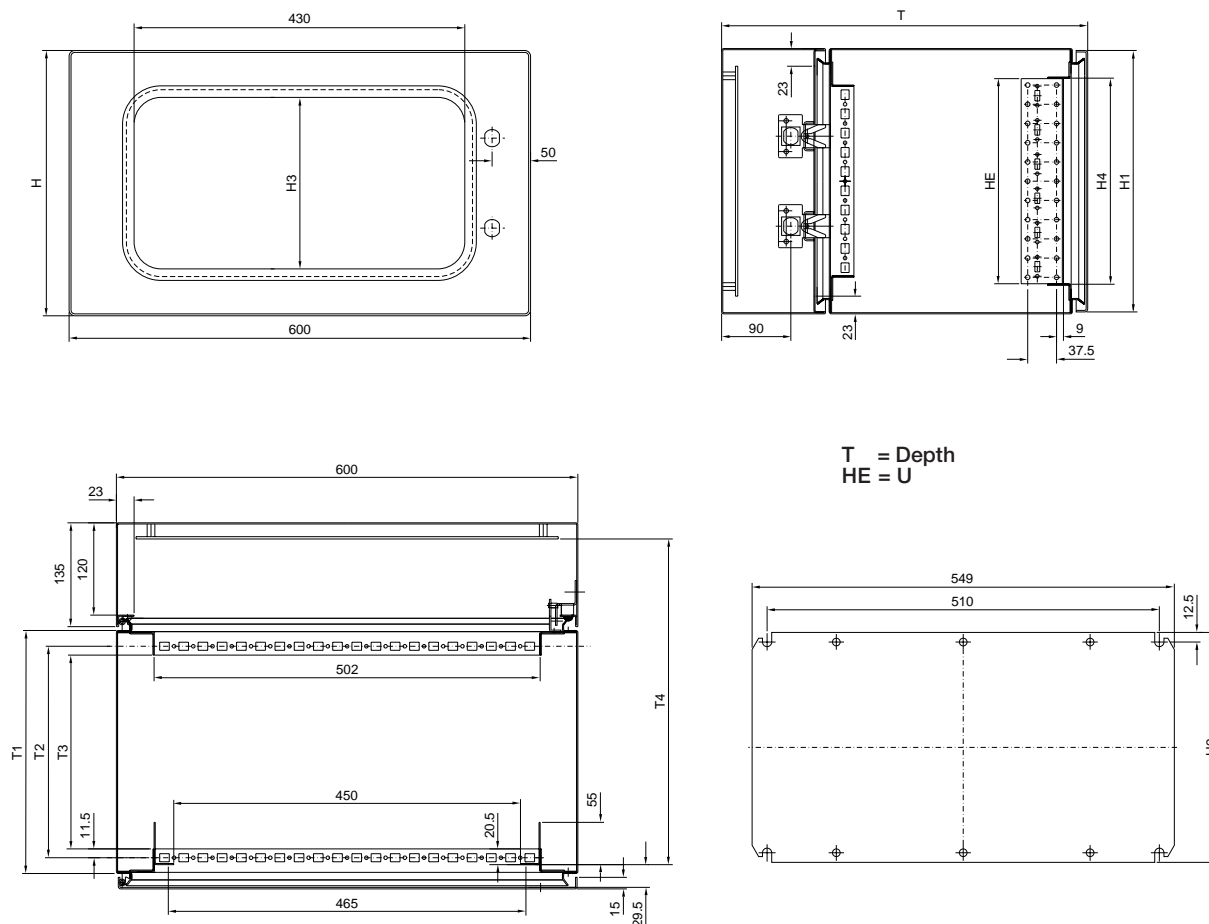
between the glazed door and
conductive sealing edge ensure
a high level of shielding and a
high IP protection category.

Order information

Wall-mounted enclosures – Rittal electronic Kombi system EL, stainless steel

Electronic Kombi system EL	Packs of	Enclosure depth 375 mm			Enclosure depth 475 mm					Page
		6 U	9 U	12 U	3 U	6 U	9 U	12 U	15 U	
Model No. EL solid	1	2267.600	2270.600*	–	–	–	2280.600	2283.600*	2286.600*	
Model No. EL with viewing window	1	2266.600	2269.600*	2272.600*	2273.600	2276.600*	2279.600	2282.600*	2285.600*	
B (mm)		600	600	600	600	600	600	600	600	
H (mm)		345	478	612	212	345	478	612	746	
H1 (mm)		340	473	607	207	340	473	607	741	
H2 (mm)		299	432	565	165	299	432	565	699	
H3 (mm)		233	366	500	100	233	366	500	634	
H4 (mm)		268	401	535	135	268	401	535	669	
T (mm)		375	375	375	475	475	475	475	475	
T1 (mm)		216	216	216	316	316	316	316	316	
T2 (mm)		175	175	175	275	275	275	275	275	
T3 (mm)		152	152	152	252	252	252	252	252	
T4 (mm)		324	324	324	424	424	424	424	424	
Accessories for external mounting										
Wall mounting bracket SZ, 10 mm spacing	1	2433.000	2433.000	2433.000	2433.000	2433.000	2433.000	2433.000	2433.000	292
Accessories for interior installation										
Slide rails EL	10	2240.000	2240.000	2240.000	2250.000	2250.000	2250.000	2250.000	2250.000	292
C rails EL	4	2238.000	2238.000	2238.000	2239.000	2239.000	2239.000	2239.000	2239.000	292
Blanking plates		see page 295								

* Extended delivery times



Wall-mounted enclosures – Rittal electronic Kombi system EL, stainless steel

**Material:**

Front door: 1.5 mm stainless steel 1.4301, with 4 mm safety glass where applicable
 Centre part, wall section, mounting angles: 1.5 mm stainless steel 1.4301
 Mounting plate:
 Sheet steel 3.0 mm
 Lock: Stainless steel 1.4301

Surface finish:

Stainless steel 1.4301, brushed
 Mounting plate: Zinc-plated

Protection category:

IP 55 to EN 60 529/10.91

Accessories:

see page 292 – 295

Supply includes:

1 wall section
 1 front door with safety glass or
 1 front door, solid
 1 centre part, vertically hinged
 2 x 482.6 mm (19") mounting angles
 1 zinc-plated mounting plate
 Assembly parts
 Locks
 Foamed-in seals
 Fully assembled

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



Wall mounting bracket
 permits cable routing behind the enclosure.
 Model No. see page 292



Blanking plates
 in various heights, horizontally or vertically hinged.
 Model No. see page 295

Wall-mounted enclosures – Rittal electronic Kombi system EL, 2-part

**Material:**

Enclosure: 1.5 mm sheet steel
 Swing frame: Sheet steel
 Front door: Extruded aluminium
 section, 3 mm acrylic glazing

**Surface finish:**

Enclosure and swing frame:
 Electrophoretic dipcoat-primed
 and powder-coated in RAL 7032
 Front door: Brown anodised

**Protection category:**

IP 55 to EN 60 529/10.91

Supply includes:

Enclosure, front door, fitted
 swing frame, including assembly
 parts

Special sizes and colours
 available on request.

Accessories:

see page 292 – 295



Facility for installing subracks and
 electronic components.



Wall mounting with the aid of
wall mounting brackets.
 Model No. see page 292

Accessories

EL enclosures

Wall mounting bracket

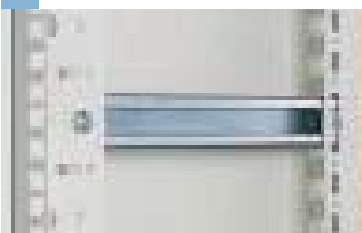


For secure attachment of all EL wall-mounted enclosures. The wall mounting brackets, with 10 or 40 mm distance from the wall, also facilitate cable routing behind the enclosure, from the top down to the cable gland plate.

Material:
Sheet steel, yellow passivated

Wall distance	Packs of	Model No. SZ
10 mm	1	2508.000
40 mm	1	2503.000

C rails



For infinite depth-variability of the mounting angles, including assembly parts.

Material:
Sheet steel, yellow passivated

For centre part depth	Packs of	Model No. EL
216 mm	4	2238.000
316 mm	4	2239.000
416 mm	4	2237.000

German Patent no. 39 30 161

Slide rails



For the installation of heavy slide-in equipment.

Material:
Sheet steel, yellow passivated

For centre part depth	Packs of	Model No. EL
216 mm	10	2240.000
316 mm	10	2250.000
416 mm	10	2260.000

Mounting angle kit for 3-part EL enclosures



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:
2 mounting angles including assembly parts

U	Model No. EL
6	7705.706*
9	7705.709*
12	7705.712*
15	7705.715*
18	7705.718*
21	7705.721*

* Extended delivery times

Mini-comfort handle



This comfort handle is suitable for use in all 3-part EL enclosures as a spare or replacement when a standard semi-cylinder is required.

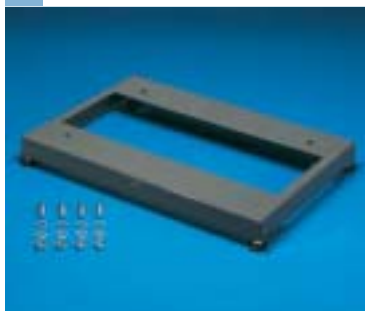
Material:
Die-cast zinc

Colour:
RAL 7035

Supply includes:
Handle with assembly parts,
excluding lock inserts

Design	Model No. DK
For semi-cylinders	7705.120

Base/plinth



The base/plinth can be fitted onto all EL enclosures with a centre part depth of 316 mm 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.

Height:
50 mm

Material:
Sheet steel

Colour:
RAL 7022

Base/plinth for centre part depth	Packs of	Model No. DK/VR
316 mm	1	7505.300
416 mm	1	7505.400
Additional castors for base/plinth	4	3805.500

Supply includes:
Base/plinth, including 4 levelling feet and assembly parts

Solid gland plate



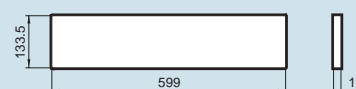
Multi-folded and welded gland plate for the base box, with foamed-in seal.

Material:
1.5 mm sheet steel

Surface finish:
Electrophoretic dipcoat-primed, textured stove enamel, RAL 7032/RAL 7035

Supply includes:
Gland plate

Design	Packs of	Model No. DK/VR
RAL 7032	1	2235.100
RAL 7035	1	2235.135



Accessories

EL enclosures

Gland plate with brush insert



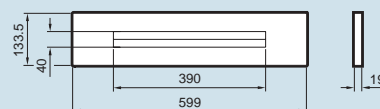
Multi-folded and welded gland plate with foamed-in seal and plastic brush inserts for simple cable entry.

Material:
1.5 mm sheet steel

Surface finish:
Electrophoretic dipcoat-primed, textured stove enamel, RAL 7032/RAL 7035

Supply includes:
Gland plate

Design	Packs of	Model No. SZ
RAL 7032	1	7705.000
RAL 7035	1	7705.035



Gland plate for cable glands



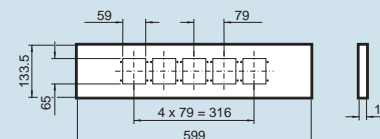
Multi-folded and welded gland plate with foamed-in seal and cutouts for cable glands
Model No.EL 2235.010 / .015 –
EL 2235.080 / .085.

Material:
1.5 mm sheet steel

Surface finish:
Electrophoretic dipcoat-primed, textured stove enamel, RAL 7032/RAL 7035

Supply includes:
Gland plate

Design	Packs of	Model No. SZ
RAL 7032	1	2235.000
RAL 7035	1	2235.005



PG segments



Plastic segments with pre-punched, knock-out holes for cable glands.
Suitable for retrospective screw-fastening to gland plate Model No.EL 2235.000 / .005.

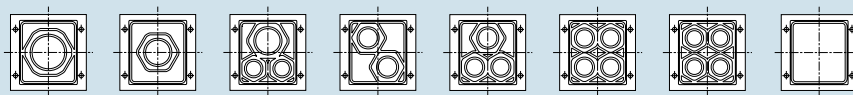
Material:
ABS, self-extinguishing to UL 94-V0

Colour:
RAL 7032/RAL 7035

PG sizes	Model No. EL	
	RAL 7032	RAL 7035
29	2235.010	2235.015
21	2235.020	2235.025
21/11	2235.030	2235.035
16	2235.040	2235.045
16/13.5	2235.050	2235.055
13.5	2235.060	2235.065
11	2235.070	2235.075
neutral	2235.080	2235.085

Packs of 5

EL 2235.010/ 2235.015	EL 2235.020/ 2235.025	EL 2235.030/ 2235.035	EL 2235.040/ 2235.045	EL 2235.050/ 2235.055	EL 2235.060/ 2235.065	EL 2235.070/ 2235.075	EL 2235.080/ 2235.085
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482.6 mm (19") blanking plates



Material:
Aluminium, natural anodised

U	1	2	3	4	6	7	9	12
Packs of	3	3	3	3	3	3	3	3
Model No. EL	1931.200	1932.200	1933.200	1934.200	1936.200	1935.200	1939.200	1937.200

Horizontally hinged blanking plate



Material:
3 mm aluminium, natural anodised
Hinge: Die-cast zinc, zinc-plated

Supply includes:
Blanking plate, 2 hinges, assembly parts

Width	U	Model No. EL
482.6 mm (19")	3	1944.000
482.6 mm (19")	6	1945.000

Vertically hinged blanking plate



Material:
3 mm aluminium, natural anodised
Hinge: Die-cast zinc, zinc-plated

Supply includes:
Blanking plate, 2 hinges, assembly parts

Width	U	Model No. EL
482.6 mm (19")	3	1940.000
482.6 mm (19")	6	1941.000

Hinge for blanking plate



For retrospective hinging of blanking plates, including assembly parts.

Material:
Die-cast zinc, zinc-plated

Packs of	Model No. EL
2	1950.000

German patent no. 40 04 264
GB patent no. 2 243 025

Ventilation front plates



For venting open-fronted enclosures.

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

Plenty of space for intelligent solutions.



Electronic enclosure systems.

The solutions offered by Rittal are as diverse as the requirements made on electronic enclosures.

E.g. Rittal QuickRack – The uncompromisingly effective enclosure system with 192 basic designs in over 5,000 variants.

E.g. Rittal flexRack – Ideal for the accommodation of high-quality electronics, with its versatile and robust frame system.

E.g. Rittal electronic enclosures TS 8 – For use in tough industrial environments.

E.g. Rittal PC enclosures – At the interface between human and machine, they offer a high level of security for computers, monitors and keyboards, coupled with an ergonomic design.



Rittal QuickRack

Choose from over 5,000 variants. Your Rittal QuickRack can be delivered and ready to install in next to no time. Other special features include the frame, which can be dismantled, and the identical cover and base frame, with the option of modular population with cable entry and cooling components.



Rittal flexRack

The design, characterised by aluminium extrusions, and the associated options for interior installation, are superb. The various sizes and population variants provide ideal conditions for a wide range of applications.



Rittal RiLab

The mobile workstation for electronic applications in the laboratory offers secure accommodation for sensitive equipment whilst remaining flexible in terms of location.

Electronic enclosure systems

Electronic enclosure flexRack	300 – 325
Electronic enclosure QuickRack	326 – 341
Electronic enclosure TS 8	342 – 349
PC enclosures	350/351
Mobile workstation RiLab	354 – 357



Rittal PC enclosure system

Protection against unauthorised access, theft protection and a relaxed posture, thanks to the consistent implementation of ergonomic principles, are the particular features of this enclosure system. Computer, keyboard, mouse and monitor are accommodated to perfection. There is also a special chassis for the printer in this enclosure.

Overview of Electronic enclosures and mobile workstations

Electronic enclosure flexRack



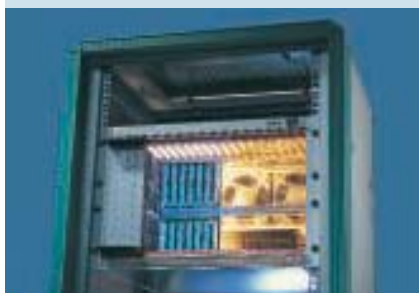
Model No. see page 300 – 325

Applications

- Office environment
- Location-flexible solutions
- Representative applications
- Industrial environment

Design features

- Vertical sections of extruded aluminium
- Screw-fastened frame
- 482.6 mm (19") and metric interior installation
- Interchangeable door hinge
- Multi-functional aluminium section
- Infinitely variable and pitch pattern attachment of mounting parts
- Two attachment levels
- Protection category max. IP 40
- Single-point locking



User benefits

- Representative, secure packaging of high-quality components
- Quick assembly
- Maximum interior usable space
- 16 attachment levels for interior installation
- Frame may be dismantled
- Fully depth-variable interior installation

Electronic enclosure QuickRack



Model No. see page 326 – 341

Applications

- Indoor applications
- Changing locations
- Customer-specific applications
- Flat-pack sales concepts

Design features

- Multi-folded vertical sections
- Inserted and screw-fastened frame, easily dismantled
- Modular roof and base construction
- 482.6 mm (19") and metric interior installation
- Interchangeable door hinge
- One attachment level
- Protection category max. IP 20
- 2-point locking
- Flat-pack version



User benefits

- Quick assembly
- Passive climate control is pre-integrated, may be upgraded to active climate control
- Exceptionally efficient complete system
- Flat-pack version requires minimal warehousing space
- 232 standard variants, thanks to modular assemblies
- Depth-variable interior installation on a 25 mm pitch pattern

Electronic enclosure TS 8



Model No. see page 342 – 349

Applications

- Industrial environments
- Office environment
- High mechanical loads

Design features

- Welded frame
- 16-fold profiled vertical sections
- Symmetrical structure
- Two attachment levels
- Interchangeable door hinge
- 4-point locking



User benefits

- High level of stability
- 15% more enclosure volume
- Bayable in all levels
- High standard of security thanks to 4-point locking
- Fully depth-variable interior installation

PC enclosure TS 8



Model No. see page 350/351

Applications

- Installation of PC hardware in tough industrial environments, laboratories or office environments

Design features

- Frame construction analogous TS 8
- Side panels and roof fastened from the inside
- Rear door with locking rod
- Protection category IP 55
- Including component shelf for monitor
- Various designs, e.g. with drawer, folding keyboard or desk section



User benefits

- Relaxed operation and monitoring
- Protects the PC against unauthorised access and theft
- High protection category for use in tough industrial environments
- Extensive range of system accessories
- Many variants for various applications

Mobile workstation RiLab



Model No. see page 354 – 357

Applications

- Laboratory environments in industry
- Suitable for versatile use as a PC workstation
- May be used for mobile test equipment
- Factory automation

Design features

- Modular system
- Three basic types
- Supporting column made from extruded aluminium section with threaded inserts for flexible installation
- Various mounting components
- Mobile on stable castors
- Integral power distribution concept using power pillars



User benefits

- High levels of stability and mobility
- Flexible installation by means of versatile positioning and configuration options
- Extensive range of accessories such as component shelves and drawer compartments

In detail: Rittal flexRack

Rittal flexRack – The outstanding packaging for high-quality network components.

The multi-functional aluminium section ingeniously combines stability, maximum utilisation of the interior space, fast, flexible installation, and a special design touch.

Whether you require infinitely variable fastening or a set pitch pattern, 482.6 mm (19") or metric installation, with static, vertically hinged or pull-out mounting angles – everything is possible, even combinations of these!

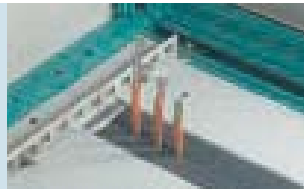
1 Design features



Multi-functional aluminium section
Provides a basis for attachment, either on a pitch pattern or infinitely variable on the mounting channels.



Accessibility
The frame, which can be dismantled, offers optimum access from all sides, thanks to removable panels.

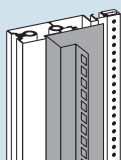


The three-part gland plate
for easy, fast cable entry from below. Standard in all 800 mm wide flexRacks.

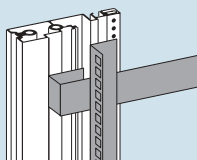


Roof plate for cable entry from above
with sliding bracket and special rubber cable clamp strip for sealing.

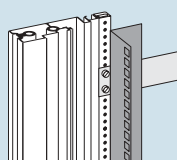
2 Mounting angles



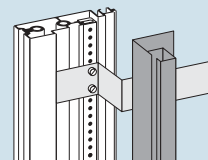
600 mm enclosure width
Mounting angles attached directly to the frame section.



600 mm enclosure width
482.6 mm (19") mounting angles with the option of cable entry from the front into the side cable chamber.



600 mm enclosure width
One or two pairs of mounting angles on depth stays. Alternatively also with T-slot mounting angles.



800 mm enclosure width
One or two pairs of mounting angles on depth stays. Alternatively also with T-slot mounting angles.

3 Door/side panels



A single action
removes the door. Simply press down the spring-loaded pins.



The door hinge
is swapped just as easily as installing and removing the door.



Ergoform-S
The clip-down handle for greater security and ease of operation.



Glazed door with frame or all-glass door (also divided)
of 4 mm safety glass.



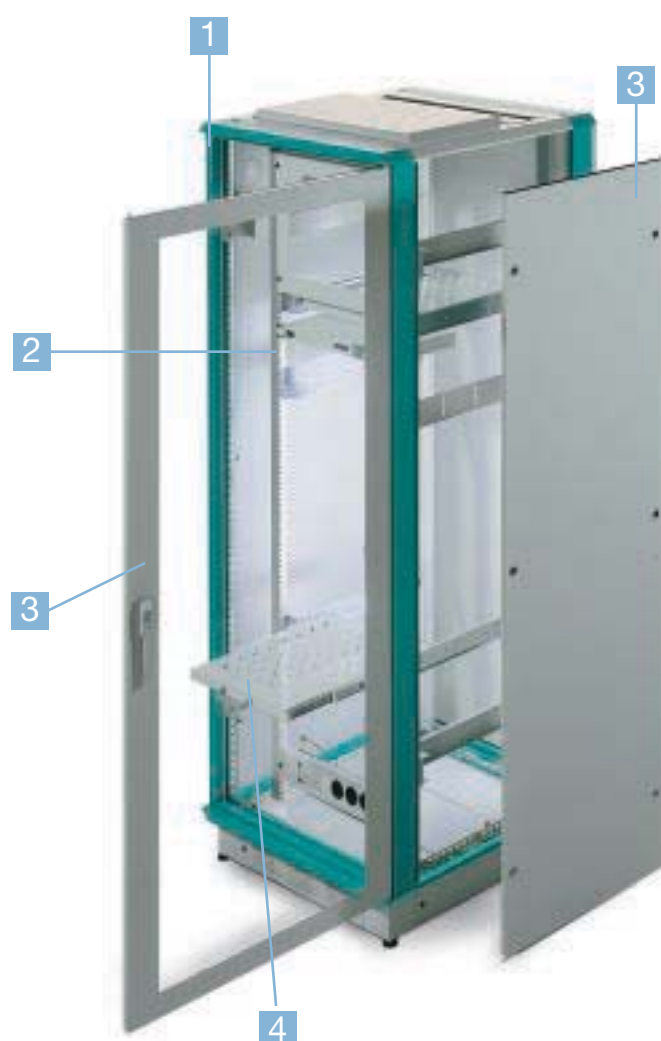
Side panels
The side panel is simply slotted into position and locked with cam locks.



Quick-fit baying clamp
for quick, simple baying of Rittal flexRacks.

Product information

Rittal flexRack



Outstanding, flexible and elegant!

- The multi-functional section combines stability, quick-fit assembly technology and an unmistakable design
- 16 levels for infinitely adjustable and/or pitch pattern attachment
- 482.6 mm (19") or metric installation with mounting angles or T-slot mounting angles
- Modular solution diversity with system accessories

4 Interior installation



Maximum useful interior space – is provided by the Rittal flexRack, thanks to slimline sections and mounting technology, which utilise the interior space to optimum effect.



16 mounting levels for component shelves, depth stays, slide rails and socket strips provide unlimited assembly diversity.



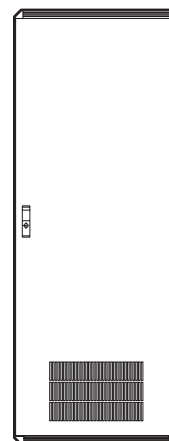
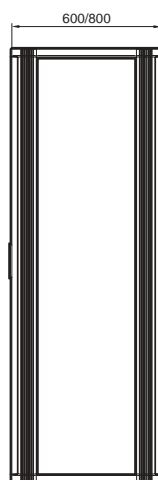
Mounting angles or cross rails are secured to the Rittal flexRack frame to your specifications, with variable depth and height.



Subrack from the Rittal range in 482.6 mm (19") or metric version.

Electronic/Network enclosures – Based on Rittal flexRack, types 3, 4

* Extended delivery times



Electronic/Network enclosures – Based on Rittal flexRack, types 3, 4

**Material:**

Enclosure frame of extruded aluminium sections
 Roof plate and rear door of sheet steel
 Die-cast corner pieces

Surface finish:

Electrophoretic dipcoat-primed, textured stove enamel

Colour:

Sheet steel parts RAL 7035, extruded aluminium sections and die-cast corner pieces RAL 5018

Accessories:

see page 312 – 325

Other accessories:

see page 358 – 389

- 482.6 mm (19") mounting angles must be ordered separately
- Side panels, roof and base modules must be ordered separately



Mounting angles
 for 482.6 mm (19") or metric installation in the foremost position.
 Model No. see page 322





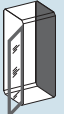
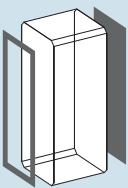
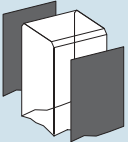
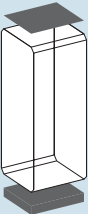
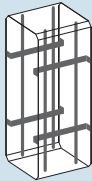
Base/plinth
 for convenient cable entry from below,
 see page 318




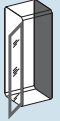





Top-mounted roof plate
 (solid or vented) to conceal the roof plate cutout.
 Model No. see page 315

Order information

Electronic/Network enclosures – Rittal flexRack, module tables

	Page	Type 3	Type 3	Type 3
				
U		11	20	33
SU		20	36	60
Width mm		600	600	600
Height mm		600	1000	1600
Depth mm		600	600	600
Model No. FR		2100.100	2101.200	2100.200
Door/rear panel				
 Glazed door with safety glass, front	–	①	①	①
Open front frame	–	–	–	–
Sheet steel door, rear, solid	–	–	–	–
Sheet steel door, rear, with vent slots	–	①	①	①
Door variants	312			
Ergoform-S handle RAL 7035 for front/rear door	313	2435.000	2435.000	2435.000
Side panel				
 Side panels with quick-release fastener	314	2102.110	2102.760	2102.210
Security lock for side panels	314	2102.395	2102.395	2102.395
Baying kit	314	2102.340	2102.340	2102.340
Roof				
 Roof plate solid	–	①	–	–
Roof plate with cutout	315	–	①	①
Roof plate for cable entry	315	7873.100	7873.100	7873.100
Roof plate with vent panel	316	–	–	–
Roof plate with cable entry and vent panel for fan extension	316	7851.000	7851.000	7851.000
Active fan insert for roof plate with cutout	316	2102.320	2102.320	2102.320
Top-mounted roof plate, vented	315	2102.400	2102.400	2102.400
Fan expansion kit	317	7980.000	7980.000	7980.000
Thermostat	388	3110.000	3110.000	3110.000
Mounting kit for thermostat	388	7952.100	7952.100	7952.100
Base				
Gland plates, one-part	319	2102.600	2102.600	2102.600
Gland plates, multi-part	319	2102.240	2102.240	2102.240
Base/plinth 100 mm, with integrated louvres	318	7526.300	7526.300	7526.300
Connecting base/plinth trim for bayed enclosures with base/plinth 100 mm	318	7860.000	7860.000	7860.000
Interior installation				
 Mounting angles, 482.6 mm (19"), front	322	7875.300	–	–
Mounting angles, 482.6 mm (19"), rear	322	7875.300	–	–
482.6 mm (19") mounting angle (for frame attachment, enclosure width 600 mm)	322	2102.120	2102.810	2102.220
Depth stays for mounting angles/cross rails	322	2102.430	2102.430	2102.430
C rails for enclosure width	324	7954.060	7954.060	7954.060
C rails for enclosure depth	324	7954.600	7954.600	7954.600
Cable management		from page 358	from page 359	from page 359
Slide rails		page 324	page 324	page 324
Socket strips		from page 372	from page 372	from page 372
Earthing variants		page 365	page 365	page 365
① Included with the supply. * Extended delivery times.				

Electronic/Network enclosures – Rittal flexRack, module tables

Type 3	Type 3	Type 3	Type 4	Type 3	Type 4	Type 3
						
33	38	42	42	42	42	47
60	68	76	76	76	76	84
600	600	600	600	600	600	600
1600	1800	2000	2000	2000	2000	2200
800	800	600	600	800	800	800
2100.400*	2101.610*	2100.300	2100.700*	2100.500	2100.900*	2101.810*
①	①	①	–	①	–	①
–	–	–	①	–	①	–
–	–	–	–	–	–	–
①	①	①	①	①	①	①
2435.000	2435.000	2435.000	2435.000	2435.000	2435.000	2435.000
2102.510	7839.000	2102.710	2102.710	7849.000	7849.000	2102.790
2102.395	2102.395	2102.395	2102.395	2102.395	2102.395	2102.395
2102.340	2102.340	2102.340	2102.340	2102.340	2102.340	2102.340
–	–	–	–	–	–	–
①	①	①	①	①	①	①
7874.100	7874.100	7873.100	7873.100	7874.100	7874.100	7874.100
–	–	–	–	–	–	–
7852.000	7852.000	7851.000	7851.000	7852.000	7852.000	7852.000
2102.490	2102.490	2102.320	2102.320	2102.490	2102.490	2102.490
2102.410	2102.410	2102.400	2102.400	2102.410	2102.410	2102.410
7980.000	7980.000	7980.000	7980.000	7980.000	7980.000	7980.000
3110.000	3110.000	3110.000	3110.000	3110.000	3110.000	3110.000
7952.100	7952.100	7952.100	7952.100	7952.100	7952.100	7952.100
2102.610	2102.610	2102.600	2102.600	2102.610	2102.610	2102.610
2102.250	2102.250	2102.240	2102.240	2102.250	2102.250	2102.250
7526.310	7526.310	7526.300	7526.300	7526.310	7526.310	7526.310
7860.000	7860.000	7860.000	7860.000	7860.000	7860.000	7860.000
–	7931.000	7941.000	7941.000	7941.000	7941.000	7901.000
–	7931.000	7941.000	7941.000	7941.000	7941.000	7901.000
2102.220	2102.820	2102.720	2102.720	2102.720	2102.720	2102.830
2102.440	2102.440	2102.430	2102.430	2102.440	2102.440	2102.440
7954.060	7954.060	7954.060	7954.060	7954.060	7954.060	7954.060
7954.800	7954.800	7954.600	7954.600	7954.800	7954.800	7954.800
from page 359	from page 359	from page 359	from page 359	from page 359	from page 359	from page 359
page 324	page 324	page 324	page 324	page 324	page 324	page 324
from page 372	from page 372	from page 372	from page 372	from page 372	from page 372	from page 372
page 365	page 365	page 365	page 365	page 365	page 365	page 365

Order information

Electronic/Server enclosures – Based on Rittal flexRack

Electronic/Server enclosures flexRack	P. of				Page
U		24	42	42	
Width mm		600	600	600	
Height mm		1200 + 142	2000 + 142	2000	
Depth mm		900	900	900	
H1 mm		1102	1902	1902	
Model No. FR		7880.125	7880.205	7880.210 ¹⁾	
Supply includes					
1 enclosure frame (RAL 5018), Rittal flexRack		•	•	•	
1 glazed door, front, of sheet steel, with 4 mm single-pane safety glass and Ergoform-S handle with lock insert		•	•	•	
1 sheet steel door rear with vent slots and Ergoform-S handle and lock insert		•	•	•	
2 side panels, with quick-release fastener		•	•	–	
1 mobile base with front extension and cable management facility, depth 935 mm		•	•	–	
1 roof plate with vent panel and sliding angle bracket for cable entry, with 6 fan cutouts		•	•	•	
1 pair of 482.6 mm (19") mounting angles, front, secured to the frame		•	•	•	
1 pair of 482.6 mm (19") mounting angles, rear, secured to the frame		•	•	•	
4 clip-on rails, each mounted on the second mounting level		•	•	•	
1 potential equalisation rail for star earthing of all enclosure panels		•	•	•	
Accessories					
Side panels with quick-release fastener, spray finished in RAL 7035	2	–	–	7880.500	314
Security locks for side panels	4	2102.395	2102.395	2102.395	314
Base/plinth 100 mm high, unvented, static	1	–	–	7880.600	
Mounting kit for imperial component shelves	1 set	2102.300	2102.300	2102.300	361
482.6 mm (19") component shelves, 700 mm deep	1	7145.735	7145.735	7145.735	360
Depth stays for depth-recessed mounting angles	6	2102.420	2102.420	2102.420	322
Fan expansion kit	1	7980.000	7980.000	7980.000	317
Slide rails to support 482.6 mm (19") equipment	2	2102.560	2102.560	2102.560	324
Cable clamp rails for enclosure width	4	7895.000	7895.000	7895.000	324
Cable clamp rails for enclosure depth	4	7899.000	7899.000	7899.000	324
Computer Multi Control CMC-Top Concept	1	7320.xxx	7320.xxx	7320.xxx	266
Server Switch Control SSCmini/SSCmulti console changeover switch	1	7551.000	7551.000	7551.010	264
¹⁾ Bayed enclosure					

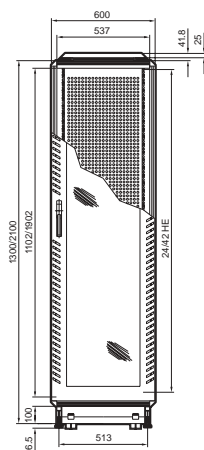
The new generation of server enclosures provide a universal solution for all 482.6 mm (19") computer systems, offering attractive protection of hardware and software, coupled with new features for cable entry and ventilation. As well as the option of passive ventilation via the glazed

door with vent slots and the slotted rear door, active ventilation is quickly achieved with the new roof plate. After removing the 6 blanking plates, the fan expansion kits are inserted, which push the hot air outwards via the vent panel. Cable entry can be achieved via the roof plate with

sliding angle bracket, and via the base/plinth through cutouts with brush strips.

The front and rear doors are equipped with an Ergoform-S handle and security lock, whilst complex monitoring of the valuable equipment is achieved via the network, with the CMC-Top

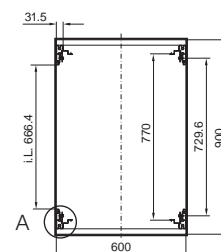
Concept monitoring system. By using the Server Switch Control SSC, several computers can be administered centrally, with a single console.



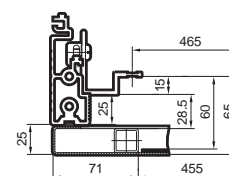
HE = U



i.L. = Clearance width



Detail A



**Material:**

Enclosure frame – extruded aluminium section, roof plate, rear door, side panels, gland plates of sheet steel, die-cast corner pieces

Surface finish:

Electrophoretic dipcoat-primed, textured stove enamel

Colour:

Sheet steel parts RAL 7035, extruded aluminium sections and die-cast corner pieces RAL 5018

Available on request:

Special sizes and special finishes, Server enclosures fitted to order with Rittal accessories.

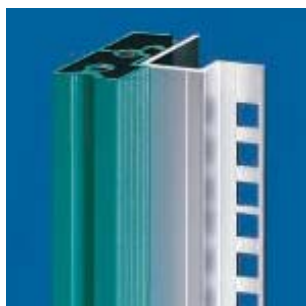
Accessories:

see page 312 – 325

Other accessories:

see page 358 – 389

- Including 482.6 mm (19") mounting angles at the front and rear
- Including side panels, roof and base modules



Mounting angles
suitable for mounting on variable depths on the frame section from 686 – 770 mm via slots.



Cable entry
at the rear and internally via brush strips.



Mobile base/plinth
with lockable castors and levelling feet.

Order information

Electronic/Network enclosures – Based on Rittal flexRack

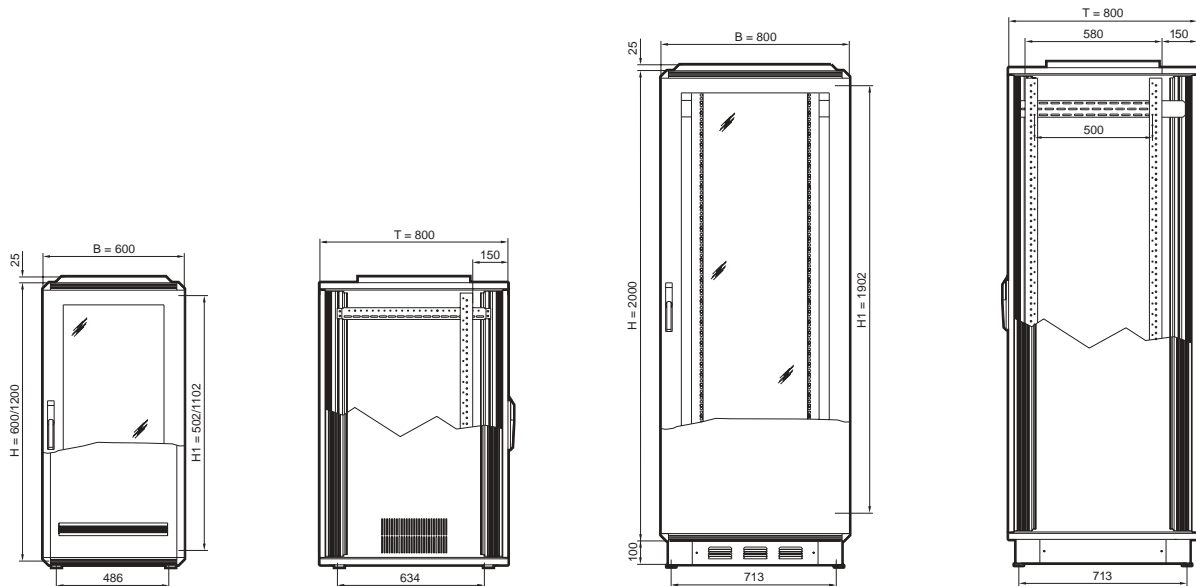
Electronic/Network enclosures			
Enclosure types	V 20 Under-desk enclosure	V 21 Network enclosure	V 22 Network enclosure
U	11	25	43
SU	20	45	77
Width (B) mm	600	600	800
Height (H) (overall) mm	600 + 25	1200 + 25	2000 + 125
Depth (T) mm	800	800	800
Frame clearance height H1 mm	502	1102	1902
Model No. FR with side panels	7801.000	7893.000	7891.000
Model No. FR without side panels	–	–	7891.120
Supply includes			
Enclosure frame Rittal flexRack	•	•	•
1 glazed door, front, of sheet steel (RAL 7035) with 4 mm single-pane safety glass and Ergoform-S handle with lock insert, 180° hinge	•	•	•
4 levelling feet to compensate for floor irregularities, supplied loose	•	•	•
1 rear panel of sheet steel with brush strips for cable entry at the bottom	•	•	
1 sheet steel door, rear with Ergoform-S handle and lock insert, 180° hinge			•
2 side panels with quick-release fastener and vent slots	•	•	
2 side panels with security lock			•
1 roof plate, with vent panel (see page 316 for description)	•	•	
1 roof plate, with vent panel and cable entry (see page 316 for description). Blanking plates should be ordered separately, Model No. UV 3613.070			•
1 one-piece gland plate	•	•	
1 three-piece gland plate			•
1 base/plinth, 100 mm, with integrated louvres for ventilation			•
1 pair of 482.6 mm (19") mounting angles on depth stays (mounted 150 mm from the front)	•	•	•
1 pair of 482.6 mm (19") mounting angles, rear			•
4 mounting rails, each mounted on the first mounting level			•
4 mounting rails, each mounted on the second mounting level	•	•	
1 potential equalisation rail with star earthing			•
4 cable clamp rails for the enclosure width, supplied loose			•
4 cable clamp rails for the enclosure depth, supplied loose			•
10 shunting rings 105 x 70 mm, supplied loose			•
50 captive nuts with screws and plastic washers, supplied loose			•

Front view

Side view

Front/rear view

Side view



**Material:**

Enclosure frame:
Extruded aluminium sections
Roof plate, rear door, rear panel,
side panels, gland plates and
base/plinth: Sheet steel
Die-cast corner pieces

Surface finish:

Electrophoretic dipcoat-primed,
textured stove enamel

Colour:

Sheet steel parts RAL 7035,
extruded aluminium sections and
die-cast corner pieces
RAL 5018

Accessories:

see page 312 – 325

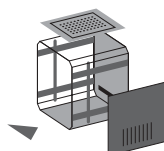
Other accessories:

see page 358 – 389

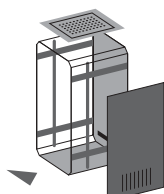
Note:

Pre-configured off the shelf!

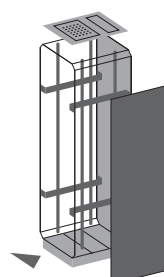
- Including 482.6 mm (19") mounting angles
- Including side panels, roof and base modules



V 20 pre-configured:
With mounting angles at the front (1 pair of 482.6 mm (19") mounting angles).



V 21 pre-configured:
With mounting angles at the front (1 pair of 482.6 mm (19") mounting angles).



V 22 pre-configured:
With mounting angles front and rear (2 pairs of 482.6 mm (19") mounting angles).
Optionally without side panels.



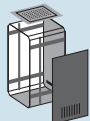
Vertically divided door
allows extra space between the enclosure rows.
Model no. see IT Catalogue

Order information

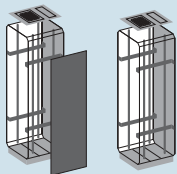
Electronic/Network enclosures – Based on Rittal flexRack, module tables




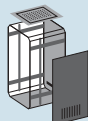
V 20: With mounting angles at front,
(1 pair of 482.6 mm (19") mounting angles), glazed front door, rear panel with cable entry, side panels with ventilation, roof plate with ventilation, gland plate.



V 21: With mounting angles at the front
(1 pair of 482.6 mm (19") mounting angles), glazed front door, rear panel with cable entry, side panels with ventilation, roof plate with ventilation, gland plate.



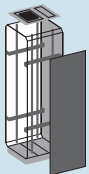
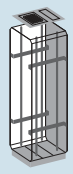
V 22: With mounting angles front and rear
(2 pairs of 482.6 mm (19") mounting angles), glazed front door, sheet steel rear door, with/without side panels, roof plate with ventilation and cable entry, three-part gland plate, base/plinth with integrated louvres at front.

	Page	V 20	V 21
			
U		11	25
SU		20	45
Width mm		600	600
Height mm		600	1200
Depth mm		800	800
Model No. FR		7801.000	7893.000
Door/rear panel			
Glazed door with safety glass, front	–	①	①
Open front frame	–	–	–
Sheet steel door, rear, solid	–	②	②
Sheet steel door, rear, with vent slots	–	–	–
Door variants, see page 162			
Rear panel	–	①	①
Ergoform-S handle RAL 7035 for rear door	313	2435.000	2435.000
Side panel			
Side panels with quick-release fastener	314	①	①
Security lock for side panels	314	2102.395	2102.395
Baying kit	314	2102.340	2102.340
Roof			
Roof plate solid	–	–	–
Roof plate with cutout	–	–	–
Roof plate for cable entry	–	–	–
Roof plate with vent panel	316	①	①
Roof plate with cable entry and vent panel for fan extension	316	7851.000	7852.000
Active fan insert for roof plate with cutout	316	2102.490	2102.490
Top-mounted roof plate, vented	–	–	–
Fan expansion kit	317	7980.000	7980.000
Thermostat	388	3110.000	3110.000
Mounting kit for thermostat	–	7952.100	7952.100
Base			
Gland plates, one-part	319	①	①
Gland plates, multi-part	319	2102.610	2102.610
Base/plinth 100 mm, with integrated louvres	318	7526.310	7526.310
Connecting base/plinth trim for bayed enclosures with base/plinth 100 mm	318	7860.000	7860.000
Interior installation			
Mounting angles, 482.6 mm (19"), front	322	①	①
Mounting angles, 482.6 mm (19"), rear	322	7875.300	7911.000
482.6 mm (19") mounting angle (for frame attachment, enclosure width 600 mm)	322	2102.120	–
Depth stays for mounting angles/mounting rails	322	①	①
Additional mounting angles, metric/482.6 mm		from page 322	from page 322
C rails for enclosure width	324	7954.060	7954.060
C rails for enclosure depth	324	7954.800	7954.800
Cable management		from page 359	from page 359
Slide rails		from page 324	from page 324
Socket strips		from page 372	from page 372
Earthing variants		from page 365	from page 365

① Included with the supply. ② On request

* Extended delivery times

Electronic/Network enclosures – Based on Rittal flexRack, module tables

V 22	V 22
	
43	43
77	77
800	800
2000	2000
800	800
7891.000	7891.120
①	①
–	–
①	①
–	–
7847.000*	7847.000*
①	①
①	7849.000
①	2102.395
2102.340	2102.340
–	–
–	–
–	–
–	–
①	①
7886.000	7886.000
–	–
7980.000	7980.000
3110.000	3110.000
7952.100	7952.100
–	–
①	①
①	①
7860.000	7860.000
①	①
①	①
–	–
①	①
from page 322	from page 322
7954.080	7954.080
7954.800	7954.800
from page 359	from page 359
from page 324	from page 324
from page 372	from page 372
from page 365	from page 365



Mounting rails, fitted as standard in all flexRack network enclosures, provide additional user benefits. Accessories are quickly and easily installed on a 25 mm height pitch pattern. For additional mounting rails, see page 325



In all **600 mm** wide Rittal flexRacks, the mounting rails are fitted as standard to the **outer** attachment level.



In all **800 mm** wide Rittal flexRacks, the mounting rails are fitted as standard to the **inner** attachment level.

Accessories

FR – Doors

All-glass door for FR



The all-glass door combines stylish design with a maximum view of all built-in components.

Material:

Single-pane safety glass, 5 mm,
side aluminium trim

Colour:

Side aluminium trim RAL 7035

Supply includes:

All-glass door with 180° opening angle and
assembly parts, Ergoform-S handle with lock
insert

For enclosures		Model No. FR
Width mm	Height mm	
600	600	2102.530*
600	1600	2102.540
600	2000	2102.550
800	2000	7845.000*

*Extended delivery times

Cover to conceal the vent slots for FR



Used as required to conceal the vent
slots in the rear door.

Material:

Sheet steel

Colour:

RAL 7035

Supply includes:

1 cover with sealing material

Packs of	Model No. FR
1	
	2102.370

Possible alternative:
Filter mat VR 3804.000,
see below.

Filter mat



To cover the vent slots in the rear door.

	Model No. VR
Filter mat	3804.000

Ergoform-S lock system



For retro-fitting in all enclosures, no machining work required. When unlatched, the handle is tilted forwards and swung around to open the lock.

Material:
Die-cast zinc

Surface finish:
Powder coated

German patent no. 34 07 700
European patent no. 0 155 543
with validity for AT, FR, GB, IT
US patent no. 4,631,937
Australian patent no. 572 965
Japanese patent no. 1 680 637
US design patent no. des. 292,171
Japanese design pattern no. 762 637

Ergoform-Standard



Prepared for the installation of semi-cylinders, 40/45 mm total length, (to DIN 18 254) and all 27 mm lock inserts, type A.

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* with brown handle and shackle	2455.000

*Hole diameter = 7 mm for padlock or multiple lock

Accessories:
Lock-inserts, type A,
see below

Lock inserts



Design A

Material:
Die-cast zinc

Note:

The universal lock system allows a suitable lock to be fitted for almost any application or customer specification. The relevant product ordering page shows which handles can be fitted into each particular module.

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	2465.000
Double-bit, 3 mm	2466.000
Fiat	2307.000
6.5 mm triangular (CNOMO)	2460.650

Lock and push-button inserts



For installation in
■ the comfort handle for semi-cylinder,
see IT Catalogue, page 354
■ Ergoform-S standard,
see IT Catalogue, page 395

Design	Model No. SZ
Lock insert Lock no. 3524 E	2467.000*
Push-button insert	2468.000*
Lock and push-button insert, lock no. 2123; no other lock is possible	2469.000*

* with 2 keys

Accessories

FR – Side panels

Side panels with quick-release fastener for FR



For side mounting on all FR enclosures. Simply slot into position and lock with the quick-release fasteners. The quick-release fasteners may be exchanged for security locks (FR 2102.395).

Material:

Sheet steel

Surface finish:

Textured stove enamel

Colour:

RAL 7035

Supply includes:

2 side panels with cam lock

Accessories:

Security locks for side panels in FR, see below

Height mm	Depth mm	Packs of	Model No. FR
600	600	2	2102.110
1000	600	2	2102.760
1200	600	2	7818.000
1400	600	2	2102.770*
1600	600	2	2102.210
1800	600	2	7838.000
2000	600	2	2102.710
2200	600	2	2102.780
1200	800	2	7819.000
1600	800	2	2102.510
1800	800	2	7839.000
2000	800	2	7849.000
2000	900	2	7880.500
2200	800	2	2102.790*

*Extended delivery times

Security locks for side panels in FR



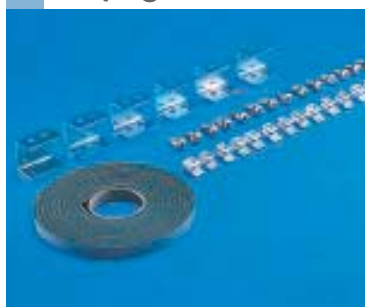
Security locks, lock 12321, may be retrofitted in place of the quick-release fasteners.

Supply includes:

4 security locks

Packs of	Model No. FR
4	2102.395

Baying kit for FR



For baying two Rittal flexRacks. The baying kit is mounted on the sides of the second mounting level of the frame sections and screw-fastened. Not suitable for the transportation of bayed enclosures.

Material:

Sheet steel

Surface finish:

Zinc-plated, passivated

Supply includes:

6 mounting brackets, assembly parts, set of seals

Packs of	Model No. FR
1 set	2102.340

Quick-fit baying clamps for FR



For quick, simple baying of two Rittal flexRacks. The baying kit is mounted on the side frame sections top and bottom, and held in place with the 8 quick-release fasteners. Not suitable for the transportation of bayed enclosures.

Material:

Sheet steel

Colour:

RAL 7035

Supply includes:

4 mounting brackets, 8 quick-release fasteners, set of seals

Packs of	Model No. FR
1 set	7952.700

Important note:

Not suitable for mounting in conjunction with a swing frame.

Note:

For baying with base/plinths, a connecting base/plinth trim may be used. See page 318

Roof plate for cable entry for FR ①



To replace the solid roof plate. For cable entry from above, with a sliding angle bracket and a special rubber cable clamp strip for sealing.

Material:
Sheet steel

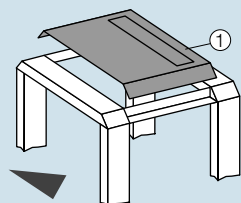
Surface finish:
Textured stove enamel

Colour:
RAL 7035

Supply includes:
1 roof plate for cable entry,
pre-configured

For enclosures		Model No. FR
Width mm	Depth mm	
600	600	7873.100*
600	800	7874.100*
800	600	7873.000*
800	800	7874.000

*Extended delivery times



Roof plate with cutout for FR ②



To replace the solid roof plate in 600 mm wide flexRacks. The cutout is concealed with a solid/vented top cover plate ③. In addition to this, an active fan insert ⑤ may be used.

Material:
Sheet steel

Surface finish:
Textured stove enamel

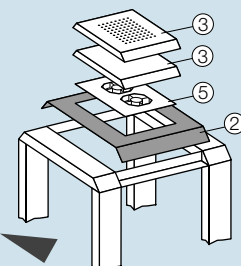
Colour:
RAL 7035

Supply includes:
1 roof plate with cutout

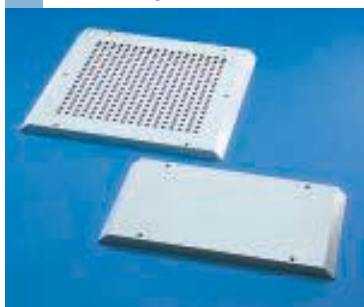
For enclosures		Model No. FR
Width mm	Depth mm	
600	600	2102.940*
600	800	2102.950*
600	900	2102.960

*Extended delivery times

Accessories:
Active fan insert ⑤,
see page 316



Cover plate solid/vented for FR ③



The top cover plate, either solid or vented (raised or close-fitting), can be fitted in the 600 mm wide flexRack with a cutout in the roof plate. In addition to this, an active fan insert may be used ⑤.

Material:
Sheet steel

Surface finish:
Textured stove enamel

Colour:
RAL 7035

Supply includes:
1 cover plate, assembly parts

For enclosures		Model No. FR	
Width mm	Depth mm	solid	vented
600	600	2102.180	2102.400
600	800	2102.190	2102.410
600	900	2102.190	2102.410

Accessories

FR – Roof configuration

Roof plate with vent panel for FR ④



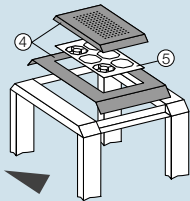
To replace the solid roof plate. The roof plate has a cutout for passive ventilation. This is covered with a slotted vent panel. For active ventilation an active fan insert ⑤ may be used.

Material:
Sheet steel

Surface finish:
Textured stove enamel

Colour:
RAL 7035

Supply includes:
Roof plate with cutout, slotted vent panel,
4 spacers, including assembly parts



For enclosures		Model No. FR
Width mm	Depth mm	
800	600	7883.000
800	800	7884.000

Accessories:
Active fan insert ⑤,
see below

Active fan insert for FR ⑤



The active fan insert can be retrofitted from above into the cutout ② of the roof plate with vent panel ④.

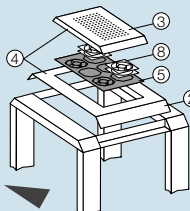
Technical specifications for one fan:
Rated operating voltage:
230 V, 50/60 Hz
Power consumption: 19/18 W at 50/60 Hz
Air throughput (unimpeded air flow):
140/165 m³/h at 50/60 Hz
Temperature range: – 10 °C to + 55 °C

Material:
1.5 mm sheet steel

Surface finish:
Textured stove enamel

Colour:
RAL 7035

Supply includes:
1 fan mounting, 2 fans, connection cable,
terminal block, assembly parts



For enclosures		Fan cutouts	Number of fans	Model No. FR
Width mm	Depth mm			
600	600	2	2	2102.320
600	800	6	2	2102.490
600	900	6	2	2102.490
800	600	3	2	7885.000
800	800	8	2	7886.000

Accessories:
Fan expansion kit ⑧,
see page 317
Thermostat for temperature-controlled
regulation of the fans,
see Rittal IT Catalogue, page 329

Roof plate for cable entry with vent panel for FR ⑥



To replace the standard roof plate.

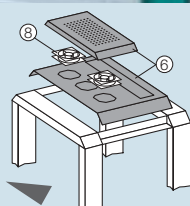
- For cable entry from above, with a sliding angle bracket and a special rubber cable clamp strip for sealing
- For passive ventilation via vent panel, by dismantling the integral blanking plates
- For active ventilation via vent panel, by replacing the integral blanking plates with fan expansion kit ⑧

Material:
Sheet steel

Surface finish:
Textured stove enamel

Colour:
RAL 7035

Supply includes:
Roof plate for cable entry with blanking plates and
slotted vent panel



For enclosures		Fan cutouts	Model No. FR
Width mm	Height mm		
600	600	3	7851.000
600	800	6	7852.000
800	600	3	7853.000
800	800	6	7854.000

Accessories:
Fan expansion kit ⑧,
see page 317
Thermostat for temperature-controlled
regulation of the fans,
see Rittal IT Catalogue, page 329

Combination fan roof, active for FR ⑦



Fully pre-configured fan roof with two fans, thermostat, cable entry and slotted vent panel. May be upgraded using fan expansion kit DK 7980.100.

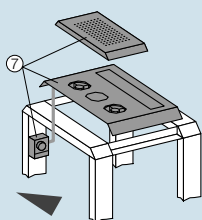
Material:
Sheet steel

Surface finish:
Textured stove enamel

Colour:
RAL 7035

Supply includes:
1 roof plate, fully assembled and wired, including blanking plate(s) and assembly parts

Technical data for one fan:
See fan expansion kit ⑧,
DK 7980.100



For enclosures		Fan cutouts	Number of fans	Model No. FR
Width mm	Depth mm			
600	600	3	2	7851.300
600	800	6	2	7852.300
800	600	3	2	7853.300
800	800	6	2	7854.300

*Extended delivery times

Accessories:
Fan expansion kit ⑧,
see below

Fan expansion kit ⑧



For retro-fitting various fan units.

Technical specifications DK 7980.000:

Rated operating voltage: 230 V~
Power consumption: 19/18 W at 50/60 Hz
Air throughput (unimpeded air flow):
140/165 m³/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):
117/135 m³/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 =
Power consumption: 7.7 W
Air throughput (unimpeded air flow):
184 m³/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)

To supplement:

the roof plate ⑥, the combination fan roof ⑦ and the active fan insert ⑤

Accessories

FR – Base/plinth

Base/plinth for FR/QR



By installing a base/plinth, you can obtain greater floor clearance. Four removable trim panels allow cable entry from all sides. Floor irregularities may be compensated with levelling feet. In the vented base/plinth, air entry is via louvres in the front and rear trim panel.

Material:
Sheet steel, spray finished

Colour:
RAL 7035

Supply includes:
Base/plinth including assembly parts

For enclosures		Model No. FR/QR		
W mm	D mm	Unvented 50 mm high	Unvented 100 mm high	Vented 100 mm high
600	600	2102.160	2102.140	7526.300
600	800	2102.170	2102.150	7526.310
600	900	–	7880.600	–
800	600	–	–	7526.311
800	800	–	–	7526.320

Accessories:
Connecting base/plinth trims for bayed base/plinths, see below

Connecting base/plinth trim for FR/QR



The connecting base/plinth trim is fitted between two bayed enclosures with 100 or 200 mm base/plinth, presenting a closed appearance front and rear.

Material:
Sheet steel, spray finished

Colour:
RAL 7035

For plinth	P. of	Model No. FR
100 mm	2	7860.000
200 mm	2	7860.200 ¹⁾ *

¹⁾ Including stacking kit for mounting two 100 mm base/plinths one on top of the other
* Extended delivery times

Mobile base/plinth for FR/QR



The mobile base/plinth allows flexible transportation to the required site. Once in place, the enclosure is aligned using the levelling feet integrated into the base/plinth and then locked into position. In all 50 mm high base/plinths, the side trim pieces may optionally be removed for cable entry. The 100 mm mobile base/plinth has a fully welded frame without removable trim pieces.

Material:
Sheet steel, spray finished

Colour:
RAL 7035

Supply includes:
Base/plinth with removable side trim pieces (base/plinth height 50 mm) and 4 castors

Enclosure width mm	Enclosure depth mm	Base/plinth height mm	Model No. QR
600	600	50	7526.331
600	800	50	7526.332
800	600	50	7526.333
800	800	50	7526.334
800	800	100	7526.335



Twin castors for FR/QR



For problem-free location changes.
M10 mounting thread.
For retro-fitting to the frame or base/plinth.

Load capacity per castor:
100 kg,
max. 300 kg static load per enclosure

Supply includes:
2 twin castors with brake,
2 twin castors without brake
Overall height: 125 mm

Packs of	Model No. FR
4	7859.100



Load capacity per castor:
80 kg,
max. 240 kg static load per enclosure

Supply includes:
4 castors, assembly parts
Overall height: 40 mm

Packs of	Model No. FR
4	2102.350

One-piece gland plate for FR



To cover the base aperture in the flexRack.

Material:
Sheet steel

Surface finish:
Textured stove enamel

Colour:
RAL 7035

For enclosures		Packs of	Model No. FR
Width mm	Depth mm		
600	600	1 set	2102.600
600	800	1 set	2102.610*

* Extended delivery times

Three-piece gland plated for FR Three-piece gland plated for FR



The gland plates are adjustable. Ideal for cable entry at the side or rear.
A self adhesive foam cable clamp strip, Model No. SZ 2573.000, may be used in addition for simple, fast sealing of the cable entry.

Material:
Sheet steel

Surface finish:
Textured stove enamel

Colour:
RAL 7035

For enclosure		Packs of set	Model No. FR	
Width mm	Depth mm		for rear cable entry	for side cable entry
600	600	1	2102.240	2102.620
600	800	1	2102.250	2102.630
800	600	1	–	7875.860*
800	800	1	–	7875.880*
800	900	1	7875.900*	–

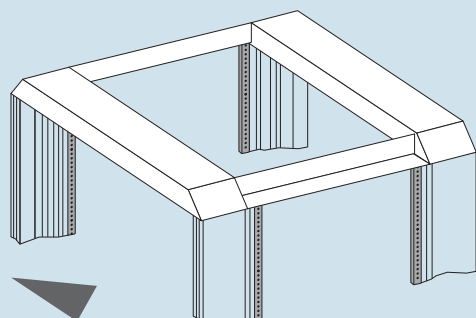
*Extended delivery times

Accessories:
Rubber cable clamp strip,
Model No. SZ 2573.000,
Packs of 3 m

Accessories

FR – Interior installation 482.6 (19")/metric

General installation of flexRacks



For general installation of Rittal flexRacks, please note the following:

- All FR enclosures are equipped as standard with 4 clip-on mounting rails on the vertical flexRack sections, to accommodate FR accessories

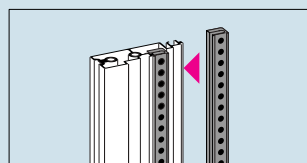
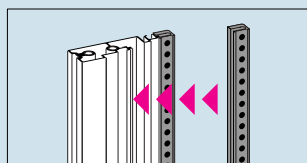
Standard installation of mounting rails, here in a 600 mm wide flexRack.



- In all **600 mm** wide Rittal flexRacks, the mounting rails are mounted on the **external** mounting level

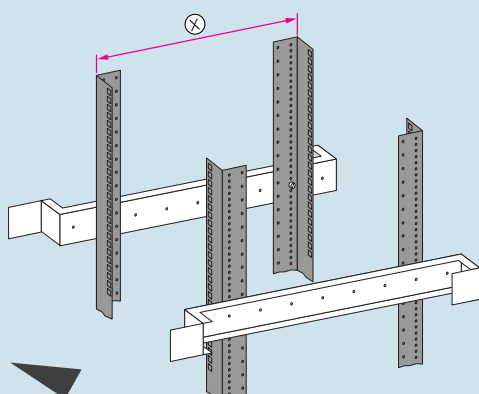


- In all **800 mm** wide Rittal flexRacks, the mounting rails are mounted on the **internal** mounting level



- If necessary, the Rittal flexRacks can be retro-fitted with additional mounting rails at the appropriate mounting level, Model No. see page 325

482.6 (19")/metric installation of flexRacks



For 482.6 mm (19")/metric installation of Rittal flexRacks, please note the following:

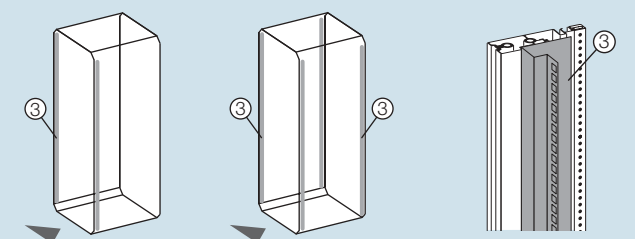
- To accommodate 482.6 mm (19")/metric network components such as patch panels, splicing boxes, hubs etc., one or two pairs of mounting angles are required in the network enclosures, depending on the application in question. The rear pair of mounting angles may be used e.g. for additional attachment of component shelves, slide rails or keyboard drawers. The correct distance between levels (X) should be set according to the installed components

- Some network enclosures are pre-configured as standard with one or two pairs of mounting angles over the entire height (full installation)

Distance between levels = (X) (depth variable on a 25 mm pitch pattern)

Enclosure width mm	Enclosure depth mm	(X) max. mm	Minimum clearance		Attachment
			Front mm	Rear mm	
600	600	470	65	65	On the frame section
600	800	670	65	65	On the frame section
600	900	770	65	65	On the frame section
800	600	400	150	50	On depth stays
800	800	600	150	50	On depth stays
800	900	800	25	25	On depth stays

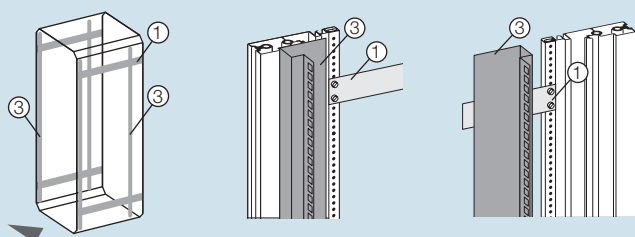
Installation of mounting angles in 600 mm wide flexRacks



Preparing for the installation of 482.6 mm (19")/metric mounting angles in 600 mm wide Rittal flexRacks

Accessories required for one or two pairs of mounting angles attached directly to the flexRack section:

2/4 mounting angles (3)



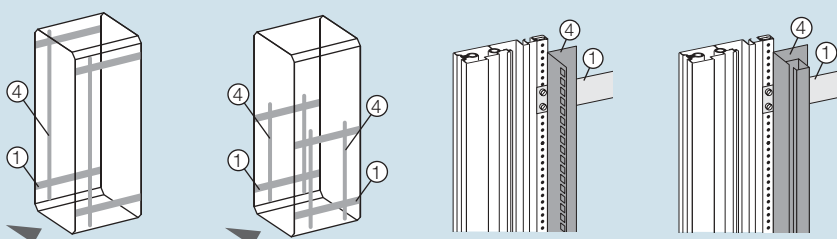
Accessories required for one pair of mounting angles at the front (directly on the flexRack section) and one at the rear (recessed):

4 mounting angles (3)

4 depth stays (1)

Note:

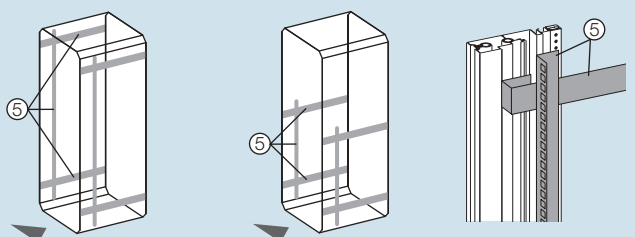
(4) (3) mounting angles should be the same at the front and the rear.



Accessories required for one or two pairs of mounting angles (partial or full installation) on depth stays:

2/4 mounting angles (alternatively with T-slot) (4)

4 depth stays (1)



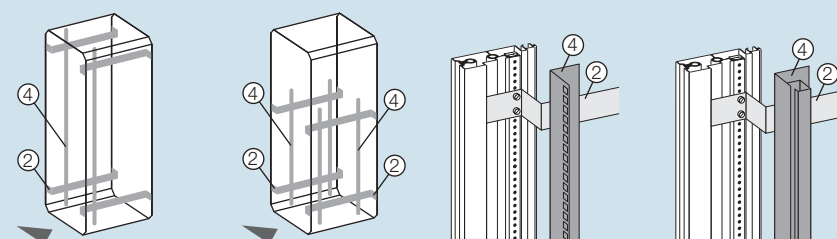
Accessories required for one pair of 482.6 mm (19") mounting angles (partial or full installation) with the option of cable entry from the front into the side cable area:

2 mounting angles with mounting kit (5)

Note:

Combination with mounting angles (3) or mounting angles (4) is not possible.

Installation of mounting angles in 800 mm wide flexRacks



Preparing for the installation of 482.6 mm (19")/metric mounting angles in 800 mm wide Rittal flexRacks

Accessories required for one or two pairs of mounting angles (partial or full installation) on depth stays:

2/4 mounting angles (alternatively with T-slot) (4)

4 depth stays (2)

Accessories

FR – Interior installation 482.6 mm (19")/metric

Depth stays for 600 mm ① and 800 mm ② wide FR



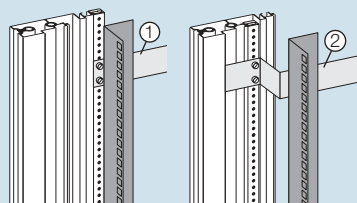
For infinitely variable installation of mounting angles ③ or mounting angles ④ in FR enclosures. The depth stays for 600 mm wide FR are mounted on the outer mounting level, and those for 800 mm wide FR on the inner mounting level (see illustration of mounting rail, page 324).

Material:
Sheet steel

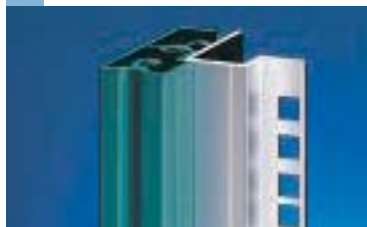
Surface finish:
Zinc-plated, passivated/spray finished in RAL 7035

Enclosure dim. W x D mm	Packs of	Model No. FR
600 x 600	6	2102.430
600 x 800	6	2102.440
600 x 900	6	2102.420
800 x 600	2	7875.286*
800 x 800	2	7875.288

* Extended delivery times



Mounting angles, 482.6 mm (19") ③ for 600 mm wide FR



For mounting to the frame sections in the utmost front position (inner mounting level) or on depth stays for depth-variable mounting.

Material:
Extruded aluminium section

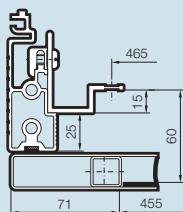
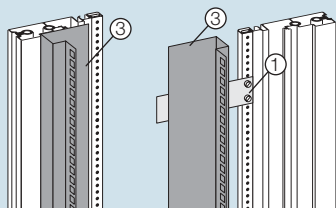
Surface finish:
Clear chromated

Supply includes:
2 mounting angles, assembly parts

Height mm	U	Packs of	Model No. FR
600	11	2	2102.120
1000	20	2	2102.800
1400	29	2	2102.810
1600	33	2	2102.220 1)
1800	38	2	2102.820
2000	42	2	2102.720 1)
2200	47	2	2102.830

1) In addition, imperial compensating trims may be mounted, see page 323

Accessories:
Depth stay ① for 600 mm wide FR,
Depth stay ② for 800 mm wide FR,
see above



Mounting angles, 482.6 mm (19") ④ for FR



For front or rear mounting of 482.6 mm (19") equipment, or for rear fastening of component shelves, slide rails and telescopic slides. For fastening to depth stays only.

Technical specifications:
Aluminium section with punchings on a U pitch pattern, plus side punchings for mounting installation kits or shunting rings

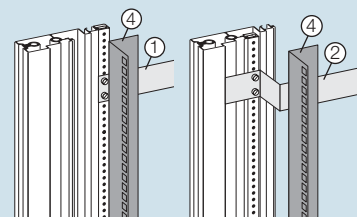
Material:
Extruded aluminium section

Surface finish:
Clear chromated

Supply includes:
2 mounting angles, incl. assembly parts

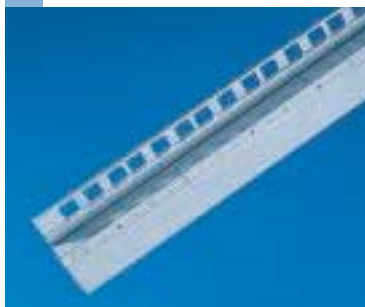
For enclosures		Packs of	Model No. FR
Height mm	U		
600	11	2	7875.300
1200	25	2	7911.000
1800	39	2	7931.000
2000	43	2	7941.000
2200	48	2	7901.000

Also required:
Depth stay ① for 600 mm wide FR,
Depth stay ② for 800 mm wide FR,
see above
Captive nuts,
see page 367



FR – Interior installation 482.6 mm (19")/metric

Adhesive measuring strips 482.6 mm (19")/metric



For precise positioning of installed equipment in the FR.
Adhesive measuring strips for sticking onto the 482.6 mm (19")/metric mounting angles and for fastening to the aluminium uprights of the Rittal flexRack.

Supply includes:
8 self-adhesive measuring strips for 2.20 m height

Adhesive measuring strips	Packs of	Model No. FR
imperial	8	7950.000
metric	8	7951.000

482.6 mm (19") compensating trim for 600 mm wide FR



For concealing the empty space at the top/bottom with 482.6 mm (19") installed equipment.
(Only required with mounting angle FR 2102.220 / FR 2102.720)

Material:
3 mm aluminium

Surface finish:
Natural anodised

Supply includes:
2 trims, assembly parts

Packs of	Model No. FR
2	2102.380

Swing frame, 482.6 mm (19"), for FR



Swing frame for mounting 482.6 mm (19") equipment and for optimum rear access to the 482.6 mm (19") components when installed in a static position.
An installation kit is required in order to mount the swing frame in the flexRack.
In 800 mm wide flexRacks, the remaining free space at the sides may be optionally concealed with infill panels for central mounting.

Max. depth of installed components:

Enclosure width mm	D max. (mm)
600	220
800	380

For enclosure height	U	Model No. FR
1600 mm	30	7926.000*
1800 mm	34	7936.000*
2000 mm	39	7946.000*
2200 mm	43	7906.000

* Extended delivery times

Material:
Sheet steel

Colour:
RAL 7035

Also required:
Installation kit for swing frames in FR

Accessories:
Infill panels, see IT Catalogue page 448

Installation kit for swing frames in FR



The installation kit allows simple mounting of the swing frame in the flexRack.
In 800 mm wide enclosures, the swing frame may optionally be installed centrally or to one side.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Installation kit incl. assembly parts

For enclosure W x D mm	Packs of	Model No. FR
600 x 600	1 set	7953.660*
600 x 800	1 set	7953.680*
800 x 600	1 set	7953.860*
800 x 800	1 set	7953.880*

* Extended delivery times

Accessories

FR – Cable management

Slide rails for FR, 600 mm wide



For fastening to the side holes of the 482.6 mm (19") mounting angles, when these are fitted directly to the frame sections. Thanks to the sheet steel bracket (supplied loose), a rear pair of 482.6 mm (19") mounting angles is not necessary.

Load capacity:

50 kg when mounted on both attachment levels,
30 kg for FR 2102.280 with attachment on one side

Material:

Sheet steel, zinc-plated, passivated

Supply includes:

2/4 slide rails, assembly part

For enclosure depth mm	Packs of	Model No. FR
600	4	2102.260
800	4	2102.270
900	2	2102.560
600/800	4	2102.280¹⁾

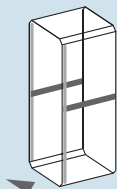
¹⁾ screw-fastened at the front only, L = 220 mm

Other dimensions:

Rail height: 80 mm

¹⁾ Rail height: 86 mm

Rail width: 70 mm



Slide rails for FR



For installation between the front and rear mounting angles. Heavy 482.6 mm (19") or metric network components can be supported with the slide rails.

Load capacity:

80 kg, static

Material:

Sheet steel, zinc-plated, passivated

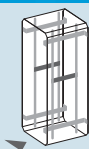
Supply includes:

2 slide rails and assembly parts

Length mm	Distance between 19" levels (mm)	Packs of	Model No. FR
324	381	2	7963.300
424	481	2	7963.400
524	581	2	7963.500
624	681	2	7963.600
724	781	2	7963.700

Other dimensions:

W x H: 85 x 80 mm



C rails for FR



For system-compatible cable routing in the Rittal flexRack. Fastened to flexRack section.

Material:

Sheet steel

Surface finish:

Zinc-plated, passivated

Supply includes:

4 C rails, including assembly parts

Accessories:

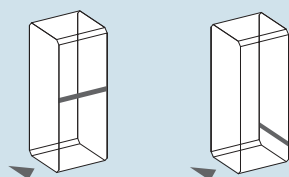
Cable clamps, see IT Catalogue, page 487

Installation in the enclosure depth

Depth mm	Length mm	Packs of	Model No. FR
600	295	4	7954.600
800	495	4	7954.800

Installation in the enclosure width

Width mm	Length mm	Packs of	Model No. FR
600	550	4	7954.060
800	750	4	7954.080



Cable clamps for FR



The cables may be routed at the side or the rear of the enclosure using cable ties, in line with system requirements.

Material:

Sheet steel

Surface finish:

Zinc-plated, passivated

Supply includes:

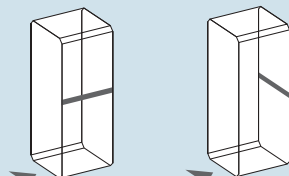
4 cable clamp rails including assembly parts

Installation in the enclosure depth

Enclosure depth mm	Packs of	Model No. FR
600	4	7897.000
800	4	7898.000
900	4	7899.000

Installation in the enclosure width

Enclosure width mm	Packs of	Model No. FR
600	4	7895.000
800	4	7896.000



Combination rail for FR



The combination rail offers the option of clamping cables with cable clamps or cable ties, and also facilitates contact between the cable shield and zero potential.

Colour:

Aluminium

Supply includes:

Combination rails with assembly parts

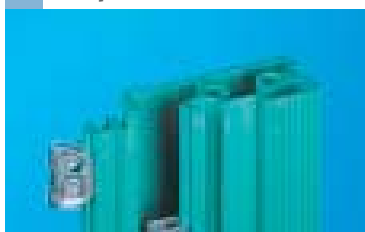
Accessories:

Cable clamps, see IT Catalogue, page 487

Cable ties, see below

Installation position	P. of	Model No. FR
Width 600 mm	2	7500.364
Width 800 mm	2	7500.384
Depth 600 mm	2	7500.362
Depth 800 mm	2	7500.364

Clip-on nuts for FR



For variable interior installation of Rittal flexRacks, for attaching mounting components to both the inner and outer mounting channel (mounting level) of the frame section.

Packs of	Model No. FR
50	2102.500

Clip-on mounting rails for FR



Additional accessory for FR network enclosures. This provides a uniform 25 mm height pitch pattern (M6) on all clip-on slots. For fast assembly of cable clamp rails, depth stays, component shelves and other mounting kits.

Material:

Extruded aluminium section

Supply includes:

4 mounting rails

With all **800 mm** wide Rittal flexRacks, the mounting rails are fitted as standard to the **inner** mounting level (left in picture). In addition, the outer mounting level can be supplemented with the mounting rail.

With all **600 mm** wide Rittal flexRacks, the mounting rails are fitted as standard to the **outer** mounting level (right in picture). In addition, the inner mounting level can be supplemented with the mounting rail.

For enclosure height mm	Packs of	Model No. FR
600	4	7894.060
1000	4	7894.100
1200	4	7894.120
1400	4	7894.140
1600	4	7894.160
1800	4	7894.180
2000	4	7894.200
2200	4	7894.220

Cable ties for fast assembly



The super-fast solution for attaching 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

In detail: Rittal QuickRack

The QuickRack offers a highly cost-effective and assembly-friendly solution for numerous applications in the field of network technology and electronics. An individual and consistent, customer-oriented configuration of the most diverse variants is possible, thanks to the modular system. It facilitates flexible, depth-variable population with 482.6 mm (19") or metric components. The innovative quick-assembly system ensures maximum saving of time, together with easy handling.

1 Design features



A high level of stability with multi-folded vertical sections. In addition, the enclosure is very assembly-friendly and one person can assemble or dismantle the frame in next to no time.



The base frame is very quickly dismantled using eight screws. Ideal for portable solutions.



The flat-pack delivery variant The ideal packaging unit for system suppliers. Saves warehouse capacity, and offers compact shipping volumes combined with the maximum possible application diversity.

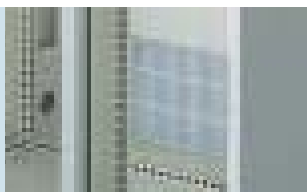


Environmentally friendly and cost-saving The modular packaging forms a complete packaging system.

2 Door/side panels



The glazed door consists of a sheet steel frame with single-pane safety glass. The door hinge is easily swapped from one side to the other.



The vented rear door of sheet steel allows the entry of air with active and passive ventilation. Solid doors may optionally be fitted.



Sheet steel and glazed door including handle with security lock. Side panels and adaptor covers have the same lock.



For additional space requirements, the 50 and 100 mm adaptor covers offer extended space for cabling.

3 Roof and base design, cable routing



Individual installation in the roof and base area thanks to free combination of the module plates.



System compatible cable routing on the combination rail, using cable clamps and/or cable ties.

Product information

Rittal QuickRack

- High level of stability, thanks to multi-folded vertical sections
- Modular roof and base design for individual installation
- Passive and active climate control integrated in a modular concept
- Adaptor covers for additional cable chamber at sides with brush strips for cable entry from above and below



4 Interior installation



Depth-variable
482.6 mm (19") or metric installation with one or two pairs of mounting angles.



Slide rails
can be attached to the side punchings of the 482.6 mm (19") mounting angles.



There are plenty of mounting positions
for component shelves on 482.6 mm (19") mounting angles or on the frame. It is also possible to combine a component shelf with telescopic slides.

Order information

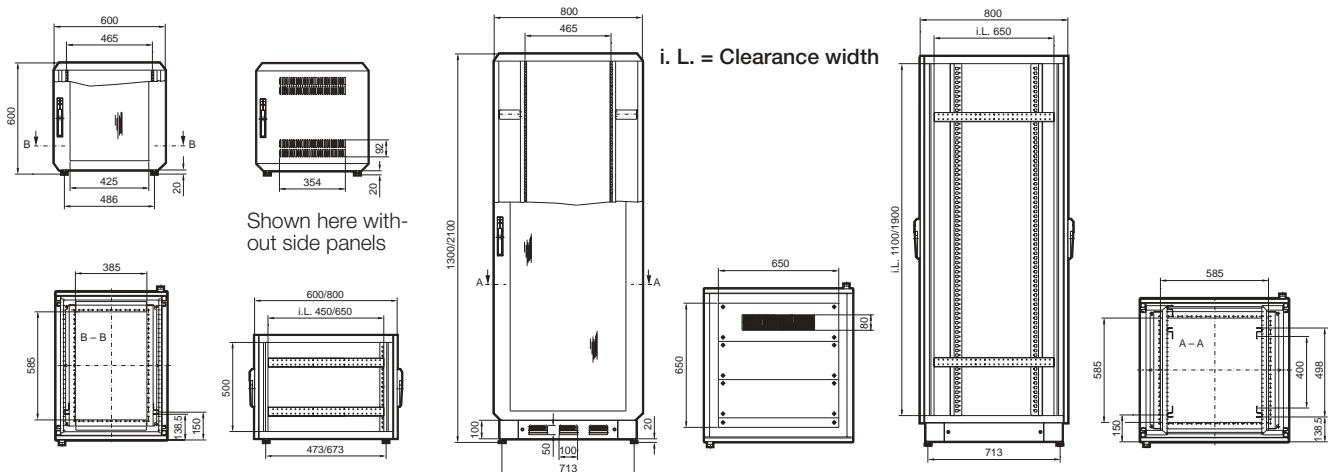
Electronic/Network enclosures – Based on Rittal QuickRack

Electronic-/Network enclosures		V 28	V 30	V 29	V 31	V 32	V 33	V 34
Enclosure types		Under-desk enclosure	Under-desk enclosure	Small distributor rack	Network enclosure	Network enclosure	Network enclosure	Network enclosure
U		11	11	24	42	42	42	42
SU		19	19	43	75	75	75	75
Width mm		600	600	800	800	800	800	800
Height mm		600	600	1200	2000	2000	2000	2000
Depth mm		600	800	800	800	800	800	800
Model No. QR		7528.250	7528.200	7528.400	7528.100	7528.110	7528.120	7528.130
Supply includes								
Enclosure frame Rittal QuickRack		•	•	•	•	•	•	•
1 glazed door with sheet steel surround, with security lock, 3 mm single-pane safety glass and 130° hinges		•	•	•	•	•	•	•
1 rear door of sheet steel, with security lock and 130° hinges				•	•	•	•	•
1 rear door of sheet steel, vented, with security lock and 130° hinges			•					
1 rear panel for cable entry, with brush strip top and bottom		•						
1 roof plate, solid			•					
Module plates, solid	in roof frame	2		1	2	2	2	2
	in base frame	1		2				
Module plates for cable entry	in roof frame				1	1	1	1
	in base frame			1				
4 levelling feet to compensate for floor irregularities, fitted		•	•	•	•	•	•	•
2 side panels with security lock		•	•	•	•		•	
1 pair of 482.6 mm (19") mounting angles, 150 mm from the front, mounted on depth stays		•	•	•	•	•	•	•
1 pair of 482.6 mm (19") mounting angles, rear, mounted on depth stays				•			•	•
1 base/plinth, 100 mm high, with integrated louvres for ventilation, front and rear				•	•	•	•	•
12 spacers, 20 mm, to raise module plates for passive ventilation, supplied loose					•	•	•	•
Earthing of the enclosure panels on the enclosure frame, with 6 mm² earth conductors		•	•	•	•	•	•	•
4 combination rails, 2 for the enclosure width and 2 for the enclosure depth, for cable clamping with cable ties or cable clamps, supplied loose				•				
4 cable clamp rails, for cable attachment, supplied loose					•	•	•	•
10 shunting rings, 105 x 70 mm, supplied loose					•	•	•	•
50 captive nuts, with screw and plastic washers, supplied loose		•		•	•	•	•	•

Front view

Rear view

Shown here without side panels



Electronic/Network enclosures – Based on Rittal QuickRack



Material:
Sheet steel

Surface finish/Colour:
Spray finished, RAL 7035
Vertical sections RAL 5018

Accessories:
see page 334 – 341

Other accessories:
see page 358 – 389

- Including 482.6 mm (19") mounting angles
- Including module plate combination



Vent slots
in the rear door of the under-desk enclosure V30 for passive heat dissipation via convection.



Levelling feet
serve to compensate for floor irregularities.

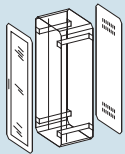


For active climate control, simply insert the **modular fan mounting plate** into the roof frame.
Model No. see page 337

Order information

Electronic/Network enclosures – Based on Rittal QuickRack modular system

Order system



1. Select the frame format and basic installation format (front door, rear door, 482.6 mm (19") level).



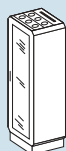
2. Select a roof configuration variant for assembly.



3. The base frame matches the roof frame. Consequently, the same configuration variants will fit here too. Specify the base configuration for assembly.



4. Should you also require assembly of the two side panels and a base/plinth, simply specify the corresponding Model Numbers.



5. Within a short space of time, any desired variant on this page can be assembled and delivered to you.

Basic installation format

Front door		Rear door, sheet steel		482.6 mm (19") attachment level		U/SU	24/43			
Sheet steel	Glazed door	Solid	Vented	Front	Front and rear	Height mm	1200			
						Width mm	600	600	800	800
						Depth mm	600	800	600	800
●	–	●	–	–	–		7523.010	7523.011	7523.012	7523.013
●	–	●	–	●	–		7523.030	7523.031	7523.032	7523.033
●	–	●	–	–	●		7523.050	7523.051	7523.052	7523.053
●	–	–	●	–	–		7523.250	7523.251	7523.252	7523.253
●	–	–	●	●	–		7523.270	7523.271	7523.272	7523.273
●	–	–	●	–	●	Model No.	7523.290	7523.291	7523.292	7523.293
–	●	●	–	–	–		7523.490	7523.491	7523.492	7523.493
–	●	●	–	●	–		7523.510	7523.511	7523.512	7523.513
–	●	●	–	–	●		7523.530	7523.531	7523.532	7523.533
–	●	–	●	–	–		7523.730	7523.731	7523.732	7523.733
–	●	–	●	●	–		7523.750	7523.751	7523.752	7523.753
–	●	–	●	–	●		7523.770	7523.771	7523.772	7523.773

Roof configuration modules (similar to base)

Variant	Solid	Compensation	Brush strip	With fans					
1	1	–	–	–		7527.010	7527.040	7527.030	7527.050
2	1	1	1	–		7527.060	–	7527.070	–
3	–	1	1	1		7527.100	–	7527.110	–
4	1	1	–	1		7527.160	–	7527.170	–
5	–	1	–	2		7527.200	–	7527.210	–
6	2	1	1	–	Model No.	–	7527.080	–	7527.090
7	–	1	1	2		–	7527.120	–	7527.130
8	1	1	1	1		–	7527.140	–	7527.150
9	1	1	–	2		–	7527.180	–	7527.190
10	–	1	–	3		–	7527.220	–	7527.230
11	1	1	2	–		–	–	–	7527.240
12	–	1	2	1		–	–	–	7527.250

Base/plinth, vented, fitted

Side panels, fitted on both sides

Interior installation

Earthing variants

Socket strips

7524.300 7524.310 7524.311 7524.320

7524.200 7524.210 7524.200 7524.210

from page 340

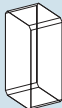
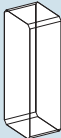
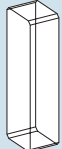
page 365

from page 372















For enclosures

Width mm	Depth mm	Variant 1	Variant 2	Variant 3	Variant 4	Variant 5
600	600					
Model No.		7527.010	7527.060	7527.100	7527.160	7527.200
800	600					
Model No.		7527.030	7527.070	7527.110	7527.170	7527.210

Electronic/Network enclosures – Based on Rittal QuickRack modular system

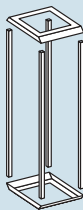
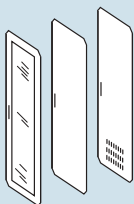

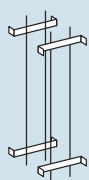

											
33/59				42/75				47/83			
1600				2000				2200			
600	600	800	800	600	600	800	800	600	600	800	800
600	800	600	800	600	800	600	800	600	800	600	800
7523.014	7523.015	7523.016	7523.017	7523.018	7523.019	7523.020	7523.021	7523.022	7523.023	7523.024	7523.025
7523.034	7523.035	7523.036	7523.037	7523.038	7523.039	7523.040	7523.041	7523.042	7523.043	7523.044	7523.045
7523.054	7523.055	7523.056	7523.057	7523.058	7523.059	7523.060	7523.061	7523.062	7523.063	7523.064	7523.065
7523.254	7523.255	7523.256	7523.257	7523.258	7523.259	7523.260	7523.261	7523.262	7523.263	7523.264	7523.265
7523.274	7523.275	7523.276	7523.277	7523.278	7523.279	7523.280	7523.281	7523.282	7523.283	7523.284	7523.285
7523.294	7523.295	7523.296	7523.297	7523.298	7523.299	7523.300	7523.301	7523.302	7523.303	7523.304	7523.305
7523.494	7523.495	7523.496	7523.497	7523.498	7523.499	7523.500	7523.501	7523.502	7523.503	7523.504	7523.505
7523.514	7523.515	7523.516	7523.517	7523.518	7523.519	7523.520	7523.521	7523.522	7523.523	7523.524	7523.525
7523.534	7523.535	7523.536	7523.537	7523.538	7523.539	7523.540	7523.541	7523.542	7523.543	7523.544	7523.545
7523.734	7523.735	7523.736	7523.737	7523.738	7523.739	7523.740	7523.741	7523.742	7523.743	7523.744	7523.745
7523.754	7523.755	7523.756	7523.757	7523.758	7523.759	7523.760	7523.761	7523.762	7523.763	7523.764	7523.765
7523.774	7523.775	7523.776	7523.777	7523.778	7523.779	7523.780	7523.781	7523.782	7523.783	7523.784	7523.785
7527.010	7527.040	7527.030	7527.050	7527.010	7527.040	7527.030	7527.050	7527.010	7527.040	7527.030	7527.050
7527.060	–	7527.070	–	7527.060	–	7527.070	–	7527.060	–	7527.070	–
7527.100	–	7527.110	–	7527.100	–	7527.110	–	7527.100	–	7527.110	–
7527.160	–	7527.170	–	7527.160	–	7527.170	–	7527.160	–	7527.170	–
7527.200	–	7527.210	–	7527.200	–	7527.210	–	7527.200	–	7527.210	–
–	7527.080	–	7527.090	–	7527.080	–	7527.090	–	7527.080	–	7527.090
–	7527.120	–	7527.130	–	7527.120	–	7527.130	–	7527.120	–	7527.130
–	7527.140	–	7527.150	–	7527.140	–	7527.150	–	7527.140	–	7527.150
–	7527.180	–	7527.190	–	7527.180	–	7527.190	–	7527.180	–	7527.190
–	7527.220	–	7527.230	–	7527.220	–	7527.230	–	7527.220	–	7527.230
–	–	–	7527.240	–	–	–	7527.240	–	–	–	7527.240
–	–	–	7527.250	–	–	–	7527.250	–	–	–	7527.250
7524.300	7524.310	7524.311	7524.320	7524.300	7524.310	7524.311	7524.320	7524.300	7524.310	7524.311	7524.320
7524.220	7524.230	7524.220	7524.230	7524.240	7524.250	7524.240	7524.250	7524.260	7524.270	7524.260	7524.270
from page 340				from page 340				from page 340			
page 365				page 365				page 365			
from page 372				from page 372				from page 372			

For enclosures

Width mm	Depth mm	Variant 1	Variant 6	Variant 7	Variant 8	Variant 9	Variant 10	Variant 11	Variant 12
600	800								
Model No.		7527.040	7527.080	7527.120	7527.140	7527.180	7527.220		
800	800								
Model No.		7527.050	7527.090	7527.130	7527.150	7527.190	7527.230	7527.240	7527.250

Order information

Electronic/Network enclosures – Based on Rittal QuickRack, flat-pack system

The basic modular enclosure		Enclosure width (mm)	Enclosure depth (mm)	Enclosure height (mm)			
				1200	1600	2000	2200
				U/SU	U/SU	U/SU	U/SU
				24/43	33/59	42/75	47/83
				Model No. DK			
	1 roof and 1 base frame	600	600	7540.300	7540.300	7540.300	7540.300
		600	800	7540.310	7540.310	7540.310	7540.310
		800	600	7540.320	7540.320	7540.320	7540.320
		800	800	7540.330	7540.330	7540.330	7540.330
	4 frame uprights	–	–	7540.400	7540.410	7540.420	7540.430
	1 glazed door	600	–	7540.650	7540.670	7540.690	7540.710
		800	–	7540.660	7540.680	7540.700	7540.720
	1 sheet steel door	600	–	7540.450	7540.470	7540.490	7540.510
		800	–	7540.460	7540.480	7540.500	7540.520
	1 sheet steel door, vented	600	–	7540.550	7540.570	7540.590	7540.610
		800	–	7540.560	7540.580	7540.600	7540.620
Individual modifications using the range of accessories							
	2 side panels	–	600	7526.200	7526.220	7526.240	7526.260
		–	800	7526.210	7526.230	7526.250	7526.270
	1 base/plinth 100 mm, vented	600	600	7526.300	7526.300	7526.300	7526.300
		600	800	7526.310	7526.310	7526.310	7526.310
		800	600	7526.311	7526.311	7526.311	7526.311
		800	800	7526.320	7526.320	7526.320	7526.320
	2 mounting angles, 482.6 mm (19")	–	–	7526.350	7526.360	7526.370	7526.380
	4 depth stays, 482.6 mm (19") installation	600	600	7526.400	7526.400	7526.400	7526.400
		600	800	7526.410	7526.410	7526.410	7526.410
		800	600	7526.420	7526.420	7526.420	7526.420
		800	800	7526.430	7526.430	7526.430	7526.430
		1 modular compensating plate, 50 mm deep*	600	–	7526.750	7526.750	7526.750
800			–	7526.790	7526.790	7526.790	7526.790
1 module plate, solid, 200 mm deep		600	–	7526.760	7526.760	7526.760	7526.760
		800	–	7526.800	7526.800	7526.800	7526.800
1 module plate with brush strip, 200 mm deep		600	–	7526.850	7526.850	7526.850	7526.850
		800	–	7526.860	7526.860	7526.860	7526.860
1 modular fan mounting plate, 200 mm deep		600	–	7526.900	7526.900	7526.900	7526.900
		800	–	7526.910	7526.910	7526.910	7526.910
1 module plate, vented, 200 mm deep		600	–	7526.829	7526.829	7526.829	7526.829
		800	–	7526.834	7526.834	7526.834	7526.834

* Generally speaking, the compensating plate is required for every module plate combination.

* Generally speaking, the compensating plate is required for every module plate combination.

The rack of your choice in reusable packaging can be assembled in next to no time. The packaging of the individual components serves as outer packaging for the populated rack. When choosing a QuickRack from the modular assemblies, you will

need the width and depth of the enclosure in order to select a roof and base frame combination. The four vertical sections determine the height of the enclosure. Finally, the front and rear doors are determined via the rack height and width.

Compile your own enclosure from the modular system and extend it individually with our range of accessories. To populate the roof and base frame, you will need a modular compensating plate plus two or three 200 mm module plates for

600 mm or 800 mm deep racks, depending on the frame depth. When populating with module plates arranged in the depth, the same will apply to the enclosure width.

Electronic/Network enclosures – Based on Rittal QuickRack, flat-pack system



Material:
Sheet steel

Surface finish/Colour:
Enclosure panels
spray finished in RAL 7035
Vertical sections RAL 5018

Supply includes:
Individual rack components,
including assembly material and
system packaging

Accessories:
see page 334 – 341

Other accessories:
see page 358 – 389

- Flat-pack variant
- Modular packaging may be used as overall packaging



Minimal space requirements
Ideal for portable solutions.



Super-easy transportation
even in confined conditions.



Environmentally friendly and cost-cutting:
The modular packaging becomes an outer packaging.

Accessories

QR – Side panels/base/plinth

Side panels for QR electronic/network enclosures



The side panels are each equipped with a quick-release fastener with security lock insert, lock 12321. They are fastened by simply inserting and locking, allowing fast access from the sides.

Material:
Sheet steel, spray finished

Colour:
RAL 7035

Supply includes:
2 side panels including quick-release fastener with lock insert

Enclosure height mm	Enclosure depth mm	Model No. QR
1200	600	7526.200
1200	800	7526.210
1600	600	7526.220
1600	800	7526.230
2000	600	7526.240
2000	800	7526.250
2200	600	7526.260
2200	800	7526.270

Packs of 2

Accessories:
Spare keys for standard lock 12321
Model No. QB 7526.050
Packs of 2

Baying kit for QR



For simple, fast baying of network enclosures, the vertical uprights can be connected to one another using the baying kit.

Material:
Sheet steel, spray finished

Colour:
RAL 7035

Supply includes:
4 baying brackets, including assembly parts

Packs of	Model No. QR
1 set	7526.965

Ergoform-S handle for QR



This special Ergoform handle can be exchanged for the standard QR handle. The handle is prepared to accommodate semi-cylinders (40 or 45 mm total length to DIN 18 254), so that customer-specific locks may be used. Alternatively, Rittal lock inserts for the Ergoform-S handle may also be used.

Material:
Die-cast zinc

Colour:
RAL 7035

Packs of	Model No. QR
1	7526.055

Surface finish:
Powder-coated

Supply includes:
Handle, including assembly parts, excluding semi-cylinder

Base/plinth for FR/QR



By fitting a base/plinth, additional floor clearance can be created. Four removable trim panels facilitate cable entry from all sides. Floor irregularities can be compensated with levelling feet. Air enters via louvres in the front and rear trims of the vented base/plinth.

Material:
Sheet steel, spray finished

Colour:
RAL 7035

Supply includes:
Base/plinth including assembly parts

For enclosures		Model No. FR		
Width mm	Height mm	Without louvres 50 mm high	Without louvres 100 mm high	With louvres 100 mm high
600	600	2102.160	2102.140	7526.300
600	800	2102.170	2102.150	7526.310
800	600	–	–	7526.311
800	800	–	–	7526.320

Accessories:
Connecting base/plinth trim for bayed base/plinths, see page 318, 335

QR – Side panels/base/plinth

Mobile base/plinth for FR/QR



The mobile base/plinth allows easy transportation to the required site. Once in place, the enclosure is aligned using the levelling feet integrated into the base/plinth and then locked into position. In all 50 mm high base/plinths, the side trim pieces may optionally be removed for cable entry. The 100 mm mobile base/plinth has a fully welded frame without removable trim pieces.

Material:
Sheet steel, spray finished

Colour:
RAL 7035

Supply includes:
Base/plinth with removable side trim pieces (base/plinth height 50 mm) and 4 castors

Enclosure width mm	Enclosure depth mm	Enclosure height mm	Model No. QR
600	600	50	7526.331
600	800	50	7526.332
800	600	50	7526.333
800	800	50	7526.334
800	800	100	7526.335



Connecting base/plinth trim for FR/QR



The connecting base/plinth trim is fitted between two bayed enclosures with 100 or 200 mm base/plinths, presenting a closed appearance front and rear.

Material:
Sheet steel, spray finished

Colour:
RAL 7035

For base/plinth	Packs of	Model No. PS
100 mm	2	7860.000
200 mm ¹⁾	2	7860.200*

¹⁾ Including stacking kit for mounting two 100 mm plinths one on top of the other
* Extended delivery times.

Twin castors for FR/QR



For problem-free location changes.
M10 mounting thread.
For retro-fitting to the frame or base/plinth.

Load capacity per castor:
100 kg,
max. 300 kg static load per enclosure

Supply includes:
2 twin castors with brake,
2 twin castors without brake.
Overall height: 125 mm

Packs of	Model No. FR
4	7859.100



Load capacity per castor:
80 kg,
max. 240 kg static load per enclosure

Supply includes:
4 castors, assembly parts.
Overall height: 40 mm

Packs of	Model No. FR
4	2102.350

Accessories

QR – Modular roof/base assembly

Module plate, solid for QR



The roof or base section of the QuickRack can be closed as required with the solid module plate. To aid passive ventilation, the module plates may be raised using spacers, see page 337.

Material:

Sheet steel, spray finished

Colour:

RAL 7035, on request in RAL 7016

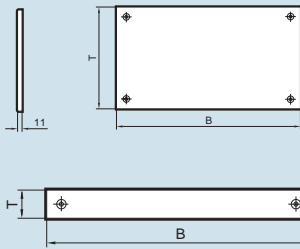
Supply includes:

1 module plate, including assembly parts

Module plate width (B) mm	Module plate depth (T) mm	Model No. QR
450	200	7526.760
450	450	7526.770
450	650	7526.780
650	200	7526.800
650	450	7526.810
650	650	7526.820

Note:

When combining individual modules, a compensating plate to match the width of the cutout is required in order to achieve a fully closed roof/base assembly.



Compensating plate:

When combining individual modules, a compensating plate is required in order to completely close the roof/base assembly.

Compensating plate width (B) mm	Compensating plate depth (T) mm	Model No. QR
450	50	7526.750
650	50	7526.790

Module plate with brush strip for QR



Module plates with brush strips may be used for convenient cable entry. These may be fitted in numerous configurations in the roof and base frame, in both the enclosure width and the enclosure depth.

Material:

Sheet steel, spray finished

Colour:

RAL 7035, on request in RAL 7016

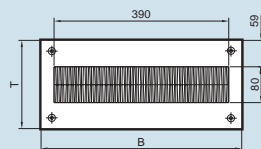
Supply includes:

1 module plate with brush strip, including assembly parts

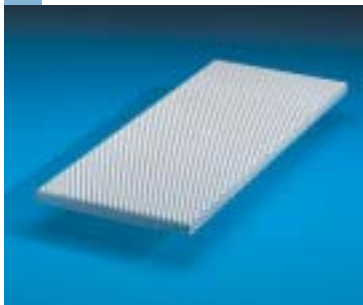
Module plate width (B) mm	Module plate depth (T) mm	Model No. QR
450	200	7526.850
650	200	7526.860

Also required:

For a completely solid roof/base assembly, a compensating plate QR 7526.750 or QR 7526.790, see above.



Module plate, vented for QR



To support passive ventilation and cooling of the installed components, the perforated module plate may be integrated into either the enclosure width or the enclosure depth.

Material:

Sheet steel, spray finished

Colour:

RAL 7035, on request in RAL 7016

Supply includes:

1 perforated module plate, including assembly parts

Module plate width mm	Module plate depth mm	Model No. QR
450	200	7526.829
650	200	7526.834

Also required:

For a completely solid roof/base assembly, a compensating plate QR 7526.750 or QR 7526.790, see above.

QR – Modular roof/base assembly

Modular fan mounting plate for QR



Modular fan mounting plates are the easiest way to integrate active climate control into the Quick-Rack. The pre-configured, pre-wired fan plates can be inserted into the required position in either the base or roof area, and connected directly. They may be used in either the enclosure width or the enclosure depth.

Material:
Sheet steel, spray finished

Colour:
RAL 7035, on request in RAL 7016

Supply includes:
1 fan plate, fitted with either two or three fans depending on the module width, wired ready for connection, including assembly parts

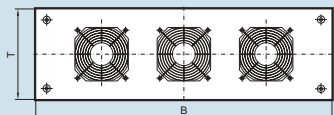
Module plate width (B) mm	Module plate depth (T) mm	Number of fans per modules	Model No. QR
450	200	2	7526.900
650	200	3	7526.910

Also required:

For a completely solid roof/base assembly, the compensating plate QR 7526.750 or QR 7526.790, see left page

Technical specifications for a fan:

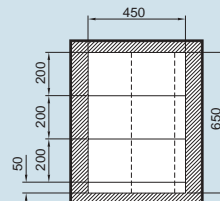
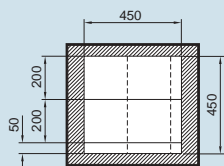
Rated operating voltage: 230 V
Power consumption: 19/18 W at 50/60 Hz
Air throughput (unimpeded air flow): 140/165 m³/h at 50/60 Hz
Temperature range: –10 °C to +55 °C



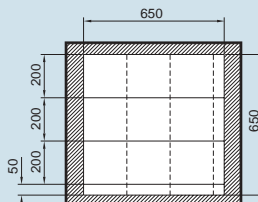
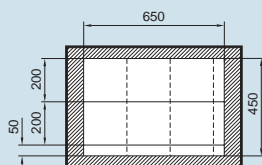
Module plate configuration

Module plates for QuickRack electronic/network enclosures:

Enclosure dimensions	W	600	600
	D	600	800
Installation position/Enclosure		Roof frame Base frame	Roof frame Base frame
		2 x module plates 1 x compensating plate	3 x module plates in the width or 2 x module plates in the depth 1 x compensating plate



Enclosure dimensions	W	800	800
	D	600	800/900
Installation position/Enclosure		Roof frame Base frame QR network enclosures	Roof frame Base frame QR network enclosures
		2 x module plates in the width or 3 x module plates in the depth 1 x compensating plate	3 x module plates in the width or depth 1 x compensating plate



Spacers



To assist passive ventilation, spacers may be used to raise the module plates.

Material:
Hexagonal sectional steel, zinc-plated, passivated

Supply includes:
4 spacers, including assembly parts

Height	Packs of	Model No. QR
20 mm	4	7526.963

Accessories

QR – 482.6 mm (19") installation system

Slide rail, vented for TS/QR/QB



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. For installation in network enclosures with two 482.6 mm (19") levels.

Load capacity:
50 kg, static

Material:
Sheet steel, zinc-plated, passivated

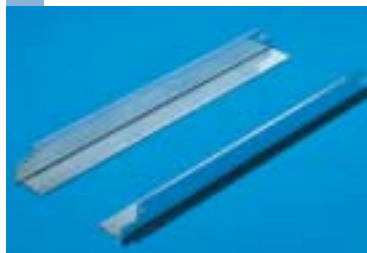
Supply includes:
Slide rail including assembly parts

Length mm	Distance between 19" levels (mm)	Packs of	Model No. DK
152*	–	2	7063.000
261	298	2	7063.300
361	398	2	7063.400
461	498	2	7063.500
561	598	2	7063.600
661	698	2	7063.700

* Only fasten to the front or rear mounting angles

Other dimensions:
W x H: 55 x 72 mm

Slide rails, heavy-duty for TS/QR



To support extremely heavy installed equipment in network enclosures with two mounting levels. 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 the case of 800 mm wide enclosures, the mounting angle centre fastening attachment.

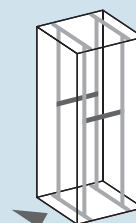
Load capacity:
80 kg, static

Material:
Sheet steel, zinc-plated, passivated

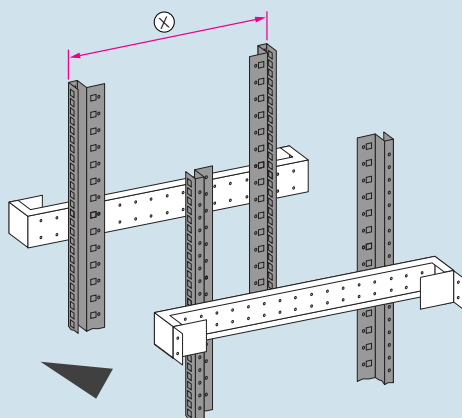
Supply includes:
2 slide rails and mounting accessories

Length mm	Distance between 19" levels (mm)	Packs of	Model No. DK
261	298	2	7492.300
361	398	2	7492.400
461	498	2	7492.500

Other dimensions:
W x H: 40 x 34.5 mm



Installation of electronic/network enclosures



For 482.6 mm (19")/metric installation of QuickRack, please note:

- To accommodate 482.6 mm (19")/metric network components such as subracks, blanking plates etc., one or two pairs of mounting angles are required in the network enclosures, depending on the application in question. The rear pair of mounting angles may be used e.g. for additional attachment of component shelves, slide rails or keyboard drawers. The correct distance between levels \otimes should be set according to the installed components
- QuickRack network enclosures are available as standard with either none, one or two pairs of 482.6 mm (19") mounting angles

Distance between levels = \otimes
(depth-variable on a 25 mm pitch pattern)

Maximum 482.6 mm (19") distance between levels \otimes

Enclosure width mm	Enclosure depth mm	\otimes max. mm	Minimum clearance	
			Front mm	Rear mm
600	600	523	38.5	38.5
600	800	723	38.5	38.5
800	600	523	38.5	38.5
800	800	723	38.5	38.5

Depth stay for QR



For depth-variable 482.6 mm (19") or metric population, depth stays are required to match the enclosure width and depth.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
4 depth stays, including assembly parts

Enclosure width mm	Enclosure depth mm	Model No. QR	
		482.6 mm (19")	Metric* 535 mm
600	600	7526.400	7526.500
600	800	7526.410	7526.510
800	600	7526.420	7526.520
800	800	7526.430	7526.530

Packs of 4
* Delivery times available on request

Accessories:
Slide rails, see page 338,
Component shelves, see page 359 – 365

Mounting angles, 482.6 mm (19")/metric



To install 482.6 mm (19") or 535 mm (metric) components, depth-variable mounting angles may be fastened to depth stays.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
2 mounting angles, including assembly parts

U	SU	Enclosure height mm	Model No. QR	
			482.6 mm (19")	Metric*
11	19	600	7526.340	7526.440
24	43	1200	7526.350	7526.450
33	59	1600	7526.360	7526.460
42	75	2000	7526.370	7526.470
47	83	2200	7526.380	7526.480

Packs of 2 * Delivery times available on request.

Accessories

QR – Interior installation

Combination rail for QR



The combination rail offers the option of attaching cables with cable clamps or cable ties, and also facilitates contact between the cable shield and zero potential.

Material:
Aluminium, anodised

Supply includes:
2 combination rails with assembly parts

Installation in the enclosure depth

Enclosure depth mm	Packs of	Model No. QR
600	2	7526.940
800	2	7526.945

Installation in the enclosure width

Enclosure depth mm	Packs of	Model No. QR
600	2	7526.930
800	2	7526.935

Accessories:
Cable clamps,
see IT Catalogue, page 487
Cable ties,
see IT Catalogue, page 488

3-D corner connector for QR



If necessary, the rigidity of the QuickRack enclosure can be reinforced via the optional use of the 3-D corner connector. Retro-fitting of existing enclosure systems is also possible. (Not suitable for QuickRack server enclosures).

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
8 installation brackets including assembly parts

Packs of	Model No. QR
1 set	7526.988

Filter mat with nylon loop fastening for QR



To shield the enclosure interior from external contamination via the vent slots of the vented door. Attachment and maintenance couldn't be easier, thanks to the use of nylon loops.

Supply includes:
Two filter mats with nylon loop

Enclosure width mm	Model No. QR
600/800	7526.987

Mounting adaptors for QR



Mounting adaptor for lights in QR

The mounting adaptor allows lights PS 4138.140 and PS 4139.140 (see page 369) to be secured both horizontally and vertically into the QuickRack without loss of U height availability.

Supply includes:
One mounting adaptor including assembly parts

	Model No. QR
Light adaptor	7526.982



Mounting adaptor for door-operated switches in QR

For attaching the door-operated switch (see page 370) directly behind the door on the enclosure frame.

Supply includes:
One mounting adaptor including assembly parts

	Model No. QR
Door-operated switch adaptor	7526.983



Multi-functional adaptor for QR

The multi-functional adaptor enables the optional attachment of junction boxes, thermostat and hygrostat directly onto the enclosure uprights.

Supply includes:
1 mounting adaptor including assembly parts

	Model No. QR
Multi-functional adaptor	7526.984

In detail: Top enclosure system TS 8

One system basis to suit all applications – this platform concept is met to perfection by the ingenious profile of the TS 8 Top enclosure system: innovative, economic, and flexible enough to accommodate all technology systems. Be it metric or 482.6 mm (19") attachment levels, or assembly across the entire rack frame, all installations are achieved in next to no time. As well as versatility and a quick-fit assembly system, the two attachment levels also offer incredible diversity with enclosure installation.

1 Design features



A high level of stability thanks to a 16-fold profiled frame section.



The ingenious symmetrical frame concept supports baying on all sides. The frame section offers unrestricted installation diversity with two levels and excellent space utilisation.



Hinged front frame with 130° opening angle.



Rear door with double-bit lock may be exchanged for other inserts and comfort handle.



PE conductor connection points on all relevant parts. Earthing bolts with contact plates, paint-free and corrosion-resistant.

2 Base/side panels/plinth



Screw-fastened side panels easily positioned using location aids (accessory).



Potential equalisation via integral panel supports.



Base/plinth components with a height of 100 or 200 mm (accessory).



Three-part gland plates

3 Internal installation



482.6 mm (19") sections at the front. Also optionally available for the rear (accessory).



Fully depth-variable interior installation creates flexibility for a diverse range of installed equipment. Fast assembly by simply locating and securing into position.



Targeted cable routing ensures manageability, even with maximum population using the twin-level concept.

Product information

Top enclosure system TS 8

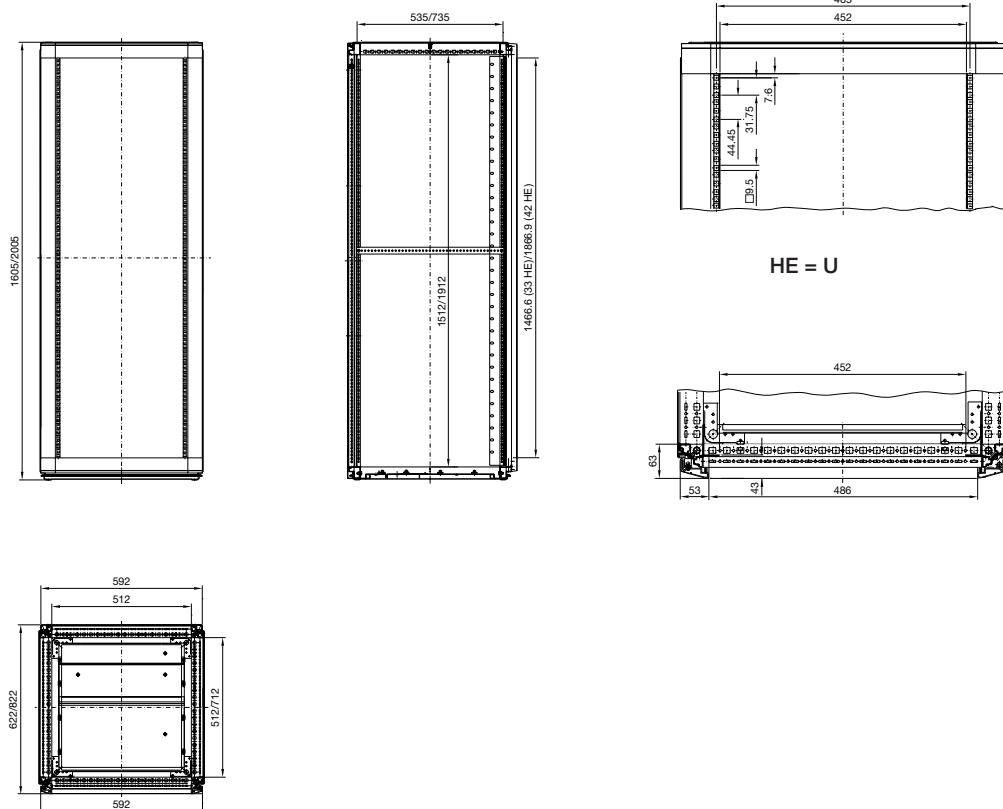


- Symmetrical frame structure
- More useful volume
- Metric and 482.6 mm (19") attachment levels
- Optimum cable management
- Completely flexible interior installation
- 4-point locking system
- Innovative climate control concepts

Order information

Baying systems TS 8 – Electronic enclosures

		P. of					Page
Width in mm			600	600	600	600	
Height in mm			1600	1600	2000	2000	
Depth in mm			600	800	600	800	
Model No. TS		1	8410.510	8418.510	8430.510	8438.510	
Supply includes							
Enclosure frame		1	•	•	•	•	
Front frame (hinged on the right, opening angle 130°, held on the left via mechanical catches)		1	•	•	•	•	
Rear door (hinge on the right side, can be changed to left)		1	•	•	•	•	
Cover (removable)		1	•	•	•	•	
2 mounting angles, 482.6 mm (19"), fitted at the front		2	•	•	•	•	
Gland plates, three-part		1 set	•	•	•	•	
Support strips fitted to depth of enclosure		2	•	•	•	•	
Base/plinth							
Components front and rear, TS	Height 100 mm	1 set	8601.600	8601.600	8601.600	8601.600	347
	Height 200 mm	1 set	8602.600	8602.600	8602.600	8602.600	347
Trim panels (sides), TS	Height 100 mm	1 set	8601.060	8601.080	8601.060	8601.080	347
	Height 200 mm	1 set	8602.060	8602.080	8602.060	8602.080	347
Accessories							
Side panels, TS		2	8166.235	8168.235	8106.235	8108.235	346
Cable clamp rails		2	4191.000	4191.000	4191.000	4191.000	
Cable entry plates ¹⁾ , TS		2	8800.060	8800.060	8800.060	8800.060	
Mounting angles, 482.6 mm (19") rear, TS		2	8613.360	8613.360	8613.300	8613.300	348
Cover profiles, TS		2	8613.200	8613.200	8613.210	8613.210	348
Lock systems							
Standard double-bit lock insert (in rear door) may be exchanged for other lock inserts and comfort handle, see Rittal Catalogue 30, page 936 – 938							
¹⁾ Cable entry grommets, see Rittal Catalogue 30, page 892							
For primed enclosures RAL 7044 please add the extension .810 to the order number. Delivery times available on request.							
More accessories, see from page 358 or in Rittal Catalogue 30							
Enclosure climate control, see from page 378							





Material/Surface finish:

Enclosure frame:
sheet steel 1.5 mm,
dip-coated primed RAL 7044
Front frame:
extruded aluminium section with
die-cast zinc corner pieces,
powder coated RAL 7035
Rear door:
sheet steel 2.0 mm,
powder coated RAL 7035
Cover:
sheet steel 1.5 mm,
powder coated RAL 7035
Mounting angles, 482.6 mm (19"):
aluminium,
conductive, corrosion-protected
coating
Gland plates:
sheet steel 1.5 mm,
zinc-plated



Accessories:

see page 346 – 349
or refer to index



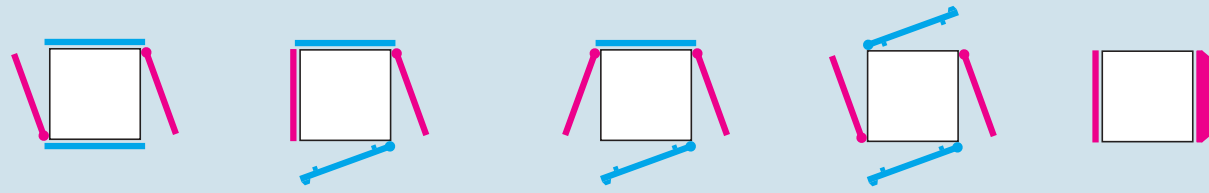
Adaptor piece
for installation of individual
subracks or slide rails.
Model No. see page 348



Captive nut M6
for attaching installed
components.
Model No. see page 367

Accessories

TS 8 – 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 Rittal Catalogue 30 page 464.

Side panels, screw-fastened for TS



Easy positioning on the frame with the location aid. Six enclosure panel holders with earthing insert ensure automatic potential equalisation and higher EMC protection. Earthing bolts with contact surface are pre-integrated.

Note:
Enclosure panel holders may optionally be fitted from the inside or outside of the enclosure.
Area available for population:
External dimensions – 100 mm

Material:
Sheet steel 1.5 mm

Protection category:
IP 55 to EN 60 529/10.91

Surface finish:
Dipcoat primed in RAL 7044, powder-coated in textured RAL 7035 on the outside

Supply includes:
2 side panels including
12 enclosure panel holders,
12 raised torx countersunk screws and
12 hex screws, as well as
12 earthing inserts

More side panel variants can be found in Rittal Catalogue 30.

Additional accessories:
Earth straps, see page 365

Automatic potential equalisation

German patent no. 198 01 720

For enclosures		External dimensions		Model No. TS
Height mm	Depth mm	Height mm	Depth mm	RAL 7035
1600	600	1597	562	8166.235
1600	800	1597	762	8168.235
2000	600	1997	562	8106.235
2000	800	1997	762	8108.235

For primed version, please add the extension .300 to the order number. Delivery times available on request.

Base/plinth components, front and rear for DK-TS



Base/plinth component consisting of one trim panel and two pre-configured corner pieces. Version with solid or vented trim panel. With 200 mm high base/plinth components, one trim panel is divided into two for cable entry. The version with designer trim panel blends in visually with the vented glazed/sheet steel door or the vented roof plate for cable entry (variant 2).

Material:
Base/plinth = Sheet steel, spray finished
Trim panel = Plastic

Colour:
RAL 7035/RAL 9005

Supply includes:
2 base/plinth components,
4 trim panels,
4 screws and captive nuts M12
for mounting on the enclosure

Accessories:
Filter mat for trim, vented,
Model No. DK 7561.500, packs of 10
Base assembly plate,
Model No. SO 2817.000, packs of 10

Design	Base/plinth height mm	Model No. TS		
		Enclosure width 600 mm		
		RAL 7035	RAL 9005	RAL 7022
Solid	100	8601.605	8601.615	8601.600
Solid	200	8602.605	–	8602.600
Vented	100	7825.601	7825.605	–

Packs of 1 set



Base/plinth trim, side for TS



For mounting between the base/plinth components. With 200 mm height, two 100 mm base/plinth trims may also be used. Base/plinth trim (100 mm high) may be installed rotated through 90° in order to stabilise bayed base/plinth components.

Material:
Sheet steel, spray finished

Supply includes:
2 base/plinth trim panels,
including material for attaching
the base/plinth components

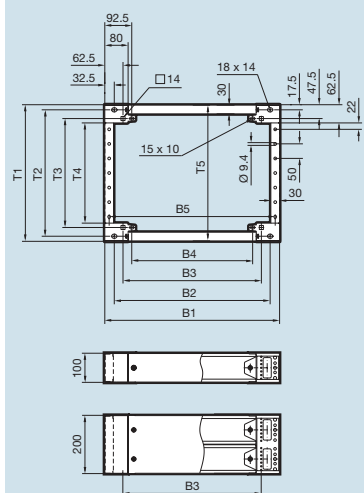
For enclosure depth mm	Packs of set	Model No. TS			
		100 mm high		200 mm high	
		RAL 7035	RAL 7022	RAL 7035	RAL 7022
600	1	8601.065	8601.060	8602.065	8602.060
800	1	8601.085	8601.080	8602.085	8602.080

Base/plinth trim with brush strip

600	1	8601.615	8601.610
800	1	8601.815	8601.810

Also required:

Base/plinth baying brackets Model No. TS 8601.100, packs of 20,
when fitted rotated through 90°, to stabilise bayed base/plinth components.



Description of the hole patterns
B1/T1 = External dimension
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					
Width mm	B1	B2	B3	B4	B5	Depth mm	T1	T2	T3	T4	T5
600	600	535	475	415	570	600	569	534	474	444	568

Accessories

TS 8 – Interior installation

Cover profiles for TS 8 electronic enclosures



For exchanging against the standard side trim panels (Fig. A) fitted on the vertically hinged front frame. The cover profiles conceal the subrack or blanking plate assembly screws (Fig. B).

Material:
Extruded aluminium section

Surface finish:
Powder-coated RAL 7035

For enclosure height mm	Packs of	Model No. TS
1600	2	8613.200
2000	2	8613.210

Note:
The vertically hinged front frame can also be supplied with locking rods and a comfort handle. In combination with the cover sections, the subracks are protected against unauthorised removal.



Fig. A



Fig. B

Mounting angles 482.6 mm (19") for rear installation in TS 8 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 Rittal Catalogue 30 page 1027). 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:
2 mounting angles,
10 screws

For enclosure height mm	U	P. of	Model No. TS
1600	33	2	8613.360
2000	42	2	8613.300

Possible alternative:
Adaptor pieces, 482.6 mm (19"), see below

Adaptor piece, 482.6 mm (19")



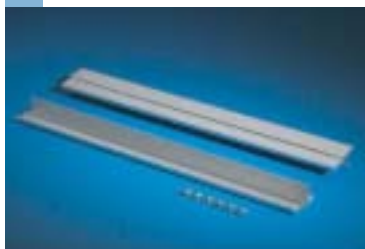
The "1 U" sub-section of mounting angles. For the installation of individual subracks and other installed equipment.

Supply includes:
Adaptor pieces, 482.6 mm (19"), including assembly parts

For	U	P. of	Model No.
TS 8	1	4	TS 8613.010
PS/ES	1	8	PS 4547.000

Accessories:
Captive nuts,
assembly screws,
see page 367

Infill panels, 482.6 mm (19"), horizontal



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-resistant coating

Supply includes:
2 infill panels, 482.6 mm (19"), including assembly parts

For enclosure height mm	Packs of	For enclosure system	
		TS 8	PS/ES
		Model No.	Model No.
1600/2000	2	8613.040	4359.000
1800/2000	2	8613.030	4360.000



Slide rails



For one-sided attachment to the 482.6 mm (19") mounting angles.
Includes assembly parts.

Material:
Sheet steel, zinc-plated, passivated

Length mm	Packs of	Model No. PS
185	10	4530.000
270	10	4531.000

Also required:
Mounting angles, 482.6 mm (19"), see left page.

Slide rails



For front to back attachment between the 482.6 mm (19") front and rear mounting angles or 482.6 mm (19") adaptor pieces.

Material:
Sheet steel, zinc-plated, passivated

For enclosure depth mm	Packs of	For enclosure system	
		TS 8	PS/ES
		Model No.	Model No.
500	10	8613.150	4545.000
600	10	8613.160	4546.000
800	10	8613.180	4549.000

Also required:
Mounting angles, 482.6 mm (19"), or adaptor pieces, 482.6 mm (19"), see left page

Order information

PC enclosure system – Based on TS 8



- Glazed door, large, with single pane safety glass
- Keyboard drawer, hinged trim panel with fastener

Model No. 8366.000 (depth 636 mm)
Model No. 8368.000 (depth 836 mm)



- Glazed door, small, with single-pane safety glass
- Fold-out tray with fastener

Model No. 8366.100 (depth 636 mm)
Model No. 8368.100 (depth 836 mm)



- Glazed door, small, with single-pane safety glass
- Mounting compartment, small
- Keyboard drawer, hinged trim panel with fastener

Model No. 8366.300 (depth 636 mm)



- Glazed door, large, with single pane safety glass
- Desk section with removable lid

Model No. 8366.200 (depth 636 mm)



- Mounting compartment, large with flat panel
- Keyboard drawer, hinged trim panel with fastener

Model No. 8366.400 (depth 636 mm)

Please ask for detailed information and other accessories.

Accessories:



Stationary base – Based on TS 8
Adapted to the enclosure design. Height 100 mm, protrudes at the front, with many options.

For enclosure depth mm	Model No. PC
636	8800.920
836	8800.930



**PC enclosure system based on TS
Variant with glazed door and drawer**

- | | |
|---|---|
| <p>1 Glazed door with supporting frame made from sheet-steel, single-pane safety glass and decorative side panels.</p> <p>2 Bowden cable for easy unlatching of the glazed door, may also be mounted behind the door at the base or rear.</p> <p>3 Handle strip extended as handrest for data input.</p> <p>4 Integral pull-out mouse pad, extends to the left or right, also suitable for IP 67 mouse and pad (see Cat. 30, page 1004).</p> <p>5 Keyboards up to a height of 70 mm may be used.</p> <p>6 Keyboard cradle, extended, creates additional space for operating manuals, plans, etc. on the pull-out keyboard.</p> <p>7 Cable support, hinged, on pull-out keyboard, for secure, pinch-free cable routing using clips supplied loose with the accessories.</p> | <p>8 Keyboard and mouse cables with connector are routed securely and snugly from the keyboard housing via the separable connector gland to the PC. May also be installed in the side of the enclosure, e.g. for scanner cables (see Cat. 30, page 1004).</p> <p>9 Stowage tray for mouse behind the keyboard.</p> <p>10 Keyboard drawer and glazed door in front of monitor are lockable. 2 keys (no. 3524 E) SZ 2532.000 (see Cat. 30, page 946) are included with the supply.</p> <p>11 Component shelf for monitor, to avoid hot spots, prepared for the installation of axial fans, e.g. DK 7980.X00 (see Cat. 30, page 959) and with holes for socket strips DK 7240.2XX and DK 7240.510 (see Cat. 30, page 1007), height-adjustable on a 25 mm pitch pattern.</p> |
| | <p>12 Double-bit lock at the front and rear may be exchanged for other lock inserts (see Cat. 30, page 937) and comfort handle (see Cat. 30, page 936 – 938). A handle adaptor PC 8611.300 (see Cat. 30, page 153) is additionally required with a bottom front door.</p> <p>13 Horizontal and vertical sections, punched on a 25 mm pitch pattern, for universal interior installation either directly or via punched sections and rails (see Cat. 30, from page 970).</p> <p>14 Rear door with locking rod and screw-fastened square frame punched on a 25 mm pitch pattern for wiring plan pocket, utility lectern etc.</p> <p>15 Two mounting levels on the vertical section for more space and interior installation with component shelf (see Cat. 30, page 153), mobile workstation (see Cat. 30, page 995), or partial mounting plates (see Cat. 30, page 968).</p> |
| | <p>16 Side panels and roof are removable, secured and screw-fastened from the inside.</p> <p>17 Gland plates, three-part. In a 600 mm deep enclosure, these may also be installed rotated through 90°, for cable routing at the sides.</p> <p>18 Front door, bottom, lockable from the inside like the glazed door on request.</p> <p>19 Optimum protection against corrosion, thanks to electrophoretic dipcoat priming and powder coating.</p> |

Please ask for detailed information and other accessories.

In detail: Mobile workstation RiLab

The mobile workstation is ideal for positioning sensitive equipment securely whilst remaining flexible in terms of location. Whether used as a mobile laboratory or test stand, a computer support point or an assembly trolley, the range of applications is extremely versatile. With a useful selection of accessories, the RiLab can be adapted to suit individual requirements and used for the most diverse applications.

1 Design features



The **support shelf with rod handle** permits problem-free transportation.



The all-round raised **safety edge** of the shelf reduces the risk of equipment sliding off.



Supporting column with two vertical threaded inserts for flexible mounting on a 32 mm height pitch pattern.



The 6-way socket strip with switch may be integrated into the **power column**.



2 of the 4 **twin castors** are lockable, to ensure flexibility combined with stability.

2 Accessories



The pull-out shelf is fastened to the supporting pillars via **telescopic slides**. The shelf can be locked in an inserted or extended position using location points.



Horizontally, the **monitor shelf** can be rotated and locked with infinite variation within a 70° angle. In addition, it can also be tilted vertically through $\pm 15^\circ$ with infinite variation.



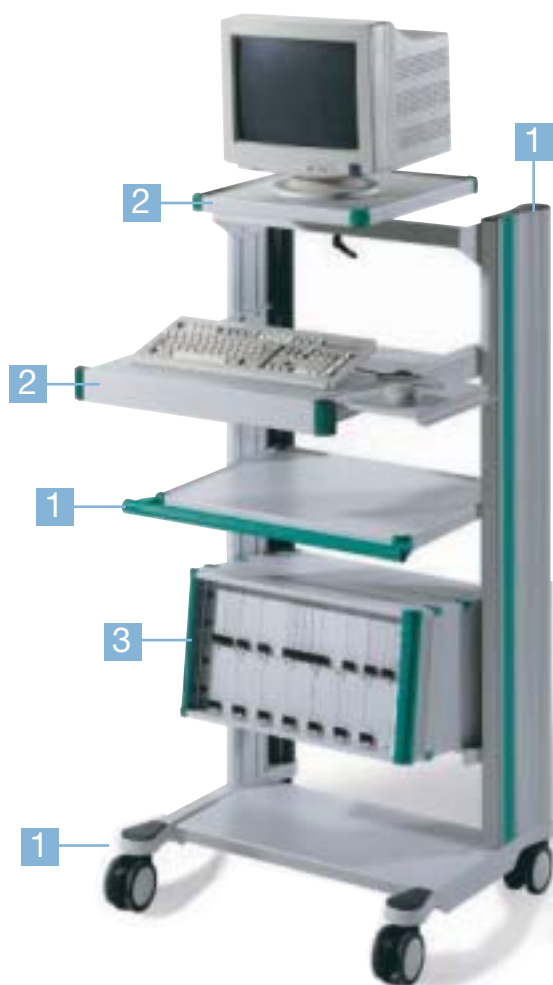
The **pull-out shelf** with integral mouse pad offers ideal accommodation for the mouse and keyboard.



The **drawer** provides plenty of space to store documents and equipment.

Product information

Mobile workstation RiLab



- Secure positioning of sensitive equipment
- Flexible applications
- Optimum mounting accessories for the most diverse applications

3 Integral enclosure



By integrating the **RiCase enclosure** into the base frame, optimum synergy is achieved between flexibility of the mobile workstation and the mounting facilities of the RiCase enclosure.



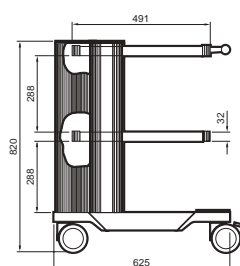
The **adaptor set** for fastening the Rittal RiCase enclosure can be locked at various tilt angles.

Order information

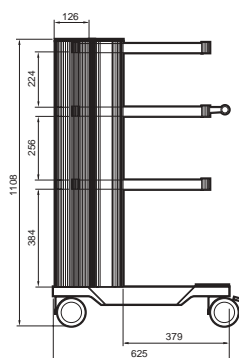
Mobile workstation – Rittal RiLab

RiLab mobile workstation	Type 1	Type 2	Type 3	Page
Width mm	714	714	714	
Height mm	820	1108	1428	
Depth mm	625	625	625	
Model No. DK	7600.100	7600.200	7600.300	
Supply includes				
Base frame, RAL 7035/RAL 5018 (trim), with two integral power columns. Supporting columns each with two vertical threaded inserts M6	●	●	●	
1 shelf with handle rod, W x D 600 mm x 490 mm	●	●	●	
1 shelf, W x D 600 mm x 490 mm	●	●	●	
1 additional shelf, W x D 600 mm x 490 mm	–	●	●	
4 twin castors, 100 mm diameter, 2 of which lockable	●	●	●	
Accessories				
1 additional shelf, W x D 600 mm x 490 mm	7600.500	7600.500	7600.500	356
1 rotating, tilting monitor shelf, W x D 410 mm x 491 mm	7600.530	7600.530	7600.530	356
1 pull-out shelf, with integral mouse pad, W x D 542 mm x 490 mm	7600.520	7600.520	7600.520	356
1 pull-out shelf, W x D 542 mm x 490 mm	7600.510	7600.510	7600.510	356
1 drawer with integral identification strip, W x H x D 600 mm x 96 mm x 490 mm	7600.540	7600.540	7600.540	357
1 adaptor set for installing Rittal RiCase enclosures, tiltable	7600.590	7600.590	7600.590	357
1 6-way socket strip, with switch, 16 A, 250 V, for installation in the power column	7600.600	7600.600	7600.600	357

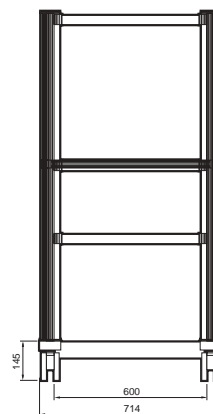
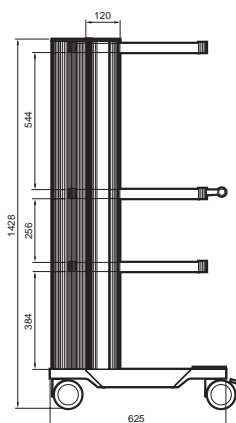
Type 1



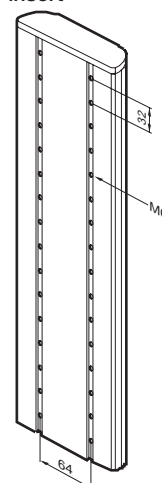
Type 2



Type 3



Threaded insert





Load capacity:

Base frame 225 kg in total
Shelves 50 kg per shelf



Material/Surface finish:

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:

1 mobile workstation,
fully assembled

Accessories:

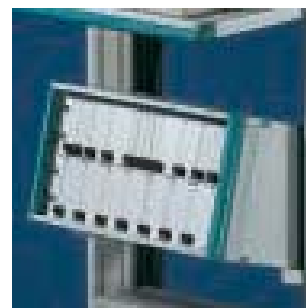
see page 356/357



The threaded insert integrated into the **supporting column** ensures flexible mounting on a 32 mm height pitch pattern.



6-way socket strip with switch, housed in the power column in a space-saving design.

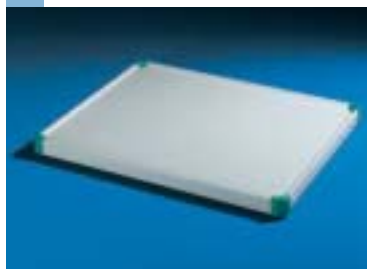


RiCase enclosures can be integrated superbly into the RiLab frame using the special **adaptor set**.

Accessories

Rittal RiLab

RiLab shelf



With all-round raised safety edge.
Reduces the risk of assemblies slipping off.

W x H x D mm	P. of	Model No. DK
600 x 32 x 490	1	7600.500

Technical specifications:
Load capacity 50 kg surface load, static

Material:
Sheet steel, 1.5 mm, RAL 7035
Trim of ABS, RAL 5018

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 an extension of up to 300 mm.
The shelf can be locked in an inserted and extended position via two locating points.

W x H x D mm	P. of	Model No. DK
542 x 48 x 490	1	7600.510

Technical specifications:
Load capacity 20 kg surface load, static

Material:
Sheet steel, 1.5 mm, RAL 7035
Trim of ABS, RAL 5018

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 keyboard. The maximum extension is 295 mm.

W x H x D mm	P. of	Model No. DK
542 x 64 x 490	1	7600.520

Technical specifications:
Load capacity 20 kg surface load, static

Material:
Sheet steel, 1.5 mm, RAL 7035
Trim of ABS, RAL 5018

Supply includes:
1 shelf with telescopic slides and integral mouse pad, including assembly parts

Rotating, tilting monitor shelf



The monitor shelf has an all-round safety edge.
It can be tilted with infinite variation through $\pm 15^\circ$.
Horizontally, the shelf can be rotated through 70° with infinite variation, and locked.

W x H x D mm	P. of	Model No. DK
410 x 32 x 491	1	7600.530

Technical specifications:
Load capacity 35 kg surface load, static

Material:
Sheet steel, 1.5 mm, RAL 7035
Trim of ABS, RAL 5018

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.

W x H x D mm	P. of	Model No. DK
600 x 96 x 490	1	7600.540

Technical specifications:

Load capacity 20 kg surface load, static

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

Supply includes:

1 drawer, including assembly parts

Adaptor set for Rittal RiCase enclosure, 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 $\pm 15^\circ$.

Packs of	Model No. DK
1 set	7600.590

Technical specifications:

Load capacity max. enclosure weight 50 kg

Material:

Sheet steel, 2.0 mm, RAL 7035

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.

Packs of	Model No. DK
1 set	7600.600

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

Supply includes:

1 socket strip, including assembly parts



General accessories

Pull-out frame

Pull-out frame, 482.6 mm (19")



For installing a pull-out 482.6 mm (19") front. For enclosures 600 and 800 mm wide and depths of 800 mm and above.

Load capacity:
50 kg

Colour:
RAL 7035

Supply includes:
Pull-out frame, including telescopic slides and assembly parts

Accessories:
Slide rails, Model No. DK 7963.300

For U	Height mm	Model No. DK
12	637	7124.035
18	903	7125.035
21	1037	7126.035

Also required:
Installation kit to match the enclosure type, see below

German patent no. 39 07 471
French patent no. 2 646 050
GB patent no. 2 229 317
Italian patent no. 01 240 428
Swedish patent no. 505 083

TS punched sections with mounting flanges 17 x 73 mm



As installation kit for pull-out frames, enclosure width 600 mm in the TS enclosure system.

Material:
Sheet steel, zinc-plated, passivated

Installation kit for enclosure dimensions (W x D mm)	Packs of	Model No. TS
600 x 800	1 set	8612.080
600 x 900	1 set	8612.090
600 x 1000	1 set	8612.000

Depth stays TS



As installation kit for pull-out frames, enclosure width 800 mm in the TS enclosure system.

Material:
Sheet steel, zinc-plated, passivated

Installation kit for enclosure dimensions (W x D mm)	Packs of	Model No. DK
800 x 800	1 set	7827.800
800 x 900	1 set	7827.900
800 x 1000	1 set	7827.000

Depth stays FR



As installation kit for pull-out frames, enclosure width 600 mm in the FR enclosure system.

Material:
Sheet steel, zinc-plated, passivated

Colour:
RAL 7035

Installation kit for enclosure dimensions (W x D mm)	Packs of	Model No. DK
600 x 800	1 set	7952.800
600 x 900	1 set	7952.900

Depth stays FR



As installation kit for pull-out frames, enclosure width 800 mm in the FR enclosure system.

Material:
Sheet steel, zinc-plated, passivated

Colour:
RAL 7035

Installation kit for enclosure dimensions (W x D mm)	Packs of	Model No. DK
800 x 800	1 set	7875.288

Extended delivery times

3 U side pieces for static installation of 482.6 mm (19") component shelves



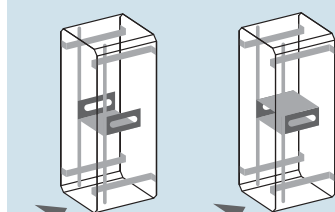
For attaching component shelves to a single pair of 482.6 mm (19") mounting angles. The component shelves are screw-fastened to the 3 U side piece. Either one or two component shelves may be secured. Combination with telescopic slides is not possible.

Load capacity:
30 kg surface load, static

Material:
Sheet steel, spray finished

Colour:
RAL 7035/RAL 7032

Supply includes:
2 side pieces



Depth of side parts mm	For component shelves DK	Component shelf depth mm	Model No. DK	
			RAL 7035	RAL 7032
300	7143.035	300	7146.035	7146.000
400	7143.035	300	7147.035	7147.000
400	7144.035	400		
400	7145.035	500		

Accessories:
Component shelves, 482.6 mm (19"), see page 360

Utility table for fitting to 482.6 mm (19") mounting angles



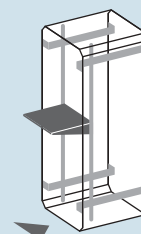
The utility table is fastened directly between the 482.6 mm (19") mounting angles without any additional assembly work. The utility table has a height of 3 U and a support area of 450 x 295 mm. It can be used as a support for measuring or splicing equipment during maintenance and wiring work.

Material:
Sheet steel, spray finished

Colour:
RAL 7035

Supply includes:
Utility table incl. assembly parts

Utility table	Model No. DK
450 x 295 mm	7183.100



Component shelf, 1 U, static installation, 482.6 mm (19")/535 mm (metric)



The 140 mm deep component shelf is the ideal support surface for small active components such as modems or mini-hubs on 482.6 mm (19") or metric mounting levels.

Load capacity:
10 kg surface load, static

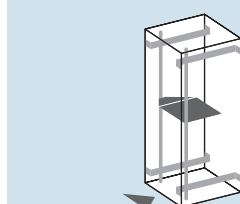
Material:
Sheet steel, spray finished

Colour:
RAL 7035

Component shelf depth	Model No. DK	
	imperial	metric
140 mm	7119.140	7119.155*

* Extended delivery times

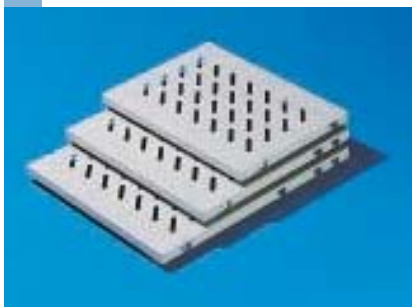
Also required:
Captive nuts, screws, see page 367



General accessories

Component shelves

Component shelves, 482.6 mm (19") installation



The component shelves may be used in TS 8 network enclosures with two pairs of 482.6 mm (19") mounting angles.

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 attached in this way can be upgraded to full withdrawal using telescopic slides. For this purpose, the telescopic slides ② are screw-fastened in place of the spacers ①.

Load capacity:
50 kg surface load, static

Material:
Sheet steel

Colour:
RAL 7035/RAL 7032*

Supply includes:
Component shelf, including assembly parts for static installation

For installation in one 482.6 mm (19") level:
Mounting on just one 482.6 mm (19") level is also possible in conjunction with 3 U side pieces.

Also required:

For installation in TS 8:
Adaptor for L-shaped mounting angles for TS,
Model No. DK 7827.300, packs of 4
For installation in FR:
Installation kit for component shelves,
see page 364

Accessories:

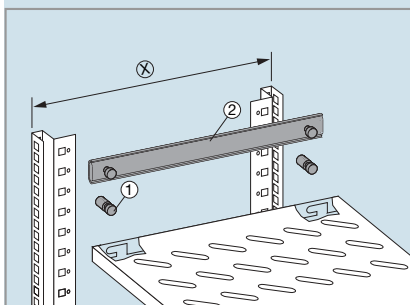
Telescopic slides,
see page 362
Hinged cable support,
see page 361
3 U side pieces,
see page 359

Possible alternative:

Heavy-duty component shelves for 482.6 mm (19") installation,
see page 364

Note for installation in TS, cranked mounting angle:

The component shelves are mounted at the side on the 482.6 mm (19") cranked mounting angles with spacers ① on a U pitch pattern.

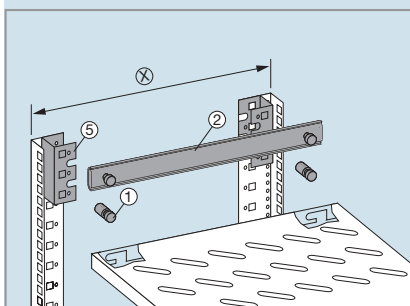


Component shelf width mm	409					Page
Component shelf depth (T) mm	300	400	500	600	700	
Distance between levels (X) for TS, QR, QB ²⁾	298	348/398	348/448/498	448/548/598	548/648/698	
Min. ¹⁾ distance between levels (x) for FR	381	381	581	581	581	
Model No. DK	7143.035*	7144.035*	7145.035*	7145.635	7145.735	
Accessories						
Telescopic slides 50 kg	7051.000	7061.000	7081.000	7161.000	7161.700	362
Handle for component shelf	3636.010					363

* To order component shelves in RAL 7032, please add the extension .000 to the Model No.

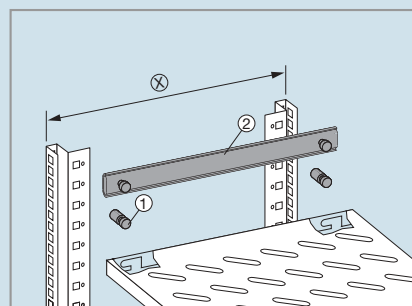
¹⁾ Alternatively, installation kit FR 7952.090, distance between levels 331 – 770 mm.

²⁾ Alternatively, depth-variable installation kit for component shelves, see page 364.



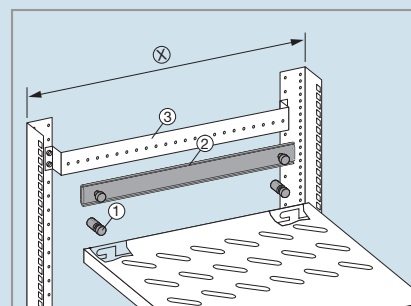
Note for installation in TS, L-shaped mounting angle:

If L-shaped mounting angles are used, adaptor DK 7827.300 ⑤ is required.



Note for installation in QR:

The component shelves are mounted at the sides on the 482.6 mm (19") mounting angles with spacers ① or on telescopic slides ②.



Note for installation in FR:

The component shelves are attached at the sides with spacers ① or on telescopic slides ② on a separate installation kit ③.

Mounting kit for component shelves in FR



For static installation or full withdrawal.
For two types of application:

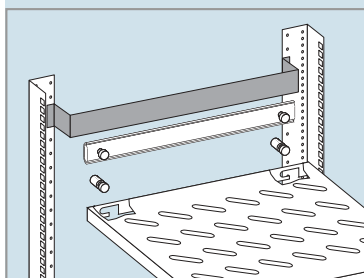
Material:
Sheet steel

Surface finish:
Zinc-plated, passivated

482.6 mm (19") mounting angles, depth-adjustable

The mounting kit is fitted between two pairs of 482.6 mm (19") mounting angles in the Rittal flexRack.

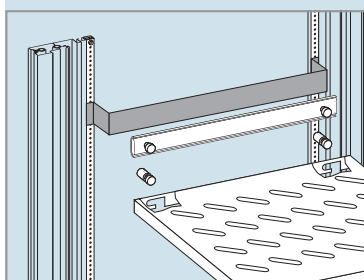
Note:
Not suitable for use in conjunction with narrow mounting angles.



482.6 mm (19") mounting angles installed directly on the enclosure section of a 600 mm wide FR

The installation kit is screw-fastened to the outer mounting level of the front and rear enclosure section see page 320

Note:
Also suitable for mounting in FR enclosures without 482.6 mm (19") accommodation



Supply includes:
2 depth stays with assembly parts

Enclosure depth mm	Base depth mm	Distance between levels mm	Model No. FR
600	300/400	381	7952.060
800	300/400	381	7952.060
	300 – 600	581	7952.080
600 – 900	400 – 700	381 – 770 ¹⁾	7952.090

Max. depth of component shelves = enclosure depth – 200 mm
¹⁾ infinitely adjustable

For enclosure depth mm	max. base depth mm	Model No. FR
600	400	2102.290
800	600	2102.310
900	700	2102.300

Accessories:
Telescopic slides, see page 362

Hinged cable support, quick-fit



For secure routing of connection cables from the component shelf to the clamping point. For component shelves with telescopic slides and printer racks. In this way, all cables can remain in the enclosure when removing or replacing a device, and re-connected directly when the location is re-populated.

Material:
Sheet steel, zinc-plated, passivated

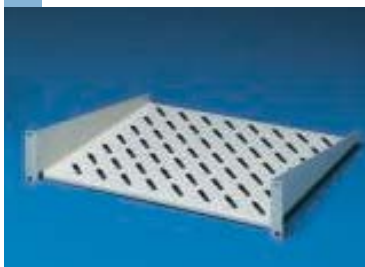
Supply includes:
Hinged cable support incl. assembly parts

Hinged cable support for enclosure depth	Model No. DK
< 600 mm	7163.500
> 600 mm	7163.550

General accessories

Component shelves

Component shelf 2 U, static installation, 482.6 mm (19")/535 mm (metric)



If only one pair of 482.6 mm (19") or metric mounting angles is available for mounting a component shelf, this variant offers a particularly cost-effective solution. Retrospective installation of telescopic slides is not possible.

Load capacity:
25 kg surface load, static

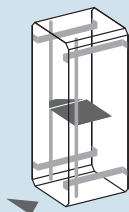
Material:
Sheet steel, spray finished

Colour:
RAL 7035

Component shelf depth	Model No. DK	
	imperial	metric
250 mm	7119.250	7119.255*
400 mm	7119.400	7119.455*

*Extended delivery times

Also required:
Captive nuts, screws, see page 367



Component shelf, 2 U, for static installation or full withdrawal, 482.6 mm (19")



Suitable for installation in all enclosures with only one pair of 482.6 mm (19") mounting angles and all swing frames via flange mounting, 482.6 mm (19").

Load capacity:
25 kg surface load, static

Material:
Sheet steel, spray finished

Colour:
RAL 7035/RAL 7032

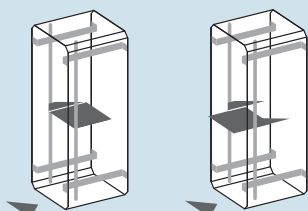
Supply includes:
1 component shelf,
2 installation brackets,
assembly parts.

For static installation or full withdrawal*

Width x Depth mm	Model No. DK	
	RAL 7035	RAL 7032
390 x 300	7148.035	7148.000

* For full withdrawal, telescopic slides DK 7051.000 should be ordered separately.

Accessories:
Telescopic slides, see below
Handle, see page 363



Telescopic slides for component shelves



Two versions:
Max. load capacity 50 kg,
Max. load capacity 100 kg

Full withdrawal:
Static component shelves are easily converted to full withdrawal. Replace the fastening bolts ① or mounting rails ② by telescopic slides ③ (heavy-duty version)

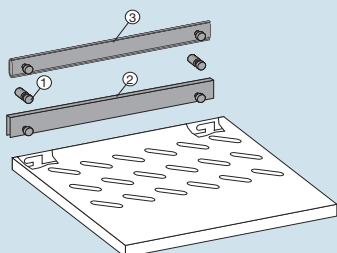
Load capacity:
50/100 kg per set

Material:
Sheet steel, zinc-plated, passivated

For component shelf depth mm	Model No. DK	
	50 kg	100 kg
300	7051.000	—
400	7061.000	7064.000
500	7081.000	7065.000
600	7161.000	7066.000
700	7161.700	7066.700

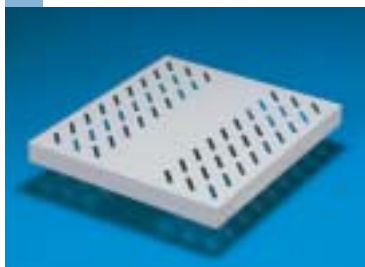
Packs of 1 pair

Accessories:
Hinged cable support, see page 361



Component shelves for enclosure with 482.6 mm (19") installation

Heavy-duty component shelves for TS/QR

**With cranked mounting angles.**

For static installation between two 482.6 mm (19") attachment levels.

The component shelf is located directly onto the **cranked** mounting angles.

Not suitable for combination with telescopic slides.

Zinc-plated version:**Load capacity:**

75 kg area load, static

Material:

Sheet steel, zinc plated

Supply includes:

Component shelf including assembly parts

Spray-finished version:**Load capacity:**

100 kg area load, static

Material:

Sheet steel, spray finished

Colour:

RAL 7035/RAL 7032

Supply includes:

Component shelf including assembly parts

Zinc-plated version:

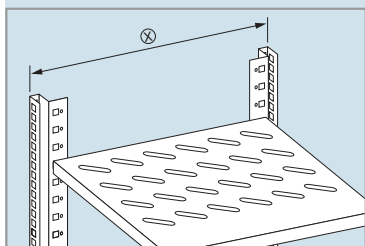
Mounting angle variant	Dimensions W x H x D mm	Distance between levels (x) mm	Model No. QR
Cranked	452.5 x 20 x 478	498	7828.950
Cranked	452.5 x 20 x 578	598	7828.960
Cranked	452.5 x 20 x 678	698	7828.970

Spray-finished version:

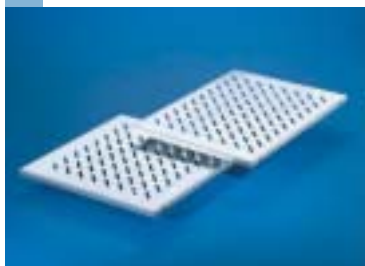
Mounting angle variant	Dimensions W x H x D mm	Distance between levels (x) mm	Model No. QR
Cranked	453 x 44 x 470	498	7145.535

Possible alternative:

Heavy-duty component shelf for 482.6 mm (19") configuration, may be combined with telescopic slides, see page 362



Heavy-duty component shelves for TS/QR

**With L-shaped mounting angles**

For static installation between two 482.6 mm (19") attachment levels.

The component shelf is located directly onto the **L-shaped** mounting angles. Not suitable for combination with telescopic slides.

Load capacity:

75 kg area load, static

Material:

Sheet steel, zinc-plated

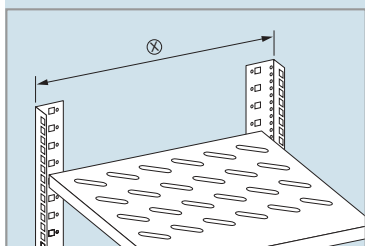
Supply includes:

Component shelf including assembly parts

Mounting angle variant	Dimensions W x H x D mm	Distance between levels (x) mm	Model No. QR
L-shaped	507.5 x 20 x 478	498	7828.951
L-shaped	507.5 x 20 x 578	598	7828.961
L-shaped	507.5 x 20 x 678	698	7828.971

Possible alternative:

Heavy-duty component shelf for 482.6 mm (19") configuration, may be combined with telescopic slides, see page 362



Handle for component shelves



All component shelves are prepared for the attachment of handles.

Material:

Die-cast zinc, spray finished

Supply includes:

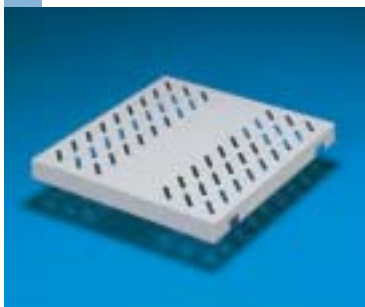
2 handles, incl. assembly parts

Packs of	Model No. UV
2	3636.010

General accessories

Component shelves

482.6 mm (19") heavy-duty component shelf



Suitable for use with depth-variable installation kit. The component shelf can optionally be pulled out on telescopic slides.

Load capacity:
100 kg surface load, static

Material:
Sheet steel, spray-finished

Colour:
RAL 7035/RAL 9005

Supply includes:
Component shelf including 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:
Depth-variable installation kit DK 7063.890, see below

Accessories:
Telescopic slides for 482.6 mm (19") component shelf, see page 362

Component shelf 1 U, depth-adjustable, 482.6 mm (19")



For non-enclosure-dependent mounting between the front and rear 482.6 mm (19") mounting angles. The component shelf is infinitely depth-adjustable from 488 to 750 mm. Combination with telescopic slides is not possible.

Load capacity:
50 kg surface load, static

Material:
Sheet steel, spray finished

Colour:
RAL 7035

Distance between levels	Packs of	Model No. VR
488 – 750 mm	1 set	3861.580

Depth-variable installation kit for 482.6 mm (19") component shelves



Infinitely adjustable to match the spacing between the 482.6 mm (19") mounting levels. Suitable for all 482.6 mm (19") component shelves in 409 mm width. May also be combined with telescopic slides. For L-shaped mounting angles only!

Material:
Sheet steel

Surface finish:
Zinc-plated, passivated

Supply includes:
2 mounting rails including assembly parts

Length	Load capacity	Model No. DK
400 – 600 mm	50 kg	7063.858
600 – 850 mm	50 kg	7063.860
710 – 900 mm	100 kg	7063.890

Packs of 1 set

Accessories:
482.6 mm (19") component shelves, see page 360
Telescopic slides, see page 362



Fastening bolts for vented component shelves



For positioning keyboards, modems, multiplexers etc. The bolts are screwed into the longitudinal slots of the component shelf support surface. They are infinitely adjustable and can be adapted to suit any appliance.

Packs of	Model No. DK
4	7115.000

Earthing set

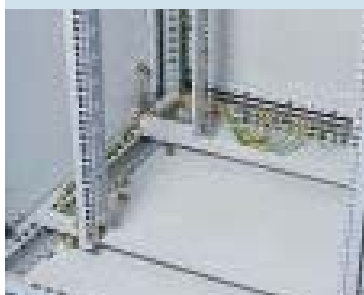


For star earthing.
With the pre-assembled earth conductors, star potential equalisation is easily integrated into network enclosures.

Supply includes:

6 mm² earth cables, assembly material for earth cables; an earth rail is also supplied for the TC-Rack and flexRack.

For	Packs of	Model No. DK
TC-Rack	1 set	7277.000
flexRack	1 set	7278.000



Complete earthing kit for TS and QR



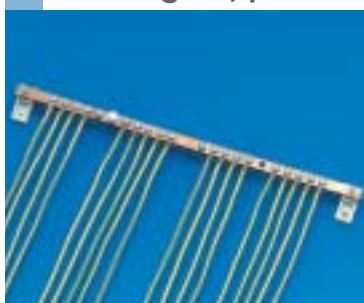
For system-compatible earthing of all enclosure parts on the enclosure frame to VDE. The earth conductors are pre-assembled ready for connection with connectors and have been cut to length.

Supply includes:

Earth conductor, 6 mm², central earthing point (only for TS), including mounting accessories.

For	Packs of	Model No. DK
QR	1 set	7526.981
TS	1 set	7829.150

Earthing set, pre-assembled for TS and FR



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:

6 mm² earth cables on a potential equalisation rail, 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

For enclosures up to height mm	Packs of	Model No. FR
≤ 1600	1 set	7278.885
≥ 1800	1 set	7278.890

Earth straps

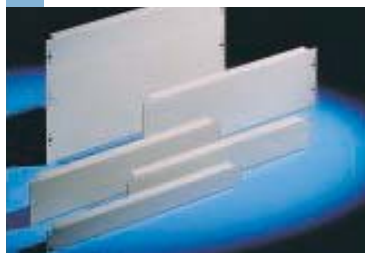


Choose from 6 ready-to-use earth straps in various lengths and cross-sections. For screws M6 and M8.

Cross-section mm ²	Packs of	Model No. SZ	
		Length 170 mm	Length 300 mm
4	5	2564.000	2567.000
16	5	2565.000	2568.000
25	5	2566.000	2569.000

Accessories

Blanking panel, 482.6 mm (19")



As an extension cover or for population as required.

Material:
Sheet steel

Colour:
RAL 7035

U	Installation height	Model No. DK
		RAL 7035
1	44 mm	7151.035
1.5	66 mm	7157.035
2	88 mm	7152.035
3	132.5 mm	7153.035
6	266 mm	7156.035

Packs of 2

482.6 mm (19") blanking plates



Material:
Aluminium, natural anodised

U	1	2	3	4	6	7	9	12
Packs of	3	3	3	3	3	3	3	3
Model No. EL	1931.200	1932.200	1933.200	1934.200	1936.200	1935.200	1939.200	1937.200

Horizontally hinged blanking plate



Material:
3 mm aluminium, natural anodised
Hinge: Die-cast zinc, zinc-plated

Supply includes:
Blanking plate, 2 hinges, assembly parts

Width	U	Model No. EL
482.6 mm (19")	3	1944.000
482.6 mm (19")	6	1945.000

Vertically hinged blanking plate



Material:
3 mm aluminium, natural anodised
Hinge: Die-cast zinc, zinc-plated

Supply includes:
Blanking plate, 2 hinges, assembly parts

Width	U	Model No. EL
482.6 mm (19")	3	1940.000
482.6 mm (19")	6	1941.000

Hinge for blanking plates



For retrospective hinging of blanking plates, including assembly parts.

Material:
Die-cast zinc, zinc-plated

Packs of	Model No. EL
2	1950.000

German patent no. 40 04 264
GB patent no. 2 243 025

Ventilation front plates



For venting open-fronted enclosures.

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

Assembly screws M5 x 16 mm/M6 x 16 mm



For 482.6 mm (19") electronic equipment and blanking plates, including 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

Torx screw M5 x 16 mm/M6 x 16 mm



For optimum transmission of torque, an extended tool life, and increased safety and reliability when tightening and loosening screw connections.

Supply includes:
Screws with Torx screw head including plastic washers

	Bit size	Packs of	Model No. DK
M5	Torx 25	100	7094.500
M6	Torx 30	100	7094.600

Captive nuts M5/M6



For securing 482.6 mm (19") electronic equipment and blanking plates to the 482.6 mm (19") mounting angles.

For use with metal thicknesses from 0.8 to 2.0 mm. In narrow tolerance ranges the captive nuts for metal thicknesses from 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 nuts M5

Version	Packs of	For metal thickness mm	Model No. EL
with contact	50	0.8 – 2.0	2094.500
without contact	50	0.8 – 2.0	2092.500

Captive nut M6

Version	Packs of	For metal thickness mm	Model No. EL
with contact	50	0.8 – 2.0	2094.200
without contact	50	0.8 – 2.0	2092.200
with contact	50	1.2 – 1.5	2094.300
without contact	50	1.2 – 1.5	2092.300

Spring nuts with M6 x 10 mm screws for T-slot mounting angle



The spring nuts ensure flexible, secure mounting of 482.6 mm (19") or metric equipment on the T-slot mounting angles.

Supply includes:
50 spring nuts,
50 screws M6 x 10 mm,
50 plastic washers

Packs of	Model No. DK
50	7000.990

General accessories

System lights

The enclosure system lights offer numerous options to cut installation, costs and increase the useful benefits.

E. g. the universal light:

1. No need to install and wire a door-operated switch, because...

... the motion sensor activates the lamp as soon as the door is opened and switches it off again automatically after approximately 3 minutes without movement, even if the door is open.

2. No need to screw-fasten the lamp housing, and no tricky connection, because...

... it is simply connected via sockets and connectors.

3. No need to keep special voltage lamps in stock, because...

... every lamp is suitable for voltages from 110 V to 240 V.

4. No unpleasant glare, because...

... the light cone can be adjusted to the precise point where it is needed.



Complete with mounting accessories for direct mounting on the horizontal enclosure section.



Connected in a flash with plug-in connection technology.



Socket for service work.



Automatic activation and deactivation via the motion sensor is convenient, helps save electricity, and eliminates the need for installation of a door operated switch.



Slide switch for additional manual switching.



Through wiring for simple integration of additional electrical components.

System light with door-operated switch



In addition to switching devices with floating normally open contact, such as fans, signal lights, protection etc. Via the connector SZ 2507.400 (see Catalogue 30, page 999), switch cable can be used.

Protection category:
IP 20 to EN 60 529/10.91

Accessories:

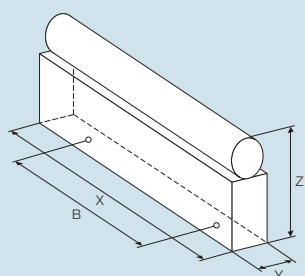
Assembly parts for installing system lights, see page 370/371

Connection accessories, see page 370/371

Technical specifications:	X mm	Y mm	Z mm	B mm	Model No. SZ	
					Standard light	Courtesy light
14 W, 230 V, 50 Hz	452	50	117	275	4138.150	4139.150
18 W, 230 V, 50 Hz	682	50	117	400	4138.190	4139.190
30 W, 230 V, 50 Hz	987	50	117	600	4138.350	4139.350

With fluorescent lamp, fuse G13, length 375/604/908 mm. Light: universal white

Components	Standard light	Courtesy light
Sockets and connectors for:		
- Power supply	●	●
- Through wiring	●	●
Connector for normally open contact	●	●
Socket	●	●
Interference suppression via:		
- Radio interference suppression capacitor	●	
- Semi-electronic ballast with integral RC element		●
Toggle switch for manual actuation	●	●
Light cover		●



Standard light



Technical spec.	Socket	X mm	Y mm	Z mm	B mm	Model No. PS
14 W, 230 V, 50 Hz	Yes	452	50	117	275	4138.140
18 W, 230 V, 50 Hz	Yes	682	50	117	400	4138.180
30 W, 230 V, 50 Hz	Yes	987	50	117	600	4138.300

With fluorescent lamp, base G13, length 375/604/908 mm



Courtesy light



Technical spec.	Socket	X mm	Y mm	Z mm	B mm	Model No. PS
14 W, 230 V, 50 Hz	Yes	452	50	117	275	4139.140
18 W, 230 V, 50 Hz	Yes	682	50	117	400	4139.180
30 W, 230 V, 50 Hz	Yes	987	50	117	600	4139.300

With fluorescent lamp, base G13, length 375/604/908 mm



Universal light



Technical spec.	Socket	X mm	Y mm	Z mm	B mm	Model No. PS
26 W, 110 – 240 V, 50 – 60 Hz	Yes	345	55	95	300	4155.100
26 W, 110 – 240 V, 50 – 60 Hz	No	345	55	95	300	4155.000

With compact fluorescent lamp, base G24q-3, length 174 mm



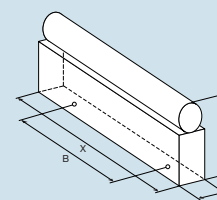
System light with filament tube (Linestra)



Technical spec.	Socket	X mm	Y mm	Z mm	B mm	Model No. PS
35 W, 230 VAC/DC	No	380	41	59	100	4103.350*
60 W, 230 VAC/DC	No	580	41	59	300	4103.600**

With filament tube,
* Base 35 S14s, length 300 mm
** Base 60 S14s, length 500 mm

Also required:
Connection accessories,
see page 370



System lights

With assembly parts for mounting:

- On the enclosure profile:
For TS, horizontally (directly), or vertically in conjunction with an adaptor angle, see Catalogue 30, page 984
- Directly onto rail systems with 25 mm system punching
- In AE, AK and AP using universal bracket SZ 2373.000, see Catalogue 30, page 996

Light:
Universal white

Protection category:
IP 20 to EN 60 529/10.91

Components	Standard light	Courtesy light	Universal light	Linestra
Sockets and connectors for:				
– Power supply	●	●	●	●
– Through wiring	●	●	●	●
– Facility for connecting a door-operated switch	●	●		●
Motion sensor			●	
Interference suppression via:				
– Radio interference suppression capacitor	●			
– Semi-electronic ballast with integral RC element		●		
– Full-electronic ballast			●	
Additional manual switching with rocker or slide switch	●	●	●	●
Light cover		●	●	
Light cone adjustment			●	
Individual voltage supply 110 – 240 V			●	

General accessories

System lights

Connection accessories



For time-saving, simple connection of the lights, the following components may be used:

Connection cable for	Length in mm	Packs of	Model No. PS	
			orange	yellow
Power supply (with socket, without connector)	3000	5	4315.100	4315.110
Power supply via connection component	600		4315.400	4315.410
Through-wiring (with socket and connector)	1000		4315.200	4315.210
	4000	1	4315.600	4315.610



Door-operated switch with mounting accessories	Length in mm	Packs of	Model No. PS	
			orange	yellow
With connection cable	600	1	4315.500	4315.510
	1000		4315.300	4315.310
Without connection cable	–		4127.000	



Connection component with circuit-breaker 10 A	Packs of	Model No. SZ
Reduce assembly costs even further: System lights are rapidly and reliably installed via the connection cable, see above. For independently configured cables, connector SZ 2507.200 must be used. Simply snap the connection component onto the top hat rail in addition to terminal clamps or other modules.	1	2507.500



Mounting adaptor for lights in QR	Supply includes:	Model No. QR
The mounting adaptor allows lights PS 4138.140 and PS 4139.140 (see page 369) to be secured both horizontally and vertically into the QuickRack without loss of U height availability.	One mounting adaptor including mounting material	7526.982



Mounting adaptor for door-operated switches in QR	Supply includes:	Model No. QR
For attaching the door-operated switch directly behind the door on the enclosure frame.	One mounting adaptor including mounting material	7526.983



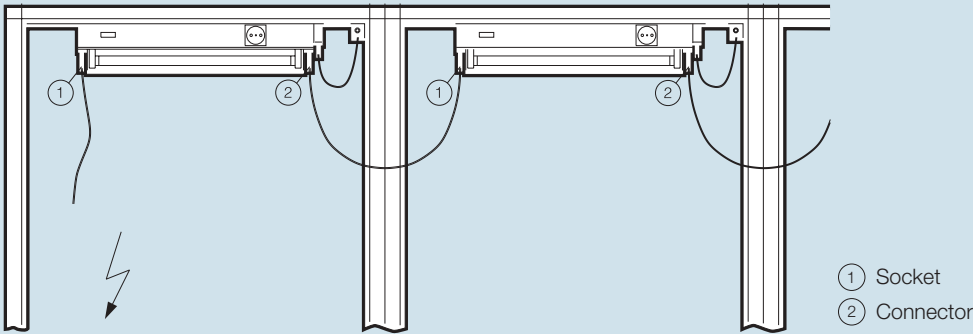
Mounting kit for door operated switches and enclosure lights in FR	Supply includes:	Packs of	Model No. FR
The mounting kit is fitted to the all-round frame section of the Rittal flexRacks; the position of the mounting kit is infinitely variable.	Mounting kit including assembly parts	1 set*	7952.100

* 1 kit is required for the door operated switch, and 2 kits for an enclosure light.



For self-assembly	Packs of	Model No. SZ
Sockets for power supply and 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

Accessories:
 Cable ties for quick assembly,
 Model No. SZ 2597.000, Packs of 100 at 150 mm



1 U 482.6 mm (19") light 230 V/50 Hz



Complete, ready-to-connect light for space-saving, fast installation between two 482.6 mm (19") mounting angles. A mains switch is provided as standard on the enclosure. The slot attachment additionally allows it to be fastened to the system punchings of the swing frame on a 25 mm pitch pattern.	Packs of	Model No. DK
	1	7109.200

Material:
 Aluminium, anodised
 Plastic

Supply includes:
 1 light with switch including
 8 W fluorescent tube
 2.5 m connection cable with fitted earthing-pin plug

General Accessories

Power distribution

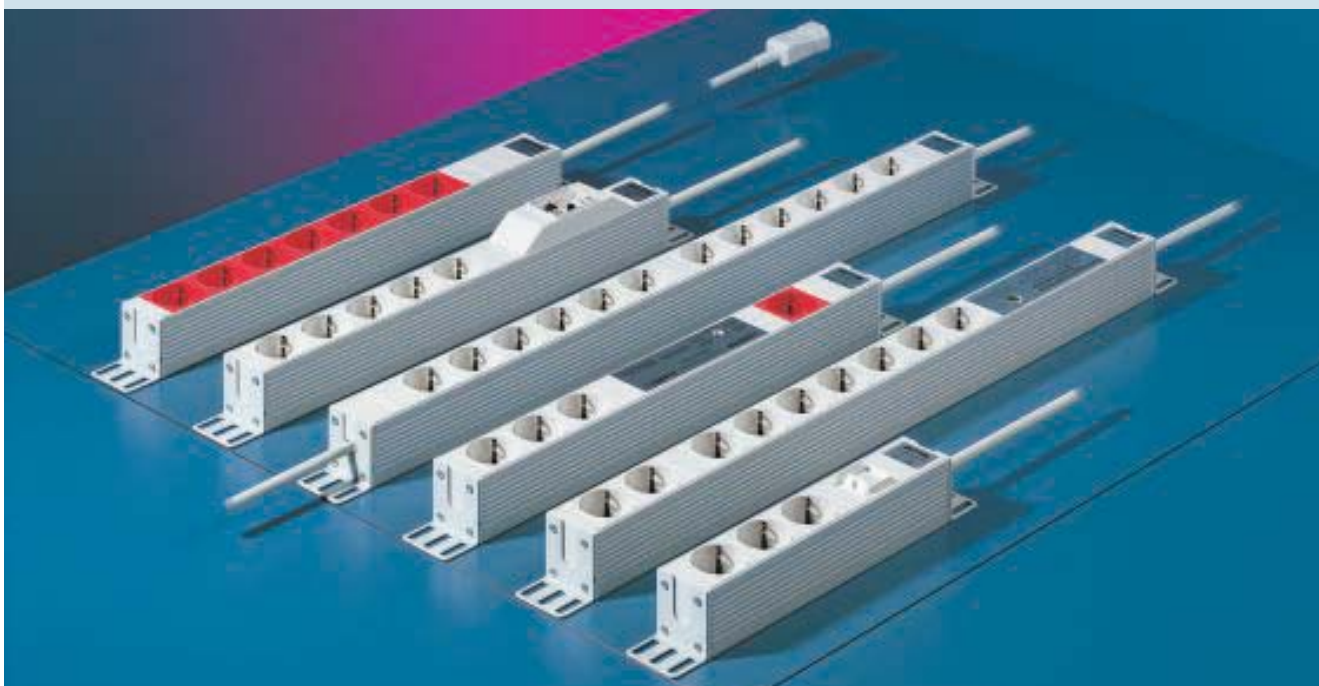
Socket strips

Socket strips in an aluminium channel are available in various lengths with various functional components. Special attention has been devoted to practical, universal fastening: A bracket which may be used in four different positions provides variable fastening. 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 of the wall-mounted distributor. Without additional assembly accessories, the socket strip may be used on 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 cable routing, and when fitting in a 482.6 mm (19") section, there is plenty of

space to route the cable between the socket strip and the mounting angles without bending.

The arrangement of the sockets at a 45° angle allows unrestricted plug use.



The rotating bracket for installation in all enclosure systems without additional assembly accessories.



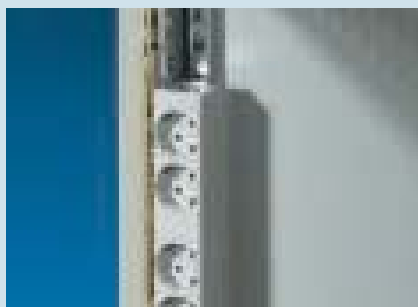
IEC 320 connector socket strip in 3 variants.



Wall-mounted distributor DK-EL
In the wall mounting section, between or on the mounting angles.



482.6 mm (19") mounting angles
Optimum use of a height unit.
With plenty of free space for cable routing without bending.



TS 8/QuickRack
Attachment to the enclosure frame with a 25 mm pitch pattern of holes. In any position or direction, thanks to the rotating angle bracket.



flexRack/TC-Rack
On the enclosure frame with clip-on nuts. In the flexRack, also on the horizontal frame section.

Socket strips

Variants:

Rocker switch

Illuminated, 2-pole switch. The safety bars prevent accidental actuation.

Master/slave

2-pole electronic automatic switching unit. The operating point may be set from 8 W to 30 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 8 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 mains voltage peaks caused by switching operation at the energy provider. 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 is disconnected (thermal disconnect). Requirement category D
Surge current resistance per conductor: 2.5 kA at $U_{oc} = 2.5$ kV
Maximum surge current resistance: 8.0 kA
Rated arrester voltage: 260 V

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.
Relay alarm output: RJ 11 jack
Relay load capacity: 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 strip 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.

RC protection

For personal protection. With residual-current circuit-breaker $I_{\Delta n}$ 30 mA to DIN 49 440.

CBO protection

A combination of personal, overload and short-circuit protection. With residual-current circuit-breaker $I_{\Delta n}$ 30 mA to DIN 49 440 and overcurrent protection 16 A/250 V~.

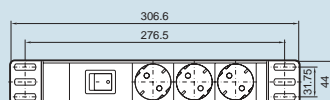
Version B/F

7 sockets to CEE 7-V UTE, with child-proof system.

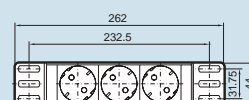
IEC connector

With connection sockets to IEC 320. With 2 metre connection cable or IEC equipment input in the plug panel. Cable: H05VV-F3G1.0/Rated current: 10 A

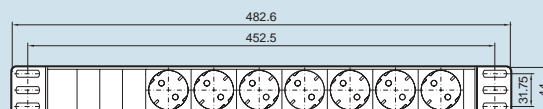
DK 7240.120



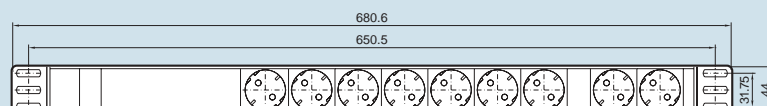
DK 7240.110



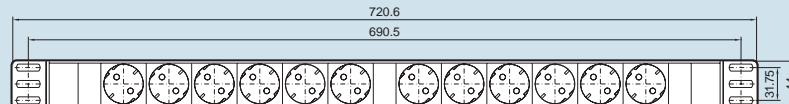
DK 7240.200 - DK 7240.290 / DK 7200.510



DK 7240.310 / DK 7240.330 / DK 7200.630



DK 7240.370



Technical specifications:

Rated voltage 250 V
Rated current 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, assembly parts

Dimensions:

Length: See order table
Height: 44 mm (1 U)
Depth: 44 mm/80 mm

Standards:

Sockets:
DIN 49 440/DIN VDE 0620/05.92
Sockets B/F:
UTE NFC 61-303, CEE 7/NV
Overvoltage protection:
E DIN VDE 0675 part 6-6/A1 and 6-6/A2
EMC interference suppression filter:
EN 1332000: 1994

Design	No. of sockets	Attachement			Length (mm)	Mounting dim. (mm)*	Model No. DK
		Frame	Wall-m. distributor, horiz.	482.6 mm (19" m. angles			
Without switch	3	●			262.0	232.5	7240.110
With switch	3	●	●		306.6	276.5	7240.120
Without switch	7	●	●	●	482.6	452.5	7240.210
With switch	7	●	●	●	482.6	452.5	7240.220
Overv. protection and interference supp. filter	5	●	●	●	482.6	452.5	7240.230
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
RC protection	5	●	●	●	482.6	452.5	7240.280
RCBO protection	5	●	●	●	482.6	452.5	7240.290
For IEC connectors	12	●	●	●	482.6	452.5	7240.200
For IEC connectors with IEC 320 input	9	●	●	●	482.6	452.5	7240.201
For IEC connectors with overvoltage protection	6	●	●	●	482.6	452.5	7240.205
Without switch	12	●			680.6	650.5	7240.310
Overv. protection and interference supp. filter	9	●			680.6	650.5	7240.330
Overv. protection and interference supp. filter, with RJ 11 connector for CMC connection	9	●			680.6	650.5	7200.630
With 2 circuits	6 + 6	●			720.6	690.5	7240.370
B/F sockets	7	●	●	●	482.6	452.5	7240.510

* Variable attachment distance within a range of 25 mm, the dimension given is hole centre to hole centre of the mounting bracket.

General accessories

Power distribution

230 V socket strips



Technical specifications:

Designed in accordance with DIN 49 440 and CEE F/III, rated voltage 250 V AC, maximum load 16 A

Material:

Hard PVC silver/black
Connection cable, 2 m long, without connector
H05VV-F3G1 (CH)
H05VV-F3G1.5 (GB, F/B)
Unrestricted use of angular connectors etc. by arranging the plug-in contacts lengthwise in a row

GB, F/B, CH version			Model No. DK	Model No. DK	Model No. DK
No. of sockets	Length mm	With rocker switch	GB version	F/B version	CH version
6	470*		7404.000	7504.000	7604.000**
8	553		7406.510	7506.510	7606.510**
12	793		7408.510	7508.510	7608.510**
16	1003		7409.510**	7509.510**	7609.510**
18	1153		7412.510**	7512.510**	7612.510**
5	470*	●	7405.000	7505.000	7605.000**

* The socket strips can be mounted horizontally at the rear of DK wall-mounted distributors based on EL/AE.

** Extended delivery times.

Installation kit for FR/QR



With this installation kit, all socket strips can be mounted in the side, front and rear of enclosures.

Material:

Sheet steel

Surface finish:

Zinc-plated, passivated

Supply includes:

Installation kit with assembly parts

Installation kit	Model No. FR
for FR	7952.000
for QR	7526.960

Socket strips



- Loading up to 16 A/max. 250 V AC
- Plastic housing, self-extinguishing to UL 94-V0
- Connection cable without connector, 2 m long
- Various national versions available

Versions for	Number 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 connectors see page 372

Installation kit for FR



To accommodate socket strips Model No. VR 3850.500 – VR 3854.500.

Material:

1.5 mm sheet steel

Surface finish:

Electrophoretic dipcoat-primed, textured stove enamel, RAL 7035

Supply includes:

4 roof mounting brackets, assembly parts

Packs of	Model No. FR
4	2102.360

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 transfer point, the bracket can also accommodate the thermostat (SK 3110.000) or hygrostat (SK 3112.000), 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 angle bracket, 1 junction box,
6 m connection cable 3 x 1.5 mm²
(flexible)

Energy box, 482.6 mm (19")

**Technical specifications:**

Depth-adjustable top hat rail for snap-in attachment of installed equipment to DIN 43 880, sizes 1 to 3 (e.g. to accommodate built-in sockets, miniature circuit-breakers etc.). Cable clamping at the rear, with one N and one PE rail on an insulated base/plinth. Plastic cover including extension cover (UL 94-V0), maximum accommodation of 22 items of installed equipment (width 18 mm).
Maximum capacity = 22 HP
(22 x 18 mm = 396 mm)

Packs of	U	Model No. DK
1	3	7480.035*

* To order in RAL 7032, please add extension .000 to the Model No.

Colour:
RAL 7035/RAL 7032*

Supply includes:
Energy box with blanking cover

Note:
Can be fitted with miniature circuit-breakers 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 provides optimum access to the wiring chamber from above and below.

Connection clamps for direct current:
2 clamps 35 mm²,
9 clamps 16 mm² (per rail)

for alternating current:
1 clamp 16 mm² (PE or N),
20 clamps 4 mm² (per rail)

Colour:
RAL 7035

Supply includes:
Energy box with plastic blanking covers

U	Model No. DK
3	7480.300

Extended delivery times

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 flush-type socket outlets, miniature circuit-breakers etc. or entire installation assemblies such as the ABB "smisline" system). Cable clamping at the rear, two power distribution rails with connection clamps on an insulated plinth. Plastic cover including extension cover, to accommodate a maximum of 22 installed devices (Width 18 mm).
Maximum accommodation = 22 HP
(22 x 18 mm = 396 mm).

Cool conditions.



Rittal rack-mounted climate control SK.

The trend towards ever smaller, more powerful electronics is leading to heat loss levels normally associated with heating units. Rittal offers an extensive climate control range which has been specifically tailored to electronic requirements, from complex, maintenance-free rack-mounted cooling units, to rack-mounted fans for installation in enclosures and subracks, through to powerful centrifugal fans for extreme conditions. More enclosure climate control solutions can be found in Rittal Catalogue 30 or in our brochure "The perfect climate".



Rack-mounted fan for direct cooling of the subracks. Thanks to permanent air circulation, the temperature is distributed evenly throughout the cabinet, preventing the formation of hot spots or heat accumulation.



Rack-mounted cooling units offer the optimum solution for applications where the enclosure internal temperature must be cooled to below the ambient temperature. The heated air is drawn in, cooled and expelled back into the enclosure interior.



The high air throughput means that Rittal centrifugal fans are capable of dissipating large heat losses in the enclosure. For this purpose, the ambient air is drawn in by a powerful fan via a front grille, diverted through 90° and directed upwards.

482.6 mm (19") rack-mounted equipment

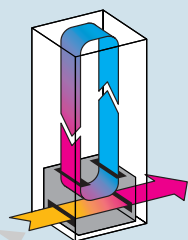
Rack-mounted fan
Rack-mounted cooling unit
Centrifugal fan
Accessories

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382/383
384/385
386 – 389

Overview

482.6 mm (19") rack-mounted equipment

Rack-mounted cooling units for 482.6 mm (19")



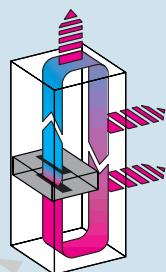
Rack-mounted cooling units

Thanks to separate internal and external circuits, the ingress of dust from the environment is prevented. Exceptionally space-saving design which combines powerful cooling outputs with a high standard of safety.

Order information see page 382/383

Useful cooling output	1000 W	
Dimensions (mm)	W	445
	H	26.9
	D	542
Voltage	115 V	230 V
Thermostat control	●	●
Model No. SK	3287.134	3292.134
Page	382/383	
CE conformity	●	●

Rack-mounted fan 482.6 mm (19")



Rack-mounted fan

For permanent air circulation, to prevent the formation of hot spots. The movement of the air increases heat dissipation via the surface of the enclosure.

Order information see page 380/381

Air throughput	230 m³/h			480 m³/h						
Voltage	24 V (DC)	115 V	230 V	24 V (DC)		115 V		230 V		24 V (DC) 115–230V (AC)
No. of fans	2			3						
Distance between axes	85 mm				105 mm	85 mm	105 mm	85 mm	105 mm	
Model No. SK fan	3340.024	3340.115	3340.230	3341.024	3342.024	3341.115	3342.115	3341.230	3342.230	3342.500
Model No. Vario SK fan	3350.024	3350.115	3350.230	3351.024	3352.024	3351.115	3352.115	3351.230	3352.230	3352.500
Model No. Matching guide frame for Vario SK	3356.100	3355.100		3356.100		3355.100				3357.100
Page	380/381									
Approvals										
UL	●	●	●	●	●	●	●	●	●	●
CUL	●	●	●	●	●	●	●	●	●	●
GS	●	●	●	●	●	●	●	●	●	●
CE conformity	●	●	●	●	●	●	●	●	●	●

Approvals status at the time of going to press.

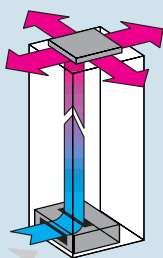
482.6 mm (19") rack-mounted equipment

Centrifugal fan for 482.6 mm (19")

**Centrifugal fan**

The external air is drawn in via a fan, diverted through 90° and conveyed upwards. This achieves effective heat dissipation and helps to prevent hot spots.

Order information see page 384/385



Air throughput		320 m³/h
Dimensions (mm)	W	482.6
	H	87.2
	D	158
Voltage	115 V	230 V
Model No. SK	3145.000	3144.000
Page	384/385	
CE conformity	●	●

Note:

More enclosure climate control components can be found in our brochure "The Perfect Climate" and in Rittal Catalogue 30.

Rittal TopTherm

**Uncompromising climate control.**

There are no compromises when it comes to climate control. With our new Rittal **TopTherm** control concept, you can ensure an optimum climate inside the enclosure.

Flexible, intelligent air guides in the inner and outer circuit offer greater scope, whilst ensuring added security for your electronics. It goes without saying that these functionally designed devices can also be integrated into monitoring systems. TopTherm – a solution of unrivalled excellence. Further details can be found in our Rittal **TopTherm** brochure.

Order information

Rack-mounted fans for 482.6 mm (19"), air throughput 320/480 m³/h

Two basic types provide universal applications, both for the ventilation of individual subracks and for enclosures and cases.

Technical description

Rack-mounted fans:

- Versions with a distance between axes
 - of 85 mm for 160 mm deep PCBs and
 - of 105 mm for 220 mm deep PCBs
- Fan unit with speed control SK 3342.500: with fault evaluation via floating contact

Technical description

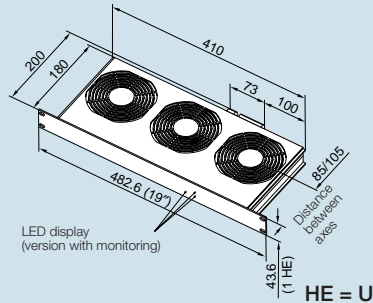
Vario rack-mounted fan:

- Via an additional guide frame, may be used in:
 - Subracks 84 HP
 - 482.6 mm (19") mounting angles
- The guide frame offers a high level of flexibility, i.e. simply slide in the fan insert, and lock into position
- Pre-configured connectors ensure secure, problem-free interconnection
- Fan unit with speed control SK 3352.500. Fault evaluation via floating contact

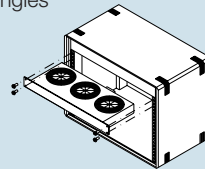
Supply includes: Rack-mounted fan/ Vario rack-mounted fan: Fully wired unit ready for connection, including terminal strip and assembly parts

Rack-mounted fan

May be fitted to 482.6 mm (19") mounting angles



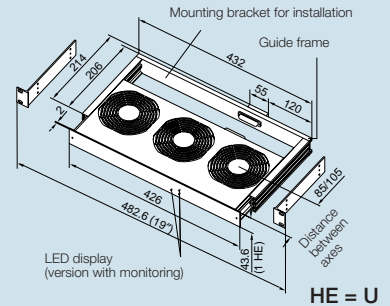
Mounted between a pair of 482.6 mm (19") mounting angles



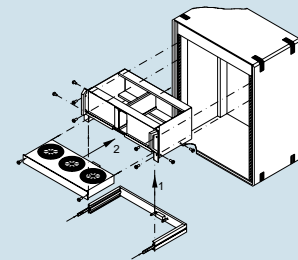
Vario rack-mounted fan

By means of additional guide frame, may be used in:

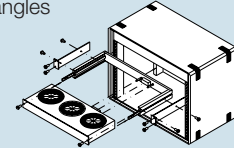
- Subrack 84 HP
- 482.6 mm (19") mounting level



Mounted in subracks 84 HP



Mounted between a pair of 482.6 mm (19") mounting angles



SK rack-mounted fan

Model No. SK

3340.024 ¹⁾	3340.115 ¹⁾	3340.230	–
3341.024 ¹⁾	3341.115	3341.230	–
3342.024	3342.115 ¹⁾	3342.230	3342.500 ²⁾
24 V (DC)	115 V (AC)	230 V (AC)	24 V (DC) 115-230 V (AC)
–	–	–	–

²⁾ Version with monitoring

3114.024	3114.115	3114.100	3114.024
3110.000			
3120.000	3120.115	3120.000	–

Vario SK rack-mounted fan

Model No. SK

3350.024 ¹⁾	3350.115 ¹⁾	3350.230	–
3351.024 ¹⁾	3351.115 ¹⁾	3351.230	–
3352.024 ¹⁾	3352.115 ¹⁾	3352.230	3352.500 ¹⁾²⁾
24 V (DC)	115 V (AC)	230 V (AC)	24 V (DC) 115-230 V (AC)
3356.100 ¹⁾	3355.100	3355.100	3357.100 ¹⁾

3114.024	3114.115	3114.100	3114.024
3110.000			
3120.000	3120.115	3120.000	–

Rated operating voltage Volt

Matching guide frame

¹⁾ Delivery times available on request

Accessories	Page
Digital temp. indicator 230 V (AC)	388
Thermostat	388
Speed control	

Technical specifications

Model No. SK	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⁾
Rated operating voltage	AC 230 V	AC 115 V	DC 24 V	AC 230 V	AC 115 V	DC 24 V	DC 24 V AC 115-230 V 50/60 HZ
Frequency	50/60 Hz	50/60 Hz	–	50/60 Hz	50/60 Hz	–	
Rated current	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
Pre-fuse T	6 A						
Number of fans	2			3			
Air throughput, unimpeded air flow	320 m³/h			480 m³/h			
Operating temperature	- 10 °C to + 55 °C						
Noise level	51 dB (A)	52 dB (A)	51 dB (A)	51 dB (A)	52 dB (A)	51 dB (A)	

Rack-mounted fans for 482.6 mm (19"), air throughput 320/480 m³/h

Air throughput	320 m³/h			480 m³/h						
Voltage	24 V (DC)	115 V	230 V	24 V (DC)		115 V		230 V		24 V (DC) 115 – 230 V (AC)
No. of fans	2			3						
Distance between axes	85 mm				105 mm	85 mm	105 mm	85 mm	105 mm	
Model No. SK rack-mounted fan	3340.024	3340.115	3340.230	3341.024	3342.024	3341.115	3342.115	3341.230	3342.230	3342.500
Model No. Vario rack-mounted fan	3350.024	3350.115	3350.230	3351.024	3352.024	3351.115	3352.115	3351.230	3352.230	3352.500
Model No. Matching guide frame for Vario SK	3356.100	3355.100		3356.100		3355.100			3357.100	

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.

Note:
Rack-mounted fan with 48 V available on request

Also required:
Order a guide frame to suit the application.

Approvals for all rack-mounted fans, see page 378

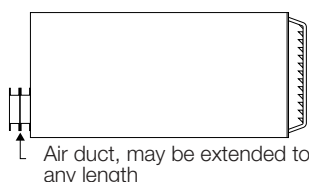
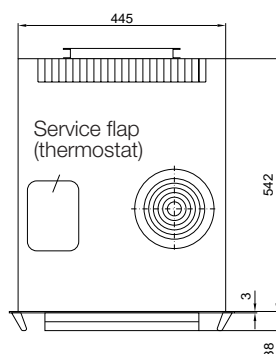
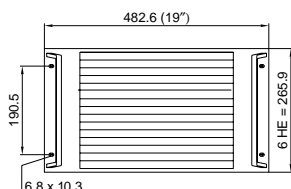
Order information

Rack-mounted cooling units for 482.6 mm (19"), useful cooling output 1000 W

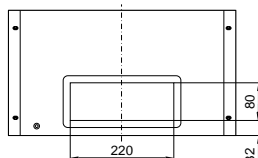
Model No. SK		3278.134*	3292.134
Rated operating voltage Volt/Hz		115/50/60	230/50/60
Dimensions mm	W	445	
	H	265.9 (6 U)	
	D	542	
Useful cooling output DIN 3168	L35 L35 L35 L50	1000 W/1050 W 660 W/ 770 W	
Rated current (50 Hz)		8.4 A/10.8 A	3.8 A/4.5 A
Start-up current (50 Hz)		21.0 A/22.0 A	10.0 A/11.8 A
Pre-fuse T		10.0 A/16.0 A	6.0 A/6.0 A
Power consumption	L35 L35 L35 L50	615 W/710 W 680 W/800 W	585 W/650 W 650 W/720 W
Refrigerant		R 134 a, 700 g	
Permissible operating pressure p. max.		25 bar	
Temperature 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		External circuit 620 m³/h	
Temperature control		Internal thermostat, setting range +20 °C to +60 °C (factory setting +35 °C)	
Special voltages available on request. Technical modifications reserved.			
Accessories	Packs of		Page
Filter mats	3	3286.000	388
Adaptor for front air supply	1	3259.000	387
Air duct	10	3220.000	387
Temperature indicator	1	3114.115	388
Door-operated switch	1	4127.000	

* Delivery times on request

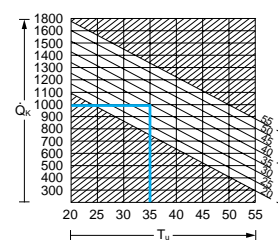
* Delivery times on request



View of the rear of the unit

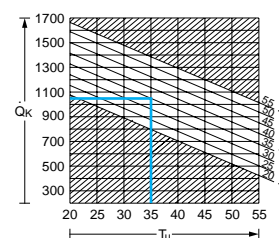


Performance diagram
(DIN 3168) (50 Hz)



T_u = Ambient temperature (°C)
 Q_K = Continuous useful cooling output (W)
 T_i = Internal temperature of enclosure (°C)

Performance diagram
(DIN 3168) (60 Hz)



T_u = Ambient temperature (°C)
 Q_K = Continuous useful cooling output (W)
 T_i = Internal temperature of enclosure (°C)

Rack-mounted cooling units for 482.6 mm (19"), useful cooling output 1000 W



Specifically designed for installation in 482.6 mm (19") systems, Rittal rack-mounted cooling units ensure reliable operating temperatures in electronic enclosures. Installed in the enclosure interior in a particularly space-saving manner, they combine powerful cooling outputs with a high standard of safety.



Technical description:

- The unit slides easily into pre-populated 482.6 mm (19") electronic enclosures.
- A service flap facilitates adjustment and control of the thermostat.
- The refrigeration system is entirely maintenance-free.
- The combined high/low pressure monitor (to VBG 20, §7), thermally controlled expansion valve and ball bearing-mounted fans with thermal winding protection give the unit a high standard of safety.
- The low pressure monitor prevents the refrigeration system from icing.

Supply includes:

Wired ready for connection with connection cable (3 m), including drilling template.

Also required:

For installation in enclosure closed on all sides.
Adaptor for front air supply and air duct for waste air, see page 387

US patent no. 4,882,911
European patent
no. 0 312 853 with validity
for DE, FR, IT
Japanese patent
no. 239 867/88

Approvals for all rack-mounted cooling units, see page 378

Useful cooling output	1000 W	
Dimensions mm	W	445
	H	265.9
	D	542
Voltage	115 V	230 V
Thermostat control	●	●
Model No. SK	3278.134	3292.134

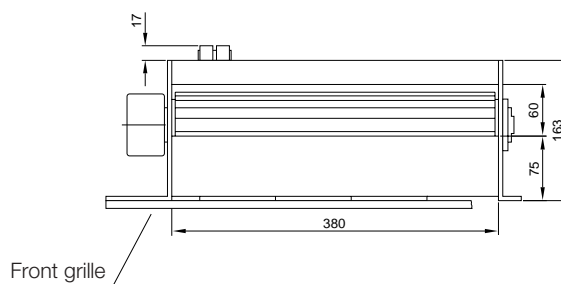
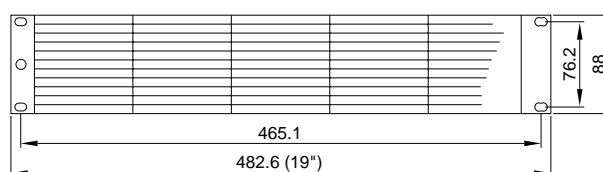


May be mounted in enclosures with front doors (metal or safety glass) by means of an adaptor for front air supply.

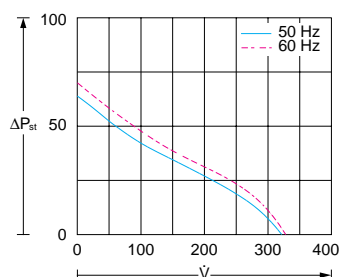
Order information

Centrifugal fan – air throughput 320 m³/h

Model No. SK		3145.000	3144.000	
Rated operating voltage Volt/Hz		115/50/60	230/50/60	
Dimensions mm	W	482.6 (19")		
	H	87.2 (2 U)		
	D	158		
Air throughput, unimpeded air flow		320 m³/h		
Rated current max.		0.32 A	0.16 A	
Power per fan		37 watts		
Noise level		52 dB (A)		
Number of fans		1		
Speed		2245 rpm		
Temperature range		– 10 °C to +55 °C		
Maximum static pressure difference		65 – 70 Pa		
Special voltage available on request. Technical modifications reserved.				
Accessories	Packs of			Page
Temperature indicator with switching contact	1	3114.115	3114.100	388
Thermostat	1	3110.000		388
Filter mats	5	3177.000		388
Front outlet grille 2 U	1	3176.000		388
Roof ventilation	1	3148.000		386
Speed control	1	3120.115	3120.000	



Performance diagram



V = Volume flow (m³/h)
 ΔP_{st} = Stat. pressure difference (Pa)

Order information

Centrifugal fan – air throughput 320 m³/h



A powerful fan draws in the ambient air via a front grille and filter, and directs it upwards after diverting the flow through 90°. This air routing system ensures effective heat dissipation from the enclosure and prevents the formation of hot spots.



Air throughput		320 m³/h	
Dimensions (mm)	W	482.6	
	H	87.2	
	D	158	
Voltage		115 V	230 V
Model No. SK		3145.000	3144.000

- Technical description**
SK 3144.000 / SK 3145.000
(2 U):
- Easily secured in a 482.6 mm (19") pitch pattern.
 - The fan motor is arranged outside of the cooling flow. This fan is equipped as standard with moisture protection for the motor winding.
 - Air drawn in via the louvred grille can be de-dusted using a filter mat (see page 388).
 - Low noise generation of 54 dB (A).
 - Even air flow across the entire width of the enclosure.
 - Roof vent SK 3148.000, see page 386 or front outlet grille SK 3176.000, see page 388 may be used to expel air to the outside.

Supply includes:
 Fully assembled and wired unit, ready for connection, including filter mat.

Approvals for all centrifugal fans, see page 379



Front outlet grille 2 U for hot air outlet to the outside in the upper section of the enclosure.



These cross-flow blowers are characterised by a high air throughput in a very confined space and low noise.

Roof-mounted fans

Roof-mounted fan for TS



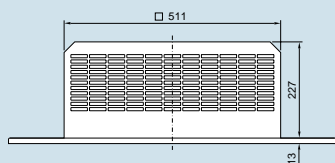
This new roof ventilation concept offers a wealth of performance, assembly and cost benefits associated with the use of integrated ventilation systems. This roof-mounted fan is pre-integrated into a roof plate with cable entry and is therefore easily retrofitted. The work of creating mounting cutouts has been eliminated altogether. Another outstanding feature is the enormous volumetric flow in proportion to a very low level of noise generation. This makes the roof-mounted fan ideal for use in sensitive office areas.

Technical description:

- 1500 m³/h volumetric flow
- Noise level 40 dB (A)
- Fitted onto a roof plate based on the TS
- Easy assembly and the work of creating mounting cutouts has been eliminated altogether
- Fan may also be supplied without pre-configured roof plate

Supply includes:

Wired ready for connection, incl. assembly parts and multi-lingual assembly manual



Model No. SK without roof plate	3164.115	3164.230			Page
Model No. SK with pre-configured roof plate	3164.610	3164.620	3164.810	3164.820	
Rated operating voltage Volt/Hz	115/50/60	230/50/60	115/50/60	230/50/60	
Air throughput (unimpeded air flow)	1500 m³/h*				
Dimensions mm	W	800 (511) ¹	800		
(W x H x D)	H	240 (227) ¹	240		
incl. roof plate (without roof plate) ¹	D	800 (511) ¹	900		
Radial fan					
Noise level		40 dB (A)			
Temperature range		+ 20 °C to + 55 °C			
Colour		RAL 7035			
Special voltages available on request. Technical modifications reserved.					
Accessories					
Temperature indicator	3114.115	3114.100	3114.115	3114.100	388
Thermostat	3110.000				388

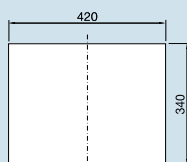
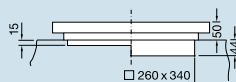
* 800 m³/h at 40 Pa counterpressure using two integrated louvres, type DK 7580.500, in the enclosure base/plinth.

¹ Dimensions of roof mounted fan without roof plate

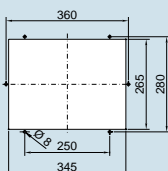
Roof-mounted fan



without fan with fan



Mounting cutout



Technical description:

- 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 labyrinth type air ducting
- The protection category is IP 43 to EN 60 529/10.91
- Via additional installation of the filter holder with filter mat SK 3175.000 (see page 388), a protection category of IP 44 is achieved with roof vent SK 3148.000

Supply includes:

Fully wired unit ready for connection with built-in radial fan, sealing material and assembly parts, connection cable (3 m), drilling template

Model No. SK	3149.000	3169.000	3148.000
Rated operating voltage Volt/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		
Condenser	1.5 µF	6 µF	
Noise level	53 dB (A)		
Speed	1400 min ⁻¹		
Weight	7.8 kg		
Colour	RAL 7032, textured enamel		
Special voltages available on request. Technical modifications reserved.			
* To order versions RAL 7035, please use order number extension .007.			

CE conformity



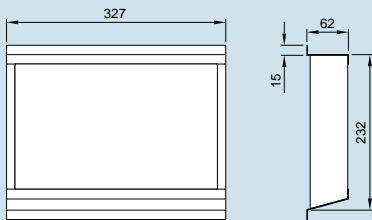
Adaptor for front air supply to cooling units SK 3292.134/SK 3278.134



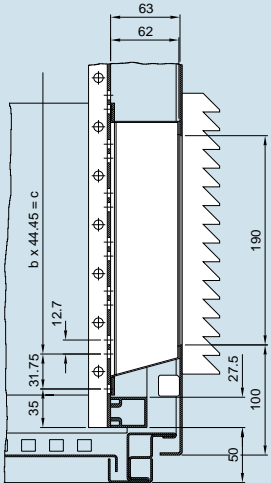
If the cooling units is installed in enclosures with front doors (sheet steel or plexiglass), this adaptor must be used. It enables ambient air to be extracted unhindered from outside, which is essential for correct functioning of the cooling units.

Material:
Sheet steel

Supply includes:
Adaptor, sealing gasket, foamed plastic gasket, assembly parts



Model No. SK
3259.000



Air duct

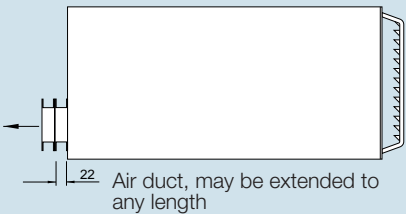


For the use of rack-mounted cooling units SK 3292.134/SK 3278.134 in enclosures with a depth greater than 600 mm. The heated ambient air is blown backwards out of the enclosures through the air duct. The air duct can be extended to any length, and comes supplied with clips.

Material:
ABS plastic

Packs of
10

Model No. SK
3220.000



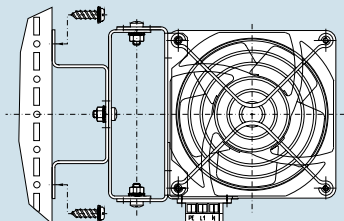
Enclosure internal fan for TS



To prevent hot spots and support the air routing of active enclosure climate control components. It is adjustable on two axes and can be fastened to the TS frame section.

Supply includes:
Fully wired unit ready for connection with radial fan and snap-on pivot device as well as assembly parts

Air throughput, unimpeded air flow	Rated voltage V/Hz	Model No. SK
160 m³/h	230/50/60	3108.100
160 m³/h	115/50/60	3108.115
160 m³/h	24 V (DC)	3108.024



Accessories

for climate control

Front outlet grille 2 U



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 of the cross-flow blower. These grilles can also be used as simple inflow and outflow grilles with natural convection.

Model No. SK

3176.000

Filter mat for SK 3144.000/SK 3145.000/SK 3176.000



The filter mat is intended to prevent dust from entering the electronics.

The dust end has an open structure, whilst the clean air end has a closed structure.

Material:

Chemical fibres

Packs of

5

Model No. SK

3177.000

Digital enclosure interior temperature indicator



CE

For installation in the enclosure door or wall, as well as in a cooling unit or heat exchanger.

Technical description:

- Small size
- 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 for a temperature range from +10 °C to +70 °C
- With 1500 mm long PTC sensor
- Rated operating voltage: 230 V (AC), 115 V (AC) and 24 V (DC), special voltages available on request
- Two relay outputs as changeover contact and normally open contact (max. contact load 230 V, 6 A)

Rated operating voltage

230 V (AC)

115 V (AC)

24 V (DC)

Model No. SK

3114.100

3114.115*

3114.024*

* Delivery times on request

- Switching difference freely selectable
- The freely adjustable setpoint values can be adjusted via the membrane keyboard at the front. Setting range: +10 °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

Enclosure internal thermostat



CE

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-pin change-over contact as a quick-break contact.

Permissible contact load:

Term. 5 - 3 (heat.) AC 10 (4*) A, DC = 30 W
Term. 5 - 4 (cool.) AC 5 (4*) A, DC = 30 W

* () = Inductive load at cos ϕ = 0.6

Setting range: +5 °C to +55 °C

Weight: approx. 105 g

Dimensions: 71 x 71 x 33.5 mm

Switching difference approx. 1 K ± 0.8 K

Rated operating voltage

230/115/60/48/24/ V (AC)

60/48/24 V (DC)

Model No. SK

3110.000

Technical description:

- 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

For mounting in the frame section of Rittal flexRacks, you will need mounting kit FR 7952.100.

1 U panel with digital temperature indicator and thermostat



The panel is equipped as standard with a temperature indicator and thermostat. Supplied with integral cable clamping facilities for connecting cables and an identification strip holder.

Technical description:

- Small size
- 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 for a temperature range from +10 °C to +70 °C
- With 1500 mm long PTC sensor
- Rated operating voltage: 230 V (AC) special voltages available on request
- Two relay outputs as changeover contact and normally open contact (max. contact load 230 V, 6 A)
- Switching difference freely selectable
- The freely adjustable setpoint values can be adjusted via the membrane keyboard at the front. Setting range: +10 °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

Panel with temperature indicator and thermostat	Model No. DK
RAL 7032	7109.000
RAL 7035	7109.035

Colour:
RAL 7032/7035

Supply includes:
Panel, temperature indicator and thermostat, identification strip

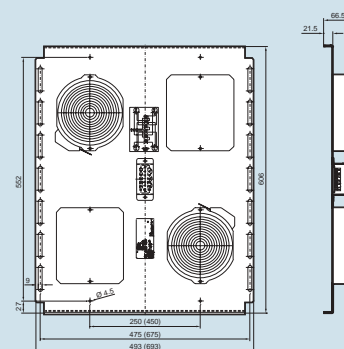
Vertical door mounted fan tray



Especially for installation in ventilated doors
The fan cross-member offers direct, front ventilation of 482.6 mm (19") equipment. This effectively prevents heat accumulation in the intake area of active components.

Technical description:

- Standard cross-member with two fans
- Air throughput (unimpeded air flow) 600 m³/h
- By adding two fan extension kits, the air throughput can be increased to 1200 m³/h
- Air flow direction is easily changed by simply rotating the fan
- Several cross-members may be configured in a cascade arrangement
- Easily mounted on the tubular door frame
- Colour RAL 7035



Supply includes:
Wired ready for connection, including assembly parts and multi-lingual assembly instructions

Delivery time on request

Model No. SK	3165.624	3165.648	3165.615	3165.630	3165.824	3165.848	3165.815	3165.830
Rated operation voltage Volt/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							
Dimensions mm (W x H x D)	W	493			693			
	H	606			606			
	D	66.5			66.5			
For doors width (mm)	600				800			
Noise level	55 dB (A)							
Temperature range	+ 20 °C to + 55 °C							
Colour	RAL 7035							
Special voltages available on request. Technical modifications reserved.								

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3340.115	381	3351.230	378	3652.610	194	3659.030	80
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3685.193	158	3685.291	159	3685.535	184	3685.602	191
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3685.194	193	3685.294	199	3685.537	184	3685.602	199

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3685.603	198	3685.667	199	3685.712	198	3685.797	142
3685.603	199	3685.668	199	3685.713	199	3685.798	142
3685.604	191	3685.669	199	3685.714	199	3685.799	142
3685.605	191	3685.670	199	3685.715	199	3685.805	61
3685.606	191	3685.671	199	3685.716	199	3685.805	183
3685.607	191	3685.672	199	3685.717	199	3685.808	209
3685.608	191	3685.673	199	3685.718	199	3685.809	209
3685.609	191	3685.674	199	3685.743	142	3685.813	166
3685.610	191	3685.675	199	3685.744	142	3685.813	167
3685.611	191	3685.676	199	3685.745	142	3685.814	166
3685.612	191	3685.677	199	3685.746	191	3685.814	167
3685.613	191	3685.678	199	3685.747	191	3685.824	61
3685.614	191	3685.679	199	3685.748	191	3685.824	183
3685.615	191	3685.680	199	3685.749	191	3685.825	208
3685.616	191	3685.681	199	3685.749	199	3685.826	208
3685.617	191	3685.683	198	3685.750	191	3685.827	208
3685.618	191	3685.683	201	3685.750	199	3685.827	209
3685.625	209	3685.684	198	3685.751	191	3685.828	208
3685.626	61	3685.684	201	3685.751	198	3685.829	209
3685.626	183	3685.685	198	3685.751	199	3685.830	208
3685.627	61	3685.685	201	3685.752	191	3685.831	208
3685.627	183	3685.686	198	3685.752	198	3685.832	208
3685.628	199	3685.686	201	3685.752	199	3685.832	209
3685.629	198	3685.687	198	3685.753	191	3685.833	208
3685.629	199	3685.687	201	3685.753	198	3685.834	208
3685.630	198	3685.688	198	3685.753	199	3685.835	208
3685.630	199	3685.688	201	3685.754	191	3685.836	208
3685.631	198	3685.689	198	3685.754	198	3685.837	208
3685.631	199	3685.689	201	3685.754	199	3685.837	209
3685.632	199	3685.690	198	3685.755	198	3685.838	208
3685.633	198	3685.690	201	3685.756	198	3685.850	142
3685.633	199	3685.691	198	3685.757	198	3685.851	166
3685.634	198	3685.691	201	3685.758	191	3685.851	167
3685.634	199	3685.692	198	3685.759	160	3685.852	166
3685.635	198	3685.692	201	3685.760	208	3685.853	166
3685.635	199	3685.693	198	3685.760	209	3685.855	166
3685.636	198	3685.693	201	3685.761	198	3685.855	167
3685.637	198	3685.694	198	3685.762	198	3685.856	167
3685.638	198	3685.694	201	3685.763	198	3685.857	167
3685.639	198	3685.695	198	3685.764	199	3685.890	142
3685.640	198	3685.695	201	3685.765	199	3685.891	142
3685.641	198	3685.696	198	3685.766	199	3685.892	142
3685.642	166	3685.696	201	3685.767	198	3685.893	142
3685.645	198	3685.697	198	3685.767	199	3685.894	142
3685.645	199	3685.697	201	3685.768	199	3685.895	142
3685.646	198	3685.698	198	3685.769	198	3685.896	142
3685.646	199	3685.698	201	3685.769	199	3685.897	142
3685.648	198	3685.699	198	3685.770	199	3685.898	142
3685.648	199	3685.699	201	3685.771	199	3685.899	142
3685.649	198	3685.700	198	3685.772	199	3685.953	209
3685.649	199	3685.700	201	3685.773	199	3685.954	209
3685.650	199	3685.701	198	3685.774	199	3685.955	208
3685.651	199	3685.701	201	3685.775	199	3685.955	209
3685.652	199	3685.702	198	3685.776	199	3685.959	142
3685.653	199	3685.702	201	3685.777	199	3685.966	35
3685.654	199	3685.703	198	3685.783	159	3685.966	183
3685.655	199	3685.703	201	3685.784	159	3685.967	35
3685.656	199	3685.704	198	3685.785	159	3685.967	183
3685.657	199	3685.704	201	3685.786	159	3685.969	209
3685.658	199	3685.705	198	3685.787	159	3685.985	148
3685.659	199	3685.705	201	3685.788	159	3685.991	149
3685.660	199	3685.706	198	3685.789	152	3686.001	209
3685.661	199	3685.706	201	3685.789	155	3686.002	209
3685.662	199	3685.707	198	3685.790	162	3686.005	151
3685.663	199	3685.708	198	3685.793	142	3686.015	209
3685.664	199	3685.709	198	3685.794	142	3686.035	208
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3686.136	162	3686.546	40	3686.655	177	3686.762	205
3686.137	162	3686.547	40	3686.656	177	3686.763	205
3686.138	193	3686.548	40	3686.657	177	3686.764	205
3686.139	193	3686.549	41	3686.658	176	3686.765	205
3686.140	193	3686.550	41	3686.659	176	3686.766	205
3686.146	61	3686.551	41	3686.682	120	3686.767	205
3686.146	183	3686.552	41	3686.700	203	3686.768	205
3686.149	152	3686.555	69	3686.701	203	3686.769	205
3686.159	150	3686.556	69	3686.702	203	3686.770	205
3686.191	150	3686.557	69	3686.703	203	3686.771	205
3686.192	143	3686.558	69	3686.704	203	3686.772	205
3686.193	143	3686.559	69	3686.705	203	3686.773	205
3686.194	143	3686.560	69	3686.706	203	3686.774	205
3686.195	145	3686.561	69	3686.707	203	3686.775	205
3686.196	145	3686.562	69	3686.708	203	3686.776	205
3686.197	145	3686.563	69	3686.709	203	3686.777	205
3686.329	177	3686.564	69	3686.710	203	3686.778	205
3686.359	177	3686.565	69	3686.711	203	3686.779	205
3686.396	43	3686.566	69	3686.712	203	3686.780	205
3686.397	43	3686.567	69	3686.713	203	3686.781	205
3686.414	43	3686.568	69	3686.714	203	3686.782	205
3686.469	114	3686.569	69	3686.715	203	3686.783	205
3686.470	114	3686.570	45	3686.716	203	3686.784	205
3686.471	114	3686.570	46	3686.717	203	3686.785	206
3686.472	114	3686.570	47	3686.718	203	3686.786	206
3686.473	67	3686.571	44	3686.719	203	3686.787	206
3686.474	67	3686.572	35	3686.720	203	3686.788	207
3686.475	68	3686.572	183	3686.721	203	3686.789	121
3686.476	68	3686.573	35	3686.722	203	3686.789	206
3686.477	68	3686.573	183	3686.723	203	3686.790	121
3686.478	68	3686.574	35	3686.724	203	3686.790	206
3686.479	68	3686.574	183	3686.725	203	3686.791	206
3686.480	68	3686.575	40	3686.726	203	3686.792	206
3686.481	68	3686.576	40	3686.727	203	3686.793	206
3686.482	68	3686.578	40	3686.728	203	3686.794	206
3686.483	68	3686.579	41	3686.729	203	3686.795	207
3686.484	68	3686.580	41	3686.730	203	3686.796	207
3686.485	68	3686.581	41	3686.731	203	3686.797	207
3686.486	68	3686.585	69	3686.732	203	3686.798	207
3686.487	68	3686.586	69	3686.733	203	3686.799	207
3686.488	68	3686.587	69	3686.734	203	3686.800	207
3686.489	68	3686.588	69	3686.735	203	3686.801	207
3686.490	68	3686.589	69	3686.736	203	3686.802	207
3686.491	68	3686.590	69	3686.737	203	3686.805	172
3686.492	68	3686.591	69	3686.738	203	3686.807	205
3686.493	68	3686.592	69	3686.739	203	3686.808	205
3686.494	68	3686.593	69	3686.740	203	3686.814	204
3686.495	68	3686.594	69	3686.741	203	3686.815	204
3686.496	68	3686.595	69	3686.742	203	3686.816	204
3686.497	68	3686.596	69	3686.743	203	3686.817	204
3686.498	68	3686.597	69	3686.744	203	3686.818	204
3686.499	68	3686.598	69	3686.745	204	3686.819	204
3686.500	68	3686.599	69	3686.746	204	3686.820	204
3686.501	68	3686.622	110	3686.747	204	3686.821	204
3686.502	68	3686.623	110	3686.748	204	3686.822	204
3686.503	68	3686.624	112	3686.749	204	3686.900	185
3686.504	68	3686.625	112	3686.750	204	3686.901	185
3686.505	68	3686.629	110	3686.751	204	3686.902	185
3686.506	68	3686.634	67	3686.752	204	3686.903	185
3686.507	68	3686.635	67	3686.753	204	3686.904	185
3686.508	68	3686.643	176	3686.754	204	3686.905	185
3686.509	68	3686.644	176	3686.755	204	3686.906	185
3686.510	68	3686.645	176	3686.756	204	3686.907	185
3686.511	68	3686.646	176	3686.757	205	3686.908	185
3686.512	68	3686.647	176	3686.758	205	3686.909	185
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3686.919	150	3687.547	189	3687.626	167	3687.706	56
3686.923	209	3687.555	198	3687.627	166	3687.708	58
3686.924	209	3687.555	201	3687.628	166	3687.709	35
3686.935	209	3687.556	198	3687.629	166	3687.709	61
3686.973	146	3687.556	201	3687.630	167	3687.710	35
3686.973	154	3687.557	198	3687.631	167	3687.710	61
3686.973	188	3687.557	201	3687.633	167	3687.711	34
3686.974	146	3687.558	198	3687.634	167	3687.711	60
3686.974	154	3687.558	201	3687.635	167	3687.712	34
3686.974	188	3687.559	198	3687.637	167	3687.712	60
3686.975	146	3687.559	201	3687.638	167	3687.713	60
3686.975	154	3687.560	198	3687.639	167	3687.714	34
3686.975	188	3687.560	201	3687.640	169	3687.714	60
3686.975	198	3687.561	198	3687.641	169	3687.715	60
3686.975	199	3687.561	201	3687.642	169	3687.716	34
3686.976	146	3687.562	198	3687.643	169	3687.716	60
3686.976	154	3687.562	201	3687.644	169	3687.717	24
3686.976	188	3687.563	198	3687.645	169	3687.718	24
3686.977	146	3687.563	201	3687.646	169	3687.719	26
3686.977	154	3687.564	198	3687.647	169	3687.720	26
3686.977	188	3687.564	201	3687.648	169	3687.721	28
3686.977	198	3687.565	198	3687.649	169	3687.723	30
3686.978	146	3687.565	201	3687.650	169	3687.724	148
3686.978	154	3687.566	198	3687.651	169	3687.726	160
3686.978	188	3687.566	201	3687.652	169	3687.780	140
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3686.979	154	3687.567	201	3687.656	190	3687.782	140
3686.979	188	3687.568	198	3687.657	190	3687.783	140
3686.980	146	3687.568	201	3687.658	190	3687.784	140
3686.980	154	3687.574	152	3687.659	190	3687.785	140
3686.980	188	3687.575	152	3687.660	190	3687.793	120
3686.981	146	3687.576	152	3687.661	190	3687.814	214
3686.981	154	3687.577	152	3687.662	190	3687.815	214
3686.981	188	3687.582	208	3687.663	190	3687.816	214
3686.989	200	3687.583	208	3687.664	190	3687.817	214
3687.014	165	3687.584	208	3687.665	121	3687.818	214
3687.015	143	3687.585	198	3687.666	121	3687.819	214
3687.015	209	3687.585	201	3687.667	138	3687.820	214
3687.020	209	3687.587	198	3687.668	138	3687.821	214
3687.021	208	3687.588	198	3687.669	138	3687.822	214
3687.021	209	3687.589	199	3687.670	138	3687.823	214
3687.050	184	3687.590	199	3687.671	138	3687.832	121
3687.050	209	3687.591	199	3687.672	138	3687.832	161
3687.051	184	3687.600	151	3687.673	138	3687.832	162
3687.051	209	3687.601	151	3687.674	138	3687.859	40
3687.052	165	3687.602	151	3687.677	169	3687.860	40
3687.146	209	3687.603	151	3687.680	138	3687.861	40
3687.519	199	3687.604	149	3687.681	138	3687.862	40
3687.519	208	3687.605	149	3687.682	138	3687.863	40
3687.519	209	3687.606	149	3687.683	138	3687.864	40
3687.520	198	3687.608	67	3687.684	138	3687.865	40
3687.521	198	3687.609	67	3687.685	138	3687.866	41
3687.522	198	3687.610	67	3687.686	138	3687.867	41
3687.523	198	3687.611	67	3687.687	138	3687.868	41
3687.524	198	3687.612	176	3687.688	138	3687.869	41
3687.525	198	3687.613	176	3687.689	138	3687.870	41
3687.526	160	3687.614	176	3687.690	138	3687.871	41
3687.527	160	3687.615	176	3687.691	138	3687.873	42
3687.528	160	3687.616	149	3687.692	169	3687.874	42
3687.529	189	3687.617	149	3687.695	121	3687.875	42
3687.530	189	3687.618	166	3687.696	52	3687.924	163
3687.531	189	3687.619	166	3687.698	52	3687.924	173
3687.536	198	3687.620	166	3687.699	52	3687.932	35
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3687.936	161	3688.129	118	3688.771	186	3735.200	248
3687.937	161	3688.130	102	3688.772	186	3736.000	253
3687.951	161	3688.130	118	3688.773	186	3740.000	244
3687.955	35	3688.504	42	3688.780	186	3743.000	246
3687.955	183	3688.505	42	3688.781	186	3743.200	246
3687.956	164	3688.506	42	3688.784	186	3744.000	246
3687.956	188	3688.507	42	3688.785	186	3744.200	246
3688.000	148	3688.508	42	3688.786	187	3745.000	246
3688.002	149	3688.528	116	3688.787	187	3745.200	246
3688.003	150	3688.530	116	3688.790	187	3746.000	241
3688.004	151	3688.534	20	3688.791	187	3746.000	254
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3688.118	100	3688.612	154	3689.208	41	3750.202	232
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3688.126	102	3688.662	195	3724.000	252	3750.354	232
3688.126	118	3688.663	195	3725.000	252	3750.360	232
3688.127	98	3688.664	195	3726.000	252	3750.362	232
3688.127	100	3688.694	20	3727.000	252	3750.364	232
3688.127	102	3688.694	22	3728.000	252	3750.400	232
3688.127	118	3688.694	116	3729.000	252	3750.402	232
3688.128	86	3688.695	20	3730.000	244	3750.404	232
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Rittal international

Agencies worldwide

Germany

Rittal GmbH & Co. KG
Postfach 1662
D-35726 Herborn
Tel.: +49 (27 72) 5 05-0
Fax: +49 (27 72) 5 05-2319
email: info@rittal.de
www.rittal.com

Argentina

Racklatina S.A.
Av. Pedro B.
Palacios 81 – 85
1704, Ramos Mejía
Buenos Aires
Tel.: +54(11) 4656-32 31
Fax: +54(11) 4656-23 23
email: rack@sion.com

Australia

Rittal Pty. Ltd.
130 – 140 Parraweena Rd.
Taren Point, 2229 N. S. W.
Tel.: +61(2) 95 25 27 66
Fax: +61(2) 95 25 53 02
Free Call 1800 350 665
email: info@rittal.com.au

Austria

Rittal-Schaltsschränke
Ges.m.b.H.
Laxenburger Straße 246a
A-1239 Wien
Tel.: +43(1) 610 09-0
Fax: +43(1) 610 09-21
email: info@rittal.at

Bahrain

Please contact
Rittal Middle East FZE
Dubai/U.A.E.

Belarus

Netexpert
Volocha Str. 1 of 310
220036 Minsk
Tel.: +375 (172) 86 20 03
Fax: +375 (172) 56 65 15

Belgium

Rittal nv/sa
Industrieterrein E17/3
Stokkelaar 8
B-9160 Lokeren
Tel.: +32(9) 353 91 11
Fax: +32(9) 355 68 62
email: info@rittal.be

Bosnia-Herzegovina

SYS Company d.o.o.
Sibenska b.b.
BiH-71000 Sarajevo
Tel.: +387/33/27 70 90
Fax: +387/33/23 05 57
email: sys@sys.ba

Brazil

Rittal Sist. Eletrom. Ltda.
Av. Cândido Portinari,
nr. 1.174
VI Jaguara
05114-001 São Paulo-SP
Tel.: +55(11) 36 22 23 77
Fax: +55(11) 36 22 23 99
email: info@rittal.com.br

Bulgaria

RITTBUL Ltd.
56 Gorski patnik Str. Office 5
BG-1421 Sofia
Tel.: +359(2) 65 10 66
Fax: +359(2) 96 32 516
email: bojkov@rittbul.bg

Canada

Rittal Systems Ltd.
7320 Pacific Circle
Mississauga, Ontario
L5T 1V1
Tel.: +1(905) 795 07 77
Fax: +1(905) 795 95 48
email: rittal.systems@rittal.ca

Chile

AMMY S.A.
Camino El Cerro 5090
Casilla 241-V C21
Huechuraba
Santiago
Tel.: +56(2) 740 01 02
Fax: +56(2) 740 10 65
email: ammysa@entelchile.net

China

Rittal Electrical Equipment
(Shanghai) Co. Ltd.
No. 353, Ri Ying North Road
P. R. China
Shanghai, 200131
Tel.: +86(21) 50 46 16 71
Fax: +86(21) 50 46 19 90
email:
marketing@rittal.com.cn

Colombia

COLSEIN Ltda.
Medición y Automatización
Calle 82 No. 5 – 48
Apartado Aereo 55479
Santafé de Bogotá,
D.C. Colombia
Tel.: +57(1) 6 10 26 74
Fax: +57(1) 6 10 78 68
email: info@colsein.com.co

Costa Rica

Elvatron
400 metros norte
de la agencia del
Banco de Costa Rica
San José
Tel.: +506 (296) 10 60
Fax: +506 (232) 60 71

Croatia

Technoshell D.O.O.
Av. V. Holjevca 20/III
10020 Zagreb
Tel./Fax:
+385/1/65 53-5 47
email: technoshell@zg.tel.hr

Cyprus

Christos Charalambous
& Sons Ltd.
9 – 11 Zanettos Street
P.O. Box 1268
Nicosia
Tel.: +357/2 77 20 55
Fax: +357/2 45 81 97
email:
chchara@spidernet.com.cy

Czech Republic

Rittal Czech, s.r.o.
Ke Zdibsku 182
250 66 Zdiby u Prahy
Tel.: +420 234 099 000
Fax: +420 234 099 099
email: info@rittal.cz

Denmark

Duelco a/s
Holtevej 10
Høeruphav
6400 Sønderborg
Tel.: +45-74 41 52 84
Fax: +45-74 41 52 09
email:
soenderborg@duelco.dk

Dubai/U.A.E.

Rittal Middle East FZE
Warehouse GC2
P.O. Box 17 599
Jebel Ali Free Zone – Dubai
U.A.E.
Tel.: +971(4) 8 83 41 31
Fax: +971(4) 8 83 42 44
email:
info@rittal-middle-east.com

Egypt

Rittal Egypt S.A.E.
45, Gamiat Al Dewal
Al Arabia St.
Mohandesine, Giza
Tel.: +2(012) 74 28 012
Fax: +2(02) 74 82 276

Finland

Rittal Oy
Valimotie 35
PL 134
01510 Vantaa
Tel.: +358 9 4 13 44 00
Fax: +358 9 4 13 44 10
email: info.keskus@rittal.fi

France

Rittal France SAS
880, rue Marcel Paul
Z.A. des Grands Godets
94507 Champigny
sur Marne Cedex
Tel.: +33(1) 49 83 60 00
Fax: +33(1) 49 83 82 06
email: info@rittal.fr

France-East

Sermes S.A.
14, rue des Frères Eberts
Boite Postale 177
67025 Strasbourg-Cedex
Tel.: +33(3) 88 40 72 00
Fax: +33(3) 88 40 72 49
email:
appareillage@sermes.fr

Great Britain

Rittal Limited
Braithwell Way
Hellaby Industrial Estate
Hellaby
Rotherham
S Yorks
S66 8QY
Tel.: +44(17 09) 70 40 00
Fax: +44(17 09) 70 12 17
email:
information@rittal.co.uk

Greece

RITTAL EPE
Thessalonikis 98
14342 Nea Philadelphia,
Athens
Tel.: +30/210/27 17 975
976
Fax: +30/210/27 12 398
www.rittal.gr

Guatemala

INTEK
Ingeniería y Tecnología
Via 5 y Ruta 3,
Zona 4 Esquina
01004 Guatemala, C.A.
Tel.: +50(2) 332 1489
332 4336
Fax: +50(2) 334 4338

Hong Kong

Ranger
Enterprise Co. Ltd.
Units A-B, 8/F, Block 1
Tai Ping Industrial Center
57 Ting Kok Road
Tai Po, N. T.
Hong Kong
Tel.: +852 24 20 89 28
Fax: +852 24 94 92 28
email:
sales@ranger.com.hk

Hungary

Rittal Kereskedelmi Kft.
Ipári Park u. 1.
1044-Budapest
Tel.: +36(1) 399 8000
Fax: +36(1) 399 8009
email: rittal@rittal.hu

Iceland

Smith & Norland h/f
Náttúni 4
P.O. Box 519
121 Reykjavík
Tel.: +354 520 3000
Fax: +354 520 3011
email: smnorin@smnor.is

India

Rittal India Pvt. Ltd.
Nos. 23 & 24 Kiadb
Industrial Area
Veerapura
Doddaballapur
Bangalore 561 203
Tel.: +91(80) 76 22 335
76 23 075
Fax: +91(80) 76 23 343
email: info@rittal-india.com

Indonesia

PT Dwitama Beta Perdana
Jl. R. S. Fatmawati No. 20
Blok II/209
Jakarta 12430
Tel.: +62(21) 7 69 28 34
Fax: +62(21) 7 59 08 481
email: dbp@centrin.net.id

Ireland

Rittal Ltd.
Unit 4C
M7 Business Park,
Newhall, Naas
Co Kildare
Ireland
Tel.: +353(45) 896 884
Fax: +353(45) 896 890
email: sales@rittal.ie

Israel

Rittal Enclosure Systems Ltd.
15, Hátarshish St. Zone 29
P.O. Box 3597
Industrial Park
Caesarea 38900
Tel.: +972(4) 6 27 55 05
Fax: +972(4) 6 27 55 35

Italy

Rittal S.p.A.
S.P. n.14 Rivoltana-Km 9,5
20060 Vignate (MI)
Tel.: +39(02) 95 93 01
Fax: +39(02) 95 36 02 09
email: Info@rittal.it

Japan

Rittal K.K.
1438-1 Shimonoohara
Nishi-izumida
Sakai-machi, Sashima-gun
Ibaraki 306-0431
Tel.: +81(280) 87 51 20
Fax: +81(280) 87 51 08
email: hotline@rittal.co.jp

Jordan

Please contact
Rittal Middle East FZE
Dubai/U.A.E.

Kuwait

Please contact
Rittal Middle East FZE
Dubai/U.A.E.

Lebanon

Please contact
Rittal Middle East FZE
Dubai/U.A.E.

Lithuania

Rittal UAB
Meistrų 8
2038 Vilnius
Tel.: +370/5 2 306 669
Fax: +370/5 2 306 665
email: info@rittal.lt

Luxembourg

D.M.E. s.a.r.l.
Distribution de matériel
électrique
Z.A.R.E. Ouest
4384 Ehlerange
Tel.: +352-57 43 44
Fax: +352-57 43 57
email: dme@dme.lu

Macedonia

Siskon System Engineerin
g
Taskenska 4A
MK-91000 Skopje
Tel.: +389/91/36 24 23
Fax: +389/91/36 12 50
email:
siskon@lotus.mpt.com.mk

Malaysia

Rittal Systems Sdn. Bhd.
No. 5 Jalan 4/118C
Desa Tun Razak
56000 Cheras
Kuala Lumpur
Tel.: +60(3)-9173 64 88
Fax: +60(3)-9173 64 99
email: sales@rittal.com.my

Mexico

Rittal, S.A. de C.V.
Prof. 5 de Mayo No. 29
Parque Industrial
Naucalpan
Naucalpan de Juarez
Estado de México
53489 México
Tel.: +52(55) 53 00-25 70
Fax: +52(55) 53 00-04 95
email: info@rittal.com.mx

Morocco

S.M.R.I.
Société marocaine de
réalisations industrielles
109, Rue Abou Ishak
El Marouni
20110 Casablanca
Tel.: +212-223 94 90
Fax: +212-223 77 08
email: smri@elan.net.ma

Netherlands

Rittal bv
Hengelder 56
Postbus 246
6900 AE Zevenaar
Tel.: +31(3) 16 59 19 11
Fax: +31(3) 16 52 51 45

New Zealand

Rittal Ltd.
5 Pretoria Street
P.O. Box 30-453
Lower Hutt
Wellington
Tel.: +64(4) 5 66 76 30
Fax: +64(4) 5 66 92 19

Norway

Rittal AS
Postboks 79 Stovner
Luhrtoppen 2
0913 Oslo
Tel.: +47-67 91 23 00
Fax: +47-67 91 23 23
email: rittal@rittal.no

Oman

Please contact
Rittal Middle East FZE
Dubai/U.A.E.

Peru

CE-YE-SA
Ingeniería Electrica
Av. Enrique Meiggs
255 – 257
Parque Internacional
de Industria y Comercio
Callao
Tel.: +51(1) 4 51 79 36

Fax: +51(1) 4 51 72 72

Philippines

Enclosure Systems
Specialist Incorporated
G/F, GE Phils Building
2291 Pasong Tamo
Extension
Makati City 1231
Philippines
Tel.: +63(2) 8 13 85 80
Fax: +63(2) 8 13 85 96
email: gardex@ibm.net

Poland

Rittal Sp. z o.o.
Ul. Królewska 6
05-825 Grodzisk Maz.
k/Warszawy
Tel.: +48(22) 724 27 84
Fax: +48(22) 724 08 52
email: rittal@rittal.com.pl

Portugal

RITTAL SIS-Sistemas
Elctricos e Electronicos
Unipersonal Lda.
Z.I. Rio Meao/Apdo. 434
4520-907 Rio Meao.
Stª Mª da Feira
Tel.: +351 256 780 210
Fax: +351 256 780 219
email: info@rittal.pt

Qatar

Please contact
Rittal Middle East FZE
Dubai/U.A.E.

Republic of Slovakia

Rittal s.r.o.
Plynárenská 1
SK-82109 Bratislava
Tel.: +421(2) 5363 0651
Fax: +421(2) 5363 0951
email: rittal@rittalsro.sk

Romania

Cubrit s.r.l.
Sos. Chitilei, no. 114
Sector 1 – Bucharest
Romania
Tel./Fax: +40/21/3 12 94 97
email: office@cubrit.ro

Russia

Rittal OOO
Letchika Babushkina 1a
129344 Moscow
Tel.: +7(095) 775 02 30
Fax: +7(095) 775 02 39
email: info@rittal.ru

Saudi Arabia

A. Abunayyan Electric
Corp.
King Abdulaziz Street
P.O. Box 321
Riyadh 11411
Kingdom of Saudi Arabia
Tel.: +966(1) 477 91 11
Fax: +966(1) 479 33 12
email:
aec-salesmarketing@
abunayyargroup.com

Singapore

Rittal Pte. Ltd.
7 Loyang Street
Loyang Industrial Estate
Singapore 508842
Tel.: +65-65 42 68 18
Fax: +65-65 42 68 33
email: sales@rittal.com.sg

Slovenia

Rittal d.o.o.
Smartinska 152
SLO-1533 Ljubljana
Tel.: +386/1/5466370
Fax: +386/1/5411710
email: info@rittal.si

South Africa

Controp Rittal (Pty) Ltd.
123, Terrace Road
Sebenza
P.O. Box 462
Edenvalle, 1610
Tel.: +27(11) 6 09-82 94
Fax: +27(11) 4 52-58 16
email: enclosures@
controprittal.co.za

South Korea

Rittal Co. Ltd.
1 NA 509 Sihwa-Gongdan
1254-8 Jeungwang-Dong
Sihung-Shi, Gyeonggi-Do
Korea 429-450
Tel.: +82(031) 499-59 61-3
Fax: +82(031) 499-59 64
email: rittal@rittal.co.kr

Spain

Rittal Disprel, S.A.
Mas Baiona, 40
Poligono Industrial
Can Roqueta
08202 Sabadell
(Barcelona)
Tel.: +34(93) 700 13 00

Fax: +34(93) 700 13 01
email: info@rittal.es

S. R. Vietnam

ESACO Ltd.
15 – 17 Tran Quoc
Taho Street
District 3
Hochiminh City
Socialist Republic
of Vietnam
Tel.: +84(8) 9 30 35 80
Fax: +84(8) 9 30 31 93
email: esaco@hcm.vnn.vn

Sweden

Rittal Scandinavia ab
26273 Ängelholm
Tel.: +46(431) 44 26 00
Fax: +46(431) 44 26 37
email: info@rittal.se

Switzerland

Rittal AG
Ringstrasse 1
5432 Neuenhof
Tel.: +41 056 416 06 00
Fax: +41 056 416 06 66
email: rittal@rittal.ch

Syria

Please contact
Rittal Middle East FZE
Dubai/U.A.E.

Taiwan

Rittal Systems Taiwan Ltd.
13 – 1 Fl., No. 87,
Wen Hua 3rd Rd.
Kuei Shan
Taoyuan Hsien
Taiwan
Tel.: +886 (3) 397-1745
(3) 327-8871
Fax: +886 (3) 397-2019
email:
sales.inform@rittal.com.tw

Thailand

Rittal Ltd.
101 Soi 7, Saeree 7
Rama 9 Road
Kwaeng Suanluang
Khet Suanluang
Bangkok 10250
Tel.: +66 (2) 7183 296
(2) 7183 297
Fax: +66 (2) 7183 298
email: info@rittal.co.th

Turkey

STOKS Ltd.
Zümrütevler Mah. Visne
Sok. No: 5
81530 Maltepe
Istanbul/Turkey
Tel.: +90(2 16) 4417009
4515739
Fax: +90(2 16) 4591290
email:
gsavas@stoks.com.tr

Ukraine

Advanced Network
Technology
Scherbakova Str. 37
04111 Kiev
Tel.: +38(44) 495 11 36
Fax: +38(44) 443 95 22

USA

Rittal Corporation
One Rittal Place
Springfield, OH 45504
Tel.: +1(937) 399-05 00
Fax: +1(937) 390-55 99
email: rittal@rittal-corp.com

Uzbekistan

Naytov Ltd.
Ul. Matbuotschilar 32
700047 Taschkent
Tel.: +998/71-132 08 56
Fax: +998/71-132 08 59

Venezuela

EMI
Equipos y sistemas C.A.
Edificio Centro Cyanamid,
P.B. Calle 1 – 2
La Urbina – 1073 Caracas
Tel.: +58(212) 243 6401
5072
Fax: +58(212) 243 6401

Yemen

Please contact
Rittal Middle East FZE
Dubai/U.A.E.

Yugoslavia

Vesimpex d.o.o.
Petra Konjovica 12 v/c
11000 Beograd
Tel.: +381/11/39 10 683
Fax: +381/11/39 10 903
email:
rittal@vesimpex.co.yu

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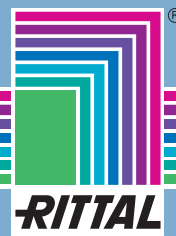


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Telephone +49(0)2772 505 -0 · Fax +49(0)2772 505 -2319
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