

# Rittal – The System.

Faster – better – worldwide.

## Innovations 2010



All supplements to Catalogue 32

FRIEDHELM LOH GROUP



# Rittal – The System.

Faster – better – worldwide.



Our strategy centres around comprehensive system solutions and understanding our customers' needs. This is translated into an individual system that is sure to impress, due to its logical structure, flexible functions, maximum modularity, simple mechanical engineering, direct availability and global presence. Quite simply, Rittal offers all this with a single system.

We guarantee comprehensive planning, engineering and a range of complimentary services, all in keeping with our basic principle:

**Rittal – The System.**  
**Faster – better – worldwide.**

- **Service and support**
- **Software and planning**
- **Products**

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# Powerful design. Flexible applications.



## Support arm system CP-C component overview

- 1 Support section CP-C, closed (CP 6074.000, .100, .300, .500)
- 2 Support section CP-C, open (CP 6075.100, .300, .500)
- 3 Enclosure attachment CP-C (CP 6070.200)
- 4 Housing coupling CP-C (CP 6070.000)
- 5 Angle coupling 90° CP-C (CP 6071.200)
- 6 Angle piece 90° CP-C (CP 6071.400)
- 7 Intermediate hinge CP-C (CP 6071.800)
- 8 Top-mounted joint CP-C, vertical outlet (CP 6072.800)
- 9 Wall-mounted joint CP-C, vertical outlet (CP 6072.400)
- 10 Top-mounted joint CP-C, horizontal outlet (CP 6072.600)
- 11 Wall-mounted joint CP-C, horizontal outlet (CP 6072.500)
- 12 Wall/base mounting bracket, small CP-C (CP 6072.200)
- 13 Wall/base mounting bracket, large CP-C (CP 6072.000)
- 14 Mounting component (CP 6073.000)

## Support arm configurator

The configurator determines the correct support arm system according to user-specific parameters.

**Further information  
is available at:  
[www.rittal.com/configurators](http://www.rittal.com/configurators)**



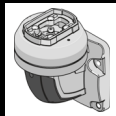
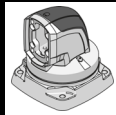
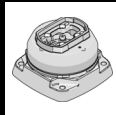
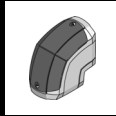
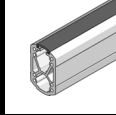
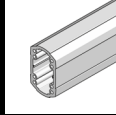
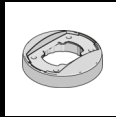
## System-compatible

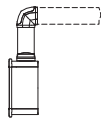
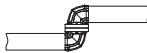
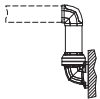
Matching operating housings for support arm systems include for example:  
Comfort Panel, Cat. 32, page 192  
Optipanel, Cat. 32, page 204  
System overview Cat. 32, page 190 – 191

**Further information  
is available at:  
[www.rittal.com/configurators](http://www.rittal.com/configurators)**



# Support arm system CP-C

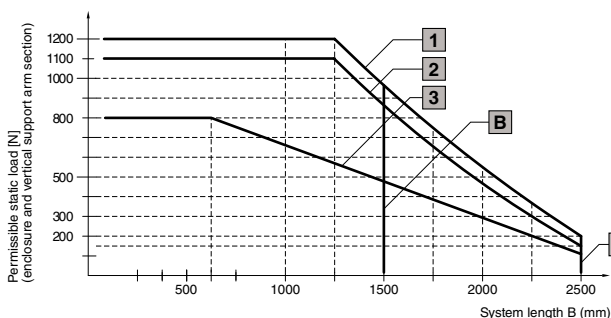


	swivel	rigid	Length mm	Weight kg	Enclosure section	Desk section	Wall section
							
Model No. CP							
Enclosure attachment CP-C	-	■	-	0.7	6070.200	-	-
Housing coupling CP-C	■	-	-	2.0	6070.000	-	-
Angle coupling 90° CP-C	■	-	-	2.1	6071.200	-	-
Support section CP-C	-	-	250 500 1000 2000	2.0 3.9 7.8 15.6	6074.000 6074.100 6074.300 6074.500		
Support section CP-C, open	-	-	500 1000 2000	4.6 9.2 18.4	6075.100 6075.300 6075.500		
Angle piece 90° CP-C	-	■	-	1.1	6071.400	-	6071.400
Intermediate hinge CP-C	■	-	-	4.4	-	6071.800	-
Top-mounted joint CP-C (vertical outlet)	■	-	-	3.8	-	-	6072.800
Top-mounted joint CP-C (horizontal outlet)	■	-	-	4.3	-	-	6072.600
Wall-mounted hinge CP-C (vertical outlet)	■	-	-	5.5	-	-	6072.400
Wall-mounted hinge CP-C (horizontal outlet)	■	-	-	6.1	-	-	6072.500
Wall/base mounting bracket, small, CP-C	-	■	-	0.5	-	-	6072.200
Wall/base mounting bracket, large, CP-C	-	■	-	2.5	-	-	6072.000

# Support arm system CP-C

## Load capacity

Permissible load depending on system configuration



1 Without intermediate hinge

2 With intermediate hinge CP 6071.800 and closed support section

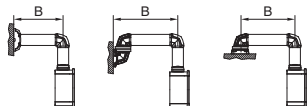
3 With intermediate hinge CP 6071.800 and open support section

Wall/base mounting bracket, small CP 6072.200 must not be used in conjunction with intermediate hinge CP 6071.800!

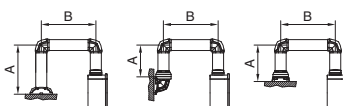
**A** Maximum system length 2500 mm for systems with horizontal outlet at the system start.

**B** Maximum system length 1500 mm for systems with vertical outlet at the system start.

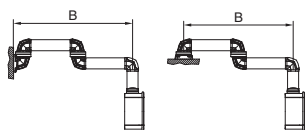
1 System configuration without intermediate hinge, CP 6071.800



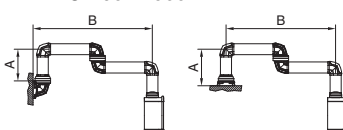
1 System configuration without intermediate hinge, CP 6071.800



2 3 System configuration with intermediate hinge, CP 6071.800<sup>1)</sup>



2 3 System configuration with intermediate hinge, CP 6071.800<sup>1)</sup>



B max. = 2500 mm

A max. = 500 mm B max. = 1500 mm

<sup>1)</sup> Intermediate hinge CP 6071.800 should only be used once per system!

## Support section CP-C, open

Attachment to the connection components with 4 self-tapping screws in the screw channel, may be cut to any required length, no thread-tapping required. With open cable duct, for easy servicing access and for pre-assembled cables with connectors; easily locked via cover section. X-shaped profiling for greater load capacity with large cable routing channels. Upper channel adequate for cables with large connectors (e.g. DVI or VGA) and available/usable throughout the entire system.

### Dimensions:

75 x 120 mm

### Material:

Support section: Extruded aluminium section  
Cover: Plastic

### Colour:

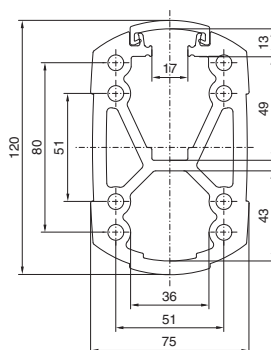
Support section: RAL 7035  
Cover: RAL 7024

Length mm	Weight kg	Model No. CP
500	4.6	6075.100
1000	9.2	6075.300
2000	18.4	6075.500



### Rittal service:

Individual lengths available on request.



# Support arm system CP-C



## Wall/base mounting bracket, large, CP-C

For rigid attachment of the support arm system to vertical or horizontal surfaces.

### Benefits:

- Prepared for flexible cable entry and routing from all sides.
- Integral one-man assembly via machined keyholes
- Optional anti-twist attachment onto the mounting surface by pinning
- Integral adjustment facility

### Material:

Wall/base mounting bracket, large:  
Cast aluminium  
Cover: Plastic

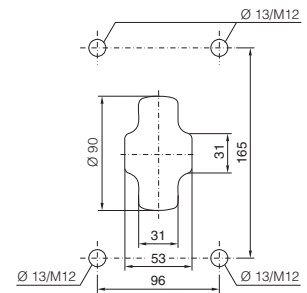
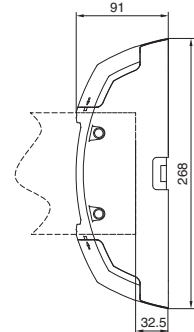
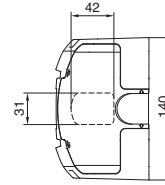
### Colour:

Wall/base mounting bracket, large: RAL 7035  
Cover: RAL 7024

### Supply includes:

Seals, self-tapping screws and grub screws for CP-C support section attachment and for adjustment.

Weight kg	Model No. CP
2.5	6072.000



## Connection adaptor CP-C to CP-L

### Applications:

- For integration of the support arm, height-adjustable CP-L (Innovations 2009, page 27) to the CP-C support arm system
- For mounting small, flat operating housings if the load capacity of the support arm system CP-C is needed for long jib lengths

### Benefits:

- Integral adjustment facility

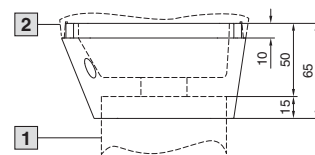
### Material:

Cast aluminium

### Supply includes:

Seals and self-tapping screws for CP-L support section attachment.

Weight kg	Model No. CP
0.6	6071.600



- 1 Support section CP-L  
Support arm, height adjustable CP-L
- 2 Connection of the CP-C system components  
CP 6071.400, CP 6071.800



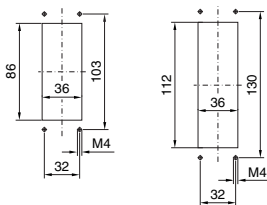


The Rittal connector gland proves that sometimes “less is more”: significantly faster installation, a flexible sealing system for different cable diameters and simple cable entry with pre-assembled cables. Low installation costs, a high degree of protection and flexible cable management – added value guaranteed with the latest generation of cable entry solutions from Rittal.

### Benefits:

- Cable diameters 4 – 16 mm
- Simple cable entry for pre-assembled cables
- Individual cables can be added or replaced without dismantling the sealing frame
- Sealing modules remain safely attached to their cables

Photo shows a configuration example with equipment not included in the scope of supply.



16-pole

24-pole

## Sealing frame

For pre-assembled cables with connectors.

Mounting over 24-pole or 16-pole connector cut-outs in:

- Module plates for TS divider panels
- Metal gland plates

### Material:

Frame: Polyamide  
Flat seal: CR

### Protection category:

IP 64 to EN 60 529, complies with NEMA 12.

### Supply includes:

Assembly parts.

For modules 20 x 20 mm	For cut-out	Packs of	Model No. SZ
10 modules	24-pole	1	<b>2400.900</b>
8 modules	16-pole	1	<b>2400.910</b>



### Accessories:

Module plates for TS divider panels, see Catalogue 32, page 923.



## Sealing modules

To seal cables in conjunction with a sealing frame. It is possible to combine 20 x 20 mm and 40 x 40 mm sealing modules.

### Material:

Hard shell: Polyamide  
Seal: LSE 2

### Protection category:

IP 64 to EN 60 529, complies with NEMA 12.

Sealing modules 20 x 20 mm		
Diameter range	Packs of	Model No. SZ
4 – 6 mm	10	<b>2400.920</b>
6 – 9 mm	10	<b>2400.930</b>
solid	10	<b>2400.970</b>

Sealing modules 40 x 40 mm		
Diameter range	Packs of	Model No. SZ
9 – 12 mm	10	<b>2400.940</b>
12 – 16 mm	10	<b>2400.950</b>
solid	10	<b>2400.960</b>

# Hygienic Design



## Simple cleaning

- Inclined surfaces: 3° on all sides, 10° on the cover
- All-round gap-free silicone seal between enclosure and cover
- Hygiene-compliant hexagon locks

## Easy assembly

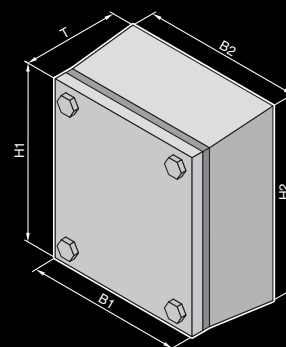
- Quick-release cover locks
- Simple replacement of the silicone seal

## Component installation

- Hole pitch of 6.25 mm for greater flexibility
- KL support rails and mounting plates can be fitted directly



# Hygienic Design



### Material:

Enclosure and cover: Stainless steel 1.4301 (AISI 304), 1.5 mm  
 Mounting bracket: Sheet steel, zinc-plated, 2.0 mm  
 Quick-release locks: Stainless steel 1.4301 (AISI 304)  
 Seal: Silicone, compliant with FDA 21 CFR 177.2600

### Surface finish:

Enclosure and cover: Brushed, grain 400,  $R_A < 0.8 \mu\text{m}$   
 Seal: Blue, dyed (RAL 5010)

### Protection category:

IP 66 to EN 60 529

### Supply includes:

Enclosure with unbroken surface, cover, mounting bracket (pre-assembled), seal and quick-release locks (enclosed).



### Accessories:

Cable glands HD, see Cat. 32, page 1056.

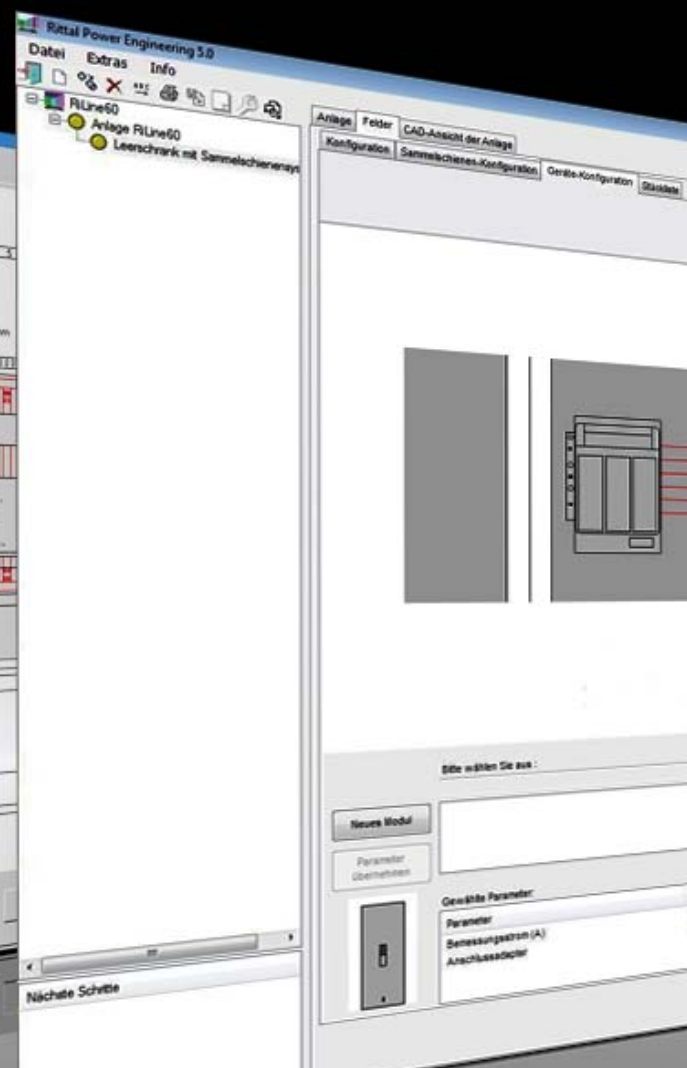
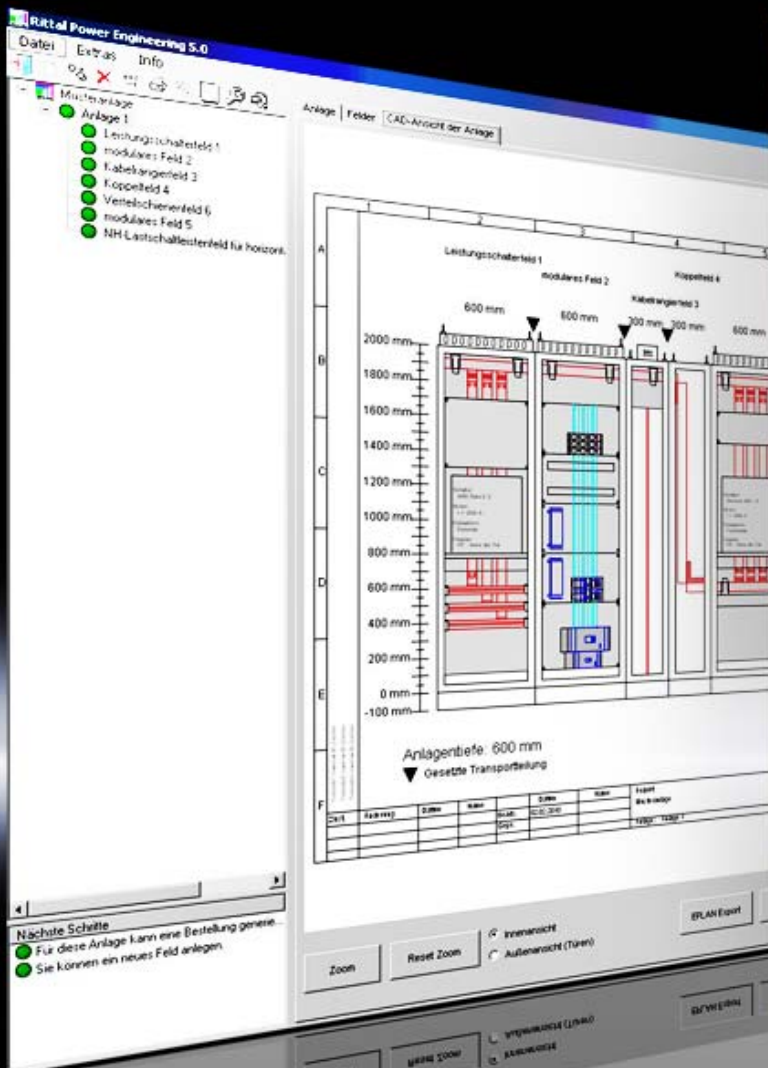
**Detailed drawing,** available on the Internet.

Photo shows a configuration example with equipment not included in the scope of supply.

## Terminal boxes HD

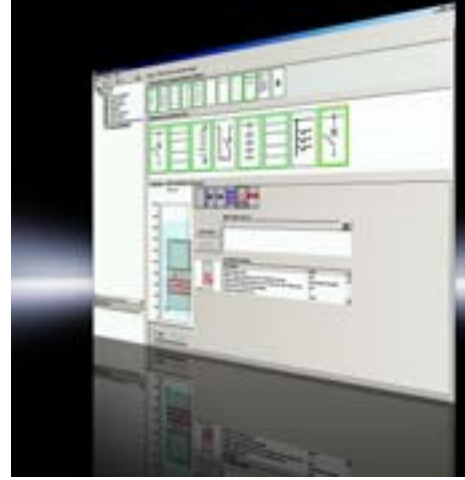
Width	front (B1) mm	Packs of	150	150	200	300	400	Cat. 32, page
	rear (B2) mm			172	177	227	327	
Height	front (H1) mm		150	150	200	200	200	
	rear (H2) mm		172	177	227	227	227	
Depth	(T) mm		80	120	120	120	120	
Model No. HD		1	<b>1670.600</b>	<b>1671.600</b>	<b>1672.600</b>	<b>1674.600</b>	<b>1675.600</b>	
Accessories								
Wall spacer 50 mm		1	4000.100	4000.100	4000.100	4000.100	4000.100	301
Mounting plate		1	1560.700	1560.700	1562.700	1563.700	1564.700	978
Support rail TS 35/7.5		10	2314.000	2314.000	2315.000	2316.000	2317.000	1002

# Power Engineering 5.0



## Quick and easy switchgear planning

- For Ri4Power low-voltage switchgear and RiLine60 busbar systems
- Simple selection and graphic positioning of assemblies
- Automatic generation of component parts lists
- Access to the entire range of Rittal products
- Multi-lingual program guidance



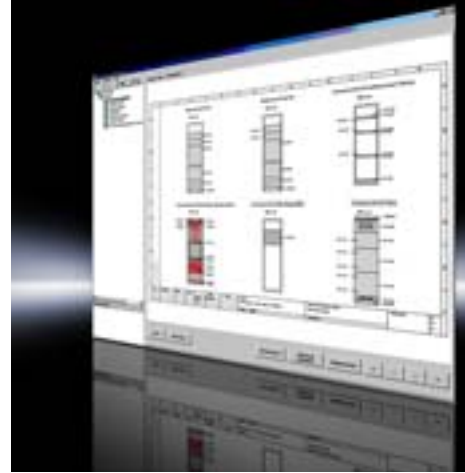
## Configuration of RiLine60

- Configuration of RiLine60 busbar systems in the Top enclosure system TS 8
- Easy selection of units and adaptors
- Integral database of switchgear from well-known manufacturers
- Automatic calculation of rated currents and heat losses



## Assembly diagram – Assembly made easy

- Automatic generation of panel-specific assembly diagrams
- Support with pre-production and assembly
- Direct allocation of components to the installation location
- Efficient, systematic assembly



## Program interfaces

- Export interface Eplan Electric P8
- Export of parts lists in MS Excel format
- CAD export in DWG or DXF format
- Tender specification texts in MS Word format
- Import/export interfaces for data updates



# RiLine60 Plus



## Fast assembly

### Busbar supports

SV 9340.000, .010, .050, .004

- Steps for adapting to the flat bar cross-section may be locked using a pin
- Bars may be inserted from the front, or slide in from the side.



### Busbar connection adaptor

SV 9342.220 – .324

- Cable entries: Perforation facilitates toolless machining by simply knocking out
- Prepared for round conductors and laminated copper bars.



### OM adaptor and OM support

SV 9340.260 – .930

- Side anti-slip guard ensures a secure grip on the busbar
- Suitable for use on 4-pole busbar system with and without base tray
- Support rails: Now only one design for adaptor section and support frame

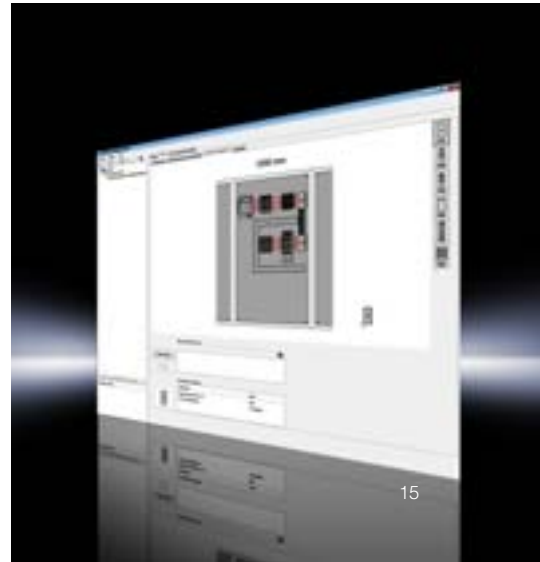


## Simple planning

### Power Engineering 5.0

SV 3020.500

- Configure RiLine60 busbar systems and components in the Rittal TS 8 Top enclosure system
- Generation of parts lists with graphical output
- Calculation of rated current and heat loss



# Ri4Power Form 1-4





## Yet more options

- Identical system structures for all Forms from 1 to 4b
- Simplified, cost-saving assembly operations
- Even more solutions for low-voltage switchgear, thanks to an extended range of combinations

## 3 busbar systems up to 5500 A

- RiLine60 – Versatile thanks to sophisticated adaptor technology
- Maxi-PLS – The assembly-friendly modular system
- Flat-PLS – The flat bar system for discerning requirements
- Optimum dimensioning of the rated current
- High levels of short-circuit resistance up to 100 kA for 1 sec./220 kA

## System accessories

- Versatile applications thanks to TS 8 system technology
- Simple assembly
- Suitable for individual applications
- Increased contact hazard protection thanks to Form 4b terminal compartment cover



# Ri4Power



## Busbar support

### Busbar support, suitable for top mounting

For the assembly of Maxi-PLS busbar systems  
3/4-pole

**Material:**  
PA 6

**Supply includes:**  
Assembly parts.

For Maxi-PLS	Packs of	Model No. SV
1600/2000	1	9649.160
3200	1	9659.160



## Isolator chassis

### for Maxi-PLS

For isolated routing of the connection brackets.

**Material:**  
PA 6.6

**Supply includes:**  
Assembly parts.

For Maxi-PLS	Bar centre distance mm	For connection bracket width mm	Packs of	Model No. SV
1600/2000	100	60	1	9640.021
3200	150	60	1	9650.021
3200	150	100	1	9650.031



## Contact piece

### for Maxi-PLS

For contacting the connection brackets to the  
Maxi-PLS busbars.

**Material:**  
E-Cu

**Supply includes:**  
Sliding block, assembly screw.

For Maxi-PLS	For connection bracket width mm	Packs of	Model No. SV
1600/2000	60	1	9640.171
1600/2000	100	1	9640.181
3200	60	1	9650.171
3200	100	1	9650.181



### Also required:

Maxi-PLS terminal stud,  
see brochure Ri4Power Form 2-4, page 103.



## Longitudinal connectors

### for Maxi-PLS

For simple baying connection of Maxi-PLS  
busbars.

**Material:**  
E-Cu

**Supply includes:**  
2 sliding blocks  
4 bolts  
4 washers  
4 spring lock washers  
4 nuts

For Maxi-PLS	Packs of	Model No. SV
1600/2000	1	9640.191
3200	1	9650.191

## Divider panel module

### for Maxi-PLS

For side shielding from neighbouring busbar chambers. In conjunction with the busbar gland and the divider panel, as a preventive measure to prevent arcing.

#### Material:

PA 6.6

#### Supply includes:

Assembly parts.



For Maxi-PLS	Number of poles	For enclosure depth mm	Bar centre distance mm	Packs of	Model No. SV
1600/2000	3/4-pole	600	100	1	<b>9640.621</b>
1600/2000	3/4-pole	800	100	1	<b>9640.628</b>
1600/2000	3-pole	600/800	185	1	<b>9640.641<sup>1)</sup></b>
3200	3/4-pole	800	150	1	<b>9659.601</b>
3200	3-pole	600	150	1	<b>9650.621</b>
3200	3-pole	600/800	185	1	<b>9650.641<sup>1)</sup></b>

<sup>1)</sup> For assembly in the rear enclosure section.

## Angular connector

### for Flat-PLS busbar systems

For connecting horizontal Flat-PLS busbar systems in the rear section to vertical Flat-PLS busbar systems.

#### Material:

E-Cu



#### Also required:

See brochure Rittal Ri4Power Form 2-4:

- Contact maker, page 96
- Claw with nut M10, page 104
- Copper castor, page 103
- Busbar claw, page 93
- Screw connections, page 104



For systems	For enclosure depth mm	Bar population up to mm <sup>1)</sup>	For conductor	Bracket version mm <sup>2)</sup>	Packs of	Model No. SV
Flat-PLS 60	600	2 x 60 x 10	L1, L2, L3	3 x 40 x 10	1 set	<b>9675.846</b>
			N	3 x 40 x 10	1 set	<b>9675.847</b>
		4 x 60 x 10	L1, L2, L3	3 x 80 x 10	1 set	<b>9675.886</b>
			N	3 x 80 x 10	1 set	<b>9675.887</b>
	800	2 x 60 x 10	L1, L2, L3	3 x 40 x 10	1 set	<b>9675.848</b>
			N	3 x 40 x 10	1 set	<b>9675.849</b>
4 x 60 x 10		L1, L2, L3	3 x 80 x 10	1 set	<b>9675.888</b>	
		N	3 x 80 x 10	1 set	<b>9675.889</b>	
Flat-PLS 100	600	2 x 100 x 10	L1, L2, L3	2 x 80 x 10	1 set	<b>9675.876</b>
			L1, L2, L3	3 x 100 x 10	1 set	<b>9675.896</b>
		4 x 100 x 10	L1, L2, L3	2 x 80 x 10	1 set	<b>9675.878</b>
			N	2 x 80 x 10	1 set	<b>9675.877</b>
	800	2 x 100 x 10	L1, L2, L3	3 x 100 x 10	1 set	<b>9675.898</b>
			N	3 x 100 x 10	1 set	<b>9675.897</b>
		4 x 100 x 10	L1, L2, L3	3 x 100 x 10	1 set	<b>9675.898</b>
			N	3 x 100 x 10	1 set	<b>9675.897</b>

<sup>1)</sup> Number of strands x bar size.

<sup>2)</sup> Number of angular connectors x bar size.

**More pressure.  
Higher air flow rates.**



## Assembly without tools

- Straightforward assembly, exchange and maintenance with no need for tools of any kind
- Simple reversal of the air flow direction by turning the fan module
- Individual positioning of the power connection
- Spring clamp terminals for electrical connection without tools
- Latch on louvred grille for fast filter mat replacement without tools

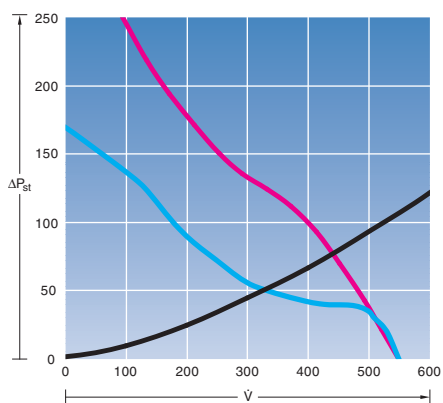


## Efficient technology

- Air throughput from 20 to 700 m<sup>3</sup>/h
- New diagonal fan technology for greater pressure stability and constant air flows in use, even with a contaminated filter mat
- Minimum installation depth
- Flow-optimised air routing
- Extended service life of filter mats and thus longer maintenance intervals



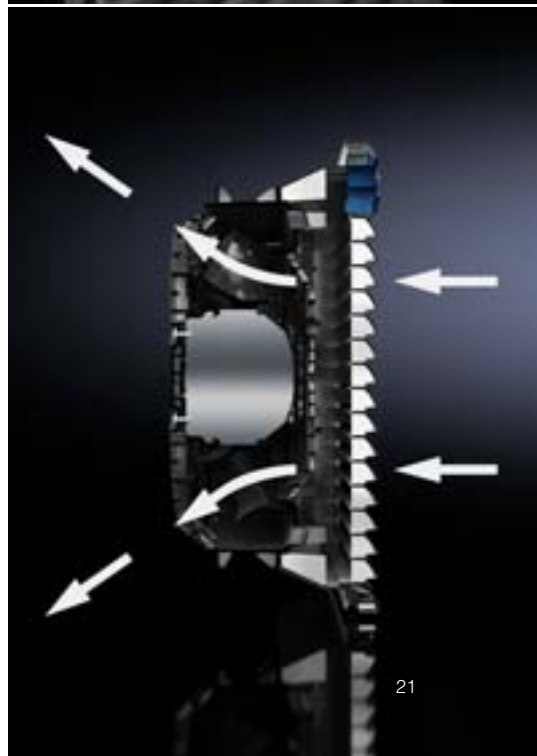
Performance diagram



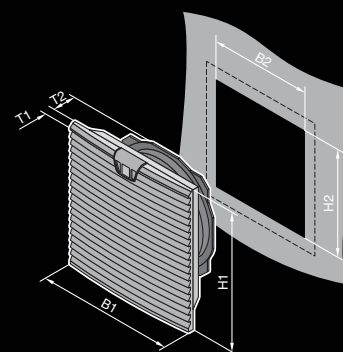
$\dot{V}$  = Volumetric flow (m<sup>3</sup>/h)  
 $\Delta P_{st}$  = Stat. pressure difference (Pa)  
— = Resistance curve  
Outlet filter SK 3243.200  
— = old 50 Hz  
Fan-and-filter unit SK 3326.xxx  
— = new 50 Hz  
Fan-and-filter unit SK 3243.xxx

## Air routing

- Intelligent symbiosis of radial and axial fan technology
- Air flow spreads diagonally from the fan, promoting a more even air distribution in the enclosure



# TopTherm fan-and-filter units



**Supply includes:**  
Complete unit ready to install,  
including filter mat.

B = Width  
T = Depth

## Air throughput 20 – 66 m<sup>3</sup>/h

Model No. SK fan-and-filter unit	3237.100	3237.110	3237.124	3238.100	3238.110	3238.124
Model No. SK fan-and-filter unit – EMC	3237.600	–	–	3238.600	–	–
Rated operating voltage V, Hz	230, 50/60	115, 50/60	24 (DC)	230, 50/60	115, 50/60	24 (DC)
Dimensions mm	B1/H1	116.5 x 116.5		148.5 x 148.5		
	B2/H2	92 x 92		124 x 124		
	T1	16		16		
Max. installation depth mm	T2	43		58.5		
<b>Air throughput, unimpeded air flow</b>	<b>20/25 m<sup>3</sup>/h</b>		<b>20 m<sup>3</sup>/h</b>	<b>55/66 m<sup>3</sup>/h</b>		<b>55 m<sup>3</sup>/h</b>
Air throughput with outlet filter including standard filter mat	1 x SK 3237.200: <b>15/18 m<sup>3</sup>/h</b>			1 x SK 3238.200: <b>43/50 m<sup>3</sup>/h</b> 2 x SK 3238.200: <b>46/56 m<sup>3</sup>/h</b>		

Diagonal fan	Self-starting shaded pole motor		DC motor	Self-starting shaded pole motor		DC motor
Rated current	0.065 A/0.052 A	0.14 A/0.12 A	0.14 A	0.12 A/0.11 A	0.24 A/0.23 A	0.28 A
Power consumption	11 W/9 W		3 W	19 W/17 W	19 W/17 W	6 W
Pre-fuse	2 A					
Noise level	38/43 dB (A)		38 dB (A)	46/49 dB (A)		46 dB (A)
Operating temperature range	–15°C to +55°C					
Storage temperature range	–30°C to +85°C					
Colour	RAL 7035					
Protection category to EN 60 529	IP 54 standard IP 55 with additional fine filter mat IP 56 with additional fine filter mat and hose-proof hood					

Model No. SK outlet filter	3237.200	–	–	3238.200	–	–
Model No. SK outlet filter – EMC	3237.060	–	–	3238.060	–	–

Accessories	Packs of		
Filter mats	5	3237.700	3238.700
Fine filter mats	5	–	3238.055
Hose-proof hood	1	3237.080	3238.080
Cover panel	1	3237.020	3238.020
Thermostat	1	3110.000	
Temperature indicator	1	3114.200	
Hygrostat	1	3118.000	
Speed control	1	3120.200	

Special voltages available on request. We reserve the right to make technical modifications.

# TopTherm fan-and-filter units

## Air throughput 105 – 120 m<sup>3</sup>/h

<b>Model No. SK fan-and-filter unit</b>	<b>3239.100</b>	<b>3239.110</b>	<b>3239.124</b>
<b>Model No. SK fan-and-filter unit – EMC</b>	<b>3239.600</b>	–	–
Rated operating voltage V, Hz	230, 50/60	115, 50/60	24 (DC)
Dimensions mm	B1/H1	204 x 204	
	B2/H2	177 x 177	
	T1	24	
Max. installation depth mm	T2	90	
<b>Air throughput, unimpeded air flow</b>	<b>105/120 m<sup>3</sup>/h</b>		<b>105 m<sup>3</sup>/h</b>
Air throughput with outlet filter including standard filter mat	1 x SK 3239.200: <b>87/100 m<sup>3</sup>/h</b> 2 x SK 3239.200: <b>93/108 m<sup>3</sup>/h</b> 1 x SK 3240.200: <b>98/111 m<sup>3</sup>/h</b>		

Diagonal fan	Self-starting shaded pole motor		DC motor
Rated current	0.12 A/0.11 A	0.24 A/0.23 A	0.28 A
Power consumption	19 W/17 W		6 W
Pre-fuse	2 A		
Noise level	46/49 dB (A)		46 dB (A)
Operating temperature range	–15°C to +55°C		
Storage temperature range	–30°C to +85°C		
Colour	RAL 7035		
Protection category to EN 60 529	IP 54 standard/IP 55 with additional fine filter mat/IP 56 with additional fine filter mat and hose-proof hood		
<b>Model No. SK outlet filter</b>	<b>3239.200</b>		
<b>Model No. SK outlet filter – EMC</b>	<b>3239.060</b>	–	–

Accessories	Packs of	
Filter mats	5	3171.100
Fine filter mats	5	3181.100
Hose-proof hood	1	3239.080
Cover panel	1	3239.020
Thermostat	1	3110.000
Temperature indicator	1	3114.200
Hygrostat	1	3118.000
Speed control	1	3120.200

Special voltages available on request. We reserve the right to make technical modifications.

## Air throughput 180 – 250 m<sup>3</sup>/h

<b>Model No. SK fan-and-filter unit</b>	<b>3240.100</b>	<b>3240.110</b>	<b>3240.124</b>	<b>3241.100</b>	<b>3241.110</b>	<b>3241.124</b>
<b>Model No. SK fan-and-filter unit – EMC</b>	<b>3240.600</b>	–	–	<b>3241.600</b>	–	–
Rated operating voltage V, Hz	230, 50/60	115, 50/60	24 (DC)	230, 50/60	115, 50/60	24 (DC)
Dimensions mm	B1/H1	255 x 255				
	B2/H2	224 x 224				
	T1	25				
Max. installation depth mm	T2	107				
<b>Air throughput, unimpeded air flow</b>	<b>180/160 m<sup>3</sup>/h</b>		<b>180 m<sup>3</sup>/h</b>	<b>230/250 m<sup>3</sup>/h</b>		<b>230 m<sup>3</sup>/h</b>
Air throughput with outlet filter including standard filter mat	1 x SK 3240.200: <b>138/121 m<sup>3</sup>/h</b> 2 x SK 3240.200: <b>165/140 m<sup>3</sup>/h</b> 1 x SK 3243.200: <b>165/140 m<sup>3</sup>/h</b>			1 x SK 3240.200: <b>183/205 m<sup>3</sup>/h</b> 2 x SK 3240.200: <b>203/230 m<sup>3</sup>/h</b> 1 x SK 3243.200: <b>203/230 m<sup>3</sup>/h</b>		

Diagonal fan	Self-starting shaded pole motor		DC motor	Self-starting shaded pole motor		DC motor
Rated current	0.19 A/0.18 A	0.38 A/0.36 A	0.07 A	0.27 A/0.28 A	0.54 A/0.52 A	0.2 A
Power consumption	33 W/33 W		10 W	42 W/46 W	43 W/46 W	25 W
Pre-fuse	2 A	4 A	2 A	4 A		2 A
Noise level	51/46 dB (A)		51 dB (A)	54/56 dB (A)		54 dB (A)
Operating temperature range	–30°C to +55°C					
Storage temperature range	–30°C to +85°C					
Colour	RAL 7035					
Protection category to EN 60 529	IP 54 standard/IP 55 with additional fine filter mat/IP 56 with additional fine filter mat and hose-proof hood					
<b>Model No. SK outlet filter</b>	<b>3240.200</b>					
<b>Model No. SK outlet filter – EMC</b>	<b>3240.060</b>	–	–	<b>3240.060</b>	–	–

Accessories	Packs of	
Filter mats	5	3172.100
Fine filter mats	5	3182.100
Hose-proof hood	1	3240.080
Cover panel	1	3240.020
Thermostat	1	3110.000
Temperature indicator	1	3114.200
Hygrostat	1	3118.000
Speed control	1	3120.200

Special voltages available on request. We reserve the right to make technical modifications.

# TopTherm fan-and-filter units

Air throughput 550 – 770 m<sup>3</sup>/h

Model No. SK fan-and-filter unit	3243.100	3243.110	3244.100	3244.110	3244.140
Model No. SK fan-and-filter unit – EMC	3243.600	–	3244.600	–	–
Rated operating voltage V, Hz	230, 50/60	115, 50/60	230, 50/60	115, 50/60	400/460, 3~, 50/60
Dimensions mm	B1/H1	323 x 323			
	B2/H2	292 x 292			
	T1	25			
Max. installation depth mm	T2	118.5	130.5		
<b>Air throughput, unimpeded air flow</b>	<b>550/600 m<sup>3</sup>/h</b>		<b>700/770 m<sup>3</sup>/h</b>		
Air throughput with outlet filter including standard filter mat	1 x SK 3243.200: <b>465/510 m<sup>3</sup>/h</b> 2 x SK 3243.200: <b>508/548 m<sup>3</sup>/h</b>		1 x SK 3243.200: <b>544/587 m<sup>3</sup>/h</b> 2 x SK 3243.200: <b>614/662 m<sup>3</sup>/h</b>		

Diagonal fan	1~ capacitor motor				Rotary current motor
Rated current	0.37 A/0.48 A	0.75 A/0.80 A	0.59 A/0.81 A	1.0 A/1.4 A	0.22 A/0.24 A
Power consumption	71 W/89 W	70 W/80 W	109 W/155 W	110 W/156 W	96 W/138 W
Pre-fuse	4 A	6 A	4 A	6 A	Motor circuit-breaker
Noise level	59/61 dB (A)		65/68 dB (A)		
Operating temperature range	–30°C to +55°C				
Storage temperature range	–30°C to +85°C				
Colour	RAL 7035				
Protection category to EN 60 529	IP 54 standard IP 55 with additional fine filter mat IP 56 with additional fine filter mat and hose-proof hood				
<b>Model No. SK outlet filter</b>	<b>3243.200</b>				
<b>Model No. SK outlet filter – EMC</b>	<b>3243.060</b>	–	<b>3243.060</b>	–	–
<b>Accessories</b>	Packs of				
Filter mats	5	3173.100			
Fine filter mats	5	3183.100			
Hose-proof hood	1	3243.080			
Cover panel	1	3243.020			
Thermostat	1	3110.000			
Temperature indicator	1	3114.200			
Hygrostat	1	3118.000			
Speed control	1	3120.200			

Special voltages available on request. We reserve the right to make technical modifications.

## Conversion table old/new

Output class	20/25 m <sup>3</sup> /h	55/66 m <sup>3</sup> /h	105/120 m <sup>3</sup> /h	180/160 m <sup>3</sup> /h	230/250 m <sup>3</sup> /h	550/600 m <sup>3</sup> /h	700/770 m <sup>3</sup> /h
Cut-out dimensions (old = new)	92 x 92	124 x 124	177 x 177	224 x 224		292 x 292	
24 V	<b>new</b>	<b>3237.124</b>	<b>3238.124</b>	<b>3239.124</b>	<b>3240.124</b>	<b>3241.124</b>	–
	old	3321.027	3322.027	3323.027	3324.027	3325.027	–
230 V	<b>new</b>	<b>3237.100</b>	<b>3238.100</b>	<b>3239.100</b>	<b>3240.100</b>	<b>3241.100</b>	<b>3243.100</b>
	old	3321.107	3322.107	3323.107	3324.107	3325.107	3326.107
115 V	<b>new</b>	<b>3237.110</b>	<b>3238.110</b>	<b>3239.110</b>	<b>3240.110</b>	<b>3241.110</b>	<b>3243.110</b>
	old	3321.117	3322.117	3323.117	3324.117	3325.117	3326.117
400 V	<b>new</b>	–	–	–	–	–	<b>3244.140</b>
	old	–	–	–	–	–	3327.147
EMC fan-and-filter unit, 230 V	<b>new</b>	<b>3237.600</b>	<b>3238.600</b>	<b>3239.600</b>	<b>3240.600</b>	<b>3241.600</b>	<b>3243.600</b>
	old	3321.607	3322.607	3323.607	3324.607	3325.607	3326.607
Outlet filter	<b>new</b>	<b>3237.200</b>	<b>3238.200</b>	<b>3239.200</b>	<b>3240.200</b>	<b>3243.200</b>	
	old	3321.207	3322.207	3323.207	3324.207	3325.207	3326.207
EMC outlet filter	<b>new</b>	<b>3237.060</b>	<b>3238.060</b>	<b>3239.060</b>	<b>3240.060</b>	<b>3243.060</b>	
	old	3321.267	3322.267	3323.267	3324.267	3325.267	3326.267
Hose-proof hood	<b>new</b>	<b>3237.080</b>	<b>3238.080</b>	<b>3239.080</b>	<b>3240.080</b>	<b>3243.080</b>	
	old	3321.800	3322.800	3323.800	3324.800	3325.800	3326.800
Blanking cover	<b>new</b>	<b>3237.020</b>	<b>3238.020</b>	<b>3239.020</b>	<b>3240.020</b>	<b>3243.020</b>	
	old	–	–	–	–	–	–
Standard filter mat (IP 54)	<b>new</b>	<b>3321.700</b>	<b>3322.700</b>	<b>3171.100</b>	<b>3172.100</b>	<b>3173.100</b>	
	old	3321.700	3322.700	3171.100	3172.100	3173.100	3327.700
Fine filter mat (IP 55)	<b>new</b>	–	<b>3238.055</b>	<b>3181.100</b>	<b>3182.100</b>	<b>3183.100</b>	
	old	–	–	3181.100	3182.100	3183.100	3183.100



# Accessories for fan-and-filter units

## Hose-proof hood

For fan-and-filter units/outlet filters. When the hose-proof hood is mounted above the fan-and-filter unit and outlet filter in conjunction with a fine filter mat, a protection category of IP 56 to EN 60 529 is achieved.

### Material:

Stainless steel, silicone

### Protection category:

In conjunction with the fan-and-filter units/outlet filters, NEMA 3R + 12 is met.

For fan-and-filter unit	Dimensions mm	Model No. SK
SK 3237. . . .	150 x 230 x 40	<b>3237.080</b>
SK 3238. . . .	176 x 245 x 55	<b>3238.080</b>
SK 3239. . . .	233 x 330 x 55	<b>3239.080</b>
SK 3240. . . /SK 3241. . . .	282 x 390 x 85	<b>3240.080</b>
SK 3243. . . /SK 3244. . . . SK 3245. . . .	350 x 480 x 110	<b>3243.080</b>



## Blanking cover

If existing mounting cut-outs for fan-and-filter units/outlet filters need to be closed to achieve a higher protection category, the filter mat of the fan-and-filter unit/outlet filter can simply be replaced with a blanking cover; welding or other mechanical modification of the enclosure is not necessary.

### Material:

Plastic

### Protection category:

IP 55

For fan-and-filter unit	Model No. SK
SK 3237. . . .	<b>3237.020</b>
SK 3238. . . .	<b>3238.020</b>
SK 3239. . . .	<b>3239.020</b>
SK 3240. . . /SK 3241. . . .	<b>3240.020</b>
SK 3243. . . /SK 3244. . . . SK 3245. . . .	<b>3243.020</b>



## Spare filter mats

Made of chopped-fibre mat with a progressive structure. Temperature-resistant to 100°C, self-extinguishing category F1 to DIN 53 438.  
Dust-laden air side: Open structure  
Clean air side: Closed structure  
Reliable filtering of virtually all types of dust from a particle size of 10 µm.

### Material:

Chemical fibre

For fan-and-filter unit	Filter class to DIN EN 779	Model No. SK
3237. . . .	G2	<b>3321.700</b>
3238. . . .	G2	<b>3322.700</b>
3239. . . .	G3	<b>3171.100</b>
3240. . . /3241. . . .	G3	<b>3172.100</b>
3243. . . /3244. . . .	G3	<b>3173.100</b>



## Fine filter mats

Made of chopped-fibre mat with a progressive structure. Temperature-resistant to 100°C, self-extinguishing category F1 to DIN 53 438.  
Dust-laden air side: Open structure  
Clean air side: Closed structure  
Reliable filtering of virtually all types of dust from a particle size of 10 µm.

### Material:

Chemical fibre

For fan-and-filter unit	Filter class to DIN EN 779	Model No. SK
3238. . . .	F5	<b>3238.055</b>
3239. . . .	F5	<b>3181.100</b>
3240. . . /3241. . . .	F5	<b>3182.100</b>
3243. . . /3244. . . .	F5	<b>3183.100</b>



# TopTherm chillers



## Control module

- One version for two frequencies 400 V/50 Hz, 460 V/60 Hz
- Temperature control by way of fixed or differential values, switchable

## Chiller module

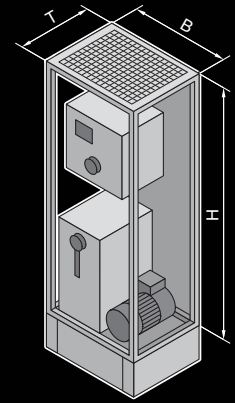
- Air intake at rear, optionally also on left or right for the 8, 12 and 16 kW versions
- Refrigerant R410A
- Simple exchanging of modules with different outputs

## Water module

- Water bypass as standard
- Flow monitor as standard
- Simple exchanging of modules of different capacities



# TopTherm chillers



## Benefits:

- Modular design
- Small footprint
- Convenient servicing
- High reliability thanks to standard water bypass

- One version for two frequencies = international compatibility
- Series product available from stock
- Fast delivery, as pre-assembled modules can simply be combined into a recooling system

## Supply includes:

Complete unit ready for connection.

B = Width  
T = Depth

Photo shows a configuration example with equipment not included in the scope of supply.

## Cooling output 8 – 40 kW

Model No. SK	3335.600	3335.610	3335.620	3335.630	3335.640	3335.650	3335.660
Rated operating voltage V, Hz	400, 3~, 50 Hz/460, 3~, 60 Hz						
Dimensions mm	W	805			1205	1610	2410
	H	2000			2000	2000	2000
	D	805			805	805	805
<b>Cooling output<sup>1)</sup> at T<sub>w</sub> = 10°C/T<sub>u</sub> = 32°C</b>	<b>6.9/7.6 kW</b>	<b>10.3/11.3 kW</b>	<b>13.8/15.2 kW</b>	<b>17.2/18.9 kW</b>	<b>21.6/23.8 kW</b>	<b>27.6/30.4 kW</b>	<b>34.5/38 kW</b>
<b>Cooling output<sup>1)</sup> at T<sub>w</sub> = 18°C/T<sub>u</sub> = 32°C</b>	<b>8/8.8 kW</b>	<b>12/13.1 kW</b>	<b>16/17.6 kW</b>	<b>20/21.8 kW</b>	<b>25/27.6 kW</b>	<b>32/35.2 kW</b>	<b>40/44 kW</b>
Power consumption max. kW	3.4/4.0	5.9/6.4	6.7/8.0	8.0/9.9	10.5/12.9	13.5/15.9	16.0/19.8
Rated current max. A	6.4/5.7	8.2/9.5	11.1/11.3	15.9/13.9	20.3/20.7	22.2/22.6	31.7/27.9
Refrigerant	R410A						
Number of cooling circuits	1					2	
Temperature range – environment	+10°C to +43°C						
Temperature range – water	+7°C to +25°C						
Pump capacity at 2.5 bar (l/min.) 50/60 Hz	35/70		30/85		50/140		60/40 (at 60 Hz 3.7 bar)
Tank capacity l	80			135			
Water connections	1"					1 1/4"	
Weight (empty) kg	250	270	325	470	500	580	940
Colour	RAL 7035						
Protection category (electrics)	IP 44						
Temperature control	Microcontroller control (factory setting +18°C, differential value control also possible)						
<b>Accessories</b>	Packs of						
Air filter	1	3286.530			3286.540		3286.530 <sup>2)</sup> 3286.540 <sup>2)</sup>
Levelling feet	4	7493.100					
Levelling feet with vibration dampening	4	7493.230					
Base/plinth components front and rear	100 mm	8601.805					
	200 mm	8602.805					
Base/plinth trim panels, side	100 mm	8601.085					
	200 mm	8602.085					
Rifrost	Canister	10 l	3301.960				
		25 l	3301.965				
		200 l	3301.967				

Technical modifications reserved.

<sup>1)</sup> Without pump heat losses.

<sup>2)</sup> 2 packs

# Enclosure heaters



### Fast assembly

- Snap-fastening onto 35 mm support rails EN 50 022
- Direct screw-fastening onto the mounting plate



### Energy-efficient design

- PTC technology
- Computational Fluid Dynamics (CFD)-assisted design for superior heating performance with the same construction size

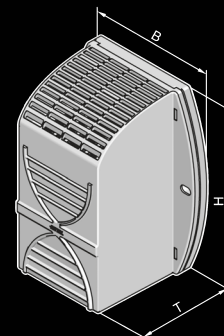
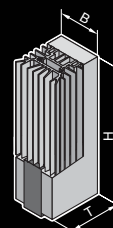


### Output range

- without fan  
10, 20, 30, 50, 75, 100, 150 W
- with fan  
250, 400, 800 W



# Enclosure heaters



## Supply includes:

PTC heater with quick-fit terminal and assembly parts.

## Note:

- Thermostat SK 3110.000 (see accessories) is recommended for precise temperature control in the enclosure.
- In order to prevent condensation on assemblies, hygrostat SK 3118.000 (see accessories) is recommended to regulate heating.
- In larger enclosures, even heat distribution is best achieved by installing several low-output heaters.
- The installation of heaters is generally advisable, even when using heat exchangers and cooling units, in order to prevent condensation.

B = Width  
T = Depth

## Without fan, continuous thermal output 10 – 150 W

Model No. SK		3105.310	3105.320	3105.330	3105.340	3105.350	3105.360	3105.370
Dimensions mm	W	45	45	64	64	64	90	90
	H	120	120	155	155	230	165	180
	D	46	46	56	56	56	75	75
Rated operating voltage V, Hz		110 – 240 V, 50/60 Hz						
<b>Continuous thermal output at <math>T_u = 10^\circ\text{C}</math></b>		<b>8 – 10 W</b>	<b>18 – 20 W</b>	<b>23 – 30 W</b>	<b>49 – 50 W</b>	<b>63 – 75 W</b>	<b>86 – 100 W</b>	<b>130 – 150 W</b>
Pre-fuse T		2 A		4 A				
<b>Accessories</b>		Packs of						
Thermostat	1	3110.000						SK Cat. (hardcover), page 182
Hygrostat	1	3118.000						SK Cat. (hardcover), page 182
Temperature indicator/controller	1	3114.200						IN 2010, page 33

Special voltages available on request. We reserve the right to make technical modifications.

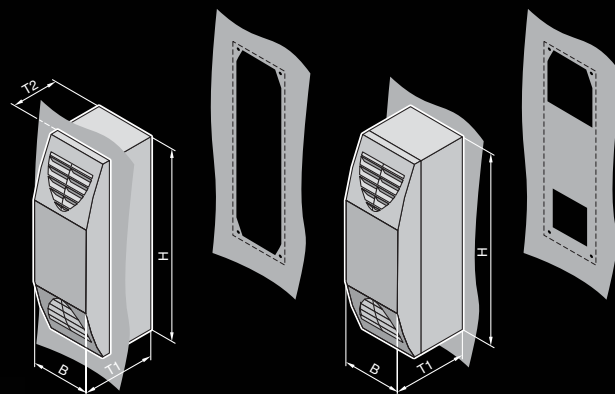
## With fan, continuous thermal output 250 – 800 W

Model No. SK 110 V		3105.210	3105.220	3105.230
Model No. SK 230 V		3105.180	3105.190	3105.200
Dimensions mm	W	142	142	142
	H	170	170	170
	D	101	101	101
Rated operating voltage V, Hz		110 or 230 V, 50/60 Hz		
<b>Continuous thermal output at <math>T_u = 10^\circ\text{C}</math></b>		<b>250 W<sup>1)</sup></b>	<b>400 W<sup>1)</sup></b>	<b>800 W<sup>1)</sup></b>
Pre-fuse gG for 110 V		4 A	6 A	10 A
Pre-fuse gG for 230 V		4 A	6 A	6 A
<b>Accessories</b>		Packs of		
Thermostat	1	3110.000		SK Cat. (hardcover), page 182
Hygrostat	1	3118.000		SK Cat. (hardcover), page 182
Temperature indicator/controller	1	3114.200		IN 2010, page 33

<sup>1)</sup> Output with fan.

Special voltages available on request. We reserve the right to make technical modifications.

# Thermoelectric cooler



Now also with heater function

## Application:

- Ideal for climate control of small enclosures and command panels.
- Especially suitable for use on support arm systems.
- Optimum space utilisation.
- Targeted cooling of hotspots and heating where necessary.

## Supply includes:

Thermoelectric climate control unit, wired ready for connection, with multilingual documentation, mounting accessories and parameterisation software.

## Detailed drawing,

available on the Internet.

## Performance diagrams,

available on the Internet.

B = Width  
T = Depth

## Useful cooling/heating output 100 W

Model No. SK	3201.200	3201.300
Dimensions in mm	B 125 H 400 T1 155	
Installation depth	T2 100	
Rated operating voltage V, Hz	100 – 230 V, 50/60	24 V DC
Start-up current	0.7 A	4.5 A
Rated current	0.7 A	4.5 A
Refrigeration factor/COP	L 35 L 35 1.0	1.2
<b>Useful cooling output <math>\dot{Q}_k</math> to DIN 3168</b>	<b>L 35 L 35 100 W</b>	<b>100 W</b>
<b>Thermal output</b>	<b>200 W</b>	<b>200 W</b>
Power pack integrated	■	–
Colour of cover/unit	RAL 7024/Anodised aluminium	
Protection category	IP 54	
Weight	3.0 kg	2.5 kg
Temperature range	–30°C to +55°C	–30°C to +60°C
Air throughput, unimpeded air flow	50 m³/h	
Type of connection	Plug-in spring connection terminal	
Pre-fuse gG	2 A	10 A
<b>Accessories</b>	Packs of	SK Cat. (hardcover), page
Power pack 240 W for 35 mm top-hat rail	1 –	3201.040 –
Filter mat	1 3201.050	195
Digital temperature indicator	1 3114.200/3114.115	3114.024 181
Master/slave adaptor	1 3201.070	–
Condensate hose, 5 m length	1 3301.606	–

We reserve the right to make technical modifications. Special voltages available on request.

# CS Outdoor climate control



### For roof mounting

With microcontroller<sup>1)</sup> and 400 W heater as standard.

### Mounting frame:

Required for CS 9762.212.

### For wall mounting

With microcontroller<sup>1)</sup> and 400 W heater as standard.

### For partial installation

With microcontroller<sup>1)</sup> and 800 W heater as standard.

### Installation options:

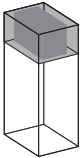
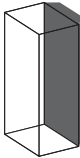
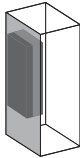
- in the door or rear panel
- in the side panel

### Protection category:

IP 55 to EN 60 529 (internal circuit to external circuit)

<sup>1)</sup> Units with Comfort controller. The Comfort controller is installed on the inside of the cooling units, and is not accessible from the outside.

## Cooling units for CS modular enclosures and Toptec

			
Model No. CS	9762.212	9761.212	9768.152
Installation	Roof mounting	Wall mounting	Partial internal mounting
Rated operating voltage	AC 230 V, 50/60 Hz		
Unit dimensions in mm	W 535 H 390 D 400	515 1170 152	400 1050 310
Minimum enclosure dimensions in mm	W x D 600 x 500	W x H 600 x 1200 mm	W/D x H 600 x 1200
<b>Useful cooling output <math>\dot{Q}_K</math> to DIN 3168</b>	<b>L 35 L 35 L 35 L 50</b>	<b>900 W/1020 W 720 W/780 W</b>	<b>1500 W/1600 W 1250 W/1250 W</b>
Heater	400 W	400 W	800 W
Rated current max.	4.0 A	4.2 A	5.8 A
Start-up current max.	10.6 A	8.3 A	19.0 A
Power consumption $P_{el}$ to DIN 3168	L 35 L 35 L 35 L 50	460 W/570 W 520 W/655 W	605 W/790 W 690 W/880 W
Coolant	R134a	550 g	600 g
p. max.	26 bar	24 bar	28 bar
Temperature range	-33°C to +55°C		
Air throughput of fans – unimpeded air flow	Internal circuit fan External circuit fan	570 m <sup>3</sup> /h 570 m <sup>3</sup> /h	880 m <sup>3</sup> /h 880 m <sup>3</sup> /h
Type of connection	Plug panel		
Weight	29 kg	45 kg	40 kg
Material (enclosure)	Aluminium	Sheet steel	Aluminium
Surface finish	Spray-finished in RAL 7035, pure polyester		
<b>Accessories</b>			
Mounting frame	9765.051	–	–

**Delivery times available on request.** The partially internally mounted CS 9768.152 may be inserted directly. Cooling units are manufactured to order. The units are assembled and supplied connected to the modular or Toptec enclosure. Roof-mounted cooling units may only be used in the modular enclosure. Adaptations to other enclosure platforms are available on request.



## Digital enclosure internal temperature display and thermostat

For installation on the enclosure door or wall.

### Technical specifications:

- 2 voltage ranges for 100 – 230 V, 50/60 Hz and 24 – 60 V (DC)
- Dimensions (W x H x D): 74.5 x 39 x 98 mm
- Three-digit, 7-segment display
- Can be switched from °C/°F
- Temperature range: +5°C to +55°C
- Includes 1800 mm long NTC sensor
- Two relay outputs as change-over contact and normally open contact (maximum contact load 230 V, 6 A)
- Freely selectable switching difference
- The freely adjustable setpoint values can be set using the membrane keyboard at the front  
Setting range: +5°C to +55°C
- Display and switching accuracy +/- 2 K
- Mounting cut-out 68 x 33 mm.
- The minimum and maximum recorded temperatures are stored until it is next reset

Packs of	Model No. SK
1	3114.200

Special requirements can be accommodated on request.



## Speed control

Temperature-dependent speed control for Rittal fan-and-filter units and air/air heat exchangers for noise reduction and to save energy in part-load operation.

### Technical specifications:

- For mounting on a 35 mm support rail DIN EN 50 022
- Dimensions (W x H x D): 105 x 90.5 x 60.2 mm
- Rated operating voltage: 100 – 230 V AC
- Setting range: +20°C to +55°C
- Phase cross-over with microcontroller
- Maximum fan output 300 W or 2 A

Packs of	Model No. SK
1	3120.200

### Supply includes:

Speed control, NTC sensor, length 1.80 m.



## Therm 6.0 software

Rittal Therm 6.0 is a calculation program for enclosure climate control.

- New layout in Vista style with semi-transparent windows
- Improved user guidance via tabs and simple selection menus
- Express and expert versions
- Identification of units with heat loss via a tree structure
- Key calculation data is visible at all times
- Simultaneous selection of wall-mounted and roof-mounted units
- Internet updates

The Therm 6.0 software package takes care of the complex calculation of climate control requirements. A user-friendly interface guides the operator to the most suitable, correctly dimensioned climate control component. All evaluations are closely based on the requirements of IEC/TR 60 890 AMD 1/02.95 and DIN 3168 for enclosure cooling units.

Packs of	Model No. SK
1	3121.000

### Supply includes:

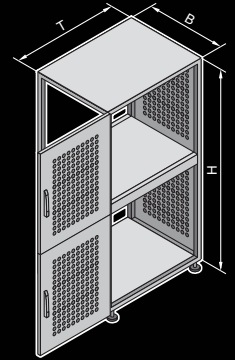
CD-ROM, with 19 languages.

### Note:

Your free 30-day trial version may be downloaded at [www.rittal.com](http://www.rittal.com)



# Server racks



## Design features

- Robust frame structure
- Front and rear door fully vented; vented surface area > 78% perforated
- 2-point locking
- Door hinge may be swapped to opposite side
- Cable entry via the base/plinth and roof (optional)
- Bayable at all levels
- Static load capacity of up to 1000 kg

## Material:

Sheet steel

## Surface finish:

Enclosure frame: Dipcoat-primed  
Enclosure panels: Dipcoat-primed, powder-coated in RAL 7035  
Mounting angles and punched sections with mounting flanges: Zinc-plated, passivated

## Supply includes:

Enclosure frame TS 8 with sheet steel doors front and rear, vented, with 180° hinges, L-shaped, depth-variable fitted mounting angles, levelling feet, comfort handle for semi-cylinder with security lock 3524 E and 2-point lock.

## Detailed drawing,

available on the Internet.

Photo shows a configuration example with equipment not included in the scope of supply.

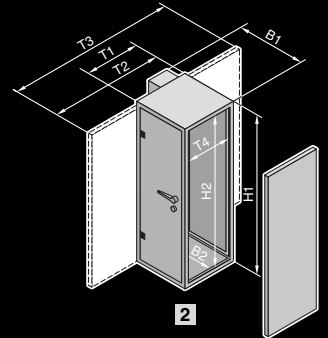
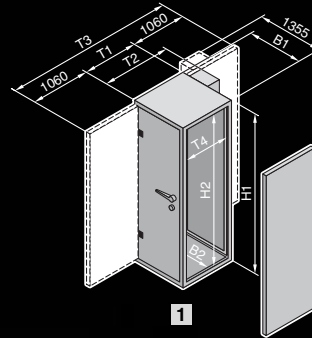
## Based on Rittal TS 8, pre-configured

Number of front and rear doors		2	4
<b>U</b>		2 x 21	4 x 10
<b>Width (B) mm</b>		600	600
<b>Height (H) mm</b>		2200	2200
<b>Depth (T) mm</b>		1000	1000
<b>Model No. DK as bayed enclosure without side panels, without baying kit</b>	RAL 7035	<b>7831.453<sup>1)</sup></b>	<b>7831.463<sup>1)</sup></b>
<b>Doors</b>			
Sheet steel doors, vented, front and rear		■	■
<b>Roof</b>			
Solid roof plate		■	■
Roof plate for side cable entry		7526.607	7526.607
<b>Base</b>			
Levelling feet		■	■
<b>Interior installation</b>			
482.6 mm (19") levels front and rear		■	■
L-shaped mounting angles		■	■
Mounting angles attached to depth stays		■	■
Panel earthing, fitted		■	■
Individual compartments, shielded/separate cable routing per compartment		■/■	■/■
<b>Accessories</b>			
Removable side panels with T lock, IP 20	RAL 7035	7824.220	7824.220
Security lock 3524 E for side panels		7824.500	7824.500
Base assembly bracket		8800.210	8800.210
Depth-variable slide rail, 1 U		7063.883	7063.883
Stabiliser, pull-out		7825.250	7825.250

■ Included with the supply.

<sup>1)</sup> Delivery times available on request.

# Modular Safe



## The Modular Safe Extend

offers ultimate security and efficient protection against potential physical threats. Available in a variety of sizes, it permits free configuration in respect of the doors and locking systems, cable bulkheads and climate control solutions.

## Protection standards

- Fire protection F90
- Compliance with limit values 50 K  $\Delta T$  and 85% relative humidity for 30 minutes
- Burglar resistance class WK4
- Protection against smoke gases
- Protection against dust and water jets

All tests were performed as system tests and confirmed by way of test reports.

## Colour:

Enclosure: RAL 7035

## The Modular Safe

promises a dependable basic level of protection, particularly for locations which place lesser demands on physical security. It is available in both 47 U and 33 U versions, each with a wide range of configuration options. Thanks to its reduced weight, the Modular Safe is also suitable for locations with a limited floor load-bearing capacity.

## Protection standards

- Fire protection F30
- Burglar resistance class WK2
- Protection against smoke gases
- Protection against dust and water jets

The tests were performed as system tests and confirmed by way of test reports.

## Colour:

Enclosure: RAL 7035

Photo shows a configuration example with equipment not included in the scope of supply.

## Modular Safe

U		1 Modular Safe Extend				2 Modular Safe			
		42	47	42	47	33	47	33	47
External dimensions (mm)	Width (B1)	1100	1100	1100	1100	1500	1500	1500	1500
	Height (H1)	2210	2410	2210	2410	1942	2321	1942	2321
	Depth (T1)	1200	1200	1400	1400	1238	1238	1238	1238
	Depth (T2)	1520	1520	1720	1720	2280	2280	2280	2280
	Depth (T3)	3324	3324	3524	3524	3322	3322	–	–
Internal dimensions (mm)	Width (B2)	920	920	920	920	979 <sup>1)</sup>	979 <sup>1)</sup>	979 <sup>1)</sup>	979 <sup>1)</sup>
	Height (H2)	2030	2230	2030	2230	1840	2219	1840	2219
	Depth (T4)	1000	1000	1200	1200	1010	1010	1010	1010
Clear height of door opening (mm)		–	–	–	–	1678	2057	1678	2057
Model No.		7999.931	7999.932	7999.983	7999.987	823026	820570	822927	823013

<sup>1)</sup> With heat exchanger installed

## Standard protection from:



Fire



Extinguishing water



Corrosive gases



Vandalism



Unauthorised access

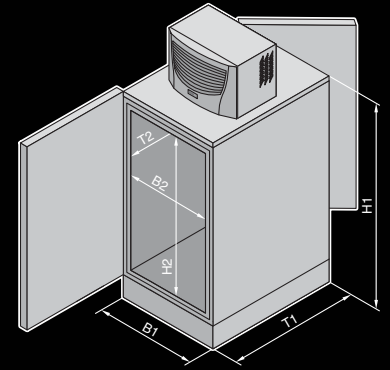


Dust



Theft/burglary

# Basic Safe Compact



### Supply includes:

- Security enclosure with operating and service doors (three-point locking)
- Cable entry in both side elements
- Cooling capacity 1.3/2.4 kW
- Usable height for installations 15 U

### Compatible configuration:

- Early fire detection system – EFD Plus
- Fire alarm and extinguisher system DET-AC Plus
- Monitoring – CMC-TC
- Uninterruptible power supply – PMC 12
- 19" server rack

### Applications:

- Micro data centre for small companies
- Protection for servers, storage applications, ...
- Suitable for integration into smaller office rooms
- Storage of personal data, e.g. doctors' surgeries or tax advisors

### Protection standards:

- Fire protection F90 to DIN 4102
- Compliance with limit values  $\Delta T < 50$  K, relative humidity  $< 85\%$  for 10 minutes
- Tested burglary protection WK II
- Protection against dust and water jets IP 55

The tests were performed as system tests and confirmed by way of test reports.

### Colour:

Enclosure: RAL 7035

Photo shows a configuration example with equipment not included in the scope of supply.

## Basic Safe Compact

Model No.	110010399800	110010399600
Cooling capacity kW	1.3	2.4
<b>Width (B1) mm</b>	806	806
<b>Height (H1) mm</b>	1646	1699
<b>Depth (T1) mm</b>	1319	1319
Clearance width (B2) mm	620	620
Clearance height (H2) mm	827	827
Clearance depth (T2) mm	1024	1024
Weight kg	330	360
<b>19" rack</b>		
Model No. DK	7995.992	7995.992
U	15	15
<b>Depth mm</b>	1000	1000

### Standard protection from:



Fire



Extinguishing water



Vandalism



Unauthorised access

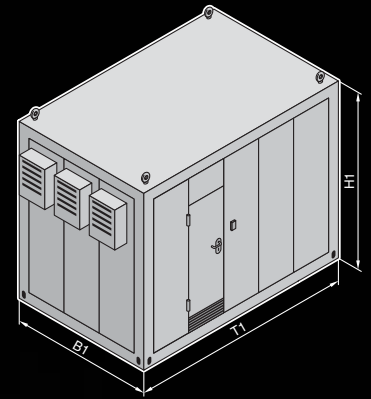


Dust



Theft/burglary

# Data Centre Container DCC



## Benefits:

- PUE (Power Usage Effectiveness) below 1.2
- Innovative direct free cooling saves energy
- Highly efficient UPS
- Up to 329 U (7 racks) and max. 6 kW/rack
- Deliver – connect up (data and power) – ready to use
- Monitor and manage the infrastructure (RiZone)
- All-in-one concept, no additional external installations
- Simple planning – fixed price for data centre
- Autonomy time: Min. 15 minutes

## Technical specifications:

### Container:

- Fire protection to EN 1363/ DIN 4102: F30, optionally F90, type-tested
- Burglar resistance to EN 1627/1630 resistance class WK2, optionally WK3

### Bulkhead system:

- Type: Hard bulkhead DN200
- Dimensions of packing space: 120 x 120 mm

## Climate control – direct free cooling:

Available with 7 and 10 kW units. Up to 3 units can be integrated.

Technical data of 7 kW unit:

- Type: RDF – Rittal Direct Free-cooling
- Useful cooling capacity (tA 32°C, RH 40%): 7.0 kW
- Max. outdoor temperature: +40°C
- Min. outdoor temperature: -35°C
- Refrigerant: R407c
- Filter grade: F 7
- Unit dimensions (W x H x D): 780 x 2370 x 325 mm
- Sound pressure level, A-weighted, 5 m from external unit, free field: 40 dB (A)

## Raised floor:

- Substructure type: Control room
- Number of slotted plates dependent on number of racks
- Total raised height: 300 mm

## Power distribution:

- Infeed: Wall-mounted CEE connector, 125 A, 3-phase/N/PE, 400 V/50 Hz
- Enclosure dimensions (W x H x D): 600 x 2000 x 400 mm

Photo shows a configuration example with equipment not included in the scope of supply.

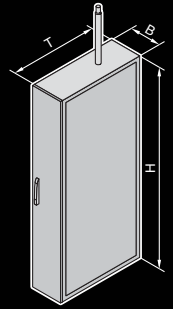
## Data Centre Container DCC

<b>Width (B1) mm</b>	3000
<b>Height (H1) mm</b>	3250
<b>Depth (T1) mm</b>	6055
Clearance width (B2) mm	2664
Clearance height (H2) mm	2896
Clearance depth (T2) mm	5722
Useful area	15.2 m <sup>2</sup>
<b>Model No.</b>	Project planning on request

## Complete infrastructure



# Fire alarm and extinguisher system DET-AC XL



## Benefits:

- Extinguisher system for room volumes up to 84 m<sup>3</sup>
- Rack extinguisher system for up to 24 racks
- Suitable for incorporation into TS 8 server rack suites
- Integration into the RimatriX5 concept
- Simple project planning on the basis of standard packages
- Innovative extinguisher gas NOVEC 1230
  - Eco-friendly
  - Uncritical for IT components

## Three solutions are available in the standard version:

### Extinguishing for:

- up to 8 racks
- up to 16 racks
- up to 24 racks

In addition, Rittal is able to configure both room and rack extinguisher systems to your individual specifications.

## Function principle:

The detection system of the DET-AC XL draws room or rack air in continuously and detects even the tiniest smoke particles during the initial phase of a fire, the pyrolysis phase. After a defined delay time, the extinguisher gas bottle is opened electrically and the gas flows out into the room or racks via the extinguisher nozzles.

Photo shows a configuration example with equipment not included in the scope of supply.

Fire alarm and extinguisher system DET-AC XL	S-08-40-10	S-16-40-10	S-24-40-10	S-08-40-12	S-16-40-12	S-24-40-12
Width (B) mm		300			300	
Height (H) mm		2000			2000	
Depth (T) mm		1000			1200	
Model No.	7338.160	7338.161	7338.162	7338.163	7338.164	7338.165
<b>Accessories</b>						
Nozzle piping kit for extinguisher system						7338.166
Piping kit for smoke extraction system						7338.167
Nozzle piping kit for extinguisher system between enclosure suites						7338.168
Piping kit for smoke extraction system between enclosure suites						7338.170
Pressure relief flap for enclosures						7338.171



# Monitor/keyboard unit, 1 U



## Benefits:

- High-quality manufacturing
- Analog and digital video input
- Separate numerical keypad
- Optionally with integrated KVM switch for up to 32 server connections in just 1 U
- With 17" TFT display and VGA/DVI connection
- Low energy consumption
- Simple, one-man installation

## Technical design<sup>2)</sup>

- 17" (432 mm) TFT display
- Native resolution 1280 x 1024
- Format 4 : 3
- 16.7 million colours
- Brightness approx. 350 cd/m<sup>2</sup> (typ.)
- Contrast ratio approx. 1000 : 1
- Mains voltage 100 – 240 V AC, 50 – 60 Hz
- Ambient temperature +5°C to +45°C (in operation)

- Max. power consumption in operation, without optional KVM switch: 32 W
- Max. power consumption when closed, without optional KVM switch: < 1 W
- Rear connections: Mains power, VGA, DVI-D, PS/2, USB, power supply for KVM

Photo shows a configuration example with equipment not included in the scope of supply.

## With 17" TFT display and VGA/DVI connection

<b>Width</b> mm				448
<b>Height</b> U				1
<b>Depth</b> mm				680
Keyboard		Packs of	German	English
<b>Model No. DK</b>	RAL 7035	1	<b>9055.310</b>	<b>9055.312</b>
	RAL 9005	1	<b>9055.410<sup>1)</sup></b>	<b>9055.412<sup>1)</sup></b>

Other country-specific versions available on request.

<sup>1)</sup> Extended delivery times.

<sup>2)</sup> We reserve the right to make changes in line with technical progress.



**Monitor/keyboard unit, 17", native resolution 1280 x 1024**

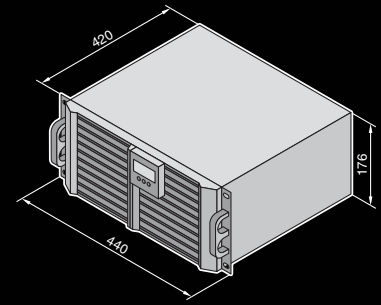


To be able to access further servers, the monitor/keyboard unit can be combined with one of the Rittal KVM switches SSC view 8 USB or SSC view 32 Cat. (KVM model nos.: DK 7552.002, DK 7552.100)



**Rear connections:**  
Mains power, VGA, DVI-D, PS/2, USB, power supply for KVM.

# UPS PMC 12 compact



The PMC 12 UPS is distinguished by its use of double-conversion topology. Double-conversion technology provides the basis for an optimum supply voltage to all connected loads.

This makes the Rittal PMC 12 compact UPS ideally suited for all applications in the IT environment and for other requirements such as automation technology, system control etc. A scalable autonomy of up to 29 minutes at 100% load produces a broad application spectrum.

#### Supply includes:

Single-phase UPS systems with internal "hot-swap compatible" batteries, assembly parts, operating manual, software on CD-ROM, USB, RS232 cable and earthing-pin connection cable.



#### Also required:

Country-specific connection cables are required to operate the UPS systems.

Photo shows a configuration example with equipment not included in the scope of supply.

## Single-phase, output range 2 – 3 kVA

UPS for 482.6 mm (19") racks or as floor-standing enclosures		UPS with integral battery	
Model No. DK PMC 12 compact, 4 U		7857.482	7857.483
Width x height mm		440 (19") x 176 (4 U)	
Depth <sup>1)</sup> mm		420	420
Weight kg		26	27
<b>Power</b>	VA	2000	3000
	Watts	1600	2400
	Max. heat loss (W)	210	252
<b>Input</b>	Rated voltage	230 V (160 – 288 V)	
	Frequency	50/60 Hz ±5%	
	Power factor	> 0.99 with linear load	
<b>Output</b>	Voltage	230 V ≤ ±1% (200/208/220/230/240 V adjustable)	
	Frequency, synchronised	±1 Hz	
	Efficiency, AC mode	88%	90%
	Power factor	0.8	
<b>Battery</b> 5 years EUROBAT	Autonomy at 100% load in the delivered state	≥ 7 min.	≥ 5 min.
	1 additional battery pack	≥ 17 min.	≥ 12 min.
	2 additional battery packs	≥ 29 min.	≥ 20 min.
<b>Communication</b>	Interface	1 x USB, 1 x RS232	
	SNMP	Optional network monitoring card DK 7857.420/relay card 7857.410	
	Operating systems supported	Windows, Unix, Linux, Novell, Apple; RCCMD shutdown licence DK 7857.421	
	Emergency Power Off (EPO)	■	
<b>Connection</b>	Input connection 230 V	10 A C14	16 A C20
	Output connection 230 V	6 x 10 A, C13, 2 units switched	4 x 10 A, C13, 2 units switched, 1 x 16 A, C19
<b>Standards and certifications</b>	Power	IEC/EN 62 040-3	
	EMC	EN 50 091-2/EN 62 040-2 class A, EN 61 000-4-2/-3/-4/-5/-6-8/-11, EN 61 000-3-2/-3	
	Labelling	CE, FCC	
<b>Accessories</b>			
Battery pack PMC 12 compact		7857.488	7857.488
Connection cable at output end, UPS, single-phase, for PSM busbar		7856.027	7856.030

<sup>1)</sup> Without an external battery pack



# PSM/PCU system

## PSM/PCU modules

### Individual current measurement per slot

#### Features of the active PSM/PCU modules in conjunction with the CMC-TC

- 2-digit local LED 7-segment current display for total current values.
- Individual current measurement per slot with limit configuration via CMC-TC web interface.
- LED colour code for load assessment per module/slot.
- SNMP switching option via the network.
- Up to 16 modules via a joint web interface under one IP address.
- Monitoring of the current per module and outgoing slot.
- Limits may be freely configured.
- The 8 individual slots of the module may be switched separately in conjunction with the CMC-TC. May also be linked to other CMC-TC alarm messages.
- Alarm messages are additionally indicated by flashing LEDs.

### PSM plug-in module/19" PCU

Modules for the Rittal PSM busbar system or for mounting on either the 19" level or enclosure frame. In conjunction with Rittal CMC-TC, the managed modules offer further convenient functions. These include event-controlled switching of the outputs and current measurements for individual sockets.

The switchable modules also feature sequential reconnection after a power failure. Versions are available for all the important connector types used in the data centre.

#### Note:

A PSM busbar (e.g. 7856.020) is required to be able to use the PSM modules.

Corresponding information can be found in Rittal Catalogue 32, from page 789.

A CMC-TC system is required for control and remote monitoring of the managed modules via TCP/IP. The CMC Processing Unit permits the administration of up to 16 modules.

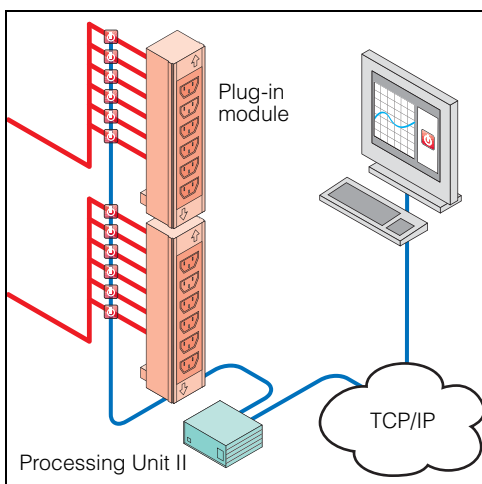
Corresponding information can be found in Rittal Catalogue 32, from page 809.

All relevant information is also to be found on the Internet at: [www.rittal.com](http://www.rittal.com)

Model No. DK	Type/slots on PSM busbar	Designation/pin pattern	Number of slots	Switchable outputs	Administration via IP/SNMP	Individual current measurement
7859.120	PSM plug-in module/ 1 slot	IEC 60 320 C13	6	no	no <sup>1)</sup>	no <sup>2)</sup>
7859.130	PSM plug-in module/ 1 slot	IEC 60 320 C19	4	no	no <sup>1)</sup>	no <sup>2)</sup>
7859.212	PSM plug-in module/ 2 slots	Earthing-pin/C13	4/2	yes	yes	yes
7859.222	PSM plug-in module/ 2 slots	IEC 60 320 C13	8	yes	yes	yes
7859.232	PSM plug-in module/ 2 slots	IEC 60 320 C19/C13	4/2	yes	yes	yes
7859.215	PCU 19" mounting	Earthing-pin/C13	4/2	yes	yes	yes
7859.225	PCU 19" mounting	IEC 60 320 C13	8	yes	yes	yes
7859.235	PCU 19" mounting	IEC 60 320 C19/C13	4/2	yes	yes	yes

<sup>1)</sup> Fixed limit values 7 A/13 A

<sup>2)</sup> Individual current measurement per module



#### Ingeniously simple: Optical load indicators

An immediate overview of phase loads at all times. No more worries about unnoticed overload-ing or unbalanced power distribution in the rack.

Photo shows a configuration example with equipment not included in the scope of supply.

# System accessories



## Comfort handle

### with door opener function

By pressing the lock mechanism, the door is released by the automatic door opening system. Prepared for the installation of standard commercially available semi-cylinders with an overall length of 40 mm to DIN 18 252, see Innovations 2010, page 42, and SZ lock inserts and push-button inserts, see Catalogue 32, page 948. Length: 302 mm.

To fit Automatic door control unit (DK 7320.790) with installed Automatic door kit (DK 7320.792/.795/.796).

### Technical specifications:

Rated voltage: 24 V DC  
 Rated current: Max. 3 A  
 Connection cable: Length 3 m  
 Temperature application range: +5°C to +40°C

Version	Model No. DK
RAL 7035	7320.794



### Also required:

Handle adaptor for mounting on glazed door TS, Model No. TS 8611.080, see Cat. 32, page 934.



## Semi-cylinder

### to DIN 18 252

40 mm, for individual locks in handle systems with cylinder insert.

### Supply includes:

3 keys per semi-cylinder.

Semi-cylinder	Model No. CS
1	9785.040
2 <sup>1)</sup>	9785.042

<sup>1)</sup> Simultaneous locking within the same pack, no simultaneous locking for different packs.



## RiZone Management Pack

### for Microsoft System Center Operations Manager

The transparent representation of the data centre infrastructure managed by RiZone facilitates a new, comprehensive view of data centre operations, with logical allocation of the physical infrastructure to an application that is available to a server.

### Benefits:

- Representation of the data centre's efficiency
- Increased availability thanks to optimised planning foundations
- Calculation of consumption figures down to a single server
- Energy optimisation with a simultaneous increase in availability

**Microsoft**  
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*Partner*

Because Rittal is a member of the Microsoft System Center Alliance, customers have access to an entire network of customised solutions covering every aspect of RiZone and SCOM.

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- System climate control
- IT systems
- Service

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