

NEW

Rittal – RiLine60 UL 508



The fascinating 60 mm system of the future

FRIEDHELM LOH GROUP



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Rittal RiLine60 UL 508 – Perfection in a 60 mm system



Time-saving assembly, versatile applications and individual modularity are the winning features of the new Rittal RiLine60 busbar system: Pioneering technology for the power distribution of today and tomorrow. The series combines innovative products, modern design and world-class engineering with high safety standards, approved to UL 508 and therefore tailored to the requirements of the North American market.

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Important notes for the use of busbar systems to UL 508/508A

One key difference from the IEC provisions on busbar systems concerns the creepage distances and clearances required by UL for use in feeder circuits. The following distances are required:

- Between phases:
 - Creepage distance 50.8 mm (2 inches)
 - Clearance 25.4 mm (1 inch)
- Between phase and earthed, uninsulated metal parts:
 - Creepage distance and clearance 25.4 mm (1 inch)

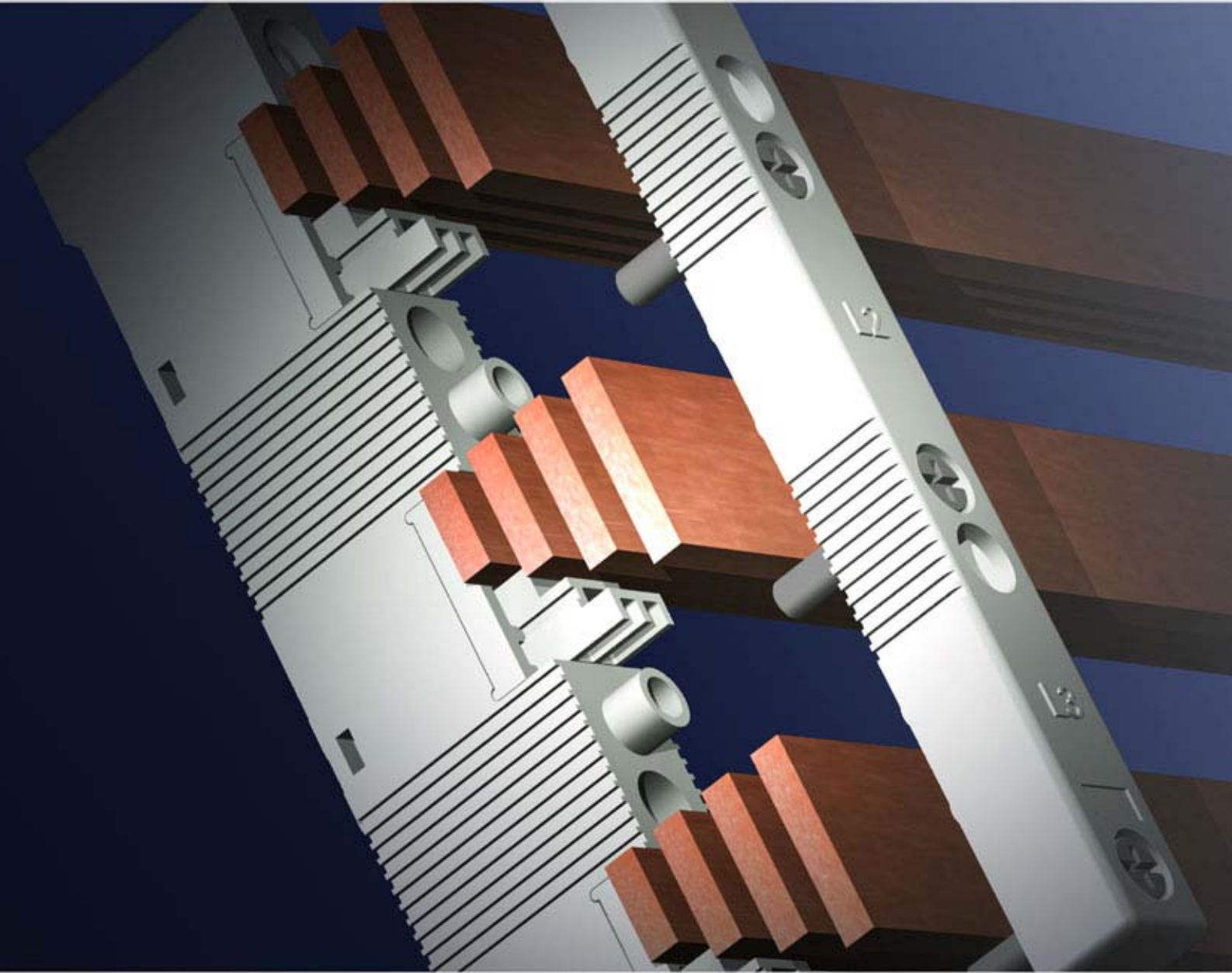
All the Rittal RiLine60 components in this brochure comply with these requirements.

Please note two further points compared with the IEC version:

- The Rittal RiLine60 UL busbar supports for flat bars and Rittal PLS have increased creepage distances and clearances between phases.
- In order to guarantee the required distances between live parts and the earthed mounting plate, the use of a Rittal RiLine60 base tray is compulsory.

Further details of UL 508 may be found on page 6/7.

Rittal RiLine60 UL 508 – For flat bars and Rittal PLS



RiLine60 UL busbar support for flat bars with integral cross-section adaptation

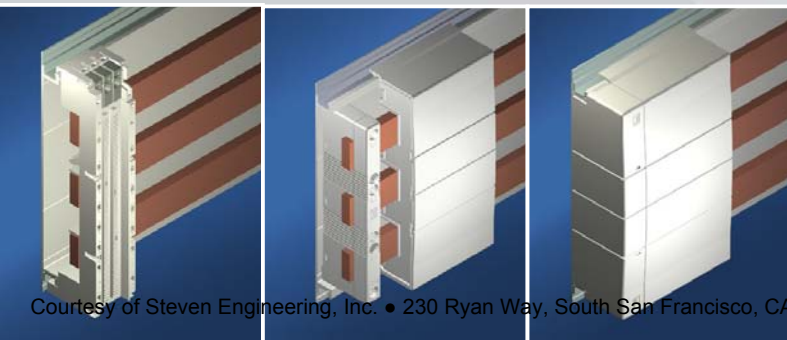
The design of the Rittal RiLine60 busbar support for UL 508 applications supports increased creepage distances and clearances with identical external dimensions and a comparable technology to the IEC version: Integral locating blocks automatically adapt to bar widths of 15, 20, 25 or 30 mm. Adaptation to a bar width of 5 or 10 mm is achieved with spacers.

Safety – For flat copper and Rittal PLS

Perfect contact hazard protection, thanks to all-round encapsulation

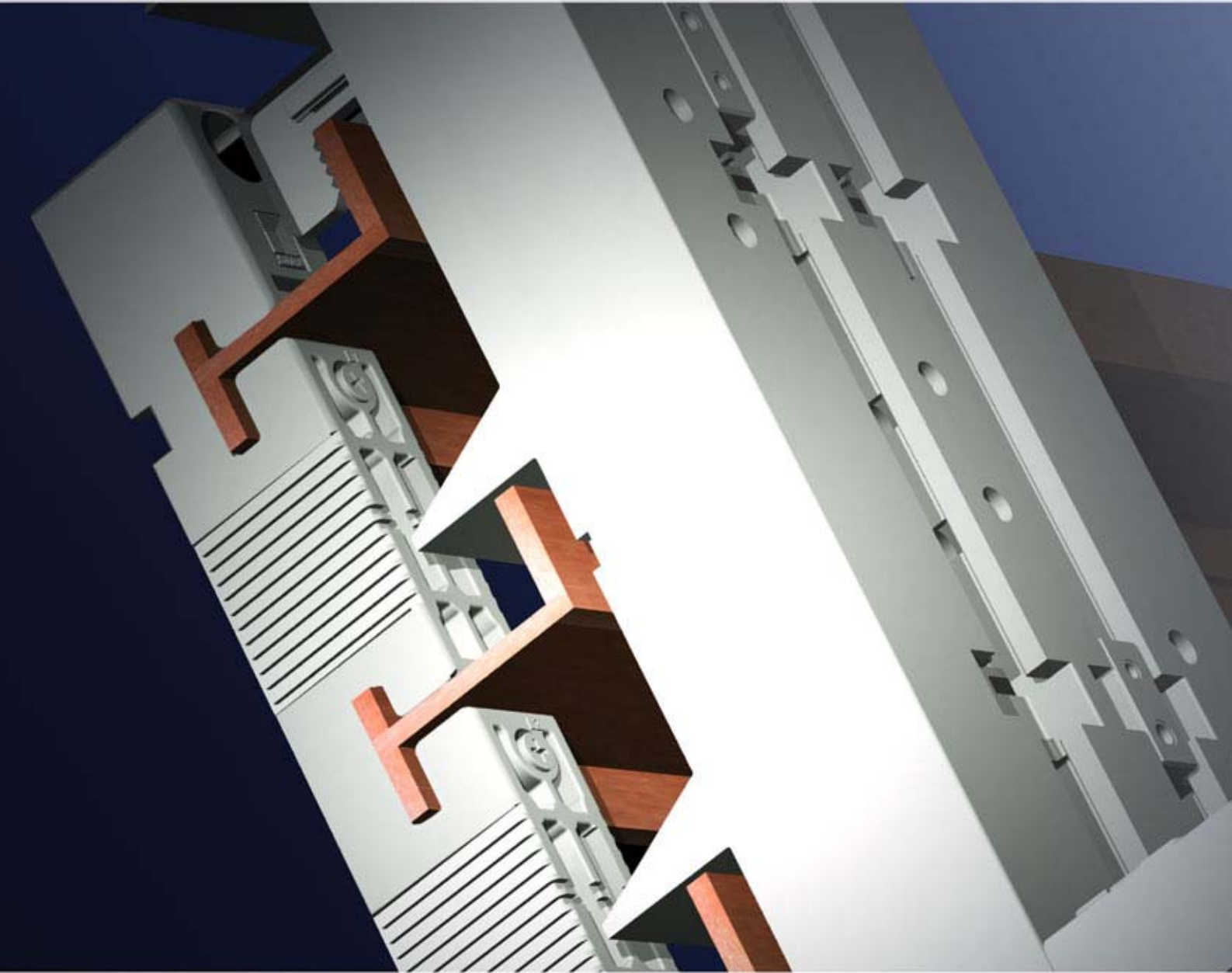
In flat bar systems, the base tray, cover section and end cover form the ideal unit for optimum contact hazard protection.

In conjunction with the Rittal RiLine60 base tray, even assembled busbar connection adaptors and component adaptors create a system of all-round protection with IP2X. The use of a Rittal RiLine60 base tray is compulsory to ensure the requisite distance between live parts and the earthed mounting plate required by UL regulations.



Rittal RiLine60 UL

Products which conform to the relevant regulations are a key factor for problem-free acceptance of electrical systems in North America. UL-approved components provide a suitable basis, saving time and money for the user by minimising acceptance problems in advance. This brochure summarises all the Rittal RiLine60 products which are suitable for use in feeder circuits to UL 508A.



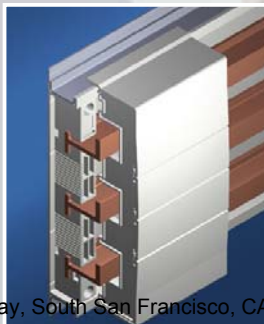
Unlimited top mounting – Supports with increased creepage distances and clearances for Rittal PLS

Suitable busbar supports with increased creepage distances and clearances are also available for the popular, established variants of Rittal PLS special busbar sections PLS 800 and PLS 1600. The unrestricted top-mounting of the busbar supports is maintained in full. This ensures easier planning, additional stability where necessary, and more effective utilisation of the available space.

Versatile – Busbar connection adaptors and component adaptors

The standard Rittal RiLine60 range of busbar connection adaptors and component adaptors already allows for the creepage distances and clearances required by UL – in other words, users are able to use identical components for applications to both UL and IEC.

The terminals of the busbar connection adaptor have been tested for “field-wiring”, in accordance with the relevant requirements. This means added flexibility and security for the user.



Busbar systems UL 508

Background information



Why are UL approvals important?

International regulations and standards such as NEMA and IEC are used as a basis by manufacturers for product developments and subsequent testing. Nationally recognised testing laboratories confirm and certify that a product meets specific standards. In North America, this is carried out by organisations such as UL or CSA (Canadian Standard Association). For many applications, only UL and/or CSA-approved products are acceptable. It is therefore advisable to ensure that electrical control systems intended for use in North America are designed with UL-approved components.

How does the US system for electrical safety work?



Every piece of electrical equipment (machine/plant) is tested by the competent local inspector (AHJ = Authority Having Jurisdiction) prior to commissioning. The AHJ has the final say with regard to commissioning.

All AHJs use Standard NFPA 70 (NFPA = National Fire Protection Association) as a basis, which is generally regarded as the NEC (National Electrical Code). NFPA 70 is therefore an important basis for UL 508A (Industrial Control Panels). The AHJ considers the use of UL-recognized or UL-listed components an important indication that a system complies with the safety requirements to NFPA 70. This saves time and money during construction and commissioning of the equipment, as the UL symbol indicates that testing of the components and/or of the system did not reveal any foreseeable risks with regard to fire, electric shock and associated dangers.

UL or Underwriter Laboratory was founded in 1894 as a non-profit-making organisation for testing and certification. UL operates five testing laboratories in the United States and subsidiaries worldwide, with an emphasis on product testing aimed at general safety.

The UL symbol: “UL listed” or “UL recognized”

When labelling UL-approved products, a general distinction is made between Recognized Components and Listed Devices:

-  Recognized Components
This label is used on products which are not complete in terms of their application. These products are listed in the UL's “yellow component database”. The correct use of such components must make due allowance for the “Conditions of Acceptability”, listing the framework conditions and application parameters approved by the UL.
-  Listed Devices
This symbol is used in products which offer a complete function in themselves. These products are listed in the UL's “green component database”. They may be used without restriction in accordance with the tested rating data.

Application areas for UL 508 and UL 508A

UL 508 describes industrial control components and is therefore the decisive standard for the assessment of Rittal SV components. For example, this standard contains information on:

- Starters
- Relays and contactors
- Switches
- Controllers

UL 508A describes industrial control panels and is therefore the decisive standard for switchgear manufacturers. For example, this standard contains information on:

- Machine controllers
- Elevator controllers
- Crane controllers
- Equipment for heating, air-conditioning and ventilation systems

Both standards describe control systems for general industrial applications with a rated voltage of up to 600 V. The maximum permissible ambient temperature is 40°C.

Distinguishing between feeder and branch circuits

Standard UL 508A makes a distinction between feeder circuits and branch & control circuits. Generally speaking, the term "feeder circuits" refers to the part of the circuit located at the supply end before the last over-current protective device. Increased requirements with regard to creepage distances and clearances apply to this part of the circuit. The term "branch & control circuits" refers to the part of the circuit located after the last over-current protective device. When using busbar systems, it is important to know whether the application is in the feeder section or the branch section, as the requirements governing the required creepage distances and clearances are significantly higher for feeder circuits.

Important notes for the use of busbar systems to UL 508/508A

1. Creepage distances and clearances

One of the principal changes in UL 508A is the amendment to the required creepage distances and clearances for feeder circuits. The following distances are required for applications >250 V:

Between phases:

- Creepage distance 50.8 mm (2 inches)
- Clearance 25.4 mm (1 inch)

Between phase and earthed, uninsulated metal parts:

- Creepage distance 25.4 mm (1 inch)
- Clearance 25.4 mm (1 inch)

Rittal RiLine60 complies with these requirements. All busbar connection adaptors and component adaptors (OM/OT with standard AWG connection cables and circuit-breaker adaptors) in the new system have been designed in accordance with these requirements. However, users should bear in mind a small number of differences from the IEC version:

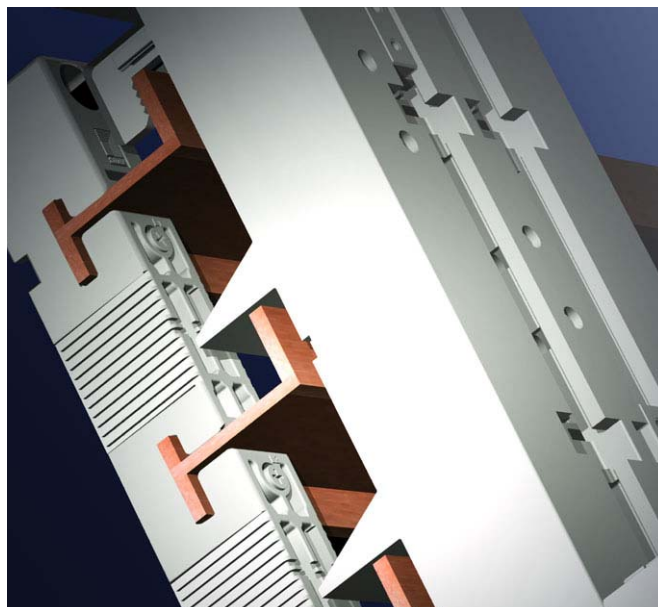
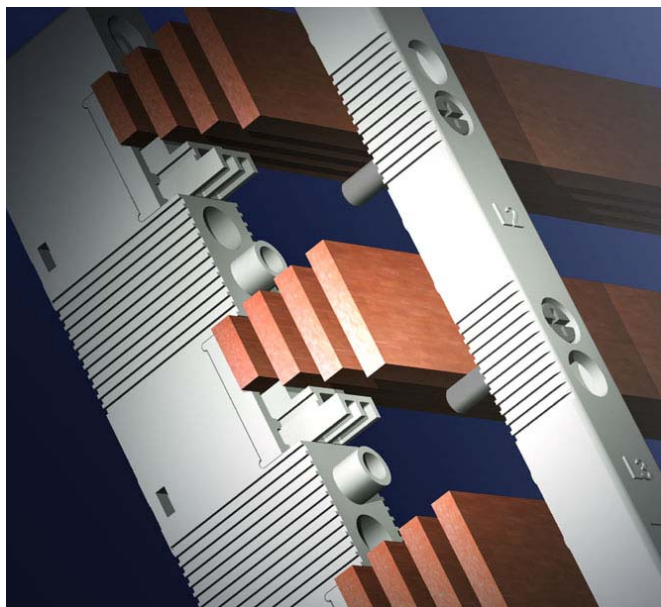
- Special UL busbar supports for flat bars and Rittal PLS with increased creepage distances and clearances.
- In order to guarantee the required distances between live parts and the earthed mounting plate, the use of a Rittal RiLine60 base tray is compulsory.

2. Rated currents

For untested busbar applications, UL 508A specifies a current carrying capacity of 1000 A/inch² (1.5 A/mm²) in the absence of testing. This value may be higher if the product or application has been subjected to suitable testing. Rittal has conducted extensive testing in this respect in order to give users the maximum benefits when using the SV busbar system. The benefit of such testing is that SV busbar systems with higher rated currents may be used than permitted by the default value. For example, a busbar with the dimensions 30 x 10 mm can carry 700 A instead of 465 A.

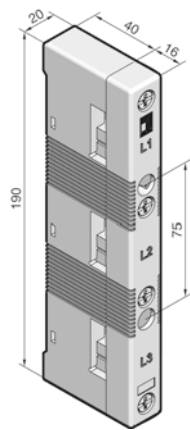
3. Terminals for factory or field wiring

In accordance with the UL standards, connection clamps may be approved for factory or field wiring. If a terminal is approved for factory wiring, it may only be used in switchgear assembly by suitably trained professionals. If connection clamps are to be used in the field (e.g. on a construction site), the component must be approved for field wiring. The terminals of the busbar connection adaptors and component adaptors in the Rittal RiLine60 series have therefore been tested for field wiring applications.



Rittal RiLine60 busbar systems UL 508

Busbar supports for feeder circuits



Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating
temperature: max. 130°C.
Fire protection corresponding
to UL 94-V0.

Colour:
RAL 7035

Short-circuit resistance,
see page 22.

Note:
Data given in accordance with
UL may deviate from IEC data.

1 with attachment holes
on the inside

Design	Packs of	1 internal attachment
Number of poles		3-pole
Bar centre distance		60 mm
Tightening torque ● Assembly screw (M5 x 16) ● Cover attachment		3 – 5 Nm 1 – 3 Nm
Model No. SV	4	9340.050
Accessories		
2 End covers for contact hazard protection on the sides	2	9340.070

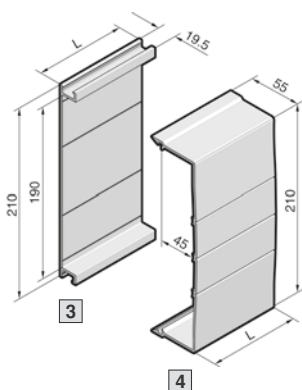
Busbars E-Cu

To DIN EN 13 601.
Length: 2400 mm/bar.

Dimensions mm	Rated current max. A	Weight per bar kg	Packs of	Model No. SV	Cat. 31, page
15 x 5	175	1,60	6	3581.000	
15 x 10	350	3,20	6	3581.100	
20 x 5	230	2,14	6	3582.000	
20 x 10	465	4,27	6	3585.000	
25 x 5	290	2,67	6	3583.000	
30 x 5	350	3,20	6	3584.000	
30 x 10	700	6,41	6	3586.000	
Accessories					
Busbar cover section (length 1 m/each)			10	3092.000	319

Rittal RiLine60 busbar systems UL 508

System components for feeder circuits



3 Base tray

For rear contact hazard protection of the flat bar assembly.

Length (L) mm	Packs of	Model No. SV
500	2	9340.100
700	2	9340.110
900	2	9340.120
1100	2	9340.130

Note:

- If the cover section is mounted from the front, the support panel (SV 9340.220) is needed for stability.
- The use of a base tray is compulsory for applications in accordance with UL 508A.

4 Cover section

May be cut to length as required; for clip-on mounting to the base tray.

Length (L) mm	Packs of	Model No. SV
700	2	9340.200
1100	2	9340.210

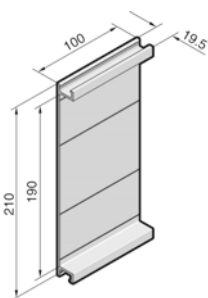
Base trays and cover sections

Material:

Thermally modified hard PVC.
Continuous operating temperature: max. 95°C.
Fire protection corresponding to UL 94-V0.

Colour:

RAL 7035



Base tray infill

For rear contact hazard protection when connecting the busbars from enclosure to enclosure.

Material:

Thermally modified hard PVC.
Continuous operating temperature: max. 95°C.
Fire protection corresponding to UL 94-V0.

Colour:

RAL 7035

Packs of	Model No. SV
2	9340.140

Supply includes:

Assembly parts.



Base tray reinforcement

For clipping into the base tray.
Required when using OT adaptors or supports, see page 16/17 and 19.

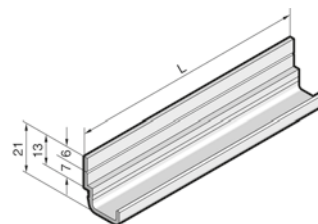
Material:

Aluminium

Note:

Self-tapping screws (Model No. SZ 2487.000) for attaching the base tray reinforcement to the mounting level, see Catalogue 31, page 937.

Length (L) mm	Packs of	Model No. SV
500	2	9340.150
1000	2	9340.160



Support panel for cover section

To prevent side access to the cover section. The support panel also provides additional stability.

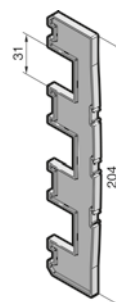
Material:

Polyamide (PA 6.6).
Continuous operating temperature: max. 105°C.
Fire protection corresponding to UL 94-V0.

Colour:

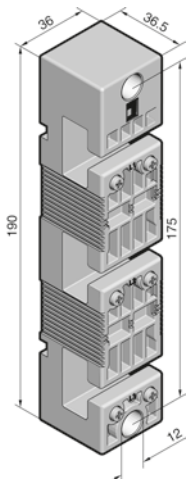
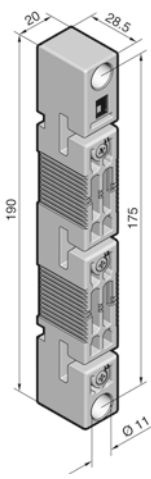
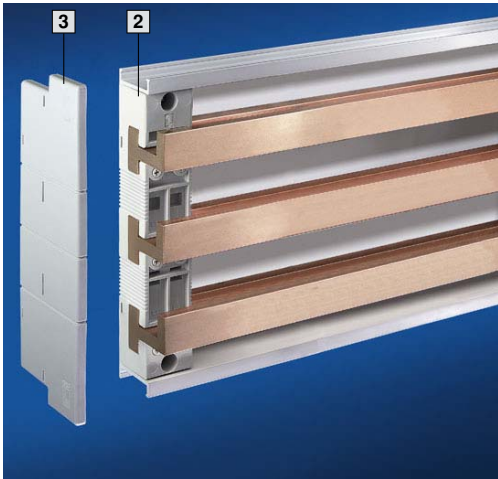
RAL 7035

Packs of	Model No. SV
5	9340.220



Rittal RiLine60 busbar systems UL 508

PLS busbar supports for feeder circuits



Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating
temperature: max. 130°C.
Fire protection corresponding
to UL 94-V0.

Colour:
RAL 7035

Short-circuit resistance,
see page 22.
Note:
Data given in accordance with
UL may deviate from IEC data.

1 Rittal PLS 800

2 Rittal PLS 1600

For Rittal system	Packs of	1 PLS 800	2 PLS 1600
Number of poles		3-pole	3-pole
Bar centre distance		60 mm	60 mm
Tightening torque ● Assembly screw (M6 x 20) ● Busbar anti-slip guard		3 – 5 Nm 0.7 Nm	3 – 5 Nm 0.7 Nm
Model No. SV	4	9341.050	9342.050
Accessories			
3 End covers for contact hazard protection on the sides	2	9341.070	9342.070

PLS special busbars

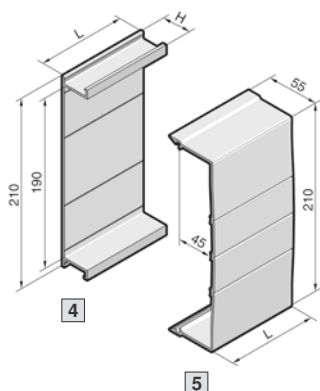
made from E-Cu

For Rittal system	Packs of	PLS 800	PLS 1600
Rated current max.		700 A	1400 A
Cross-section		300 mm ²	900 mm ²
Bar thickness		5 mm	10 mm
Length mm	For enclosure width mm	Model No. SV	Model No. SV
495	600 ¹⁾	3 3524.000	3527.000
695	800 ¹⁾	3 3525.000	3528.000
895	1000 ¹⁾	3 3525.010	3528.010
1095	1200 ¹⁾	3 3526.000	3529.000
2400	variable	1 3509.000	3516.000

¹⁾ For Rittal TS 8/ES enclosure systems

Rittal RiLine60 busbar systems UL 508

PLS system components for feeder circuits



4 Base tray

For rear contact hazard protection of the PLS busbar assembly.

Length (L) mm	Packs of	Model No. SV For system	
		PLS 800	PLS 1600
500	2	9341.100	9342.100
700	2	9341.110	9342.110
900	2	9341.120	9342.120
1100	2	9341.130	9342.130
Height (H) mm		32	43

Note:

- If the cover section is mounted from the front, the support panel (SV 9340.220) is needed for stability.
- The use of a base tray is compulsory for applications in accordance with UL 508A.

5 Cover section

May be cut to length individually, for clip-on mounting to the base tray for PLS system 800 A and 1600 A.

Length (L) mm	Packs of	Model No. SV
700	2	9340.200
1100	2	9340.210

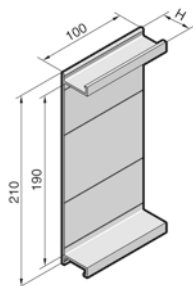
Base trays and cover sections

Material:

Thermally modified hard PVC.
Continuous operating temperature: max. 95°C.
Fire protection corresponding to UL 94-V0.

Colour:

RAL 7035



Base tray infill

For rear contact hazard protection when connecting the busbars from enclosure to enclosure.

Material:

Thermally modified hard PVC.
Continuous operating temperature: max. 95°C.
Fire protection corresponding to UL 94-V0.

Colour:

RAL 7035

For system	Height (H) mm	Packs of	Model No. SV
PLS 800	32	2	9341.140
PLS 1600	43	2	9342.140

Supply includes:

Assembly parts.



Base tray reinforcement

For clipping into the base tray.
Required when using OT adaptors or supports, see page 16/17 and 19.

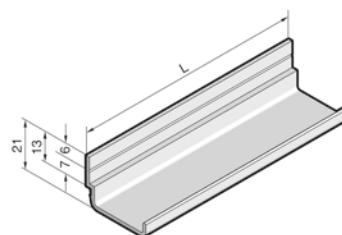
Material:

Aluminium

Note:

Self-tapping screws (Model No. SZ 2487.000) for attaching the base tray reinforcement to the mounting level, see Catalogue 31, page 937.

Length (L) mm	Packs of	Model No. SV For system	
		PLS 800	PLS 1600
500	2	9341.150	9342.150
1000	2	9341.160	9342.160



Support panel

for cover section

To prevent side access to the cover section. The support panel also provides additional stability.

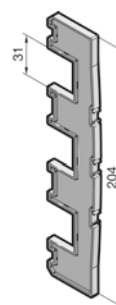
Material:

Polyamide (PA 6.6).
Continuous operating temperature: max. 105°C.
Fire protection corresponding to UL 94-V0.

Colour:

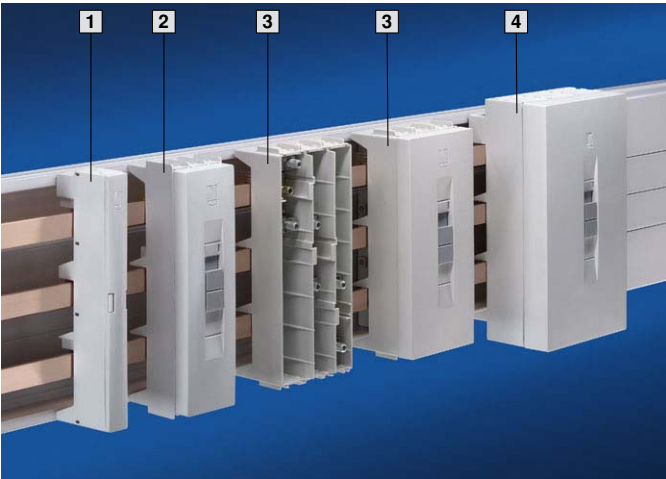
RAL 7035

Packs of	Model No. SV
5	9340.220



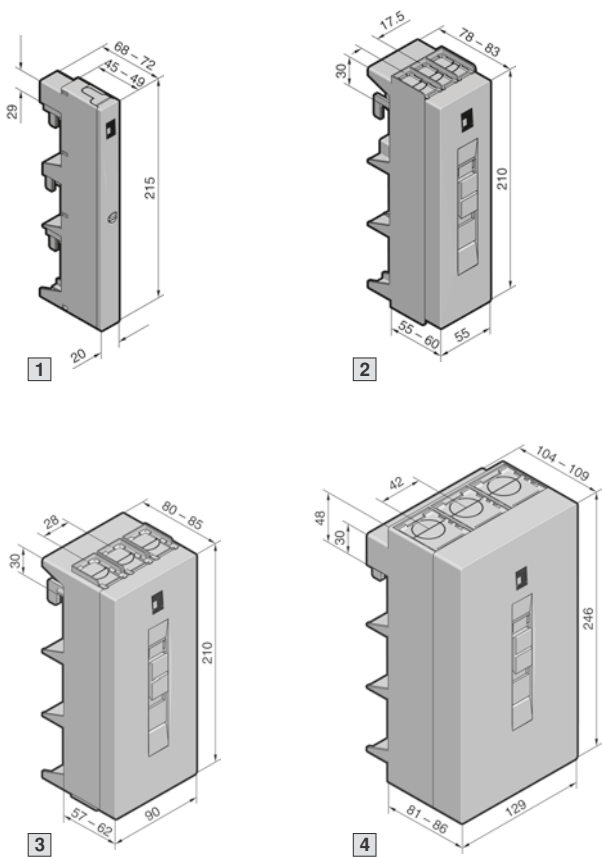
Rittal RiLine60 busbar systems UL 508

Busbar connection adaptors for feeder circuits



Material:
Punched section
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating
temperature: max. 130°C.
Fire protection corresponding
to UL 94-V0.
Cover
ABS,
Fire protection corresponding
to UL 94-V0.

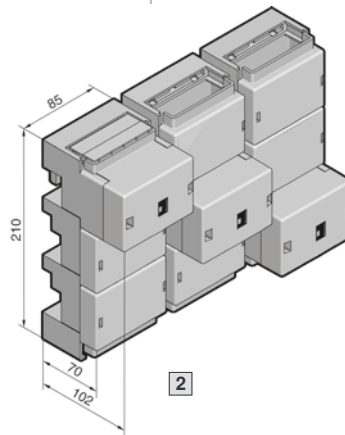
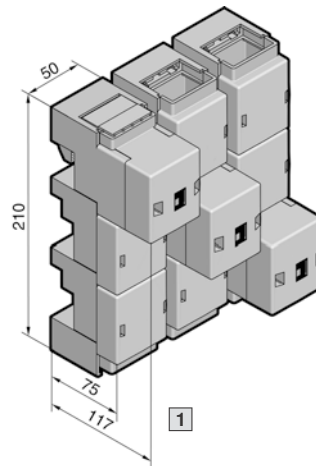
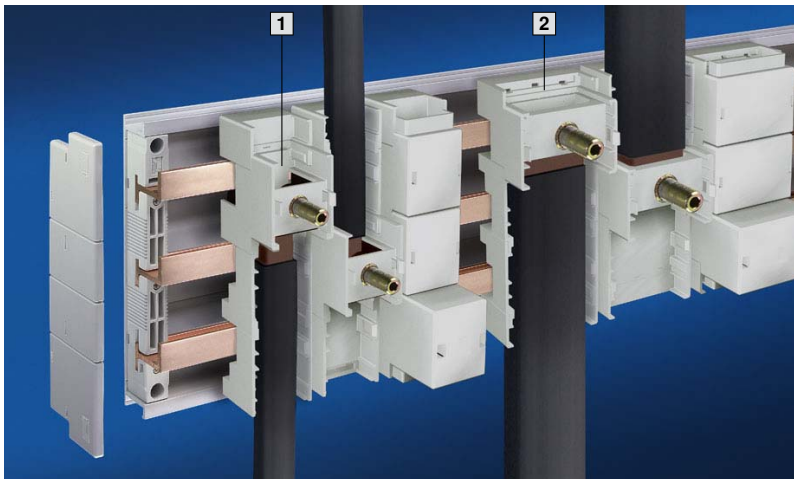
Colour:
RAL 7035
Supply includes:
Cover
Note:
Data given in accordance with
UL may deviate from IEC data.



Version (3-pole)	Packs of	1	2	3	4	Cat. 31, page
Rated current up to		63 A	125 A	250 A	800 A	
Rated voltage		600 V~	600 V~	600 V~	600 V~	
Connection of round conductors		6 – 16 mm ² (AWG 10 – AWG 6)	16 – 35 mm ² (AWG 6 – AWG 2)	35 – 120 mm ² (AWG 2 – MCM250)	95 – 300 mm ² (AWG 4/0 – MCM600)	
Clamping area for laminated copper bars		–	10 x 7.8 mm	18.5 x 15.5 mm	33 x 20 mm	
Tightening torque – assembly screw		2 Nm	2 Nm	4 – 6 Nm	6 Nm	
Tightening torque – terminal screw	for round conductors for laminated copper bars	4 – 5 Nm –	4 – 5 Nm 4 – 5 Nm	10 Nm 8 Nm	18 Nm 14 Nm	
For bar thickness		5/10 mm	5/10 mm	5/10 mm	5/10 mm	
Outlet top/bottom Model No. SV	1	–	–	9342.250	–	
Outlet at top Model No. SV	1	9342.200	9342.230	9342.260	9342.290	
Outlet at bottom Model No. SV	1	9342.210	9342.240	9342.270	9342.300	
Accessories						
Laminated copper bars		–	■	■	■	361

Rittal RiLine60 busbar systems UL 508

Busbar connection adaptors for feeder circuits



Material:

Punched section

Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating
temperature: max. 130°C.
Fire protection corresponding
to UL 94-V0.

Cover

ABS,
Fire protection corresponding
to UL 94-V0.

Colour:

RAL 7035

Supply includes:

Cover

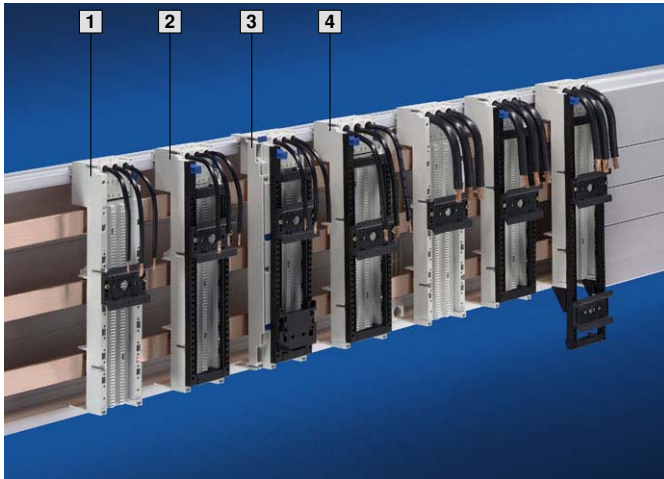
Note:

Data given in accordance with
UL may deviate from IEC data.

Design (3 x 1-pole)	Packs of	1	2	Cat. 31, page
Rated current up to		700 A	1400 A	
Rated voltage		600 V~	600 V~	
Outlet		top/bottom	top/bottom	
Clamping area for laminated copper bars				
• For 5 mm bar thickness		33 x 27 mm	65 x 27 mm	
• For 10 mm bar thickness		33 x 22 mm	65 x 22 mm	
Tightening torque		12 – 15 Nm	15 – 20 Nm	
For bar thickness		5/10 mm	5/10 mm	
Model No. SV	1 set (3)	9342.310	9342.320	
Accessories				
Laminated copper bars		■	■	361

Rittal RiLine60 busbar systems UL 508

OM adaptors 25 A/32 A/40 A with connection cables for feeder circuits

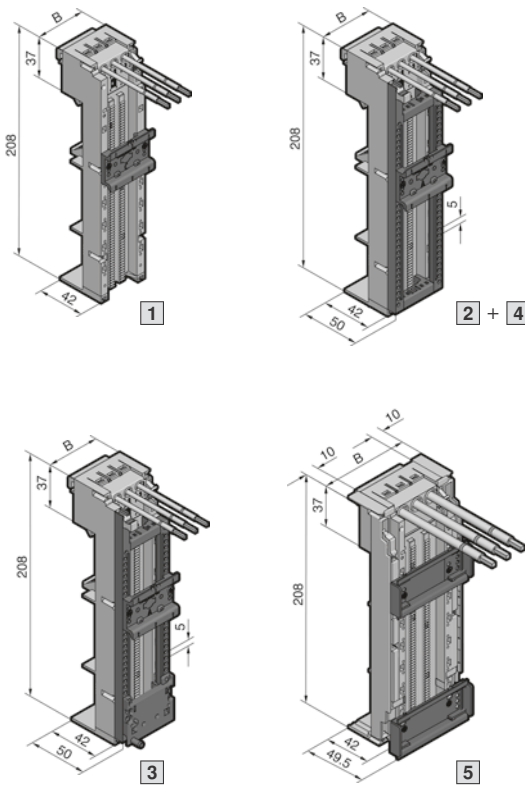


Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating
temperature: max. 130°C.
Fire protection corresponding
to UL 94-V0.

Colour:
RAL 7035 (punched section)

Note:
Overview of market switchgear
for the appropriate adaptor,
see Innovations 2005/2006,
page 213.

Data given in accordance with
UL may deviate from IEC data.

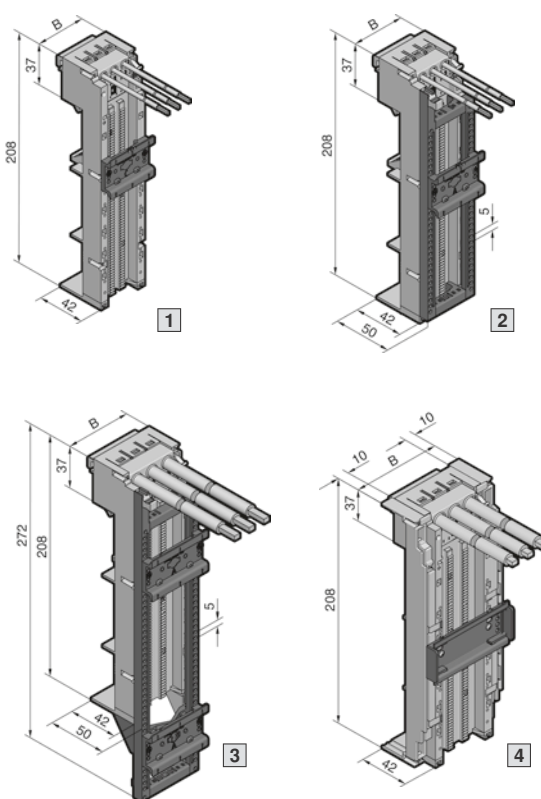


Design	Packs of	1	2	3	4	4	5	Page
Construction width (B)		45 mm	45 mm	45 mm	45 mm	55 mm	75 mm	
Length		208 mm	208 mm	208 mm	208 mm	208 mm	208 mm	
Rated current up to		25 A	25 A	25 A	32 A	32 A	40 A	
Rated voltage		600 V~	600 V~	600 V~	600 V~	600 V~	600 V~	
Connection cables ¹⁾		AWG 12	AWG 12	AWG 12	AWG 10	AWG 10	AWG 8	
With	Support frame	–	45 x 170 mm	45 x 170 mm	45 x 170 mm	55 x 170 mm	–	
	PinBlock	–	–	■	–	–	–	
	Insert strips	–	–	–	–	–	■	
Number of support rails, height	10 mm	1	1	1	1	1	–	
	7.5 mm	–	–	–	–	–	2	
For bar thickness 5/10 mm Model No. SV	1	9340.310	9340.340	9340.370	9340.350	9340.460	9340.710	
Accessories								
Connection pin	20	9340.280	9340.280	9340.280	9340.280	9340.280	9340.280	Innov. 78
Insert strip 10 mm	2	9340.290	9340.290	9340.290	9340.290	9340.290	9340.290	Innov. 78
OM support	45 x 208 mm	1	9340.260	9340.260	9340.260	9340.260	9340.260	18
	55 x 208 mm	1	9340.270	9340.270	9340.270	9340.270	9340.270	18
Support frame								Innov. 78
PinBlock for support frame								Innov. 79
PinBlock Plus								Innov. 79
Support rails								Innov. 80

¹⁾ AWG = American Wire Gauges
AWG 12 = 3.31 mm² ± 4 mm²
AWG 10 = 5.26 mm² ± 6 mm²
AWG 8 = 8.37 mm² ± 10 mm²

Rittal RiLine60 busbar systems UL 508

OM adaptors 65 A with connection cables for feeder circuits



Material:

Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating
temperature: max. 130°C.
Fire protection corresponding
to UL 94-V0.

Colour:

RAL 7035 (punched section)

Note:

Overview of market switchgear
for the appropriate adaptor,
see Innovations 2005/2006,
page 213.

Data given in accordance with
UL may deviate from IEC data.

Design	Packs of	1	2	3	4	Page
Construction width (B)		55 mm	55 mm	55 mm	75 mm	
Length		208 mm	208 mm	272 mm	208 mm	
Rated current up to		65 A	65 A	65 A	65 A	
Rated voltage		600 V~	600 V~	600 V~	600 V~	
Connection cables ¹⁾		AWG 6	AWG 6	AWG 6	AWG 6	
With						
Support frame		–	55 x 170 mm	55 x 237 mm	–	
Support frame supports		–	–	■	–	
Insert strips		–	–	–	■	
Number of support rails, height	10 mm	1	1	2 ²⁾	–	
	7.5 mm	–	–	–	1	
For bar thickness 5/10 mm Model No. SV	1	9340.410	9340.430	9340.450	9340.700	
Accessories						
Connection pin	20	9340.280	9340.280	9340.280	9340.280	Innov. 78
Insert strip 10 mm	2	9340.290	9340.290	9340.290	9340.290	Innov. 78
OM support	45 x 208 mm	1	9340.260	9340.260	9340.260	18
	55 x 208 mm	1	9340.270	9340.270	9340.270	18
Support frame						Innov. 78
PinBlock for support frame						Innov. 79
PinBlock Plus						Innov. 79
Support rails						Innov. 80

¹⁾ AWG = American Wire Gauges
AWG 6 = 13.3 mm² ± 16 mm²

²⁾ The lower support rail with special latch is attached from the rear with the support frame loosened.

Rittal RiLine60 busbar systems UL 508

OT adaptors 25 A/32 A with connection cables for feeder circuits



Material:

Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating
temperature: max. 130°C.
Fire protection corresponding
to UL 94-V0.

Colour:

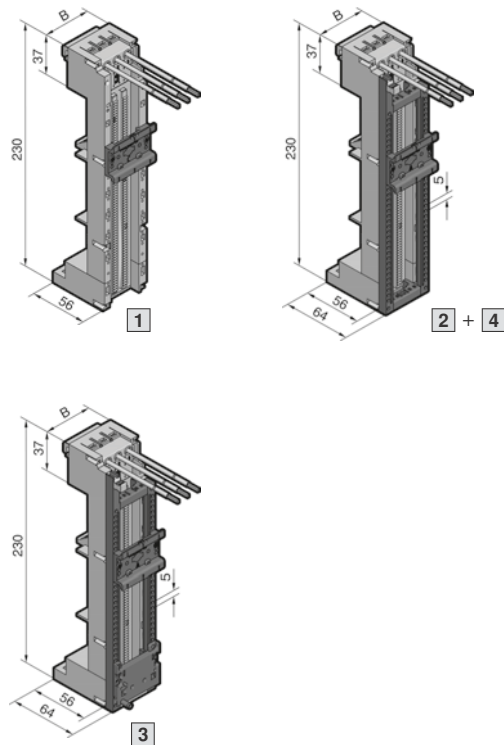
RAL 7035 (punched section)

Note:

Overview of market switchgear
for the appropriate adaptor,
see Innovations 2005/2006,
page 213.

OT adaptors may only be used
with 10 mm thick busbars or
Rittal PLS 800/1600.

Data given in accordance with
UL may deviate from IEC data.



Design	Packs of	1	2	3	4	Page
Construction width (B)		45 mm	45 mm	45 mm	55 mm	
Length		230 mm	230 mm	230 mm	230 mm	
Rated current up to		25 A	25 A	25 A	32 A	
Rated voltage		600 V~	600 V~	600 V~	600 V~	
Connection cables ¹⁾		AWG 12	AWG 12	AWG 12	AWG 10	
With Support frame		–	45 x 195 mm	45 x 195 mm	55 x 195 mm	
PinBlock		–	–	■	–	
Number of support rails, height 10 mm		1	1	1	1	
For bar thickness 5/10 mm Model No. SV	1	9341.310	9341.340	9341.370	9341.460	

Also required

Base tray	9, 11
Base tray reinforcement	9, 11

Accessories

Connection pin	20	9340.280	9340.280	9340.280	9340.280	Innov. 78
Insert strip 10 mm	2	9341.290	9341.290	9341.290	9341.290	Innov. 78
OT support 45 x 230 mm	1	9341.260	9341.260	9341.260	9341.260	19
55 x 230 mm	1	9341.270	9341.270	9341.270	9341.270	19
Support frame						Innov. 78
PinBlock for support frame						Innov. 79
PinBlock Plus						Innov. 79
Support rails						Innov. 80

¹⁾ AWG = American Wire Gauges
AWG 12 = 3.31 mm² ± 4 mm²
AWG 10 = 5.26 mm² ± 6 mm²

Rittal RiLine60 busbar systems UL 508

OT adaptors 65 A with connection cables for feeder circuits



Material:

Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating
temperature: max. 130°C.
Fire protection corresponding
to UL 94-V0.

Colour:

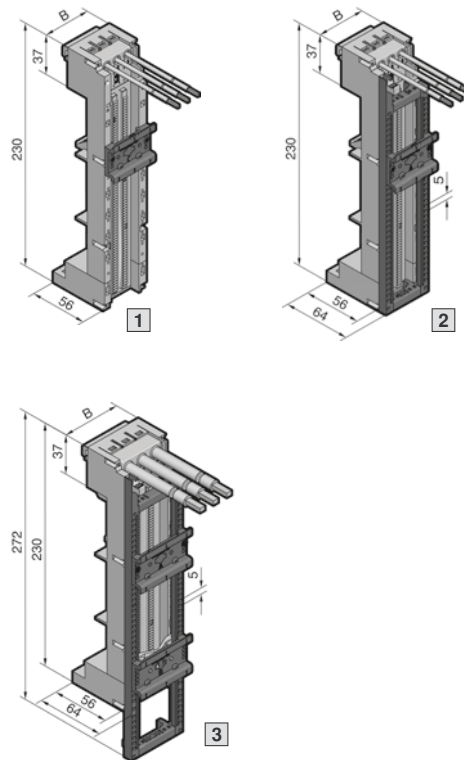
RAL 7035 (punched section)

Note:

Overview of market switchgear
for the appropriate adaptor,
see Innovations 2005/2006,
page 213.

OT adaptors may only be used
with 10 mm thick busbars or
Rittal PLS 800/1600.

Data given in accordance with
UL may deviate from IEC data.



Design	Packs of	1	2	3	Page
Construction width (B)		55 mm	55 mm	55 mm	
Length		230 mm	230 mm	272 mm	
Rated current up to		65 A	65 A	65 A	
Rated voltage		600 V~	600 V~	600 V~	
Connection cables ¹⁾		AWG 6	AWG 6	AWG 6	
With Support frame		–	55 x 195 mm	55 x 237 mm	
PinBlock		–	–	–	
Number of support rails, height 10 mm		1	1	2 ²⁾	
For bar thickness 5/10 mm Model No. SV	1	9341.410	9341.430	9341.450	

Also required

Base tray	9, 11
Base tray reinforcement	9, 11

Accessories

Connection pin	20	9340.280	9340.280	9340.280	Innov. 78
Insert strip 10 mm	2	9341.290	9341.290	9341.290	Innov. 78
OT support 45 x 230 mm	1	9341.260	9341.260	9341.260	19
55 x 230 mm	1	9341.270	9341.270	9341.270	19
Support frame					Innov. 78
PinBlock for support frame					Innov. 79
PinBlock Plus					Innov. 79
Support rails					Innov. 80

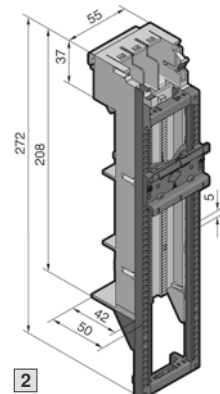
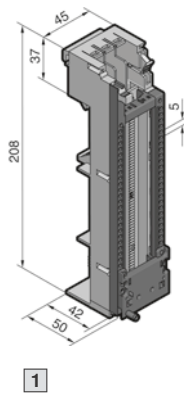
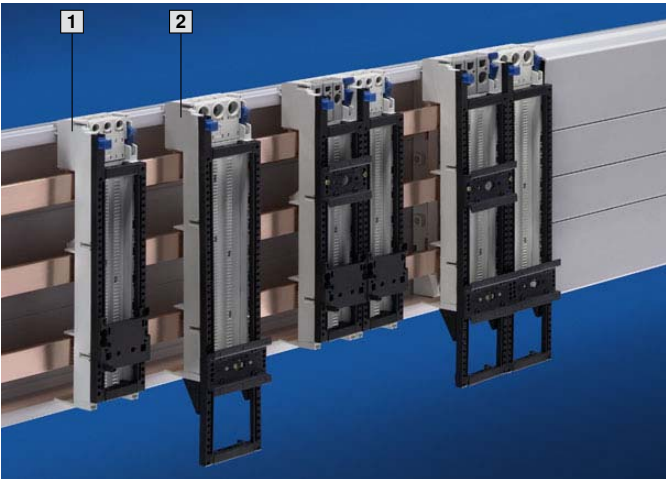
¹⁾ AWG = American Wire Gauges

AWG 6 = 13.3 mm² ± 16 mm²

²⁾ The lower support rail with special latch is attached from the rear with the support frame loosened.

Rittal RiLine60 busbar systems UL 508

OM supports (without contact system)



Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating
temperature: max. 130°C.
Fire protection corresponding
to UL 94-V0.

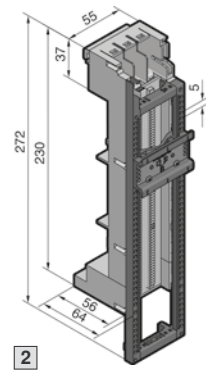
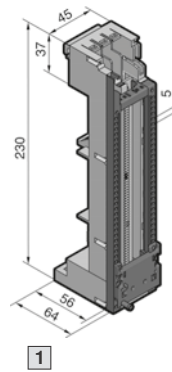
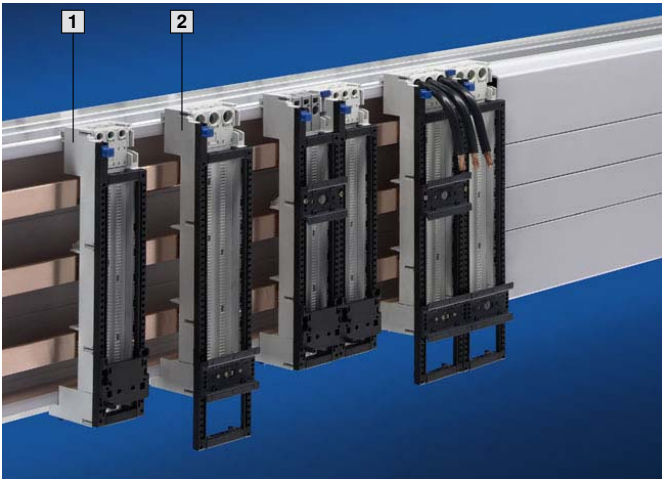
Colour:
RAL 7035 (punched section)

Design		Packs of	1	2	Page
Construction width			45 mm	55 mm	
Length			208 mm	272 mm	
With	Support frame		45 x 170 mm	55 x 237 mm	
	Support frame supports		–	■	
	PinBlock		■	–	
Number of support rails, height 10 mm			–	1 ¹⁾	
For bar thickness 5/10 mm					
Model No. SV		1	9340.260	9340.270	
Accessories					
Connection pin		20	9340.280	9340.280	Innov. 78
Insert strip 10 mm		2	9340.290	9340.290	Innov. 78
Support frame					Innov. 78
PinBlock for support frame					Innov. 79
PinBlock Plus					Innov. 79
Support rails					Innov. 80

¹⁾ The support rail with special latch is attached from the rear with the support frame loosened.

Rittal RiLine60 busbar systems UL 508

OT supports (without contact system)



Material:

Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating
temperature: max. 130°C.
Fire protection corresponding
to UL 94-V0.

Note:

OT supports may only be used
with 10 mm thick busbars or
Rittal PLS 800/1600.

Colour:

RAL 7035 (punched section)

Design	Packs of	1	2	Page
Construction width		45 mm	55 mm	
Length		230 mm	272 mm	
With Support frame		45 x 195 mm	55 x 237 mm	
PinBlock		■	—	
Number of support rails, height 10 mm		—	1 ¹⁾	
For bar thickness 5/10 mm Model No. SV	1	9341.260	9341.270	

Also required

Base tray				9, 11
Base tray reinforcement				9, 11

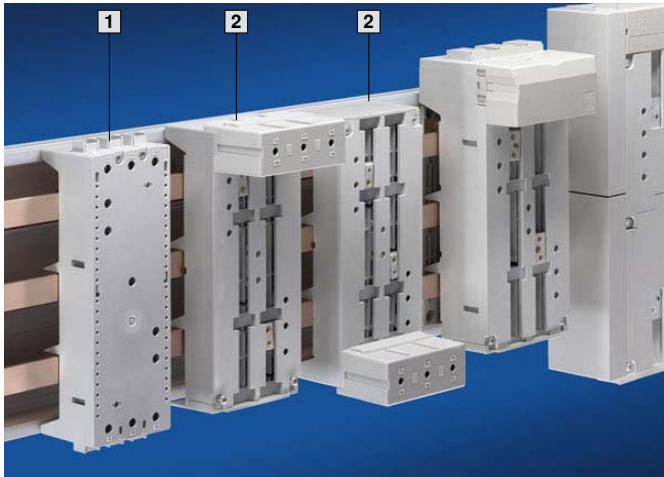
Accessories

Connection pin	20	9340.280	9340.280	Innov. 78
Insert strip 10 mm	2	9341.290	9341.290	Innov. 78
Support frame				Innov. 78
PinBlock for support frame				Innov. 79
PinBlock Plus				Innov. 79
Support rails				Innov. 80

¹⁾ The support rail with special latch is attached from the rear with the support frame loosened.

Rittal RiLine60 busbar systems UL 508

Component adaptors 100 A/Circuit-breaker component adaptors 125 A for feeder circuits



Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating
temperature: max. 130°C.
Fire protection corresponding
to UL 94-V0.

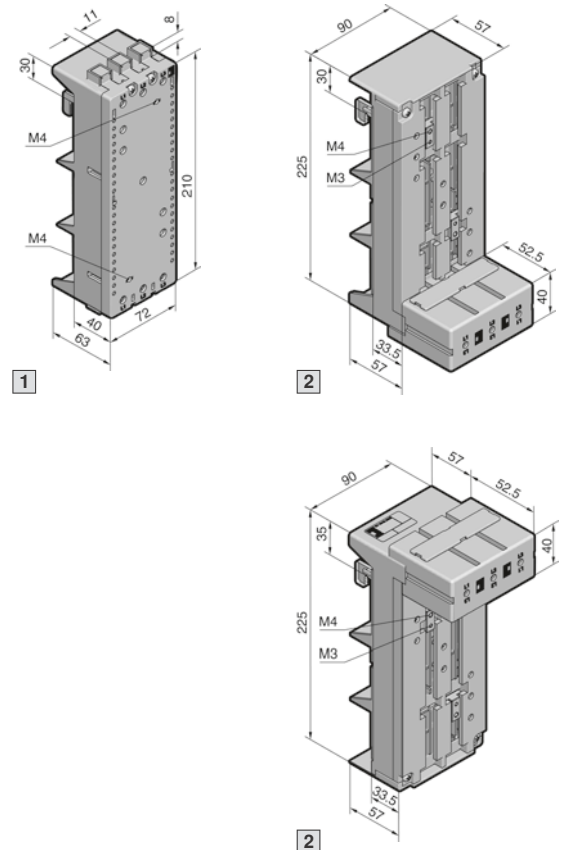
Colour:
RAL 7035

Scope of supply Circuit-breaker component adaptor:

Terminal cover and sliding
blocks for switchgear
attachment.

Note:

Data given in accordance with
UL may deviate from IEC data.



Design		Packs of	1 Component adaptor	2 Circuit-breaker component adaptor	Page
Construction width			72 mm	90 mm	
Length			210 mm	225 mm	
Rated current up to			100 A	125 A	
Rated voltage			600 V~	600 V~	
Connection clamp			Box terminal	Box terminal	
Connection of round conductors			16 – 35 mm ² (AWG 6 – AWG 2)	35 – 120 mm ² (AWG 2 – MCM250)	
Clamping area for laminated copper bars			10 x 7.8 mm	18.5 x 15.5 mm	
Tightening torque					
● Terminal screw			4 – 5 Nm	8 – 10 Nm	
● Rail attachment			2 Nm	4 – 6 Nm	
For switchgear make/model	ABB		MS 497	S2, T1, T2	
	GE		–	FD	
	Merlin Gerin		–	NS80, NSC100	
	Moeller Electric		PKZ2 ¹⁾	NZM1	
	Siemens		S3	–	
	Telemecanique		GV3 ¹⁾	–	
Universal application			■ ¹⁾	–	
For bar thickness			5/10 mm	5/10 mm	
Cable outlet at the top ²⁾		1	9342.400	9342.540	
Model No. SV					
Cable outlet at the bottom ²⁾		1	9342.410	9342.550	
Model No. SV					
Accessories					
Support rail		5	9320.120	–	Innov. 81
Width 72 mm, height 15 mm					

¹⁾ Mounting only possible with support rail SV 9320.120.

²⁾ Switch outlet or outgoing cable.

Rittal RiLine60 busbar systems UL 508

Circuit-breaker component adaptors 250 A/600 A for feeder circuits

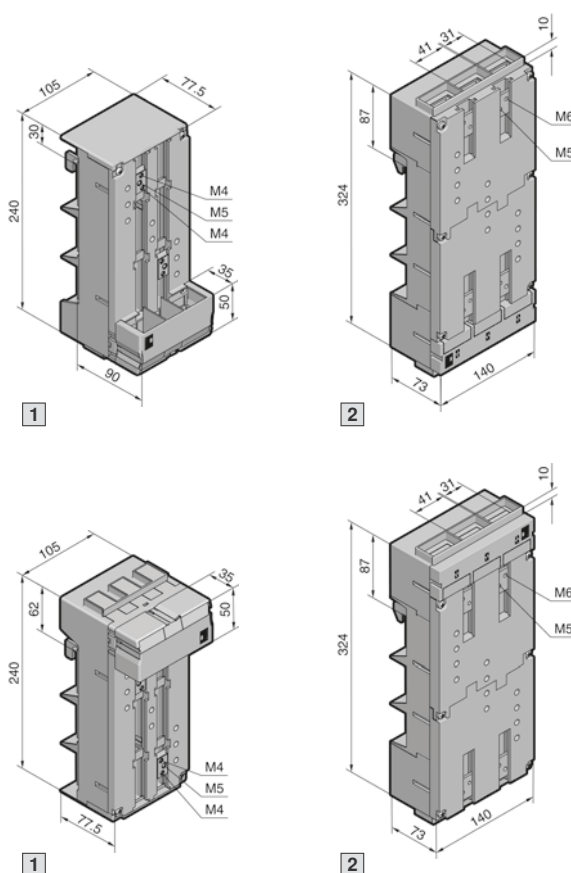


Material:
Polyamide (PA 6.6),
25 % fibreglass-reinforced.
Continuous operating
temperature: max. 130°C.
Fire protection corresponding
to UL 94-V0.

Colour:
RAL 7035

Supply includes:
Terminal cover and sliding
blocks for switchgear
attachment.

Note:
Data given in accordance with
UL may deviate from IEC data.



Design		Packs of	1	2	Page
Construction width			105 mm	140 mm	
Length			240 mm	324 mm	
Rated current up to			250 A	600 A ²⁾	
Rated voltage			600 V~	600 V~	
Connection clamp			Box terminal	Screw terminal M10	
Connection of round conductors			35 – 120 mm ²	max. 150 mm ² 3)	
Clamping area for laminated copper bars			18.5 x 15.5 mm	32 x 10 mm	
Tightening torque					
● Terminal screw			8 – 10 Nm	30 – 32 Nm	
● Rail attachment			4 – 6 Nm	12 – 14 Nm	
For switchgear make/model	ABB		S3, T3, T4	S5, T5	
	GE		FE	–	
	Merlin Gerin		NS100, NS160, NS250	NS400, NS630	
	Moeller Electric		NZM2	NZM3	
	Siemens		VL160X, VL160, VL250	VL400, VL630 ⁴⁾	
Telemecanique			GV7	–	
For bar thickness			5/10 mm	5/10 mm	
Cable outlet at the top ¹⁾					
Model No. SV		1	9342.600	9342.700	
Cable outlet at the bottom ¹⁾					
Model No. SV		1	9342.610	9342.710	
Accessories					
3 Insert strip 25 mm to extend the construction width from 140 mm to 190 mm		4 (1 set)	–	9342.720	Innov. 78

¹⁾ Switch outlet or outgoing cable.

²⁾ Derating may be necessary, depending on the application.

³⁾ With ring terminal.

⁴⁾ Also required: Insert strip 25 mm (SV 9342.720).

Technical details

Short-circuit resistance Rittal RiLine60 UL 508

The short-circuit resistance of Rittal RiLine60 has been extensively tested. Short-circuit resistance to UL criteria is assessed via the root-mean-square value of the short-circuit current (I_{RMS}), which must be applied for at least 3 periods.

During the course of testing, the test equipment has been adjusted to the respective root-mean-square values (I_{RMS}). The resultant peak short-circuit currents I_p are shown in the short-circuit protection diagrams below.

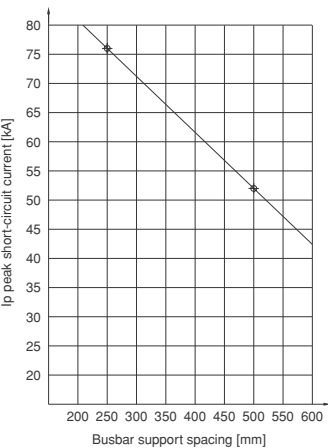
Busbar supports for flat bars from 15 x 5 to 30 x 10 mm

I_{RMS} settings of the test equipment:

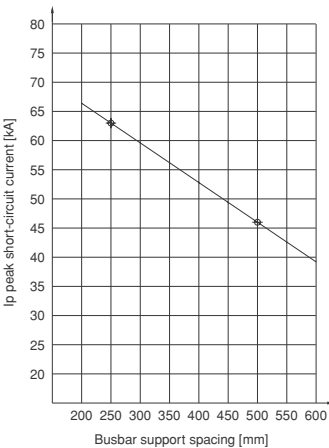
l [mm]	I_{RMS} [kA]
250	35
500	25

l [mm]	I_{RMS} [kA]
250	30
500	22

SV 9340.050 with
30 x 5/10 mm



SV 9340.050 with
25 x 5 mm
20 x 5/10 mm
15 x 5/15 mm



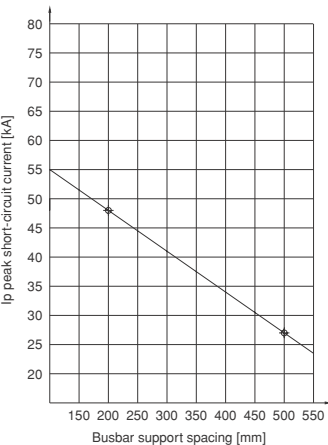
Busbar supports for PLS 800/PLS 1600

I_{RMS} settings of the test equipment:

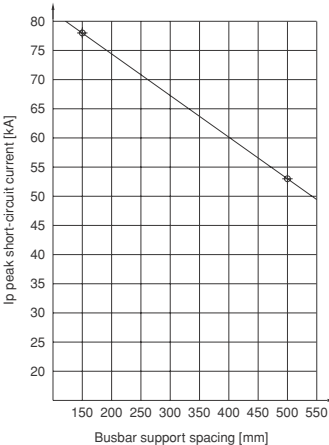
l [mm]	I_{RMS} [kA]
200	22
500	14

l [mm]	I_{RMS} [kA]
150	35
500	25

SV 9341.050 (PLS 800)



SV 9342.050 (PLS 1600)



List of model numbers/Index

Model No.	Page	Model No.	Page	Model No.	Page	Model No.	Page
3509.000	10	9340.130	9	9341.110	11	9342.150	11
3516.000	10	9340.140	9	9341.120	11	9342.160	11
3524.000	10	9340.150	9	9341.130	11	9342.200	12
3525.000	10	9340.160	9	9341.140	11	9342.210	12
3525.010	10	9340.200	9, 11	9341.150	11	9342.230	12
3526.000	10	9340.210	9, 11	9341.160	11	9342.240	12
3527.000	10	9340.220	9, 11	9341.260	19	9342.250	12
3528.000	10	9340.260	18	9341.270	19	9342.260	12
3528.010	10	9340.270	18	9341.310	16	9342.270	12
3529.000	10	9340.310	14	9341.340	16	9342.290	12
3581.000	8	9340.340	14	9341.370	16	9342.300	12
3581.100	8	9340.350	14	9341.410	17	9342.310	13
3582.000	8	9340.370	14	9341.430	17	9342.320	13
3583.000	8	9340.410	15	9341.450	17	9342.400	20
3584.000	8	9340.430	15	9341.460	16	9342.410	20
3585.000	8	9340.450	15	9342.050	10	9342.540	20
3586.000	8	9340.460	14	9342.070	10	9342.550	20
9340.050	8	9340.700	15	9342.100	11	9342.600	21
9340.070	8	9340.710	14	9342.110	11	9342.610	21
9340.100	9	9341.050	10	9342.120	11	9342.700	21
9340.110	9	9341.070	10	9342.130	11	9342.710	21
9340.120	9	9341.100	11	9342.140	11		

A

Adaptor
– OM
– OT

B

Base tray
Base tray infill
Base tray reinforcement
Busbar support
– PLS
Busbars
– E-Cu
– PLS

C

Circuit-breaker
component adaptor
Connection adaptor
Copper bars
– E-Cu
– PLS
Cover section

E

End cover

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OM adaptor
– with connection cables
OM support
OT adaptor
– with connection cables
OT support

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PLS special busbars

R

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S

Short-circuit resistance
Support
– OM
– OT
– PLS
Support panel for cover sections

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10 Trim panel
– for cover sections 9, 11

U

UL – Underwriter Laboratory 6, 7

All in all – solutions from Rittal



Industrial enclosures



Power distribution

Mini-PLS/PLS busbar systems
Busbar systems 40/60/100/150/185 mm
Components for mounting plate installation
Rittal Maxi-PLS low voltage distributors
ISV installation distribution enclosures



Electronic packaging



System Climate Control



IT Solutions



Communication Systems

Rittal has one of the largest ranges of enclosures available for immediate delivery. However, Rittal also supplies integrated solutions – up to Level 4. This comprises mechanical installation, power supply, electronic components, climate control and central monitoring. For all of your requirements.

Fully assembled and functional. Wherever in the world you develop and implement solutions for yourself and your customers, we are close at hand. The global alliance between production, distribution and service guarantees closeness to the customer. Worldwide!

11/06 • E461

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