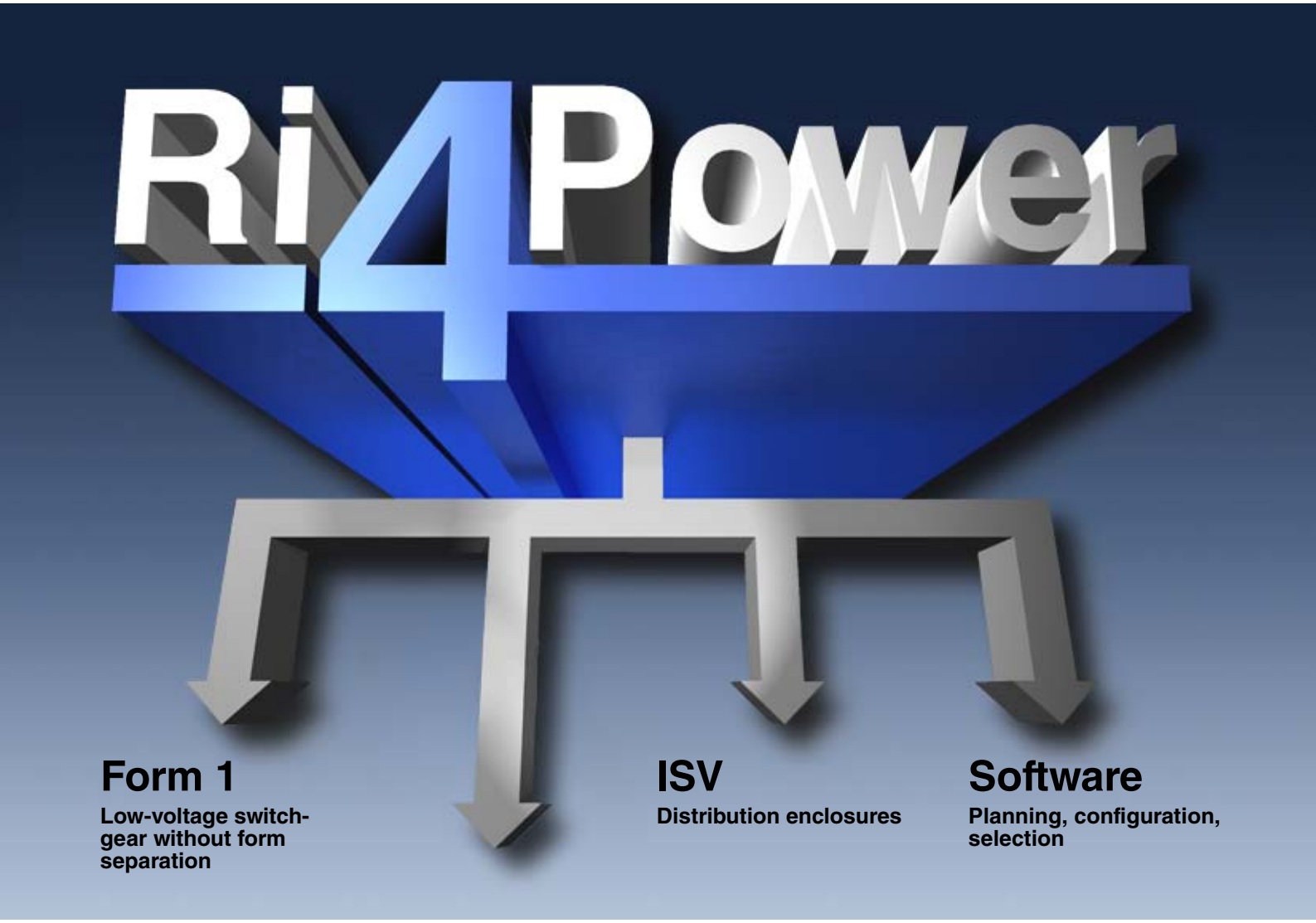
Rittal – **Ri4Power Form 2-4**

Low-voltage switchgear for maximum flexibility

FRIEDHELM LOH GROUP

RITTAL

Ri4Power – structured system solutions for the reliable, fast assembly of low-voltage switchgear systems for machines, plant, and buildings. Rittal Ri4Power is the new name in low-voltage switchgear and distribution enclosures under a single roof – in accordance with the worldwide standard (IEC 60 439-1 and IEC 61 439-1/-2).



Form 1
Low-voltage switchgear without form separation

ISV
Distribution enclosures

Software
Planning, configuration, selection

Form 2-4

Low-voltage switchgear with form separation
Top enclosure system TS 8 in conjunction with busbar systems up to 5500 A as a modular solution.

Applications:
- Process industry
- Water supply/disposal
- Building distribution
- Chemical industry
- Mechanical engineering
- Small power plants
- Wind power

Form 2-4, system examples — from page 9

Complete examples of the principal panel types:

Form 2-4 enclosures — from page 28

TS 8 Top enclosure system – System platform of infinite possibilities for Ri4Power Form 2-4

Form 2-4 enclosure system accessories — from page 39

The modular system for fast, perfect, individual configuration. Please also refer to Catalogue 32.

Form 2-4 compartment — from page 48

TS 8-compatible components for simple assembly of compartments

Form 2-4 busbar systems — from page 62

Tested safety, infinite solution diversity, rapid assembly with RiLine60, Maxi-PLS and Flat-PLS

Form 2-4 technical information — from page 115

Detailed dimensions, diagrams and other important information for reliable project-planning

Form 2-4:
Universal in best form



Process industry
- Sewage treatment plant
- Heavy industry (mining, iron, steel)
- Cement works
- Waste disposal industry
- Paper industry
- Chemicals, petrochemicals
- Pharmaceutical industry

Industrial plants
- Automotive industry
- Mechanical engineering
- Shipbuilding, marine engineering

Energy generation
- Small power plants
- Wind and solar power
- Biomass power plants

Buildings, infrastructure
- Schools
- Banks
- Insurance companies
- Data centres
- Football stadiums
- Hospitals
- Festival halls and exhibition buildings
- Airports




1 Circuit-breaker section
- For switchgear from all well-known manufacturers such as Siemens, ABB, Mitsubishi, Moeller, Merlin Gerin, Terasaki
- Use of air and moulded case circuit-breakers

See page 9.

2 Coupling section
- Combination of a circuit-breaker section with a space-saving busbar riser
- Separation into individual busbar sections to boost equipment availability

See page 13.

3 Outgoing section
- Flexible design of the interior installation
- Fully insulated distribution busbars with extensive connection system

See page 17.

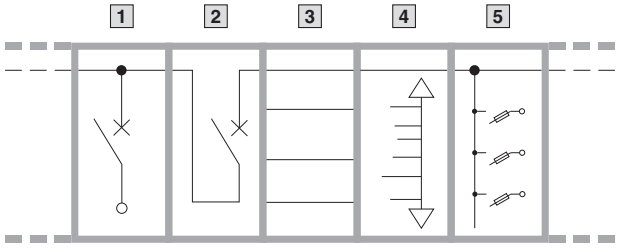
4 Cable chamber
- Available from a field width of 300 mm
- Optional cable entry from above or below
- Flexible installation with Rittal system accessories

See page 21.

NEW

5 Switch-disconnector-fuse section
- For switchgear from Jean Müller, Moeller, ABB, Siemens
- Alternatively also suitable for installation of equipment modules from Jean Müller.

See page 25.



Ri4Power Form 2-4 – An individual system for the configuration of type-tested low-voltage switchgear with inner form separation. The flexible combination of Ri4Power field types supports optimum configuration for your applications.

Form 2-4:
Switchgear with a high level of safety

1 Cable connection
- Tested connection system
- Clear arrangement of the cable connection points
- Contacting system with no drilling required
- Space-optimised configuration, even for smaller rated currents

2 Busbar infeed
- An extensive range of accessories to cover the busbar
- Fully insulated busbar connection
- Connection accessories for every type of conductor

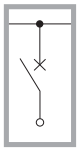
3 Side busbar riser
- Connection accessories for every type of conductor
- Unobstructed access to the busbar compartment from the front
- For the side infeed of compartments

4 Modular outgoing section
- Safe compartmentalisation
- Logically structured layout of functional units
- Access control, thanks to lockable partial doors
- Combination of control units and power outlet within one enclosure is supported

5 Cable chamber enclosure
- Various options for structured cable routing
- Safe shielding from the compartments
- Solid shielding from the main busbar system

Tested safety
- Type-tested to the internationally valid standard IEC 60 439-1
- Design verification to IEC 61 439-1/-2
- Tests with ASTA certification
- Tested accidental arcing protection to IEC 61 641
- Protection category up to IP 54
- Prevention of accidental arcing

Ri4Power Form 2-4 offers the best possible operator protection. Thanks to extensive busbar insulation and sub-division of the compartments, the occurrence and spread of accidental arcs is largely prevented.



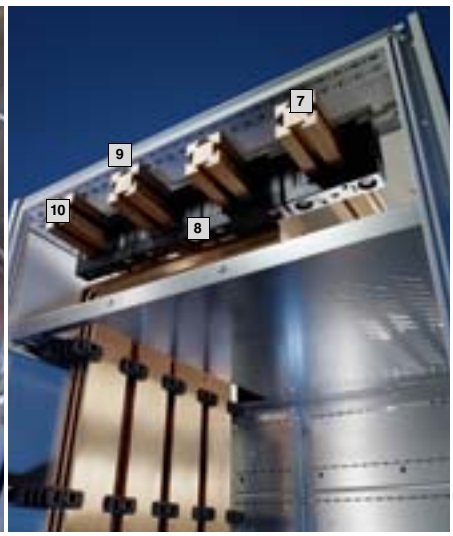
Form 2-4 system example 1

Circuit-breaker section

Note:
Use these examples of a circuit-breaker section to give you ideas. The following information and tools will make project planning easier:

- For diagrams and lists of parts with model numbers for this example, please see page 10/11.
- Software **Rittal Power Engineering** from Version 4.0, see page 123.

The circuit-breaker section is used as the feed to switchgear and the output of large currents from switchgear. Busbar systems up to 5500 A with Maxi-PLS or Flat-PLS **are dimensioned and individually configured according to requirements.** The integrated modular concept and high manufacturing quality ensure **fast, time-saving configuration.** The Ri4Power Form 2-4 system is suitable for circuit-breakers from all well-known manufacturers such as Siemens, ABB, Mitsubishi, Moeller, Merlin Gerin and Terasaki. Finally, the compartment divider is assembled, ensuring optimum access to all connection points throughout the entire assembly process.



Example of a comprehensive circuit-breaker section design with Ri4Power Form 2-4.

Terminal space

1 Stepped, assembly-friendly arrangement of the connection bars.

2 Cable connection system for optimum connection of all conductor types.

3 Flexible positioning of the bars in the connection space thanks to the modular side panel system.

Circuit-breakers

4 Circuit-breakers available as fixed or rack-mounted, allowing a choice of positioning.

5 Connection systems for ACB air circuit-breakers from all well-known manufacturers (Siemens, ABB, Mitsubishi, Moeller, Merlin Gerin, Terasaki).

6 Modular configuration of the compartments, for circuit-breakers and function groups, in accordance with your requirements.

Busbar system

7 Maxi-PLS up to 4000 A, alternatively Flat-PLS up to 5500 A.

8 Main busbar system 3- or 4-pole.

9 Busbar mounting options include: Roof, base or rear panel area, both top and bottom.

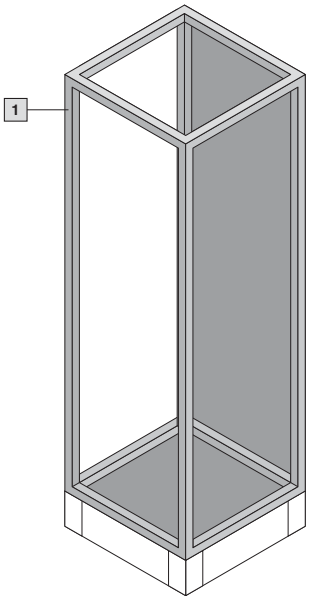
10 “Section to section connection system” for all busbar systems, with no drilling required.

Form 2-4 system example 1

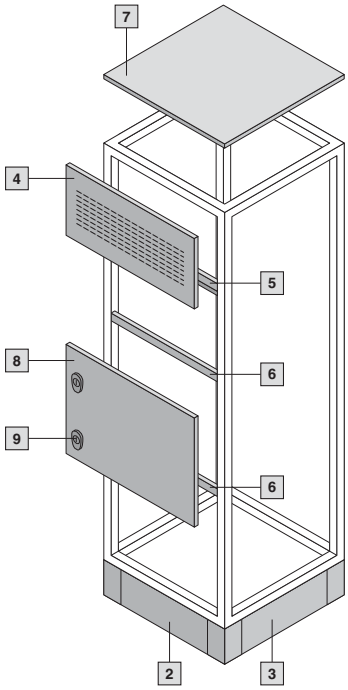
Circuit-breaker section, component overview

The components required for a circuit-breaker section are comprised of the enclosure, the enclosure system accessories, the compartment and the busbar systems.

Enclosure



Enclosure system accessories

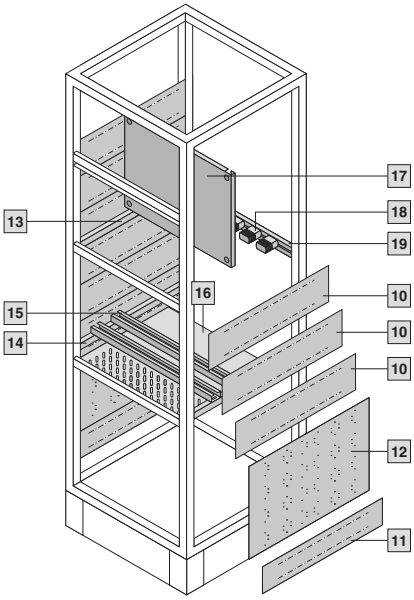


Rittal Power Engineering

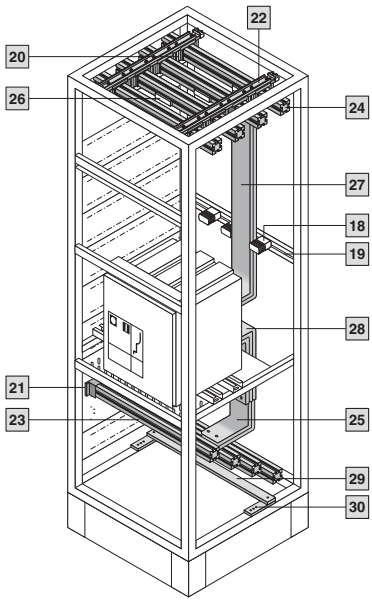
The software Rittal Power Engineering from V4.0 is highly recommended for easy, fast configuration of section types and systems. This continuously updated, graphics-oriented software tool supports customer-specific configuration and automatically produces bills of materials, CAD drawings and order lists of equipment and sections. The export interfaces mean that data and drawings are easily transmitted to other programs such as Word or Excel, or to EPLAN Electric P8.

See page 123.

Compartment



Busbar systems



Circuit-breaker section, parts list

Configuration parameters:

Enclosure dimensions
W x H x D: 800 x 2200 x 800 mm,
with base/plinth 200 mm

Roof plate IP 54
Front trim panel IP 2X
Form 4b

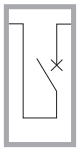
Busbar system top
Maxi-PLS 3200, 4-pole,
in roof area,
without cover

PE busbar design 80 x 10 mm

For air circuit-breaker (ACB)
Mitsubishi AE, 3200 A,
4-pole, rack-mounted,
positioned behind the door,
with cable connection system
Maxi-PLS 3200 A, 4-pole

Functional space divider, vented.

Enclosure		Qty.	P. of	**Model No.**	Page
1	SV-TS 8 mdoular enclosure, W/H/D: 800 x 2200 x 800 mm	1	1	**9670.828**	32
Enclosure system accessories					
2	Base/plinth components, front and rear, 200 mm high	1	1	**8602.800**	40
3	Base/plinth trim, side, 200 mm high	1	1	**8602.080**	40
4	Front trim panel kit, IP 2X, W/H: 800 x 300/100 mm	1	1	**9672.038**	42
5	Horizontal roof frame bar, W: 800 mm	1	2	**9672.008**	44
6	Cross member for functional space divider, W: 800 mm	3	5	**9671.008**	42
7	Solid roof plate, W/D: 800 x 800 mm	1	1	**9671.688**	44
8	Partial door, W/H: 800 x 600 mm	3	1	**9671.186**	43
9	Lock with double-bit insert	6	1	**9671.130**	43
Compartment					
10	Functional space side panel module, H/D: 200 x 800 mm	12	6	**9673.082**	51
11	Functional space side panel module, H/D: 150 x 800 mm	2	6	**9673.085**	51
12	Functional space side panel module connection space, H/D: 450 x 800 mm	2	2	**9673.089**	51
13	Mounting bracket for functional space divider for enclosure depth 800 mm	4	8	**9673.408**	53
14	Mounting bracket for ACB + functional space divider for enclosure depth 800 mm	2	2	**9673.428**	53
15	Air circuit-breaker support rail Form 2-4 for enclosure width 800 mm	2	2	**9673.008**	54
	Mounting kit for air circuit-breaker	1	1	**9660.970**	54
16	Functional space divider for busbar system gland, vented, W/D: 800 x 800 mm	3	4	**9673.478**	55
	Gland plate for functional space divider, W: 800 mm	3	4	**9673.508**	55
17	Partial mounting plate, W/H: 800 x 600 mm	1	1	**9673.686**	56
18	Stacking insulator	25	6	**9660.200**	105
19	Support rail for stacking insulator for enclosure width 800 mm	5	2	**9676.198**	105
Busbar systems					
20	Busbar support Maxi-PLS 3200	6	3	**9650.000**	86
	Busbar support Maxi-PLS 3200	2	1	**9659.000**	86
21	End support Maxi-PLS 3200	6	6	**9650.010**	86
	End support Maxi-PLS 3200	2	2	**9659.010**	86
22	System attachment, Maxi-PLS 3200, 4-pole, in roof area	2	2	**9650.080**	86
23	Busbars Maxi-PLS 3200 691 mm	4	1	**9650.231**	86
24	Busbars Maxi-PLS 3200 799 mm	4	1	**9650.251**	86
25	Connection bracket for Maxi-PLS 3200, 3-pole, 3 x 100 x 10 mm, for D: 800 mm	2	1	**9659.483**	87
	Connection bracket for Maxi-PLS 3200, for N, 3 x 100 x 10 mm, for D: 800 mm	2	1	**9659.484**	87
26	U contact makers Maxi-PLS 3200, W: 100 mm	3	3	**9650.180**	87
	U contact maker Maxi-PLS 3200, W: 100 mm	1	1	**9659.180**	87
	Sliding blocks Maxi-PLS 3200, M12	8	15	**9650.990**	87
27	Connection kit, top, for ACB, design code 828F8J1H8H6F16	1	1	**9676.910**	88
28	Connection kit, bottom, for ACB, design code 828F8J1H8H6F16	1	1	**9676.912**	88
	Screw connection for connection bracket	2	8	**9676.963**	104
29	Busbars 80 x 10 mm, 792 mm	1	2	**9661.180**	109
30	PE/PEN combination angles, flat, 40 x 10 mm	2	4	**9661.240**	109



Form 2-4 system example 2

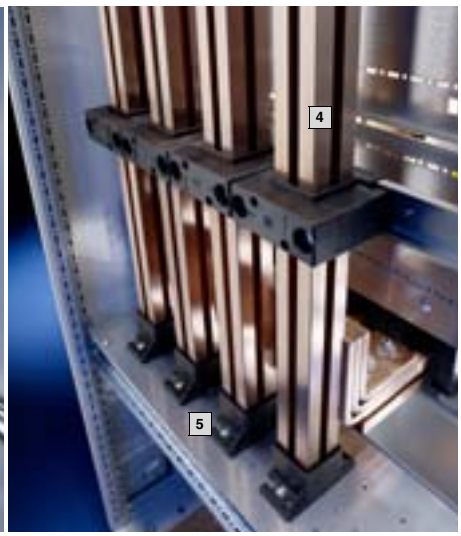
Coupling section

Note:
Use these examples of a coupling section to give you ideas. The following information and tools will make your individual project planning easier:

- For diagrams and lists of parts with model numbers for this example, please see page 14/15.
- Software **Rittal Power Engineering** from Version 4.0, see page 123.

Disconnecting and connecting main busbar systems in a low-voltage switchgear is the task of a coupling section. For plant with several incomers, this prevents total failure and helps to reduce costs in the event of a malfunction. Similarly, the requirements governing overall short-circuit resistance may be reduced. **Overall, the investment, operating and maintenance costs are reduced, while reliability is increased.** In the event of servicing, individual busbar sections can be de-energised without having to switch off the entire system.

The coupling section is a combination of a circuit-breaker section with a busbar riser optionally arranged on the left or right. The large number of identical parts and work stages therefore also translates into **convincing cost and time benefits during assembly.**



Example of a comprehensive coupling section design with Ri4Power Form 2-4.

Coupling switch

1 Connection systems for ACB air circuit-breakers from all well-known manufacturers (Siemens, ABB, Mitsubishi, Moeller, Merlin Gerin, Terasaki).

2 The same system architecture as the circuit-breaker section reduces the number of different items and the required assembly work.

3 Other system accessories facilitate virtually any variant, tailored to the required application.

Busbar riser

4 Version with Maxi-PLS or alternatively Flat-PLS.

5 Space-saving, modular and flexible arrangement of the busbar riser (on the left, alternatively on the right, or on both sides).

Busbar configuration

6 Main busbar routing in the rear. Alternatively, other positions are also supported.

7 Option of using the other compartments separately. Flexible design with standard items e.g. for controlling and monitoring the coupling switch.

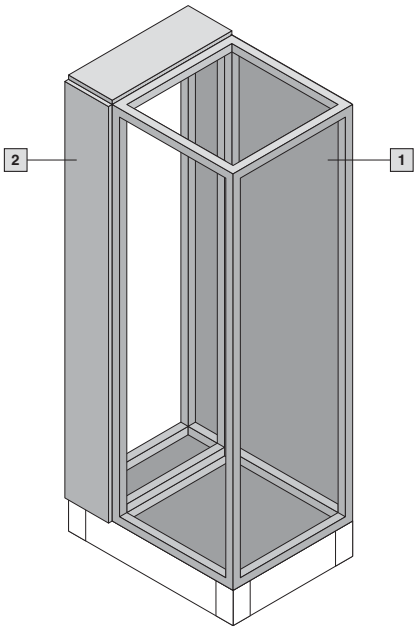
8 Individual selection of the roof plate and front trim panel allows process-optimised population of the switchgear.

Form 2-4 system example 2

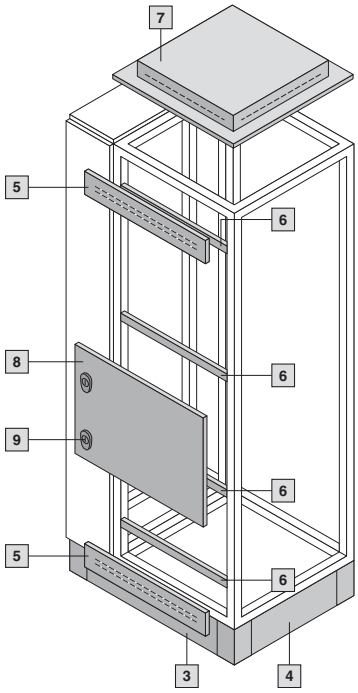
Coupling section, component overview

The components required for a coupling section are comprised of the enclosure, the enclosure system accessories, the compartment and the busbar systems.

Enclosure



Enclosure system accessories



Rittal Power Engineering

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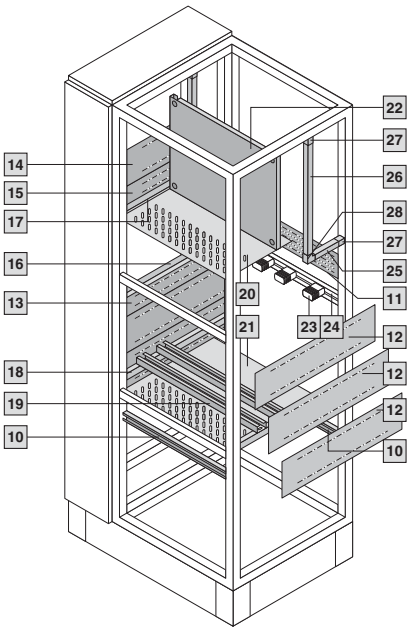
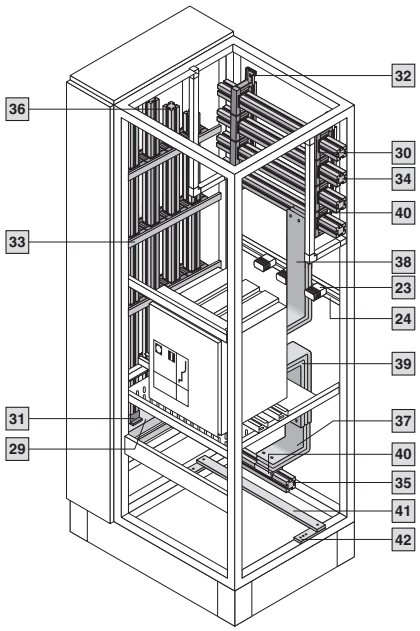
See page 123.

Compartment



Busbar systems



Coupling section, parts list

Configuration parameters:

Enclosure dimensions
W x H x D: 800 x 2200 x 800 mm,
200 x 2200 x 800 mm,
with base/plinth 200 mm

Roof plate IP2X vented
Front trim panel IP 2X vented
Form 4b

Busbar system top
Maxi-PLS 2000, 4-pole,
in rear area,
without cover

PE busbar design 80 x 10 mm

For air circuit-breakers (ACB)
ABB, E2, 2500 A,
static installation, 4-pole,
positioned behind the door

Busbar system, bottom
Maxi-PLS 2000, 4-pole,
directly underneath the
circuit-breaker

Functional space divider, vented

	Enclosure	Qty.	P. of	**Model No.**	Page
1	SV-TS 8 mdoular enclosure, W/H/D: 800 x 2200 x 800 mm	1	1	**9670.828**	32
2	SV-TS 8 busbar enclosure, W/H/D: 200 x 2200 x 800 mm	1	1	**9670.228**	38
	Enclosure system accessories				
3	Base/plinth components, front and rear, 200 mm high	1	1	**8602.000**	40
4	Base/plinth trim, side, 200 mm high	1	1	**8602.080**	40
5	Front trim panel kit, IP 2X, W/H: 800 x 100 mm	1	1	**9671.038**	41
6	Cross member for functional space divider, W: 800 mm	6	5	**9671.008**	42
7	Roof plate, vented, IP 2X, W/D: 800 x 800 mm	1	1	**9659.535**	44
	Partial door, W/H: 800 x 200 mm	1	1	**9671.182**	43
	Partial door, W/H: 800 x 300 mm	2	1	**9671.183**	43
8	Partial door, W/H: 800 x 600 mm	2	1	**9671.186**	43
9	Lock with double-bit insert	7	1	**9671.130**	43
	Baying connectors, external	6	6	**8800.490**	41
	Angular baying bracket TS/TS	4	4	**8800.430**	41
	Compartment				
10	Punched section w. mounting flange for coupling set section, for encl. width 800 mm	2	2	**9674.058**	59
11	TS punched section with mounting flange, 23 x 73 mm, for enclosure width 800 mm	1	4	**8612.580**	Cat. 32, 995
12	Functional space side panel module, H/D: 200 x 800 mm	13	6	**9673.082**	51
13	Functional space side panel module, H/D: 100 x 800 mm	2	6	**9673.081**	51
14	Functional space side panel module, H/D: 200 x 600 mm	4	6	**9673.062**	51
15	Functional space side panel module, H/D: 100 x 600 mm	2	6	**9673.061**	51
16	Mounting bracket for functional space divider for enclosure depth 800 mm	2	8	**9673.408**	53
17	Mounting bracket for functional space divider for enclosure depth 600 mm	6	8	**9673.406**	53
18	Mounting bracket for ACB + functional space divider for enclosure depth 800 mm	2	2	**9673.428**	53
19	Air circuit-breaker support rail Form 2-4 for enclosure width 800 mm	2	2	**9673.008**	54
	Mounting kit for air circuit-breaker	1	1	**9660.970**	54
20	Functional space divider, vented, W/D: 800 x 600 mm	3	4	**9673.485**	54
21	Functional space divider for busbar system gland, vented, W/D: 800 x 800 mm	2	4	**9673.478**	55
	Gland plate for functional space divider, W: 800 mm	2	4	**9673.508**	55
22	Partial mounting plate, W/H: 800 x 200 mm	1	1	**9673.682**	56
	Partial mounting plate, W/H: 800 x 300 mm	2	1	**9673.683**	56
23	Stacking insulator	5	6	**9660.200**	105
24	Support rail for stacking insulator for enclosure width 800 mm	1	2	**9676.198**	105
25	Mini-TS profile, 17 x 15.5 mm, L: 137.5 mm	2	12	**9673.920**	57
26	Mini-TS profile, 17 x 15.5 mm, L: 487.5 mm	2	12	**9673.953**	57
27	Frame connector piece for Mini-TS profile	4	24	**9673.901**	58
28	Corner connector for Mini-TS profile	2	10	**9673.902**	58
29	Coupling set mounting kit for enclosure depth 800 mm	1	1	**9674.198**	59
	Busbar systems				
	Busbar support Maxi-PLS 2000	24	3	**9640.000**	84
30	Busbar support Maxi-PLS 2000, suitable for top-mounting	8	3	**9640.160**	84
31	End support Maxi-PLS 2000	4	6	**9640.010**	84
32	System attachment Maxi-PLS 2000/4, rear section, frame chassis	2	2	**9640.098**	84
	System attachment Maxi-PLS 2000/4, in the roof area	2	2	**9640.088**	84
33	System attachment Maxi-PLS 2000/4, coupling section	6	2	**9649.078**	84
34	Busbars Maxi-PLS 2000 725 mm	4	1	**9640.241**	84
35	Busbars Maxi-PLS 2000 799 mm	4	1	**9640.251**	84
36	Busbars Maxi-PLS 2000, special length 1299 mm	1	1	**9640.368**	on request
	Busbars Maxi-PLS 2000, special length 1399 mm	1	1	**9640.368**	on request
	Busbars Maxi-PLS 2000, special length 1499 mm	1	1	**9640.368**	on request
	Busbars Maxi-PLS 2000, special length 1599 mm	1	1	**9640.368**	on request
37	Connection bracket for Maxi-PLS 1600/2000, 3-pole, 2 x 100 x 10 mm	1	1	**9640.473**	85
	Connection bracket for Maxi-PLS 1600/2000, for N, 2 x 100 x 10 mm	1	1	**9640.474**	85
38	Connection kit, top, for ACB, design code 828D9A2G4H6D26	1	1	**9676.910**	88
39	Connection kit, bottom, for ACB, design code 828D9A2G4H6D26	1	1	**9676.912**	88
	Terminal studs for connector kit	8	8	**9676.976**	103
	Screw connection for connection bracket	8	8	**9676.962**	104
40	U contact makers Maxi-PLS 2000, W: 100 mm	8	3	**9640.180**	85
	Corner bracket Maxi-PLS 2000	4	1	**9640.700**	102
	Sliding blocks Maxi-PLS 2000, M10	16	15	**9640.980**	85
	Connection kit Maxi-PLS 2000/3, coupling set in the rear section	1	1	**9660.313**	102
	Connection kit Maxi-PLS 2000/N, coupling set in the rear section	1	1	**9660.314**	102
41	Busbars 80 x 10 mm, 992 mm	1	2	**9661.100**	109
42	PE/PEN combination angles, flat, 40 x 10 mm	2	4	**9661.240**	109

Form 2-4 system example 3

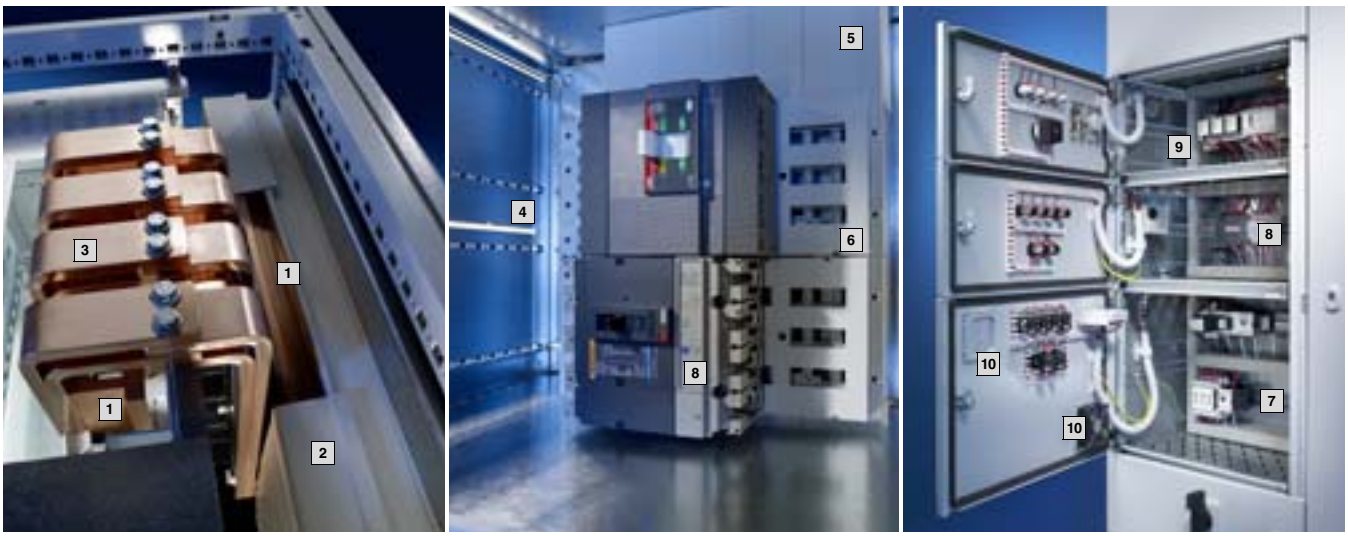
Outgoing section

Note:
Use these examples of an outgoing section to give you ideas. The following information and tools will make project planning easier:

- For diagrams and lists of parts with model numbers for this example, please see page 18/19.
- Software **Rittal Power Engineering** from Version 4.0, see page 123.

Installation of switchgear, power supply outlets or controllers – the **application areas of the outgoing section are very versatile.** With multifunctional components, the individual compartments may be quickly assembled and configured to suit your requirements. The busbar distributor system may be positioned adjacent to, behind or directly in the compartments and is easily and safely connected to the main busbar systems using system components.

The benefits are convincing, both in terms of assembly and during subsequent operation: Simple project planning, fast assembly, flexible adaptation and a high level of safety.



Example of a comprehensive outgoing section design with Ri4Power Form 2-4.

Distributor busbars

1 RiLine60 is ideal for small rated currents. Alternatively, for higher currents, Maxi-PLS or Flat-PLS may be used for the main busbar.

2 Simple insulation and cover with standard parts.

3 T-connection kits for connecting main and distribution busbar systems.

Compartments with power outlet

4 Interior installation individual, flexible and tailored to your requirements.

5 Distribution busbar arrangement of the indoor busbar system, alternatively:
– Behind the compartments/partial mounting plates
– At the side adjacent to the modular outgoing section to the side infeed into the compartments.

6 RiLine60 circuit-breaker adaptor for time-saving, maintenance-friendly installation of circuit-breakers up to 630 A.

Compartments with control units

7 Use of control units to your individual requirements.

8 For all well-known brands of switchgear from Siemens, ABB, Mitsubishi, Moeller, Merlin Gerin, Terasaki.

9 Space-optimised configuration thanks to graduation of the compartment heights.

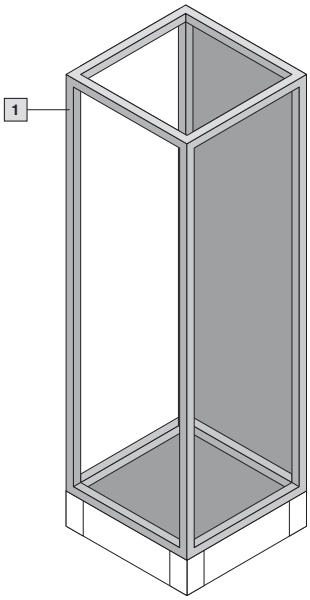
10 Rittal system accessories provide comprehensive installation and numerous design variants depending on the intended application.

Form 2-4 system example 3

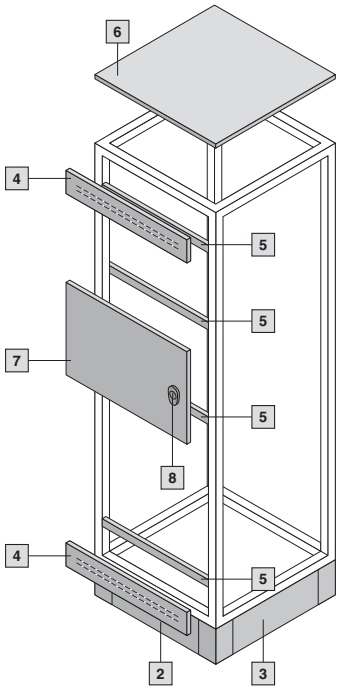
Outgoing section, component overview

The components required for an outgoing section are comprised of the enclosure, the enclosure system accessories, the compartment and the busbar systems.

Enclosure



Enclosure system accessories

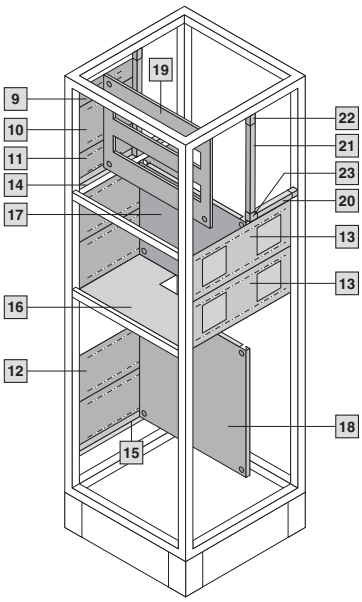


Rittal Power Engineering

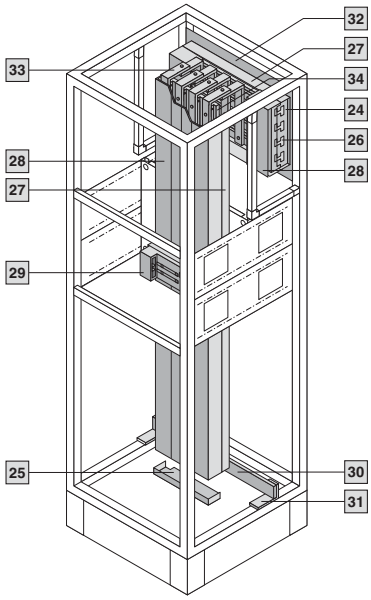
The software Rittal Power Engineering from V4.0 is highly recommended for easy, fast configuration of section types and systems. This continuously updated, graphics-oriented software tool supports customer-specific configuration and automatically produces bills of materials, CAD drawings and order lists of equipment and sections. The export interfaces mean that data and drawings are easily transmitted to other programs such as Word or Excel, or to EPLAN Electric P8.

See page 123.

Compartment



Busbar systems



Outgoing section, parts list

Configuration parameters:

Enclosure dimensions
W x H x D: 600 x 2200 x 600 mm, with base/plinth 200 mm

Roof plate IP 54, solid
Front trim panel IP 54, solid
Form 4a

Main busbar system
RiLine60, PLS 1600, 4-pole, in rear section, top, with busbar cover

PE busbar design 30 x 10 mm

Distributor busbar system
RiLine60, PLS 1600, 4-pole, in compartment (indoor), with cover

Functional space divider for RiLine60, solid

Device-specific design of the compartments and adaptors

	Enclosure	Qty.	P. of	Model No.	Page
1	SV-TS 8 modular enclosure, W/H/D: 600 x 2200 x 600 mm	1	1	**9670.626**	32
	Enclosure system accessories				
2	Base/plinth components, front and rear, 200 mm high	1	1	**8602.600**	40
3	Base/plinth trim, side, 200 mm high	1	1	**8602.060**	40
4	Front trim panel kit IP 54, W/H: 600 x 100 mm	1	1	**9671.016**	41
5	Cross member for functional space divider, W: 600 mm	7	5	**9671.006**	42
6	Solid roof plate, W/D: 600 x 600 mm	1	1	**9671.666**	44
	Partial door, W/H: 600 x 150 mm	1	1	**9671.161**	43
7	Partial door, W/H: 600 x 300 mm	2	1	**9671.163**	43
	Partial door, W/H: 600 x 400 mm	1	1	**9671.164**	43
	Partial door, W/H: 600 x 600 mm	1	1	**9671.166**	43
	Partial door, W/H: 600 x 250 mm	1	1	**9671.167**	43
8	Lock with double-bit insert	7	1	**9671.130**	43
	Compartment configuration				
9	Functional space side panel module, H/D: 100 x 425 mm	2	6	**9673.051**	51
10	Functional space side panel module, H/D: 200 x 425 mm	1	6	**9673.052**	51
11	Functional space side panel module, H/D: 150 x 425 mm	1	6	**9673.055**	51
	Functional space side panel module, H/D: 100 x 600 mm	4	6	**9673.061**	51
12	Functional space side panel module, H/D: 200 x 600 mm	6	6	**9673.062**	51
	Functional space side panel module, H/D: 150 x 600 mm	1	6	**9673.065**	51
	Functional space side panel module with gland plate, H/D: 200 x 425 mm	1	6	**9673.152**	51
	Functional space side panel module with gland plate, H/D: 150 x 425 mm	1	6	**9673.155**	51
13	Functional space side panel module with gland plate, H/D: 200 x 600 mm	6	6	**9673.162**	51
	Functional space side panel module with gland plate, H/D: 150 x 600 mm	1	6	**9673.165**	51
14	Mounting bracket for functional space divider for enclosure depth 425 mm	6	8	**9673.405**	53
15	Mounting bracket for functional space divider for enclosure depth 600 mm	8	8	**9673.406**	53
16	Functional space divider for RiLine60, solid, W/D: 600 x 401 mm	7	4	**9673.450**	55
	Partial mounting plate, W/H: 600 x 150 mm	1	1	**9673.661**	56
17	Partial mounting plate, W/H: 600 x 300 mm	2	1	**9673.663**	56
	Partial mounting plate, W/H: 600 x 400 mm	1	1	**9673.664**	56
18	Partial mounting plate, W/H: 600 x 600 mm	1	1	**9673.666**	56
	Partial mounting plate, W/H: 600 x 250 mm	1	1	**9673.667**	56
19	Support frame for DIN rail-mounted devices, W: 600 mm, 2-row	1	1	**9674.762**	56
20	Mini-TS profile, 17 x 15.5 mm, L: 62.5 mm	2	12	**9673.915**	57
21	Mini-TS profile, 17 x 15.5 mm, L: 437.5 mm	2	12	**9673.952**	57
22	Frame connector piece for Mini-TS profile	4	24	**9673.901**	58
23	Corner connector for Mini-TS profile	2	10	**9673.902**	58
	Busbar systems				
24	RiLine60 busbar support PLS 1600 PLUS	7	4	**9342.004**	76
25	RiLine60 end cover for PLS 1600 PLUS	1	2	**9342.074**	76
26	Busbar PLS 1600 A, 495 mm long	4	3	**3527.000**	68
27	RiLine60 base tray for PLS 1600 PLUS	2	2	**9342.134**	77
28	RiLine60 cover section, L: 1100 mm	2	2	**9340.214**	77
	RiLine60 support panel	14	5	**9340.224**	77
	Circuit-breaker component adaptor 160 A, 690 V, outlet at bottom, 3-pole	1	1	**9342.510**	72
29	Circuit-breaker component adaptor 160 A, 690 V, outlet at bottom, 4-pole	2	1	**9342.514**	80
	Circuit-breaker component adaptor 250 A, 690 V, outlet at bottom, 4-pole	2	1	**9342.614**	80
	Circuit-breaker component adaptor 630 A, 690 V, outlet at bottom, 3-pole	3	1	**9342.710**	73
	Insert strip, W: 25 mm, for SV 9342.700/.710	4	4	**9342.720**	113
30	Busbar, 30 x 10 mm, for enclosure width 600 mm	1	2	**9661.360**	109
31	PE/PEN combination angles, 30 x 10 mm	2	4	**9661.230**	109
32	System attachment for RiLine60 for enclosure width 600 mm	1	1	**9674.006**	103
33	T-connector RiLine60, 1600 A, 4-pole, indoor, PLS 1600	1	1	**9675.166**	100
34	Distribution busbar PLS 1600, indoor, for enclosure height 2200 mm	4	1	**9675.242**	102

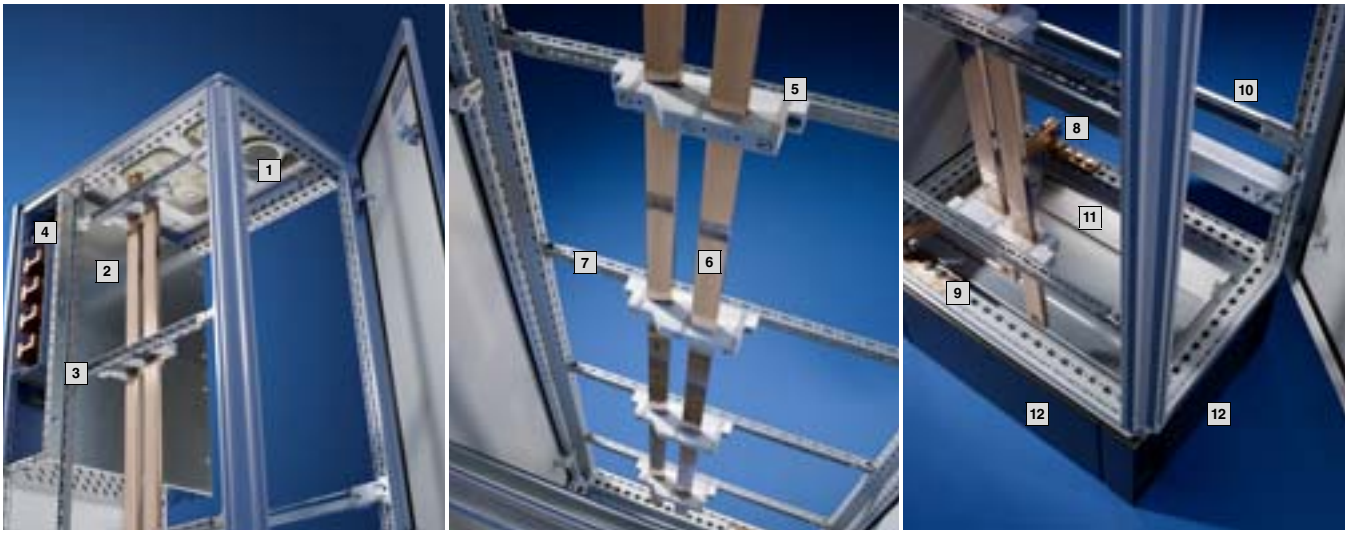
Form 2-4 system example 4

Cable chamber

Note:
Use these examples of a cable chamber to give you ideas. The following information and tools will make project planning easier:

- For diagrams and lists of parts with model numbers for this example, please see page 22/23.
- Software **Rittal Power Engineering** from Version 4.0, see page 123.

The distribution of cables into and out of the individual compartments is the task of the cable chamber. Depending on the main busbar system chosen, **cable entry may be either from below, above, or below and above.** There are various cable entry glands to choose from for the roof plate. The main busbar system is covered in a contact hazard-proof way, depending on the type and configuration. Ri4Power Form 2-4 offers every conceivable option for designing PE and N distribution busbars. In each case, **the panel builder's requirements are effectively met to perfection.**



Example of a comprehensive cable chamber design with Ri4Power Form 2-4.

SV-TS 8 cable chamber enclosure

1 Roof plate for cable gland plates, cable entry glands.

2 Cover of the main busbar system.

3 Mini-TS profiles as an auxiliary construction.

4 Main busbar system with RiLine60, alternatively with Maxi-PLS or Flat-PLS.

PE and N distributor busbars

5 Busbar supports for PE and N distribution busbars.

6 Distribution busbar to match the enclosure heights.

7 Supporting structure of Mini-TS sections for individual attachment.

PE/PEN, cable entry, base/plinth

8 PE/PEN busbar tailored to the enclosure width. Configurable in various cross-sections.

9 PE/PEN combination angles for attaching the PE busbar and incorporating the TS 8 enclosure into the protective measure.

10 C rails for cable attachment, alternatively cable clamp rail from right-angle profile.

11 Gland plates divided in the depth.

12 Base/plinth components, front and rear base/plinth trim, side.

Form 2-4 system example 4

Cable chamber, component overview

The components required for a cable chamber are comprised of the enclosure, the enclosure system accessories, the compartment and the busbar systems.

Rittal Power Engineering

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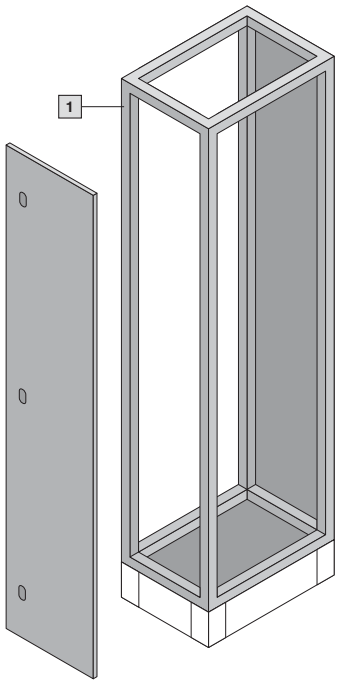
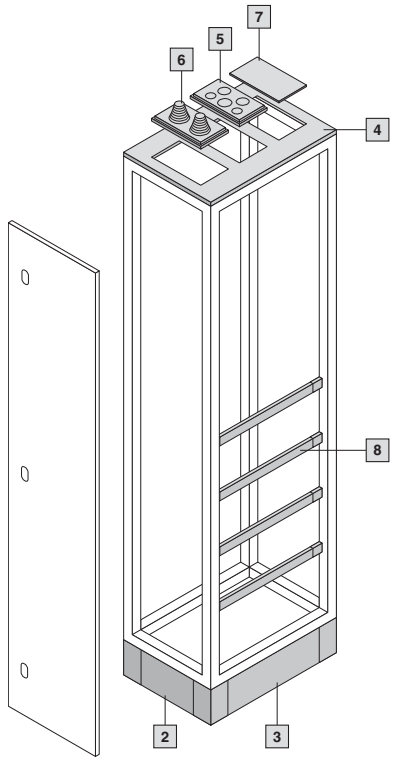
See page 123.

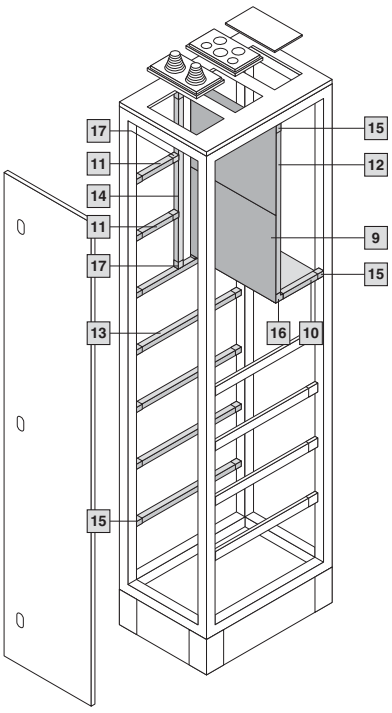
Enclosure



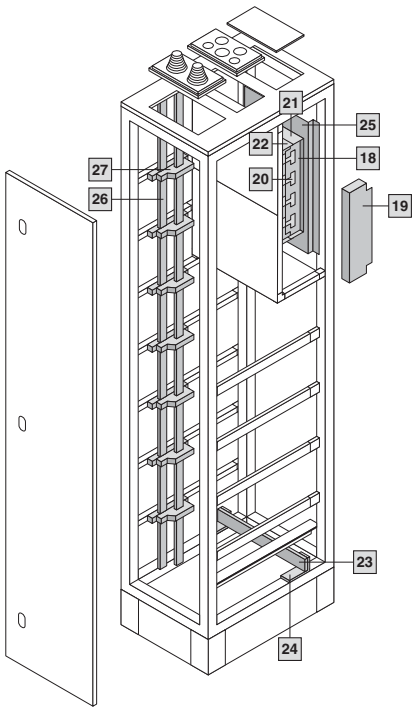
Enclosure system accessories



Compartment



Busbar systems



Cable chamber, parts list

Configuration parameters:

Enclosure dimensions
W x H x D: 400 x 2200 x 600 mm, with base/plinth 200 mm

Roof plate for cable gland plates
Form 4a

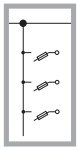
Main busbar system RiLine60, PLS 1600, 4-pole, in rear section, top, with cover

PE busbar design 30 x 10 mm

PE/N distribution busbar version
PE + N
PE 30 x 10 mm
N 30 x 10 mm

Cable clamp rail
C rail

	Enclosure	Qty.	P. of	Model No.	Page
1	SV-TS 8 cable chamber enclosure, W/H/D: 400 x 2200 x 600 mm	1	1	**9670.436**	35
	Enclosure system accessories				
2	Base/plinth components, front and rear, 200 mm high	1	1	**8602.400**	40
3	Base/plinth trim, side, 200 mm high	1	1	**8602.060**	40
4	Roof plate for cable gland plates, W/D: 400 x 600 mm	1	1	**9671.546**	44
5	ISV cable entry gland, M25/32/40/50/63	1	1	**9665.760**	45
6	ISV cable entry gland, with entry fittings	1	1	**9665.780**	45
7	ISV cable entry gland, solid	1	4	**9665.785**	45
8	Support rail for TS 8, W: 600 mm	4	2	**9676.196**	105
	Compartment				
9	Cover plate for main busbar system, W: 400 mm	1	2	**9673.540**	52
10	Mini-TS profile, 17 x 15.5 mm, L: 62.5 mm	2	12	**9673.915**	57
11	Mini-TS profile, 17 x 15.5 mm, L: 262.5 mm	2	12	**9673.940**	57
12	Mini-TS profile, 17 x 15.5 mm, L: 487.5 mm	2	12	**9673.953**	57
13	Mini-TS profile, 17 x 15.5 mm, L: 462.5 mm	5	12	**9673.960**	57
14	Mini-TS profile, 17 x 15.5 mm, L: 662.5 mm	1	12	**9673.980**	57
15	Frame connector piece for Mini-TS profile	17	24	**9673.901**	58
16	Corner connector for Mini-TS profile	2	10	**9673.902**	58
17	T-connector piece for Mini-TS profile	3	24	**9673.903**	58
	Busbar systems				
18	RiLine60 busbar support PLS 1600 PLUS	2	4	**9342.004**	76
19	RiLine60 end cover for PLS 1600 PLUS	1	2	**9342.074**	76
20	Busbar PLS 1600 A, 495 mm long	4	3	**3527.000**	68
21	RiLine60 base tray for PLS 1600 PLUS	1	2	**9342.134**	77
22	RiLine60 cover section, L: 1100 mm	1	2	**9340.214**	77
	RiLine60 support panel	2	5	**9340.224**	77
23	Busbar, 30 x 10 mm, for enclosure width 400 mm	1	2	**9661.340**	109
24	PE/PEN combination angles, 30 x 10 mm	2	4	**9661.230**	109
25	System attachment for RiLine60 for enclosure width 400 mm	1	1	**9674.004**	103
26	Distribution busbar 30 x 10 mm, indoor, for enclosure height 2200 mm	2	1	**9675.222**	102
27	Busbar support N/PE, 2-pole	7	4	**9340.040**	110



Form 2-4 system example 5

Switch-disconnector-fuse section

Note:
Use these examples of a switch-disconnector-fuse section to give you ideas. The following information and tools will make project planning easier:

- For diagrams and lists of parts with Model Numbers for this example, please see page 26/27.
- **Rittal Power Engineering** software from Version 4.1, see page 123.

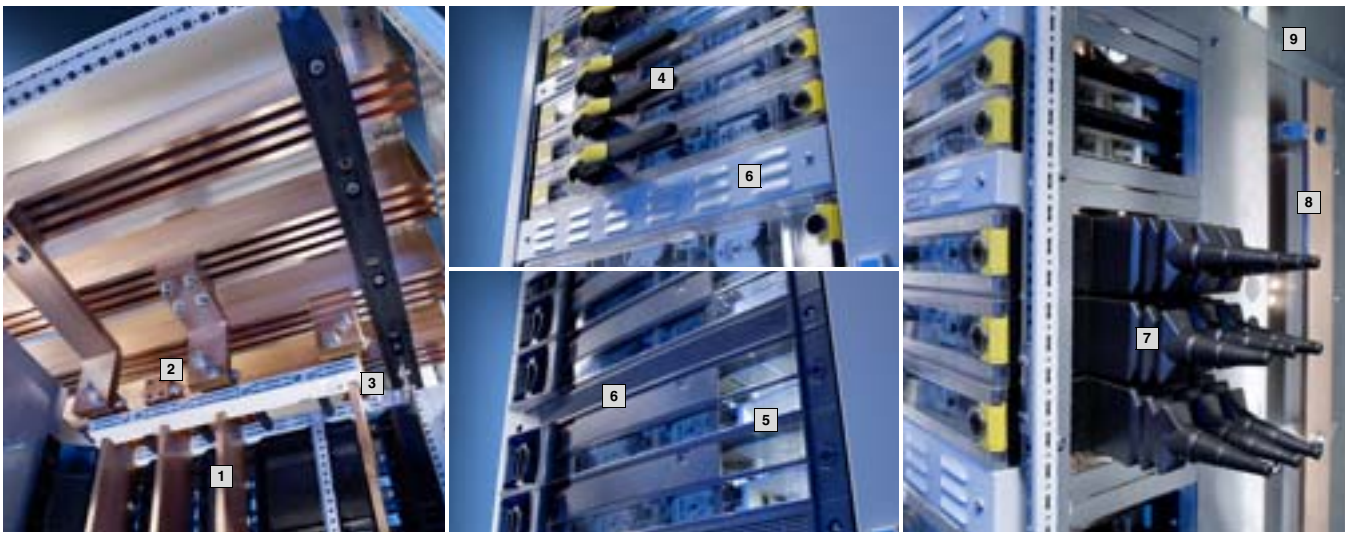
The distribution of electrical power with fused switchgear can be achieved compactly and variably with a switch-disconnector-fuse section.

Thanks to the modular Ri4Power configuration system the installation of switch-disconnector-fuse sections sizes 00 to 3 from **Jean Müller or ABB/Siemens** can be fully prepared.

With the device modules from Jean Müller, live-interchangeable control units may also be integrated into the switch-disconnector-fuse section.

The distribution busbars are selectively and economically dimensioned according to requirements. **The main and the distribution busbar system can be configured for short-circuit resistance of up to 100 kA.**

Internal sub-division in the switch-disconnector-fuse section is from Form 1 to Form 4b, depending on customer requirements, thanks to the optional selection of components.



Example of a comprehensive switch-disconnector-fuse section design with Ri4Power Form 2-4.

Busbar system

1 Accommodates standard commercially available flat copper bars from 50 x 10 to 100 x 10 mm for rated currents up to 2100 A.

2 Connection of the distribution busbars with terminal block, no drilling required.

3 Flexible busbar support arrangement on a 25 mm pitch pattern for optimum switch-disconnector-fuse configuration.

Switchgear area

Individual interior configuration for:

4 a) Jean Müller Sasil switch-disconnector-fuses, Jean Müller device modules

5 b) ABB SlimLine switch-disconnector-fuses/Siemens 3NJ62 switch-disconnector-fuses

6 Variable positioning of ventilation trim panels between switch-disconnector-fuses according to manufacturer's instructions.

Cable connection space

7 Upgradable to Form 4b with device-specific terminal space covers.

8 Application-specific design of PE and N for the distribution busbar system.

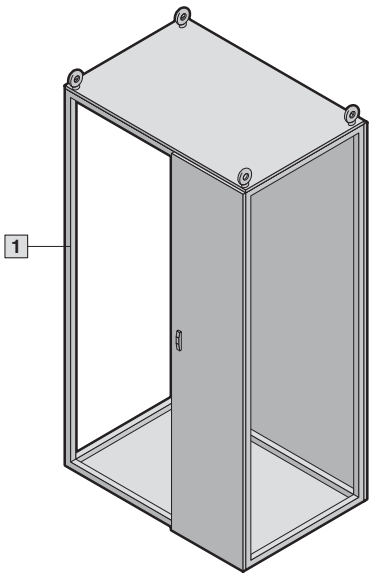
9 Optional contact hazard protection even without form separation.

Form 2-4 system example 5

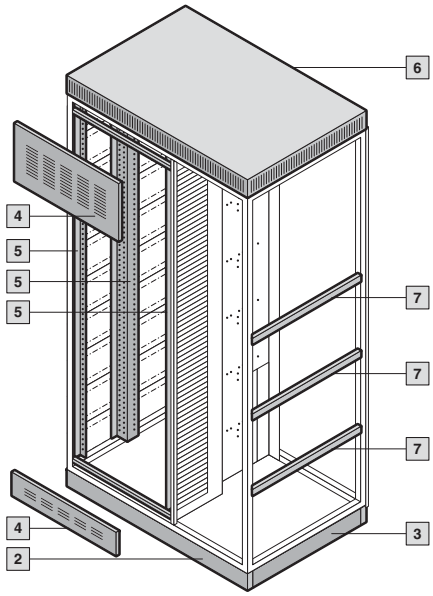
Switch-disconnector-fuse section, component overview

The components required for a switch-disconnector-fuse section are comprised of the enclosure,
the enclosure system accessories, the compartment and the busbar systems.

Enclosure



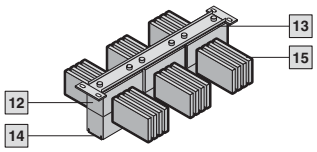
Enclosure system accessories



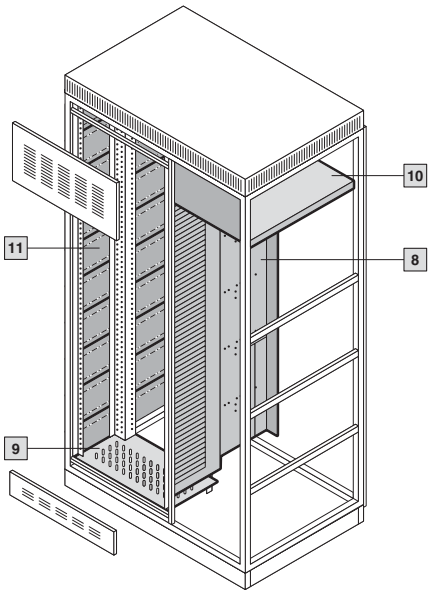
Rittal Power Engineering

The software Rittal Power Engineering from V4.1 is highly recommended for easy, fast configuration of panel types and systems. This continuously updated, graphics-oriented software tool supports customer-specific configuration and automatically produces bills of materials, CAD drawings and order lists of equipment and panels. The export interfaces mean that data and drawings are easily transmitted to other programs such as Word or Excel, or to EPLAN Electric P8.

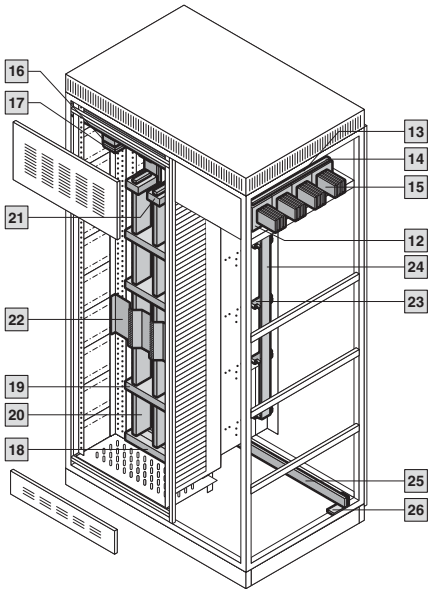
See page 123.



Compartment



Busbar systems



Switch-disconnector-fuse section, component list

Configuration parameters:

Enclosure dimensions
W x H x D: 1200 x 2200 x 800 mm, with base/plinth 200 mm

Roof plate IP 2X vented
Front trim panel IP 2X vented
Form 4b

Busbar system top
Flat-PLS 100, 4-pole,
4 x 100 x 10 mm,
reinforced,
in roof section with cover

PE busbar design 80 x 10 mm

For Jean Müller (JM) NH switch-disconnector-fuses, type Sasil

	Enclosure	Qty.	P. of	**Model No.**	Page
1	SV-TS 8 switch-disconnector-fuse enclosure, W/H/D: 1200 x 2200 x 800 mm	1	1	**9670.128**	37
	Enclosure system accessories				
2	Base/plinth components, front and rear, 200 mm high	1	1	**8602.200**	40
3	Base/plinth trim, side, 200 mm high	1	1	**8602.080**	40
4	Front trim panels, switch-disconnector-fuse section, top 350 mm/bottom 150 mm	1	1	**9674.340**	46
5	Assembly kit for switch-disconnector-fuse section JM, H: 2200 mm	1	1	**9674.352**	46
6	Maxi-PLS roof plate, vented, W/D: 1200 x 800 mm, 50 mm high, RAL 7035	1	1	**9659.555**	44
	Baying connector, external	6	6	**8800.490**	41
	Angular baying bracket TS/TS	4	4	**8800.430**	41
7	Support rails for TS 8, W/D: 800 mm	4	2	**9676.198**	105
	Compartment				
8	Divider panel, switch-disconnector-fuse section JM/ABB, H/D: 2200 x 800 mm	1	1	**9674.328**	60
9	Dividing plate for switch-disconnector-fuse section for JM	2	1	**9674.346**	60
10	Contact hazard protection, switch-disconnector-fuse section, W/D: 1200 x 800 mm	1	1	**9674.368**	60
11	Functional space side panel module, H/D: 200 x 800 mm	9	6	**9673.082**	51
	Busbar systems				
12	Busbar support Flat-PLS 100 suitable for stabiliser bar	12	1	**9676.021**	91
13	System attachment for busbar support Flat-PLS 100, in roof/bases, 3-/4-pole, D: 800 mm	3	2	**9674.184**	90
14	Busbar stabiliser bar, 4-pole	3	2	**9676.025**	91
15	Busbars E-Cu, 100 x 10 x 2400 mm	8	3	**3590.010**	110
	Busbar claws up to 4 x 100 x 10 mm, 1-pole	12	1	**9676.016**	93
16	Contact piece for Flat-PLS, 4 bars, W: 60 mm	4	1	**9676.546**	96
17	Connection bracket, switch-disconnector-fuse section, Flat-PLS 100, L1 – 3, D: 800 mm	1	1	**9674.457**	108
	Connection bracket, switch-disconnector-fuse section, Flat-PLS 100, N, D: 800 mm	1	1	**9674.458**	108
18	End support for switch-disconnector-fuse section, 3-/4-pole, bar width: 100 mm	1	1	**9674.430**	106
19	Busbar support for switch-disconnector-fuse section, 3-/4-pole, bar width: 100 mm	6	1	**9674.410**	106
20	Distributor bar for switch-disconnector-fuse section, W/H: 100/2200 mm	4	1	**9674.420**	106
21	Terminal block, distribution busbar for switch-disconnector-fuse section, 80/100 mm	4	1	**9674.488**	108
22	Cover for distribution busbar, switch-disconnector-fuse section JM, enclosure height: 2000/2200 mm	1	1	**9674.380**	107
	Punched rail for distribution busbar cover, switch-disconnector-fuse section JM, enclosure height: 2000/2200 mm	1	1	**9674.381**	107
23	Busbar support up to 1600 A, 3-pole, 185 mm bar centre distance for busbars E-Cu 50 x 10 to 80 x 10 mm	2	2	**3052.000**	Cat. 32, 391
24	Distribution busbar for switch-disconnector-fuse section, W/H: 80/2000 mm	1	1	**9674.408**	106
25	Busbars, 1192 x 80 x 10 mm, for enclosure width 1200 mm	1	2	**9661.120**	109
26	PE/PEN combination angles, flat, E-Cu 40 x 10 mm	2	4	**9661.240**	109

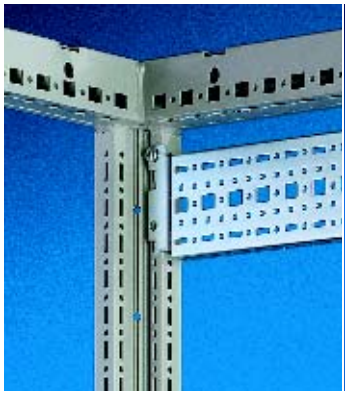
Top enclosure, top flexibility, top efficient: TS 8

With the TS 8 enclosure system, every enclosure is a specialist – however exceptional the task. By combining Ri4Power and busbar components with general system accessories, it is possible to create infinite possibilities in the separation of Form 2-4 – the TS 8 system punching is the key.

Benefits of the TS 8 system platform

System platform TS 8 Top enclosure system

The enclosure system with the efficiency of infinite possibilities. Unbeatable in terms of space utilisation, bayability, interior installation and fast assembly.



Universal interior installation: Frame sections, slotted on a **25 mm pitch pattern.** Two symmetrical levels for maximum space utilisation in the width and depth.

Uninhibited access from all sides: Doors are possible at the front, rear and sides. 4-point hinge and lock system.

Bayable on all sides: Around corners, to the front, rear, left, right and if necessary, even upwards.

Ri4Power configuration

Ri4Power system solutions are based on the TS 8 Top enclosure system. Winning features: Compatibility with all power distribution components.

The proven **TS 8 pitch pattern** is used for many Ri4Power Form 2-4 components, thus enabling the use of TS 8 system accessories.

Undoubtedly convincing – **RiLine60:** effective space utilisation, extensive safety backups, all-round contact hazard protection, safe and fast contacting.

Low voltage switchgear with **Maxi-PLS and Flat-PLS.** Future-oriented, type-tested modular systems offer exceptional fast assembly and safety.

Standard accessories

Rittal system accessories for individuality, perfection and speed when solving your tasks.

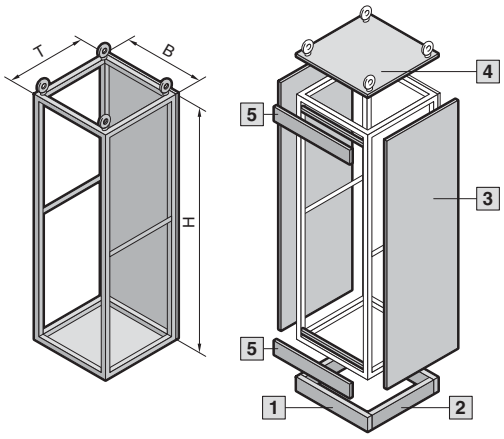
Base/plinth components (front and rear) combined with trim panels (side) or used to link two base/plinths.

Quick assembly: Door-operated switch and lights – simply fit and secure – and it's done.

Roof plate options for every type of cable entry and ventilation.

Form 2-4 enclosures

SV-TS 8 modular enclosures (height 1800 mm)



Modular enclosure frame for installation with partial doors and internal separation.

Material:
Sheet steel
Enclosure frame, rear panel and gland plates: 1.5 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Gland plates: Zinc-plated

Protection category:
Up to IP 54, depending on the roof plate, front trim panels and side panel.

Supply includes:
Enclosure frame with rear panel and gland plates.

Accessories:
System accessories,
see Cat. 32, page 890.

Standard:
Type-tested in accordance with IEC 60 439-1.
Design verification in accordance with IEC 61 439-1/-2.

Detailed drawings,
see page 130.

Technical information,
see page 134 – 140.

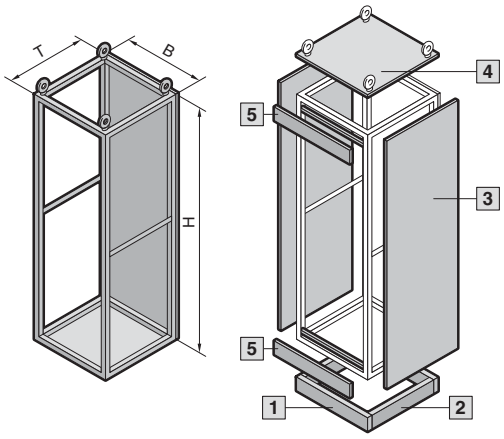
Width (B) mm		Packs of	400	600	800	Page
Height (H) mm			1800	1800	1800	
Depth (T) mm			600	600	600	
Model No. SV		1	**9670.486**	**9670.686**	**9670.886**	
Weight (kg)			42.0	53.0	58.0	
Base/plinth						
1 Components front and rear	Height 100 mm	1 set	8601.400	8601.600	8601.800	40
	Height 200 mm	1 set	8602.400	8602.600	8602.800	40
2 Trim panels sides	Height 100 mm	1 set	8601.060	8601.060	8601.060	40
	Height 200 mm	1 set	8602.060	8602.060	8602.060	40
Also required						
3 Side panels for protection category	IP 55	2	8186.235	8186.235	8186.235	39
	IP 2X	2	9671.986	9671.986	9671.986	39
Upgrade kit for side panels IP 2X	IP 43	2 sets[1)]	9671.996	9671.996	9671.996	39
4 Roof plates for protection category	IP 55	1	9671.646	9671.666	9671.686	44
	IP 43	1	9671.746	9671.766	9671.786	44
	IP 2X	1	9671.446	9660.235	9660.245	44
Roof plates for cable entry gland		1	9671.546	9665.903	9671.586	44
5 Front trim panels for protection category	IP 54	1 set	9671.014	9671.016	9671.018	41
	IP 2X	1 set	9671.034	9671.036	9671.038	41
Upgrade kit for front panels IP 2X	IP 43	1 set	9671.044	9671.046	9671.048	41
Partial doors for clearance height with front trim panel 100/100 mm		1	9671.156	9671.176	9671.196	43
5 Front trim panels, top 300 mm/ bottom 100 mm for protection category	IP 54	1 set	9672.014	9672.016	9672.018	42
	IP 2X	1 set	9672.034	9672.036	9672.038	42
Front trim panels, top 100 mm/ bottom 300 mm for protection category	IP 54	1 set	9672.024	9672.026	9672.028	42
	IP 2X	1 set	9672.044	9672.046	9672.048	42
Upgrade kit for front trim panels 300/100 mm IP 2X	IP 43	1 set	9672.054	9672.056	9672.058	42
Partial doors for clearance height with front trim panel 300/100 mm		1	–	–	–	
Partial doors for modular configuration		1	■	■	■	43
Angular baying brackets		4	8800.430			41
Baying connectors, external		6	8800.490			41

Accessories	
Enclosure configuration	39 – 46
Compartment configuration	50 – 61
Components	65 – 114

[1)] Pack sufficient for 1 pack of side panels.

System examples Page 9 – 27

SV-TS 8 modular enclosures (height 2000 mm)



Modular enclosure frame for installation with partial doors and internal separation.

Material:
Sheet steel
Enclosure frame, rear panel and gland plates: 1.5 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Gland plates: Zinc-plated

Protection category:
Up to IP 54, depending on the roof plate, front trim panels and side panel.

Supply includes:
Enclosure frame with rear panel and gland plates.

Accessories:
System accessories,
see Cat. 32, page 890.

Standard:
Type-tested in accordance with IEC 60 439-1.
Design verification in accordance with IEC 61 439-1/-2.

Detailed drawings,
see page 130.

Technical information,
see page 134 – 140.

Width (B) mm		Packs of	400	600	800	400	600	800	Page
Height (H) mm			2000	2000	2000	2000	2000	2000	
Depth (T) mm			600	600	600	800	800	800	
Model No. SV		1	**9670.406**	**9670.606**	**9670.806**	**9670.408**	**9670.608**	**9670.808**	
Weight (kg)			43.8	54.0	59.2	43.8	53.7	64.2	
Base/plinth									
1 Components front and rear	Height 100 mm	1 set	8601.400	8601.600	8601.800	8601.400	8601.600	8601.800	40
	Height 200 mm	1 set	8602.400	8602.600	8602.800	8602.400	8602.600	8602.800	40
2 Trim panels sides	Height 100 mm	1 set	8601.060	8601.060	8601.060	8601.080	8601.080	8601.080	40
	Height 200 mm	1 set	8602.060	8602.060	8602.060	8602.080	8602.080	8602.080	40
Also required									
3 Side panels for protection category	IP 55	2	8106.235	8106.235	8106.235	8108.235	8108.235	8108.235	39
	IP 2X	2	9671.906	9671.906	9671.906	9671.908	9671.908	9671.908	39
Upgrade kit for side panels IP 2X	IP 43	2 sets[1)]	9671.996	9671.996	9671.996	9671.998	9671.998	9671.998	39
4 Roof plates for protection category	IP 55	1	9671.646	9671.666	9671.686	9671.648	9671.668	9671.688	44
	IP 43	1	9671.746	9671.766	9671.786	9671.748	9671.768	9671.788	44
	IP 2X	1	9671.446	9660.235	9660.245	9671.448	9659.525	9659.535	44
Roof plates for cable entry gland		1	9671.546	9665.903	9671.586	9671.548	9671.568	9671.588	44
5 Front trim panels for protection category	IP 54	1 set	9671.014	9671.016	9671.018	9671.014	9671.016	9671.018	41
	IP 2X	1 set	9671.034	9671.036	9671.038	9671.034	9671.036	9671.038	41
Upgrade kit for front panels IP 2X	IP 43	1 set	9671.044	9671.046	9671.048	9671.044	9671.046	9671.048	41
Partial doors for clearance height with front trim panel 100/100 mm		1	9671.158	9671.178	9671.198	9671.158	9671.178	9671.198	43
5 Front trim panels, top 300 mm/ bottom 100 mm for protection category	IP 54	1 set	9672.014	9672.016	9672.018	9672.014	9672.016	9672.018	42
	IP 2X	1 set	9672.034	9672.036	9672.038	9672.034	9672.036	9672.038	42
Front trim panels, top 100 mm/ bottom 300 mm for protection category	IP 54	1 set	9672.024	9672.026	9672.028	9672.024	9672.026	9672.028	42
	IP 2X	1 set	9672.044	9672.046	9672.048	9672.044	9672.046	9672.048	42
Upgrade kit for front trim panels 300/100 mm IP 2X	IP 43	1 set	9672.054	9672.056	9672.058	9672.054	9672.056	9672.058	42
Partial doors for clearance height with front trim panel 300/100 mm		1	9671.156	9671.176	9671.196	9671.156	9671.176	9671.196	43
Partial doors for modular configuration		1	■	■	■	■	■	■	43
Angular baying brackets		4	8800.430						41
Baying connectors, external		6	8800.490						41

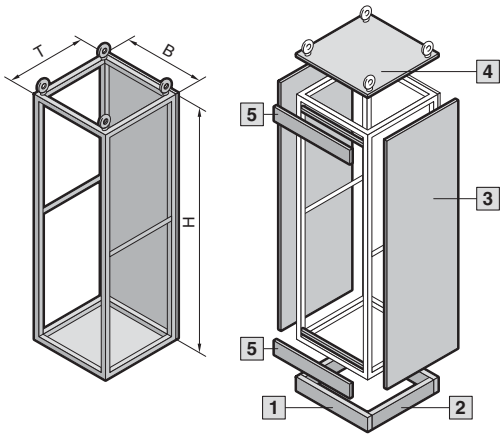
Accessories	
Enclosure configuration	39 – 46
Compartment configuration	50 – 61
Components	65 – 114

[1)] Pack sufficient for 1 pack of side panels.

System examples Page 9 – 27

Form 2-4 enclosures

SV-TS 8 modular enclosures (height 2200 mm)



Modular enclosure frame for installation with partial doors and internal separation.

Material:
Sheet steel
Enclosure frame, rear panel and gland plates: 1.5 mm

Surface finish:
Enclosure frame:
Dipcoat-primed
Rear panel:
Dipcoat-primed, powder-coated in textured RAL 7035 on the outside
Gland plates: Zinc-plated

Protection category:
Up to IP 54, depending on the roof plate, front trim panels and side panel.

Supply includes:
Enclosure frame with rear panel and gland plates.

Accessories:
System accessories,
see Cat. 32, page 890.

Standard:
Type-tested in accordance with IEC 60 439-1.
Design verification in accordance with IEC 61 439-1/-2.

Detailed drawings,
see page 130.

Technical information,
see page 134 – 140.

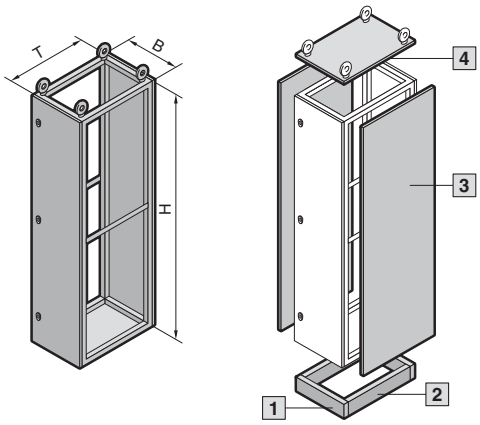
Width (B) mm		Packs of	400	600	800	400	600	800	Page
Height (H) mm			2200	2200	2200	2200	2200	2200	
Depth (T) mm			600	600	600	800	800	800	
Model No. SV		1	**9670.426**	**9670.626**	**9670.826**	**9670.428**	**9670.628**	**9670.828**	
Weight (kg)			43.2	54.0	59.4	46.1	55.8	66.0	
Base/plinth									
1 Components front and rear	Height 100 mm	1 set	8601.400	8601.600	8601.800	8601.400	8601.600	8601.800	40
	Height 200 mm	1 set	8602.400	8602.600	8602.800	8602.400	8602.600	8602.800	40
2 Trim panels sides	Height 100 mm	1 set	8601.060	8601.060	8601.060	8601.080	8601.080	8601.080	40
	Height 200 mm	1 set	8602.060	8602.060	8602.060	8602.080	8602.080	8602.080	40
Also required									
3 Side panels for protection category	IP 55	2	8126.235	8126.235	8126.235	8128.235	8128.235	8128.235	39
	IP 2X	2	9671.926	9671.926	9671.926	9671.928	9671.928	9671.928	39
Upgrade kit for side panels IP 2X	IP 43	2 sets[1)]	9671.996	9671.996	9671.996	9671.998	9671.998	9671.998	39
4 Roof plates for protection category	IP 55	1	9671.646	9671.666	9671.686	9671.648	9671.668	9671.688	44
	IP 43	1	9671.746	9671.766	9671.786	9671.748	9671.768	9671.788	44
	IP 2X	1	9671.446	9660.235	9660.245	9671.448	9659.525	9659.535	44
Roof plates for cable entry gland		1	9671.546	9665.903	9671.586	9671.548	9671.568	9671.588	44
5 Front trim panels for protection category	IP 54	1 set	9671.014	9671.016	9671.018	9671.014	9671.016	9671.018	41
	IP 2X	1 set	9671.034	9671.036	9671.038	9671.034	9671.036	9671.038	41
Upgrade kit for front panels IP 2X	IP 43	1 set	9671.044	9671.046	9671.048	9671.044	9671.046	9671.048	41
Partial doors for clearance height with front trim panel 100/100 mm		1	9671.150	9671.170	9671.190	9671.150	9671.170	9671.190	43
5 Front trim panels, top 300 mm/ bottom 100 mm for protection category	IP 54	1 set	9672.014	9672.016	9672.018	9672.014	9672.016	9672.018	42
	IP 2X	1 set	9672.034	9672.036	9672.038	9672.034	9672.036	9672.038	42
Front trim panels, top 100 mm/ bottom 300 mm for protection category	IP 54	1 set	9672.024	9672.026	9672.028	9672.024	9672.026	9672.028	42
	IP 2X	1 set	9672.044	9672.046	9672.048	9672.044	9672.046	9672.048	42
Upgrade kit for front trim panels 300/100 mm IP 2X	IP 43	1 set	9672.054	9672.056	9672.058	9672.054	9672.056	9672.058	42
Partial doors for clearance height with front trim panel 300/100 mm		1	9671.158	9671.178	9671.198	9671.158	9671.178	9671.198	43
Partial doors for modular configuration		1	■	■	■	■	■	■	43
Angular baying brackets		4	8800.430						41
Baying connectors, external		6	8800.490						41

Accessories	
Enclosure configuration	39 – 46
Compartment configuration	50 – 61
Components	65 – 114

[1)] Pack sufficient for 1 pack of side panels.

System examples Page 9 – 27

SV-TS 8 cable chamber enclosures (height 1800 mm)



Enclosure frame for the management of incoming and outgoing cables. The use of a roof plate with cable gland plates additionally allows cables to be fed in from above.

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

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

Protection category:
Up to IP 54, depending on the roof plate and the side panel.

Supply includes:
Enclosure frame with door, rear panel and gland plates.

Accessories:
System accessories, see Cat. 32, page 890.

Standard:
Type-tested in accordance with IEC 60 439-1.
Design verification in accordance with IEC 61 439-1/-2.

Detailed drawings,
see page 131.

Technical information,
see page 134 – 140.

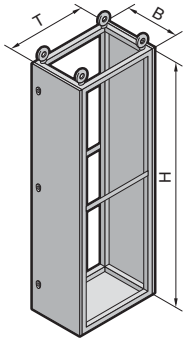
Width (B) mm		Packs of	300	400	600	Page
Height (H) mm			1800	1800	1800	
Depth (T) mm			600	600	600	
Model No. SV		1	**9670.396**	**9670.496**	**9670.696**	
Weight (kg)			47.0	49.5	62.0	
Base/plinth						
1 Components front and rear	Height 100 mm	1 set	8601.915	8601.400	8601.600	40
	Height 200 mm	1 set	8602.915	8602.400	8602.600	40
2 Trim panels sides	Height 100 mm	1 set	8601.060	8601.060	8601.060	40
	Height 200 mm	1 set	8602.060	8602.060	8602.060	40
Also required						
3 Side panels for protection category	IP 55	2	8186.235	8186.235	8186.235	39
	IP 2X	2	9671.986	9671.986	9671.986	39
Upgrade kit for side panels IP 2X	IP 43	2 sets[1)]	9671.996	9671.996	9671.996	39
4 Roof plates for protection category	IP 55	1	9671.636	9671.646	9671.666	44
	IP 43	1	9671.736	9671.746	9671.766	44
Roof plates for cable entry gland		1	9671.536	9671.546	9665.903	44
Front trim panels, top 300 mm/ bottom 100 mm for protection category	IP 54	1 set	–	9672.014	9672.016	42
	IP 2X	1 set	–	9672.034	9672.036	42
Front trim panels, top 100 mm/ bottom 300 mm for protection category	IP 54	1 set	–	9672.024	9672.026	42
	IP 2X	1 set	–	9672.044	9672.046	42
Upgrade kit for front trim panels 300/100 mm IP 2X	IP 43	1 set	–	9672.054	9672.056	42
Partial doors for clearance height with front trim panel 300/100 mm		1	–	–	–	
Angular baying brackets		4	8800.430			41
Baying connectors, external		6	8800.490			41
Accessories						
Enclosure configuration						39 – 46
Compartment configuration						50 – 61
Components						65 – 114
Lock systems						
Standard double-bit lock may be exchanged for a lock with security cylinder/T handles, see page 43.						

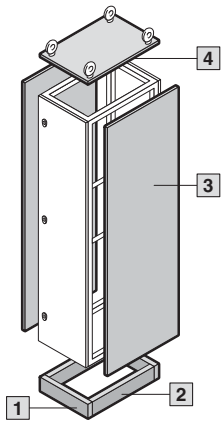
[1)] Pack sufficient for 1 pack of side panels.

System examples Page 9 – 27

Form 2-4 enclosures

SV-TS 8 cable chamber enclosures (height 2000 mm)





Enclosure frame for the management of incoming and outgoing cables. The use of a roof plate with cable gland plates additionally allows cables to be fed in from above.

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

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

Protection category:
Up to IP 54, depending on the roof plate and the side panel.

Supply includes:
Enclosure frame with door, rear panel and gland plates.

Accessories:
System accessories,
see Cat. 32, page 890.

Standard:
Type-tested in accordance with IEC 60 439-1.
Design verification in accordance with IEC 61 439-1/-2.

Detailed drawings,
see page 131.

Technical information,
see page 134 – 140.

Width (B) mm		Packs of	300	400	600	300	400	600	Page
Height (H) mm			2000	2000	2000	2000	2000	2000	
Depth (T) mm			600	600	600	800	800	800	
Model No. SV		1	**9670.316**	**9670.416**	**9670.616**	**9670.318**	**9670.418**	**9670.618**	
Weight (kg)			48.5	53.8	69.4	50.4	55.9	74.0	
Base/plinth									
1 Components front and rear	Height 100 mm	1 set	8601.915	8601.400	8601.600	8601.915	8601.400	8601.600	40
	Height 200 mm	1 set	8602.915	8602.400	8602.600	8602.915	8602.400	8602.600	40
2 Trim panels sides	Height 100 mm	1 set	8601.060	8601.060	8601.060	8601.080	8601.080	8601.080	40
	Height 200 mm	1 set	8602.060	8602.060	8602.060	8602.080	8602.080	8602.080	40
Also required									
3 Side panels for protection category	IP 55	2	8106.235	8106.235	8106.235	8108.235	8108.235	8108.235	39
	IP 2X	2	9671.906	9671.906	9671.906	9671.908	9671.908	9671.908	39
Upgrade kit for side panels IP 2X	IP 43	2 sets[1)]	9671.996	9671.996	9671.996	9671.998	9671.998	9671.998	39
4 Roof plates for protection category	IP 55	1	9671.636	9671.646	9671.666	9671.638	9671.648	9671.668	44
	IP 43	1	9671.736	9671.746	9671.766	9671.738	9671.748	9671.768	44
Roof plates for cable entry gland		1	9671.536	9671.546	9665.903	9671.538	9671.548	9671.568	44
Front trim panels, top 300 mm/ bottom 100 mm for protection category	IP 54	1 set	9672.013	9672.014	9672.016	9672.013	9672.014	9672.016	42
	IP 2X	1 set	9672.033	9672.034	9672.036	9672.033	9672.034	9672.036	42
Front trim panels, top 100 mm/ bottom 300 mm for protection category	IP 54	1 set	9672.023	9672.024	9672.026	9672.023	9672.024	9672.026	42
	IP 2X	1 set	9672.043	9672.044	9672.046	9672.043	9672.044	9672.046	42
Upgrade kit for front trim panels 300/100 mm IP 2X	IP 43	1 set	9672.053	9672.054	9672.056	9672.053	9672.054	9672.056	42
Partial doors for clearance height with front trim panel 300/100 mm		1	9671.126	9671.156	9671.176	9671.126	9671.156	9671.176	43
Angular baying brackets		4	8800.430						41
Baying connectors, external		6	8800.490						41

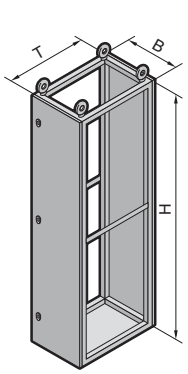
Accessories	
Enclosure configuration	39 – 46
Compartment configuration	50 – 61
Components	65 – 114

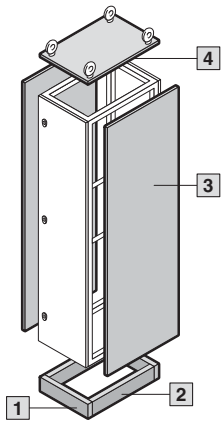
Lock systems
Standard double-bit lock may be exchanged for a lock with security cylinder/T handles, see page 43.

[1)] Pack sufficient for 1 pack of side panels.

System examples Page 9 – 27

SV-TS 8 cable chamber enclosures (height 2200 mm)





Enclosure frame for the management of incoming and outgoing cables. The use of a roof plate with cable gland plates additionally allows cables to be fed in from above.

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

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

Protection category:
Up to IP 54,
depending on the roof plate and the side panel.

Supply includes:
Enclosure frame with door, rear panel and gland plates.

Accessories:
System accessories,
see Cat. 32, page 890.

Standard:
Type-tested in accordance with IEC 60 439-1.
Design verification in accordance with IEC 61 439-1/-2.

Detailed drawings,
see page 131.

Technical information,
see page 134 – 140.

Width (B) mm		Packs of	300	400	600	300	400	600	Page
Height (H) mm			2200	2200	2200	2200	2200	2200	
Depth (T) mm			600	600	600	800	800	800	
Model No. SV		1	**9670.336**	**9670.436**	**9670.636**	**9670.338**	**9670.438**	**9670.638**	
Weight (kg)			47.8	57.3	75.8	50.6	61.0	80.7	
Base/plinth									
1 Components front and rear	Height 100 mm	1 set	8601.915	8601.400	8601.600	8601.915	8601.400	8601.600	40
	Height 200 mm	1 set	8602.915	8602.400	8602.600	8602.915	8602.400	8602.600	40
2 Trim panels sides	Height 100 mm	1 set	8601.060	8601.060	8601.060	8601.080	8601.080	8601.080	40
	Height 200 mm	1 set	8602.060	8602.060	8602.060	8602.080	8602.080	8602.080	40
Also required									
3 Side panels for protection category	IP 55	2	8126.235	8126.235	8126.235	8128.235	8128.235	8128.235	39
	IP 2X	2	9671.926	9671.926	9671.926	9671.928	9671.928	9671.928	39
Upgrade kit for side panels IP 2X	IP 43	2 sets[1)]	9671.996	9671.996	9671.996	9671.998	9671.998	9671.998	39
4 Roof plates for protection category	IP 55	1	9671.636	9671.646	9671.666	9671.638	9671.648	9671.668	44
	IP 43	1	9671.736	9671.746	9671.766	9671.738	9671.748	9671.768	44
Roof plates for cable entry gland		1	9671.536	9671.546	9665.903	9671.538	9671.548	9671.568	44
Front trim panels, top 300 mm/ bottom 100 mm for protection category	IP 54	1 set	9672.013	9672.014	9672.016	9672.013	9672.014	9672.016	42
	IP 2X	1 set	9672.033	9672.034	9672.036	9672.033	9672.034	9672.036	42
Front trim panels, top 100 mm/ bottom 300 mm for protection category	IP 54	1 set	9672.023	9672.024	9672.026	9672.023	9672.024	9672.026	42
	IP 2X	1 set	9672.043	9672.044	9672.046	9672.043	9672.044	9672.046	42
Upgrade kit for front trim panels 300/100 mm IP 2X	IP 43	1 set	9672.053	9672.054	9672.056	9672.053	9672.054	9672.056	42
Partial doors for clearance height with front trim panel 300/100 mm		1	9671.128	9671.158	9671.178	9671.128	9671.158	9671.178	43
Angular baying brackets		4	8800.430						41
Baying connectors, external		6	8800.490						41

Accessories	
Enclosure configuration	39 – 46
Compartment configuration	50 – 61
Components	65 – 114

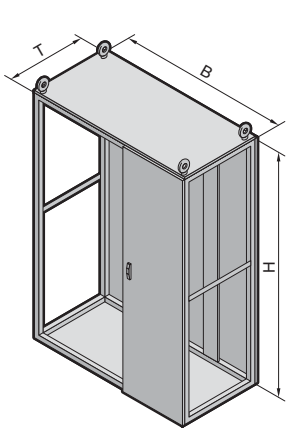
Lock systems

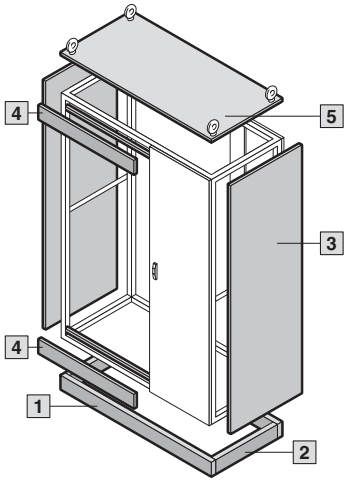
Standard double-bit lock may be exchanged for a lock with security cylinder/T handles, see page 43.

[1)] Pack sufficient for 1 pack of side panels.

System examples Page 9 – 27

SV-TS 8 switch-disconnector-fuse enclosure (height 2000 mm)





Enclosure frame for assembly with mounting kit and distribution busbar system to install switch-disconnector-fuses from Jean Müller Sasil or ABB SlimLine. Optionally with inner separation in a modular design up to Form 4b.

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

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

Protection category:
Up to IP 3X,
depending on the roof plate, front trim panels and side panel.

Supply includes:
Enclosure frame prepared for the installation of switch-disconnector-fuse section components with door, roof, rear panel and gland plates.

Accessories:
System accessories,
see Cat. 32, page 890.

Standard:
Type-tested in accordance with IEC 60 439-1.
Design verification in accordance with IEC 61 439-1/-2.

Detailed drawings,
see page 132.

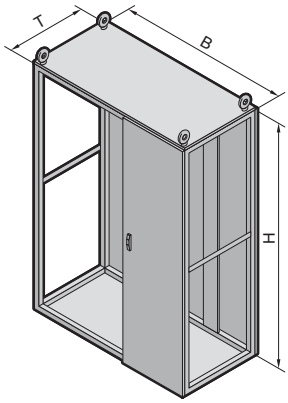
Technical information,
see page 134 – 140.

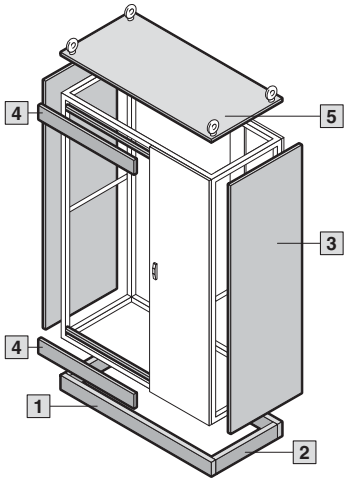
Width (B) mm		Packs of	1000	1200	1000	1200	Page
Height (H) mm			2000	2000	2000	2000	
Depth (T) mm			600	600	800	800	
Model No. SV		1	**9670.006**	**9670.106**	**9670.008**	**9670.108**	
Weight (kg)			97.0	116.0	104.0	123.0	
Base/plinth							
1 Components front and rear	Height 100 mm	1 set	8601.000	8601.200	8601.000	8601.200	40
	Height 200 mm	1 set	8602.000	8602.200	8602.000	8602.200	40
2 Trim panels sides	Height 100 mm	1 set	8601.060	8601.060	8601.080	8601.080	40
	Height 200 mm	1 set	8602.060	8602.060	8602.080	8602.080	40
Also required							
3 Side panels for protection category	IP 55	2	8106.235	8106.235	8108.235	8108.235	39
	IP 2X	2	9671.906	9671.906	9671.908	9671.908	39
Upgrade kit for side panels IP 2X	IP 43	2 sets[1)]	9671.996	9671.996	9671.998	9671.998	39
4 Front trim panels, top 350 mm/ bottom 150 mm for protection category	IP 3X	1 set	9674.340	9674.340	9674.340	9674.340	46
Front trim panels, top 150 mm/ bottom 350 mm for protection category	IP 3X	1 set	9674.342	9674.342	9674.342	9674.342	46
Contact hazard protection, cable chamber		1 set	9674.362	9674.366	9674.364	9674.368	60
Angular baying brackets		4	8800.430				41
Baying connectors, external		6	8800.490				41
Accessories							
5 Roof plates for protection category	IP 2X	1	9660.255	9660.265	9659.545	9659.555	44
Roof plates with pressure relief function[2)]		1	9660.955	9660.965	–	–	44
Enclosure configuration							39 – 46
Compartment configuration							50 – 61
Components							65 – 114

[1)] Pack sufficient for 1 pack of side panels.
[2)] Other sizes available on request.

System examples Page 9 – 27

SV-TS 8 switch-disconnector-fuse enclosure (height 2200 mm)





Enclosure frame for assembly with mounting kit and distribution busbar system to install switch-disconnector-fuses from Jean Müller Sasil or ABB SlimLine. Optionally with inner separation in a modular design up to Form 4b.

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

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

Protection category:
Up to IP 3X,
depending on the roof plate, front trim panels and side panel.

Supply includes:
Enclosure frame prepared for the installation of switch-disconnector-fuses section components with door, roof, rear panel and gland plates.

Accessories:
System accessories,
see Cat. 32, page 890.

Standard:
Type-tested in accordance with IEC 60 439-1.
Design verification in accordance with IEC 61 439-1/-2.

Detailed drawings,
see page 132.

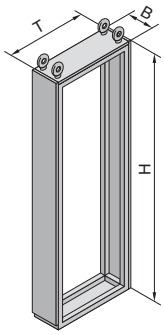
Technical information,
see page 134 – 140.

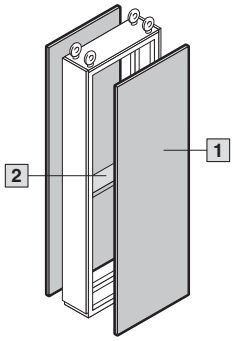
Width (B) mm		Packs of	1000	1200	1000	1200	Page
Height (H) mm			2200	2200	2200	2200	
Depth (T) mm			600	600	800	800	
Model No. SV		1	**9670.026**	**9670.126**	**9670.028**	**9670.128**	
Weight (kg)			102.0	122.0	109.0	129.0	
Base/plinth							
1 Components front and rear	Height 100 mm	1 set	8601.000	8601.200	8601.000	8601.200	40
	Height 200 mm	1 set	8602.000	8602.200	8602.000	8601.200	40
2 Trim panels sides	Height 100 mm	1 set	8601.060	8601.060	8601.080	8601.080	40
	Height 200 mm	1 set	8602.060	8602.060	8602.080	8602.080	40
Also required							
3 Side panels for protection category	IP 55	2	8126.235	8126.235	8128.235	8128.235	39
	IP 2X	2	9671.926	9671.926	9671.928	9671.928	39
Upgrade kit for side panels IP 2X	IP 43	2 sets[1)]	9671.996	9671.996	9671.998	9671.998	39
4 Front trim panels, top 350 mm/ bottom 150 mm for protection category	IP 3X	1 set	9674.340	9674.340	9674.340	9674.340	46
Front trim panels, top 150 mm/ bottom 350 mm for protection category	IP 3X	1 set	9674.342	9674.342	9674.342	9674.342	46
Contact hazard protection, cable chamber		1 set	9674.362	9674.366	9674.364	9674.368	60
Angular baying brackets		4	8800.430				41
Baying connectors, external		6	8800.490				41
Accessories							
5 Roof plates for protection category	IP 2X	1	9660.255	9660.265	9659.545	9659.555	44
Roof plates with pressure relief function[2)]		1	9660.955	9660.965	–	–	44
Enclosure configuration							39 – 46
Compartment configuration							50 – 61
Components							65 – 114

[1)] Pack sufficient for 1 pack of side panels.
[2)] Other sizes available on request.

System examples Page 9 – 27

SV-TS 8 busbar enclosures (width 200 mm)





Empty enclosure for baying to TS 8 enclosures, to accommodate vertical busbar systems.

Material:
Sheet steel
enclosure frame with front trim panel, rear panel and roof plate and gland plate: 1.5 mm

Surface finish:
Enclosure frame, gland plate, roof plate:
Dipcoat-primed and powder-coated in textured RAL 7035
Rear panel, front trim panel:
Dipcoat-primed and powder-coated in textured RAL 7035

Protection category:
Up to IP 55

Supply includes:
Enclosure frame with front trim panel, rear panel, roof and gland plates.

Accessories:
System accessories,
see Cat. 32, page 890.

Standard:
Type-tested in accordance with IEC 60 439-1.
Design verification in accordance with IEC 61 439-1/-2.

Detailed drawings,
see page 133.

Technical information,
see page 134 – 140.

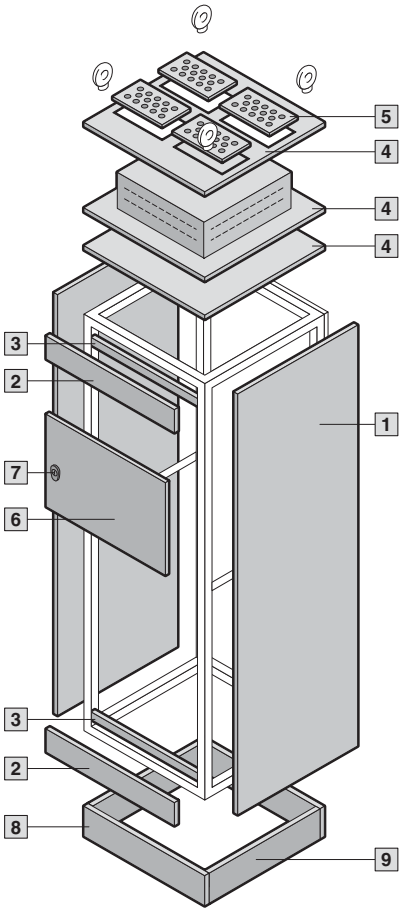
Width (B) mm		Packs of	200	200	200	200	Page
Height (H) mm			2000	2200	2000	2200	
Depth (T) mm			600	600	800	800	
Model No. SV		1	**9670.206**	**9670.226**	**9670.208**	**9670.228**	
Weight (kg)			34.0	36.6	37.5	40.0	
Base/plinth[2)]							
Also required							
1 Side panels for protection category	IP 55	2	8106.235	8126.235	8108.235	8128.235	39
	IP 2X	2	9671.906	9671.926	9671.908	9671.928	39
Upgrade kit for side panels IP 2X	IP 43	2 sets[1)]	9671.996	9671.996	9671.998	9671.998	39
2 Coupling set mounting kit		1 set	9674.196	9674.196	9674.198	9674.198	59
Angular baying brackets		4	8800.430				41
Baying connectors, external		6	8800.490				41
Accessories							
Compartment configuration							50 – 61
Components							65 – 114

[1)] Pack sufficient for 1 pack of side panels.
[2)] The busbar enclosure is on one base/plinth together with the main enclosure, i.e. please select a base/plinth for the main enclosure which is 200 mm wider.

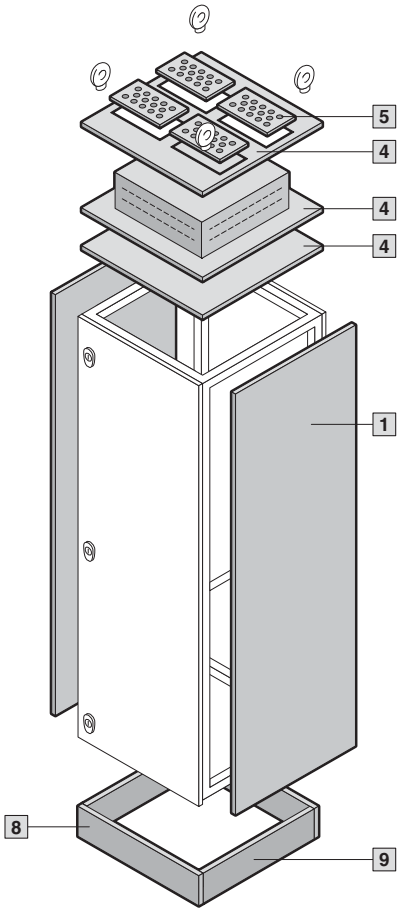
System examples Page 9 – 27

Enclosure configuration

SV-TS 8 modular section



SV-TS 8 cable chamber section



Accessory components for external mounting on a modular or cable chamber enclosure.
The required components should be selected depending on the required function.
We highly recommend the Rittal Power Engineering software for easier selection – see page 123.

Accessory components	Page
1 Side panels	39
2 Front trim panels	41/42/46
3 Roof frame bars/cross members	42/44
4 Roof plates	44
5 Cable entry glands	45
6 Partial doors	43
7 Locks	43
8 Base/plinth components, front and rear	40
9 Base/plinth trim, side	40

Side panels

for TS
Easy positioning on the frame with the location aid.
Six enclosure panel holders with earthing insert ensure automatic potential equalisation and higher EMC protection. Earthing bolts with contact surface are integrated.

Material:
Sheet steel, 1.5 mm

Surface finish:
Textured RAL 7035

Supply includes:
Assembly parts.

For enclosures		Version	Packs of	Model No. SV
Height mm	Depth mm			
1800	600	IP 55 sealed	2	**8186.235**
2000	600		2	**8106.235**
2200	600		2	**8126.235**
2000	800		2	**8108.235**
2200	800		2	**8128.235**
1800	600	IP 2X with ventilation hole	2	**9671.986**
2000	600		2	**9671.906**
2200	600		2	**9671.926**
2000	800		2	**9671.908**
2200	800		2	**9671.928**

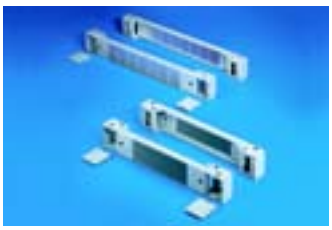
Accessories:

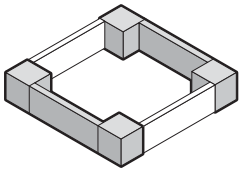
IP 43 upgrade kit for side panels

For enclosure depth mm	Version	Packs of	Model No. SV
600	for side panels IP 2X	2 sets	**9671.996**
800		2 sets	**9671.998**

Pack sufficient for 1 pack of side panels.

Enclosure configuration





Base/plinth components front and rear

Sheet steel
for TS, CM, TP, PC-TS, IW, FR(i), TE
Base/plinth component consisting of one trim panel and two pre-configured corner pieces. In 200 mm high base/plinth components, one trim panel is divided into two for cable entry.

Material:
Sheet steel, spray-finished
Cover caps plastic RAL 9005/7035

Supply includes:
1 set =
2 base/plinth components, 4 cover caps,
4 screws and captive nuts M12
for mounting on the enclosure.

Accessories:

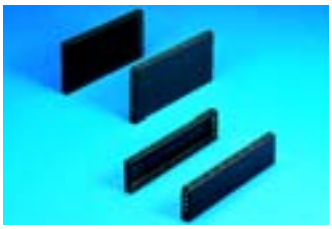
Base mounting plate SO 2817.000,
see Cat. 32, page 896.
Filter mat for vented variants,
see Cat. 32, page 898.

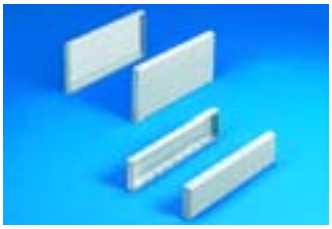
Detailed drawing,
see Cat. 32, page 894.

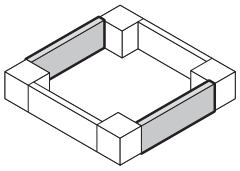
German patent no. 198 60 408

For enclosure width mm	Version	Colour		Model No. TS	
		RAL 7022	RAL 7035	100 mm high	200 mm high
300	solid	–	■	**8601.905**	**8602.905**
	solid	■	–	**8601.915**	**8602.915**
400	solid	■	–	**8601.400**	**8602.400**
500	solid	■	–	**8601.500**	**8602.500**
600	solid	■	–	**8601.600**	**8602.600**
	solid	–	■	**8601.605[1)]**	**8602.605**
	vented	–	■	**7825.601[2)]**	**–**
	vented with designer cover	–	■	**7825.603**	**–**
800	solid	■	–	**8601.800**	**8602.800**
	solid	–	■	**8601.805[3)]**	**8602.805**
	vented	–	■	**7825.801[4)]**	**–**
	vented with designer cover	–	■	**7825.803**	**–**
850	solid	■	–	**8601.850**	**8602.850**
1000	solid	■	–	**8601.000**	**8602.000**
1100	solid	■	–	**8601.300**	**8602.100**
1200	solid	■	–	**8601.200**	**8602.200**
1600	solid	■	–	**8601.920**	**8602.920**

[1)] Variant in RAL 9005: TS 8601.602
[2)] Variant in RAL 9005: DK 7825.605
[3)] Variant in RAL 9005: TS 8601.802
[4)] Variant in RAL 9005: DK 7825.805







Base/plinth trim, side

Sheet steel
for TS, CM, TP, PC-TS, IW, FR(i), TE
For mounting between the base/plinth components. At 200 mm height, two 100 mm base/plinth trims may be used. Base/plinth trim (100 mm high) may be installed rotated through 90° in order to stabilise bayed base/plinth components.

Material:
Sheet steel, spray-finished

Supply includes:
1 set =
2 base/plinth trim panels, including parts for attaching to the base/plinth components.

Also required:

Base/plinth baying brackets TS 8601.100,
see Cat. 32, page 896,
when mounting base/plinth trim panels rotated through 90°.

Accessories:

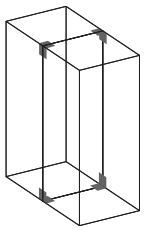
Assembly bolts for base/plinth,
see Cat. 32, page 896.

Detailed drawing,
see Cat. 32, page 894.

For enclosure depth mm	Colour		Model No. TS	
	RAL 7022	RAL 7035	100 mm high	200 mm high
300	■	–	**8601.030**	**8602.030**
400	■	–	**8601.040**	**8602.040**
500	■	–	**8601.050**	**8602.050**
600	■	–	**8601.060**	**8602.060**
	–	■	**8601.065**	**8602.065**
800	■	–	**8601.080**	**8602.080**
	–	■	**8601.085[1)]**	**8602.085**
900	–	■	**8601.095[2)]**	**8602.095**
1000	–	■	**8601.015[3)]**	**8602.015**
1200	–	■	**8601.025[4)]**	**8602.025**

[1)] Variant in RAL 9005: TS 8601.086
[2)] Variant in RAL 9005: TS 8601.092
[3)] Variant in RAL 9005: TS 8601.010
[4)] Variant in RAL 9005: TS 8601.026

Enclosure configuration



Angular baying bracket

for TS/TS

The robust connection when transporting bayed enclosure suites.

Screw-fastening either
- Horizontally and vertically with 8 screws
- Horizontally with 2 screws and M8 threaded blocks, vertically with 4 screws

is supported.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Packs of	Model No. TS
4	**8800.430**

Baying connector, external

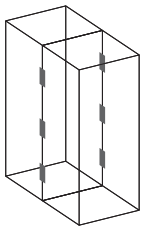
for TS/TS

For mounting on the vertical enclosure sections.

Simply position on the outside and screw-fasten either from the inside or outside.

Material:
Sheet steel, zinc-plated, passivated
or stainless steel 1.4301 (AISI 304)

Supply includes:
Assembly parts.



Version	Packs of	Model No. TS
Sheet steel	6	**8800.490**
Stainless steel	6	**8700.000**

German patent no. 197 37 668

Front trim panels

for TS

Required as an upper and lower height filler when partial doors are used.
Height: 100 mm.

Material:
Sheet steel, 2 mm

Surface finish:
Textured RAL 7035

Supply includes:
2 front trim panels, including assembly parts.

Also required:

Cross member,
see page 42.

Version	Packs of	Model No. SV			
		For enclosure width			
		300 mm	400 mm	600 mm	800 mm
IP 54 sealed	1 set	**9671.013**	**9671.014**	**9671.016**	**9671.018**
IP 2X with ventilation hole	1 set	**9671.033**	**9671.034**	**9671.036**	**9671.038**
Accessories					
Upgrade kit IP 43 for front trim panel IP 2X	1 set	**9671.043**	**9671.044**	**9671.046**	**9671.048**

Form 2-4 enclosure system accessories

Enclosure configuration

Front trim panels

for TS (busbar compartment)
Required to conceal a 300 mm high busbar compartment and for using partial doors as an upper and lower height filler.

Height of busbar compartment cover: 300 mm.
Height of front trim panel opposite: 100 mm.

Material:
Sheet steel, 2 mm

Colour:
Textured RAL 7035

Supply includes:
2 front trim panels, including assembly parts.

Also required:

Roof frame bars,
see page 44.
Cross members,
see page 42.

Accessories:

Upgrade kit IP 43
for front trim panels IP 2X with ventilation hole

For enclosure width mm	Packs of	Model No. SV
300	1 set	**9672.053**
400	1 set	**9672.054**
600	1 set	**9672.056**
800	1 set	**9672.058**
1000	1 set	**9672.050**[1)]
1200	1 set	**9672.052**[1)]

[1)] Delivery times available on request.

For enclosure width mm	Height of front trim panels		Packs of	Model No. SV	
				Version	
	top mm	bottom mm		IP 54 sealed	IP 2X with ventilation hole
300	300	100	1 set	**9672.013**	**9672.033**
300	100	300	1 set	**9672.023**	**9672.043**
400	300	100	1 set	**9672.014**	**9672.034**
400	100	300	1 set	**9672.024**	**9672.044**
600	300	100	1 set	**9672.016**	**9672.036**
600	100	300	1 set	**9672.026**	**9672.046**
800	300	100	1 set	**9672.018**	**9672.038**
800	100	300	1 set	**9672.028**	**9672.048**
1000	300	100	1 set	**9672.010**[1)]	**9672.030**[1)]
1000	100	300	1 set	**9672.020**[1)]	**9672.040**[1)]
1200	300	100	1 set	**9672.012**[1)]	**9672.032**[1)]
1200	100	300	1 set	**9672.022**[1)]	**9672.042**[1)]

[1)] Delivery times available on request.

Cross members

for TS
For use as sealing member between:
- Front trim panels
- Trim panels
- Partial doors

Material:
Sheet steel, 1 mm

Colour:
RAL 7035

Supply includes:
Assembly parts and sealing material.

For enclosure width mm	Packs of	Model No. SV
300	5	**9671.003**
400	5	**9671.004**
600	5	**9671.006**
800	5	**9671.008**

Partial doors

for TS, without lock
Door hinges with non-drilled internal fastening. Door may be optionally hinged on the right or left.

Material:
Sheet steel, 2 mm

Surface finish:
Textured RAL 7035

Supply includes:
Hinges and assembly parts.

Also required:
Locks, see page 43.
Cross members, see page 42.

Height mm	No. of locks required	Packs of	Model No. SV			
			For enclosure width			
			300 mm	400 mm	600 mm	800 mm
150	1	1	–	**9671.141**	**9671.161**	**9671.181**
200	1	1	–	**9671.142**	**9671.162**	**9671.182**
250	1	1	–	**9671.147**	**9671.167**	**9671.187**
300	1	1	–	**9671.143**	**9671.163**	**9671.183**
400	1	1	–	**9671.144**	**9671.164**	**9671.184**
600	2	1	–	**9671.146**	**9671.166**	**9671.186**
800	2	1	–	**9671.148**	**9671.168**	**9671.188**
1000	3	1	–	**9671.140**	**9671.160**	**9671.180**
1600	3	1	**9671.126**	**9671.156**	**9671.176**	**9671.196**
1800	3	1	**9671.128**	**9671.158**	**9671.178**	**9671.198**
2000	3	1	**9671.120**	**9671.150**	**9671.170**	**9671.190**

Perforated mounting strip

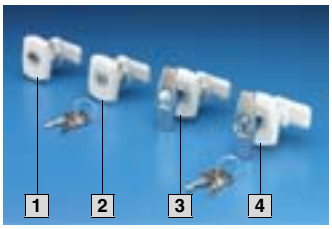
for partial doors
For retrospective external mounting on SV partial doors. The perforated mounting strips have a 25 mm pitch pattern of holes and may be used for individual mountings on the rear side of the door, e.g. cable ducts, hose holders etc.

Material:
Sheet steel, 1 mm

Surface finish:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For partial door height mm	Hole diameter of the perforated strip mm	Packs of	Model No. SV			
			For enclosure width mm			
			300	400	600	800
150 – 800	4.5	10	–	**9671.204**	**9671.206**	**9671.208**
Length mm			–	298	498	698



5

Locks

For installation in partial doors or in exchange for AE cam locks.

Material:
Housing made of fibreglass-reinforced plastic, bolt made of PA

Colour:
RAL 7035

Supply includes:
Housing, lock insert, bolt including assembly parts.

Version	Packs of	Model No. SV
1 With double-bit insert	1	**9671.130**
2 With cylinder insert, lock no. 3524 E	1	**9671.132**
3 With T handle	1	**9671.134**
4 With T handle and lock insert, lock no. 3524 E	1	**9671.135**
5 Fastener lug with end stop[1)]	2	**9671.138**

[1)] Must be used if the twist lock cannot be locked on the TS 8 frame.

Form 2-4 enclosure system accessories

Enclosure configuration

Roof frame strips, horizontal

for TS
Required as sealing bar between 300 mm high front trim panels and partial doors.

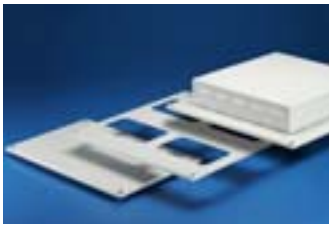
Material:
Sheet steel, 1.5 mm

Colour:
RAL 7035

Supply includes:
Assembly parts and sealing material.

For enclosure width mm	Width mm	Packs of	Model No. SV
300	208	2	**9672.003**
400	308	2	**9672.004**
600	508	2	**9672.006**
800	708	2	**9672.008**
1000	908	2	**9672.000**[1)]
1200	1108	2	**9672.002**[1)]

[1)] Delivery times available on request.



Roof plates

for TS
For SV-TS 8 modular and cable chamber enclosures without roof plate and in exchange for the standard roof plate for other TS enclosures.

Material:
Sheet steel, 1.5 mm

Surface finish:
Textured RAL 7035

Supply includes:
Assembly parts.

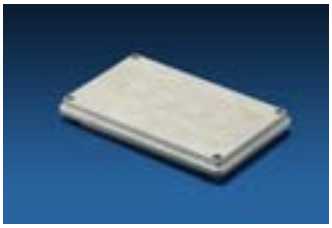
Also required:

Cable entry gland, see page 45.

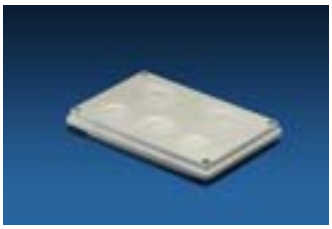
No. of cable entry glands required	
For roof plate	Quantity required
SV 9671.536	2
SV 9671.546	3
SV 9665.903	4
SV 9671.586	8
SV 9671.538	2
SV 9671.548	4
SV 9671.568	8
SV 9671.588	8

For enclosures		Packs of	Model No. SV				
			Version				
Width mm	Depth mm		IP 55 sealed	IP 43 with ventilation hole	IP 2X with ventilation hole	For cable entry gland	With pressure relief valve
300	600	1	**9671.636**	**9671.736**	**–**	**9671.536**	**–**
400	600	1	**9671.646**	**9671.746**	**9671.846**	**9671.546**	**9671.446**[1)]
600	600	1	**9671.666**	**9671.766**	**9660.235**	**9665.903**	**9660.935**[1)]
800	600	1	**9671.686**	**9671.786**	**9660.245**	**9671.586**	**9660.945**[1)]
1000	600	1	**–**	**–**	**9660.255**	**–**	**9660.955**
1200	600	1	**–**	**–**	**9660.265**	**–**	**9660.965**
300	800	1	**9671.638**	**9671.738**	**–**	**9671.538**	**–**
400	800	1	**9671.648**	**9671.748**	**9671.848**	**9671.548**	**9671.448**[1)]
600	800	1	**9671.668**	**9671.768**	**9659.525**	**9671.568**	**9671.468**[1)]
800	800	1	**9671.688**	**9671.788**	**9659.535**	**9671.588**	**9671.488**[1)]
1000	800	1	**–**	**–**	**9659.545**	**–**	[3)]
1200	800	1	**–**	**–**	**9659.555**	**–**	[3)]
Build height mm			0	93	72	0[2)]	25

[1)] Delivery times available on request.
[2)] Build height depending on the cable entry gland.
[3)] Other sizes available on request.



1



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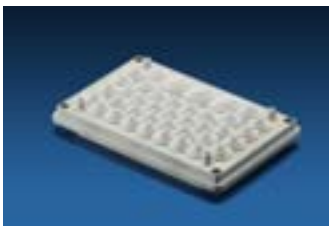

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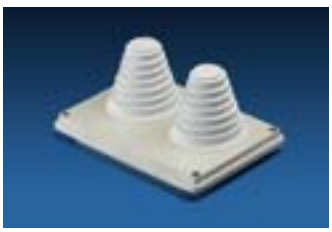
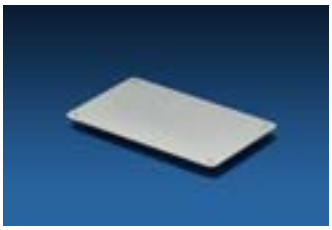


4



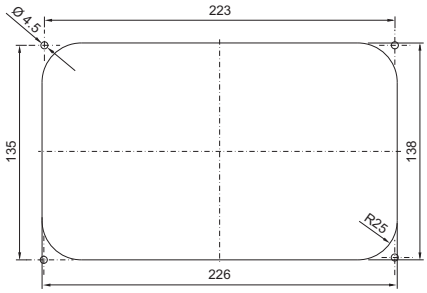
5

Cable entry glands

- Including seal
- External dimensions 250 x 160 mm
- Protection category IP 55

Material:
SV 9665.750 to 9665.780
Insulating material RAL 7032
SV 9665.785
Sheet steel, spray-finished in RAL 7035

Version	Packs of	Model No. SV
1 14 x M25/32	1	**9665.750**
2 2 x M25/32/40, 1 x M32/40/50, 2 x M40/50/63	1	**9665.760**
3 With sealing membranes 32 x dia. 7 – 16 mm, 4 x dia. 10 – 20 mm, 3 x dia. 14 – 26 mm	1	**9665.770**
4 With entry glands up to 66 mm diameter	1	**9665.780**
5 Solid	4	**9665.785**



Cut-out dimensions for
SV 9665.750 to SV 9665.785

Form 2-4 enclosure system accessories

Enclosure configuration

Front trim panels

for switch-disconnector-fuse section
The front trim panels cover above and below the mounting area of the NH switch-disconnector-fuses on the door front. With integral vent openings, protection categories IP 3X/IP 2X of the switch-disconnector-fuse section are achieved.

Material:
Sheet steel, 2 mm

Colour:
Textured RAL 7035

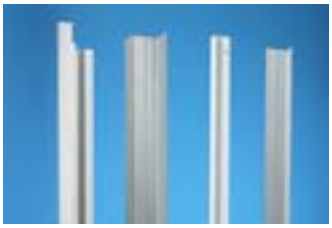
Supply includes:
2 front trim panels,
assembly parts.

Front trim panels height mm		Packs of	Model No. SV
			Version
top	bottom		IP 3X[1] with ventilation hole
338	136	1 set	**9674.340**
136	338	1 set	**9674.342**

[1] For IP 2X the inner perforated plate must be removed.

Also required:

Assembly kit for switch-disconnector-fuse section, see page 46.



Assembly kit

for switch-disconnector-fuse section
Assembly kit for the installation of switch-disconnector-fuses and attachment of the distribution busbar system. Depending on the switch-disconnector-fuses to be used from ABB or Jean Müller, the required assembly kits are selected according to the enclosure height.

Material:
Section corner piece left/right,
sheet steel, zinc-plated, 2 mm
Trim panel left/right,
sheet steel, 2 mm, spray-finished

Colour:
Textured RAL 7035

Supply includes:
2 section corner pieces,
2 trim panels,
assembly parts.

For make/switch-disconnector-fuse	For enclosure height mm	Packs of	Model No. SV
Jean Müller SASIL	2000	1 set	**9674.350**
Jean Müller SASIL	2200	1 set	**9674.352**
ABB SlimLine	2000	1 set	**9674.356**
ABB SlimLine	2200	1 set	**9674.358**

Also required:

Divider panel for switch-disconnector-fuse section, see page 60.


JEAN MÜLLER®
SASIL-P
160A
NH00
JEAN MÜLLER®
SASIL-P
160A
NH00
JEAN MÜLLER®
SASIL-P
250A
NH1
JEAN MÜLLER®
SIZE DIN NH1
250A

Perfection down to the smallest detail

Time-saving system assembly, form-separated interior installation, innovative module components, and an extensive range of accessories. Rittal Ri4Power Form 2-4 is a modular system for the time-optimised configuration of form-separated low-voltage switchgear. Fresh approaches in installation technology and multifunctional components now mean that the internal separation of a low-voltage switchgear can be installed with just a few operations. The TS 8 Top enclosure system, as the system platform for Ri4Power Form 2-4, offers infinite possibilities, and provides the ideal solution to suit your requirements, however specific.

Time-saving system assembly

Side panel modules

The side panel modules form the basic element for internal installation.

One-person assembly: Locate components into the TS 8 pitch pattern, and release. Both hands are now free for the next installation step.

The **modular installation concept** enables optimum utilisation of the assembly area, thanks to compartment heights in small increments (150, 200, 250 mm, etc.).

The **proven TS 8 pitch** is used for many Ri4Power components and so permits the use of TS 8 system accessories.

Partial doors and cross members

Simple assembly and high quality standards characterise the new partial door system.

Thanks to the new design, the **cross member** may also be retro-fitted.

Fitting accuracy and precision are prerequisites for modular technology.

The **hinge** of the partial doors is mounted on the TS 8 frame **without any holes needing to be drilled.**

Mini-TS profile

Mini-TS profile – the TS pitch in the smallest dimension. An extension of the assembly spectrum for small and medium loads.

The **three assembly sides of the Mini-TS profile** ensure the versatility and fast assembly technology of the TS 8 enclosure profile at all times, whatever the location.

The **connector pieces** always provide an attachment point at every position in the 25 mm pitch, irrespective of the mounting angle used.

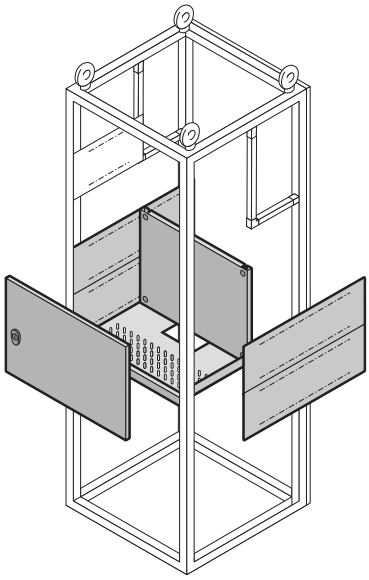
The **small size** means the Mini-TS bars can be mounted without conflict in the internal and external mounting level of the TS 8 enclosure.

Form 2-4 compartment

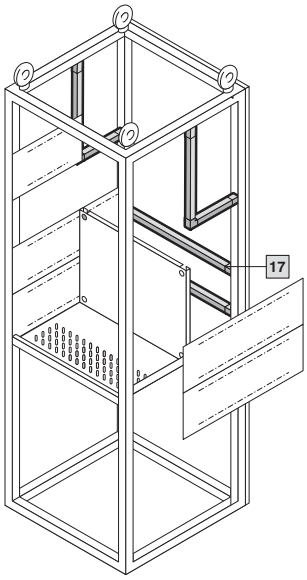
Compartment configuration

Modular outgoing section with distribution busbar system

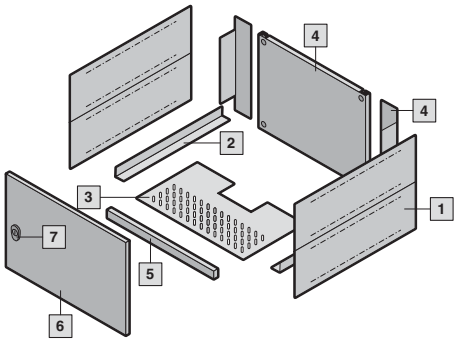
Inside the compartment



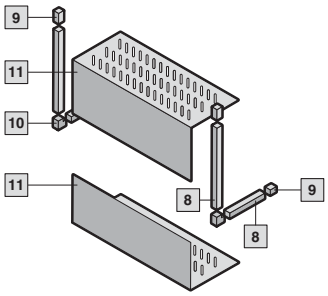
Behind the compartment

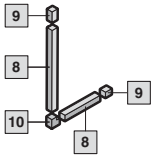


Compartment layout

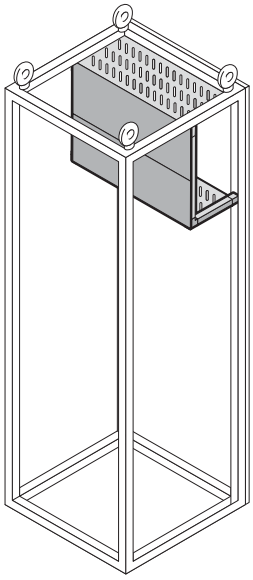


Busbar space separation
(only required with main busbar systems in the rear area)

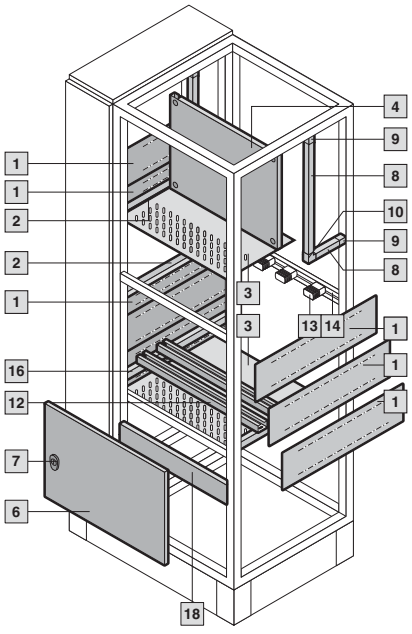




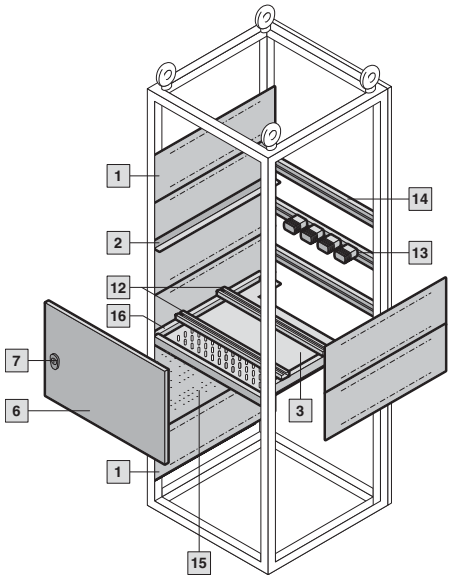
Cable chamber



Coupling section

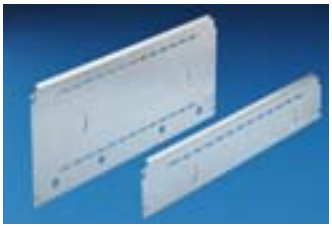


Circuit-breaker section



Accessory components for the configuration of modular or cable chamber enclosures. The required components are selected depending on the required compartments and system configuration.
We highly recommend the Rittal Power Engineering software for an explanation of the selection process – see page 123.

Accessory components	Page
1 Functional space side panel modules	51
2 Mounting bracket for functional space divider	53
3 Functional space divider	54/55
4 Partial mounting plates including angle brackets	56
5 Cross members	42
6 Partial doors	43
7 Locks	43
8 Mini-TS profiles 17 x 15.5 mm	57
9 Frame connector piece (external mounting level)	58
10 Corner connector	58
11 Cover plates	52
12 Air circuit-breaker support bar	54
13 Stacking insulator	105
14 Support bar for packing insulator	105
15 Functional space side panel modules for cable connection space	51
16 Mounting bracket for functional space divider and air circuit-breaker support bar	53
Support frame for DIN rail-mounted devices	56
17 Punched rails, RiLine distribution busbar system	61
18 Accessories for coupling set	59
Accessories for switch-disconnector-fuses	60



Functional space side panel modules

for TS

For internal separation as a side divider panel for compartments, for mounting in the TS pitch pattern. Prepared for the attachment of mounting brackets for horizontal functional space dividers or mounting plates with two M40 knockouts for cable entry. Two TS system punchings allow the use of additional TS accessories.
The side panel modules for reduced compartment depth and an auxiliary construction using the Mini-TS profiles can be used to provide a separate enclosure space in the side panel area, e.g. for the provision of a busbar system. Version with plastic plate has prepunched knockouts for cable entry.

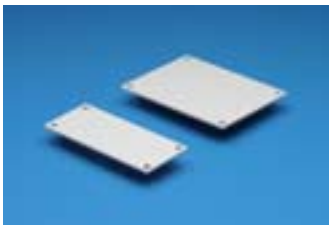
Material:
Sheet steel, zinc-plated, passivated, 1.5 mm

Supply includes:
Assembly parts.

Accessories:

Mini-TS extrusions and connector pieces,
see page 57, 58.
Gland plates,
see page 51.

Height mm	Configuration with plastic gland plate	Packs of	Model No. SV		
			For compartment depth		
			425 mm	600 mm	800 mm
100	–	6	**9673.051**	**9673.061**	**9673.081**
150	–	6	**9673.055**	**9673.065**	**9673.085**
150	■	6	**9673.155**	**9673.165**	**9673.185**
200	–	6	**9673.052**	**9673.062**	**9673.082**
200	■	6	**9673.152**	**9673.162**	**9673.182**
600	–	2	**–**	**9673.066**	**9673.086**
600	■	2	**–**	**9673.166**	**9673.186**



Gland plates

To seal additional cable entries.

Material:
PVC, 3 mm
fire protection corresponding to UL 94-V0

Colour:
RAL 7004

Supply includes:
Assembly parts.

For side panel modules height mm	Packs of	Model No. SV
150	10	**9673.195**
200/600	10	**9673.192**

Functional space side panel modules

for TS (cable connection space)

For mounting a Maxi-PLS cable connection busbar system in a TS enclosure.

Material:
Sheet steel, zinc-plated, passivated, 2 mm

Supply includes:
Assembly parts.

Height mm	Packs of	Model No. SV	
		For enclosure depth	
		600 mm	800 mm
450	2	**9673.069**	**9673.089**
Suitable for cable connection busbar system			
Maxi-PLS	Number of poles		
1600/2000	3-pole	■	■
1600/2000	4-pole	■	■
3200	3-pole	■	■
3200	4-pole	–	■

Also required:

2 functional space side panel modules with height 150 mm,
see page 51.
End support,
see page 84/86.

Compartment configuration

Cover plates

for rear busbar system in the cable chamber
To separate an area of the cable chamber enclosure for a rear-mounted busbar system. Attachment requires an auxiliary construction made from Mini-TS profiles, to which the cover plates are attached and fastened.

Material:
Sheet steel, zinc-plated, passivated, 1.5 mm

Supply includes:
Assembly parts.

Also required:

Frame connector piece
(4 x SV 9673.901), see page 58.
Corner connector
(2 x SV 9673.902), see page 58.
Mini-TS profiles for SV 9673.5X0
(2 x SV 9673.915, 2 x SV 9673.953),
see page 57.
Mini-TS profiles for SV 9673.5X2
(2 x SV 9673.920, 2 x SV 9673.983),
see page 57.

For enclosure depth mm	For enclosure width mm	Width mm	Height mm	Depth mm	Packs of	Model No. SV
600	300	297	540	170.5	2 sets	**9673.530[1)]**
600	400	397	540	170.5	2 sets	**9673.540[1)]**
600	600	597	540	170.5	2 sets	**9673.560[1)]**
600/800	300	297	837	245.5	1 set	**9673.532[2)]**
600/800	400	397	837	245.5	1 set	**9673.542[2)]**
600/800	600	597	837	245.5	1 set	**9673.562[2)]**

[1)] Suitable for RiLine60 and Maxi-PLS 1600/2000
[2)] Suitable for RiLine60, Maxi-PLS 1600/2000/3200 and Flat-PLS

Terminal box Form 4b

for modular outgoing section
To shield the connections (terminals) of the functional space, busbar chamber and cable chamber to Form 4b, IEC 60 439-1. The terminal boxes are externally mounted on the functional space side panel modules in the cable chamber, to match the heights of the compartments. The terminal box is prepared for mounting of a clamping strip and the introduction of lines and cables.

Material:
Sheet steel, zinc-plated, passivated, 1.5 mm

Supply includes:
Assembly parts.

Note:
For installation of the terminal boxes, the width of the cable chamber must be at least 400 mm!

For compartment height mm	For enclosure width mm[1)]	Packs of	Model No. SV
150	400/600	1 set	**9674.701**
200	400/600	1 set	**9674.702**
250	400/600	1 set	**9674.707**
300	400/600	1 set	**9674.703**
400	400/600	1 set	**9674.704**
600	400/600	1 set	**9674.706**

[1)] Enclosure width of the cable chamber

Also required:

Functional space side panel modules,
see page 51.

Compartment configuration

Mounting bracket

for functional space divider

The mounting bracket is fastened to the TS frame or between a frame section and an auxiliary construction.
It is suitable both for fastening to a side panel module and also directly to the TS frame. The functional space dividers can be inserted into the installation openings provided.

Material:
Sheet steel, zinc-plated, passivated, 1.5 mm

Supply includes:
Assembly parts.

For compartment depth mm	Length mm	Packs of	**Model No. SV**
425	427	8	**9673.405**[1)]
600	552	8	**9673.406**
800	752	8	**9673.408**

[1)] In conjunction with vertical busbar space separation.

Mounting bracket

for functional space divider (inner mounting level)

The mounting bracket is secured to a TS punched section with mounting flange 23 x 73 mm.
The functional space dividers can be inserted into the installation openings provided.

Material:
Sheet steel, zinc-plated, passivated, 1.5 mm

Supply includes:
Assembly parts.

For compartment depth mm	Length mm	Packs of	**Model No. SV**
600	544.5	8	**9673.416**
800	744.5	8	**9673.418**

Also required:

TS punched section with mounting flange, 23 x 73 mm,
see Cat. 32, page 995.

Mounting bracket

for functional space divider and air circuit-breaker support bar

The mounting bracket is attached to a side panel module. The functional space dividers can be inserted into the installation openings provided.
The air circuit-breaker support bar may be attached to the upper level.

Material:
Sheet steel, zinc-plated, passivated, 2 mm

Supply includes:
Assembly parts.

For compartment depth mm	Length mm	Packs of	**Model No. SV**
600	552	2	**9673.426**
800	752	2	**9673.428**

Also required:

Functional space side panel modules,
see page 51.
Air circuit-breaker support bar,
see page 54.

Compartment configuration

Air circuit-breaker support bar

For the configuration of air circuit-breakers (ACB) in compartments. The air circuit-breaker support bar is attached to a mounting bracket for functional space dividers and air circuit-breaker support bar.

Material:
Sheet steel, zinc-plated, passivated, 2.5 mm

Supply includes:
Assembly parts.

For enclosure width mm	Length mm	Packs of	**Model No. SV**
400	351	2	**9673.004**
600	551	2	**9673.006**
800	751	2	**9673.008**

Also required:

Mounting bracket for functional space divider and air circuit-breaker support bar
see page 53.
Attachment set for air circuit-breaker installation,
see page 54.

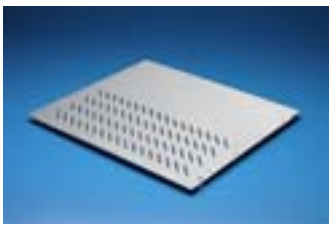
Attachment set

for air circuit-breaker installation
For attaching air circuit-breakers (ACB) to air circuit-breaker support bars.

Material:
Sheet steel, zinc-plated

Supply includes:
4 threaded plates (M8).

Packs of	**Model No. SV**
1 set	**9660.970**



Functional space divider

for TS
For the horizontal separation of compartments. In combination with the side panel modules, produces a separation in accordance with Form 3 or 4. Two mounting brackets are required to install the functional space divider.

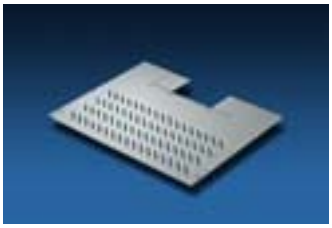
Material:
Sheet steel, zinc-plated, passivated, 1.25 mm

Also required:

Mounting bracket,
see page 53.
Cross members,
see page 42.

For enclosure width mm	For compartment depth mm	Width mm	Depth mm	Packs of	**Model No. SV**	
					Version	
					Vented[1]	Solid[2]
300	600	206	588	4	–	**9673.431**
300	800	206	788	4	–	**9673.432**
400	425	306	445	4	**9673.444**	**9673.440**
400	600	306	588	4	**9673.445**	**9673.441**
400	800	306	788	4	**9673.448**	**9673.449**
600	425	506	445	4	**9673.464**	**9673.460**
600	600	506	588	4	**9673.465**	**9673.461**
600	800	506	788	4	**9673.468**	**9673.469**
800	425	706	445	4	**9673.484**	**9673.480**
800	600	706	588	4	**9673.485**	**9673.481**
800	800	706	788	4	**9673.488**	**9673.489**

[1] With ventilation holes
[2] Derating of 5% with enclosure protection category IP 2X or less, in relation to the rated currents of the selected busbar system.



Functional space divider

for TS, prepared for RiLine60 busbar systems

For the horizontal separation of compartments with integrated RiLine60 multi-terminal busbar system. In combination with the side panel modules, produces a separation in accordance with Form 3 or 4. Two mounting brackets are required to install the functional space divider.

Material:
Sheet steel, zinc-plated, passivated, 1.25 mm

Also required:

Mounting bracket,
see page 53.
Cross members,
see page 42.

For enclosure width mm	For compartment depth mm	Width mm	Depth mm	Position of the busbar system in the compartment	Packs of	Model No. SV	
						Version	
						Vented[1]	Solid[3]
400	401	306	413	–	4	**9673.434[2]**	**9673.430[2]**
600	401	506	413	–	4	**9673.454**	**9673.450**
800	401	706	413	Right	4	**9673.474**	**9673.470**
800	401	706	413	Left	4	**9673.475**	**9673.471**

[1] With ventilation holes
[2] Only for use with a 3-pole bar system.
[3] Derating of 5% with enclosure protection category IP 2X or less, in relation to the rated currents of the selected busbar system.

Functional space divider

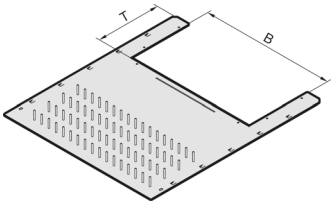
for TS,
prepared for the entry of vertical busbar systems

For the horizontal separation of compartments with vertical busbars. In combination with the side panel modules, produces a separation in accordance with Form 3 or 4. Two mounting brackets are required to install the functional space divider.

Material:
Sheet steel, zinc-plated, passivated, 1.25 mm

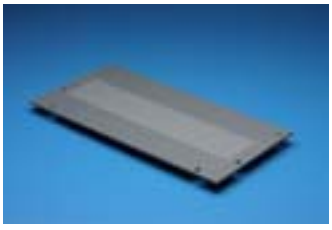
Also required:

Mounting bracket,
see page 53.
Cross members,
see page 42.
Gland plate,
see page 55.



For enclosure width mm	For compartment depth mm	Width mm	Depth mm	Width of entry (B) mm	Depth of entry (T) mm	Packs of	Model No. SV	
							Version	
							Vented[1]	Solid[2]
400	600	306	588	212	201	4	**9673.436**	**9673.437**
400	800	306	788	212	201	4	**9673.438**	**9673.439**
600	600	506	588	412	201	4	**9673.456**	**9673.457**
600	800	506	788	412	201	4	**9673.458**	**9673.459**
800	600	706	588	612	201	4	**9673.476**	**9673.477**
800	800	706	788	612	201	4	**9673.478**	**9673.479**

[1] With ventilation holes
[2] Derating of 5% with enclosure protection category IP 2X or less, in relation to the rated currents of the selected busbar system.



Gland plate

To shroud the opening for the vertical busbar systems.

For enclosure width mm	Width mm	Height mm	Packs of	Model No. SV
400	250	223.5	4	**9673.504**
600	450	223.5	4	**9673.506**
800	650	223.5	4	**9673.508**

Compartment configuration

Partial mounting plates

With and without duct, for TS

For direct attachment to the functional space side panel modules.

- Universal internal installation with switchgear and control devices.
- Additional mounting levels.

In combination with functional space dividers and side panel modules, internal separation in accordance with Form 2, 3 or 4 is possible.

Material:
Sheet steel, zinc-plated, passivated, 2 mm

Supply includes:
Angle brackets and assembly parts.
For the version with cable entry:
Additional square cut-out with insulating plates for sealing the cut-out.

Also required:

Functional space side panel modules,
see page 51.

For enclosure width mm	For compartment height mm	Width mm	Height mm	Packs of	Model No. SV	
					With duct	Without duct
400	150	302	143	1	**9673.651**	**9673.641**
400	200	302	193	1	**9673.652**	**9673.642**
400	250	302	243	1	**9673.657**	**9673.647**
400	300	302	293	1	**9673.653**	**9673.643**
400	400	302	393	1	**9673.654**	**9673.644**
400	600	302	593	1	–	**9673.646**
400	800	302	793	1	–	**9673.648**
400	1000	302	993	1	–	**9673.640**
600	150	502	143	1	**9673.671**	**9673.661**
600	200	502	193	1	**9673.672**	**9673.662**
600	250	502	243	1	**9673.677**	**9673.667**
600	300	502	293	1	**9673.673**	**9673.663**
600	400	502	393	1	**9673.674**	**9673.664**
600	600	502	593	1	–	**9673.666**
600	800	502	793	1	–	**9673.668**
600	1000	502	993	1	–	**9673.660**
800	150	702	143	1	**9673.691**	**9673.681**
800	200	702	193	1	**9673.692**	**9673.682**
800	250	702	243	1	**9673.697**	**9673.687**
800	300	702	293	1	**9673.693**	**9673.683**
800	400	702	393	1	**9673.694**	**9673.684**
800	600	702	593	1	–	**9673.686**
800	800	702	793	1	–	**9673.688**
800	1000	702	993	1	–	**9673.680**

Support frame

for DIN rail-mounted devices

Support frame set for accepting DIN rail-mounted devices (e.g. MCBs). The support rails are fastened with two mounting brackets to the side panel modules. The cover is fastened to the support frame with knurled screws.
In combination with functional space dividers, partial mounting plates and side panel modules, separation in accordance with Form 2, 3 or 4 is possible.

Material:
Support frame: Sheet steel, zinc-plated, passivated, 1.5 mm
Cover: Sheet steel, spray-finished, 1.5 mm

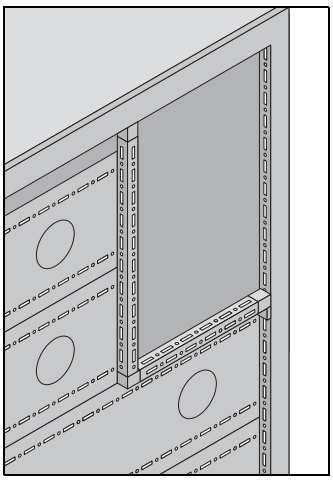
Supply includes:
2 support rails,
2 mounting brackets,
1 front trim panel with cut-out,
incl. assembly parts.

For enclosure width mm	For compartment height mm	No. of pitch units 17.5 mm	Packs of	Model No. SV
600	150	1 x 24	1 set	**9674.761**
600	300	2 x 24	1 set	**9674.762**
600	600	3 x 24	1 set	**9674.763**
600	600	4 x 24	1 set	**9674.764**
800	150	1 x 36	1 set	**9674.781**
800	300	2 x 36	1 set	**9674.782**
800	600	3 x 36	1 set	**9674.783**
800	600	4 x 36	1 set	**9674.784**

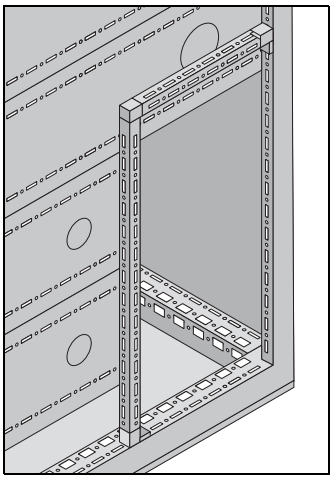
Also required:

Functional space side panel modules,
see page 51.
Partial mounting plates,
see page 56.

Compartment configuration



Installation situation with busbar system in the top rear section



Installation situation with busbar system in the bottom rear section

Mini-TS profiles 17 x 15.5 mm

for TS

Mounting angle with TS pitch on three sides.
Suitable for

- building an auxiliary construction for dividing the busbar space,
- individual use as mounting frame for low and medium loads,
- fastening to the internal or external mounting level of the TS 8 enclosure.

Material:
Sheet steel, zinc-plated, passivated, 1.5 mm

! Also required:

Frame connector piece,
see page 58.
T-connector piece,
see page 58.
Corner connector,
see page 58.

For horizontal busbar space separation		Packs of	Model No. SV
For compartment depth mm	Length mm		
425	62.5	12	**9673.915**
600	137.5	12	**9673.920**

For vertical separation with busbar system in the top rear section		Packs of	Model No. SV
For compartment height mm	Length mm		
350	337.5	12	**9673.942**
400	387.5	12	**9673.943**
450	437.5	12	**9673.952**
500	487.5	12	**9673.953**
550	537.5	12	**9673.962**
600	587.5	12	**9673.963**
650	637.5	12	**9673.972**
700	687.5	12	**9673.973**
750	737.5	12	**9673.982**
800	787.5	12	**9673.983**

For vertical separation with busbar system in the bottom rear section		Packs of	Model No. SV
For compartment height mm	Length mm		
350	412.5	12	**9673.951**
400	462.5	12	**9673.960**
450	512.5	12	**9673.961**
500	562.5	12	**9673.970**
550	612.5	12	**9673.971**
600	662.5	12	**9673.980**
650	712.5	12	**9673.981**
700	762.5	12	**9673.990**
750	812.5	12	**9673.991**
800	862.5	12	**9673.995**

For external mounting level		Packs of	Model No. SV
For enclosure width/depth mm	Length mm		
300	162.5	12	**9673.930**
400	262.5	12	**9673.940**
500	362.5	12	**9673.950**
600	462.5	12	**9673.960**
800	662.5	12	**9673.980**

For internal mounting level		Packs of	Model No. SV
For enclosure width/depth mm	Length mm		
300	212.5	12	**9673.931**
400	312.5	12	**9673.941**
500	412.5	12	**9673.951**
600	512.5	12	**9673.961**
800	712.5	12	**9673.981**

Compartment configuration

Frame connector piece

for Mini-TS profile
Mounting part with integral M4 threads for attaching the Mini-TS profile to the horizontal and vertical TS frame section (external level). The frame adaptor piece can be used as a self-holding construction aid in the TS pitch and fastened with a screw to the frame. Can also be used for fastening other sections with TS pitch.

Material:
Die-cast zinc

Supply includes:
Assembly parts.

Packs of	Model No. SV
24	**9673.901**

T-connector piece

for Mini-TS profile
Mounting part with integrated M4 threads for fastening the Mini-TS profile to the
- horizontal and vertical TS chassis,
- Mini-TS profile,
- vertical TS frame section (internal level).

The T-connector piece can be used as a self-holding construction aid in the TS pitch and fastened with a screw to the frame. Can also be used for fastening other sections with TS pitch.

Material:
Die-cast zinc

Supply includes:
Assembly parts.

Packs of	Model No. SV
24	**9673.903**

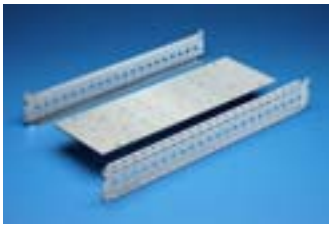
Corner connector

for Mini-TS profile
Mounting part with integrated M4 threads for connecting two Mini-TS profiles at an angle of 90° at the corner. Required for building the auxiliary construction for the busbar space separation.

Material:
Die-cast zinc

Supply includes:
Assembly parts.

Packs of	Model No. SV
10	**9673.902**



Coupling set mounting kit

for busbar enclosure or riser

The mounting kit is used as a base support for a vertical Maxi-PLS busbar system/Flat-PLS busbar system.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Support plate and punched section with mounting flange, assembly parts.
With the version for 300 and 400 mm enclosure widths, additionally with insulating plate for the installation of Flat-PLS.

For enclosure width mm	For enclosure depth mm	Packs of	Model No. SV
200	600	1 set	**9674.196**[1)]
200	800	1 set	**9674.198**[1)]
300	600	1 set	**9674.036**
300	800	1 set	**9674.038**
400	600	1 set	**9674.046**
400	800	1 set	**9674.048**

[1)] Only suitable for Maxi-PLS.

Also required:

End support,
see page 84/86.

Punched sections with mounting flanges

for coupling section

The punched section with mounting flange for coupling set is needed for assembling a Maxi-PLS or Flat-PLS busbar system directly beneath or above the circuit-breaker. This punched section with mounting flange may be used without conflict in conjunction with the functional space side panel modules. It is attached to the outer level of the TS 8 enclosure system, but thanks to the PS punchings allows a mounting level as in the roof or base frame, thereby facilitating the use of busbar system attachment for the roof/base section.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure width mm	For enclosure depth mm	Packs of	Model No. SV
600	600	2	**9674.056**
800	800	2	**9674.058**

Also required:

System attachment for Maxi-PLS 1600/2000,
see page 84.
System attachment for Maxi-PLS 3200,
see page 86.
System attachment for Maxi-PLS 60 and 100,
see page 90.

Compartment configuration

Divider panel

for switch-disconnector-fuse section
The divider panel is required for interior configuration of the switch-disconnector-fuse section, and divides the connection space from the functional space. Depending on the chosen position of the main busbar system, the divider panel is fitted in the prepared switch-disconnector-fuse enclosures. The prepared cut-outs are suitable for the connection of switch-disconnector-fuse Jean Müller Sasil and ABB SlimLine.

Material:
Sheet steel, zinc-plated, passivated, 1.5 mm

Supply includes:
Assembly parts.

For main busbar system in the roof section

For enclosure height mm	For enclosure depth mm	Packs of	Model No. SV
2000	600	1	**9674.306**
2000	800	1	**9674.308**
2200	600	1	**9674.326**
2200	800	1	**9674.328**

For main busbar system in the rear section, top or bottom

For enclosure height mm	For enclosure depth mm	Packs of	Model No. SV
2000	600	1	**9674.305**
2000	800	1	**9674.307**
2200	600	1	**9674.325**
2200	800	1	**9674.327**

Dividing plate

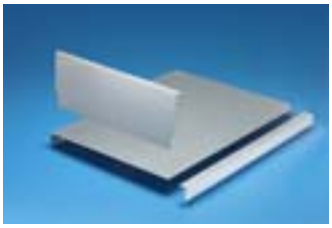
for switch-disconnector-fuse section
Dividing plate to divide the busbar chamber and NH switch-disconnector-fuse chamber (compartment). The design of the divider plate must be matched to the chosen make of the NH switch-disconnector-fuse and the installation position.

Material:
Sheet steel, zinc-plated, passivated, 1.5 mm

Supply includes:
Assembly parts.

Mounting position	Make of NH switch-disconnector-fuse	Packs of	Model No. SV
Top/bottom	Jean Müller SASIL	1	**9674.346**
Top/bottom	ABB SlimLine	1	**9674.348**

Also required:
Assembly kit for switch-disconnector-fuse section, see page 46.



Contact hazard protection, cable chamber

for switch-disconnector-fuse section
The contact hazard protection cover plate shields the main busbar in the cable chamber, enabling the safe connection of cables and lines. Suitable for Maxi-PLS and Flat-PLS busbar systems in the roof section. Contact hazard protection for main busbars in the rear section available on request.

Material:
Sheet steel, zinc-plated, passivated, 1.5 mm

Supply includes:
Assembly parts.

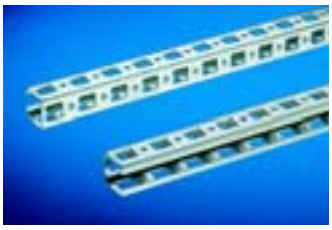
For main busbar system in the roof section

For enclosure width mm	For enclosure depth mm	Packs of	Model No. SV
1000	600	1 set	**9674.362**
1000	800	1 set	**9674.364**
1200	600	1 set	**9674.366**
1200	800	1 set	**9674.368**

Also required:
Divider panel for switch-disconnector-fuse section, see page 60.

Assembly parts

for RiLine60 distribution busbar systems
The following accessory components must be used for mounting a type-tested vertical distribution busbar system behind the compartment:



Mounting rails 23 x 23 mm

For installing a vertical RiLine60 distribution busbar system on the vertical enclosure section.

Material:
Sheet steel, zinc-plated, passivated

Length mm	For enclosures WHD mm	Packs of	Model No. PS
295	400	12	**4169.000**
495	600	12	**4171.000**
695	800	12	**4172.000**

Also required:

Mounting bracket and U nuts,
see page 61.

Mounting bracket

For mounting the mounting rails on the TS frame.

Material:
Die-cast zinc

Supply includes:
24 screws 5.5 x 13 mm.

Packs of	Model No. TS
24	**8800.370**

Also required:

U nuts (recommendation: M6),
see page 61.

U nuts

For fastening the mounting rails to the bracket and fastening the busbar holder to the mounting rails.

Thread	Packs of	Model No. PS
M5	20	**4157.000**
M6	20	**4179.000**

Accessories:

Multi-tooth screws M6 x 12 mm (for PS 4179.000),
see Catalogue 32, page 1011.

Safe, flexible and fast – Rittal busbar technology

Time-saving assembly, diverse application options, individual modularity and a high level of operational safety – these are the benefits of the Rittal RiLine60 busbar systems. Simply insert the bars, secure – and it's done!

This is how quickly a variety of copper cross-sections may be mounted in the support. Simple assembly and safe contacting, coupled with a broad selection of connection and component support adaptors and fuse elements are the prerequisites for efficient assembly and operation.

RiLine60 up to 1600 A

Safety

Rittal busbar systems use proven and tested system components to provide a high level of safety.

Fully-insulated busbar system with finger-safe **contact hazard protection,** also at the connection points.

Increased arcing safety thanks to **busbar system installed without any base points** and busbar holders with arcing fault prevention.

All plastic materials used for the busbar system are **self-extinguishing** (fire behaviour in accordance with UL 94-V0).

Busbar system

Rittal busbar systems – modular and compact.

Each rated current, each construction form and each required short-circuit resistance has a busbar system appropriate for the enclosure.

Pre-assembled **busbar connection adaptors** ensure simple, safe handling.

As well as enabling you to optimise your assembly, the **tested component adaptors** and the alternative indoor busbar system also saves valuable installation and servicing time.

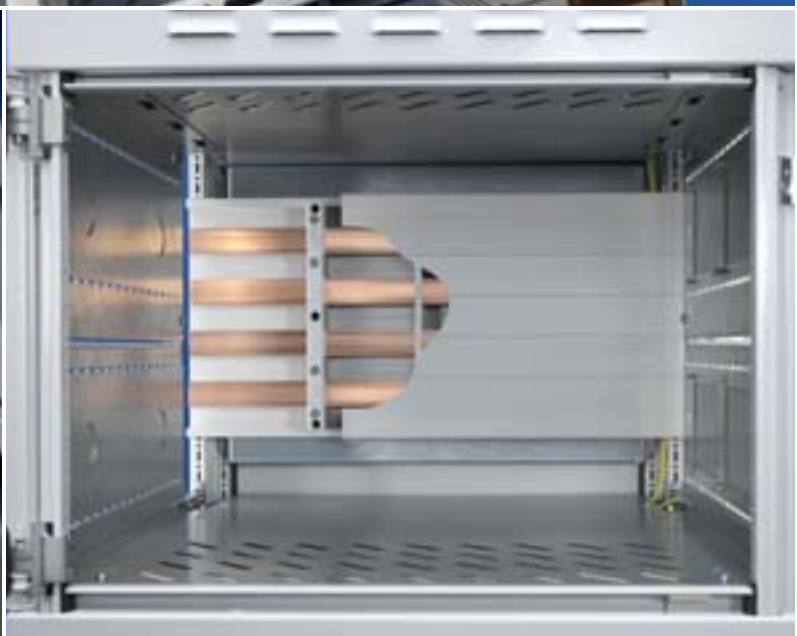
Fuse elements

Simple planning, compact designs, fast assembly, reliable contacting.

Bus-mounting fuse bases for snap-on mounting. The three-pole components ensure reliable-contact, shake-proof connection with the busbars.

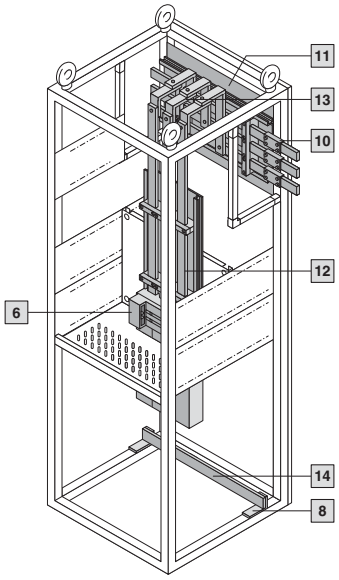
RiLine NH fuse-switch-disconnector. The contact swivel feet have one outstanding function: The cable outlet can be switched from bottom to top in a matter of seconds.

NH fuse-switch-disconnector. With a build width of just 50 mm, it sets new standards in compact, space-saving configuration.

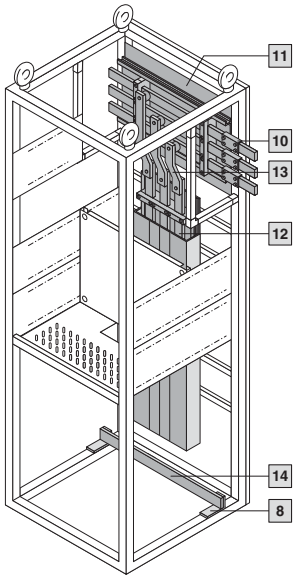


Modular outgoing section with distribution busbar system

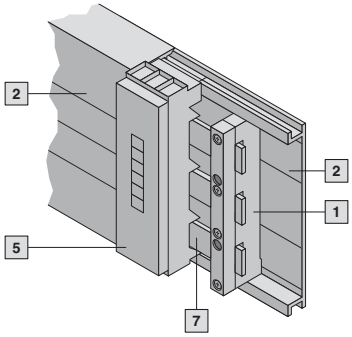
Inside the compartment



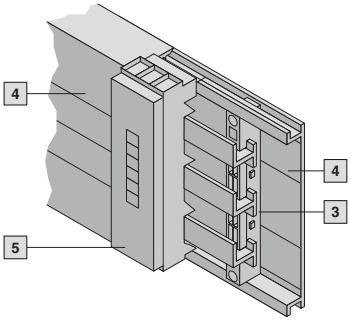
Behind the compartment



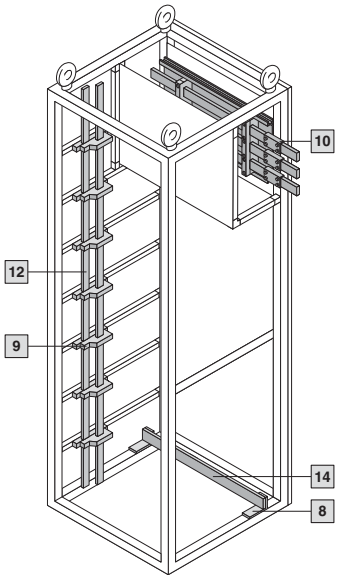
Flat copper busbar system



PLS busbar system

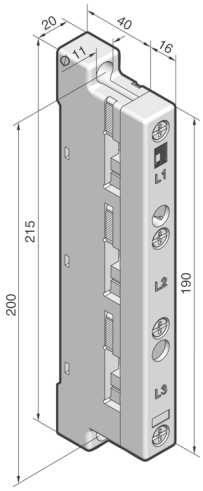


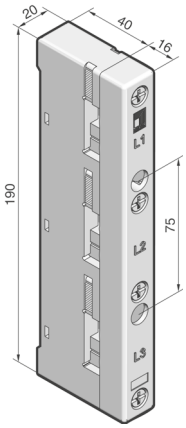
Cable chamber



Busbar components for the configuration of modular sections or cable chambers with a busbar system. Components must be selected depending on the required rated current and the associated system components. Connection and cover components should be selected according to requirements. We highly recommend the Rittal Power Engineering software for an explanation of the selection process – see page 123.

Busbar supports (3-pole)





1 With attachment holes on the outside

2 With attachment holes on the inside

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 protection diagram,
see page 116.

Technical information
for the calculation of rated currents,
see page 120.

Version	Packs of	1 External attachment	2 Internal attachment	Page
Number of poles		3-pole	3-pole	
Bar centre distance		60 mm	60 mm	
For busbars E-Cu		12 x 5/10 mm[1], 15 x 5 – 30 x 10 mm		
Tightening torque ● Assembly screw (M5 x 16) ● Cover attachment		 3 – 5 Nm 1 – 3 Nm	 3 – 5 Nm 1 – 3 Nm	
Model No. SV	4	**9340.010**	**9340.000**	
Accessories				
3 End covers for contact hazard protection on the sides	2	**9340.070**	**9340.070**	
Spacers for SV 9340.000/.010	12	9340.090	9340.090	113

[1] If 12 x 5/10 mm busbars are used, the spacer SV 9340.090 is additionally required.

Busbars E-Cu

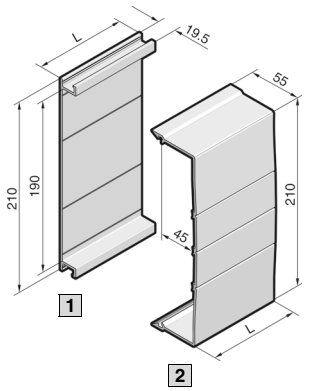
To DIN EN 13 601.
Length: 2400 mm/bar.

Dimensions mm	Packs of	**Model No. SV**	Page
12 x 5	6	3580.000	110
12 x 10	6	3580.100	
15 x 5	6	3581.000	
15 x 10	6	3581.100	
20 x 5	6	3582.000	
20 x 10	6	3585.000	
25 x 5	6	3583.000	
30 x 5[1]	6	3584.000[2]	
30 x 10[1]	6	3586.000[2]	
Accessories			
Busbar cover section (length 1 m/each)	10	3092.000	110
Busbar connector for E-Cu			
4 12 x 5 – 15 x 10 mm (single connection)	3	9350.075	111
5 20 x 5 – 30 x 10 mm (single connection)	3	9320.020	111
6 20 x 5 – 30 x 10 mm (bayed connection)[3]	3	9320.030	111

[1] Other busbar lengths, see page 109.
[2] Tin-plated version available on request.
[3] From enclosure to enclosure.

Busbar connection adaptors Page 70/71 **Component adaptors** Page 72/73 **Accessories** Page 109

System components (3-pole)



1 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**
2400	1	**9340.170**

2 Cover section

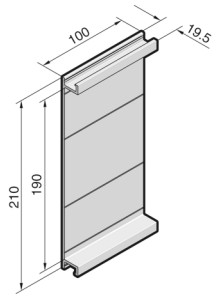
May be cut to length as required; for clip-on mounting to the base tray.

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

Base tray and cover section
Material:
Thermally modified hard PVC.
Continuous operating temperature max. 91°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Note:
If the cover section is mounted from the front, the support panel (SV 9340.220) is needed for stability.



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. 91°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Packs of	Model No. SV
2	**9340.140**

Supply includes:
Assembly parts.

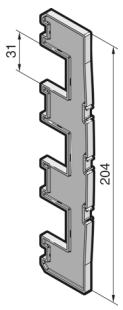
Support panel

for cover section
To prevent side access to the cover section. The support panel also provides additional stability.
Recommended mounting distance ≤ 500 mm.

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

Colour:
RAL 7035

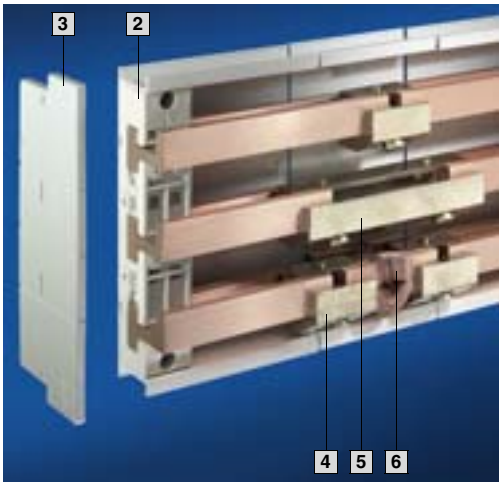
Packs of	Model No. SV
5	**9340.220**

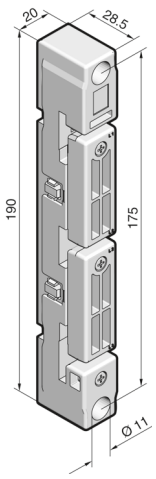


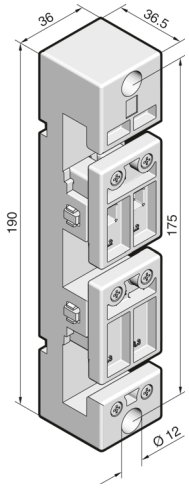
Busbar connection adaptors Page 70/71 **Component adaptors** Page 72/73 **Accessories** Page 109

Form 2-4 busbar systems

PLS busbar supports (3-pole)







1 Rittal PLS 800

2 Rittal PLS 1600

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 protection diagram,
see page 116.

Technical information
for the calculation
of rated currents,
see page 120.

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 (M5 x 20) ● Busbar anti-slip guard		 3 – 5 Nm 0.7 Nm	 3 – 5 Nm 0.7 Nm
Model No. SV	4	**9341.000**	**9342.000**
Accessories			
3 End covers for contact hazard protection on the sides	2	**9341.070**	**9342.070**

PLS special busbars

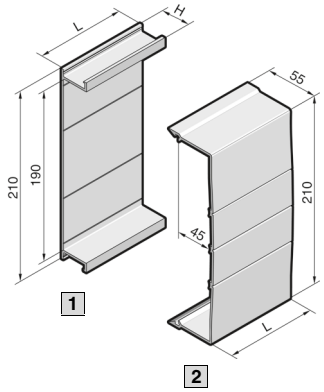
made from E-Cu

For Rittal system		Packs of	PLS 800		PLS 1600		Page
Cross-section			300 mm²		900 mm²		
Bar thickness			5 mm		10 mm		
Length mm	For enclosure width mm		**Model No. SV**		**Model No. SV**		
			E-Cu	E-Cu, tin-plated	E-Cu	E-Cu, tin-plated	
495	600[1]	3	**3524.000**	**3524.200[2]**	**3527.000**	**3527.200[2]**	
695	800[1]	3	**3525.000**	**3525.200[2]**	**3528.000**	**3528.200[2]**	
895	1000[1]	3	**3525.010**	**3525.210[2]**	**3528.010**	**3528.210[2]**	
1095	1200[1]	3	**3526.000**	**3526.200[2]**	**3529.000**	**3529.200[2]**	
2400	variable	1	**3509.000**	**3509.200[2]**	**3516.000**	**3516.200[2]**	
Accessories							
4 PLS busbar connector (single connection)		3	3504.000		3514.000		111
5 PLS busbar connector (bayed connection)[3]		3	3505.000		3515.000		111
6 PLS expansion connectors[4]		3	9320.060		9320.070		111

[1] For Rittal TS 8/ES enclosure systems.
[2] Delivery times available on request.
[3] From enclosure to enclosure.
[4] Two PLS rail connectors (single connection) are required to fit one expansion connector.

Busbar connection adaptors Page 70/71 **Component adaptors** Page 72/73 **Accessories** Page 109

PLS system components (3-pole)



1 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**
2400	1	**9341.170**	**9342.170**
Height (H) mm		32	43

2 Cover section

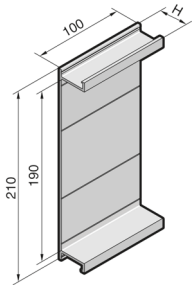
May be cut to length as required; for clip-on mounting to the base tray.

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

Base tray and cover section
Material:
Thermally modified hard PVC.
Continuous operating temperature max. 91°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Note:
If the cover section is mounted from the front, the support panel (SV 9340.220) is needed for stability.



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. 91°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.

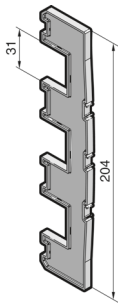
Support panel

for cover section
To prevent side access to the cover section. The support panel also provides additional stability.
Recommended mounting distance ≤ 500 mm.

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

Colour:
RAL 7035

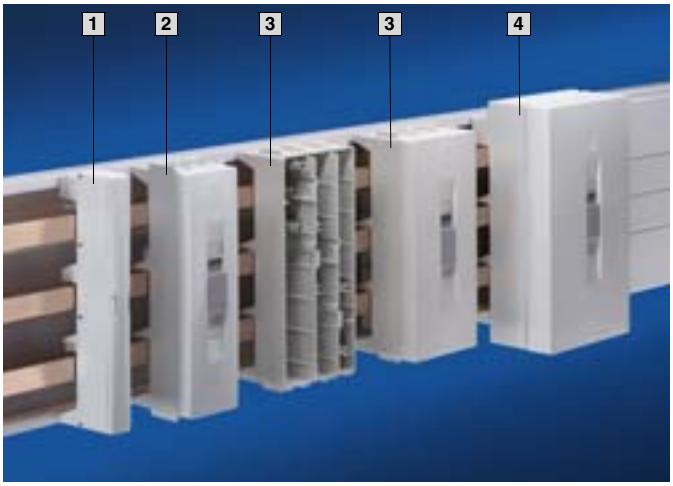
Packs of	Model No. SV
5	**9340.220**

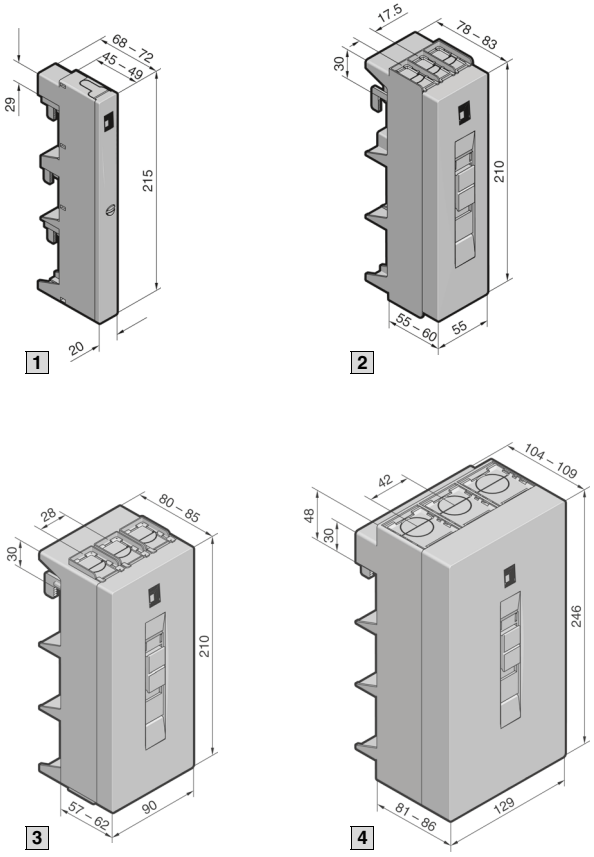


Busbar connection adaptors Page 70/71 **Component adaptors** Page 72/73 **Accessories** Page 98

Form 2-4 busbar systems

Busbar connection adaptors (3-pole)





Material:
Chassis
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.

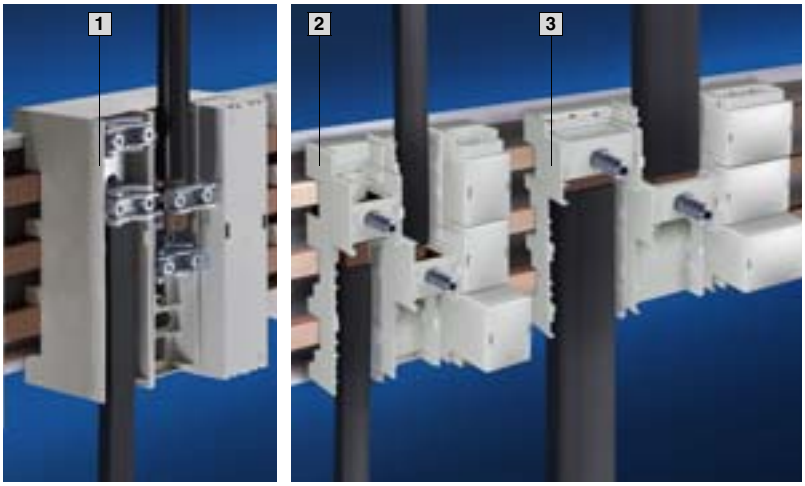
Colour:
RAL 7035

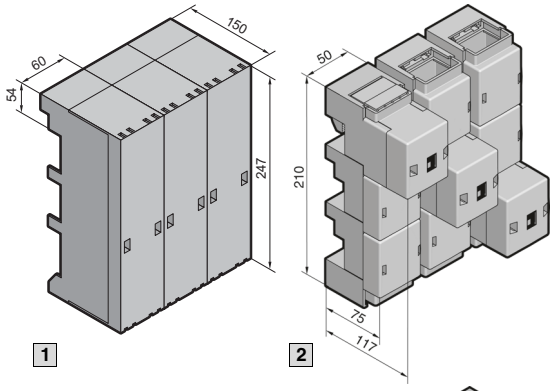
Supply includes:
Cover.

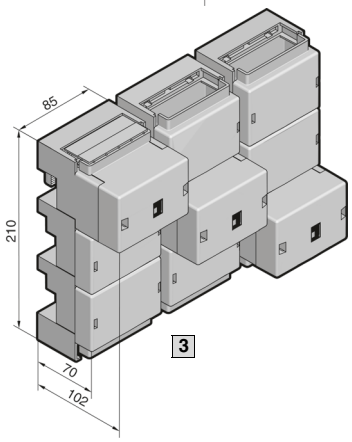
Version (3-pole)	Packs of	1	2	3	4	Page
Rated current up to		63 A	125 A	250 A	800 A	
Rated operating voltage		690 V~	690 V~	690 V~	690 V~	
Connection of round conductors ● Fine wire with wire end ferrule ● Multi-wire ● Solid		 2.5 – 10 mm² 2.5 – 16 mm² 2.5 – 16 mm²	 10 – 25 mm² 16 – 35 mm² –	 35 – 120 mm² 35 – 120 mm² –	 95 – 185 mm² 95 – 300 mm² –	
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 ● Terminal screw		 2 Nm 2.5 Nm	 2 Nm 2 – 3 Nm	 4 – 6 Nm 12 Nm	 6 Nm 12 – 14 Nm	
For bar thickness		5/10 mm	5/10 mm	5/10 mm	5/10 mm	
Outlet at top/bottom **Model No. SV**	1	**–**	**9342.220**	**9342.250**	**9342.280**	
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		–	■	■	■	112

Busbar systems Page 66 – 69 **Component adaptors** Page 72/73 **Accessories** Page 112

Busbar connection adaptors (3-pole)







Material:
Chassis
SV 3439.010
Fibreglass-reinforced, thermoplastic polyester (PBT). Continuous operating temperature max.140°C. Fire protection corresponding to UL 94-V0.
SV 9342.310/.320
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

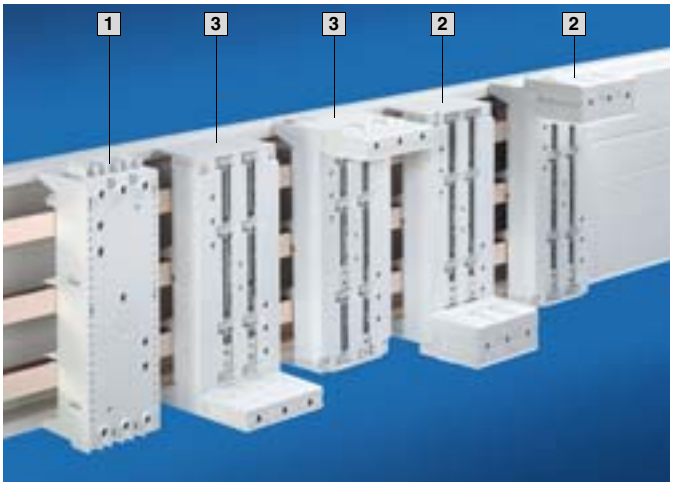
Supply includes:
Cover.

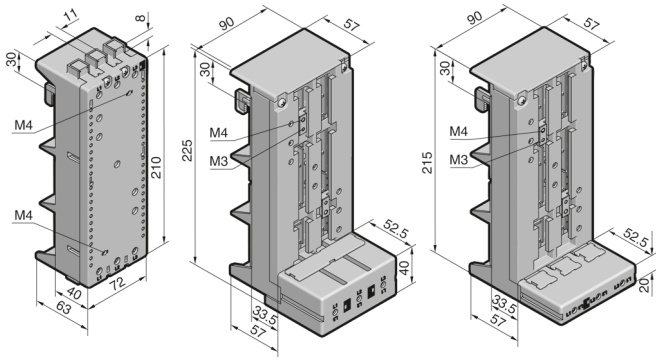
SV 3439.010
When connecting round conductors 300 mm² with ring terminal, the terminal clamps fitted as standard in the busbar connection adaptors must be replaced with screws and/or bolts M10.

Version (3 x 1-pole)	Packs of	1	2	3	Page
Rated current up to		600 A	800 A	1600 A	
Rated operating voltage		690 V~	690 V~	690 V~	
Outlet		top/bottom	top/bottom	top/bottom	
Connection of round conductors ● Fine wire with wire end ferrule ● Multi-wire		 35 – 240 mm² 35 – 240 mm²	 95 – 185 mm² 95 – 300 mm²	 – –	
Clamping area for laminated copper bars ● For 5 mm bar thickness ● For 10 mm bar thickness		 24 x 21 mm 24 x 21 mm	 33 x 27 mm 33 x 22 mm	 65 x 27 mm 65 x 22 mm	
Tightening torque ● Assembly screw ● Terminal screw		 15 – 20 Nm 15 Nm	 – 12 – 14 Nm	 – 15 – 20 Nm	
For bar thickness		5/10 mm	5/10 mm	5/10 mm	
Model No. SV	1 set	**3439.010**	**9342.310**	**9342.320**	
Accessories					
Laminated copper bars		■	■	■	112

Busbar systems Page 66 – 69 **Component adaptors** Page 72/73 **Accessories** Page 112

Component adaptors 100 A/circuit-breaker component adaptors 125 A, 160 A (3-pole)

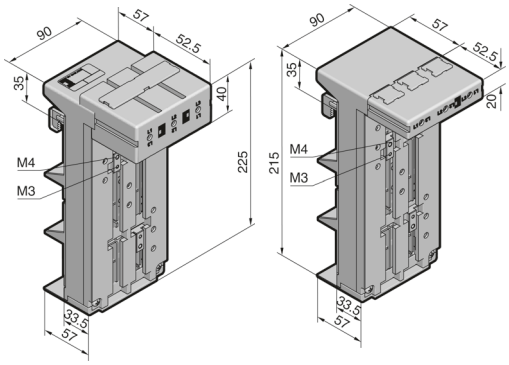




1 SV 9342.400
SV 9342.410

2 SV 9342.540

3 SV 9342.500



2 SV 9342.550

3 SV 9342.510

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

Colour:
RAL 7035

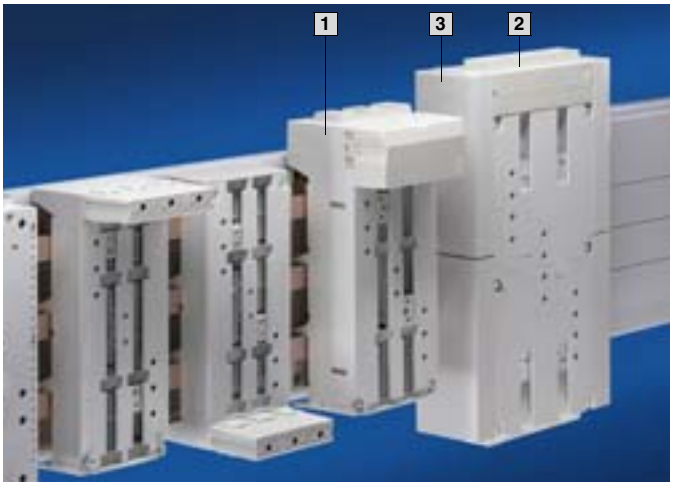
Scope of supply
Circuit-breaker component adaptor:
Terminal cover and sliding blocks for switchgear attachment.

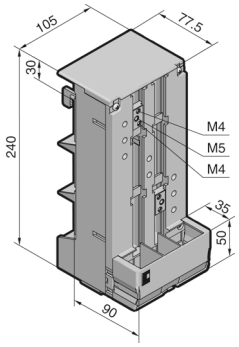
Version		Packs of	1 Component adaptor	2 Circuit-breaker component adaptor	3 Circuit-breaker component adaptor	Page
Construction width			72 mm	90 mm	90 mm	
Length			210 mm	225 mm	215 mm	
Rated current up to			100 A	125 A	160 A	
Rated operating voltage			690 V~	690 V~		
Connection clamp			Box terminal	Box terminal		
Connection of round conductors			10 – 35 mm²	35 – 120 mm²		
Clamping area for laminated copper bars			10 x 7.8 mm	18.5 x 15.5 mm		
Tightening torque ● Terminal screw ● Rail attachment ● Switchgear attachment			 2 – 3 Nm 2 Nm 1.5 Nm	 12 Nm 4 – 6 Nm 1.5 Nm		
For switchgear make/model	ABB		MS497	S2, T1, T2		
	Allen Bradley		–	140 – CMN		
	GE		–	FD		
	Merlin Gerin		–	NS80, NSC100		
	Mitsubishi		–	–		
	Moeller Electric		PKZ2[1]	NZM1		
	Siemens		S3	–		
	Telemecanique		GV3[1]	–		
	Terasaki		–	S125, E125		
	Universal application		■ [1]	–		
For bar thickness			5/10 mm	5/10 mm		
Cable outlet at the top[2] **Model No. SV**		1	**9342.400**	**9342.540**	**9342.500**	
Cable outlet at the bottom[2] **Model No. SV**		1	**9342.410**	**9342.550**	**9342.510**	
Accessories						
Support rail Width 72 mm, height 15 mm		5	9320.120	–	–	113
Sliding blocks		6	–	9342.560	9342.560	113
Connection bracket			–	■	■	114

[1] Mounting only possible with support rail SV 9320.120.
[2] Switch outlet or outgoing cable.

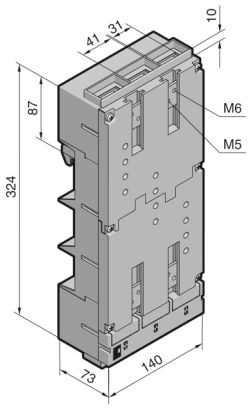
Busbar systems Page 66 – 69 **Busbar connection adaptors** Page 70/71 **Accessories** Page 109

Circuit-breaker component adaptors 250 A/630 A (3-pole)





1 SV 9342.600

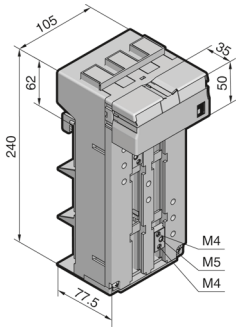


2 SV 9342.700

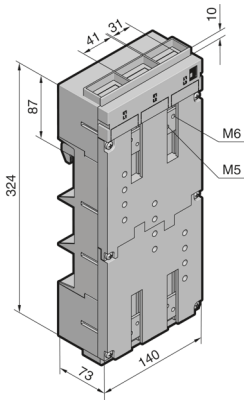
Material:
Chassis
Polyamide (PA 6.6), 25% fibreglass-reinforced. Continuous operating temperature max.130°C. Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

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



1 SV 9342.610



2 SV 9342.710

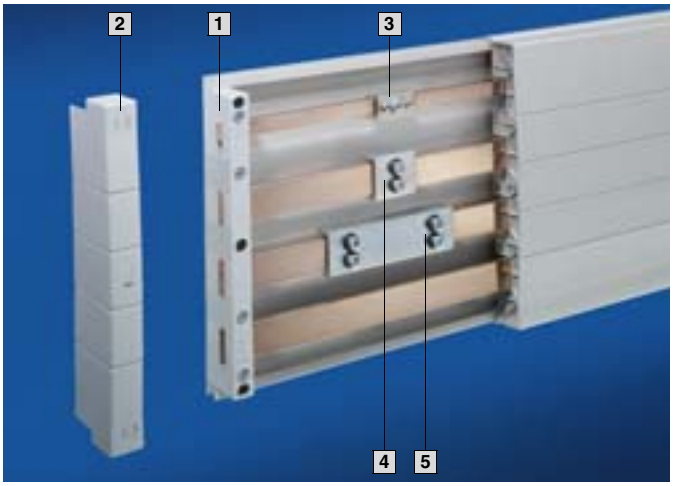
Version		Packs of	1	2	Page
Construction width			105 mm	140 mm	
Length			240 mm	324 mm	
Rated current up to			250 A	630 A	
Rated operating voltage			690 V~	690 V~	
Connection clamp			Box terminal	Screw terminal M10	
Connection of round conductors			35 – 120 mm²	max. 150 mm² 2)	
Clamping area for laminated copper bars			18.5 x 15.5 mm	32 x 10 mm	
Tightening torque ● Terminal screw ● Rail attachment ● Switchgear attachment			 12 Nm 4 – 6 Nm 1.5 Nm	 30 – 32 Nm 12 – 14 Nm 2.5 Nm	
For switchgear make/model	ABB		S3, T3, T4	S5, T5	
	Allen Bradley		140 U – J	140 U – L	
	GE		FE	–	
	Merlin Gerin		NS(X)100, NS(X)160, NS(X)250	NS(X)400, NS(X)630	
	Mitsubishi		NF125-SGW, NF125-HGW, NF160-SGW, NF160-HGW	NF400-SEW, NF400-HEW, NF400-REW, NF600-SEW, NF600-HEW, NF600-REW	
	Moeller Electric		NZM2	NZM3	
	Siemens		VL160X, VL160, VL250	VL400, VL630 3)	
	Telemecanique		GV7	–	
	Terasaki		S160, S250, E250, H125, L125, H160, L160, H250, L250	E400, S400, H400, L400, E630, S630	
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	113
Sliding blocks		6	9342.640	–	113
Connection bracket			■	■	114

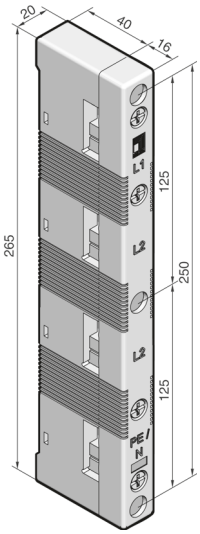
1) Switch outlet or outgoing cable.
2) With ring terminal.
3) Also required: Insert strip 25 mm (SV 9342.720).

Busbar systems Page 66 – 69 **Busbar connection adaptors** Page 70/71 **Accessories** Page 109

Form 2-4 busbar systems

Busbar supports (4-pole)





1 With attachment holes on the inside

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 protection diagram,
see page 117.

Technical information
for the calculation of rated currents,
see page 120.

Version	Packs of	1	Page
Number of poles		4-pole	
Bar centre distance		60 mm	
For busbars E-Cu		12 x 5/10 mm[1], 15 x 5 – 30 x 10 mm	
Tightening torque ● Assembly screw (M5 x 25) ● Cover attachment		 3 – 5 Nm 1 – 3 Nm	
Model No. SV	4	**9340.004**	
Accessories			
2 End covers for contact hazard protection on the sides	2	**9340.074**	
Spacers for SV 9340.004	12	9340.090	113

[1] If 12 x 5/10 mm busbars are used, the spacer SV 9340.090 is additionally required.

Busbars E-Cu

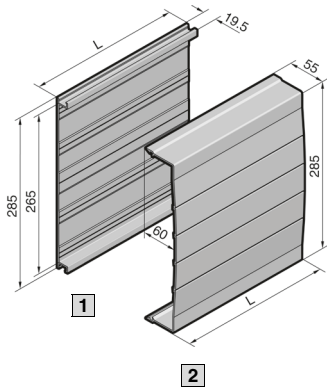
To DIN EN 13 601.
Length: 2400 mm/bar.

Dimensions mm	Packs of	**Model No. SV**	Page
12 x 5	6	3580.000	110
12 x 10	6	3580.100	
15 x 5	6	3581.000	
15 x 10	6	3581.100	
20 x 5	6	3582.000	
20 x 10	6	3585.000	
25 x 5	6	3583.000	
30 x 5[1]	6	3584.000[2]	
30 x 10[1]	6	3586.000[2]	
Accessories			
Busbar cover section (length 1 m/each)	10	3092.000	110
Busbar connector for E-Cu			
3 12 x 5 – 15 x 10 mm (single connection)	3	9350.075	111
4 20 x 5 – 30 x 10 mm (single connection)	3	9320.020	111
5 20 x 5 – 30 x 10 mm (bayed connection)[3]	3	9320.030	111

[1] Other busbar lengths, see page 109.
[2] Tin-plated version available on request.
[3] From enclosure to enclosure.

Busbar connection adaptors Page 78/79 **Component adaptors** Page 80 **Accessories** Page 109

System components (4-pole)



1 Base tray

For rear contact hazard protection of the flat bar assembly.

Length (L) mm	Packs of	Model No. SV
1100	2	**9340.134**

2 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
1100	2	**9340.214**

Base tray and cover section
Material:
Thermally modified hard PVC.
Continuous operating temperature max. 91°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Note:
If the cover section is mounted from the front, the support panel (SV 9340.224) is needed for stability.

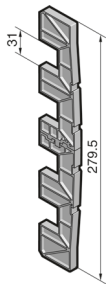
Support panel

for cover section
To prevent side access to the cover section. The support panel also provides additional stability. Recommended mounting distance ≤ 500 mm.

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

Colour:
RAL 7035

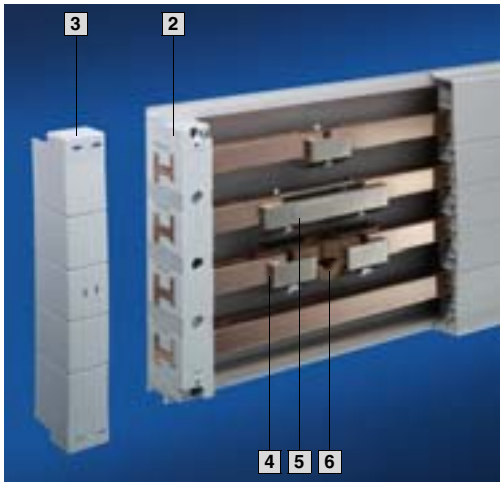
Packs of	Model No. SV
5	**9340.224**

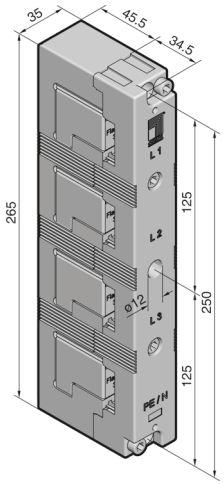


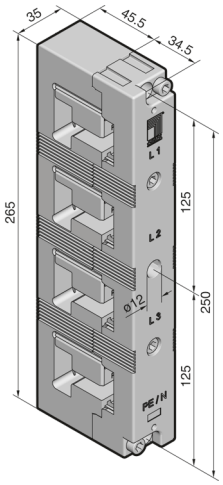
Busbar connection adaptors Page 78/79 **Component adaptors** Page 80 **Accessories** Page 109

Form 2-4 busbar systems

Busbar supports PLUS (4-pole)







1 Rittal 30 x 10 PLUS 2 Rittal PLS 1600 PLUS

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 protection diagram,
see page 117.

Technical information
for the calculation
of rated currents,
see page 120.

For system		Packs of	1 Rittal 30 x 10 PLUS	2 Rittal PLS 1600 PLUS
Number of poles			4-pole	4-pole
Bar centre distance			60 mm	60 mm
For	busbars E-Cu 30 x 10 mm		■	–
	PLS special busbars (PLS 1600)		–	■
Tightening torque ● Assembly screw (M6 x 20) ● Cover attachment			 3 – 5 Nm 5 – 7 Nm	 3 – 5 Nm 5 – 7 Nm
Model No. SV		4	**9342.014**	**9342.004**
Accessories				
3 End covers for contact hazard protection on the sides		2	**9342.074**	**9342.074**

Busbars

made from E-Cu

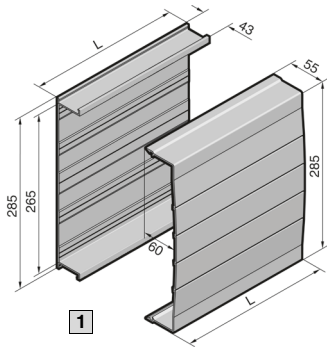
Detailed drawing:
SV 9661.300 to .380, see page 109.

For system		Rittal 30 x 10 PLUS			Page	Rittal PLS 1600 PLUS			Page
Size		30 x 10 mm				–			
Cross-section (bar thickness)		–				900 mm² (10 mm)[1]			
For enclosure width mm		Length mm	Packs of	**Model No. SV**		Length mm	Packs of	**Model No. SV**	
300[2]		265	2	9661.330	109	–	–	–	
400[2]		365	2	9661.340	109	–	–	–	
600[2]		565	2	9661.360	109	495	3	3527.000	68
800[2]		765	2	9661.380	109	695	3	3528.000	68
1000[2]		965	2	9661.300	109	895	3	3528.010	68
1200[2]		1165	2	9661.320	109	1095	3	3529.000	68
Variable		2400	6	3586.000	110	2400	1	3516.000	68
Accessories									
4 PLS busbar connector (single connection)		–	–	–		–	3	3514.000	111
5 PLS busbar connector (bayed connection)[3]		–	–	–		–	3	3515.000	111
6 PLS expansion connectors[4]		–	–	–		–	3	9320.070	111
Baying bracket for SV 9661.300 to .380 (bayed connection)		95	4	9661.350	109	–	–	–	
Busbar connector for SV 3586.000	Single connection	–	3	9320.020	111	–	–	–	
	Baying connection[3]	–	3	9320.030	111	–	–	–	
Busbar cover section		1000	10	3092.000	110	–	–	–	

[1] PLS special busbars (1600 A). To order tin-plated version, please add extension .2X0 to the Model No. Delivery times available on request.
[2] For Rittal TS 8/ES enclosure systems.
[3] From enclosure to enclosure.
[4] Two PLS rail connectors (single connection) are required to fit one expansion connector.

Busbar connection adaptors Page 78/79 **Component adaptors** Page 80 **Accessories** Page 109

System components (4-pole)



2

1 Base tray

For rear contact hazard protection of the busbar assembly PLUS.

Length (L) mm	Packs of	**Model No. SV**
1100	2	**9342.134**

2 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**
1100	2	**9340.214**

Base tray and cover section
Material:
Thermally modified hard PVC.
Continuous operating temperature max. 91°C.
Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

Note:
If the cover section is mounted from the front, the support panel (SV 9340.224) is needed for stability.

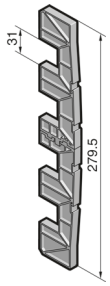
Support panel

for cover section
To prevent side access to the cover section. The support panel also provides additional stability.
Recommended mounting distance ≤ 500 mm.

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

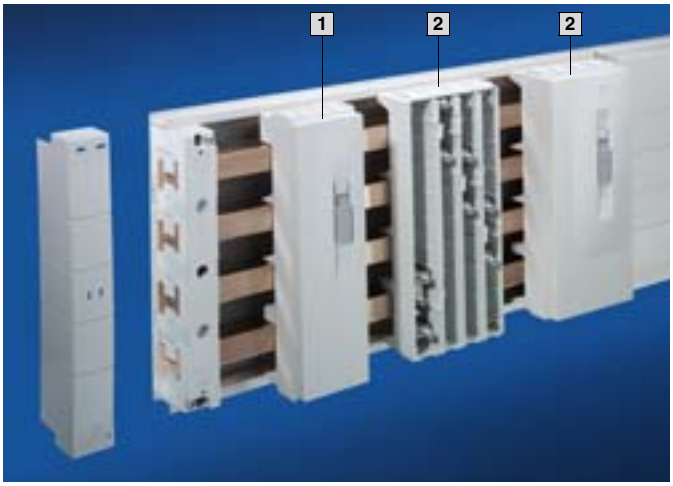
Colour:
RAL 7035

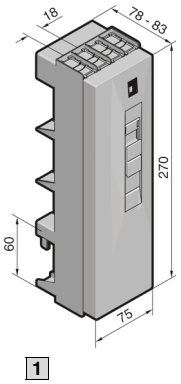
Packs of	**Model No. SV**
5	**9340.224**



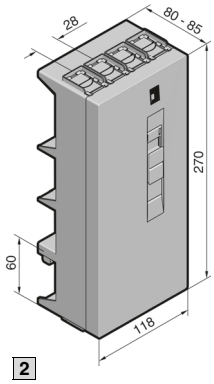
Busbar connection adaptors Page 78/79 **Component adaptors** Page 80 **Accessories** Page 109

Busbar connection adaptors (4-pole)





1



2

Material:
Chassis
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.

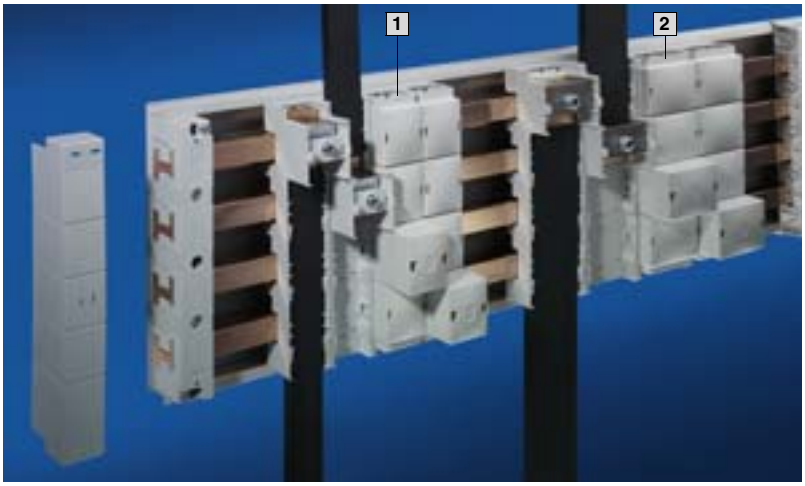
Colour:
RAL 7035

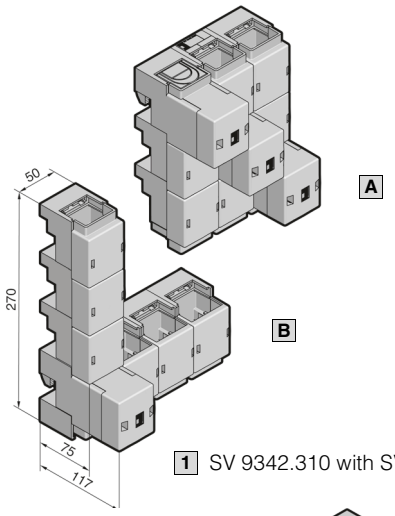
Supply includes:
Cover.

Version (4-pole)	Packs of	1	2	Page
Rated current up to		125 A	250 A	
Rated operating voltage		690 V~	690 V~	
Connection of round conductors ● Fine wire with wire end ferrule ● Multi-wire		 10 – 25 mm² 16 – 35 mm²	 35 – 120 mm² 35 – 120 mm²	
Clamping area for laminated copper bars		10 x 7.8 mm	18.5 x 15.5 mm	
Tightening torque ● Assembly screw ● Terminal screw		 2 Nm 2 – 3 Nm	 4 – 6 Nm 12 Nm	
For bar thickness		5/10 mm	5/10 mm	
Outlet at top/bottom **Model No. SV**	1	**9342.224**	**9342.254**	
Outlet at top **Model No. SV**	1	**9342.234**	**9342.264**	
Outlet at bottom **Model No. SV**	1	**9342.244**	**9342.274**	
Accessories				
Laminated copper bars		■	■	112

Busbar systems Page 74 – 77 **Component adaptors** Page 80 **Accessories** Page 112

Busbar connection adaptors (4-pole)



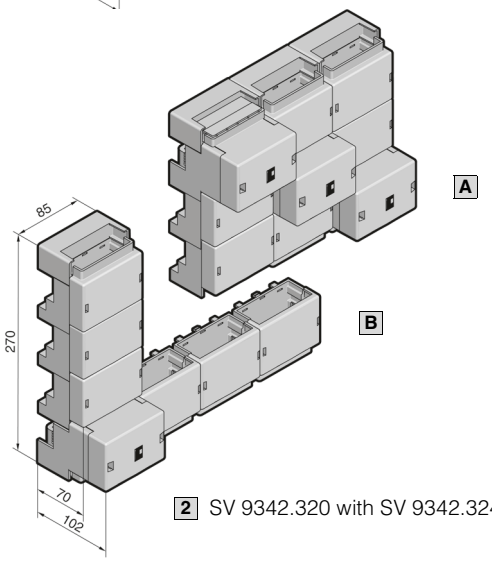


1 SV 9342.310 with SV 9342.314

Material:
Chassis
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.



2 SV 9342.320 with SV 9342.324

Version		Packs of	1	2	Page
Rated current up to			800 A	1600 A	
Rated operating voltage			690 V~	690 V~	
Outlet			top/bottom	top/bottom	
Connection of round conductors ● Fine wire with wire end ferrule ● Multi-wire			 95 – 185 mm² 95 – 300 mm²	 – –	
Clamping area for laminated copper bars ● For 5 mm bar thickness ● For 10 mm bar thickness			 33 x 27 mm 33 x 22 mm	 65 x 27 mm 65 x 22 mm	
Tightening torque			12 – 14 Nm	15 – 20 Nm	
For bar thickness			5/10 mm	5/10 mm	
Busbar connection adaptors (3 x 1-pole) **Model No. SV**	A	1 set	**9342.310**	**9342.320**	
Also required					
Connection adaptor (expansion set for 4-pole configuration)	B	1	**9342.314**	**9342.324**	
Accessories					
Laminated copper bars			■	■	112

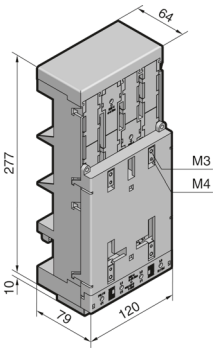
Busbar systems Page 74 – 77 **Component adaptors** Page 80 **Accessories** Page 112

Circuit-breaker component adaptors 160 A/250 A (4-pole)

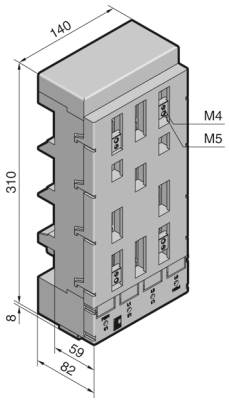
Material:
Chassis
Polyamide (PA 6.6), 25% fibreglass-reinforced. Continuous operating temperature max.130°C. Fire protection corresponding to UL 94-V0.

Colour:
RAL 7035

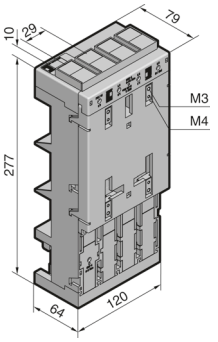
Supply includes:
Terminal cover and sliding blocks for switchgear attachment.



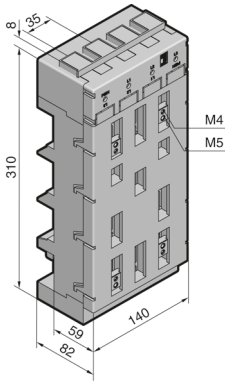
1 SV 9342.504



2 SV 9342.604



1 SV 9342.514

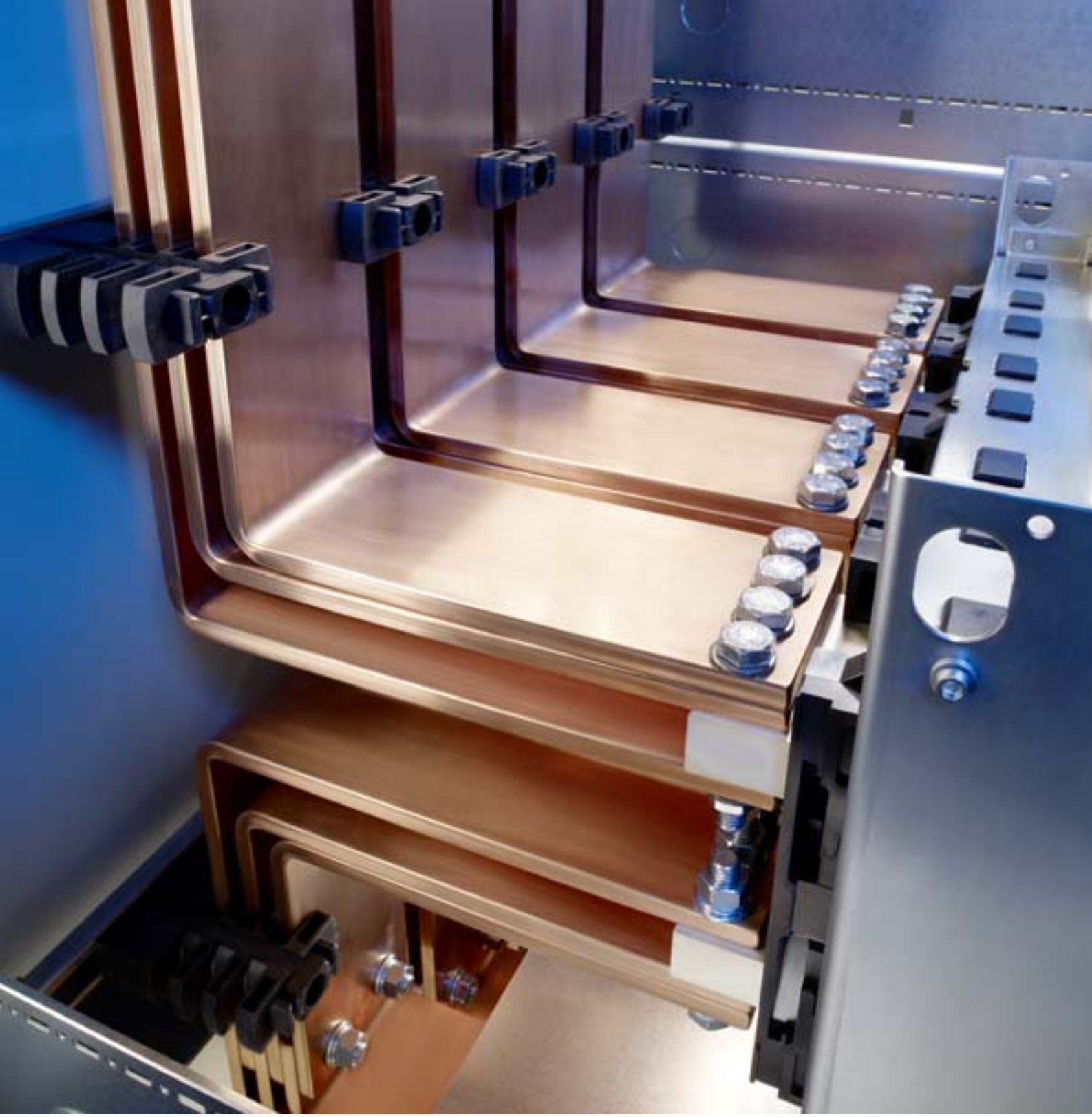


2 SV 9342.614

Version		Packs of	1	2
Construction width			120 mm	140 mm
Length			277 mm	310 mm
Rated current up to			160 A	250 A
Rated operating voltage			690 V~	690 V~
Connection clamp			Box terminal	Box terminal
Connection of round conductors			35 – 120 mm^2	35 – 120 mm^2
Clamping area for laminated copper bars			18.5 x 15.5 mm	18.5 x 15.5 mm
Tightening torque ● Terminal screw ● Rail attachment ● Switchgear attachment			 12 Nm 4 – 6 Nm 1.5 Nm	 12 Nm 4 – 6 Nm 1.5 Nm
For switchgear make/model	ABB		T1 (160 A), T2 (160 A)	T3S (250 A), T4V (315 A)
	Merlin Gerin		NSC100	NS(X)100, NS(X)160, NS(X)250
	Moeller Electric		NZM1-4 (125 A)	NZM2-4 (250 A)
	Siemens		–	VL160X, VL160, VL250
For bar thickness			5/10 mm	5/10 mm
Cable outlet at the top[1)] **Model No. SV**		1	**9342.504**	**9342.604**
Cable outlet at the bottom[1)] **Model No. SV**		1	**9342.514**	**9342.614**

[1)] Switch outlet or outgoing cable.

Busbar systems Page 74 – 77 **Busbar connection adaptors** Page 78/79 **Accessories** Page 112



Two systems for optimum performance

Ingeniously simple assembly of low-voltage distributors and switchgear in the heavy current range.

The Rittal Maxi-PLS system components are supplied ready to assemble. All modules are standardised and batch-produced to ensure cost-effectiveness. One new addition to the range is the Flat-PLS, a busbar system for standard, commercially available flat bars. Whether you opt for Maxi-PLS or Flat-PLS – Ri4Power systems are the ideal links between power supply and power distribution, even down to the tiniest piece of equipment.

Maxi-PLS and Flat-PLS up to 5500 A

Maxi-PLS

Standardised Maxi-PLS busbars in a super-compact design with an ingeniously simple attachment system.

Thanks to the **perfect system technology** and tailored dimensional pitch pattern, Maxi-PLS supports and bars ensure precise-fit, simple and fast installation.

With the aid of sliding blocks or studs, the **four attachment levels** of the Maxi-PLS busbars enable infinitely variable attachment and …

… contacting of round conductors, laminated flat copper, connection brackets and connection kits.

Flat-PLS

System configuration analogous to Maxi-PLS with standard, commercially available flat copper bars.

Flat-PLS busbar support. **Multivariant dimensioning** of the busbars with just two supports. Also suitable for aluminium and copper-plated aluminium bars.

Longitudinal connectors for Flat-PLS. For connecting Flat-PLS busbar systems, no drilling required. Adapted to your requirements.

All-round contact hazard protection for busbars and for connection kits. Also for preventive protection against accidental arcing.

Connection components

System packages for all commercially available air circuit-breakers.

Connected to Maxi-PLS und Flat-PLS busbars using standardised components on the **connection tailored to the respective air circuit-breaker.**

The combination of **isolator chassis, contact makers and connection brackets** forms the heart of the connection.

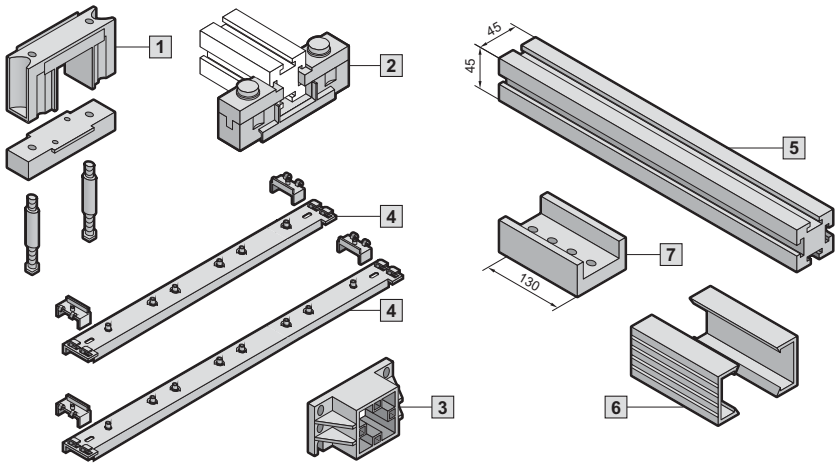
IEC 60 439-1
IEC 61 439-1
IEC 61 439-2
IEC 61 641

IPH BERLIN

Type-tested to IEC 60 439-1, with ASTA certification. Design verification to IEC 61 439-1/-2. Special testing to EN 61 641/ IEC 61 641.

Form 2-4 busbar systems

System components, Maxi-PLS 1600/2000



Material:
Busbar support, end support, end cover: PA 6.6
System attachment: Stainless steel
Cover section: Hard PVC

Note:
Busbars for PE/PEN combinations, see page 109.

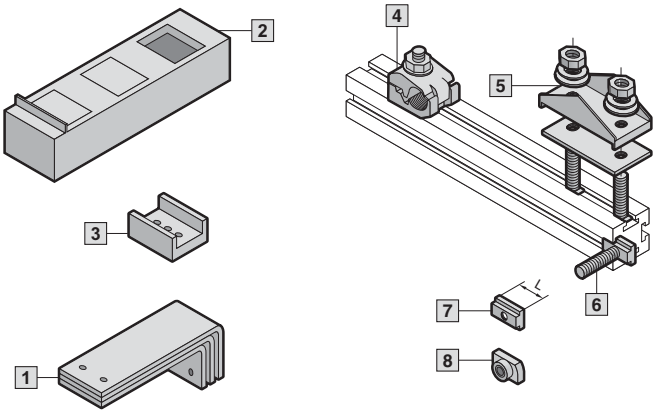
Detailed drawing,
see page 125.

Maxi-PLS system components				3-pole		4-pole	
				Packs of	Model No. SV	Packs of	Model No. SV
1	**Busbar support**			3	**9640.000**	3 + 1	**9640.000 9649.000**
2	**Busbar support, suitable for top mounting**			3	**9640.160**	3	**9640.160**
3	**End support**			6	**9640.010**	6 + 2	**9640.010 9649.010**
4	**System attachment** for installing the busbar supports.						
	For application	For enclosure depth mm	Bar centre distance mm				
	In the roof/base section	600	100	2	**9640.080**	2	**9640.080**
		800	100	2	**9640.088**	2	**9640.088**
	Vertical coupling set	600	100	2	**9649.076**	2	**9649.076**
		800	100	2	**9649.078**	2	**9649.078**
	Rear section top/bottom	–	100	2	**9640.098**	2	**9640.098**
	Rear section (185 mm)	–	185	2	**9640.150**	–	**–**
6	**Cover section** for clip-on mounting on the Maxi-PLS busbars, length 1000 mm.			5	**9640.050**	5	**9640.050**
7	**Longitudinal connector E-Cu** for simple baying connection of Maxi-PLS busbars. Incl. sliding blocks, bolts, washers and nuts.			3	**9640.190**	3 + 1	**9640.190 9649.190**
	End cover for clip-on mounting on the end surface of Maxi-PLS busbars.			6	**9640.060**	6 + 2	**9640.060 9649.060**
5	**Maxi-PLS busbars E-Cu** (special lengths available on request).						
	Length mm	For enclosure width mm	For application[1)]	3/4-pole		3/4-pole	
					1600 A		2000 A
	491	600	A	1	**9640.206**	1	**9640.201**
	525	600	B	1	**9640.216**	1	**9640.211**
	599	600	C	1	**9640.226**	1	**9640.221**
	691	800	A	1	**9640.236**	1	**9640.231**
	725	800	B	1	**9640.246**	1	**9640.241**
	799	800	C	1	**9640.256**	1	**9640.251**
	891	1000	A	1	**9640.266**	1	**9640.261**
	925	1000	B	1	**9640.276**	1	**9640.271**
	999	1000	C	1	**9640.286**	1	**9640.281**
	1091	1200	A	1	**9640.296**	1	**9640.291**
	1125	1200	B	1	**9640.306**	1	**9640.301**
	1199	1200	C	1	**9640.316**	1	**9640.311**
	2400	–	–	3	**9640.365**	3	**9640.360**
	2400	–	–	–	**–**	4	**9649.360**

[1)] A = Cable connection system with end support
B = Left-hand or right-hand end enclosure in a switchgear installation
C = Bayed enclosure with sections bayed on the left and right

Connection components Page 85 **SV-TS 8 enclosures** Page 30 – 38 **Accessories** Page 99 – 112

Connection components, Maxi-PLS 1600/2000



Detailed drawing,
see page 126.

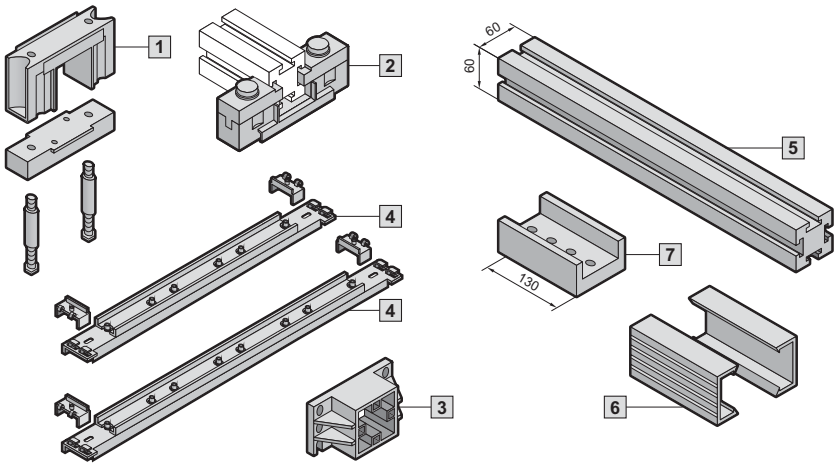
Maxi-PLS connection components				3-pole		4-pole	
				Packs of	Model No. SV	Packs of	Model No. SV
1	**Connection bracket E-Cu** Transition from the main busbar system to the connection kits[1].						
	For enclosure depth mm	Width mm	Number of brackets per phase				
	600/800	60	1	1 set	**9640.433**	1 set	**9640.433 + 9640.434**
		60	2	1 set	**9640.443**	1 set	**9640.443 + 9640.444**
		60	3	1 set	**9640.453**	1 set	**9640.453 + 9640.454**
		100	2	1 set	**9640.473**	1 set	**9640.473 + 9640.474**
		100	3	1 set	**9640.483**	1 set	**9640.483 + 9640.484**
2	**Isolator chassis** for isolated routing of the connection brackets. Material: PA 6.6, black, including assembly parts.						
	Bar centre distance mm		For connection bracket width mm				
	100		60	1 set	**9640.020**	1 set	**9649.020**
3	**U contact maker E-Cu** for contacting the connection brackets to the Maxi-PLS busbars. Including sliding blocks.						
	60 mm width			3	**9640.170**	3 + 1	**9640.170** **9649.170**
	100 mm width			3	**9640.180**	3	**9640.180**
4	**Connection clamp** for the connection of round conductors (Cu/Al) 95 to 300 mm² (single-wire and multi-wire). Including assembly parts.						
	50 mm width			1	**9640.325**	1	**9640.325**
5	**Connection plates** for the connection of laminated flat copper bars. Including assembly parts.						
	Maximum clamping area	2 x 10 x 32 x 1 mm		3	**9640.330**	3	**9640.330**
		2 x 10 x 63 x 1 mm		3	**9640.340**	3	**9640.340**
		2 x 10 x 100 x 1 mm		3	**9640.350**	3	**9640.350**
6	**Terminal stud** for connecting cables with ring terminals. Including sliding blocks.						
	Thread	M12	Length 30 mm	3	**9640.370**	3	**9640.370**
		M16	Length 30 mm	3	**9640.380**	3	**9640.380**
7	**Sliding blocks** for sliding into the Maxi-PLS busbar section at the sides.						
	Thread	M8	Length (L) 20 mm	15	**9640.970**	15	**9640.970**
		M10	Length (L) 25 mm	15	**9640.980**	15	**9640.980**
8	**Sliding nuts** for retrospective insertion into the Maxi-PLS busbar section.						
	Thread	M6		15	**9640.900**	15	**9640.900**
		M8		15	**9640.910**	15	**9640.910**
		M10		15	**9640.920**	15	**9640.920**
	Threaded bolts for individual connection options[2]. Including plain washers, spring lock washers and nuts.						
	Thread	M6	Length 35 mm	6	**9640.930**	6	**9640.930**
		M8	Length 35 mm	6	**9640.940**	6	**9640.940**
		M10	Length 80 mm	6	**9640.960**	6	**9640.960**

[1] For the assembly of connection brackets to Maxi-PLS busbars without using contact makers (e.g. for cable connection system), please choose sliding blocks SV 9640.980 (3-pole = 6 pcs., 4-pole = 8 pcs.).
[2] Sliding blocks or sliding nuts are additionally required for attachment.

Connection components Page 84 **SV-TS 8 enclosures** Page 30 – 38 **Accessories** Page 99 – 112

Form 2-4 busbar systems

System components, Maxi-PLS 3200



Material:
Busbar support, end support, end cover: PA 6.6
System attachment: Stainless steel
Cover section: Hard PVC

Note:
PE/PEN combination/busbars, see page 109.

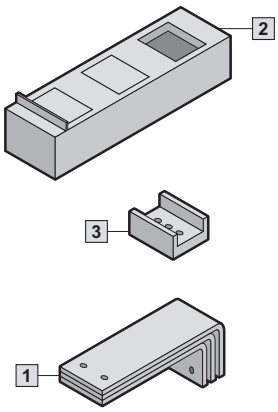
Detailed drawing,
see page 125.

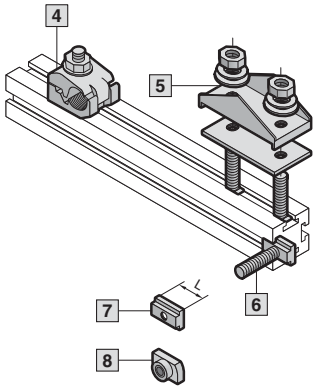
Maxi-PLS system components			3-pole		4-pole	
			Packs of	Model No. SV	Packs of	Model No. SV
1	**Busbar support**		3	**9650.000**	3 + 1	**9650.000** **9659.000**
2	**Busbar support, suitable for top mounting**		3	**9650.160**	3	**9650.160**
3	**End support**		6	**9650.010**	6 + 2	**9650.010** **9659.010**
4	**System attachment** for installing the busbar supports.					
	For application	For enclosure depth mm / Bar centre distance mm				
	In the roof/base section	600 / 150	2	**9650.100**	–	**–**
		800 / 150	2	**9650.080**	2	**9650.080**
	Vertical coupling set	600 / 150	2	**9650.076**	–	**–**
		800 / 150	2	**9659.078**	2	**9659.078**
	Rear section top/bottom	– / 150	2	**9650.098**	2	**9650.098**
	Rear section (185 mm)	– / 185	2	**9650.150**	–	**–**
6	**Cover section** for clip-on mounting on the Maxi-PLS busbars, length 1000 mm.		5	**9650.050**	5	**9650.050**
7	**Longitudinal connector E-Cu** for simple baying connection of the Maxi-PLS busbars. Including sliding blocks, bolts, washers and nuts.		3	**9650.190**	3 + 1	**9650.190** **9659.190**
	End cover for clip-on mounting on the end surface of Maxi-PLS busbars.		6	**9650.060**	6 + 2	**9650.060** **9659.060**
	Stabiliser to increase short-circuit resistance (I_{cw} up to 124 kA).		4[2]	**9650.140**	–	**–**
5	**Maxi-PLS busbars E-Cu** (special lengths available on request).					
	Length mm	For enclosure width mm / For application[1]		3200 A		
	491	600 / A	1	**9650.201**		
	525	600 / B	1	**9650.211**		
	599	600 / C	1	**9650.221**		
	691	800 / A	1	**9650.231**		
	725	800 / B	1	**9650.241**		
	799	800 / C	1	**9650.251**		
	891	1000 / A	1	**9650.261**		
	925	1000 / B	1	**9650.271**		
	999	1000 / C	1	**9650.281**		
	1091	1200 / A	1	**9650.291**		
	1125	1200 / B	1	**9650.301**		
	1199	1200 / C	1	**9650.311**		
	2400	– / –	3	**9650.360**		
	2400	– / –	4	**9659.360**		

[1] A = Cable connection system with end support
B = Left-hand or right-hand end enclosure in a switchgear installation
C = Bayed enclosure with sections bayed on the left and right
[2] Modules for two complete stabilisers

Connection components Page 87 **SV-TS 8 enclosures** Page 30 – 38 **Accessories** Page 99 – 112

Connection components, Maxi-PLS 3200





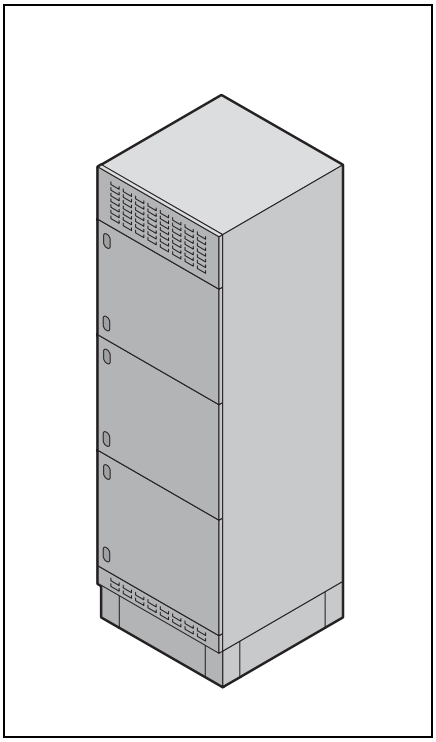
Detailed drawing,
see page 126.

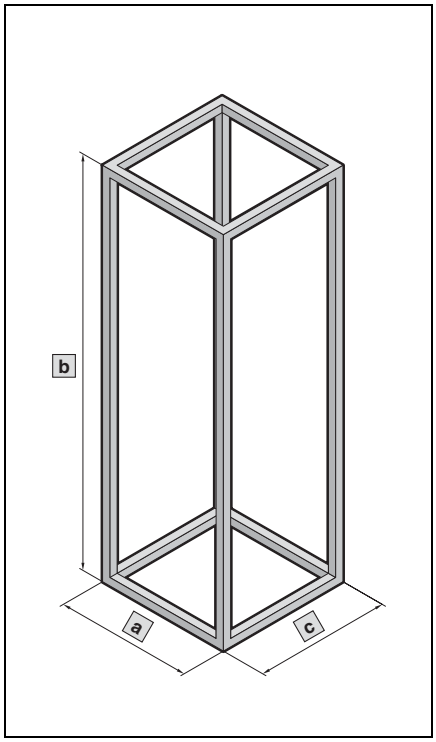
Maxi-PLS connection components				3-pole		4-pole	
				Packs of	Model No. SV	Packs of	Model No. SV
1	**Connection bracket E-Cu** Transition from the main busbar system to the connector kits[1].						
	For enclosure depth mm	Width mm	Number of brackets per phase				
	600	60	1	1 set	**9650.400**	–	**–**
		60	2	1 set	**9650.410**	–	**–**
		60	3	1 set	**9650.420**	–	**–**
		100	2	1 set	**9650.470**	–	**–**
		100	3	1 set	**9650.480**	–	**–**
		120	3	1 set	**9650.487**	–	**–**
	800	60	1	1 set	**9659.403**	1 set	**9659.403 + 9659.404**
		60	2	1 set	**9659.413**	1 set	**9659.413 + 9659.414**
		60	3	1 set	**9659.423**	1 set	**9659.423 + 9659.424**
		100	2	1 set	**9659.473**	1 set	**9659.473 + 9659.474**
		100	3	1 set	**9659.483**	1 set	**9659.483 + 9659.484**
		120	3	1 set	**9659.493**	1 set	**9659.493 + 9659.494**
2	**Isolator chassis** for isolated routing of the connection brackets. Material: PA 6.6, black, including assembly parts.						
	Bar centre distance mm		For connection bracket width mm				
	150		60	1 set	**9650.020**	1 set	**9659.020**
	150		100	1 set	**9650.030**	1 set	**9659.030**
3	**U contact maker E-Cu** for contacting the connection brackets to the Maxi-PLS busbars. Including sliding blocks.						
	60 mm width			3	**9650.170**	3 + 1	**9650.170 9659.170**
	100 mm width			3	**9650.180**	3 + 1	**9650.180 9659.180**
4	**Connection clamp** for the connection of round conductors (Cu/Al) 95 to 300 mm² (single-wire and multi-wire). Including assembly parts.						
	50 mm width			1	**9650.325**	1	**9650.325**
5	**Connection plates** for the connection of laminated flat copper bars. Including assembly parts.						
	Maximum clamping area	2 x 10 x 32 x 1 mm		3	**9650.330**	3	**9650.330**
		2 x 10 x 63 x 1 mm		3	**9650.340**	3	**9650.340**
		2 x 10 x 100 x 1 mm		3	**9650.350**	3	**9650.350**
6	**Terminal stud** for connecting cables with ring terminals. Including sliding blocks.						
	Thread	M12	Length 32 mm	3	**9650.370**	3	**9650.370**
		M16	Length 32 mm	3	**9650.380**	3	**9650.380**
7	**Sliding blocks** for sliding into the Maxi-PLS busbar section at the sides.						
	Thread	M10	Length (L) 25 mm	15	**9650.980**	15	**9650.980**
		M12	Length (L) 35 mm	15	**9650.990**	15	**9650.990**
8	**Sliding nuts** for retrospective insertion into the Maxi-PLS busbar section.						
	Thread	M6		15	**9650.900**	15	**9650.900**
		M10		15	**9650.910**	15	**9650.910**
		M12		15	**9650.920**	15	**9650.920**
	Threaded bolts for individual connection options[2]. Including plain washers, spring lock washers and nuts.						
	Thread	M6	Length 35 mm	6	**9650.930**	6	**9650.930**
		M10	Length 35 mm	6	**9650.940**	6	**9650.940**
		M12	Length 80 mm	6	**9650.960**	6	**9650.960**

[1] For the assembly of connection brackets to Maxi-PLS busbars without using contact makers (e.g. for cable connection system), please choose sliding blocks SV 9650.990 (3-pole = 6 pcs., 4-pole = 8 pcs.).
[2] Sliding blocks or sliding nuts are additionally required for attachment.

Connection components Page 86 **SV-TS 8 enclosures** Page 30 – 38 **Accessories** Page 99 – 112

Connection components, Maxi-PLS/Flat-PLS





Connector kits

For connecting air circuit-breakers (ACB) to Maxi-PLS/Flat-PLS busbar systems in SV-TS 8 modular enclosures. Please include the design code of the specification below in the order text for your connector kit.
We highly recommend the Rittal Power Engineering software for easier configuration of the connector kits – see page 123.

Model No. SV		Design code													
		a	b	c	d	e	f	g	h	i	j	k	l	m	n
Top	**9676.910**														
Bottom	**9676.912**														

Material:
E-Cu

Note:
Please quote the complete design code on all enquiries and orders.

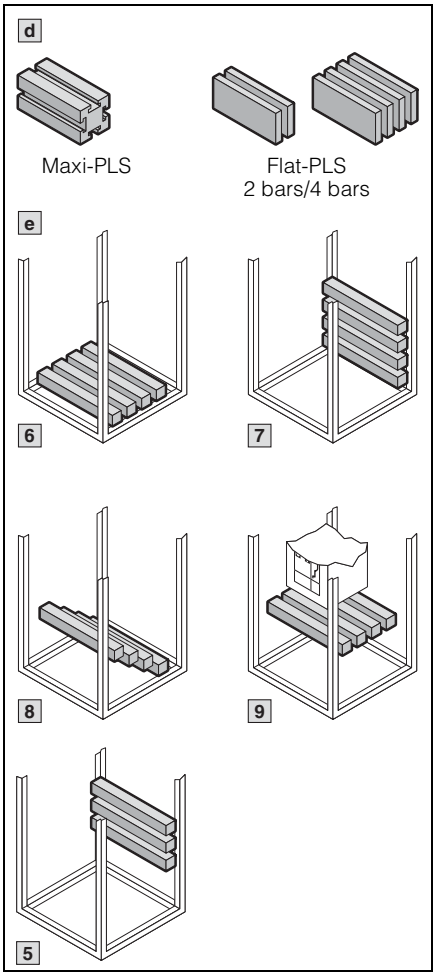
Also required:

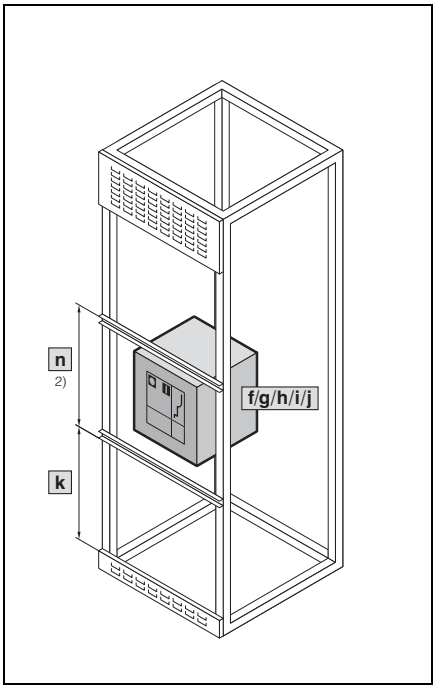
M10/M12 screw connections,
see page 104.
Terminal studs Maxi-PLS,
see page 103.
Screw connections Flat-PLS,
see page 104.

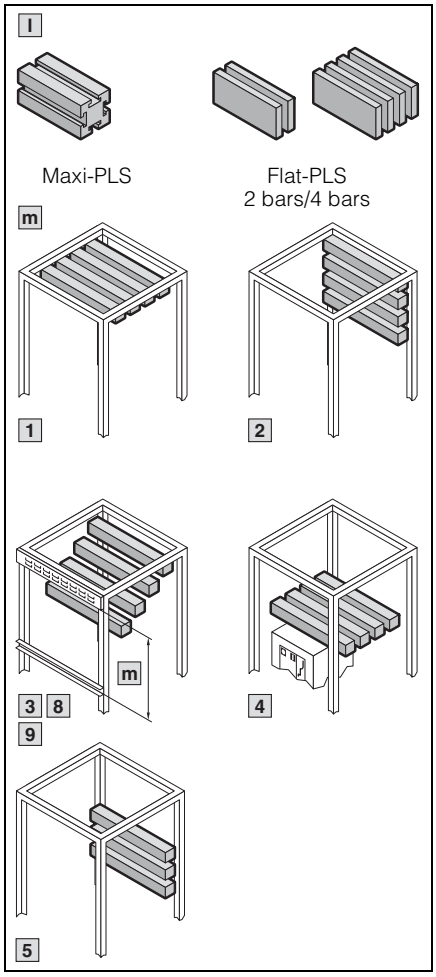
Enclosure

a	Width mm	400 **4**	600 **6**	800 **8**	1000 **0**	Selection ☐
b	Height mm	1800 **8**	2000 **0**	2200 **2**		Selection ☐
c	Depth mm	600 **6**	800 **8**			Selection ☐

Connection components, Maxi-PLS/Flat-PLS







Underneath the air circuit-breaker

d	**Busbar type**				Selection ☐
	Maxi-PLS	1600	3-pole	A	
			4-pole	B	
		2000	3-pole	C	
			4-pole	D	
		3200	3-pole	E	
			4-pole	F	
	Flat-PLS	60 2 bars	3-pole	G	
			4-pole	H	
		60 4 bars	3-pole	I	
			4-pole	J	
		100 2 bars	3-pole	K	
			4-pole	L	
		100 4 bars	3-pole	M	
			4-pole	N	
e	**Busbar system configuration**				Selection ☐
	in rear section, Form 1[1]			5	
	in the base section			6	
	in the lower rear section			7	
	as cable connection system			8	
	directly underneath the circuit-breaker			9	

Air circuit-breakers

f	**Brand**	ABB		A	Selection ☐
		Mitsubishi		J	
		Merlin Gerin		M	
		Siemens/Moeller		S	
		Terasaki		D	
		Various		V	
g	**Size**	1/none		1	Selection ☐
		2		2	
		3		3	
		4		4	
h	**Rated current**	630 A		A	Selection ☐
		800 A		B	
		1000 A		C	
		1250 A		D	
		1600 A		E	
		2000 A		F	
		2500 A		G	
		3200 A		H	
		4000 A		I	
i	**No. of poles/ version**	Static	3-pole	3	Selection ☐
			4-pole	4	
		Rack-mounted	3-pole	6	
			4-pole	8	
j	**Position**	Behind the door		H	Selection ☐
		In front of the door (in door cut-out)		V	
k	**Compartment height directly underneath the circuit-breaker**	0 mm		0	Selection ☐
		150 mm		1	
		200 mm		2	
		250 mm		3	
		300 mm		4	
		400 mm		5	
		600 mm[1]		6	
		800 mm		7	
		1000 mm		8	
n[2]	**Compartment height of circuit-breaker**	600 mm		6	Selection ☐
		800 mm		7	
		1000 mm		8	

Above the air circuit-breaker

l	**Busbar type**				Selection ☐
	Maxi-PLS	1600	3-pole	A	
			4-pole	B	
		2000	3-pole	C	
			4-pole	D	
		3200	3-pole	E	
			4-pole	F	
	Flat-PLS	60 2 bars	3-pole	G	
			4-pole	H	
		60 4 bars	3-pole	I	
			4-pole	J	
		100 2 bars	3-pole	K	
			4-pole	L	
		100 4 bars	3-pole	M	
			4-pole	N	
m	**Busbar system configuration**				Selection ☐
	in the roof section			1	
	in the top rear section			2	
	as cable connection system, connection space height 600 mm			3	
	directly above the circuit-breaker			4	
	in rear section, Form 1[1]			5	
	as cable connection system connection space height 800 mm			8	
	as cable connection system connection space height 1000 mm			9	

[1] Standard height in Form 1
[2] For Form 1 please select a 6

Busbar support Flat-PLS

for flat copper busbars
For the configuration of busbar systems from flat copper bars. For mounting on a system attachment or directly on the mounting plate. Also suitable for aluminium and copper-plated aluminium bars.
Max. permissible tolerance of bar width (60/100 mm) ±0.3 mm, bar thickness (10 mm) ±0.15 mm.

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

Colour: RAL 9005

Short-circuit protection diagrams,
see page 118.

Current carrying capacity,
see page 121.

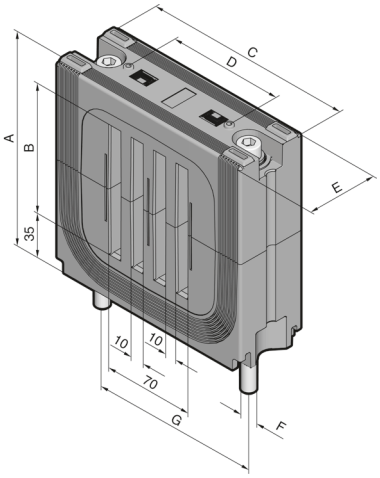
Supply includes:
Assembly parts.

Note:
The internal use of busbar supports may be rotated through 90° so that the busbars 3 may be upright or horizontal 4 for installation purposes.

Busbars,
see page 110.

Accessories:

System attachments for Flat-PLS,
see page 90.
End cover,
see page 92.
Filler piece,
see page 92.
Spacer,
see page 92.



System	For busbars up to	A mm	B mm	C mm	D mm	E mm	F	Md[2] Nm	G mm	Packs of	Model No. SV
1 Flat-PLS 60	4 x 60 x 10 mm	127.5	60	120	70	50	M8	8	100	1	**9676.002[1]**
2 Flat-PLS 100	4 x 100 x 10 mm	162.5	100	165	90	55	M10	9	125	1	**9676.004[1]**

[1] With a bar width of < 60/100 mm the spacer should be used.
When using only 1, 2 or 3 bars, the vacant bar slots should be closed using the filler pieces.
[2] Rated torque

1

2

System attachments

for Flat-PLS
For the assembly of 3- or 4-pole busbar systems of flat copper bars.
For mounting on the TS frame or punched section with mounting flange.

Material:
Stainless steel

Supply includes:
Assembly parts.

For busbar support Flat-PLS 60

For application	For enclosure depth mm	Bar centre distance mm	For assembly 3-pole	For assembly 4-pole	Packs of	Model No. SV
1 In the roof section/ base section	600	120	■	■	2	**9674.162**
	800	120	■	■	2	**9674.182**
Vertical coupling set	600	120	■	■	2	**9674.172**
	800	120	■	■	2	**9674.192**
Rear section[1] [2]	–	120	■	■	2	**9674.122**
Rear section[3]	–	185	■	–	2	**9674.152**
2 Single-pole assembly, for mounting on the TS 8 frame	–	–	–	–	2	**9674.102**

For busbar support Flat-PLS 100

For application	For enclosure depth mm	Bar centre distance mm	For assembly 3-pole	For assembly 4-pole	Packs of	Model No. SV
1 In the roof section/ base section	600	165	■	–	2	**9674.164**
	800	165	■	■	2	**9674.184**
Vertical coupling set	600	165	■	–	2	**9674.174**
	800	165	■	■	2	**9674.194**
Rear section[1] [2]	–	165	■	■	2	**9674.124**
Rear section[3]	–	185	■	–	2	**9674.154**
2 Single-pole assembly, for mounting on the TS 8 frame	–	–	–	–	2	**9674.104**

[1] For mounting between the TS 8 roof frame and TS punched section with mounting flange.
[2] In conjunction with form separation, may only be used in 800 mm deep TS enclosures.
[3] For mounting between two TS punched sections with mounting flanges.

Busbar support Flat-PLS

for flat copper bar, suitable for stabiliser bar

For the configuration of busbar systems from flat copper bars with increased short-circuit resistance. For mounting on a system attachment or directly on the mounting plate.
Also suitable for aluminium and copper-plated aluminium bars.
Max. permissible tolerance of bar width (60/100 mm) ± 0.3 mm, bar thickness (10 mm) ± 0.15 mm.

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

Colour:
RAL 9005

Short-circuit protection diagrams,
see page 118.

Current carrying capacity,
see page 121.

Supply includes:
Assembly parts.

Note:
The internal busbar support insert may be rotated through 90° to allow upright or flat installation of the busbars.

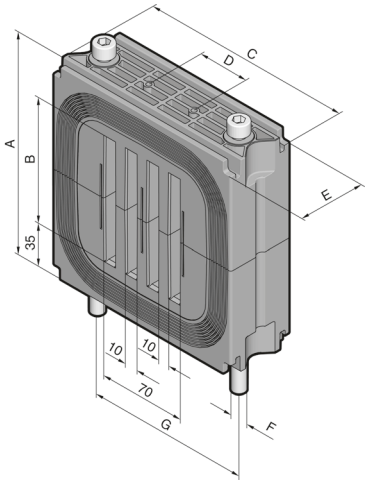
Busbars,
see page 110.

Also required:

System attachments for Flat-PLS,
see page 90.
Busbar stabiliser bar,
see page 91.

Accessories:

End cover,
see page 92.
Filler piece,
see page 92.
Spacer,
see page 92.



System	For busbars up to	A mm	B mm	C mm	D mm	E mm	F	Md[2] Nm	G mm	Packs of	Model No. SV
Flat-PLS 60	4 x 60 x 10 mm	130	60	120	70	50	M8	10	100	1	**9676.020[1]**
Flat-PLS 100	4 x 100 x 10 mm	170	100	165	90	55	M10	12	125	1	**9676.021[1]**

[1] With a bar width of < 60/100 mm the spacer should be used.
When using only 1, 2 or 3 bars, the vacant bar slots should be closed using the filler pieces.
[2] Rated torque

Busbar stabiliser bars

for busbar support Flat-PLS

For the configuration of busbar systems from flat copper bars with increased short-circuit resistance. For mounting in conjunction with system attachment and Flat-PLS busbar support for stabiliser bar.

Material:
Stainless steel

Also required:

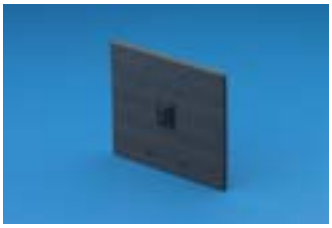
System attachments for Flat-PLS,
see page 90.

Accessories:

Busbar claw,
see page 93.

For system	For busbar supports	Bar centre distance mm	System assembly	Packs of	Model No. SV
Flat-PLS 60	SV 9676.020	120	3-pole	2	**9676.022**
			4-pole	2	**9676.023**
		185	3-pole	2	**9676.026**
Flat-PLS 100	SV 9676.021	165	3-pole	2	**9676.024**
			4-pole	2	**9676.025**
		185	3-pole	2	**9676.027**

Flat-PLS



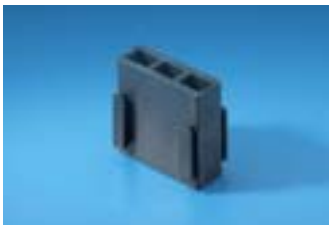
End covers

for busbar support Flat-PLS
Inserted into the Flat-PLS busbar supports for electric shockproof covering of the busbar ends.

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

Colour:
RAL 9005

For system	For busbar supports		Packs of	**Model No. SV**
Flat-PLS 60	SV 9676.002	SV 9676.020	2	**9676.006**
Flat-PLS 100	SV 9676.004	SV 9676.021		



Filler pieces

for busbar support Flat-PLS
To cover open chambers in busbar supports when using only 1, 2 or 3 bars per conductor or when using a busbar support as an end support.

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

Colour:
RAL 9005

Note:
If only 2 busbars are used per support, the bars should be inserted as shown in the left-hand picture, in order to ensure the usability of connection brackets and connector kits.

For system	For busbar supports[3]		Packs of	**Model No. SV**
Flat-PLS 60[1]	SV 9676.002	SV 9676.020	16	**9676.008**
Flat-PLS 100[2]	SV 9676.004	SV 9676.021		

[1] Two required per chamber.
[2] Three required per chamber.
[3] When using a busbar support as an end support, eight are required per support.

Spacers

for busbar support Flat-PLS
When using smaller busbar widths, the spacer piece should be inserted into the chambers of the support to compensate for width differences.

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

Colour:
RAL 9005

Note:
The spacers should always be inserted into the support base, so that the busbars are as close as possible to the support lid (see left-hand picture).

For system	E-Cu Dimensions	Required number of spacers per chamber	Packs of	**Model No. SV**
Flat-PLS 60	40 x 10 mm	2	16	**9676.007**
	50 x 10 mm	1		
Flat-PLS 100	80 x 10 mm	2		

Busbar claws

for Flat-PLS
For the assembly of busbar systems from flat copper bars with increased short-circuit resistance or for the mechanical stabilisation of busbar stacks. For use on free busbar lengths > 300 mm in order to achieve the specified short-circuit resistance levels.

Material:
Stainless steel.
Accessories: Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Accessories:

Covers for busbar claws,
see page 93.

Detailed drawing,
see page 127.

For system	For busbar width mm	Screw	Rated torque Nm	Packs of	**Model No. SV**
Flat-PLS 60	2 x 60 x 10 mm	M10 x 80	15	1	**9676.011**
	3 x 60 x 10 mm	M10 x 80	15	1	**9676.012**
	4 x 60 x 10 mm	M10 x 80	15	1	**9676.013**
Flat-PLS 100	2 x 100 x 10 mm	M10 x 120	15	1	**9676.014**
	3 x 100 x 10 mm	M10 x 120	15	1	**9676.015**
	4 x 100 x 10 mm	M10 x 120	15	1	**9676.016**
Flat-PLS	2 x B x 10 mm[1)]	Without screw[2)]	15	1	**9676.017**
	3 x B x 10 mm[1)]	Without screw[3)]	15	1	**9676.018**
	4 x B x 10 mm[1)]	Without screw[3)]	15	1	**9676.019**

[1)] For the version without screw, the relevant screw must additionally be ordered according to the relevant busbar width B.
[2)] Required number of screws per busbar claw: 1
[3)] Required number of screws per busbar claw: 2

Accessories	For busbar width B mm	Screw	Rated torque Nm	Packs of	**Model No. SV**	Page
Screw connections for Flat-PLS busbar systems	40	M10 x 60	15	8	9676.806	104
	50	M10 x 70	15	8	9676.807	104
	60	M10 x 80	15	8	9676.808	104
	80	M10 x 100	15	8	9676.810	104
	100	M10 x 120	15	8	9676.812	104

Covers

for busbar claws
For contact hazard protection of the busbar claws. The cover terminates flush with the cover sections of the Flat-PLS system.

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

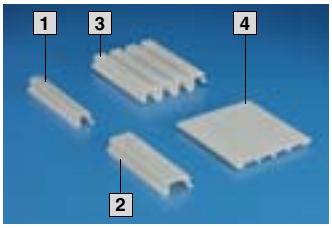
Colour:
RAL 7035

Accessories:

Cover section,
see page 94.

For system	No. of bars per conductor	For busbar claw			Packs of	**Model No. SV**
Flat-PLS 60/ Flat-PLS 100	2	SV 9676.011	SV 9676.014	SV 9676.017 SV 9676.832	8	**9676.046**
	3	SV 9676.012	SV 9676.015	SV 9676.018	8	**9676.047**
	4	SV 9676.013	SV 9676.016	SV 9676.019	8	**9676.048**

Flat-PLS



Cover sections

for Flat-PLS

For contact hazard protection of the Flat-PLS busbar system and connector kits for open air circuit-breakers. The cover sections may also be used outside of Flat-PLS for covering standard, commercially available flat copper bars. Edge cover sections should always be combined with side cover sections when assembling the cover.

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

Colour:
RAL 7035

Detailed drawing,
see page 127.

	For system	No. of bars per conductor	For busbar width mm	Length mm	Packs of	Model No. SV
1	Edge cover section for bar systems with no space between the bars	1	–	1000	10	**9676.041**
2		2	–	1000	10	**9676.042**
		3	–	1000	10	**9676.043**
	Edge cover section for bar systems with 10 mm space between the bars	2	–	1000	10	**9676.052**
		3	–	1000	10	**9676.053**
3		4	–	1000	10	**9676.054**
	Side cover section for bar systems, to match the edge cover sections	–	60	1000	10	**9676.056**
		–	80	1000	10	**9676.058**
4		–	100	1000	10	**9676.059**

Direct connection terminals

for Flat-PLS

For the direct connection of round conductors 95 – 300 mm² (single-wire and multi-wire).
The mounting accessories supplied loose may be used to mount the connection terminal on the Flat-PLS busbar system without the need for drilling.

Max. rated current with 300 m²
at 20°K = 630 A
at 70°K = 1300 A

Material:
Brass alloy,
nickel-plated surface finish

Supply includes:
Assembly parts.

Detailed drawing,
see page 128.

For system	For busbar width mm	Screw	Rated torque Nm	Packs of	Model No. SV
Flat-PLS 60	60	M10 x 120	20	1	**9676.731**
Flat-PLS 100	100	M10 x 160	20	1	**9676.733**
Flat-PLS	B[1)]	Without screw	20	1	**9676.730**

[1)] For the version without screw, the relevant screw must additionally be ordered according to the relevant busbar width B.

Accessories	For busbar width B mm	Screw	Rated torque Nm	Packs of	Model No. SV	Page
Screw connections for Flat-PLS busbar systems	40	M10 x 100	20	8	9676.810	104
	50	M10 x 110	20	8	9676.811	104
	60	M10 x 120	20	8	9676.812	104
	80	M10 x 140	20	8	9676.814	104
	100	M10 x 160	20	8	9676.816	104

Connection plates with studs M12/16

for Flat-PLS

For connecting ring terminals to a Flat-PLS busbar system with 2 – 4 bars per conductor. The mounting accessories supplied loose may be used to mount the connection terminal on a Flat-PLS busbar system without the need for drilling.

Material:
E-Cu, nickel-plated

Supply includes:
Assembly parts.

Also required:

Screw connections Flat-PLS,
see page 104.

Detailed drawing,
see page 128.

For system	Terminal studs	Stud length mm	Rated torque Terminal stud Nm	Rated torque Screw M10 Nm	Packs of	**Model No. SV**
Flat-PLS	M12	30	40	20	1	**9676.700**
Flat-PLS	M16	30	40	20	1	**9676.704**

Accessories	For busbar width B mm	Screw	Rated torque Nm	Packs of	**Model No. SV**	Page
Screw connections for Flat-PLS busbar systems	40	M10 x 60	20	8	9676.806	104
	50	M10 x 70	20	8	9676.807	104
	60	M10 x 80	20	8	9676.808	104
	80	M10 x 100	20	8	9676.810	104
	100	M10 x 120	20	8	9676.812	104

Connection plates with studs M10

for Flat-PLS

For connecting ring terminals to a Flat-PLS busbar system with 2 – 4 bars per conductor. The straight-through screws and the mounting accessories supplied loose may be used to mount the connection terminal on a Flat-PLS busbar system without the need for drilling.

Material:
E-Cu, nickel-plated

Supply includes:
Assembly parts.

Also required:

Screw connections Flat-PLS,
see page 104.

Detailed drawing,
see page 128.

For system	Terminal stud	Rated torque Screw M10 Nm	Packs of	**Model No. SV**
Flat-PLS	M10	20	1	**9676.710**
	2 x M10	20	1	**9676.714**

Accessories	For busbar width B mm	Screw	Rated torque Nm	Packs of	**Model No. SV**	Page
Screw connections for Flat-PLS busbar systems	40	M10 x 80	20	8	9676.808	104
	50	M10 x 90	20	8	9676.809	104
	60	M10 x 100	20	8	9676.810	104
	80	M10 x 120	20	8	9676.812	104
	100	M10 x 140	20	8	9676.814	104

Connection plates for laminated copper bars

for Flat-PLS

For connecting laminated copper bars up to 2 x 10 x 100 x 1.0 mm (Flexibar) to a Flat-PLS busbar system with 2 – 4 bars per conductor. The mounting accessories supplied loose may be used to mount the copper bar on a Flat-PLS busbar system without the need for drilling.

Material:
Infill plate: E-Cu, nickel-plated
Top: Stainless steel

Supply includes:
Assembly parts.

Laminated copper bars,
see page 112.

Detailed drawing,
see page 128.

For system	For busbar width mm	For laminated copper bars up to	Screw	Rated torque Nm	Packs of	**Model No. SV**
Flat-PLS 60	60	2 x 10 x 32 x 1 mm	2 off M10 x 115	20	1	**9676.741**
Flat-PLS 60	60	2 x 10 x 63 x 1 mm	2 off M10 x 115	25	1	**9676.742**
Flat-PLS 60	60	2 x 10 x 100 x 1 mm	2 off M10 x 115	30	1	**9676.743**
Flat-PLS 100	100	2 x 10 x 32 x 1 mm	2 off M10 x 150	20	1	**9676.744**
Flat-PLS 100	100	2 x 10 x 63 x 1 mm	2 off M10 x 150	25	1	**9676.745**
Flat-PLS 100	100	2 x 10 x 100 x 1 mm	2 off M10 x 150	30	1	**9676.746**
Flat-PLS	B[1)]	2 x 10 x 32 x 1 mm	Without screws	20	1	**9676.747[2)]**
Flat-PLS	B[1)]	2 x 10 x 63 x 1 mm	Without screws	25g	1	**9676.748[2)]**
Flat-PLS	B[1)]	2 x 10 x 100 x 1 mm	Without screws	30	1	**9676.749[2)]**

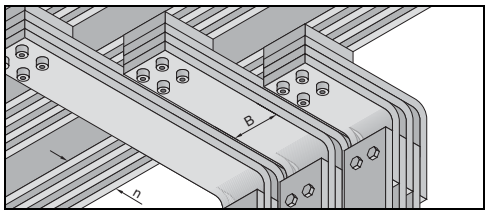
[1)] For the version without screw, the relevant screw must additionally be ordered according to the relevant busbar width B.
[2)] Version without assembly screws.

Accessories	For busbar width B mm	Screw	Rated torque Nm	Packs of	**Model No. SV**	Page
Screw connections for Flat-PLS busbar systems	40	M10 x 90	20/25/30	8	9676.809	104
	50	M10 x 100	20/25/30	8	9676.810	104
	80	M10 x 130	20/25/30	8	9676.813	104

Contact makers

for Flat-PLS

For connecting connection brackets and connector kits of flat copper bars to Flat-PLS busbar systems; no drilling required
For connecting the connection brackets or a connector kit to the main busbar system, a suitable screw connector kit should be ordered separately.



Material:
E-Cu

Supply includes:
Contact maker,
assembly aid for Flat-PLS with 60 or 100 mm bar width[1)],
assembly parts.

Note:
Nickel-plated version of the contact maker for connecting alumminium bars available on request.

Also required:
Screw connections Flat-PLS[2)],
see page 104.

Detailed drawing,
see page 127.

For system	For busbar width (B) mm	No. (n) of bars per conductor	Rated torque Nm	Packs of	**Model No. SV**
Flat-PLS 60 + Flat-PLS 100	60	2	20	1	**9676.526**
	60	3 or 4	20	1	**9676.546**
	80	2	20	1	**9676.528**
	80	3 or 4	20	1	**9676.548**
	100	2	20	1	**9676.520**
	100	3 or 4	20	1	**9676.540**

[1)] If alternative main busbar widths are used, the screws supplied loose with the mounting aid cannot be used.
[2)] Required screw length for attaching the connection bracket:
Length of screw connection = (no. of bars of the connection bracket x 10 mm) + width of main busbar system + 40 mm.
Required screw length for attaching the connector kits to main busbar systems in the rear section:
Length of screw connection = (no. of bars of connector kits x 10 mm) + width of main busbar system + 40 mm + sum total of distances between the bars of the connector kits.

Connection bracket

for Flat-PLS

For connecting connection brackets and connector kits of flat copper bars to Flat-PLS busbar systems; no drilling required.

Material:
E-Cu

Supply includes:
Connection bracket without assembly parts.

Also required:

Contact maker,
see page 96.
Connector kit for Flat-PLS,
see page 88.
Screw connections for Flat-PLS[1)],
see page 104.
M12 screw connections for connection brackets,
see page 104.

For system Flat-PLS	For conductor	No. of bars per conductor	Bar width of connection bracket	Packs of	Model No. SV	Packs of	Model No. SV
				For enclosure depth 600 mm		For enclosure depth 800 mm	
for connecting connector kits of air circuit-breakers to a Flat-PLS 60 main bar system in the roof section, base section, directly above or below the air circuit-breaker	L1, L2, L3	1	60	1 set	**9676.201**	1 set	**9676.221**
	N			1 set	**9676.202**	1 set	**9676.222**
	L1, L2, L3	2		1 set	**9676.203**	1 set	**9676.223**
	N			1 set	**9676.204**	1 set	**9676.224**
	L1, L2, L3	3		1 set	**9676.205**	1 set	**9676.225**
	N			1 set	**9676.206**	1 set	**9676.226**
	L1, L2, L3	2	100	1 set	**9676.213**	1 set	**9676.233**
	N			1 set	**9676.214**	1 set	**9676.234**
	L1, L2, L3	3		1 set	**9676.215**	1 set	**9676.235**
	N			1 set	**9676.216**	1 set	**9676.236**
	L1, L2, L3	3	120	1 set	**9676.217**	1 set	**9676.237**
	N			1 set	**9676.218**	1 set	**9676.238**
for connecting connector kits of air circuit-breakers to a Flat-PLS 100 main bar system in the roof section, base section, directly above or below the air circuit-breaker	L1, L2, L3	1	60	1 set	**9676.301**	1 set	**9676.321**
	N			–	**–**	1 set	**9676.322**
	L1, L2, L3	2		1 set	**9676.303**	1 set	**9676.323**
	N			–	**–**	1 set	**9676.324**
	L1, L2, L3	3		1 set	**9676.305**	1 set	**9676.325**
	N			–	**–**	1 set	**9676.326**
	L1, L2, L3	2	100	1 set	**9676.313**	1 set	**9676.333**
	N			–	**–**	1 set	**9676.334**
	L1, L2, L3	3		1 set	**9676.315**	1 set	**9676.335**
	N			–	**–**	1 set	**9676.336**
	L1, L2, L3	3	120	1 set	**9676.317**	1 set	**9676.337**
	N			–	**–**	1 set	**9676.338**

[1)] Screw length = (no. of bars x 10 mm) + bar width of main busbar + 40 mm.
No. of screws per bracket: for 2 bars, per conductor of the main busbar system: 2,
for 3/4 bars, per conductor of the main busbar system: 4

Connector kits

for Flat-PLS

For connecting air circuit-breakers (ACB) to Flat-PLS busbar systems in SV-TS 8 modular enclosures. Please include the design code for the relevant specification in the order text for your connector kit.
We highly recommend the Rittal Power Engineering software for easier configuration of the connector kits – see page 123.

Note:
Model No. design code,
see page 88.

Material:
E-Cu

Supply includes:
Connection bracket.

Also required:

M12 screw connections for connection brackets,
see page 104.
Screw connections Flat-PLS,
see page 104.

Flat-PLS

Longitudinal connector

for Flat-PLS
For connecting Flat-PLS busbar systems, no drilling required.

Material:
E-Cu

Supply includes:
Assembly parts.

Note:
Nickel-plated version of the longitudinal connector for connecting alumminium bars available on request.

Detailed drawing,
see page 127.

For system	No. of bars per conductor	For busbar width mm	Screw	Rated torque Nm	Packs of	**Model No. SV**
Flat-PLS 60	2	60	M10 x 100	20	1	**9676.626**
	3 or 4	60	M10 x 100	20	1	**9676.646**
Flat-PLS 100	2	80	M10 x 120	20	1	**9676.628**
	3 or 4	80	M10 x 120	20	1	**9676.648**
	2	100	M10 x 140	20	1	**9676.620**
	3 or 4	100	M10 x 140	20	1	**9676.640**
Flat-PLS	2	B[1]	Without screw	20	1	**9676.621[2] [3]**
	3 or 4	B[1]	Without screw	20	1	**9676.641[2] [4]**

[1] For the version without screw, the relevant screw must additionally be ordered according to the relevant busbar width B.
[2] Design as for SV 9676.620/SV 9676.640, but without assembly screws.
[3] Number of screws: 4
[4] Number of screws: 8

Accessories	For busbar width B mm	Screw	Rated torque Nm	Packs of	**Model No. SV**	Page
Screw connections for Flat-PLS busbar systems	40	M10 x 80	20	8	9676.808	104
	50	M10 x 90	20	8	9676.809	104

Angular connector

for Flat-PLS busbar systems
For connecting horizontal and vertical Flat-PLS busbar systems.

Material:
E-Cu

Supply includes:
Bracket.

Note:
No. of corner brackets required for applications
- 3-pole = 3
- 4-pole = 4

Also required:
Screw connections for Flat-PLS busbar system[1], see page 104.
Claw with threaded insert, see page 104.

For systems	Bar population up to	For enclosure depth mm	No. of brackets	Packs of	**Model No. SV**
Flat-PLS 60	2 x 40 x 10 mm	600/800	2 x 40 x 10 mm	1	**9675.842**
Flat-PLS 60	2 x 60 x 10 mm	600/800	3 x 40 x 10 mm	1	**9675.843**
Flat-PLS 60/100	4 x 40 x 10 mm or 2 x 100 x 10 mm	600/800	2 x 80 x 10 mm	1	**9675.882**
Flat-PLS 60	4 x 60 x 10 mm	600/800	3 x 80 x 10 mm	1	**9675.883**
Flat-PLS 100	4 x 80 x 10 mm	600/800	2 x 100 x 10 mm	1	**9675.892**
Flat-PLS 100	4 x 100 x 10 mm	600/800	3 x 100 x 10 mm	1	**9675.893**

[1] Required length of screw connection = (no. of brackets x 10 mm) + bar width of main busbar system + 20 mm.

Cable connection system

for Maxi-PLS/Flat-PLS

The type-tested cable connection system facilitates fast, cost-optimised assembly while guaranteeing the very highest level of security. Thanks to the sliding block system, the connection components may be moved around as required, for simple, manageable connection of cables and lines.

In conjunction with the connection brackets and connection kits of Ri4Power sytem technology, the complete assembly of air circuit-breaker sections is simple and requires minimal installation time.

Cable connection systems are dimensioned according to
- Rated current for incoming/outgoing circuit
- Enclosure dimensions
- Number of poles in the connection
- Type and number of cables or lines

For rated current of cable connection system		Packs of	For enclosure width mm				Page
			600	800	1000	1200	
			Model No. SV				
up to 2000 A	Cable connection bar	1	**9640.206**	**9640.236**	**9640.266**	**9640.296**	84
	End supports	6	**9640.010**	**9640.010**	**9640.010**	**9640.010**	84
	Terminal studs M12	3	**9640.370**				85
	Terminal studs M16	3	**9640.380**				85
	Direct connection terminal	1	**9640.325**				85
up to 3200 A	Cable connection bar	1	**9640.201**	**9640.231**	**9640.261**	**9640.291**	84
	End supports	6	**9640.010**	**9640.010**	**9640.010**	**9640.010**	84
	Terminal studs M12	3	**9640.370**				85
	Terminal studs M16	3	**9640.380**				85
	Direct connection terminal	1	**9640.325**				85
up to 4000 A	1 Cable connection bar	1	**9650.201**	**9650.231**	**9650.261**	**9650.291**	86
	2 End supports	6	**9650.010**	**9650.010**	**9650.010**	**9650.010**	86
	3 Terminal studs M12	3	**9650.370**				87
	Terminal studs M16	3	**9650.380**				87
	4 Direct connection terminal	1	**9650.325**				87
Additionally required							
Side panel module for cable connection space	For enclosure depth 600 mm	2	**9673.069**				51
	For enclosure depth 800 mm	2	**9673.089**				51

For more connection accessories, see page 85 or 87.

Order example

Cable connection for 2500 A, 4-pole, for enclosure W x H x D 800 x 2000 x 800 mm:
Designed for 6 cables, 240 mm² per conductor, with ring terminals for studs M12

	Required quantity	Model No. SV	
Side panel module for cable connection space (D = 800 mm)	2	**9673.089**	
Cable connection bar	4	**9640.231**	
End supports	8	**9640.010**	
Terminal studs M12	24	**9640.370**	

Accessories

T-connector kits

for Maxi-PLS/RiLine60 bar systems

For connecting horizontal Maxi-PLS main busbar systems to vertical RiLine60 distribution busbar systems in the modular outgoing section.

Material:
E-Cu

Supply includes:
Assembly parts.

Also required:
Distribution busbars,
see page 102.

Main busbar system	Distribution busbar system	Packs of	Model No. SV			
			For enclosure depth mm			
			600		800	
			3-pole	4-pole	3-pole	4-pole
In the roof section/ base section	**Behind the compartment**					
Maxi-PLS 1600/2000	Cu 30 x 10/5 mm	1 set	**9675.303**	**9675.304**	**9675.303**	**9675.304**
Maxi-PLS 3200	Cu 30 x 10/5 mm	1 set	**9675.311**	**–**	**9675.313**	**9675.314**
Maxi-PLS 1600/2000	PLS 1600	1 set	**9675.306**	**9675.307**	**9675.306**	**9675.307**
Maxi-PLS 3200	PLS 1600	1 set	**9675.315**	**–**	**9675.316**	**9675.317**
In the roof section/ base section	**In the compartment (indoors)**					
Maxi-PLS 1600/2000	Cu 30 x 10/5 mm	1 set	**9675.321**	**9675.322**	**9675.323**	**9675.324**
Maxi-PLS 3200	Cu 30 x 10/5 mm	1 set	**9675.331**	**–**	**9675.333**	**9675.334**
Maxi-PLS 1600/2000	PLS 1600	1 set	**9675.325**	**9675.328**	**9675.326**	**9675.327**
Maxi-PLS 3200	PLS 1600	1 set	**9675.335**	**–**	**9675.336**	**9675.337**
In the rear section top/bottom	**Behind the compartment**					
Maxi-PLS 1600/2000	Cu 30 x 10/5 mm	1 set	**9675.343**	**9675.344**	**9675.343**	**9675.344**
Maxi-PLS 3200	Cu 30 x 10/5 mm	1 set	**–**	**–**	**9675.353**	**9675.354**
Maxi-PLS 1600/2000	PLS 1600	1 set	**9675.346**	**9675.347**	**9675.346**	**9675.347**
Maxi-PLS 3200	PLS 1600	1 set	**–**	**–**	**9675.356**	**9675.357**
In the rear section top/bottom	**In the compartment (indoors)**					
Maxi-PLS 1600/2000	Cu 30 x 10/5 mm	1 set	**9675.361**	**9675.362**	**9675.363**	**9675.364**
Maxi-PLS 3200	Cu 30 x 10/5 mm	1 set	**–**	**–**	**9675.373**	**9675.374**
Maxi-PLS 1600/2000	PLS 1600	1 set	**9675.365**	**9675.368**	**9675.366**	**9675.367**
Maxi-PLS 3200	PLS 1600	1 set	**–**	**–**	**9675.376**	**9675.377**

T-connector kits

for Rittal RiLine60 busbar systems

For connecting horizontal RiLine60 main busbar systems to vertical RiLine60 distribution busbar systems.

Material:
E-Cu

Supply includes:
Assembly parts.

Also required:
Distribution busbars,
see page 102.

Main busbar system	Distribution busbar system	Packs of	Model No. SV	
			3-pole	4-pole
Behind the compartment				
PLS 1600	Cu 30 x 10/5 mm	1 set	**9675.130**	**9675.140**
Cu 30 x 10/5 mm	Cu 30 x 10/5 mm	1 set	**9675.133**	**9675.143**
PLS 1600	PLS 1600	1 set	**9675.136**	**9675.146**
Inside the compartment				
PLS 1600/Cu 30 x 10/5 mm	Cu 30 x 10/5 mm	1 set	**9675.153**[1)]	**9675.163**[1)]
PLS 1600	PLS 1600	1 set	**9675.156**[1)]	**9675.166**[1)]

[1)] Only suitable for enclosure depth 600 mm.

T-connector kits

for Flat-PLS/RiLine60 bar systems
For connecting horizontal Flat-PLS main busbar systems to vertical RiLine60 distribution busbar systems in the modular outgoing section.

Material:
E-Cu

Supply includes:
Sets of screws for connection to distribution busbar system.

Also required:

Distribution busbar,
see page 102.
Spacer rolls SV 9676.503[1],
see page 103.
Screw connections for Flat-PLS[1) 2)],
see page 104.
Claw with threaded insert M10[1],
see page 104.

Main busbar system	Distribution busbar system	Packs of	Model No. SV			
			For enclosure depth mm			
			600		800	
			3-pole	4-pole	3-pole	4-pole
In the roof section/ base section	**Behind the compartment**					
Flat-PLS 60	Cu 30 x 10/5 mm	1 set	**9675.501**	**9675.502**	**9675.503**	**9675.504**
Flat-PLS 100	Cu 30 x 10/5 mm	1 set	**9675.511**	**–**	**9675.513**	**9675.514**
Flat-PLS 60	PLS 1600	1 set	**9675.505**	**9675.508**	**9675.506**	**9675.507**
Flat-PLS 100	PLS 1600	1 set	**9675.515**	**–**	**9675.516**	**9675.517**
In the roof section/ base section	**In the compartment (indoors)**					
Flat-PLS 60	Cu 30 x 10/5 mm	1 set	**9675.521**	**9675.522**	**9675.523**	**9675.524**
Flat-PLS 100	Cu 30 x 10/5 mm	1 set	**9675.531**	**–**	**9675.533**	**9675.534**
Flat-PLS 60	PLS 1600	1 set	**9675.525**	**9675.528**	**9675.526**	**9675.527**
Flat-PLS 100	PLS 1600	1 set	**9675.535**	**–**	**9675.536**	**9675.537**
In the rear section top/bottom	**Behind the compartment**					
Flat-PLS 60	Cu 30 x 10/5 mm	1 set	**–**	**–**	**9675.543**	**9675.544**
Flat-PLS 100	Cu 30 x 10/5 mm	1 set	**–**	**–**	**9675.553**	**9675.554**
Flat-PLS 60	PLS 1600	1 set	**–**	**–**	**9675.546**	**9675.547**
Flat-PLS 100	PLS 1600	1 set	**–**	**–**	**9675.556**	**9675.557**
In the rear section top/bottom	**In the compartment (indoors)**					
Flat-PLS 60	Cu 30 x 10/5 mm	1 set	**–**	**–**	**9675.563**	**9675.564**
Flat-PLS 100	Cu 30 x 10/5 mm	1 set	**–**	**–**	**9675.573**	**9675.574**
Flat-PLS 60	PLS 1600	1 set	**–**	**–**	**9675.566**	**9675.567**
Flat-PLS 100	PLS 1600	1 set	**–**	**–**	**9675.576**	**9675.577**

[1)] For main busbar system with 2 or 3 bars, 1 spacer roll, 1 screw connection and 1 claw should be ordered per pole.
[2)] For main busbar systems with 4 bars, 2 spacer rolls, 2 screw connections and 2 claws should be ordered per pole.

Accessories	For busbar width B mm	Screws for connecting a T-connection kit for						Page
		Cu 30 x 10/5 mm			PLS 1600			
		Packs of	Screw	**Model No.**	Packs of	Screw	**Model No.**	
Screw connections for Flat-PLS busbar systems	40	8	M10 x 90	9676.809	8	M10 x 100	9676.810	104
	50	8	M10 x 100	9676.810	8	M10 x 110	9676.811	104
	60	8	M10 x 110	9676.811	8	M10 x 120	9676.812	104
	80	8	M10 x 130	9676.813	8	M10 x 140	9676.814	104
	100	8	M10 x 150	9676.815	8	M10 x 160	9676.816	104

Accessories

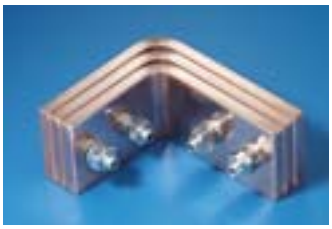
Distribution busbars

Prepared for the connection of T-connector kits. The lengths are adapted for applications in TS 8 enclosures.

Material:
E-Cu

For main busbar system with RiLine60 and distribution busbar system behind the compartment	For distribution busbar system in the compartment (indoors)	Packs of	Version			
			Cu 30 x 10 mm		PLS 1600	
For enclosure height mm			Length mm	**Model No. SV**	Length mm	**Model No. SV**
1800	–	1	1210	**9675.218**	1150	**9675.238**
2000	–	1	1410	**9675.210**	1350	**9675.230**
2200	1800[1)]	1	1610	**9675.212**	1550	**9675.232**
–	2000[1)]	1	1810	**9675.220**	1750	**9675.240**
–	2200[1)]	1	2010	**9675.222**	1950	**9675.242**

[1)] Also suitable as a vertical busbar for PE/PEN/N.



Corner bracket

E-Cu

- For connecting horizontal Maxi-PLS busbar systems in the roof/base section to vertical busbar systems.
- For 90° connection of two Maxi-PLS busbars in the rear area.
- May be used for individual installation.

Material:
E-Cu

Supply includes:
Bracket, threaded bolts, nuts, washers.

Note:
No. of corner brackets required for applications
- 3-pole = 3
- 4-pole = 4

For Maxi-PLS	Packs of	3/4-pole			Page
		1600	2000	3200	
No. of brackets per phase		2 x 60 x 10 mm	3 x 60 x 10 mm	3 x 80 x 10 mm	
Model No. SV	1	**9640.705**	**9640.700**	**9650.700**	
Also required					
Sliding blocks	15	9640.980[1)]	9640.980[1)]	9650.990[1)]	85/87

[1)] Quantity required per corner bracket: 4

Connector kits

for busbar riser
For connecting horizontal Maxi-PLS busbar systems in the rear section to vertical busbar systems.

Material:
E-Cu

Supply includes:
Bracket.

Also required:

Terminal studs for connector kits and connection brackets,
see page 103.

Sliding blocks

For Maxi-PLS	Packs of	**Model No. SV**	Page
1600/2000	15	9640.980[1)]	85
3200	15	9650.990[1)]	87

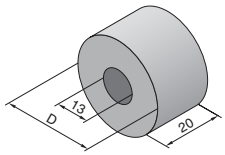
[1)] Quantity required per connector kit: 4

For Maxi-PLS	For enclosure depth mm	No. of brackets per phase	Packs of	**Model No. SV**	
				for 3-pole	for 4-pole
1600	600/800	2	1 set	**9660.318**	**9660.318 + 9660.319**
2000	600/800	3	1 set	**9660.313**	**9660.313 + 9660.314**
3200	600	3	1 set	**9660.363**	**–**
3200	800	3	1 set	**9660.368**	**9660.368 + 9660.369**

Spacer rolls

for Maxi-PLS and flat copper bars
For use as a universal spacer.

Material:
E-Cu



Diameter (D) mm	Cu bar – Cu bar		Maxi-PLS – Cu bar		Flat-PLS – Cu bar		Packs of	Model No. SV
	Cross-section size mm²	Max. rated current A	Contact area mm²	Max. rated current A	Contact area mm²	Max. rated current A		
30	550	1100	360	800	380	850	4	**9676.503**
40	1100	2200	780	1600	670	1400	4	**9676.504**
50	1800	3400	1380	2800	990	2000	4	**9676.505**

System attachments

for RiLine60 main busbar system
System attachment with M5 and M6 threaded holes in a 50 mm pitch for the rear assembly of a RiLine60 main busbar system up to 1600 A. For locating into the TS frame.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

Note:
RiLine60 busbar systems,
see page 66 – 76.

For enclosure width mm	Width mm	Height mm	Packs of	Model No. SV
300	238.5	362	1	**9674.003**
400	338.5	362	1	**9674.004**
600	538.5	362	1	**9674.006**
800	738.5	362	1	**9674.008**

Terminal studs

for connector kits and connection brackets
Special bolt for attaching a connector kit or connection bracket with and without U contact maker to a Maxi-PLS busbar section.
May be used for 3- and 4-pole connector kits.

Supply includes:
8 nuts and 8 washers.

Note:
For a connector kit bar width of 120 mm, 2 packs are required per connector kit.

No. of bars per phase when using		Packs of	For Maxi-PLS 1600/2000		For Maxi-PLS 3200	
with U contact maker	without U contact maker[1)]		Screw design	Model No. SV	Screw design	Model No. SV
–	1	8	M10 x 35	**9676.971**	M12 x 40	**9676.981**
–	2	8	M10 x 45	**9676.972**	M12 x 50	**9676.982**
1	3	8	M10 x 55	**9676.973**	M12 x 60	**9676.983**
2	–	8	M10 x 70	**9676.976**	M12 x 70	**9676.986**
3	–	8	M10 x 80	**9676.977**	M12 x 80	**9676.987**

[1)] Sliding blocks – see page 85/87 – additionally required.

Accessories

Screw connections

for connection brackets

For connecting connection brackets and a connector kit.
May be used for 3- and 4-pole connector kits.

Material:
Steel screws, zinc-plated, passivated

Supply includes:
8 nuts and 16 washers.

Note:
For a bar width of 120 mm, 2 packs are required per connector kit.

For systems	Screw design	Rated torque Nm	No. of bars per phase	Packs of	Model No. SV
Maxi-PLS 1600/2000/3200	M10 x 40	20	1	8	**9676.966**
	M10 x 60	20	2	8	**9676.967**
	M10 x 80	20	3	8	**9676.968**
Maxi-PLS 1600/2000/3200 and Flat-PLS 60 + 100	M12 x 40	40	1	8	**9676.961**
	M12 x 60	40	2	8	**9676.962**
	M12 x 80	40	3	8	**9676.963**

Screw connections

for Flat-PLS busbar systems

For attaching connection brackets and connector kits, with and without contact makers, to Flat-PLS busbar systems.

Material:
Stainless steel

Supply includes:
Allen screw,
spring lock washer and
plain washer.

For systems	Screw design	Rated torque Nm	Packs of	Model No. SV
Flat-PLS 60 + 100	M10 x 60	20	8	**9676.806**
	M10 x 70	20	8	**9676.807**
	M10 x 80	20	8	**9676.808**
	M10 x 90	20	8	**9676.809**
	M10 x 100	20	8	**9676.810**
	M10 x 110	20	8	**9676.811**
	M10 x 120	20	8	**9676.812**
	M10 x 130	20	8	**9676.813**
	M10 x 140	20	8	**9676.814**
	M10 x 150	20	8	**9676.815**
	M10 x 160	20	8	**9676.816**
	M10 x 170	20	8	**9676.817**
	M10 x 190	20	8	**9676.819**

Claw with nut M10

for Flat-PLS

Double claw with nut M10. Used in combination with screw connections for the mechanical connection of connection components such as angular connectors.

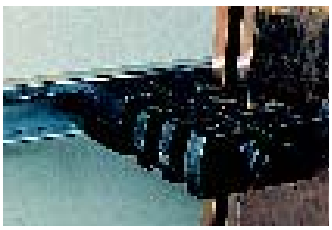
Material:
Stainless steel

Supply includes:
8 claws.

Also required:

Screw connectors for Flat-PLS,
see page 104.

For systems	Insert nut	Rated torque Nm	Packs of	Model No. SV
Flat-PLS 60 + 100	M10	20	8	**9676.832**



Stacking insulator

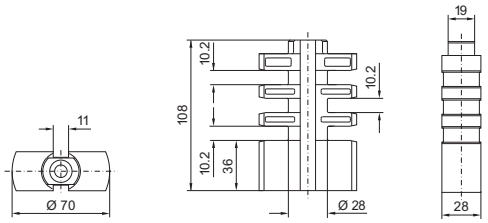
To support the connection kits top/bottom for circuit-breakers. Easily retro-fitted.

Supply includes:
Assembly parts.

Packs of	Model No. SV
6	**9660.200**

Also required:

Support rail for stacking insulator,
see page 105.



Support rails

for stacking insulator
For attaching to the outer mounting level of the TS 8 enclosure and for the configuration of stacking insulators. C rail may also be used as cable management bar.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly parts.

For enclosure width mm	Packs of	Model No. SV
400	2	**9676.194**
600	2	**9676.196**
800	2	**9676.198**

Stabiliser

for connection kit
To increase short-circuit resistance of the connection kits to 100 kA, 1 sec.
2 stabilisers are required per connection kit.
May be used for 3- and 4-pole connector kits.
Fitted in addition to the stacking insulators.

Material:
Tapped rod: Fibreglass-reinforced plastic

Supply includes:
2 stabilisers
Assembly parts.

For enclosure width mm	Packs of	Model No. SV
400	2	**9676.184**
600	2	**9676.186**
800	2	**9676.188**

Accessories

Busbar support

for switch-disconnector-fuse section
Busbar support for the distribution busbar system of the switch-disconnector-fuse section, to assemble the distribution busbar.
The busbar supports are mounted on the section corner pieces of the assembly kit.

Material:
Fibreglass-reinforced plastic

Supply includes:
Mounting bracket and screws.

Number of poles	For bars mm	Packs of	Model No. SV
3/4-pole	50 x 10	1	**9674.415**
3/4-pole	60 x 10	1	**9674.416**
3/4-pole	80 x 10	1	**9674.418**
3/4-pole	100 x 10	1	**9674.410**

Also required:

Assembly kit for switch-disconnector-fuse section, see page 46.
End support for switch-disconnector-fuse section, see page 106.
Distribution busbar for switch-disconnector-fuse section,
see page 106.

End support

for switch-disconnector-fuse section
End support for the distribution busbar system of the switch-disconnector-fuse section, for vertical support of the distribution system with infeed from above.
The end support is secured to the section corner piece of the assembly kit.

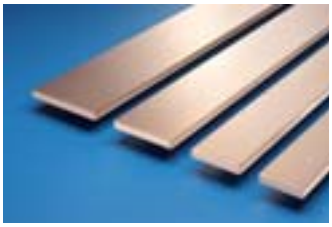
Material:
Fibreglass-reinforced plastic

Supply includes:
Mounting bracket and screws.

Number of poles	For bars mm	Packs of	Model No. SV
3/4-pole	50 x 10	1	**9674.435**
3/4-pole	60 x 10	1	**9674.436**
3/4-pole	80 x 10	1	**9674.438**
3/4-pole	100 x 10	1	**9674.430**

Also required:

Assembly kit for switch-disconnector-fuse section, see page 46.
Distribution busbar for switch-disconnector-fuse section,
see page 106.



Distribution busbar

for switch-disconnector-fuse section
Distribution busbar to fit the Ri4Power main busbar systems Maxi-PLS and Flat-PLS for installation in the switch-disconnector-fuse sections.

Material:
E-Cu

Also required:

Busbar support for switch-disconnector-fuse section,
see page 106.
End support for switch-disconnector-fuse section, see page 106.
Terminal block distribution busbar,
see page 108.

Dimensions mm	Length mm	Packs of	Model No. SV	Length mm	Packs of	Model No. SV
	For enclosure height 2000 mm			For enclosure height 2200 mm		
50 x 10	1632.5	1	**9674.405**	1832.5	1	**9674.425**
60 x 10	1632.5	1	**9674.406**	1832.5	1	**9674.426**
80 x 10	1632.5	1	**9674.408**	1832.5	1	**9674.428**
100 x 10	1632.5	1	**9674.400**	1832.5	1	**9674.420**

Distribution busbar cover

for Jean Müller switch-disconnector-fuse section

Busbar cover as kit for covering the distribution busbar system of a switch-disconnector-fuse section, designed to install devices from Jean Müller. The 150 mm high busbar and cable connection space covers shield the busbar compartment from the functional space and the cable connection compartment so that it is safe from probe contact, with a protection category of IP 20. The internal separation significantly enhances personal safety of the switchgear, and is a pre-requisite for all work when the system is live. For systems from Form 2a and above, this cover is compulsory.

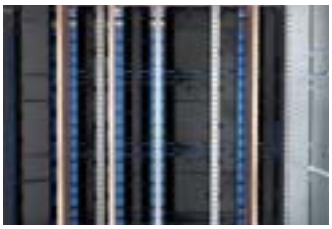
Material:
PVC, black

Supply includes:
Busbar cover and cable connection space cover for enclosure height 2000 mm and 2200 mm.

Packs of	Model No. SV
1 set	**9674.380**

Also required:

Punched rail cover, distribution busbar,
see page 107.



Punched rail cover, distribution busbar

for Jean Müller switch-disconnector-fuse section

Required for mounting the distribution busbar cover. The cover modules are inserted into the punched rail and create form-fit separation of the busbar compartment from the functional space and cable chamber. Suitable for use in enclosures with height 2000 mm and 2200 mm. For systems from Form 2a and above, this cover is compulsory.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
2 punched rails.

Packs of	Model No. SV
1 set	**9674.381**

Note:
For 1 switch-disconnector-fuse section, 1 pack of punched rails is required.

Distribution busbar cover

for ABB/Siemens switch-disconnector-fuse section

Busbar cover to cover the distribution busbar system of a switch-disconnector-fuse section, designed to install equipment from ABB (model SlimLine) or Siemens (model 3NJ62).
The 200 mm high busbar compartment covers shield the busbar compartment from the functional space so that it is safe from probe contact, with a protection category of IP 20. The internal separation significantly enhances personal safety of the switchgear, and is a pre-requisite for all work when the system is live. For systems from Form 2a and above, this cover is compulsory.

Material:
PVC, black

Note:
The distribution busbar cover for switch-disconnector-fuse sections from ABB/Siemens may be ordered from ABB under order number NHP 407062R000X.
For enclosure height 2000 mm, a height of 1500 mm should be covered, and for enclosure height 2200 mm, a height of 1700 mm should be covered.

Accessories

Connection bracket

for switch-disconnector-fuse section
For connecting Maxi-PLS or Flat-PLS main busbar systems to distribution busbar systems of the switch-disconnector-fuse sections, no drilling required.

Material:
E-Cu

Supply includes:
Assembly parts.

Also required:

Maxi-PLS contact makers, 60 mm,
see page 85/87.
Flat-PLS contact makers, 60 mm,
see page 96.
Terminal block distribution bar,
see page 108.

For system	For application	For conductor	Packs of	Model No. SV	Packs of	Model No. SV
			For enclosure depth 600 mm		For enclosure depth 800 mm	
Flat-PLS 60	Roof section/base section	L1, L2, L3	1 set	**9674.451**	1 set	**9674.453**
Flat-PLS 60	Roof section/base section	N	1 set	**9674.452**	1 set	**9674.454**
Flat-PLS 60	Rear section top/bottom	L1, L2, L3	1 set	**–**	1 set	**9674.473**
Flat-PLS 60	Rear section top/bottom	N	1 set	**–**	1 set	**9674.474**
Flat-PLS 100	Roof section/base section	L1, L2, L3	1 set	**9674.455**	1 set	**9674.457**
Flat-PLS 100	Roof section/base section	N	1 set	**–**	1 set	**9674.458**
Flat-PLS 100	Rear section top/bottom	L1, L2, L3	1 set	**–**	1 set	**9674.477**
Flat-PLS 100	Rear section top/bottom	N	1 set	**–**	1 set	**9674.478**
Maxi-PLS 1600/2000	Roof section/base section	L1, L2, L3	1 set	**9674.441**	1 set	**9674.443**
Maxi-PLS 1600/2000	Roof section/base section	N	1 set	**9674.442**	1 set	**9674.444**
Maxi-PLS 1600/2000	Rear section top/bottom	L1, L2, L3	1 set	**9674.461**	1 set	**9674.463**
Maxi-PLS 1600/2000	Rear section top/bottom	N	1 set	**9674.462**	1 set	**9674.464**
Maxi-PLS 3200	Roof section/base section	L1, L2, L3	1 set	**9674.445**	1 set	**9674.447**
Maxi-PLS 3200	Roof section/base section	N	1 set	**–**	1 set	**9674.448**
Maxi-PLS 3200	Rear section top/bottom	L1, L2, L3	1 set	**–**	1 set	**9674.467**
Maxi-PLS 3200	Rear section top/bottom	N	1 set	**–**	1 set	**9674.468**

Terminal block distribution busbar

for switch-disconnector-fuse section
Terminal block for connecting the connection brackets to the distribution busbar system of the switch-disconnector-fuse section, no drilling required.

Material:
E-Cu

Supply includes:
Assembly parts.

Detailed drawing,
see page 128.

For distribution busbar width mm	Packs of	Model No. SV
50/60	1	**9674.485**
80/100	1	**9674.488**

Also required:

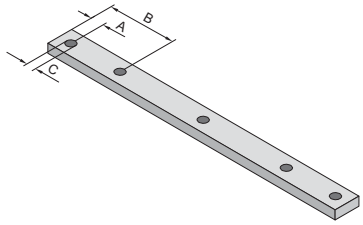
Connection bracket for switch-disconnector-fuse section,
see page 108.
Distribution busbar for switch-disconnector-fuse section,
see page 106.

1 Busbars

made from E-Cu

Suitable for

- Direct installation in TS 8 enclosures
- Busbar support
  - SV 9340.000/.010, see page 66
  - SV 9340.004, see page 74
  - SV 9340.030/.040, see page 110
  - SV 9342.014, see page 76
  - SV 3052.000, see Cat. 32, page 391
  - SV 3073.000, see Cat. 32, page 387
- PE/PEN combinations in conjunction with combination angle and baying bracket.



For enclosure width mm	Packs of	Length mm	30 x 5 mm	30 x 10 mm	Length mm	40 x 10 mm	80 x 10 mm
			Model No. SV	**Model No. SV**		**Model No. SV**	**Model No. SV**
300	2	265	**9661.335**	**9661.330**	292	**9661.030**	**9661.130**
400	2	365	**9661.345**	**9661.340**	392	**9661.040**	**9661.140**
600	2	565	**9661.365**	**9661.360**	592	**9661.060**	**9661.160**
800	2	765	**9661.385**	**9661.380**	792	**9661.080**	**9661.180**
1000	2	965	**9661.305**	**9661.300**	992	**9661.000**	**9661.100**
1200	2	1165	**9661.325**	**9661.320**	1192	**9661.020**	**9661.120**
A mm			15	15		20	20
B mm			–	–		158,5	158,5
C mm			Ø 11	Ø 11		Ø 14	Ø 14
Accessories							
2 Baying bracket E-Cu	4	95	**9661.355**	**9661.350**	–	–	–
		–	–	–	88	**9661.050**	**9661.150**

PE/PEN combination angle

for PE/PEN combinations

The PE/PEN combination, comprised of busbars, combination angles and baying brackets, facilitates type-tested assembly to IEC 60 439-1. The pre-manufactured combination angles and baying brackets, and the busbars customised to the individual enclosure width, facilitate inexpensive, time-saving assembly.

Material:
E-Cu

Supply includes:
Assembly parts.

Technical specifications:
Tested short-circuit resistance
PE/PEN combination

- 30 x 5 mm:
  I_{cw} 18 kA, 1 sec.
- PE/PEN combination
  30 x 10 mm:
  I_{cw} 30 kA, 1 sec.
- PE/PEN combination
  40/80 x 10 mm:
  I_{cw} 60 kA, 1 sec.

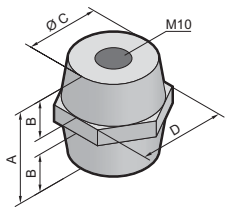
Combination angle for	Packs of	For busbars mm		
		30 x 5	30 x 10	40 x 10/80 x 10
Form 2-4 insert	4	**9661.235**	**9661.230**	2 **9661.240**[1)]
Other applications	4	**9661.235**	**9661.230**	1 **9661.200**[1)]

[1)] Material of PE/PEN combination angles E-Cu 40 x 10 mm

Base isolators

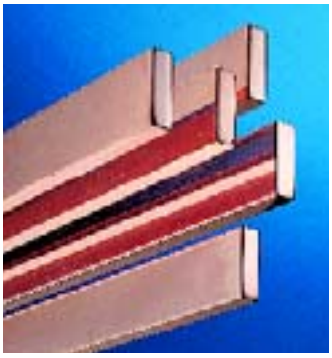
For configuring busbar systems with any given bar centre distances and for assembling PE or PEN bars.

Material:
Duroplastic polyester (UP resin).
Continuous operating temperature max. 135°C.



Rated operating voltage	1 kV	1 kV
Tensile strength	12 kN	13 kN
Torsional strength	75 Nm	90 Nm
Bending strength	6 kN	6 kN
Tightening torque	40 Nm	40 Nm
A mm	40	50
B mm	15	19
Ø C mm	32	42
D mm	SW 36	SW 50
Packs of	6	6
Model No. SV	**3031.000**	**3032.000**

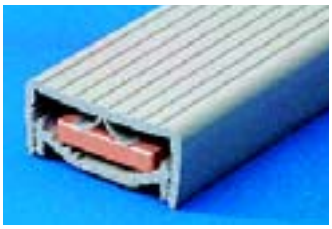
Accessories



Busbars

made from E-Cu
To DIN EN 13 601.
Length: 2400 mm/bar.

Dimensions mm	Weight/bar kg	Packs of	Model No. SV
12 x 5	1.28	6	**3580.000**
15 x 5	1.60	6	**3581.000**
20 x 5	2.14	6	**3582.000**
25 x 5	2.67	6	**3583.000**
30 x 5	3.20	6	**3584.000**
12 x 10	2.56	6	**3580.100**
15 x 10	3.20	6	**3581.100**
20 x 10	4.27	6	**3585.000**
30 x 10	6.41	6	**3586.000**
40 x 10	8.55	3	**3587.000**
50 x 10	10.68	3	**3588.000**
60 x 10	12.82	3	**3589.000**
80 x 10	17.09	3	**3590.000**
100 x 10	21.38	3	**3590.010**

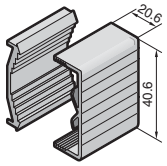


Busbar cover section

Contact hazard protection via full encapsulation of the busbars. May be cut to required length.

Material:
Thermally modified hard PVC.
Continuous operating temperature max. 91°C.
Fire protection corresponding to UL 94-V0.

For busbars mm	Width (B) mm	Packs of	Model No. SV
12 x 5 – 30 x 10	40.6	10 @ 1 m	**3092.000**
40 – 60 x 10	70.6	10 @ 1 m	**3085.000**



Busbar support

1- and 2-pole

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

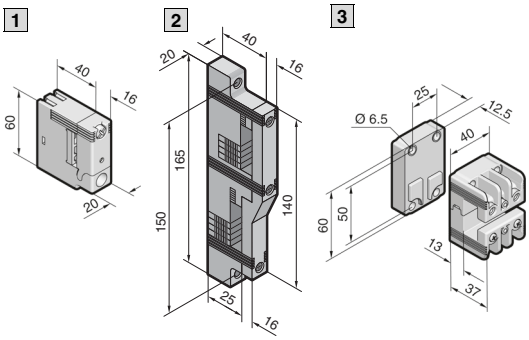
Colour:
RAL 7035

1

2

3

1 and 4



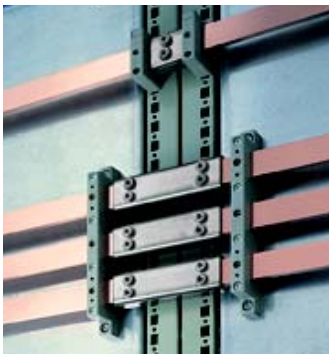
Version	1 1-pole	2 2-pole	3 1-pole
Bar centre distance	–[1]	60 mm	–[1]
For busbars E-Cu	12 x 5 – 30 x 10 mm	12 x 5[2] – 30 x 10 mm	PLS 1600
Tightening torque ● Assembly screw M5 x 16 ● Cover attachment/busbar anti-slip guard	(M5 x 16) 3 – 5 Nm 1 – 3 Nm	(M5 x 16) 3 – 5 Nm 1 – 3 Nm	(M6 x 20/35[3]) 3 – 5 Nm 0.7 Nm
Packs of	4	4	4
Model No. SV	**9340.030[4]**	**9340.040[5]**	**9342.030[4]**

[1] Bayable for a bar centre distance of 60 mm.
[2] If 12 x 5/10 mm busbars are used, the spacer SV 9340.090 is additionally required.
[3] 35 mm when using the additional raised section.
[4] PEN/N/PE support
[5] N/PE support

Accessories:

4 Additional attachment for SV 9340.030
Optional anti-twist guard for SV 9340.030. Facilitates support alignment with horizontal or vertical mounting.

Packs of	Model No. SV
4	**9340.035**



Busbar connectors

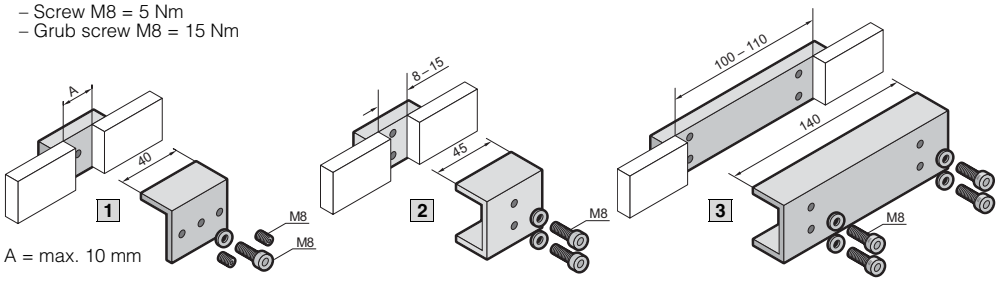
For connecting busbars, no drilling required.

Material:
SV 9350.075
Top part: St 37, nickel-plated surface finish
Base: E-Cu

SV 9320.020/SV 9320.030
Top part: Sheet steel, zinc-plated, passivated
Contact plate: E-Cu, silver-plated

For busbars mm	Application		Tightening torque	Packs of	Model No. SV
	Single connection	Bayed connection[1]			
12 x 5 – 15 x 10	1	–	5 Nm/15 Nm[2]	3	**9350.075**
20 x 5 – 30 x 10	2	–	20 Nm	3	**9320.020**
	–	3	20 Nm	3	**9320.030**

[1] From enclosure to enclosure
[2] Hex socket
– Screw M8 = 5 Nm
– Grub screw M8 = 15 Nm



A B

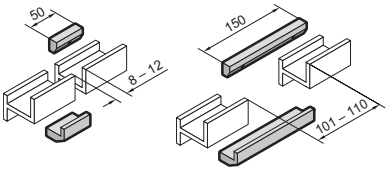
PLS busbar connectors

For connecting the PLS special busbars; no drilling required.

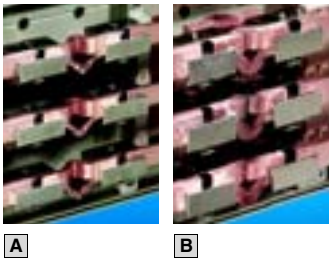
Material:
E-Cu, nickel-plated

For	Packs of	Model No. SV for system	
		PLS 800	PLS 1600
A Single connection	3	**3504.000**	**3514.000**
B Baying connection[1]	3	**3505.000**	**3515.000**
Tightening torque		10 – 15 Nm	15 – 20 Nm

[1] From enclosure to enclosure (TS 8)



A B



A B

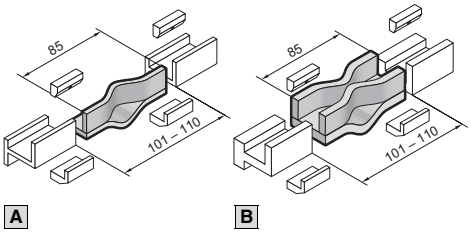
PLS expansion connectors

For thermal and mechanical compensation during connection of PLS special busbars from enclosure to enclosure (TS 8).

Material:
E-Cu

Packs of	Model No. SV for system	
	A PLS 800	B PLS 1600
3	**9320.060**	**9320.070**
Also required		
PLS busbar connectors[1]	3504.000	3514.000

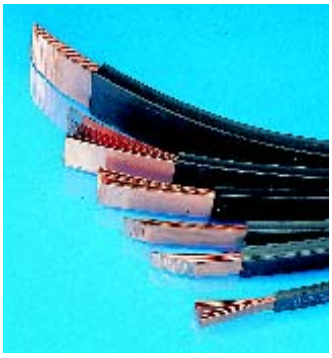
[1] Two busbar connectors are needed to fit one expansion connector.



A B

Note:
With a temperature increase of 30 K, the busbars will expand in length by around 0.5 mm/m. Consequently, the use of an expansion connector is recommended for busbar systems with lengths in excess of 3 m.

Laminated copper bars and accessories



Laminated copper bars Rittal Flexibar “S”

Length: 2000 mm/bar.

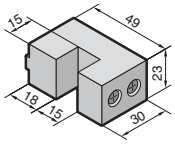
Material:
Cu lamina
- High-purity electrolyte copper F20

Insulation
- High-strength vinyl compound
- Expansion 370%
- Temperature range: –30°C to +105°C
- Flame retardant version to UL 94-V0
- Dielectric strength: 20 kV/mm

Note:
Short-circuit protection diagram,
see page 119.

Configuration[1] mm	I_n for 50 K[2]	I_n for 30 K[2]	I_n for 10 K[2]	Packs of	Model No. SV
8 x 6.0 x 0.5	165 A	125 A	–	1	**3565.010**
6 x 9.0 x 0.8	250 A	220 A	120 A	1	**3565.000**
6 x 13.0 x 0.5	200 A	150 A	110 A	1	**3566.000**
4 x 15.5 x 0.8	300 A	210 A	140 A	1	**3567.000**
6 x 15.5 x 0.8	350 A	290 A	170 A	1	**3568.000**
10 x 15.5 x 0.8	450 A	350 A	190 A	1	**3569.000**
5 x 20.0 x 1.0	400 A	300 A	180 A	1	**3570.000**
5 x 24.0 x 1.0	450 A	370 A	230 A	1	**3571.000**
10 x 24.0 x 1.0	800 A	600 A	340 A	1	**3572.000**
5 x 32.0 x 1.0	550 A	470 A	280 A	1	**3573.000**
10 x 32.0 x 1.0	1000 A	800 A	460 A	1	**3574.000**
5 x 40.0 x 1.0	800 A	600 A	340 A	1	**3575.000**
10 x 40.0 x 1.0	1200 A	950 A	500 A	1	**3576.000**
5 x 50.0 x 1.0	900 A	700 A	400 A	1	**3577.000**
10 x 50.0 x 1.0	1400 A	1000 A	600 A	1	**3578.000**
10 x 63.0 x 1.0	1600 A	1240 A	715 A	1	**3579.000**

[1] Number of lamina x lamina width x lamina thickness
[2] The conductor temperature of the laminated copper bar is derived by adding the ambient temperature and the temperature increase together.
Example:
SV 3565.000 carrying 220 A, i.e. the temperature increases by 30 K. At an ambient temperature of 35°C, this produces a resultant conductor temperature of 35°C + 30 K = 65°C.



Universal support

For the attachment of laminated copper bars from 20 x 5 to 63 x 10 mm.

Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Fire protection corresponding to UL 94-V0.

Supply includes:
Screws and “U” nuts for mounting on PS/TS mounting rails.

Packs of	Model No. SV
3	**3079.000**

Note:
Short-circuit protection diagram,
see page 119.

Universal holder

For the attachment of multi-stacked laminated copper bars from 40 x 5 to 100 x 10 mm.

Material:
Fibreglass-reinforced, thermoplastic polyester (PBT).
Fire protection corresponding to UL 94-V0.

Supply includes:
Screws and sliding nuts for attachment on C rails.

Packs of	Model No. SV
3 set	**3079.010**

Note:
Short-circuit protection diagram,
see page 119.

Accessories:

Support rails for stacking insulator,
see page 105.

Spacers

for RiLine60 busbar supports (flat busbar system)
For adapting 12 x 5 and 12 x 10 mm size busbars.
For busbar supports
- SV 9340.000/.010 (3-pole), see page 66.
- SV 9340.004 (4-pole), see page 74.
- SV 9340.030 (1-pole), see page 110.

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

Colour:
RAL 7035

Packs of	Model No. SV
12	**9340.090**

Insert strip

for circuit-breaker component adaptors
To extend the construction width from 140 mm to 190 mm.
Width: 25 mm.

Material:
ABS

Colour:
RAL 7035

Note:
4 pieces (1 set) are needed to widen a component adaptor.

For	Packs of	Model No. SV
SV 9342.700 SV 9342.710	4 (1 set)	**9342.720**

Support rail 35 x 15 mm

for component adaptors
Width 72 mm.

Material:
Sheet steel, zinc-plated, passivated

Supply includes:
Assembly screws and side end brackets.

For	Packs of	Model No. SV
SV 9342.400 SV 9342.410	5	**9320.120**

Sliding blocks

for circuit-breaker component adaptors
For additional circuit breakers with more than two attachment points.

Colour:
RAL 7035

For	With threaded insert	Packs of	Model No. SV
SV 9342.500/.510 SV 9342.540/.550	M3/M4	6	**9342.560**
SV 9342.600/.610	M4/M5	6	**9342.640**

RiLine60 accessories

Connection bracket

for circuit-breaker component adaptors
Pre-assembled, laminated flat copper for connecting standard, commercially available moulded case circuit-breakers (MCCB).

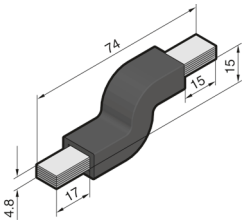
Material:
Electrolyte copper F20

Insulation:
Vinyl compound.
Temperature resistance up to 105°C.
Fire protection corresponding to UL 94-V0.

Dimensions[1] mm	For circuit-breaker component adaptor	For connecting moulded case circuit-breakers (MCCB), make (model)	Packs of[2]	Model No. SV
6 x 9 x 0.8	SV 9342.500/.510 SV 9342.540/.550	Moeller (NZM1)	3	**9342.570[3]**
10 x 15.5 x 0.8	SV 9342.600/.610	ABB (T3), GE (FE)	3	**9342.660**
		Merlin Gerin (NS/NSX100/160/250), Telemecanique (GV7)	3	**9342.670**
		ABB (S3), Moeller (NZM2), Siemens (VL250)	3	**9342.680**
		Siemens (VL160X, VL160)	3	**9342.690**
10 x 32.0 x 1.0	SV 9342.700/.710	ABB (T5)	3	**9342.770**
		ABB (S5), Merlin Gerin (NS400/630)	3	**9342.780**
		Moeller (NZM3)	3	**9342.790**

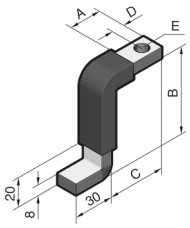
[1] Number of lamina x lamina width x lamina thickness
[2] 3 = 1 set
[3] Universal application for switchgear with a dimensional difference between the mounting level and the upper edge of the contact level of 20 ± 5 mm.

SV 9342.570

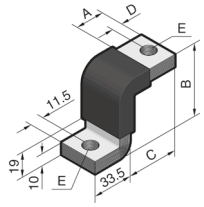


Model No. SV	A mm	B mm	C mm	D mm	E mm
9342.660	26	65	43	9	Ø 10
9342.670	19	66	36	10	Ø 10
9342.680	23	71	40	9	Ø 10
9342.690	23	67	40	11	Ø 7
9342.770	26	51	62	9	Ø 12
9342.780	29	57	46	12	Ø 12
9342.790	28	62	38	14	Ø 12

SV 9342.660 – SV 9342.690



SV 9342.770 – SV 9342.790



Rittal busbar systems

When developing the Rittal busbar systems and their components, Rittal drew on the latest state of the art and the currently valid standards and regulations. These applications are used by specialist companies worldwide. As well as permanent in-house controls at Rittal, the quality of the SV components is further reinforced by a vast array of tests and approvals.

As product development is an on-going process, we reserve the right to make amendments in line with technical progress.

Basic regulations for busbar systems

- **IEC/EN 60 439-1**
  Low-voltage switchgear and controlgear assemblies
  Part 1: Type-tested and partially type-tested combinations
- **IEC 61 439-1/-2**
  Low-voltage switchgear and controlgear assemblies
  Part 1: General Rules
  Part 2: Power switchgear and controlgear assemblies
- **IEC/EN 60 947-1**
  Low-voltage switchgear and controlgear assemblies
  Part 1: General specifications
- **IEC/EN 60 947-3**
  Low-voltage switchgear and controlgear: switches, disconnectors, switch disconnectors and fuse combination units
- **IEC/EN 60 664-1**
  Coordination of insulation for electrical operating equipment in low-voltage systems
  Part 1: Basic principles, requirements and tests
- **IEC/EN 60 999-1**
  Connector parts – Electrical copper conductors –
  Safety requirements for screw terminals and screwless terminals
  General and specific requirements for terminals for conductors from 0.2 mm^2 up to and including 35 mm^2
- **IEC/EN 60 999-2**
  Connector parts – Electrical copper conductors –
  Safety requirements for screw terminals and screwless terminals
  Part 2: Special requirements for terminals for conductors greater than 35 mm^2 up to and including 300 mm^2
- **DIN 43 671**
  Copper busbars, dimensioning for constant current
- **DIN 43 673-1**
  Busbar drill holes and screw fastenings, busbars with rectangular cross-section
- **IEC/EN 60 715**
  Dimensions of low-voltage switchgear –
  Standardised support rails for the mechanical attachment of electrical components in switching systems
- **DIN EN 13 601**
  Copper and copper alloys –
  Copper rods and wires for general use in electrical engineering

Application

In order to avoid injury and damage to property, busbar systems must only be assembled and used by suitably trained and qualified personnel. The valid technical regulations, standards and provisions must, of course, be observed.

Users are required to carefully observe the information and instructions supplied by Rittal, and where necessary to forward them to downstream users and/or customers with a special advice note. In particular, the specified tightening torques of electrical terminal connections must be observed in order to achieve an optimum contact pressure.

Technical data and catalogue information

Power distribution components are used in conjunction with a wide range of different switchgear and other components for power distribution, and in relation to a wide range of operating and ambient conditions which are outside of Rittal's control. The horizontal position of busbars is considered the standard installation position for the busbar system. IEC/EN 60 439-1 and the ambient conditions specified therein should be considered the basis for the use of power distribution components.

At enclosure internal temperatures of > 35°C, application-specific derating should be provided where necessary. Specifically in relation to the temperature limits admissible in IEC/EN 60 439-1, the following factors should be critically reviewed:

- Arrangement of components inside the enclosure
- Heat loss of the circuit-breakers and fuses used
- Passive and/or active climate control measures
- Connected conductor cross-sections
- Operating mode of equipment (switching cycles etc.)
- Consideration of the operating and ambient conditions
- Consideration of the rated load factor.

Short-circuit resistance diagrams RiLine60

Busbar support

up to 800 A, 3-pole Page 66

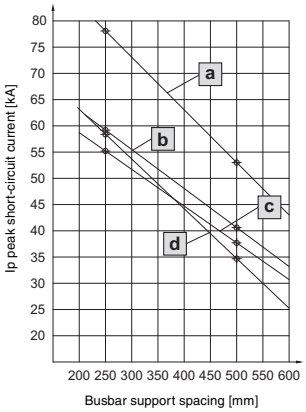
Model No. SV 9340.000/SV 9340.010

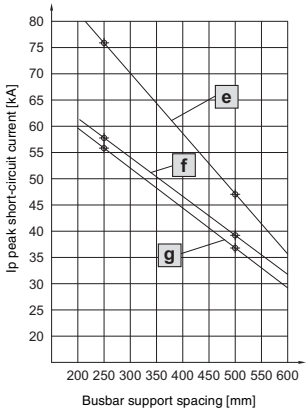
60 mm bar centre distance,
for busbars 15 x 5 – 30 x 10 mm.

Rated operating voltage: up to 690 V AC
Rated insulation voltage: 1000 V AC
Rated surge voltage: 8 kV

Overvoltage category: IV
Level of contamination: 3
Rated frequency: 50/60 Hz

Test implemented:
- Rated surge current resistance I_{pk} (see diagram)
- Rated short-time current resistance I_{cw}





Busbar mm	l mm	I_{cw} [1] kA
30 x 10	250	37.6
30 x 5	250	36.0
20 x 10	250	29.0

[1] For 1 sec.

Busbar mm	Curve
30 x 10	a
20 x 10	b
25 x 5	c
15 x 5	d

Busbar mm	Curve
30 x 5	e
20 x 5	f
15 x 10	g

PLS busbar supports

up to 800 A/1600 A, 3-pole Page 68

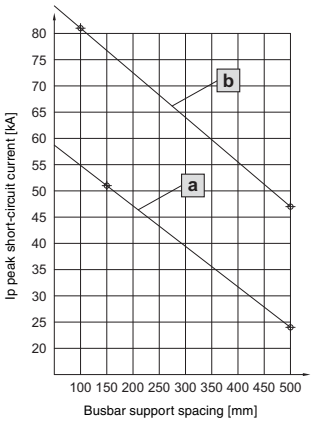
Model No. SV 9341.000/SV 9342.000

60 mm bar centre distance,
for Mini-PLS special busbars.

Rated operating voltage: up to 690 V AC
Rated insulation voltage: 1000 V AC
Rated surge voltage: 8 kV

Overvoltage category: IV
Level of contamination: 3
Rated frequency: 50/60 Hz

Test implemented:
- Rated surge current resistance I_{pk} (see diagram)
- Rated short-time current resistance I_{cw}



Busbar mm	l mm	I_{cw} [1] kA
PLS 800	150	25.9
PLS 1600	150	37.5

[1] For 1 sec.

Busbar mm	Curve
PLS 800	a
PLS 1600	b

Short-circuit resistance diagrams RiLine60

Busbar support

up to 800 A, 4-pole Page 74/76

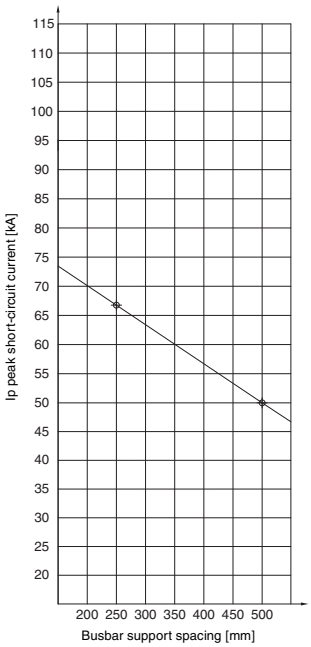
Model No. SV 9340.004/SV 9342.014

60 mm bar centre distance,
for 30 x 10 mm busbars.

Rated operating voltage: up to 690 V AC
Rated insulation voltage: 1000 V AC
Rated surge voltage: 8 kV

Overvoltage category: IV
Level of contamination: 3
Rated frequency: 50/60 Hz

Test implemented:
- Rated surge current resistance I_{pk} (see diagram)
- Rated short-time current resistance I_{cw}



Busbar mm	l mm	I_{cw} [1] kA
30 x 10	250	29
	500	23

[1] For 1 sec.

PLS busbar support

up to 1600 A, 4-pole Page 76

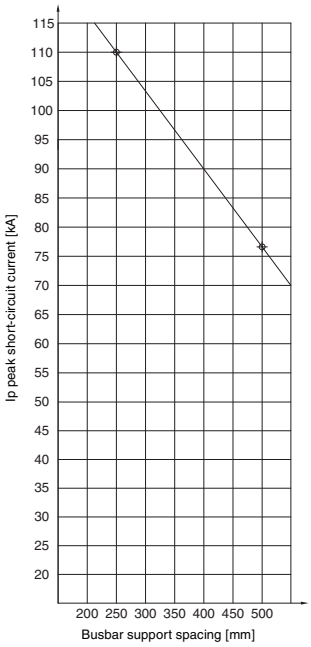
Model No. SV 9342.004

60 mm bar centre distance,
for Mini-PLS special busbars.

Rated operating voltage: up to 690 V AC
Rated insulation voltage: 1000 V AC
Rated surge voltage: 8 kV

Overvoltage category: IV
Level of contamination: 3
Rated frequency: 50/60 Hz

Test implemented:
- Rated surge current resistance I_{pk} (see diagram)
- Rated short-time current resistance I_{cw}



Busbar mm	l mm	I_{cw} kA
PLS 1600	250	50[1]
	250	53[2]
	500	38[2]

[1] For 3 sec.
[2] For 1 sec.

Short-circuit resistance diagrams Flat-PLS

Busbar support Flat-PLS 60

1- to 4-pole Page 90/91

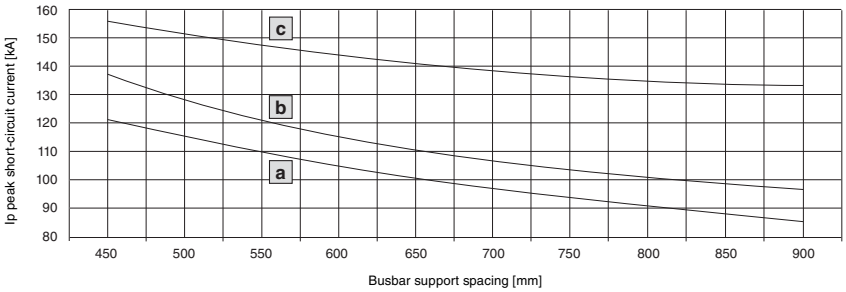
Model No. SV 9676.002/SV 9676.020

120 mm bar centre distance,
for busbars 40 x 10 – 60 x 10 mm.
Population: 2, 3 or 4 bars per support

Rated operating voltage: up to 690 V AC
Rated insulation voltage: 1000 V AC
Rated surge voltage: 8 kV

Overvoltage category: IV
Level of contamination: 3
Rated frequency: 50/60 Hz

Test implemented:
- Rated surge current resistance I_{pk} (see diagram)
- Rated short-time current resistance I_{cw}



Busbar mm	l mm	I_{cw} kA/1 sec.	Version
4 x 60 x 10	450	55.0	a
4 x 60 x 10	900	40.0	
4 x 60 x 10	450	60.0	b
4 x 60 x 10	900	45.0	
4 x 60 x 10	450	70.0	c
4 x 60 x 10	900	60.0	

Characteristic curve/design	Design of busbar attachment
a	basic version[1)]
b	with busbar claws[2)]
c	with busbar stabilisers and busbar claws[2)]

[1)] Basic version consists of system attachment with fitted busbar support.
[2)] Version see page 118.

Busbar support Flat-PLS 100

1- to 4-pole Page 90/91

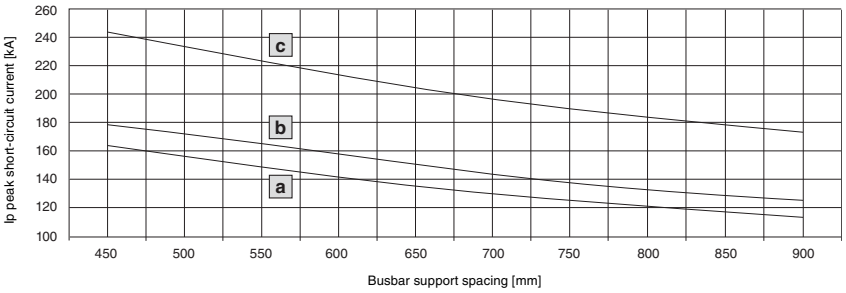
Model No. SV 9676.004/SV 9676.021

165 mm bar centre distance,
for busbars 80 x 10 – 100 x 10 mm.
Population: 2, 3 or 4 bars per support

Rated operating voltage: up to 690 V AC
Rated insulation voltage: 1000 V AC
Rated surge voltage: 8 kV

Overvoltage category: IV
Level of contamination: 3
Rated frequency: 50/60 Hz

Test implemented:
- Rated surge current resistance I_{pk} (see diagram)
- Rated short-time current resistance I_{cw}



Busbar mm	l mm	I_{cw} kA/1 sec.	Version
4 x 100 x 10	450	75.0	a
4 x 100 x 10	900	52.0	
4 x 100 x 10	450	81.6	b
4 x 100 x 10	900	55.9	
4 x 100 x 10	450	110.0	c
4 x 100 x 10	900	78.0	

Characteristic curve/design	Design of busbar attachment
a	basic version[1)]
b	with busbar claws[2)]
c	with busbar stabilisers and busbar claws[2)]

[1)] Basic version consists of system attachment with fitted busbar support.
[2)] Version see page 118.

Busbar claws

2-, 3- or 4-way Page 93

Model No. SV 9676.011 to SV 9676.019

Supplementary information on Flat-PLS short-circuit protection diagrams
Mounting distance of busbar claws:
In order to achieve the cited short-circuit protection, the busbar claws must be fitted at a spacing of 300 mm. If there is a busbar support, a contact maker or a longitudinal connector located within this 300 mm, there is no need to fit a claw at this point.

Max. distance	mm
Busbar claw – Busbar claw	≤ 300
Busbar claw – Busbar support	≤ 300
Busbar claw – Contact maker	≤ 300
Busbar claw – Longitudinal connector	≤ 300

Short-circuit resistance diagram Flexibar “S”

Laminated copper bars Rittal Flexibar “S”

Page 112

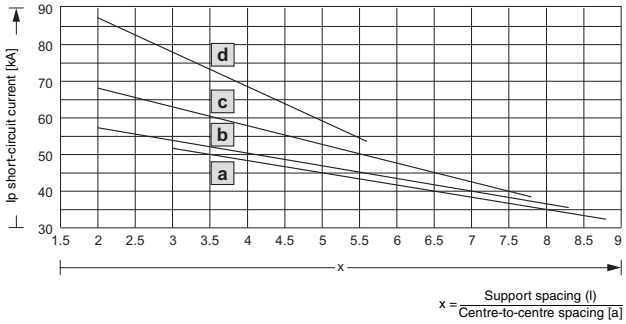
Configuration[1] mm	I_n for 50 K[2]	I_n for 30 K[2]	I_n for 10 K[2]	Curve (short-circuit resistance)	Installation type	**Model No. SV**
8 x 6.0 x 0.5	165 A	125 A	–	–	–	3565.010
6 x 9.0 x 0.8	250 A	220 A	120 A	–	–	3565.000
6 x 13.0 x 0.5	200 A	150 A	110 A	–	–	3566.000
4 x 15.5 x 0.8	300 A	210 A	140 A	–	–	3567.000
6 x 15.5 x 0.8	350 A	290 A	170 A	a	1	3568.000
10 x 15.5 x 0.8	450 A	350 A	190 A	a	1	3569.000
5 x 20.0 x 1.0	400 A	300 A	180 A	a	1	3570.000
5 x 24.0 x 1.0	450 A	370 A	230 A	a	1	3571.000
10 x 24.0 x 1.0	800 A	600 A	340 A	b	1	3572.000
5 x 32.0 x 1.0	550 A	470 A	280 A	b	2/3	3573.000
10 x 32.0 x 1.0	1000 A	800 A	460 A	c	2/3	3574.000
5 x 40.0 x 1.0	800 A	600 A	340 A	b	2/3	3575.000
10 x 40.0 x 1.0	1200 A	950 A	500 A	c	2/3	3576.000
5 x 50.0 x 1.0	900 A	700 A	400 A	b	2/3	3577.000
10 x 50.0 x 1.0	1400 A	1000 A	600 A	c	2/3	3578.000
10 x 63.0 x 1.0	1600 A	1240 A	715 A	d	2/3	3579.000

[1] Number of lamina x lamina width x lamina thickness
[2] The conductor temperature of the laminated copper bar is derived by adding the ambient temperature and the temperature increase together.
Example:
SV 3565.000 carrying 220 A, i.e. the temperature increases by 30 K. At an ambient temperature of 35°C, this produces a resultant conductor temperature of 35°C + 30 K = 65°C.

Short-circuit resistance diagrams

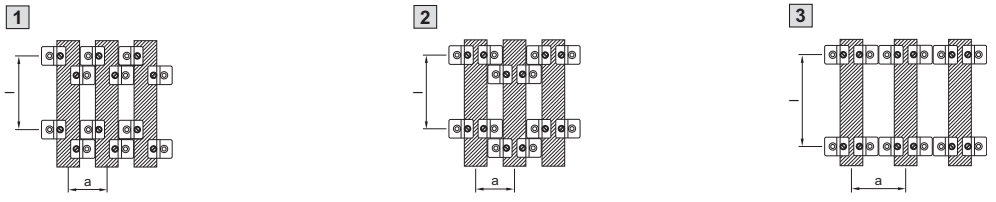
Basis of test:
VDE 0660, part 500/IEC 60 439-1.
Test implemented:
Dynamic short-circuit resistance to IEC 60 439-1.

The dimensions for the support spacing (l) and for the centre-to-centre spacing (a) must be within the specified min./max. limits. The quotients of l/a can be used to determine the permissible short-circuit current I_p by using curves a to d. The prescribed installation type must be taken into account.



Curve	Support spacing (l) mm		Centre-to-centre spacing (a) mm	
	min.	Max.	min.	Max.
a	150	300	34	60
b	150	350	42	85
c	200	400	51	85
d	200	450	81	100

Type of assembly with universal support SV 3079.000



Rated currents of busbars E-Cu (DIN 43 671)

DIN 43 671 specifies the continuous currents for busbars at an ambient temperature of 35°C and an average busbar temperature of 65°C. With the aid of a correction factor (k_2), the continuous currents specified in the following table may be adjusted to alternative operating temperatures.

For safe operation with thermal reserve, it is advisable to limit the busbar temperature to a maximum of 85°C. However, the decisive factor is the lowest permissible continuous temperature of the components which directly contact the busbar sytem (fuse bases, outgoing cables etc.). The ambient air temperature of the busbars or busbar system should not exceed 40°C; an average of 35°C maximum is recommended.

For the continuous temperatures specified in the table, an emission level of 0.4 applies, equivalent to an oxidating copper bar. In modern busbar systems – built into enclosures with a protection category of IP 54 and above – a more favourable emission level can be assumed. The lower emission level facilitates an additional increase in continuous currents compared with the figures in DIN 43 671, irrespective of the specified air and busbar temperature. Experience has shown an increase in the continuous current of 6 – 10% compared with the table figures for uncoated copper bars, and 60% for surface-oxidised copper bars.

Example:
For a Cu bar 30 x 10 mm (E-Cu F30), DIN 43 671 specifies a constant current of I_{N65} = 573 A.
The correction factor diagram for square cross-sections indicates a correction factor k_2 = 1.29 at an air temperature of 35°C and a busbar temperature of 85°C. Thanks to the favourable emission level, the continuous current is increased by a further 6 – 10%. In this example, a mean value of 8% is used. Compared with the table figure from DIN 43 671, the Rittal rated current specification for a Cu bar 30 x 10 mm is:

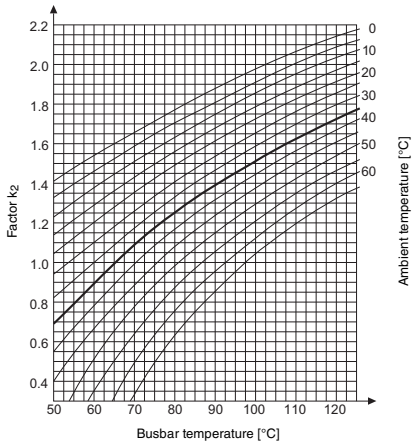
$$I_{N85} = I_{N65} \cdot k_2 + 8\%$$
$$= 573\ A \cdot 1.29 \cdot 1.08$$
$$I_{N85} = 800\ A$$

Continuous currents for busbars
Made from E-Cu with square cross-section in indoor locations at 35°C air temperature and 65°C bar temperature, vertical position or horizontal position of the bar width.

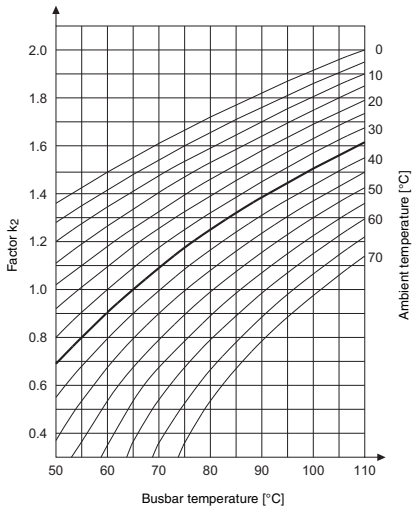
Width x thickness mm	Cross-section mm²	Weight[1]	Material[2]	Continuous current in A			
				AC current up to 60 Hz		DC current + AC current 16 Hz	
				Bare bar	Coated bar	Bare bar	Coated bar
12 x 2	23.5	0.209	E-Cu F30	108	123	108	123
15 x 2	29.5	0.262		128	148	128	148
15 x 3	44.5	0.396		162	187	162	187
20 x 2	39.5	0.351		162	189	162	189
20 x 3	59.5	0.529		204	237	204	237
20 x 5	99.1	0.882		274	319	274	320
20 x 10	199.0	1.770		427	497	428	499
25 x 3	74.5	0.663		245	287	245	287
25 x 5	124.0	1.110		327	384	327	384
30 x 3	89.5	0.796		285	337	286	337
30 x 5	149.0	1.330		379	447	380	448
30 x 10	299.0	2.660		573	676	579	683
40 x 3	119.0	1.060		366	435	367	436
40 x 5	199.0	1.770		482	573	484	576
40 x 10	399.0	3.550		715	850	728	865
50 x 5	249.0	2.220		583	697	588	703
50 x 10	499.0	4.440		852	1020	875	1050
60 x 5	299.0	2.660		688	826	696	836
60 x 10	599.0	5.330		985	1180	1020	1230
80 x 5	399.0	3.550		885	1070	902	1090
80 x 10	799.0	7.110		1240	1500	1310	1590
100 x 10	999.0	8.890		1490	1810	1600	1940

[1] Calculated with a density of 8.9 kg/dm³
[2] Reference basis for the continuous current levels (figures taken from DIN 43 671)

Correction factor diagram to DIN 43 671



Correction factor diagram for PLS



Rittal PLS current load
According to DIN 43 671, the correction factor k_2 (correction diagram) is used to correct the basic current with reference to the existing temperatures of the ambient air and the busbar. In accordance with DIN 43 671, the load figures of the Rittal PLS special bars have been determined on the basis of measurement trials, as follows:

PLS special busbars	Rated current AC 50/60 Hz	
	for 35/75°C	for 35/65°C (basic value)
E-Cu PLS 800	800 A	684 A
E-Cu PLS 1600	1600 A	1368 A

Rated currents of Flat-PLS busbar systems

DIN 43 671 specifies the continuous currents for busbars surrounded by air, giving defined temperatures for the ambient and busbar temperature (35°C/65°C). The air temperature around the busbars is considered the ambient temperature, not the air temperature around the enclosure housing. However, in certain circumstances, a busbar system installed in an enclosure may be subject to completely different conditions. Similarly, the figures in DIN 43 671 do not make allowance for the effect of airflows inside the enclosure caused by fan systems, which may influence the maximum rated currents.

In addition to the rated currents for copper busbars to DIN 43 671, the following table lists additional values for rated currents of Flat-PLS busbar systems with bare copper bars for AC currents up to 60 Hz.

These values were determined on Flat-PLS busbars fitted in enclosures with various protection categories, as well as with and without forced ventilation. Depending on the busbar system and protection category, two figures are given, representing the rated current at an overtemperature of 30°K and 70°K. In contrast to the rated currents to DIN 43 671, the temperature outside the enclosure is measured as the ambient temperature here.

The benefit of this approach is that the enclosure housing, which may exert a major influence on the busbar system, is taken into account in the ratings data for the busbar system. Designing a busbar system to DIN 43 671 without consideration of the enclosure housing may lead to thermal problems in the enclosure interior, particularly with higher currents.

Although IEC 60 439-1/IEC 61 439-1/-2 permits higher overtemperature limits than 70°K, the absolute busbar temperature at an ambient temperature of 35°C and 70°K overtemperature limit is 105°C. This figure of 105°C is high, but significantly below the thermal softening of copper material, and therefore acceptable.

Example:
If a rated current is used at an overtemperature of 30°K, this means that the temperature of the busbars is 30°K above the ambient temperature of the enclosure. Expressed in absolute figures, therefore, at an ambient temperature of 35°C around the enclosure housing, this produces a maximum absolute busbar temperature of 65°C.

Rated AC currents of Flat-PLS busbar system up to 60 Hz for bare copper bars (E-Cu F30) in A

Design of Flat-PLS busbar system	Protection category of enclosure										
	Ri4Power DIN 43 671	IP 2X with forced ventilation[1)]		IP 2X		IP 43		IP 54 with forced ventilation[2)]		IP 54	
	ΔT = 30°K	ΔT = 30°K	ΔT = 70°K	ΔT = 30°K	ΔT = 70°K	ΔT = 30°K	ΔT = 70°K	ΔT = 30°K	ΔT = 70°K	ΔT = 30°K	ΔT = 70°K
2 x 40 x 10 mm	1290	1800	2700	1200	1900	1000	1536	1700	2400	950	1500
3 x 40 x 10 mm	1770	2100	3250	1350	2150	1150	1650	2000	3000	1150	1800
4 x 40 x 10 mm	2280	2300	3400	1400	2300	1250	2040	2050	3100	1200	1900
2 x 50 x 10 mm	1510	2200	3260	1340	2140	1200	1920	1980	2920	1140	1800
3 x 50 x 10 mm	2040	2660	3900	1580	2540	1400	2240	2320	3440	1320	2100
4 x 50 x 10 mm	2600	2700	4040	1640	2660	1440	2340	2360	3500	1380	2220
2 x 60 x 10 mm	1720	2300	3600	1500	2450	1300	2200	2200	3200	1250	2000
3 x 60 x 10 mm	2300	2450	4050	1700	2700	1500	2500	2400	3520	1450	2300
4 x 60 x 10 mm	2900	2740	4220	1740	2840	1580	2540	2420	3580	1460	2360
2 x 80 x 10 mm	2110	2760	4160	1740	2840	1600	2560	2540	3720	1480	2360
3 x 80 x 10 mm	2790	3300	5060	2000	3260	1840	2960	3060	4520	1680	2700
4 x 80 x 10 mm	3450	3680	5560	2060	3440	1900	3280	3220	4880	1780	2820
2 x 100 x 10 mm	2480	3240	4840	1920	3200	1800	2880	2900	4340	1660	2660
3 x 100 x 10 mm	3260	3580	5400	2200	3720	1980	3240	3320	4880	1920	2980
4 x 100 x 10 mm	3980	4020	5760	2320	3820	2000	3400	3380	4900	1960	3120

[1)] For I_N < = 2000 A using fan-and-filter unit SK 3326.107,
for I_N > 2000 A using fan-and-filter unit SK 3327.107.
[2)] For I_N < = 2000 A using fan-and-filter unit SK 3326.107 and outlet filter SK 3326.207,
for I_N > 2000 A using fan-and-filter unit SK 3327.107 and outlet filter SK 3326.207.

For calculating rated currents at temperatures between the overtemperature limits of Flat-PLS busbar systems, the correction factor diagram may be used. If data is available regarding the maximum ambient temperature and the maximum bar temperature, a correction factor k_2 may be calculated using the correction factor diagram. With a correction factor k_2 and a specified rated current at 30°K overtemperature limit, the new rated current is calculated.

Example:
Flat-PLS 100 busbar system
with 4 x 100 x 10 mm

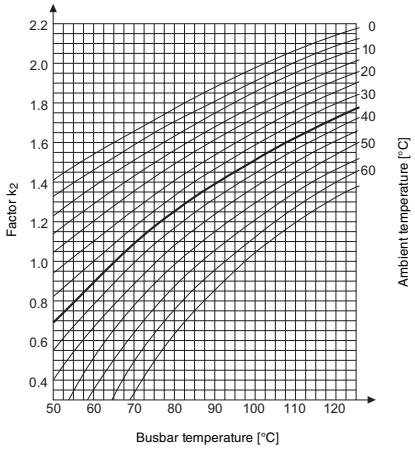
I_{N30} at IP 2X = 2320 A
ambient temperature = 35°C
Bar temperature = 85°C

From the diagram, this produces a factor k_2 = 1.29

The new rated current under these conditions is then calculated as follows:

$$I_N = I_{N30} \cdot k_2$$
$$= 2320\ A \cdot 1.29$$
$$= 2992\ A$$

Correction factor diagram



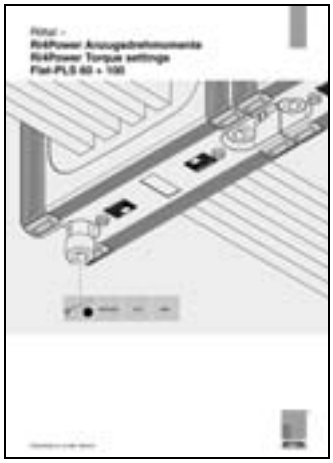
Planning and configuration of Ri4Power systems

Tightening torques for Flat-PLS busbar systems

There is separate documentation available containing all the requisite torque information for the configuration of Ri4Power systems with the new Flat-PLS busbar system. Organised according to item numbers, information is provided on screws, screw drive and rated torque.

This documentation is available for downloading at the Rittal website **www.rittal.com.** Alternatively, a printed copy may be ordered quoting the following item number.

Packs of	**Model No. SV**
1	**9676.001**



Assembly instructions for Ri4Power low-voltage switchgear

for Form 2-4, with Flat-PLS, Maxi-PLS and RiLine60

These assembly instructions explain the configuration of type-tested Ri4Power field types and possible busbar systems, divided into 3 sections. The first section explains the assembly sequence for the individual stages of the possible field types in diagrammatic form.
The second section provides detailed assembly instructions using diagrams and data tables. The final section explains the installation of optional accessories and general work operations.

This documentation is available for downloading at the Rittal website **www.rittal.com.** Alternatively, a printed copy may be ordered quoting the following item number.

Packs of	**Model No. SV**
1	**9676.000**

Assembly instructions for Ri4Power low-voltage switchgear

for Form 1 (open design), with Maxi-PLS

Assembly instructions for the configuration of type-tested low-voltage switchgear, open design (without internal compartmentalisation of the functional areas) with the Maxi-PLS busbar system. The document uses diagrams and data tables to explain the assembly of the various field types.

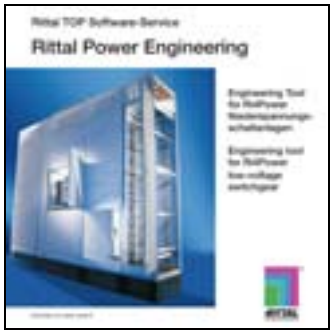
This documentation is available for downloading at the Rittal website **www.rittal.com.** Alternatively, a printed copy may be requested from your specialist Rittal advisor.

Rittal Power Engineering

Planning software for type-tested low-voltage switchgear
with the System Ri4Power configuration tool for simple, fast planning and calculation of type-tested low-voltage switchgear with the Ri4Power systems Form 1, Form 2-4 and ISV.

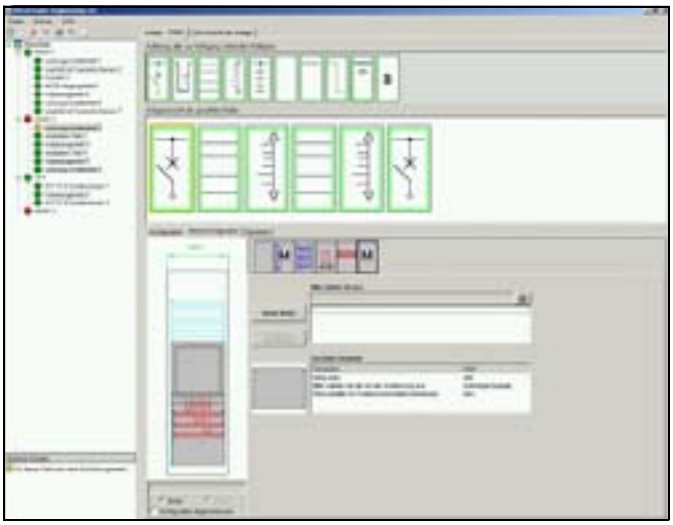
The multi-lingual software package includes the following functions:

- Project handling, from the initial enquiry through to ordering
- Complete, automatic function for the generation of bills of materials and a calculation program for producing a quote
- Input and evaluation of assembly times to calculate man hours
- Access to the entire range of Rittal products
- Output of orders, including combining several projects into one order
- Generation of special fields configured by the customer with graphical processing in the CAD view
- Import/export interfaces for product and CAD data
- Export function of order and parts lists in Excel or CSV format
- Calculation based on current copper price
- Interface to EPLAN Electric P8, for the export of CAD data and bills of materials
- The extra benefit for engineering and planning offices: Output of detailed tender texts on the basis of plant project-planned in Power Engineering in MS Word format.
- Output of generated project-specific assembly sketches
- Integral configurator for the generation of drawings and bills of materials to create connector kits for connecting air circuit-breakers (ACB).

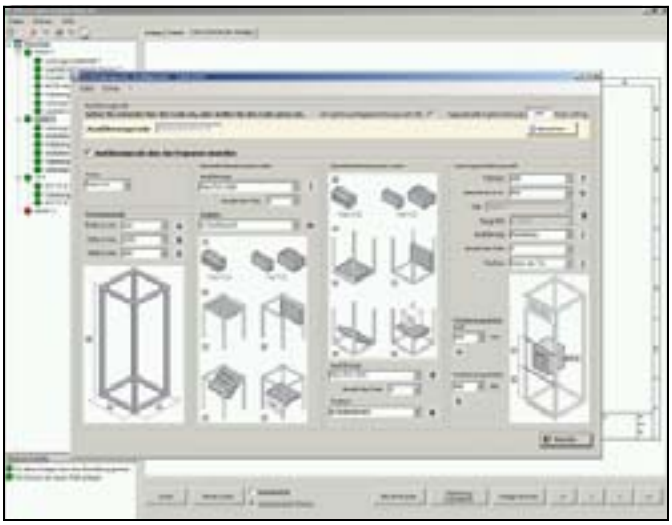


Supply includes
CD-ROM
Language: German/English/ French/Dutch/Danish/ Swedish/Czech/Italian/ Spanish/Polish/Russian

Model No. SV	3020.300



With the graphical user interface, plant configurations may be planned and designed very quickly and easily.



As a stand-alone module, the integral configurator for connector kits also supports the manual generation of production documents of air circuit-breaker connector kits for air circuit-breakers from ABB, Merlin Gerin, Mitsubishi, Moeller, Siemens and Terasaki.

Engineering support for project handling

For individual project handling, Rittal offers an extra service with specially trained expert advisors and technical support staff for the generation of quotes, technical order handling, and after-sales service.

Following technical coordination, individual low-voltage switchgear may be configured. On request, we can supply you with assembly drawings and bills of materials to match your project. As a planner, you have the option of requesting a tender text for your project based on Power Engineering project planning.

During the execution of your plant, our expert advisors can also provide technical support with the assembly and execution.

For initial contact with our engineering support team, please contact your local expert advisor. He or she will make a note of your request and forward it to our technical team. Further information is available at www.rittal.com.

Planning and configuration of Ri4Power systems

Planning and project management in line with regulations

As a general principle, low-voltage switchgear and distributors should be planned to meet the operating conditions of their final installation site. To this end, the operator of the plant, in collaboration with the manufacturer, should stipulate the operating and ambient conditions. Moreover, as a general rule, the operator or planning office should also supply the manufacturer with full electrical specifications of both the mains supply end and the distributor outlet end. This makes it possible to plan and manufacture a cost-effective system with optimum adaptation to the technical requirements.

Important basic data for planning and project management

- Applicable regulations and standards, both regional and international
- Electricity supply company conditions
- Operator-specific regulations
- Mains-specific protective measures/mains type
- Rated voltage and frequency
- Rated current with due regard for the number of conductors (infeed and busbars)
- Rated insulation voltage
- Short-circuit current at the point of installation
- Location of incoming cables, from above or below
- Number of incoming cables, specifying the type and cross-section
- Number of outlets, specifying the operating load and the envisaged outgoing cables with type and cross-section
- For the outlet side, specification of the simultaneity factor and rated load factor of the relevant equipment items

Important operating and ambient conditions

- Rated operating voltage U_e
- Mains frequency f_N
- Rated insulation voltage U_i
- Busbar rated current I_{sas}
- Rated current for the supply end I_{zu}
- Rated surge current resistance I_{pk}
- Rated short-time current resistance I_{cw}
- Ambient temperature condition ϑ
- Atmospheric climatic stress, specifying the relative humidity and temperature
- Protection category of the overall system IP . . .
- Specification to DIN EN 60 529
- Protection category

Rated diversity factor

The rated diversity factor of a switchgear combination or part thereof (e.g. a field) comprising several main circuits refers to the ratio between the largest sum total of all currents anticipated at any given time in the affected main circuits and the sum total of the rated currents of all main circuits of the switchgear enclosure or observed part thereof.

Application suggestion to IEC/EN 60 439-1

Number of main circuits	Load factor
2 and 3	0.9
4 and 5	0.8
6 and 7	0.7
10 or more	0.6

Rated currents and short-circuit currents of standard transformers

Rated voltage U_N = 400 V	400 V		
Short-circuit voltage U_k		4%[1]	6%[2]
Rated power S_{NT} [kVA]	Rated current I_N [A]	Short-circuit current I_{k}''[3] [kA]	
50	72	1.89	1.20
100	144	3.61	2.41
160	230	5.77	3.85
200	288	7.22	4.81
250	360	9.02	6.01
315	455	11.36	7.58
400	589	14.43	9.62
500	722	18.04	12.03
630	910	22.73	15.15
800	1156	28.86	19.24
1000	1444	36.08	24.05
1250	1805	45.09	30.06
1600	2312	57.72	38.48
2000	2882	72.15	48.10
2500	3613	90.32	60.21

[1] U_k = 4% standardised to DIN 42 503 for S_{NT} = 50 . . . 630 kVA
[2] U_k = 6% standardised to DIN 42 511 for S_{NT} = 100 . . . 1600 kVA
[3] I_{k}'' = Initial symmetrical short-circuit current of transformer when connecting to a mains supply with unlimited short-circuit lead

Maxi-PLS 1600/2000

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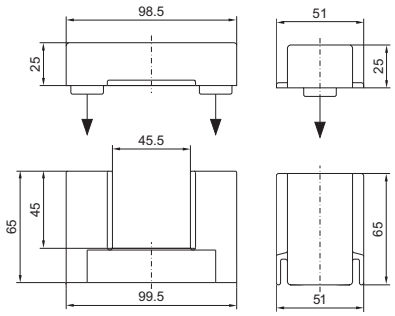
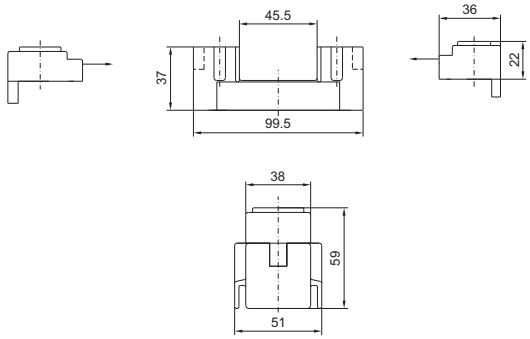
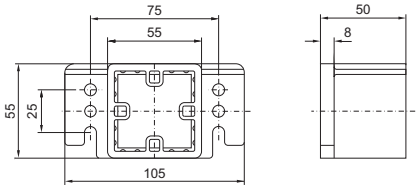
Busbar supports
Model No. SV 9640.000, SV 9649.000



Busbar support, suitable for top mounting
Model No. SV 9640.160



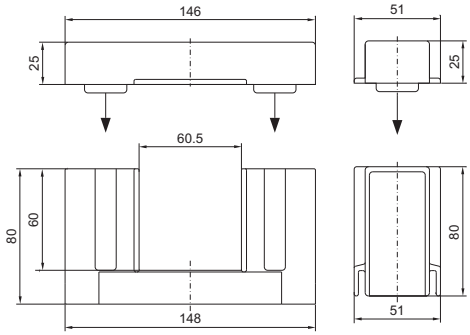
End supports
Model No. SV 9640.010, SV 9649.010



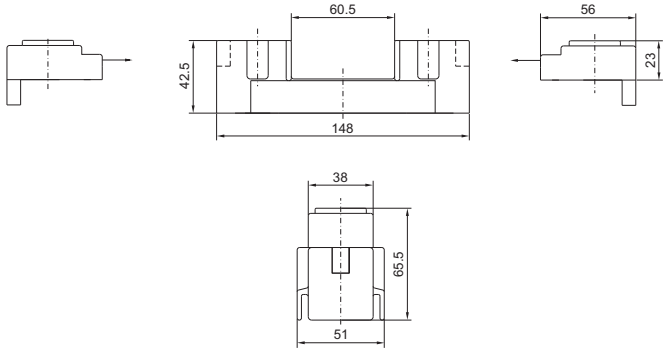
Maxi-PLS 3200

Page 86

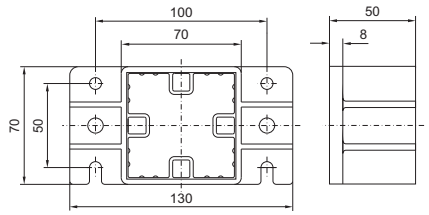
Busbar supports
Model No. SV 9650.000, SV 9659.000



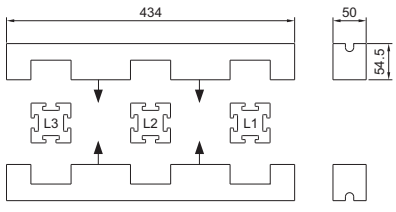
Busbar support, suitable for top mounting
Model No. SV 9650.160



End supports
Model No. SV 9650.010, SV 9659.010



Stabiliser
Model No. SV 9650.140

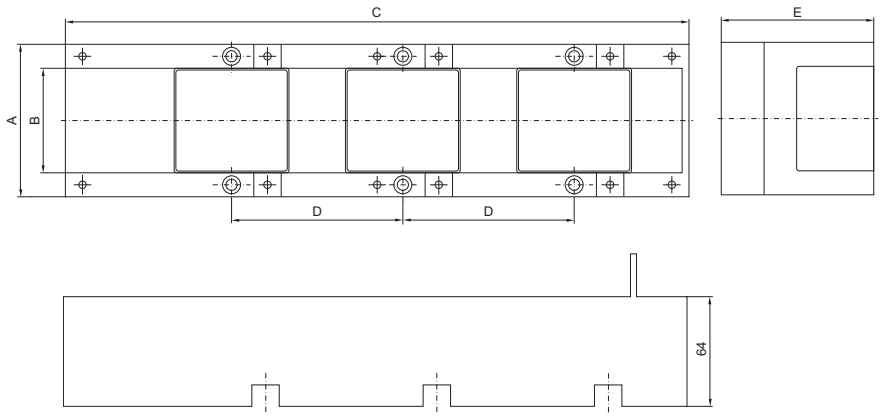


Maxi-PLS connection components

Maxi-PLS 1600/2000
Page 85

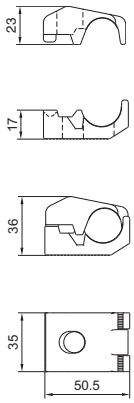
Maxi-PLS 3200
Page 87

Isolator chassis

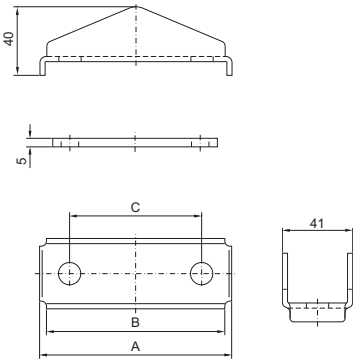


Model No. SV	A	B	C	D	E
9640.020	89	61	346	100	89
9650.020	89	61	479	150	94
9650.030	129	101	479	150	94

Connection clamp
Model No.
SV 9640.325
SV 9650.325

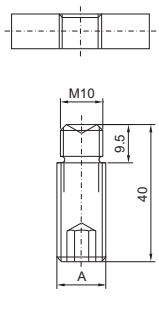


Connection plates



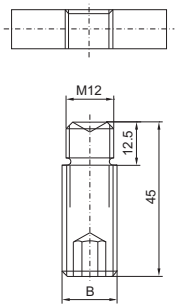
Model No. SV	Size	A	B	C	T-head screws	Tightening torque
9640.330	1	81	73	46	M10	20 Nm
9640.340	2	112	104	77	M10	25 Nm
9640.350	3	149	141	114	M10	30 Nm
9650.330	1	81	73	46	M12	25 Nm
9650.340	2	112	104	77	M12	30 Nm
9650.350	3	149	141	114	M12	35 Nm

Terminal studs (1600/2000)

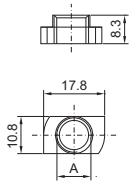


Model No. SV	A	B
9640.370	M12	–
9640.380	M16	–
9650.370	–	M12
9650.380	–	M16

Terminal studs (3200)

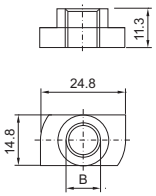


Sliding nuts (1600/2000)



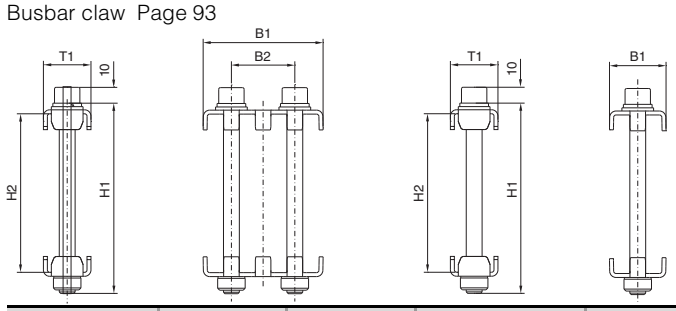
Model No. SV	A	B
9640.900	M6	–
9640.910	M8	–
9640.920	M10	–
9650.900	–	M6
9650.910	–	M10
9650.920	–	M12

Sliding nuts (3200)



Flat-PLS 60/100

Busbar claw Page 93

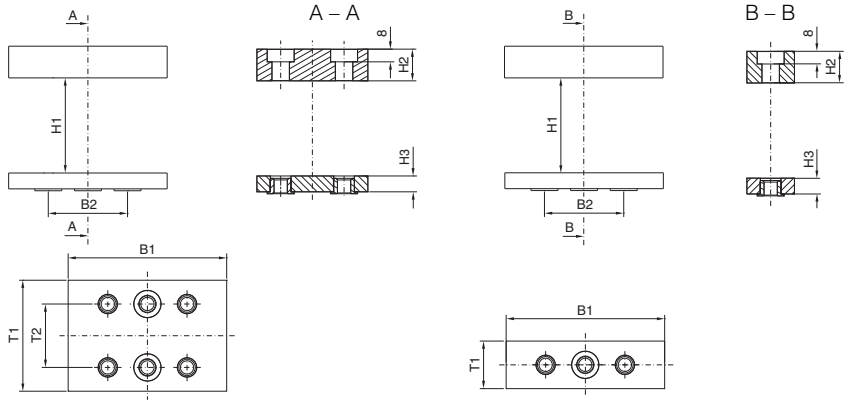


B = Width
T = Depth

Model No. SV	B1	B2	H1	H2	T1
9676.011	35.7	–	80	57 – 62	30
9676.012	55.7	20	80	57 – 62	30
9676.013	75.7	40	80	57 – 62	30
9676.014	35.7	–	120	97 – 102	30
9676.015	55.7	20	120	97 – 102	30
9676.016	75.7	40	120	97 – 102	30
9676.017	35.7	–	Without screw	+2/–3[1)]	30
9676.018	55.7	20	Without screw	+2/–3[1)]	30
9676.019	75.7	40	Without screw	+2/–3[1)]	30

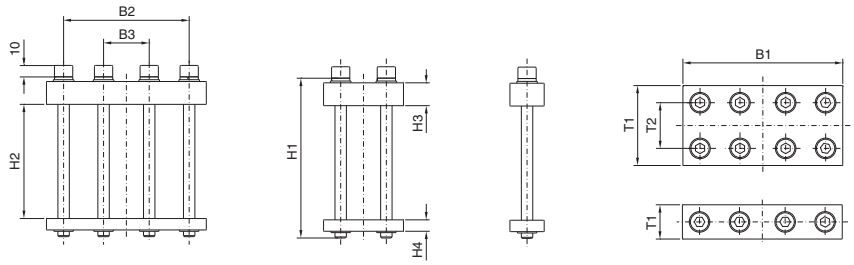
[1)] With reference to the required screw H2 = H1 – 20 (H1 ≙ length of screw).

Contact makers Page 96



Model No. SV	B1	B2	H1	H2	H3	T1	T2
9676.526	60	36	40 – 100	20	10	30	–
9676.546	60	36	40 – 100	20	10	70	40
9676.528	80	50	40 – 100	20	10	30	–
9676.548	80	50	40 – 100	20	10	70	40
9676.520	100	50	40 – 100	20	10	30	–
9676.540	100	50	40 – 100	20	10	70	40

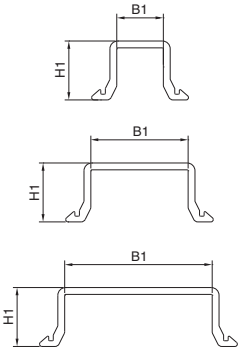
Longitudinal connector Page 98



Model No. SV	B1	B2	B3	H1	H2	H3	H4	T1	T2
9676.626	140	110	40	100	60	20	10	30	–
9676.646	140	110	40	100	60	20	10	70	40
9676.628	140	110	40	120	80	20	10	30	–
9676.648	140	110	40	120	80	20	10	70	40
9676.620	140	110	40	140	100	20	10	30	–
9676.640	140	110	40	140	100	20	10	70	40
9676.621	140	110	40	X[1)]	H1 – 40	20	10	30	–
9676.641	140	110	40	X[1)]	H1 – 40	20	10	70	40

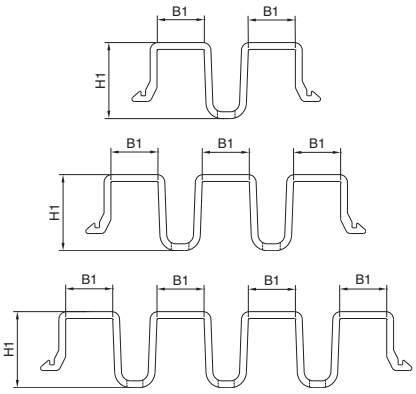
[1)] Length of screw (to be ordered separately).

Edge cover section without spacer Page 94



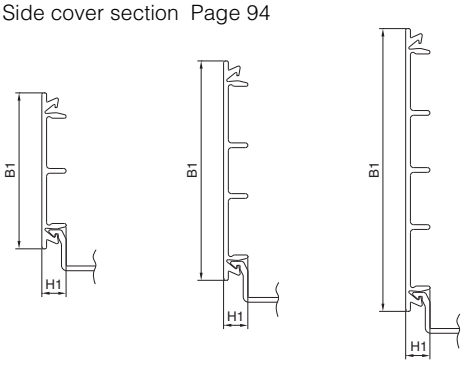
Model No. SV	B1	H1
9676.041	10.2	12.9
9676.042	21.3	12.9
9676.043	32.3	12.9

Edge cover section with spacer Page 94



Model No. SV	B1	H1
9676.052	10.3	16.65
9676.053	10.3	16.65
9676.054	10.3	16.65

Side cover section Page 94

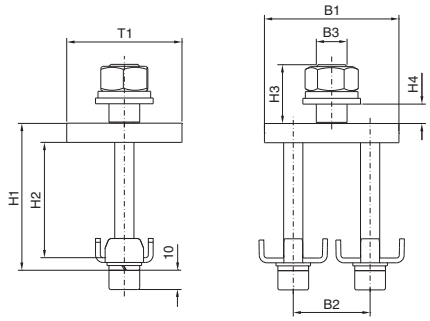


Model No. SV	B1	H1
9676.056	49.2	7.65
9676.058	69.2	7.65
9676.059	89.2	7.65

Flat-PLS connection components

Flat-PLS 60/100

Connection plates with bolts M12/M16 Page 95

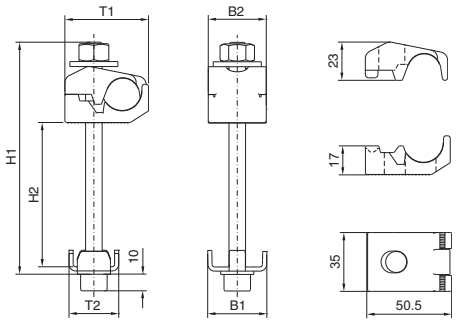


B = Width
T = Depth

Model No. SV	B1	B2	B3	H1	H2	H3	H4	T1
9676.700	70	40	M12	1)	H1 – 21.5	30.6	15.6	60
9676.704	70	40	M16	1)	H1 – 21.5	30.6	11.1	60

1) Length of screw connection.

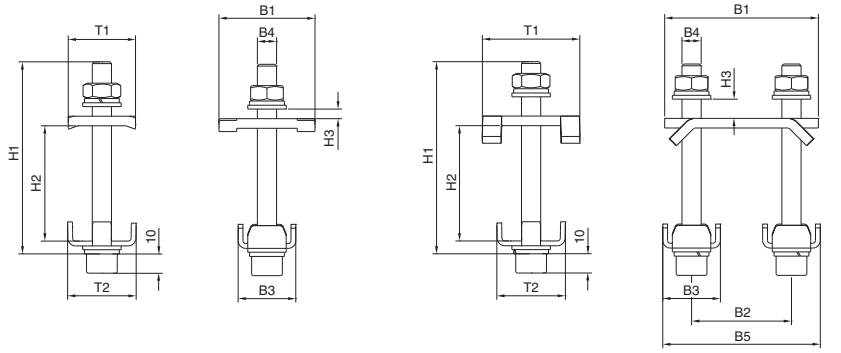
Direct connection terminals Page 94



Model No. SV	B1	B2	H1	H2	T1	T2
9676.730	35.7	35	1)	H1 – 60	50.5	30
9676.731	35.7	35	120	60	50.5	30
9676.733	35.7	35	160	100	50.5	30

1) Length of screw connection.

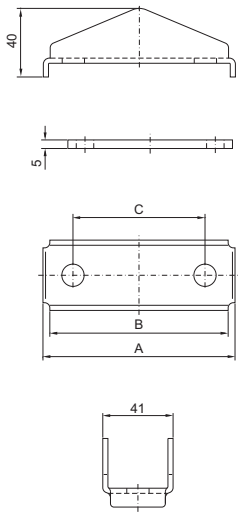
Connection plates with bolts M10 Page 95



Model No. SV	B1	B2	B3	B4	B5	H1	H2	H3	T1	T2
9676.710	50	–	30	M10	–	1)	H1 – 40	5	35	35.7
9676.714	80	52	30	M10	82	1)	H1 – 40	10	50	35.7

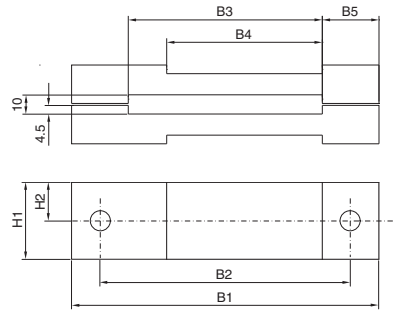
1) Length of screw connection.

Connection plates for laminated copper bars Page 96



Model No. SV	Size	A	B	C	Screw	Tightening torque
9676.741	1	81	73	46	M10 x 115	20 Nm
9676.742	2	112	104	77	M10 x 115	25 Nm
9676.743	3	149	141	114	M10 x 115	30 Nm
9676.744	1	81	73	46	M10 x 150	20 Nm
9676.745	2	112	104	77	M10 x 150	25 Nm
9676.746	3	149	141	114	M10 x 150	30 Nm
9676.747	1	81	73	46	without	20 Nm
9676.748	2	112	104	77	without	25 Nm
9676.749	3	149	141	114	without	30 Nm

Terminal block distributor bar Page 108



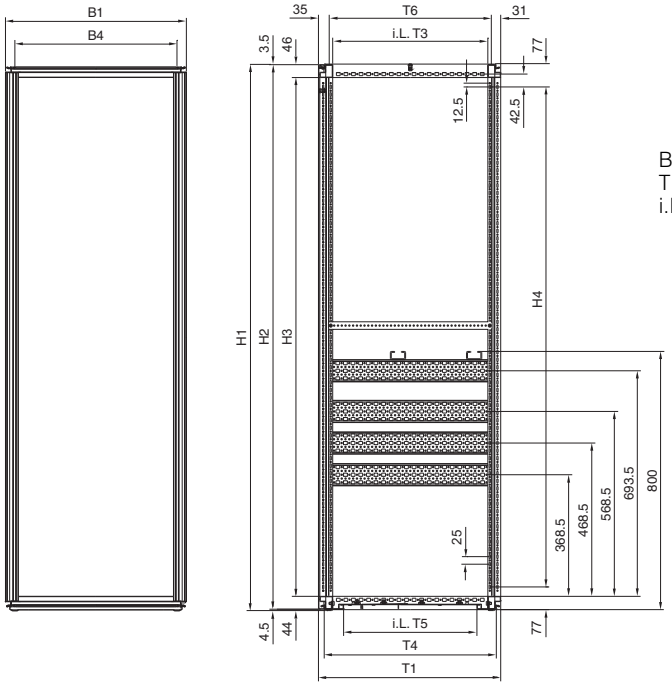
Model No. SV	B1	B2	B3	B4	B5	H1	H2	H3	T1
9674.485	160	130	61	51	29.5	40	20	25	20
9674.488	160	130	101	81	29.5	40	20	25	20

Dimensions SV-TS 8 enclosures

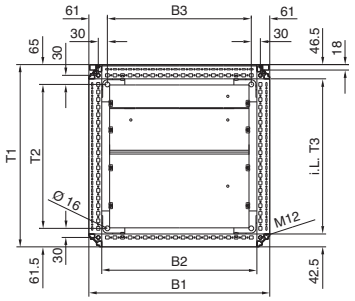
SV-TS 8 enclosures

for incoming/outgoing circuit (Form 1 only)

Catalogue 32, page 438

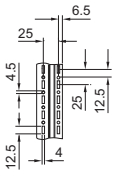


B = Width
T = Depth
i.L. = Clearance width

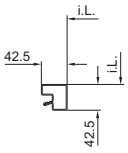


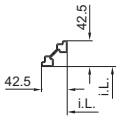
Cross-sections

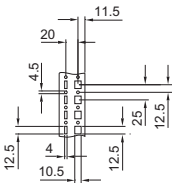
vertical



horizontal





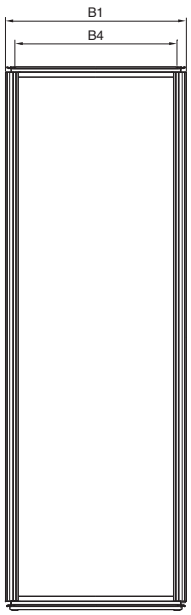


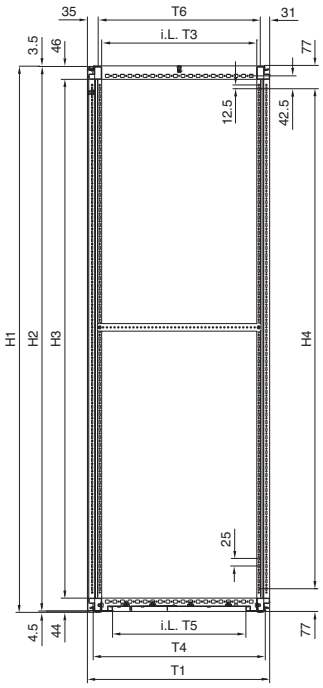
Model No. SV	B1 mm	B2 mm	B3 mm	B4 mm	H1 mm	H2 mm	H3 mm	H4 mm	T1 mm	T2 mm	T3 mm	T4 mm	T5 mm	T6 mm	Door(s)
9660.665	597	512	475	535	2005	1997	1912	1850	601.5	475	512	568	440	535	1
9660.675	597	512	475	535	2005	1997	1912	1850	601.5	475	512	568	440	535	3
9660.865	797	712	675	735	2005	1997	1912	1850	601.5	475	512	568	440	535	1
9660.875	797	712	675	735	2005	1997	1912	1850	601.5	475	512	568	440	535	3

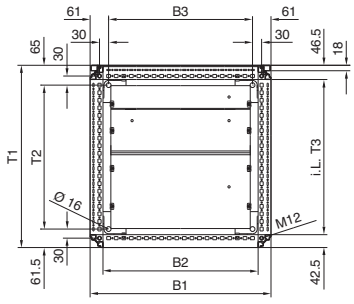
Dimensions SV-TS 8 enclosures

SV-TS 8 modular enclosures

Page 30 – 32

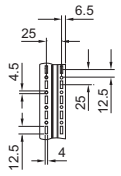


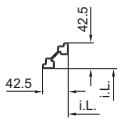




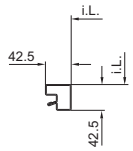
Cross-sections

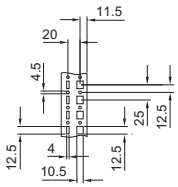
vertical





horizontal





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

Model No. SV	B1 mm	B2 mm	B3 mm	B4 mm	H1 mm	H2 mm	H3 mm	H4 mm	T1 mm	T2 mm	T3 mm	T4 mm	T5 mm	T6 mm
9670.406	397	312	275	335	2005	1997	1912	1850	601.5	475	512	568	440	535
9670.408	397	312	275	335	2005	1997	1912	1850	801.5	675	712	768	640	735
9670.426	397	312	275	335	2205	2197	2112	2050	601.5	475	512	568	440	535
9670.428	397	312	275	335	2205	2197	2112	2050	801.5	675	712	768	640	735
9670.486	397	312	275	335	1805	1797	1712	1650	601.5	475	512	568	440	535
9670.606	597	512	475	535	2005	1997	1912	1850	601.5	475	512	568	440	535
9670.608	597	512	475	535	2005	1997	1912	1850	801.5	675	712	768	640	735
9670.626	597	512	475	535	2205	2197	2112	2050	601.5	475	512	568	440	535
9670.628	597	512	475	535	2205	2197	2112	2050	801.5	675	712	768	640	735
9670.686	597	512	475	535	1805	1797	1712	1650	601.5	475	512	568	440	535
9670.806	797	712	675	735	2005	1997	1912	1850	601.5	475	512	568	440	535
9670.808	797	712	675	735	2005	1997	1912	1850	801.5	675	712	768	640	735
9670.826	797	712	675	735	2205	2197	2112	2050	601.5	475	512	568	440	535
9670.828	797	712	675	735	2205	2197	2112	2050	801.5	675	712	768	640	735
9670.886	797	712	675	735	1805	1797	1712	1650	601.5	475	512	568	440	535

Dimensions SV-TS 8 enclosures

SV-TS 8 cable chamber enclosures

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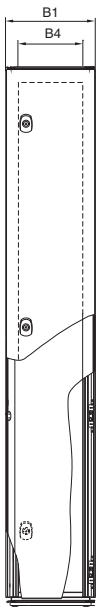
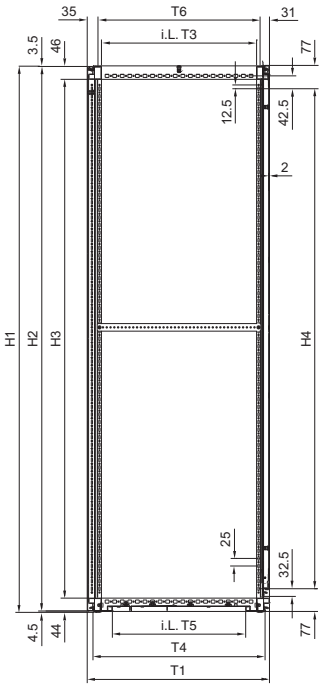
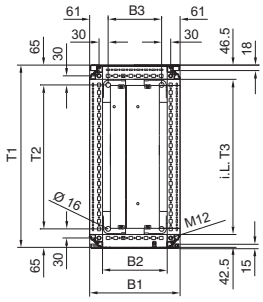


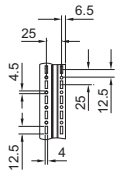


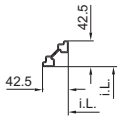


B = Width
T = Depth
i.L. = Clearance width

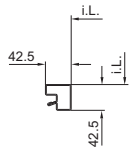
Cross-sections

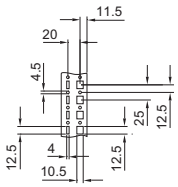
vertical





horizontal





Model No. SV	B1 mm	B2 mm	B3 mm	B4 mm	H1 mm	H2 mm	H3 mm	H4 mm	T1 mm	T2 mm	T3 mm	T4 mm	T5 mm	T6 mm
9670.316	297	212	175	235	2005	1997	1912	1850	605	475	512	568	440	535
9670.318	297	212	175	235	2005	1997	1912	1850	805	675	712	768	640	735
9670.336	297	212	175	235	2205	2197	2112	2050	605	475	512	568	440	535
9670.338	297	212	175	235	2205	2197	2112	2050	805	675	712	768	640	735
9670.396	297	212	175	235	1805	1797	1712	1650	605	475	512	568	440	535
9670.416	397	312	275	335	2005	1997	1912	1850	605	475	512	568	440	535
9670.418	397	312	275	335	2005	1997	1912	1850	805	675	712	768	640	735
9670.436	397	312	275	335	2205	2197	2112	2050	605	475	512	568	440	535
9670.438	397	312	275	335	2205	2197	2112	2050	805	675	712	768	640	735
9670.496	397	312	275	335	1805	1797	1712	1650	605	475	512	568	440	535
9670.616	597	512	475	535	2005	1997	1912	1850	605	475	512	568	440	535
9670.618	597	512	475	535	2005	1997	1912	1850	805	675	712	768	640	735
9670.636	597	512	475	535	2205	2197	2112	2050	605	475	512	568	440	535
9670.638	597	512	475	535	2205	2197	2112	2050	805	675	712	768	640	735
9670.696	597	512	475	535	1805	1797	1712	1650	605	475	512	568	440	535

Dimensions SV-TS 8 enclosures

SV-TS 8 switch-disconnector-fuse enclosures

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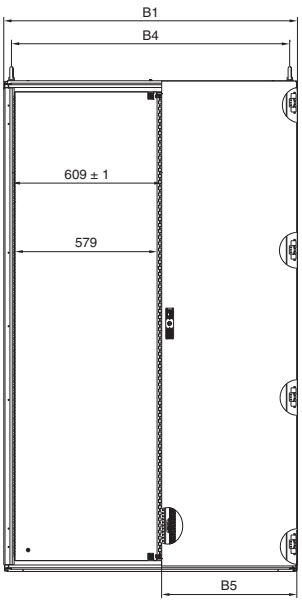
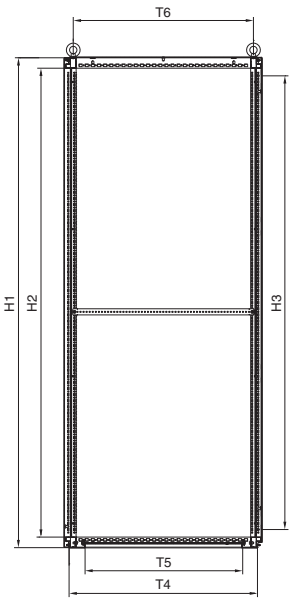
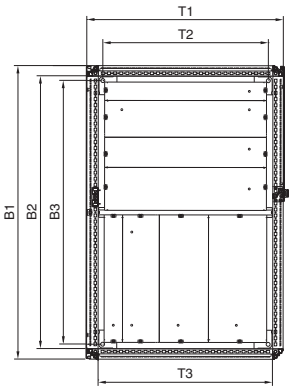
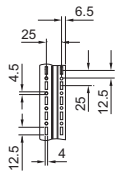


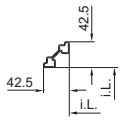




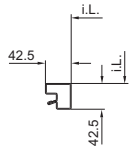
Cross-sections

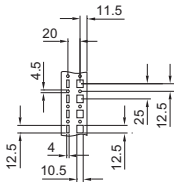
vertical





horizontal





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

Model No. SV	B1 mm	B2 mm	B3 mm	B4 mm	B5 mm	H1 mm	H2 mm	H3 mm	T1 mm	T2 mm	T3 mm	T4 mm	T5 mm	T6 mm
9670.006	997	912	875	935	350.5	1997	1912	1850	601.5	475	512	568	440	535
9670.008	997	912	875	935	350.5	1997	1912	1850	801.5	675	712	768	640	735
9670.026	997	912	875	935	350.5	2197	2112	2050	601.5	475	512	568	440	535
9670.028	997	912	875	935	350.5	2197	2112	2050	801.5	675	712	768	640	735
9670.106	1197	1112	1075	1135	550.5	1997	1912	1850	601.5	475	512	568	440	535
9670.108	1197	1112	1075	1135	550.5	1997	1912	1850	801.5	675	712	768	640	735
9670.126	1197	1112	1075	1135	550.5	2197	2112	2050	601.5	475	512	568	440	535
9670.128	1197	1112	1075	1135	550.5	2197	2112	2050	801.5	675	712	768	640	735

SV-TS 8 busbar enclosures

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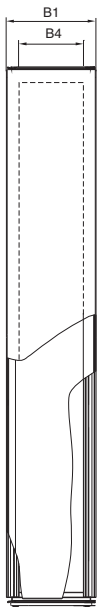
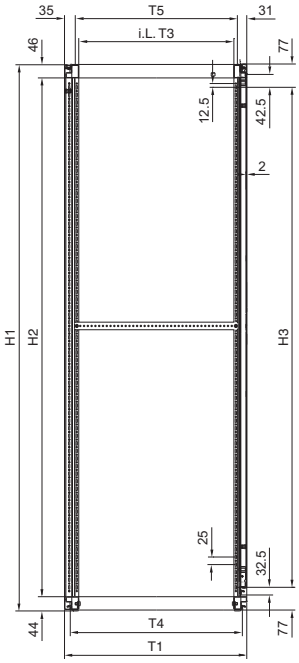
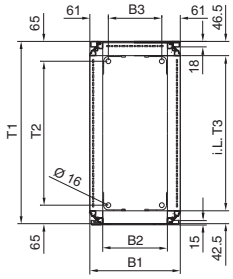
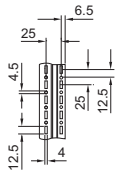


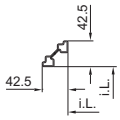




Cross-sections

vertical





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

Model No. SV	B1 mm	B2 mm	B3 mm	B4 mm	H1 mm	H2 mm	H3 mm	T1 mm	T2 mm	T3 mm	T4 mm	T5 mm
9670.206	197	112	75	75	1997	1912	1850	605	475	512	561	535
9670.208	197	112	75	75	1997	1912	1850	805	675	712	761	735
9670.226	197	112	75	75	2197	2112	2050	605	475	512	561	535
9670.228	197	112	75	75	2197	2112	2050	805	675	712	761	735

Form 2-4 technical information

System data

Type-tested Ri4Power low-voltage switchgear combinations

The section types of Ri4Power low-voltage switchgear combinations are type-tested to IEC 60 439-1. If planned and executed in accordance with the specifications and assembly instructions for Ri4Power systems, the combination of section types corresponds to a type-tested low-voltage switchgear combination to IEC 60 439-1. Alternatively, design verification to IEC 61 439-1/-2 is possible. For further information please contact your local expert advisor.

Type testing of Ri4Power systems was carried out with the following switchgear brands:

- ABB
- Jean Müller
- Merlin Gerin
- Mitsubishi
- Moeller Electric
- Siemens
- Terasaki

and with RiLine components from Rittal. In contrast to a non-type-tested switchgear combination, the requirements for the selection of components and switchgear are linked to the tested types. When planning air circuit-breakers, where necessary, reduction factors should be taken into account for use at increased temperatures in the enclosure interior.

Before planning and assembling a type-tested switchgear combination, the technical parameters of a type-tested switchgear combination should be coordinated between the user and switchgear manufacturer. For type-tested execution of the Ri4Power system, we recommend use of the Rittal Power Engineering software. All parameters are integrated into this software, which guides users to the required solution.
Type-testing of a switchgear combination confirms the combination of enclosure, busbar system and switchgear as a functioning unit, and verifies compliance with all technical limits. The technical data of a type-tested switchgear combination may deviate from the tested values of the individual components, since these components are often subject to different test requirements.

For busbar systems, too, the data within a type-tested switchgear combination may deviate from the data pursuant to DIN 43 671, since in addition to the enclosure and busbar system, type-testing also makes allowance for heat loss in switchgear. For this reason, the technical system data on the following pages is decisive for the type-tested switchgear combinations. If field types with different ratings data are combined, please note that the lowest values for the main busbar system and the overall enclosure protection category prescribe the rated for the overall switchgear combination.

Ri4Power low-voltage switchgear assemblies without type-testing certificate

Ri4Power components may also be used outside of type-tested switchgear and controlgear assemblies. However, the technical data for the products and the short-circuit protection data and ratings data of the busbar systems must be observed.

Operating and ambient conditions for Ri4Power switchgear assemblies

The siting conditions for Ri4Power systems are identical for all field types. Any requirements which deviate from this should be agreed with the product management team.

Operating and ambient conditions	Ambient temperature	Short-term peak	+40°C	IEC 60 439-1
		Maximum on a 24 h average	+35°C	
		Low	–5°C	
	Atmospheric conditions	Normal climatic stress		IEC 60 439-1
		Relative humidity	50% at 40°C 90% at 20°C (without condensation due to temperature fluctuations)	
			Operation up to 1000 m above sea level	

Additional field-specific technical data for the type-tested field types is listed in detail on the following pages. This data represents the maximum, tested figures. For optimum adaptation of customer requirements to the possible system assemblies, we recommend use of the latest version of the Rittal Power Engineering software.

SV-TS 8 enclosures

for air circuit-breakers and moulded case circuit-breakers (ACB + MCCB)

Enclosures				
Mechanical parameters	Dimensions	Enclosure width Enclosure height Enclosure depth	400/600/800 mm[3] 1800/2000/2200 mm[3] 600/800 mm[3]	
		Pitch pattern	25 mm	
	Protection category		Max. IP 54	EN 60 529
	Design		1 – 4	EN 60 439-1
	Surface protection/ Material	Enclosure frame	Dipcoat-primed	
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside	
		System attachment	Stainless steel	
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated	

General ratings data				
Electrical parameters	Rated voltage	Rated insulation voltage U_i	1000 V	EN 60 439-1
		Rated operating voltage U_e	690 V	
		Rated surge voltage resistance U_{imp}	8 kV	
		Overvoltage category	IV	
		Level of contamination	3	
		Rated frequency	50 Hz	

Maxi-PLS busbar system			**Maxi-PLS 1600**	**Maxi-PLS 2000**	**Maxi-PLS 3200**	
Electrical parameters	Rated current (primary busbar)	Rated operating current I_e[4]	1400 A	1800 A	2800 A	IP 54
			1600 A	2000 A	3000 A	IP 2X[1]
			1800 A	2500 A	4000 A	IP 2X[2]
		Rated surge current resistance I_{pk}	110 kA		220 kA	EN 60 439-1
		Rated short-time current resistance I_{cw}	50 kA		100 kA	
	Testing under accidental arc conditions	Permissible prospective short-circuit current	50 kA		70 kA	EN 61 641
		Test voltage	420 V			
		Permissible arc duration	0.3 sec.			
Mechanical parameters	Busbar	Material	E-Cu, bare			
		External dimensions (cross-section)	45 x 45 mm (1000 mm²)	45 x 45 mm (1380 mm²)	60 x 60 mm (2700 mm²)	

RiLine60 busbar system			**E-Cu 30 x 10 mm**	**PLS 1600**	
Electrical parameters	Rated current (primary busbar)	Rated operating current I_e[4]	800 A	1150 A	IP 54
			860 A	1300 A	IP 43
			1000 A[5]	1600 A[2]	IP 2X
		Rated surge current resistance I_{pk}	68 kA	110 kA	EN 60 439-1
		Rated short-time current resistance I_{cw}	32 kA, 1 sec.	50 kA, 1 sec./50 kA, 3 sec.	
	Testing under accidental arc conditions	Permissible prospective short-circuit current	30 kA	50 kA	EN 61 641
		Test voltage	690 V		
		Permissible arc duration	0.3 sec.		
Mechanical parameters	Busbar	Material	E-Cu, bare		
		Version (cross-section)	30 x 10 mm (300 mm²)	PLS 1600 (900 mm²)	

Flat-PLS busbar system			**Flat-PLS 60**	**Flat-PLS 100**	
Electrical parameters	Rated current (primary busbar)	Rated operating current I_e[4]	3500 A	4000 A	IP 54
			3650 A	4200 A	IP 43
			4100 A[2]	5500 A[2]	IP 2X
		Rated surge current resistance I_{pk}	154 kA	220 kA	EN 60 439-1
		Rated short-time current resistance I_{cw}	70 kA, 1 sec.	100 kA, 1 sec.	
Mechanical parameters	Busbar	Material	E-Cu, bare		
		Version (cross-section)	Up to 4 x 60 x 10 mm (max. 2400 mm²)	Up to 4 x 100 x 10 mm (max. 4000 mm²)	

[1] Using outlet filter SK 3326.207 and roof plate IP 2X.
[2] Using fan-and-filter unit SK 3327.107 (700 m³/h) and roof plate IP 2X.
[3] Other sizes available on request.
[4] Other rated currents for different protection categories on request.
[5] Using fan-and-filter unit SK 3325.107 (230 m³/h) and roof plate IP 2X.

Form 2-4 technical information

System data

SV-TS 8 enclosures

for coupling sections

Enclosures				
Mechanical parameters	Dimensions	Enclosure width Enclosure height Enclosure depth	600/800/1000 mm[3] 2000/2200 mm[3] 600/800 mm[3]	
		Pitch pattern	25 mm	
	Protection category		Max. IP 54	EN 60 529
	Design		1 – 4	EN 60 439-1
	Surface protection/ Material	Enclosure frame	Dipcoat-primed	
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside	
		System attachment	Stainless steel	
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated	

General ratings data				
Electrical parameters	Rated voltage	Rated insulation voltage U_i	1000 V	EN 60 439-1
		Rated operating voltage U_e	690 V	
		Rated surge voltage resistance U_{imp}	8 kV	
		Overvoltage category	IV	
		Level of contamination	3	
		Rated frequency	50 Hz	

Maxi-PLS busbar system			**Maxi-PLS 1600**	**Maxi-PLS 2000**	**Maxi-PLS 3200**	
Electrical parameters	Rated current (primary busbar)	Rated operating current I_e[4]	1400 A	1800 A	2000 A	For IP 54
			1600 A	2000 A	2400 A	For IP 2X[1]
			1800 A	2500 A	3400 A	For IP 2X[2]
		Rated surge current resistance I_{pk}	110 kA		165 kA	EN 60 439-1
		Rated short-time current resistance I_{cw}	50 kA		75 kA	
	Testing under accidental arc conditions	Permissible prospective short-circuit current	50 kA		70 kA	EN 61 641
		Test voltage	420 V			
		Permissible arc duration	0.3 sec.			
Mechanical parameters	Busbar	Material	E-Cu, bare			
		External dimensions (cross-section)	45 x 45 mm (1000 mm²)	45 x 45 mm (1380 mm²)	60 x 60 mm (2700 mm²)	

RiLine60 busbar system			**E-Cu 30 x 10 mm**	**PLS 1600**	
Electrical parameters	Rated current (primary busbar)	Rated operating current I_e[4]	800 A	1150 A	IP 54
			860 A	1300 A	IP 43
			1000 A[5]	1600 A[2]	IP 2X
		Rated surge current resistance I_{pk}	68 kA	110 kA	EN 60 439-1
		Rated short-time current resistance I_{cw}	32 kA, 1 sec.	50 kA, 1 sec./50 kA, 3 sec.	
	Testing under accidental arc conditions	Permissible prospective short-circuit current	30 kA	50 kA	EN 61 641
		Test voltage	690 V		
		Permissible arc duration	0.3 sec.		
Mechanical parameters	Busbar	Material	E-Cu, bare		
		Version (cross-section)	30 x 10 mm (300 mm²)	PLS 1600 (900 mm²)	

Flat-PLS busbar system			**Flat-PLS 60**	**Flat-PLS 100**	
Electrical parameters	Rated current (primary busbar)	Rated operating current I_e[4]	2500 A	2500 A	IP 54
			2550 A	2550 A	IP 43
			3200 A[2]	3600 A[2]	IP 2X
		Rated surge current resistance I_{pk}	154 kA	220 kA	EN 60 439-1
		Rated short-time current resistance I_{cw}	70 kA, 1 sec.	100 kA, 1 sec.	
Mechanical parameters	Busbar	Material	E-Cu, bare		
		Version (cross-section)	Up to 4 x 60 x 10 mm (max. 2400 mm²)	Up to 4 x 100 x 10 mm (max. 4000 mm²)	

[1] Using outlet filter SK 3326.207 and roof plate IP 2X.
[2] Using fan-and-filter unit SK 3327.107 (700 m³/h) and roof plate IP 2X.
[3] Other sizes available on request.
[4] Other rated currents for different protection categories on request.
[5] Using fan-and-filter unit SK 3325.107 (230 m³/h) and roof plate IP 2X.

SV-TS 8 enclosures

for modular outgoing sections

Enclosures				
Mechanical parameters	Dimensions	Enclosure width Enclosure height Enclosure depth	400/600/800 mm[3] 1800/2000/2200 mm[3] 600/800 mm[3]	
		Pitch pattern	25 mm	
	Protection category		Max. IP 54	EN 60 529
	Design		1 – 4	EN 60 439-1
	Surface protection/ Material	Enclosure frame	Dipcoat-primed	
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside	
		System attachment	Stainless steel	
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated	

General ratings data				
Electrical parameters	Rated voltage	Rated insulation voltage U_i	1000 V	EN 60 439-1
		Rated operating voltage U_e	690 V	
		Rated surge voltage resistance U_{imp}	8 kV	
		Overvoltage category	IV	
		Level of contamination	3	
		Rated frequency	50 Hz	

Maxi-PLS busbar system			**Maxi-PLS 1600**	**Maxi-PLS 2000**	**Maxi-PLS 3200**	
Electrical parameters	Rated current (primary busbar)	Rated operating current I_e[4]	1400 A	1800 A	2800 A	For IP 54
			1600 A	2000 A	3000 A	For IP 2X[1]
			1800 A	2500 A	4000 A	For IP 2X[2]
		Rated surge current resistance I_{pk}	110 kA		220 kA	EN 60 439-1
		Rated short-time current resistance I_{cw}	50 kA		100 kA	
	Testing under accidental arc conditions	Permissible prospective short-circuit current	50 kA		70 kA	EN 61 641
		Test voltage	690 V			
		Permissible arc duration	0.3 sec.			
Mechanical parameters	Busbar	Material	E-Cu, bare			
		External dimensions (cross-section)	45 x 45 mm (1000 mm²)	45 x 45 mm (1380 mm²)	60 x 60 mm (2700 mm²)	

RiLine60 busbar system			**E-Cu 30 x 10 mm**	**PLS 1600**	
Electrical parameters	Rated current (primary busbar)	Rated operating current I_e[4]	800 A	1150 A	IP 54
			860 A	1300 A	IP 43
			1000 A[5]	1600 A[2]	IP 2X
		Rated surge current resistance I_{pk}	68 kA	110 kA	EN 60 439-1
		Rated short-time current resistance I_{cw}	32 kA, 1 sec.	50 kA, 1 sec./50 kA, 3 sec.	
	Rated current (distribution busbar)	Rated operating current I_e[4]	800 A	1600 A[6]	IP 54
			860 A	1600 A[6]	IP 43
			1000 A[5]	1600 A[2]	IP 2X
		Rated surge current resistance I_{pk}	68 kA	110 kA	EN 60 439-1
		Rated short-time current resistance I_{cw}	32 kA, 1 sec.	50 kA, 1 sec./50 kA, 3 sec.	
	Testing under accidental arc conditions	Permissible prospective short-circuit current	30 kA	50 kA	EN 61 641
		Test voltage	690 V		
		Permissible arc duration	0.3 sec.		
Mechanical parameters	Busbar	Material	E-Cu, bare		
		Version (cross-section)	30 x 10 mm (300 mm²)	PLS 1600 (900 mm²)	

Flat-PLS busbar system			**Flat-PLS 60**	**Flat-PLS 100**	
Electrical parameters	Rated current (primary busbar)	Rated operating current I_e[4]	3500 A	4000 A	IP 54
			3650 A	4200 A	IP 43
			4100 A[2]	5500 A[2]	IP 2X
		Rated surge current resistance I_{pk}	154 kA	220 kA	
		Rated short-time current resistance I_{cw}	70 kA, 1 sec.	100 kA, 1 sec.	
Mechanical parameters	Busbar	Material	E-Cu, bare		
		Version (cross-section)	Up to 4 x 60 x 10 mm (max. 2400 mm²)	Up to 4 x 100 x 10 mm (max. 4000 mm²)	

[1] Using outlet filter SK 3326.207 and roof plate IP 2X.
[2] Using fan-and-filter unit SK 3327.107 (700 m³/h) and roof plate IP 2X.
[3] Other sizes available on request.
[4] Other rated currents for different protection categories on request.
[5] Using fan-and-filter unit SK 3325.107 (230 m³/h) and roof plate IP 2X.
[6] In conjunction with RiLine60 as the main busbar system: Rated currents on request.

System data

SV-TS 8 enclosures

for switch-disconnector-fuse sections

Enclosures				
Mechanical parameters	Dimensions	Enclosure width Enclosure height Enclosure depth	1000/1200 mm[3] 2000/2200 mm[3] 600/800 mm[3]	
		Pitch pattern	25 mm	
	Protection category		Max. IP 31	EN 60 529
	Design		1 – 4	EN 60 439-1
	Surface protection/ Material	Enclosure frame	Dipcoat-primed	
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside	
		System attachment	Stainless steel	
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated	

General ratings data				
Electrical parameters	Rated voltage	Rated insulation voltage U_i	1000 V	EN 60 439-1
		Rated operating voltage U_e	690 V	
		Rated surge voltage resistance U_{imp}	8 kV	
		Overvoltage category	IV	
		Level of contamination	3	
		Rated frequency	50 Hz	

Maxi-PLS busbar system			**Maxi-PLS 1600**	**Maxi-PLS 2000**	**Maxi-PLS 3200**	
Electrical parameters	Rated current (primary busbar)	Rated operating current I_e[4]	1400 A	1800 A	2800 A	For IP 54
			1600 A	2000 A	3000 A	For IP 2X[1]
			1800 A	2500 A	4000 A	For IP 2X[2]
		Rated surge current resistance I_{pk}	110 kA		220 kA	EN 60 439-1
		Rated short-time current resistance I_{cw}	50 kA		100 kA	
	Testing under accidental arc conditions	Permissible prospective short-circuit current	50 kA		70 kA	EN 61 641
		Test voltage	690 V			
		Permissible arc duration	0.3 sec.			
Mechanical parameters	Busbar	Material	E-Cu, bare			
		External dimensions (cross-section)	45 x 45 mm (1000 mm²)	45 x 45 mm (1380 mm²)	60 x 60 mm (2700 mm²)	

Flat-PLS busbar system			**Flat-PLS 60**	**Flat-PLS 100**	
Electrical parameters	Rated current (primary busbar)	Rated operating current I_e[4]	3500 A	4000 A	IP 54
			3650 A	4200 A	IP 43
			4100 A[2]	5500 A[2]	IP 2X
		Rated surge current resistance I_{pk}	154 kA	220 kA	EN 60 439-1
		Rated short-time current resistance I_{cw}	70 kA, 1 sec.	100 kA, 1 sec.	
Mechanical parameters	Busbar	Material	E-Cu, bare		
		Version (cross-section)	Up to 4 x 60 x 10 mm (max. 2400 mm²)	Up to 4 x 100 x 10 mm (max. 4000 mm²)	

Flat-PLS distribution busbar system			**Flat-PLS**				
Electrical parameters	Rated current (distribution busbar)	Rated operating current I_e[4]	1000 A	1250 A	1600 A	2100 A	IP 31
		Rated surge current resistance I_{pk}	154 kA	165 kA	187 kA	220 kA	EN 60 439-1
		Rated short-time current resistance I_{cw}	70 kA, 1 sec.	75 kA, 1 sec.	85 kA, 1 sec.	100 kA, 1 sec.	
Mechanical parameters	Busbar	Material	E-Cu, bare				
		Version (cross-section)	50 x 10 mm (500 mm²)	60 x 10 mm (600 mm²)	80 x 10 mm (800 mm²)	100 x 10 mm (1000 mm²)	

[1] Using outlet filter SK 3326.207 and roof plate IP 2X.
[2] Using fan-and-filter unit SK 3327.107 (700 m³/h) and roof plate IP 2X.
[3] Other sizes available on request.
[4] Other rated currents for different protection categories on request.

SV-TS 8 enclosures

for cable chambers

Enclosures					
Mechanical parameters	Dimensions	Enclosure width Enclosure height Enclosure depth	300/400/600 mm[3] 1800/2000/2200 mm[3] 600/800 mm[3]		
		Pitch pattern	25 mm		
	Protection category		Max. IP 54		EN 60 529
	Design		1 – 4		EN 60 439-1
	Surface protection/ Material	Enclosure frame	Dipcoat-primed		
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside		
		System attachment	Stainless steel		
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated		

Maxi-PLS busbar system			**Maxi-PLS 1600**	**Maxi-PLS 2000**	**Maxi-PLS 3200**	
Electrical parameters	Rated current (primary busbar)	Rated operating current I_e[4]	1400 A	1800 A	2800 A	For IP 54
			1600 A	2000 A	3000 A	For IP 2X[1]
			1800 A	2500 A	4000 A	For IP 2X[2]
		Rated surge current resistance I_{pk}	110 kA		220 kA	EN 60 439-1
		Rated short-time current resistance I_{cw}	50 kA		100 kA	
	Testing under accidental arc conditions	Permissible prospective short-circuit current	50 kA		70 kA	EN 61 641
		Test voltage	420 V			
		Permissible arc duration	0.3 sec.			
Mechanical parameters	Busbar	Material	E-Cu, bare			
		External dimensions (cross-section)	45 x 45 mm (1000 mm²)	45 x 45 mm (1380 mm²)	60 x 60 mm (2700 mm²)	

RiLine60 busbar system			**E-Cu 30 x 10 mm**	**PLS 1600**	
Electrical parameters	Rated current (primary busbar)	Rated operating current I_e[4]	800 A	1150 A	IP 54
			860 A	1300 A	IP 43
			1000 A[5]	1600 A[2]	IP 2X
		Rated surge current resistance I_{pk}	68 kA	110 kA	EN 60 439-1
		Rated short-time current resistance I_{cw}	32 kA, 1 sec.	50 kA, 1 sec./50 kA, 3 sec.	
	Testing under accidental arc conditions	Permissible prospective short-circuit current	30 kA	50 kA	EN 61 641
		Test voltage	690 V		
		Permissible arc duration	0.3 sec.		
Mechanical parameters	Busbar	Material	E-Cu, bare		
		Version (cross-section)	30 x 10 mm (300 mm²)	PLS 1600 (900 mm²)	

Flat-PLS busbar system			**Flat-PLS 60**	**Flat-PLS 100**	
Electrical parameters	Rated current (primary busbar)	Rated operating current I_e[4]	3500 A	4000 A	IP 54
			3650 A	4200 A	IP 43
			4100 A[2]	5500 A[2]	IP 2X
		Rated surge current resistance I_{pk}	154 kA	220 kA	EN 60 439-1
		Rated short-time current resistance I_{cw}	70 kA, 1 sec.	100 kA, 1 sec.	
Mechanical parameters	Busbar	Material	E-Cu, bare		
		Version (cross-section)	Up to 4 x 60 x 10 mm (max. 2400 mm²)	Up to 4 x 100 x 10 mm (max. 4000 mm²)	

[1] Using outlet filter SK 3326.207 and roof plate IP 2X.
[2] Using fan-and-filter unit SK 3327.107 (700 m³/h) and roof plate IP 2X.
[3] Other sizes available on request.
[4] Other rated currents for different protection categories on request.
[5] Using fan-and-filter unit SK 3325.107 (230 m³/h) and roof plate IP 2X.

System data

SV-TS 8 enclosures

for busbar sections

Enclosures				
Mechanical parameters	Dimensions	Enclosure width Enclosure height Enclosure depth	200/300/400 mm[3] 1800/2000/2200 mm[3] 600/800 mm[3]	
		Pitch pattern	25 mm	
	Protection category		Max. IP 54	EN 60 529
	Design		1 – 4	EN 60 439-1
	Surface protection/ Material	Enclosure frame	Dipcoat-primed	
		Panels (roof plate, rear panel)	Dipcoat-primed, powder-coated in RAL 7035 on the outside	
		System attachment	Stainless steel	
		System rails and punched sections with mounting flanges	Sheet steel, zinc-plated, passivated	

General ratings data				
Electrical parameters	Rated voltage	Rated insulation voltage U_i	1000 V	EN 60 439-1
		Rated operating voltage U_e	690 V	
		Rated surge voltage resistance U_{imp}	8 kV	
		Overvoltage category	IV	
		Level of contamination	3	
		Rated frequency	50 Hz	

Maxi-PLS busbar system[6]			**Maxi-PLS 1600**	**Maxi-PLS 2000**	**Maxi-PLS 3200**	
Electrical parameters	Rated current (primary busbar)	Rated operating current I_e[4]	1400 A	1800 A	2800 A	For IP 54
			1600 A	2000 A	3000 A	For IP 2X[1]
			1800 A	2500 A	4000 A	For IP 2X[2]
		Rated surge current resistance I_{pk}	110 kA		165 kA	EN 60 439-1
		Rated short-time current resistance I_{cw}	50 kA		75 kA	
	Testing under accidental arc conditions	Permissible prospective short-circuit current	50 kA		70 kA	EN 61 641
		Test voltage	420 V			
		Permissible arc duration	0.3 sec.			
Mechanical parameters	Busbar	Material	E-Cu, bare			
		External dimensions (cross-section)	45 x 45 mm (1000 mm²)	45 x 45 mm (1380 mm²)	60 x 60 mm (2700 mm²)	

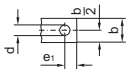
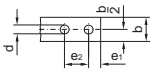
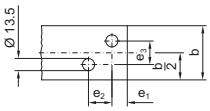
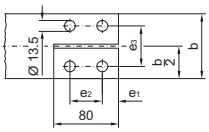
RiLine60 busbar system[6]			**E-Cu 30 x 10 mm**	**PLS 1600**	
Electrical parameters	Rated current (primary busbar)	Rated operating current I_e[4]	800 A	1150 A	IP 54
			860 A	1300 A	IP 43
			1000 A[5]	1600 A[2]	IP 2X
		Rated surge current resistance I_{pk}	68 kA	110 kA	EN 60 439-1
		Rated short-time current resistance I_{cw}	32 kA, 1 sec.	50 kA, 1 sec./50 kA, 3 sec.	
	Testing under accidental arc conditions	Permissible prospective short-circuit current	30 kA	50 kA	EN 61 641
		Test voltage	690 V		
		Permissible arc duration	0.3 sec.		
Mechanical parameters	Busbar	Material	E-Cu, bare		
		Version (cross-section)	30 x 10 mm (300 mm²)	PLS 1600 (900 mm²)	

Flat-PLS busbar system[6]			**Flat-PLS 60**	**Flat-PLS 100**	
Electrical parameters	Rated current (primary busbar)	Rated operating current I_e[4]	3500 A	4000 A	IP 54
			3650 A	4200 A	IP 43
			4100 A[2]	5500 A[2]	IP 2X
		Rated surge current resistance I_{pk}	154 kA	220 kA	
		Rated short-time current resistance I_{cw}	70 kA, 1 sec.	100 kA, 1 sec.	
Mechanical parameters	Busbar	Material	E-Cu, bare		
		Version (cross-section)	Up to 4 x 60 x 10 mm (max. 2400 mm²)	Up to 4 x 100 x 10 mm (max. 4000 mm²)	

[1] Using outlet filter SK 3326.207 and roof plate IP 2X.
[2] Using fan-and-filter unit SK 3327.107 (700 m³/h) and roof plate IP 2X.
[3] Other sizes available on request.
[4] Other rated currents for different protection categories on request.
[5] Using fan-and-filter unit SK 3325.107 (230 m³/h) and roof plate IP 2X.
[6] Usability of the various busbar systems depends on the enclosure width.

Busbar screw connections to DIN 43 673

Drilling templates and drilled holes

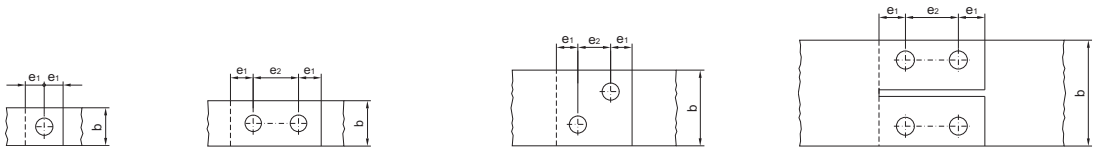
Bar widths mm		12 to 50		25 to 60			60			80 to 100		
Form[1)]		1		2			3			4		
Drilled holes in the bar ends (drilling pattern)												
	Nominal width b	d	e_1	d	e_1	e_2	e_1	e_2	e_3	e_1	e_2	e_3
Hole size	**12**	5.5	6	–	–	–	–	–	–	–	–	–
	15	6.6	7.5	–	–	–	–	–	–	–	–	–
	20	9.0	10	–	–	–	–	–	–	–	–	–
	25	11	12.5	11	12.5	30	–	–	–	–	–	–
	30	11	15	11	15	30	–	–	–	–	–	–
	40	13.5	20	13.5	20	40	–	–	–	–	–	–
	50	13.5	25	13.5	20	40	–	–	–	–	–	–
	60	–	–	13.5	20	40	17	26	26	–	–	–
	80	–	–	–	–	–	–	–	–	20	40	40
	100	–	–	–	–	–	–	–	–	20	40	50

Permissible deviations for hole-centre distances ± 0.3 mm

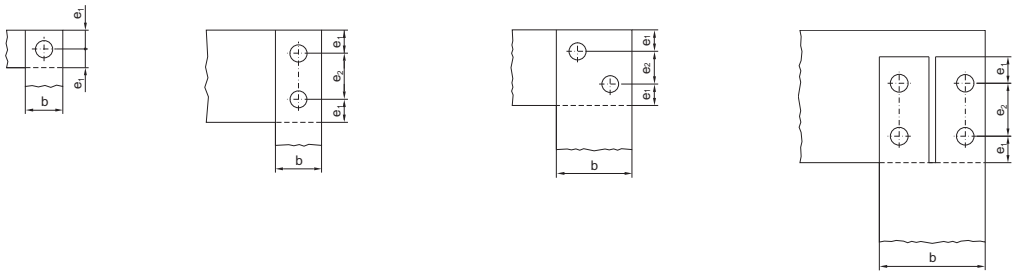
[1)] Form designations 1 – 4 match DIN 46 206, part 2 – Flat-type screw terminal

Examples of busbar screw connections

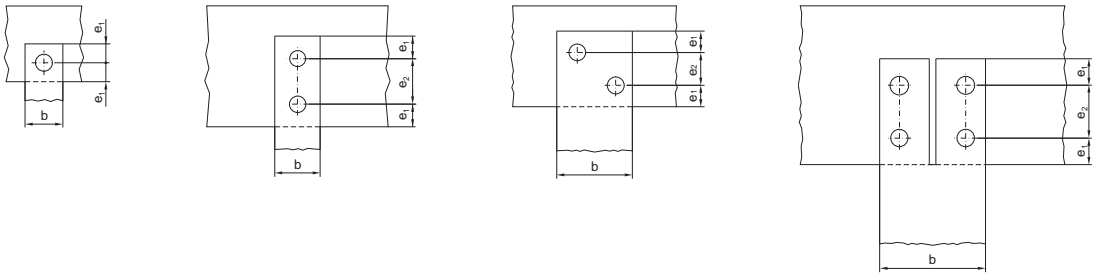
Longitudinal connections



Angular connections



T-connections



Note:
Figures for dimensions b, d, e_1 and e_2 see table “Drilling templates and drilled holes”.
Longitudinal holes are permissible at the end of a bar or bar stack.

List of model numbers

3020.300 to 9640.940

9640.960 to 9672.013

List of model numbers

9672.014 to 9675.156

9675.163 to 9676.987

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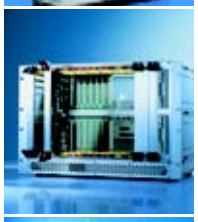
All in all – solutions from Rittal

Industrial Enclosures

Power Distribution

Busbar systems RiLine60
Busbar systems 40/100/150/185 mm
Ri4Power low-voltage switchgear



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