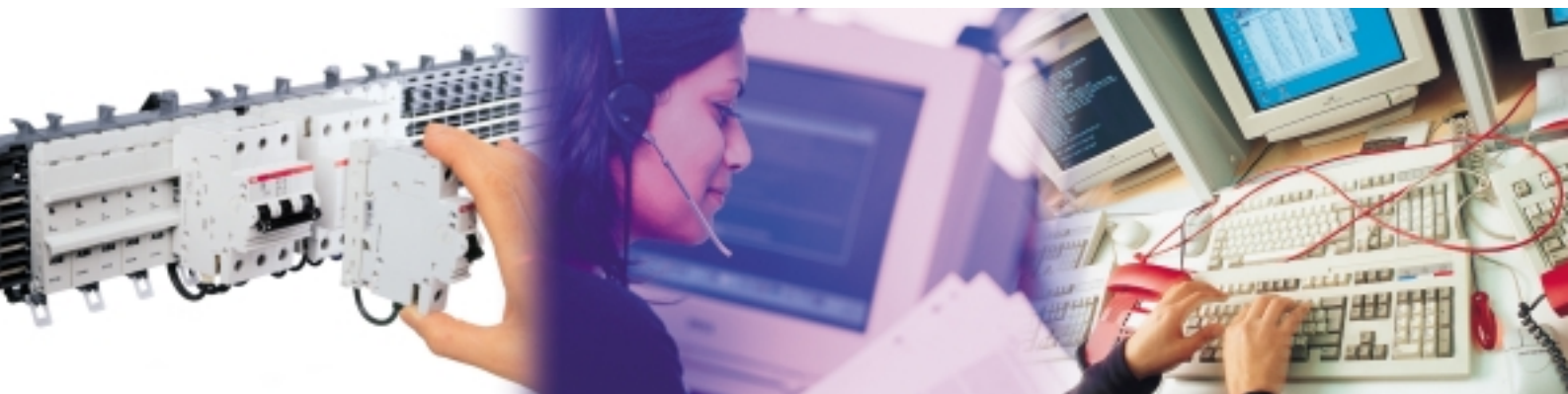
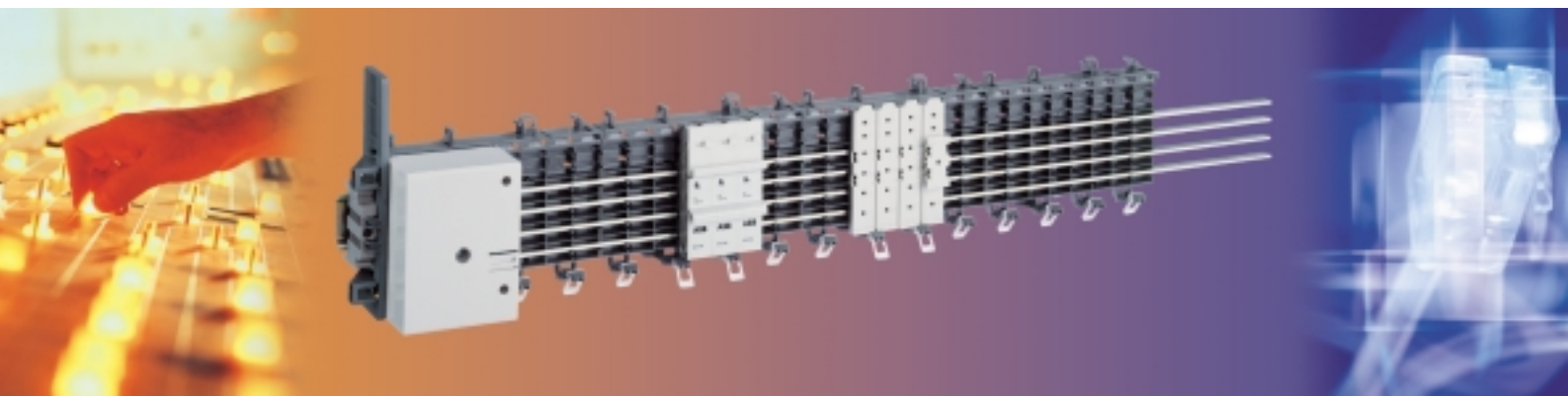


Bus-bar System

smissline

Technical system for
energy distribution



ABB

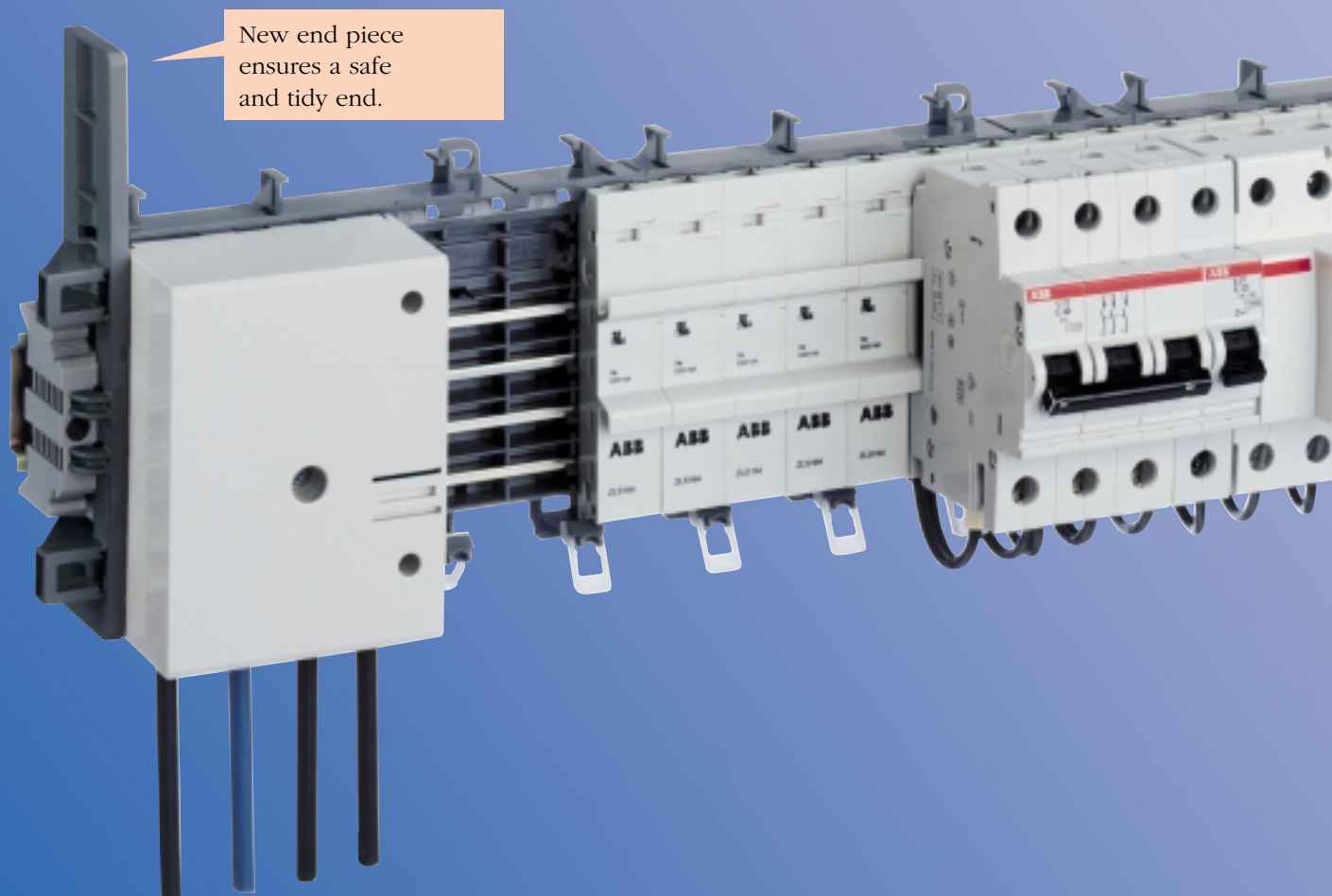
smissline Bus-bar System: touch proof, compact and versatile

The smissline Bus-bar System offers the efficient, flexible and rapid mounting of components. The socket bases can be combined in any order. The bus-bars are fitted to the 6- and 8-way modular sockets (and additional sockets) and according to requirements. Therefore on the socket base you have the option to insert bus-bars for L1, L2, L3 and N. On the additional sockets you can fit N and PE bus-bars.

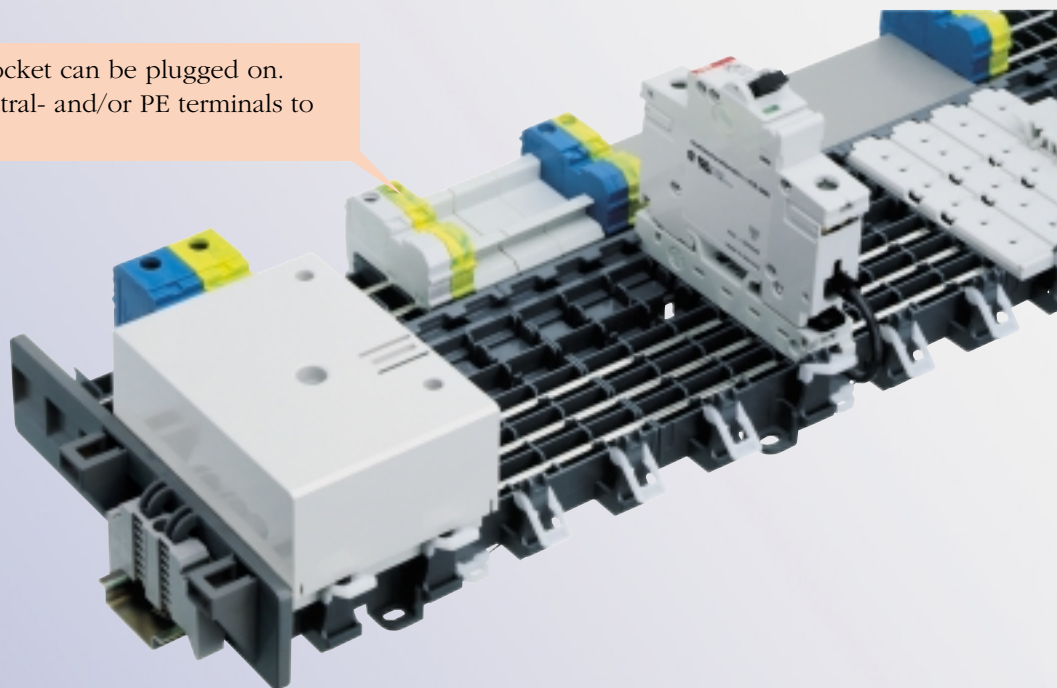
By the use of adapters any modular device with the same mounting height can be mechanically and electrically connected to the bus-bar system. The supply to the bus-bars is normally via an Incoming Terminal Block (max.160A) or an Incoming Terminal Component (max. 200A). Another possibility is to utilise a protective device. This allows both feeding and protection of the bus-bar system simultaneously. For example over voltage protection or residual current protection of the system or part thereof can be achieved. If required galvanic isolation of the system can be achieved by using a bus-bar insulator between sections.

Advantages:

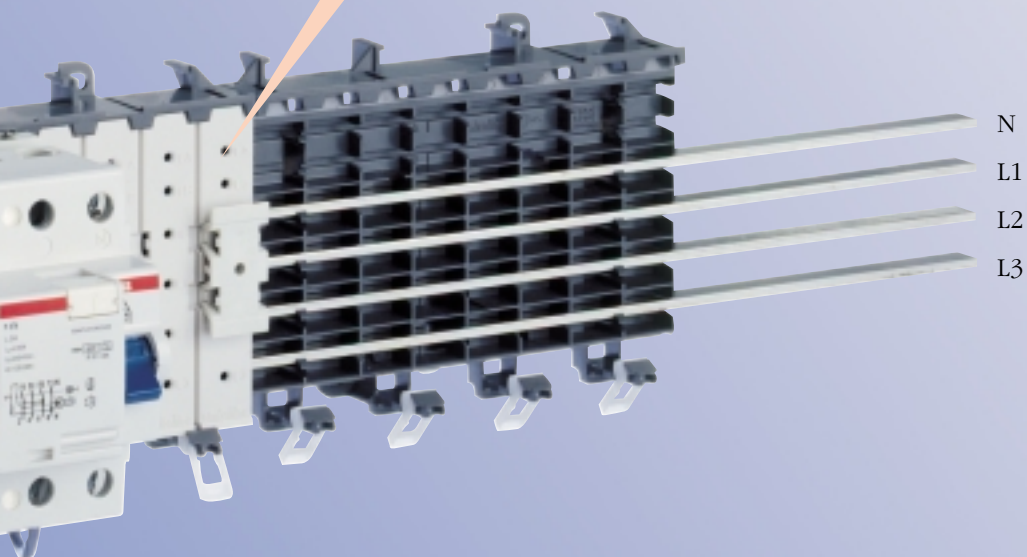
- **Fitting of any modular device with the same mounting height**
- **Components interchangeable at any time**
- **Compact energy distribution – up to max. 200A**
- **Full scope for the future**
- **Completely touch proof**



An additional socket can be plugged on.
This allows Neutral- and/or PE terminals to be added.



Bus-bar covers
enable a complete
touch proof system.



Socket bases allow the
bus-bars to be individually
inserted as required.



Adapters for one-
and multiple pole
devices up
to max. 63A.

smissline Bus-bar System

Versatile possibilities in a small space

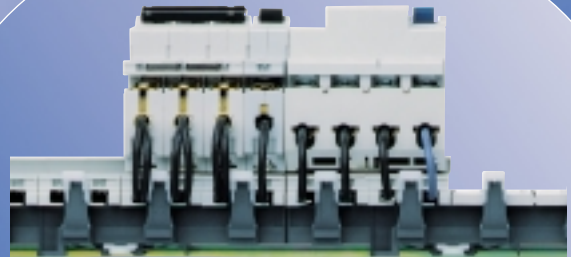
Power distribution should offer you the flexibility for tomorrow. These conditions do justice to the modular Bus-bar System, smissline. Easy maintenance and system extension are given with the socket device adapters. The adapters are easily and securely plugged onto the socket base. The plug-in technique has

been proven for years and is in use in numerous environments. Through the adapter technology many modular devices of different pole sizes can be integrated into the system, allowing almost unlimited possibilities as a result.

Compact

Space saving distribution is possible due to the compact construction, which is so important in modern buildings today. This also in view of expensive space allocation for distribution boards of a building.

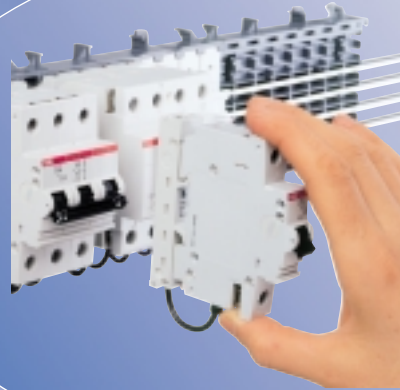
Any modular devices of same height can be integrated into the Bus-bar System.



Flexibility

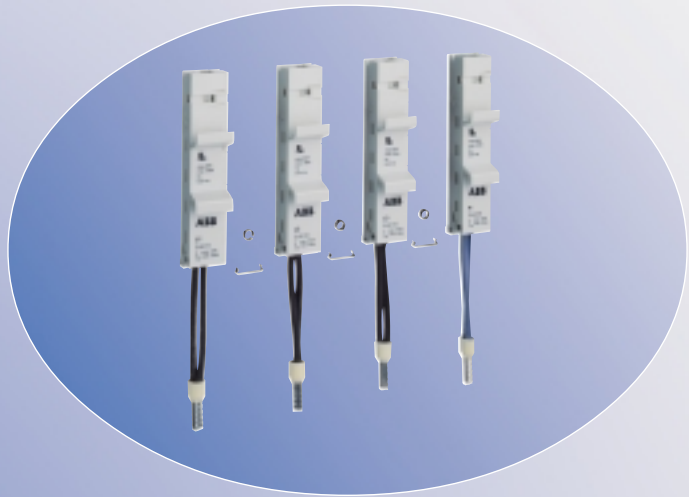
The bus-bars are provided individually. An additional socket can be added on, allowing a N- and/or the PE bus-bar to be integrated into the system. The outer N and PE terminals can just be clipped on. Therefore the outgoing cable can be directly allocated to these devices.

The adapter can easily and securely be plugged onto the socket base. Ease of handling is assured due to a mechanical guide.



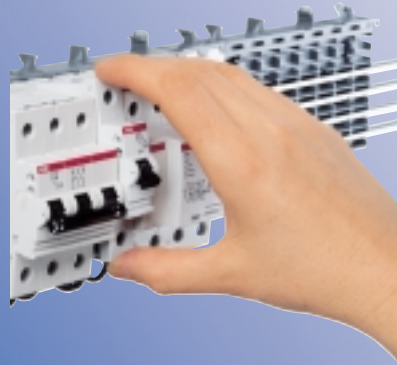
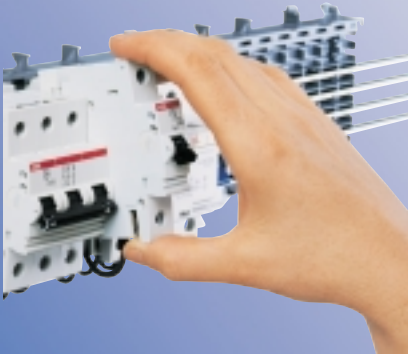
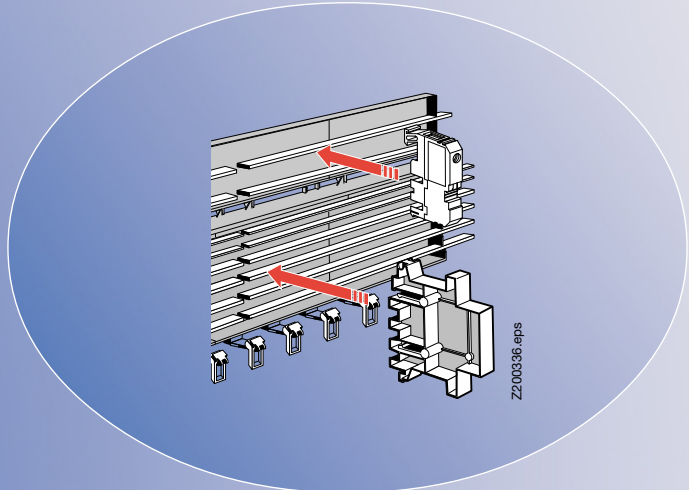
Versatile

For the smissline-S Bus-bar System there are extensive accessories available: incoming terminal blocks up to maximum 160A, a new modular incoming terminal up to maximum 200A, exterior terminals, coverings, adapters in various designs etc.

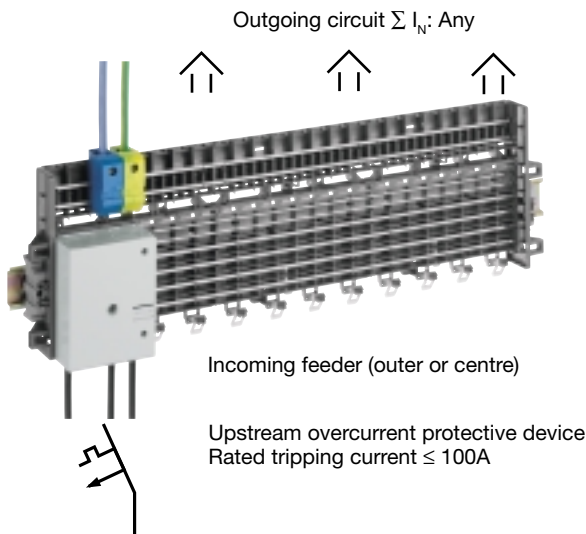


Modular

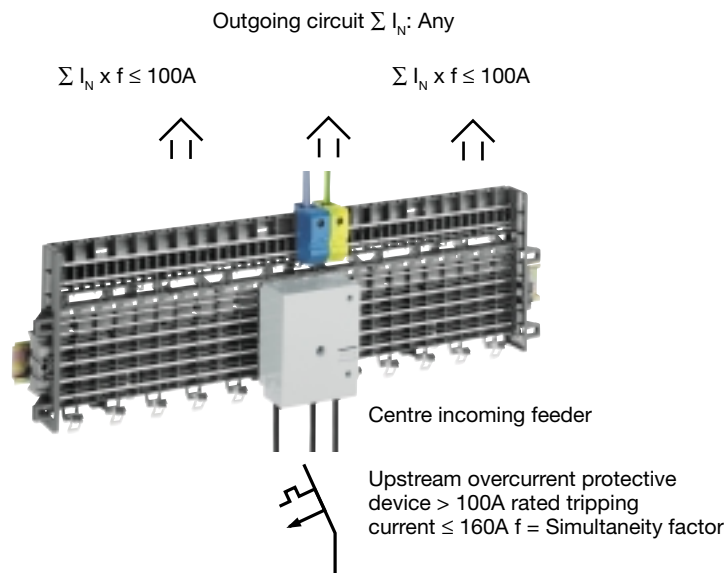
Due to bus-bar insulators the Bus-bar System can be divided into different segments. For example this enables them to be split in to RCD protected groups. Thus the bus-bar system can also be fed via a protective device.



Power Supply Variants



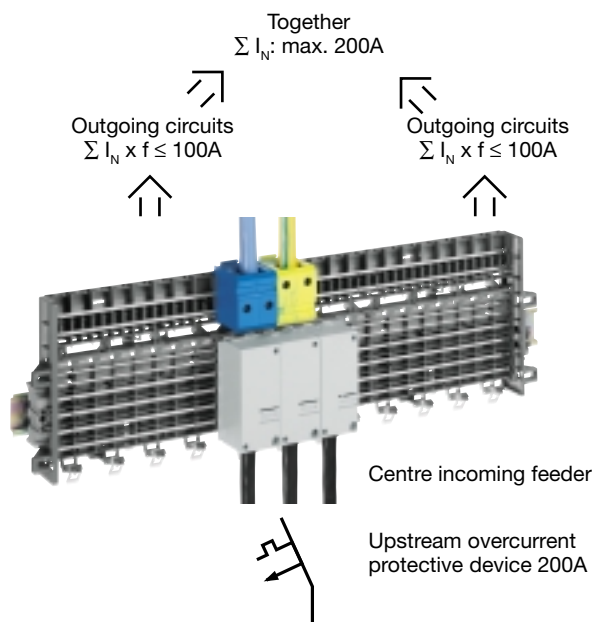
Upstream overvoltage arrester
maximum 100A



Upstream overcurrent arrester
maximum 160A

Number of power circuits	Simultaneity factor (f)
2 and 3	0.8
4 and 5	0.7
6 to 9	0.6
10 and more	0.5

Table from EN 60439-3



Upstream overcurrent arrester
greater than 200A

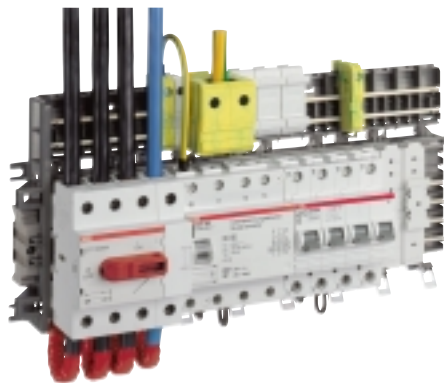
The sum of all the rated tripping currents of all connected overcurrent arresters multiplied by the simultaneity factor «f» in the following table must not be greater than 200A. In addition, this value must not exceed 100A on either side of the feeder block. If power circuits are connected with a specified load current (e.g. motors), the simultaneity factor must not be used for these circuits. Power for 200A rated current can only be supplied by means of feeder elements and not by the feeder block.

f = Simultaneity factor

Number of power circuits	Simultaneity factor (f)
2 and 3	0.8
4 and 5	0.7
6 to 9	0.6
10 and more	0.5

Table from EN 60439-3

Power Supply Possibilities



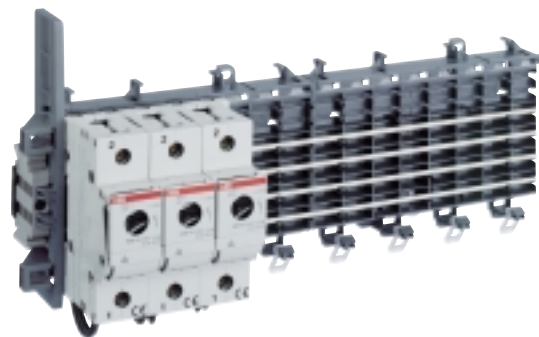
Direct power supply through protective devices

The feeder cables are connected directly to the terminals of the protective device. It should therefore be noted, that the sum of all down stream connected devices do not exceed the rated current of the adapter fitted to the up stream protective device. For the power supply via a protection device there are two different power supplies in existence:

- 1. Power supply on the same side as the wire of the adapter.

For the best possible use of the rated current of the adapters fitted to the protective device it is advantageous to connect the supply cable to the highest rated current of the adapter e.g. protection device.

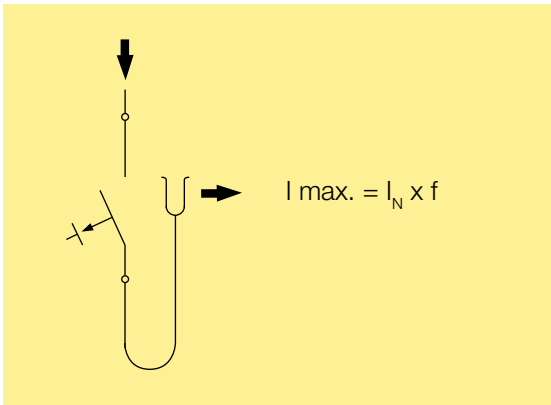
- 2. Power supply on the opposite side of the wire of the adapter.



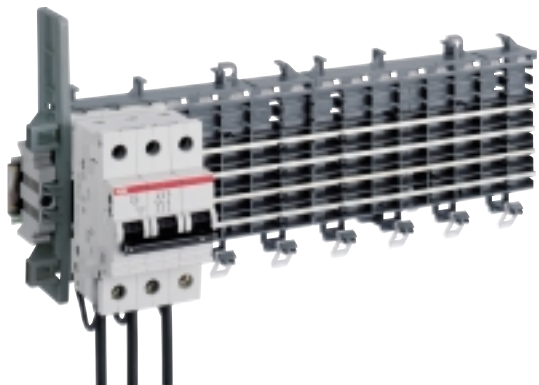
The connection of the supply result e.g. over an RCD on the opposite side of the bus-bar connector wire. With this supply version the bus-bars and consequently all devices are earth fault protected. If additional earth fault protected groups are planned, then the bus-bars should be separated by using the dark grey bus-bars insulators. The standard of protection of the RCD to down stream connected devices is to be noted (see table).

Number electrical circuits	Diversity factor factor (f)
2 and 3	0.8
4 to 6	0.7
7 to 9	0.6
10 and more	0.5

Table from EN 60439-3



f = Diversity factor

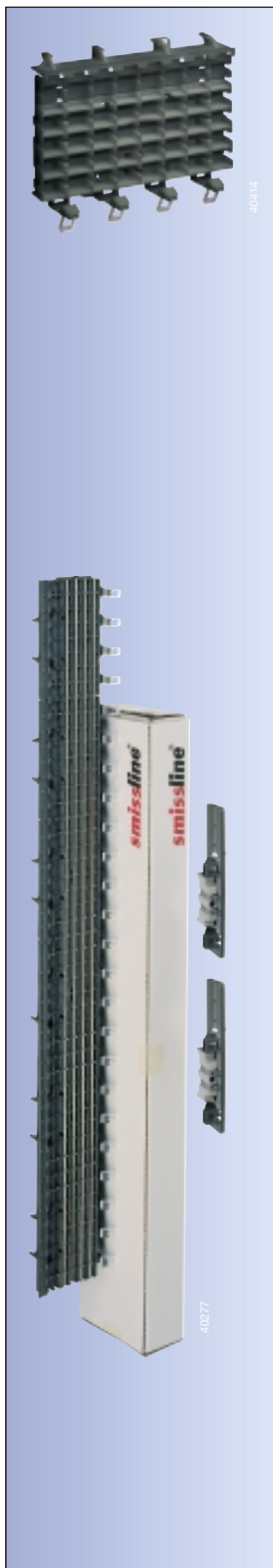


Technical data / Approbation

Technical data

	Socket base ZLS806/808	Incoming terminal block ZLS224/225	Incoming terminal component ZLS250-255	Adapter 32A	Adapter 63A	Adapter 100A	Outer terminal ZLS812, 815	Outer terminal ZLS813, 816
Rated voltage U_n :	400/690V~	400/690V~	400/690V~	400/690V~	400/690V~	400/690V~	400/690V~	400/690V~
Rated current I_n :	–	Main terminal 160A Auxiliary terminal 40A	200A	32A	63A	100A	32A	100A
Space required (Modules) per element:	6 (108 mm) 8 (144 mm)	4 (72 mm)	2 (36 mm)	1 (18 mm)	1 (18 mm)	4 (72 mm)	0,5 (9 mm)	1 (18 mm)
Cable cross section:	–	Cable 50 mm ² (2x25 mm ²) Main terminal Strand 10 mm ² Auxiliary terminal	1 x 95 mm ²	–	–	–	10 mm ²	16-50 mm ²
Type of feeder cable:	–	Cable or strand	Cable or strand	–	–	–	Cable or strand	Cable or strand
Rated insulation voltage U_i :	2500 Volt	2500 Volt	2500 Volt	2500 Volt	2500 Volt	2500 Volt	2500 Volt	2500 Volt
Rated surge voltage U_{imp} :	8000 Volt	8000 Volt	8000 Volt	8000 Volt	8000 Volt	8000 Volt	8000 Volt	8000 Volt
Rated surge current I_{cw} :				6kA	6kA	6kA	6kA	6kA
IP-Protection:	–	IP 40	IP 40	–	–	–	IP 20	IP 20
Rated ambient temperature:	30 °C	30 °C	30 °C	30 °C	30 °C	30 °C	30 °C	30 °C
Environmental degree:	3	3	3	3	3	3	3	3
Plastics:	Halogen- and cadmium free	Halogen- and cadmium free	Halogen- and cadmium free	Halogen- and cadmium free	Halogen- and cadmium free	Halogen- and cadmium free	Halogen- and cadmium free	Halogen- and cadmium free
Approbation/Standards:	  	 EN60947-2 	 EN60947-2	 –	 –	 –	60947-7	60947-7

Order data Sockets, Starter pack



Sockets

To determine the required socket length allow for

- the required components
- the feeder block and
- spare positions must be determined.

Major features

- Expansion to any desired length (even number of poles)
- Integral bus-bars
- Simple exchange of units
- Long-term planning and problem-free extension possible
- Significant time savings for mounting and connection

Order data

	Order data	Module	Packaging unit	EAN Code
Socket base				
- 8-module socket length 144 mm	ZLS 808	8	10	761 227 002 1796
- 6-module socket length 108 mm	ZLS 806	6	10	761 227 002 1789

Starter pack

Starter packs are available comprising socket bases with 3 or 4 main bus-bars already inserted as required. Two end pieces are also included.

Order data

Solutions available:			Order data	Packaging unit	EAN Code
Starter pack with 22 modules	397 mm	3P	ZLS760	1	761 227 005 1007
Starter pack with 22 modules	397 mm	3P+N	ZLS761	1	761 227 005 1014
Starter pack with 24 modules	433 mm	3P	ZLS750	1	761 227 002 1574
Starter pack with 24 modules	433 mm	3P+N	ZLS751	1	761 227 002 1581
Starter pack with 30 modules	541 mm	3P	ZLS762	1	761 227 005 1021
Starter pack with 30 modules	541 mm	3P+N	ZLS763	1	761 227 005 1038
Starter pack with 32 modules	577 mm	3P	ZLS752	1	761 227 002 1598
Starter pack with 32 modules	577 mm	3P+N	ZLS753	1	761 227 002 1604
Starter pack with 38 modules	685 mm	3P	ZLS764	1	761 227 005 1045
Starter pack with 38 modules	685 mm	3P+N	ZLS765	1	761 227 005 1052
Starter pack with 40 modules	721 mm	3P	ZLS754	1	761 227 002 1611
Starter pack with 40 modules	721 mm	3P+N	ZLS755	1	761 227 002 1628
Starter pack with 48 modules	865 mm	3P	ZLS756	1	761 227 002 1635
Starter pack with 48 modules	865 mm	3P+N	ZLS757	1	761 227 002 1642
Starter pack with 64 modules	1154 mm	3P	ZLS766	1	761 227 005 1069
Starter pack with 64 modules	1154 mm	3P+N	ZLS767	1	761 227 005 1076
Starter pack with 80 modules	1442 mm	3P	ZLS758	1	761 227 002 1659
Starter pack with 80 modules	1442 mm	3P+N	ZLS759	1	761 227 002 1666

Order data Incoming Terminal Block, Incoming Terminal Component

Incoming Terminal Blocks, standard

Touch proof incoming terminal block, height 50 mm. To feed the bus-bars, the terminal block base can be fitted with L1, L2, L3 and N connectors if required.

Order data

	Order data	Module	Packaging unit	EAN Code
Standard incoming terminal block complete with main terminals, construction height 50 mm				
3LN	ZLS224	4	1	761 227 001 9816
3L	ZLS225	4	1	761 227 001 9823
Incoming terminal block, low complete with main terminals, construction height 36 mm				
3LN	ZLS228	4	1	761 227 001 9854
3L	ZLS229	4	1	761 227 001 9861
Cover for standard incoming terminal				
	ZLS235	4	1	761 227 002 1543

Incoming Terminal Blocks, oversized

The incoming terminal component is used to connect the feeder cable to the bus-bars. The incoming terminal component with a width of 36 mm is available as a single-pole device to feed L1, L2, L3 as well as for N. The incoming terminals act directly on the bus-bars and are mechanically secured. Accordingly the incoming terminals L1, L2, L3 and N can be combined to meet specific needs.

Order data

Type	Order data	Rated current	Module	Packaging unit	EAN Code
Incoming Terminal Component L1	ZLS251	200	2	1	761 227 050 5319
Incoming Terminal Component L2	ZLS252	200	2	1	761 227 050 5326
Incoming Terminal Component L3	ZLS253	200	2	1	761 227 050 5333
Incoming Terminal Component neutral	ZLS250	200	2	1	761 227 050 5340
Incoming Terminal Component neutral for additional socket	ZLS254	200	2	1	761 227 050 5511
Incoming Terminal Component earth for additional socket	ZLS255	200	2	1	761 227 050 5528



Order data Accessories

Bus-bars for the sockets and additional socket

The 10 x 3 mm bus-bars are suitable for currents up to 100A. They are electroplated for perfect contact with unit plug contacts. The maximum available bus-bar length is 1983 mm. The same bus-bar type is used regardless of whether it is internally in the socket (L1, L2, L3, N) or externally in the additional socket (N, PE). The bus-bars are inserted into the socket from the front.

	Order data	Module	Packaging unit	EAN Code
Bus-bars 100A				
electroplated, 10 x 3 mm, for L1, L2, L3, N and PE – Delivery length 1979 mm	ZLS200	110	10	761 227 001 5702

Socket end-piece

	Order data	Module	Packaging unit	EAN Code
Socket end-piece				
for lateral, electrically-protected closure and mech. fixing of a row of sockets on the supporting rail. Width: 20 mm	ZLS730	–	1	761 227 052 3535

Bus-bar insulator

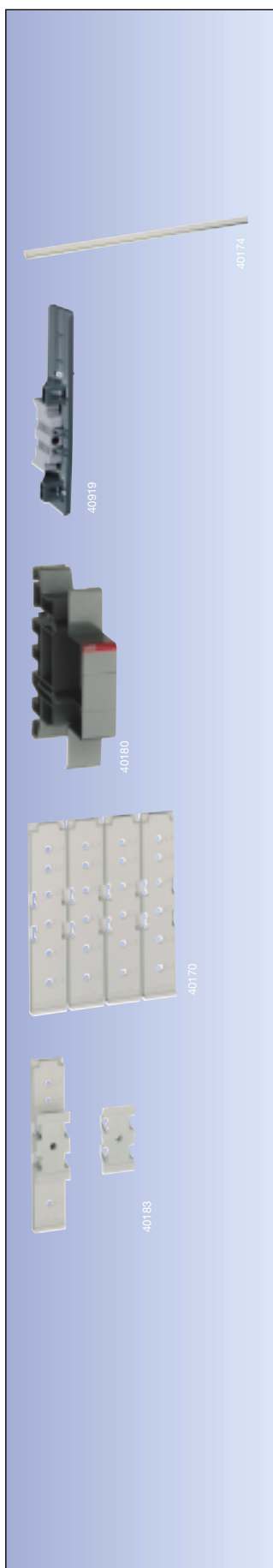
	Order data	Module	Packaging unit	EAN Code
Bus-bar insulator				
dark grey, for isolation and spacing of the bus-bar interruption at the isolation point, 18 mm	ZLS239	1	10	761 227 001 9182

Bus-bar cover

	Order data	Module	Packaging unit	EAN Code
Bus-bar cover				
electrically-protected covering of bus-bars, 4-module, can be divided. Suitable to accept extension adapter ZLS101 4 x 18 mm – Bag of 5	ZLS100	1	1	761 227 001 5603

Extension adapter

	Order data	Module	Packaging unit	EAN Code
Extension adapter				
18 mm wide, for plugging into bus-bar cover ZLS100. For fixing REG units	ZLS101	1	10	761 227 001 5610



Additional socket Accessories



Additional socket

Additional sockets can be covered to prevent accidental contact with live parts.

	Order data	Module	Packaging unit	EAN Code
Additional socket base for external N- and PE-bus-bars				
– 8-module additional socket (suitable for 8-module sockets)	ZLS811	8	10	761 227 002 1802
– 6-module additional socket (suitable for 6-module sockets)	ZLS810	6	10	761 227 002 1819

N and PE terminals

	Order data	Module	Packaging unit	EAN Code
N-terminal for additional socket				
light blue, for external rail				
– up to 10 mm ²	ZLS812		10	761 227 002 1840
– up to 50 mm ²	ZLS813		10	761 227 002 1826
PE-terminal for additional socket				
yellow-green, for external rail				
– up to 10 mm ²	ZLS815		10	761 227 002 1857
– up to 50 mm ²	ZLS816		10	

Insulator block

	Order data	Module	Packaging unit	EAN Code
Insulator block for additional socket				
dark grey, for isolation and spacing of external bus-bars	ZLS831	0.5	10	761 227 002 1871

Dummy block

	Order data	Module	Packaging unit	EAN Code
Dummy block for additional socket				
light grey, fills empty terminal positions	ZLS830	0.5	10	761 227 002 1864

Cover with DIN top

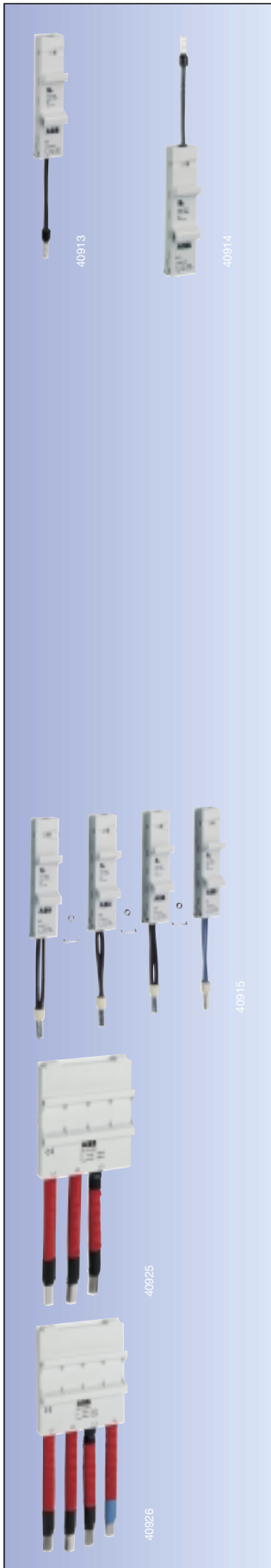
The cover can be plugged into the additional socket individually or several side by side. This permits conventional DIN units to be snapped on. The bus-bars are covered and protected.

	Order data	Module	Packaging unit	EAN Code
Cover with DIN top for additional socket				
Cover 18 mm wide with DIN top	ZLS832	1	10	761 227 002 1888

Cover with cable duct top

	Order data	Module	Packaging unit	EAN Code
Duct cover for additional socket				
Duct for covering, length 144 mm	ZLS833	8	10	761 227 002 1895

Order data Adapter



General

The incoming terminal component for non smissline devices has an installation width of one module of (18 mm). This adapter can be combined to multiple pole versions to meet specific needs (L1, L2, L3, N, dummy). The connecting wires can carry a maximum of 63A (I_n).

Order data of Adapter 32A and 63A

Description	Order data	Module	Packaging unit	EAN Code
Single Adapter 32A bottom feed				
Adapter 32A L1 bottom feed	ZLS161	1	1	761 227 050 5609
Adapter 32A L2 bottom feed	ZLS162	1	1	761 227 050 5616
Adapter 32A L3 bottom feed	ZLS163	1	1	761 227 050 5623
Adapter 32A N bottom feed	ZLS160	1	1	761 227 050 5593
Adapter dummy element	ZLS164	1	1	761 227 050 5548
Single Adapter 32A top feed				
Adapter 32A L1 top feed	ZLS177	1	1	761 227 050 5562
Adapter 32A L2 top feed	ZLS178	1	1	761 227 050 5579
Adapter 32A L3 top feed	ZLS179	1	1	761 227 050 5586
Adapter 32A N top feed	ZLS176	1	1	761 227 050 5555
Combination 32A bottom feed				
Adapter 32A L1, N bottom feed	ZLS180	1	1	761 227 052 3399
Adapter 32A L2, N bottom feed	ZLS181	1	1	762 227 052 3405
Adapter 32A L3, N bottom feed	ZLS182	1	1	763 227 052 3412
Adapter 32A L1, L2, L3 bottom feed	ZLS183	1	1	764 227 052 3429
Adapter 32A L1, L2, L3, N bottom feed	ZLS184	1	1	765 227 052 3436
Single Adapter 63A bottom feed				
Adapter 63A L1 bottom feed	ZLS171	1	1	761 227 050 5517
Adapter 63A L2 bottom feed	ZLS172	1	1	761 227 050 5524
Adapter 63A L3 bottom feed	ZLS173	1	1	761 227 050 5531
Adapter 63A N bottom feed	ZLS170	1	1	761 227 050 5500
Adapter dummy element	ZLS164	1	1	
Single Adapter 63A top feed				
Adapter 63A L1 top feed	ZLS167	1	1	761 227 050 5647
Adapter 63A L2 top feed	ZLS168	1	1	761 227 050 5654
Adapter 63A L3 top feed	ZLS169	1	1	761 227 050 5661
Adapter 63A N top feed	ZLS166	1	1	761 227 050 5630
Combination 63A bottom feed				
Adapter 63A L1, N bottom feed	ZLS186	1	1	761 227 052 3423
Adapter 63A L2, N bottom feed	ZLS187	1	1	762 227 052 3450
Adapter 63A L3, N bottom feed	ZLS188	1	1	763 227 052 3467
Adapter 63A L1, L2, L3 bottom feed	ZLS189	1	1	764 227 052 3474
Adapter 63A L1, L2, L3, N bottom feed	ZLS190	1	1	765 227 052 3481
Combination set for multiple pole adapter (Packets with 100 pieces for 50 adapters)	ZLS174	1	1	762 227 052 3382

Order data of Adapter 100A

Type	Order data	Module	Packaging unit	EAN Code
Adapter with 3 connecting wires (L1, L2, L3)	ZLS240	4	1	761 227 052 3498
Adapter with 4 connecting wires (L1, L2, L3, N)	ZLS241	4	1	761 227 052 3504

Accessories

Order data

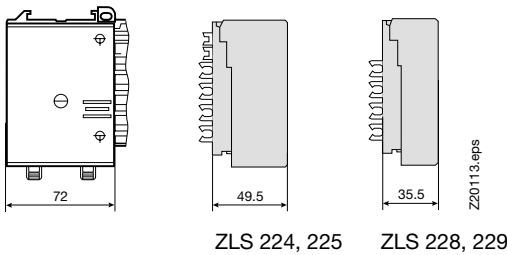
100A-Bus-bars / Socket base selection table

Modules	Bus-bar length in mm	Order data bus-bar 100A	Number of sockets		Modules	Bus-bar length in mm	Order data bus-bar 100A	Number of sockets	
			8-piece	6-piece				8-piece	6-piece
6	108	ZLS201E6	–	1	60	1078	ZLS201E60	6	2
8	144	ZLS201E8	1	–	62	1114	ZLS201E62	7	1
12	212	ZLS201E12	–	2	64	1150	ZLS201E64	8	–
14	248	ZLS201E14	1	1	66	1186	ZLS201E66	6	3
16	284	ZLS201E16	2	–	68	1222	ZLS201E68	7	2
18	320	ZLS201E18	–	3	70	1258	ZLS201E70	8	1
20	357	ZLS201E20	1	2	72	1294	ZLS201E72	9	–
22	393	ZLS201E22	2	1	74	1330	ZLS201E74	7	3
24	429	ZLS201E24	3	–	76	1366	ZLS201E76	8	2
26	465	ZLS201E26	1	3	78	1402	ZLS201E78	9	1
28	501	ZLS201E28	2	2	80	1438	ZLS201E80	10	–
30	537	ZLS201E30	3	1	82	1474	ZLS201E82	8	3
32	573	ZLS201E32	4	–	84	1510	ZLS201E84	9	2
34	609	ZLS201E34	2	3	86	1546	ZLS201E86	10	1
36	645	ZLS201E36	3	2	88	1582	ZLS201E88	11	–
38	681	ZLS201E38	4	1	90	1618	ZLS201E90	9	3
40	717	ZLS201E40	5	–	92	1654	ZLS201E92	10	2
42	753	ZLS201E42	3	3	94	1690	ZLS201E94	11	1
44	789	ZLS201E44	4	2	96	1726	ZLS201E96	12	–
46	825	ZLS201E46	5	1	98	1762	ZLS201E98	10	3
48	861	ZLS201E48	6	–	100	1799	ZLS201E100	11	2
50	897	ZLS201E50	4	3	102	1835	ZLS201E102	12	1
52	933	ZLS201E52	5	2	104	1871	ZLS201E104	13	–
54	969	ZLS201E54	6	1	106	1907	ZLS201E106	11	3
56	1005	ZLS201E56	7	–	108	1943	ZLS201E108	12	2
58	1041	ZLS201E58	5	3					

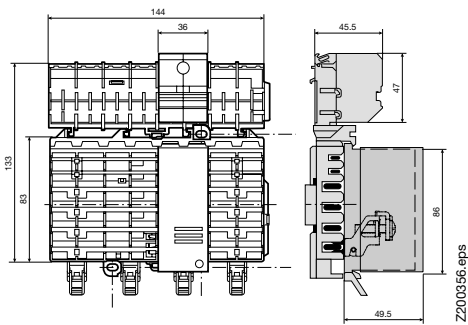
Planning for the incorporation of feeder block and spare places should be taken into account.
The total lengths given above were determined taking account of socket spacing and tolerances.
They are not therefore necessarily a multiple of 18 mm (1 position unit).

Dimensions (in mm)

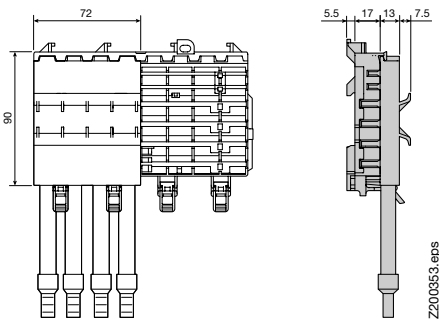
Incoming terminal blocks



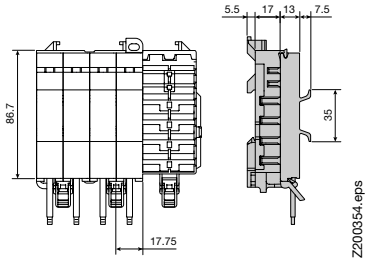
Incoming terminal components



Adapter for non smissline devices 100A

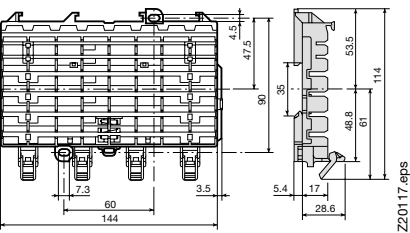


Adapter for foreign devices 32A, 63A



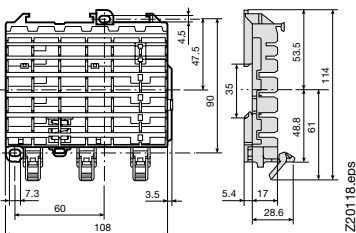
smissline-Socket base ZLS808

Socket base
– 8 way modules

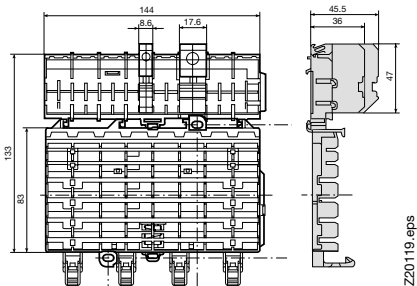


smissline-Socket base ZLS806

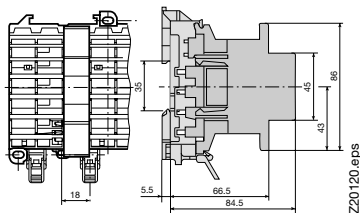
Socket base
– 6 way modules



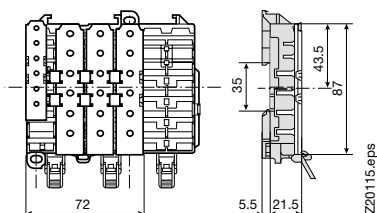
Additional socket bases with external terminals



Bus-bar isolator ZLS239



Bus-bar cover ZLS100



Extension adapter ZLS101

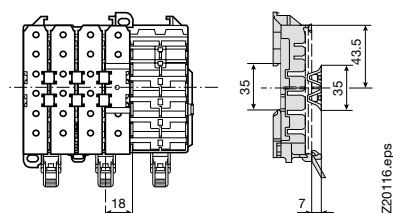




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