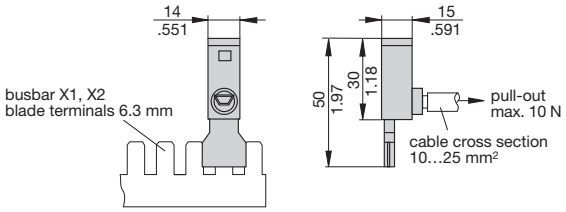
Connections and terminals

Line terminal X 221 503 01

suitable for **Power-D-Box with sockets pre-wired**

Line terminal (max. 63 A) max. tightening torque 3.0 Nm
X 221 503 01

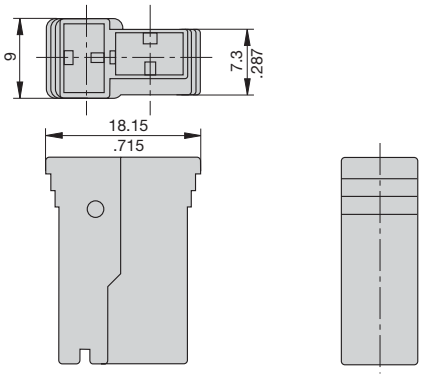


Caution: cables must not be connected with terminal plugged in

Load output terminal protected against reverse polarity X 222 847 01 X 222 625 01 X 222 848 01

suitable for
19BGT-2-X8340-S02
19BGT-2-X8340-SZ4
X8340-S02
X8340-SZ4

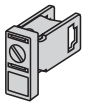
Load output terminal proteced against reverse polarity
(set: 4 moduled sleeves, 8 blade terminals 6.3 x 0.8 mm)
X 222 847 01 for cable cross section 0.7 ...2.0 mm²
X 222 625 01 for cable cross section 2.5 ...4.0 mm²
X 222 848 01 for cable cross section 4.0 ...6.0 mm²



Screw terminal X 211 156 01

suitable for **Module 17plus**

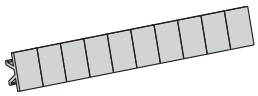
Screw terminal for busbar Y 307 016 11
X 211 156 01
non insulated
(max. 35 m²)



7

Labels

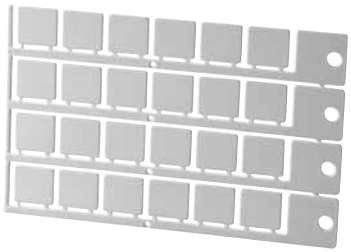
Label
marking area 6 x 10 mm / .629 x .394 in.
Y 307 942 61



Label white Y 307 942 61
ordering unit 10 pcs = 1 strip

suitable for **Module 17plus**

Label
marking area 16 x 13 mm / .629 x .512 in.
Y 308 327 01



Label white Y 308 327 01
ordering unit 24 pcs = 1 plate

suitable for
19BGT-2-X83S2
19BGT-2-X83S4
19BGT-2-X83Z4
19BGT-2-X8345

Label
markine area 46 x 13 mm / 1.81 x .512 in.
Y 308 328 01

Label white Y 308 328 01
ordering unit 8 pcs = 1 plate

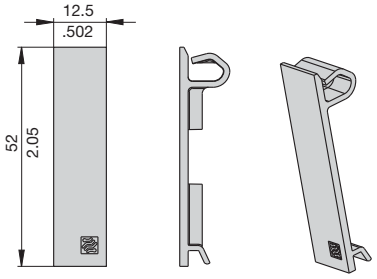
suitable for
19BGT-2-2210
19BGT-2-3600
19BGT-2-ESS20
19BGT-2-ESX10
19BGT-2-X2210

Blanking piece

Blanking piece Y 308 563 01

suitable for
19BGT-2-2210
19BGT-2-3600/3900

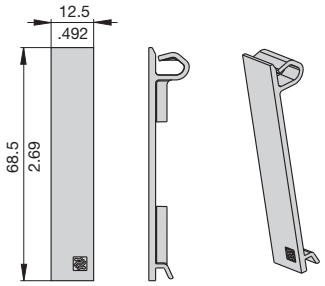
Blanking piece for Power-D-Box
(circuit breaker types 3600/3900, 2210)
Y 308 563 01



Blanking piece Y 308 563 41

suitable for
19BGT-2-ESS20
19BGT-2-ESX10

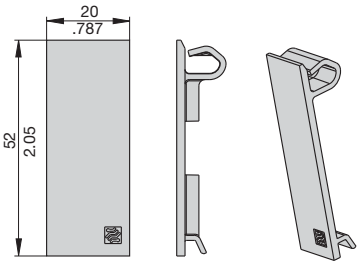
Blanking piece for Power-D-Box
(circuit breaker types ESS20, ESX10)
Y 308 563 41



Blanking piece Y 308 563 21

suitable for
19BGT-2-X8345
19BGT-2-X83S2
19BGT-2-X83S4
19BGT-2-X83Z4

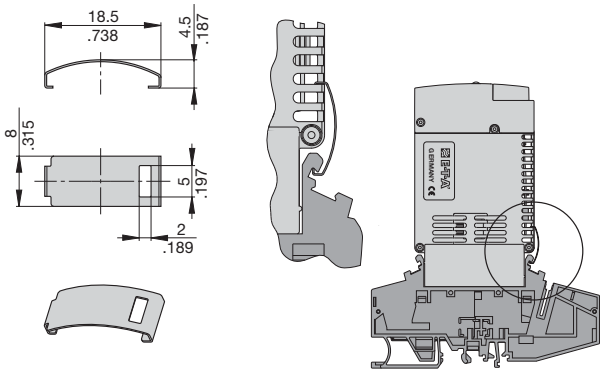
Blanking piece for Power-D-Box
(circuit breaker types 8345, X8345-D01)
Y 308 563 21



7

Mounting aids

Retaining clip for electronic circuit breaker ESS20/ESX10
recommended for fitting the devices
Y 307 754 01

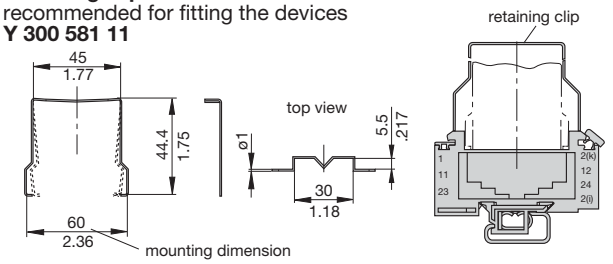


Retaining clip Y 307 754 01

suitable for

Module 17 plus mit ESS20
Module 17 plus mit ESX10

Retaining clip for circuit breaker 3600/3900/E-1048/E-1079
recommended for fitting the devices
Y 300 581 11

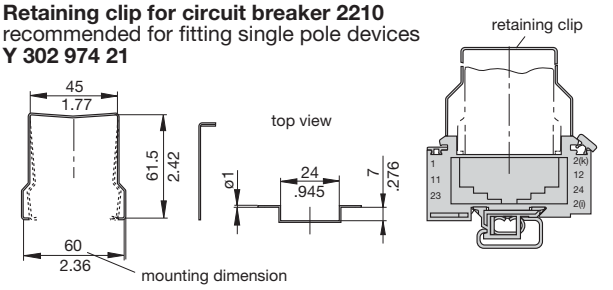


Retaining clip Y 300 581 11

suitable for

socket type 17...	Module 17plus
with 3600	with 3600
3900	3900
E-1048-6..	E-1048-6..
E-1048-7..	E-1048-7..
E-1079-6..	E-1079-6..

Retaining clip for circuit breaker 2210
recommended for fitting single pole devices
Y 302 974 21



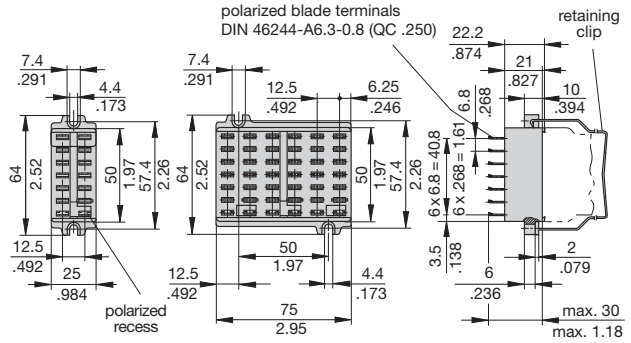
Retaining clip Y 302 974 21

suitable for

socket type 17...	Module 17plus
with 2210-...	with 2210-...

Retaining clip for circuit breaker 3600/3900/E-1048/E-1079
recommended for fitting the devices
Y 300 581 03

23-P10-Si **63-P10-Si**



Retaining clip Y 300 581 03

suitable for

socket type 23...	socket type 63...
with 3600	with 3600
3900	3900
E-1048-6..	E-1048-6..
E-1048-7..	E-1048-7..
E-1079-6..	E-1079-6..

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Mounting aids

Retaining clip Y 302 974 01

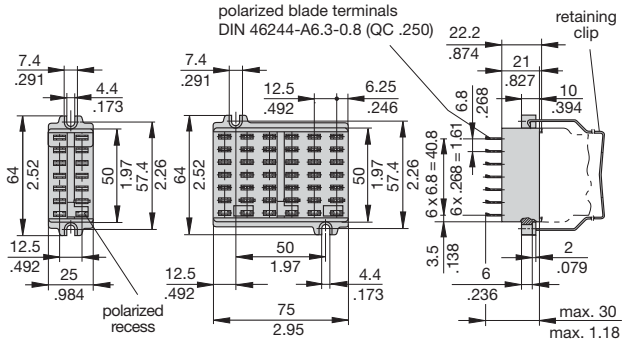
suitable for

socket type 23...
with 2210-S...

socket type 63...
with 2210-S...

Retaining clip for circuit breaker 2210-S...
recommended for fitting single pole devices
Y 302 974 01

23-P10-Si **63-P10-Si**



Screw and washer X 223 019 01
1 set with 4 screw and 4 washers
in a plastic bag

suitable for **19BGT-...**

Sufficient for mounting one Power-D-Box

Screw and washer
screw for mounting the Power-D-Box (19BGT)
X 223 019 01

Barrier Y 308 139 01

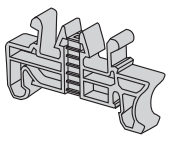
suitable for **19BGT-2-X8345**
X8345-D01

Barrier
for isolating the load terminals of the Power-D-Box (High-Power)
Y 308 139 01

End bracket X 222 004 01

suitable for **Module 17plus**
socket type 17

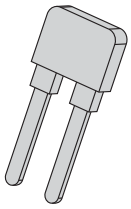
End bracket
recommended for fixing on symmetrical rails
X 222 004 01



7

Busbars and jumpers

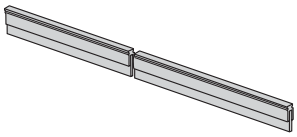
Insulated wire bridge
X 222 984 01
packaging quantity: 10 pcs



Insulated wire bridge X 222 984 01
packaging quantity 1 pc = 10 wire bridges

suitable for **SVS.**

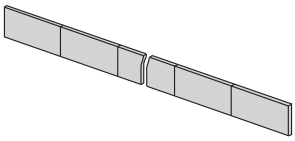
Bus bar 32 A
X 222 005 01 blue insulated, 500 mm
X 222 005 02 red insulated, 500 mm
X 222 005 03 grey insulated, 500 mm



Bus bar 32 A — X 222 005 01 blue / X 222 005 02 red / X 222 005 03 grey

suitable for **Module 17plus**

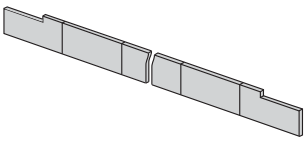
Bus bar 50 A
Y 307 016 01 non insulated, 500 mm



Bus bar 50 A Y 307 016 01

suitable for **Module 17plus**

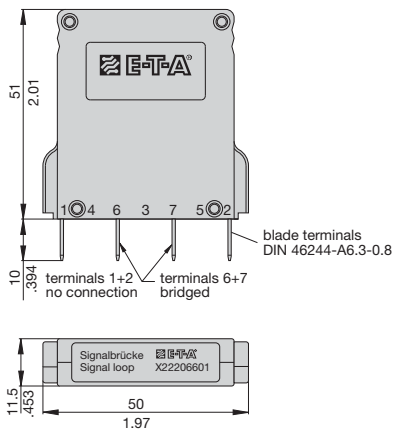
Bus bar for line entry on the side
(in combination with screw terminal X 211 156 01)
Y 307 016 11 non insulated, 500 mm



Busbar Y 307 016 11
for line entry on the side

suitable for **Module 17plus**

Jumper
X 222 066 01



Jumper X 222 066 01 old version

suitable for
Module 17plus
SVS.
19BGT-2-2210
19BGT-2-3600/3900
19BGT-2-ESS20
9BGT-2-ESX10

New version see jumper SB-S11-P1-01-1-1A

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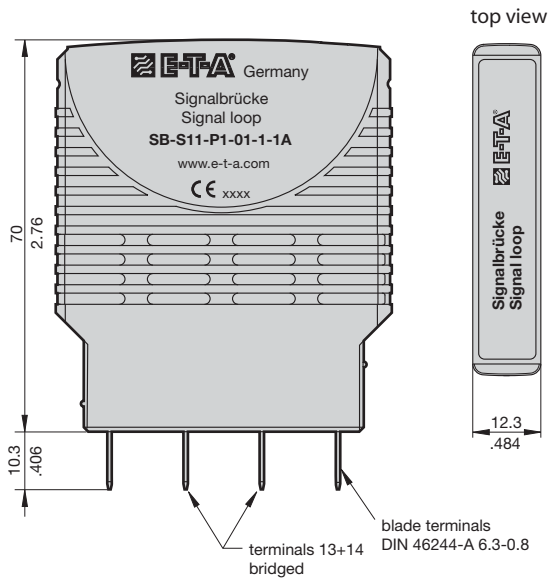
Busbars and jumpers

Jumper SB-S11-P1-01-1-1A

suitable for

Module 17 plus
SVS...
19BGT-2-2210
19BGT-2-3600/390
19BGT-2-ESS20
19BGT-2-ESX10

Jumper
SB-S11-P1-01-1-1A

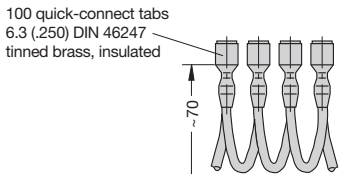


Connector bus link -P10 X 210 588 01 (brown) X 210 588 02 (black) X 210 588 03 (red) X 210 588 04 (blue)

suitable for

Power-D-Box with sockets X 211 530 01

Connector bus link -P10
X 210 588 01/ 1.5 mm², brown (up to 13 A max. load)
X 210 588 02/ 2.5 mm², black (up to 20 A max. load)
X 210 588 03/ 2.5 mm², red (up to 20 A max. load)
X 210 588 04/ 2.5 mm², blue (up to 20 A max. load)

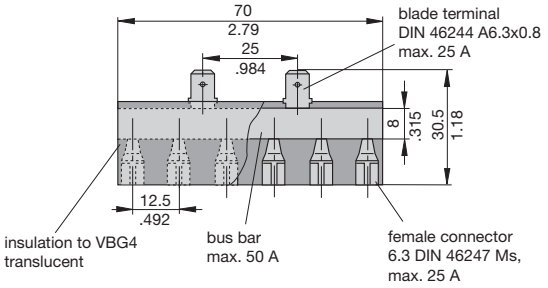


Bus bar 50 A X 221 760 11

suitable for

Power-D-Box with socketsX 211 530 01

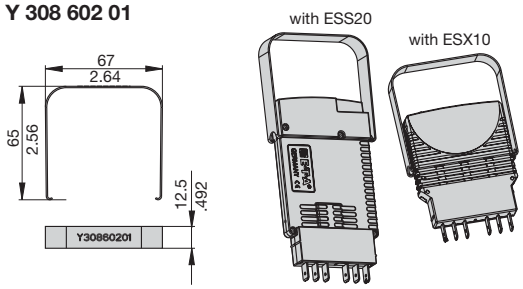
Bus bar 50 A for socket 63-P10-Si
X 221 760 11



7

Tools

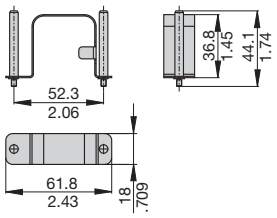
Withdrawal tool for ESS20 /ESX10
Y 308 602 01



Withdrawal tool Y 308 602 01

suitable for **19BGT-2-ESS20**
19BGT-2-ESX10

Withdrawal tool
for removing circuit breaker type 8345
X 222 547 02



Withdrawal tool X 222 547 02

suitable for **19BGT-2-X8345**
X8345-D01

Withdrawal tool
for removing circuit breaker type 2210-S291
X 211 018 01

Withdrawal tool X 211 018 01

suitable for **19BGT-2-X2210**
X2210-S06...

1U compact solution

19" 1U Power-D-Box power distribution system (also for ETSI systems) accommodating plug-in thermal-magnetic circuit breakers type 2210-S or similar types, single or double pole, with or without signal contact.

8 single pole (or 4 double pole) circuit breakers are fitted transversely as vertical pairs, line entry is at the rear by means of screw terminals with 16 (25) mm^2 cable cross section capacity. Redundant design of the system (2 x 4 single pole circuit breakers) is also available.

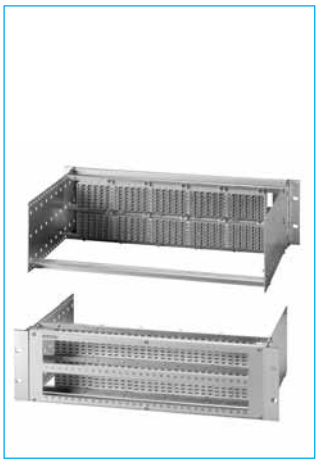
The load terminals are connected from the front by means of high current sub-D connectors or by means of screw terminals up to 4 mm^2. Auxiliary contact terminals can be connected form the rear (serial or parallel connection possible).

For replacing or retrofitting circuit breakers part of the front plate can be removed.

Above and below the circuit breakers are two narrow strips for customer-specific marking. Permanent marking is available ex factory for the front plate as an option.

Max. rating per way is 16 A (due to the derating of the circuit breakers mounted closely side-by-side), max. load of the line entry is 63 A at DC 65 V / AC 250 V.

3 U multi-channel solution



19" 3U racks (also for ETSI systems) for accommodating plug-in type 2210-S or similar, single pole or multipole, with or without auxiliary contacts.

Up to 60 single pole circuit breakers can be fitted (in 2 rows above each other). Standard version of the rack is supplied without wiring, but customer-specific wiring is possible upon request.

Type and size of line entry, wiring of load outputs, signal contact connection as well as fitting with connecting terminals will be to order.

For replacing or retrofitting circuit breakers part of the front plate can be removed. Unused ways can be covered with blanking pieces.

Above and below the circuit breakers customer-specific marking is possible. Permanent marking is available ex factory for the front plate as an option.

Max. rating per way is 16 A (due to the derating of the circuit breakers mounted closely side-by-side), max. load of the line entry is 63 A at DC 65 V / AC 250 V.

High Power

Power distribution system for direct mounting to the rear wall of a control cabinet. Featuring type X8345-D01 power distribution rail with a variable number of modules possible.

Plug-in type 8345 circuit breakers are installed allowing load output currents of up to 125 A per module, with a maximum of 160 A for two adjacent positions.

Line entry is on the side, connected directly to internal busbars with up to 300 A at max. DC 110 V / AC 230 V.

Optional auxiliary contacts are also connected from the side by means of 2.8 mm blade terminals, all contacts are connected in parallel.

Reliable main and load terminal connections are by means of M10/M12 hexagonal screws.

The entire power distribution system is protected against brush contact by a slide-on plexi glass cover.

The system is mounted on the rear wall of a control cabinet by means of aluminium brackets. The system is also available as a version offering system redundancy.

The circuit breakers are hot-swappable without removing the protective cover.

Above and below the circuit breakers customer-specific marking is possible. Permanent marking is available ex factory for the front plate as an option.

1U compact solution X482

1U rack for 19", 23" and ETSI systems for accommodating thermal circuit breakers type 482, single pole with or without auxiliary contact.

The rack is redundantly configurable with up to 8 circuit breakers (A + B supply). Line entry is at the rear by means of screw terminals or optionally by means of pluggable connector technology. The system is also available with only one line entry (1 x 16 circuit breakers).

Load terminals are connected form the side via high current contacts (optionally from the rear via screw terminals). Auxiliary contact terminals are on the side (serial and parallel wiring), optional LED indication is configurable on the front.

For replacing or retrofitting circuit breakers the front plate can be removed. Circuit breakers must be switched off but may be replaced with power on.

Customer-specific marking of the front plate is possible.

Max load of one way is 50 A (please observe derating factor), max. load of the line entry is 2 x 450 A at DC 72 V (optionally AC 230 V or AC 115 V).

2U version with front terminals

The Power-D-Box is a 2U 19" power distribution system (also for ETSI systems), accommodating plug-in type double pole thermal-magnetic circuit breakers 2210-S with auxiliary contacts.
All cable connections are on the front by means of feed-through terminals, partly pluggable.

Line entry is via two fixed feed-through screw terminals up to 10 mm² with cable feed from below, max. line current 50 A.
The load outputs are connected via double pole plug-in type screw terminals or alternatively spring-loaded terminals up to 4 mm². Polarisation is colour-coded. Cable feed is from the front. Max. load current is 16 A. All auxiliary contacts are combined as a group signal (series or parallel connection are possible) and also have plug-in type terminals up to 4 mm² .
All connectors may optionally be fitted with a strain relief by means of wire wraps.

All terminals and circuit breakers are marked correspondingly.

The version shown above accommodates 8 double pole circuit breakers, variations upon request.

The front plate can be removed for replacing the circuit breakers.

Modular distribution system on pcb

Small compact power distribution system on printed circuit board to accommodate 6 plug-in type thermal overcurrent circuit breakers type 1180.

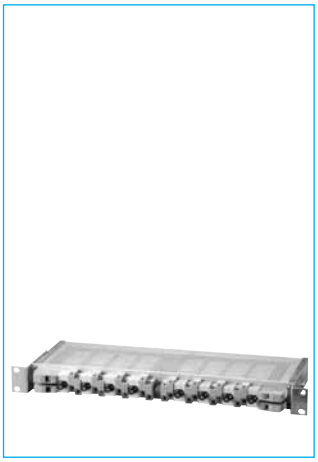
Line entry is on the rear via screw terminals up to 10 mm², max. 16 A (back-up fuse required).
Load outputs are connected via a plug-in type screw terminal busbar, cable cross section 2.5 mm², max. 10 A.

Dimensions of the system are 90 x 50 x 96 mm (l x w x d) including the installed circuit breakers.

Numbers of ways, termination as well as mechanical design of the power distribution system can be tailored to customers' needs.

Max. rated voltage DC 65 V, AC 250 V.

1U Compact Solution High Power



Two Power-D-Boxes, 1U 19" power distribution systems, for use with thermal high-performance circuit breakers type 482.

The power distribution systems feature a redundant design with 2 x 4 ways.

Connection of all cables can be either from the rear or on the front.
Line entry is on the right and left sides by means of screw-type feed-through terminals up to 16 mm² cable cross section, max. 100 A per side.
Load outputs are also via screw-type feed-through terminals up to 10 mm², max. 50 A per way (please observe derating factor of the circuit breakers).

Plug-in design of the circuit breakers allows easy adaptation to changing loads.

The max. installation depth is less than 180 mm including front and rear screw terminals.

Max. rated voltage is DC 72 V or AC 230 V.

Description

Module 17plus is a power distribution system for use with E-T-A circuit breakers type 2210-S... or 3600-.../3900-... or electronic circuit breaker ESS20 or SSRPC E-1048-7... Each module accommodates two single pole plug-in circuit breakers with an individual housing width of only 12.5 mm and fits onto all industry standard mounting rails.
The two-way modules can be interconnected to provide as many ways as required with a terminal block fitted at each end for connection of signalling circuits. A distribution busbar can be fitted on the supply side of the modules, but each pole of multipole circuit breakers must be individually connected. Electrical connections are by means of screwless spring loaded terminals.
Suitable electro-mechanical circuit breakers have integral make and break auxiliary contacts. Depending on the application these may be used for either single or group signalisation. For group signalisation, the make contacts (which open in the event of a fault) are connected in series to the terminal blocks of the modules. The module is designed to accommodate a probe for series connection continuity tests. When multipole circuit breakers are fitted auxiliary contacts are required for each pole.
Single signalisation is achieved through use of the break contacts (which close in the event of failure) connected in parallel by means of terminals on each module. Both types of signalisation (individual and group signalisation) are available at the same time if the circuit breakers used provide auxiliary contacts (please note when ordering). The signalling circuitry between modules is automatically connected when modules are linked together.

Meets the requirements of UL60950

17plus

Ordering information

For thermal magnetic circuit breakers types 2210-S, 3600, 3900:
For electronic circuit breaker type ESS20:
For solid state remote power controller E-1048-7..:

17PLUS-Q02-00	Module 17plus, centre piece, two-way
17PLUS-QA0-LR	one each left- and right-side terminal block for supply feed from the side by means of screw terminal

Technical data of:	**please see:**
Circuit Breaker 2210-S, 3600, 3900	product group 2
Electronic Circuit Breaker ESS20, ESX10	product group 5
Solid State Remote Power Controller E-1048-7..	product group 6

Approvals

Authority	**Voltage ratings**	**Current ratings**
UL USA + Canada	AC 250 V; DC 80 V	50 A

Technical data

Connection	Spring-loaded terminals for rigid wires and flexible cables with and without wire end ferrules. Please use appropriate screw driver size (SD) for removing the spring loaded terminals. Line feed (1): spring-loaded terminals for 1.5 – 10 mm², SD 2 (0.8x4.0) Load output (2): spring-loaded terminals for 0.25-4 mm², SD 1 (0.6x3.5) Signalisation: terminals (11, 13, 14): spring-loaded terminals for 0.25-2.5 mm², SD 1 (0.6x3.5) terminal (12): spring-loaded terminal for 0.25-1.5 mm², SD 0 (0.4x2.5)

Test probe for testing the group signal for line interruption: ≤ 2 mm ø

Voltage rating (without circuit breaker): AC 433 V; DC 65 V

Current rating (without circuit breaker)		Internal resistances (without circuit breaker)	
Line feed (1)	50 A	Line/load (1-2)	≤ 5 mΩ
Load output (2)	25 A*)	Signalisation parallel (11-12)	≤ 9 mΩ[1]/per pole
Signalisation Feed (11) (ground with electronic components)	10 A	serial per module (13-14)	≤ 8 mΩ[2]/per pole
Single output (12)	1 A	plus [1] + 2 mΩ	
Group signal (13-14)	1 A	[2] + 5 mΩ for each further module interconnected	

*) Caution: When several devices are mounted together, each should carry only max. 80 % (I_N ≤ 16 A) or max. 65 % (I_N > 16 A) of its rating.

Busbar for power distribution

insulated busbar (blue or red):	I_{max}	32 A
non-insulated busbar:	I_{max}	50 A

(The non-insulated busbar, too, meets brush contact safety standards when fitted.)

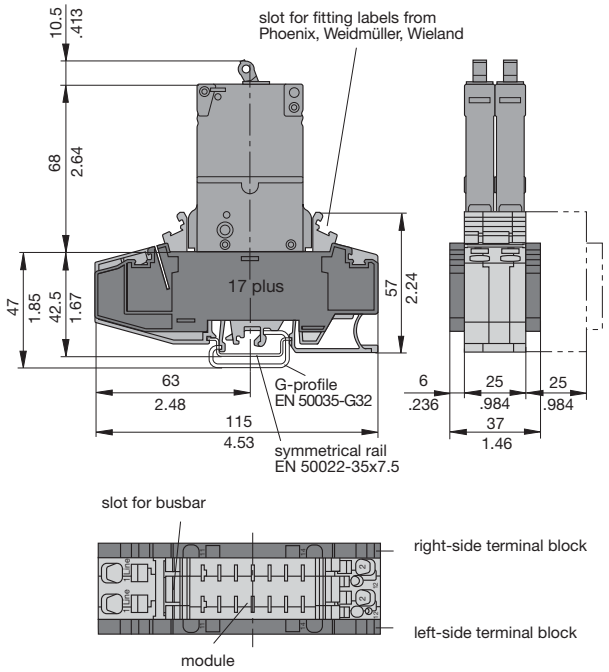
Dielectric strength

between main circuits (without busbar):	1,500 V
main circuit to auxiliary circuit:	1,500 V
between auxiliary circuits:	1,500 V

Mass:	Module 17plus (centre piece)	approx. 85 g
	terminal blocks (pair)	approx. 30 g

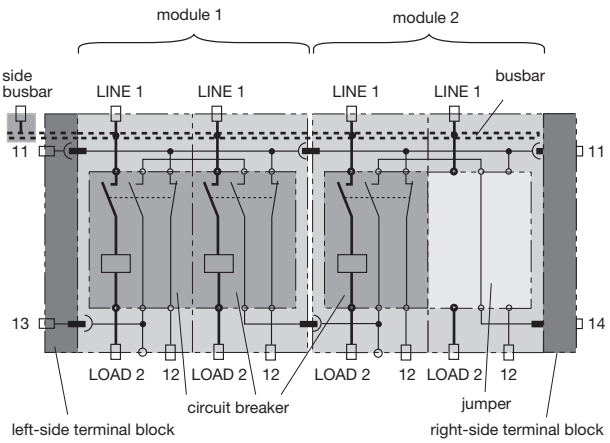
7

Dimensions



Connection diagram

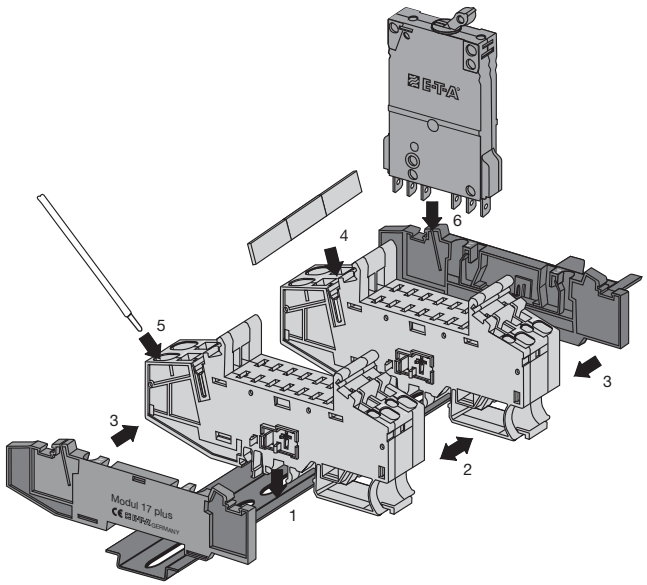
Example for circuit breaker types 2210, 3600, 3900



13, 14 terminals for group signalisation
11 feed for single signalisation
12 terminal for single signalisation

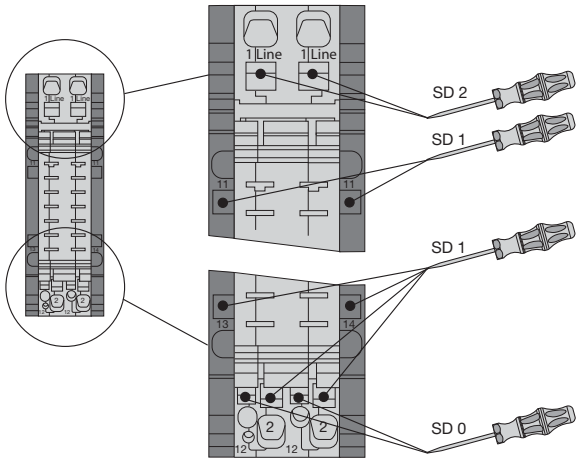
For connection diagram for electronic circuit breakers and components please see relevant data sheets of types ESS20, ESS21, E-1048-7..

Installation example



Installation:

1 Clip modules onto DIN rails.
2 Push modules together (side-by-side).
3 Snap on right-side and left-side terminal blocks.
4 Cut busbar to required length and fit on supply side of the modules.
5 Connect line feed with spring-loaded terminals.
6 Plug in circuit breakers.



Connection and disconnection of cables with screw driver

Module 17plus for electronic overcurrent protection

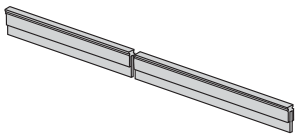
For technical data, dimensions, mounting examples, schematic diagrams and connection diagrams of

- ESS20-0... please see product group 5
- ESS20-1... please see product group 5
- ESX10 please see product group 5
- E-1048-7... please see product group 6

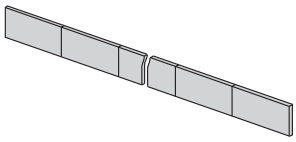
This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

Accessories

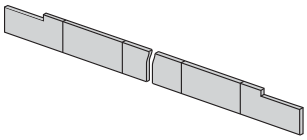
Busbar 32 A
X 222 005 01 blue insulation, 500 mm/19.68 in.
X 222 005 02 red insulation, 500 mm/19.68 in.
X 222 005 03 grey insulation, 500 mm/19.68 in.



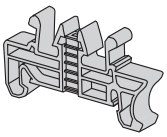
Busbar 50 A
Y 307 016 01 non-insulated, 500 mm/19.68 in.



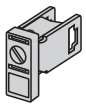
Busbar 50 A
Y 307 016 11 non-insulated, 500 mm/19.68 in.



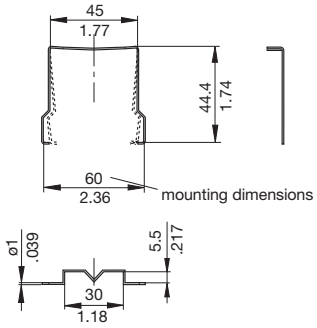
End bracket
X 222 004 01



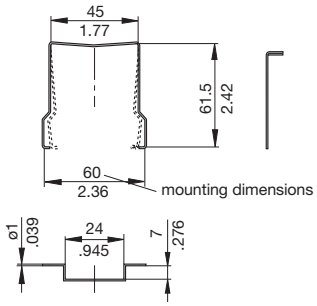
Screw terminal for busbar
X 211 156 01 non insulated
(up to 35 mm²)



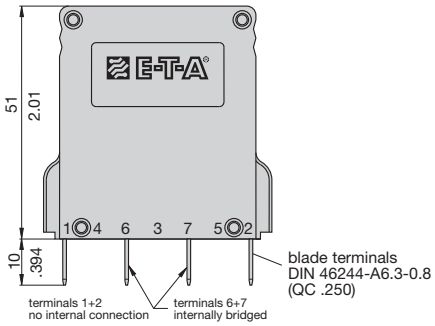
Retaining clip for circuit breaker 3600/3900
recommended for fitting the devices
Y 300 581 11

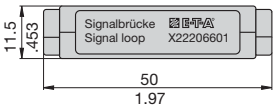


Retaining clip for circuit breaker 2210
recommended for fitting single pole devices
Y 302 974 21

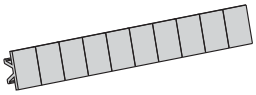


Jumper X 222 066 01





Labels
marking area 6 x 10 mm
(ordering unit 10 pcs = 1 strip)
Y 307 942 61



This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved.Product markings may not be exactly as the ordering codes. Errors and omissions excepted.

7

Description

The E-T-A power distribution system SVS02 is designed to accommodate the electronic circuit breaker series ESS20-003 or electronic circuit protector ESX10. It distributes the current supplied by a switch mode power supply up to 40 A to 4, 8, 12 or 16 channels. Input connections are via screw terminals. The individual circuit breakers can be plugged in. Loads are connected via spring-loaded screwless terminals. The power distribution includes integral wiring of the signalisation of the individual channels which can be combined to a group signal. The SVS02 can be snapped onto a DIN symmetrical rail.

Suitable for
- **ESS20-003**
- **ESX10-103**
- **2210-S21.**
- **3600**

SVS02-08-...

Ordering information

Type

SVS02 Power distribution system for ESS20-003
- short circuit current limited DC 24 V applications
- max. 40 A continuous load
- two integral circuit breakers (CB1 and CB2): overcurrent protection of group signalisation of power distribution system, red LED glashes upon trip of CB1
- 2 insulated wire bridges Y 303 881 08 included
- without jumpers X 222 066 01 (for unused positions)

Version, max. number of circuit breakers ESS20-003 on the power distribution system

04 4 channels (F1...F4)
08 8 channels (F1...F8)
12 12 channels (F1...F12)
16 16 channels (F1...F16)

Screw terminals for power supply DC 24 V

P310 3 loop-through terminals (X 21) max. 10 mm² for DC 24 V (+) / DC 24 V (-) / FE functional earth

Load outputs per channel (F1 .. Fn, n = 04, 08, 12, 16)

L50 5 load outputs per channel, max. 8 A each
- (L+S) group output (+) internally bridged over all channels
- (L+L) protected load output (+), per channel
- (-) DC 24 V (-)
- (-) DC 24 V (-)
- (FE) functional earth

Signal outputs

S15 1 signal terminal (X31) for group signal, 5-pole, complete with plug-in terminal, wiring 5 x max. 2.5 mm² / without connector sleeve, max. 0.5 A:
- (+) internal +DC 24 V supply for signalisation via insulated wire bridge from (+) to (SC)
- (SC) external supply possible +DC 24 V for signalisation
- (S0) signal output group signalisation
- (-) additional output DC 24 V (-)
- (FE) additional functional earth

Control input

E00 without control input

Fitting variants

B10 complete with screwless spring-loaded terminals, (max. 2.5 mm², without connector sleeve) (standard)

B20 complete with plug-in screw terminals (max. 2.5 mm², without connector sleeve)

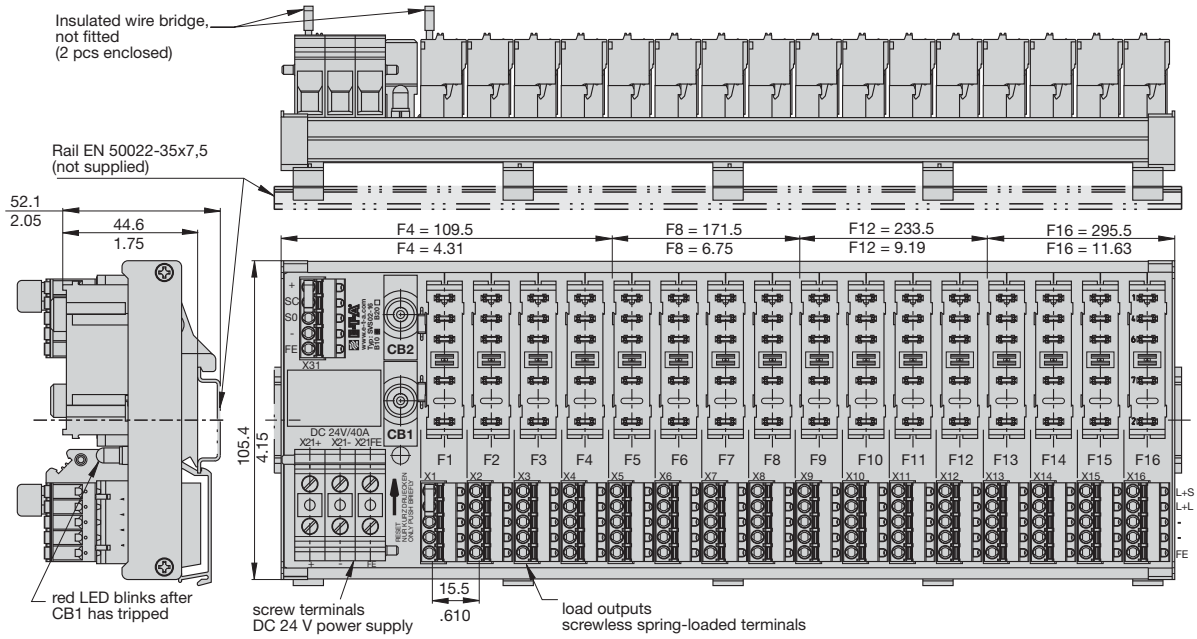
SVS02 - 16-P310 - L50 - S15 - E00 - B10

Technical data

- Modular Power distribution system for short-circuit limited DC 24 V applications up to max. 40 A continuous load, max. voltage DC 32 V.
- Three screw terminals (max. 10 mm²/AWG 8) for:
  - DC 24 V (+) = X 21 +
  - DC 24 V (-) = X 21 -
  - FE (functional earth) = X 21 FE

  for connecting the DC 24 V power supply max. 40 A
- Modular design ESS20-positions F1...F4 (..F8, ...F12 or ...F16):
  - SVS02-04 / 4 channels / F1...F4 = Kl. X1...X4
  - SVS02-08 / 8 channels / F1...F8 = Kl. X1...X8
  - SVS02-12 / 12 channels / F1...F12 = Kl. X1...X12
  - SVS02-16 / 16 channels / F1...F16 = Kl. X1...X16
- 5 load outputs per channel complete with Combicon screwless connectors, wiring 5 x max. 2.5 mm² (AWG 14)/ without connector sleeve max. 8 A:
  - (L+S) group output (+), internally bridged across all channels
  - (L+L) load output (+), per channel
  - (-) DC 24 V (-)
  - (-) DC 24 V (-)
  - (FE) functional earth
- Signal terminal (X31) for group signal complete with Combicon screwless connectors, wiring 5 x max. 2.5 mm² (AWG 14)/ without connector sleeve, max. 0.5 A (signal contact ESS20):
  - (+) internal +DC 24 V supply for signalisation of terminal X 21 + via insulated jumper from (+) to (SC), protected by CB2
  - (SC) external supply possible +DC 24 V for signalisation, protected by CB1
  - (S0) signal output group signalisation
  - (-) additional output DC 24 V (-)
  - (FE) additional functional earth
- Selective overcurrent protection CB1 and CB2 for group signalisation of the power distribution system, red LED blinks after CB1 has tripped (see schematic diagram). Reset of circuit breakers: momentarily press red actuator button
- Protection class to: IP20
- Insulation co-ordination to IEC 60934: 0.5 kV / pollution degree 2
- Dielectric strength AC 500 V
- Temperature range: 0...50 °C (without condensation)
- for DIN symmetrical rail mounting EN 50022 - 35 x 7.5
- Dimensions: see dimensional drawing

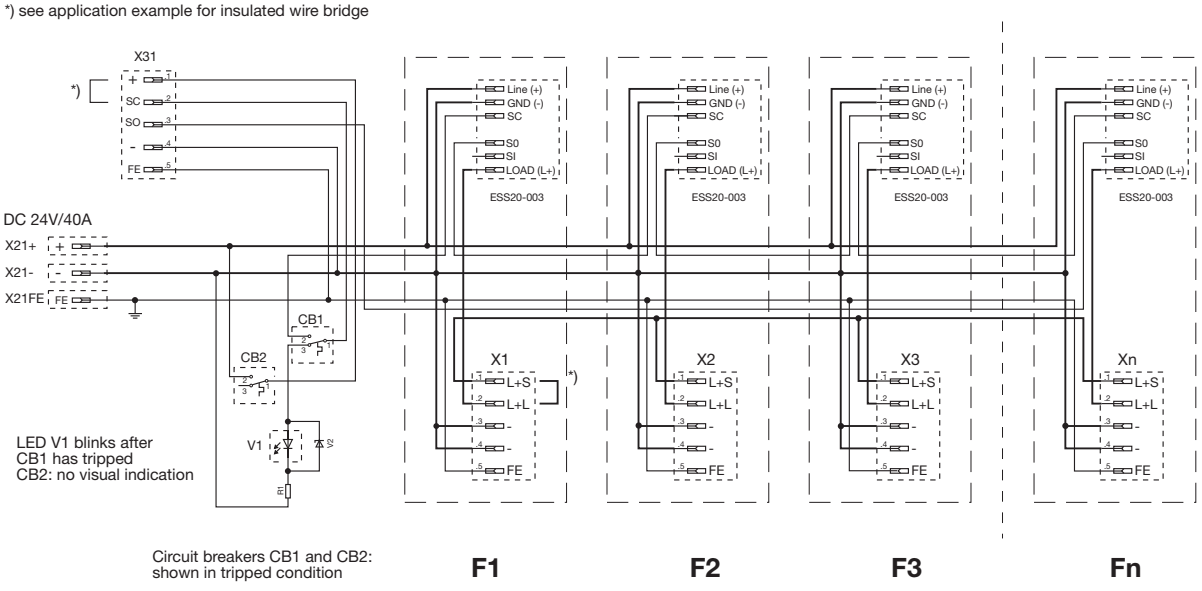
Dimensions SVS02-16



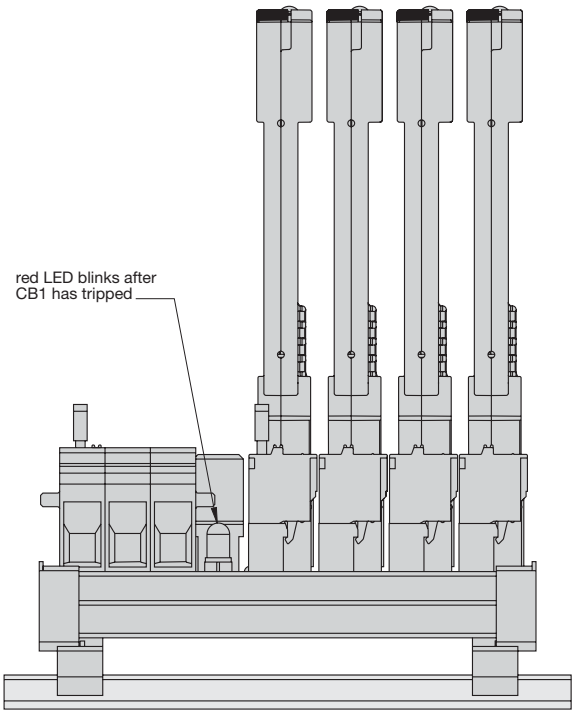
This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

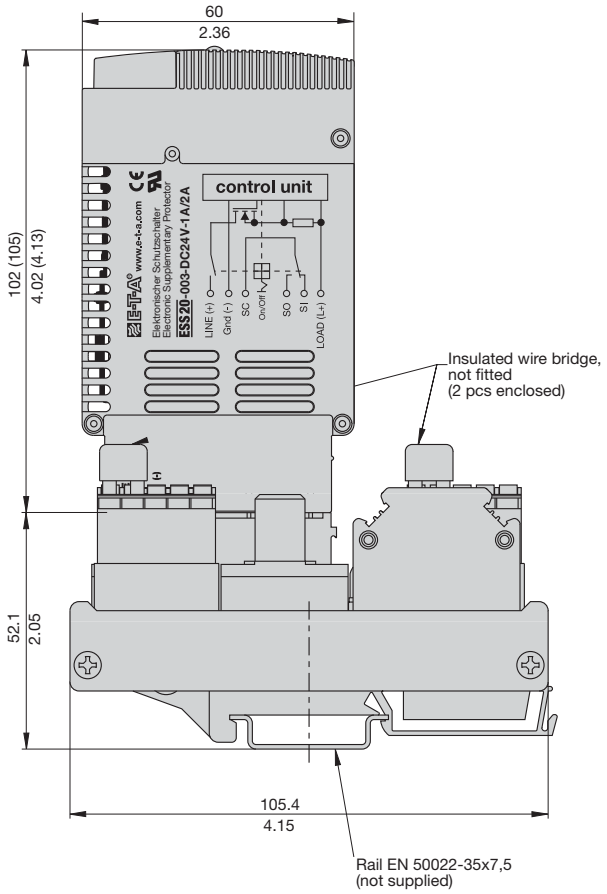
Schematic diagram SVS02-(n) n = 04, 08, 12, 16

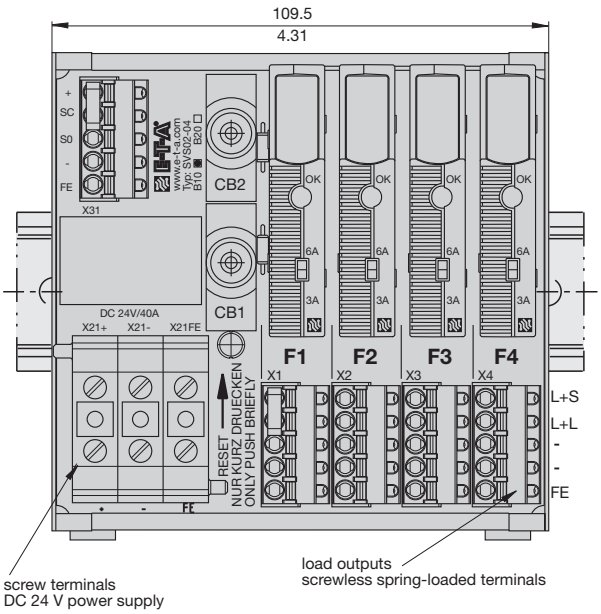
*) see application example for insulated wire bridge

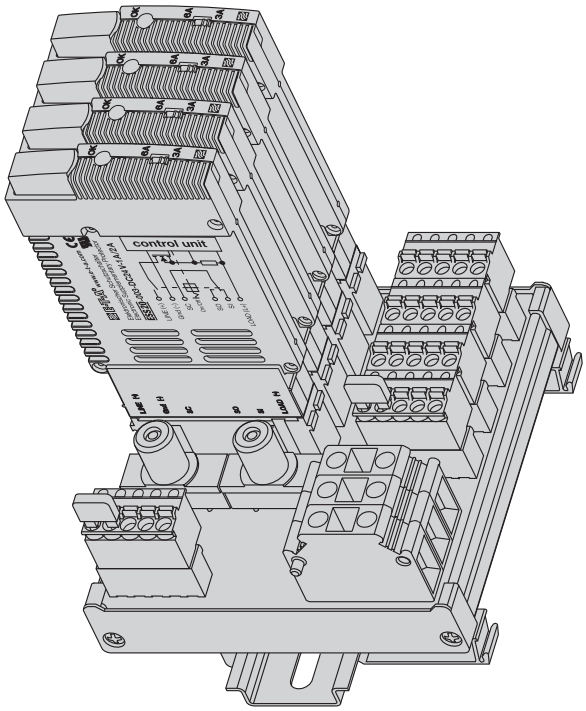


Dimensions SVS02-04, fitted with ESS20-003



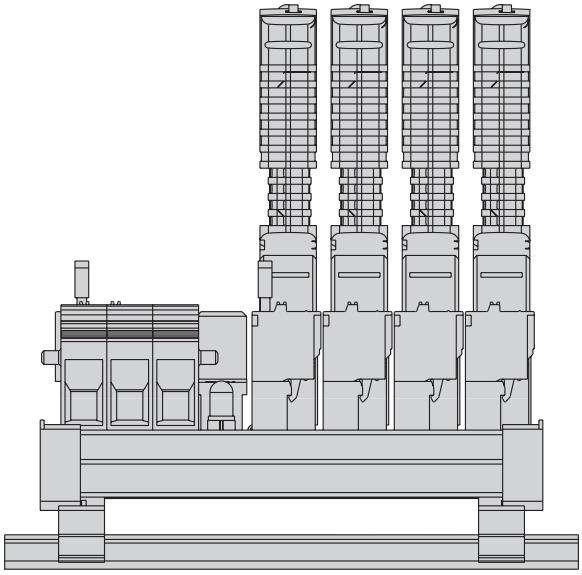


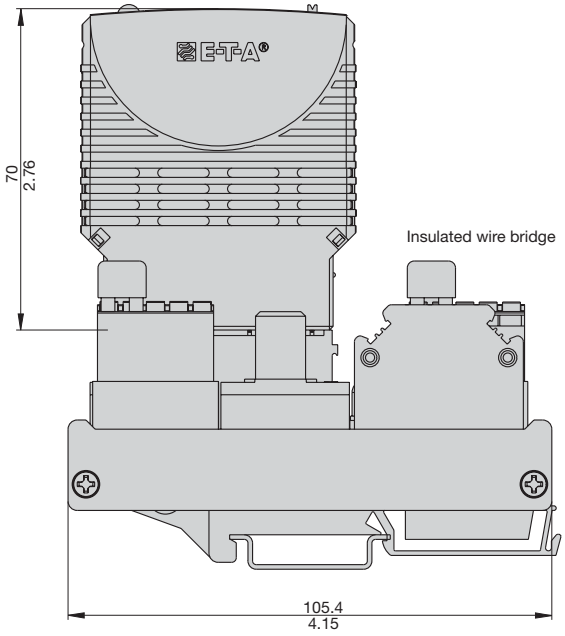


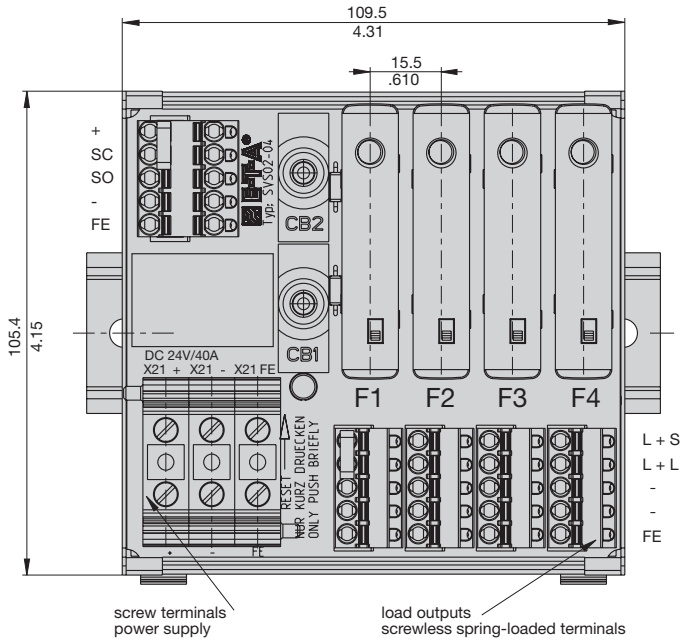


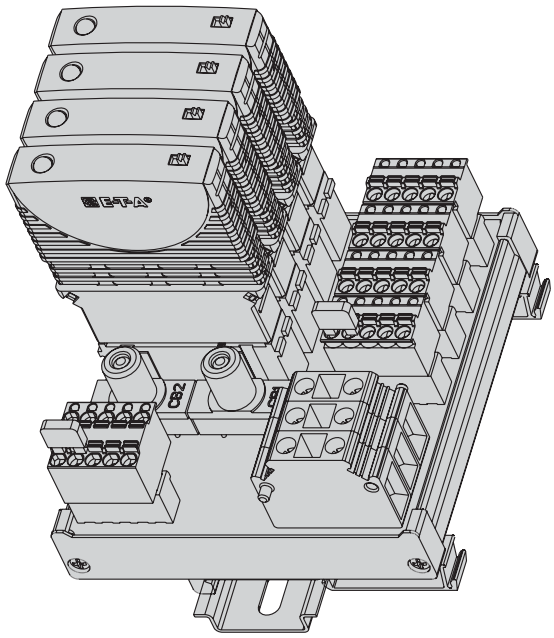
This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

Dimensions SVS02-04, fitted with ESX10-103







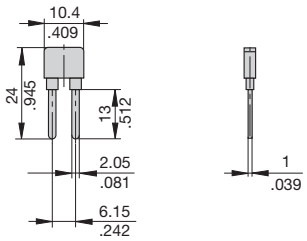


Accessories

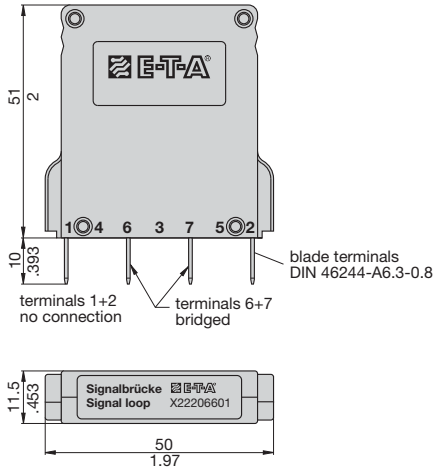
Insulated wire bridge
Y 303 881 08

Two insulated wire bridges are supplied with the power distribution system. They may be used for:

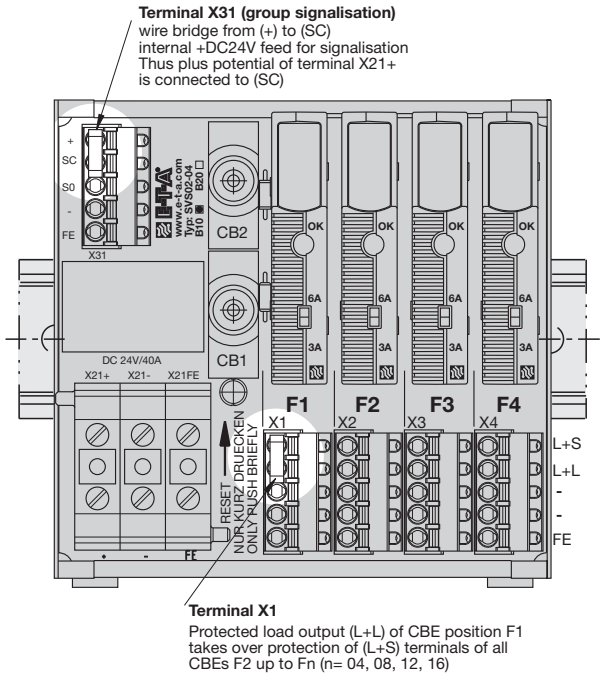
- Channel X31: internal +DC 24 V supply for signalisation wire bridge from (+) to (SC)
  Signal circuit (+) to (SC) protected by CB2
  Signal circuit (SC) to (SO) protected by CB1
- Channel X1: Protected load output (L+L) of CBE position F1 takes over protection of (L+S) terminals of all CBEs F2 up to Fn (n= 04, 08, 12, 16)



Jumper
X 222 066 01



Application example for insulated wire bridge

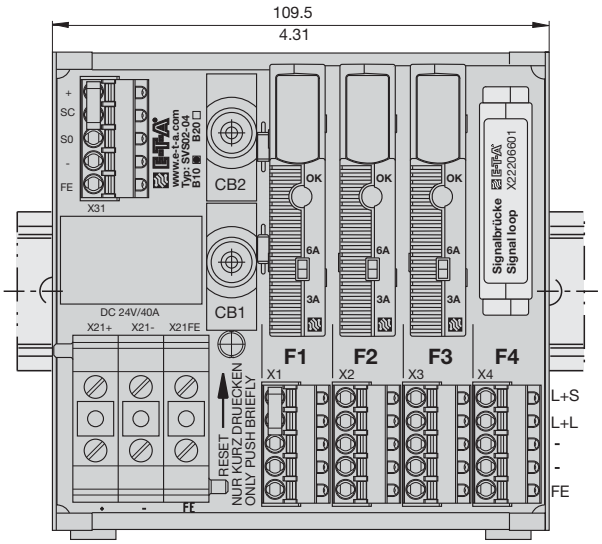


Application example for jumper to replace ESS20-003

The signalling pathway of the group signalisation is as follows:
- feed-in of +DC 24 V potential in (SC = terminal 31.2)
- via in-built overcurrent protection CB1
- via all signal contacts of the fitted circuit breakers type ESS20-003
- back to signal output of group signalisation (S0 = terminal 31.3)

In operating condition (i.e. all circuit breakers plugged in and functional) the signalling pathway (SC) to (S0) is closed.

If the distribution rail is not completely fitted with ESS20-003, the open pathway (SC) to (S0) may be closed by means of a jumper type X 222 066 01.



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Description

The SVS04 power distribution system for symmetrical DIN rail mounting is designed to distribute power from a switch-mode power supply to 4 or 8 channels. Selective protection of the load output circuits is provided by the plug-in type circuit breakers installed. With a max. load current of 8A per channel and a max. total current of 40A the SVS04 provides ease of wiring in short circuit current limited DC24V applications. Five protected “L+” load outputs per way and 15 or 30 minus terminals significantly reduce wiring time enormously.

Electronic circuit breaker ESS20-003, electronic circuit protector ESX10-103, thermal-magnetic circuit breakers 2210-S21. and 3600 are all suitable for use with the SVS04, plugging directly into the sockets provided for each of the 4 or 8 outputs.

Ordering information

Type

SVS04 power distribution system for types ESS20-003, ESX10-103, 2210-S21., 3600

- for short circuit current limited DC 24 V applications
- max. 40 A continuous load
- one integral circuit breaker (CB1): overcurrent protection of group signalisation, red LED flashes upon trip of CB1
- including 1 insulated wire bridge Y 303 881 08
- accessories: jumper X 222 066 01 for unused ways, please order separately

Version, max. number of circuit breakers on the power distribution system

04 4 circuit breakers F1...F4)
08 8 circuit breakers (F1...F8)

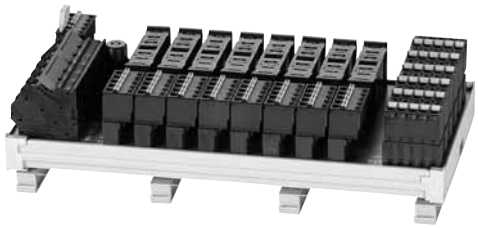
Fitted versions

B10 standard: fitted with screwless spring-loaded terminals (max. 2.5 mm², without wire end ferrule)
B20 fitted with plug-in type screw terminals (max. 2.5 mm², without wire end ferrule)
C10 fitted with pcb terminals, spring-loaded terminals (max. 2.5 mm², without wire end ferrule)

Minus terminals

– 15 minus terminals
K01 30 minus terminals (only for SVS04-08)

SVS04 - 04 - B10 - ...



SVS04-08-...

Technical data

DC24 V supply

DC 24 V terminals, 2x3 terminals
(screwless terminals max. 10 mm²), for current supply
- DC 24 V (+) = (X21) +/+/+
- DC 24 V (-) = (X21) -/-/-
Integral loop-through, for wiring and additional connection of an external buffer module.

F positions

Number of ways for circuit breakers, suitable for types ESS20-003, ESX10-103, 2210-S21., 3600
SVS04-04... F1...F4 = terminals X1...X4
SVS04-08... F1...F8 = terminals X1...X8
Plug jumper X 222 066 01 into unused ways (please order separately, see accessories)

Load outputs

5 x L+ protected per position F1…F4 (F1…F8), led through terminals X1…X4 (X1…X8), max. 2.5 mm² load current max. 8 A per position

Signalisation

signalisation terminal X31, 5-pole, max. 2.5 mm²
+: DC 24 V feed from terminal X21, protected by integral circuit breaker CB1 total current max. 0.5 A
group signalisation:
S: line feed DC 24 V, insert insulated wire bridge Y 303 881 08 (bulk shipped) between + and GR
AS: output of group signalisation
two-group signalisation
GR: line feed, insert insulated wire bridge Y 303 881 08 (bulk shipped) between + and GR
AS: output group A (X5…X8)
B: output group B (X1…X4)

Minus terminals

3 x 5 terminals (X22, X23, X24) or
6 x 5 terminals (X22, X23, X24, X25, X26, X27): version K01

Termination

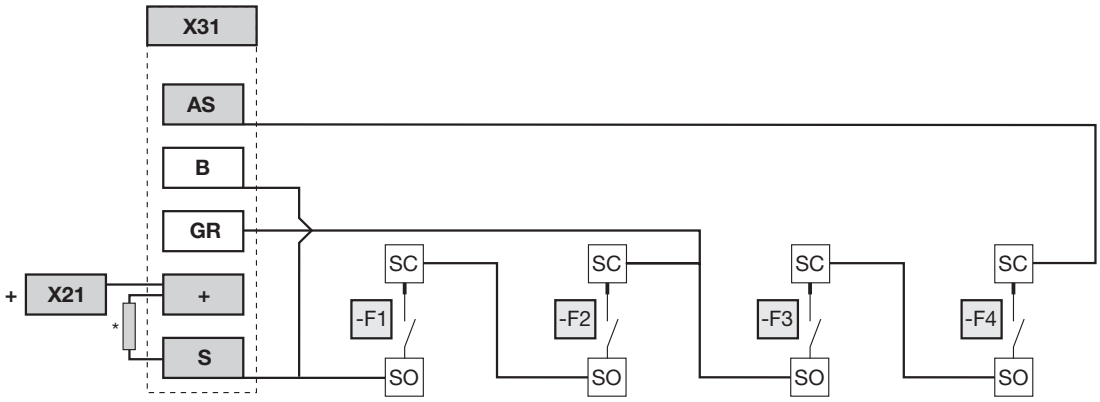
For signalisation, load outputs and minus terminals:
B10: screwless spring-loaded terminals max. 2.5 mm², with integral test socket
B20: plug-in type screw terminals max 2.5 mm², with integral test socket
C10: pcb terminal/spring-loaded terminal max. 2.5 mm², with integral test socket

General data

- protection class to DIN 40050: IP20
- insulation co-ordination to IEC 60934: 0.5 kV
- pollution degree 2
- dielectric strength AC 500 V
- temperature range: 0…50 °C (without condensation)
- for symmetrical DIN rail mounting EN50022 – 35 x 7.5
- dimensions: see dimensional drawings

Wiring example: SVS04-04… with ESS20-003 and group signalisation

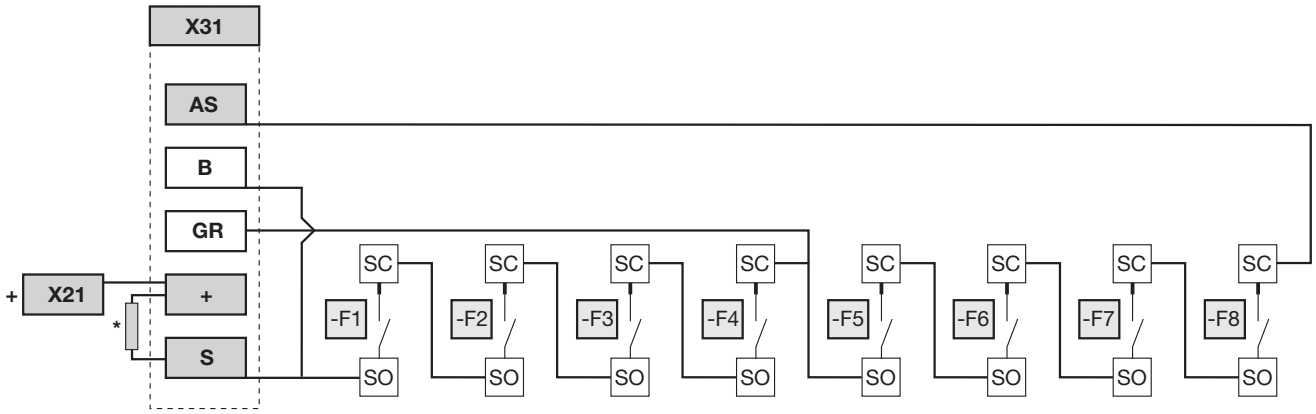
Signal path of group signalisation from F1 to F4



X 31	**signalisation terminal**
AS	signal output group signal
+	+DC 24 V from terminal 21, internally prewired and protected by CB1
S	line feed group signalisation with insulation bridge*
SC / SO	auxiliary contact ESS20-003, make contact

Wiring example: SVS04-08... with ESS20-003 and group signalisation

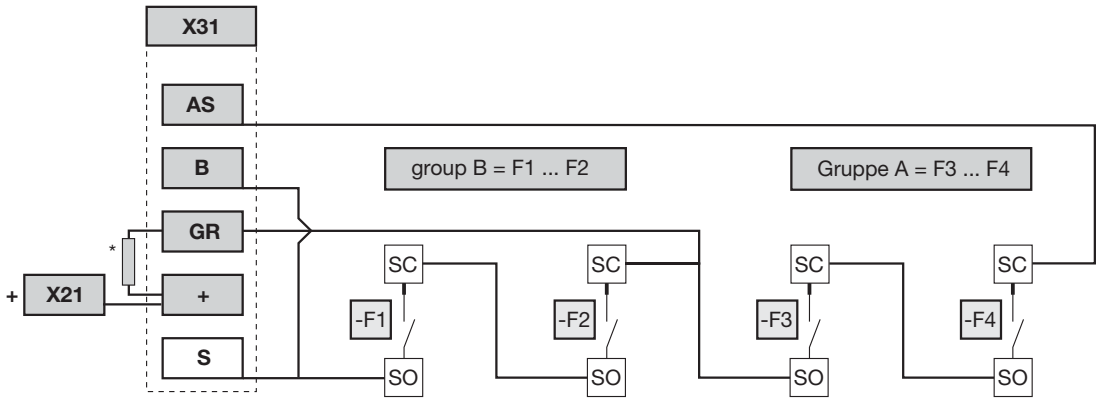
Signal path of group signalisation from F1 to F8



X 31	**signalisation terminal**
AS	signal output group signal
+	+DC 24 V from terminal 21, internally prewired and protected by CB1
S	line feed group signalisation with insulation bridge*
SC / SO	auxiliary contact ESS20-003, make contact

Wiring example: SVS04-04… with ESS20-003 and two-group signalisation

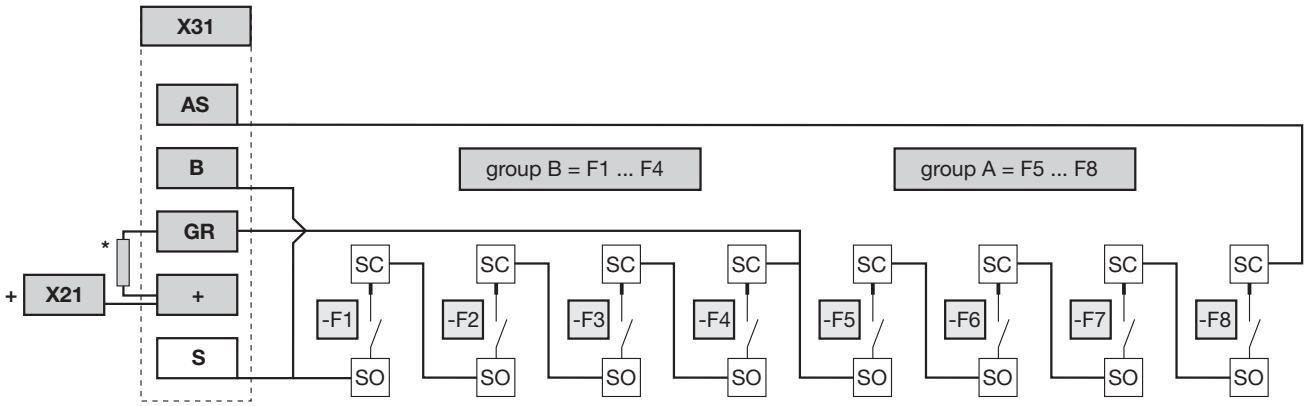
Signal path of two-group signalisation
from F1 to F2 = group B, from F3 to F4 = group A



X31	**signalisation terminal**
AS	signal output group A (F3 ... F4)
B	signal output group B (F1 ... F2)
+	+DC 24 V from terminal 21, internally prewired and protected by CB1
GR	line feed two-group signalisation with insulation bridge*
SC/SO	auxiliary contact ESS20-003, make contact

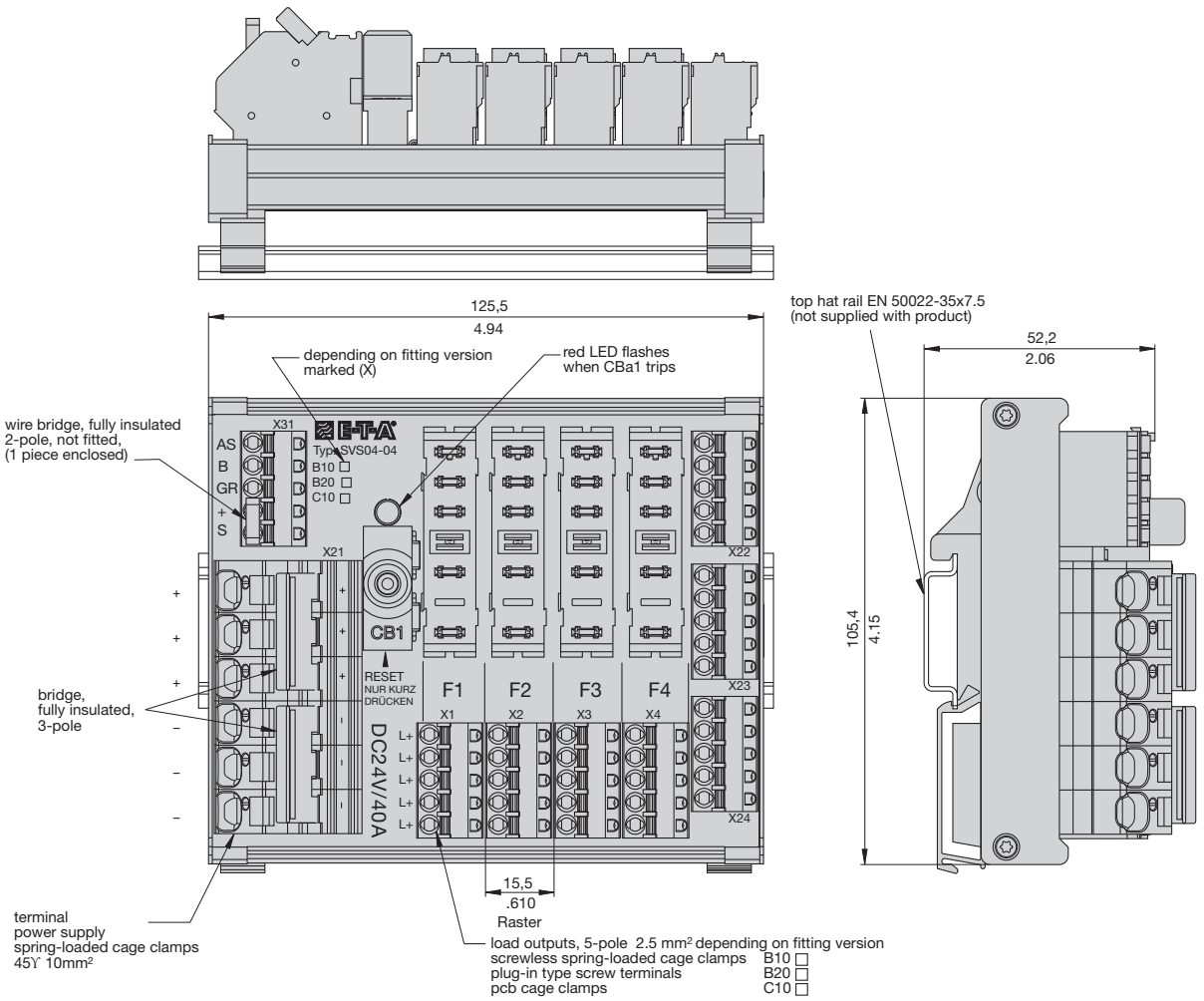
Wiring example: SVS04-08... with ESS20-003 and two-group signalisation

Signal path of two-group signalisation
from F1 to F4 = group B, from F5 to F8 = group A

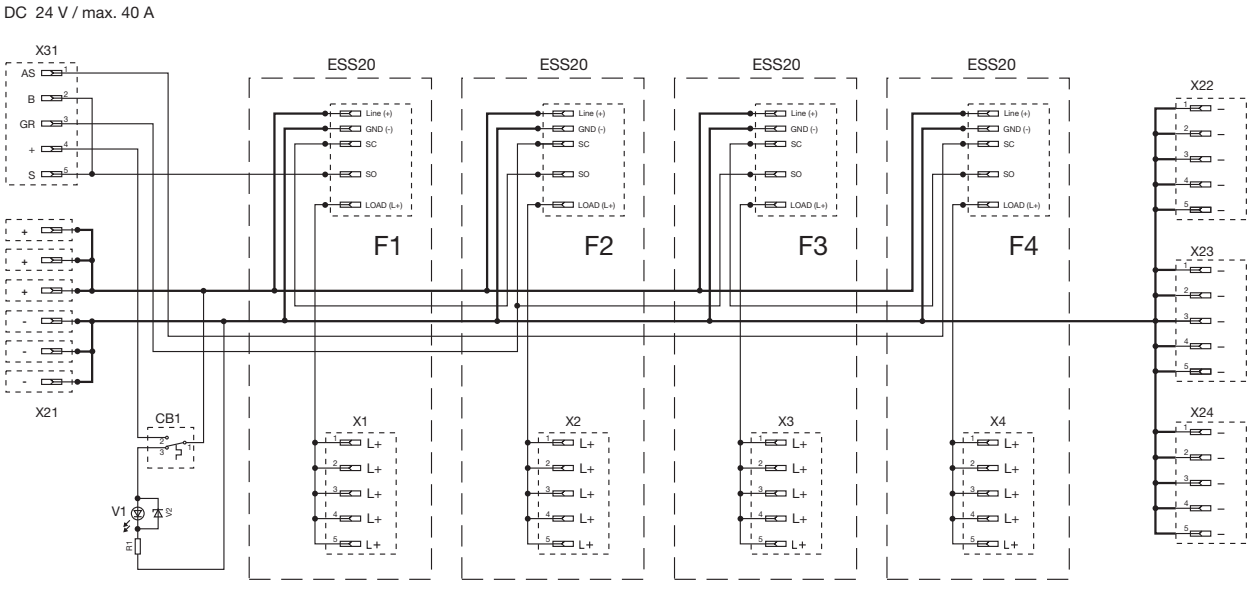


X31	**signalisation terminal**
AS	signal output group A (F5 ... F8)
B	signal output group B (F1 ... F4)
+	+DC 24 V from terminal 21, internally prewired and protected by CB1
GR	line feed two-group signalisation with insulation bridge*
SC/SO	auxiliary contact ESS20-003, make contact

Dimensions SVS04-04-... (with 15 minus terminals)



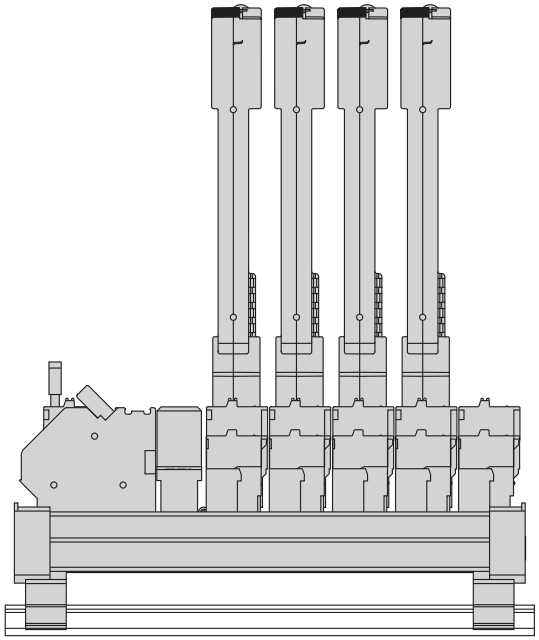
Schematic diagram SVS04-04-... (fitted with ESS20-003)

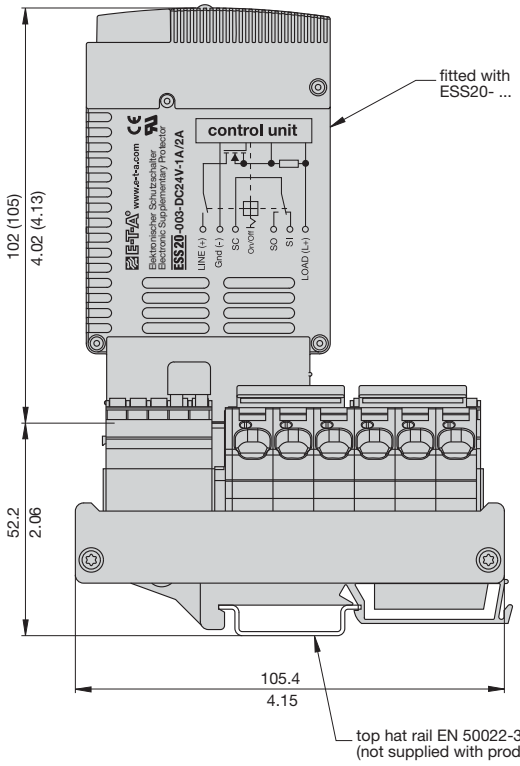


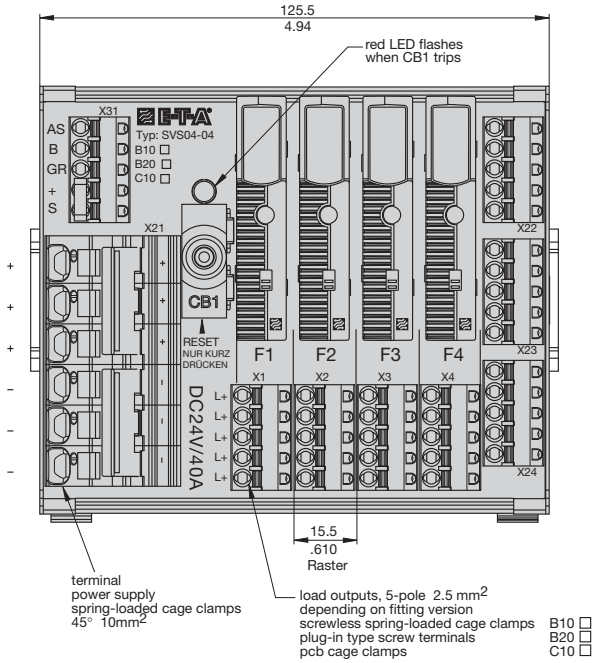
LED V1 flashes upon trip of CB1

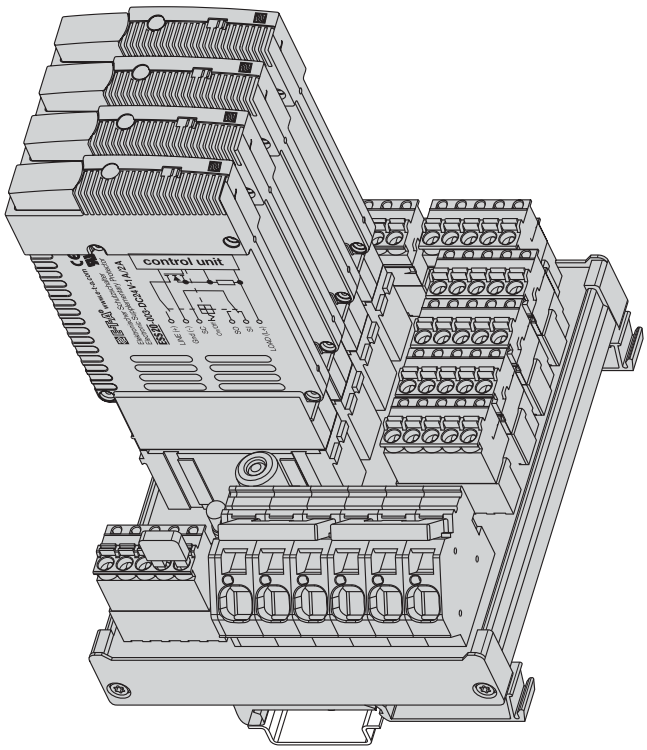
Circuit breaker CB1 shown in tripped condition

Dimensions SVS04-04-..., fitted with ESS20-003



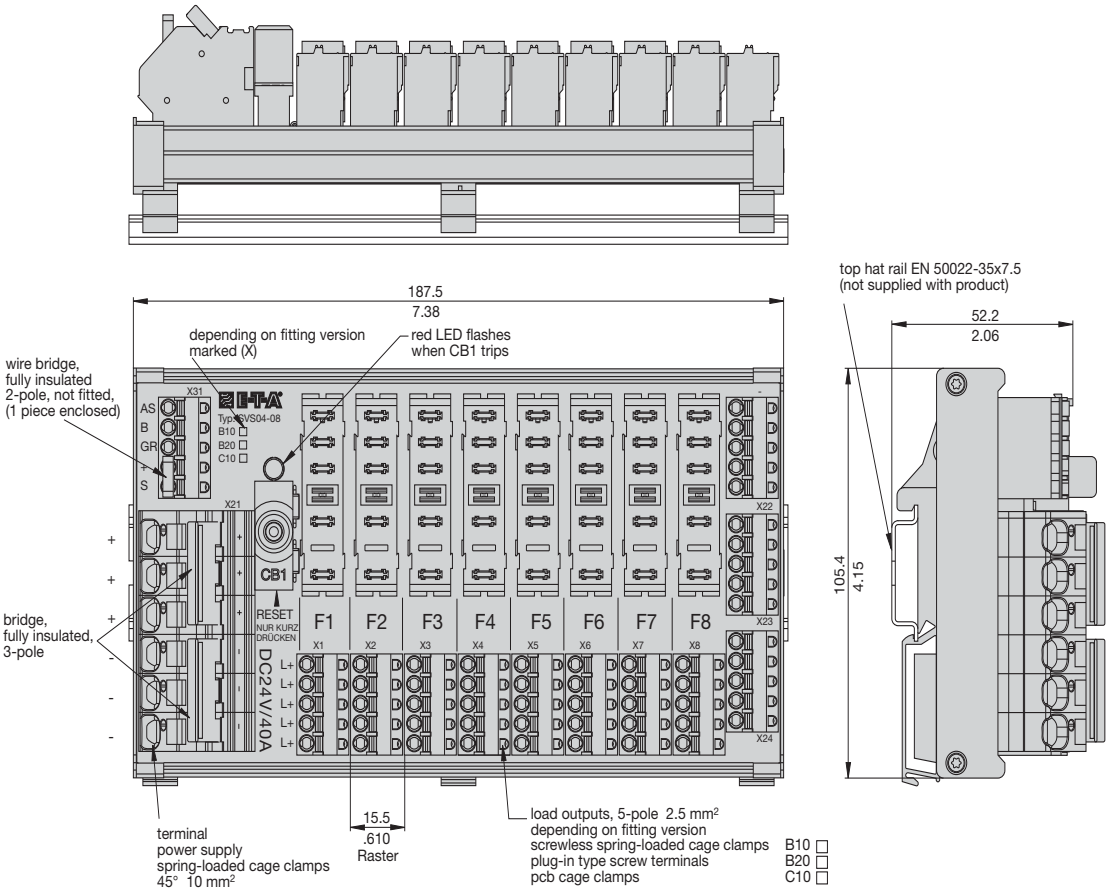






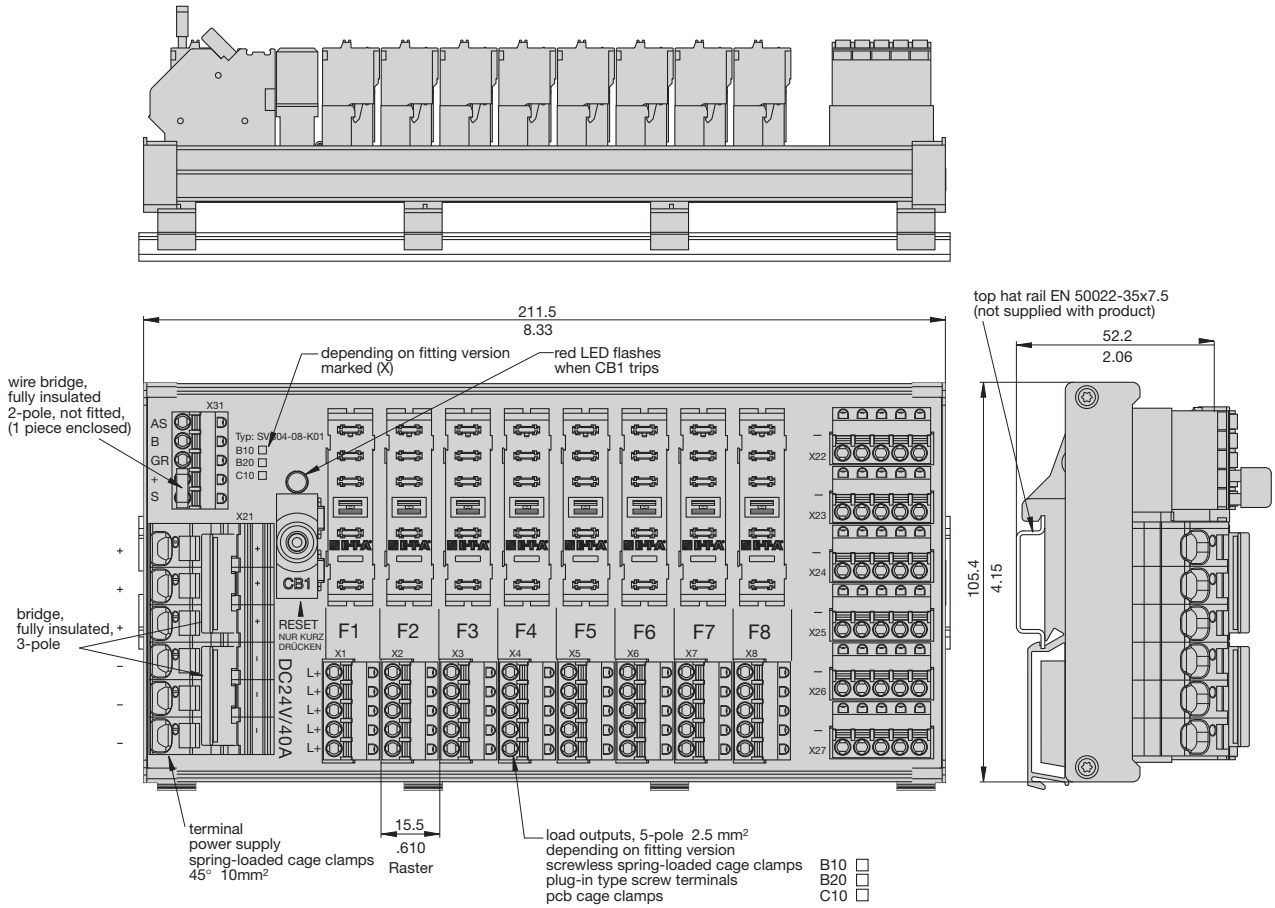
This is a metric design and millimeter dimensions take precedence (mm / inch)

Dimensions SVS04-08-... (with 15 minus terminals)

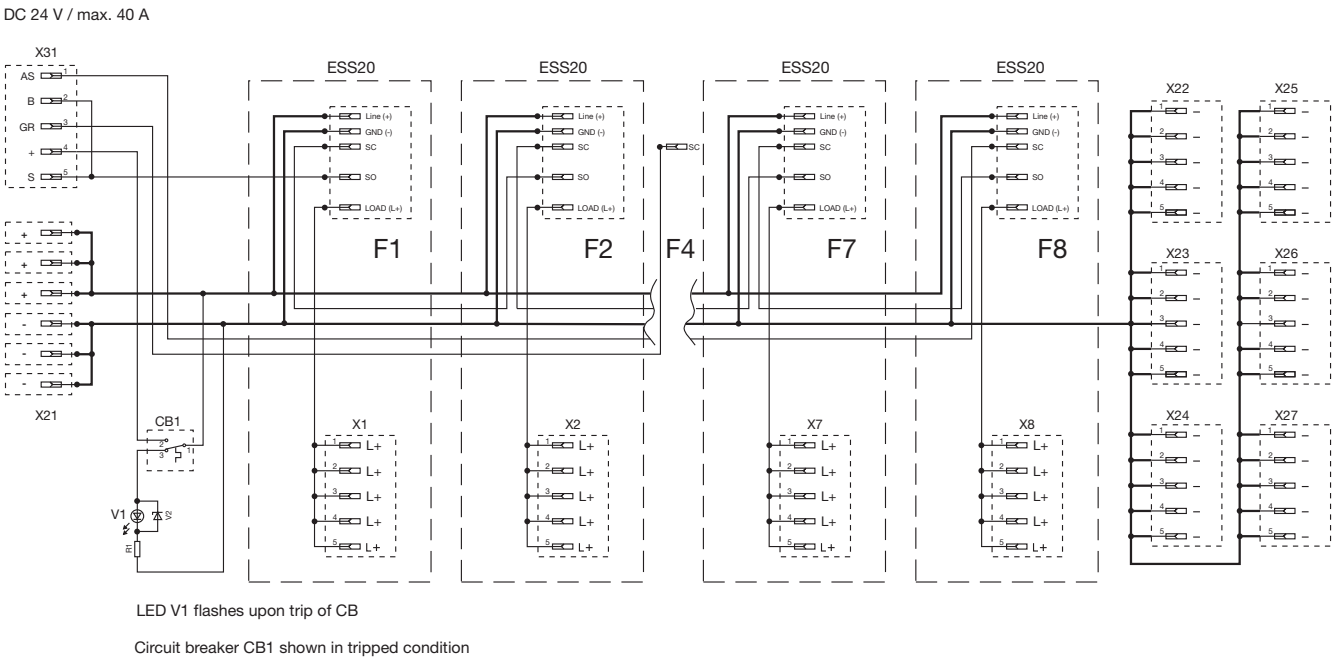


This is a metric design and millimeter dimensions take precedence (mm / inch)

Dimensions SVS04-08... K01 (with 30 minus terminals)



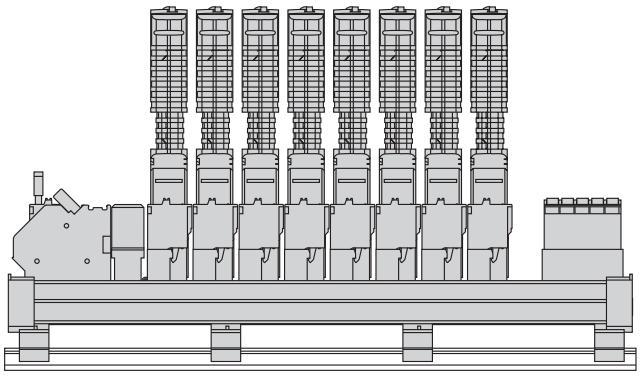
Schematic diagram SVS04-08... K01 (fitted with ESS20-003)

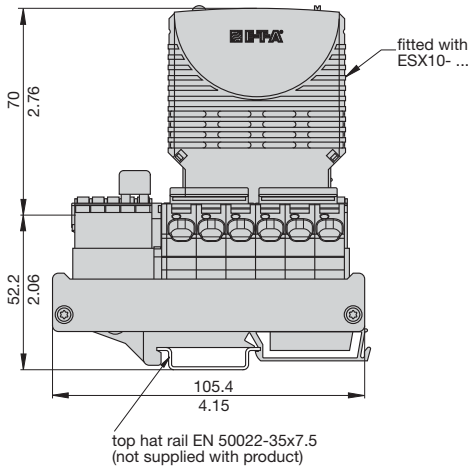


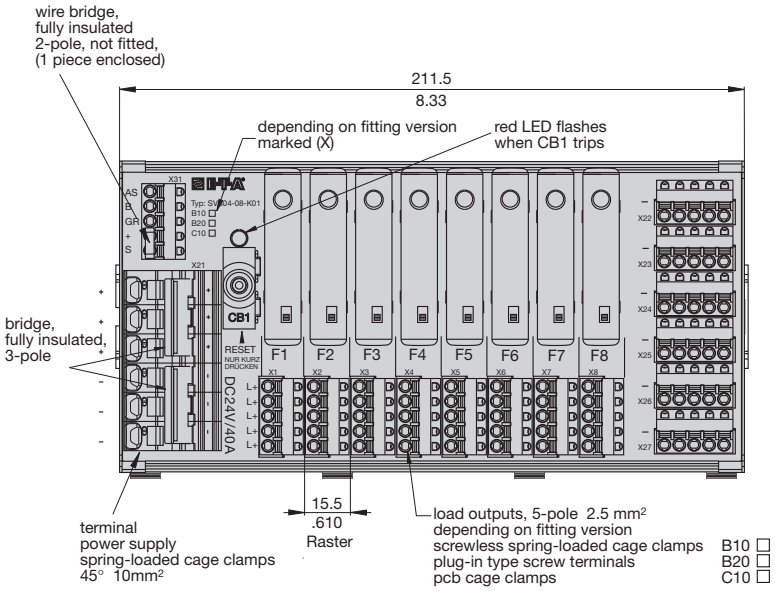
LED V1 flashes upon trip of CB

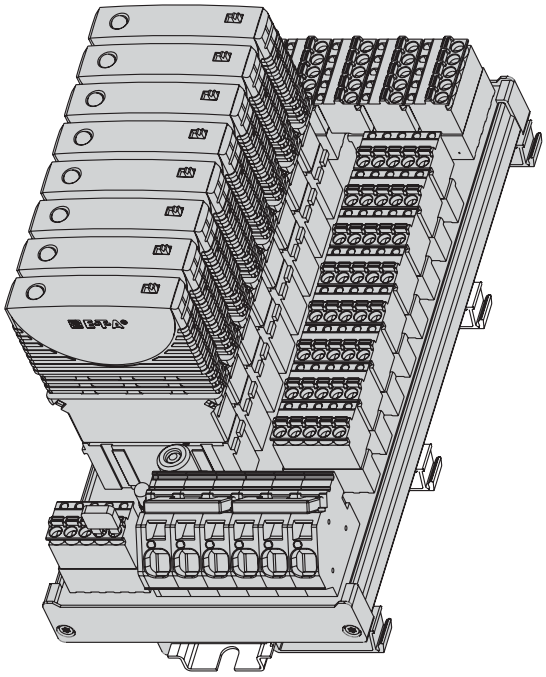
Circuit breaker CB1 shown in tripped condition

Dimensions SVS04-08... K01, fitted with ESX10-103









This is a metric design and millimeter dimensions take precedence (mm / inch)

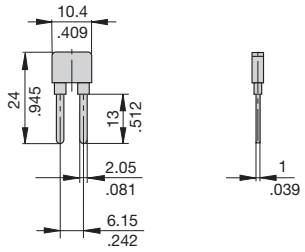
Accessories

Insulated wire bridge
Y 303 881 08

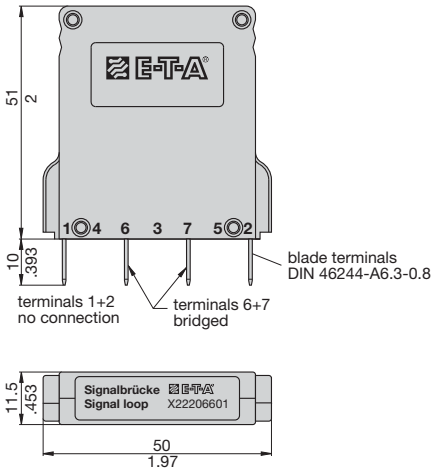
2 pcs of the insulated wire bridge are supplied with the power distribution system. The insulated wire bridges may be used for:

- terminal X31: internal DC 24 V feed for group signalisation wire bridge from (+) to (S) signal path protected by CB1

- terminal X31: internal DC 24 V feed for two-group signalisation wire bridge from (+) to (GR) signal path protected by CB1

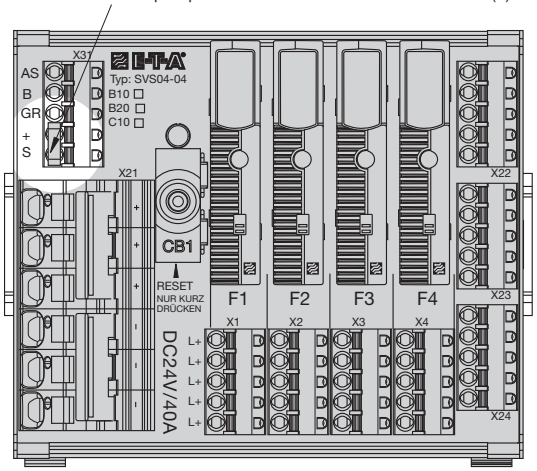


Jumper (for unused slots)
X 222 066 01



Application example for insulated wire bridge

Terminal X31 (group signalisation)
wire bridge from (+) to (SC)
internal +DC24V feed for signalisation
Thus plus potential of terminal X21+ is connected to (S)

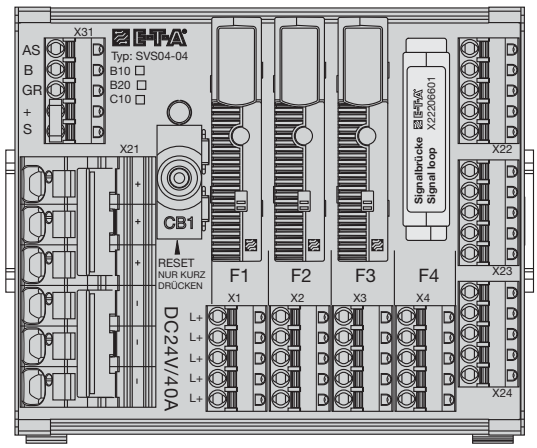


Application example for jumper to replace ESS20-003

The signalling pathway of the group signalisation is as follows:
- feed-in of +DC 24 V potential in X31 (»+« terminal) via in-built overcurrent protection CB1
- via all signal contacts of the fitted circuit breakers type ESS20-003
- back to signal output of group signalisation X31 (»AS«)

In operating condition (i.e. all circuit breakers plugged in and functional) the signalling pathway X31 from »+« to »AS« is closed.

If the distribution rail is not completely fitted with ESS20-003, the open pathway »+« to »AS« may be closed by means of a jumper type X 222 066 01.



7

This is a metric design and millimeter dimensions take precedence (mm / inch)

All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved. Product markings may not be exactly as the ordering codes. Errors and omissions excepted.

Description

The SVS09 power distribution system with integral signalling module optimises DC 24 V distribution at the machine-oriented field level in automated process control, production plants and power plants. Offering 10-plug-in sockets for electronic and thermal-magnetic circuit breakers and an integrated alarm handling function for single and group signalisation, the SVS09 distribution board can be cascaded on the master-slave principle to meet specific requirements. This cascading allows transducers, actuators, valves, distributed PLCs, intelligent terminals etc. to be clustered into distinct function groups and to be conveniently incorporated into the plant's overall alarm monitoring scheme. Particularly for applications with a great number of sensors/actuators, the SVS09 offers possibilities for cost- and space-saving in the design of control cabinets.

Each load circuit that is interrupted by an overload or short circuit trip always generates a single alarm. In addition, a group alarm for the entire SVS09 cascade is induced which will be acknowledged by means of a command element (momentary switch, relay, PLC) either locally in the control cabinet or remotely in the control room. Acknowledging the group alarm immediately reactivates the group signalling function of the SVS09 cascade remobilising it for new incoming short-circuit or overload messages.

The power distribution system SVS09 is mounted on a symmetrical rail and accommodates 10 electronic or thermal-magnetic circuit breakers. All terminals (line entry DC +24 V, GND (-) for self-supply, load outputs L(+), signalling and acknowledgment) are spring-loaded terminals.

Suitable for the following E-T-A circuit breaker types:

electronic circuit breaker	**ESS20-003..**
electronic circuit protector	**ESX10-103..**
thermal-magnetic circuit breakers	**2210-S211** (also with intermediate position)
	3600-P10, 3900-P10

Features and benefits

- integral distribution, protection and signalling functions
- power distribution and selective protection of DC 24 V load circuits form one source
- single signalling with manual reset on the protective device
- group signalling and acknowledgement by means of momentary switch/signal (local/remote)
- ease of signalling integration into signal concept of the entire system
- cascading of several SVS09 systems on the master-slave principle
- ease of configuration with wire bridges on the master SVS09

Ordering information

Type No.		
SVS09	power distribution system for ESS20-003, ESX10-103, 2210-S211, 3600-P10, 3900-P10	
	• for short circuit limited DC 24 V applications	
	• max. continuous load per SVS09 system: 30 A	
	• max. continuous load per load output: 4 A	
	Version	
	max. number of circuit breakers on the power distribution system	
	10 10 circuit breakers (F1...F10)	
		Assembly version, load output
		C10 standard: completely fitted with spring-loaded terminals (max. 1.5 mm², without wire end ferrule)
		C20 option: completely fitted with screw terminals (max. 1,5 mm², without wire end ferrule)
SVS09 - 10 - C10	ordering example	

Accessory: signalling module SIGMO-09-1xx, see Accessories

SVS09-10-C10

Technical data (T_{amb} = 25 °C, U_S = DC 24 V)

Application

modular power distribution system for short circuit limited DC 24 V applications

Line entry

rated voltage	DC 24 V (19...28 V) residual ripple 5 % max.
total current	max. 30 A DC 24 V (+) = X 21:1+, X21:2+ GND (-) = X 22:4-, X22:3- (for self-supply of circuit breakers)

F positions

10 ways for circuit breakers, suitable for types ESS20-003, ESX10-103, 2210-S211, 3600-P10, 3900-P10
SVS09-10 / 10-way / F1...F10 load output /way terminal block X24

Load outputs per position

rated voltage:	DC 24 V (19...28 V)
current:	max. 4 A[1)]
number:	1 protected load output L(+) via circuit breaker (Fx)

Single signalisation[2)]

10 x single signalisation for 10 x F(x)
terminal block X23, contacts 30-40, 31-41, 32-42, ...
potential-free make contacts (N/O)

error indication:	contact open
OK indication:	contact closed
Empty way:	contact closed
reset:	manually on plugged-in circuit breaker

Group signalisation[2)]

1 x group signalisation pro SVS09-cascade (1 master + 5 slaves)
terminal block master X22, contact 13-23,
potential-free contact
error indication: contact closed
OK indication: contact open
configuration as Local/Remote-group signal

Acknowledgment of group signalisation[1)]

1 x acknowledgment instruction per SVS09-cascade (1 master + 5 slaves) acknowledgment only on the master
terminal block master X22, contact 10-11,
terminal potential-free break contact (N/C) or bridge

with bridge:	master, acknowledgment locally, momentary switch on SVS09 (module SIGMO)
break contact N/C:	master, acknowledgment locally and remote (momentary switch, relay, external PLC)

1) When mounted side-by-side or fully fitted with thermal-magnetic circuit breaker types 2210, 3600 or 3900, each breaker should only carry 80 % of its rating or a higher rating should be chosen.

2) For failure signalisation and for cascading functions on the master-slave principle the plug-in type signalisation module SIGMO-09-1xx is required. See accessories.

Technical data (T_{amb} = 25 °C, U_S = DC 24 V)

Configuration master/slave and group signal[1)]

configuration of master/slave functions of a SVS09-cascade on the master SVS09 via bridges[3)] on terminal block X22

X22: 20-21	master/slave-marking: with bridge = master without bridge = slave
X22: 13-23	group signal locally/remote pre-adjustment = only locally, LED on master-SVS09 terminal of external indication element = locally and remote
X22: 10-11	acknowledgment of group signal locally/remote with bridge = master, acknowledgment locally with break contact = master, acknowledgment locally and remote without bridge = slave, no acknowledgment

Cascading several SVS09 systems

cascading possible with 1 x master M and max. 5 slaves S1...S5
Loop through the following 4 lines:

24 V (+)	supply voltage M-X21:2+ → S1-X21:1+ → S1-X21:2+ → S2-X21:1+...
GND (-)	self-supply circuit breaker/signalisation M-X22:3- → S1-X22:4- → S1-X22:3- → S2-X22:4-...
S (+)	group signalisation (+) M-X22:12 → S1-X22:11 → S1-X22:12 → S2-X22:11...
S (-)	group signalisation (-) M-X22:22 → S1-X22:21 → S1-X22:22 → S2-X22:21...

Termination

C10 pcb spring-loaded terminals (standard)
line entry DC 24 V on terminal block X21
line (+) terminals 1+ und 2+,
connection capability (cable cross section)
with and without wire end ferrule 0.25 - 10 mm²
stripped length 12 mm

configuration, GND (-) (self-supply) and group signal on terminal block X22
5x double level terminal block

single signalisation on terminal block X23
10x double level terminal block

load outputs on terminal block X24
5x double level terminal block
connection capability (cable cross section)
with and without wire end ferrule 0.25 - 1.5 mm²
stripped length 7 mm

plug-in type signalisation module SIGMO-09-1xx
50-pole Card Edge socket board

C20 pcb screw terminals (option)

General data

- Mounting: symmetrical rail to EN 50022 - 35 x 7.5
- Temperature range: 0...50 °C (without condensation)
- Storage temperature: -20...+70 °
- Housing material: plastic
- Protection class
  - terminals IP20 DIN 40050
  - pcb IP00 DIN 40050 (double-lacquered)
- Insulation voltage: DC 250 V (pcb)
- Dimensions: see drawings (tolerances to DIN ISO 286 part 1 IT13)
- Mass: SVS09-10 approx. 380 g

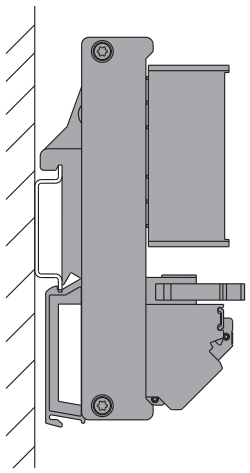
2) The plug-in type signalisation module SIGMO-09-1xx is required for failure signalisation and for the cascading functions on the master/slave principle. See accessories.

3) The SVS09 power distribution system is supplied without wire bridges and can thus be integrated into existing SVS09 cascade as a slave unit without further configuration. The user inserts wire bridges on terminal block X22 of the master.

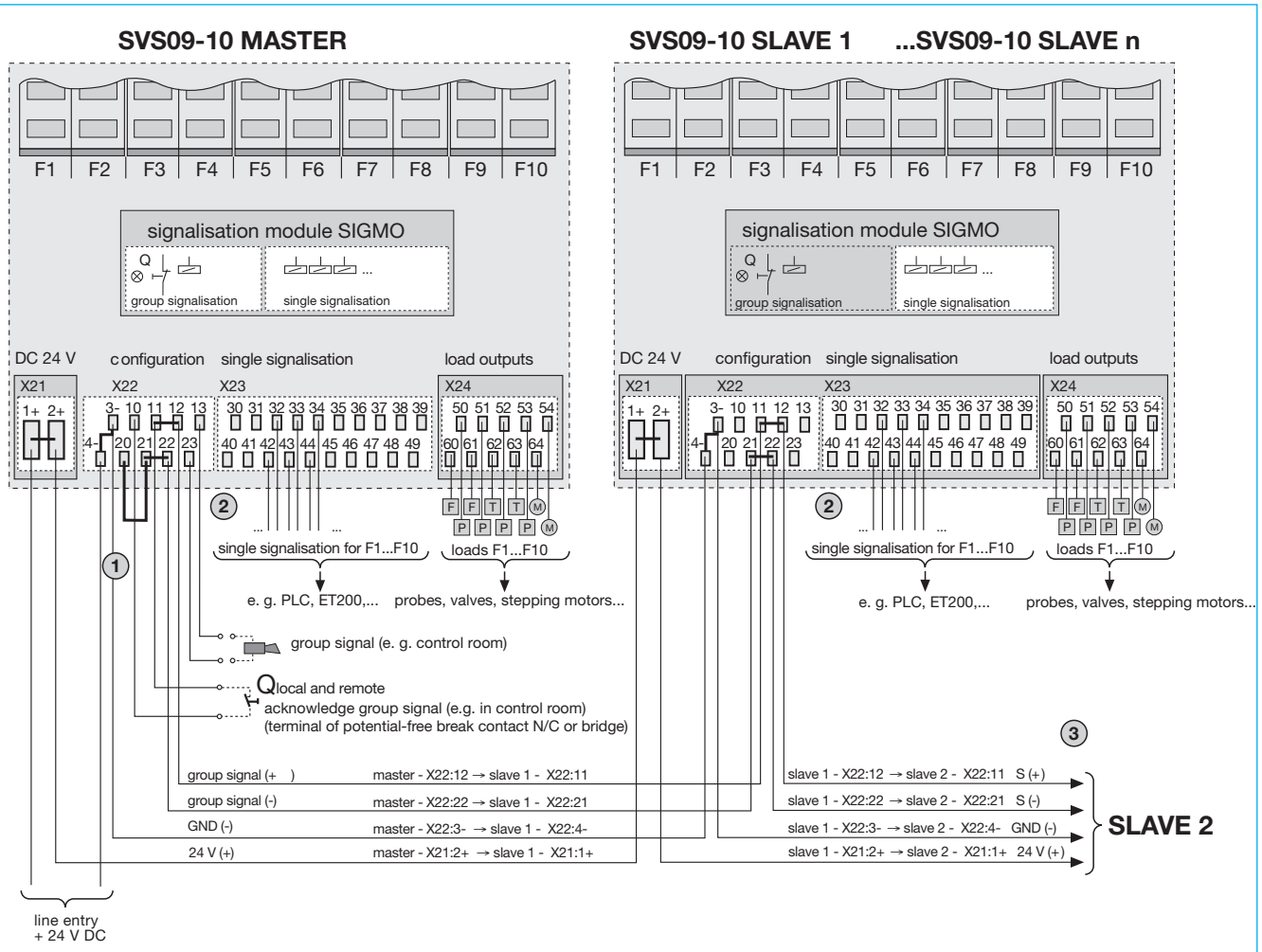
Reference notes:

- The power distribution system must be installed by qualified personnel only.
- Only after expert installation may the assembly be connected to a power supply.
- The assembly is only suitable for use at safety extra-low voltage (DC 24 V).
- Connection to higher or not reliably disconnected voltages may be hazardous or cause damage.
- The max. total current of the SVS09 system must not be exceeded.
- In each load circuit the cable cross sections and the current rating of the protective device must be selected according to the rating of the connected load.
- The technical data of the circuit breakers used must be observed.
- According to “Machinery Directive 98/37/EG and EN 60204-1, Machine Safety” special precautions have to be taken in machinery (e. g. use of a safety PLC) to prevent inadvertent start-up of machinery parts. In the event of a failure (short circuit/overload) the load circuit will be disconnected by the circuit breaker.
- After tripping of the circuit breaker and before reset the cause of tripping (short circuit or overload) must be remedied.
- The international standards (e. g. DIN VDE 0100 for Germany) must be observed with respect to installation and selection of cables.

Mounting position



Power distribution system with overcurrent protection and integral signalling logic



1 Configuration master / slave — **terminal block X22**

X22 20-21 — **master / slave marking**
with bridge: master
without bridge: slave: (factory setting)

X22 10-11 — **acknowledgment of group signalisation**
with bridge: = master: acknowledgment locally
break contact N/C: = master: acknowledgment locally + remote (momentary switch, PLC ...external)
without bridge: = slave: no acknowledgment on slave (factory setting)

2 Fault signalisation

single signal: — **terminal block X23**
terminals 30-40, 31-41, 32-42, 33-43, 34-44, 35-45, 36-46, ...
potential-free contact
fault: contact open
OK: contact closed
empty way: contact closed

group signal: — **terminal block X22**
locally: LED on master
remote: terminals 13-23, potential-free contact
fault: contact closed
OK: contact open

3 Cascading
master → slave 1 → ... slave n — **loop-through of 4 lines**

24 V (+): LINE (supply voltage)
M-X21:2+ → S1-X21:1+ X21:2+ → S2-X21:1+ X21:2+ → S3 ...

S (+): group signalisation (+)
M-X22:12 → S1-X22:11 X22:12 → S2-X22:11 X22:11 → S3...

S (-): group signalisation (-)
M-X22:22 → S1-X22:21 X22:22 → S2-X22:21 X22:22 → S3 ...

GND (-): self-supply circuit breaker / plug-in type SIGMO module
M-X22:3- → S1-X22:4- X22:3- → S2-X22:4- X22:3- → S3 ...

7

Configuration instruction

General information

- Application individually (1 SVS09-10 as master) or as cascade (1 master + max. 5 slaves)
- Any configuration with wire bridges will **only** be done on the master.
- The minimum configuration with a master and local signalisation and acknowledgment directly on the SVS09 power distribution system requires wiring of two bridges: X22:20-21 for master identification and X22:10-11 for group acknowledgment.
- Configuration of a cascade is always carried out **only** on the master with cascades consisting of several SVS09 mounted side-by-side. No adjustments are required on the slaves.
- Devices for status indication and acknowledgment for external signalisation must be connected only to the master. Should several external display elements be required (e. g. LED, acoustic signal), these must also be connected only to the corresponding signal outputs of the master.
- Unused slots do not have to be bridged, they have no influence on the signalisation of the installed circuit breakers. Unused slots forward to OK indication to the signalisation outputs.
- The SVS09 power distribution system invariably requires a plugged-in signalisation module SIGMO-09-xxx (on separate order).

Individual application

Minimal configuration: 1 master with local group signalisation and acknowledgment

step	configuration
1	**mounting:** mount SVS09 on the symmetrical rail
2	**connect DC +24 V (+) supply:** on terminal block DC 24 V, +24 V to terminal 1+
3	**connect GND (-) supply:** [1] on terminal block X22, GND (-) to terminal 4-
4	**master identification:** bridge terminals 20-21 on terminal block X22
5	**group signal locally:** pre-adjustment. In the event of group failure the red LED is always lighted (only) on the master.
6	**group acknowledgment locally:** bridge terminals 10-11 on terminal block X22 acknowledgment manually with red momentary switch on SVS09 (module SIGMO)
7	**single signalisation:** connect single signalisation for F1 through F10 on terminal block X23, F1: terminals 30-40, F2: terminals 31-41, F3: terminals 32-42 … F10: terminals 39-49 signal: potential-free contact: fault = contact open, OK = contact closed, empty way: contact closed
8	**loads:** on terminal block X24: connect loads to be protected to terminals 50 through 64

1 master with local and external (remote) group signalisation and acknowledgment

step	configuration
1	**mounting:** mount SVS09 on the symmetrical rail
2	**DC +24 V (+) supply:** on terminal block DC 24 V, connect +24 V to terminal 1+
3	**GND (-) supply:** [1] on terminal block X22, connect GND (-) to terminal 4-
4	**master identification:** bridge terminals 20-21 on terminal block X22
5	**group signal locally and remote:** on terminal block X22, connect to external display element to terminals 13-23 (e.g. LED, relay, acoustic signal). In addition the red LED is always lighted on the master with group signal signal: potential-free contact: fault = contact closed, OK = contact open
6	**group acknowledgment locally or remote:** on terminal block X22, connect a command element to the terminals 10-11, e.g. momentary switch, relay, PLC signal (potential-free break contact N/C)
7	**single signalisation:** on terminal block X23, connect single signalisation for F1 through F1 F1: terminals 30-40, F2: terminals 31-41, F3: terminals 32-42, … F10: terminals 39-49 signal: potential-free contact: fault = contact open, OK = contact closed, empty way: contact closed
8	**loads:** on terminal block X24: connect loads to be protected to terminals 50 through 64

[1] GND (-) potential serves for self-supply of SVS09 (circuit breaker and SIGMO-module)

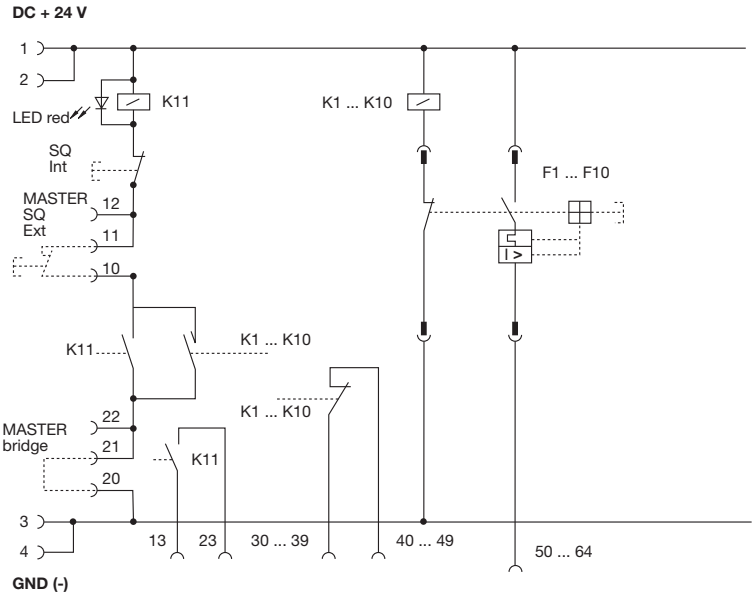
Cascading: 1 master and several (n) slaves (max. 5)

1 master + n slaves: with local group signalisation and acknowledgment	
step	**configuration**
1	**mounting:** mount all SVS09 onto symmetrical rail
2	**DC +24 V (+) supply: terminal block DC 24 V** - on the master: connect +24 V (+) to terminal 1+ and lead through to terminal 2+ for slave 1 - on slave 1: connect +24 V (+) of master to terminal 1+ + lead through to terminal 2+ for slave 2 - on slave n: connect +24 V (+) of slave (n-1)) to terminal 1+ - additional slaves: always lead through +24 V (+) of terminal 2+ for next slave, terminal 1+
3	**GND (-) supply:** [1] **terminal block X22** - on the master: connect GND (-) to terminal 4- and lead through at terminal 3- for slave 1 - on slave 1: connect GND (-) of master to terminal 4- and lead through at terminal 3- for slave 2 - on slave n: connect GND (-) of slave (n-1) to terminal 4- - additional slaves: always lead through GND (-) of terminal 3- for next slave, terminal 4-
4	**master identification:** bridge terminals 20-21 on the SVS09-master, on terminal block X22 Note: no adjustments on the slaves required!
5	**group signal locally:** pre-adjustment. In the event of group fault the red LED is always lighted (only) on the master.
6	**group acknowledgment locally:** bridge terminals 10-11 on SVS09-master, terminal block X22 acknowledgment manually with red momentary switch on SVS09-master (module SIGMO) Note: no adjustments on the slaves required!
7	**single signalisation:** on terminal block X23, connect single signalisation for F1 through F10 F1: terminals 30-40, F2: terminals 31-41, F3: terminals 32-42, … F10: terminals 39-49 signal: potential-free contact: fault = contact open, OK = contact closed, empty way: contact closed
8	**loads:** on terminal block X24: connect loads to be protected to terminals 50 through 64

1 master + n slaves: with local and external (remote) group signalisation and acknowledgment	
step	**configuration**
1	**mounting:** mount all SVS09 onto the symmetrical rail
2	**DC +24 V (+) supply: terminal block DC 24 V** - on the master: connect +24 V (+) to terminal 1+ and lead through terminal 2+ for slave 1 - on slave 1: connect +24 V (+) of master to terminal 1+ and lead through terminal 2+ for slave 2 - on slave n: connect +24 V (+) of slave (n-1) to terminal 1 - additional slaves: always lead through +24 V (+) of terminal 2+ for next slave, terminal 1+
3	**GND (-) supply:** [1] **terminal block X22** - on the master: connect GND (-) to terminal 4- and lead through at terminal 3- for slave 1 - on slave 1: connect GND (-) of master to terminal 4- and lead through at terminal 3- for slave 2 - on slave n: connect GND (-) of slave (n-1) to terminal 4- - additional slaves: always lead through GND (-) of terminal 3- for next slave, terminal 4-
4	**master identification:** bridge terminals 20-21 on the SVS09-master, on terminal block X22 Note: no adjustments on the slaves required!
5	**group signal locally and remote:** connect an external display element (e.g. LED, relay, acoustic signal) on master, terminal block X22, to terminals 13-23. In addition the red LED is always lighted in the event of group signal. signal: potential-free contact: fault = contact closed, OK = contact open Note: no adjustments on the slaves required, group acknowledgment is valid for the entire cascade.
6	**group acknowledgment locally or remote:** connect a command element on master, terminal block X22, to terminals 10-11, e. g. momentary switch, relay, PLC signal (potential-free break contact N/C) Note: no adjustments on the slaves required, group acknowledgment is valid for the entire cascade.
7	**single signalisation:** on terminal block X23, connect single signalisation for F1 through F10 F1: terminals 30-40, F2: terminals 31-41, F3: terminals 32-42, … F10: terminals 39-49 signal: potential-free contact: fault = contact open, OK = contact closed, empty way: contact closed
8	**loads:** on terminal block X24: connect loads to be protected to terminals 50 through 64

[1] GND (-) potential serves for self-supply of the SVS09 (circuit breaker and SIGMO module)

Schematic diagram

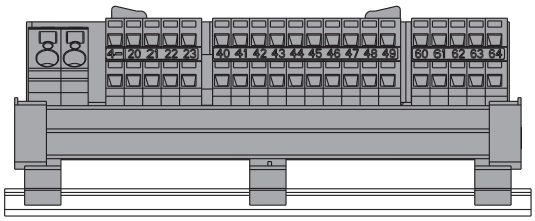


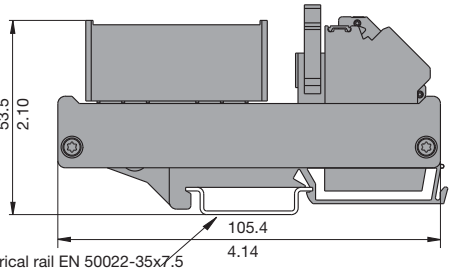
11/10	MASTER bridge or break contact
21/20	MASTER bridge

relay contacts in OFF condition

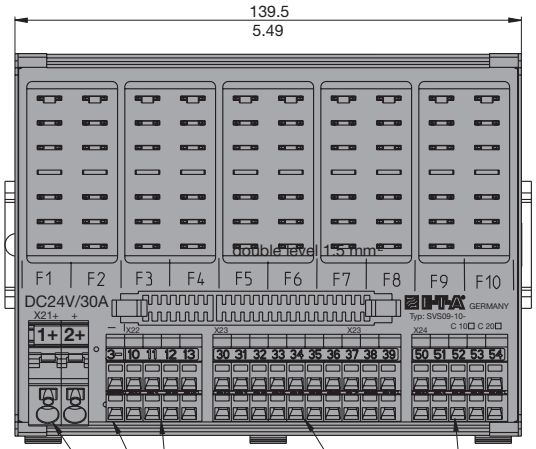
K1 ... K10	single signalisation
K11	group signalisation
12	group signalisation (+)
22	group signalisation (-)

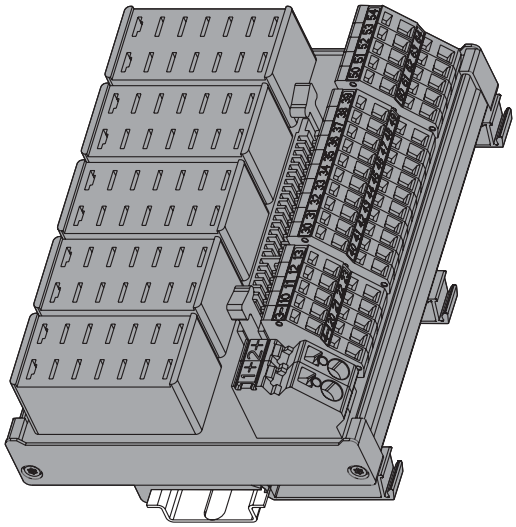
Dimensions SVS09-10-C10





symmetrical rail EN 50022-35x7.5
(not included in delivery)





screw terminals
power supply (++)
spring loaded terminals
45° 10.0 mm²

group signalisation
spring-loaded terminals
double level 1.5 mm²

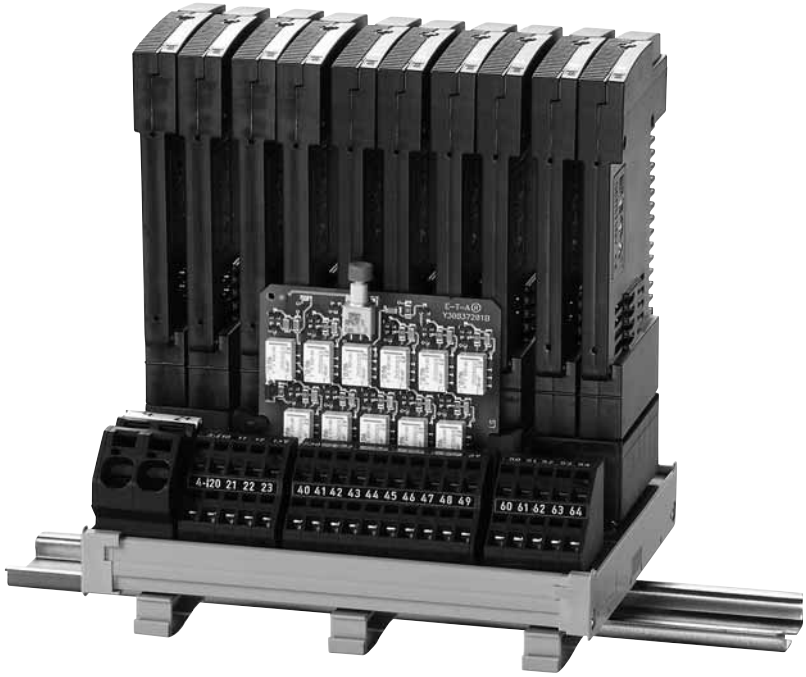
GND (-)
self-supply
spring-loaded terminals
double level 1.5 mm²

single signalisation
spring-loaded terminals
double level 1.5 mm²

load outputs
spring-loaded terminals
double level 1.5 mm²

This is a metric design and millimeter dimensions take precedence (mm / inch)

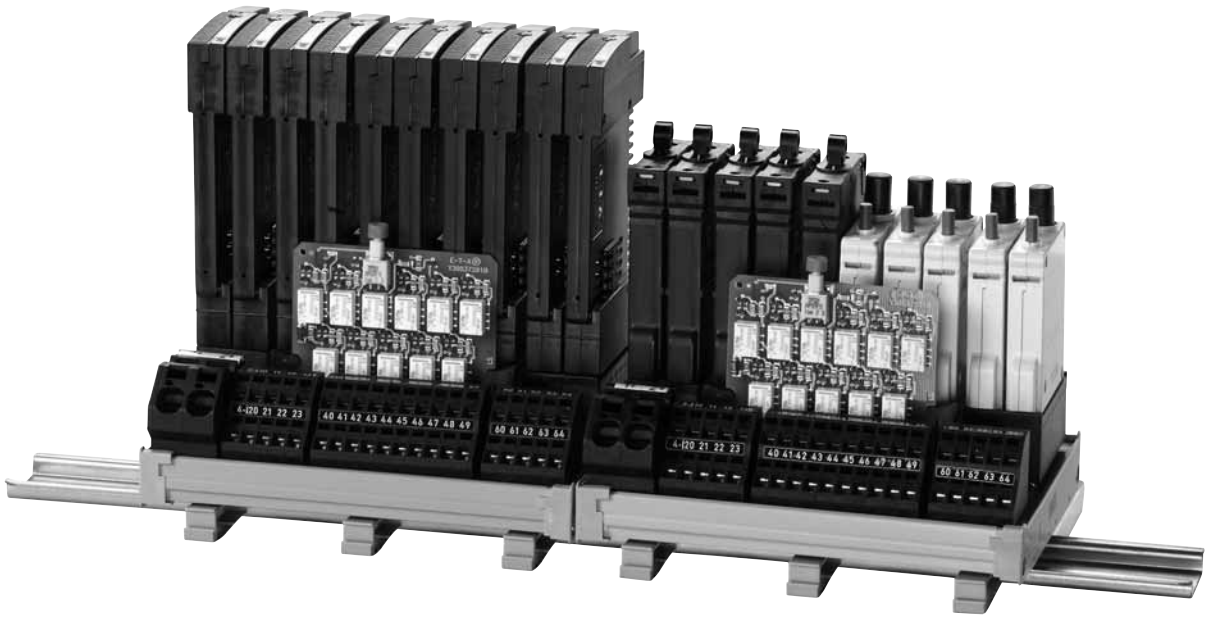
Application example: SVS09-10-C10 fitted with ESS20-003



Plug-on module (circuit breaker / signalisation module SIGMO-09-1xx)
to be ordered separately

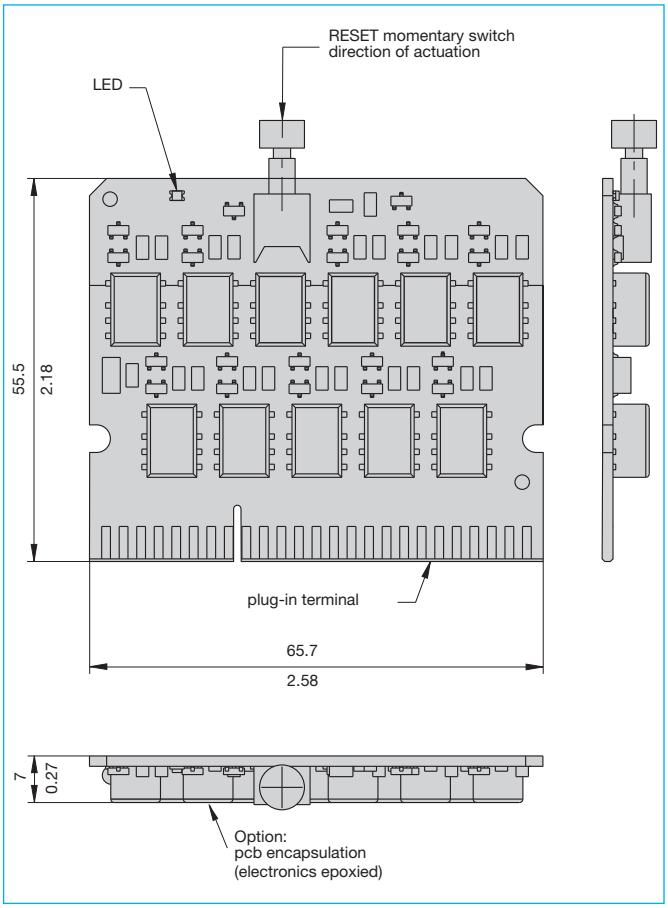
Application example: SVS09 cascade with 1 master and 1 slave

SVS09-10-C10 master fitted with 10 x ESS20-003
SVS09-10-C10 slave fitted with 5 x 2210-S2 and 5 x 3600



Accessories

Signalisation module SIGMO-09-1xx



Technical data (T_{amb} = 25 °C, U_S = DC 24 V)

Voltage supply

rated voltage: DC 24 V (19...28 V)
residual ripple 5 % max.
supply via SVS09

Current load

normal operation without trip: 0 mA
max. 150 mA with 10-way fault on SVS09 (all relays loaded)

Contacts

min. 10 V / 10 mA
max. 28 V / 200 mA...

Status indication and actuation

LED red:	lighted in the event of group fault
momentary switch red:	for local acknowledgment of group signalisation
remote acknowledgment:	terminal of an external command (momentary switch, relay, PLC signal) rupture capacity 28 V / 20 mA integral free-wheeling diode in SIGMO module

Reverse polarity protection

Protected against reverse polarity of potentials DC 24 V (+) and GND (-) on the SVS09. No function if connected reversely

Application

Plug-in type signalisation module for the power distribution system SVS09 for group signalisation and acknowledgment for an isolated SVS09 application or a cascade. The SIGMO module ensures a group fault to be indicated after each trip of a circuit breaker on the SVS09. Fault indication can be – depending on the configuration[1)] – locally on the power distribution system (red LED) or locally and externally (remotely), e. g. by means of an acoustic signal in the control room. Acknowledgment of the group signal can also be only locally via a momentary switch on the power distribution system, or locally and remotely, e. g. via a momentary switch in the control room. Acknowledgment of the group signal re-activates the group signalisation, so that it is released again and ready for new error messages. The single signalisation and the tripped circuit breaker will be manually reset by actuating the push button of the circuit after remedy of the failure.

Note: Proper function of the signalisation module SIGMO-09-1xx is ensured only in connection with the power distribution system SVS09-10-Cxx.

[1)] see power distribution system SVS09, basic schematic diagram and configuration instruction

Ordering information

Type No.			
SIGMO	signalisation module for SVS09 power distribution system		
	● plug-in type signalisation module		
	● DC 24 V-applications		
	● supply via SVS09		
	Version for power distribution system		
	09	SVS09-10 for circuit breakers (F1...F10)	
		Pcb version	
		100	standard: plug-in type signalisation module for circuit breaker (F1...F10) pcb populated, open,
		120	option: plug-in type signalisation module for circuit breaker (F1...F10) pcb populated, encapsulated
SIGMO -	09 -	100	ordering example

7

This is a metric design and millimeter dimensions take precedence (mm / inch)

All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved.Product markings may not be exactly as the ordering codes. Errors and omissions excepted.

Power-D-Box with sockets

Description

Power-D-Box 19" power distribution system fitted with E-T-A sockets 63-P10-Si to accommodate thermal-magnetic circuit breakers with each terminal block accepting up to 6 circuit breakers. Other rack types upon request.

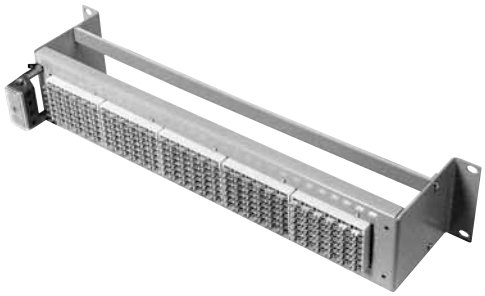
Typical applications

Circuit breakers that may be accommodated on Power-D-Box 19" racks fitted with E-T-A sockets 63-P10-Si:

type 2210	see section 2 - thermal-magnetic overcurrent CBs
type 3600	see section 2 - thermal-magnetic overcurrent CBs
type 3900	see section 2 - thermal-magnetic overcurrent CBs
type E-1048-60.	see section 6 - SSRPCs

Ordering information

X 211 530 01	for 5 E-T-A terminal blocks 63-P10-Si



Power-D-Box with sockets

Technical data

X 211 530 01	2 U
Material:	The Power-D-Box 19" power distribution system and the mounting flanges are made of 2 mm thick steel sheet.
Colour:	RAL 7032, grey

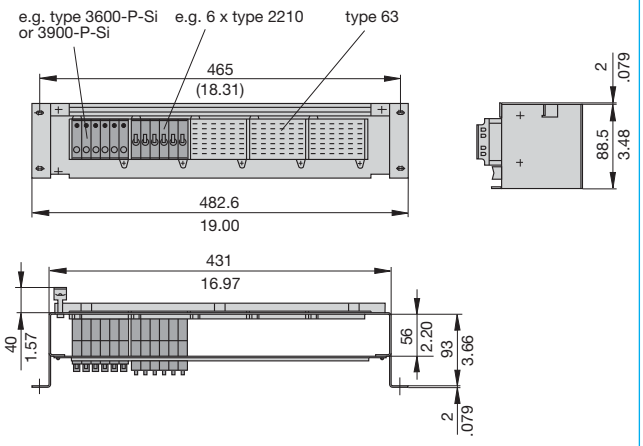
Connection

By means of one or two 4-pole female multi-pin connectors for max. 4 mm^2 cables, which may be connected either on the right or left side of the rack.

7

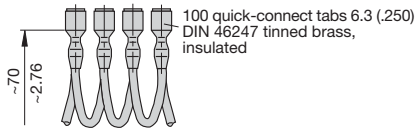
Dimensions

X 211 530 01
19" rack Power-D-Box with 5 E-T-A sockets 63-P10-Si

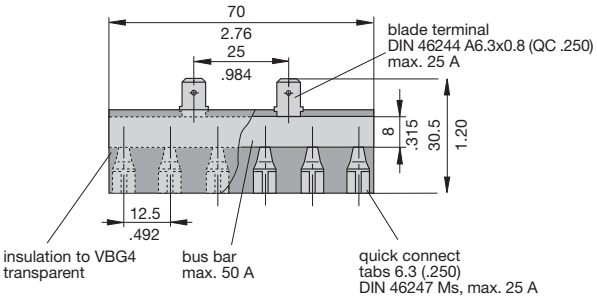


Accessories

Connector bus links -P10
X 210 588 01/ 1.5 mm² (AWG 16), brown (up to 13 A max. load)
X 210 588 02/ 2.5 mm² (AWG 14), black (up to 20 A max. load)
X 210 588 03/ 2.5 mm² (AWG 14), red (up to 20 A max. load)
X 210 588 04/ 2.5 mm² (AWG 14), blue (up to 20 A max. load)



Busbar 50 A for socket 63-P10-Si
X 221 760 11



7

This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved.Product markings may not be exactly as the ordering codes. Errors and omissions excepted.

Description

The compact 19" Power-D-Box features aluminium profiled cross members with an anodised front plate. The panel cutout accommodates up to 30 positions numbered 1 to 30. Blanks cover unused positions, with 6, 12, 24 or 30 being ”open“.

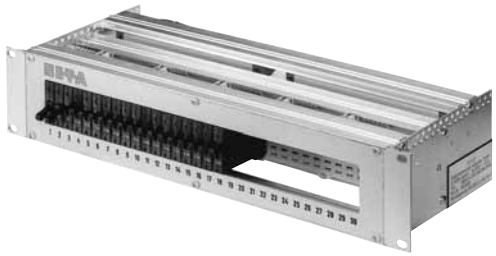
The rack can be fitted with plug-in type circuit breakers 3600/3900 and 2210, electronic circuit breakers ESS20 or electronic circuit protector ESX10 or E-T-A Solid State Remote Power Controllers (SSRPC) E-1048-600/700. Please specify the correct option according to the ordering information shown, as different depths as well as different heights of the front cut-out must be allowed for.
The devices are plugged into sockets 63-P10-Si (6 positions each). These sockets (S1...S5) are provided with 6.3 mm blade terminals on the rear.

Four busbars (X1...X4) with 6 (signalisation) or 15 (feed) positions each (6.3 mm blade terminals) provide easy terminal connection.

Prewired options available ex factory are:
- Parallel connected feed (2.5 mm²) with separate supply for each socket via busbars X1 and X2.
  Choice of wiring colours: black, red, blue, grey. Outputs are not connected.
- Parallel connected auxiliary contacts (N/C) grouped per socket, 1 mm², via busbars X3 (supply) and X4 (signalisation).
  Choice of wiring colours: black, red, blue, grey.
- Series connected auxiliary contacts (N/O) of all positions with 1 mm², via busbars X3 (feed) and X4 (signalisation).
  Choice of wiring colours: black, red, blue, grey.
- Custom designed connection according to specification.

Other fittings, e.g. back-up fuse, separate circuits or redundancy, multipole circuits, screw terminals, custom designed markings etc., are available to special order (please enquire).

A compact printed circuit board with rear screw terminals is available as an alternative to the standard cable wiring (see pages **7** - 45 to **7** - 51).



Power-D-Box with sockets pre-wired

Technical data

19" Power-D-Box	length: 84 modules (426.72 mm) height: 2 U (88.90 mm) depth: 205...295 mm (depending on the selected version) material: aluminium, anodized
Front cutout for 30 positions, numbered 1 through 30	1 socket = 6 positions (No. 1 - 6) 2 sockets = 12 positions (No. 1 - 12) 3 sockets = 18 positions (No. 1 - 18) 4 sockets = 24 positions (No. 1 - 24) 5 sockets = 30 positions (No. 1 - 30) blanks cover unused sockets.
Mounting socket	polarised E-T-A mounting socket type 63-P10-Si (6 positions) rear blade terminals 6.3 mm max. load: 16 A continuous
Busbars Feed (X1, X2)	15-way for 6.3 mm blade terminals max. current rating: 63 A
Busbars Auxiliary contacts (X3, X4)	6-way for 6.3 mm blade terminals max. current rating: 32 A
Feed	busbar 50 A per socket (= 6 positions) HO7Z-K cables 2.5 mm² with fully insulated 6.3 mm blade terminals to VBG 4 one cable per socket max. current rating: 20 A
Auxiliary contact wiring	HO7Z-K cables 1 mm² with fully insulated 6.3 mm blade terminals to VBG 4 max. current rating: 4 A
Wire colour option	black, red, blue or grey
Voltage rating	AC 250 V/DC 65 V
Housing ground/earth	on the inside via M6 screw by means of ring cable lug (two with redundant systems)

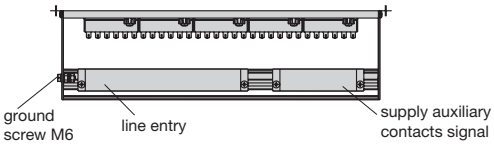
Ordering information

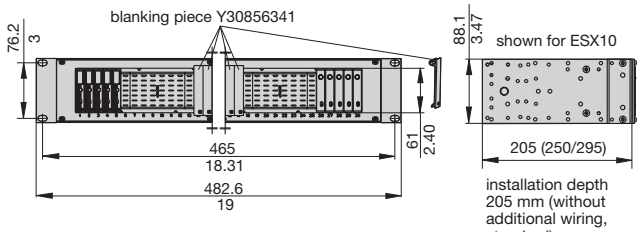
Type No.	
19BGT	19" Power-D-Box with sockets pre-wired
	Height
1	1 U
2	2 U
3	3 U
	Prepared for circuit breaker types (supplied separately)
2210	for circuit breaker type 2210
3600	for circuit breaker type 3600/3900
1048	for SSRPC E-1048-600
ESS20	for electronic circuit breaker type ESS20
ESX10	for electronic circuit protector type ESX10
	Number of positions
06	6-poles
12	12-poles
18	18-poles
24	24-poles
30	30-poles
nn	number of poles (special version)
	Feed prewired
A0	without
R0	without, redundant
A2	line feed pre-wired (2.5 mm²) 1-pole (or 1 circuit)
R2	line feed pre-wired 1-pole redundant
A4	line feed pre-wired (2.5 mm²) 2-pole (or 2 circuits)
R4	line feed pre-wired 2-pole redundant
A6	line feed pre-wired 3-pole (or 3 circuits)
R6	line feed pre-wired 3-pole redundant
A8	line feed pre-wired 4-pole (or 4 circuits)
R8	line feed pre-wired 4-pole redundant
	Wire colour (not with A0 + R0)
	1-pole
SW	black
RT	red
BL	blue
GR	grey
	2-pole
RB	1st pole red, 2nd pole blue
RS	1st pole red, 2nd pole black
SB	1st pole black, 2nd pole blue
	3-pole
SW	1st pole to 3rd pole black
SB	1st pole to 2nd pole black, 3rd pole blue
	4-pole
SW	1st pole to 4th pole black
SB	1st pole to 3rd pole black, 4th pole blue
	Auxiliary contacts prewired (1 mm²)
B0	without
B1	auxiliary contacts connected in series (please consider plug-in device)
B2	auxiliary contacts connected in parallel (please consider plug-in device)
	Wire colour (not with B0)
SW	black
RT	red
BL	blue
GR	grey (standard)
S...	customer-specific version

19BGT - 2 - 2210 - 24 A2 SW - B1 GR - S... ordering example

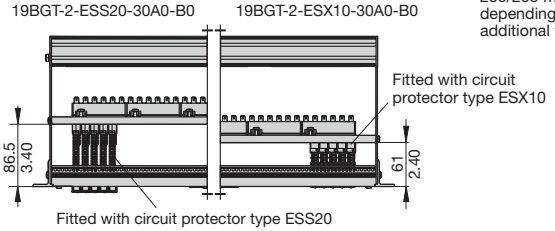
Dimensions

Bottom view
19BGT-2-ESS20-30A0-B0

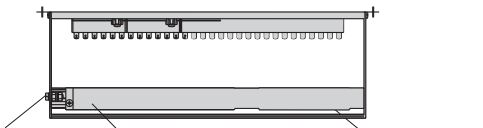


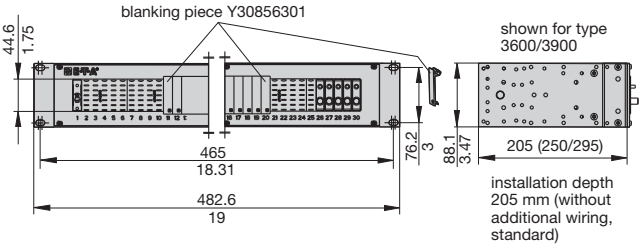


Top view
19BGT-2-ESS20-30A0-B0 19BGT-2-ESX10-30A0-B0

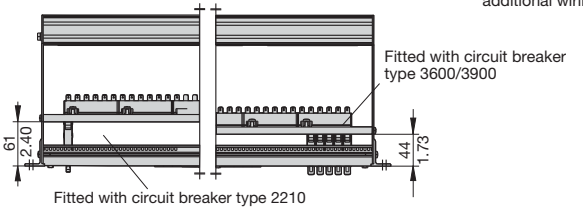


Bottom view
19BGT-2-2210-30A0-B0





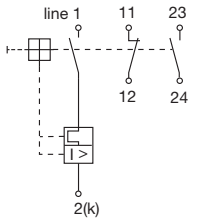
Top view
19BGT-2-2210-30A0-B0 19BGT-2-3600-30A0-B0



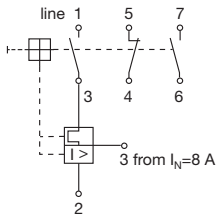
This is a metric design and millimeter dimensions take precedence (mm/inch)

Internal connection diagrams

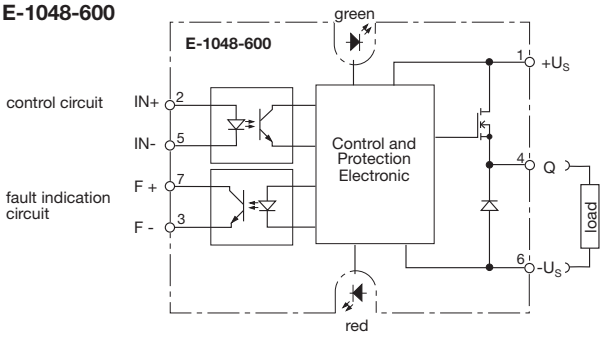
2210



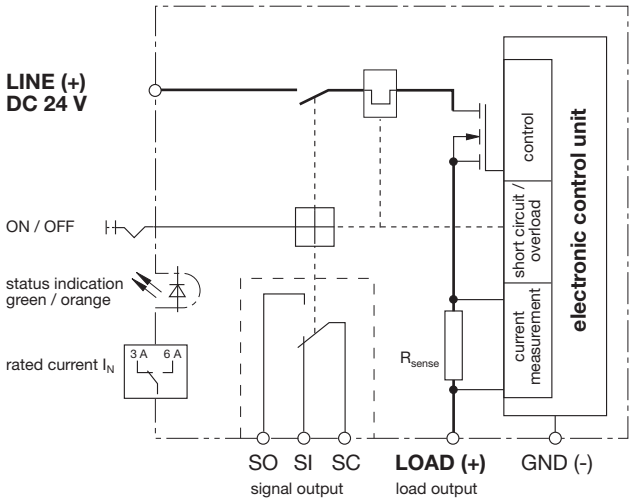
3600/3900



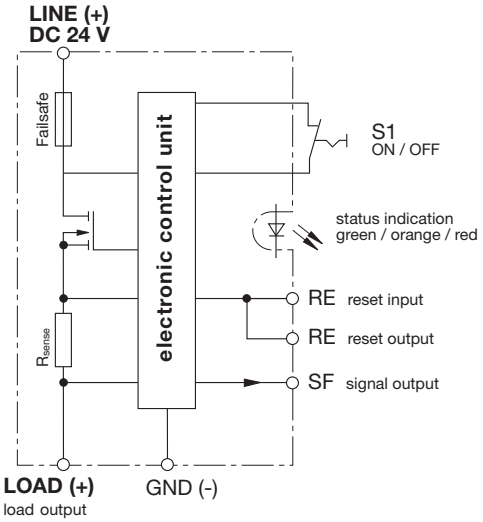
E-1048-600



ESS20-003- … (group signalisation with change over)



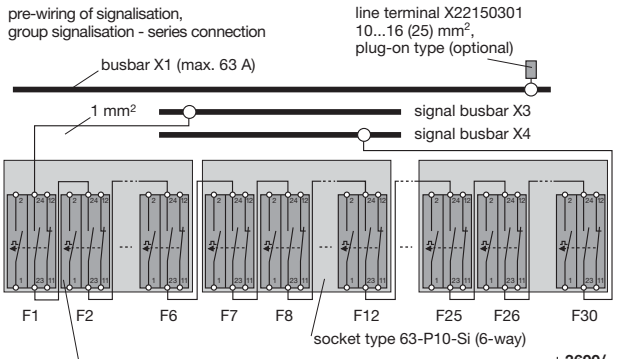
ESX10-124-…



7

Termination

19BGT-2-2210/3600-30A0-**B1**

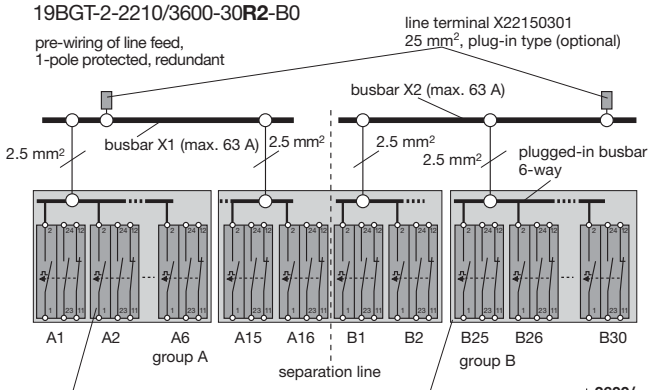


	2210	3600/ 3900
	2	1
	12	4
	24	6
	n.c.	3
	23	7
	11	5
	1	2

load terminal pin 1, blade terminals 6.3 mm
auxiliary contact terminals:
11-12 make contact, blade terminals 6.3 mm
auxiliary contact terminals:
23-24 break contact, blade terminals 6.3 mm

pin assignment socket 63-P10-Si (per pole)

19BGT-2-2210/3600-30**R2**-B0

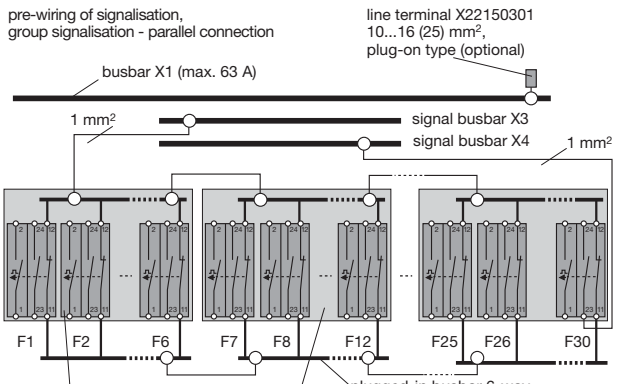


	2210	3600/ 3900
	2	1
	12	4
	24	6
	n.c.	3
	23	7
	11	5
	1	2

load terminal pin 1, blade terminals 6.3 mm
auxiliary contact terminals:
11-12 make contact, blade terminals 6.3 mm
auxiliary contact terminals:
23-24 break contact, blade terminals 6.3 mm

pin assignment socket 63-P10-Si (per pole)

19BGT-2-2210/3600-30A0-**B2**

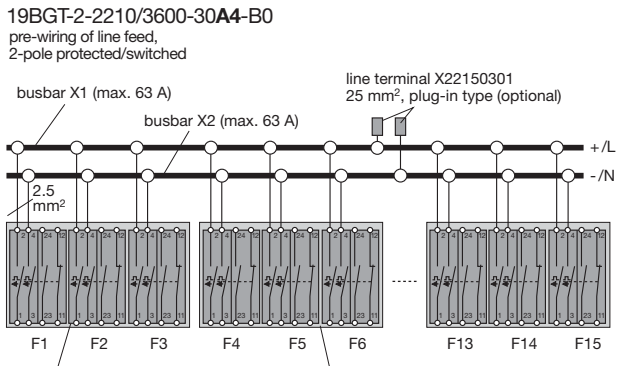


	2210	3600/ 3900
	2	1
	12	4
	24	6
	n.c.	3
	23	7
	11	5
	1	2

load terminal pin 1, blade terminals 6.3 mm
auxiliary contact terminals:
11-12 make contact, blade terminals 6.3 mm
auxiliary contact terminals:
23-24 break contact, blade terminals 6.3 mm

pin assignment socket 63-P10-Si (per pole)

19BGT-2-2210/3600-30**A4**-B0

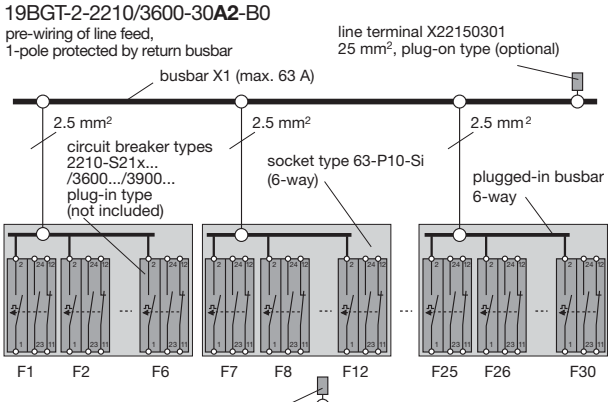


	2210	3600/ 3900
	2	1
	12	4
	24	6
	n.c.	3
	23	7
	11	5
	1	2

load terminals:
Pin 1 (+/-), Pin 3 (+/-), blade terminal 6.3 mm
auxiliary contact terminals:
11-12 make contact, blade terminals 6.3 mm
auxiliary contact terminals:
23-24 break contact, blade terminals 6.3 mm

pin assignment socket 63-P10-Si (per pole)

19BGT-2-2210/3600-30**A2**-B0

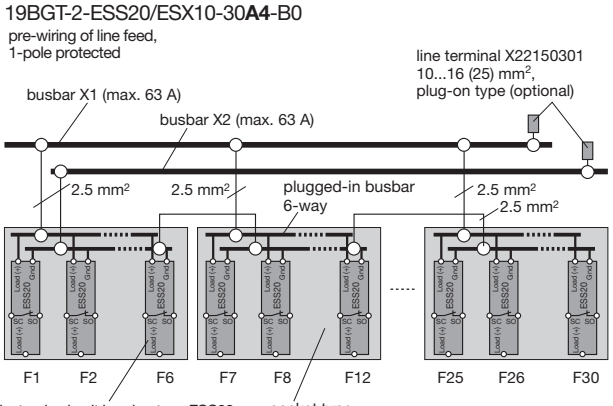


	2210	3600/ 3900
	2	1
	12	4
	24	6
	n.c.	3
	23	7
	11	5
	1	2

load terminals 1. pole to PIN 1, blade terminals 6.3 mm
load terminals 2. pole to return busbar X2,
blade terminals 6.3 mm
auxiliary contact terminals: 11-12 make contact,
blade terminals 6.3 mm
auxiliary contact terminals: 23-24 break contact,
blade terminals 6.3 mm

pin assignment socket 63-P10-Si (per pole)

19BGT-2-ESS20/ESX10-30**A4**-B0



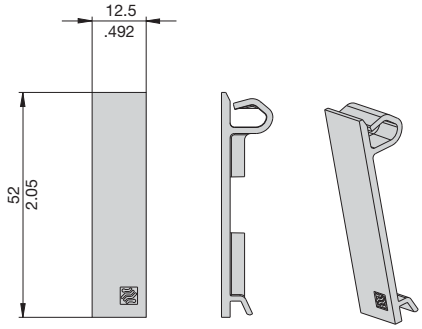
	ESS20	ESX10
	LINE	1LINE
	Gnd	11Gnd
	SC	13SC
	n.c.	n.c.
	SO	14SO
	LOAD	2LOAD

load terminals LOAD(+), blade terminals 6.3 mm
auxiliary contact terminals SC-SO make contact,
blade terminals 6.3 mm

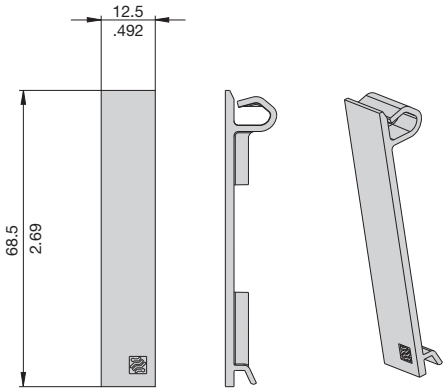
pin assignment socket 63-P10-Si (per pole)

Accessories

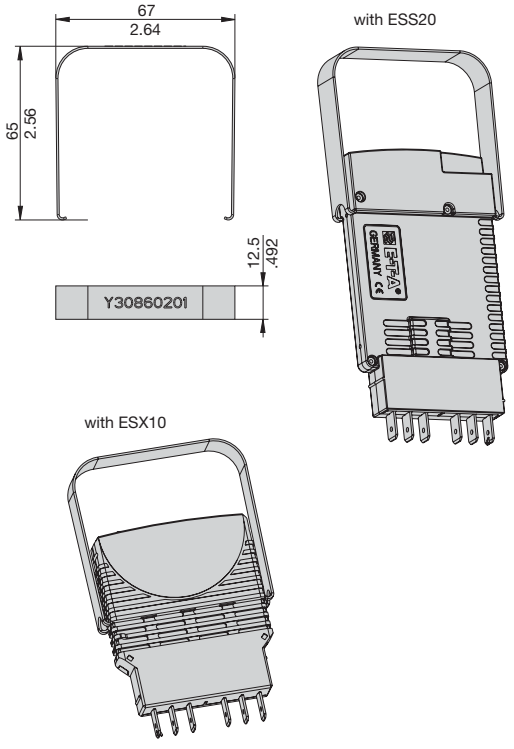
Blanking piece for Power-D-Box
(types 3600/3900, 2210)
Y 308 563 01



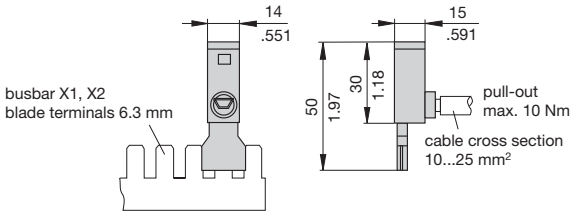
Blanking piece for Power-D-Box
(types ESS20/ESX10)
Y 308 563 41



Withdrawal tool for ESS20/ESX10
Y 308 602 01

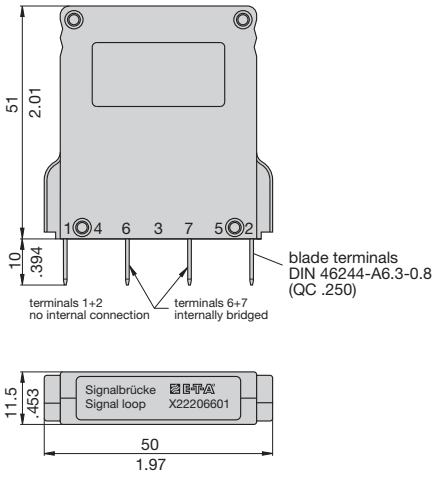


Line Terminal (max. 63 A)
X 221 503 01
max. tightening torque 3.0 Nm



Caution: cables must not be connected with terminal plugged in

Jumper
to bypass looped through unused auxiliary contacts
(series connection)
X 222 066 01



This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved.Product markings may not be exactly as the ordering codes. Errors and omissions excepted.

Description

The compact 2U 19" Power-D-Box with sockets mounted on a pcb and pre-connected features aluminium profiled cross members with an anodised front plate. The panel cutout accommodates up to 30 positions numbered 1 to 30. It is possible to have 6, 12, 18, 24 or 30 prepared slots or to have a redundant distribution with up to 2 x 15 positions.

The Power-D-Box accommodates plug-in type circuit breakers 3600/ 3900 and 2210, solid state remote power controller E-1048-700, electronic circuit breaker type ESS20 and electronic circuit protector ESX10. The required device must be specified in the ordering information as both different installation depth and pcb pin assignments must be allowed for.

The devices are plugged into corresponding sockets type 63-P10-Si (6 positions each), soldered onto the pcb and pre-connected.

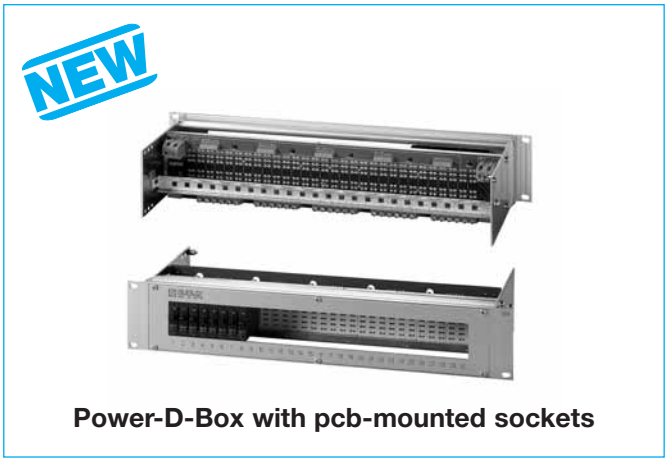
The system is configured with redundancy as standard (2 x 15 positions), but the two groups may be interconnected so as to provide a non-redundant system if required. Line entry within each group is single pole or double pole.
With single pole line entry all slot numbers per group are combined and connected via an M6 terminal stud by means of a ring cable lug.
With double pole line entry, odd and even slot numbers are integrated into separate circuits each of which is connected via 10 mm² screw terminals. This allows use of double pole circuit breakers.

Load outputs are connected by means of screw terminals up to 4 mm² on the rear of the pcb.

The system offers a number of signalisation possibilities and separation for redundancy is also possible:
- series connection of make contacts (group signalisation via closed circuit current)
- parallel connection of break contacts (double sided for group signalisation via closed circuit current)
- parallel connection of break contacts (only one-sided, second side of break contacts will be connected individually with the terminals for single signalisation via closed or open-circuit current)

Termination is on the rear side by means of screw terminals up to 1.5 mm² (group connection) and up to 1 mm² (single signalisation) on the pcb. When using ESS20, ESX10 or E-1048-700, the required Gnd terminals as well as control and reset signals will also be connected via the terminals for group or single signalisation.

Upon request the group distribution (redundancy) can be cancelled by means of jumpers. Additional terminals on the rear side of the rack simplify connection. It is also possible to provide terminals for return lines from the individual loads so as to integrate the necessary external wiring into the rack.



Power-D-Box with pcb-mounted sockets

Technical data

19"Power-D-Box	length: 84 modules (426.72 mm) height: 2 U (88.90 mm) depth: 205...295 mm depending on the version material: aluminium, partly anodized
Front cutout for 30 positions, numbered 1 through 30	1 socket = 6 positions (no. 1 - 6) 2 socket = 12 positions (no. 1 - 12) 3 sockets = 18 positions (no. 1 – 18) 4 sockets = 24 positions (no. 1 - 24) 5 sockets = 30 positions (no. 1 - 30)
Mounting socket	polarised mounting socket type 63-P10-Si (6 positions) , soldered onto the pcb from the rear with wiring Contact load: 16 A continuously
Line entry X0 Single pole	2 groups, single pole each (= 2 separate circuits) 2 x 100 A max. via terminal stud M6 for ring cable lug
Supply feed X0 Double pole	2 groups, double pole each (= 4 separate circuits) 4 x 40 A max. via screw terminal up to 10 mm² (max. 4 x 50 A at max. 40 °C ambient temperature)
Load outputs X1	30 channels 16 A max. per pole via screw terminals up to 4 mm²
Signalisation group signalisation X2	series connection of make contacts / parallel connection of break contacts (double sided) in 2 groups (interconnectable by means of wire bridges) max. 1 A total current via screw terminal up to 1.5 mm² max. 0.5 A single current via screw terminal up to 1 mm²
Rated voltage	AC 250 V; DC 65 V
Housing ground/earth	on the inside via M6 screw by means of ring cable lug (two with redundant systems)
Ambient temperature range	0...50 °C

Ordering Information

Type number

19BGT 19" Power-D-Box with sockets pre-wired on pcb

Height

2 2 U = 88.90 mm

Device prepared for accommodation

- **3600** circuit breaker type 3600 or 3900
- **2210** circuit breaker type 2210-S
- **1048** solid state remote power controller E-1048-700
- **ESS20** electronic circuit breaker type ESS20
- **ESX10** electronic circuit breaker type ESX10

Number of positions

- **06** 6 poles
- **12** 12 poles
- **18** 18 poles
- **24** 24 poles
- **30** 30 poles

Additional wiring and terminals for line feed

- **A0** without (only pcb with terminals)
- **R0** none (only pcb with terminals, redundant)
- **A2** line feed pre-wired 1-pole (all positions = 1 circuit)
- **R2** line entry pre-wired single pole redundant
- **A3** line feed pre-wired 1-pole (as A2 + return busbar)
- **R3** line feed pre-wired 1-pole + return busbar, redundant
- **A4** line feed pre-wired 2-pole connected (all positions = 2 circuits)
- **R4** line feed pre-wired 2-pole connected, redundant

Colour for additional wiring, line feed (not with A0 + R0)

single pole wiring

- **SW** black
- **RT** red
- **BL** blue

multipole wiring

- **RB** 1st pole red, 2nd pole blue
- **SB** 1st pole black, 2nd blue

Auxiliary contact function

- **B1** auxiliary contacts connected in series (group signalisation)
- **B2** auxiliary contacts connected in parallel (group signalisation)
- **B3** auxiliary contacts connected in parallel (single signalisation)
- **B5** as B1, with additional wiring (1 mm²) to terminal (not with A0)
- **B6** as B2, with additional wiring (1 mm²) to terminal (not with A0)

Colour of additional wiring of auxiliary contacts

- **GR** grey (only with B5 or B6)

- **L** with printed circuit board (pcb)

- **S...** **suffix number** for customer specific version

19BGT - 2 - 2210 - 24 A2 ... - B1 ... - L S... ordering example

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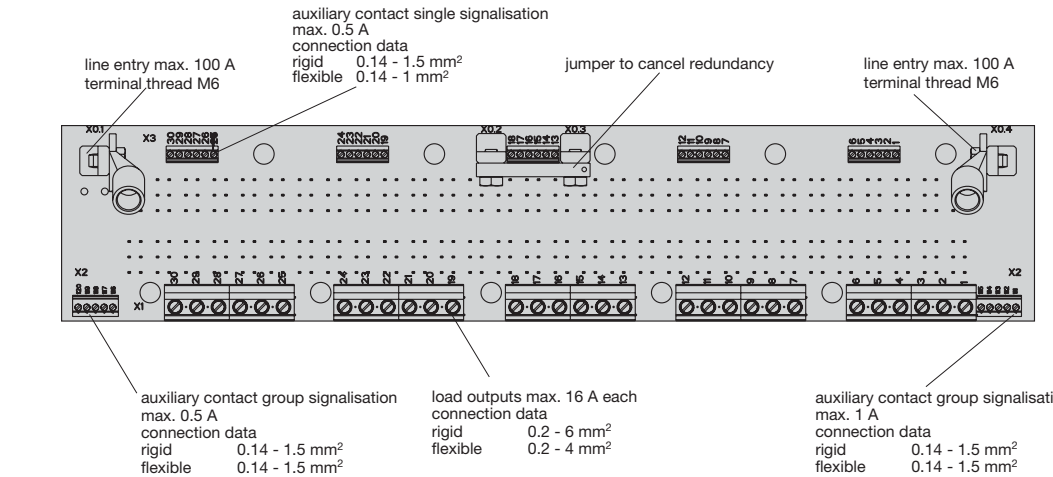
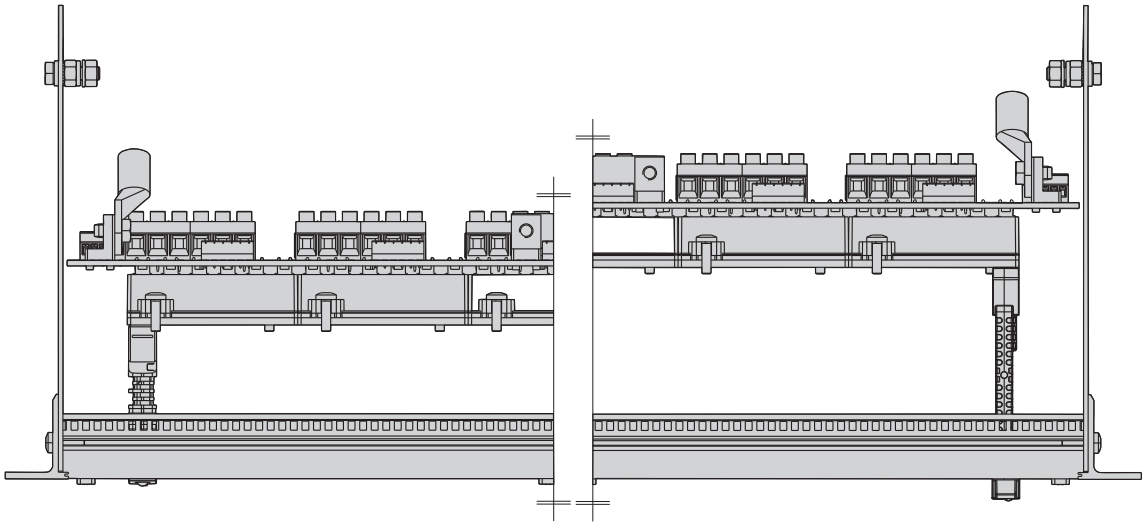
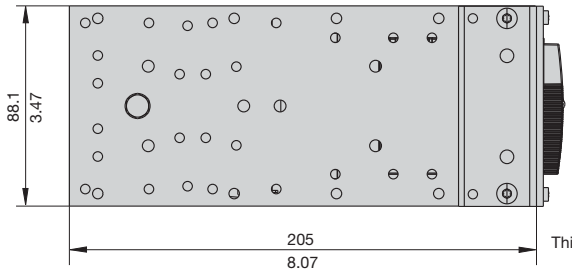
Dimensions



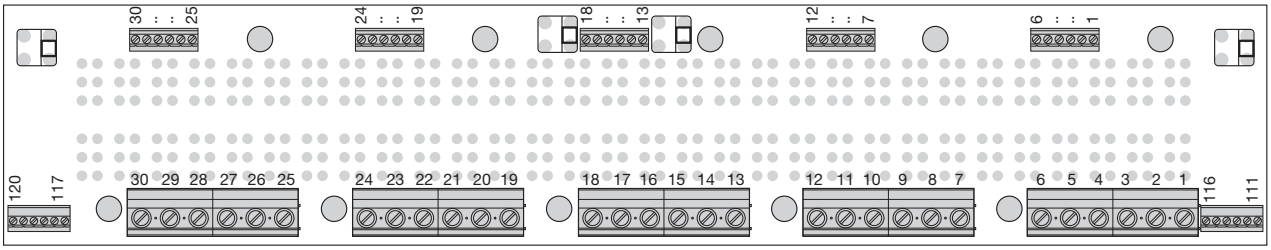


installation depth depending on additional wiring
standard depth 205/250/295 mm



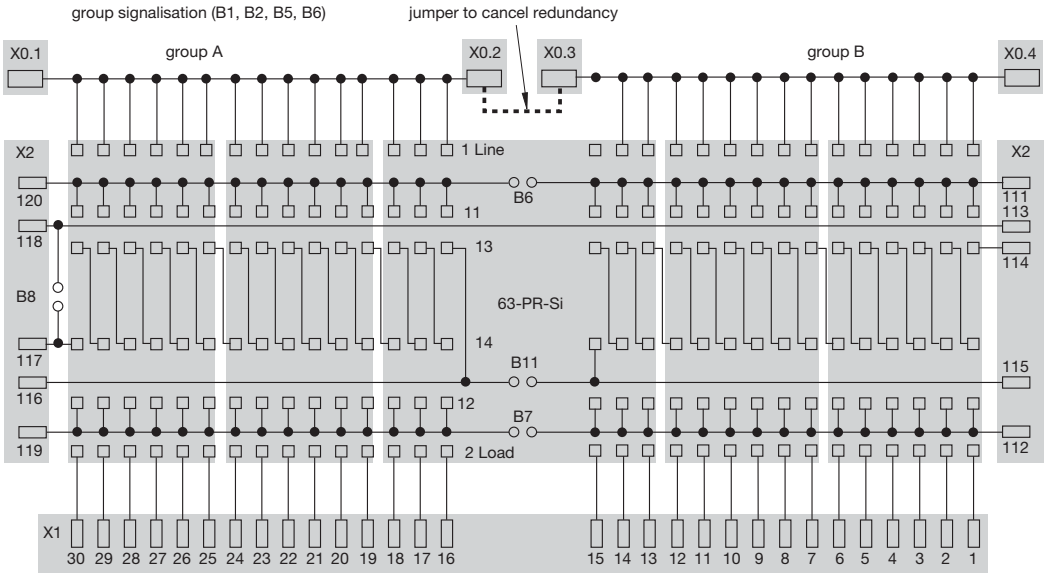
This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

Pin assignment bus pcb (terminal side)



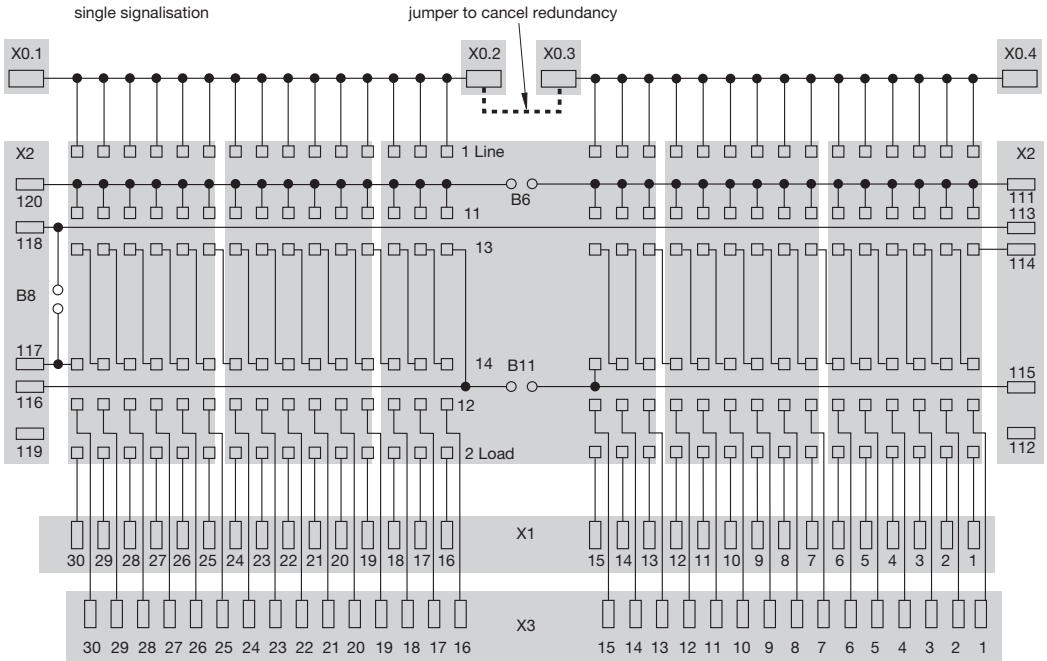
Schematic diagrams

Bus pcb (single pole version)



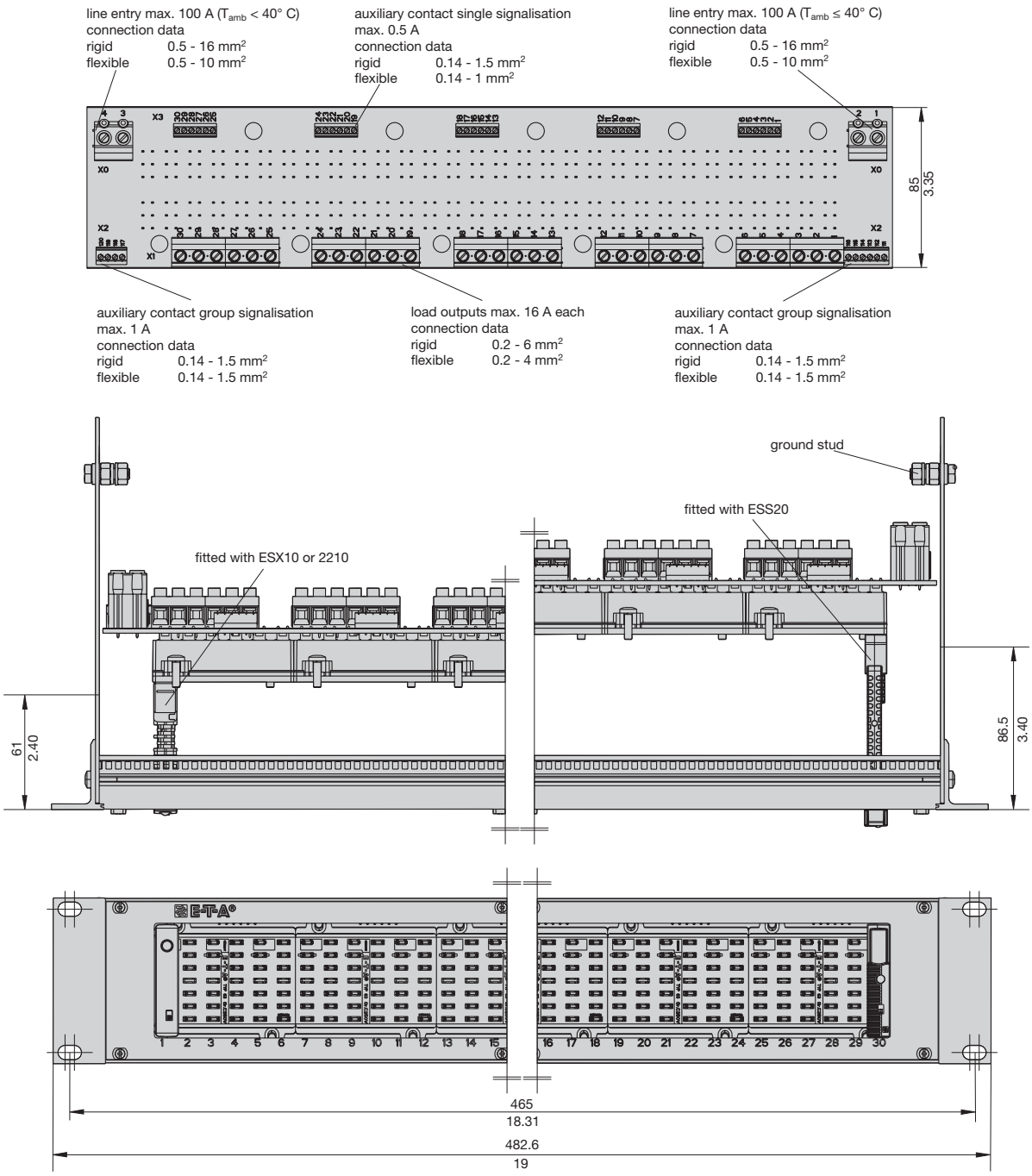
assignment 63-PR-Si	2210	3600/3900	ESS20
1 Line	2	1	Line (+)
2 Load	1	2	Load (+)
11	12	4	Gnd (-)
12	11	5	SI
13	24	6	SC
14	23	7	SO

Bus pcb (single pole version)

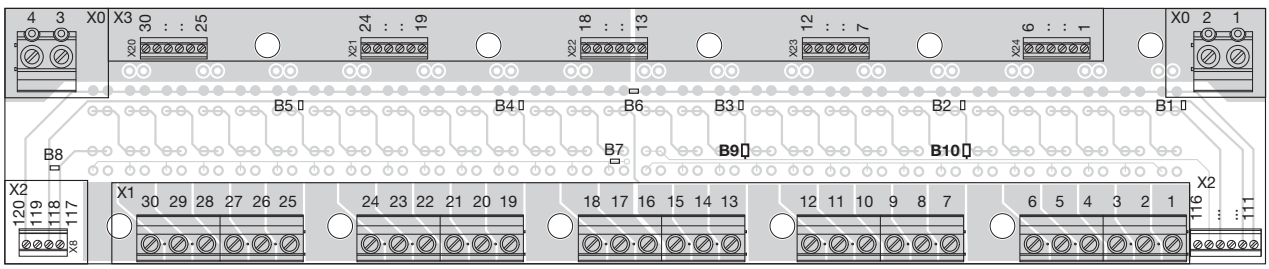


7

Dimensions

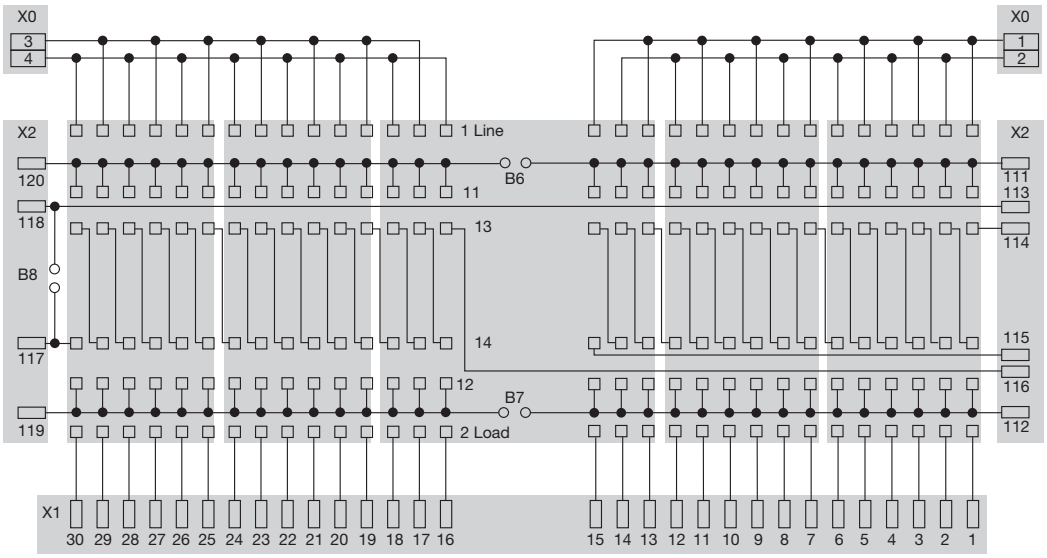


Pin assignment bus pcb (terminal side)



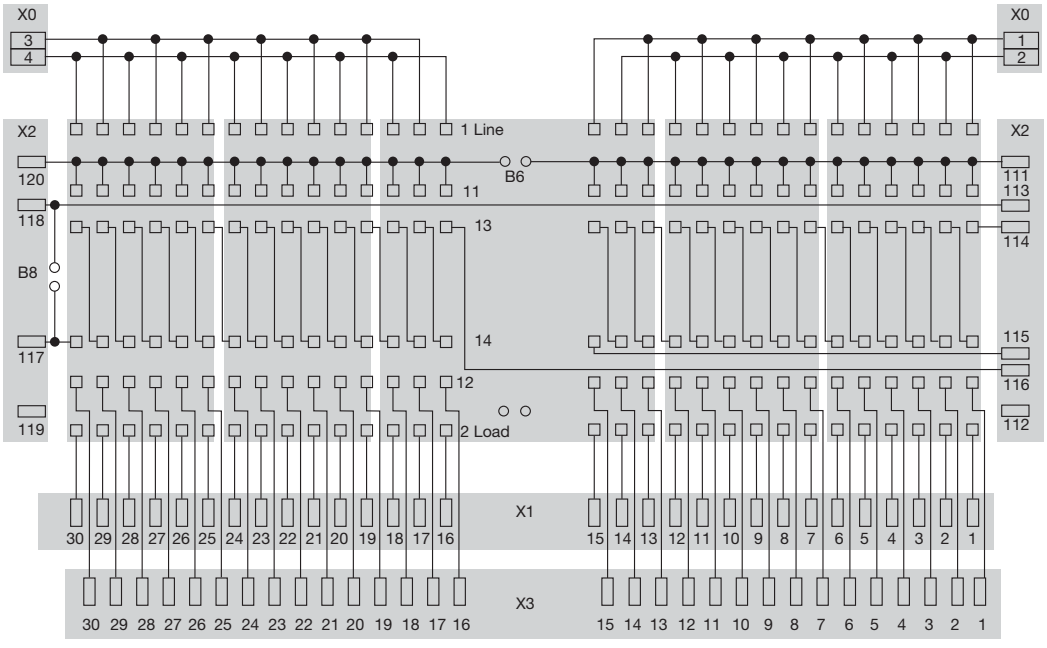
Schematic diagrams

Bus pcb (signalisation B1, B2, B5, B6)



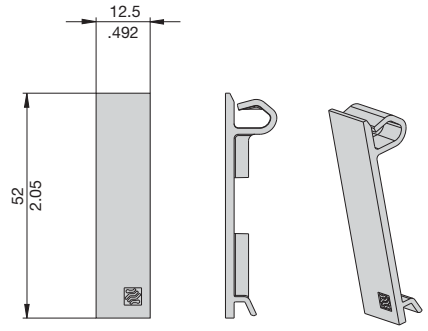
pin assignment 63-P10-Si	2210	3600/3900	ESS20
1 Line	2	1	Line (+)
2 Load	1	2	Load (+)
11	12	4	Gnd (-)
12	11	5	SI
13	24	6	SC
14	23	7	SO

Bus pcb (signalisation B3)

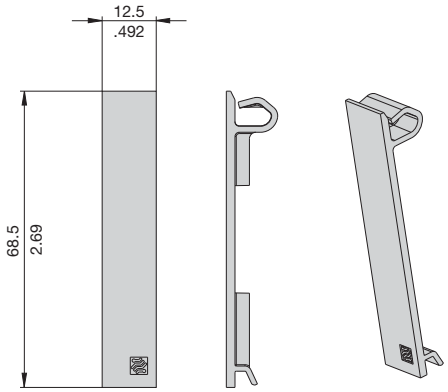


Accessories

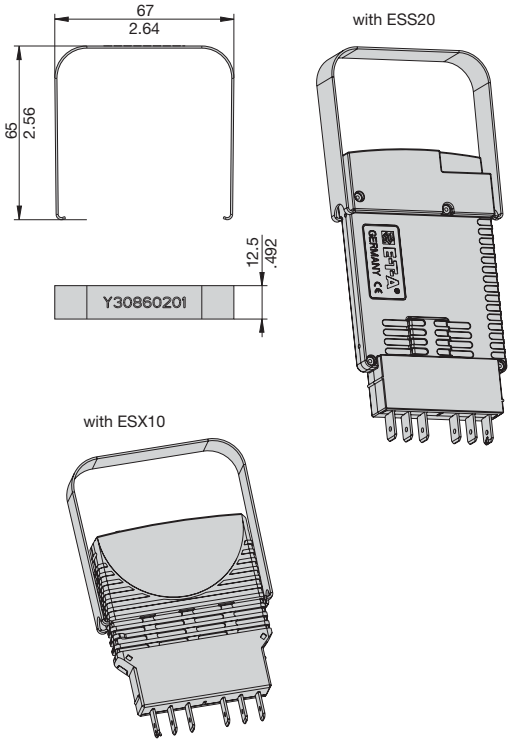
Blanking piece for Power-D-Box
(types 3600/3900, 2210)
Y 308 563 01



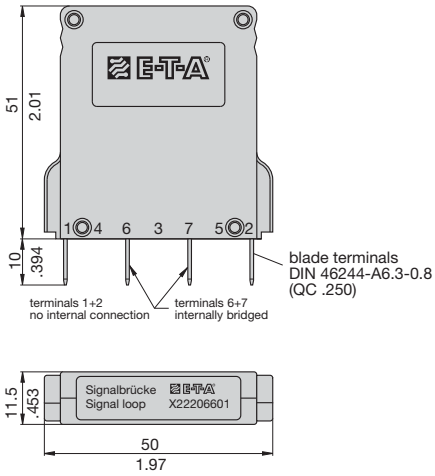
Blanking piece for Power-D-Box
(types ESS20/ESX10)
Y 308 563 41



Withdrawal tool for ESS20/ESX10
Y 308 602 01



Jumper
to bypass looped through unused auxiliary contacts
(series connection)
X 222 066 01



This is a metric design and millimeter dimensions take precedence (mm/inch)

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Description

The Power-D-Box is a compact 2U power distribution system made of aluminium.

The 19BGT-2-X is a compact 19" 2 U power distribution rack incorporating E-T-A plug-in circuit breakers type 2210-S291 (for 19BGT-2-X2210-...), 8340-F (for 19BGT-2-X83S2/..S4/..Z4-...) or 8345-.01.-W0 (for 19BGT-2-X8345-...). These are installed in pre-wired E-T-A power distribution rails type X2210-S, X8340-S02, X8340-S04, X8340-SZ4 or X8345-D01. Options available include separate circuits, redundant circuits and customer-specific marking.

Power-D-Box / High-Power

Ordering information

Type No.			
19BGT	19" Modular Power-D-Box		
	Height		
	2	2 U = 88.90 mm	
		Distribution rails (pre-wired)	
		X2210	for X2210-S Economy, max. 12 poles / 2 x 6 poles
		X83S2	for X8340-S02 Economy, max. 16 poles / 2 x 8 poles
		X83S4	for X8340-S04 Economy, max. 3 x 4 poles
		X83Z4	for X8340-SZ4 Economy, max. 16 poles / 2 x 8 poles
		X8345	for X8345-D01 High-Power, max. 18 poles / 2 x 7 poles
			Number of slots (numbered)
			02 2 poles
			03 3 poles
			04 4 poles
			05 5 poles
			06 6 poles
			07 7 poles
			08 8 poles
			09 9 poles
			10 10 poles
			12 12 poles
			14 14 poles
			16 16 poles
			18 18 poles
			Pre-wired supply-feed
			A0 without, with single power distribution system
			R0 without, with redundant power distribution system
			Pre-wired auxiliary contacts (0.75 mm²)
			B0 without
			S... special version

19BGT - 2 - X2210 - 18 A0 B0 - S... ordering example

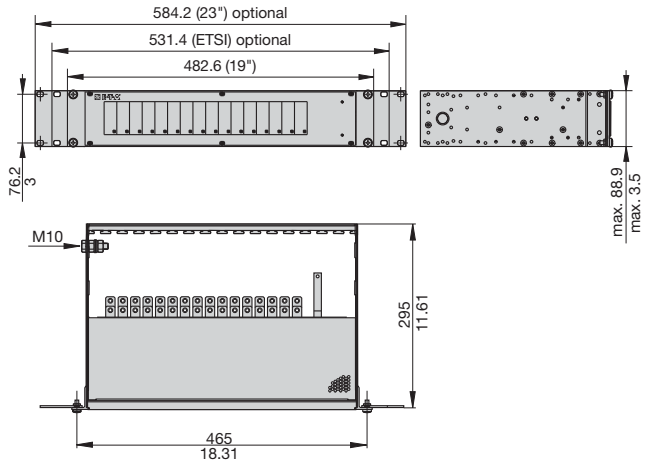
Technical data

19" Power-D-Box	length: 426.72 mm height: 2 U (88.90 mm) material: aluminium
Voltage rating	AC 230 V; DC 110 V; DC 80 V; DC 65 V

Details of power distribution systems:	
X2210-S...	pages **7** - 57 to **7** - 58
X8340-S02	pages **7** - 65 to **7** - 66
X8340-S04	pages **7** - 67 to **7** - 68
X8340-SZ4	pages **7** - 69 to **7** - 71
X8345-D01	pages **7** - 73 to **7** - 76

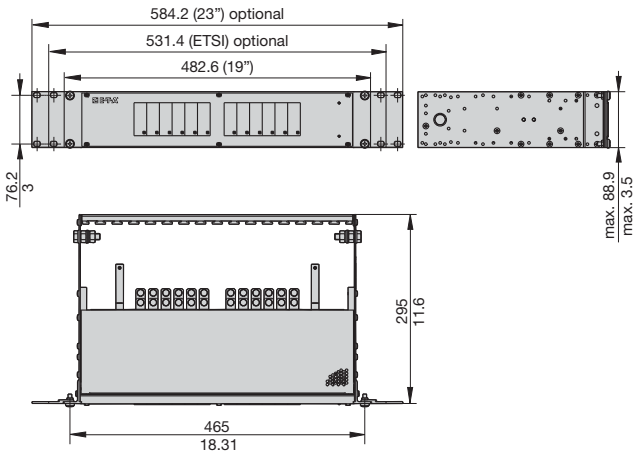
Dimensions 19BGT-2-X8345 (High-Power)

not redundant

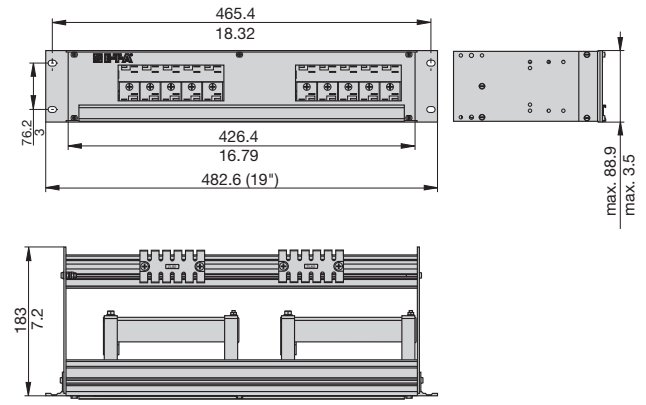


Dimensions 19BGT-2-X8345 (High-Power)

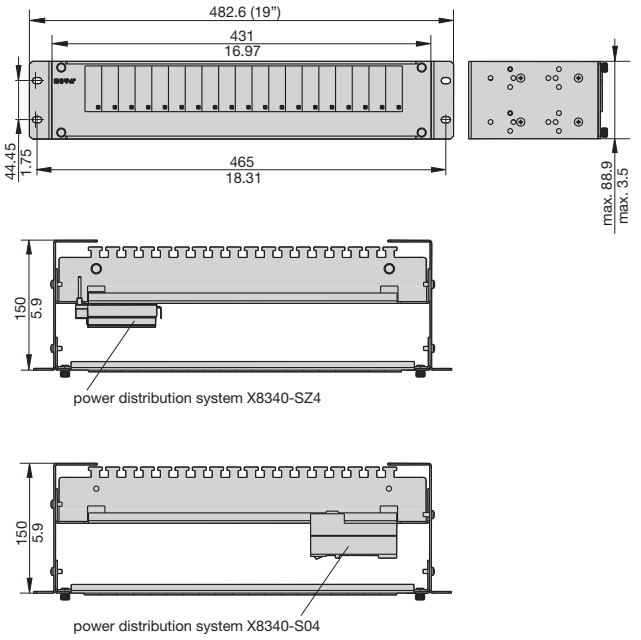
redundant



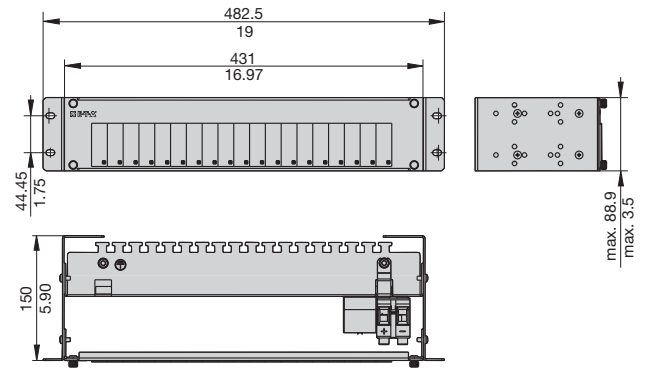
Dimensions 19BGT-2-X2210 (Economy)



Dimensions 19BGT-2-X83S4 / -X83Z4 (Economy)

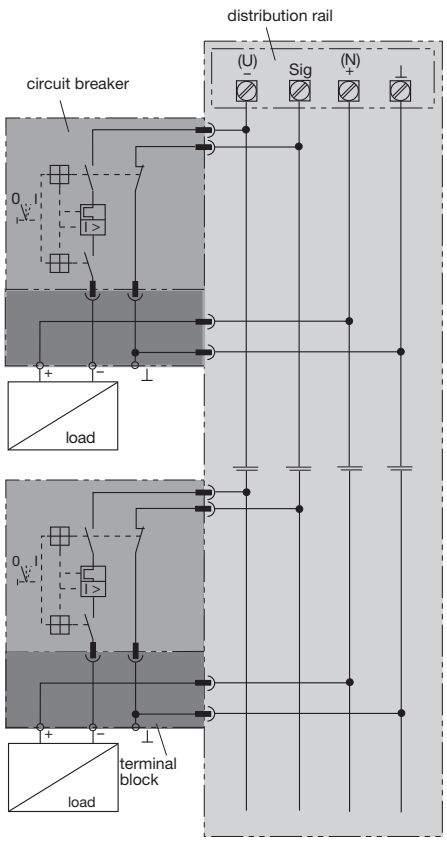


Dimensions 19BGT-2-X83S2 (Economy)

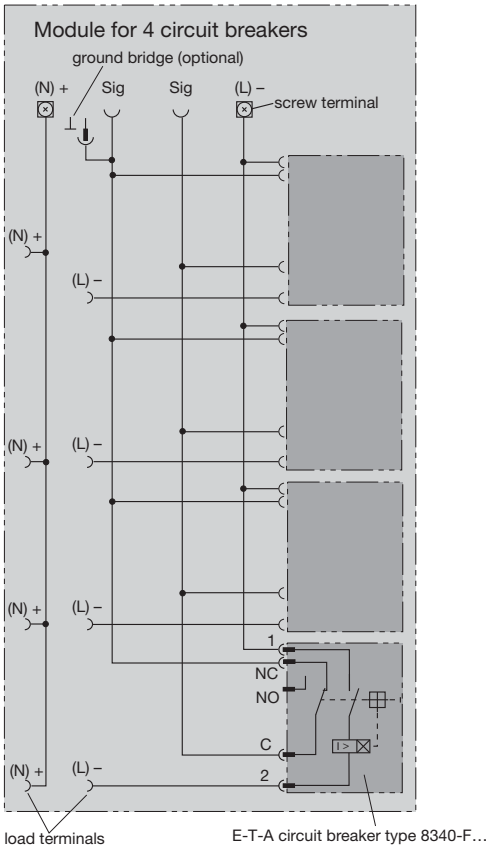


This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

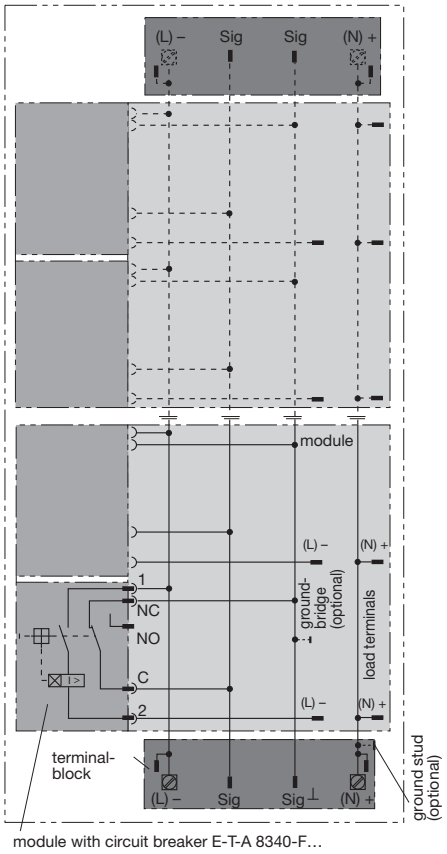
Schematic diagram X2210-S (Economy)



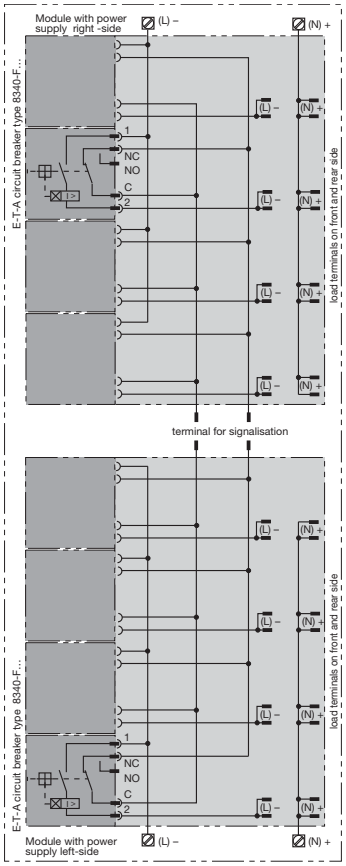
Schematic diagram X8340-S04 (Economy)



Schematic diagram X8340-S02 (Economy)

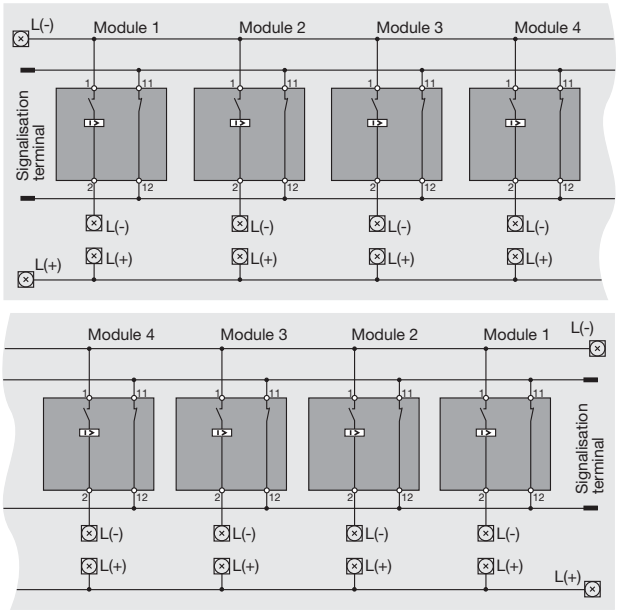


Schematic diagram X8340-SZ4 (Economy)



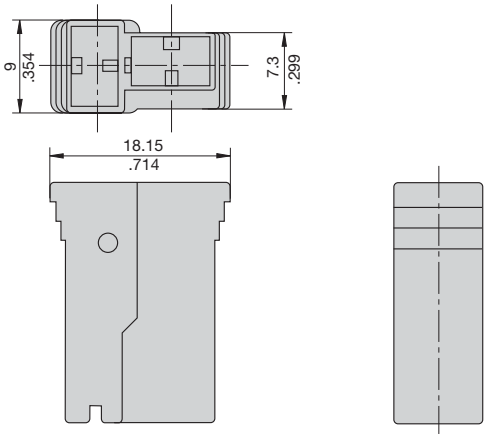
7

Schematic diagram X8345-D01 (High Power)

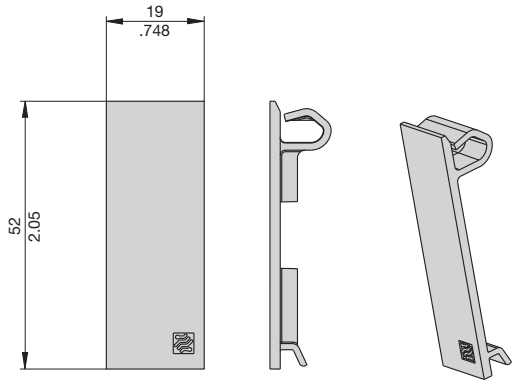


Accessories

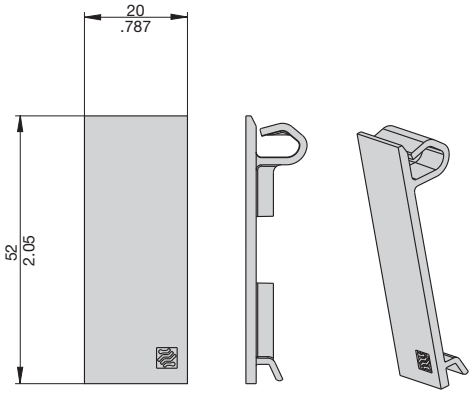
Load output terminal protected against reverse polarity
(set: 4 moulded sleeves, 8 blade terminals 6.3 x 0.8 mm)
X 222 847 01 for cable cross section 0.7...2.0 mm²
X 222 625 01 for cable cross section 2.5...4.0 mm²
X 222 848 01 for cable cross section 4.0...6.0 mm²



Blanking piece for Power-D-Box
(circuit breaker types 8340, 8345)
Y 308 563 11



Blanking piece for Power-D-Box
(circuit breaker types 8340, 8345-D01)
Y 308 563 21



This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

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Distribution rail X2210-S06...

Description

E-T-A rails distribute electrical power in telecommunications, automation, data and control systems. They have been designed to industry standard requirements and are suitable for mounting in ETSI control cabinets. These distribution rails are supplied with mounting bracket, cover, 6 blanks and withdrawal tool.
Live parts in terminal areas are protected against brush contact (VDE 106, part 100).

Typical applications

Telecommunications systems using ETSI racks; process control, measuring and control systems.

X2210-S06... for 6 circuit breakers 2210-S291..

Ordering information

Type No.	
X2210	Module for circuit breaker type 2210-S291-...
	Version
	S distribution rail
	Identification number
	06 6 positions
	Terminal block (intermediate element) (fitted)
	00 without
	01 1 x
	02 2 x
	03 3 x
	04 4 x
	05 5 x
	06 6 x
	Accessories (fitted)
	G without
	H with mounting bracket
	J with mounting bracket, cover and 6 blanks
	R without mounting bracket, with cover and 6 blanks
X2210 -	S 06 06 J ordering example

Technical data

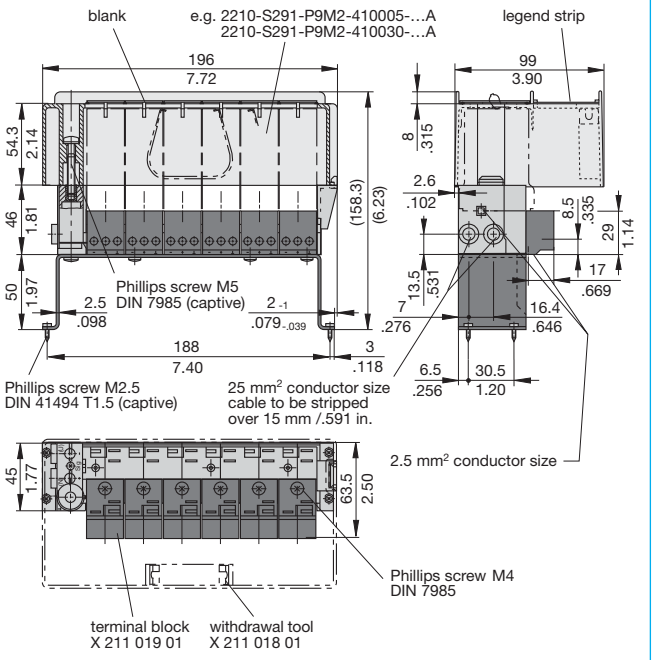
Circuit breakers to be fitted	2210-S291-P9M2-410005 2210-S291-P9M2-410033	
Voltage rating	AC 250 V; DC 65 V	
Load	max. 25 A per position max. 80 A for complete unit	
Signalisation (N/C contact)	AC 240 V / DC 65 V max. 1 A per position	
Insulation co-ordination (IEC 60664 and 60664A)	Rated impulse withstand voltage 2.5 kV	Pollution degree 2
Flame retardance (IEC 60695, part 2-2)	self-extinguishing	
Terminal design		
input	clamp-type terminal 2.5 to 25 mm² flexible	
output	clamp-type terminal 0.5 to 2.5 mm² flexible	
Typical volume resistances in main circuit		
input terminal B + (N) to output terminal + (N)	< 1.5×10^{-3} Ω	
input terminal B - (U) to female contact 2 (k)	< 1.5×10^{-3} Ω	
input terminal B-Sig to female contact 12	< 2×10^{-3} Ω	
output terminal - (U) to female contact 1	< 1.5×10^{-3} Ω	
output terminal - ⊥ to female contact 11	< 2×10^{-3} Ω	
Mass X2210-S0606J	660 g	

Accessories

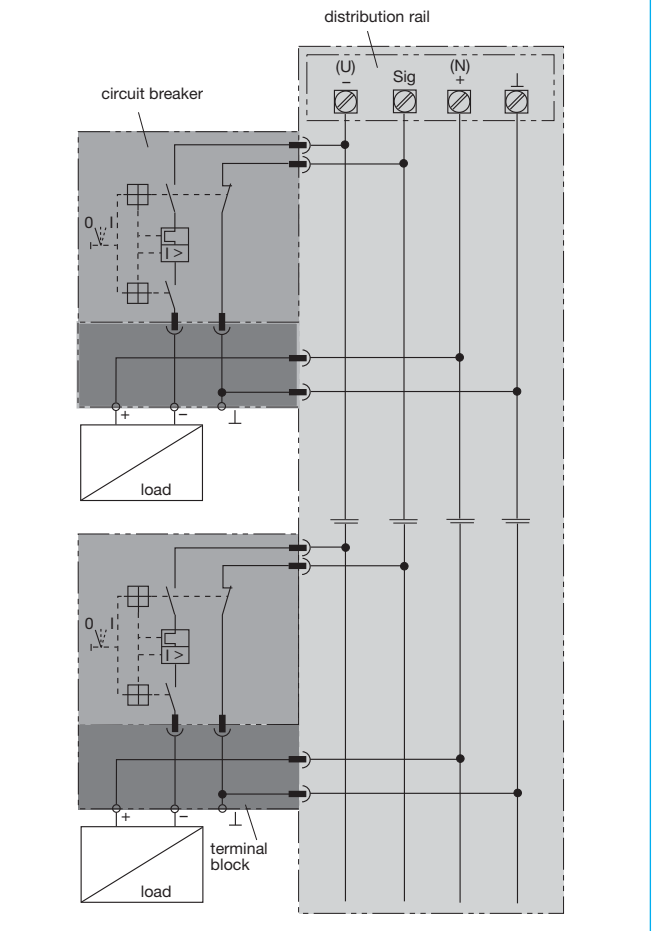
Terminal block	X 211 019 01
Withdrawal tool	X 211 018 01

7

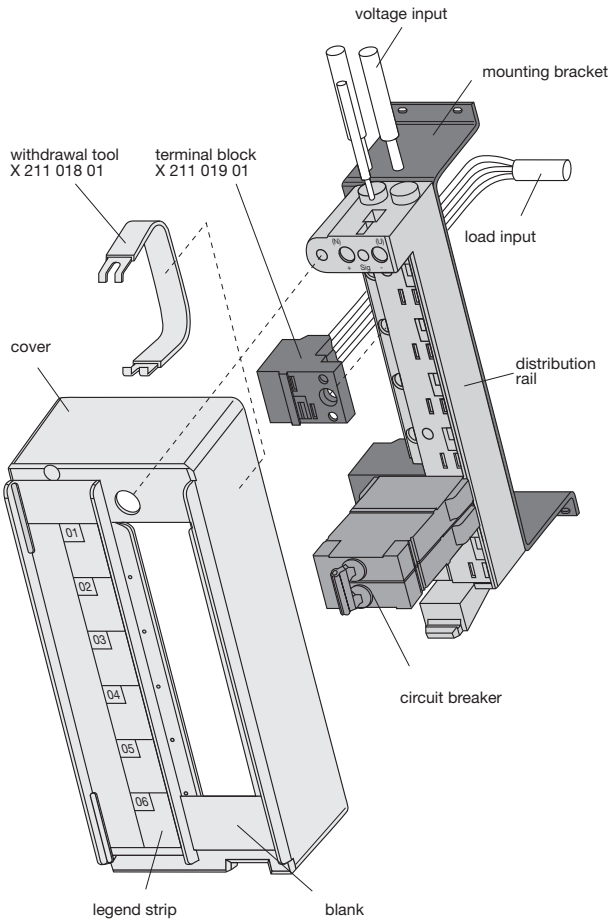
Dimensions



Internal connection diagram



Installation example



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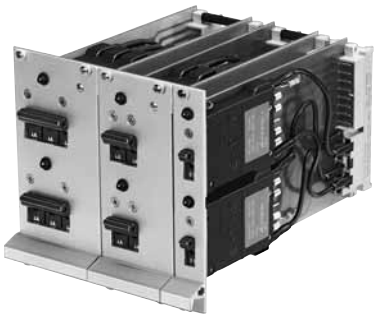
All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved.Product markings may not be exactly as the ordering codes. Errors and omissions excepted.

Description

Thermal-magnetic circuit breaker mounted on Euro Card for 19" rack mounting, with one Euro Card accommodating one or two single pole, double pole or three pole circuit breakers. Convenient toggle actuation enables series 2210 additionally to be used as an ON/OFF switch. A red LED is located in the front frame of the Euro Card, indicating the switching status of the circuit breaker (via the auxiliary circuit).

Typical applications

Process control, measuring and control systems, telecommunications



E2210-...

Technical data

Circuit breaker

Main circuit:

voltage rating	3 AC 433 V (50/60 Hz); AC 250 V (50/60 Hz); DC 65 V
current rating range	0.1...16 A
standard current ratings	0.1 0.2 0.3 0.4 0.5 0.6 0.8 A 1 1.5 2 2.5 3 4 5 A 6 8 10 12 16 A

Auxiliary circuit:

voltage rating	AC 240 V; DC 65 V
current rating	1 A
Other data	see type 2210-S2..

Front plate

Dimensions
(1 module = 5.08 mm, 1 U = 44.45 mm)

Width:	one single pole circuit breaker	4 modules
	one double pole circuit breaker	6 modules
	one three pole circuit breaker	9 modules
	two single pole circuit breakers	4 modules
	two double pole circuit breakers	10 modules
	two three pole circuit breakers	12 modules
Height:		3 U
Material	aluminium, anodized	

LED

Voltage rating	DC 24 V / DC 60 V

7

Ordering information

Type No.
E2210

Mounting style
1 1 x single pole, central mounting (standard)
2 1 x single pole, top mounting
3 1 x single pole, bottom mounting
4 1 x double pole, central mounting (standard)
5 1 x three pole, central mounting (standard)
6 2 x single pole, symmetrical mounting (standard)
7 2 x double pole, symmetrical mounting (standard)
8 2 x three pole, symmetrical mounting (standard)

Front plate
1 aluminium (standard)
2 moulded (Intermas)

LED
1 red, DC 24 V (standard)
2 red, DC 60 V
3 green, DC 24 V
4 green, DC 60 V

Circuit breaker

Mounting
S panel mounting

Actuator design
2 short toggle

Number of poles
1 1-pole protected
2 2-pole protected
3 3-pole protected
5 2-pole, protected on one pole only

Panel mounting
1 with M3 thread

Terminal design (main contacts) **
P1 blade terminals 6.3-0.8 (standard)

Characteristic curve**
01 F1 fast acting: therm. 1.01-1.4 x I_N; magn. 2-4 x I_N DC (DC only)
02 M1 standard delay: therm. 1.01-1.4 x I_N; magn. 6-12 x I_N AC; 7.8-15.6 x I_N DC
03 T1 delayed:therm.1.01-1.4 x I_N; magn.10-20 x I_N AC
04 T2 thermal only, 1.01-1.4 x I_N
05 M3 standard delay, low resistance: therm.1.4-1.8 x I_N AC; magn.6-12 x I_N AC; 7.8-15.6 x I_N DC
F2 fast acting: therm. 1.1-1.4 x I_N magn.3.5-6.5 x I_N AC/DC
XX different curves for multipole versions to order*

Intermediate position**
H without intermediate position (standard)
Z with intermediate position

Auxiliary contacts**
1 with auxiliary contacts (only with 1x1-pole, 2x1-pole)
5 with auxiliary contact only in the last unit of multipole versions

Auxiliary contact function**
1 1 N/C, 1 N/O (standard)
2 1 N/O (23/24)
3 1 N/C (11/12)
4 1 N/O contact, closed in the intermediate and ON position (-Z only)

Auxiliary contact-terminal design
1 same as main terminals **

Current ratings***
0.1...16 A

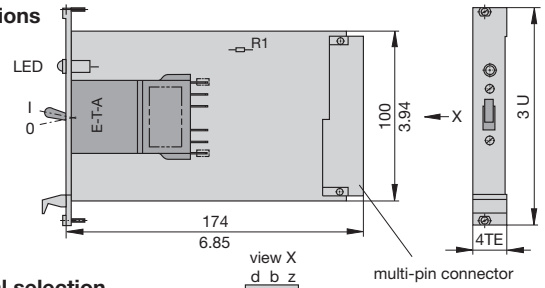
E2210 - 6 1 1 - S 2 1 1 - 02 - H 1 1 1 - 0.1 A

XX — only with 2x1-pole/2x2-pole/2x3-pole
0.1/0,2 A

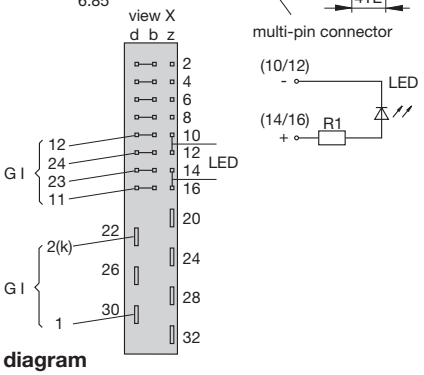
*) Clearly add the desired specifications.
**) With mounting styles 6, 7 and 8: both circuit breakers must have the same characteristics.
***) It is possible to fit circuit breakers of mixed current ratings on the Euro Card.

One single pole circuit breaker

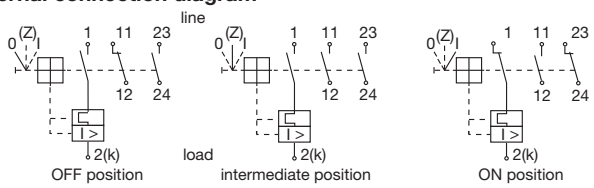
Dimensions



Terminal selection

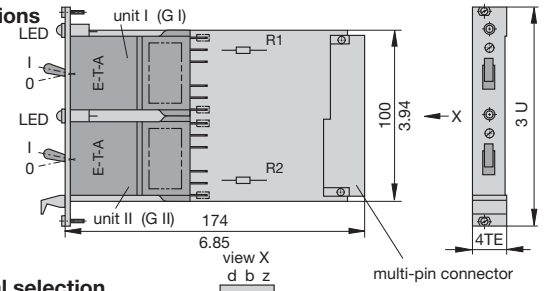


Internal connection diagram

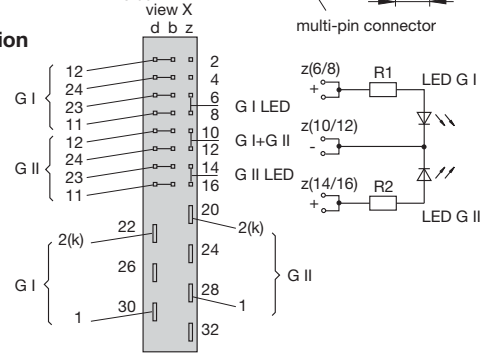


Two single pole circuit breakers

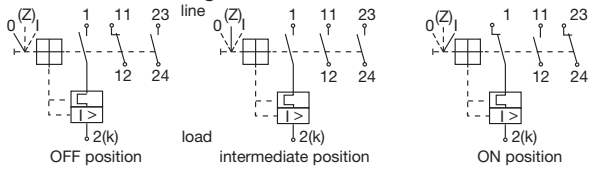
Dimensions



Terminal selection



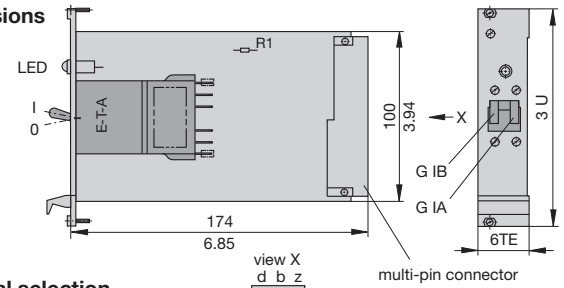
Internal connection diagrams for units G I and G II



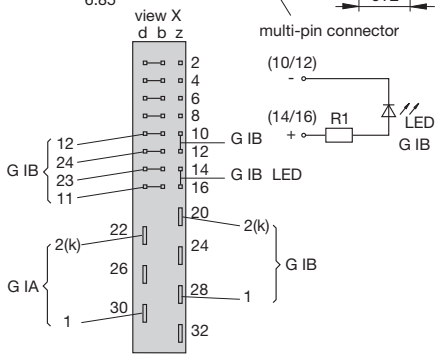
This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

One double pole circuit breaker

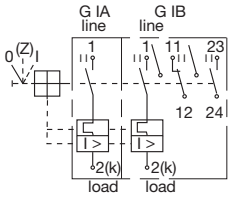
Dimensions



Terminal selection

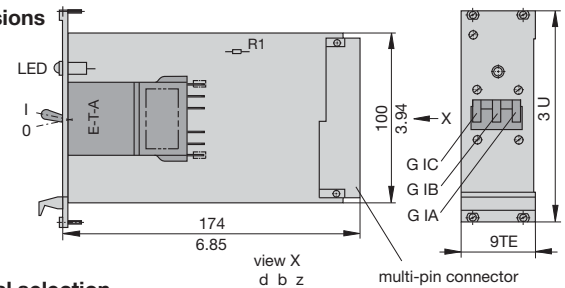


Internal connection diagram

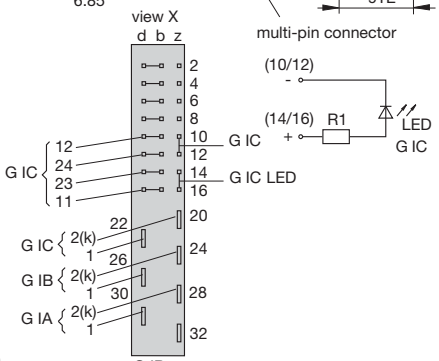


One three-pole circuit breaker

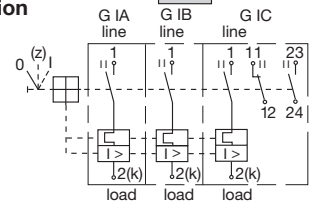
Dimensions



Terminal selection

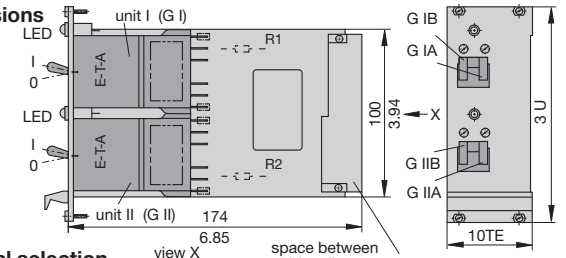


Internal connection diagram

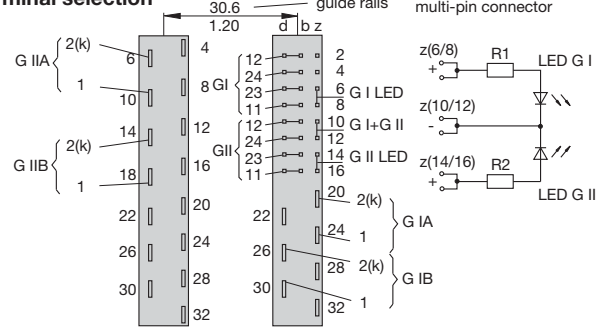


Two double pole circuit breakers

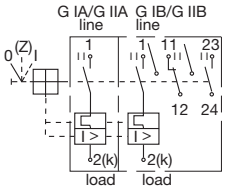
Dimensions



Terminal selection

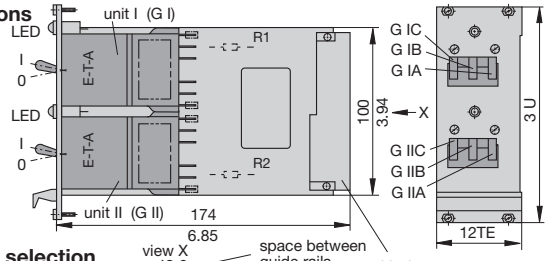


Internal connection diagram for units 1 (G I) and 2 (G II)

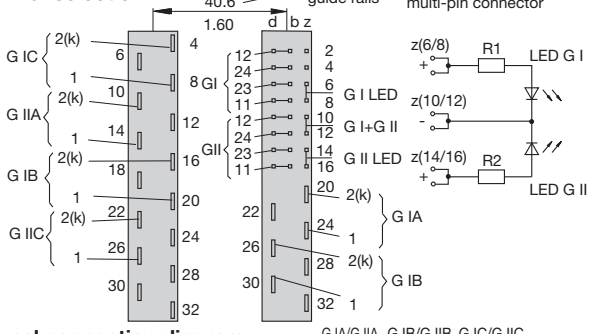


Two three-pole circuit breakers

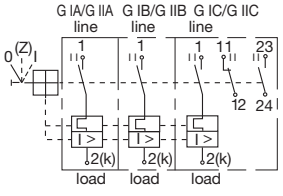
Dimensions



Terminal selection



Internal connection diagram for units 1 (G I) and 2 (G II)



This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

Sockets for Euro Cards

Description

The following sockets may be used with single pole circuit breakers:

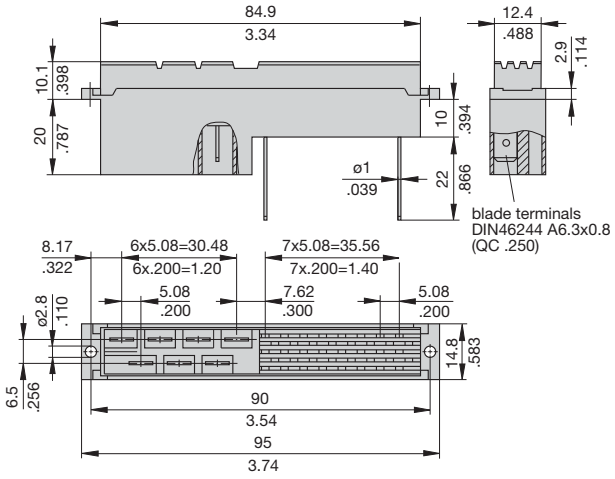
0Z041Z000004
24/7-pole mixed socket to DIN 41612 - form M.
Connection: 7-pole for 6.3x0.8 mm connectors and 24-pole midi-wire wrap posts (1 x 1 mm).

0Z041Z000007
24/7-pole mixed socket to DIN 41612 - form M.
Connection: 7-pole for 6.3x0.8 mm connectors and 24-pole for 2.8x0.8 mm connectors.

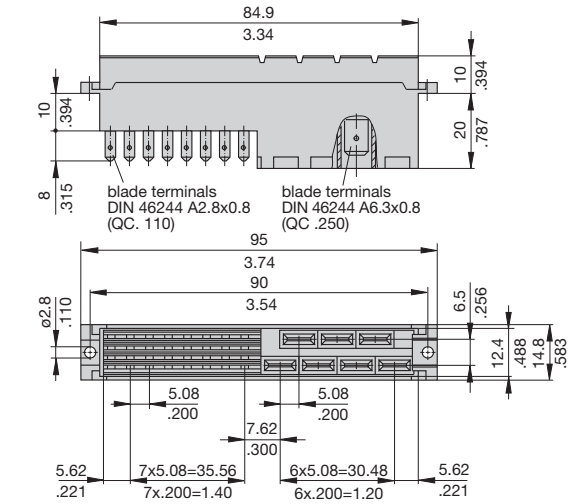
0Z041Z000005
A 15-pole socket to DIN 41612, form H, for 6.3x0.8 mm connectors is required in addition to the socket mentioned above, if two double pole or two three pole circuit breakers are fitted on one Euro Card.

Dimensions of sockets for Euro Cards

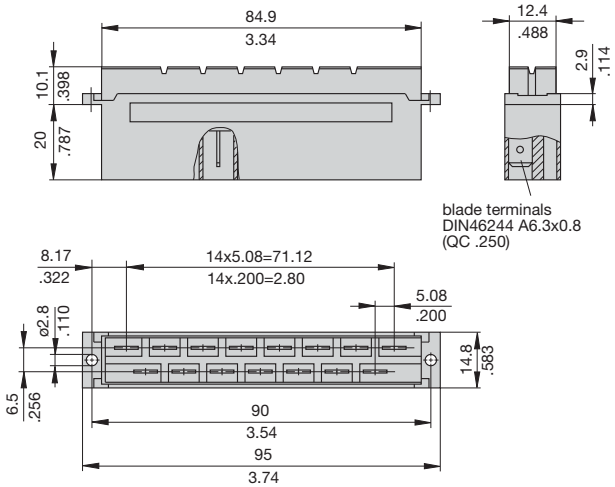
0Z041Z000004



0Z041Z000007



0Z041Z000005



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Description

Thermal-magnetic circuit breaker mounted on Euro Card for 19" rack mounting, with one Euro Card accommodating up to three circuit breakers. Convenient toggle actuation enables series 2215 additionally to be used as an ON/OFF switch. A red LED is located in the front frame of the Euro Card, indicating the switching status of the circuit breaker (via the auxiliary circuit).

Typical applications

Process control, measuring and control systems, telecommunications

Ordering information for circuit breakers only

Type No.
E2215

Mounting
1 3 x 1-pole, mounted symmetrically (standard)
2 2 x 1-pole, mounted centrally above and below
3 2 x 1-pole, mounted above and below
4 2 x 1-pole, mounted below and centrally
5 1 x 1-pole, mounted above
6 1 x 1-pole, mounted centrally
7 1 x 1-pole, mounted below

Handle
1 aluminium handle (standard)

LED
1 red LED, DC 24 V (standard)

Circuit breaker

Actuator design
L2 moulded toggle

Number of poles
1 single pole protected

Accessories
0 without

Terminal design
P1 blade terminals A6.3-0.8 (standard)

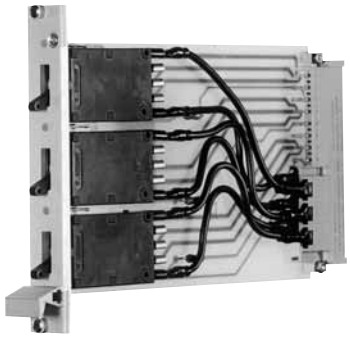
Characteristic curve
01 F1 fast acting: therm. 1.01 x 1.4 I_N; magn. 2-4 x I_N DC (DC only)
02 M1 standard delay: therm. 1.01-1.4 x I_N; magn. 5-10 x I_N DC; magn. 3.5-8 x I_N DC
03 T1 delayed: therm. 1.01-1.4 x I_N; magn. 6-13 x I_N AC
07 T3 delayed: therm. 1.01-1.4 x I_N; magn. 9.5-15.5 x I_N AC

Auxiliary contacts
S1 with auxiliary contacts (change over)

Auxiliary contact - terminal design
1 same as main terminals

Current ratings
0.05...10 A

E2215 3 1 1 - L2 1 0 - 02 - S1 1 - 0.1 A ordering example



E2215-...

Technical data

Circuit Breaker	
Main circuit:	
voltage rating	AC 250 V (50/60 Hz); DC 48 V
current rating range	0.05...10 A
standard current ratings	0.1 0.2 0.3 0.4 0.5 0.6 A 0.8 1 1.5 2 2.5 3 A 4 5 6 8 10 A
Auxiliary circuit:	
voltage rating	AC 250 V/DC 28 V
current rating	1 A
Other data	see type 2215

Front plate	
Dimensions:	
width	4 modules (1 module = 5.08 mm)
height	3 U (1 U = 44.45 mm)
Material	aluminium, anodized

LED	
Max. voltage rating	DC 24 V

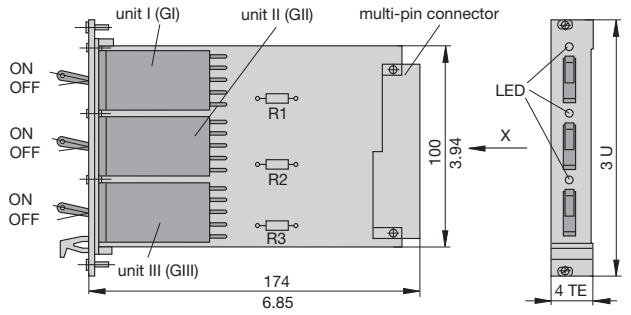
Select the circuit breakers to above ordering information. For further information please refer to group 2.

It is possible to fit circuit breakers of mixed current ratings on the Euro Card.

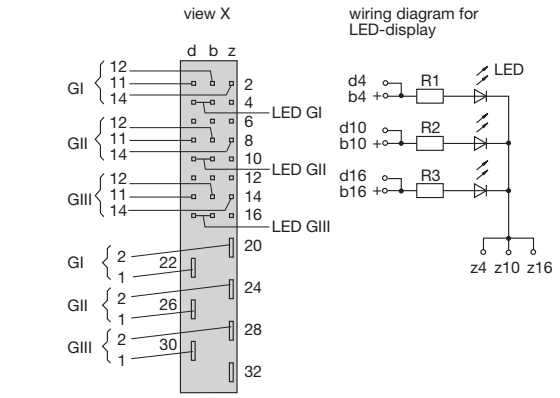
Please add "Circuit breakers to be mounted on Euro Card" to the circuit breaker designation when ordering so that the applicable suffix number for the special version (E2215-...-L2..) can be determined .

19" racks may also be fitted with one or two circuit breakers by the customer, using industry standard components such as base plates, front plates with handle, sockets. Connection by means of blade terminals 6.3x0.8 mm.

Dimensions



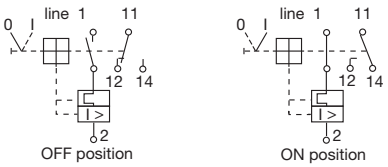
Terminal selection



Connection of the Euro Card DIN 41612 with socket type H7/F24-F413.173
Connector of the 19" rack to DIN 41494

Internal connection diagrams

applicable to all circuit breakers GI to GIII



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Description

Modular distribution rail, each module accommodating 2 magnetic or hydraulic-magnetic circuit breakers type 8340-F... and associated load terminals. Circuit breaker status indication (group signalisation) is via 2 busbars. Power supply is via right- or left-side terminal block. Live parts in the plug-in and supply feed terminal areas are protected against brush contact. Circuit breakers may be replaced with power on.

Typical applications

Telecommunications and cellular communication systems

Ordering information

Type No.

X8340 Distribution rail for circuit breaker type 8340

Version
- **S** rail

Identification number
- **02** modular, for 2 circuit breakers

Power supply
- **L** left-side
- **R** right-side

Modules with power supply
- **1** 1 module, 2-way
- **2** 2 modules, 2-way each
- **3** 3 modules, 2-way each
- **4** 4 modules, 2-way each
- **5** 5 modules, 2-way each
- **..** ...

Signalisation
- **0** without signalisation
- **1** group signalisation
- **2** group signalisation, through-connected for right- or left-side power supply (main current path separated)
- **3** single signalisation

Accessories
- **00** without
- **01** cover per module
- **02** ground bridge in first module
- **03** M4 mounting screw per module
- **04** cover per module + mounting screw M4 (bulk shipped)
- **05** cover per module + ground bridge in first module
- **06** ground bridge in first module + mounting screw M4 (bulk shipped)
- **07** cover + ground bridge + M4 mounting screw (bulk shipped)
- **08** cover per module + ground bridge in first module + mounting screw M4 (bulk shipped) + ground stud M6
- **09** mounting screw M4 (bulk shipped) + ground stud M6
- **10** cover per module + mounting screw M4 (bulk shipped) + ground stud M6

Terminal marking
- **B** + and - reversed

X8340 - S 02 L 5 - 1 01 B ordering example

Approvals

Authority	Voltage ratings	Current ratings
UL 1801	AC 250 V; DC 80 V	100 A

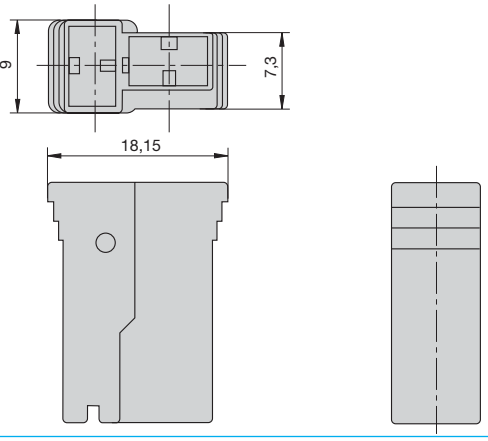
X8340-S02

Technical data

For circuit breaker type	8340-F.10-P1..-H...	
Voltage rating	AC 230 V; DC 80 V	
Load	25 A per position (30 A upon request) 132 A for complete unit	
Signalisation (N/C)	6 A, AC 230 V 1 A, DC 80 V per position	
Insulation co-ordination (IEC 60664 and 60664A)	Rated impulse withstand voltage 2.5 kV	Pollution degree 2
Flame retardance (IEC 60695, part 2-2)	self-extinguishing	
Supply terminal design		
(terminal socket)	recessed screw/pressure plate 6...50 mm², stranded feed-in 6...35 mm² with connector sleeve additional blade terminals 6.3x0.8	
load (module)	blade terminals 6.3x0.8 load output terminal protected against reverse polarity	
signalisation (module)	blade terminals 4.8x0.8	
Mass		
terminal block	144 g	
power distribution module	96 g	
cover	12 g	

Internal connection diagrams

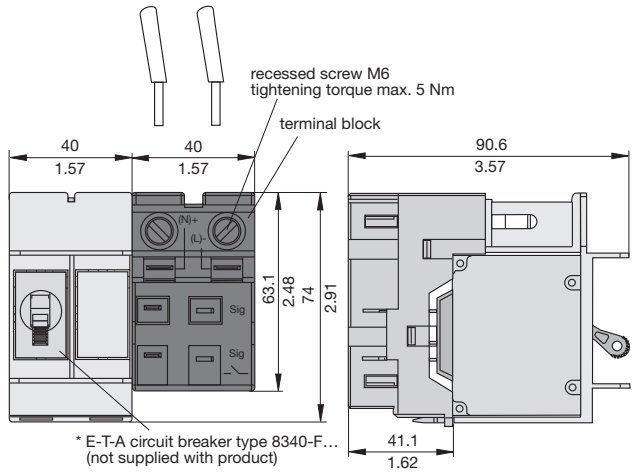
Load output terminal protected against reverse polarity
(set: 4 moulded sleeves, 8 blade terminals 6.3 x 0.8 mm)
X 222 847 01 for cable cross section 0.7...2.0 mm²
X 222 625 01 for cable cross section 2.5...4.0 mm²
X 222 848 01 for cable cross section 4.0...6.0 mm²



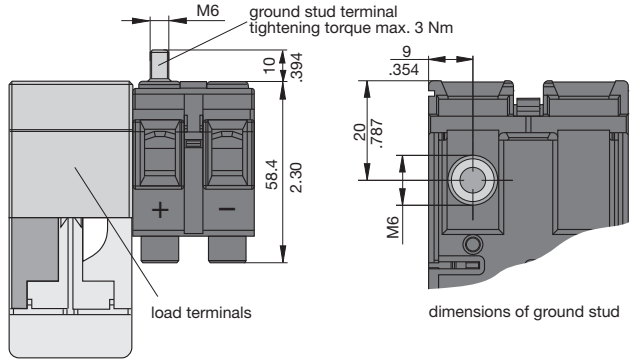
7

Dimensions

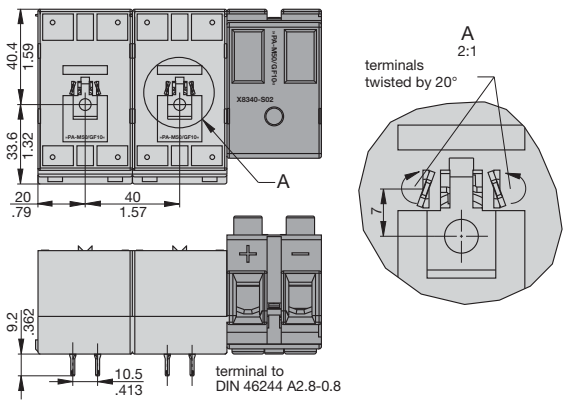
Distribution rail, shown with power supply right-side X8340-S02R-…



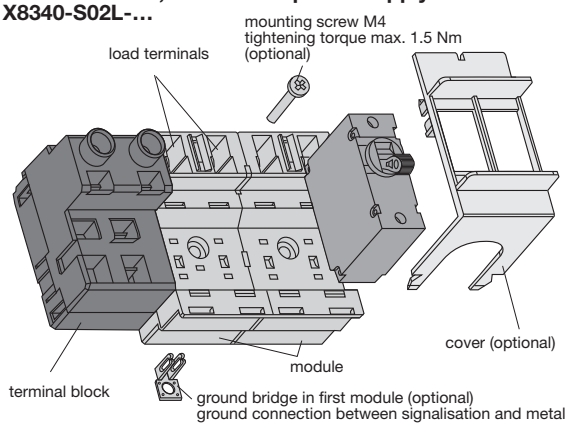
Distribution rail, ground stud M6 (optional)



Distribution rail, single signalisation

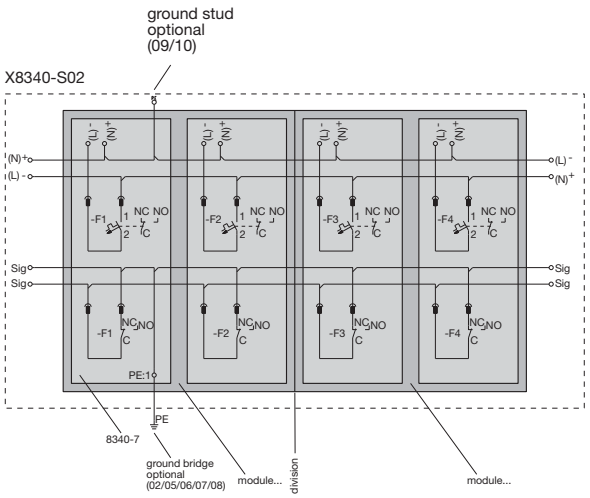


Distribution rail, shown with power supply left-side X8340-S02L-…

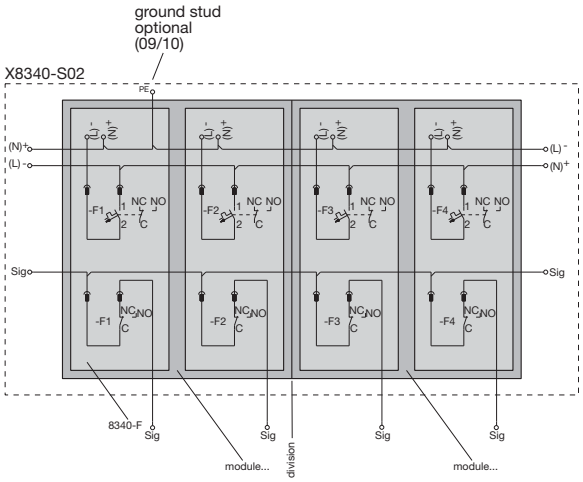


Internal connection diagram

Group signalisation



Single signalisation



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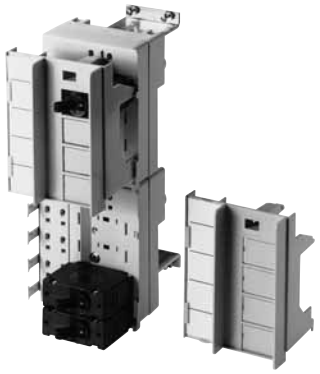
Distribution rail X8340-S04

Description

Distribution rail for one or two modules suitable for ETSI control cabinet and similar applications. One module comprises 4 positions for magnetic or hydraulic-magnetic circuit breakers type 8340-F... and associated line and load terminals. Circuit breaker status indication (group signalisation) is via two busbars. The modular design facilitates the operation of a single distribution rail at two different voltages.
Live parts in the plug-in and supply feed terminal areas are protected against brush contact.
Expansion or circuit breaker replacement is possible with power on.

Typical applications

Telecommunications, measuring and control systems



X8340-S04

Ordering information

Type No.		
X8340	Distribution rail for circuit breaker type 8340-F	
	Version	
	S rail	
	Identification number	
	04 modular, for 4 circuit breakers	
	Modules with power supply	
	1 1 module, 4-way	
	2 2 modules, 4-way each	
	Accessories	
	0 without	
	1 mounting bracket, 2 modules + mounting screw	
	2 mounting bracket, 2 modules + cover + mounting screw	
	3 cover	
	4 mounting bracket, 1 module + cover + mounting screw	
	5 cover + mounting screw	
	6 mounting screw	
	Signalisation	
	0 without	
	1 group signalisation + ground connection	
	2 group signalisation	
X8340 - S 04 2 1 - 1	ordering example	

Technical data

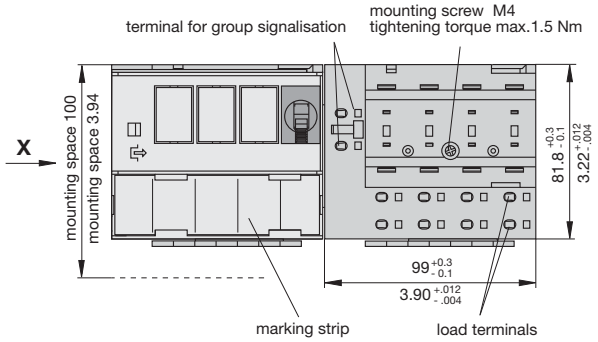
For circuit breakers	8340-F.10-P1...-..H...	
Voltage rating	AC 230 V; DC 80 V	
Load	20 A per position 80 A for module	
Signalisation (N/C)	6 A, AC 230 V 1 A, DC 80 V per position	
Insulation co-ordination (IEC 60664 and 60664A)	Rated impulse withstand voltage 2.5 kV	Pollution degree 2
Flame retardance (IEC 60695, part 2-2)	self-extinguishing	
Supply terminal design	recessed screw/pressure plate feed 6...25 mm², stranded or 6...16 mm² with connector sleeve	
load and signalisation	screw-less connectors 0.5...2.5 mm², stranded, with connector sleeve	
Mass		
module	220 g	
cover	35 g	
bracket	145 g	

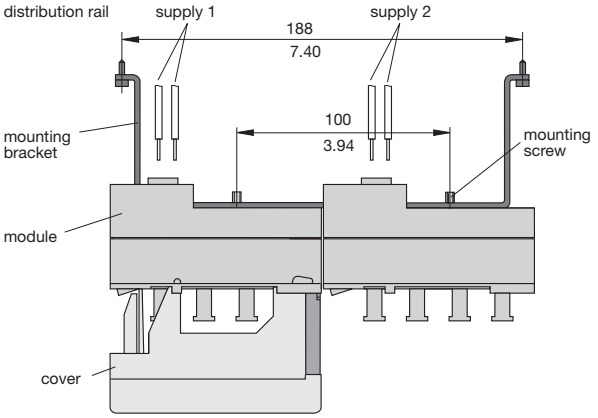
Approvals

Authority	Voltage ratings	Current ratings
UL 1801	AC 250 V; DC 80 V	80 A

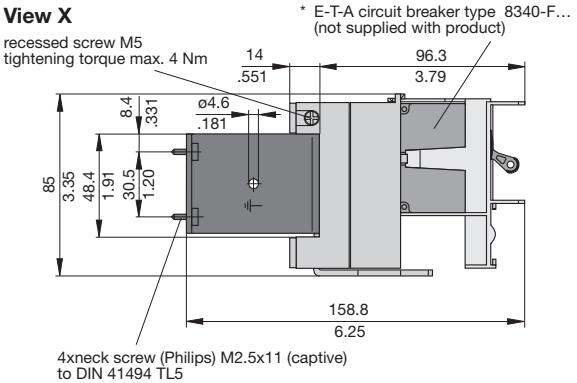
Dimensions

X8340-S0422 (right cover not represented)

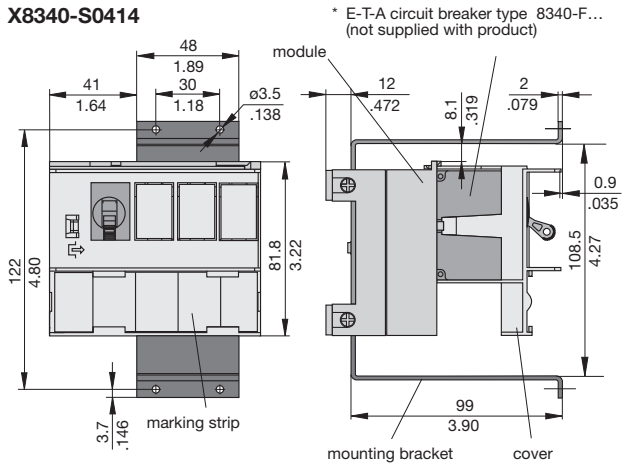




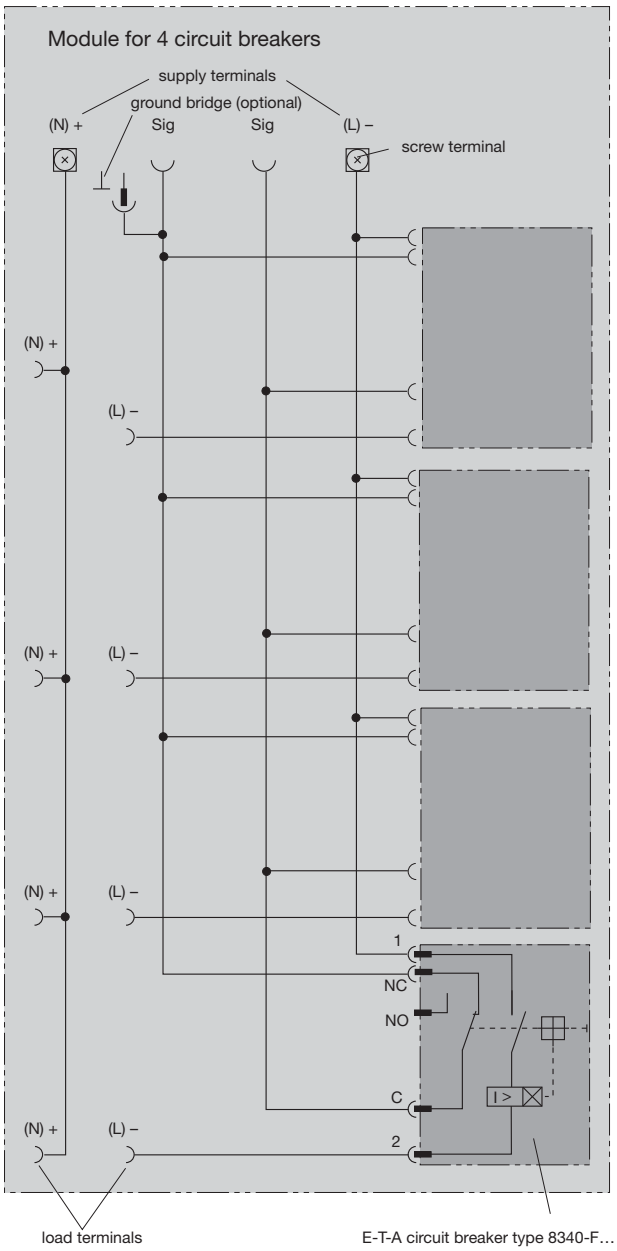
View X



X8340-S0414



Internal connection diagram



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Distribution rail X8340-SZ4

Description

Distribution rail with modules connected in series. One module provides 4 positions for magnetic or magnetic-hydraulic circuit breakers type 8340-F... and the pertinent line and load terminals on the front and rear side of the rail. Supply feed is either on the right or left side with copper busbars. Trip indication of the circuit breakers (group signalisation) is possible via two signal busbars.
Live parts in the plug-in area of the load terminals are protected against brush contact. Circuit breaker replacement is possible with power on.

Typical applications

Telecommunications, measuring and control systems

X8340-SZ4

Ordering information

Type No.
X8340 Distribution rail for circuit breaker type 8340-F
- **Version**
  - **S** rail
    - **Identification number**
      - **Z4** module accommodating 4 circuit breakers (smallest unit)
        - **Terminal (supply feed)**
          - **L** left side
          - **R** right side
            - **Power distribution modules**
              - **1** 1 module
              - **2** 2 modules
              - **3** 3 modules
              - **4** 4 modules
              - **5** 5 modules
                - **Signalisation**
                  - **0** without
                  - **1** group signalisation
                    - **Accessories / variations**
                      - **00** none
                      - **01** mounting screw M4 / module bulk shipped
                      - **A1** terminals twisted by 180°
                        - **Additional configuration**
                          - **00** neutral
                          - **01** customer specified marking

X8340 - S Z4 R 3 - 1 00 - 00 ordering example

Approvals

Authority	Voltage ratings	Current ratings
UL 1059	AC 250 V; DC 80 V	150 A

Technical data

Plug-in type circuit breakers	8340-F110-P1...-..H...	
Voltage rating	AC 230 V; DC 80 V	
Load	25 A per position (30 A upon request) 150 A for the rail	
Signalisation (N/C contact)	6 A, AC 230 V 1 A, DC 80 V per position	
Insulation co-ordination (IEC 60664)	Rated impulse withstand voltage 2.5 kV	Pollution degree 2
Flame retardance (IEC 60695, part 2-2)	self-extinguishing	
Terminal design		
supply feed	copper busbar 10x3 mm with hole ø 5.3 mm dia. current supply from the rear side (left or right)	
loads	blade terminals DIN 46244-A6.3x0.8mm load output terminal protected against reverse polarity on front and rear side	
signalisation	blade terminals DIN 46244-A6.3x0.8mm plug-in direction as circuit breakers, opposite to the main terminal side	
Mass		
module	200 g	
every additional module	145 g	

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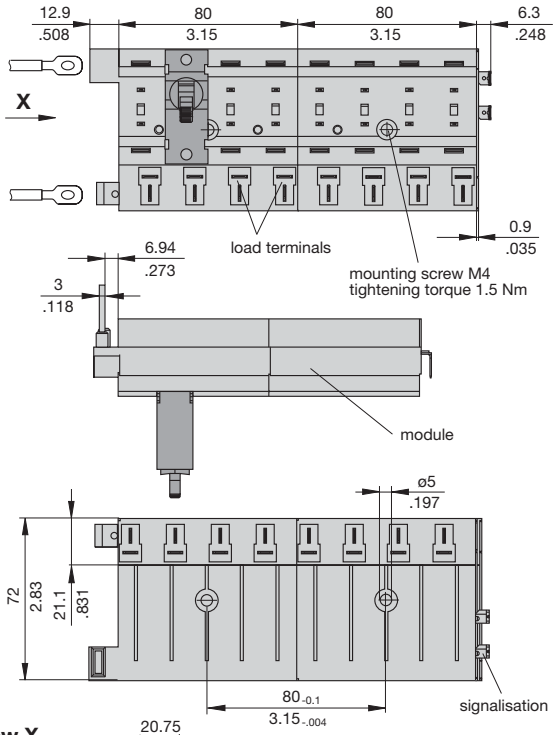
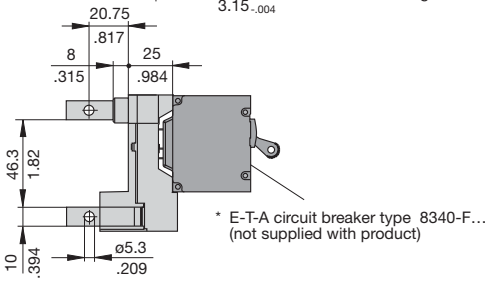
Dimensions

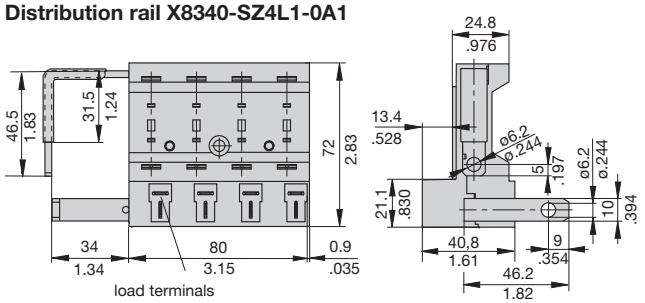
Distribution rail. Power supply left-side



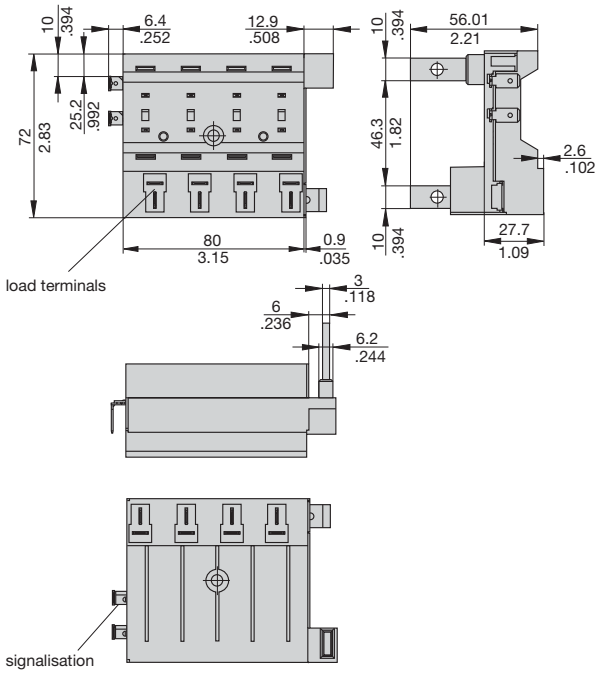
View X



Distribution rail X8340-SZ4L1-0A1



Distribution rail. Power supply right-side



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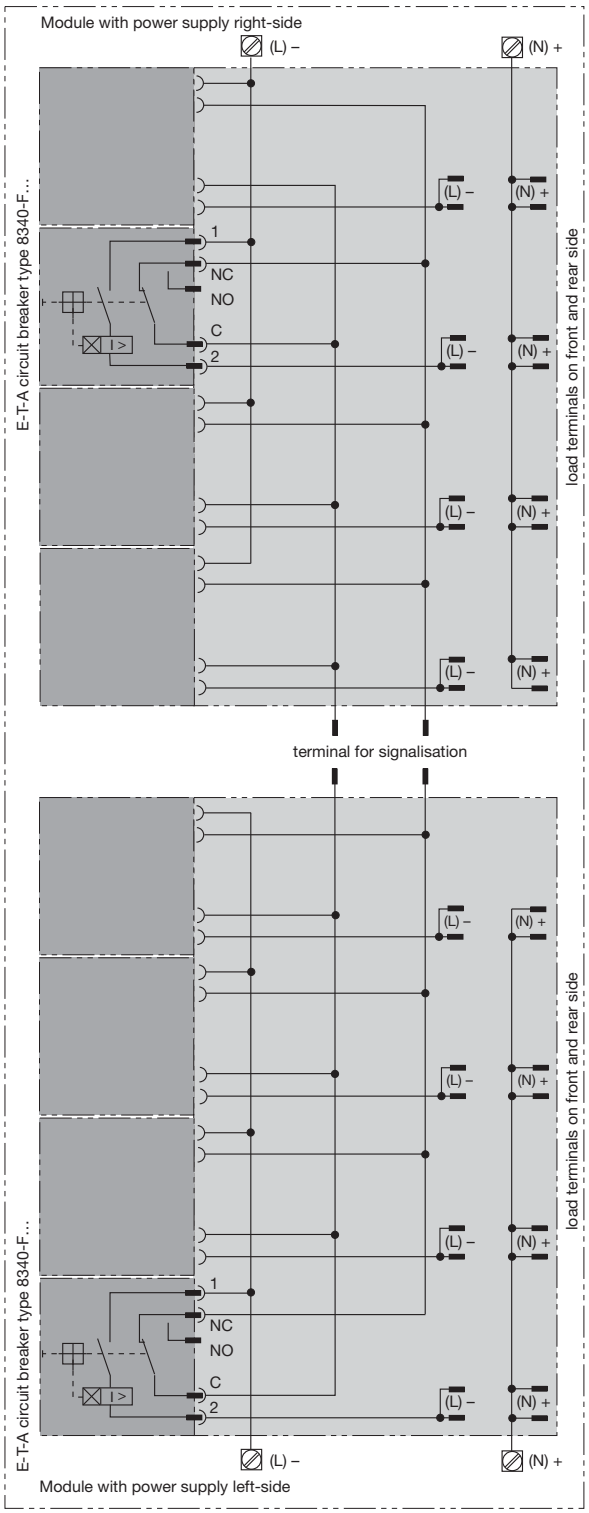
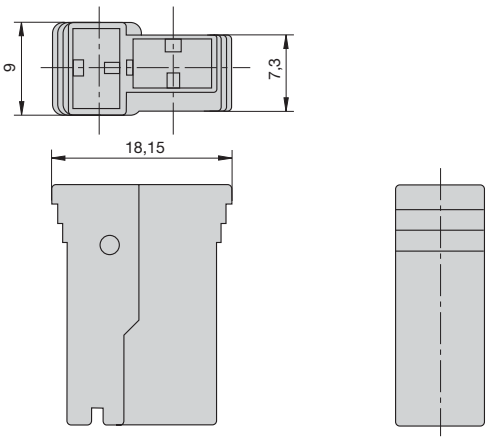
This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

Internal connection diagram



Internal connection diagrams

Load output terminal protected against reverse polarity
(set: 4 moulded sleeves, 8 blade terminals 6.3 x 0.8 mm)
X 222 847 01 for cable cross section 0.7...2.0 mm²
X 222 625 01 for cable cross section 2.5...4.0 mm²
X 222 848 01 for cable cross section 4.0...6.0 mm²



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Distribution rail X8345-D01

Description

Distribution rail comprising series connected circuit breaker mounting modules. Each module accommodates one magnetic or magnetic-hydraulic circuit breaker type 8345 and the associated line and load terminals on the rear side of the rail. Supply feed is either on the right or left side with copper busbars. Trip indication of the circuit breakers (group signalisation) is possible via two signal busbars.
Live parts in the plug-in area of the load terminals are protected against brush contact (IP20). Replacement of circuit breakers (switched off) is possible with power on.

Typical applications

Telecommunications, measuring and control systems

X8345-D01

Ordering information

Type No.
X8345 Distribution rail for circuit breaker type 8345
Version
D rail
Identification number
01 module for 1 circuit breaker
Terminal (supply feed)
L left side
R right side
Power distribution modules
02 2 modules
03 3 modules
04 4 modules
05 5 modules
06 6 modules
07 7 modules
08 8 modules
09 9 modules
10 10 modules
Signalisation
0 without
1 group signalisation parallel connection
Terminal design of main circuitry
01 2xM12 hexagon head screws for single-hole cable lug
03 2xM12 bent, hexagon head screws for double-hole cable lug (300 A)
Terminal design of circuit breaker module
01 hexagon head screw M6 for single-hole cable lug
07 hexagon head screw M6 for single-hole cable lug, with barrier
Accessories
00 without
01 19"mounting bar and screws M5, for module and frame, bulk shipped (length = 431.4 mm)
02 mounting bar (length = 153.8 mm)
Marking
A standard without marking

X8345 - D 01 L 05 - 1 - 01 01 -01 A ordering example

Technical data

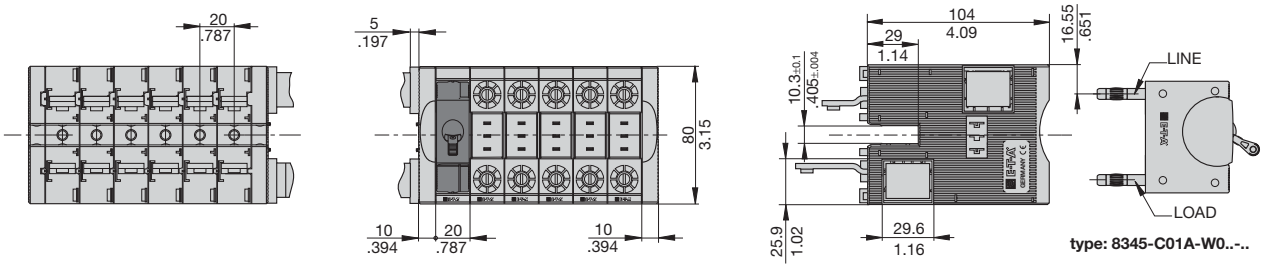
Plug-in type circuit breakers	8345-.01.-W0..-D.... and auxiliary contact module X8345-S01KW102-M	
Voltage rating	DC 110 V other ratings upon request	
Max. load	125 A per position (total 160 A for the two neighbouring positions when a breaker rated > 80 A is used), 600 A per complete module	
Ambient temperature	-30...+60 °C	
Signalisation (N/C contact)	DC 80 V 0.5 A per position	
Insulation co-ordination (IEC 60664)	Rated impulse withstand voltage 2.5 kV	Pollution degree 2
Flame retardance (IEC 60695, part 2-2)	self-extinguishing	
Terminal design		
supply feed	copper bar 20x25 mm with M10 thread current supply from the rear side (left or right) (tightening torque max. 15 Nm)	
load	screw terminals M6 (tightening torque max. 7 Nm) on rear side	
signalisation	2 blade terminals DIN 46244-A6.3x0.8mm	
Mass		
module	approx. 320 g	

Approvals

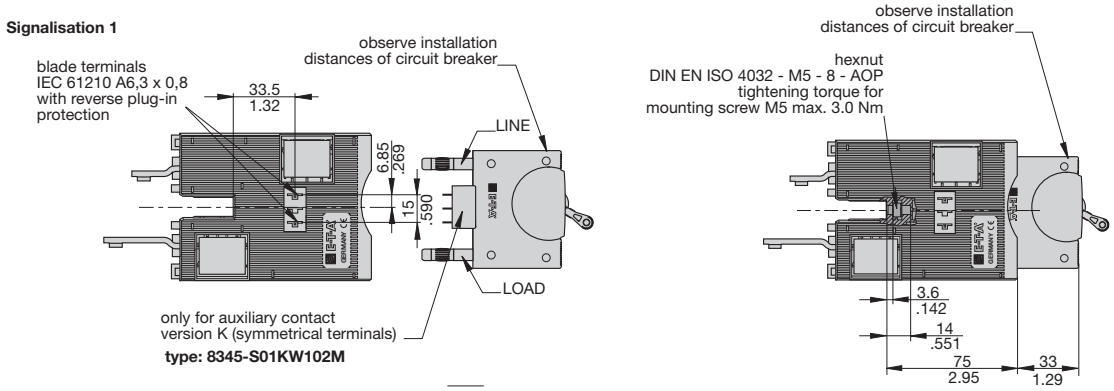
Authority	Voltage ratings	Current ratings
UL 60950	AC 277 V; DC 110 V	600 A

7

Dimensions

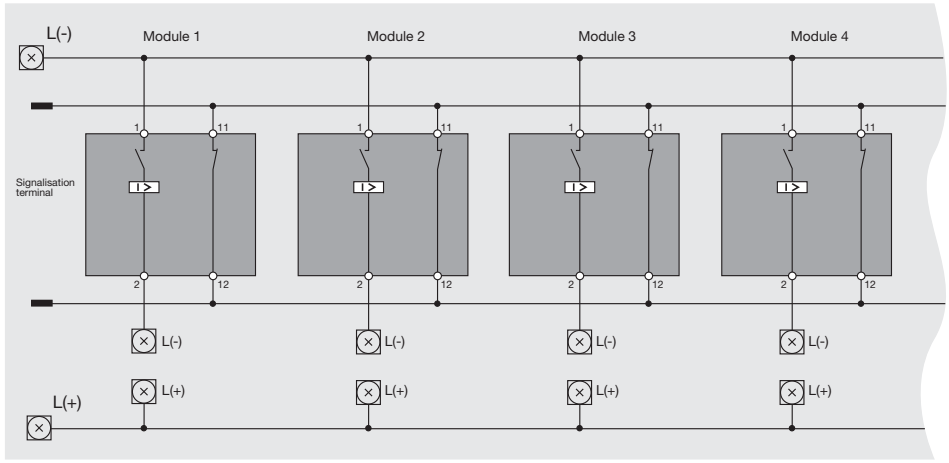


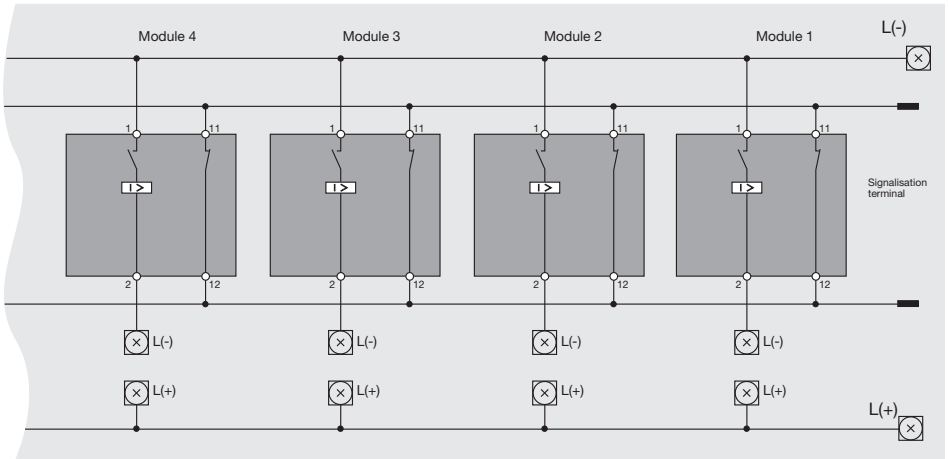
Signalisation 1



This is a metric design and millimeter dimensions take precedence ($\frac{mm}{inch}$)

Internal connection diagrams





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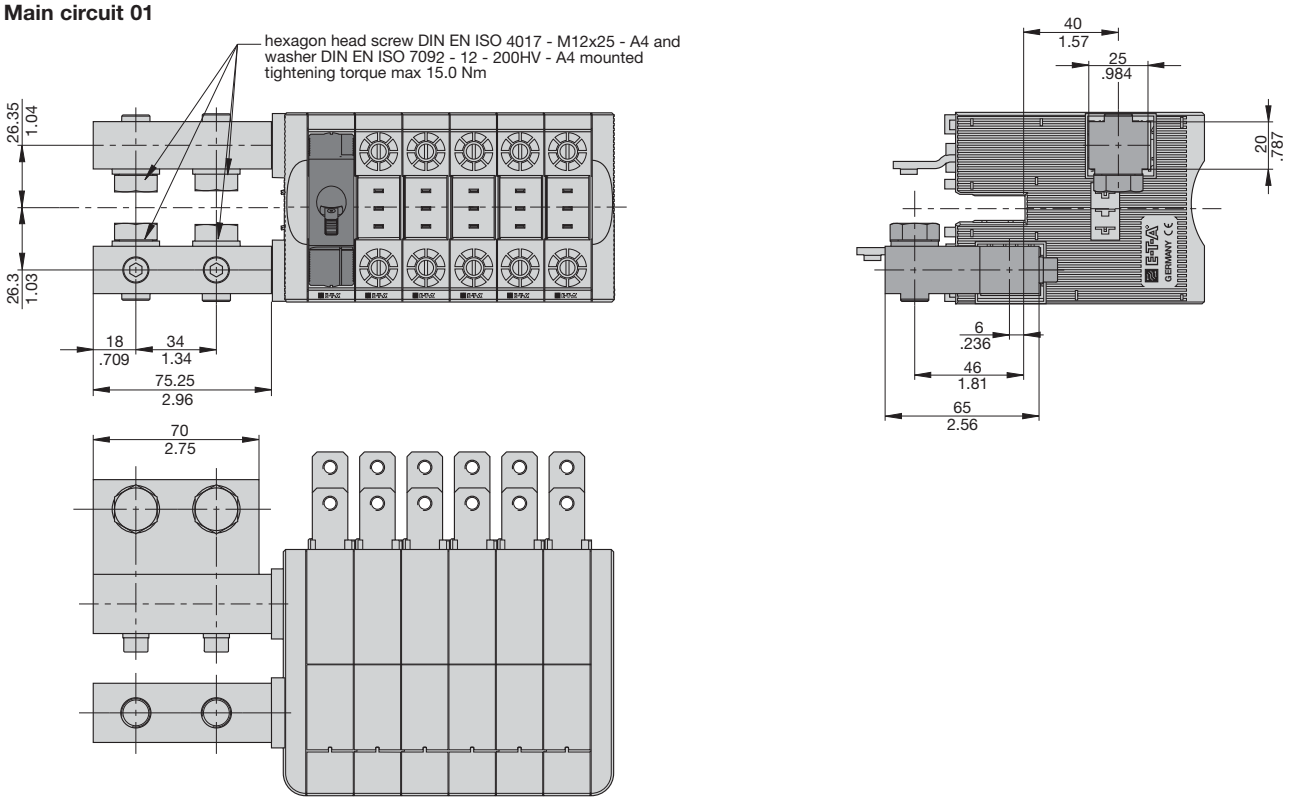
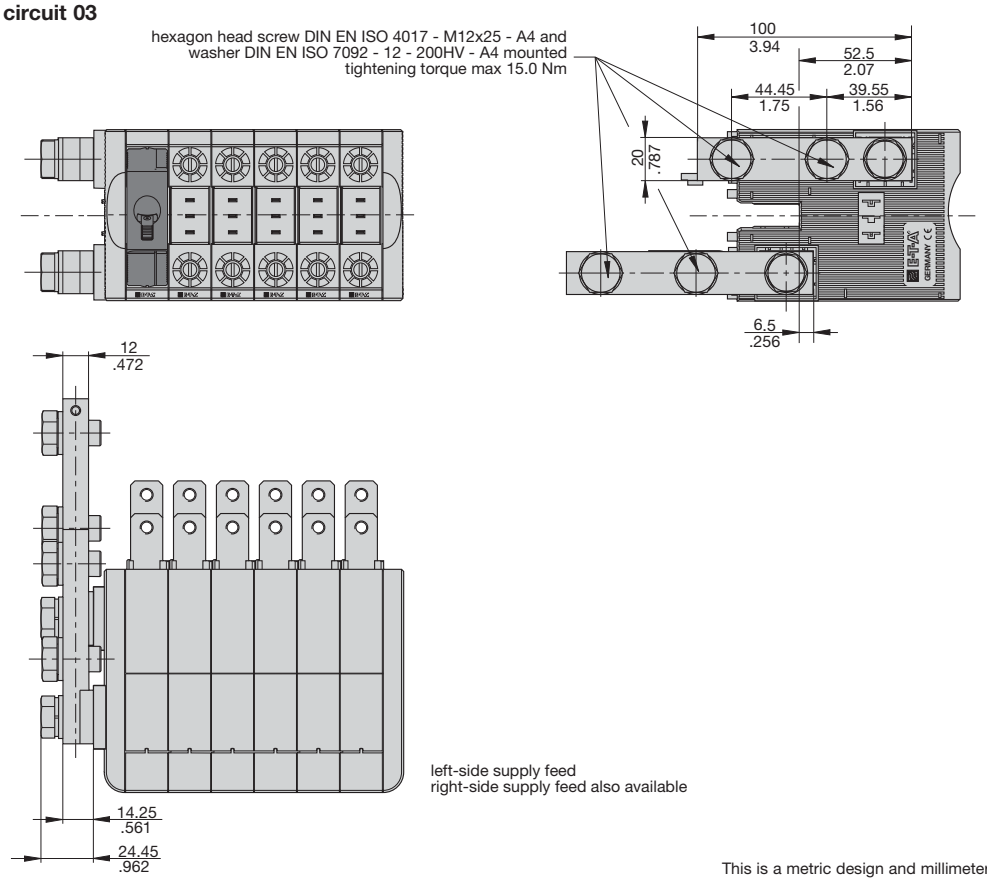
Terminal design

Main circuit 01



left-side supply feed
right-side supply feed also available

Main circuit 03



left-side supply feed
right-side supply feed also available

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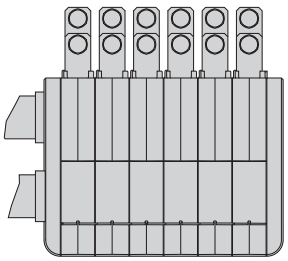
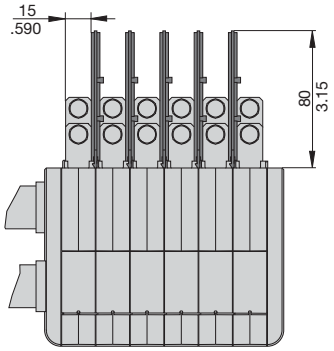
7

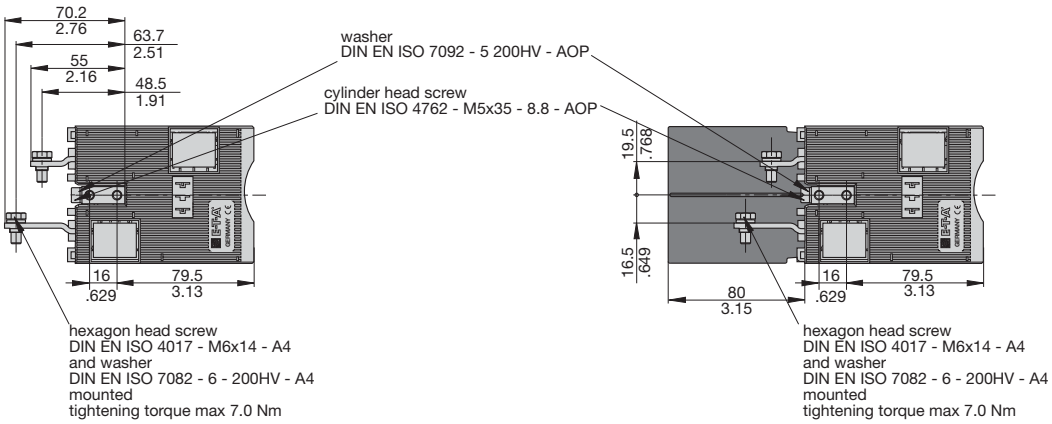
Terminal design

Circuit breaker module 01
without barrier

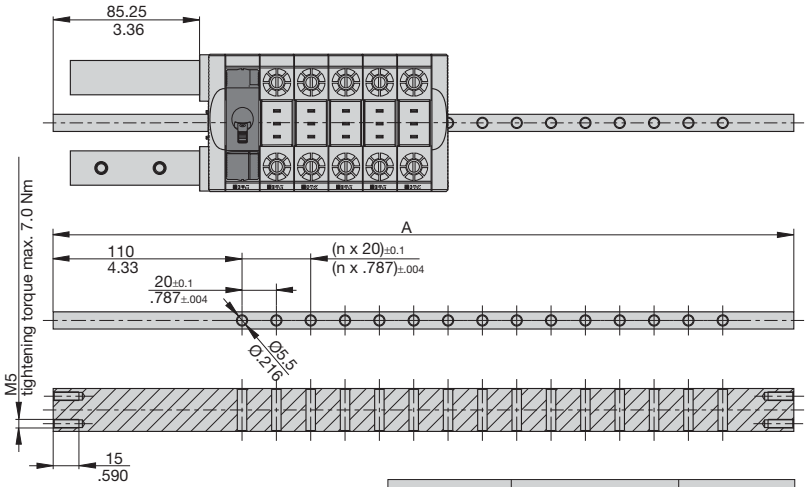


Circuit breaker module 07
with barrier



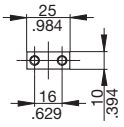


Accessories

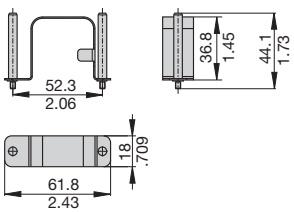


left-side supply feed
mounting bar suitable for
left- and right-side supply feed

part number	n = number of holes	A
Y 307 873 01	15	431.4 ± 0.2 16.98 ± .007
Y 307 873 02	2	153.8 ± 0.2 6.05 ± .007



Withdrawal tool
X 222 547 02



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