

Description

The power distribution system SVS20 for rail mounting distributes the current supplied by a DC 24 V switch-mode power supply to 8 channels and selectively protects the connected loads by means of the inserted circuit breakers. With a max. load current of 8 A per channel and a max. total current of 40 A the SVS20 provides ease of wiring in short-circuit limited DC 24 V applications. Eight protected "L+" load outputs per channel and 35 minus terminals help to reduce wiring time significantly.

Suitable for the following circuit breaker types:

Electronic circuit breaker	ESS20-003..
Electronic circuit protector	ESX10-103..

Features and benefits

- Systematic integration of protection and distribution functions
- Power distribution and selective protection of DC 24 V load circuits all-in-one
- Clear distribution and wiring concept
- Significant reduction of wiring time
- Ease of planning, design and installation
- Ease of maintenance, diagnostics and system extension
- Compact power distribution for compact control cabinets
- Additional integral minus terminals
- External loop-in facilities between load output terminal (L) and (1) per channel
- Signal contact can be arranged in groups:
F1...F4 = gr. 1, F5...F8 = gr. 2 possible

Ordering information

Type

SVS20	Power distribution system for ESS20-003, ESX10-103
	<ul style="list-style-type: none"> • For short-circuit limited DC 24 V applications • Max. 40 A continuous load • One integral circuit breaker (CB1): overcurrent protection for split-group and group signalling, LED flashing red after trip of CB1 • Including 8 insulated wire bridges Y 303 881 08 between L and 1 fitted • Including 1 insulated wire bridge Y 303 881 08 • Accessories: jumpers SB-11-P1-01-1-1A (for free channels), order separately
	Version, max. number of circuit breakers on the system
08	8 circuit breakers (F1...F8)
	Fitting variant, load output / minus and signalling terminals
B10	Standard: completely fitted with plug-in type screwless terminals (max. 2,5mm ² , without wire end ferrule)
	Minus terminals
K01	35 minus terminals
	Special version
SB01	with marked terminals supply terminals +/+/-/-/- load output terminals L/1/2/3/4//5/6/7/8/9 minus- / signal terminals 1/2/3/4/5

SVS20 - 08 - B10-K01-SB01 ordering example

Accessories: jumper and wire bridge see page "Accessories"



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

Application

Modular power distribution system for **short circuit limited** DC 24 V applications

Supply

Voltage rating	DC 24 V (18...32 V)
Total current	max. 40 A DC 24 V (+) = X21 + / + / + DC 24 V (-) = X21 - / - / -

Terminals	3 x 2 screwless terminals max. 10 mm ² , for power supplies loop-through integral, for wiring max. cable cross section without/ with wire end ferrule stripping length	0,25 – 10 mm ² 12 mm
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F-positions

8 positions for circuit breakers, prepared for types ESS20-003, ESX10-103

U1-potential / F1...F8 = terminals X1...X8
Plug jumper SB-11-P1-01-1-1A into free positions (order separately, see accessories)

Load outputs per channel

Voltage rating	DC 24 V (18...32 V)
Current	max. 8 A per terminal block / position ¹⁾
Terminals	10 x L/1/2/3/4//5/6/7/8/9 protected per position F1...F8 led out to terminals X1...X8 screwless terminals max. 2.5 mm ²

External loop-in facilities between load output terminal (L) and (1) per channel
delivery status: load output terminal (L) and (1), bridged with "jumper insulated"

Minus terminals

Voltage rating	DC 24 V (18...32 V)	
Current	max. 8 A per terminal block	
Terminals	5-pole terminals X22...X28 (total 35 minus terminals) screwless terminals max. 2.5 mm ² max. (cable cross section) without/with wire end ferrule stripped length	0,25 – 10 mm ² 10 mm

¹⁾ When connected in series and mounted side-by-side, circuit breakers type ESS20, ESX10, rated 10 A can only carry 80 % rated load.

Technical data ($T_{amb} = 25\text{ °C}$, $U_B = \text{DC } 24\text{ V}$)

Signalling

Voltage rating	DC 24 V (18...30 V)	
Total current	max. 0.5 A	
Signal terminal X31 for group or split-group signal		
X31.1 [OUT-S/GR1]	Signal output: output group signal S or output split-group signal GR1	
X31.2 [+DC24V]	external supply + DC 24 V for aux. circuit (max. 0.5 A)	
X31.3 [IN-GR]	supply split-group signal via jumper between X31.4 and X31.3	
X31.4 [PROT24]	aux. circuit, protected via integral circuit breakers CB1	
X31.5 [IN-S/OUT-GR2]	supply group signal via jumper between X31.4 and X31.5 or output split-group signal GR2 (at jumper between X31.4 and X31.3)	
Terminals	5-pole terminals screwless terminals max. (cable cross section) without/with wire end ferrule stripping length	max. 2,5 mm ² 0,25 – 10 mm ² 10 mm

Selective overcurrent protection CB1 for supply of group or split-group signal. LED red flashing after trip and reset of CB1: press red actuator button

Termination

For signalling, load outputs and minus terminals:

10 load outputs, minus terminals and signalling: (standard)

5-pole terminals (X1-Xn) / (X31) / (X22-X28)	
plug-in type screwless terminals, fitted	
max. cable cross section	
with/without wire end ferrule	0.25 – 10 mm ²
stripping length	10 mm
with integral test socket	

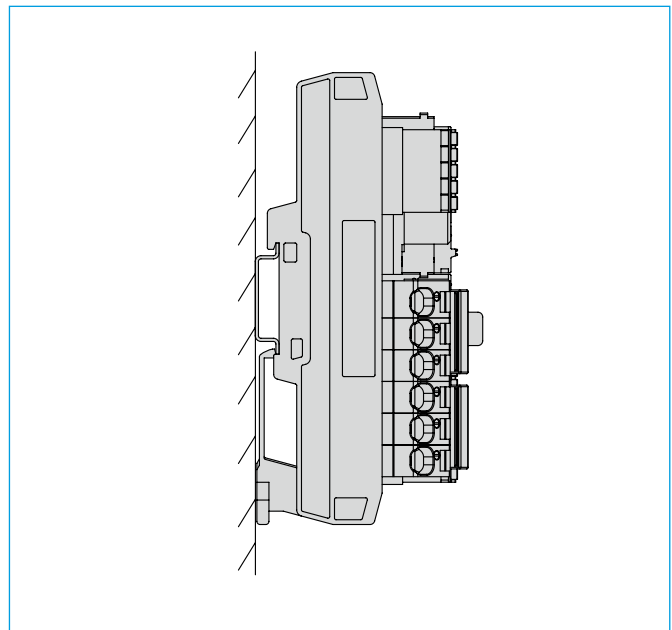
General data

Mounting	rail mounting to EN 50022 - 35 x 7.5
Temperature range	0...50 °C (without condensation)
Storage temperature	-20...+70 °C
Housing material	plastic
Protection class	terminals P20 DIN 40050 pcb IP00 DIN 40050 (double coating)
Insulation voltage	DC 250 V (pcb)
Dimensions	see drawing (tolerances to DIN ISO 286 part 1 IT13)
Mass	SVS20-08-B10 approx. 780 g

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.

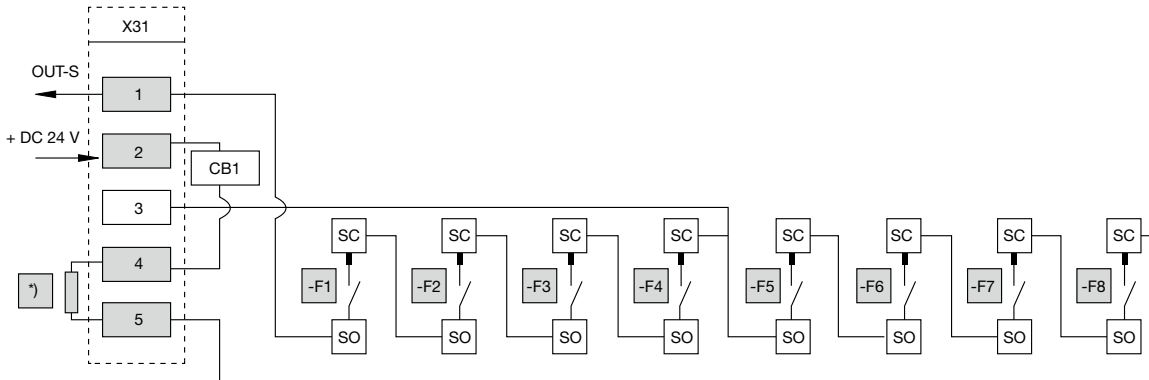
Mounting position



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Wiring example: SVS20-08... with ESS20-003 / ESX10-103 and group signalling

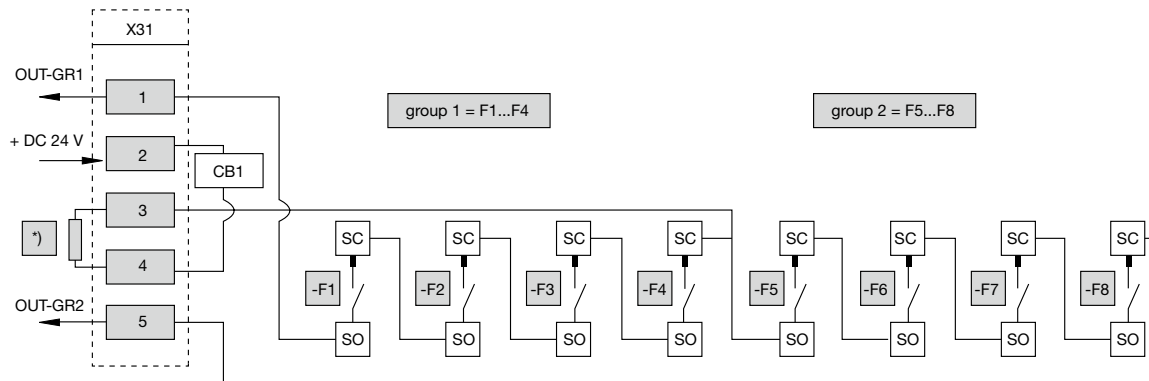
Signal path of group signalling from F1 to F8



- X31.1** [OUT-S] signal output group signal
- X31.2** [+DC24V] supply + DC 24 V for aux. circuit
- X31.3** - not connected -
- X31.4** [PROT24] aux. circuit, protected via CB1
- X31.5** [IN-S] supply group signalling with insulated wire bridge *)
- SC/SO Aux. contact make contact (ESS20-003 / ESX10-103)

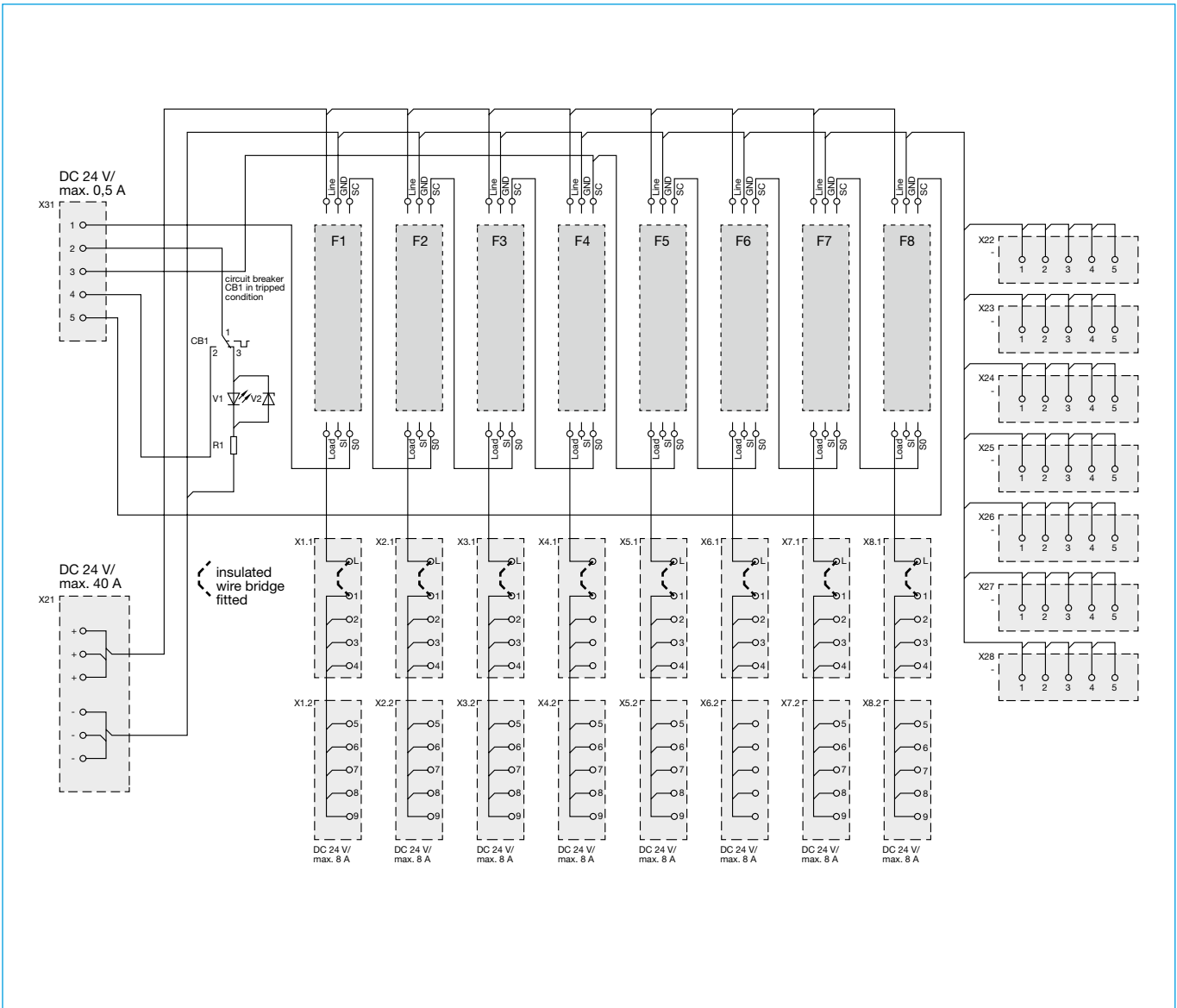
Wiring example: SVS20-08... with ESS20-003 / ESX10-103 and split-group signalling

Signal path of split-group signalling
from F1 to F4 = group 1, from F5 to F8 = group 2



- X31.1** [OUT-GR1] signal output group 1
- X31.2** [+DC24V] supply + DC 24 V for aux. circuit
- X31.3** [IN-GR] supply split-group signal with insulated wire bridge *)
- X31.4** [PROT24] aux. circuit, protected via CB1
- X31.5** [OUT-GR2] signal output group 2
- SC/SO Aux. contact make contact (ESS20-003 / ESX10-103)

Schematic diagram: SVS20-08-xxx-K01



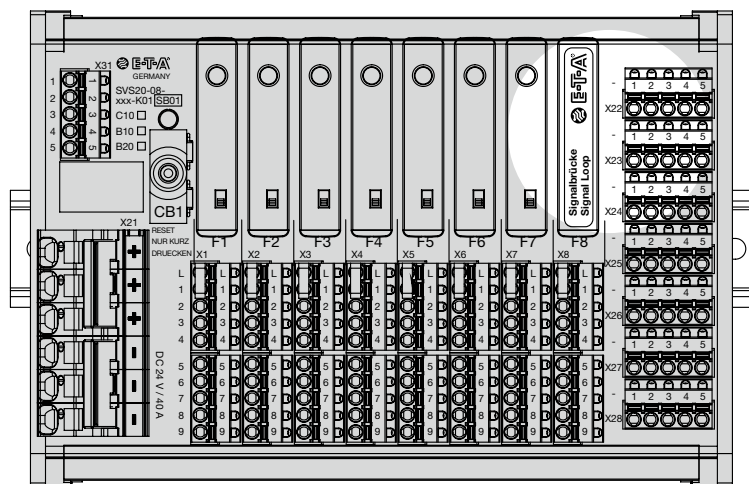
Application example for insulated wire bridge

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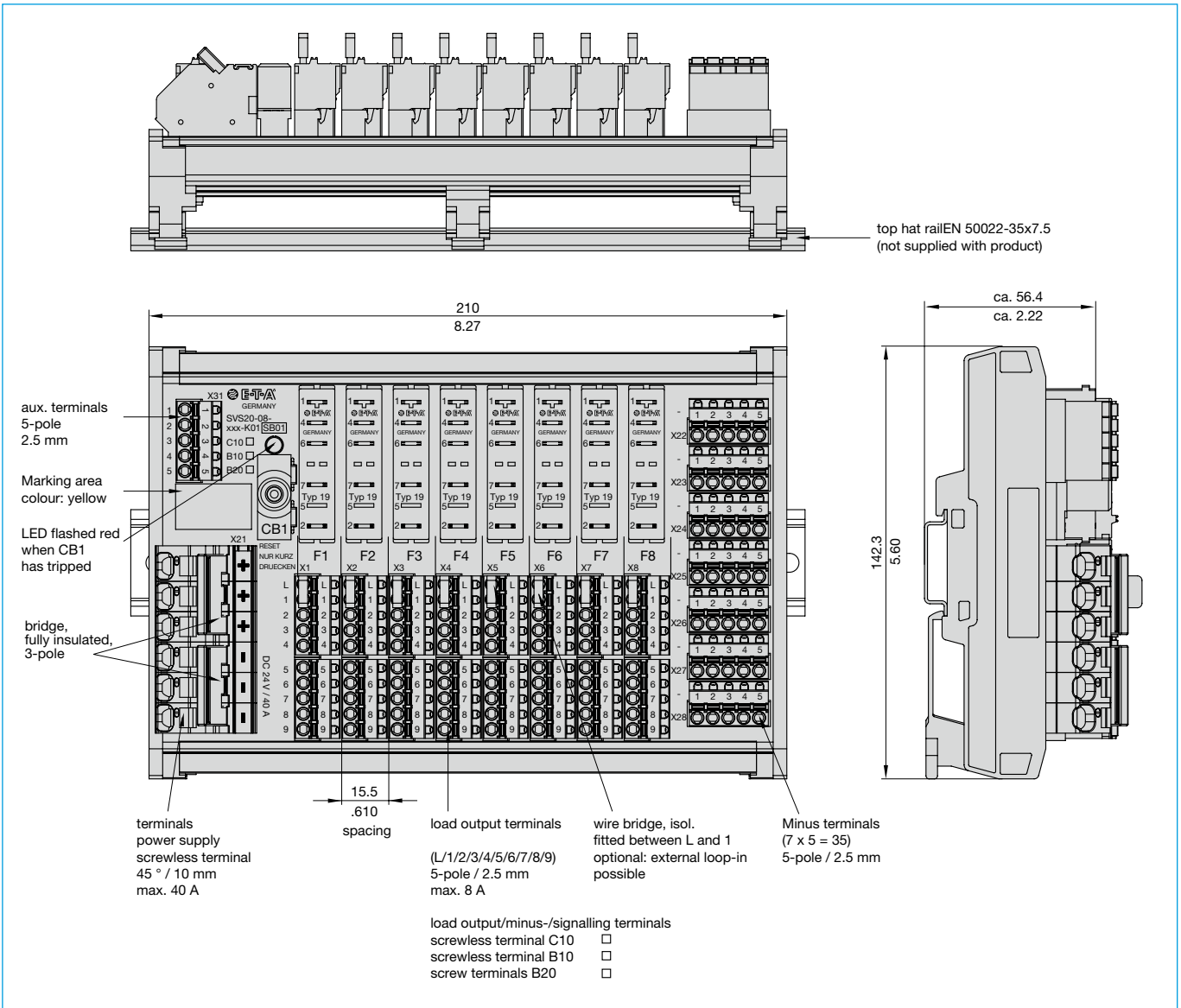
If the power distribution system is not completely fitted with circuit breakers, the open position can be closed by means of the jumper SB-S11-P1-01-1-1A.

- Signal path of group signalling
- after supply of + DC 24 V in X31.2 via integral overcurrent protection CB1 to X31.4
- from X31.4 via plugged-in wire bridge to X31.5
- via all aux. make contacts SC/S0 of the inserted circuit breakers type ESX10-103
- back to the signal output of the group signal X31.1 ("OUT-S")

In operating conditions (i.e. all circuit breakers plugged in and working), the signalling pathway from X31.2 to X31.1 is closed.



Dimensions: SVS20-08-B10-K01-SB01 (with 35 minus terminals)

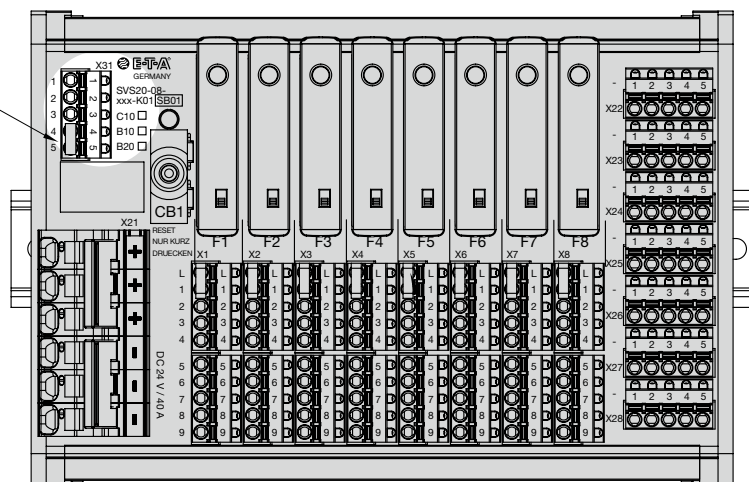


Application example for isolated wire bridge

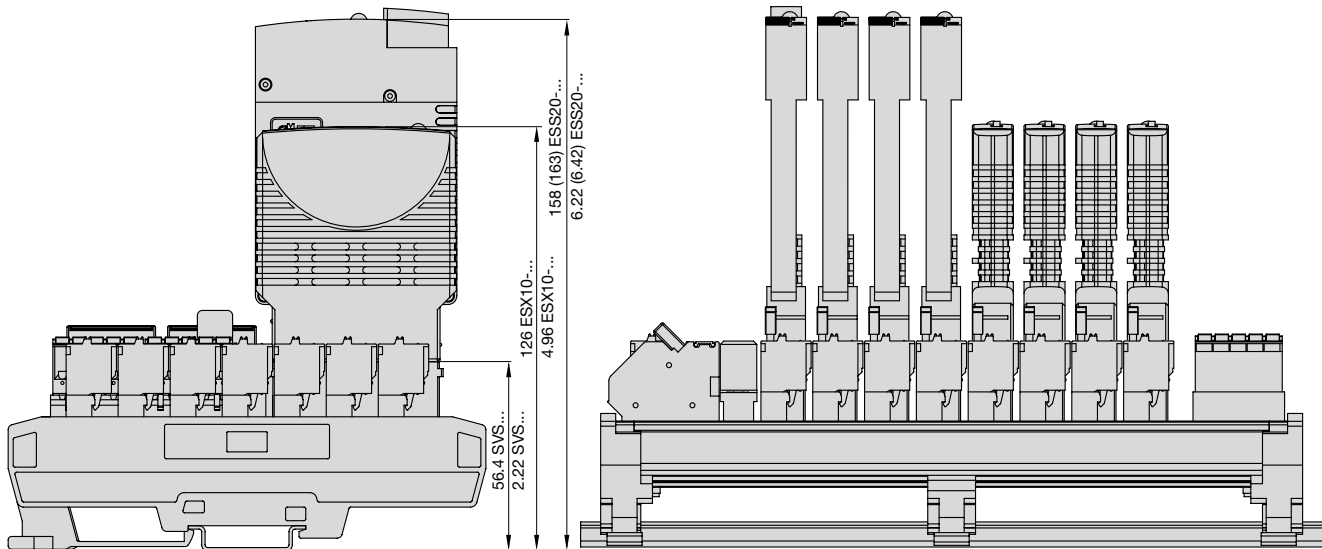
**terminal X31 e.g.. for
group signalling**

plug in insulated wire bridge between
X31.4 and X31.5

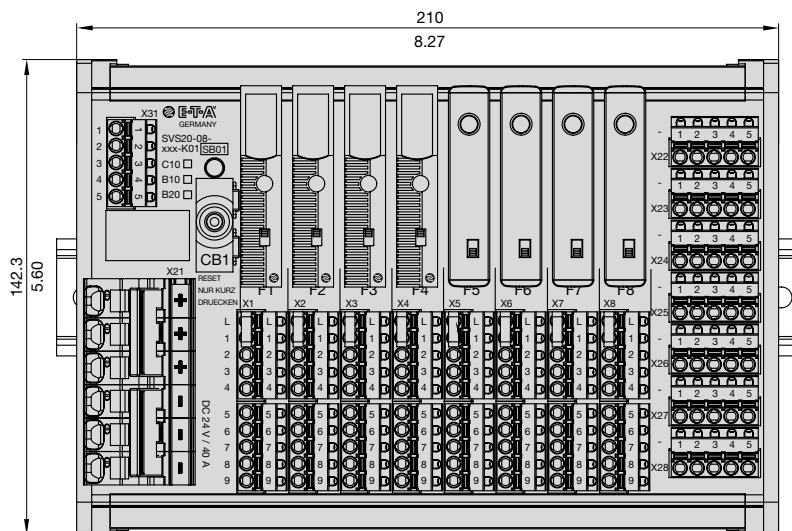
supply + DC 24 V is in X31.2
signal output group signal of all
circuit breakers is X31.1



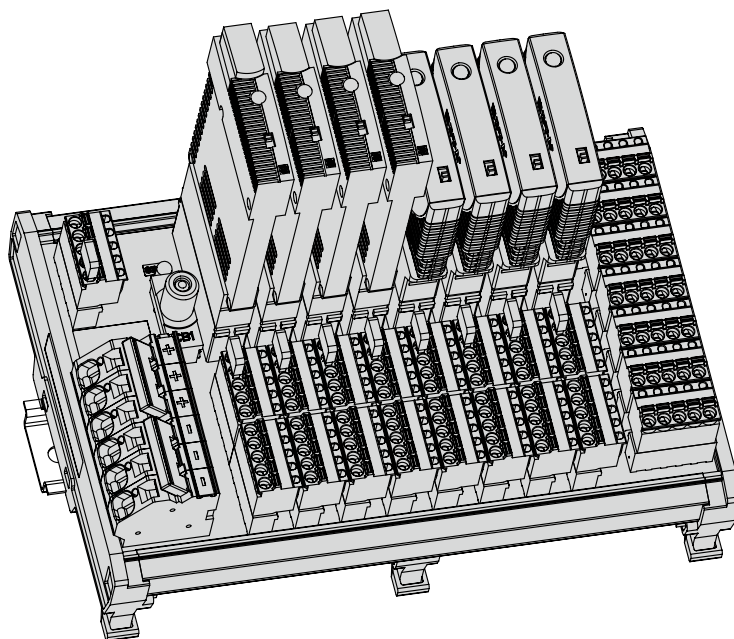
Application example: SVS20-08-B10-K01-SB01 fitted with ESS20-003 and ESX10-103



top hat rail EN 50022-35x7.5
(not supplied with product)

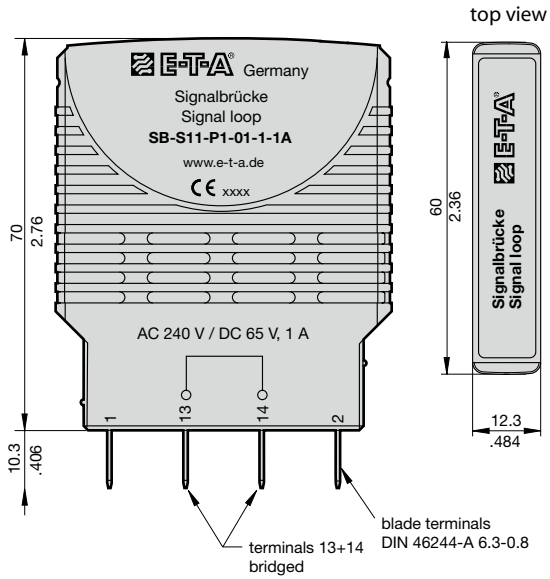


Plug-on modules
(circuit breakers / jumpers):
Please order separately.



Accessories

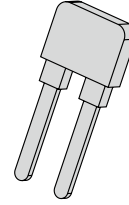
**Jumper
SB-S11-P1-01-1-1A**



Insulated wire bridge

Y 303 881 08

1 piece is supplied with the product



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

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.

