

Description

The new power distribution and remote output system type SVS16-PB-xx offers selective overcurrent protection, power distribution of load circuits and switching, protection and diagnosis of digital outputs up to 10 A. An integral consistent communication of operating and fault conditions as well as switching and resetting of individual circuits on the DC 24 V level via PROFIBUS-DP make the SVS16-PB an intelligent sub-system on the control level. The SVS16-PB for direct rail mounting accommodates 8 (SVS16-PB-08-Cx3-P0x) or 16 (SVS16-PB-16-Cx3-P0x) electronic circuit protectors up to 10 A of type ESX10-(S)125 (with reset input) or ESX10-(S)115 (with control input). They ensure selective overcurrent protection of sensors and actuators, de-centralised peripheral sub-assemblies and their supply lines.

Alternatively the slots of the SVS16-PB allow the use of the solid state power controllers type E-1048-S7xx. Their well-proven features include activation, monitoring and diagnosis of hydraulic or pneumatic solenoids, magnetic valves, signal lamps etc. in a range of 0.5 A to 5 A with regard to short circuit, overload or wire breakage. PROFIBUS-DP makes all benefits of this approved system available for the protection of DC 24 V circuits. The SVS16-PB has a fully-fledged PROFIBUS-DP interface supporting all specified Baud rates up to max. 12 MBaud. The SVS16 reduces wiring times and increases diagnostic capabilities and system availability in process control, chemical, petrochemical, pharmaceutical and foodstuffs industry, in steel production and car manufacturing.

Suitable for the following types:

Electronic circuit protector	ESX10-(S)115.. (with control input and status output)
Electronic circuit protector	ESX10-(S)125.. (with reset input and status output)
Solid state remote power controller	E-1048-S7xx.. (with control input and status output)

Features and Benefits

- Integral complete DC 24 V system for overcurrent protection, power distribution and remote input and output
- Systematic integration of protection and distribution functions
- Power distribution and selective protection of DC 24 V load circuits all in one
- For electronic circuit protectors ESX10-(S)115/-(S)125 bis 10 A
- For solid state remote power controller E-1048-S7xx up to 5 A
- Fully-fledged PROFIBUS-DP interface
- Integral diagnostic functions for load circuits (overcurrent, wire breakage etc.)
- Profitability through considerably reduced wiring time
- Reduction of planning, design and installation time
- Ease of maintenance, diagnosis and system extension

Approvals

- CE



SVS16-PB

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

Application:

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

Line entry load module (X21)

Rated voltage	DC 24 V (18 ... 32 V)
Total current	max. 40 A DC 24 V (+) = (X21) 1+ / 2+ (2-way) DC 24 V (-) = (X21) 1- / 2- (2-way) PE = (X21) PE, connected to DC 24 V (-) integral loop-through
Terminal design	5-pole spring-loaded terminals, (1+/2+/1-/2-/PE) Cable cross section max. 10 mm ²

Connection of line entry of BUS module (X31) is compulsory

Rated voltage:	DC 24 V (18...32 V)
Current consumption	max. 250 mA DC 24 V (+) = (X31) 1+ / 2+ (2-way) DC 24 V (-) = (X31) 1- / 2- (2-way) integral loop-through, 2 x 2-pole PT terminals, (1+/2+) (1-/2-)
Terminals:	2 x 2-pole PT terminals, (1+/2+) (1-/2-) cable cross section max. 1.5 mm ²

F-slots

Number of slots for circuit breakers, prepared for circuit protector types ESX10-(S)115, ESX10-(S)125, E-1048-S7xx
SVS16-PB-08... F1...F8 = terminals X1...X8
SVS16-PB-16... F1...F16 = terminals X1...X16

Load outputs per way / slot

Rated voltage:	DC 24 V (18 ... 32 V)
Current:	max. 10A per terminal block / slot 1) (L+) protected load output (+) (L-) negative return load (-) (PE)
Terminals:	three-level screwless spring-loaded terminals (+X1...+Xn / -X1...-Xn / PE X1...PE Xn) Cable cross section max. 2.5 mm ²

BUS terminal (X50)

PROFIBUS-DP:	D-Sub, 9-pole, connector (X50)
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¹⁾ When mounted side-by-side, the circuit protectors ESX10 and the SSRPCs E-1048 rated 10A the devices can only carry 80% of their rated load continuously.

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

Termination

For supply lines and load outputs

C13 print spring-loaded terminals (standard)

line entry load module DC 24 V on terminal block (X21)
 5-pole spring-loaded terminals, (1+/2+/1-/2-/PE)
 max. cable cross section
 flexible with wire end ferrule w/wo
 plastic sleeve 0.5 mm – 10 mm²
 stripping length 12 mm

line entry BUS module DC 24 V on terminal block (X31)
 2 x 2-pole PT terminals, (1+/2+) (1-/2-)
 flexible with wire end ferrule
 (with plastic sleeve) 0.25 – 1.5 mm²
 flexible with wire end ferrule
 (without plastic sleeve) 0.25 – 2.5 mm²
 stripping length 8 mm

Load outputs on terminal block
 8x (16x) double level screwless spring-loaded terminals
 (+X1...+Xn / -X1...-Xn / PE X1...PE Xn)
 max. cable cross section
 flexible with wire end ferrule
 (with plastic sleeve) 0.25 – 1.5 mm²
 cable cross section AWG 0.20 – 2.5 mm²
 stripping length 7.5 mm

Order numbering code

Type

SVS16 Power distribution system for
 ESX10-(S)115, ESX10-(S)125, E-1048-S7xx

- Short-circuit limited DC 24 V applications
- Max. cont. load 40 A
- Max. cont. load per load output: 10 A
- BUS connection

Version: Bus system

PB PROFIBUS-DP (connection D-Sub, 9-pole, connector)

Max. number of circuit protectors on the distribution system

08 8 circuit protectors [F1...F8]

16 16 circuit protectors [F1...F16]

Fitting version

C13 standard: completely fitted with screwless spring-loaded terminals

Configuration parameters / behaviour at PROFIBUS error

P01 output byte(s) unchanged

P02 output byte(s) resetting

SVS16 - PB - 08 - C13 - P01 ordering example

Please note

- The max. total current of 40A per way must not be exceeded
- It is only intended for use with safety extra-low voltage (=24V DC).
- Connection to a higher or not reliably disconnected voltage can cause hazardous conditions or damages.
- The user has to ensure that the cable cross section of the load circuit in question complies with the current rating of the used load or circuit protector.
- The technical data of the used circuit protectors have to be observed.
- In addition special precautions must be taken in the system or machine (e.g. use of a safety PLC) which reliably prevent an automatic re-start of parts of the system (cf. Machinery Directive 2006/42/EG and EN 60204-1, Safety of Machinery). In the event of a failure (short circuit/overload) the load circuit will be disconnected by the circuit protector.
- The power distribution system must only be installed by qualified personnel.
- Only after expert installation must the device be supplied with power.
- After tripping of the circuit protector and before reset, the cause of the failure (short circuit or overload) must be remedied..
- The national standards (e.g. for Germany DIN VDE 0100) have to be observed for installation and selection of feed and return cables.
- 0V potential load and control voltage connected
- For convenient adjustment and configuration by means of projecting software a master data file with the file name `ETA_OC9E.gsd` will be made available for downloading on the E-T-A homepage. Please observe the user manual for type SVS16-PB-xx.

Caution



Caution:

Electrostatically sensitive sub-assemblies can be destroyed by voltages far below the human perception threshold. These voltages already occur if you touch a component or electrical terminals of a sub-assembly without being electrostatically discharged. The damage of a sub-assembly caused by an overvoltage is often not immediately recognised, but will be noticed only after a longer operating time.

PROFIBUS-DP Bus System

PROFIBUS-DP is a master-slave bus system to which up to 126 participants can be connected. Max. 32 participants can be operated at one bus segment.

More detailed information on the bus system, planning, mounting and operation of a system can be found in the official documents of the PROFIBUS user organisation (PNO).

The link www.profibus.com/downloads/ will lead you to the following documents:

- PROFIBUS (technical directive)
- PROFIBUS (planning directive)
- PROFIBUS (installation directive)
- PROFIBUS (operation directive)

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Configuration parameters Pxx "PROFIBUS-DP"

The output behaviour in the event of a PROFIBUS error (master failure, disruption of bus line etc.) can vary depending on the type configuration of the SVS16:

SVS16-PB-XX-XX-P01

A bus error will not affect the condition of the connected loads. The output byte(s) assigned to the slots remain unchanged.

SVS16-PB-XX-XX-P02

A bus error will affect the condition of the connected loads. The output byte(s) assigned to the slots will be set to 0, i.e. the connected loads will be disconnected.

General data

Application:

Mounting method symmetrical rail to EN 60715 - 35 x 7.5

Temperature range 0 °C to 50 °C (without condensation)

Storage temperature -20...+70°

Housing material plastic

Protection class terminals IP20 DIN 40050
pcb IP00 DIN 40050

Insulation voltage DC 250 V (pcb)

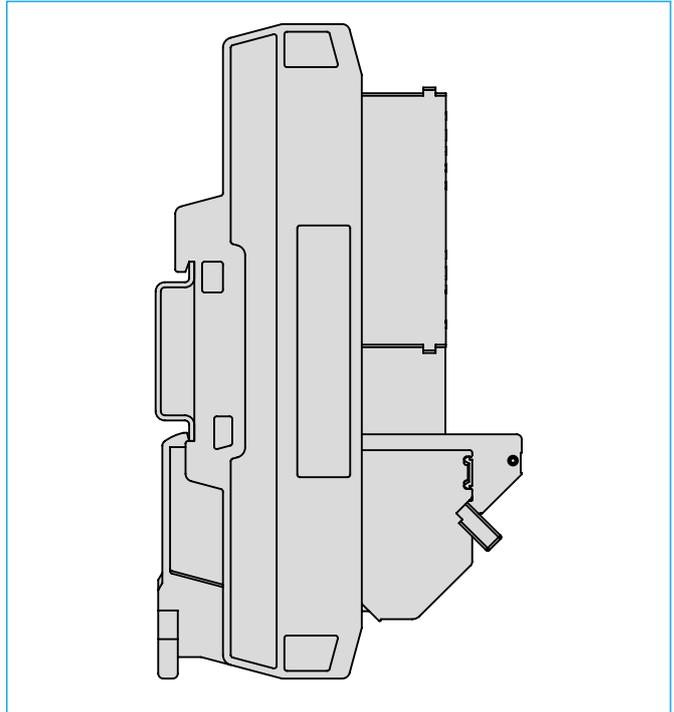
Dimensions see dimensional drawing (tolerances to DIN ISO 286 part 1 IT13)

Mass SVS16-PB-08-C13-Pxx approx. 515g
SVS16-PB-16-C13-Pxx approx. 810g

EMC

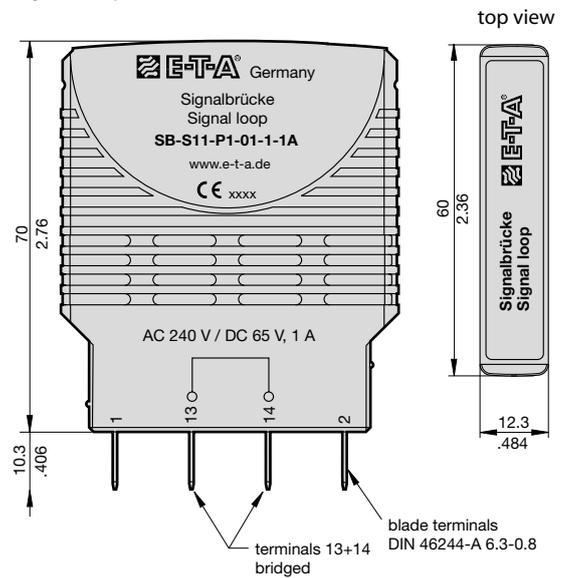
- EN 61000-6-2: 2005
Electromagnetic compatibility (EMC)
part 6-2: Basic standards - noise immunity
for industrial areas
- EN 61000-6-4: 2007+A1: 2011
Electromagnetic compatibility (EMC)
part 6-4: Basic standards - noise immunity
for industrial areas

Mounting position

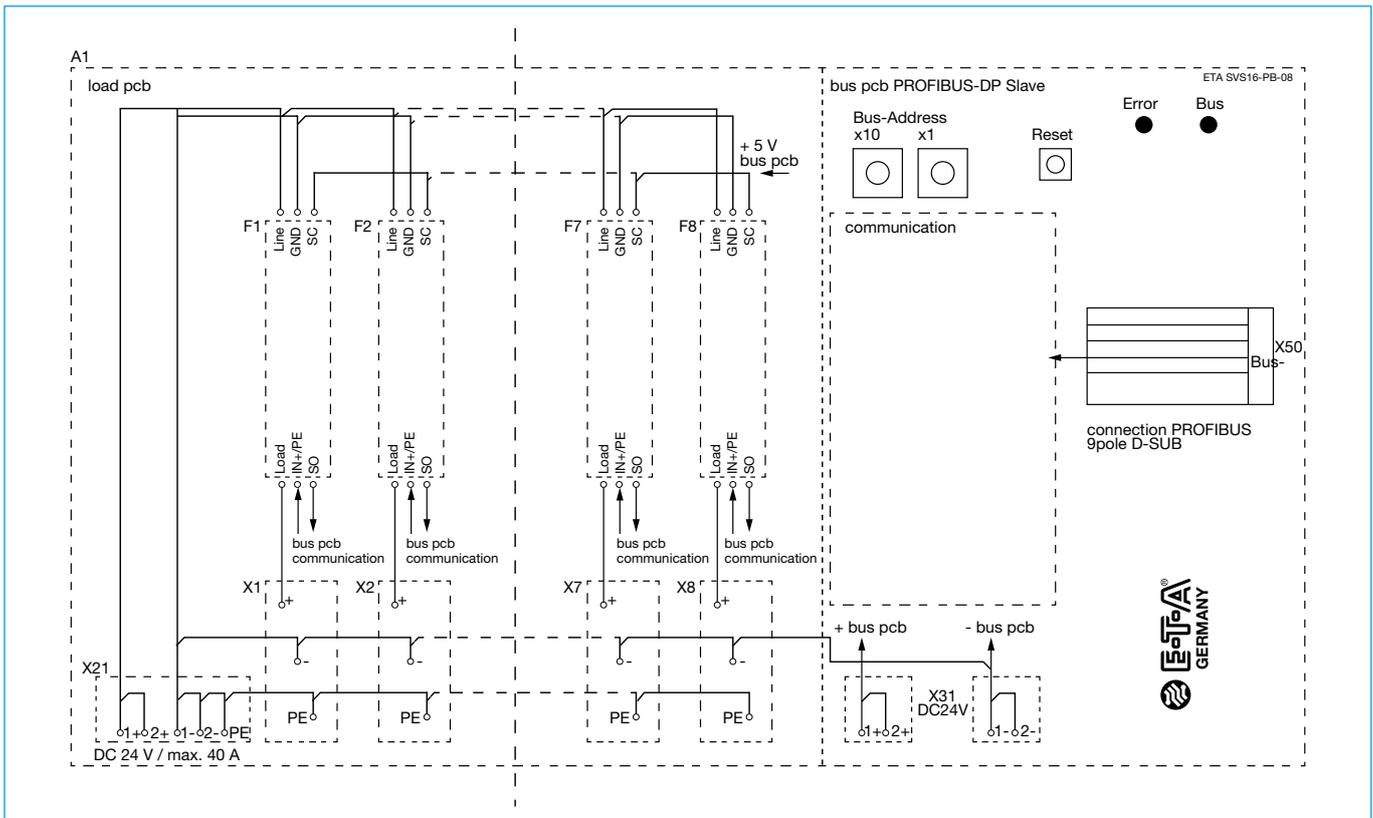


Accessories

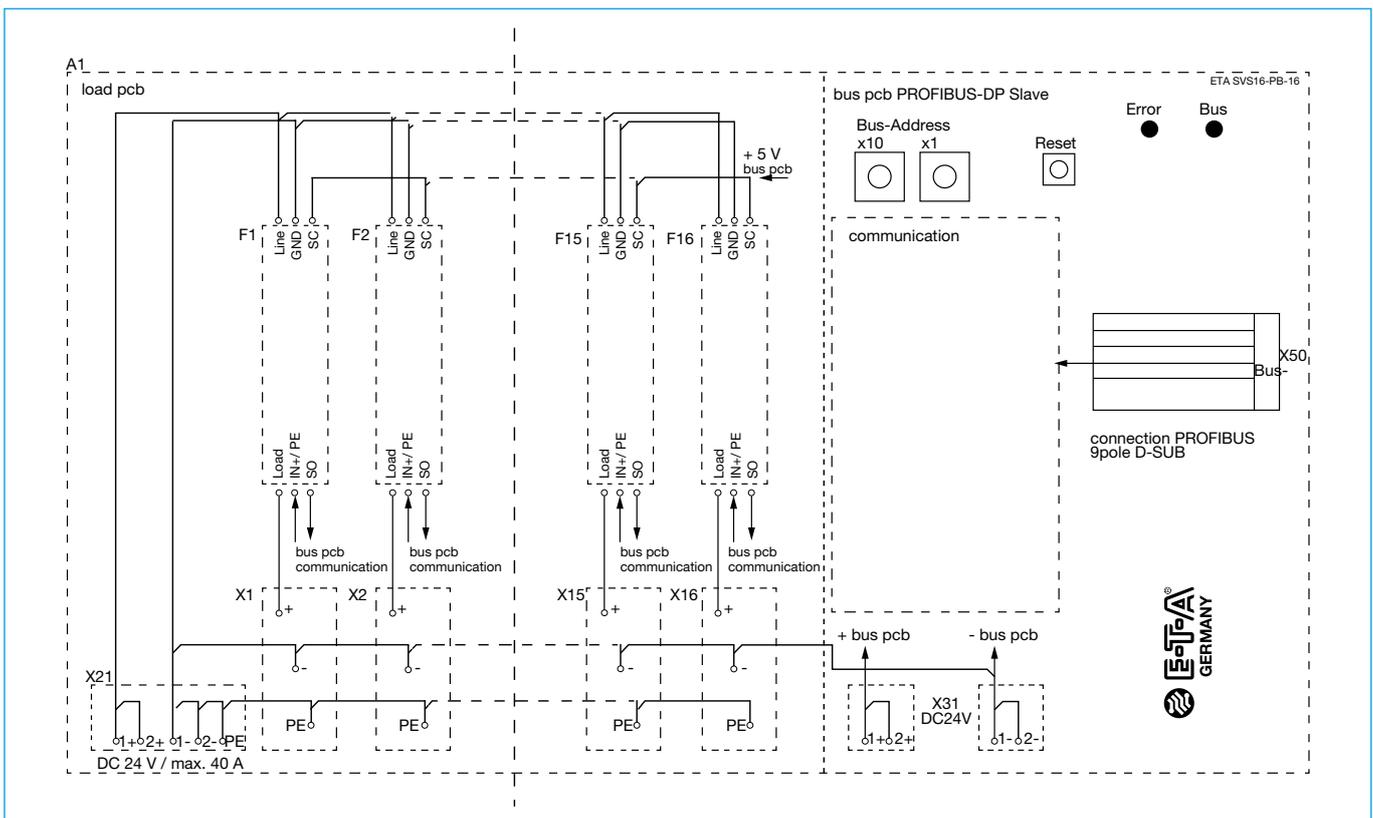
**Jumper
SB-S11-P1-01-1-1A**



Schematic diagram SVS16-PB-08-...

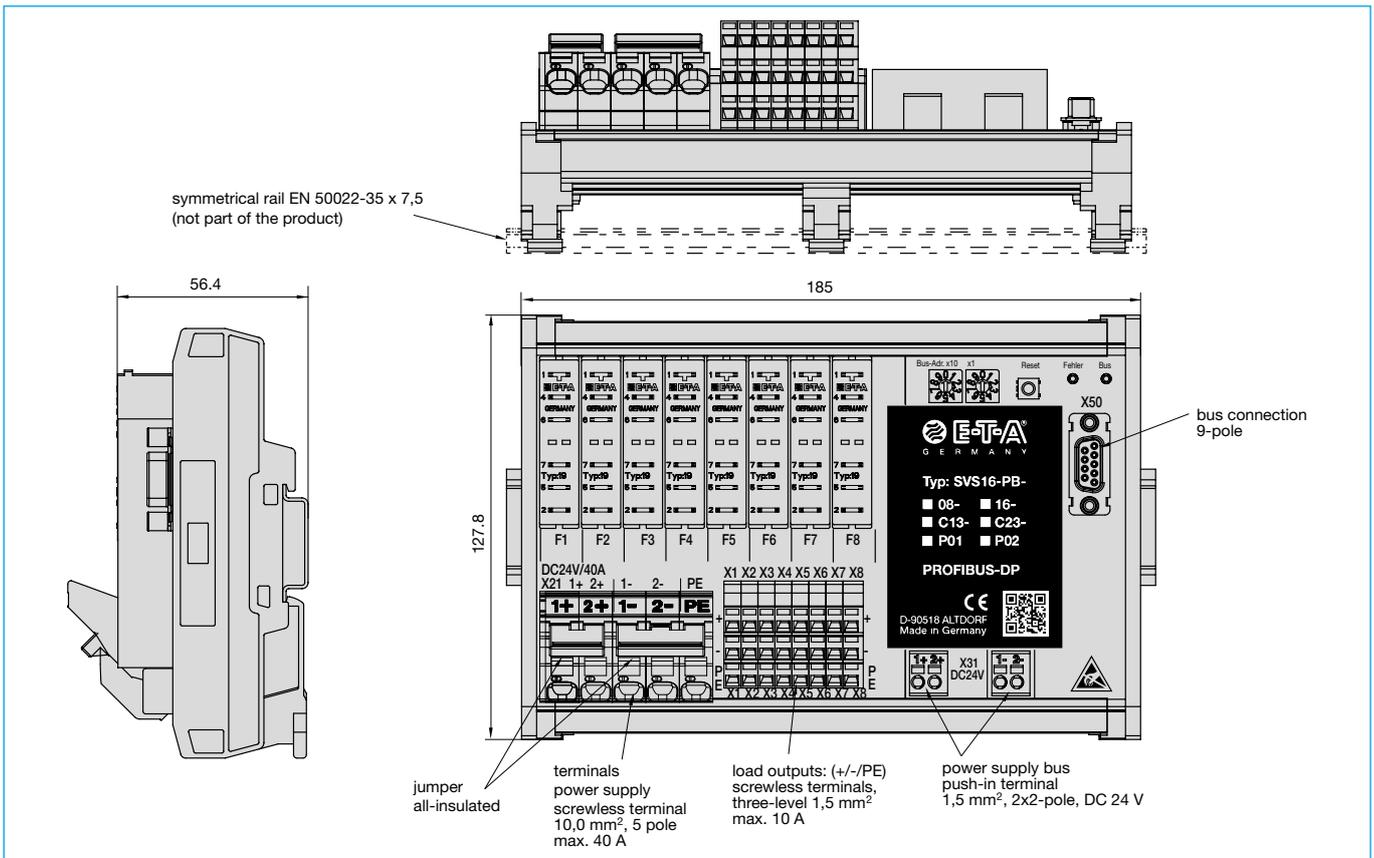


Schematic diagram SVS16-PB-16-...

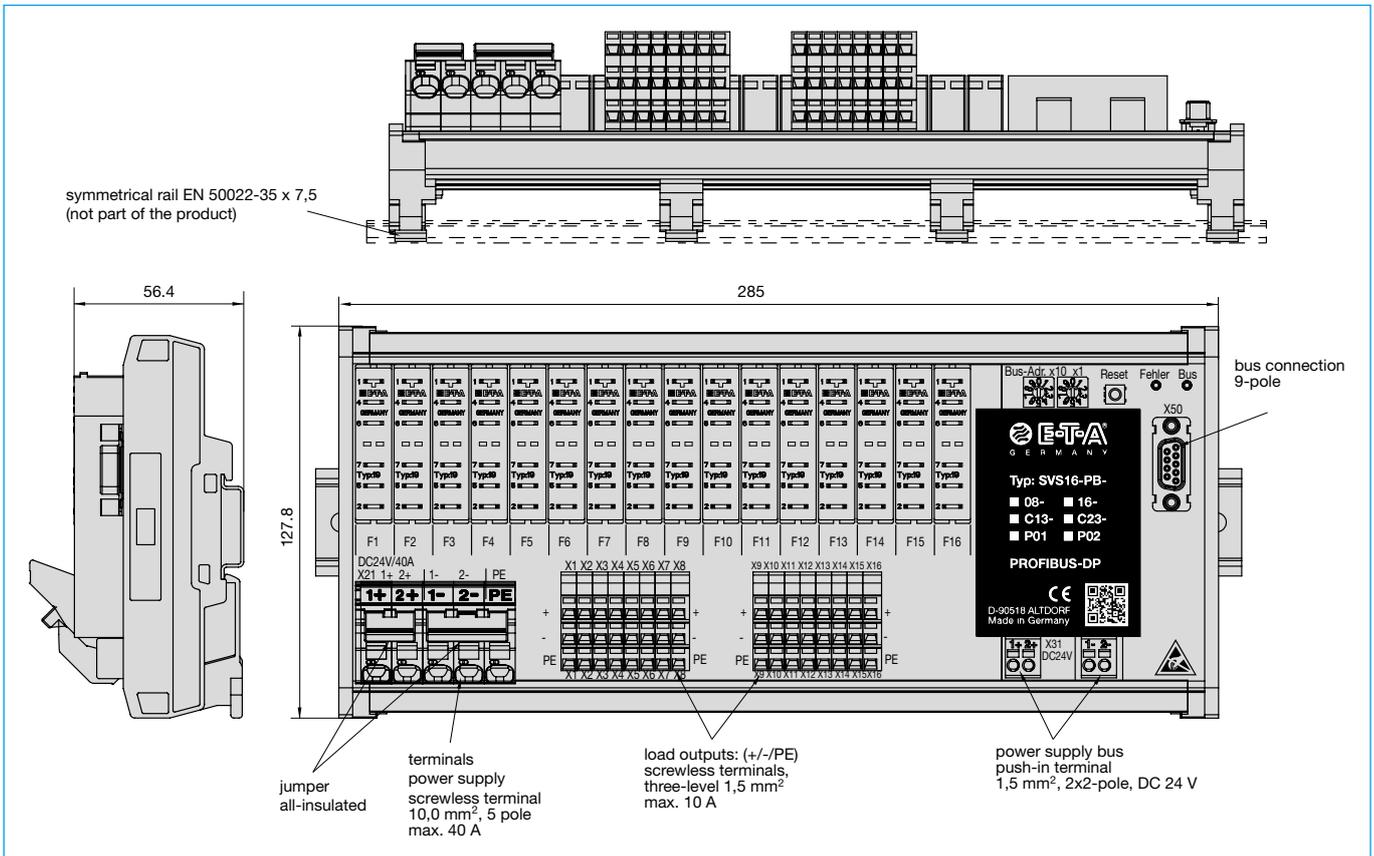


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Dimensions SVS16-PB-08-C13-Pxx



Dimensions SVS16-PB-16-C13-Pxx



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.