CONVENTIONAL POWER DISTRIBUTION SYSTEMS
Flexible *Power-D-Box*® DC (PDB-P)

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The flexible ***Power-D-Box***® system is a sophisticatedly designed power distribution system for DC applications in a 19" rack with only 2 HU. Thanks to its many configuration options, the respective version can be perfectly matched to your application. You can choose between the pluggable 2210 thermal-magnetic circuit breaker (1 pole or 2 poles) or the ESS30 electronic circuit protector as protective element. For optimal use of the available installation space, different group signalling options and terminal versions are available, as well as a flexibly configurable system redundancy.

TYPICAL FEATURES

- 19" power distribution system, made of aluminium
- Rated voltage up to DC 65 V
- Option for 2-pole protection
- Max. 100 A per supply unit
- For 30 or 2 x 15 pluggable 2210 circuit breakers or ESS30 circuit protectors, more upon request
- Max. load current up to 16 A
- Redundant or non-redundant set-up
- Connection via screw terminals
- Group signalling

YOUR BENEFITS

- Compact, space-saving, clear design through efficient utilisation of installation space and PCB technology
- Increased machine uptime through resettable circuit breakers
- Increased operational availability by means of group signalling
- Significantly reduced number of individual components through pre-assembly
- Facilitated system extension through pluggable circuit protectors even during operation
- Option of additional terminals on the back of the DIN rail for more convenient connection and transparency
- No additional installation space required for minimum bending radius of the connection cable

PREFERRED TYPES

Preferred types are E-T-A products, which are most frequently used by our customers. We manufacture these preferred types in substantial quantities. You can find an overview of our preferred types here (Page 3).

TYPICAL APPLICATIONS

Automation technology, chemical industry, oil and gas, DC 24 V power plant technology, pharmaceuticals and foodstuffs, renewable energies, telecommunications & datacom

COMPLIANCE

REACH RoHS CE

WEB LINKS

Further information, Mounting instructions (ESS30), Mounting instructions (2210), REACH, RoHS, Contact

GENERAL INFORMATION

FURTHER INFORMATION

Mounting instructions for flexible ***Power-D-Box***® for ESS30 electronic circuit protectors
https://www.e-t-a.com/datei/15699

Mounting instructions for flexible ***Power-D-Box***® for mechanical circuit breaker 2210 (positive pole protected) & 2210-2P
https://www.e-t-a.com/datei/15698

TECHNICAL DATA

ELECTRICAL DATA

Rated voltage U_n	DC 24 V (DC 10...65 V depending on version)
Protected pole	2-pole or plus pole
Circuit breakers / circuit protectors	Plug-in type 2210-S circuit breakers (1 & 2-pole), ESS30, more upon request
Number of loads	Up to 30
Redundancy	Optionally according to ordering number key

MECHANICAL DATA

Mounting dimensions (WxHxD)	Width: 482.6 mm (19“ mounting) x Height: 88.9 mm (2 HU) x Depth: 205 mm...256 mm
Mass	3.18...4.75 kg
Material	Aluminium
Enclosure grounding	Available for each supply
Cable strain relief	Integrated

SUPPLY

Total current per supply	Max. 100 A (1-pole) Max. 50 A (double-pole)
Terminals / Cable cross section	M6 thread for cable lug up to 25 mm^2 Screw terminals up to 35 mm^2 (depending on the version, see mounting instructions)

LOADS

Rated current per load channel	Max. 16 A
Terminals / Cable cross section	Screw terminals up to 4 mm^2

GROUP SIGNALLING

Series connection	Make contacts of the auxiliary contacts are connected in series. Max. 0.5 A, max. 1.5 mm^2
Parallel connection	Break contacts of the auxiliary contacts are connected in parallel, with decoupling relay Max. 0.5 A, max. 1.5 mm^2

AMBIENT CONDITIONS

Ambient temperature	0...+50 °C

ORDERING NUMBER CODE

PDB	-	P	-	2210	-	28R	-	B4	-	Z
1		2		3		4		5		6

1 TYPE NUMBER	
PDB	Power Distribution Box

2 PROTECTED POLE	
P	DC system plus-pole protected

3 DEVICE TYPES	
2210	Thermal-magnetic 2210 circuit breakers
2210-2P	Thermal-magnetic 2210 circuit breakers, 2-pole
ESS30	ESS30 electronic circuit breaker

4 NUMBER OF LOADS AND DESIGN VERSION	
30E	1 x 30 load circuits (1-pole protected), non-redundant
30R	2 x 15 load circuits (1-pole protected), redundant
30E	1 x 15 load circuits (2-pole protected), non-redundant (with -Z only)
28R	2 x 7 load circuits (2-pole protected), redundant (with -Z only)

5 SIGNALLING	
B1	make contacts connected in series (with ESS30 only)
B4	Make contact connected in series and break contact connected in parallel

6 ADDITIONAL OPTIONS	
Z	Additional terminals on rear DIN rail (DIN rail)

PREFERRED TYPES

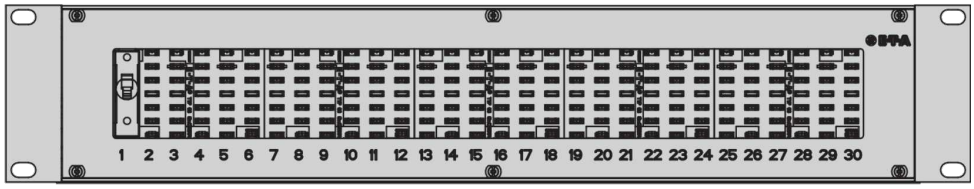
Preferred types	Short description
PDB-P-2210-2P-28R-B4-Z	2210 2-pole, redundant, series/parallel connection signalling, additional terminals
PDB-P-2210-2P-30E-B4-Z	2210 2-pole, non-redundant, series/parallel connection signalling, additional terminals
PDB-P-2210-30E-B4	2210 1-pole, non-redundant, series/parallel connection signalling, no additional terminals
PDB-P-ESS30-30E-B1-Z	ESS30, non-redundant, series connection signalling, additional terminals
PDB-P-ESS30-30R-B1-Z	ESS30, redundant, series connection signalling, additional terminals

COMPLIANCE	
Compliance according to	EN 62368-1

DIMENSIONS

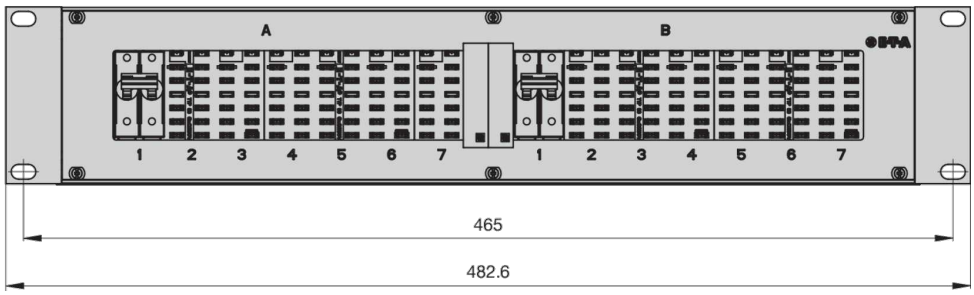
DIMENSIONAL DRAWING

Front view/example: 2210, 1pole, non-redundant



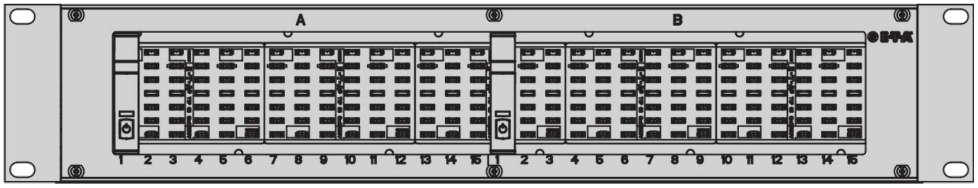
DIMENSIONAL DRAWING

Front view/example: 2210, 2pole, redundant



DIMENSIONAL DRAWING

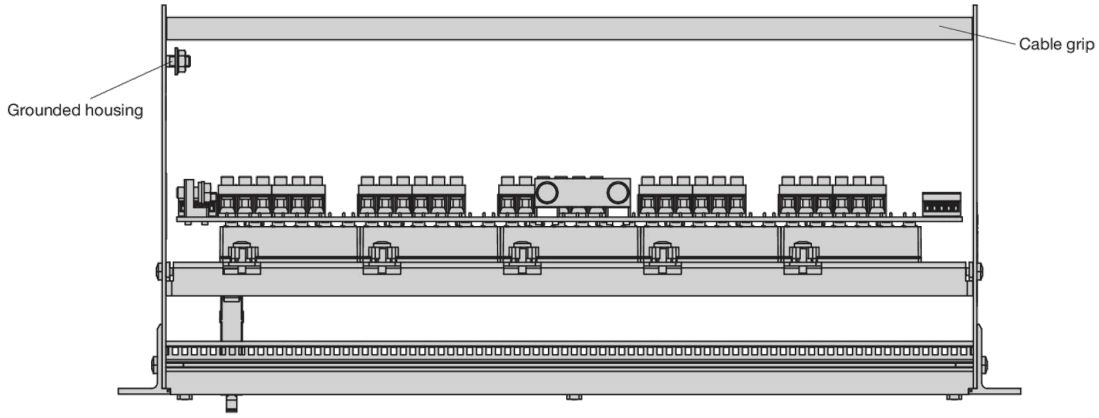
Front view/example: ESS30, 1pole, redundant



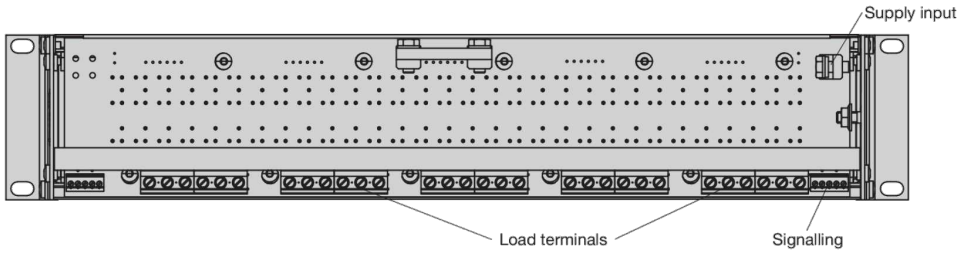
DIMENSIONAL DRAWING

Example: PDB-P-2210-30E-B4

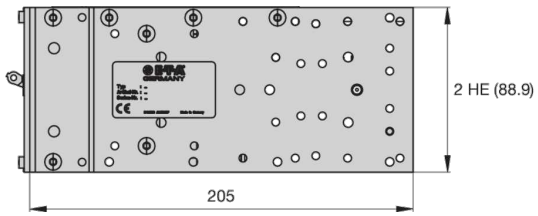
Top view (open cover) / example: no additional terminals on DIN rail, supply terminals on PCB



Rear view/example: no additional terminals on DIN rail, supply terminals on PCB



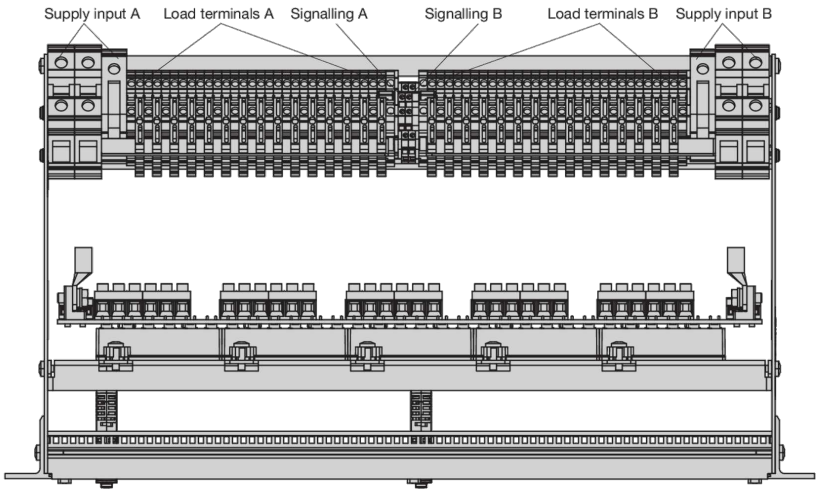
Side view/example: no additional terminals on DIN rail, supply terminals on PCB



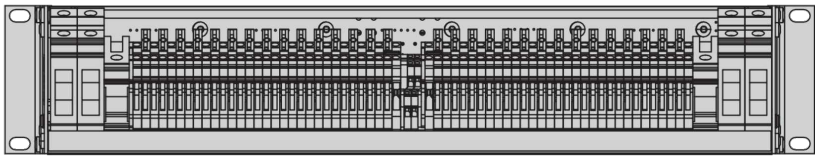
DIMENSIONAL DRAWING

Example: PDB-P-ESS30-30R-B1

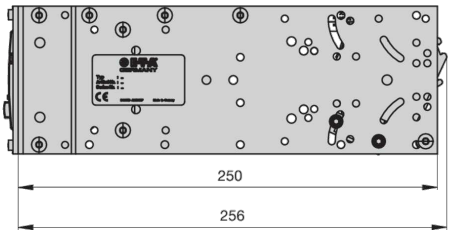
Top view (open cover)/example: additional terminals on DIN rail



Rear view/example: additional terminals on DIN rail



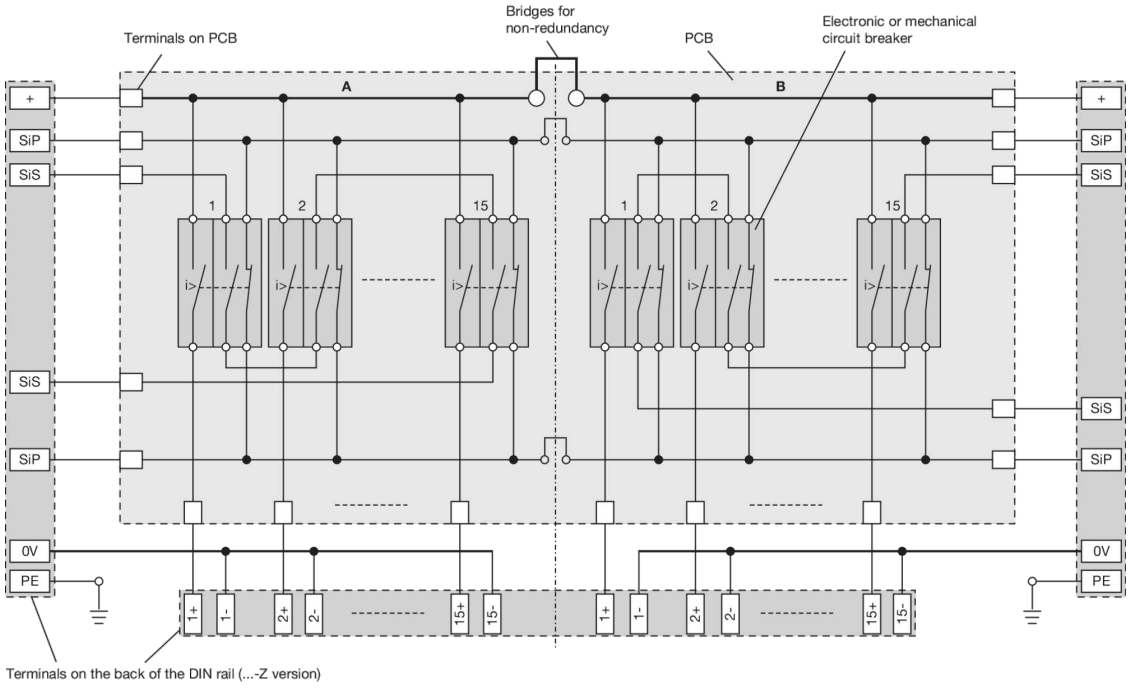
Side view/example: additional terminals on DIN rail



SCHEMATIC DIAGRAMS

SCHEMATIC DIAGRAMS

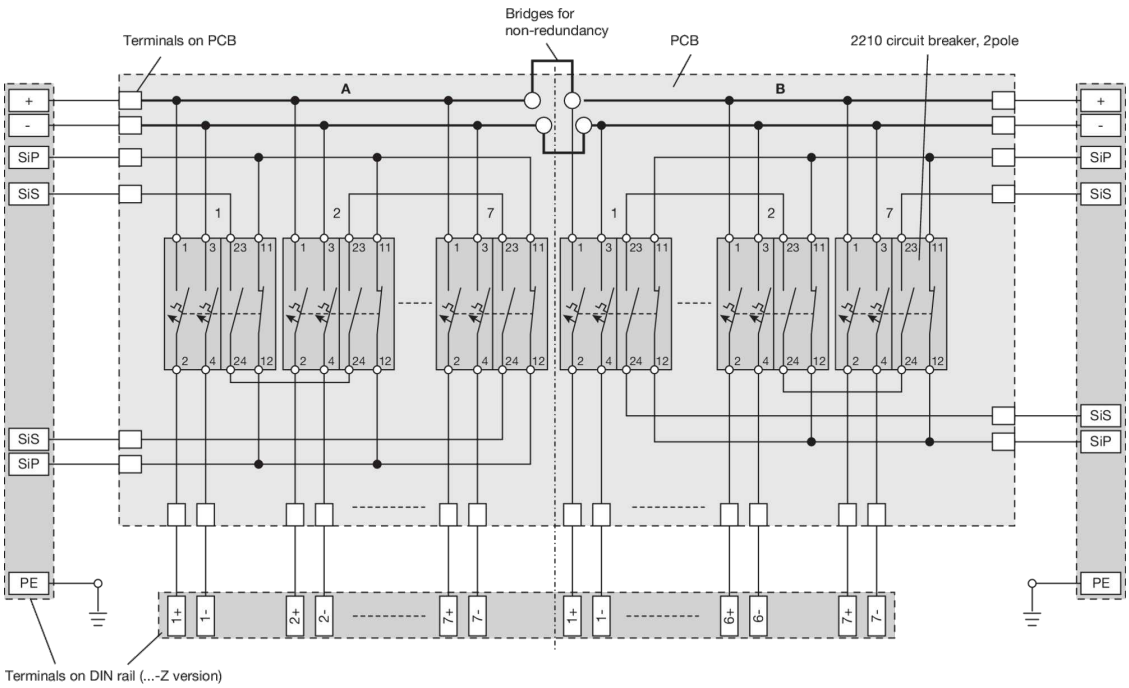
Flexible *Power-D-Box*® DC schematic diagram (1pole)



Note: Depending on the version, the schematic diagram may vary in detail. This diagram shows the general options.
You can find further information for version-specific installation instructions at the end of the document.

SCHEMATIC DIAGRAMS

Flexible *Power-D-Box*® DC schematic diagram (2pole)



Note: Depending on the version, the schematic diagram may vary in detail. This diagram shows the general options.
You can find further information for version-specific installation instructions at the end of the document.

ACCESSORIES

OPTIONAL ACCESSORIES

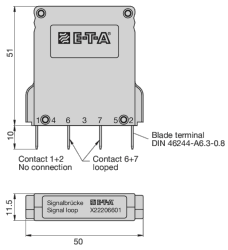
0SB000001125	SB-S11-P1-01-1-1A jumper optional instead of using the slide Si on the SVS14 (for empty slots F1...F10)	

X22206601 C	Bridging of the looped-through auxiliary contacts via jumper instead of circuit breakers (series connection)	
Y30856301	Blind cover for***Power-D-Box***® (Device types 3600/3900, 2210)	
Y30856341	Blind cover for***Power-D-Box***® (Device types ESS20/ESX10)	

FURTHER INFORMATION ABOUT ACCESSORIES (DRAWINGS)

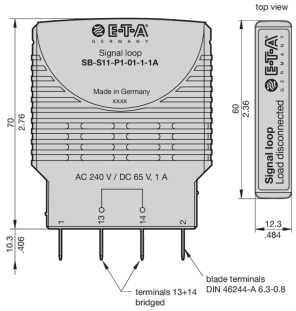
ACCESSORIES

Signal loop
Plug-in module for circuit breakers
to bridge the looped auxiliary contacts
(series connection)
Part no. X 222 066 01
for 2210 and 3600



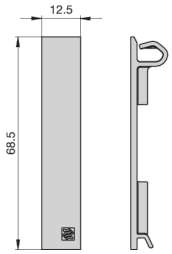
ACCESSORIES

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



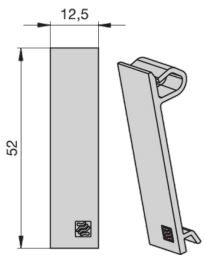
ACCESSORIES

Blind cover for
Power-D-Box®
(ESS20/ESX10 device types)
Part no. Y 308 563 41

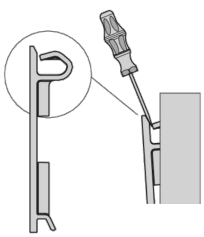


ACCESSORIES

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



Removal of the blind cover:
Use the screw driver to snap off at the lever edge



FURTHER PRODUCTS

RELATED PRODUCTS		
2210-S2	Single- or multi-pole thermal-magnetic circuit breaker with toggle actuation, panel or terminal block mounting, independent trip-free mechanism, various characteristic curves, disconnection of all poles. Optionally available with auxiliary contacts and intermediate positions. Special version of the auxiliary contacts for industrial atmosphere and low voltage equipment (e.g. 5 V) upon request. They meet the requirements of the circuit breaker standard EN 60934 (IEC 60934): S-type, TM. **Suitable for the use in power distribution systems - see power distribution systems product group - customer-specific solutions.**	
ESS30-S	The electronic circuit protector ESS30-S with physical isolation is the globally unique electronic overcurrent protection for DC 24 V applications as a “low energy breaker”. For the use in decentralised and centralised power supply units, it meets the requirements according to the standards DIN EN 60934, UL1077 as a Supplementary Protector and UL 1310 as “Class2 power unit” (NEC class2). The compact device can be plugged into the terminal blocks 17plus and 18plus and into the SVS power distribution systems and ensures quick and easy installation.	

All information and data given on our products are accurate and reliable to the best of our knowledge, but E-T-A does not accept any responsibility for the use in applications which are not in accordance with the present specification. E-T-A reserves the right to change specifications at any time in the interest of technical improvement. Dimensions are subject to change without notice. Please enquire for the latest dimensional drawing with tolerances if required. All dimensions, data, pictures and descriptions are for information only and are not binding. Amendments, errors and omissions excepted. Ordering part numbers may differ from the device marking.