

# Install Guide

## SBG-8345-16-V0011



1. Important Information .....	3
2. Product Specifications.....	4
3. Product Setup.....	5
4. Product Description .....	6
4. Illustrations .....	7
5. Principle Wiring Diagram.....	8
6. Installation / Setup.....	9
7. Connections .....	10
7.1 Supply Connections .....	10
7.2 Signaling Connections.....	11
7.3 Load Connections .....	12
7.4 Top Cover Monitoring Switch Connection .....	13
8. Circuit Breaker Removal and Replacement .....	13
9. Circuit Breaker Mounting (up to 16 load circuits) .....	14
10. Appendix - Parts Index.....	16

## 1. Important Information



### CAUTIONS

- Approved rules of technique have to be used during installation and connection.
- PDU must be located in restricted access locations only.
- Installation and service must be performed by qualified and electrically instructed personnel and meet local electrical codes or operating company guidelines. The use of protective equipment, including insulated tools, is recommended during installation or service at all times.
- Failure to properly ground this equipment can create hazardous conditions to installation personnel and to the equipment.
- Before connecting or disconnecting input power cables, make sure that input power to panel is turned off.
- Do not install breakers in reset position. Doing so may damage breakers or panel.
- The delivered equipment may slightly vary from the described version.

### GENERAL RACK MOUNT GUIDELINES:

- a) Elevated Operating Ambient – If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature specified by the manufacturer.
- b) Mechanical Loading – Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- c) Reduced Air Flow – Installation of the equipment in a rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.
- d) Installation – Sufficient room for supply and load connections and the appropriate cable bending radius must be observed.
- e) Circuit Overloading – Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on over-current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- f) Equipment Earthing – Equipment shall be mounted to an earthed rail system within the rack.
- g) Cable Strain Relief – Generally accepted electrical codes and regulations require an effective cable strain relief.



Waste Management Guidelines: Power-D-Box must not be disposed among common domestic waste. Packaging and packaging materials are recyclable.

## 2. Product Specifications

Electrical Data	
Operating Voltage	DC 48 V / 60 V
Number of CBEs	max. 16 (CBEs not included)
Redundant System	no
Nominal Current (Unit)	max. 315 A (M12 Double hole cable lug, min. 150 mm <sup>2</sup> )
Nominal Current per Channel	max. 100 A (Cable cross section min. 25 mm <sup>2</sup> ) max. 60 A (Cable cross section min. 16 mm <sup>2</sup> )
Type of CBEs	circuit breakers with attached signaling module 60A: 8345-S00077-60A (NSN-Number: V39118-Z4005-A177) 100A: 8345-S00077-100A (NSN-Number: V39118-Z4005-A178)
Ambient Temperature	0° C bis + 55° C
Storage Temperature	-20 ° C bis + 70 ° C
Mechanical Data	
Dimensions	Length: 445 mm Height: 84 mm Depth: 200 mm
Materials / Setup	Plastic housing, materials self-extinguishing, according to UL94-V0, setup according to EN 60950
Installation	For attachment to control cabinet back walls, applying 4 pcs. plastic bushings and self-shaping screws (parts not included)
Supplies	
Cable Cross Section	min. 150 mm <sup>2</sup>
Connection / Tightening Torque	Screw terminals M12, double-hole cable lugs / 12 Nm (hole spacing 44,45 mm)
Loads	
Cable Cross Section	max. 25 mm <sup>2</sup>
Connection / Tightening Torque	Screw terminals M6, double-hole cable lugs / 7 Nm
Signaling	
Cable Cross Section	6,3 mm <sup>2</sup>
Connection	through PCB and blade terminals

### 3. Product Setup

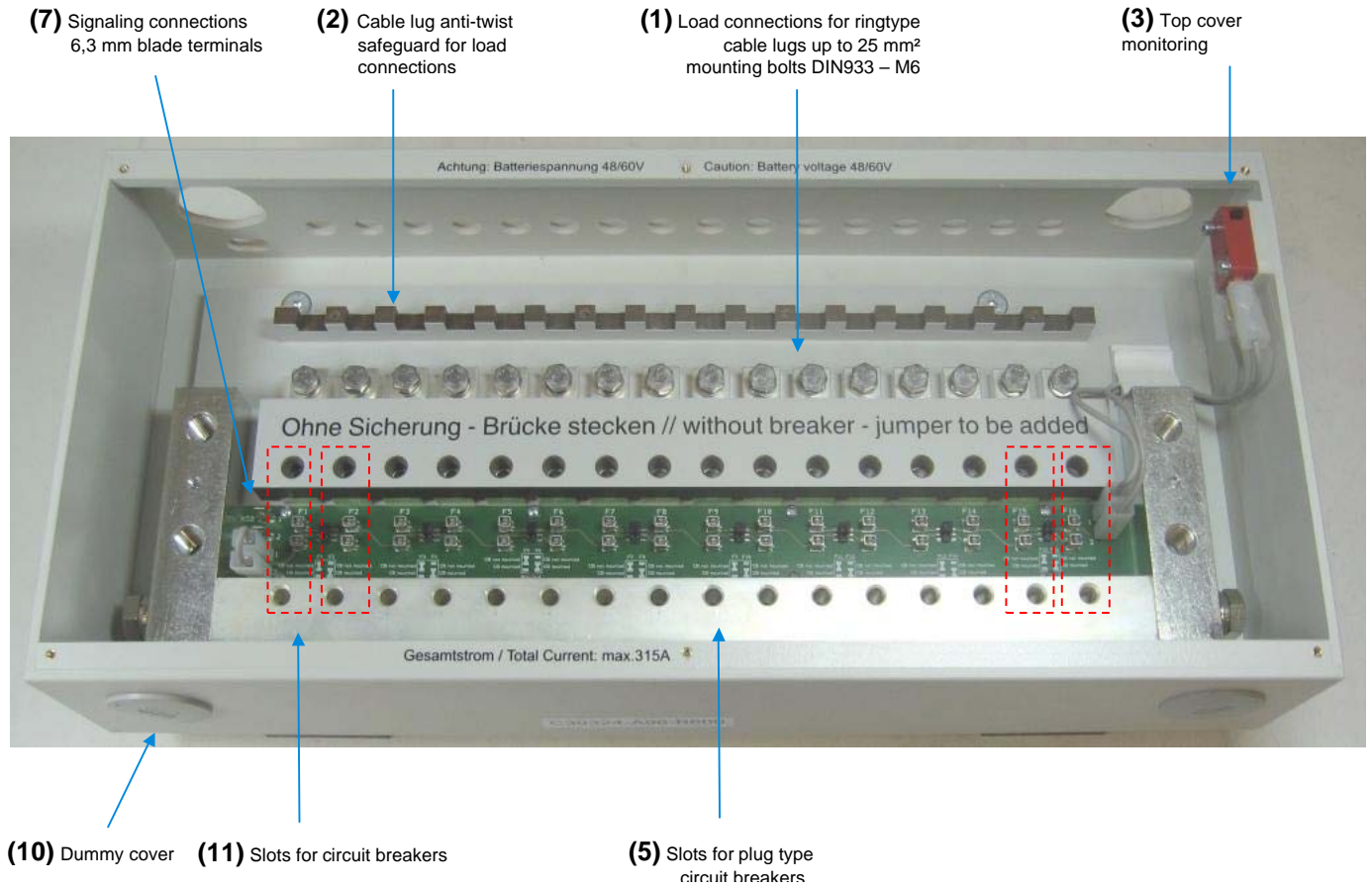


Fig. 1 - Top View (cover removed)

## 4. Product Description

- 16 channel Power Distribution Unit, 16 channels for plug-type, one-pole, magnetic-hydraulic circuit breakers type 8345-C01A-W0M1-DB1B2B-60A with attached signaling-contact module X8345-S-01-K-W1-02-M. (NSN-Part No.: V39118-Z4005-A177).
- Alternatively, circuit breakers type 8345-C01A-W0M1-DB1B2B-100A with attached signaling contact module X8345-S-01-K-W1-02-M. (NSN-Part No.: V39118-Z4005-A178) may be installed.
- Unused circuit breaker slots (**Fig. 1/11**) are to be covered by snap-in plastic pieces (**Fig.2/23**).
- Integrated busbar for parallel distribution up to max. 315 A total current.
- Parallel supply through 2 x M12 screw connections for double-hole cable lugs, 150 mm<sup>2</sup> max. (**Fig. 4/6**).
- Openings for supply-cable feed on top and bottom; the two bottom openings are closed with dummy covers M32. Top-side openings for all load-cable connections.
- M6 screw connection load outputs (**Fig. 1/1**) per channel for ring-type cable lugs (16 mm<sup>2</sup> at 60 A / 25 mm<sup>2</sup> at 100 A); integrated anti-twist safeguard (**Fig. 1/2**).
- Max. load current per channel 100 A.
- Group signaling (all NOC switched in series) via PCB with 6.3 mm blade connectors (**Fig. 1/7**). The signaling loop for unused circuit breaker slots is bridged by jumpers (**Fig. 12/8**). An extra Power-D-Box may be cascaded as well.
- Plastic housing 445 x 200 x 82 mm with cover, housing color light grey.
- Cover fastened with captive screws (**Fig. 2/23**), with cutout for circuit breakers. Labeling F1...F16 above circuit breakers, additional blank labeling field on top of circuit breaker labeling field.
- Top cover monitored by micro switch (**Fig. 1/3**). Micro switch looped into the group signaling circuit by 6.3 mm blade connector (**Fig. 4/4**).
- Housing with two rear PVC spacers (**Fig. 6/16**) for cable feed-through.
- Attachment to control cabinet back wall with 4 pcs. M12 hex bolts (**Fig. 6/12**).

## 4. Illustrations



Fig. 2 - Front View

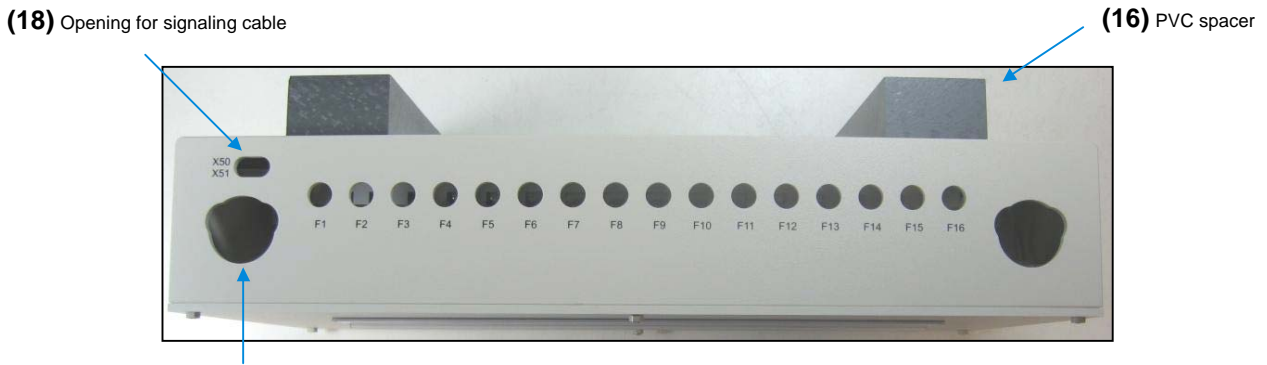
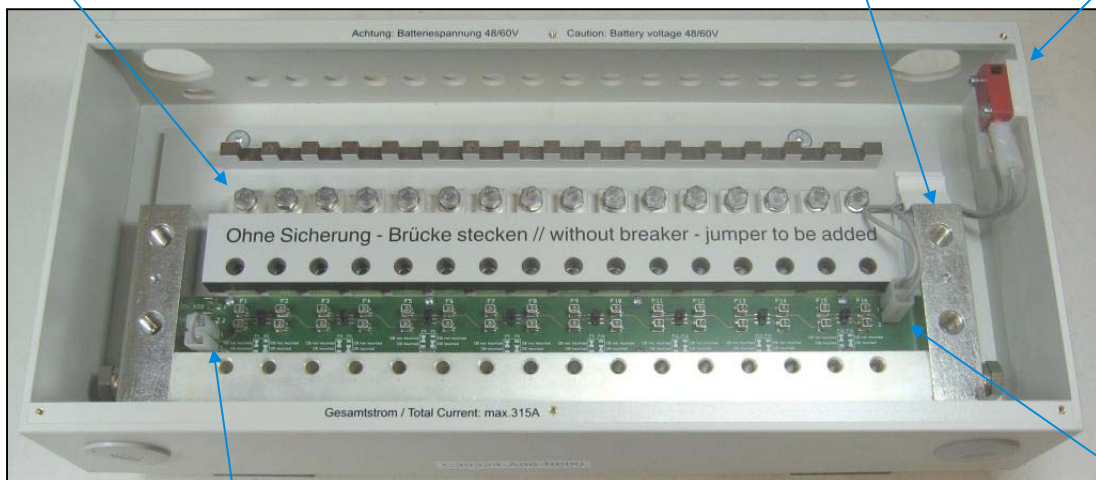


Fig. 3 - Top View

- (1) Load connections through tube-type cable lugs max. 25 mm<sup>2</sup> attachment with bolts DIN 933 M6x12
- (6) Supply through double-hole cable lug max. 150 mm<sup>2</sup> attachment through bolts DIN 933 M12x20
- (3) Top cover monitoring switch

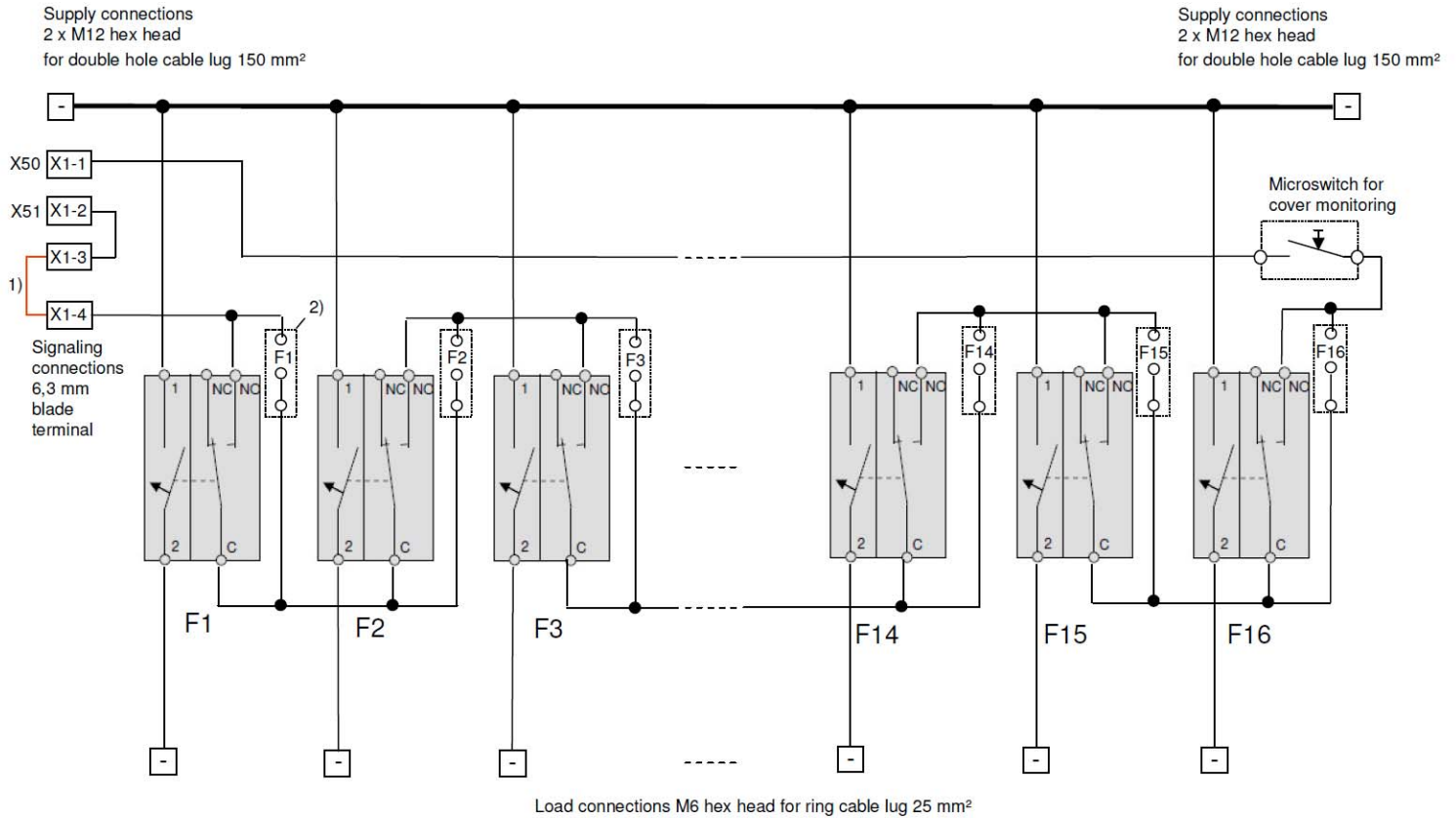


- (7) Signaling loop connection

- (4) 6,3 mm blade connector for micro switch connection

Fig. 4 - Cover Removed

## 5. Principle Wiring Diagram



- 1) Jumper cap for signaling loop, mounted ex works  
(no longer required when an additional PDU is connected)
- 2) Jumper F1 (... F16) set, if CBE slot F1 (... F16) is empty  
(Condition as delivered = all Jumpers set)

Fig. 5 - Principle Wiring Diagram

Signaling contact connection **without** extra Power-D-Box cascaded:

Terminals X1-1 (X50) and X1-2 (X51)  
Jumper (**Fig. 9/9**) in place

Signaling contact connection **with** extra Power-D-Box cascaded:

Terminals X1-1 (X50) and X1-2 (X51) supply  
Terminals X1-3 and X1-4  
Wiring to the next Power-D-Box  
Jumper (**Fig. 9/9**) no longer required

Slots F1 ... F16

Circuit breakers type 8345-C01A-W0M1-DB1B2B-60A or 8345...100 A with attached signaling contact module X8345-S-01-K-W1-02-M (NSN-part number: V39118-Z4005-A177 or V...A178)) mounted. Circuit breakers not included in delivery!

Jumpers F1 ... F16

Jumpers set (jumper in upper position) = signaling loop closed when circuit breakers not in place (condition as delivered) .

Jumpers not set (jumper in lower position / jumper in parking position) = signaling loop not closed. Circuit breakers must be mounted already (**Fig12/8**).



## 6. Installation / Setup

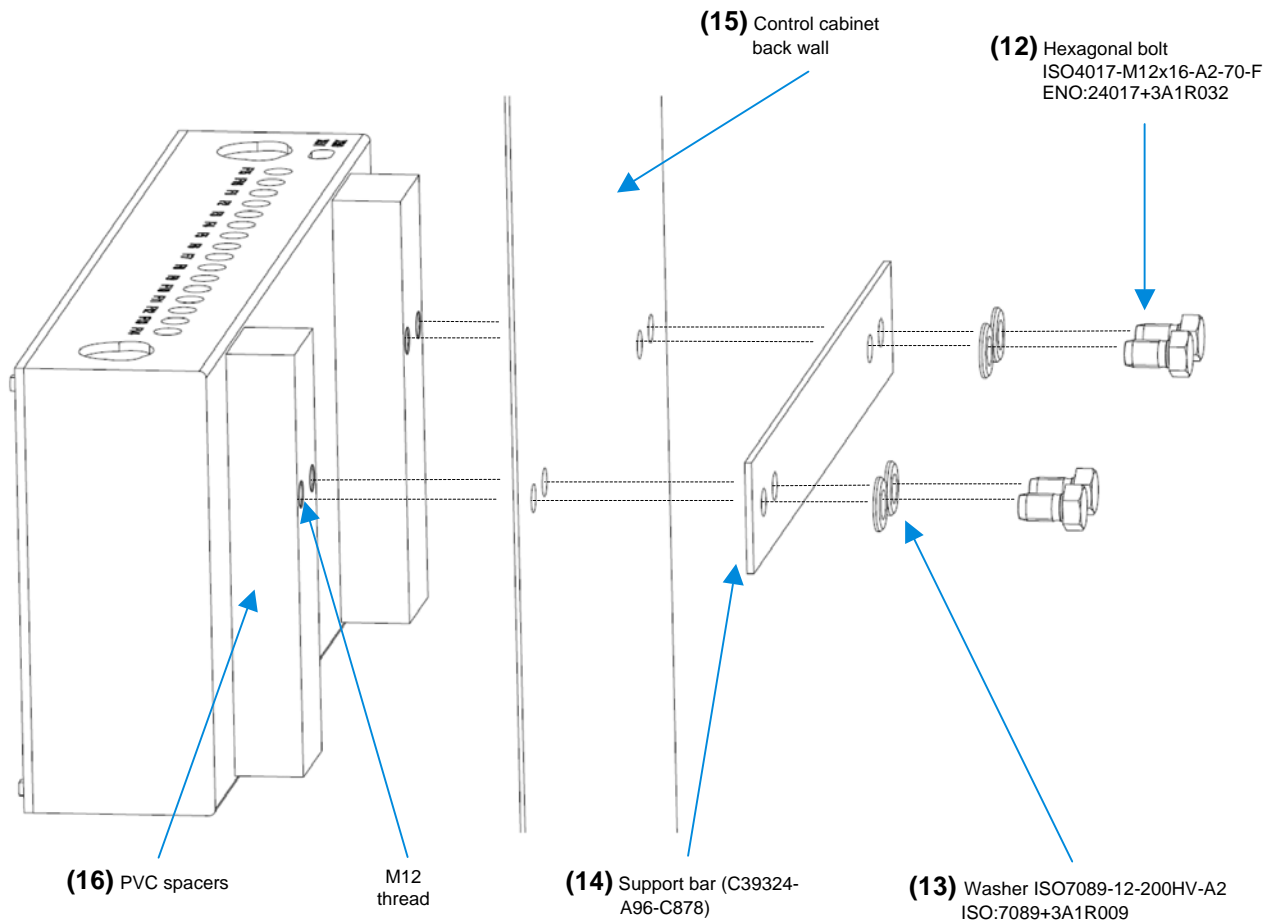


Fig. 6 - Control Cabinet Mounting

The Power-D-Box is attached to the outside of the control cabinet's back wall by 4 pcs. mounting bolts DIN 933-M12x16, washers DIN 125-B13 and support bar C39324-A96-C878. The mounting bolts (Fig. 6/12) are screwed into the Power-D-Boxes' PVC spacers (Fig. 6/16), incorporating the control cabinet's interior back wall (Fig. 6/15), washers (Fig. 6/13), and support bar (Fig. 6/14). Max. tightening torque 16 Nm.

## 7. Connections



**CAUTION:**

When working under live power conditions, use insulated tools only!

### 7.1 Supply Connections

- Supply cable feed from the top or from the bottom optionally. Supply-cable with its (previously) crimped double-hole cable lug is fed through the supply-cable opening (**Fig. 7/17**) and affixed to the busbar by M12 mounting bolts (**Fig. 1/6**). Max. torque 12 Nm.
- Unused supply cable openings on top or bottom are to be sealed by employing enclosed M32 dummy covers (**Fig.1/10**). Condition as delivered: Both bottom openings sealed.

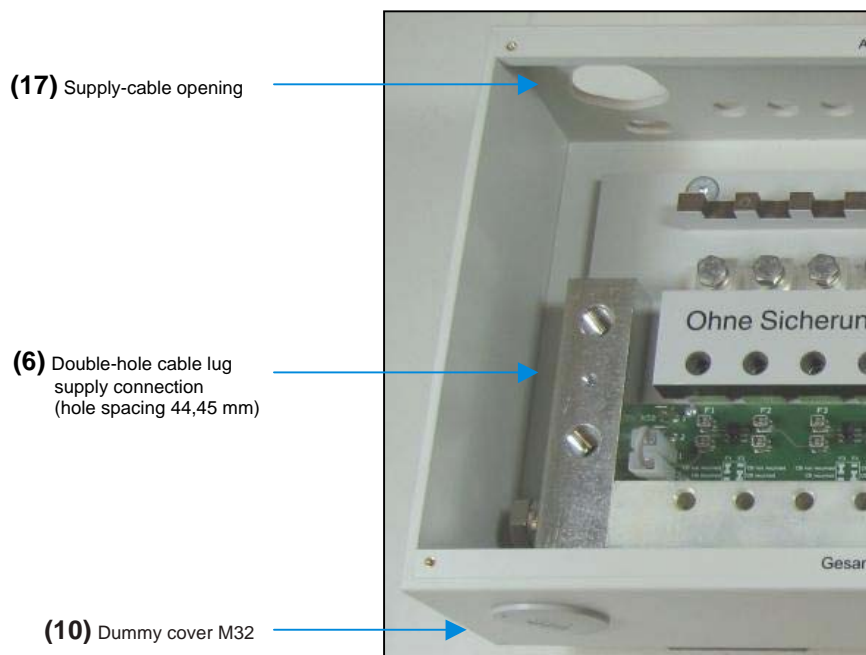


Fig. 7 – Supply and signaling connections

## 7.2 Signaling Connections

- Signaling loop connected to internal PCB by 6.3 mm blade connectors.
- Signaling cables fed through openings for signaling cable (X50 / X51) (**Fig. 8/18**). Next the blade connectors are connected to the signaling connections upper X1-1 / X1-2 (**Fig. 9/9**) on the PCB's left side (polarity negligible).
- In order to add an additional Power-D-Box to the signaling loop, remove the signaling jumper (**Fig. 8/9**), then plug in the blade connectors lower X1-1 / X1-2 (**Fig. 9/19**).



**NOTE:**

**Apply insulated connectors only!**

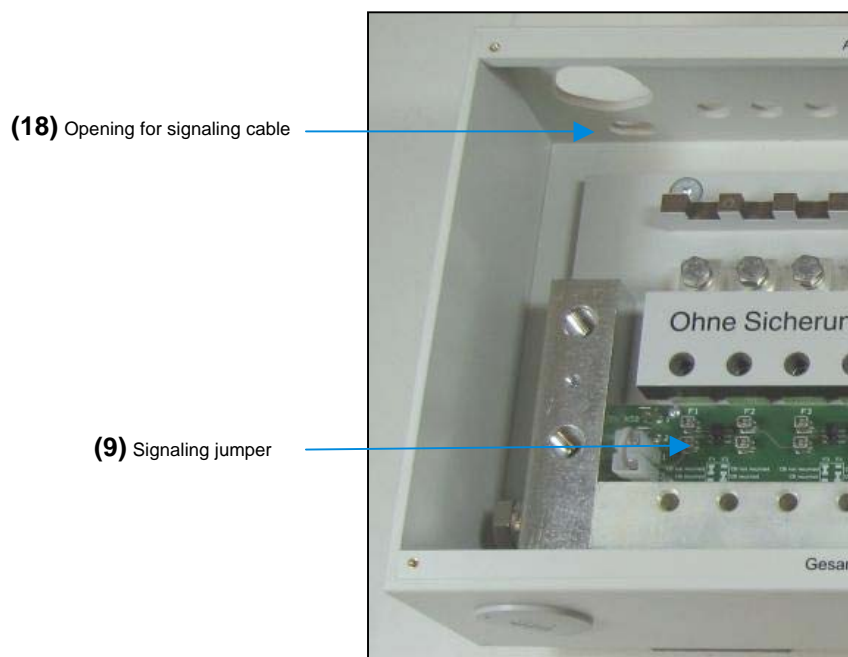


Fig. 8 - Signaling connections

### 7.3 Load Connections

- Load-cables are fed from the top through the load cable glands D = 12 mm (**Fig. 10/20**), then crimped to cable lugs and attached to individual channels by M6 mounting bolts (**Fig. 10/1**).
- Max. torque 7 Nm. In order to ensure correct cable lug placement, the lugs are protected within the anti-twist safeguard (**Fig. 10/2**).

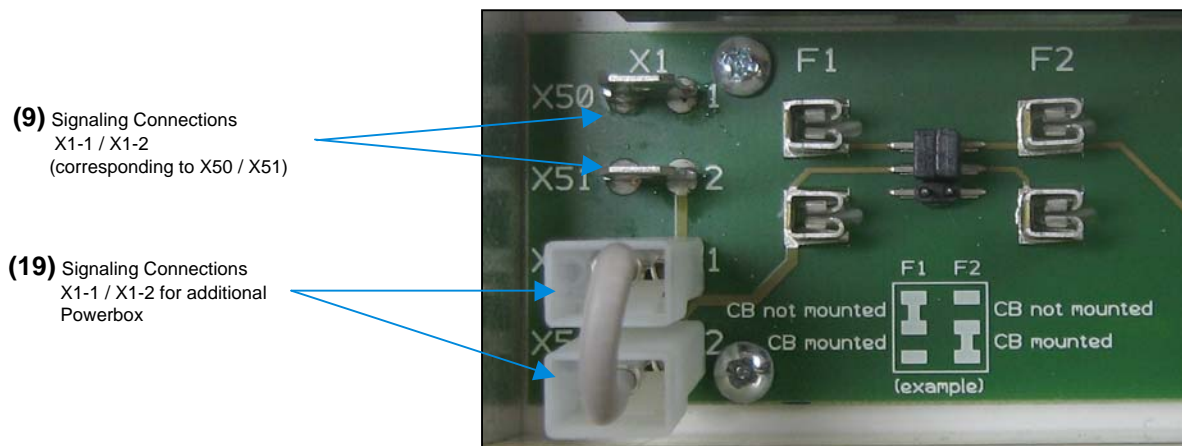


Fig. 9 - Signaling Connections Detail

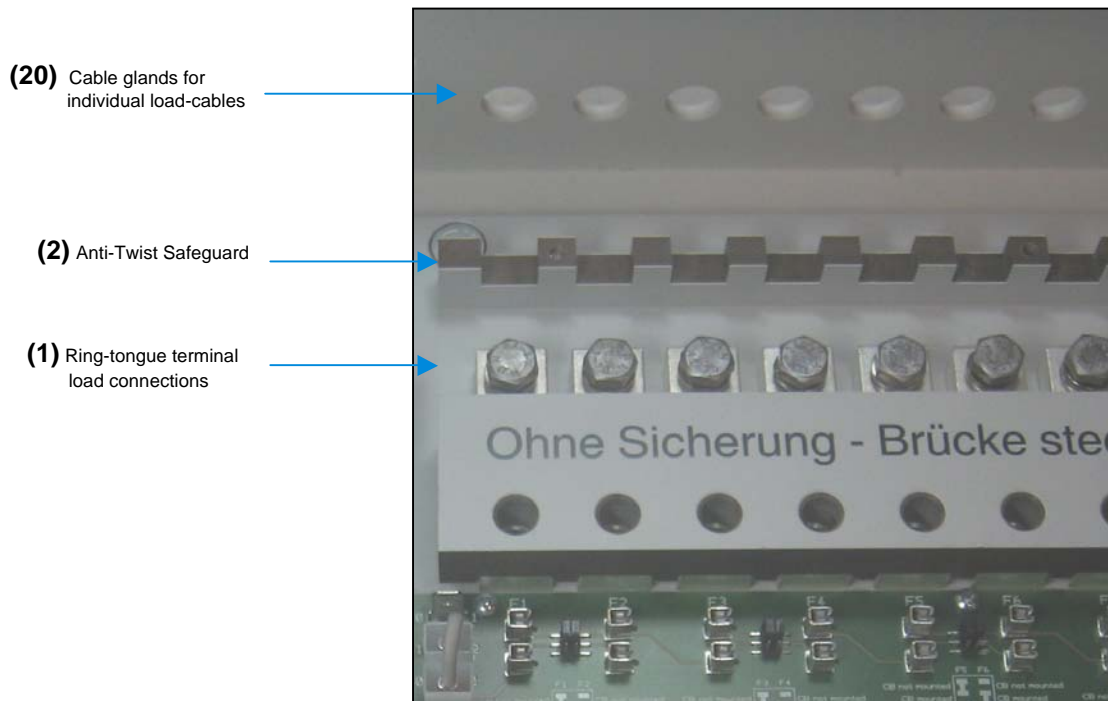


Fig. 10 - Load Connections

## 7.4 Top Cover Monitoring Switch Connection

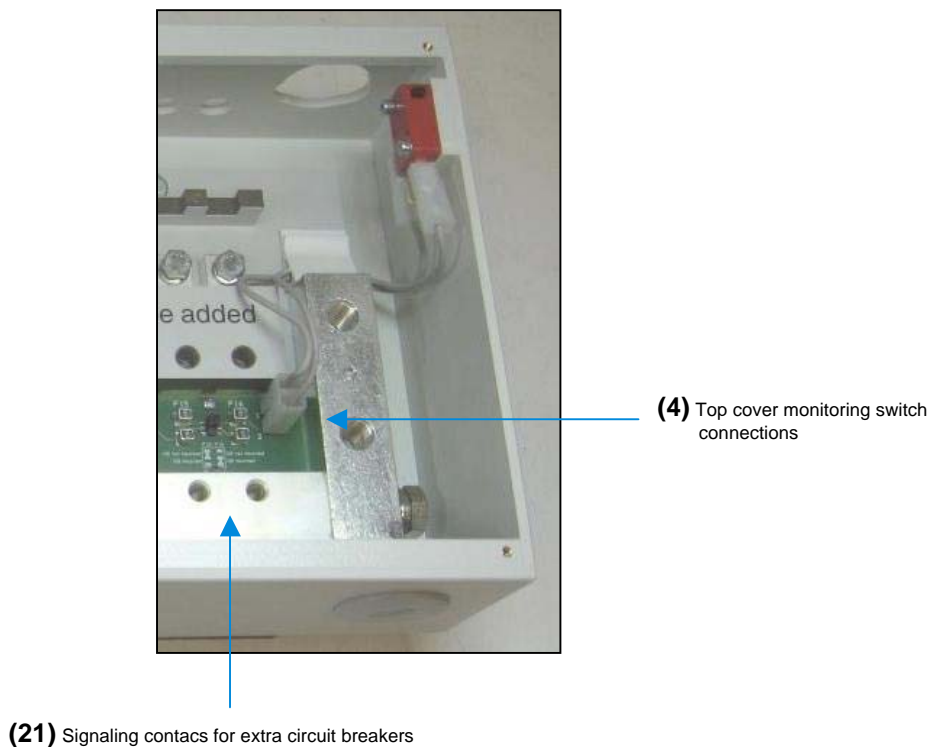


Fig. 11 - Top Cover Monitoring Switch Connection

Removal of the PDU's top cover (**Fig. 2/22**) is monitored by a micro switch (**Fig. 1/3**), looped into the group signaling circuit. Upon removal of the top cover, the signaling loop is interrupted and triggers an error message identical to the overcurrent error message that is generated by a tripped circuit breaker (see wiring diagram also).

## 8. Circuit Breaker Removal and Replacement



### CAUTION:

**Do not replace circuit breakers with toggle switch in ON-position!  
This could lead to circuit breaker and PDU damage.**

- All circuit breakers are plug-type CBEs and may be installed, replaced or upgraded under live power conditions (with Hot Swap Capability).
- To this end, loosen the 6 captive screws (**Fig. 2/23**) and remove the top cover (**Fig.2/22**).
- Upon top cover removal the alarm loop is interrupted by a micro switch (**Fig. 1/3**) -> error message.

## 9. Circuit Breaker Mounting (up to 16 load circuits)



**NOTE:** Prior to any work on the auxiliary slot assignments, the signaling connections X1-1 and X1-2, must be disconnected.

This renders the signaling loop potential-free and eliminates the risk of short circuiting the main busbars.

Jumpers set (upper jumper position) = signaling loop closed when circuit breakers are not in place (condition as delivered) .

Jumpers not set (lower jumper position) = signaling loop not closed. Jumper parking position. Circuit breakers must have been mounted previously.

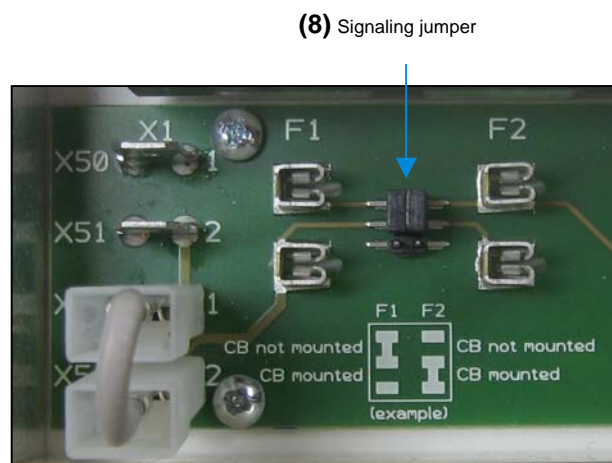


Fig. 12 - Jumper Positions for signaling loop activation prior to circuit breaker mounting

**CAUTION:**

**Surrounding parts may be voltage-carrying!**

- In order to assign additional circuit breakers to empty slots (**Fig. 1/11**) it is necessary to move the jumpers (**Fig. 12/8**) to the lower jumper position. This activates the signaling contact for additional circuit breakers (**see Fig. 5 and Fig. 8**).
- A pincer might be employed for the resetting of jumpers.

**IMPORTANT NOTE:**

**Please follow these instructions carefully. Failure to comply, or misuse of this equipment, could result in serious damage to both the equipment itself and to the installation. The manufacturer is unable to accept responsibility for customer or third party liability, warranty claims or damage caused by incorrect installation or improper handling resulting from non-observance of these instructions.**

## 10. Appendix - Parts Index

Index	Component	Fig.
1	Load connections, M6 .....	1
2	Anti-twist safeguard .....	1
3	Micro switch .....	1
4	Micro switch connections .....	4
5	Plug-type circuit breaker slots .....	1
6	Supply connection, double-hole cable lug .....	4
7	Signaling contact connections .....	1
8	Signaling jumper .....	12
9	Signaling connection X1-1 / X 1-2.....	9
10	Supply opening dummy-cover, M32 .....	1
11	Auxiliary circuit breaker slots .....	1
12	Hexagonal mounting bolts, M12 .....	6
13	Washers .....	6
14	Support bar .....	6
15	Control cabinet back panel .....	6
16	PVC spacers .....	6
17	Housing openings - supply.....	7
18	Housing openings - signaling.....	8
19	Auxiliary signaling connections .....	9
20	Housing openings - individual loads .....	10
21	Auxiliary circuit breaker signaling contact connection.....	11
22	Cover .....	2
23	Cover captive screws.....	2



E-T-A Elektrotechnische Apparate GmbH  
 Industriestrasse 2-8 · D-90518 ALTDORF  
 GERMANY  
 Phone: +49 9187 10-0 · Fax: +49 9187 10-397  
 E-Mail: info@e-t-a.de · www.e-t-a.com/e