

# Install Guide

## SBG-8345-16-V0005



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. Auxiliary Slot Assignment.....	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	12, expandable to max. 16
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> )
CBEs	12 pcs. circuit breakers with attached signaling module, nominal current 60 A, ordering number 8345-S00077-60A (NSN-Number: V39118-Z4005-A177) preassembled
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
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

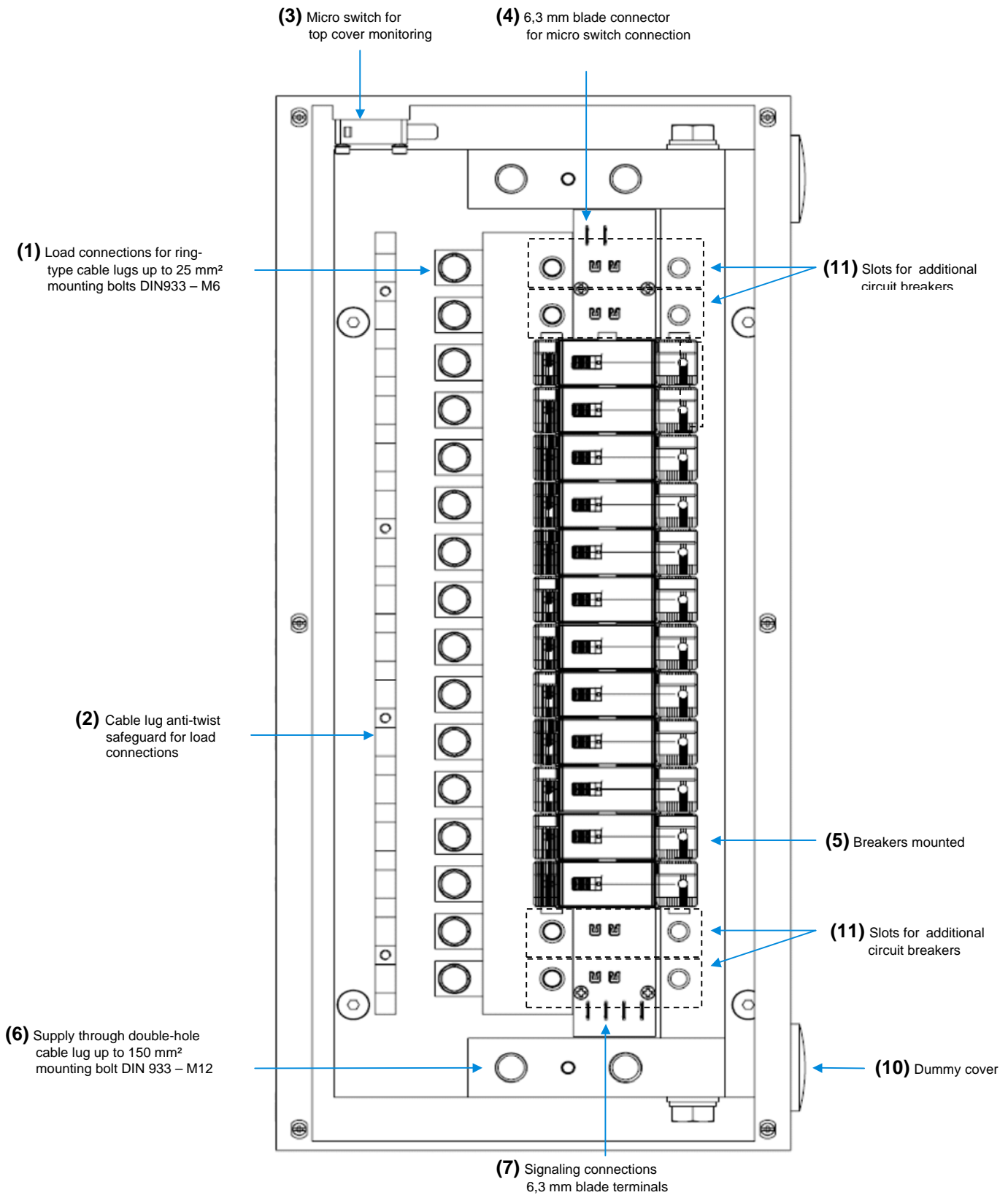


Fig. 1 - Internal View

## 4. Product Description

- 16 channel Power Distribution Unit, 12 channels pre-assembled with 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) **(Fig. 1/5)**.
- 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.
- Four auxiliary slots **(Fig. 1/11)** ready to support additional circuit breakers and covered by snap-in plastic blank covers **(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. 1/6)**.
- 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)**. Extra Power-D-Box may be cascaded.
- Plastic housing 445 x 200 x 82 mm with cover, housing color light grey.
- Cover screwed on (captive screws **(Fig. 2/24)**), 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 6.3mm blade connector **(Fig. 1/4)**.
- Housing with two rear PVC spacers **(Fig. 6/16)** for cable feed through.
- Attachment to control cabinet back wall with 4 pcs. M12 hexagonal bolts **(Fig. 6/12)**.

## 4. Illustrations

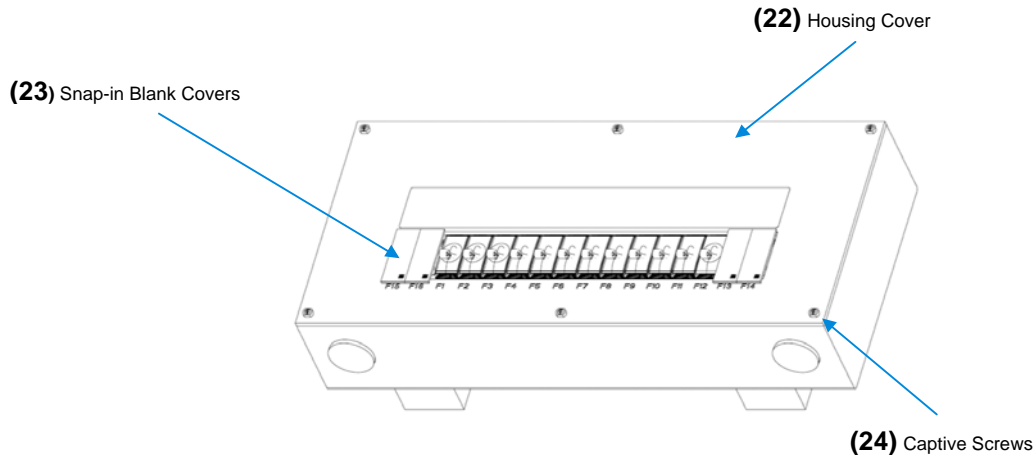


Fig. 2 - Front View

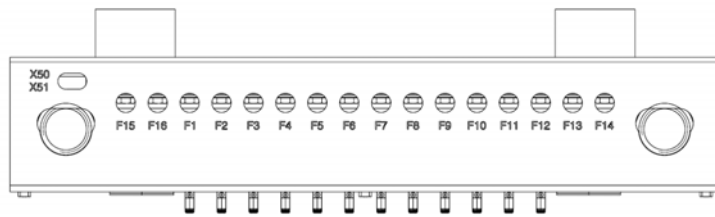


Fig. 3 - Terminal Side View (from top)

**(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

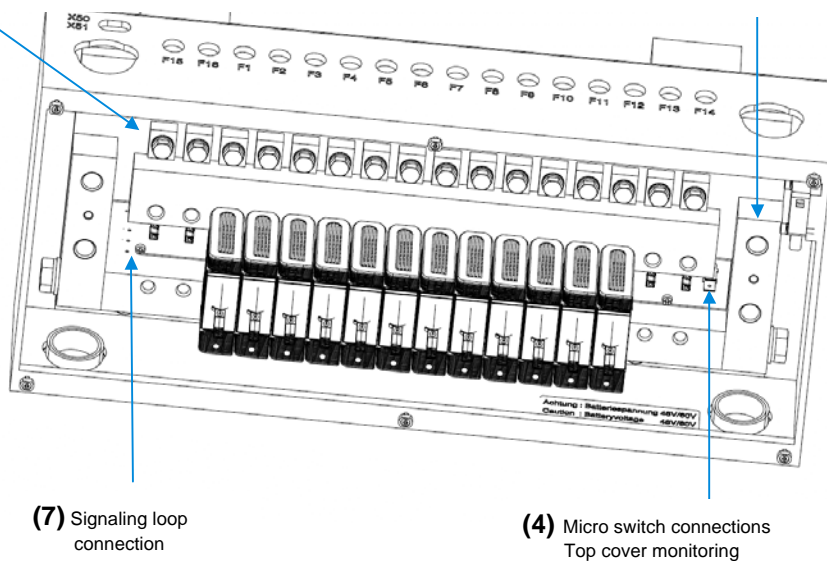


Fig. 4 - Cover Removed

## 5. Principle Wiring Diagram

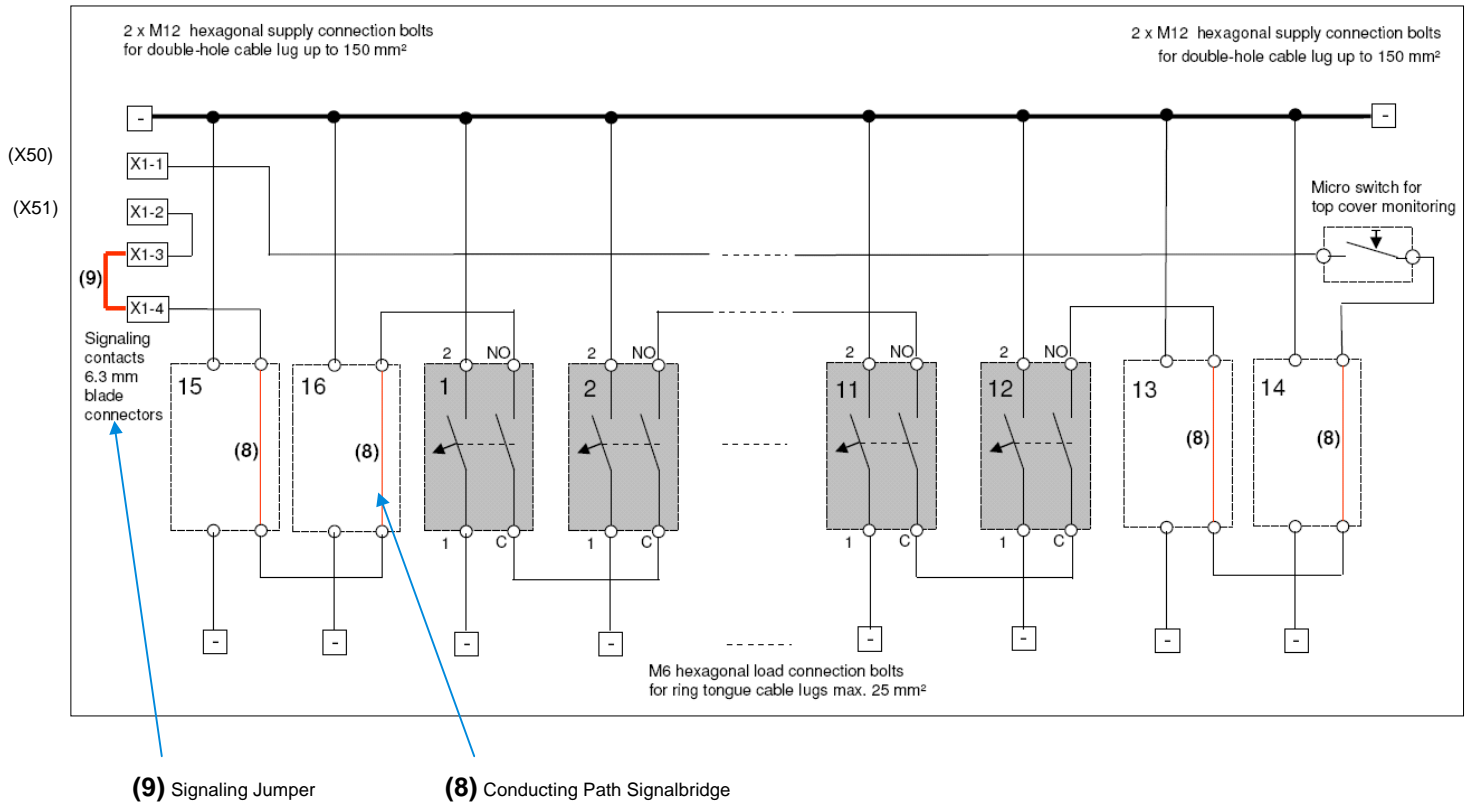


Fig. 5 - Principle Wiring Diagram

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

Terminals X1-1 and X1-2  
Jumper **(Fig. 5/9)** in place

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

Terminals X1-1 and X1-2 supply  
Terminals X1-3 and X1-4  
Wiring to the next Power-D-Box  
Jumper **(Fig. 5/9)** not in place

Slots 1 ... 12 circuit breakers type 8345-C01A-W0M1-DB1B2B-60A with attached signaling contact module X8345-S-01-K-W1-02-M (NSN-part number: V39118-Z4005-A177) mounted.

Slots 13 ... 16 auxiliary slots.



## 6. Installation / Setup

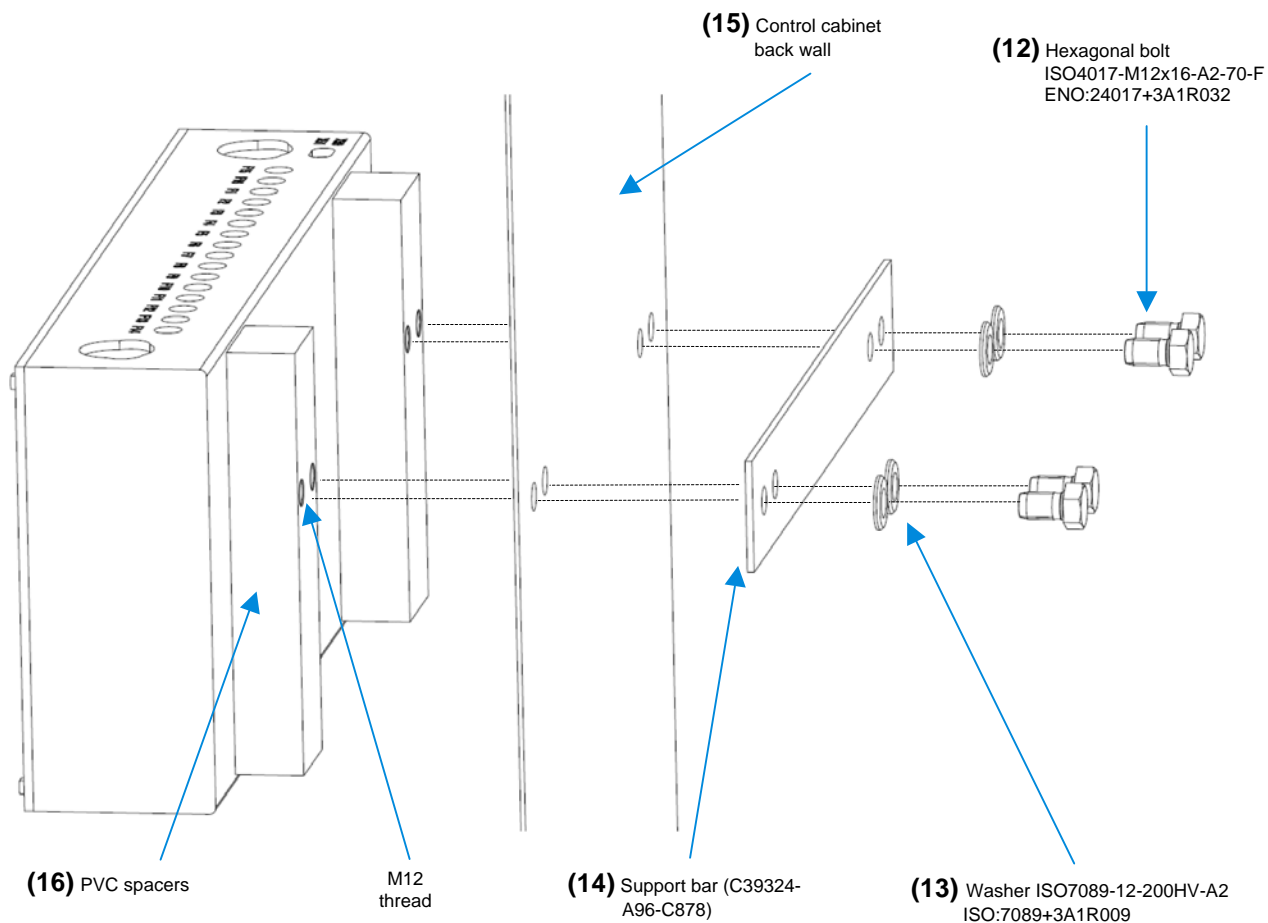


Fig. 6 - Control Cabinet Mounting

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 respectively. 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 the enclosed M32 dummy covers (**Fig. 1/10**). Condition as delivered: Both bottom openings sealed.

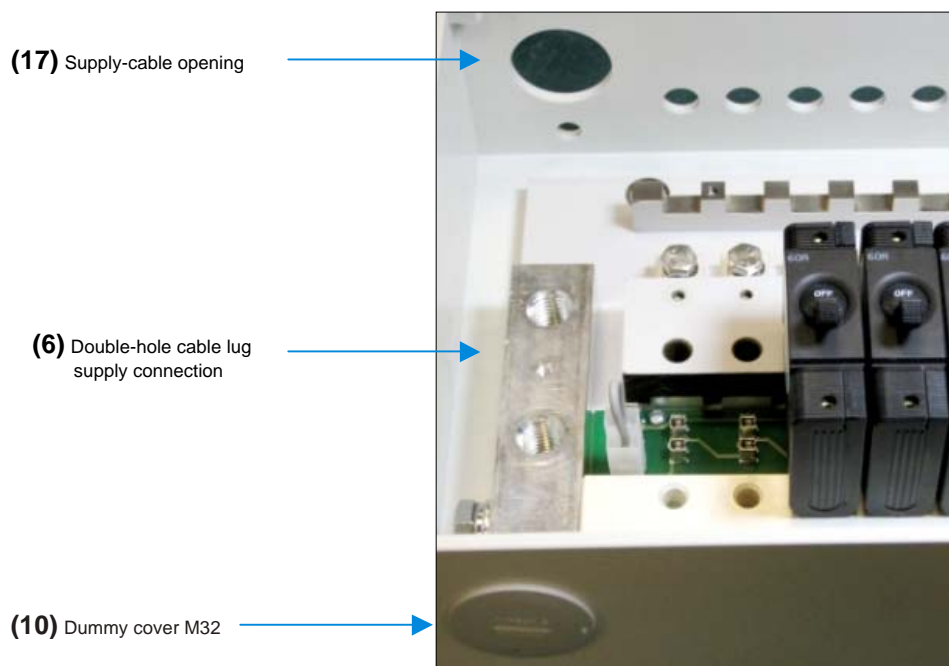


Fig. 7 – Supply and signaling connections

## 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 X1-1 / X1-2 (**Fig. 9/7**) 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 X1-3 / X1-4 (**Fig. 9/19**).



**NOTE:** Apply insulated connectors only!

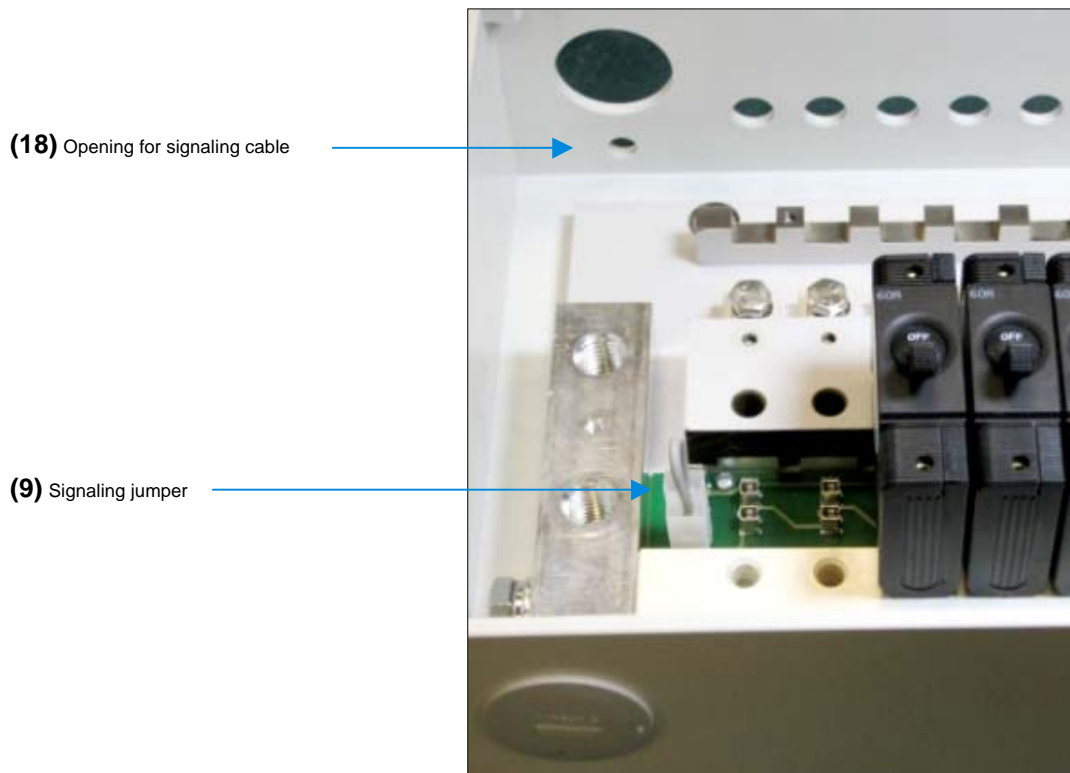
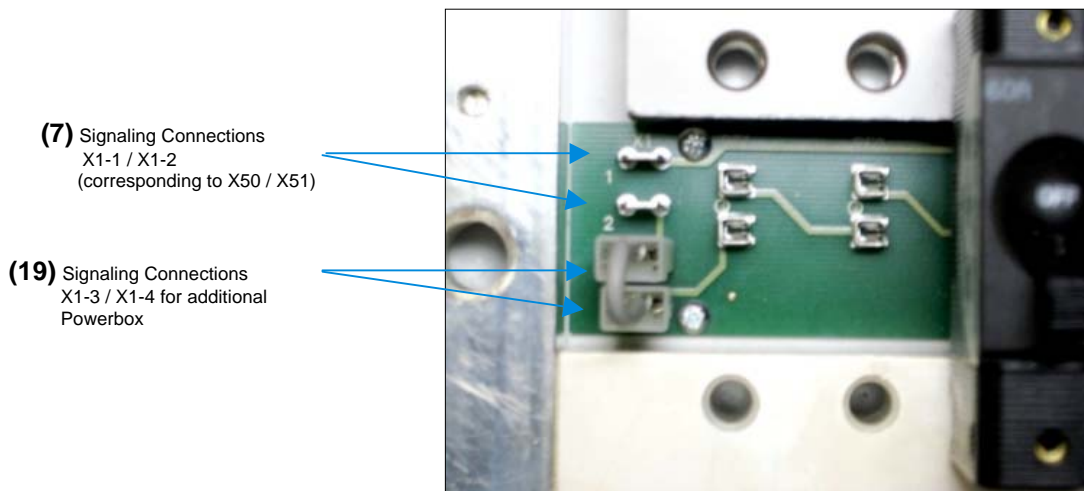


Fig. 8 - Signaling connections

### 7.3 Load Connections

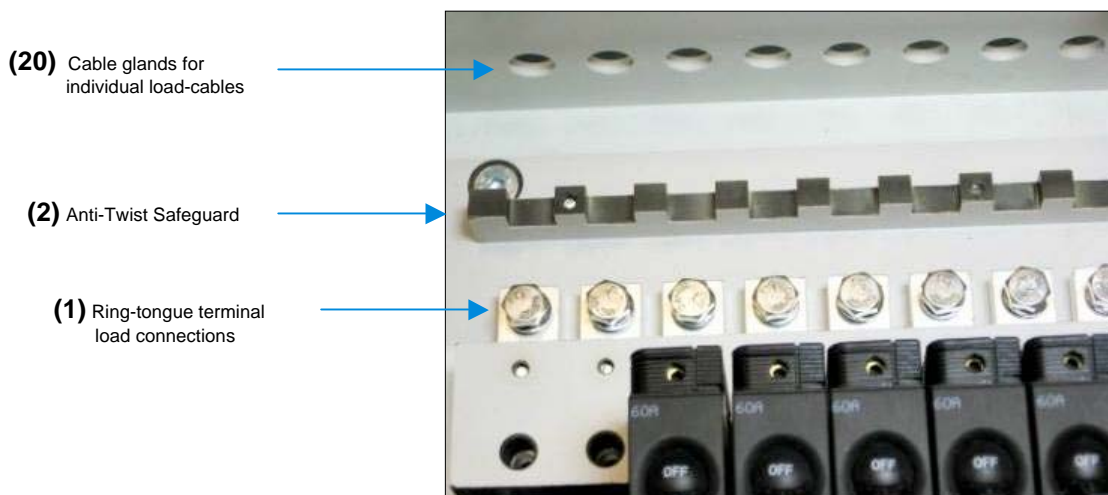
- Load-cables are fed from the top through the load cable glands D = 12 mm (**Fig. 10/20**), then crimped to cable lugs and attached to individual channels by M6 mounting bolts (**Fig. 10/1**).
- Max. torque 7 Nm. In order to ensure correct cable lug placement, the lugs are protected within the anti-twist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



**(7)** Signaling Connections  
X1-1 / X1-2  
(corresponding to X50 / X51)

**(19)** Signaling Connections  
X1-3 / X1-4 for additional  
Powerbox

*Fig. 9 - Signaling Connections Detail*



**(20)** Cable glands for  
individual load-cables

**(2)** Anti-Twist Safeguard

**(1)** Ring-tongue terminal  
load connections

*Fig. 10 - Load Connections*

## 7.4 Top Cover Monitoring Switch Connection

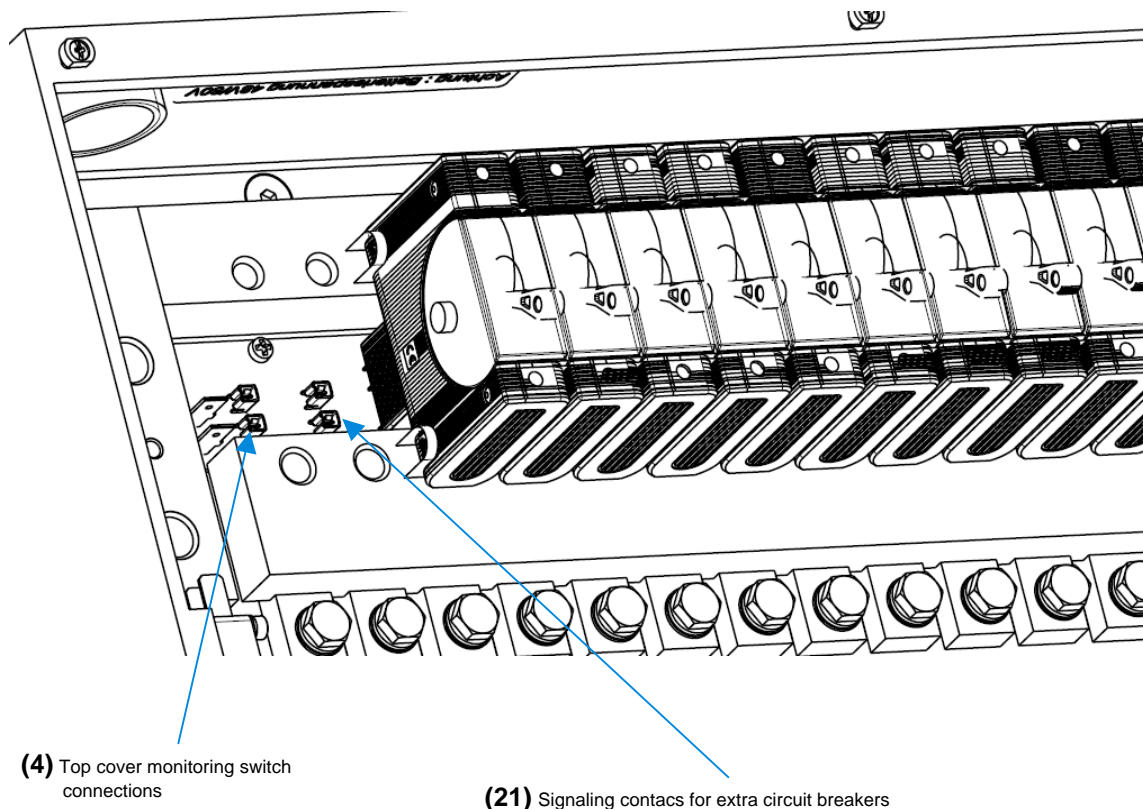


Fig. 11 - Top Cover Monitoring Switch Connection

The 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 would be 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. 2/24**) 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. Auxiliary Slot Assignment



**NOTE:** Prior to any work on the auxiliary slot assignments, the signaling connections X1-1 and X1-2 (if an external PDU is connected, X1-3 and X1-4 as well) must be disconnected.

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

(8) Conductor path signaling jumper

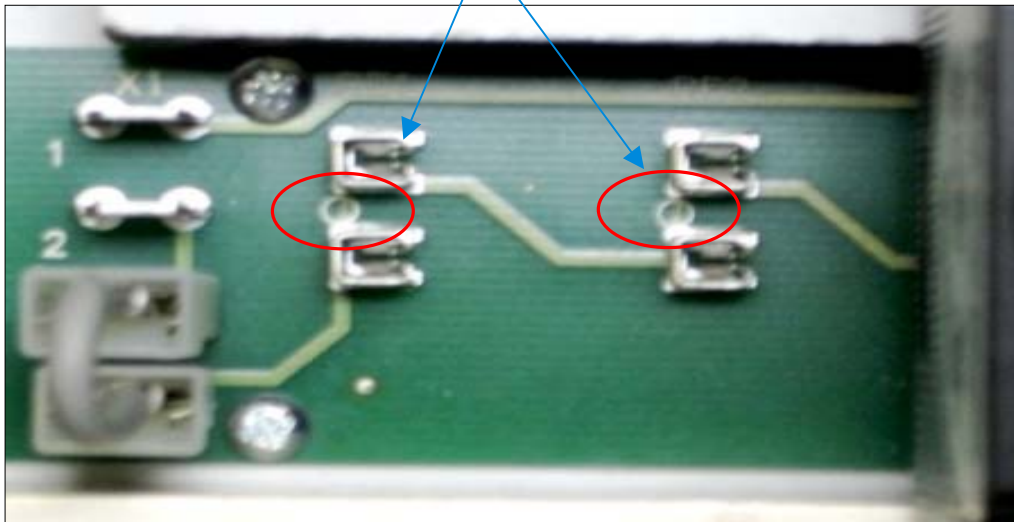


Fig. 12 - Conductor path cut-off point (Fig. 5/8) for Si-activation of auxiliary channels 15 and 16 (left hand side)

(8) Conductor path signaling jumper

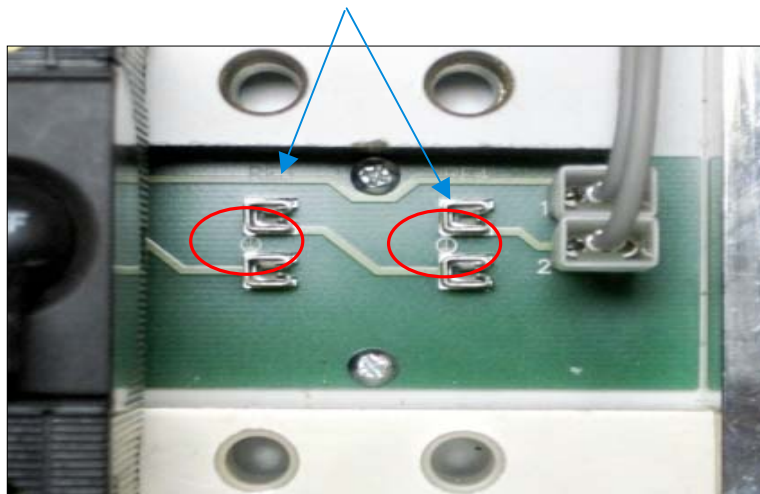


Fig. 13 - Conductor path cut-off point (Fig. 5/8) for Si-activation of auxiliary channels 13 and 14 (right hand side)

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

- In order to assign additional circuit breakers to the auxiliary slots (**Fig. 1/11**) F15, F16, F13 or F14 and to integrate them into the signaling loop, it is necessary to cut off the signaling conductor path (**Fig. 5/8**) between the signaling connectors (**Fig. 11/21**) as shown in **Fig. 12** and **13** for each additional circuit breaker position respectively.
- A sharp knife or the tip of a small screw driver may be utilized to cut off the signaling conductor path.
- The tool applied should be handled with caution, so that no damage is done to the soldering pads or to conductor paths other than those shown in **Fig. 12/8** and **Fig. 13/8**.

**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 .....	1
5	Plug-type circuit breakers .....	1
6	Supply connection, double-hole cable lug .....	1
7	Signaling contact connections .....	1
8	Conductor path signaling jumper .....	5
9	Signaling jumper .....	5
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	Snap-in blank covers for empty slots .....	2
24	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