

INSTALLATION MANUAL



Battery-protection "BAT BREAKER"

type 10012460



Picture Similar

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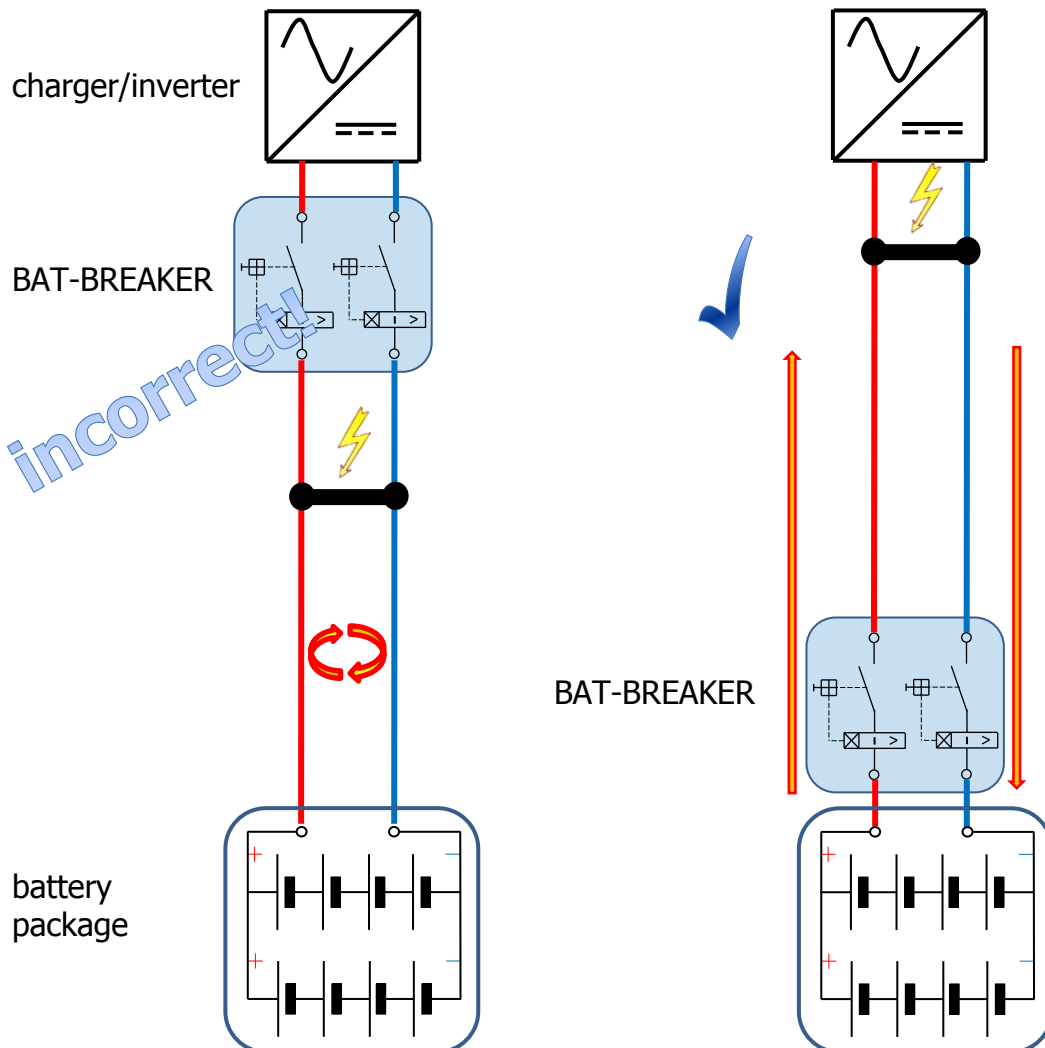
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1. Scope of application and appropriate usage

You may use the battery-protection "BAT BREAKER" for stationary or even mobile battery-storage systems of different technologies (Lead, Lithium...) as a protection against overcurrent and short-circuit current. The voltage for charging/discharging is limited to max. 75V DC. The max. short-circuit current may not occur with a value more than 10kA. The inserted circuit breakers are tested for even more short-circuit current (>25kA) and they had left the tests without any damage. But actually the confirmation IEC/EN 60947-2 conceded the usage up to 10kA and this is mandatory.

Obviously, you will get only in rare cases a short circuit of more than 10kA. For example in parallel connection of more than TWO battery-serial strings and maybe batteries with very low internal resistance. However, you have to calculate the max. short-circuit current in case of uncertainty. You may also use a Excel[®]-sheet for your help which is available on request - ask our sales team. If you experienced an activating breaker during the ongoing operation you would have to expect a failure in your system. Make sure that this failure is eliminated before reactivating the BAT BREAKER.

Always mount the BAT-BREAKER very close to the battery package in order to get an appropriate protection!



2. Scope of delivery

A



Picture Similar



position	quantity	component
A	1	BAT BREAKER type 10012460
B	10	Cable gland M32 x 1,5
C	10	Locknut M32
D	6	Cable gland M40 x 1,5
F	6	Locknut M40

3. Mounting the BAT BREAKER

3.1 Selecting the mounting location



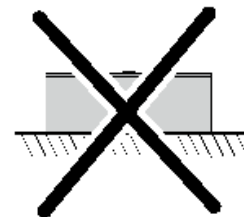
DANGER

risk of explosion or fire

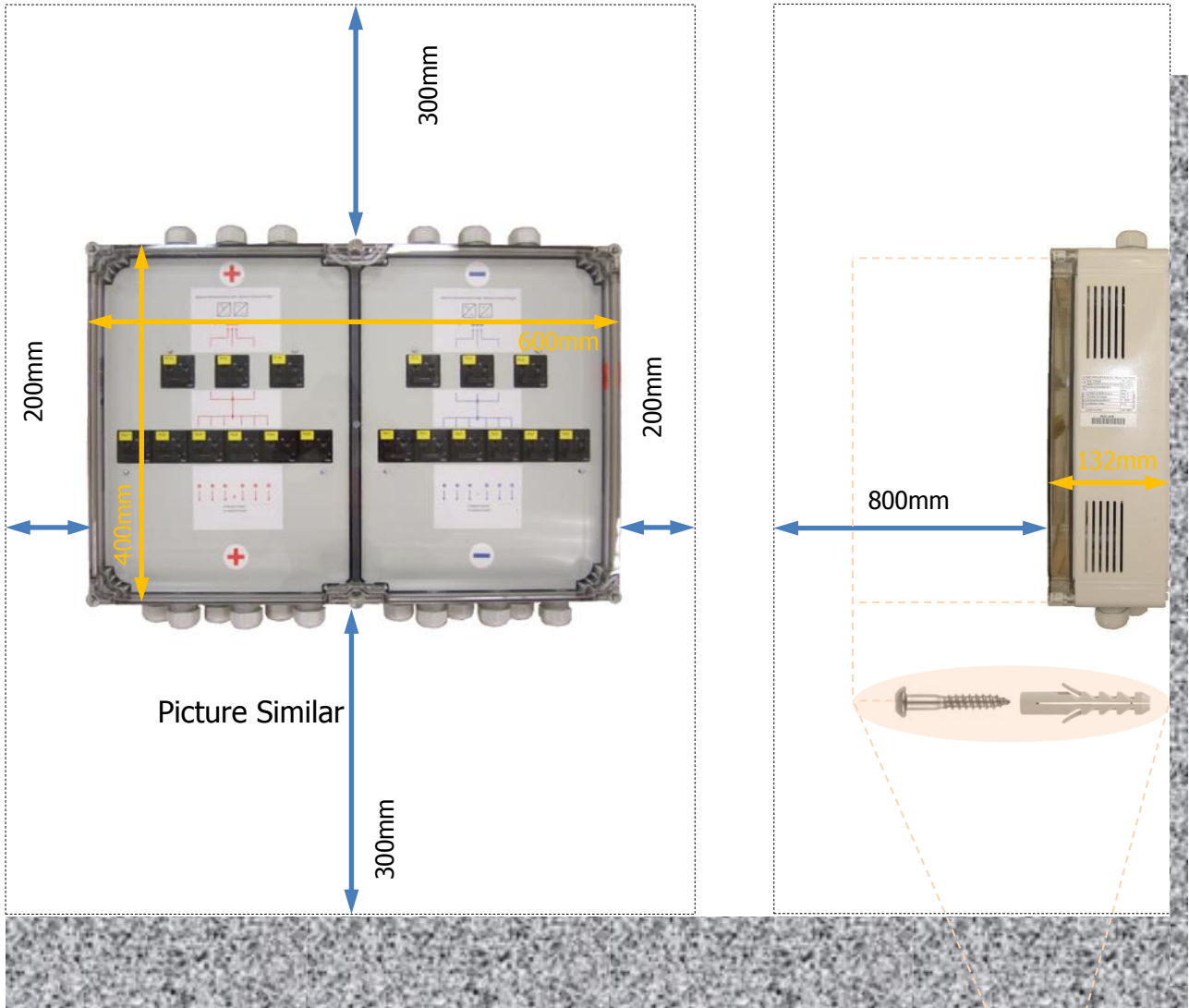
- do not mount the BAT BREAKER on flammable construction materials!
- do not mount the BAT BREAKER near highly flammable materials!
- do not mount the BAT BREAKER in potentially explosive areas!

- mount on a solid surface
- the mounting location and method must be suitable for the weight and dimension
- the mounting location must be accessible at all times
- climatic conditions must be in compliance with the specification
- the device may not be exposed to direct sunlight and weather
- the mounting location has to be protected against splashing water

installation position



3.2 Minimum distances/dimension/mounting method



Select the correct mode of mounting, **depending on the mounting surface**, for example 4 x expansion anchor "S8"+ 4 x chipboard screw Ø5.0



ATTENTION: Max. diameter head of bolt: Ø10mm!

Do not forget the cable catch rail!

4. Electrical connecting



previously remove the cover!



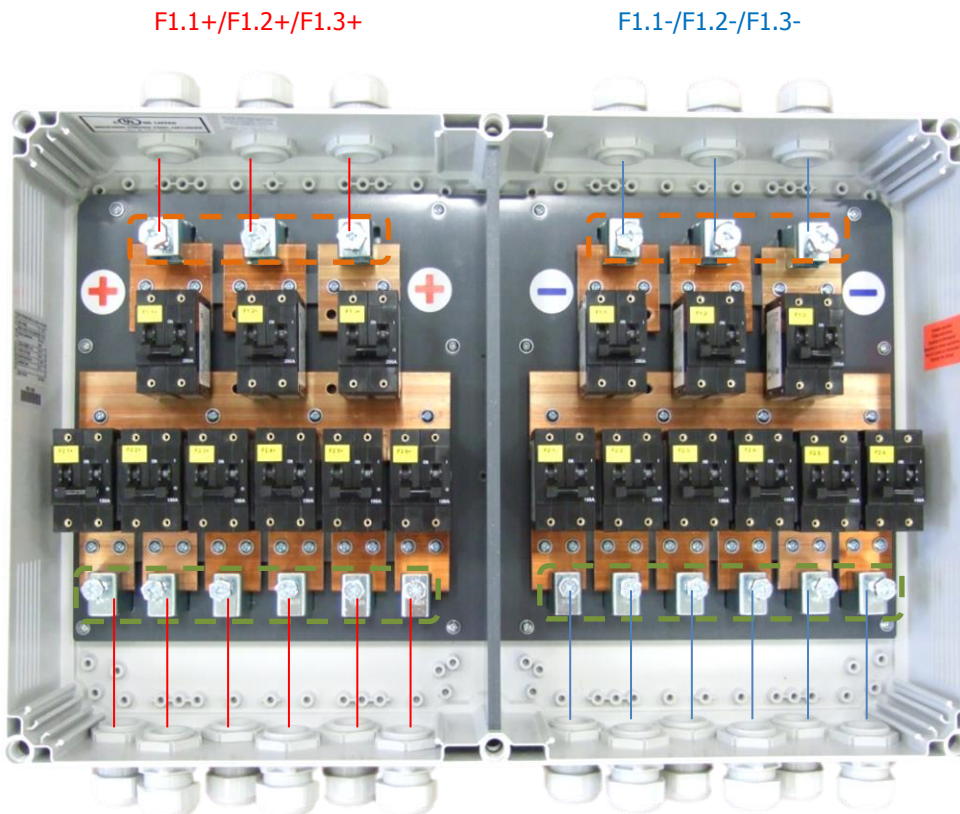
Accu -> **M32** Ø11-21mm (= permitted range of litz - diameter)



Inverter/charger-> **M40** Ø14-28mm (= permitted range of litz - diameter)



TOP: max. 3 x charger/inverter



- ↳ clamping range AWG 5 - 4/0 (16 - 120mm²)
- ↳ finely stranded with wire-end sleeve!
- ↳ range of tightening torque: 16,2-19,2 ft·lb (22-26 Nm)



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- ↳ finely stranded with wire-end sleeve!
- ↳ range of tightening torque: 16,2-19,2 ft·lb (22-26 Nm)

F2.1+/F2.2+/F2.3+/F2.4+/F2.5+

F2.1-/F2.2-/F2.3-/F2.4-/F2.5-

Picture Similar

5. Maintenance and cleaning

You should do a frequent short inspection of your BAT BREAKER for keeping a long durability and avoidance of an operational system's breakdown.

Please also consider your national standards and provisions regarding the requirements of battery- and/or PV power installations and their equipment. Potentially, you have to do an electrical test procedure once a year as it is to adduce in some european countries, e.g. Germany.

Visual inspection

Depending on the installation side and the environmental conditions you have to expect some pollution on the device's surface. Clean carefully with the help of a moist cloth! During this time do not open the case of the device under any circumstances!

6. How to stock the BAT BREAKER

Demands:

- dry conditions
- ambient air temperature ranges from -25°C up to $+55^{\circ}\text{C}$
- for a maximum of 24 hours: temperature might get higher up to $+70^{\circ}\text{C}$

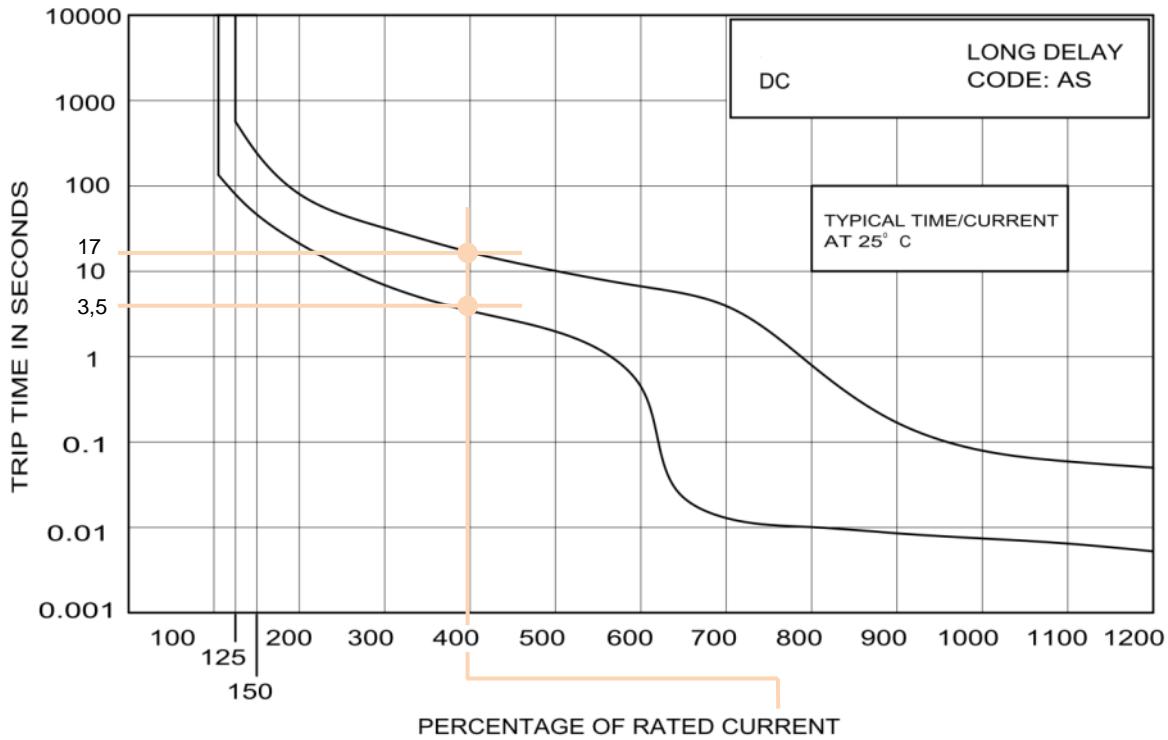
7. Disposal

Disposal is due to your national/local regulations. The BAT BREAKER is to classify as "electronic waste" (it is no "household waste"!).

Take care of that and protect the environment!

8. Specification in detail

8.1 Tripping characteristic



PERCENTAGE OF RATED CURRENT	100%	125%	200%	400%	600%	800%	1000%	1200%
MINIMUM TRIP TIME IN SECONDS	NO TRIP	80	21	3.5	0.45	0.01	0.0075	0.005
MAXIMUM TRIP TIME IN SECONDS	NO TRIP	560	80	17	6.8	0.8	0.08	0.05



for example: circuit breaker - rated current 200A:
 overcurrent of 800A (= 400% of rated current 200A)
 trip time between 3.5s und 17s
 (axis of ordinates: log. scale - trip time [s])

8.2 Technical data BAT BREAKER type 10012460

Artikel-Nr.	10012460
designation (match-code)	BAT BREAKER-Spec.BYD-5xAccu-3x Charger_ex safe_KL
<u>electrical data</u>	
max.number of battery charger/inverter	max. 3
max.number of accu parallel-connect	max. 5
max. DC-voltage	75V
rated current of circuit breaker -charger/inverter-	200A per potential
rated current of circuit breaker -power storage ESS 7.0-	200A per potential
tripping characteristic	DC - "long delay" - CBI Circuit Breaker
max. short circuit breaking capacity	10kA
<u>electrical connection (busbar contactor terminals)</u>	
<u>towards - charger/inverter</u>	
type of litz	finely stranded + wire-end sleeve
range of cross section	AWG 5 - 4/0 (16 - 120mm ²)
range of tightening torque	16,2-19,2 ft·lb (22-26 Nm)
<u>towards - accu (6 x)</u>	
type of litz	finely stranded + wire-end sleeve
range of cross section	AWG 5 - 4/0 (16 - 120mm ²)
range of tightening torque	16,2-19,2 ft·lb (22-26 Nm)
<u>cabinet</u>	
IP protection class	IP31
protection class against electric shock	II
dimensions (WxHxD)	600x400x132(mm) - without cable glands-
plastic material	polycarbonate - base part in grey -RAL7035-; cover clear
installation type	wall mounting
cable inlets (plastic metric cable glands)	M32 for accu / M40 for charger or inverter
<u>environmental conditions for operation</u>	
humidity	up to 85%, non-condensing
ambient temperature range	0°...45°C
<u>miscellaneous</u>	
according standard	IEC 60947-2
weight	approx. 14,5 Kg

