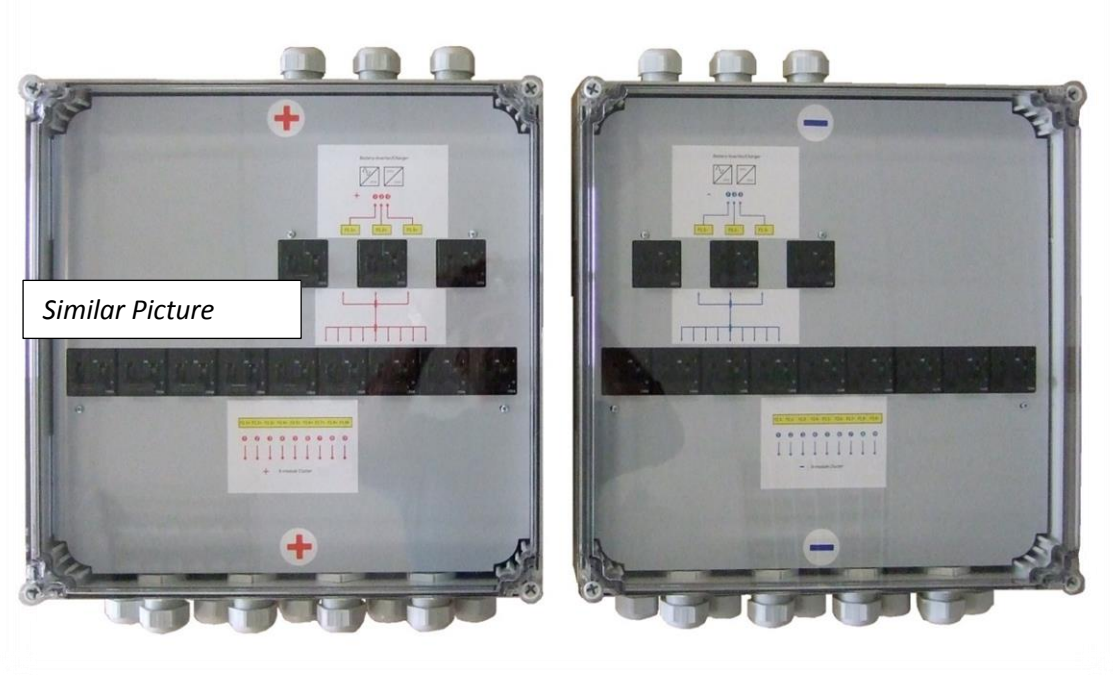


INSTALLATION MANUAL

EN

Battery-protection "BAT BREAKER" type 10012811

suitable for the PV energy storage system



3 x  Sunny Island (all types except 8.0H in off-grid mode)

If a different battery inverter/charger is aimed to use: Please clarify the technical capability in accordance with BYD who keeps the responsibility for the system!

6 x energy storage system

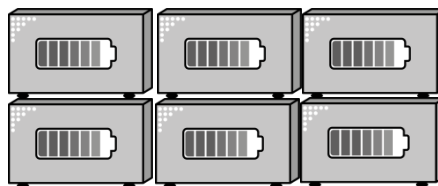


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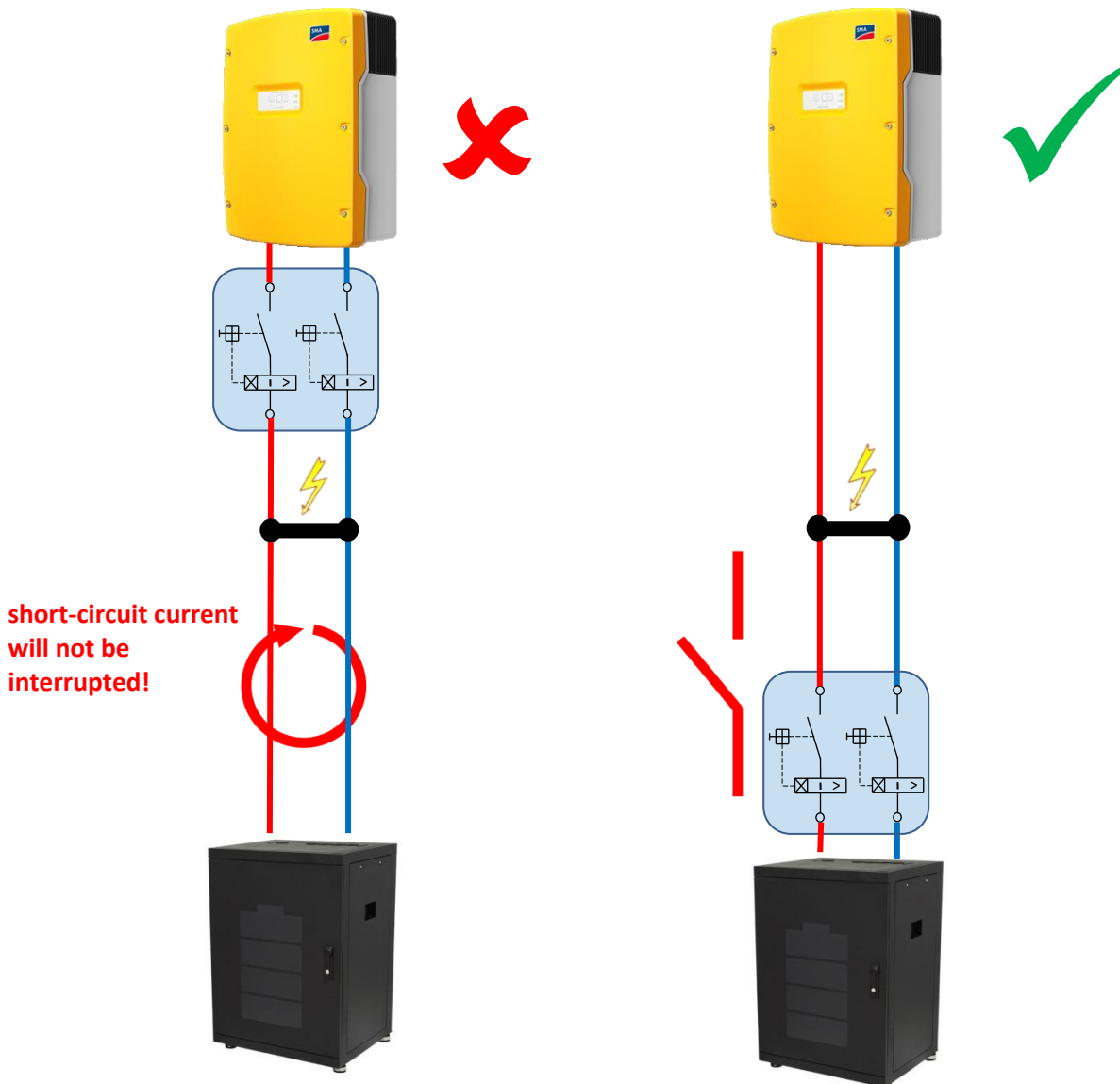
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1. Scope of application and appropriate usage

You may use enwitec's battery-protection series "BAT BREAKER" in general for stationary or even mobile battery storage systems within 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 circuit breaker's nominal current-values are matching the BYD Systems requirements and making the maximum safety and availability for the system feasible.

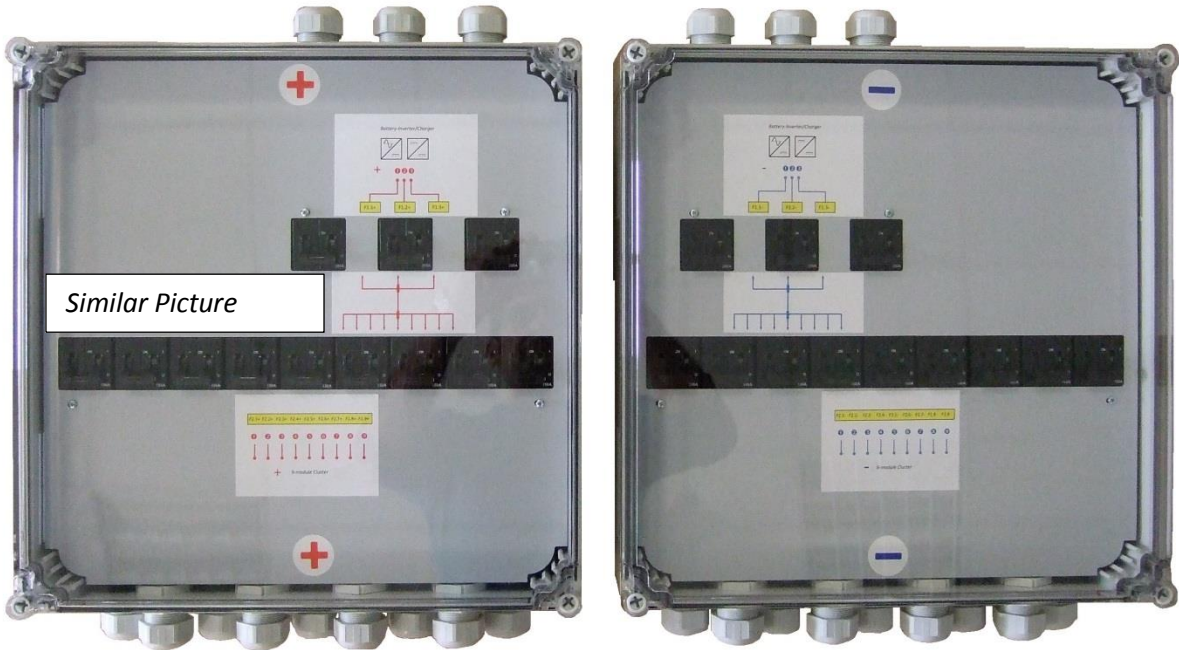
If you observe a releasing of circuit breakers there must be a failure in the system! Before switching on again the circuit breaker you have to ensure the system's error-free performance!

The BAT-BREAKER should be installed in close distance to the energy-storage unit. This provides the best protection for the system and cabling!



2. Scope of delivery

A



B/E



C



D/F



position	quantity	Component
A	1	BAT BREAKER type 10012811
B	12	Cable Glands M32 x 1,5
C	2	Twisting sleeve M32 x 1,5
D	12	Locknut M32 x 1,5
E	6	Cable glands M40 x 1,5
F	6	Locknut M40 x 1,5

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

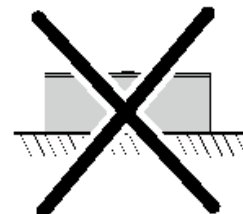


the device may not be exposed to direct sunlight and weather

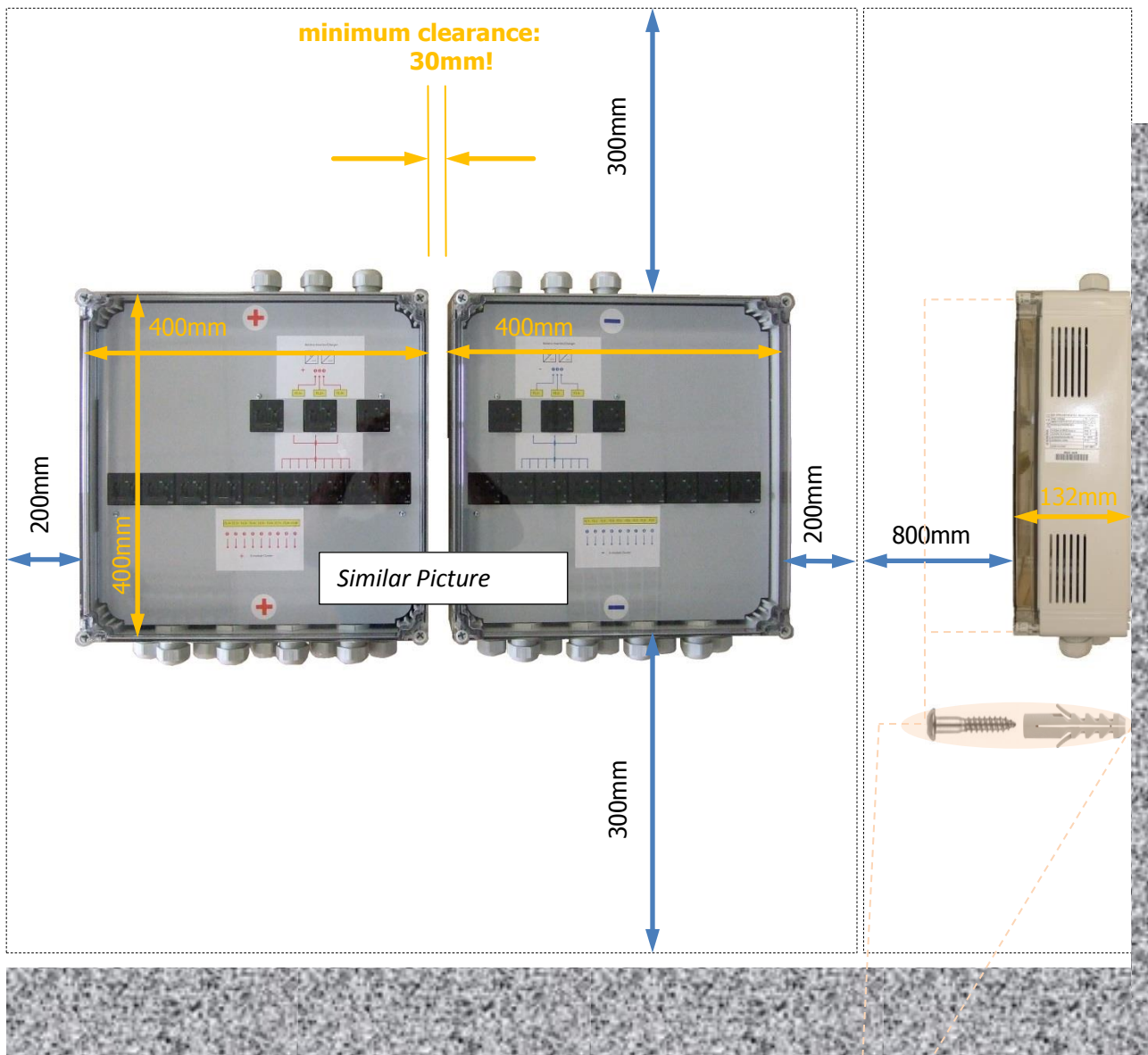


the mounting location has to be protected against splashing water

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



Do not forget the cable catch rail!

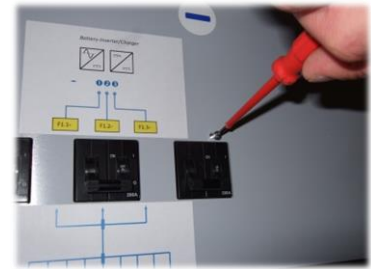
ATTENTION: Max. diameter head of bolt: Ø10mm!

4. Electrical connecting

previously remove
the cover!



M32 Ø15-25mm
M40 Ø16-28mm



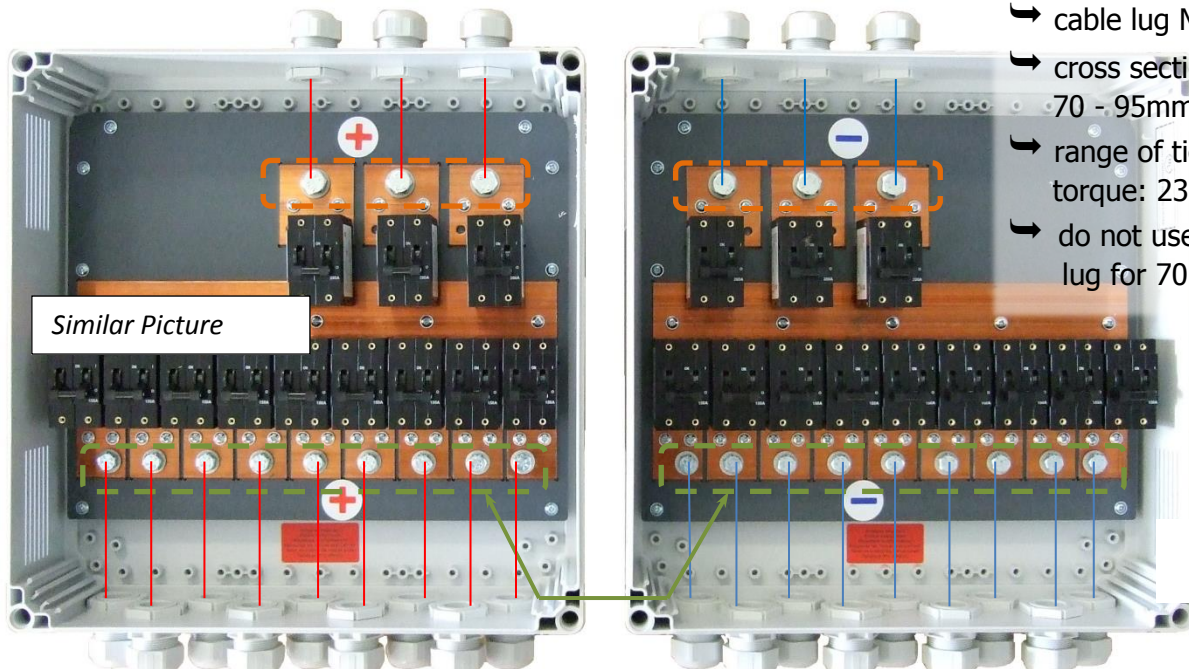
TOP: max. 3 x charger/inverter

F1.1+/F1.2+/F1.3+

F1.1-/F1.2-/F1.3-



- ↪ cable lug M10
- ↪ cross section
70 - 95mm²
- ↪ range of tightening
torque: 23-28Nm
- ↪ do not use crimping
lug for 70mm²



F2.1+/F2.2+/F2.3+/F2.4+/F2.5+/F2.6+

F2.1-/F2.2-/F2.3-/F2.4-/F2.5-/F2.6-



BOTTOM: 6 x energy storage system“*”



- ↪ cable lug M10
- ↪ cross section
70 - 95mm²
- ↪ range of tightening
torque: 23-28Nm
- ↪ do not use crimping
lug for 70mm²

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°C
- ☒ for a maximum of 24 hours: temperature might get higher up to +70°C

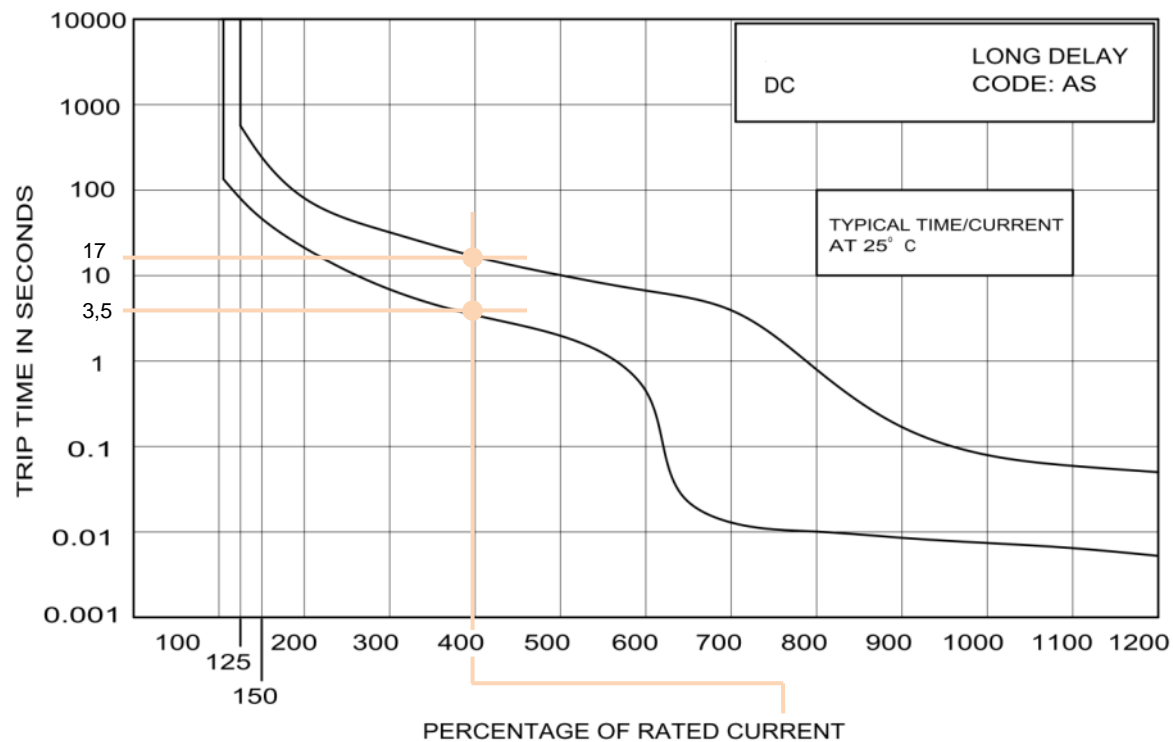
7. Disposal

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

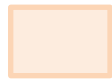
Take care of that and protect the environment!

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 10012811

order number	10012811
designation (match-code)	BAT BREAKER-Spec.BYD-6xAccu-3xCharger_ex safe_KS
electrical data	
max.number of battery charger/inverter	max. 3
confirmed manufacturer and device-type	SMA-Sunny Island (all types except 8.0H in off-grid mode)
max.number of accu parallel-connect	max. 6
max. DC-voltage	75V
rated current of circuit breaker -charger/inverter-	200A per potential
rated current of circuit breaker	200A per potential
max. permitted occurring current	compatible to "BYD Energy Storage System"
tripping characteristic	DC - "long delay" - CBI Circuit Breaker
max. short circuit breaking capacity	10kA
electrical connection (ready for cable-lugs)	
<u>towards - charger/inverter</u>	
cable lug	1 x M10 per potential
max. cross section of litz wire	
* cable lugs fit through the opening of the cable glands (cable lug is already pre-crimped)	70...95mm ²
* external diameter cable glands opening	16 - 28mm
<u>towards - accu (6 x)</u>	
cable-lug	1 x M10 per potential
	70...95mm ²
cross section (copper)	
external diameter cable glands opening	15 - 25mm
Cabinet	
IP protection class	IP31
protection class	II
dimensions (WxHxD)	2 x (!) 400x400x132(mm) – transparent with cable glands-
plastic material	polycarbonate - base part in grey -RAL7035-; cover clear
installation type	wall mounting
cable inlets (plastic metric cable glands)	M32 (Accu)/M40(Charger)
environmental conditions for operation	
humidity	up to 85%, non-condensing
ambient temperature range	0°...45°C
miscellaneous	
weight	2 x (!) approx. 8,7 Kg

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