DBC-1
DEIF Battery Charger



INSTALLATION INSTRUCTIONS

- 12/24 V-5/10 A-115/230 V
- High MTBF > 60,000 h at 70°C
- Temp. range -25°C to +70°C
- Overvoltage protected
- Boost/equalisation functionality
- Failure alarm functionality

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1. Technical information

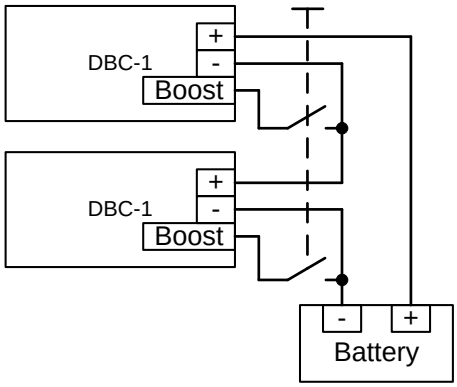
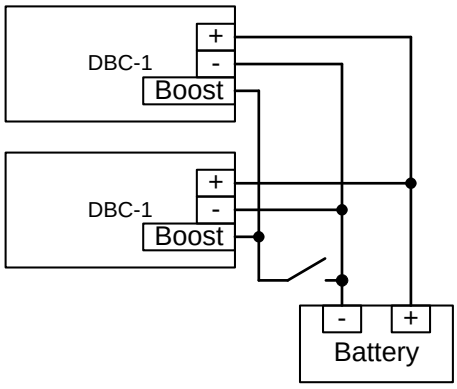
2. General information

1. Technical information

1.1 Technical specifications

1.1.1 General data

Input voltage	115V AC models, 115V AC ±15% 230V AC models, 230V AC ±15%
Input current	1205 115V AC: 1.20A 1210 115V AC: 2.40A 2405 115V AC: 2.40A 2410 115V AC: 4.40A 1205 230V AC: 0.60A 1210 230V AC: 1.20A 2405 230V AC: 1.20A 2410 230V AC: 2.20A
Frequency range	47...63 Hz (supply)
Input fuse (safety)	Not exchangeable. When blown, the charger is stopped. Fuse can only be exchanged by DEIF.
Output voltage	For 1205 and 1210 versions: Factory setting 13.8V DC +/-1% Adjustable 12.6...15.1V DC For 2405 and 2410 versions: Factory setting 27.6V DC +/-1% Adjustable 25.2...30.2V DC (Can be adjusted with a trimmer potentiometer at the front)
BOOST voltage	1205: +0.8V DC ±1% 1210: +0.8V DC ±1% 2405: +1.6V DC ±1% 2410: +1.6V DC ±1%
Output current	For 1205 and 2405 versions: Nominal current: 5.0A Maximum current (short cct.): 6.0A For 1210 and 2410 versions: Nominal current: 10.0A Maximum current (short cct.): 12.0A

Series operation	12 V + 12 V = 24V DC Possible 12 V + 24 V = 36V DC Not possible 24 V + 24 V = 48V DC Possible How to connect the Boost terminals when connected in series: 
Parallel operation	5A + 5A = 10A DC Possible 5A + 10A = 15A DC Possible 10A + 10A = 20A DC Possible How to connect the Boost terminals when connected in parallel: 
LED indication	Green/Red/Blue: Power indication, charge failure and boost
Housing	Materials: Top cover is plastic consisting of polycarbonate and bottom part aluminium alloy.
	L x W x H, DBC-1 1205/1210/2405 - 115/230V AC: 154 mm (6.06”) x 120 mm (4.72”) x 79 mm (3.10”) See dimensions chapter.
	L x W x H, DBC-1 2410 - 115/230V AC: 189 mm (7.44”) x 120 mm (4.72”) x 79 mm (3.10”) See dimensions chapter.

	Distance for convection: 100 mm above and below the DBC-1, 30 mm to each side
	Mounting: DIN-rail, EN 50022-35 or four pcs. Ø 4.5 mm holes for base mounting
Safety	VDE0805/EN60950/IEC950/EN61010-1 Protection: Class I Degree of protection: IP20 Leakage current: <0.75 mA (50…60 Hz ±5%)
Temperatures	-25…70ºC (operating, free convection) (Note: derating starts at 60ºC) -40…85ºC (storage)
Humidity	0...95% RH (operating, no convection)
Weight	DBC-1 1205: approx. 0.68 kg DBC-1 1210: approx. 0.74 kg DBC-1 2405: approx. 0.74 kg DBC-1 2410: approx. 0.83 kg

 **Caution! If high ambient temperature and high load, heat sink can get hot.**

1.2 Description of functions and settings

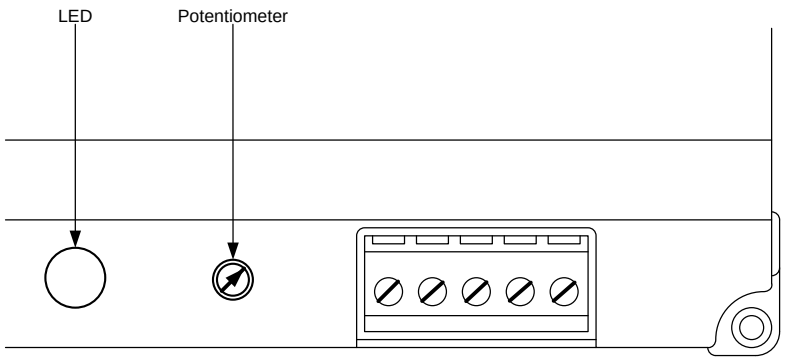
1.2.1 Output voltage setting

At the side of the output terminals (secondary side), the DBC-1 has a trim potentiometer for setting the output voltage. By means of an insulated slotted screwdriver or adjusting pin, the output voltage can be set in the range 12.6…15.1V DC respectively 25.2…30.2V DC.

Setting

Lower output voltage = counterclockwise rotation
Higher output voltage = clockwise rotation

Illustration
Terminals of the secondary side and setting potentiometer for output voltage.



Be cautious: do not turn the potentiometer across its endpoints! If so, the potentiometer is broken!

1.2.2 LED

The LED on the front indicates how the unit is operating or if it is not operating.

LED indication

LED OFF	- No power on the input terminals - Not a healthy voltage on the output terminals
STEADY GREEN	- Power on the input terminals - Healthy voltage on output terminals
STEADY RED	- Failure on the line input or input fuse - No output voltage
GREEN/RED FLASH	- Failure caused by battery reverse polarity connection - Overvoltage condition on output terminals
BLUE	- BOOST charge mode activated

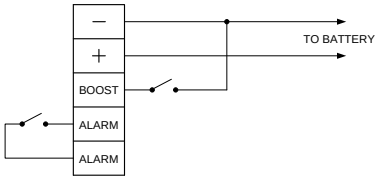
1.2.3 Mounting specifications

To obtain optimum cooling, it is imperative to comply with the specified installation position, where the terminals are at the bottom. If the mounting differs from this, a reduction in output must be expected, depending on the ambient temperature.

Distance	Above and below the DBC-1: 100 mm To each side: 30 mm
Permissible ambient temperature	Operating, free convection: -25...70°C (Note: derating starts at 60ºC) Storage: -40...85°C

1.2.4 Connection specifications

See the cover of the unit (imprint).

Terminals	Primary max.: 2.5 mm^2 Secondary max.: 2.5 mm^2
Primary terminals	L - Mains Line input. N - Mains Neutral input. PE - Protective Earth input. ⏚ PE on the DBC-1 **must** be connected to the protective earth of the switchboard.
Secondary terminals	 (-): Negative output to the battery (+): Positive output to the battery Alarm: Alarm contact outputs Alarm contact rating: 3 A 250V AC.

1.2.5 Protection

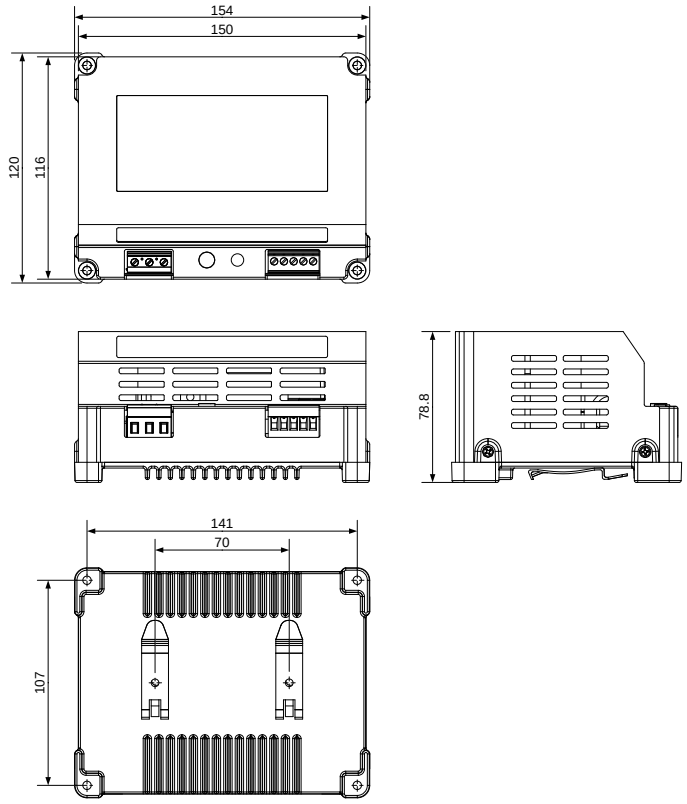
Input	The units are internally protected by a fuse and can be connected directly to line. If the fuse is blown, the charger will stop working. The blown fuse can only be replaced by DEIF.
Output	If the output is short-circuited, an internal current limiter will be activated.

2. General information

2.1 Dimensions, CE marking and disclaimer

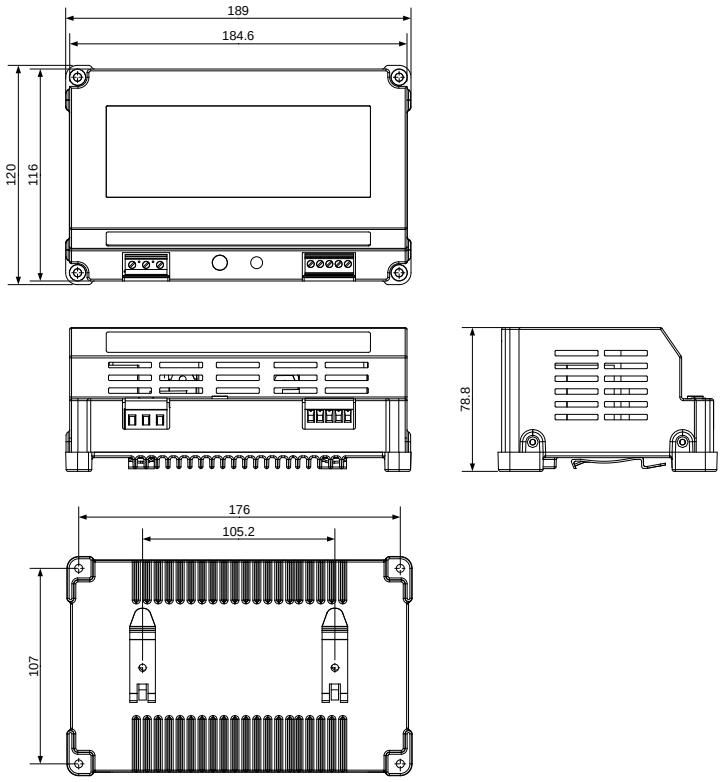
2.1.1 Dimensions

Type: DBC-1 1205, 1210, 2405 (115/230V AC)



All dimensions are in mm.

Type: DBC-1 2410 (115/230V AC)



All dimensions are in mm.

2.1.2 CE marking

All variants of the DBC-1 are CE-marked to the EMC Directive and the Low Voltage Directive. However, the following comments concerning EN 61000-3-2 (limits for harmonic current emissions) apply and must be observed upon installation of the DBC-1:

If the DBC-1 with 230V AC supply is used as part of an apparatus which has a rated AC power of 1 kW or more, there is no requirement for compliance with EN 61000-3-2.

If the DBC-1 with 230V AC supply is used as part of an apparatus which has a rated AC power less than 1 kW, compliance with EN 61000-3-2 must be ensured by the maker of the apparatus. In this case, the maker of the apparatus containing the DBC-1 with 230V AC supply must carry out CE marking to the EN 61000-3-2 himself. All other parts of the CE marking provided by DEIF A/S are still valid.

Alternatively, permission to connect the DBC-1 with 230V AC supply must be given by the local power supply authority of the place of installation of the DBC-1, as stipulated by EN 61000-3-2, clause 4. In this case, the entire CE marking provided by DEIF A/S, including to EN 61000-3-2, is valid.

2.1.3 Disclaimer

DEIF A/S reserves the right to change any of the contents of this document without prior notice.