

DBL1600/3W

Intelligent Charging Computer

for motor vehicles starter battery (Lead acid / Gel / AGM / VRLA)



Abbildung ähnlich / device similar to figure



DBL1600/3W-derivative table

Type	Input voltage	Output voltage (configurable)		Output current	Cat. No.
		FSV	Charge/trickle (typical)	Nom. / Boost	
DBL1600/3W-14-B-HAN	380 - 500 VAC	14,4 VDC	14,4 / 13,8 VDC	90 / 105 A	107201/0/000
DBL1600/3W-14-B-HAN*	380 - 500 VAC	14,4 VDC	14,4 / 13,8 VDC	90 / 105 A	107140/0/000

*Version with alternative pin assignment of the input connection, see fig. 7.1

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1 Input

Input voltage AC	nom. 3x 380 - 500 VAC	Tolerance: 320 - 552 VAC TN-S, TN-C, TT, IT systems
Input frequency	50 - 60 Hz	Tolerance: 45 - 65 Hz
Input voltage DC	450 - 700 VDC	Tolerance: 400 - 780 VDC
Inrush current	No Inrush current	Active regulated limitation / Option: Values modifiable on request (e.g. mains switch-on time delay etc.)
Current consumption at full load	4,5 A	-
Power factor	typ. 0,95	-
Hold up time	> 3 ms	@ U _{out} > U _{out} -10%
Input fuse	-	Externally, a 3-pole circuit breaker with characteristic $\geq B$ must be provided. The circuit-breaker must be dimensioned in accordance with the country-specific regulations and to the maximum rated current specification.
Transient over voltage protection	Varistor (4,5kA / 71J)	L1, L2, L3; active transient voltage filter (1000V/1.3ms)

2 Output

Output voltage (configurable)	2 - 17 VDC	For an output voltage > 15,5 VDC the default OVP limit must be changed.
continuous output current	max. 90 A	-
Short-term output current (Boost)	max. 105 A	-
Boost	Adaptive process	Cooling time depends on boost time (max. 1min). After 1min boost (I _{out} >90 A) automatic cooling phase (I _{out} ≤ 90 A) of 4 min.
Current limiting	typ. ± 1% of adjusted value	-
Output power	≤ 1600 W with boost	Automatic power adjustment depending on input voltage, ambient temperature and load condition

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3 Regulation accuracy

Tolerance	± 2% over all	-
Load regulation static (10-90%)	< 0,5 %	typ. 0,05%
Load regulation dyn. (10-90%)	< 5 %	-
Recovery time	< 1 ms	-
Temperature drift	-25°C ... +50°C: < 1%	(typ. 0,5%; @0-40°C: typ. 0,4%)
Voltage ripple	< 50 mVpp	-
Switching spikes	< 300 mVpp	-

4 EMC (Electromagnetic Compatibility)

RF-emission	EN55011 class B	With signal lamp / interface connection: class A
Harmonic current emissions	EN61000-3-2	-
Immunity	EN61000-6-2	-

5 Enviroment

Operating temperature	-25°C...+60°C	Automatic output power derating
Storage temperature	- 40°C ... + 85°C	-
Cooling	Convection and internal fan	Automatic power reduction at too high temperature due to insufficient convection. In case of fan failure, power reduction to emergency program; processor-controlled fan control and monitoring
Humidity	95%	No operation during dew; coated PCB by varnish
Pollution degree according to EN61010	2	-
Climatic category according to EN60721	3K3	-
Protection class according to EN60529	IP54	-

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6 General data

Electrical safety according to	· UL1236 · EN60335-1 · EN60335-2-29 · EN61010	-
Protection class	class I	-
Isolation voltage	3000 VAC 500 VDC	Input / Output Output / Housing
Efficiency	typ. 91%	-
Housing	Metal	Especially designed for car manufacture and service stations. Mounting option at the devices side via 4 screws, size M6 (height of thread 10mm)
Dimensions	390 x 355 x 118 mm 390 x 355 x 143 mm	standard-version option with heat-sink see figure 8.1
Weight	ca. 7,7 kg ca. 10 kg	standard-version option with heat-sink (both without cables and package)

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7 Connections

Input

3-phase mains connector

Connection of 3AC mains cable at the front side of the device with Harting Connector HAN6E/B in two versions:

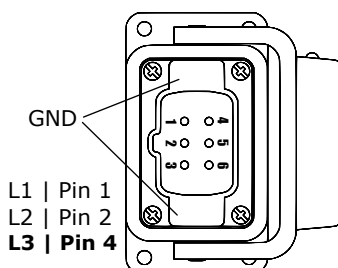
107201: L1(Pin-1), L2(Pin-2), L3(Pin-4), PE(contacts external)

107140: L1(Pin-1), L2(Pin-2), L3(Pin-3), PE(contacts external)

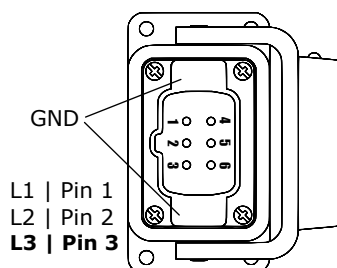
PIN assignment – see technical drawing 7.1); Connection of N [neutral] is not permitted!

HAN: Mains connection via Harting connector HAN6E/B (Note: Mains connection is NOT hot pluggable!

Attention: Included in delivery is only the plug on the device side, The mating plug can be ordered from Deutronic cat. no.: 140442)



Cat. No.: 107201



Cat. No.: 107140

Figure 7.1: Pin assignment input

Further optional connector variants on request:

- a) 4-pole, plug-able screw terminal (4x 0.5-4mm²)
- b) Mains connection kit with protective cover (cat. no.: 140742)
- c) Fully pre-assembled mains connection kit (protective cover [see b]), CEKON mains plug as well as customized design / length of mains cable)

Output

Welding cable connector

Plug [-] / socket [+] for wire cross section 16 / 25mm²

Interface (25-pol. SUB-D)^{[*1][*2]}

For various purposes (e.g. floating Relays, Remote ON/OFF etc.)

RS232 (9-pol. SUB-D)^{[*1][*2]}

For communication or firmware update (standard PC interface)

[*1]

A shielded cable must be used to connect external equipment.

[*2]

ATTENTION: GND-Pins not galvanically isolated to the power output! When connecting the device with an external control a galvanic isolation must be provided!

Signals

3 high power LED's for operating state indication / alarming

Display

Big sized graphic display

3-key operator panel

Menu navigation as well as configuration / parametrization of operation mode and individual device parameters (among others output voltage, current limits, security parameters, start / stop behavior, short circuit reaction etc.) Extensive functional description see operating instructions

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8 Dimensions

All dimensions are given in millimeters and have a general tolerance according to DIN ISO 2768 - m.

B-HAN version: Display on the top, interface and connector on the front - mains connection via Harting connector HAN6E/B (Attention - included in delivery is only the plug on the device side, not the mating plug).

The heat sink shown here on the bottom of the device is a selectable option and is not included in delivery.

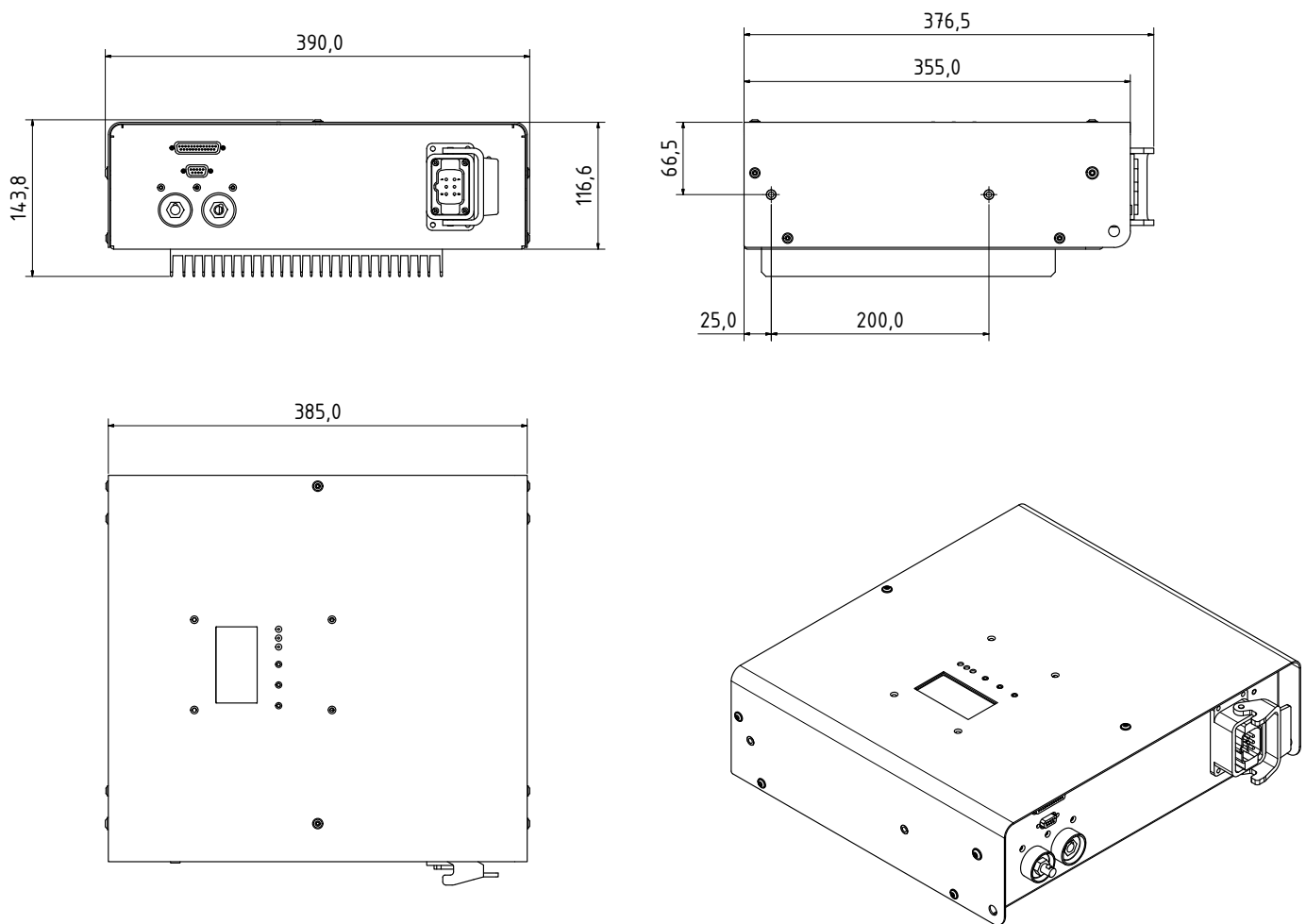


Figure 8.1: Dimensions

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9 Function description

Attributes

load detection, reverse polarity-, short circuit- and over voltage protection (OVP), cable compensation

Output (Factory settings)

Output voltage monitored by OVP (Over Voltage Protection) and complete disable of output current if preset charging voltage limit is exceeded. Extensive functional description of the charger's features - see operating instructions.

Charge Mode (Factory settings)

When starting the DBL the predefined charging voltage is set (e.g. 14,4VDC). If charging current goes under the predefined limit (e.g. 2,5A) then the charging voltage is reduced to trickle charge (e.g. 13,2VDC). If additional current is required, the charger will again increase the charging voltage (to e.g. 14,4VDC).

Current limiting

Current limit is user selectable. According to the operation state the current limit is automatically adjusted during operation, depending on mains voltage operating temperature, load characteristic etc. The maximum current limit value / boost (see table on page 1) is provided for max. 1 minute continuously followed by a cooling period for approximately 4 minutes.

Operating modes

Standard setting /000

- Charging
- External-Power-Supply (PS)
- Auto mode function (automatic detection of PS/Charging)
- additional modes on request

Hint: For more details, please refer to the corresponding operating instructions.

Customized setting /yyy

- on request:
- universal configurations and charging programs
 - Autodetect functionality (automatic detection Pb/Li)

10 Optional accessories for DBL series chargers

- Charging cables (3 and 5 meters)
- External signal lamp
- Ethernet/WLAN adapter
- PC software

more accessories you will find on our webpage www.deutronic.de

11 Installations- und Sicherheitshinweise

The general installation and safety instructions for charging computers can be found at: www.deutronic.de

- Generally it is recommended to use by Deutronic released equipment, only. Because only in this way an appropriate technical suitability and an adequate dimensioning can be ensured for professional use.
- Equipment and accessories have to be selected and installed in accordance with the requirements and under attention of the existing safety guidelines.
- For DBL series chargers with max. output current >100A we recommend using charging cables with a diameter of at least 25mm².
- **Note:** Mains cables / charging cables must be used in completely unrolled condition only, to ensure a sufficient cooling! Moreover pay attention of a safety interlocksystem at the respective device to ensure the operational safety and to avoid damages. If worn, the cables must be replaced immediately!

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