

# DBL2253/3W-14 Charging Computer

for lead acid / AGM / gel / fleece / Lithium-Ion batteries



Abbildung ähnlich / device similar to figure



DBL2253/3W-14 - derivative table

Type	Input voltage	Typ. output voltage (configurable)*			Output current Boost / Nom.	Cat. No.**
		Charge Pb / LiFe	LTC Pb / LiFe	FSV		
DBL2253/3W	400 - 480 VAC	14.4 / 14.0 V	14.4 / 14.0 V	14.0 V	150 A	107265/0/yyy
DBL2253/3W	400 - 480 VAC	14.4 / 14.0 V	14.4 / 14.0 V	14.0 V	150 A / 100 A	107260/0/yyy
DBL1903/3W	400 - 480 VAC	14.4 / 14.0 V	14.4 / 14.0 V	14.0 V	120 A	107264/x/yyy
DBL1903/3W	400 - 480 VAC	14.4 / 14.0 V	14.4 / 14.0 V	14.0 V	120 A / 100 A	107261/0/yyy
DBL1603/3W	400 - 480 VAC	14.4 / 14.0 V	14.4 / 14.0 V	14.0 V	105 A / 90 A	107262/0/yyy
DBL1303/3W	400 - 480 VAC	14.4 / 14.0 V	14.4 / 14.0 V	14.0 V	90 A / 80 A	107263/0/yyy

\* Charging voltages can be customized on request. The actual charging voltage depends on the prevailing operating state.

\*\*Setting /yyy: see 10 - Functional description

## Charging Computer

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## 1 Input

<b>Input voltage range AC</b>	nom. 3x 400 - 480 VAC	Tolerance: 320 - 552 VAC TN-S, TN-C, TT, IT systems, Connection to industrial networks
<b>Input frequency</b>	50 - 60 Hz	Tolerance: 45 - 65 Hz
<b>Input voltage range DC</b>	450 - 700 VDC	Tolerance: 400 - 780 VDC
<b>Inrush current</b>	No inrush current	Active regulated limitation / Option: Values modifiable on request (e.g. mains switch-on time delay etc.)
<b>Maximum current consumption</b>	7 A	Short-term, at lowest input voltage
<b>Current consumption at full load</b>	max. 3x 5,0 A (@DBL2253) max. 3x 4,0 A (@DBL1903) max. 3x 3,4 A (@DBL1603) max. 3x 2,8 A (@DBL1303)	-
<b>Power factor</b>	> 0,95	-
<b>Input fuse</b>	16 A	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.

## 2 Output

<b>Output voltage</b>	-	See DBL2253/3W-14 - derivative table
<b>Output current</b>	max. 150 A (@DBL2253) max. 120 A (@DBL1903) max. 105 A (@DBL1603) max. 90 A (@DBL1303)	Boost / Nom. typ. 1 min. / 4 min.
<b>Output power</b>	< 2250 W (@DBL2253) < 1900 W (@DBL1903) < 1600 W (@DBL1603) < 1300 W (@DBL1303)	Automatic power regulation depending on input voltage, ambient temperature and load condition
<b>Nominal output voltage <math>U_{nom}</math></b>	14,0 VDC	Reference value for tolerance specifications
<b>Initial tolerance <math>N_{initial}</math></b>	$\pm 0,6 \% U_{nom}$	-
<b>Load regulation tolerance <math>N_{load}</math></b>	$+0,5 \% / -0,6 \% U_{nom}$	-
<b>Overall tolerance <math>N_{overall}</math> 0 - 20 Hz</b>	$+1,1 \% / -1,2 \% U_{nom}$	$N_{overall} = N_{initial} + N_{load} + N_{line}$
<b>Ripple &amp; Noise <math>N_{RN}</math></b>	$< \pm 1,4\% U_{nom}$	< 400 mVpp
<b>Overall toleranz <math>N_{overall}</math> 0 - 20 MHz</b>	$+2,5 \% / -2,6 \% U_{nom}$	$N_{overall} = N_{initial} + N_{load} + N_{RN}$

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## 3 Environment

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Operating temperature (environment)	-25 °C...+40 °C	Automatic output power derating up to 60°C
Storage temperature	-40 °C...+85 °C	-
Humidity	max. 95%	-
Dewing	not allowed	-
Pollution degree	2	Acc. to EN50178
Climatic category	3K3	Acc. to EN60721
Degree of protection acc. to EN60529	IP54	Without connection system

## 4 General data

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Protective system	Class I	-
Insulation strength	3000 VAC 500 VDC	Input / output Output / enclosure
Efficiency	typ. 90%	-
Enclosure	Metal	Especially designed for car manufacturer and service stations. Mounting option via 6 screws size M6 at the side.
Dimensions (LxWxH)	385 x 376,5 x 149,3 mm	Without connections, see fig. 8.1
Weight	approx. 12,2 kg	Without cables, without packaging

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## 5 Standards

### EMC (Electromagnetic compatibility)

Title	Standard	Data
RF-Emission	EN55011	Group 1, class B
Harmonic current emissions	EN61000-3-2	-
Immunity	EN61000-6-2	Immunity standard for industrial environments (Charging cable < 15m; USB-cable < 3m; Ethernet-cable < 30m)

### Electrical safety

Title	Standard	Data
Electrical safety	IEC/EN/UL/CSA 61010-1 IEC/EN/UL/CSA 61010-2-201 UL 1012 CSA C22.2 No. 107.2	-

## 6 Installation and Safety Instructions

In addition to the general installation and safety instructions, the following values and supplements apply:

Cooling	Natural convection	Temperature monitoring (Automatic electronic power reduction at too high temperatures due to insufficient or missing cooling)
Mounting position	-	Open, well ventilated
Connection input / output	-	See chapter 7
USB connection	-	See chapter 7
Ethernet connection	-	See chapter 7
Transient over voltage protection	-	Varistor (4,5 kA / 190 J)
Reverse polarity protection output	-	In case of wrong polarity the charging process is interrupted

The general installation and safety instructions for charging computers can be found at [www.deutronic.com](http://www.deutronic.com)

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## 7 Connections

### Connection input

3-phase mains connector

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

- Pin assignment Standard:  
L1(Pin-1), L2(Pin-2), L3(Pin-4), PE(contacts external)
- Optional pin assignment on request:  
L1(Pin-1), L2(Pin-2), L3(Pin-3), PE(contacts external)

Pin assignment see fig. 7.1; Connection of N [neutral] is not permitted!

HAN: Mains connection via Harting connector HAN6E/B

(Note: Pulling/plugging under load is not permitted!

Attention: Only the plug on the device side is included in the scope of delivery, not the mating plug! It can be obtained from Deutronic, cat. no.: 140442

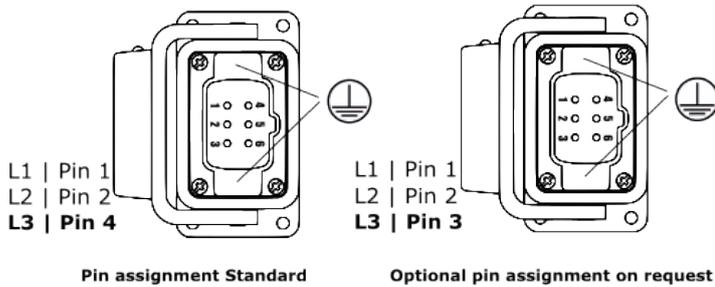


Figure 7.1: Pin assignment connection input

### Connection output

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Typ. overall length ≤ 15m

Threaded bolt:

- M12 [max. torque 35Nm]

### USB connection

-

For connection to the USB ports, use USB cables with foil and braided shielding with a total length < 3m

### Ethernet connection

-

For connection to the Ethernet port, use an shielded Ethernet cable category CAT5e or higher with shielded network connector with a total length < 30m.

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## 8 Dimensions

All dimensions are given in millimeters and have a general tolerance according to DIN ISO 2768 - m. The output cables (optionally available) are not shown in this drawing.

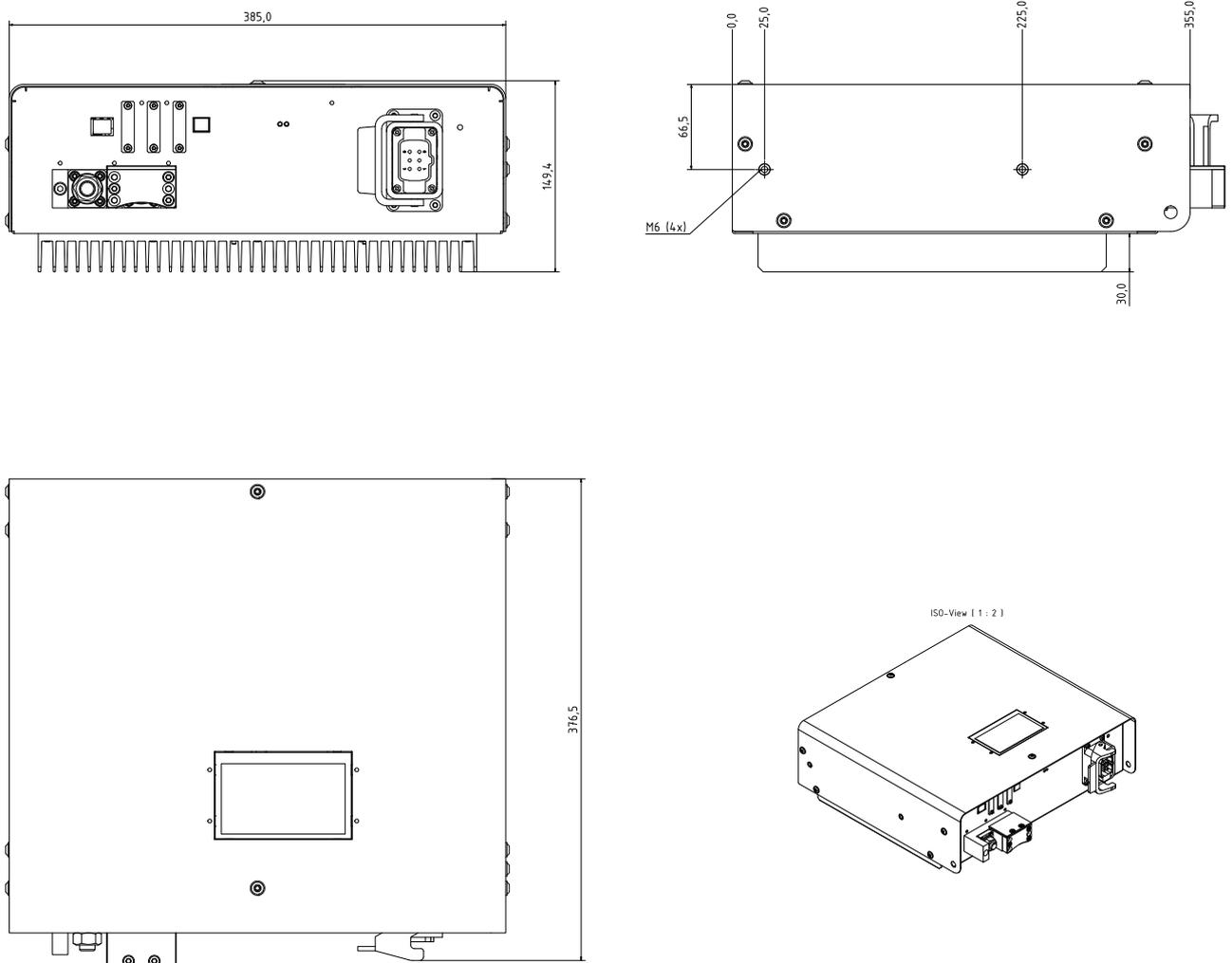


Figure 8.1: Dimensions

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## 9 Interfaces

<b>Ethernet-Interface</b>	max. 100 Mbit/s	Device control via ethernet possible, Power over ethernet
<b>3x USB-Type-A Host - Interface</b>	FW-Update/Setting possible via USB flash drive	Possible Accessory-Adapter (on request): <ul style="list-style-type: none"> <li>· Retrofit 25-pol. SUB-D (function e.g. pot. free Relay, Remote ON/OFF, Connection DBL-SIG Signalindicator, etc.)</li> <li>· USB-Signalindicator</li> <li>· IO-Link</li> <li>· Wireless-Adapter</li> </ul>
<b>USB-Client - Interface</b>	-	Service-Interface
<b>Signalization</b>	Power-LED (white / red) Status-LED (RGB-LED)	-
<b>4,3" Touch-Display</b>	Large size graphic display	Display of charging mode, current, voltage, device status, charging status, active adapters, menu structure.

## 10 Functional description

<b>Features</b>		Load detection, reverse polarity, short circuit and over voltage protection (OVP), cable compensation Hint: The cable compensation function is not activated as standard ex works.
<b>Output (Factory settings)</b>		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).
<b>Current limiting</b>		According to the operation state, the current limit is automatically adjusted during operation.
<b>Operating modes</b>	Standard setting /000	<ul style="list-style-type: none"> <li>· Pb-Charging</li> <li>· Li-Charging</li> <li>· Pb-Long-Time-Charging (Pb-LTC)</li> <li>· Li-Long-Time-Charging (Li-LTC)</li> <li>· External-Power-Supply (FSV)</li> <li>· PowerUp</li> <li>· Auto mode function (automatic detection of FSV/Charging)</li> <li>· additionally 5 individually configurable charging modes</li> </ul> Hint: For more details, please refer to the corresponding operating instructions.
	Customized setting /yyy	On request: <ul style="list-style-type: none"> <li>· universal configurations and charging programs</li> <li>· Autodetect functionality (automatic detection Pb/Li)</li> </ul>

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