

# **Bosch C10 charger** Operating instructions



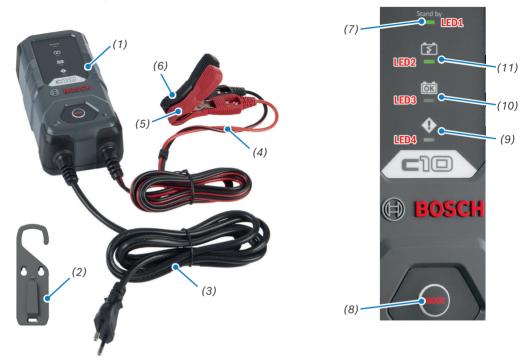
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	ruzioni d'uso

### **Device description**



1	Charger			
2	Mounting hook			
3	Mains cable with mains connection			
4	Charging cable (red and black, 18AWG cable)			
5	(+) Terminal clamp (red)			
6	(–) Terminal clamp (black)			
7	Standby Stand			

8	Mode selection button	
9	Battery status: very low (<4.5 V)	•
10	Battery status: OK (charged)	ŌK
11	Battery status: charging in progress	1

### 1 Technical data

Technical data	
Input voltage	230 VAC / 50 Hz
Starting current	<50 A
Rated input current	Max. 0.6A (RMS value)
Input power	60 watts
Rated output voltage	DC 12 V
Charging voltage	14.7 V (± 0.25 V)
Charging current	3.5A (± 10%)
Rated output current	3.5A
Reverse current <sup>1</sup>	< 5 mA (no AC input)
Protection rating	IP65 (dustproof, waterproof)
Battery type	12 V lead-acid battery (EFB, GEL, AGM, open and VRLA)
Battery capacity	12 V: 5Ah-120Ah
Fuse (internal)	3.15A
Noise level	< 50 dB(A)
Temperature	0°C to + 40°C
Dimensions	169 x 81 x 54 mm (L x W x H)

<sup>1)</sup> The reverse current is the current that the charger consumes from the battery when no mains power is connected.

### 2 Safety



Please read these instructions carefully before using the charger.

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- If the power supply cable is damaged, it must be replaced by the manufacturer or service representative in order to avoid any danger.
- Disconnect the power supply before making or breaking the connections to the battery.
- The battery connection, which is not connected to the vehicle body, must be connected first (+) red. The other connection must be made to the vehicle body (-) black, away from the battery and fuel lines. Only then connect the battery charger to the mains supply.
- After charging, disconnect the battery charger from the mains supply first. Then disconnect the connection to the vehicle body (-) black and battery connection (+) red in this order.

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The mains plug must not come into contact with water. Water must be prevented from flowing toward the mains supply to protect users from electrocution.

### **WARNING**

### Danger of explosion and fire!

#### Explosive gases.

- Prevent any flames or sparks.
- Provide adequate ventilation during the charging process.
- Ensure that the area around the battery is well ventilated during the charging process.



#### Battery

Use the battery charger only for 12 V 5 Ah-120 Ah lead-acid type (WET, EFB, GEL, AGM, open and VRLA) batteries.

### **≜** WARNING

Do not attempt to charge a non-rechargeable battery!



Keep children away from the charger.

- This device can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning the safe use of the device and understand the hazards involved.
- Children must not be allowed to play with the device.
- Cleaning and maintenance must not be performed by children without supervision.
- For indoor use only.



Help protect the environment! Please observe the local regulations. Electrical devices that are no longer usable must be collected separately and disposed of in an environmentally friendly manner.

The packaging is made of ecological materials that can be disposed of in local recycling plants.

### **3** Operation

#### 3.1 Before initial start-up

- 1. Read the battery operating instructions before connecting the charger.
- 2. Follow the vehicle manufacturer's recommendation if the battery is still connected to the vehicle.
- 3. Clean the battery terminals. Do not allow the dirt to come into contact with your eyes, skin or mouth. Wash your hands thoroughly after contact with the battery connections.
- 4. Provide adequate ventilation. Gaseous hydrogen (oxyhydrogen) can escape from the battery during charging and trickle charging.

#### 3.2 Connection

- 1. Connect the (+) terminal (red) of the charger to the (+) terminal of the battery.
- 2. Connect the (-) terminal (black) of the charger to the (-) terminal of the battery.
- 3. The (-) terminal clamp (black) can also be connected to the vehicle body, but far away from fuel lines.

Note: Make sure that the (+) and (-) terminals are firmly connected.

Only then connect the mains cable.

#### 3.3 Terminating the connection

- 1. Put the charger into standby mode by pressing the mode button.
- 2. Always disconnect the mains plug from the mains first.
- 3. Disconnect the (-) terminal (black) of the charger from the (-) terminal of the battery.
- 4. Disconnect the (+) terminal (red) of the charger from the (+) terminal of the battery.

#### 3.4 Overheating protection

If the device becomes too hot during the charging process, the output power and output current are automatically reduced to prevent damage to the device.

#### 4 Mode selection

- 1. Press the mode button, the charger will enter the charging mode from the standby state and the charging LED will light up.
- 2. Suitable for batteries with capacity of more than 5Ah in cold state (0-4°C) of 12V WET, EFB, and the majority of GEL batteries, or for many AGM batteries in normal state.

Note: Do not connect 6V battery.

3. If there is no other operation, it will automatically enter the charging mode in 5 seconds.

	Mode	Indicator	Function
7	Standby	Stand by	<ul> <li>Switched on, not charging</li> </ul>
11	Charging mode (14.7 V / 3.5 A)	1	<ul> <li>Press the mode button once, LED 2 will light up, then the charger will switch to charging mode.</li> </ul>
10	Fully charged (≥14.7 V)		LED 2 OFF, LED 3 ON means fully charged.
9	Very low battery (2 V - 4.5 V)	<b>•</b>	■ LED 4 ON

#### 4.1 Pulse charging

This is an automatic charging function that cannot be selected manually. If the battery voltage in 12 V mode is between 4.5 V ( $\pm$  0.5 V) and 10.5 V ( $\pm$  0.5 V) at the start of the charging process, the charger will automatically switch to pulse charging.

#### 4.2 Trickle charging phase

The charger has an automatic trickle charging phase with max. 200 mA at full charge.

#### 4.3 Maintenance phase

When the battery is fully charged, if the charger is always connected to the battery, the charger will enter maintenance phase to maintain the battery capacity in full state.

#### 5 Maintenance and care

## Always remove the mains plug from the socket before cleaning the charger. The charger is maintenance-free.

- 1. Switch off the device.
- 2. Use a dry cloth to clean the plastic surfaces of the device.
- 3. Never use solvents or other aggressive cleaning agents.
- 4. To maintain operational safety, the devices must only be repaired by the manufacturer or its service representative using original spare parts.
- 5. For Li-Ion (LiFePO<sub>4</sub>) batteries, please use the Bosch C40-Li or C80-Li.
- 6. For 6 V batteries, please use the C30, C40-Li or C80-Li.
- 7. For 24 V batteries, please use the C70.

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