

## Operating Instructions for the LG1485 Battery Charger



### Foreword

Dear Customer,

Please read these operating instructions carefully before you use the LG1485 Battery Charger.

Pay particular attention to the safety notices on the following pages.

Keep these instructions for future reference and pass the documentation on to any future owners.

### Brief Description and Functionality

The LG1485 Battery Charger is a charger and testing device for up to four rechargeable batteries, featuring an integrated System Management Bus (SMBus).

The device can be used to charge any combination of two-cell (7.2 V) and three-cell (10.8 V) rechargeable lithium ion batteries.

The battery charger communicates with the batteries via the SMBus. When a battery is inserted into the charger slot, the battery charger automatically checks whether the battery only needs to be charged or requires a full testing cycle (conditioning).

To measure and optimize battery capacity and to recalibrate the SMBus system, the device alternates between charge and discharge cycles during the full testing cycle. Once the testing cycle is complete, the battery is ready for use. The battery status is shown by the testing LED (see the table on the following page).

The testing cycle can be started and stopped individually for each battery by pressing the corresponding button.

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**Before Commissioning**

Inspect the device for visible damage.

The power cord and connector must not show any signs of damage. If you notice any damage, the device must be checked by a qualified professional to prevent hazards.

This device is designed for industrial use only and provides the corresponding level of performance.

The warranty will become void in the event of improper use.

**Basic Precautions**

The product you have bought is state of the art and complies with the requirements of the recognized safety regulations.

However, hazards may occur. Only operate this battery charger if it is in perfect working condition, and observe these operating instructions. Use the device for its intended purpose only.

**Caution**

To avoid the risk of injury or electric shock, please observe the following:

- This device must not be used in the vicinity of patients.
- Do not touch the device or the mains plug with wet hands.
- The device must be connected to a suitable socket. Before the device is connected to the mains supply, check that the mains voltage and frequency indicated on the device are correct.
- Never move the device by pulling on the power cord.
- Ensure that the device is sufficiently ventilated.
- The two fans and air filters must not be covered.
- Do not place any metallic objects on the device.
- Inspect the power cord for damage from time to time. Never use the device if the cable is damaged. If the power cord shows signs of damage, it must be replaced by a qualified electrician.
- Do not use this device if it is not working correctly, is damaged or has been dropped.
- Keep away from children and other unqualified persons, as well as persons under the influence of alcohol or medication.
- This device is not intended for use by persons (including children) with impaired physical, sensory or mental capacity or a lack of experience and/or knowledge.
- Before cleaning, disconnect the device from the mains.
- Clean the surfaces of the device using a cloth moistened with disinfectant or a sanitizer. Ensure that no fluids enter the device. Do not immerse the device in water or other fluids. Do not place it in the dishwasher.
- Do not use the device if fluids have entered it. Before the device is used again, it must be inspected by qualified maintenance personnel.
- Repairs may only be carried out by qualified professionals working for the manufacturer. Never try to repair the device yourself!
- Do not use the device outside the permissible ambient temperature range of 0°C to +35°C.

**Positioning the Device**

- Place the device on a stable, even surface.
- To ensure adequate ventilation, place the device at least 10 cm away from adjacent units.
- Do not place the device near heat sources (heating systems, etc.).
- Keep the device away from direct sunlight.
- Check that the power cord does not come into contact with sharp edges and/or hot surfaces.

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### Commissioning the Device

- Before connecting the device to the power supply, check that the voltage indicated on the system label matches the mains voltage in your building. Connecting the device to an improper power supply may cause severe damage to the device and personal injury.
- Do not insert any objects such as metal wires or tools into the inlet or outlet vents. Caution: This may lead to electric shocks.
- If you do not use the device for an extended period of time, we would recommend that you disconnect the mains plug.
- The use of accessories and replacement parts that are not recommended by the manufacturer may cause damage to the device and injury.
- Use only the rechargeable lithium-ion batteries listed below with the LG1485 Battery Charger:

Philips P/N: M4605A (3S3P)

Philips P/N: M4607A (3S1P)

Philips P/N: 989803196521 (3S1P)

## Instructions for Use for the LG1485 Battery Charger

### Charging the Battery

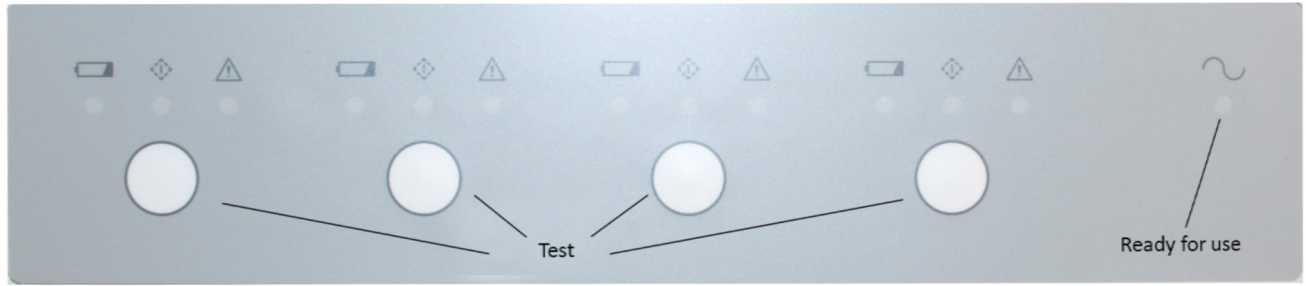
- Insert the rechargeable battery into any free charger slot. Do not use force when inserting the battery.
- The device will detect the battery type and will switch automatically to the required charging mode.
- The device will detect whether the battery requires a testing cycle (conditioning).
- If the testing LED flashes yellow, a testing cycle is required.
- To stop or start the test manually, press the button.
- If no testing cycle is required, the battery will be charged in standard mode. While charging is in progress, the charging LED will flash yellow.
- When the charging LED turns green (and the testing LED is off), the battery is fully charged and ready for use.
- Remove the fully charged battery from the battery charger.

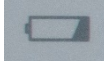


### Testing Cycle (Conditioning)

- If a testing cycle was started, either manually or automatically, the testing LED will flash yellow until the battery is fully discharged. The test consists of three steps:
  - Step 1: First battery charge cycle, if the battery is not yet fully charged.
  - Step 2: Battery discharge cycle.
  - Step 3: Second battery charge cycle.
- The measured capacity is then displayed by the testing LED lighting up permanently (green = good, yellow = reduced capacity, or red = replace the battery).
- When the charging LED turns green, the charging process is complete. The LED displaying the measured capacity will continue to light up.
- Remove the fully charged battery from the battery charger.
- When conditioning, up to two batteries can be discharged at the same time.

### Battery Errors

- If the battery charger detects a battery error, both LEDs will flash red. To clear the error display, remove the battery.
- Never use a faulty battery.



Description	 Charging	 Testing	 Error
<b>Standard charging mode (battery inserted, button not pressed)</b>			
Battery charger slot empty	○	○	○
Battery charging	★	○	○
Battery charged	●	○	○
<b>Testing cycle (button pressed and/or diagnostics)</b>			
Charging	★	★	
Discharging, measuring capacity		★	
Charging, capacity OK	★	●	
Charging, reduced capacity	★	●	
Charging, insufficient capacity (replace battery)	★	●	
Testing cycle complete	●	● ● ●	
<b>Battery errors — possible causes</b>			
Mains voltage outside the range (indicated on all channels)			●
Maximum charging time exceeded			
Maximum number of testing cycles exceeded			
Maximum battery voltage exceeded			
Minimum battery voltage not reached			
Voltage measurement error			
Battery overcharge error			
Excess current when charging			●
Current measurement error			
Excess current when discharging			
SMBus error (communication with inserted battery failed)			●
Battery temperature error			★
Charge controller temperature error			
Discharge system temperature error			
<b>Bootloader mode</b>			
During bootloader mode		Running sequence	
Bootloader error (shown on all channels)			●

○ OFF

● PERMANENTLY LIT

★ FLASHING

## Maintenance

It is recommended to clean the material in both air filters regularly. Depending on the frequency of use and the ambient conditions (dust, etc.), the air filter material should be cleaned or replaced every 6–24 months. You can clean or replace the air filter material yourself.



- Disconnect the mains plug from the socket.
- The air filters are on the right and left sides of the device.
- Remove the two screws and the filter cover.
- Remove the air filter material and shake it out or replace it.
- Reinsert the air filter material, the cover and the screws.



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## Updating the Firmware

There is a USB port on the left side of the device. This can be used to update the firmware of the LG 1485. To do so, connect the LG 1485 to an external PC via a USB cable (type B USB 1.0/2.0 connector).

For more information about firmware updates, see the description for the relevant software package, which can be provided if required.

## Safety Notice for Repair and Service

Repairs may only be carried out by qualified professionals working for the manufacturer. Never try to repair the device yourself!

### Caution

The device must be disconnected from the mains power supply before it is opened.

The intermediate circuit capacitor in the inbuilt switch-mode power supply may still contain a dangerous electrical charge over one hour after the device is disconnected from the mains.

Test operation may only be performed by trained professionals using a safety isolation transformer.

When the fans are running, the rotor blades inside the device present a risk of injury.

**Technical Data**

Number of Li-ion cells:	2 cells (7.2 V) or 3 cells (10.8 V)
Charge current:	max. 3 A
Charging/discharging capacity:	max. 150 W / max. 50 W
Power supply:	100–240 V AC / 50–60 Hz / max. 2.0 A
Power consumption:	max. 175 W
Standby power:	max. 5 W
Protection class:	IP20
Operating conditions:	Temperature 0–35°C, rel. humidity range 20–90%, altitude 0–2000 m
Storage conditions:	Temperature 0–60°C, rel. humidity range 10–95%, altitude 0–5000 m
Dimensions:	80 x 313 x 261 mm (H x W x D)
Weight:	Approx. 3.0 kg

Complies with standard UL62368-1:2014. CE mark in accordance with European Low Voltage Directive and EMC Directive.

**Charging Information**

Standard charging time:	175 mins, maximum charging time: 300 mins
Standard testing cycle time:	11 hours
Max. battery voltage:	12.6 V
Max. battery capacity:	7500 mAh

**Environmental Notices**

Sort the packaging materials and dispose of them appropriately.

At the end of its service life, this product must not be disposed of as standard domestic waste. It must be taken to a recycling collection point for electrical and electronic equipment. The symbol on the product, in the instructions for use and on the packaging indicate this.

The materials are recyclable as marked. The reuse or recycling of materials and old units makes an important contribution toward protecting the environment.

Please ask your local authority for the relevant disposal site.



This information is subject to change without notice.