

# Operating instructions Plus battery charger



# WELCOME.

We congratulate you on your choice of a genuine accessory product from our company. We constantly strive to match our accessories product world optimally to customers' needs and preferences and areas of use, so that the products can be of assistance to you on your adventures and in your daily routine.

## **About these operating instructions**

Read these operating instructions before using your new accessory product for the first time. You will find important notes here on operation which will help you to make the most of the technical benefits of our products and to use the products to optimum effect and for the longest possible time.

## **Suggestions and criticism**

If you have questions concerning our products, your authorised BMW Motorrad retailer will be happy to provide advice and assistance.

We hope you enjoy using your new product and that all your journeys will be pleasant and safe

BMW Motorrad.

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**GENERAL  
INSTRUCTIONS**

**01**

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## ABOUT THESE OPERATING INSTRUCTIONS

Read these operating instructions before switching on your new Plus battery charger. Important information about operation is to be found here.

If the time comes to sell your Plus battery charger, be sure to hand over this copy of the operating instructions to the new owner. They are an important part of the Plus battery charger.

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## ABBREVIATIONS AND SYMBOLS



**CAUTION** Low-risk hazard. Non-avoidance can lead to slight or moderate injury.



**WARNING** Medium-risk hazard. Non-avoidance can lead to fatal or severe injury.



**DANGER** High-risk hazard. Non-avoidance leads to fatal or severe injury.



**ATTENTION** Special notes and precautionary measures. Non-compliance can lead to damage to the vehicle or accessory and, consequently, to voiding of the warranty.



Specific instructions on how to operate, control, adjust or look after items of equipment on the motorcycle.

- Instruction.
- » Result of an activity.
- ▢➔ Reference to a page with more detailed information.
- ◁ Indicates the end of a passage relating to specific accessories or items of equipment.
-  Tightening torque.
-  Technical data.

# PRODUCT DESCRIPTION

02

## SAFETY INSTRUCTIONS

### WARNING

#### **Wrong battery type or charging mode**

Battery damage and risk of fire

- Use the battery charger only for rechargeable 12 V lead-acid and lithium-ion batteries. Never attempt to charge NiCd, NiMh, or primary cells (non-rechargeable batteries).
- Before starting the charging process, you must always make sure that the correct battery type/charging mode has been selected.

### WARNING

#### **Heat development during charging**

Risk of fire

- Do not operate the battery charger in proximity to or on burnable, flammable or sensitive materials.

### WARNING

#### **Damage due to external influence**

Risk of fire

- Use the device only as intended by the manufacturer.
- Do not place the battery charger in water and do not permit ingress of liquids.
- Prevent mechanical impact by dropping and application of force.

### WARNING

#### **Short-circuit at battery terminals**

Risk of explosion and fire

- Avoid short-circuits at the battery terminals.
- Do not lay tools or metallic objects on the battery.

### WARNING

#### **Explosive gases during battery charging**

Risk of explosion and fire

- Avoid sparks and flame.
- Charge the battery in a well-ventilated location.
- Do not set the battery charger on the battery during charging. Instead, position the battery charger as far from the battery as the connecting cable permits.

### ATTENTION

#### **Incorrect or damaged accessories**

Risk of short-circuit and fire

- Use the battery charger only with the correct adapter supplied with it, or the genuine accessories from the manufacturer.
- Do not attempt to use the battery charger with a damaged or extended connecting cable.

### ATTENTION

#### **Acid level too low**

Damage to battery

- Always check the battery's acid level before connecting the battery charger to a lead-acid battery; top up with distilled water as necessary.
- It is neither permissible nor necessary to attempt to top up a maintenance-free battery (gel, AGM, lithium, etc.) with distilled water.

### DANGER

#### **Handling of electrical current not in compliance with correct procedure.**

Injury or damage to property, e.g. by electric shock or fire.

- Comply with the safety regulations.

## 6 PRODUCT DESCRIPTION

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### COMPATIBILITY

The Plus battery charger is compatible with all genuine BMW Motorrad starter batteries.

- Lead-acid batteries
- Maintenance-free lead-acid batteries (gel or AGM)
- Lithium-ion batteries

The Plus battery charger is also suitable for motorcycles with CAN bus technology.

No liability is accepted for other-make batteries.

an approved collection centre for electrical devices.

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### CHARGING PROCESS

The battery is charged via the motorcycle's on-board socket. Alternatively, the battery can be charged with the enclosed adapter cable connected directly to the battery terminals.

The charging process is fully automatic, in accordance with the charging characteristics stored in the microprocessor's memory.

The Plus battery charger can remain connected to the motorcycle or the battery for a prolonged period of time. Charging cycles are run, the battery is monitored and recharged as necessary.

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### PROTECTIVE CIRCUITRY

The Plus battery charger has built-in circuitry to protect it against short circuit, reverse polarity and overload.

In addition, charge current is reduced when ambient temperature is low.

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### MAINTENANCE AND CLEANING

Apart from occasional cleaning, the Plus battery charger is maintenance-free. For cleaning, disconnect the Plus battery charger from the battery and from the electricity supply.

Clean the device with a clean, lint-free, anti-static, dry cleaning cloth without abrasive, chemical or solvent-based cleaning agents.

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### DISPOSAL



Do not attempt to dispose of an end-of-life Plus battery charger as domestic waste. Bring the EOL Plus battery charger to

**OPERATION**

**03**

# 8 OPERATION

## OVERVIEW



- 1 Cable bracket
- 2 Wall-mount holes
- 3 Slot for attaching hook and loop tape
- 4 Display
- 5 Charging adapter
- 6 Charging cable
- 7 MENU button
- 8 Arrow right button
- 9 OK button
- 10 Arrow left button
- 11 Power supply cable
- 12 LEDs

## LEDS



The meanings of the LEDs are as follows:

- POWER: Device operational
- FULL: Battery fully charged or float charging mode active
- ERROR: Error

## SWITCHING ON

- Connect the Plus battery charger to the electricity supply.
- » A functional check is performed. The LEDs light up for two seconds and the device ID appears in the display.
- » The Plus battery charger is ready for operation and the display shows *No battery*.

## CHANGING THE SETTINGS

Change the settings as necessary before using the Plus battery charger. The settings are saved in memory and do not necessarily have to be changed again before each use. Use the MENU button to open and also to exit the menu.

Use the left and right arrow buttons to select the settings you want.

Use the OK button to confirm the setting you select.

You have to long-press the buttons of the Plus battery charger; this is a design measure to prevent settings from being changed accidentally.

## Default settings

If you do not make changes to the settings in the menu, the Plus battery charger starts charging with the following pre-programmed values:

- Lead standard battery
- Display language English

## SELECTING A LANGUAGE

- Press the MENU button.
- Press the OK button
- » The "Language" menu item opens.
- Select one of the following languages:
  - English
  - German
  - French
  - Spanish
  - Italian
  - Portuguese
- Press the OK button as confirmation.
- Press the MENU button to exit the menu.

## SELECTING A CHARGING MODE

- Press the MENU button.
- Select the "Charging mode" menu item.
- Press the OK button.
- » The "Charging mode" menu item opens.
- Select one of the following charging modes:
  - **Mode 1:** Lead acid, lead gel, AGM and lead calcium batteries
  - **Mode 2:** Lithium iron phosphate batteries
- Press the OK button as confirmation.
- Press the MENU button to exit the menu.

# CHARGING PROCESS

04

## RECHARGING BATTERY



### WARNING

#### Wrong battery type or charging mode

Battery damage and risk of fire

- Use the battery charger only for rechargeable 12 V lead-acid and lithium-ion batteries. Never attempt to charge NiCd, NiMh, or primary cells (non-rechargeable batteries).
- Before starting the charging process, you must always make sure that the correct battery type/charging mode has been selected.

- Connect the Plus battery charger to the on-board socket.
- » Charging starts automatically.

If `No battery` appears in the display although the Plus battery charger is connected via the on-board socket, the battery is too deeply discharged to recharge via the on-board socket. The battery will have to be charged with the battery charger connected directly to the battery terminals.

- Disconnect the battery from the motorcycle.
- Connect the adapter cable to the Plus battery charger.
- Connect the crocodile clips of the adapter to the battery terminals.
- Be sure to connect the red crocodile clip to the battery's positive terminal and the black crocodile clip to the battery's negative terminal. If `Short / reversed polarity` appears in the display, either the crocodile clips have come into contact with each other or polarity is reversed.
- Eliminate the short circuit between the crocodile clips or connect the crocodile clips to the correct terminals, as applicable.
- » Charging starts automatically.

## CHARGING PROGRESS

The Plus battery charger shows charging progress in the display.

The top display line shows charging progress as a progress bar and a percentage reading. Charge current and charge voltage are shown in the bottom display line.

The Plus battery charger switches automatically to float charging as soon as the battery is fully charged.

The time it takes to charge the battery depends on the battery's initial state of charge and its age, and also on the size of the battery.

When the battery is fully charged, `ChargingComplete Battery mainten. appears` in the display. The Plus battery charger can be disconnected.

## PAUSES IN CHARGING

On account of the vehicle electronics, there is a possibility of pauses in charging occurring when the battery is being charged via the motorcycle's on-board socket.

Pauses in charging can occur in different charge states. `Charge 30 % Pausing` (example) appears in the display.

Charging resumes automatically as soon as the vehicle electronics are clear for charging.

## FLOAT CHARGING



### ATTENTION

#### Long charging without overvoltage protection

Damage to the battery charger

- To prevent damage due to overvoltage, it is advisable to use additional overvoltage protection (e.g. power-socket adapter with surge protector) when charging over a prolong period.

The Plus battery charger can remain connected to the battery for months after charging has completed. The battery is monitored and the charge is topped up as necessary. Float charging (battery maintenance) is carried out.

## 12 CHARGING PROCESS

The Plus battery charger switches to sleep mode to conserve energy. The POWER LED flashes and Sleep mode Energy-saving appears in the display. Pressing any button will briefly awaken the darkened display from sleep mode.

A very low current flows from the battery back to the Plus battery charger, so over a period of months the battery can become fully discharged. For float charging, therefore, the Plus battery charger has to stay connected to the electricity supply.

# **TROUBLESHOOTING**

**05**

## 14 TROUBLESHOOTING

### CHARGING ERROR

If the battery cannot be charged, the Plus battery charger interrupts charging. The ERROR LED flashes and **Charging error** appears in the display. The battery could not be charged by the charging characteristic stored in the Plus battery charger. Disconnect the Plus battery charger from the power supply and try again. If the message reappears in the display, have the battery and the Plus battery charger checked by a specialist workshop, preferably an authorised BMW Motorrad dealer.

### BATTERY DOES NOT FULLY RECHARGE

If the battery never fully recharges, this is often due to products that are not genuine BMW Motorrad accessories (such as a satnav device, for example) being installed on the motorcycle and drawing a significant standby current even when switched off. If the battery cannot be charged to the full 100 % the charger does not switch to sleep mode for battery float charging. Switch off consumers or remove the battery and charge it while removed from the vehicle.

### DEEP-DISCHARGED BATTERIES

#### ATTENTION

##### Recharging a deep-discharged battery

Damage to the battery and the vehicle electronics

- If the battery is deep-discharged (residual voltage less than 5 V), always disconnect it from the vehicle's electrical system before charging.

Batteries left at a very low voltage level for a prolonged period of time are very difficult or, under certain circumstances, impossible to charge. A battery that has deep-discharged might also prove unable to deliver the full rated energy after recharging. If a deep-discharged battery is connected directly by the adapter's crocodile clips attached to the battery terminals,

the Plus battery charger can tell that the battery is deep-discharged, in which case **Battery deep-discharged?** and **Start charging press OK** appear in the display. Press the OK button to start the charging process.

If **Charge 30 % Pausing (example)** appears in the display, the battery cannot be charged.

Disconnect the Plus battery charger from the power supply and try again. If the message reappears in the display, have the battery and the Plus battery charger checked by a specialist workshop, preferably an authorised BMW Motorrad dealer.

### DEEP-DISCHARGED LITHIUM-ION BATTERIES

#### Safety instructions

#### WARNING

##### Charging a deep-discharged lithium-ion battery

Risk of fire

- Have deep-discharged lithium-ion batteries checked and charged by a specialist workshop.

Lithium-ion batteries require particularly careful charging, because they can overheat and cause serious damage or fire. Always keep lithium-ion batteries under observation at all times when charging and check the temperature at regular intervals. If the lithium-ion battery reaches a temperature higher than 40 °C while charging, disconnect it immediately from the Plus battery charger and remove the lithium-ion battery from inside residential rooms, garages or other enclosed spaces. Move the lithium-ion battery to a hazard-free location.

#### Information about charging

The lithium-ion battery has a self-protection function that shuts down the battery management system if voltage is below a certain limit. If this self-protection function has tripped, the Plus battery charger will not recognise the battery. Under these circumstances the display shows **No battery**. If

it is left connected, the Plus battery charger will charge the battery slowly until the battery's management system goes active again. When this happens the charging process is started automatically and progress is indicated. It can take up to 24 hours for the battery management system to go active. If the charging process has not started after 24 hours, the lithium-ion battery has to be tested and charged by a specialist workshop, preferably an authorised BMW Motorrad retailer.

When the Plus battery charger is in charging mode 2, ambient temperature is checked continuously. If ambient temperature is lower than 0 °C, the Plus battery charger reduces the charging current to 0.5 A and does not increase it again until ambient temperature is above 0 °C.

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### **MOTORCYCLE DOES NOT START**

ChargingComplete Battery mainten. appears in the display, but the motorcycle cannot be started. The Plus battery charger is not a battery tester. The battery might be defective.

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### **ERROR LED LIGHTS UP**

If the Plus battery charger is connected to a battery with a voltage outside the permissible range, for example greater than 16 V, the ERROR LED lights up and No battery appears in the display.

# TECHNICAL DATA

06

**ELECTRICAL RATINGS**

Line voltage	230 V, 50 Hz, power cord with type C plug (Euro-standard plug)
	230 V, 50 Hz, power cord with type G plug (special UK plug)
	110 V, 60 Hz, power cord with type A plug
Charging voltage	12 V
Charge cut-off voltage	14.4 V
Maximum charge current	2.5 A

**GENERAL**

Weight	800 g
Power supply cable	1.9 m
Charging cable	1.3 m

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**Disclaimer**

Depending on the scope of equipment or accessories of your product from BMW Motorrad but also in the case of country-specific versions, deviations from the details described or illustrated in this booklet may occur. No claims will be entertained as a result of such discrepancies.

Dimensions, weights, fuel consumption and performance data are quoted to the customary tolerances.

The right to modify designs, equipment and accessories is reserved.

Errors and omissions excepted.

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