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Bateria Power 10A MPPT SunRock 10

Bateria Power 10Amp 12 Volt MPPT Solar Charge Controller (SunRock 10) Instruction Manual

Model: 10A MPPT SunRock 10

1. Introduction and Overview

This manual provides detailed instructions for the safe and efficient operation of your Bateria Power 10Amp 12 Volt MPPT Solar Charge Controller (SunRock 10). This device is designed to optimize the charging process for 12V batteries using solar panels, ensuring maximum efficiency and battery longevity.

The controller features 100% efficient MPPT charging, a compact and portable design with an LCD display, and comprehensive safety protections. It is compatible with various 12V battery types including AGM, Gel, Deep Cycle, Sealed, Lead Acid, Flooded, and LiFePO4 lithium batteries.

Figure 1: Bateria Power 10Amp 12 Volt MPPT Solar Charge Controller (SunRock 10).

2. Safety Information

- Designed for 12V batteries only. Do not connect to higher voltage batteries.
- The PV Voc (Open Circuit Voltage) must be higher than the battery voltage. The minimum recommended PV Voc is 15V, and the maximum should not exceed 30V.
- Connection sequence: Always connect the battery first, then connect the solar panel.
- Avoid short circuits.
- Keep away from flammables.
- Do not charge in a sealed container.
- Recharge immediately after discharge.
- Do not tip. Do not open battery.
- While the controller has good waterproof performance, it is not recommended to soak it in water to prolong its service life.

3. Product Features

- **100% Efficient MPPT Charging:** Automatically monitors 12V DC system voltage with up to 100% tracking efficiency, potentially saving 20% charging time compared to other products.
- **Mini & Portable with LCD Display & LED Indicator Light:** Equipped with an LCD display and LED indicator for monitoring solar panel and battery status. Compact design saves 30% space and is convenient for outdoor use.
- **Designed for 12V Batteries:** Compatible with AGM, Gel, Deep Cycle, Sealed, Lead Acid, Flooded, and LiFePO4 lithium batteries.
- **High Security:** Built-in protection system with intelligent 3-stage charging (Equalize, Float, Boost) and multiple protections including Over Charge, Over Temperature, Over Voltage, Over Current, Short Circuit, Discharge, and Reverse Polarity Protection.
- **Plug & Play:** SAE connector for quick connection/disconnection. Includes two additional 130mm SAE Extension cables for system expansion.
- **Excellent Waterproof Performance:** Designed for outdoor use in various weather conditions.

Figure 2: High efficiency MPPT charging technology.

Figure 3: Integrated 8X protection systems for enhanced safety.

4. Specifications

Feature	Value
Item Weight	145 Grams (5.1 ounces)
Display Type	LCD
Product Dimensions	3.7 x 2.42 x 1.06 inches
Item model number	10A MPPT SunRock 10
Included Components	10A MPPT Solar Charge Controller*1, 130mm SAE Extension cable*2
Color	Black
Voltage	12 Volts (DC)

Material	Plastic
No-load Loss	20mA
Max Solar Input Voltage	<30Voc
Rated Solar Charge Current	10A
Max Solar Input Power	150W
Temperature Compensation	-40°C ~ +80°C (-40°F ~ +176°F)
Operating Temperature	-20°C ~ +45°C (-4°F ~ +113°F)
IP Protection	IP45
Operating Altitude	≤3000 meters
Connection Sequence	First connect the battery, then connect the solar panel.

5. Setup and Installation

Follow these steps for proper installation:

1. **Connect the Battery:** First, connect the battery to the controller using the provided SAE connector. Ensure correct polarity. If extending the SAE wire, use quick connectors or soldering.
2. **Connect the Solar Panel:** After the battery is connected, connect your solar panel to the controller. Ensure the PV Voc is within the specified range (15V-30V).

Figure 4: Basic wiring diagram for the solar charge controller.

Installation Video Guide:

Video 1: "How to Wire the MPPT Solar Charge Controller?" - This video demonstrates the correct wiring sequence for the controller, connecting the battery and solar panel.

6. Operation

The controller features an LCD display and LED indicators to show its working status. The display shows battery voltage, charging current, PV input power, device temperature, calibration voltage, system voltage, boost charging voltage, float charging voltage, and MPPT tracking return voltage.

Figure 5: LCD screen and LED indicators for monitoring.

Operating Video Guide:

Video 2: "How to Set the 10A MPPT Solar Charge Controller" - This video provides a guide on how to operate and configure the controller.

7. Battery Type Settings

To set the battery type:

1. Long-press the 'SET & ENTER' button to enter the battery type setting mode. The battery light on the display will flash.
2. Short-press the 'SET & ENTER' button to toggle between the available battery types: GEL, AGM, LiFePO4, and Custom.
3. Once your desired battery type is selected, long-press the 'SET & ENTER' button again to lock the battery type.

For GEL, AGM, and LiFePO4 batteries, no further charging parameter settings are required as the controller will automatically detect the system voltage and start charging with default parameters. For custom battery types, you can manually adjust boost charging voltage, float charging voltage, and

MPPT tracking return voltage according to your battery manual.

Figure 6: 3-Stage Charging optimizes battery performance for various battery types.

8. Voltage Calibration

Due to cable voltage drop and other factors, there may be some deviation in the displayed battery voltage. To ensure accurate charging:

1. Long-press the 'SET & ENTER' button to enter the voltage calibration setting.
2. Adjust the displayed battery voltage to match the reading from a multimeter connected directly to your battery terminals. This ensures more accurate battery charging.

9. Troubleshooting (Frequently Asked Questions)

- **Q1: After my controller is connected to the battery and the solar panel, the display is still not lit, what should I do?**
  A1: Unplug the solar connector, and connect the MPPT charger to the battery. Double-check the

battery's positive and negative terminals to ensure they are correctly connected to the MPPT. Then connect and check the solar panel.

- **Q2: Is the LCD showing panel voltage or battery voltage (or both)?**
  A2: It shows both: the battery volt and charge current.
- **Q3: What is the proper setting for deep cycle, lead acid, and flooded batteries?**
  A3: Long-press the function key. When the battery light on the display is flashing, short-press the key to select your battery type. Once selected, long-press the key to lock the battery type.
- **Q4: Can this 10A MPPT Solar Charge Controller be used with 18V solar panels?**
  A4: PV Voc needs to be higher than the battery voltage (12V). The lowest 15V can be charged, but the highest should not exceed 35V. The max solar input power is 150W.
- **Q5: Can it be used to charge my 24V 100Ah battery?**
  A5: No, this controller is designed for 12V batteries. Please do not connect to higher-voltage batteries. Please choose a 20A MPPT controller for 24V systems.

10. Maintenance

To ensure optimal performance and longevity of your Bateria Power MPPT Solar Charge Controller, regular maintenance is recommended:

- Periodically inspect all connections for tightness and corrosion.
- Keep the controller clean and free from dust and debris. Use a dry cloth for cleaning.
- Ensure adequate ventilation around the controller to prevent overheating.
- Check the battery terminals for any signs of wear or damage.

11. Warranty and Support

For warranty information and technical support, please refer to the documentation included with your product or visit the official Bateria Power website. Keep your purchase receipt as proof of purchase for warranty claims.

For additional resources and product information, you may visit theBateria Power Store on Amazon.

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