Yuecoom Yuecoom64vqy9md2w

Yuecoom MPPT Solar Charge Controller User Manual

Model: Yuecoom64vqy9md2w

1. Introduction

The Yuecoom MPPT Solar Charge Controller is designed to efficiently manage power flow from solar panels to batteries and loads in 12V or 24V solar power generation systems. It features Maximum Power Point Tracking (MPPT) technology to optimize solar energy harvesting, ensuring high charging efficiency. This controller is suitable for various applications, including outdoor RVs, villas, and solar street lights.

Image 1.1: The Yuecoom MPPT Solar Charge Controller shown with examples of its versatile applications, including residential solar systems, RVs, and larger solar panel installations.

2. Safety Information

Please read all instructions carefully before installation and operation. Failure to follow these instructions may result in damage to the controller, battery, or other components, and may cause personal injury.

- Ensure all connections are correct and secure before applying power.
- Always connect the battery first, then the solar panel, and finally the load. Disconnect in the reverse order.
- Do not short-circuit the solar panel or battery terminals.
- Install the controller in a well-ventilated area, away from flammable materials and direct sunlight.
- This device is designed for indoor use or protected outdoor environments. Avoid exposure to water or excessive humidity.
- Only qualified personnel should perform installation and maintenance.

3. Product Features

- **Automatic Voltage Adaptation:** Automatically adapts to 12V and 24V systems.
- **High Charging Efficiency:** MPPT tracking technology ensures maximum energy harvest from solar panels.
- **Durable Construction:** Made from sturdy PVC and aluminum alloy for wear resistance and longevity.
- **Versatile Application:** Ideal for villas, outdoor RVs, solar power systems, yachts, solar billboards, and solar street lights.
- **Multiple Protection Features:** Includes overtemperature, overcurrent, short circuit, open circuit, and reverse polarity protection. All faults are automatically recovered.
- **LCD Display:** Large color LCD display shows real-time data on power generation, temperature, and both charging and discharging currents.
- **Adjustable Parameters:** Allows for easy monitoring and adjustment of charge and discharge parameters.

Image 3.1: The controller's display indicating its automatic adaptation to 12V or 24V systems, a key feature for flexible solar power setups.

4. Package Contents

Upon opening the package, please verify that all items are present and undamaged:

- 1 x MPPT Solar Charge Controller
- 1 x Instruction Manual (this document)

5. Specifications

Parameter	Value
Item Type	MPPT Solar Charge Controller
Material	PVC, Aluminum Alloy
Rated Charging Current	10A
Rated Discharge Current	10A
USB Output	5V 2A
Maximum Working Temperature	-36°C to +60°C
Package Dimensions	7.48 x 3.94 x 1.97 inches
Item Weight	10.3 ounces
Model Number	Yuecoom64vqy9md2w

6. Setup and Installation

Follow these steps for proper installation of your MPPT solar charge controller. Ensure all power sources are disconnected before making any connections.

1. **Connect the Battery:** Connect the battery to the charge controller's battery terminals. Ensure correct polarity (+ to + and - to -). The controller will automatically detect the system voltage (12V or 24V).
2. **Connect the Solar Panel:** Connect the solar panel to the charge controller's solar panel terminals. Ensure correct polarity.
3. **Connect the Load:** Connect the DC load to the charge controller's load terminals. Ensure correct polarity.

Important: Always connect the battery first, then the solar panel, and finally the load. Disconnect in the reverse order: load, then solar panel, then battery.

Image 6.1: A clear wiring diagram illustrating the correct connection sequence for solar panels, battery, and a typical DC load (represented by a house) to the MPPT solar charge controller.

Image 6.2: The underside of the solar charge controller, highlighting the various input and output terminals for solar panels, battery, and load connections.

Image 6.3: A detailed close-up of the controller's wiring terminals, showing the screw-down connections for secure and reliable electrical contact.

7. Operating Instructions

Once installed, the controller will begin operating automatically. The LCD display provides real-time information and allows for parameter adjustments.

7.1 LCD Display

The large color LCD display shows critical system data:

- **Power Generation:** Indicates the current power being generated by the solar panels.
- **Temperature:** Displays the controller's internal temperature.
- **Charging Current:** Shows the current flowing into the battery.
- **Discharging Current:** Shows the current being drawn by the load.
- **Battery Voltage:** Displays the current battery voltage.

Color LCD display large screen
Charge and discharge parameters are adjustable.
Ultra-wide charge and discharge adjustable,
as long as you understand the characteristics of the battery and
set its corresponding charging parameters, you can charge any battery
Power generation, temperature, charge and discharge current

Image 7.1: The controller's LCD screen displaying real-time operational data such as voltage, current, and temperature, along with graphical indicators for solar input, battery status, and load output.

7.2 Parameter Adjustment

The controller allows for adjustment of charge and discharge parameters. Refer to the on-screen menu and buttons for navigation and setting changes. Understanding your battery's characteristics is essential for setting appropriate charging parameters.

7.3 Three-Stage Charging Management

The controller employs a three-stage charging management process to optimize battery health and longevity:

- **Bulk Charge:** Delivers maximum current to rapidly charge the battery.
- **Absorption Charge:** Maintains a constant voltage to fully charge the battery, reducing current as the battery approaches full capacity.
- **Float Charge:** Reduces voltage to a lower level to maintain the battery at full charge, compensating for self-discharge.

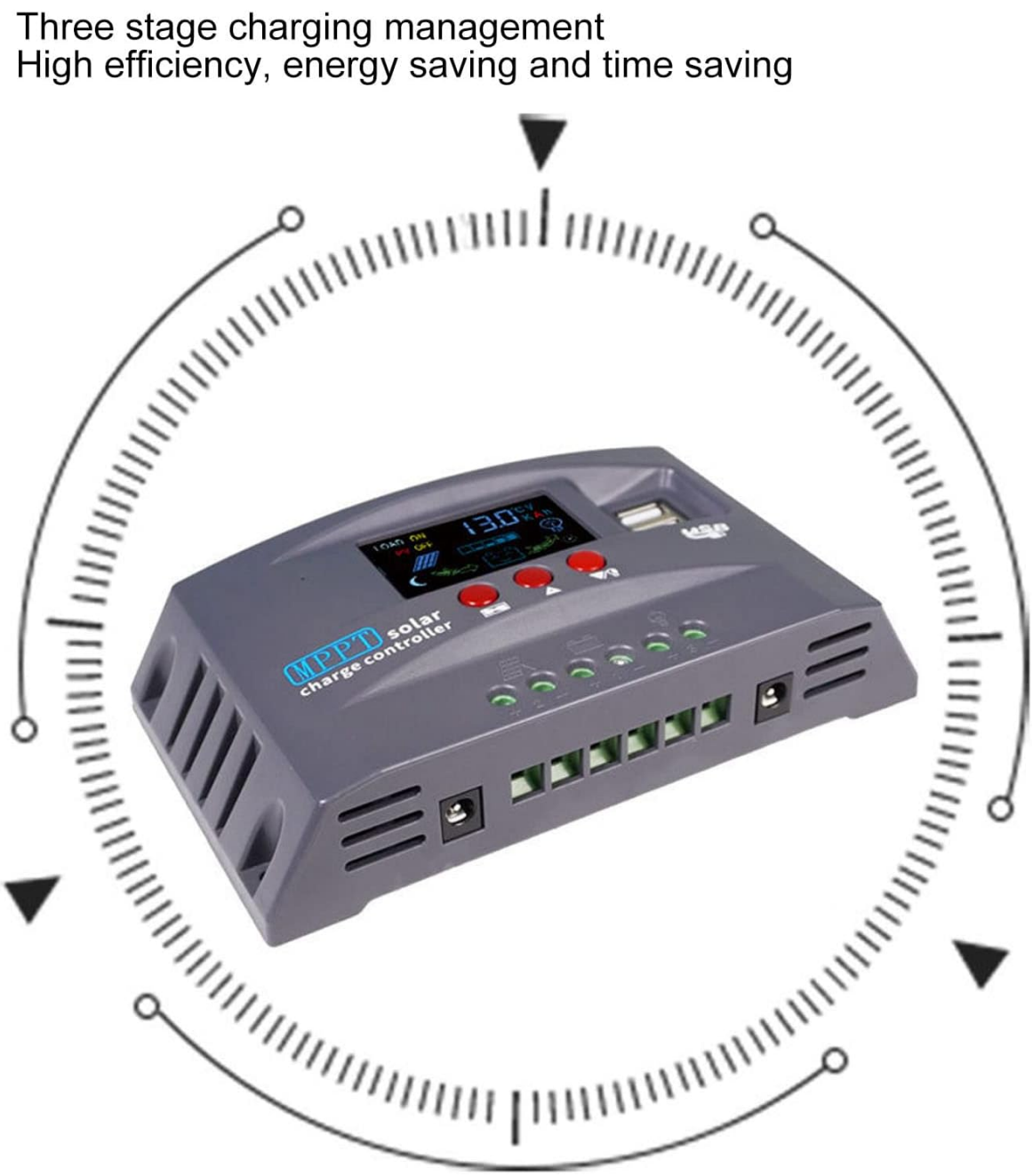

Image 7.2: A circular diagram visually representing the three-stage charging management cycle, emphasizing its efficiency, energy saving, and time-saving benefits.

8. Maintenance

Regular maintenance ensures optimal performance and extends the lifespan of your solar charge controller.

- **Cleanliness:** Keep the controller clean and free from dust and debris. Use a dry cloth for cleaning.
- **Connections:** Periodically check all wiring connections to ensure they are tight and free from corrosion.
- **Ventilation:** Ensure the installation area has adequate ventilation to prevent overheating.
- **Inspection:** Inspect the controller for any signs of physical damage or unusual operation.

9. Troubleshooting

The Yuecoom MPPT Solar Charge Controller is equipped with multiple built-in protection features that allow for automatic recovery from most faults without damaging the controller.

Image 9.1: An illustration detailing the various protection mechanisms integrated into the controller, including overtemperature, overcurrent, reverse polarity, short circuit, open circuit, and charging protection.

- **Overtemperature Protection:** If the controller's internal temperature exceeds safe limits, it will reduce power or shut down to prevent damage. Operation resumes automatically once the temperature drops.
- **Overcurrent Protection:** Protects against excessive current draw from the load or during charging. The controller will limit current or disconnect the load/charge.
- **Short Circuit Protection:** Automatically disconnects in case of a short circuit on the load or battery terminals.
- **Open Circuit Protection:** Manages situations where the solar panel or battery circuit is open.
- **Reverse Polarity Protection:** Protects the controller and connected devices from damage due to incorrect wiring of battery or solar panel polarity.

If the controller is not functioning as expected, check the LCD display for error codes or indicators. Verify all connections are secure and correct. If issues persist after checking connections and allowing for automatic recovery, consult a qualified technician.

10. Warranty and Support

For warranty information and technical support, please refer to the documentation provided at the time of purchase or contact Yuecoom customer service directly. Ensure you have your product model number (Yuecoom64vqy9md2w) and purchase details available when seeking support.