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> PowMr 12V/24V MPPT Solar Charge Controller 25Amp User Manual

PowMr UT-POW-M25-PRO

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Model: UT-POW-M25-PRO

1. PRODUCT OVERVIEW

The PowMr 12V/24V MPPT Solar Charge Controller 25Amp is an advanced maximum power point tracking (MPPT) device designed to regulate the power from your solar array to your battery bank. It ensures efficient charging by optimizing the voltage and current from the solar panels, thereby maximizing energy harvest. This controller is suitable for various off-grid solar applications, providing reliable power management for 12V or 24V battery systems.



This image shows the front of the PowMr MPPT Solar Charge Controller. It features a digital display at the top, showing various parameters like solar input, battery voltage, and load status. Below the display are four orange circular buttons and a row of four rectangular buttons labeled 'PV', 'BAT/▲', 'DC/▼', and 'SET/⚙️', used for navigation and settings. The device is primarily dark gray with an orange accent strip at the bottom.

2. SAFETY INFORMATION

- Read all instructions carefully before installation and operation.
- Ensure all wiring is correctly polarized and securely connected to prevent damage to the controller or other components.
- Do not disassemble or attempt to repair the controller yourself. Refer to qualified personnel for service.
- Install the controller in a well-ventilated area, away from flammable materials and direct sunlight.
- Always connect the battery first, then the solar panel, and finally the load. Disconnect in the reverse order.
- Use appropriate circuit breakers or fuses for all connections to protect against overcurrent.

3. PACKAGE CONTENTS

Upon opening the package, please verify that all items listed below are present and in good condition:

- MPPT Solar Charge Controller
- Dedicated Mounting Screws
- Instruction Manual (this document)

4. PRODUCT FEATURES

- **Advanced MPPT Technology:** Maximizes energy harvest from solar panels by tracking the maximum power point.
- **Automatic Voltage Recognition:** Automatically detects 12V or 24V battery systems.
- **High Charging Efficiency:** Ensures optimal battery charging with minimal power loss.
- **Multi-stage Charging:** Provides efficient and safe charging for various battery types.
- **Comprehensive Protections:** Includes overcharge, over-discharge, overload, short-circuit, and reverse polarity protection.
- **LCD Display:** Intuitive display shows real-time system status and parameters.
- **User-Friendly Interface:** Easy navigation and parameter setting via integrated buttons.

5. SETUP AND INSTALLATION

5.1 Mounting the Controller

Choose a dry, well-ventilated location for mounting the controller, away from direct sunlight, high temperatures, and moisture. Ensure there is sufficient air circulation around the unit for proper heat dissipation. Use the dedicated mounting screws provided to secure the controller to a flat, stable surface.

5.2 Wiring Connections

Follow the connection order strictly to ensure safe and proper operation. Incorrect wiring can damage the controller or other components.

1. **Connect the Battery:** Connect the positive and negative terminals of the battery to the corresponding battery terminals on the charge controller. Ensure correct polarity. The controller will automatically detect the battery voltage (12V or 24V).
2. **Connect the Solar Panel:** Connect the positive and negative terminals of your solar panel array to the corresponding PV input terminals on the charge controller. Ensure correct polarity.

3. **Connect the DC Load (Optional):** If you are connecting a DC load directly to the controller, connect its positive and negative terminals to the load output terminals. Ensure correct polarity.

Important: Always ensure all connections are tight and secure to prevent loose contacts and potential hazards.

6. OPERATING INSTRUCTIONS

6.1 LCD Display Interface

The LCD display provides real-time information about the system's status. Key indicators include:

- **Solar Panel Icon:** Indicates solar input status.
- **Battery Icon:** Shows battery charge level and status.
- **Load Icon:** Indicates load output status.
- **Voltage/Current Readings:** Displays real-time voltage and current for PV, battery, and load.
- **Work Mode:** Shows the current operating mode (e.g., 24H for continuous load, 3.0 for timed load).

6.2 Button Functions

The controller features four main buttons for navigation and setting adjustments:

Button	Function (Short Press)	Function (Long Press)
PV	View PV parameters (voltage, current, power).	N/A
BAT/▲	View Battery parameters (voltage, temperature). In setting mode, increases value.	Enter/Exit setting mode.
DC/▼	View Load parameters (current, power). In setting mode, decreases value.	Toggle load ON/OFF.
SET/⚙	Cycle through display screens. In setting mode, confirms selection.	N/A

7. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance 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 that the ventilation openings are not blocked to allow for proper heat dissipation.
- **Environmental Conditions:** Verify that the operating environment remains within the specified temperature and humidity ranges.

8. TROUBLESHOOTING

This section provides solutions to common issues you might encounter:

Problem	Possible Cause	Solution
Controller display is off.	No power from battery or solar panel; reverse polarity.	Check battery and solar panel connections and polarity. Ensure battery voltage is above minimum operating voltage.

Problem	Possible Cause	Solution
Battery not charging.	Solar panel not connected, insufficient sunlight, faulty panel, or battery.	Verify solar panel connections. Check solar panel output voltage. Inspect battery health.
Load not working.	Load output disabled, overload, short circuit, or low battery voltage.	Check load settings on the controller. Reduce load. Inspect for short circuits. Ensure battery is sufficiently charged.
Error code displayed.	Specific system fault (e.g., overvoltage, overcurrent).	Refer to the controller's specific error code definitions (if available in a more detailed manual) or contact support.

9. TECHNICAL SPECIFICATIONS

Detailed specifications for the PowMr 12V/24V MPPT Solar Charge Controller 25Amp:

Parameter	Value
Model Number	UT-POW-M25-PRO
System Voltage	12V/24V Auto Recognition
Rated Charge Current	25 Amp
Package Dimensions	6.5 x 4.5 x 2.01 inches
Item Weight	1.1 pounds
Manufacturer	PowMr
Country of Origin	China
Batteries Required	No

10. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please contact PowMr customer service through their official channels or the retailer from whom the product was purchased. Please have your model number (UT-POW-M25-PRO) and purchase details ready when contacting support.

You can visit the PowMr Store on Amazon for more information: [PowMr Store](#)