OOYCYOO 60A 48V 36V 24V 12V

OOYCYOO 60A MPPT Solar Charge Controller User Manual

Model: 60A 48V 36V 24V 12V

1. Introduction

The OOYCYOO 60A MPPT Solar Charge Controller is an advanced device designed to efficiently manage power flow from your solar panels to your battery bank. Utilizing Maximum Power Point Tracking (MPPT) technology, it optimizes solar energy harvesting, ensuring rapid and efficient charging for various battery types including lead-acid (Sealed, Gel, Flooded) and Lithium (LFP) batteries across 12V, 24V, 36V, and 48V systems. This controller features a clear LCD display for monitoring system status and multiple safety protections to ensure reliable operation.

Figure 1: Front view of the OOYCYOO 60A MPPT Solar Charge Controller, highlighting the LCD display and connection terminals.

2. Key Features

- **60A MPPT Charging Controller:** Features a 4-stage battery charging algorithm (Bulk Charge, Boost Charge, Float Charge, and Equalization) for rapid, efficient, and safe charging.
- **Wide Voltage/Power Support:** Supports high PV input power and voltage. The controller can accept solar voltage up to 160V. Recommended solar power: 720W for 12V systems, 1440W for 24V, 2100W for 36V, and 2800W for 48V.
- **Multi-Battery Compatibility:** Compatible with various battery types including lead-acid (Sealed, Gel, Flooded) and Lithium (LFP) batteries. Charging parameters are pre-set and user-definable.
- **High Tracking Efficiency:** Advanced Maximum Power Point Tracking technology ensures continuous tracking of the array's maximum power point, achieving tracking efficiency of not less than 98.1% and peak conversion efficiency up to 98%.
- **Dual Cooling System:** Constructed with die-cast aluminum for excellent heat dissipation. Includes a built-in cooling fan that activates when the temperature exceeds 45°C and turns off below 40°C, extending product life up to 5000 hours in normal use.
- **Enhanced Safety Protections:** Includes protection against PV overcurrent/power, PV short circuit, PV reverse polarity, night reverse charging, battery reverse polarity, battery over voltage, battery over discharge, battery overheating, controller overheating, lithium battery low temperature, load short circuit, load overload, and TVS high voltage transients.

Figure 2: Overview of the controller's comprehensive safety protection features.

3. Setup and Installation

Proper installation is crucial for the safe and efficient operation of your solar charge controller. Always ensure all power sources are disconnected before making any connections.

3.1 Connection Order

1. **Connect the Battery:** First, connect the battery to the controller's battery terminals. Ensure correct polarity (+ to + and - to -). The controller will automatically detect the battery voltage.
2. **Connect the Solar Panels:** Next, connect the solar panel array to the controller's PV terminals. Ensure correct polarity. The controller will begin charging the battery.
3. **Connect the DC Load (Optional):** Finally, connect your DC load to the load terminals. Do not exceed the maximum rated current for the load output.

Important: Always connect the battery first and disconnect the solar panels first when disassembling the system.

Figure 3: System wiring diagram for the solar charge controller, illustrating connections to solar panels, battery, and DC load.

3.2 Installation Video Guide

For a visual guide on the installation process, please refer to the video below:

Video 1: Quick installation guide for a 60A MPPT solar charge controller, demonstrating battery and photovoltaic input cable connections.

4. Operation

The controller features an LCD display and control buttons for monitoring and adjusting settings.

4.1 LCD Display and Buttons

The LCD display provides real-time information on system status, including battery voltage, charging current, and load status. Use the 'SET' button to enter settings mode and the 'A', 'B', 'C', 'D' buttons (or similar navigation

buttons) to adjust parameters. A 5-second press on the 'SET' button typically initiates a reset or enters advanced settings.

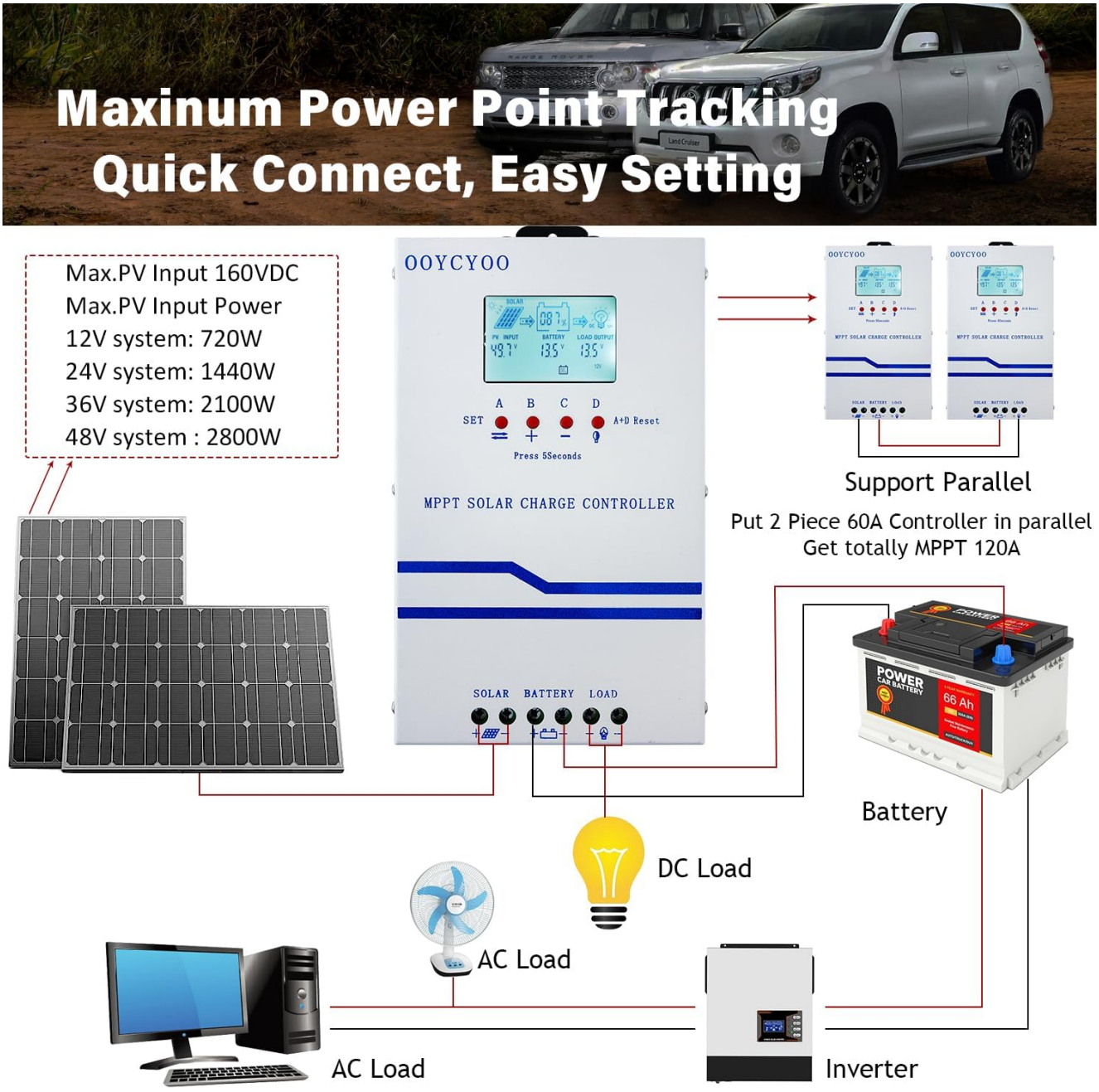

Figure 4: Illustration of the controller's strong battery adaptability, supporting GEL, AGM, User, SEL, FLD, LI, and LiFePO4 battery types, along with a typical 4-stage charging curve.

4.2 Battery Type and System Voltage Settings

The controller automatically identifies 12V, 24V, 36V, or 48V battery systems. You can select the specific battery type (e.g., Sealed, Gel, Flooded, Lithium) and customize charging parameters if needed. Refer to the specifications table for default values.

Figure 5: Table detailing default and adjustable parameters for 12V, 24V, and 48V battery systems, including float voltage, undervoltage protection, and maximum solar panel input power.

4.3 Operation Video Guides

Explore the operational aspects of the solar charge controller with these video guides:

Video 2: An overview of the MPPT Solar Charging Controller (80A model shown), demonstrating its features and basic operation.

Video 3: Detailed operation of an Ampinvt solar charge controller, covering display navigation and settings adjustments.

Video 4: An instructional video on the CM Series solar charge controller, demonstrating how to navigate settings and understand display information.

5. Maintenance

To ensure the longevity and optimal performance of your OOYCYOO MPPT Solar Charge Controller, follow these maintenance guidelines:

- **Regular Inspection:** Periodically check all wiring connections for tightness and corrosion. Ensure no wires are frayed or damaged.
- **Cleanliness:** Keep the controller clean and free from dust and debris. Use a dry cloth to wipe the exterior. Do not use liquids or solvents.
- **Ventilation:** Ensure the cooling vents are unobstructed to allow for proper airflow. The built-in fan will operate automatically to dissipate heat.
- **Battery Health:** Monitor your battery bank's health regularly. Ensure batteries are properly maintained according to their manufacturer's recommendations.

6. Troubleshooting

This section outlines common issues and their potential solutions. The controller is equipped with multiple protection functions to prevent damage.

Issue/Protection Triggered	Possible Cause	Solution
PV Over Current/Power	Solar panel input power or current exceeds controller limits.	Reduce the number of solar panels or ensure total PV power is within specifications.
PV Short Circuit	Short circuit in the solar panel wiring.	Inspect solar panel wiring for damage or incorrect connections and rectify.
PV Reverse Polarity	Solar panel positive and negative terminals are reversed.	Disconnect solar panels and reconnect with correct polarity.
Battery Reverse Polarity	Battery positive and negative terminals are reversed.	Disconnect battery and reconnect with correct polarity.
Battery Over Voltage	Battery voltage exceeds the set over-voltage protection point.	Check battery type settings; ensure battery is not faulty.
Battery Over Discharge	Battery voltage drops below the set over-discharge protection point.	Reduce load, charge battery, or check battery health.
Controller Overheating	Internal temperature of the controller is too high.	Ensure adequate ventilation around the controller. Check if the cooling fan is operating. Reduce load if necessary.
Load Short Circuit	Short circuit in the DC load wiring.	Inspect load wiring for damage or incorrect connections and rectify.
Load Overload	Connected DC load exceeds the controller's maximum load current.	Reduce the total power of the connected DC loads.

7. Technical Specifications

Parameter	Value

Parameter	Value
Rated Charge Current	60A
System Nominal Voltage	12V/24V/36V/48V DC Auto Identifying
Max. PV Open Circuit Voltage	160VDC
Max. PV Input Power (12V System)	720W
Max. PV Input Power (24V System)	1440W
Max. PV Input Power (36V System)	2100W
Max. PV Input Power (48V System)	2800W
Battery Voltage Range	9V~55V
Power Terminal Wire Gauge	6-12 AWG
Dimensions (L x W x H)	27.9L x 27.9W x 6.4H Centimetres (11 x 6 x 2.5 inches)
Material	Die-cast aluminum
Display Type	LCD
Tracking Efficiency	≥ 98.1%
Peak Conversion Efficiency	Up to 98%

8. Warranty Information

Specific warranty details for the OOYCYOO 60A MPPT Solar Charge Controller are not provided in this manual. Please refer to the product packaging, the retailer's website, or contact the manufacturer directly for warranty terms and conditions.

9. Support and Contact

For further assistance, technical support, or to access additional resources, please refer to the manufacturer's official website or contact their customer service. You may also find additional information by scanning the QR code often found on the product or packaging.
A relevant link for additional information or support may be found at:http://qr61.cn/oQXA1T/qsECN8r

Figure 6: Side view of the controller, displaying regulatory compliance marks and a QR code for additional information.