Luqeeg 2000W MPPT Wind Solar Controller (DC12V 24V 48V)

Luqeeg 2000W MPPT Wind Solar Hybrid Charge Controller User Manual

Model: 2000W MPPT Wind Solar Controller (DC12V 24V 48V)

1. Introduction

This manual provides essential instructions for the safe and efficient operation of your Luqeeg 2000W MPPT Wind Solar Hybrid Charge Controller. This controller is designed to manage power from both wind turbines and solar panels, ensuring optimal charging of your battery system. It features Maximum Power Point Tracking (MPPT) for high charging efficiency and automatic voltage identification for 12V, 24V, and 48V systems.
Please read this manual thoroughly before installation and use to ensure proper functionality and longevity of the product.

2. Safety Instructions

- Ensure all wiring is performed by qualified personnel in accordance with local electrical codes.
- Always disconnect power from the wind turbine, solar panels, and battery before installing or servicing the controller.
- Wear appropriate personal protective equipment (PPE), including insulated gloves and eye protection.
- Do not operate the controller in wet or damp conditions.
- Verify correct polarity for all connections to prevent damage to the controller and connected components.
- The controller generates heat during operation; ensure adequate ventilation.
- Keep children away from the installation area.

3. Product Overview

The Luqeeg 2000W MPPT Wind Solar Hybrid Charge Controller is designed for robust performance in various renewable energy applications. It integrates advanced MPPT technology for efficient power conversion from both wind and solar sources.

Key Features:

- **MPPT Charging Method:** Ensures maximum power extraction from wind turbines for high charging efficiency.

- **Independent Boost Circuit:** Addresses charging efficiency issues for low-power vertical wind turbines.
- **Automatic Voltage Identification:** Automatically detects 12V, 24V, or 48V battery systems.
- **Durable Construction:** Made from high-quality aluminum alloy for strength and wear resistance.
- **Wide Application Range:** Suitable for communication base stations, household systems, street lighting, and field monitoring.

Components:



Image: The Luqeeg 2000W MPPT Wind Solar Hybrid Charge Controller (left) shown alongside its unloading resistor (right).

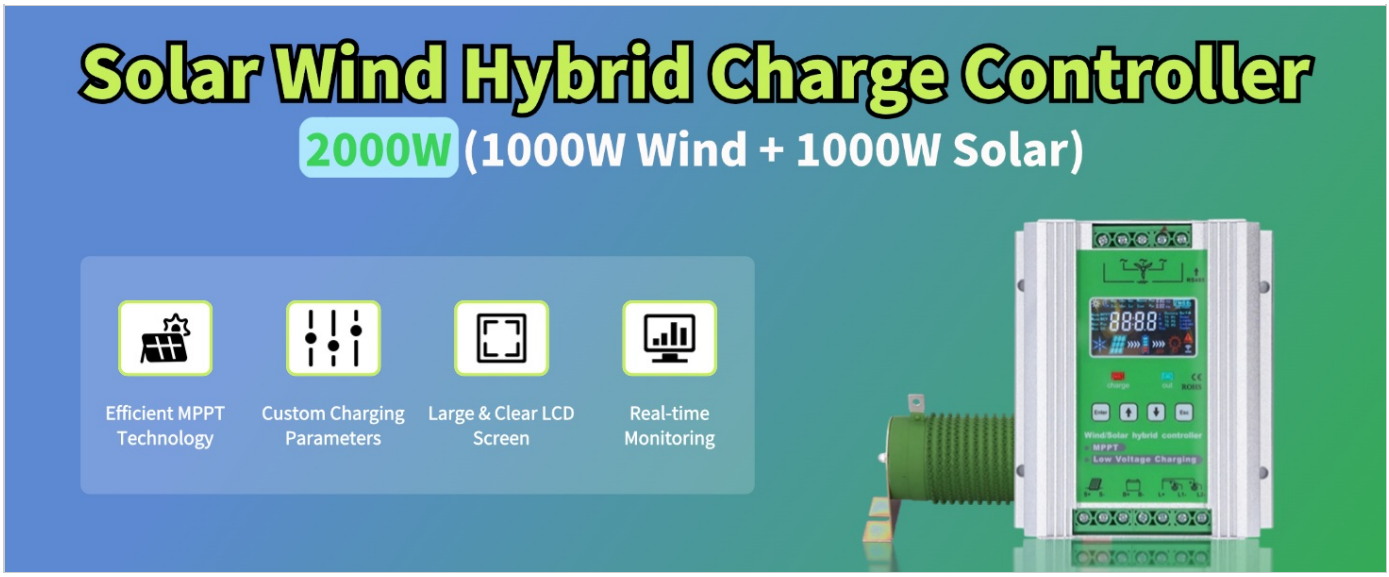


Image: Overview of the controller's main features, including MPPT technology, customizable parameters, LCD screen, and real-time monitoring.

4. Setup and Installation

Follow these steps carefully for proper installation. Ensure all power sources are disconnected before beginning.

Wiring Diagram:



Image: Detailed wiring diagram illustrating connections for wind turbines, solar panels (PV array), battery, unloading resistor, and electrical load to the controller.

1. **Mounting:** Choose a dry, well-ventilated location for mounting the controller, away from direct sunlight and moisture. Ensure sufficient space around the controller for heat dissipation.
2. **Battery Connection:** Connect the battery to the controller's "B+" and "B-" terminals. Ensure correct polarity. The controller will automatically detect the battery voltage (12V, 24V, or 48V).
3. **Wind Turbine Connection:** Connect the wind turbine output wires to the "Wind turbines terminals" on the controller.
4. **Solar Panel (PV Array) Connection:** Connect the solar panel array to the "Solar terminal" on the controller. Ensure correct polarity.
5. **Unloading Resistor Connection:** Connect the unloading resistor to the "Unloading terminal" on the controller. This resistor dissipates excess energy from the wind turbine when the battery is full or the load is insufficient.
6. **Load Connection:** Connect your DC loads to the "Load terminal" (L+ and L-) on the controller.
7. **RS485 Communication (Optional):** If using external monitoring, connect the RS485 communication cable to the designated port.

Important: Always connect the battery first, then the wind turbine and solar panels, and finally the load. When disconnecting, reverse this order: disconnect load, then wind/solar, then battery.

5. Operating Instructions

The controller features an LCD color display and several buttons for monitoring and configuration.

Controller Interface:



Image: Labels indicating the functions of the LCD display, charging indicator, output indicator, and control buttons (Enter, Up, Down, Esc).

- **LCD Color Display:** Shows real-time system parameters such as voltage, current, power, and charging status.
- **Charging Indicator:**
  - Off: No charge.
  - Long bright: Charging.
- **Output Indicator:**
  - Off: The output is off.
  - Long bright: The output is normal.
- **Buttons:**

- **Enter Key:** Main menu key / Parameter setting save key.
- **Up Key:** Display parameter page up / Parameter setting plus.
- **Down Key:** Display parameter page down / Parameter setting minus.
- **Esc Key:** Exit setting interface key.

Monitoring and Configuration:

Use the Up and Down keys to navigate through different display pages to view system status. Press the Enter key to access the parameter setting interface. Use Up/Down to adjust values and Enter to save changes. Press Esc to exit settings.
The controller supports WiFi and GPRS module expansion for APP cloud monitoring and PC monitoring. This functionality requires additional modules and configuration, which are not detailed in this basic manual.



Image: Illustration of the controller's expandability for remote monitoring via WiFi (mobile app), GPRS (mobile app), PC, and cloud server (Ethernet).

6. Maintenance

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

- **Visual Inspection:** Periodically inspect the controller and all connections for any signs of damage, corrosion, or loose wiring.
- **Cleaning:** Keep the controller clean and free from dust and debris. Use a dry, soft cloth for cleaning. Do not use liquids or abrasive cleaners.
- **Ventilation:** Ensure that the ventilation openings are not blocked to allow for proper heat dissipation.
- **Battery Check:** Regularly check the battery terminals for corrosion and ensure they are securely tightened. Monitor battery voltage and health according to battery manufacturer guidelines.
- **System Performance:** Monitor the system's performance via the LCD display or connected monitoring systems to ensure it is operating within expected parameters.

7. Troubleshooting

This section addresses common issues you might encounter. For problems not listed here, please contact customer support.

Problem	Possible Cause	Solution
Controller display is off.	No power from battery or incorrect battery connection.	Check battery connections and ensure correct polarity. Verify battery voltage is within operating range.
Battery not charging from wind/solar.	Loose connections, low wind/solar input, faulty wind turbine/solar panel, or controller fault.	Check all wind and solar input connections. Verify wind speed and solar irradiance. Inspect wind turbine and solar panels for damage.
Load not receiving power.	Load output is off, battery voltage too low, or overload protection activated.	Check the output indicator on the display. Ensure battery is sufficiently charged. Reduce load if overload protection is active.
Unloading resistor is constantly active.	Battery is fully charged, or there is insufficient load for the generated power.	This is normal operation when excess power is available. If it happens frequently and battery is not full, check battery health or increase load.
Difficulty with RS485 communication.	Incorrect wiring, incompatible module, or software configuration issues.	Verify RS485 wiring. Ensure compatible communication modules are used. Refer to specific documentation for RS485 module configuration.

8. Specifications

Parameter	Value
Brand	Luqeeg
Model	2000W MPPT Wind Solar Controller (DC12V 24V 48V)
Wind Power Input	0-1000W
Solar Power Input	0-1000W

Parameter	Value
System Voltage	DC12V, 24V, 48V (Automatic Identification)
Material	Aluminum Alloy
Display Type	LED or LCD
Package Dimensions	13.58 x 11.57 x 6.18 inches
Item Weight	6.67 pounds

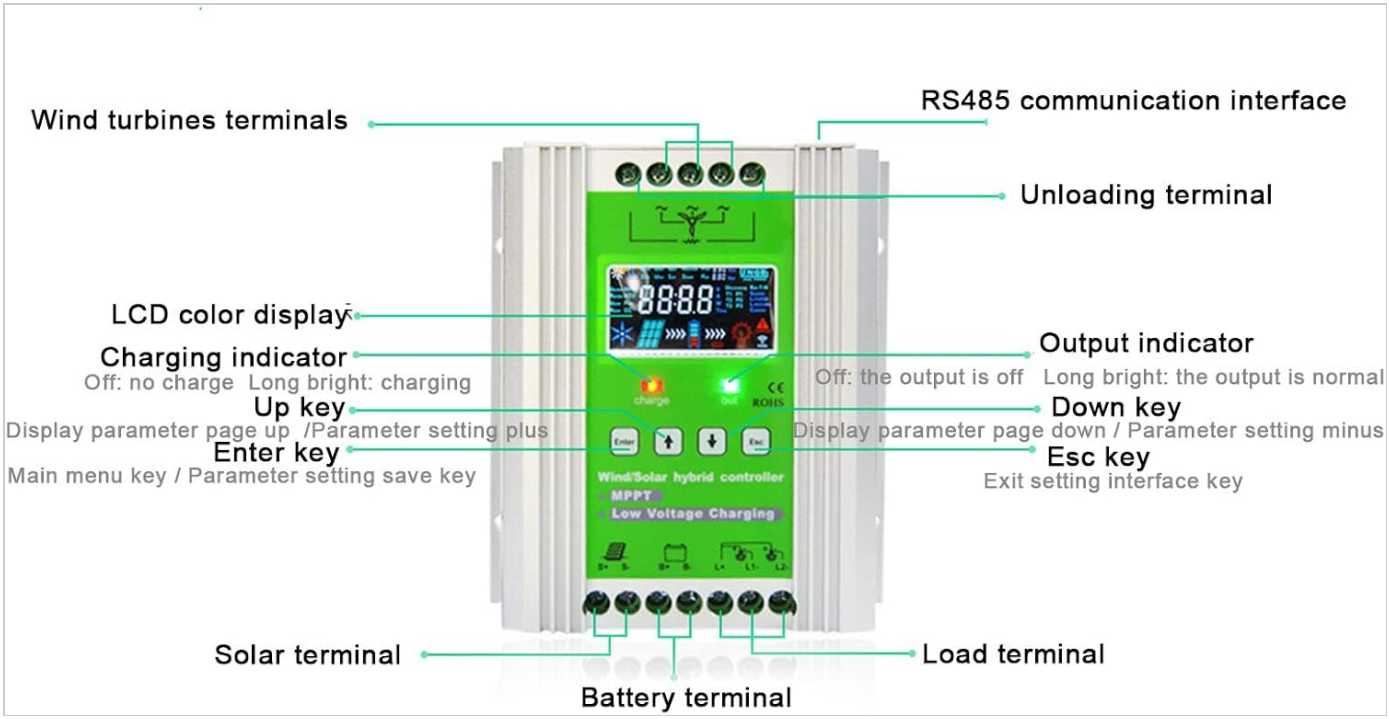


Image: Physical dimensions of the controller, showing approximate measurements of 140mm x 165mm x 66mm (5.5 x 6.5 x 2.6 inches).

9. Warranty and Support

For warranty information and technical support, please contact Luqeeg customer service. Details regarding specific warranty periods and claims procedures are typically provided with your purchase documentation or available on the manufacturer's official website.

When contacting support, please have your product model number (2000W MPPT Wind Solar Controller) and purchase date available.

You can visit the Luqeeg Store on Amazon for more information or to find contact details.

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Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

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