## Fablestoryem 15000W Wind and Solar Hybrid System Controller

# Fablestoryem 15000W Wind and Solar Hybrid Controller User Manual

Model: 15000W Wind and Solar Hybrid System Controller

## 1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the Fablestoryem 15000W Wind and Solar Hybrid Controller. This controller is specifically designed to optimize energy management in wind and solar hybrid street lighting systems, and with minor adjustments, it can also be integrated into home energy systems. It features advanced MPPT boost charging for wind turbines and PWM discharge for solar panels, ensuring efficient and stable power generation.

## 2. Product Features

- **MPPT Boost Charging:** Utilizes Maximum Power Point Tracking technology for wind turbines, ensuring efficient charging even at low wind speeds.
- **Automatic Voltage Identification:** Automatically identifies 12V, 24V, and 48V system voltages.
- **Wide Compatibility:** Compatible with various battery types including lithium, lead-acid, and gel batteries.
- **PWM Discharge Function:** Features PWM overcurrent limit function for solar panel charging, using MOS tubes in series.
- **LCD Display:** Real-time display of parameters such as wind turbine power, photovoltaic power, battery status, load status, and cumulative power generation.
- **Multiple Load Modes:** Supports various working modes for load output, including pure light control, light control + time control (for street lights), and 24-hour operation (for monitoring).
- **Comprehensive Safety Protection:** Includes solar anti-reverse charging, battery reverse connection protection, open circuit protection, over-voltage protection, over-current load overload protection, and external unloading resistor for fan braking.
- **Durable Design:** Features aluminum profile heat dissipation, self-cooling, dust-proof, anti-static internal circuit board, and TVS lightning protection diodes.

## 3. Product Overview & Components

The Fablestoryem Wind and Solar Hybrid Controller is designed for robust performance and ease of use. Below are images illustrating the product and its key components.


Figure 3.1: Fablestoryem 15000W Wind and Solar Hybrid Controller with a dump load resistor, set against a backdrop of solar panels and a house.


Figure 3.2: Various views of the controller, highlighting its compact design and terminal layout.

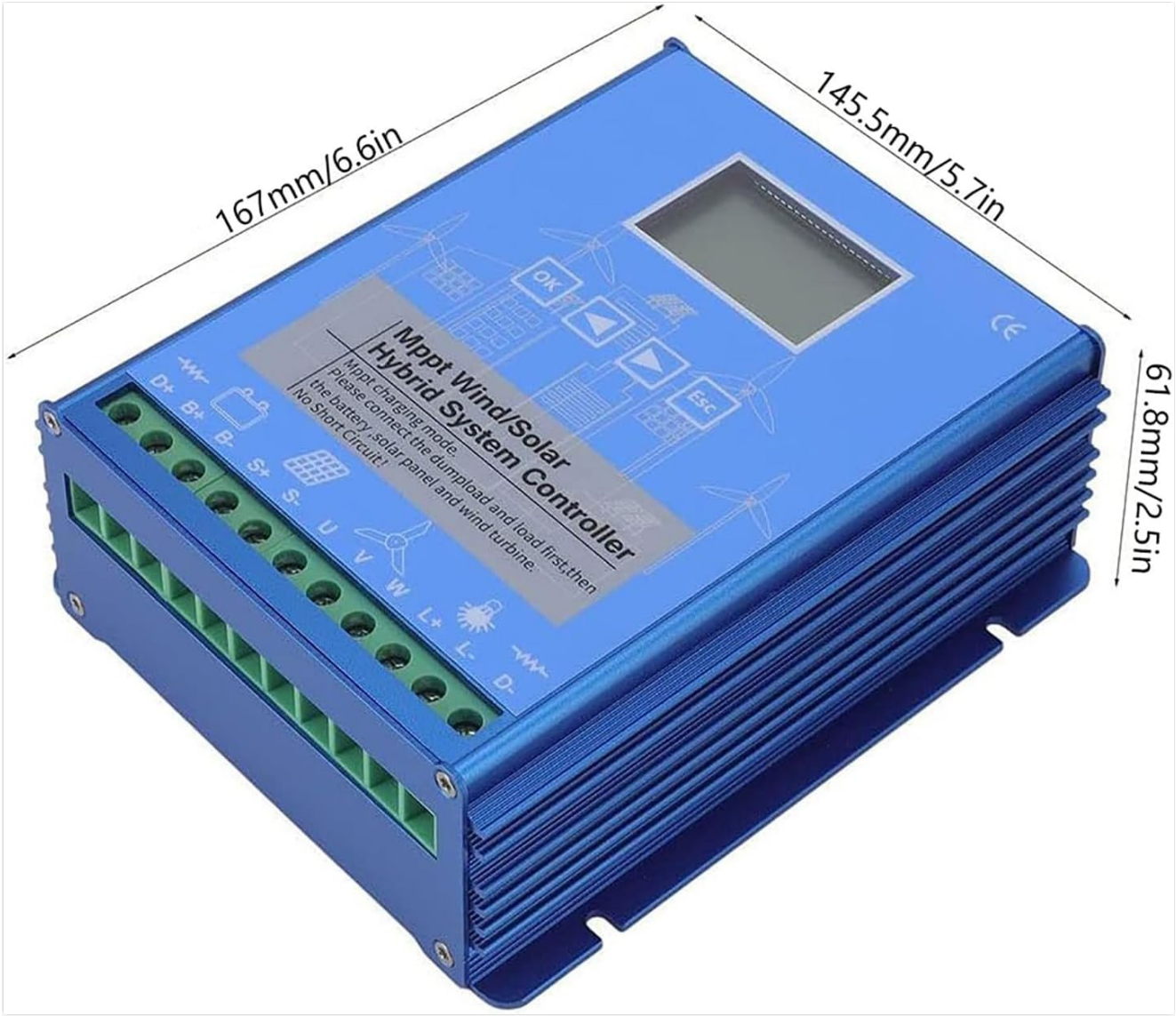


Figure 3.3: Physical dimensions of the controller for installation planning.

# product description


Figure 3.4: Labeled components of the controller and included accessories.

## 4. Technical Specifications

| Parameter | Value |
|---|---|
| System Rated Voltage | Automatically identifies 12V/24V/48V |
| No-load Current | <0.05A |
| Controller Power Source | Batteries or Photovoltaic Panels |
| Control Mode | Fan MPPT boost charging, PWM discharge, PWM overcurrent limit |
| Display Mode | LCD |
| Heat Dissipation Method | Aluminum profile heat dissipation and self-cooling |
| Operating Temperature & Humidity | 20 ~ +55°C / 35 ~ 85% RH (non-condensing) |
| Net Weight | 2.35kg (5.18 lbs) |
| Gross Weight | 2.85kg (6.28 lbs) |

| Parameter | Value |
| --- | --- |
| Product Size (L*W*H) | 167mm * 145.5mm * 61.8mm (6.6in * 5.7in * 2.5in) |
| Maximum Fan Input Voltage | 80V |
| Material | Aluminum profile |
| Package Dimensions | 14.17 x 9.84 x 4.72 inches |
| Item Weight | 6.16 pounds |
| Country of Origin | China |

## 5. Installation Guide

Proper installation is crucial for the safe and efficient operation of the hybrid controller. Please follow the wiring diagram and instructions carefully.

### 5.1 Wiring Diagram


Figure 5.1: System wiring diagram. Ensure all connections are secure and correct polarity is observed.

## 5.2 Connection Steps

1. **Connect the Dump Load:** First, connect the provided dump load resistor to the controller's designated terminals. This is critical for safely dissipating excess energy.
2. **Connect the Battery:** Connect the battery bank to the controller's battery terminals (D+ and B-). Ensure correct polarity (positive to positive, negative to negative). The controller will automatically detect the battery voltage (12V/24V/48V).
3. **Connect the Solar Panels:** Connect the solar panel array to the controller's solar input terminals (S+ and S-). Observe correct polarity.
4. **Connect the Wind Turbine:** Connect the wind turbine to the controller's wind input terminals (U, V, W).
5. **Connect the Load:** Connect your DC or AC load (via an inverter if AC) to the controller's load output terminals (L+ and L-).
6. **Verify Connections:** Double-check all connections for tightness and correct polarity before powering on the system.

*Important: Always connect the dump load and battery first before connecting solar panels or wind turbine to prevent*

*damage to the controller. Do not short circuit any terminals.*

## 6. Operating Instructions

The controller features an intuitive LCD display for monitoring system status and adjusting settings.


Figure 6.1: LCD Display and Load Mode Settings.

### 6.1 LCD Display Overview

The widescreen LCD displays real-time information about your wind and solar hybrid system, including:

- Wind turbine power (Pw)
- Photovoltaic power (Ps)
- Battery voltage (V) and charge status
- Load status (LOAD)

- Cumulative power generation (kWh)
- System temperature (TEMP)
- Day/Night indication

### 6.2 Navigating the Menu

- Use the **Up/toggle key** and **Scroll down/toggle key** to navigate through different display screens and adjust parameter values.
- Press the **Confirm/Save button (OK)** to enter a setting menu or confirm a selection.
- Press the **Escape key (Esc)** to exit a menu or cancel an operation.

### 6.3 Setting Load Modes

The controller supports various load modes to suit different applications:

- **Mode 1: Pure Light Control** (Suitable for street lights) - The load will turn on automatically at dusk and turn off at dawn.
- **Mode 2: 24-Hour Operation** (Suitable for monitoring systems) - The load remains continuously on.
- **Mode 3: Light Control + Time Control** (Suitable for street lights) - The load turns on at dusk and stays on for a set duration (e.g., 6 hours), then turns off.

To change the load mode, navigate to the load mode setting on the LCD and use the toggle keys to select the desired mode, then confirm with the OK button.

## 7. Safety Precautions & Protection

The controller is equipped with multiple safety features to protect the system and ensure reliable operation.

- **Solar Anti-Reverse Charging:** Prevents current from flowing back from the battery to the solar panels at night.
- **Battery Reverse Connection Protection:** Protects the controller and battery from damage if the battery is connected with incorrect polarity.
- **Open Circuit Protection:** Safeguards the system against damage from open circuits.
- **Over-Voltage Protection:** Prevents damage from excessive voltage levels.
- **Over-Current Load Overload Protection:** Shuts down the load if current exceeds safe limits.
- **External Unloading Resistor:** When the battery is full or the wind turbine is generating excess power, the controller diverts excess energy to the external unloading resistor, effectively braking the wind turbine and protecting the battery.
- **Dust-proof and Anti-static Design:** The internal circuit board is designed to resist dust and static electricity, enhancing durability.
- **TVS Lightning Protection Diodes:** Integrated diodes protect components from impact due to lightning strikes or power surges.

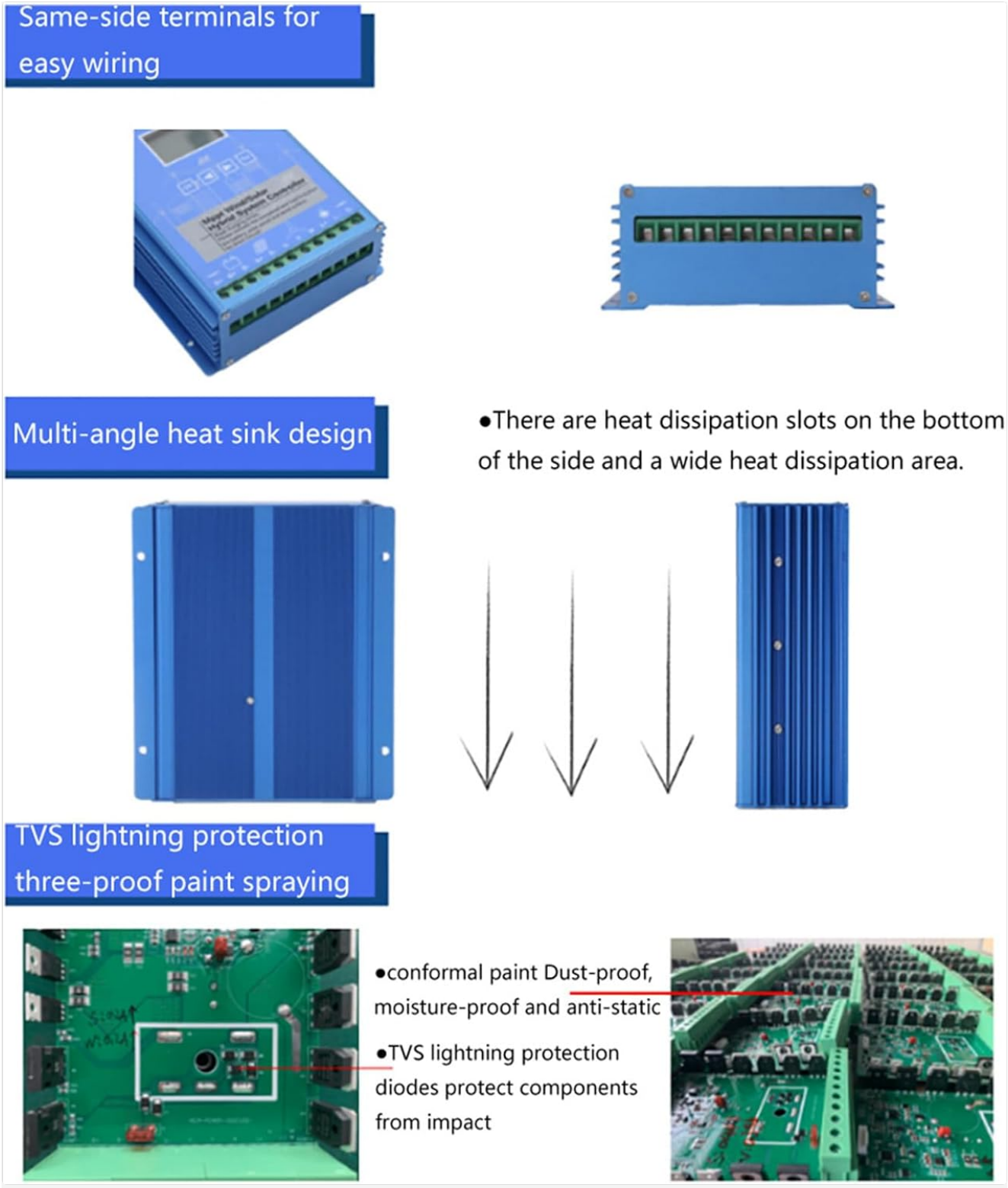


Figure 7.1: Design features for safety and durability, including heat dissipation and internal protection.

## 8. Maintenance

To ensure the longevity and optimal performance of your Fablestoryem hybrid controller, regular maintenance is recommended:

- **Inspect Connections:** Periodically check all wiring connections for tightness and corrosion. Loose connections can lead to power loss or overheating.
- **Clean the Controller:** Keep the controller's exterior clean and free of dust. Ensure the heat dissipation fins are not obstructed to allow for proper cooling. Use a dry, soft cloth for cleaning.
- **Monitor Performance:** Regularly check the LCD display for normal operation and parameter readings. Note any

unusual readings or error messages.

- **Battery Health:** Ensure your batteries are well-maintained according to their manufacturer's guidelines. Battery health directly impacts system performance.
- **Environmental Conditions:** Ensure the controller is installed in a location that adheres to the specified operating temperature and humidity ranges. Avoid direct exposure to water or extreme temperatures.

## 9. Troubleshooting

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

- **No Display/Controller Not Powering On:**
  - Check battery connections and ensure the battery has sufficient charge. The controller can be powered by either the battery or solar panels.
  - Verify that the battery voltage is within the controller's operating range (12V/24V/48V).
- **No Charging from Solar Panels:**
  - Check solar panel connections and polarity.
  - Ensure there is sufficient sunlight and the panels are clean and unobstructed.
  - Verify solar panel voltage is within the controller's input range.
- **No Charging from Wind Turbine:**
  - Check wind turbine connections (U, V, W) and ensure they are secure.
  - Verify there is adequate wind speed for the turbine to generate power.
  - Ensure the maximum fan input voltage (80V) is not exceeded.
- **Load Not Working:**
  - Check load connections and ensure they are secure.
  - Verify the load mode setting on the LCD display is appropriate for your application (e.g., 24-hour mode for continuous operation).
  - Check for over-current or short-circuit protection activation. Reduce load if necessary.
  - Ensure battery voltage is not too low, as the controller may cut off load output to protect the battery.
- **Controller Overheating:**
  - Ensure the controller is installed in a well-ventilated area.
  - Check that the heat dissipation fins are not blocked by dust or debris.
  - Verify the dump load resistor is correctly connected and functioning, as it dissipates excess energy.

## 10. Applications

The Fablestoryem Wind and Solar Hybrid Controller is versatile and can be used in various applications requiring efficient hybrid power management.


Figure 10.1: Examples of system applications.

- **Wind Solar Hybrid Energy Storage Power Station:** Ideal for off-grid power solutions, combining wind and solar energy for battery charging and power supply.
- **Wind Solar Hybrid Monitoring System:** Provides reliable power for remote surveillance cameras and other monitoring equipment.
- **Wind Solar Hybrid Lighting System:** Perfect for street lights, garden lights, and other outdoor lighting applications, ensuring continuous operation.
- **Home Systems:** Can be adapted for residential use to supplement grid power or provide off-grid energy.
- **Boats and RVs:** Suitable for mobile applications where a reliable, independent power source is needed.

## 11. Package Contents

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


Figure 11.1: Contents of the product package.

- 1 x Fablestoryem Wind and Solar Hybrid Controller
- 1 x Discharge Resistor (Dump Load)
- 1 x Instruction Manual (this document)
- 1 x Unloading Line (connecting wire for dump load)

## 12. Warranty and Support

Fablestoryem is committed to providing high-quality products and customer satisfaction. This product comes with a standard manufacturer's warranty against defects in materials and workmanship under normal use.

For warranty claims, technical support, or any questions regarding your product, please contact our customer service team. Please have your purchase details and product model number ready when contacting support.

**Customer Support:** If you have any questions, you can send us an email and we will reply to you within 24 hours.



**Related Documents - 15000W Wind and Solar Hybrid System Controller**

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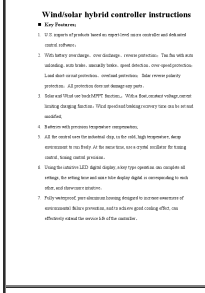
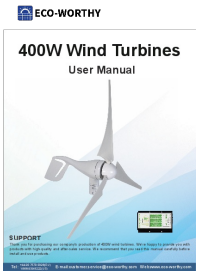
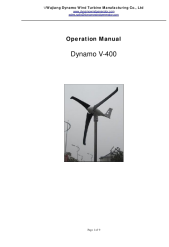
|  | [ECO-WORTHY Wind-Solar Hybrid Controller Instructions and Specifications]<br>Comprehensive instructions and technical specifications for the ECO-WORTHY Wind-Solar Hybrid Controller, covering key features, system description, installation, operation, and troubleshooting. |
|  | [ECO-WORTHY 400W Wind Turbine User Manual]<br>Comprehensive user manual for the ECO-WORTHY 400W Wind Turbine Generator and accompanying Wind & Solar Hybrid Controller. Covers product specifications, installation steps, system connection, indicator light conditions, and contact information. |
|  | [Dynamo V-400 Wind Turbine Operation Manual and Specifications]<br>Comprehensive operation manual and technical specifications for the Dynamo V-400 wind turbine. Learn about its applications, safety instructions, installation, performance, and warranty. |
|  | [JW-MPPT High-end Type MPPT Wind Solar Hybrid Controller User Manual]<br>User manual for the JW-MPPT High-end Type MPPT Wind Solar Hybrid Controller, detailing installation, operation, safety, troubleshooting, and technical specifications. |
|  | [VEVOR FG300W Wind Turbine Generator User Manual and Technical Data]<br>Comprehensive user manual and technical specifications for the VEVOR FG300W Wind Turbine Generator, covering installation, safety, maintenance, troubleshooting, and technical data. |
|  | [MARSROCK MPPT Hybrid Wind Solar Controller User Manual]<br>User manual for the MARSROCK MPPT Hybrid Wind Solar Controller, detailing installation, safety, and operation for lead-acid, GEL, and lithium batteries. |