Pikasola B087BXW4F9

Pikasola Hybrid Wind & Solar Controller User Manual

Model: B087BXW4F9

1. Introduction

The Pikasola Hybrid Wind & Solar Controller is designed for off-grid complementary systems, efficiently managing power from both wind generators and solar panels to charge 12V/24V battery banks. This controller utilizes advanced PWM technology and features an MCT (Maximum Current Tracking) charging function for optimal solar panel performance. Its robust design ensures reliable operation in various environmental conditions.

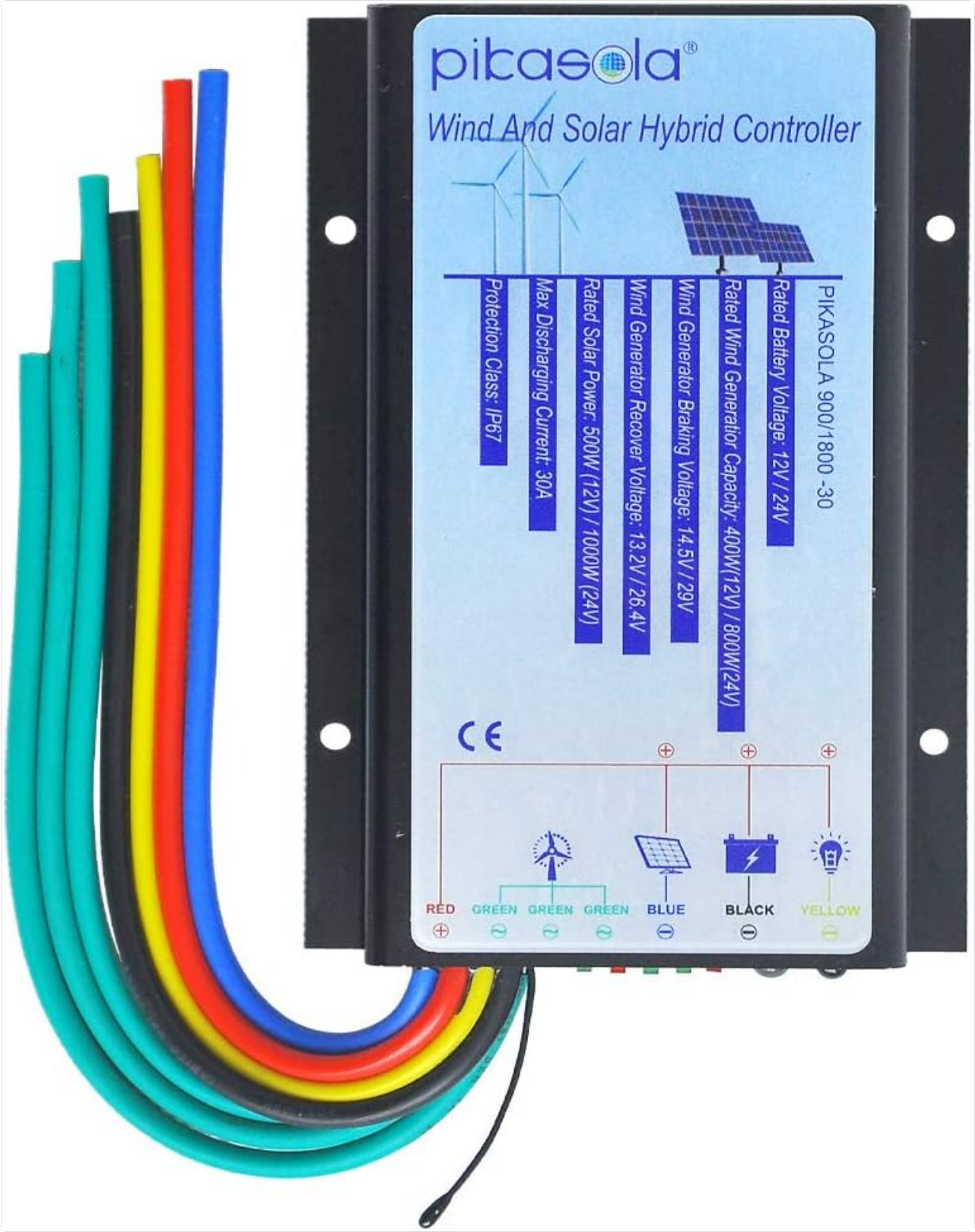


Figure 1: Pikasola Hybrid Wind & Solar Controller. This image displays the compact design of the controller with its multi-colored wiring harness, highlighting its main features and specifications printed on the device label.

2. Setup and Installation

Proper installation is crucial for the safe and efficient operation of your Pikasola Hybrid Wind & Solar Controller. Always ensure all power sources are disconnected before making any connections.

2.1 Wiring Connections

1. **Battery Connection:** Connect the battery bank to the controller's battery terminals (Black for negative, Yellow for positive). Ensure correct polarity. The controller automatically detects 12V or 24V battery systems.
2. **Wind Turbine Connection:** Connect the wind generator's output to the controller's wind input terminals (Green

wires). The controller supports wind generators up to 800W (12V) or 800W (24V).

3. **Solar Panel Connection:** Connect the solar panels to the controller's solar input terminals (Blue wires). The controller supports solar panels up to 1000W (12V) or 1000W (24V).

Refer to the diagram below for a visual representation of the system connections.



Figure 2: Wind-Solar Hybrid System Diagram. This diagram illustrates the complete setup, showing the wind turbine generator, solar panel, Pikasola controller, battery group, inverter, and various loads (AC and DC).

3. Operating Instructions

The Pikasola Hybrid Wind & Solar Controller operates automatically once properly connected. It manages the charging process to ensure optimal battery health and system efficiency.

3.1 LED Indicators

The controller features several LED indicators to provide real-time status information:

- **Program Sending/Receiving:** Indicates data communication.
- **Battery Capacity Indication:** Shows the current charge level of the battery.

- **Solar Charging Indicator:** Illuminates when solar panels are actively charging the battery.
- **Controller Power-on Indicator:** Confirms the controller is powered on.
- **Status Indicator:** Provides general operational status.
- **Fan Charging Indicator:** Indicates when the wind turbine is actively charging.

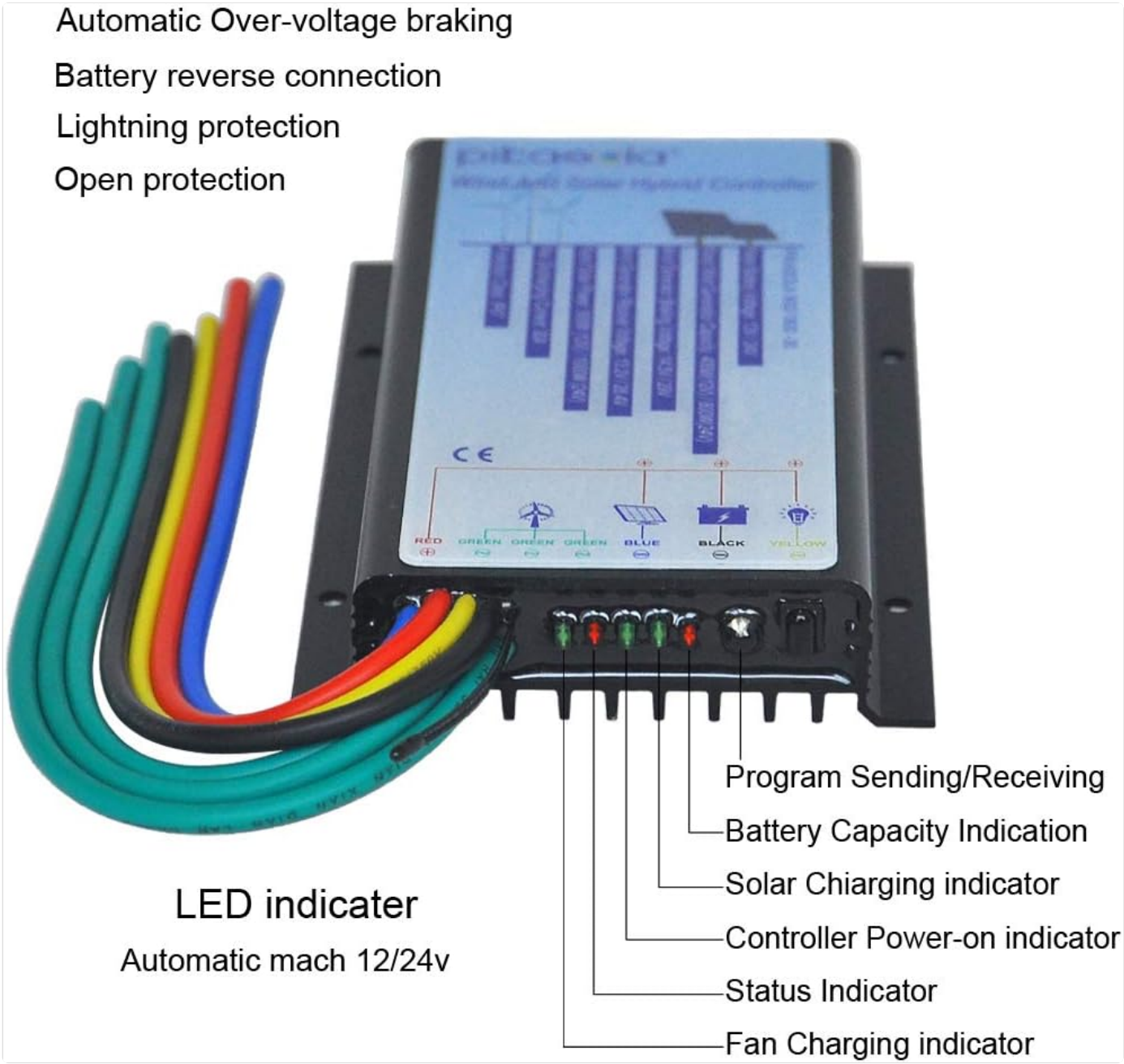


Figure 3: Pikasola Controller LED Indicators. This image highlights the various LED indicators on the controller, each labeled with its function, such as battery capacity, solar charging, and fan charging.

3.2 Charging Technology

The controller employs PWM (Pulse Width Modulation) technology for efficient charging. Its MCT (Maximum Current Tracking) function continuously tracks and optimizes the current from the solar panel in real-time, maximizing energy harvest. Automatic over-voltage braking is integrated to protect the system from excessive voltage from the wind turbine.

4. Maintenance

To ensure the longevity and optimal performance of your Pikasola Hybrid Wind & Solar Controller, regular maintenance is recommended.

- **Regular Inspection:** Periodically check all wiring connections for tightness and signs of corrosion or damage.

- **Cleaning:** Keep the controller's exterior clean and free from dust and debris. Use a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Heat Dissipation:** The aluminum alloy shell with its multi-edge bottom plate design is engineered for good heat dissipation. Ensure the controller is installed in a location with adequate airflow to maintain an optimal operating temperature.
- **Waterproof Protection:** The controller features an IP67 waterproof rating, allowing it to operate steadily in humid environments. However, avoid submerging the device.



Figure 4: Pikasola Controller IP67 Waterproof. This image shows the controller with water droplets on its surface, demonstrating its IP67 waterproof capability, suitable for humid environments.



Figure 5: Pikasola Controller Heat Dissipation Fins. This image provides a view of the controller's underside, showcasing the aluminum alloy shell with its heat dissipation fins, designed to maintain optimal operating temperature.

5. Troubleshooting

This section addresses common issues and provides guidance for resolving them. The Pikasola Hybrid Wind & Solar Controller is designed for automatic operation with limited user-adjustable settings.

5.1 Common Issues and Solutions

- **No Power Indication:**
  - Check all battery connections for secure contact and correct polarity.
  - Verify the battery voltage is within the 12V/24V operating range.
- **No Charging from Solar/Wind:**
  - Ensure solar panels are receiving adequate sunlight and are clean.
  - Verify wind turbine is spinning freely and generating power.
  - Check all solar and wind input connections for secure wiring.
  - Confirm that the solar and wind input power does not exceed the controller's maximum rated capacity (1000W solar, 800W wind).
- **Battery Not Fully Charging or Overcharging:**
  - The controller has built-in protection functions. If the battery is not charging as expected, ensure it is not

already at full capacity or experiencing an internal issue.
    - The controller features automatic over-charge voltage and under-voltage protection. If these protections are active, charging may be halted or reduced.
- **Controller Malfunction or Unexpected Behavior:**
    - The controller is designed to be plug-and-play with minimal user adjustments. If unexpected behavior occurs, verify all connections are correct and within specified parameters.
    - The controller includes protection against battery reverse connection, overload voltage, and open circuit. These features are designed to prevent damage.
    - In cases of persistent issues, contact Pikasola customer support for further assistance.

6. Specifications

Detailed technical specifications for the Pikasola Hybrid Wind & Solar Controller:

Feature	Value
Brand	Pikasola
Model Number	B087BXW4F9
UPC	745499000840
Rated Battery Voltage	12V/24V Auto Match
Max Wind Generator Power	800W
Max Solar Panel Power	1000W
Max Discharging Current	30A
Protection Class	IP67
Material	Aluminum
Product Dimensions (L x W x H)	5.04 x 3.2 x 0.8 inches
Item Weight	16 ounces (1 pound)
Display Type	LCD (for external monitoring, not on controller itself)
Operating Temperature	Up to 55 Degrees Celsius



Figure 6: Pikasola Controller Dimensions. This image provides a detailed view of the controller with its key dimensions labeled in inches, showing its compact size.

7. Warranty and Support

For warranty information or technical support regarding your Pikasola Hybrid Wind & Solar Controller, please contact Pikasola Inc. directly through their official channels. Keep your purchase receipt and product model number (B087BXW4F9) readily available when seeking support.

For additional resources and product information, you may visit thePikasola Store on Amazon.

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