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Model: 1200W Wind Solar MPPT Hybrid Charge Controller

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1. PRODUCT OVERVIEW

The NINILADY Rewindagic 1200W Wind Solar MPPT Hybrid Charge Controller is designed for off-grid wind and solar power systems. It efficiently manages power from both wind turbines (up to 1000W) and solar panels (up to 200W) to charge 12V, 24V, or 48V battery banks. This controller features advanced Maximum Power Point Tracking (MPPT) technology for wind input, ensuring optimal power generation even at low wind speeds. It also includes comprehensive protection mechanisms for safe and reliable operation.

Key features include:

- **Waterproof Design:** The circuit board is protected with waterproof, anti-corrosion, and insulated coatings. The housing is also designed for water resistance.
- **Advanced MPPT Technology:** Utilizes automatic wind turbine MPPT or a 5-segment matching curve input configuration to maximize power generation efficiency, especially at low wind speeds.
- **Comprehensive Protections:** Includes safeguards against over-speed, over-current, induced lightning strikes for wind input; reverse connection for solar input; and reverse polarity, over-voltage, and low-voltage for battery connections.
- **Data Monitoring:** Displays real-time data such as wind/solar input voltage, current, power, cumulative power, RPM, and battery voltage, charging current, and remaining power.
- **Multiple Output Modes:** Offers various load output modes including light control, time control, and morning light, suitable for diverse applications.
- **Optional Communication:** Standard TTL232 communication micro-port allows for system monitoring via computer (RS485 and short-distance wireless options may be available).

2. TECHNICAL SPECIFICATIONS

Feature	Specification
Rated System Voltage	12V/24V AUTO, 48V (model dependent)
Rated Wind Power	1000W
Rated Solar Power	200W
Controller Power Mode	Battery and Solar
Maximum Input Voltage	60V
DC Output Current	Equal to Battery Voltage
Maximum Output Current	40A
Display Content	LED Display
Insulation Grade	IP41
Package Weight	1 kg

3. INSTALLATION AND SETUP

Before installation, ensure all components are present and undamaged. It is recommended to have this installation performed by a qualified professional. Always disconnect power sources before making any connections.

3.1 Safety Precautions

- Wear appropriate personal protective equipment (PPE).
- Ensure the installation area is dry and well-ventilated.
- Verify correct voltage and polarity for all connections.
- Do not short-circuit battery terminals or input terminals.
- Mount the controller in a location protected from direct sunlight, rain, and excessive dust.

3.2 Mounting the Controller

Mount the controller vertically on a non-flammable surface, allowing sufficient clearance around it for heat dissipation. Use appropriate screws for secure mounting.



Image: Side view of the charge controller, illustrating the integrated mounting brackets for secure installation.

3.3 Wiring Connections

Follow the connection order carefully to prevent damage to the controller or other components.



Image: Front view of the charge controller, showing the clearly labeled terminals for Wind Input, Battery, Solar Input, and DC Outputs.

1. **Connect the Battery:** Connect the battery bank to the "BATTERY" terminals on the controller. Ensure correct polarity (+ to + and - to -). The controller will automatically detect the system voltage (12V, 24V, or 48V) if it's an auto-sensing model.
2. **Connect the Wind Turbine:** Connect the wind turbine output cables to the "WIND INPUT" terminals. Ensure proper

connection according to your wind turbine's manual.

3. **Connect the Solar Panels:** Connect the solar panel array to the "SOLAR INPUT" terminals. Verify correct polarity.
4. **Connect DC Loads (Optional):** If using the DC output feature, connect your DC loads to the "OUT+" and "OUT-" terminals. Observe the maximum output current rating.

After all connections are made, the controller's LED display should illuminate, indicating proper power-up.

4. OPERATING INSTRUCTIONS

The controller provides real-time monitoring and control capabilities through its LED display and optional communication port.

4.1 LED Display and Navigation



Image: Side view of the charge controller, highlighting the LED display and the 'UP' and 'DOWN' buttons for navigating through data.

The LED display shows various system parameters. Use the "UP" and "DOWN" buttons (if present on your model) to cycle through the displayed information. The controller can display:

- **Wind Data:** Input voltage, current, power, cumulative power generated, RPM, and unloading current.
- **Solar Data:** Input voltage, current, power, and cumulative power generated.
- **Battery Data:** Voltage, charging current, power, and remaining battery power.
- **Load Parameters:** Output current, voltage, power, and operating time (if configured).

4.2 Load Output Modes

The controller supports multiple load output modes for connected DC loads. These modes are typically configured via the communication port and software (if applicable to your model) or through specific button sequences. Common modes include:

- **Light Control:** Turns the load on/off based on ambient light levels.
- **Time Control:** Turns the load on/off for a set duration.
- **Morning Light:** A specific timed output often used for street lighting applications.

Refer to the detailed software manual (if your model includes software) for advanced configuration of these modes.

4.3 Communication (Optional)

For models equipped with the TTL232 communication port, you can connect the controller to a computer using a USB to RS232 cable. This allows for detailed monitoring, data logging, and parameter configuration via dedicated software. Ensure you have the correct software and drivers installed for your operating system.

5. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your charge controller.

- **Visual Inspection:** Periodically inspect the controller and all wiring connections for any signs of damage, corrosion, or loose connections.
- **Cleaning:** Keep the controller clean and free from dust and debris. Use a dry, soft cloth. Do not use liquid cleaners or solvents.
- **Ventilation:** Ensure that the ventilation fins (if present) are not obstructed to allow for proper heat dissipation.
- **Battery Check:** Regularly check the battery bank's condition and electrolyte levels (for flooded batteries) as per the battery manufacturer's recommendations.
- **Firmware Updates:** If applicable, check the manufacturer's website for any available firmware updates for your controller model.

Always disconnect power from the wind turbine, solar panels, and battery before performing any maintenance that requires touching electrical connections.

6. TROUBLESHOOTING

This section provides guidance for common issues. For more complex problems, contact technical 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 solar.	Solar panel reverse connection, low sunlight, damaged panel/wiring.	Check solar panel polarity. Ensure sufficient sunlight. Inspect solar panel and wiring for damage. The controller has reverse connection protection, but correct wiring is essential for operation.
Battery not charging from wind.	Low wind speed, wind turbine not connected, over-speed/over-current protection active.	Ensure adequate wind speed. Check wind turbine connections. If protection is active, the controller will automatically resume charging once conditions normalize.
Load output not working.	Load disconnected, over-current protection, low battery voltage protection.	Check load connections. Verify battery voltage is above the low-voltage disconnect threshold. Reduce load if over-current protection is active.
Error code on display.	Specific system fault.	Refer to the detailed error code list in the full product manual (if available) or contact technical support with the specific code.

7. WARRANTY AND SUPPORT

For warranty information, please refer to the documentation provided with your purchase or contact the retailer/manufacture

directly. NINILADY products are typically covered by a limited warranty against defects in materials and workmanship. For technical support, troubleshooting assistance, or to inquire about replacement parts, please contact NINILADY customer service through their official website or the contact information provided at the point of purchase. When contacting support, please have your product model number and purchase date available.