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› RWRAPS RP 3000W Off Grid Inverter 12V DC/AC 110/220Vac Low Frequency Pure Sine Inverter Charger User Manual

RWRAPS 12V_220-240V 3000w

RWRAPS RP 3000W Off Grid Inverter Charger User Manual

Model: 12V_220-240V 3000w

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your RWRAPS RP 3000W Off Grid Inverter Charger. This device is designed to provide ultra-pure pure sine wave AC power, crucial for sensitive induction equipment requiring high startup current. It features advanced protection mechanisms and a user-friendly interface for real-time monitoring.



Figure 1.1: Top view of the RWRAPS RP 3000W Off Grid Inverter Charger.

Key features include:

- **Pure Sine Wave Output:** Ensures compatibility with sensitive electronics.
- **Comprehensive Protection:** Built-in safeguards against overvoltage, overload, overcurrent, undervoltage, overtemperature, and short circuits.
- **Intuitive LCD Display:** Provides real-time status updates on working temperature, battery power, output voltage, and performance.
- **Versatile Connectivity:** Supports various battery types and offers configurable AC/Battery input priority.

- Generator Compatibility: Can automatically start a generator when battery levels are low.

2. SETUP AND INSTALLATION

Before installation, ensure the inverter is placed in a well-ventilated area, away from direct sunlight, heat sources, and moisture. The unit is designed for easy installation in various environments, including trucks, RVs, camping setups, boats, or as an emergency power solution.



Figure 2.1: Rear panel connections of the Inverter Charger.

2.1 Connecting to Battery

To power your equipment, simply connect the inverter to a 12-volt battery. Ensure correct polarity when connecting the battery cables to the inverter's battery terminals (Battery Positive and Battery Negative). Standard mounting ports are provided for secure installation.

1. Locate the **Battery Positive (+)** and **Battery Negative (-)** terminals on the rear panel.
2. Connect the positive battery cable to the **Battery Positive** terminal.
3. Connect the negative battery cable to the **Battery Negative** terminal.
4. Ensure all connections are tight and secure to prevent arcing or poor performance.

2.2 AC Input/Output Connections

The inverter supports both AC input for charging and AC output for powering appliances. Refer to Figure 2.1 for the location of the Input/Output terminals.

1. Connect your AC power source (e.g., grid power, generator) to the **AC Input** terminals.
2. Connect your appliances or electrical system to the **AC Output** terminals.
3. Ensure proper wiring according to local electrical codes.

2.3 Remote Control and Dry Contact

The unit includes RJ11 and RJ45 ports for remote control and a dry contact for generator auto-start functionality.

1. Use the **RJ11/RJ45 Remote Control** ports for compatible remote monitoring and control devices.
2. The **Dry contact** (NC, C, NO) can be wired to a generator for automatic starting when the battery is low.

3. OPERATING INSTRUCTIONS

The RWRAPS RP 3000W Inverter Charger is designed for user-friendly operation with its comprehensive LCD and LED display.



Figure 3.1: LCD display and control panel.

3.1 Powering On/Off

Locate the main power switch (On/Off) on the unit. Press to turn the inverter on or off. The LCD display will illuminate upon startup.

3.2 LCD Display and Monitoring

The LCD screen provides rich and intuitive display content, allowing for quick and convenient debugging, installation, and

real-time monitoring of running status. Information displayed includes:

- Working Temperature
- Battery Power/Voltage
- Output Voltage (110V-220Vac)
- Output Frequency (50Hz/60Hz)
- Equipment Performance
- Protection Functions (active warnings)

3.3 Configuration Settings

The inverter allows for configurable settings via the LCD interface:

- **AC/Battery Input Priority:** Set whether the inverter prioritizes AC input (utility/generator) or battery power.
- **Battery Type:** Select the appropriate battery type for optimized charging performance. Supported types include Gel, AGM, Sealed Lead Acid, Open Lead Acid, Calcium, De-sulphation, LI (Lithium), and other user-defined options.
- **Output Frequency:** Adjust between 50Hz and 60Hz as required.

3.4 Automatic Functions

- **Auto Restart:** The unit will automatically restart when AC power is recovered after an interruption.
- **Generator Auto-Start:** Compatible with generators, the dry contact can initiate generator startup automatically when the battery charge is low.

4. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your RWRAPS RP 3000W Inverter Charger.

4.1 Cleaning and Ventilation

- Keep the inverter's ventilation openings clear of dust and debris.
- The smart fan control system helps maintain optimal operating temperature. Ensure fans are not obstructed.
- Clean the exterior with a dry, soft cloth. Do not use liquid cleaners or solvents.

4.2 Battery Care

The smart battery charger design optimizes battery performance and extends battery life.

- Ensure the correct battery type is selected in the inverter settings for proper charging.
- Periodically check battery terminals for corrosion and ensure connections are secure.
- Follow the battery manufacturer's guidelines for specific battery maintenance.

5. TROUBLESHOOTING

The inverter is equipped with multiple protection features to ensure safe operation. If an issue occurs, the unit will typically provide an audible beep and display an error on the LCD.

5.1 Common Issues and Solutions

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
Inverter beeps and powers off, screen flickers.	Overload, short circuit, overvoltage, undervoltage, or overtemperature protection activated.	Reduce connected load. Check for short circuits in wiring. Verify input voltage is within range. Allow unit to cool down. The unit will automatically restart after correcting the error.
No output power.	Battery low, inverter off, or faulty connection.	Check battery charge. Ensure inverter is switched on. Verify all battery and output connections are secure.
Battery not charging.	AC input not connected, incorrect battery type selected, or charger input protection active.	Ensure AC input is connected and live. Verify correct battery type setting. Check charger input protection status.

5.2 Protection Features

The inverter's internal chip controls various protection mechanisms:

- **Overvoltage Protection:** Shuts down if input voltage is too high.
- **Overload Protection:** Activates if the connected load exceeds the inverter's capacity.
- **Overcurrent Protection:** Protects against excessive current draw.
- **Undervoltage Protection:** Prevents battery over-discharge.
- **Overtemperature Protection:** Shuts down if internal temperature becomes too high.
- **Short Circuit Protection:** Immediately cuts power in case of a short circuit.

When a protection state is triggered, the inverter will emit a short beep, power off, and the screen may flicker. It will automatically restart once the error condition is resolved.

6. SPECIFICATIONS

Detailed technical specifications for the RWRAPS RP 3000W Off Grid Inverter Charger (Model: 12V_220-240V 3000w).

- **Model:** 12V_220-240V 3000w
- **Output Power:** 3000 Watts
- **Input Voltage:** 12 Volts DC
- **Output Voltage:** 110V-220Vac (Configurable)
- **Output Frequency:** 50Hz / 60Hz (Configurable)
- **Inverter Type:** Low Frequency Pure Sine Inverter
- **Charger Type:** AC Charger with Ring Transformer
- **Supported Battery Types:** Gel, AGM, Sealed Lead Acid, Open Lead Acid, Calcium, De-sulphation, LI (Lithium), Other User-defined.
- **Communication Interface:** RS232 (optional)
- **Weight:** Approximately 33.1 pounds (15 kg)
- **Features:** Phase detection for stability, Smart fan control.

7. WARRANTY AND SUPPORT

While specific warranty details are not provided in this manual, RWRAPS products are typically covered by a manufacturer's warranty. For extended protection, consider purchasing additional protection plans available at the time of

purchase, such as 2-Year or 3-Year Protection Plans.

For technical support, troubleshooting assistance beyond this manual, or warranty claims, please contact your retailer or the RWRAPS customer service department. Keep your purchase receipt and product serial number handy for faster service.