Renogy RIV1230P2-126

Renogy 3000W 12V Pro Pure Sine Wave Inverter Instruction Manual

Model: RIV1230P2-126

1. Introduction

The Renogy 3000W 12V Pro Pure Sine Wave Inverter converts 12V DC battery power into stable 110V/120V AC household electricity. This inverter is designed for reliable performance in various applications, including RVs, trucks, and off-grid home energy systems. Key features include a 3000W continuous power output, 6000W peak power, built-in Bluetooth for monitoring, an EcoSleep mode for energy conservation, and a remote controller for convenient operation.

Figure 1: Renogy 3000W 12V Pro Pure Sine Wave Inverter with included remote control and communication cable.

2. Safety Information

Please read and understand all safety instructions before installing or operating the inverter. Failure to follow these instructions may result in electrical shock, fire, or serious injury.

- The inverter is UL 458 & CSA C22.2 No. 107.1 certified, ensuring compliance with safety and quality standards.
- Ensure the inverter chassis is properly grounded to prevent electrical hazards.
- The inverter features pre-charging functionality to ensure a smooth start, protecting both the battery and the inverter from high peak currents during connection.
- Dual-polarity reverse connection protection is integrated to prevent internal damage in case of accidental misconnection of battery positive and negative terminals. However, always verify correct polarity before making connections.
- Be aware that the surge capacity of inductive appliances can exceed their continuous rating by 5 to 7 times. Plan your loads accordingly to avoid unexpected shutdowns.
- Do not expose the inverter to rain, moisture, or excessive dust.
- Operate the inverter in a well-ventilated area to prevent overheating.

Figure 2: Inverter security features including pre-charging and dual-polarity reverse protection.

Figure 3: Essential safety protections including GFCI, FCC, and ETL certifications.

3. Setup

3.1 Mounting

Mount the inverter in a dry, well-ventilated area, away from direct sunlight, heat sources, and flammable materials. Ensure there is adequate space around the inverter for proper airflow and cooling.

3.2 DC Input Connection

Connect the inverter to your 12V battery bank. Use appropriate gauge cables for the power rating. The inverter is equipped with dual-polarity reverse connection protection, but it is crucial to always connect the positive (+) terminal of the inverter to the positive (+) terminal of the battery and the negative (-) terminal of the inverter to the negative (-) terminal of the battery. The pre-charging function will help protect the system during initial connection.

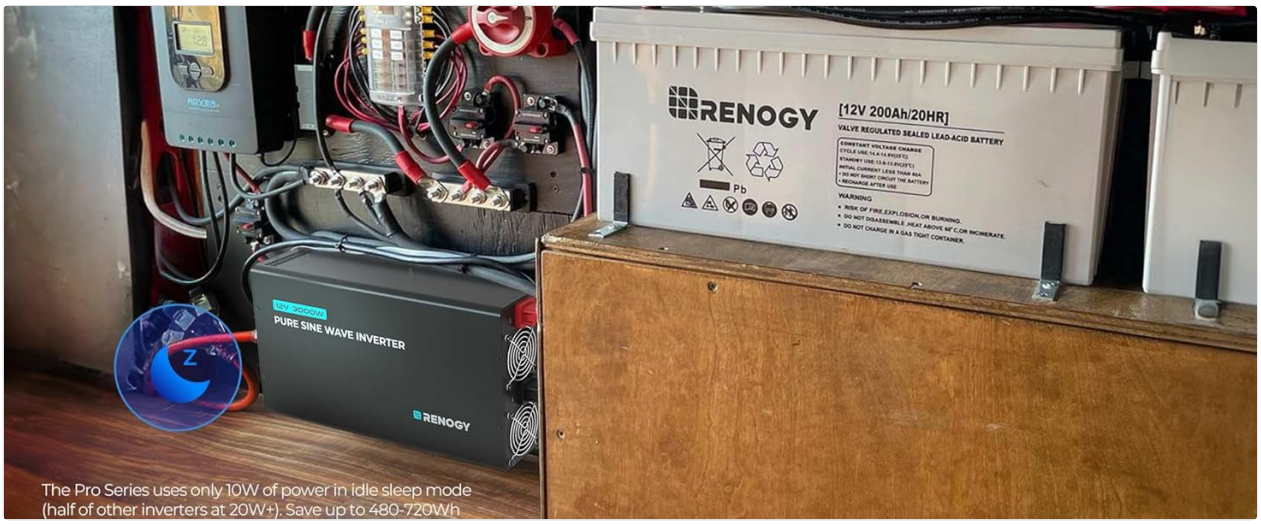


Figure 4: Connecting battery cables to the inverter, demonstrating reverse polarity protection.

3.3 AC Output Connection

The inverter provides two standard AC sockets and one AC terminal block for connecting your AC loads. Ensure that the total continuous power draw of your appliances does not exceed 3000W. For permanent installations, use the AC terminal block following local electrical codes.

3.4 Remote Controller Connection

Connect the included 16.4ft wired remote controller to the designated port on the inverter. This allows for convenient power control and monitoring from a distance.

Figure 5: The Renogy wired remote controller.

4. Operating Instructions

4.1 Powering On/Off

To power on the inverter, press the power button on the unit or the remote controller. The indicator lights will confirm operation. To power off, press the button again.

4.2 EcoSleep Mode

The intelligent EcoSleep mode conserves energy by automatically switching the inverter to a low-power sleep state when no load is detected. In this mode, idle power consumption is less than 10W. The inverter will automatically wake up when an AC load is connected or detected.

Figure 6: Inverter operating in EcoSleep mode, showing smartphone monitoring interface.

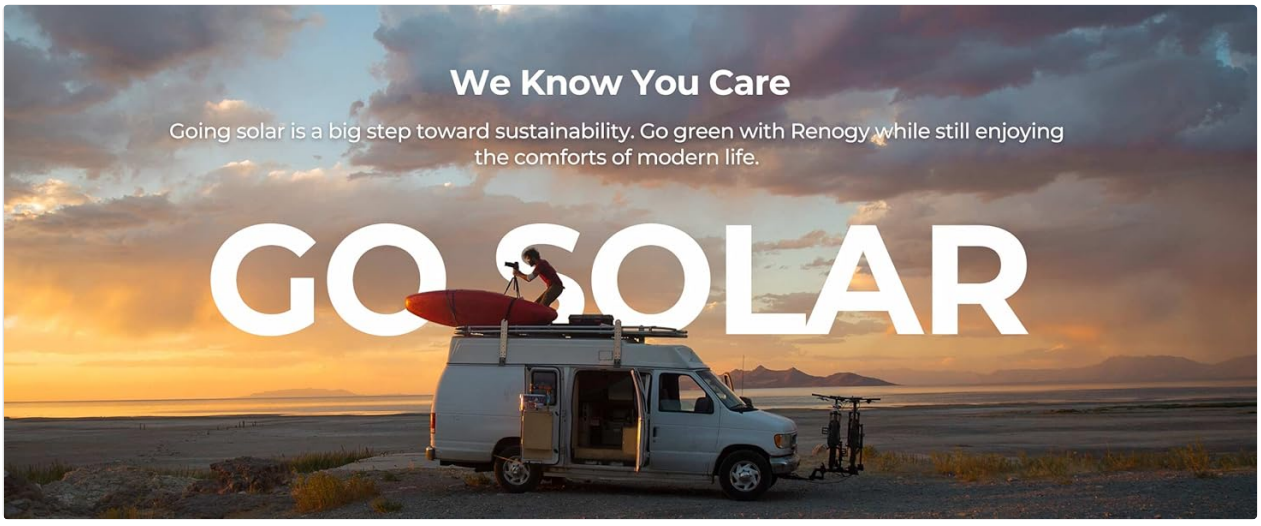


Figure 7: Inverter in an RV setup, demonstrating EcoSleep mode activation.

4.3 Bluetooth Monitoring

The inverter features built-in Bluetooth connectivity, allowing for real-time monitoring via a compatible smartphone application. It also supports RV-C connectivity for seamless integration with Renogy One Core/M1

systems, providing enhanced control and convenience.

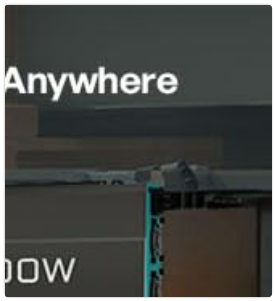


Figure 8: Real-time monitoring of the inverter via a smartphone application.

Figure 9: Example of RV appliances powered by the inverter.

5. Maintenance

Regular maintenance ensures the longevity and optimal performance of your inverter.

- Keep the inverter clean and free from dust and debris. Use a dry cloth for cleaning.
- Ensure all electrical connections, especially battery terminals, are tight and free from corrosion.
- Verify that the ventilation openings are not blocked to allow for proper heat dissipation.

- The inverter supports multiple battery types including GEL, AGM, SLA, FLD, and Lithium (LI). Ensure your battery settings are correctly configured if applicable.

6. Troubleshooting

If you encounter issues with your inverter, refer to the following general troubleshooting steps. For specific error codes or persistent problems, contact Renogy customer support.

- **No Power Output:** Check battery connections for tightness and correct polarity. Verify battery voltage is within the inverter's operating range. Ensure the inverter is powered on.
- **Low AC Output Voltage:** Check DC input voltage from the battery. Ensure the load is not exceeding the inverter's continuous power rating.
- **Overload Indication:** Reduce the number of connected AC appliances. Disconnect high-power inductive loads that may cause surge spikes.
- **Overheating:** Ensure the inverter is in a well-ventilated area. Clear any obstructions from the cooling fans. Reduce the load if operating in high ambient temperatures.

7. Specifications

Feature	Specification
Model Name	3000W Pure Sine Wave Inverter Pro
Item Model Number	RIV1230P2-126
Continuous Power Output	3000W
Peak Power Output	6000W
DC Input Voltage	12V
AC Output Voltage	110V/120V
Conversion Efficiency	Up to 90%
Full-load Efficiency	Exceeding 87%
Idle Power Consumption (EcoSleep Mode)	< 10W
Total Harmonic Distortion (THD)	< 2%
AC Sockets	2
AC Terminal Block	1
Remote Controller Cable Length	16.4 ft
Product Dimensions (L x W x H)	19.5 x 9.2 x 4.2 inches
Item Weight	16.6 pounds
Certifications	UL 458, CSA C22.2 No. 107.1, FCC, ETL

Figure 10: Inverter dimensions.

Figure 11: Feature comparison between Renogy P2 PRO Series and P2 Series inverters.

8. Warranty and Support

8.1 Warranty

The Renogy 3000W 12V Pro Pure Sine Wave Inverter comes with a 3-year warranty. For any issues encountered within this period, please contact Renogy customer support.

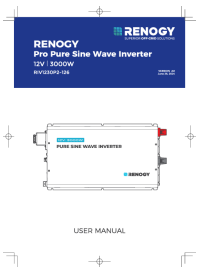
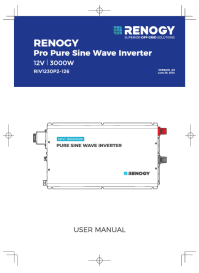
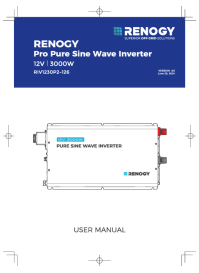
8.2 Customer Support

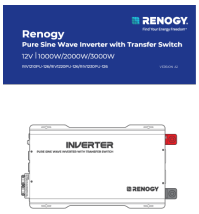
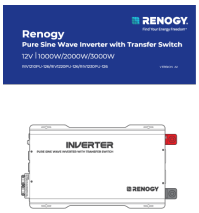
Renogy is committed to providing excellent customer service. Support includes:

- 24-hour prompt response to inquiries.
- Access to local warehouses in the US for efficient service.
- Professional technical guidance to assist with installation, operation, and troubleshooting.

Figure 12: Renogy customer support services.

Related Documents - RIV1230P2-126

	Renogy RIV1230P2-126 Pro 3000W 12V Pure Sine Wave Inverter User Manual Comprehensive user manual for the Renogy RIV1230P2-126 Pro 3000W 12V Pure Sine Wave Inverter with EcoSleep Mode, covering features, specifications, installation, operation, and safety guidelines.
	Renogy 3000W 12V Pro Pure Sine Wave Inverter User Manual Comprehensive user manual for the Renogy 3000W 12V Pro Pure Sine Wave Inverter, detailing installation, operation, safety guidelines, specifications, and troubleshooting. Features EcoSleep mode for energy efficiency.
	Renogy 12V 3000W Pro Pure Sine Wave Inverter User Manual User manual for the Renogy 12V 3000W Pro Pure Sine Wave Inverter, providing essential operation, maintenance, and safety information. Learn about product features, disclaimers, and trademarks.

	[Renogy 12V Pure Sine Wave Inverter with Transfer Switch User Manual] This user manual provides comprehensive instructions for the Renogy 12V Pure Sine Wave Inverter with Transfer Switch, available in 1000W, 2000W, and 3000W models. It covers installation, operation, safety precautions, troubleshooting, and technical specifications for off-grid applications.
	[Renogy 12V Pure Sine Wave Inverter Core Series - Technical Specifications and Features] Explore the Renogy 12V Pure Sine Wave Inverter Core Series, featuring efficient power conversion, quiet operation, and advanced safety features. Ideal for off-grid systems. Includes technical specifications for RIV1210PU-126, RIV1220PU-126, and RIV1230PU-126 models.
	[Renogy 12V Pure Sine Wave Inverter with Transfer Switch User Manual] Comprehensive user manual for Renogy 12V Pure Sine Wave Inverters (1000W, 2000W, 3000W) with Transfer Switch, covering installation, operation, safety, troubleshooting, and specifications.