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AIMS Power PWRINV250012W

AIMS Power 2500 Watt 12 VDC Car Power Inverter User Manual

Model: PWRINV250012W

1. Introduction

This manual provides essential information for the safe and efficient operation of your AIMS Power 2500 Watt 12 VDC Car Power Inverter. Please read these instructions thoroughly before installation and use. Keep this manual for future reference.

2. Safety Information

WARNING: Improper installation or use can result in electric shock, fire, or damage to the inverter and connected devices. Always follow safety guidelines.

- Ensure proper ventilation around the inverter.
- Do not expose the inverter to water, rain, or excessive moisture.
- Avoid operating the inverter in areas with flammable fumes or gases.
- Connect the inverter only to a 12 VDC battery system.
- Ensure all connections are tight and secure to prevent arcing.
- Do not open the inverter casing; there are no user-serviceable parts inside.
- Always disconnect the battery before performing any maintenance or installation.
- The inverter features over-temperature, overload, and short-circuit protection. Do not attempt to bypass these safety features.

3. Package Contents

Verify that your package contains the following items:

- AIMS Power 2500 Watt 12 VDC Car Power Inverter (Model PWRINV250012W)
- User Manual

Note: Battery cables are not included and must be purchased separately. Ensure appropriate gauge cables are used for the power rating.

4. Product Features

The AIMS Power 2500 Watt Inverter is designed for mobile and off-grid power applications, offering robust performance and safety features:

- 2500 Watts Continuous Output Power
- 5000 Watts Surge Power Capacity (Peak)
- Modified Sine Wave Output
- 12 VDC Input for versatile applications
- Front Panel Digital Display for Battery Voltage and Current Usage (Ammeter)
- Over-temperature and Overload LED Indicators
- Two AC Receptacles (UL rated 1500 watts maximum per outlet)
- Integrated ON/OFF Switch
- Comprehensive Protection: Over-temperature, Overload, AC Output Short Circuit, High/Low Input Voltage
- Thermally Controlled Cooling Fan
- Internally Fused Protection
- Automatic Reset in most fault conditions
- Durable Aluminum Casing for optimal heat dissipation
- Pre-wired for optional Remote ON/OFF Switch
- Pre-slotted Mounting Plate for easy installation



Figure 4.1: AIMS Power 2500 Watt 12 VDC Car Power Inverter, showing its compact design and robust aluminum casing.

5. Setup and Installation

5.1 Choosing a Location

Select a dry, well-ventilated area for installation. The inverter should be mounted securely to a flat surface using the pre-slotted mounting plate. Ensure there is sufficient clearance around the unit for airflow, especially around the cooling fan.



Figure 5.1: The inverter features pre-drilled mounting holes for secure installation.

5.2 DC Input Connection

CAUTION: Incorrect polarity will damage the inverter and void the warranty. Always connect the negative terminal first, then the positive.

1. Ensure the inverter's ON/OFF switch is in the "OFF" position.
2. Connect the negative (black) battery cable to the negative (-) terminal on the inverter.
3. Connect the other end of the negative cable to the negative terminal of your 12 VDC battery.
4. Connect the positive (red) battery cable to the positive (+) terminal on the inverter.
5. Connect the other end of the positive cable to the positive terminal of your 12 VDC battery.
6. Ensure all connections are tight.



Figure 5.2: DC input terminals (red for positive, black for negative) and cooling fan on the inverter.

5.3 AC Output Connection

Once the DC input is securely connected, you can plug your AC devices into the inverter's output receptacles.

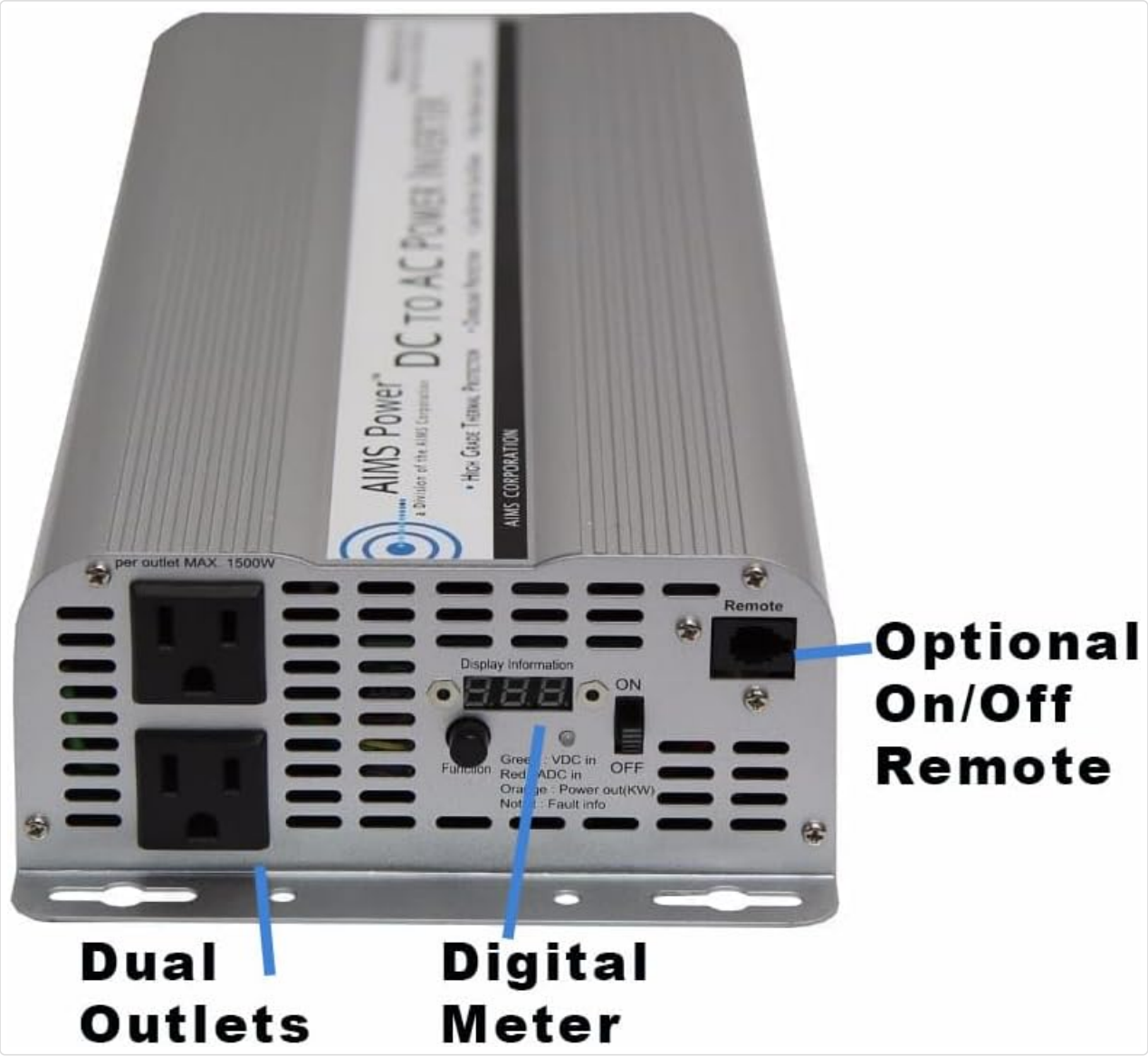


Figure 5.3: The inverter's back panel features dual AC outlets, a digital meter, and an optional remote ON/OFF port.



Figure 5.4: Close-up of the AC output panel, showing the two AC receptacles, digital display, ON/OFF switch, and remote port.

- Each AC receptacle is rated for a maximum of 1500 watts. Do not exceed this limit per outlet.
- The total continuous output for the inverter is 2500 watts.

5.4 Optional Remote ON/OFF Switch

The inverter is pre-wired for an optional remote ON/OFF switch. Connect the remote switch cable to the "Remote" port on the inverter's AC output panel.

6. Operation

6.1 Turning the Inverter ON/OFF

1. Ensure all DC connections are secure.
2. If using a remote switch, ensure it is connected.
3. Flip the ON/OFF switch on the inverter (or the remote switch) to the "ON" position.
4. The digital display will illuminate, showing battery voltage or current usage.
5. To turn off, flip the switch to the "OFF" position.

6.2 Monitoring with the Digital Display

The front panel digital display provides real-time information:

- **Battery Voltage (VDC):** Indicates the input voltage from your battery.
- **Current Usage (Amps or KW):** Shows the rate at which power is being drawn from your battery.

Use the "Function" switch next to the display to cycle through the display modes (VDC, ADC, KW, Fault info).

6.3 Connecting AC Devices

Plug your AC devices into the 2-3 prong receptacles. Ensure the total wattage of connected devices does not exceed 2500 watts continuous, and no single outlet exceeds 1500 watts.
Note: This is a modified sine wave inverter. Some sensitive electronic devices or devices with AC motors may not operate optimally or may be damaged by modified sine wave power. Consult your device's manufacturer for compatibility.

7. Maintenance

- **Cleaning:** Periodically clean the exterior of the inverter with a dry cloth. Ensure cooling vents are free from dust and debris.
- **Connections:** Regularly check all DC and AC connections to ensure they are tight and free from corrosion.
- **Battery:** Maintain your 12 VDC battery according to its manufacturer's instructions. A healthy battery is crucial for inverter performance.
- **Cooling Fan:** The cooling fan operates automatically based on temperature. Ensure it is not obstructed.

WARNING: Do not attempt to service the inverter yourself. Refer all servicing to qualified personnel.

8. Troubleshooting

The inverter is equipped with diagnostic indicators and automatic protection features. Refer to the following table for common issues:

Problem	Possible Cause	Solution
No power output, digital display off.	• Inverter switch is OFF. • Loose DC connections. • Low battery voltage (below 10V shutdown). • Blown internal fuse.	• Turn inverter ON. • Check and tighten DC cables. • Recharge or replace battery. • Contact AIMS Power support for fuse replacement.
Overload LED indicator ON.	• Connected load exceeds 2500W continuous or 1500W per outlet. • High surge current from a device.	• Reduce the total load. • Disconnect and reconnect devices one by one to identify the problematic device. • Consider a higher wattage inverter for devices with high surge requirements.
Over-temperature LED indicator ON.	• Inverter is overheating due to excessive load or poor ventilation.	• Reduce load. • Improve ventilation around the inverter. • Allow inverter to cool down.

Problem	Possible Cause	Solution
Low Battery Voltage Alarm sounds.	• Battery voltage is dropping (around 10.5V).	• Reduce load. • Recharge battery immediately to prevent shutdown.
Inverter shuts down automatically.	• Low battery voltage (below 10V). • Overload condition. • Over-temperature condition. • AC output short circuit. • High input voltage (above 17V).	• Address the specific fault condition (low battery, overload, over-temperature, short circuit, high voltage). The inverter will automatically reset in most fault conditions once the issue is resolved.

9. Specifications

Feature	Detail
Model	PWRINV250012W
Continuous Output Power	2500 Watts
Surge Power Capacity (Peak)	5000 Watts
DC Input Voltage Range	10.5 - 15.5 VDC
Output Voltage	120 VAC +/- 10%
Output Waveform	Modified Sine Wave with phase correction
Output Frequency	60 Hz +/- 1 Hz
Low Battery Voltage Alarm	10.5 +/- 0.5 V
Low Battery Voltage Shutdown	10 +/- 0.5 V
No Load Current Draw	<0.2 Amps
Full Load Efficiency	90%
Minimum Operating Temperature	5°F (-15°C)
Maximum Operating Temperature	130°F (54°C)
AC Output Receptacles	Quadruple 2-3 prong type (UL rated 1500W max per outlet)
High Input Voltage Protection	17 V
Low Input Voltage Shutdown	10 V
Weight	6 Pounds (2.72 kg)
UPC	852669374264, 840271000060

Feature	Detail
GTIN	852669374264, 840271000060

10. Warranty and Support

10.1 Warranty Information

AIMS Power products typically come with a manufacturer's warranty. Please refer to the warranty card included with your product or visit the official AIMS Power website for the most current and detailed warranty information. Keep your proof of purchase for warranty claims.

10.2 Customer Support

For technical assistance, troubleshooting beyond this manual, or warranty inquiries, please contact AIMS Power customer support. Contact details can usually be found on the manufacturer's website or on the product packaging.
AIMS Power Official Website: www.aimscorp.net

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