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AIMS Power PWRI200012120S

AIMS Power PWRI200012120S 2000W Pure Sine Inverter User Manual

Model: PWRI200012120S

1. Introduction

Thank you for choosing the AIMS Power PWRI200012120S 2000W Pure Sine Inverter. This device converts 12V DC battery power into 120V AC household power, providing clean, stable electricity suitable for sensitive electronics. This manual provides essential information for the safe installation, operation, and maintenance of your inverter. Please read it thoroughly before use.

2. Safety Instructions

Observe the following safety precautions to prevent injury and damage to the inverter or connected equipment.

- **Proper Ventilation:** Ensure adequate airflow around the inverter. Do not block cooling vents.
- **Dry Environment:** Install the inverter in a dry location, away from water, rain, or excessive humidity.
- **Flammable Materials:** Do not operate the inverter near flammable liquids or gases.
- **Correct Voltage:** Connect the inverter only to a 12V DC power source. Connecting to other voltages may cause damage.
- **Grounding:** Ensure the inverter is properly grounded according to local electrical codes.
- **Overload Protection:** Avoid exceeding the inverter's rated continuous power output (2000W) to prevent automatic shutdown and potential damage.
- **Temperature Control:** The inverter features over-temperature protection. If the internal temperature exceeds safe limits, the unit will shut down. Allow it to cool before restarting.
- **Short Circuit Protection:** The inverter is equipped with short circuit protection on the AC output.
- **Input Voltage Protection:** Includes warnings and automatic shutdown for both over-voltage and under-voltage conditions on the DC input.
- **Professional Installation:** If you are unsure about any installation steps, consult a qualified electrician.

3. Product Overview

The AIMS Power PWRI200012120S is a 2000W Pure Sine Inverter designed for reliability and efficiency.

Key Features:

- 2000 Watts Continuous Power, 4000 Watts Peak Power
- Pure Sine Wave Output (120V AC, 60 Hz)
- 12V DC Input (Operating Range: 9.5V - 16V)
- Multiple Safety Protections: Short Circuit, Over-voltage, Under-voltage, Over-temperature, Overload
- Two GFCI AC Outlets
- USB Port (2.1A)
- AC Direct Connect Terminal Block
- Dual Thermally Controlled Cooling Fans
- Optional Remote Control Port (Remote # REMOTEHF sold separately)
- High Efficiency: 90%

Component Identification:



Figure 1: Rear Panel. This image displays the rear panel of the AIMS Power 2000W Pure Sine Inverter. Key components visible include the positive (red) and negative (black) DC input terminals for battery connection, and a cooling fan for thermal management.



Figure 2: Front Panel. This image shows the front panel of the AIMS Power 2000W Pure Sine Inverter. It features two GFCI-protected AC outlets for connecting standard appliances, a USB charging port, and a port for an optional remote control. The power switch and indicator lights are also visible.

4. Setup

Proper setup is crucial for the safe and efficient operation of your inverter.

1. **Mounting:** Choose a secure, well-ventilated, and dry location for mounting the inverter. Ensure it is away from direct sunlight, heat sources, and moisture.
2. **Battery Connection:**
    - Ensure the inverter's power switch is in the "OFF" position.
    - Connect the positive (+) terminal of the 12V DC battery bank to the red (+) terminal on the inverter.
    - Connect the negative (-) terminal of the 12V DC battery bank to the black (-) terminal on the inverter.
    - Use appropriately sized cables to minimize voltage drop and ensure safe current flow.
    - **Important Note:** When connecting the inverter to the battery for the first time, a small arc may occur. This is normal and due to capacitor saturation within the inverter. Ensure connections are firm and secure.
3. **Grounding:** Connect the inverter's chassis ground terminal to a reliable earth ground or vehicle chassis ground.
4. **AC Output Connection:**
    - For direct wiring, use the AC direct connect terminal block. Consult a qualified electrician for this type of installation.
    - For standard appliances, plug them into the GFCI AC outlets on the front panel.
5. **Optional Remote Control:** If using the optional remote control (Part # REMOTEHF), connect it to the designated port on the front panel.

5. Operating Instructions

Follow these steps to operate your AIMS Power inverter.

1. **Power On:** Once all connections are secure, switch the inverter's power button to the "ON" position. The power indicator light should illuminate.
2. **Connect Devices:** Plug your AC appliances into the GFCI outlets. For USB charging, connect your device to the USB port.
3. **Monitor Load:** Ensure the total wattage of connected appliances does not exceed the inverter's continuous power rating of 2000W. The inverter can handle peak loads up to 4000W for short durations.
4. **Cooling Fans:** The dual cooling fans are thermally controlled and will automatically activate when the internal temperature reaches approximately 40°C (104°F) to maintain optimal operating temperature.
5. **Remote Operation (Optional):** If an optional remote control is connected, you can power the inverter on or off from a convenient location.
6. **Power Off:** When finished, switch the inverter's power button to the "OFF" position. Disconnect appliances if they will not be used for an extended period.

6. Maintenance

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

- **Keep Clean:** Periodically clean the exterior of the inverter with a dry cloth. Ensure cooling vents are free from dust and debris.
- **Check Connections:** Regularly inspect all DC and AC connections to ensure they are tight and free from corrosion. Loose connections can cause overheating and poor performance.
- **Battery Health:** Maintain your 12V DC battery bank according to the battery manufacturer's recommendations. A healthy battery is essential for inverter performance.
- **Ventilation:** Ensure the installation area remains well-ventilated and free from obstructions to airflow.
- **Storage:** If storing the inverter for an extended period, disconnect it from the battery and store it in a cool, dry place.

7. Troubleshooting

This section addresses common issues you might encounter with your inverter.

Problem	Possible Cause	Solution
Inverter does not turn on.	• Loose battery connections. • Battery voltage too low (below 9.5V). • Inverter switch is OFF. • Blown fuse (internal or external).	• Check and tighten all battery cable connections. • Recharge or replace the battery. • Ensure the power switch is ON. • Consult AIMS Power support for fuse replacement.
No AC output, but inverter is ON.	• Overload condition. • Over-temperature shutdown. • Input over-voltage (above 16V) or under-voltage (below 9.5V). • GFCI tripped.	• Reduce the load. Disconnect some appliances. • Allow the inverter to cool down. Ensure proper ventilation. • Check battery voltage. Correct charging system if over-voltage. Recharge battery if under-voltage. • Press the "RESET" button on the GFCI outlet.

Problem	Possible Cause	Solution
Cooling fan not operating.	• Inverter is not under sufficient load or temperature. • Fan malfunction.	• Fans are thermally controlled and only activate when needed (approx. 40°C). This may be normal. • If the inverter is hot and fans are not running, contact AIMS Power support.
Arcing when connecting to battery.	• Normal capacitor charging.	• This is expected. Ensure connections are made quickly and firmly.

8. Specifications

Detailed technical specifications for the AIMS Power PWRI200012120S inverter.

Specification	Value
Model	PWRI200012120S
Continuous Output Power	2000 Watts
Peak Output Power	4000 Watts
Output Waveform	Pure Sine Wave
Output Voltage	120 Volts AC
Output Frequency	60 Hz
Input Voltage (DC)	12 Volts DC
Operating Voltage Range (DC)	9.5V - 16V
Low Battery Alarm	9.8V ± 0.5V
Low Battery Shutdown	9.5V ± 0.5V
High Input Voltage Shutdown	16V
Efficiency	90%
Number of AC Outlets	2 (GFCI)
USB Output	2.1A
Operating Temperature	0°C – 40°C (32°F – 104°F)
Storage Temperature	-10°C – 45°C
Dimensions (L x W x H)	45.7 cm x 24.1 cm x 9.9 cm (18" x 9.5" x 3.88")
Weight	5.35 kg (11.8 lbs)
Certifications	UL, CSA
UPC	840271003177

9. Warranty and Support

AIMS Power stands behind its products with comprehensive warranty and support services.

- **Manufacturer's Warranty:** This AIMS Power inverter comes with a 2-year manufacturer's warranty from the date of purchase. This warranty covers defects in materials and workmanship under normal use.
- **Technical Support:** AIMS Power provides lifetime technical support for all its products.
- **Contact Information:** For warranty claims, technical assistance, or any questions regarding your inverter, please contact AIMS Power customer service. Refer to the official AIMS Power website for the most current contact details.

10. Disposal Information

When the inverter reaches the end of its service life, please dispose of it responsibly. Electronic devices should not be disposed of with general household waste. Consult your local authorities for information on electronic waste recycling and disposal programs.

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