PowMr POW-HVM4.2M-24V-N

PowMr 4200W Off-Grid Hybrid Solar Inverter User Manual

Model: POW-HVM4.2M-24V-N

1. Introduction

This manual provides comprehensive instructions for the installation, operation, and maintenance of your PowMr 4200W Off-Grid Hybrid Solar Inverter. This all-in-one unit combines the functions of an inverter, solar charger, and battery charger to deliver an uninterruptible power supply for various applications.

The inverter features a pure sine wave output, a 120A MPPT solar charge controller, and is designed to work with 24V lead-acid and lithium battery systems, providing 220-230VAC output.



Figure 1: Front view of the PowMr 4200W Off-Grid Hybrid Solar Inverter.



Figure 2: Overview of the PowMr 4200W Solar Inverter Charger highlighting its main capabilities.

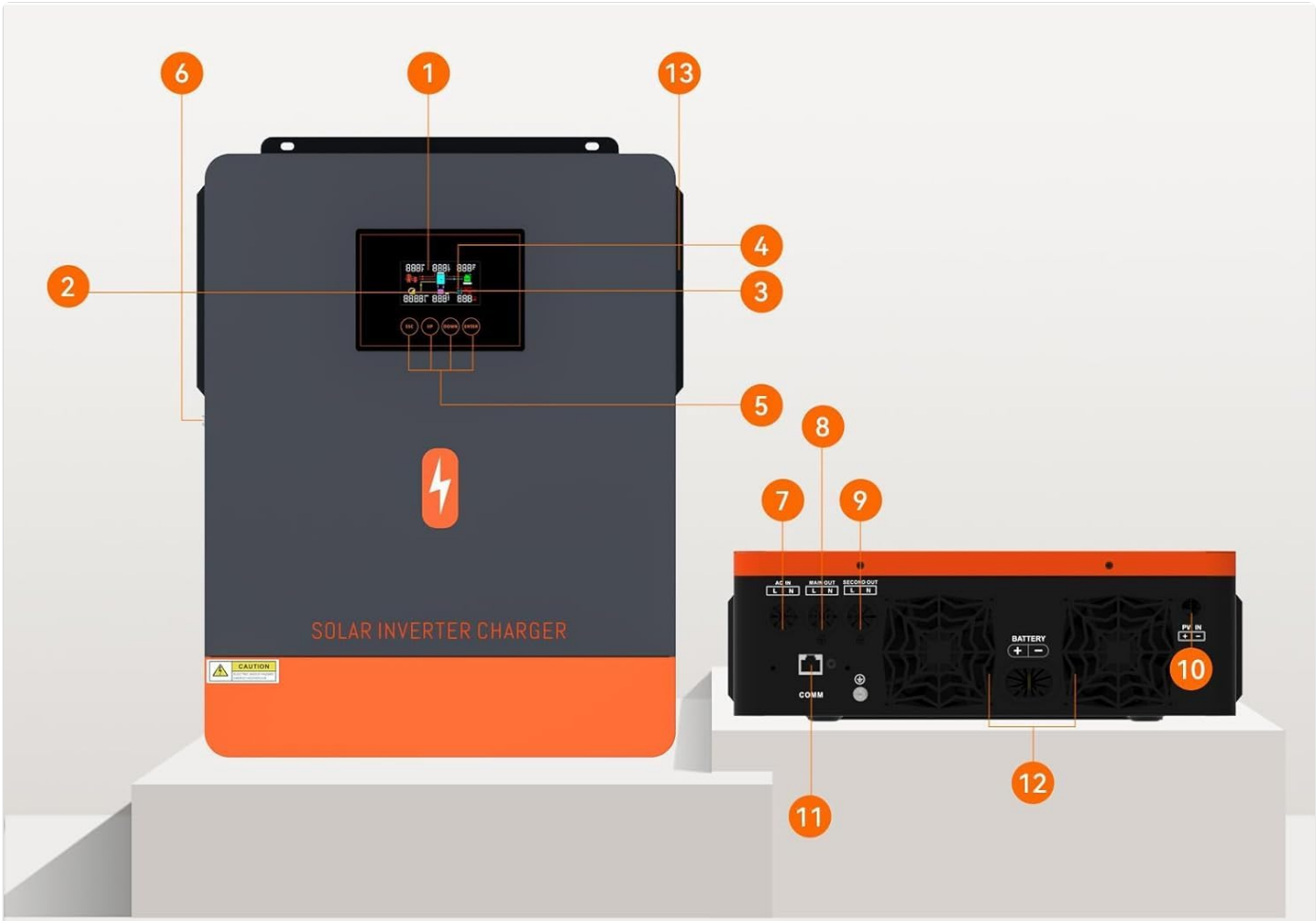
2. Safety Instructions

Please read all instructions and warnings carefully before installation and operation. Failure to follow these instructions may result in electric shock, fire, or severe injury.

- Installation must be performed by qualified personnel.
- Ensure all wiring is correctly connected and securely fastened.
- Do not disassemble the inverter. There are no user-serviceable parts inside.
- Keep the inverter away from flammable materials, moisture, and direct sunlight.
- Ensure adequate ventilation around the inverter to prevent overheating.
- Always disconnect all power sources (AC, DC, and PV) before performing any maintenance or wiring.

3. Product Components

Familiarize yourself with the various components and connection points of your PowMr Hybrid Solar Inverter.



1	LCD display	6	Power ON/OFF switch	11	RS232/WIFI/Remote LCD Communication Port)
2	Status indicator	7	AC input		
3	Charging indicator	8	Main output	12	Battery input
4	Fault indicator	9	Second output	13	Anti dust cover
5	Touch Function buttons	10	PV 1 and PV 2 input		

Figure 3: Labeled components and connection points of the inverter.

1. **LCD Display:** Shows system status and operational parameters.
2. **Status Indicator:** LED light indicating the inverter's operational status.
3. **Charging Indicator:** LED light indicating battery charging status.
4. **Fault Indicator:** LED light indicating system errors or faults.
5. **Touch Function Buttons:** Used for navigating menus and adjusting settings.
6. **Power ON/OFF Switch:** Main power control for the inverter.
7. **AC Input:** Connection point for grid or generator AC power.
8. **Main Output:** Primary AC output for connected loads.
9. **Second Output:** Secondary AC output for connected loads (if applicable).
10. **PV 1 and PV 2 Input:**Connection points for solar panel arrays.
11. **RS232/WIFI/Remote LCD Communication Port:** For data communication and remote monitoring.
12. **Battery Input:** Connection points for the 24V battery bank.
13. **Anti-Dust Cover:** Protects internal components from dust.

4. Setup and Installation

Proper installation is crucial for the safe and efficient operation of your inverter. Refer to the detailed wiring diagrams in the full PDF manual for specific connections.

4.1 Mounting the Inverter

- Mount the inverter vertically on a non-flammable surface.
- Ensure sufficient clearance (at least 20 cm) around the unit for proper airflow.
- Avoid mounting in direct sunlight or areas with high humidity.

4.2 Battery Connection

The inverter is compatible with 24V lead-acid (Flooded, GEL, AGM) and lithium batteries. Ensure the battery type is correctly configured in the inverter settings after connection.

- Connect the battery cables to the Battery Input terminals (12). Observe correct polarity (+ to + and - to -).
- Ensure battery cables are adequately sized for the current draw.
- For lithium batteries, the system will activate after 3 seconds when solar energy is present and the battery type is set to LiB.

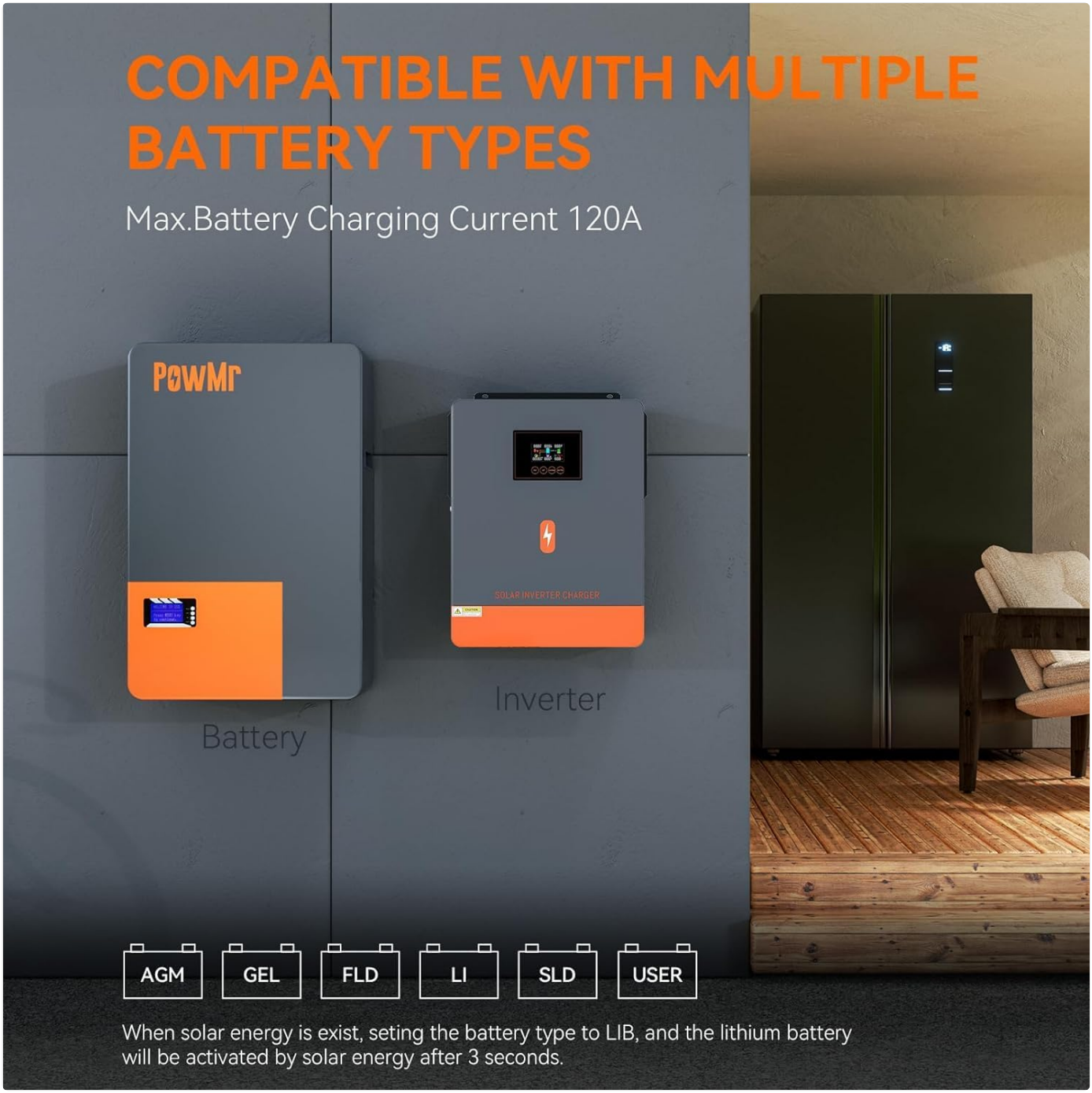


Figure 4: The inverter supports various battery types including AGM, GEL, FLD, LI, SLD, and USER-defined.

4.3 PV Array Connection

Connect your solar panel array to the PV Input terminals (10).

- Maximum PV array power: 6200W.
- Maximum PV open circuit voltage: 500Vdc.
- MPPT voltage range: 90~450Vdc.
- Starting voltage: >150Vdc.
- Ensure the total voltage and current of your solar array are within these limits.

4.4 AC Input and Output Connections

- Connect the AC input from the grid or generator to the AC Input terminal (7).
- Connect your household or office loads to the Main Output (8) and Second Output (9) terminals.
- The inverter provides a single-phase 230VAC output. If your system requires 110V output, an external transformer is

necessary.

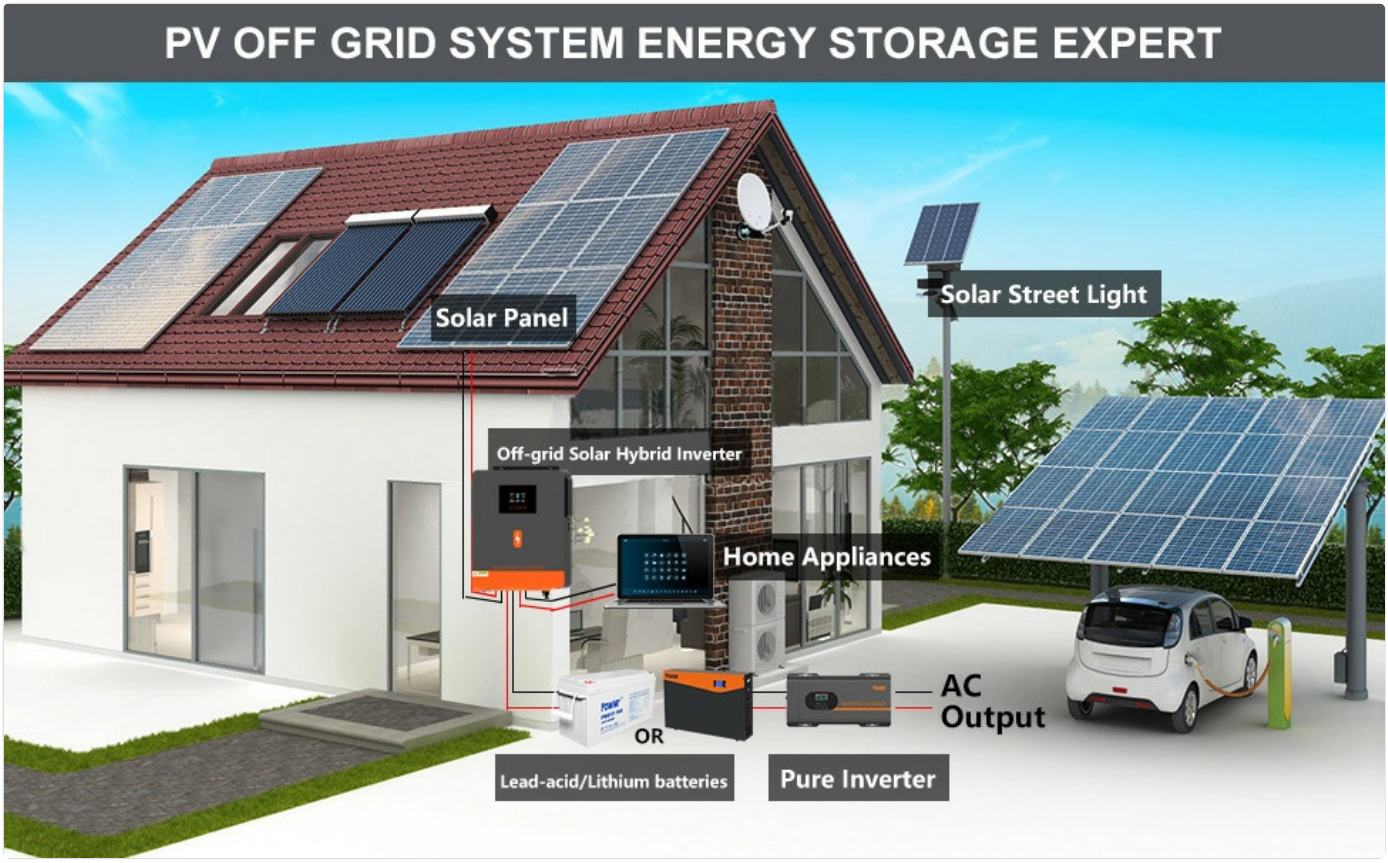


Figure 5: Example of an off-grid PV system setup utilizing the hybrid inverter.

5. Operation

5.1 Powering On/Off

- To power on, ensure all connections are secure, then switch the Power ON/OFF switch (6) to the 'ON' position.
- To power off, disconnect all AC loads, then switch the Power ON/OFF switch (6) to the 'OFF' position. Disconnect battery and PV power.

5.2 LCD Display and Indicators

The LCD display (1) shows real-time operational data. The RGB logo light indicates the current operating mode:

- **White Light:** Stationary mode (standby).
- **Purple Light:** PV mode (solar power is active).
- **Red Light:** Battery mode (inverter is drawing power from batteries).
- **Blue Light:** Utility mode (inverter is drawing power from the grid/generator).



Figure 6: RGB logo light indications for various operating modes.

5.3 Charging Modes

The inverter supports four charging modes, configurable via the LCD display:

- **Utility First:** Prioritizes grid/generator power for charging.
- **Solar First:** Prioritizes solar power for charging.
- **Solar & Utility:** Uses both solar and utility power for charging.
- **Battery Solar:** Charges batteries primarily from solar.

5.4 Load Compatibility

The inverter is designed to power a wide range of household and office appliances, including refrigerators, lamps, televisions, fans, and air conditioners.



Figure 7: The inverter's broad compatibility with common electrical loads.

6. Maintenance

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

- **Cleaning:** Periodically clean the exterior of the inverter with a dry cloth. Ensure ventilation openings are free from dust and debris.
- **Connections:** Annually check all electrical connections (battery, PV, AC input/output) for tightness and corrosion.
- **Environment:** Ensure the operating environment remains within specified temperature and humidity ranges.

7. Troubleshooting

This section addresses common issues you might encounter. For more complex problems, consult a qualified technician or contact customer support.

7.1 Common Issues and Solutions

- **Inverter not turning on:** Check battery connections, battery voltage, and the power switch. Ensure PV input voltage is above the starting voltage if operating in solar mode.
- **No AC output:** Check AC output connections, ensure loads are not exceeding the inverter's capacity, and verify the inverter is not in a fault state (check fault indicator).
- **Battery not charging:** Verify PV array connections and voltage. Check AC input if charging from utility. Ensure correct charging mode is selected.
- **Overload warning:** Reduce connected loads. The inverter will automatically restart once the overload condition is removed.

7.2 Restore Default Settings

In case of setting errors, the 4.2KW All-in-One MPPT inverter features a one-click restore function to revert to factory default settings. Refer to the full manual for specific instructions on how to perform this action.

8. Specifications

Technical specifications for the PowMr 4200W Off-Grid Hybrid Solar Inverter (Model: POW-HVM4.2M-24V-N).

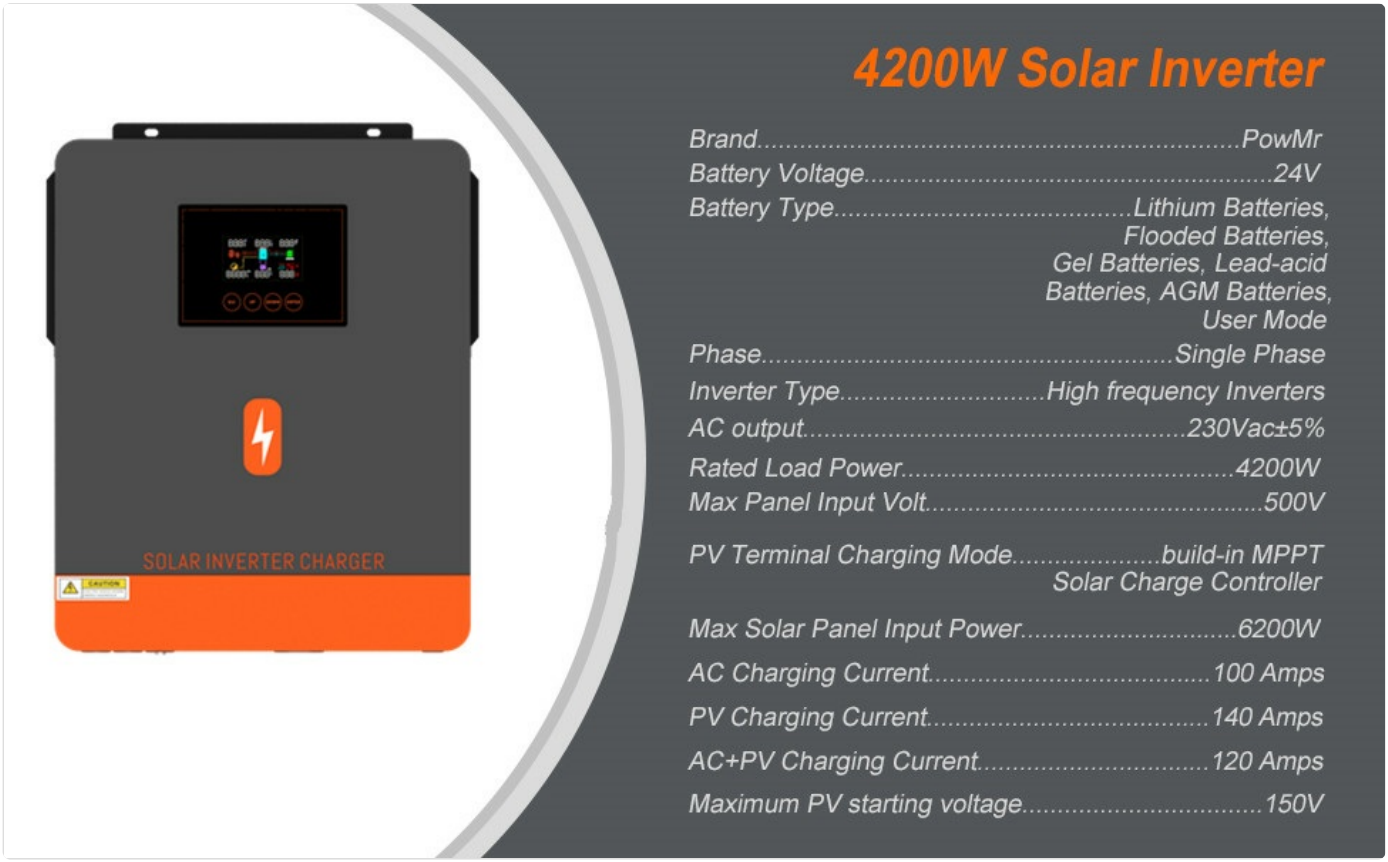


Figure 8: Detailed technical specifications of the inverter.

PowMr 4200W Hybrid Solar Inverter Technical Data

Brand	PowMr
Model Name	HVM4.2M
Item Model Number	POW-HVM4.2M-24V-N
Rated Load Power	4200W

Input Voltage	24 Volts (DC)
AC Output Voltage	230VAC
Max. PV Array Power	6200W
Max. PV Open Circuit Voltage	500Vdc
PV Array MPPT Voltage Range	90~450Vdc
Starting Voltage	>150Vdc
Max. Charging Current	140A (PV) / 100A (AC) / 120A (AC+PV)
Battery Type Compatibility	Lithium, Flooded, Gel, Lead-acid, AGM, User-defined
Power Source	Solar Powered
Recommended Uses	Office, Home, Off-grid systems
Package Dimensions	50 x 43 x 18 cm
Weight	9 kg

9. Warranty Information

Specific warranty terms and conditions for the PowMr 4200W Off-Grid Hybrid Solar Inverter are typically provided with the product packaging or available on the official PowMr website. Please retain your proof of purchase for warranty claims.

The manufacturer warrants this product against defects in materials and workmanship under normal use for a specified period from the date of purchase. This warranty does not cover damage caused by improper installation, misuse, neglect, or unauthorized modifications.

10. Customer Support

For technical assistance, troubleshooting guidance beyond this manual, or warranty inquiries, please contact PowMr customer support through their official website or the contact information provided with your purchase.

Please have your model number (POW-HVM4.2M-24V-N) and purchase date ready when contacting support.

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Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question