

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

PowMr 4200W Solar Inverter User Manual

Model: **POW-HVM4.2M-24V-N** | Brand: **PowMr**

1. INTRODUCTION AND OVERVIEW

This user manual provides detailed instructions for the installation, operation, and maintenance of the PowMr 4200W Solar Inverter. This all-in-one hybrid inverter integrates inverter, solar charger, and battery charger functions to provide uninterruptible power support. It is designed for off-grid applications and is compatible with both lead-acid and lithium batteries.

Key features include:

- Pure Sine Wave Inverter with 220-230VAC output.
- Integrated 120A MPPT Solar Charge Controller.
- Maximum PV Array Power: 6200W.
- Supports various battery types including Lead Acid and Lithium.
- Multiple charging modes: Utility/Solar Priority, Hybrid, and Battery+Solar.
- Built-in safeguards against short-circuit, over/under-voltage, overload, and backfeed.
- One-click restore to default settings function.



Figure 1.1: Front view of the PowMr 4200W Solar Inverter.

2. PRODUCT COMPONENTS AND DIAGRAM

Familiarize yourself with the main components and connection points of the 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 2.1: Detailed component diagram of the PowMr 4200W Solar Inverter.

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

3. SETUP AND INSTALLATION

Installation of the PowMr 4200W Solar Inverter should be performed by qualified professionals to ensure safety and compliance with local electrical codes. Ensure the installation environment is well-ventilated, dry, and free from direct sunlight or excessive dust.

3.1 Wiring Diagram

The following diagram illustrates a typical connection setup for the inverter with solar panels, batteries, and AC loads:



Figure 3.1: Typical wiring diagram for the PowMr 4200W Solar Inverter.

Important Considerations:

- **Battery Connection:** Connect 24V lead-acid or lithium batteries to the battery input terminals. Ensure correct polarity.
- **PV Input:** Connect solar panels to the PV 1 and PV 2 inputs. Ensure the maximum PV open circuit voltage (500VDC) and power (6200W) are not exceeded.
- **AC Input/Output:** Connect to the utility grid or generator for AC input, and to your household appliances for AC output. Note that this is a single-phase 220-240V output inverter. A transformer may be needed for 110V systems.
- **Grounding:** Always ensure proper grounding for safety.

4. OPERATING INSTRUCTIONS AND SETTINGS

The inverter features an LCD display and touch function buttons for configuration. Below are key settings and their functions. For a visual guide, refer to the official setting guide video.

Your browser does not support the video tag.

Video 4.1: PowMr 4200W 24V 220VAC Solar Inverter Setting Guide. This video provides a detailed explanation of the configuration process for the POW-HVM4.2M-24V-N all-in-one solar inverter.

4.1 Accessing Settings Menu

After powering on, long-press the **ENTER** key on the main screen to access the settings menu.

4.2 Key Settings Overview

- **Setting 00: Restore Function**
Used to reset the inverter, restoring all settings to factory defaults.
- **Setting 01: Output Source Priority**

Configures the output power priority. Options include:

- **SUB Priority:** Solar > Grid > Battery. Suitable for areas with unstable grid power or long-term battery usage.
- **SBU Priority:** Solar > Battery > Grid. Solar is top priority, battery supplements when solar is insufficient or at night, grid is used only when battery voltage is low. More suitable for areas with higher electricity prices.
- **USB Priority:** Grid > Solar > Battery. Grid power takes precedence, with solar and battery activating when grid power is unavailable. More suitable for regions with relatively lower electricity rates.

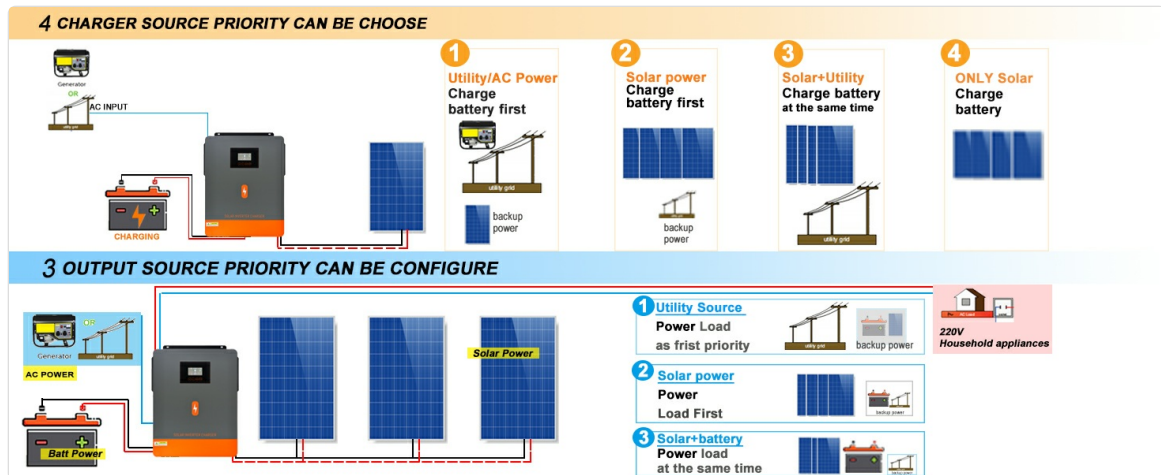


Figure 4.1.1: Output Source Priority options.

- **Setting 02: Maximum Charging Current**
Sets the maximum charging current of the inverter (sum of grid and solar charging).
- **Setting 03: AC Input Voltage Range**
Configures the AC input voltage range. APL mode has a wider range for different grid environments, while UPS mode has a narrower range for sensitive electronic devices.
- **Setting 05: Battery Type**
Selects the battery type (AGM, Flooded Lead-Acid, USE, LIB, LIC, LIL). USE and LIB options allow custom parameter configuration in settings 26, 27, and 29. LIC and LIP are for Pace battery's 232 and 485 communication protocols, respectively. LIL is for Pylontech batteries.
- **Setting 06: Automatic Restart Function When Overload**
Enables or disables automatic restart during overload.
- **Setting 07: Automatic Restart Function When Over-temperature**
Enables or disables automatic restart during over-temperature.
- **Setting 09: Output Frequency**
Sets the system output frequency (50Hz or 60Hz).
- **Setting 10: Output Voltage**
Sets the output voltage.
- **Setting 11: Maximum Grid Charging Current**
Sets the maximum charging current from the grid.
- **Setting 12: Voltage Threshold for Battery-to-Grid Switching**
Sets the voltage when switching priority power source from battery to grid in SBU or SUB priority.
- **Setting 13: Voltage Threshold for Grid-to-Battery Switching**
Sets the voltage when switching priority power source from grid to battery in SBU or SUB priority.
- **Setting 16: Charging Source Priority**
Sets the charging source priorities:

- **SNU Mode:** Both solar and grid power charge the battery simultaneously with equal priority.
- **OSO Mode:** Only solar charges the battery; the grid does not participate.
- **CSO Mode:** Solar has a higher priority for battery charging; the grid charges the battery only when solar is unavailable.



Figure 4.2.1: Charging Source Priority options.

- **Setting 18: Alarm Function**
Enables or disables the inverter's alarm function.
- **Setting 19: Auto Return to the Main Screen**
Enables or disables the automatic return to the main screen function.
- **Setting 20: Backlight Function**
Enables or disables the backlight function.
- **Setting 22: Beeps While Primary Source is Interrupted**
Enables or disables the power source blocked alarm function. If the priority power source is blocked for various reasons, the inverter will issue an alarm.
- **Setting 23: Overload Bypass**
Enables or disables the overload bypass function. If enabled, when the inverter is in battery mode and the load experiences an overload, it will switch to grid mode, providing continued power to the load to ensure stable power supply.
- **Setting 25: Record Fault Code**
Enables or disables the fault code recording function. If enabled, you can view fault records through the Wi-Fi module connected to the mobile app or by connecting to the upper computer software.
- **Setting 26: Constant Voltage Charging Voltage**
Configures the constant voltage charging voltage (crucial for charging, refer to battery manual).
- **Setting 27: Float Charging Voltage**
Configures the float charging voltage (crucial for charging, refer to battery manual).
- **Setting 29: Low-voltage Cut-off Voltage**
Configures the low-voltage cut-off voltage (crucial for charging, refer to battery manual).
- **Setting 30: Equalization Function**
Enables the battery equalization function. If the selected battery type is Flooded or another type that accepts equalization, this function can be enabled. After enabling, you can configure settings 31 to 36.
- **Setting 31: Equalization Charging Voltage**
Sets the battery equalization voltage.
- **Setting 33: Duration of Equalization Charging**
Sets the duration of equalization charging.
- **Setting 34: Equalization Charging Voltage (Extended Time)**
Sets the extended time of equalization charging. If equalization charging reaches the duration set in

setting 33 but the battery voltage has not reached the equalization voltage set in setting 31, the inverter will extend the duration by the time set in setting 34.

- **Setting 35: Equalization Interval**
Sets the equalization interval (how often equalization charging occurs).
- **Setting 36: Equalization Activated Immediately**
For immediately enabling or disabling equalization.
- **Setting 37: Grid-tied Operation**
Switch for grid-tied operation. Note: Grid-tied operation should be performed by professionals and comply with local grid specifications.
- **Setting 38: Grid-tied Output Current**
Sets the grid-tied output current.
- **Setting 39: Switch of the LED Light**
Enables or disables the LED light.
- **Setting 41: Dual-output Function**
Enables the dual output function. This mode is mainly used to terminate one non-essential output when the battery level is low, ensuring the stability of the other output. This avoids the situation where all connected loads are affected in single output mode.
- **Setting 42: Exit Dual-output Mode**
Configures the voltage value to exit dual output mode.

5. MONITORING AND INDICATORS

The inverter provides visual indicators and remote monitoring capabilities:

5.1 LED Pattern (RGB Light for Different Working Mode)

LED PATTERN (RGB Light For Different Working Mode)

Stationary mode



PV Mode: Purple Light



Utility Mode: Blue Light



Battery Mode: Red Light



YOU CAN KNOW THE WORKING MODE OF THE INVERTER BY THE CHANGE OF LOGO LIGHT.

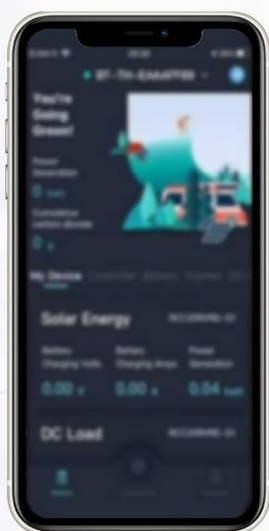
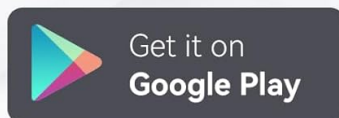
Figure 5.1.1: LED patterns indicating different working modes.

- **Stationary Mode:** No specific color mentioned, implies idle or normal state.
- **PV Mode:** Purple Light (Indicates power is primarily from PV/Solar).
- **Utility Mode:** Blue Light (Indicates power is primarily from the utility grid).
- **Battery Mode:** Red Light (Indicates power is primarily from the battery).

5.2 Remote Monitoring via App

The inverter supports remote monitoring and control via the "SMARTESS" app. A Wi-Fi module and GPRS data need to be purchased separately for this functionality.

REMOTE MONITORING AND CONTROL VIA THE APP "SMARTESS"




WiFi module and GPRS data need to be purchased separately. 



Figure 5.2.1: Remote monitoring and control via the SMARTESS app.

Download the app from the App Store or Get it on Google Play.

For more information on the Wi-Fi module, refer to the product information with code [Q2721100111238](#).

6. TROUBLESHOOTING

The inverter is equipped with various protection features. In case of an issue, the fault indicator (4) on the diagram will illuminate, and an alarm may sound if enabled (Setting 18). Fault codes can be recorded (Setting 25) and viewed via the mobile app or computer software for diagnosis.

Common issues and their potential solutions:

- **Overload:** If an overload occurs, the inverter may automatically restart (Setting 06). Reduce the connected load.
- **Over-temperature:** Ensure adequate ventilation around the inverter. Check for obstructions in cooling vents. Automatic restart may occur (Setting 07).
- **Battery Voltage Low:** Check battery connections and charge level. Ensure proper charging source priority (Setting 01, 16) and battery type (Setting 05) are configured.
- **Grid Power Interruption:** The inverter will switch to battery or solar power based on priority settings. If the primary source is interrupted, an alarm may sound (Setting 22).

For persistent issues or complex fault codes, please contact PowMr customer support or a certified technician.

7. SPECIFICATIONS

Below are the detailed technical specifications for the PowMr 4200W Solar Inverter (Model: POW-HVM4.2M-24V-N):

Feature	Specification
Model Name	POW-HVM4.2M-24V-N
Wattage	4200 watts
Power Source	Solar Powered
Product Dimensions	17.39 x 4.56 x 14.09 inches
Item Weight	17.6 pounds
Max. PV Array Power	6200W
Max. PV Open Circuit Voltage	500VDC
MPPT Voltage Range	60Vdc-500Vdc
Max. Charging Current	120A
Nominal Output Voltage	220-230VAC
Battery Voltage	24V
Recommended Uses	Home, office, RV, outdoor travel, etc.

Table 7.1: Technical Specifications. For more detailed specifications, refer to the product label with code [920422405060107](#).

8. SAFETY INFORMATION

Always adhere to the following safety guidelines when installing, operating, or maintaining the PowMr Solar Inverter:

- Read the entire manual before installation and operation.
- Only qualified personnel should perform electrical installations.
- Ensure all connections are secure and correct polarity is observed.
- Do not operate the inverter in wet conditions or near flammable materials.
- Ensure proper ventilation to prevent overheating.
- Do not attempt to open or repair the inverter yourself. Contact qualified service personnel.
- Disconnect all power sources (PV, battery, AC) before performing any maintenance or service.

9. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please contact PowMr customer service

through their official channels. Keep your purchase receipt and product model number (POW-HVM4.2M-24V-N) handy for faster assistance.

Visit the [PowMr Store on Amazon](#) for additional products and support resources.