

## PowMr 3000W-24V-110V

# PowMr 3000W 24V to 110V Pure Sine Wave Solar Inverter with 80A MPPT Charge Controller Instruction Manual

Model: 3000W-24V-110V | Brand: PowMr

### 1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your PowMr 3000W 24V to 110V Pure Sine Wave Solar Inverter. It includes details on product features, installation, operation modes, maintenance, and troubleshooting. Please read this manual thoroughly before installation and use, and retain it for future reference.



Image 1.1: Front view of the PowMr 3000W Solar Inverter.

## 2. SAFETY INSTRUCTIONS

### Important Safety Precautions:

- Installation must be performed by qualified personnel.
- Ensure all wiring complies with local and national electrical codes.
- Do not disassemble the inverter. There are no user-serviceable parts inside.
- Avoid contact with water or other liquids.
- Install in a well-ventilated area, away from flammable materials.
- Ensure proper grounding before connecting any power sources.
- Verify battery voltage and polarity before connecting to the inverter.
- Always disconnect all power sources (PV, AC, Battery) before performing any maintenance or wiring.

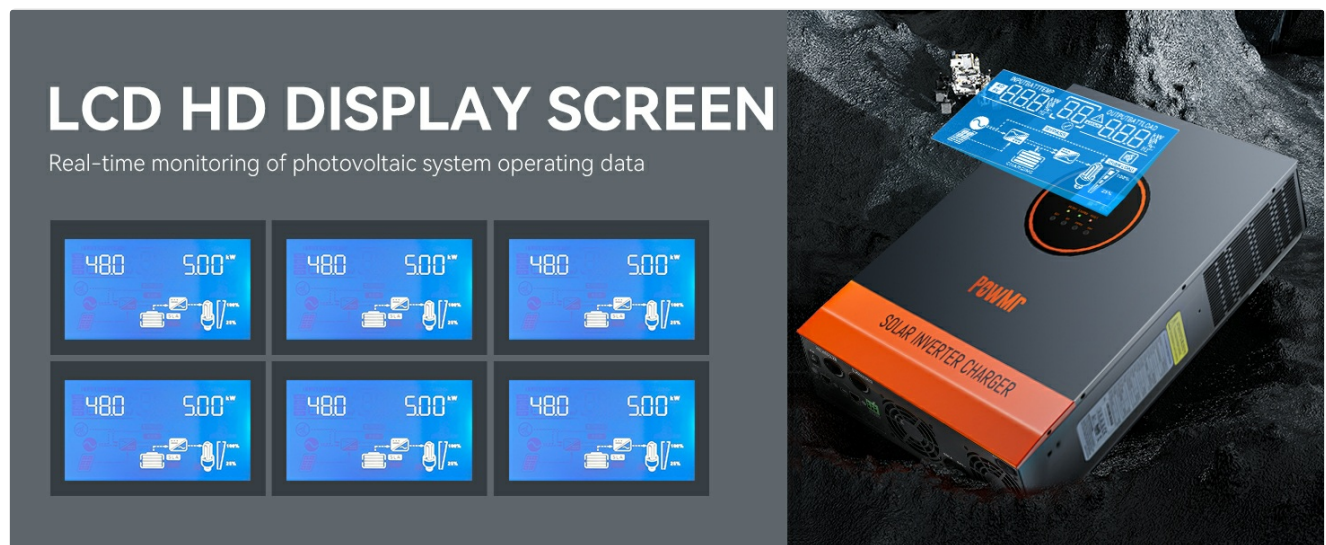


Image 2.1: The inverter features a 12-layer SmartProtect system, including protections against PV input over-voltage, current, reverse connection, battery over-voltage, AC input over-voltage, and inverter overload.

## 3. PRODUCT OVERVIEW

### 3.1 Key Features

- 3000W Pure Sine Wave Inverter: Provides high-quality AC power suitable for sensitive electronics.
- Built-in 80A MPPT Charge Controller: Maximizes solar power harvesting efficiency (up to 99.9%).
- Wide Compatibility: Supports 24V Lead-Acid and Lithium batteries.
- Multiple Charging Modes: Solar, Utility priority, Solar priority, Utility hybrid charging.
- Three Output Modes: PV priority, Utility priority, Inverter mode.
- Comprehensive Protection: Short-circuit, overload, reverse polarity, overvoltage, undervoltage.
- LCD Display & LED Indicators: Real-time monitoring of system data and operational status.
- Max PV Input Power: 4000W, MPPT Voltage range: 120-400Vdc.

### 3.2 Component Identification

# MONITOR AND CONTROL VIA SMARTESS APP



Image 3.1: Front and rear panel components of the inverter.

1. LCD Buttons
2. Mounting Holes
3. LCD Screen
4. LED Indicators
5. CAN Communication Port
6. Dry Contact Port
7. RS485 Communication Port
8. USB Debugging Port (Internal Use)
9. AC Input Terminal
10. AC Output Terminal
11. Cooling Fans
12. PV Input Terminal
13. Main On/Off Power Switch
14. Battery Input Terminal
15. Grounding Lug

## 4. SETUP AND INSTALLATION

**Before Installation:** Ensure the mounting surface is strong enough to support the inverter's weight (approximately 19.1 pounds). Choose a location that is dry, well-ventilated, and protected from direct sunlight and extreme temperatures.

### 4.1 Wiring Diagram

## Power All Your Daily Needs

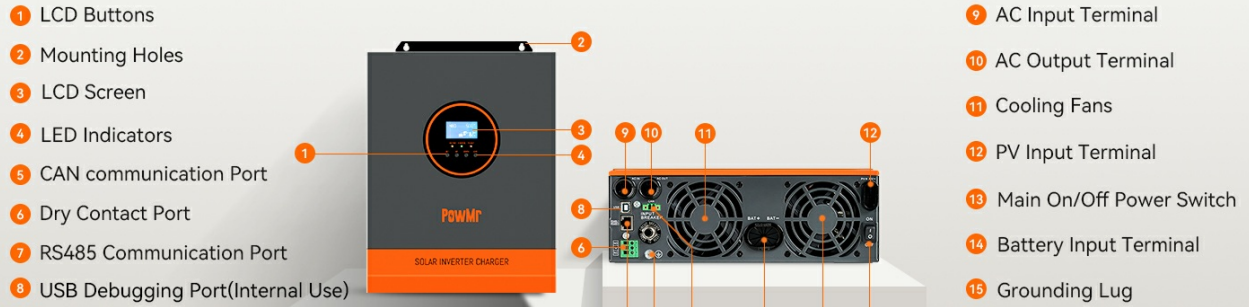


Image 4.1: Wiring diagram for connecting the inverter to solar panels, battery, AC input (utility/generator), and AC output.

### Wiring Notes:

- **Grounding:** Always connect the PE protective conductor (Ground) first.
- **Battery Connection:** Connect the 24V battery to the Battery Input Terminal. Recommended battery capacity is 200AH. Ensure correct polarity. The battery must be connected for the system to operate.
- **PV Input:** Connect solar panels in series to the PV Input Terminal. Max PV Input Power: 4000W. MPPT Voltage range: 120-400Vdc. Starting voltage > 150V. Total Open Circuit Voltage (VOC)  $\leq$  450V. Use 12AWG PV wire.
- **AC Input:** Connect utility power or a generator to the AC Input Terminal. AC Input Voltage range: 90-140V. Frequency: 50Hz/60Hz. Max AC Bypass Current: 40A. Max AC Charge Current: 40A. Use 10AWG AC wire.
- **AC Output:** Connect household and office loads to the AC Output Terminal. AC Output Power  $\leq$  3000W. Rate Voltage: 120Vac  $\pm$  5%. Rate Current: 27.5A.

## 5. OPERATING INSTRUCTIONS

### 5.1 LCD Display and Indicators

The inverter features an LCD display and LED indicators for real-time monitoring of system data and operational status. The LCD display provides more than 20 programmable parameters, including input/output voltage range, battery charging current, battery type, and charging/discharging priority.

## WIRING DIAGRAM AND TECHNICAL SPECIFICATIONS

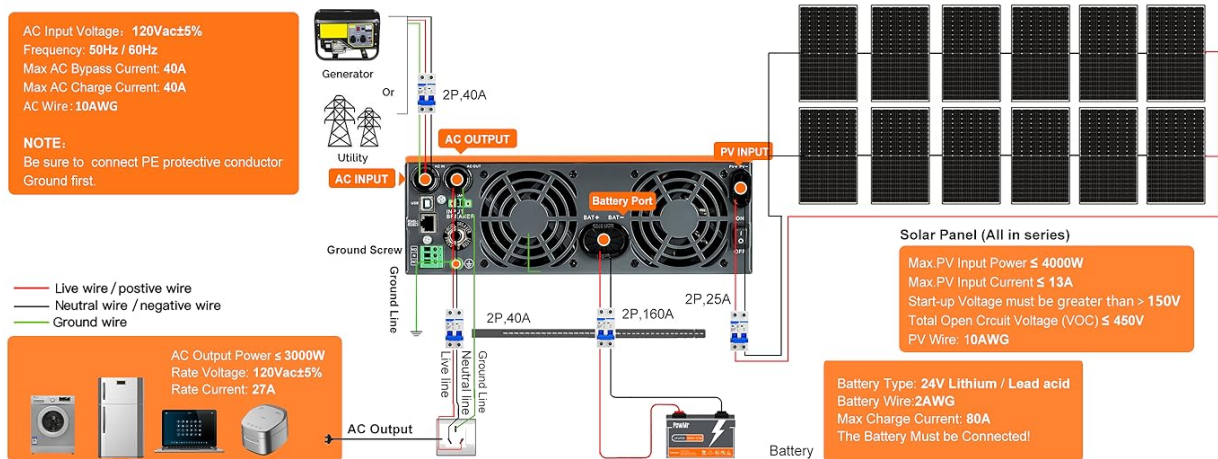


Image 5.1: The LCD display provides real-time monitoring of photovoltaic system operating data.

## 5.2 Charging Modes

The inverter supports four charging modes:

- **Solar Charging:** Charges the battery solely from solar power.
- **Utility Charge (Solar as backup power):** Primarily uses utility power to charge, with solar as a backup.
- **Solar Priority:** Prioritizes solar power for charging, using utility only when solar is insufficient.
- **Solar + Utility Charging:** Combines solar and utility power to charge the battery.





Image 5.2: Visual representation of the four available charging modes.

### 5.3 Output Modes

The inverter offers three output modes:

- **PV Priority:** Prioritizes solar power to supply loads.
- **Utility Priority:** Prioritizes utility power to supply loads.
- **Inverter Mode:** Uses battery power (converted by inverter) to supply loads.

### 5.4 Remote Monitoring (Optional)

The inverter supports remote monitoring and control via the SMARTeSS App. A Wi-Fi/GPRS data acquisition module is required and needs to be purchased separately. Download the app from the App Store or Google Play.

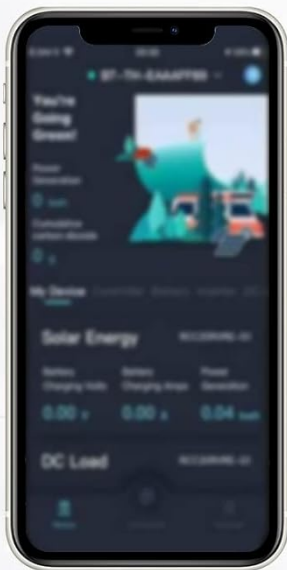
# MONITOR AND CONTROL VIA SMARTESS APP



Download on the  
**APP Store**



Get it on  
**Google Play**



Optional

The Wi-Fi/GPRS data acquisition module need to be purchased separately.



Image 5.3: Remote monitoring via the SMARTeSS App with an optional Wi-Fi module.

Scan the QR code to download the app: [Q2721100111238](https://play.google.com/store/apps/details?id=com.q2721100111238) (Note: Actual download link may vary, refer to product documentation for correct link).

## 6. MAINTENANCE

Regular maintenance ensures optimal performance and longevity of your inverter. Always disconnect all power sources before performing any maintenance.

- **Cleaning:** Periodically clean the exterior of the inverter with a dry cloth. Ensure cooling fan vents are free from dust and debris to prevent overheating.
- **Connections:** Check all electrical connections (battery, PV, AC input/output) regularly for tightness and corrosion.
- **Battery Health:** Monitor battery voltage and performance. Refer to your battery manufacturer's guidelines for specific maintenance.



- **Environment:** Ensure the installation environment remains dry, well-ventilated, and within the specified operating temperature range.

## 7. TROUBLESHOOTING

The inverter's LCD display will show corresponding fault codes if a problem occurs. Refer to the product's detailed fault code list (typically found in the full user manual) to identify and resolve issues.

### Common Issues and Solutions:

Problem	Possible Cause	Solution
Inverter not turning on	No battery connection, low battery voltage, main switch off.	Check battery connections and voltage. Ensure main power switch is ON.
No AC output	Overload, short circuit, inverter fault.	Reduce load. Check for short circuits in connected appliances. Refer to LCD fault code.
Battery not charging from PV	Insufficient solar input, PV connection issue, MPPT controller fault.	Check solar panel connections and ensure adequate sunlight. Verify PV input voltage is within range (120-400Vdc).
Overheating	Blocked cooling vents, excessive ambient temperature, prolonged high load.	Clear vents. Ensure proper ventilation. Reduce load if necessary.

If the problem persists after attempting these solutions, contact PowMr customer support for assistance.

## 8. SPECIFICATIONS

Parameter	Value
Model Number	3000W-24V-110V
Rated Power	3000W
Battery Voltage	24VDC
AC Output Voltage	110V/120VAC $\pm$ 5%
AC Output Frequency	60 Hz
Waveform	Pure Sine Wave
MPPT Charge Controller Current	80A
Max PV Input Power	4000W

Parameter	Value
MPPT PV Voltage Range	120-400VDC
Max PV Open Circuit Voltage	450VDC
AC Input Voltage Range	90-140V
Max Hybrid Charging Current (AC+PV)	80A
Product Dimensions	16.53 x 12.59 x 4.72 inches
Item Weight	19.1 pounds
Compatible Battery Types	Lead-Acid, Lithium

## 9. WARRANTY AND SUPPORT

For warranty information and technical support, please contact PowMr directly. Refer to the product packaging or the official PowMr website for the most current contact details and warranty terms.

**Manufacturer:** PowMr

**Date First Available:** May 16, 2023