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PowMr PowMr 3000W

PowMr 3000W Solar Inverter User Manual

Model: PowMr 3000W (24V DC to 120V AC)

1. Introduction

This manual provides essential information for the safe and efficient operation of your PowMr 3000W Solar Inverter. This device converts 24V DC power from batteries or solar panels into 120V AC power, suitable for various household and office appliances. It features an integrated 80A MPPT solar charge controller and a 40A AC charger, offering versatile charging and output modes.

2. Safety Information

Please read all instructions and warnings carefully before installation and operation. Failure to follow these instructions may result in electric shock, fire, or serious injury. Keep this manual for future reference.

- Ensure all wiring is performed by qualified personnel and complies with local electrical codes.
- Do not disassemble the inverter. There are no user-serviceable parts inside.
- Install the inverter in a well-ventilated area, away from flammable materials and moisture.
- Ensure proper grounding of the unit.
- Disconnect all power sources (PV, battery, AC) before performing any maintenance or wiring.

3. Product Overview

The PowMr 3000W Solar Inverter is a compact unit designed for off-grid and hybrid solar power systems. It integrates an inverter, MPPT solar charger, and AC battery charger into one device.



Figure 3.1: Front view of the PowMr 3000W Solar Inverter, showing the LCD display and control buttons.

3.1. Dimensions and Key Features



Figure 3.2: Inverter dimensions (14.88 in height, 11.02 in width, 4.05 in depth) and key features including 3000W Pure Sine Wave Output, 80A MPPT, and 4000W Max Input Power.

3.2. Component Identification



1	AC input terminal	6	Grounding screw hole	11	PV input terminal
2	AC output terminal	7	Overload protector	12	Touchable buttons
3	USB communication port	8	Cooling fan	13	LED Indicators
4	RS485/WIFI communicationport	9	Battery input terminal	14	LCD screen
5	Dry contact port	10	ON/OFF rocker switch		

Figure 3.3: Top-down view of the inverter with numbered components.

No.	Component	No.	Component
1	AC input terminal	6	Grounding screw hole
2	AC output terminal	7	Overload protector
3	USB communication port	8	Cooling fan
4	RS485/WiFi communication port	9	Battery input terminal
5	Dry contact port	10	ON/OFF rocker switch
		11	PV input terminal
		12	Touchable buttons
		13	LED indicators

		14	LCD screen

4. Technical Specifications

Rated Output: 3000W, 120Vac±5%

Rated Battery Input Voltage: 24V (Minimum starting voltage 22V)

Max. PV Input Power: 4000W

Max. PV Input Voltage: 450V

Max. PV Input Current: 13A

AC Rate Input/Output: 120Vac±5%

Max. Hybrid Charging Current (AC + PV): 80A

Built-in MPPT Controller: 80A

Built-in AC Charger: 40A

Output Waveform: Pure Sine Wave

Item Weight: 19.14 pounds

Package Dimensions: 17.56 x 14.37 x 7.83 inches

5. Installation and Setup

Proper installation is crucial for the performance and safety of the inverter. Follow these steps carefully.

5.1. Site Selection

- Mount the inverter vertically on a non-flammable surface.
- Ensure adequate clearance around the unit for proper ventilation (at least 20 cm on all sides).
- Avoid direct sunlight, high temperatures, and high humidity.

5.2. Wiring Diagram

The following diagram illustrates the typical connection setup for the inverter, including solar panels, batteries, AC input (utility or generator), and AC output to loads.

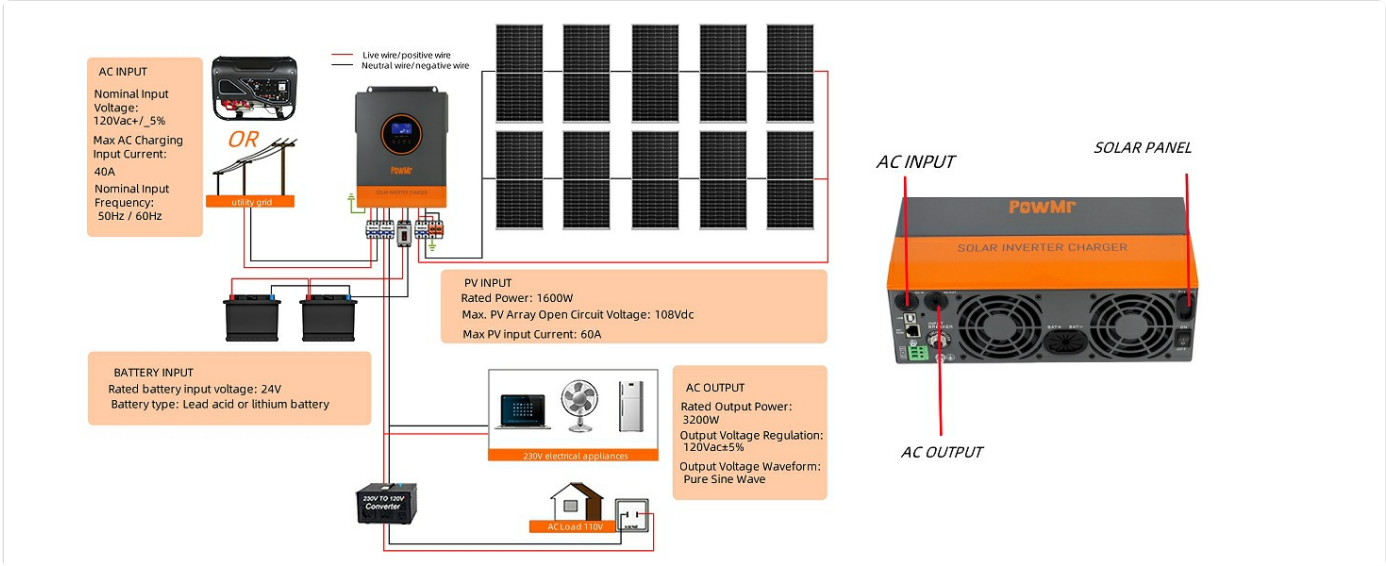


Figure 5.1: Detailed wiring diagram showing connections for PV panels, battery bank, AC input (utility/generator), and AC output to household appliances.

5.3. Connection Steps

1. **Battery Connection:** Connect the 24V battery bank to the battery input terminals (9). Ensure correct polarity.
2. **PV Panel Connection:** Connect the solar panels to the PV input terminals (11). Observe maximum voltage and current ratings.
3. **AC Input Connection:** Connect the utility grid or generator to the AC input terminal (1).
4. **AC Output Connection:** Connect your AC loads to the AC output terminal (2).
5. **Grounding:** Connect the grounding screw hole (6) to an appropriate ground.
6. **Communication Ports:** If using, connect USB (3) or RS485/WiFi (4) communication modules.

After all connections are secure, switch on the ON/OFF rocker switch (10).

6. Operating Modes

The inverter offers flexible charging and output modes to suit various energy management needs.



Figure 6.1: Visual representation of the four charging modes and three output modes.

6.1. Four Charging Modes

- **Only Solar:** Prioritizes solar power for battery charging.
- **Utility Priority:** Prioritizes utility power for charging, with solar as a backup.
- **Solar Priority:** Prioritizes solar power for charging, with utility as a backup.
- **Utility & Solar Hybrid Charging:** Combines both utility and solar power for charging.

6.2. Three Load Output Working Modes

- **PV Priority:** Loads are primarily powered by solar energy.
- **Utility Priority:** Loads are primarily powered by the utility grid.
- **Inverter Mode:** Loads are powered by the inverter from battery storage.

7. Battery Compatibility

The PowMr 3000W Solar Inverter is compatible with various 24V battery types.

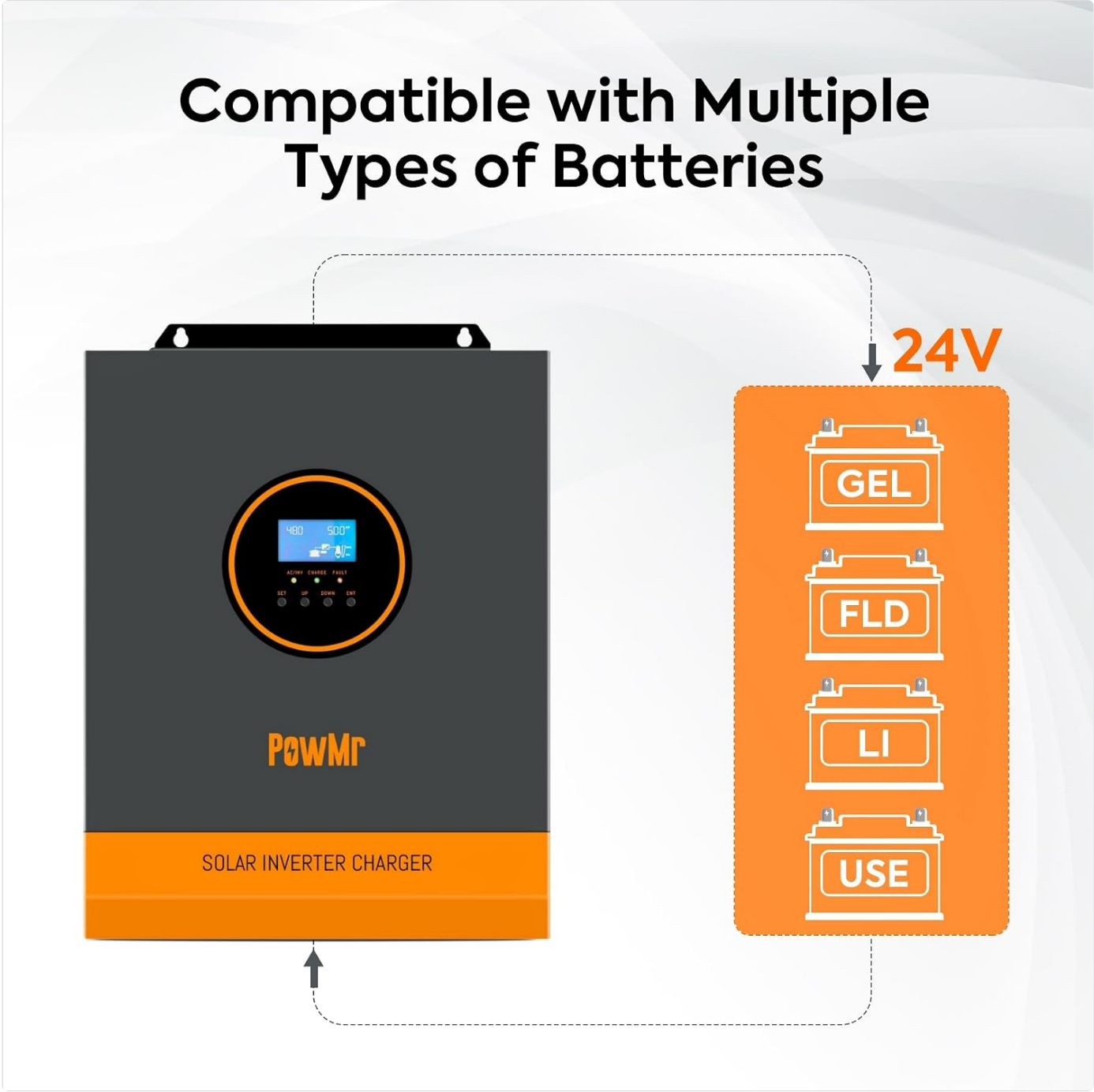


Figure 7.1: The inverter is compatible with GEL, FLD (Flooded), LI (Lithium), and USE (User-defined) 24V battery types.

Compatible battery types include:

- Sealed Lead-Acid batteries
- AGM batteries
- Gel batteries
- Flooded batteries
- Lithium batteries

Ensure the correct battery type is selected in the inverter's settings for optimal charging and discharge performance.

8. LCD Display and Indicators

The inverter features an LCD display (14) and three LED indicators (13) to provide real-time system data and operational status.

- **LCD Screen:** Displays various parameters such as input/output voltage, battery status, charging current, and error

codes.

- **LED Indicators:** Provide quick visual status updates (e.g., AC input, charge status, fault).
- **Touchable Buttons:** Used for navigating menus and adjusting settings on the LCD.

9. Maintenance

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

- **Cleaning:** Keep the inverter clean and free from dust. Use a dry cloth to wipe the exterior.
- **Ventilation:** Ensure cooling fans (8) and ventilation openings are not obstructed.
- **Connections:** Periodically check all electrical connections for tightness and corrosion.
- **Battery Health:** Monitor battery voltage and health according to battery manufacturer guidelines.

10. Troubleshooting

This section provides solutions to common issues you might encounter.

Problem/Error Code	Possible Cause	Solution
Inverter not turning on	No battery connection, low battery voltage, ON/OFF switch off.	Check battery connections, ensure battery voltage is above 22V, turn ON/OFF switch (10) to ON.
No AC output	Overload, short circuit, inverter fault.	Reduce load, check for short circuits, restart inverter. Check overload protector (7).
Error Code 29	Internal fault, often related to power components.	This indicates a critical internal error. Disconnect all power sources immediately. Contact customer support for assistance. Do not attempt to repair.
Battery not charging	PV input too low, AC input not present, incorrect charging mode selected, battery fault.	Check PV panel connections and sunlight, verify AC input, select appropriate charging mode, check battery health.

For issues not listed here or if troubleshooting steps do not resolve the problem, please contact PowMr customer support.

11. Warranty and Support

PowMr products are designed for reliability and performance. For warranty information and technical support, please refer to the official PowMr website or contact their customer service department.

- **Online Support:** Visit the PowMr Store on Amazon for product information and support resources.
- **Warranty Claims:** Keep your purchase receipt for warranty validation. Specific warranty terms and conditions may vary.

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The provided documentation for the PowMr 3000W Solar Inverter does not explicitly list or explain the meaning of "Error Code 01". The troubleshooting section does mention "Error Code 29" which indicates a critical internal...

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