POWLAND SMR-6KW

POWLAND 6000W 48V Hybrid Pure Sine Wave Inverter SMR-6KW User Manual

Model: SMR-6KW

1. Introduction

This manual provides essential information for the safe and efficient operation of your POWLAND 6000W 48V Hybrid Pure Sine Wave Inverter, model SMR-6KW. This device integrates a 6000W pure sine wave inverter, a 120A MPPT solar charge controller, and a battery charger into one compact unit. It is designed to provide uninterrupted power to various loads, supporting multiple charging and output modes for flexible energy management.
Please read this manual thoroughly before installation and operation to ensure proper use and to prevent damage to the unit or injury to personnel. Keep this manual for future reference.

2. Safety Information

WARNING: This section contains important safety instructions that must be followed during installation and operation of the inverter. Failure to follow these instructions may result in electric shock, fire, serious injury, or death.

- Installation must be performed by qualified personnel in accordance with all local electrical codes and regulations.
- Before installing or using the inverter, read all instructions and cautionary markings on the unit, batteries, and all appropriate sections of this manual.
- Do not disassemble the inverter. If service is required, contact POWLAND customer support. Incorrect reassembly may result in electric shock or fire.
- To reduce the risk of electric shock, disconnect all wiring before attempting any maintenance or cleaning. Turning off controls will not reduce this risk.
- Never connect the inverter to AC utility power if the unit or wiring is damaged.
- Ensure proper ventilation. The inverter generates heat during operation.
- Do not expose the inverter to rain, snow, spray, or any liquids.
- Use only recommended accessories. The use of non-recommended accessories may result in fire, electric shock, or injury.
- This inverter is designed for indoor use.

3. Setup

3.1 Unpacking and Inspection

Upon receiving the inverter, carefully unpack it and inspect for any shipping damage. Ensure all components listed in the packing list are present. If any damage or missing parts are found, contact your dealer immediately.

3.2 Mounting the Unit

The inverter should be mounted vertically on a wall or other sturdy surface. Choose a location that is:

- Protected from direct sunlight, heat, and moisture.
- Well-ventilated to allow for proper heat dissipation.
- Accessible for wiring and maintenance.
- Away from flammable materials.

Ensure there is sufficient clearance around the unit for airflow, especially above and below the ventilation openings.

3.3 Electrical Connections

All electrical connections must be made in the correct sequence to prevent damage. Refer to the connection diagram below.

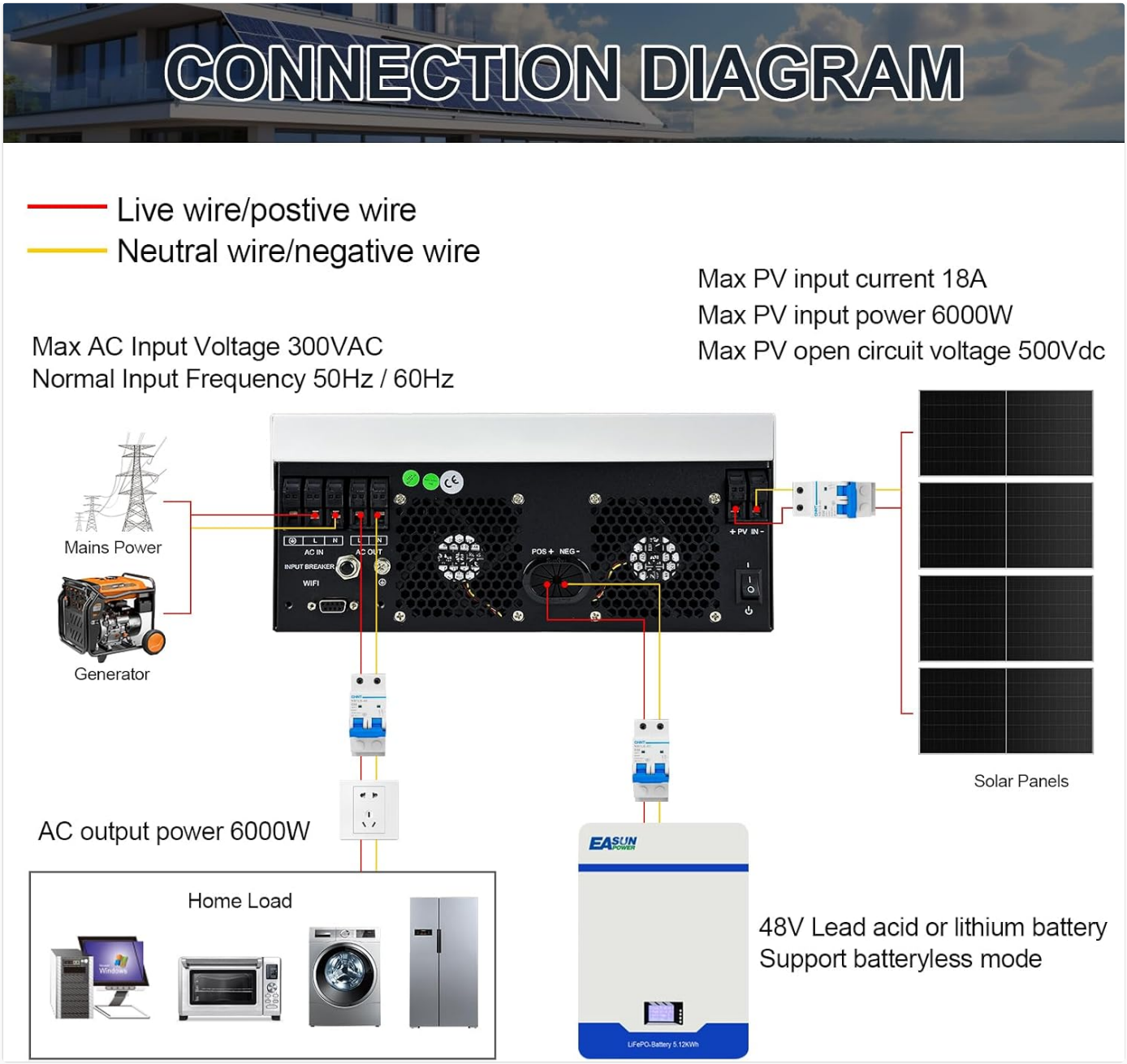


Figure 3.3.1: Connection Diagram. This diagram illustrates the proper wiring for solar panels, batteries, AC input (mains power or generator), and AC output (home load).

- **Battery Connection:** Connect the 48V battery bank (lead-acid or lithium) to the inverter's battery terminals. Ensure correct polarity. The inverter supports batteryless mode, but for hybrid operation, batteries are required.
- **PV Array Connection:** Connect the solar panels to the PV input terminals. Ensure the maximum PV input power (6000W), maximum PV input current (18A), and maximum PV open circuit voltage (500Vdc) are not exceeded. The PV array MPPT voltage range is 60-450Vdc.
- **AC Input Connection:** Connect the AC utility grid or a generator to the AC input terminals. The inverter supports 240V AC input.
- **AC Output Connection:** Connect your home loads to the AC output terminals. The inverter provides 6000W AC output.

3.4 Initial Power-Up

1. Verify all connections are secure and correct.
2. Turn on the battery breaker.
3. Turn on the PV array breaker (if applicable).

4. Turn on the AC input breaker (if applicable).
5. Turn on the inverter's power switch.
6. Observe the LCD display and LED indicators for system status.

4. Operating Instructions

4.1 LCD Display and LED Indicators

The inverter features an LCD HD display and three LED indicators to provide real-time system data and status monitoring. The LCD allows for viewing various parameters and setting multiple operational modes.



Figure 4.1.1: LCD HD Display. The display shows input/output voltage, frequency, battery status, and load percentage.

4.2 Charging Modes

The SMR-6KW inverter offers four distinct charging modes to optimize energy usage:

- **Hybrid Charge:** Utilizes both solar and utility power to charge the battery.
- **Grid Priority Charge:** Prioritizes utility power for charging, using solar only when grid power is unavailable or insufficient.
- **Solar Priority Charge:** Prioritizes solar power for charging, using utility power only when solar power is insufficient.
- **Only Solar Charge:** Charges batteries exclusively from solar power.

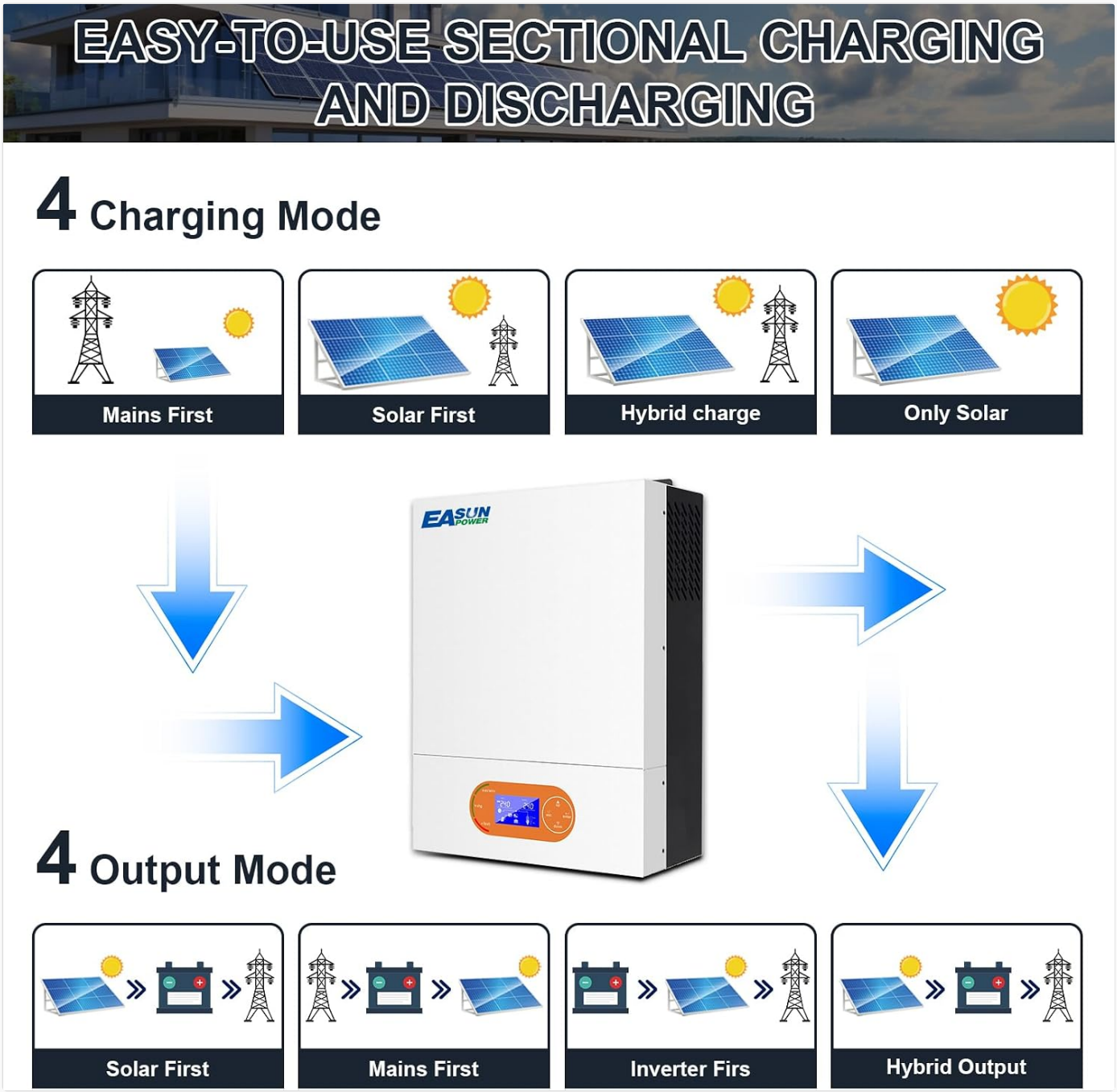


Figure 4.2.1: Charging and Output Modes. This diagram visually represents the four charging modes (Mains First, Solar First, Hybrid Charge, Only Solar) and four output modes (Solar First, Mains First, Inverter First, Hybrid Output).

4.3 Output Modes

The inverter also provides four output modes to manage power delivery to your loads:

- **Grid Priority Output:** Prioritizes utility power for loads, using inverter power (from solar/battery) only when grid power is unavailable.
- **Solar and Hybrid Grid Output:** Uses solar power first, then battery power, and finally utility grid power to supply loads.

- **Solar Priority Output:** Prioritizes solar power for loads, then battery power, and finally utility power.
- **Inverter Priority Output:** Prioritizes inverter power (from battery/solar) for loads, using utility power only when inverter power is insufficient or battery is low.

4.4 Programmable Charge and Discharge

The POWLAND SMR-6KW series features programmable charge and discharge functions. Users can set specific charge and discharge periods to optimize energy usage based on local peak and off-peak electricity rates. This ensures efficient utilization of both grid and photovoltaic energy.

4.5 Battery Compatibility and Activation

The inverter is compatible with a wide range of 48V battery types, including AGM, Gel, lead-acid, lithium-ion, and LiFePO4. It also supports operation without batteries. A dual activation function can reactivate dormant lithium-ion batteries.



Figure 4.5.1: Battery Compatibility. The inverter supports various 48V battery types including SLD, FLD, AGM, GEL, LI (Lithium-ion), and SUER, and features a battery activation function.

4.6 WiFi Monitoring

The inverter includes built-in WiFi for remote monitoring and management. Refer to the separate WiFi module manual or application instructions for setup and usage details.

5. Maintenance

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

5.1 Cleaning

- Periodically clean the exterior of the inverter with a dry, soft cloth.
- Ensure ventilation openings are free from dust and debris.
- Do not use liquid cleaners or solvents.

5.2 Inspection

- Regularly inspect all wiring connections for tightness and signs of corrosion or damage.
- Check for any unusual noises or smells coming from the unit.
- Monitor the LCD display for any error codes or abnormal readings.

5.3 Fan Maintenance

The inverter is equipped with intelligent variable speed cooling fans. These fans help dissipate heat efficiently. Ensure the fan vents are not obstructed. If the fans become excessively noisy or stop working, contact customer support.

6. Troubleshooting

This section provides guidance for common issues. For problems not listed here, or if issues persist, contact POWLAND customer support.

Problem	Possible Cause	Solution
Inverter does not power on	Battery not connected or low voltage; Power switch off; Blown fuse/breaker	Check battery connections and voltage; Turn on power switch; Check and reset breakers/fuses.
No AC output	Overload; Short circuit; Inverter fault; AC output breaker tripped	Reduce load; Check for short circuits; Reset AC output breaker; If fault persists, contact support.
Battery not charging from solar	PV panels not connected; Insufficient sunlight; PV voltage too low/high; MPPT controller fault	Check PV connections; Ensure adequate sunlight; Verify PV array voltage is within range; Contact support.
Error Code 09 (as reported by a user)	Specific internal fault, possibly related to communication or hardware.	This error code indicates a specific internal issue. Power cycle the unit. If the error persists, contact POWLAND customer support for diagnosis and repair.
Over-temperature warning	Insufficient ventilation; Ambient temperature too high; Fan malfunction	Ensure proper airflow around the unit; Reduce ambient temperature; Check fans for obstruction or malfunction.

7. Specifications

The following table details the technical specifications of the POWLAND SMR-6KW Hybrid Pure Sine Wave Inverter.

Feature	Specification
Model	SMR-6KW
Rated Power	6000W
Battery Voltage	48V
AC Input Voltage	240V
AC Output Voltage	240V
Max. PV Input Power	6000W
Max. PV Input Current	18A
Max. PV Open Circuit Voltage	500Vdc
MPPT Voltage Range	60-450Vdc
MPPT Controller Current	120A
Product Dimensions	30.2 x 12.6 x 40 cm
Product Weight	10 kg
Display Type	Digital Display
Battery Capacity (Recommended)	200 Ah
Manufacturer	EASUN POWER

8. Warranty and Support

POWLAND products are designed for reliability and performance. For warranty information, please refer to the warranty card included with your product or visit the official POWLAND website. Keep your purchase receipt as proof of purchase. For technical support, troubleshooting assistance, or service inquiries, please contact POWLAND customer service through the following channels:

- **Website:** www.powland.com (Hypothetical link, please replace with actual if available)
- **Email:** support@powland.com (Hypothetical email, please replace with actual if available)
- **Phone:** Refer to your regional support contact information.

When contacting support, please have your product model (SMR-6KW) and serial number ready.

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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.

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