POWLAND SMG-II-6.2KW-48V-WiFi

POWLAND 6200W 48V Hybrid Solar Inverter User Manual

Model: SMG-II-6.2KW-48V-WiFi

Brand: POWLAND

1. Introduction

This manual provides comprehensive instructions for the installation, operation, and maintenance of your POWLAND 6200W 48V Hybrid Solar Inverter. This all-in-one inverter is designed to efficiently manage power from solar panels, batteries, and the utility grid, providing a reliable pure sine wave AC output for various household and office loads. Please read this manual thoroughly before installation and use to ensure safe and optimal performance of the unit.

2. Safety Instructions

Please observe the following safety precautions to prevent injury and damage to the inverter or connected equipment:

- Installation must be performed by qualified personnel in accordance with all local electrical codes.
- Do not attempt to disassemble or repair the inverter. Refer all servicing to authorized service personnel.
- Ensure proper grounding of the inverter.
- Keep the inverter away from water, high humidity, and flammable materials.
- Ensure adequate ventilation around the inverter to prevent overheating.
- The inverter is equipped with multiple protection functions including**short circuit protection**, **overload protection**, and **over temperature protection**. However, these do not substitute for careful handling and correct installation.
- This unit does not support three-phase connections.

3. Product Overview

3.1 Key Features

- **6200W Load Capacity:** Provides a robust 230V pure sine wave AC output.
- **Off-Grid Operation:** Designed for standalone use, cannot feed power back into the utility grid.
- **High PV Input:** Supports a wide PV input voltage range of 60-500V DC, with a maximum open circuit voltage of 500V DC and maximum input power of 6500W.
- **Battery-Less Operation:** Can operate directly from solar panels without a connected battery, provided the PV voltage is above 150V.
- **Integrated MPPT Controller:** Features a built-in Maximum Power Point Tracking solar charger controller with a maximum PV charging current of 120A.
- **Battery Compatibility:** Compatible with 48V lead-acid batteries (Sealed, AGM, Gel, Flooded types) and lithium batteries.
- **WiFi Module:** Includes a WiFi module for remote monitoring of operating status and data via a mobile application (SmartESS APP).
- **Programmable LCD:** Offers a configurable LCD screen for setting battery charging current, AC/solar charging priority, and charging source priority.
- **Dust-Proof Design:** Features a dust-proof grid to prevent dust ingress, extending the inverter's service life.

3.2 Product Components and Display

The inverter features a clear LCD display for monitoring and configuration, along with essential connection ports on the rear panel.

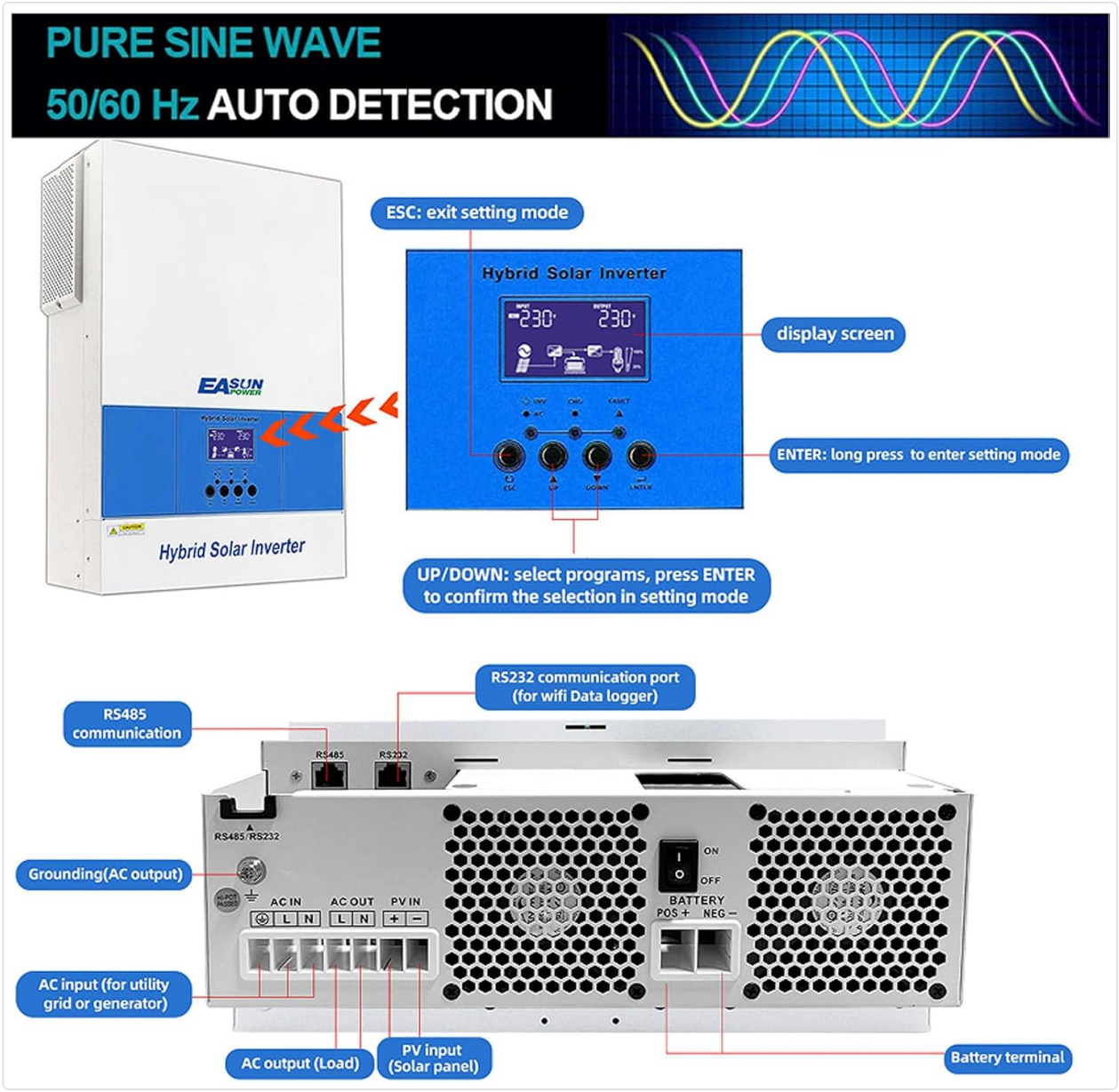


Image: Detailed view of the inverter's display screen and connection ports. The display shows voltage and current readings. The rear panel illustrates AC input, AC output, PV input, and battery terminals, along with RS232 and RS485 communication ports for the WiFi data logger.



Image: Front view of the POWLAND 6200W Hybrid Inverter, highlighting its 6200W AC output, 120A max PV charging current, 60-500Vdc wide PV input voltage, and 27A max PV input current. It's an all-in-one inverter with a built-in MPPT solar charger controller for 48V lead-acid and lithium batteries.

4. Setup

4.1 Installation Location

Choose a dry, well-ventilated area, away from direct sunlight and heat sources. Ensure sufficient clearance around the inverter for proper airflow.

4.2 Wiring Connections

Follow the diagram below for correct wiring of the solar panels, battery, utility grid, generator, and AC loads. Always ensure all power sources are disconnected before making any connections.

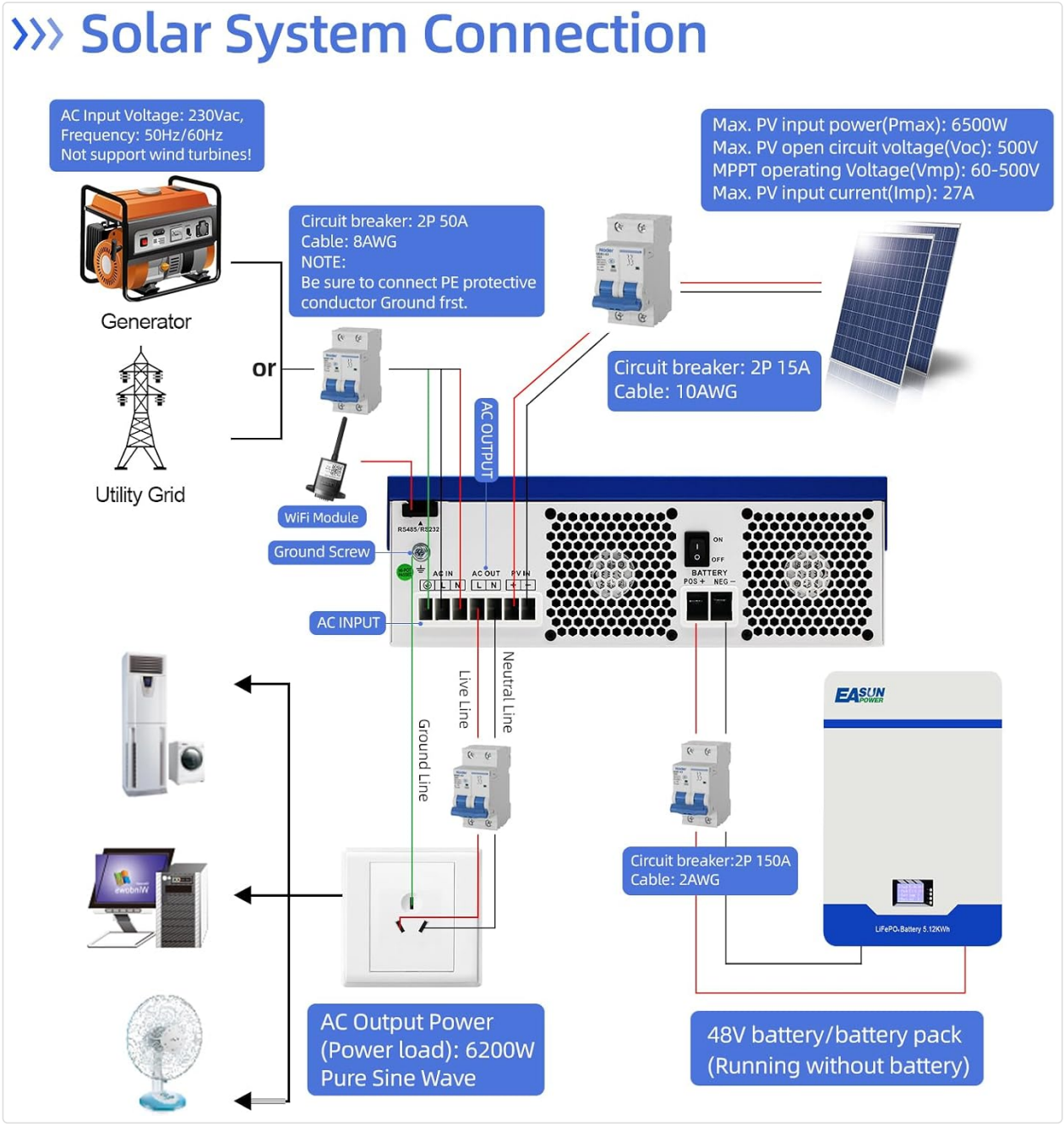


Image: Diagram illustrating a typical solar system connection for the hybrid inverter. It shows connections for solar panels, utility grid, generator, 48V battery, and various household loads like a fan, TV, and refrigerator. Includes circuit breaker recommendations and wiring details.

- **Battery Connection:** Connect the 48V battery bank to the designated battery terminals. Ensure correct polarity.
- **PV Input:** Connect solar panels to the PV input terminals. Observe the maximum PV open circuit voltage (500V DC) and operating voltage range (60-500V DC).
- **AC Input:** Connect the utility grid or a generator to the AC input terminals.
- **AC Output:** Connect your household or office loads to the AC output terminals.
- **Grounding:** Ensure the inverter is properly grounded using the ground screw.
- **WiFi Module:** Install the included WiFi module into the RS232 communication port for remote monitoring.

4.3 Initial Power-Up

After all connections are secure, switch on the battery breaker first, then the PV breaker, and finally the AC input breaker (if connected to grid/generator). The inverter will initiate and the LCD display will light up.

5. Operating the Inverter

5.1 LCD Display and Programmable Settings

The LCD display allows you to monitor the system status and configure various parameters. Use the navigation buttons (UP/DOWN, ENTER, ESC) to access and adjust settings such as battery charging current, and power source priorities.



Image: Image showcasing the 6200 Watt pure sine wave output of the inverter, suitable for various home appliances. It lists four output source priorities: Solar first (SOL), Utility grid first (UEI), Solar > Battery > Utility grid (SBU), and Solar > Utility grid > Battery (SUB). Examples of compatible appliances include electric kettles, refrigerators, air conditioners, microwave ovens, coffee machines, and blenders.

5.2 Charging Modes

The inverter supports four configurable charging modes:

1. **Solar First:** Prioritizes solar power for charging the battery.
2. **Utility Grid First:** Prioritizes utility grid power for charging the battery.
3. **Solar & Utility Grid:** Uses both solar and utility grid power to charge the battery.
4. **Solar Only:** Charges the battery exclusively from solar power.

5.3 Output Priority Modes

The inverter offers four output source priority settings to determine which power source supplies the loads:

1. **Solar First (SOL):** Prioritizes solar power to supply loads.
2. **Utility Grid First (UEI):** Prioritizes utility grid power to supply loads (Standard).
3. **SBU (Solar Battery Utility):** Prioritizes solar, then battery, then utility grid.
4. **SUB (Solar Utility Battery):** Prioritizes solar, then utility grid, then battery.

5.4 Battery Compatibility and Operation without Battery

The inverter is compatible with various 48V battery types, including Sealed Lead-Acid, AGM, Gel, Flooded, and Lithium batteries. For lithium batteries, ensure settings 05 and 41 are correctly configured to activate the battery function if not automatically detected.



Image: Image showing the inverter's compatibility with lithium and lead-acid batteries (GEL, AGM, FLD, LI, SLD types). It also mentions the four charging modes: Solar first, Utility Grid first, Solar & Utility Grid, and Solar only. Notes that operation without a battery requires PV input voltage of 150V or more.

The inverter can operate without a connected battery. In this mode, the PV input voltage must be maintained

above 150V DC for the unit to function.

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. Do not use liquid cleaners.
- **Dust-Proof Grid:** The inverter features a dust-proof grid. Regularly inspect and clean the grid to ensure proper ventilation and prevent dust accumulation, which can affect performance and lifespan.
- **Connections:** Periodically check all electrical connections to ensure they are tight and free from corrosion.
- **Environment:** Ensure the installation environment remains within the recommended temperature and humidity ranges.



Image: Collage showing key features: remote monitoring via SmartESS app with WiFi module, lithium battery activation function (settings 05 and 41), multiple protection features (overload, over temperature, short circuit), and a dust-proof grid design for extended service life.

7. Troubleshooting

If you encounter issues with your inverter, refer to the following general troubleshooting steps:

- **No Power Output:** Check all input power sources (solar, battery, grid) and ensure they are connected and active. Verify circuit breakers are not tripped.
- **Inverter Overheating:** Ensure the inverter is in a well-ventilated area and that the dust-proof grid is clean and unobstructed. Reduce the load if it exceeds the inverter's capacity.
- **Error Codes:** Refer to the specific error codes displayed on the LCD screen. Consult the full product manual (if provided separately) for detailed explanations of each code.
- **Battery Not Charging:** Check solar panel connections and output. Verify battery settings on the LCD are correct for your battery type.
- **Remote Monitoring Issues:** Ensure the WiFi module is correctly installed and configured, and that your mobile device has a stable internet connection.

For persistent issues, please contact technical support.

8. Specifications

Feature	Specification
Brand	POWLAND
Model Number	SMG-II-6.2KW-48V-WiFi (Non-parallel)
Manufacturer	EASUN POWER
Power Source	Solar and Battery Powered
Wattage	6200 Watts
Output Power	6200 Watts
Max Output Power (Watts)	6500
Inverter Capacity (VA)	7750
Input Voltage	48 Volts (DC)
Output Voltage	230 Volts (AC)
Frequency	50 Hz
Output Waveform	Pure Sine Wave
Max. PV Charge Current	120A
Max. PV Open Circuit Voltage	500V DC
PV Operating Voltage Range	60-500V DC
Max. PV Input Power	6500W
Max. PV Input Current	27A

Feature	Specification
Battery Compatibility	48V Lead-Acid (Sealed, AGM, Gel, Flooded) and Lithium Batteries
Battery Capacity (Recommended)	200 Ampere Hours
Display Type	LCD Screen
Product Dimensions (L x W x H)	43.8 x 29.5 x 10.5 cm
Item Weight	8.7 Kilograms
Total Power Outlets	2
Efficiency	High
Compliance	CE
Recommended Product Uses	Home
Included Components	Hybrid Inverter, English Manual, WiFi Module (Data Logger)
ASIN	B0D8FBDX9V

9. Warranty and Support

Your purchase includes the hybrid inverter unit, an English instruction manual, and a WiFi module (data logger). For any technical assistance or inquiries, online service support is available from our professional technical team. Please refer to the contact information provided with your product or on the manufacturer's website for support details.