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POWLAND iSolar-SMG-II-6.2KP-48V-WiFi

POWLAND 6200W Hybrid Solar Inverter User Manual

Model: iSolar-SMG-II-6.2KP-48V-WiFi

Brand: POWLAND

1. Introduction

This manual provides comprehensive instructions for the installation, operation, and maintenance of your POWLAND 6200W Hybrid Solar Inverter. This all-in-one pure sine wave inverter is designed to convert DC power to AC power, suitable for various household and office loads. It features a high PV input voltage range, supports battery-less operation (with PV voltage above 150V), and allows for parallel connections of multiple inverters. A WiFi module is included for remote monitoring via a mobile application. Please read this manual thoroughly before installation and use to ensure safe and efficient operation.

2. Safety Information

Always adhere to 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 and national electrical codes.
- Ensure the inverter is disconnected from all power sources (PV, battery, utility) before performing any installation or maintenance.
- Do not attempt to disassemble or repair the inverter yourself. Refer to qualified service personnel.
- Install the inverter in a well-ventilated area, away from flammable materials, moisture, and direct sunlight.
- Ensure proper grounding of the inverter.
- Avoid connecting inductive loads that exceed the inverter's rated power by 3 to 5 times during startup, as these require high starting power.
- This inverter is designed for off-grid use and is not intended for on-grid connection.

3. Product Overview

3.1 Key Features

- **Hybrid Solar Inverter:** 6200W load capacity, 230V output, pure sine wave off-grid inverter.
- **Battery-less Operation:** Can function without a connected battery if PV voltage exceeds 150V.
- **Parallel Function:** Supports multiple inverter connections (parallel cables included).
- **WiFi Module:** Included for remote monitoring via mobile application.

- **High PV Input:** Max. open circuit voltage 500 VDC; operating voltage 60-500 VDC; Max. PV input 6500W; Max. PV charging current 120A.
- **Battery Compatibility:** Suitable for 48V lead-acid (Seal, AGM, Gel, Flooded) and lithium batteries. Supports BMS communication with 48V 200AH/100AH wall-mounted batteries.
- **Programmable LCD Display:** Configurable battery charging current, AC/solar charging priority, and load current priority.
- **Multiple Charging Modes:** Solar only, Utility priority, Solar priority, Hybrid solar and utility.
- **Multiple Output Modes:** Solar first, Utility first (default), SBU (Solar-Battery-Utility), SUB (Solar-Utility-Battery).
- **Comprehensive Protection:** Short-circuit, overload, over-temperature, and dust protection.

3.2 Components and Package Contents

The package includes the following items:

- Inverter x 1
- English Manual x 1
- WiFi Module (Data Logger) x 1
- Parallel Communication Cable x 1



Front view of the POWLAND 6200W Hybrid Solar Inverter.



Key specifications of the 6200W Hybrid Solar Inverter, including AC output, PV charging current, and PV input voltage range.



Contents of the product package, showing the inverter, manual, WiFi module, and parallel communication cable.

4. Setup and Installation

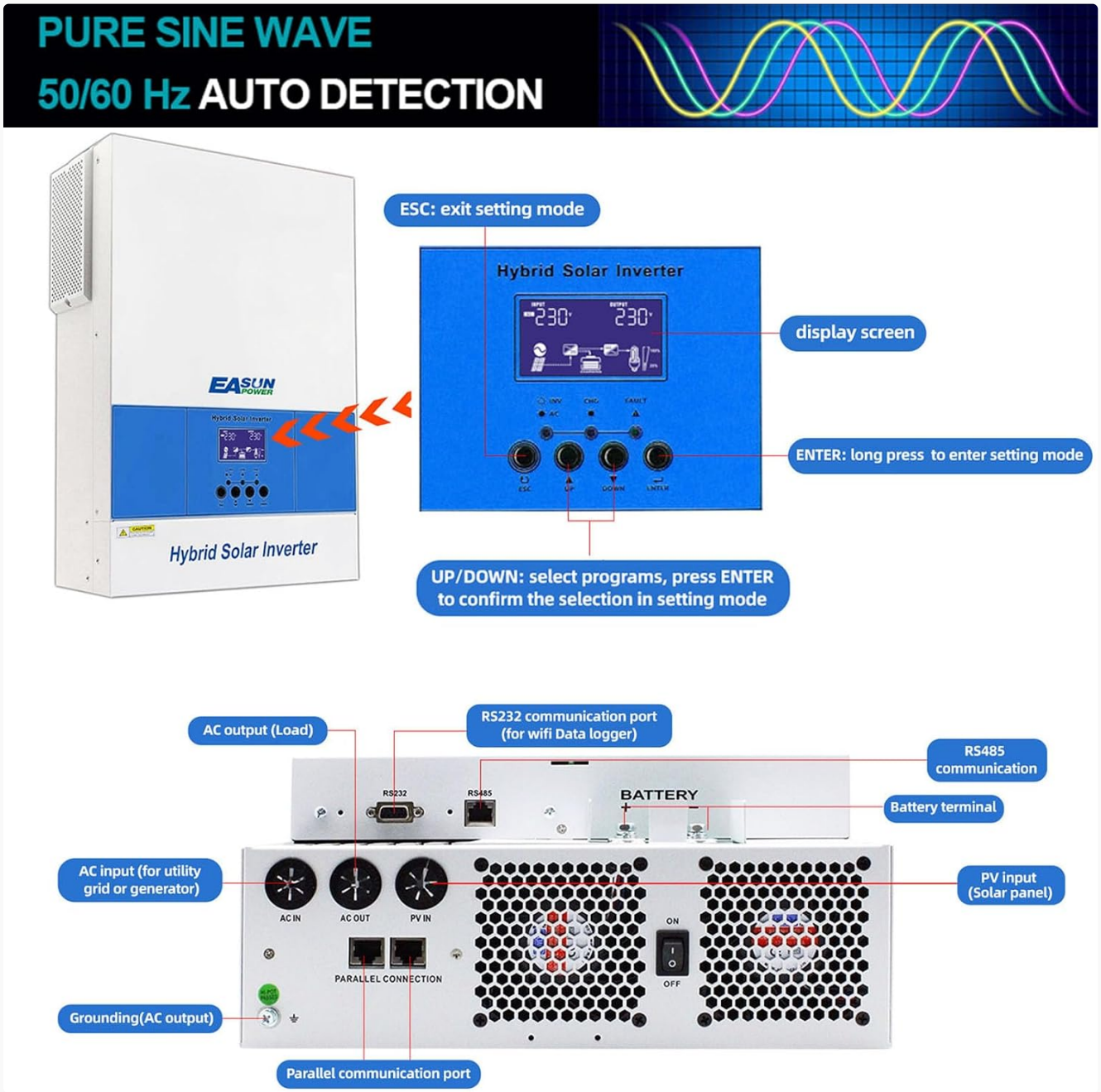
Proper installation is crucial for the safe and efficient operation of your hybrid solar inverter.

4.1 Physical Installation

- Mount the inverter vertically on a sturdy surface in a clean, dry, and well-ventilated area.
- Ensure adequate clearance around the inverter for proper airflow and heat dissipation.
- Avoid installing in direct sunlight or areas with high humidity or dust.

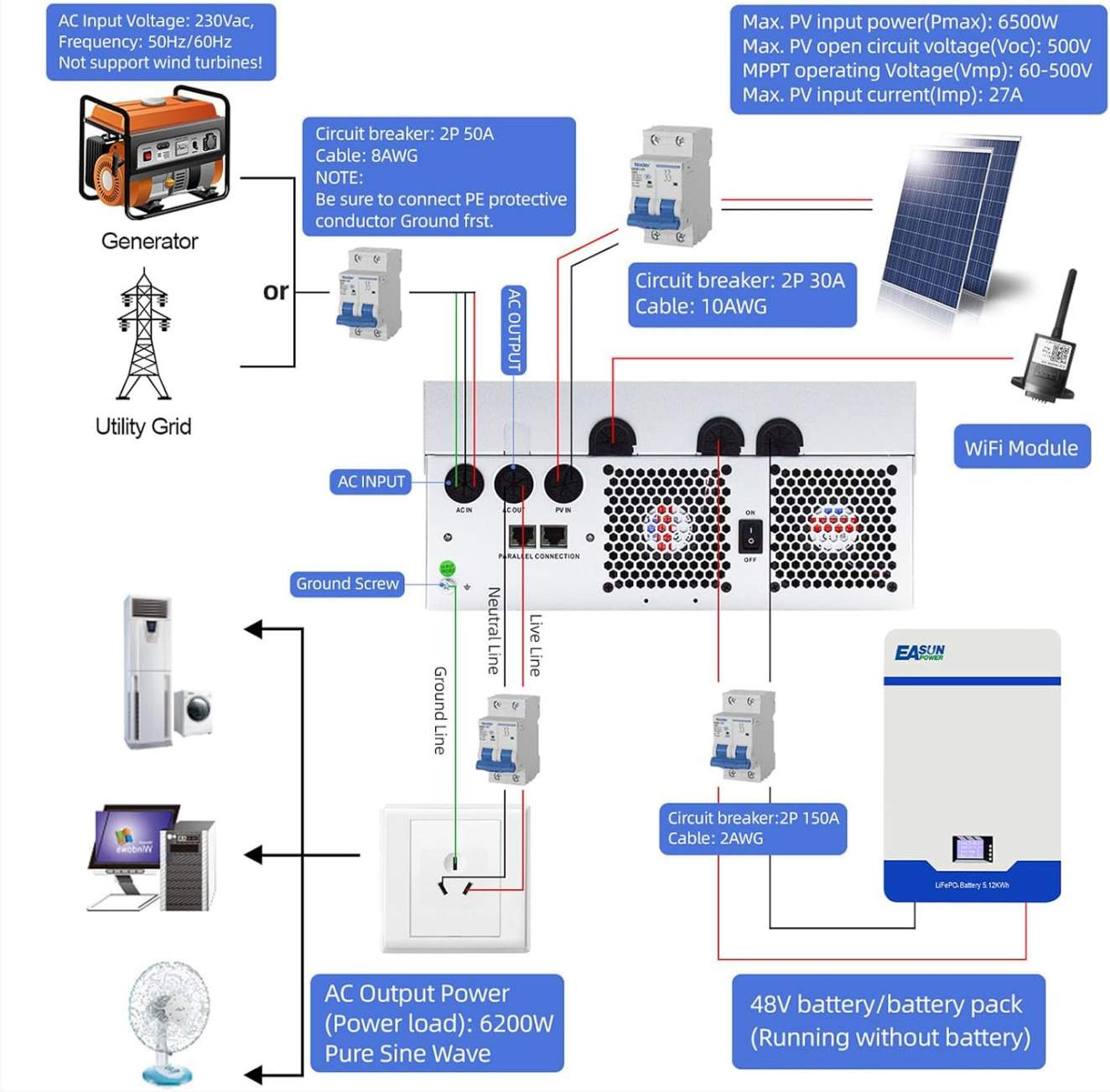
4.2 Wiring Connections

Refer to the diagram below for correct wiring connections. All wiring must comply with local electrical codes.



Detailed view of the inverter's control panel and connection ports, including AC input/output, PV input, battery terminals, RS232, RS485, and parallel communication port.

Solar System Connection



Comprehensive diagram illustrating the solar system connection, including generator/utility grid input, PV input, battery connection, AC output to loads, and grounding.

- **AC Input:** Connect to utility grid or generator (230Vac, 50Hz/60Hz). Ensure proper grounding.
- **PV Input:** Connect solar panels. Max. PV input power 6500W, Max. open circuit voltage 500VDC, operating voltage 60-500VDC.
- **Battery Connection:** Connect 48V lead-acid or lithium batteries. If no battery is connected, PV voltage must be above 150V for operation.
- **AC Output:** Connect household or office loads. The inverter provides 6200W pure sine wave output.
- **Parallel Connection:** Use the parallel communication port and cable for connecting multiple inverters (up to 9 units) to increase total power output.
- **WiFi Module:** Connect the included WiFi module to the RS232 communication port for remote monitoring.



Visual representation of remote monitoring via WiFi, the parallel connection capability for multiple inverters, and the dust-proof design for enhanced durability.

5. Operating Instructions

5.1 LCD Display and Buttons

The inverter features an LCD display and buttons for configuration and monitoring.

- **ESC:** Exit setting mode.
- **UP/DOWN:** Select programs or navigate menus.
- **ENTER:** Long press to enter setting mode; press to confirm selection in setting mode.

5.2 Programmable Settings

You can configure various parameters via the LCD display:

- **Battery Charging Current:** Adjust the charging current for your battery type.

- **AC/Solar Charging Priority:** Set the preferred source for battery charging.
- **Load Current Priority:** Define the priority for power supply to loads.

5.3 Charging Modes

The inverter supports four charging modes:

1. **Solar Only:** Charges batteries exclusively from solar power.
2. **Utility Priority:** Prioritizes utility grid for charging, using solar only when utility is unavailable.
3. **Solar Priority:** Prioritizes solar power for charging, using utility only when solar is insufficient.
4. **Hybrid Solar and Utility:** Uses both solar and utility power for charging as needed.

5.4 Output Modes

The inverter offers four output priority modes for supplying power to loads:

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



Illustration of the 6200W pure sine wave output and examples of compatible household appliances like electric kettles, refrigerators, and air conditioners.

5.5 Remote Monitoring (WiFi)

The included WiFi module allows you to monitor the inverter's status and data remotely via the SmartESS APP on your mobile phone.

- Connect the WiFi module to the RS232 port on the inverter.
- Download and install the SmartESS APP on your iOS or Android device.
- Follow the APP's instructions to connect to your inverter and begin monitoring.
- The APP also supports parameter modification.

Note: *Some users have reported initial difficulties with APP setup on newer smartphones, suggesting trying an older device if issues persist.*

6. Maintenance

Regular maintenance helps ensure the longevity and optimal performance of your inverter.

- **Cleaning:** Periodically clean the exterior of the inverter, especially the ventilation openings, to prevent dust accumulation. The inverter features a dust-proof grid design to minimize internal dust entry.
- **Connections:** Regularly check all electrical connections for tightness and signs of corrosion. Loose connections can lead to overheating and poor performance.
- **Environment:** Ensure the installation environment remains within the recommended temperature and humidity ranges.
- **Battery Check:** If using batteries, follow the battery manufacturer's maintenance guidelines.

7. Troubleshooting

If you encounter issues with your inverter, refer to the following common problems and solutions. For persistent issues or error codes not listed, contact customer support.

Problem	Possible Cause	Solution
Inverter not turning on	No input power (PV, battery, utility), loose connections, power switch off.	Check all power connections, ensure PV voltage is sufficient (especially for battery-less operation), verify battery charge, turn on the power switch.
No AC output	Overload, short circuit, over-temperature, low battery voltage, inverter fault.	Reduce load, check for short circuits, allow inverter to cool down, charge battery, check LCD for error codes.
Error Codes (e.g., E8, E14)	Internal fault, communication error, specific system issue.	Note the error code displayed on the LCD. Power cycle the inverter. If the error persists, contact customer support with the specific code.
WiFi APP connection issues	Incorrect setup, network issues, APP compatibility.	Ensure WiFi module is correctly connected. Verify network settings. Try connecting with a different mobile device if issues persist. Refer to the APP's specific troubleshooting guide.

8. Specifications

Detailed technical specifications for the POWLAND 6200W Hybrid Solar Inverter:

Parameter	Value
Model	iSolar-SMG-II-6.2KP-48V-WiFi
Rated Power	6200W
AC Output Voltage	230V
Frequency	50 Hz / 60 Hz (Auto Detection)
Max. PV Input Power	6500W
Max. PV Open Circuit Voltage	500 VDC
PV Operating Voltage Range	60-500 VDC

Parameter	Value
Max. PV Charging Current	120A
Max. PV Input Current	27A
Battery Voltage	48V
Battery Capacity (Recommended)	200 Ampere/hours
Display Type	LCD
Dimensions (L x W x H)	45 x 30 x 13 cm
Weight	10 kg
Power Source	Solar Powered
Recommended Use	Household

9. Warranty and Support

For warranty information and technical support, please contact the manufacturer or your point of purchase.

- **Manufacturer:** EASUN POWER
- **Support:** Refer to the contact information provided with your purchase or visit the official POWLAND/EASUN POWER website for support resources.
- When contacting support, please have your model number (iSolar-SMG-II-6.2KP-48V-WiFi) and purchase details ready.

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