PMSUN 8.2KKW

PMSUN 8.2KW On/Off Grid Solar Hybrid Inverter User Manual

Model: 8.2KKW | Brand: PMSUN

1. Product Overview

The PMSUN 8.2KW On/Off Grid Solar Hybrid Inverter is an all-in-one solar energy inverter charger designed for domestic energy storage, RVs, and off-grid systems. It features a pure sine wave output, an integrated 160A MPPT charge controller, and supports dual PV inputs.

2. Safety Instructions

- Read all instructions carefully before installation and operation.
- Installation must be performed by qualified personnel in accordance with local electrical codes.
- Ensure the inverter is installed in a well-ventilated area, away from flammable materials and direct sunlight.
- Do not install the device near a bedroom, as the fan may produce noise during operation.
- Verify all connections are secure and correctly polarized before applying power.
- Do not attempt to repair or disassemble the inverter. Contact qualified service personnel.
- Ensure the battery is fully charged before connecting it to the inverter.

3. Key Features

- **Pure Sine Wave Inverter:** Provides high-quality AC power suitable for sensitive electronics.
- **High Power Output:** 8200W continuous power, 16400W surge power.
- **Integrated MPPT Charge Controller:** 160A maximum charge current with a PV input range of 90-450Vdc and max VOC of 500V DC.
- **Dual PV Inputs:** Supports two independent PV arrays for optimized solar energy harvesting.

- **Multiple Charging Modes:** Offers Solar Only, Utility Time, Solar Time, and Hybrid Solar charging modes.
- **Multiple Output Modes:** Includes Solar Priority, Utility Priority, and SBU Priority for flexible power management.
- **BMS Function:** Built-in Battery Management System with lithium battery activation function.
- **Dual AC Outputs:** One for main load (UPS) and another for normal load.
- **RGB Indicator Lights:** Visual indication of operating modes (Purple for PV, Red for Battery, Blue for Utility).
- **Compatibility:** Suitable for 48V lead-acid (sealed, AGM, gel, flooded) and lithium batteries.

4. Technical Specifications

Feature	Specification
Model Name	PMSUN 8.2KW On/Off Grid Solar Hybrid Inverter
Max PV Input Power	8200 W
PV Input Voltage Range	90-450 Vdc
Max PV Open Circuit Voltage (VOC)	500 V DC
Optimal Operating Voltage	300-360 V
Recommended PV Cable Size	10 AWG
Max Charge Current	160 A
Nominal Input Frequency	50/60 Hz
Output Power	8200 W
Surge Power	16400 W
Battery Voltage	48 V (Lead-acid, Lithium)
Product Dimensions	53 x 39 x 13 cm
Item Weight	14.5 kg
Certifications	CE

Note: Specifications are subject to change without prior notice. Always refer to the product label for the most accurate information.

5. Installation and Connections

Proper installation is crucial for the safe and efficient operation of your hybrid inverter. Follow these guidelines:

5.1 System Diagram

This diagram illustrates the typical connections for the 8.2KW solar hybrid inverter, including dual solar panel inputs (Solar Power A, Solar Power B), battery connection, utility grid input, and outputs for both backup and on-grid home loads. A generator can also be connected as an alternative power source.

5.2 Physical Connections

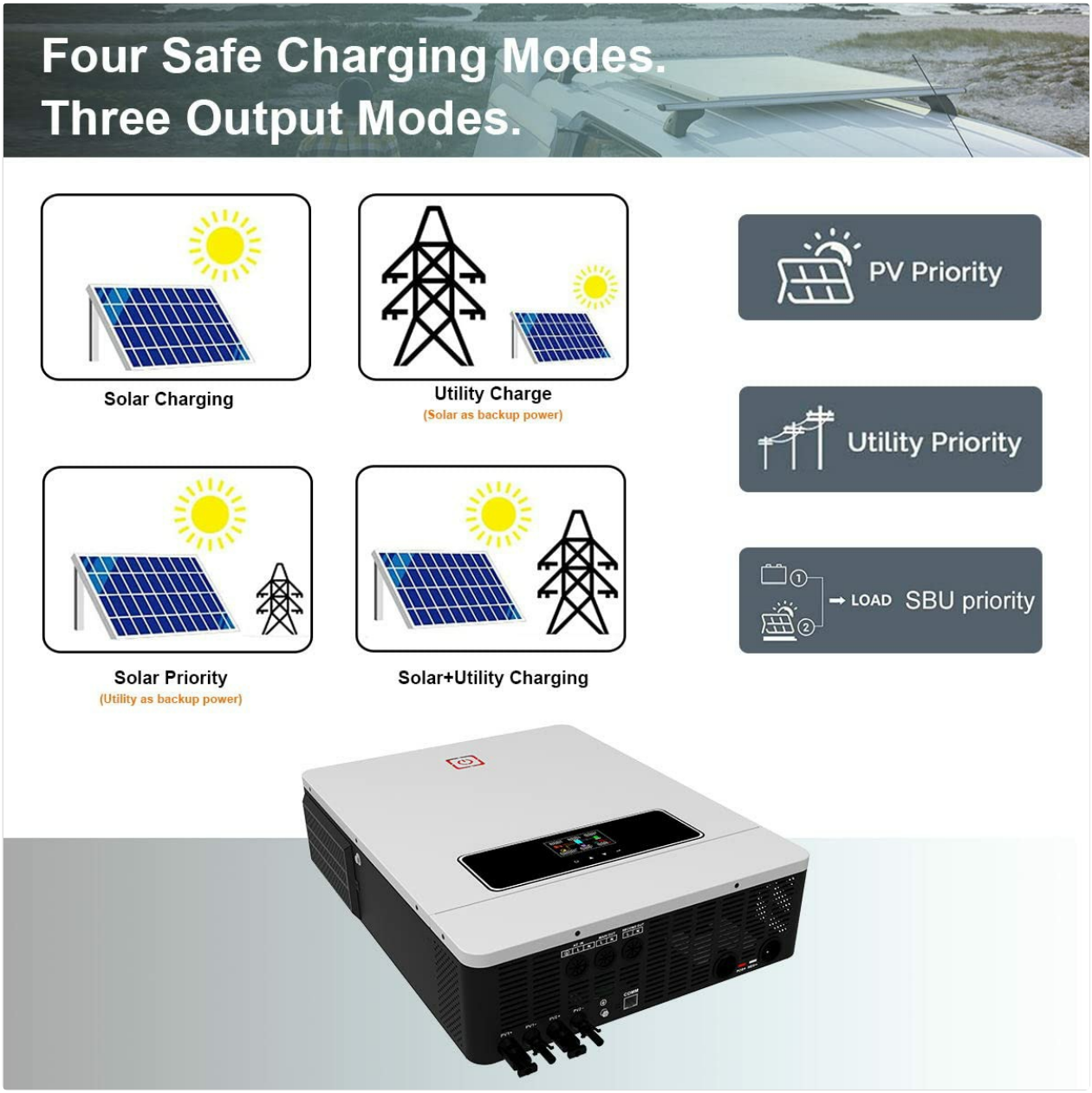
The image above displays the rear panel of the inverter, highlighting the connection points for AC input, main AC output, secondary AC output, dual PV inputs (PV1 and PV2), a communication port, and battery terminals. Ensure all wiring is correctly sized and terminated.

- **PV Input:** Connect your solar panels to the designated PV+ and PV- terminals. The inverter supports dual MPPT inputs for optimal performance.
- **Battery Connection:** Connect the 48V battery bank to the BATTERY + and - terminals. Ensure correct polarity.
- **AC Input:** Connect the utility grid or generator to the AC IN terminals.
- **AC Output:** Connect your main loads to the MAIN OUT terminals and secondary loads to the SECOND OUT terminals.
- **Communication Port:** Use the COMM port for monitoring and data logging.

6. Operating Modes

The inverter offers flexible operating modes to suit various energy management needs:

6.1 Charging Modes



The inverter supports four distinct charging modes: **Solar Charging** (solar is the primary source), **Utility Charge** (utility is the primary source, solar is backup), **Solar Priority** (solar is primary, utility is backup), and **Solar+Utility Charging** (both solar and utility charge the battery simultaneously).

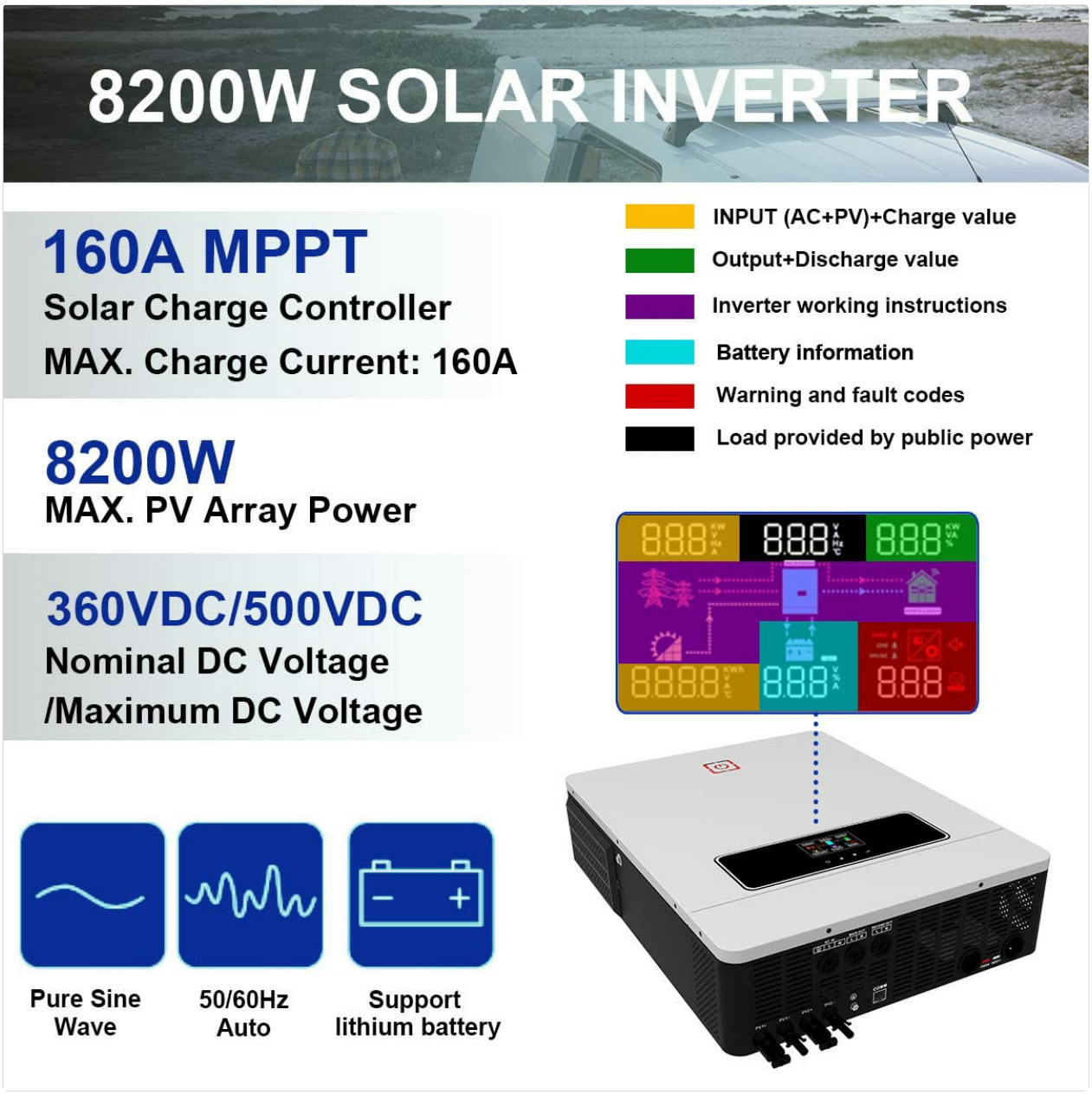
6.2 Output Modes

The inverter provides three output modes for power distribution:

- **Solar Priority:** Solar power is prioritized for loads, then battery power, and finally utility power.
- **Utility Priority:** Utility power is prioritized for loads, then solar power, and finally battery power.
- **SBU Priority:** Solar power is prioritized, then battery power, and finally utility power.

7. Display and Indicators

The inverter features RGB indicator lights that automatically change color to reflect the current operating mode: Purple for PV Mode, Red for Battery Mode, and Blue for Utility Mode. This provides a quick visual status of the system.



The LCD display provides detailed information on the inverter's status, including input/output values, charging status, battery information, and any warning or fault codes. Users can navigate through menus using the touch buttons to view specific data and adjust settings.

8. Lithium Battery Activation (BMS)

The inverter includes a built-in Battery Management System (BMS) with a lithium battery activation function. This feature allows the inverter to activate a dormant lithium battery through PV or mains power, even if the battery has entered a protection mode. This eliminates the need for manual activation.

9. Monitoring (WiFi App)

The inverter supports WiFi monitoring through a dedicated mobile application (Sun House App). This allows users to remotely monitor system performance, view data, and manage settings from their smartphone or tablet.

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This video demonstrates the process of connecting the inverter to the Sun House App for WiFi monitoring, including network configuration and device registration. It shows how to search for WLAN, enter Wi-Fi credentials, and add the device to your

account for remote access to energy data.

10. Maintenance

- **Regular Inspection:** Periodically check all cables and connections for wear, damage, or loose contacts.
- **Cleaning:** Keep the inverter's ventilation openings clear of dust and debris to ensure proper cooling. Use a soft, dry cloth for cleaning.
- **Environment:** Ensure the installation environment remains within the specified operating temperature and humidity ranges.
- **Firmware Updates:** Check for available firmware updates from the manufacturer to ensure optimal performance and security.

11. Troubleshooting

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

- **No Power Output:** Check AC input and output connections, battery voltage, and PV input voltage. Ensure all circuit breakers are on.
- **Inverter Not Charging Battery:** Verify PV panel connections and voltage. Check battery health and connections. Ensure the charging mode is correctly configured.
- **Error Codes on Display:** Consult the inverter's display for specific error codes. Refer to the full manual (if provided separately) for a detailed explanation of each code and recommended actions.
- **Overload Warning:** Reduce the connected load. The inverter's surge power capacity is limited.
- **Overheating:** Ensure adequate ventilation around the inverter. Clear any obstructions from the cooling vents.

For persistent issues, contact PMSUN customer support or a qualified technician.

12. Warranty and Support

This PMSUN 8.2KW On/Off Grid Solar Hybrid Inverter comes with a manufacturer's warranty. Please refer to the warranty card included with your product for specific terms and conditions, including warranty period and coverage details.
For technical support, service, or warranty claims, please contact PMSUN customer service through the contact information provided in your product packaging or on the official PMSUN website.