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PowMr POW-HVM5.5K-48V

PowMr 5500W Hybrid Inverter User Manual

Model: POW-HVM5.5K-48V

1. Product Overview

The PowMr 5500W Hybrid Inverter is a versatile power solution designed for off-grid solar systems. It integrates a pure sine wave inverter, an 80A MPPT solar charge controller, and a battery charger into one compact unit. This inverter is compatible with various battery types, including 48V Lead-Acid (Sealed, AGM, Gel, Flooded) and Lithium batteries, and can even operate without a battery.

- **Pure Sine Wave Output:** Provides stable 230Vac±5% power, suitable for sensitive electronics.
- **High Power Capacity:** Max input power of 5500W with a Max PV Array Open Circuit Voltage of 500VDC.
- **Integrated MPPT Charge Controller:** Features an 80A MPPT charge controller for efficient solar charging.
- **Flexible Battery Compatibility:** Supports 48V Lead-Acid and Lithium batteries, and can function without a battery.
- **User-Friendly Interface:** Comprehensive LCD display and accessible buttons for configurable settings like battery charging current, AC/solar charger priority, and input voltage range.
- **Comprehensive Protections:** Includes overload, over-temperature, and short-circuit protection for safe operation.
- **Wide Application:** Capable of powering various home and office appliances, including motor-type loads.





Figure 1.1: Front view of the PowMr 5500W Hybrid Inverter.

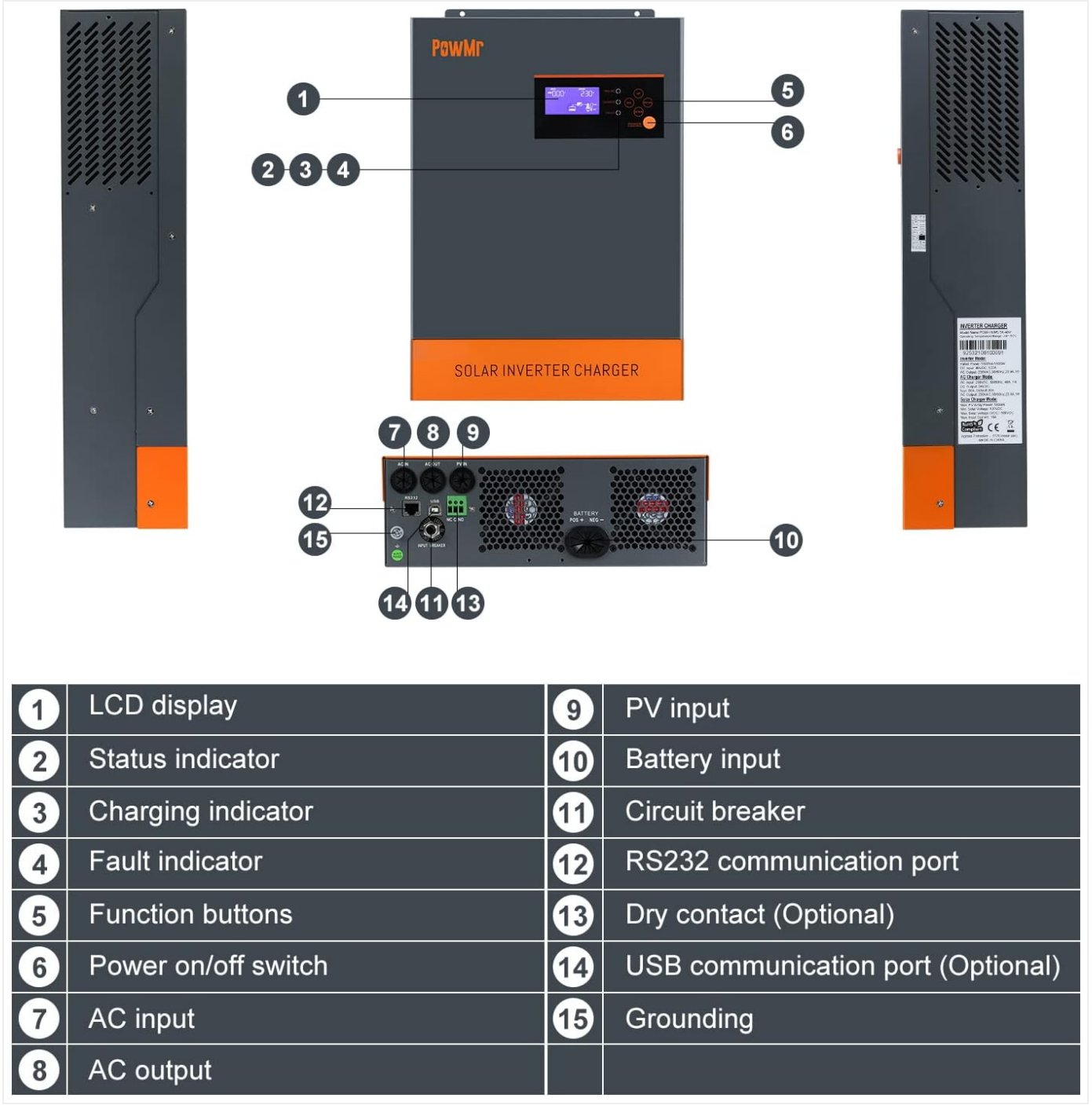
2. Safety Information

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

- Ensure all wiring is performed by qualified personnel.
- Do not disassemble the inverter. There are no user-serviceable parts inside.
- Install the inverter in a well-ventilated area, away from flammable materials.
- Ensure proper grounding of the unit.
- Disconnect all power sources (AC, DC, PV) before performing any maintenance or wiring.
- Wear appropriate personal protective equipment (PPE) during installation and maintenance.

3. Product Components and Connections

Familiarize yourself with the various components and connection points of your PowMr Hybrid Inverter.



1	LCD display	9	PV input
2	Status indicator	10	Battery input
3	Charging indicator	11	Circuit breaker
4	Fault indicator	12	RS232 communication port
5	Function buttons	13	Dry contact (Optional)
6	Power on/off switch	14	USB communication port (Optional)
7	AC input	15	Grounding
8	AC output		

Figure 3.1: Front and Rear Panel Diagram with labeled components.

Table 3.1: Component Descriptions

No.	Component	No.	Component
1	LCD display	9	PV input
2	Status indicator	10	Battery input
3	Charging indicator	11	Circuit breaker
4	Fault indicator	12	RS232 communication port
5	Function buttons	13	Dry contact (Optional)

No.	Component	No.	Component
6	Power on/off switch	14	USB communication port (Optional)
7	AC input	15	Grounding
8	AC output		

4. Setup and Installation

Proper installation is crucial for the safe and efficient operation of your inverter. Follow these steps carefully.

4.1 Battery Connection

The inverter supports various 48V battery types. Ensure correct polarity when connecting batteries.



Figure 4.1: The inverter is compatible with 48V lead-acid (Sealed/AGM/Flooded/Gel) and Lithium batteries, and can also operate without a battery.

Important: Always connect the battery first before connecting solar panels or AC input. Ensure the inverter's power switch is OFF during battery connection.

4.2 System Wiring Diagram

The inverter can be integrated into a hybrid power system, utilizing solar, utility, and generator inputs to power home appliances.

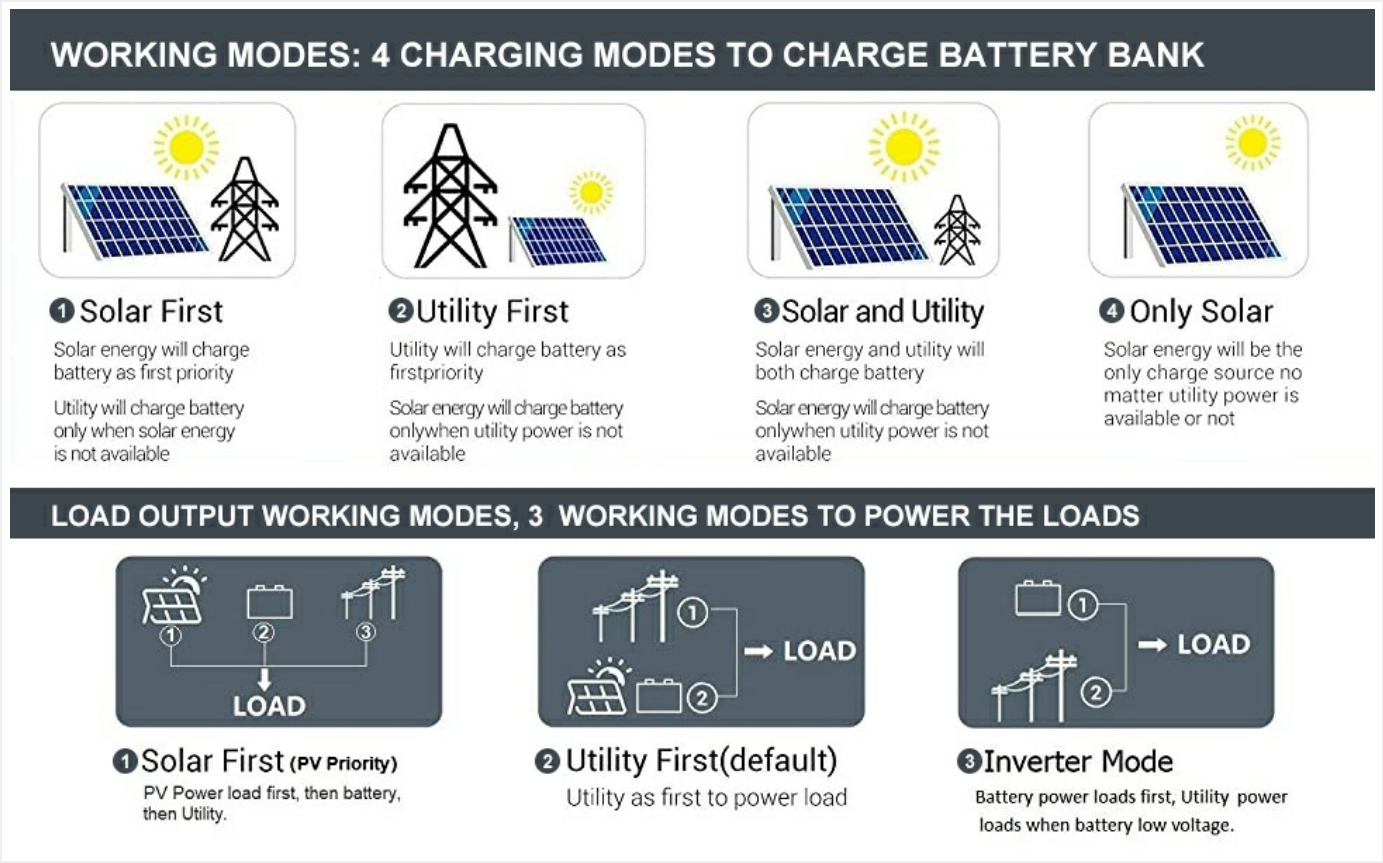


Figure 4.2: Hybrid Power System overview, illustrating connections for solar panels, generator, utility grid, battery, and household loads.

For detailed wiring instructions, refer to the video below:

[redacted]

Video 4.1: Installation guide for the PowMr 5500W Solar Inverter, demonstrating the connection of battery cables and the proper placement of the cover. This video highlights the built-in 80A MPPT solar controller.

5. Operating Instructions

This section details how to operate your PowMr Hybrid Inverter, including display navigation and mode selection.

5.1 Operation and Display Panel

The inverter features an LCD display and LED indicators to provide real-time status and allow for configuration.

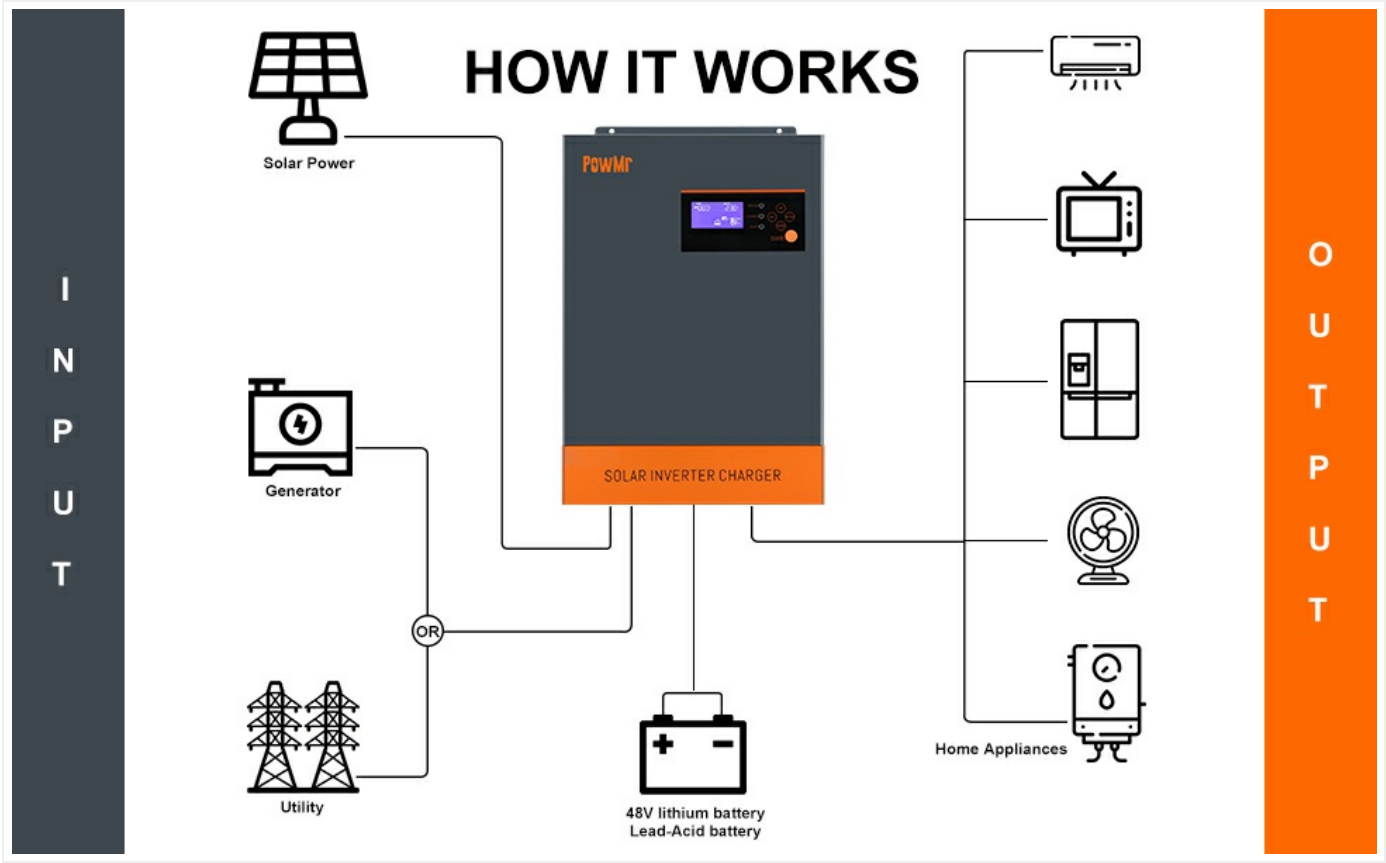


Figure 5.1: Detailed view of the inverter's operation and display panel, showing the LCD, LED indicators, and function buttons.

Table 5.1: LED Indicator Messages

LED Indicator	Messages
AC / **INV** (Green)	Solid On: Output is powered by utility in Line mode. Flashing: Output is powered by battery or PV in battery mode.
CHARGE (Green)	Solid On: Battery is fully charged. Flashing: Battery is charging.
FAULT (Red)	Solid On: Fault occurs in the inverter. Flashing: Warning condition occurs in the inverter.

5.2 Working Modes: Charging and Output

The inverter offers four charging modes and three output modes to optimize power management based on your needs.



Figure 5.2: Diagram illustrating the four charging modes (Solar Charging Only, Electricity Utility Priority, Solar Priority, Hybrid Charging) and three output modes (PV Priority, Utility Priority, Inverter Mode).

For a visual demonstration of the inverter's operation and features, please watch the video below:

[redacted].

Video 5.1: Overview of the PowMr 5500W Solar Hybrid Inverter, showcasing its features and operational display. This video demonstrates the inverter's ability to run without a battery and its DC48V to 220/230VAC output.

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. Ensure ventilation openings are free from dust and debris.
- **Connections:** Annually check all electrical connections for tightness. Loose connections can cause overheating and

damage.

- **Battery Health:** If using batteries, monitor their health and charge levels regularly. Follow battery manufacturer's guidelines for maintenance.
- **Environment:** Ensure the installation environment remains within the specified temperature and humidity ranges.

7. Troubleshooting

This section provides solutions to common issues you might encounter with your inverter. For problems not listed here, please contact customer support.

Table 7.1: Common Troubleshooting Guide

Problem	Possible Cause	Solution
Inverter not turning on	No DC input from battery/PV; Loose battery connections; Circuit breaker tripped.	Check battery voltage; Ensure battery cables are securely connected; Reset circuit breaker.
No AC output	Overload; Short circuit; Low battery voltage; Inverter fault.	Reduce load; Check for short circuits in wiring; Charge battery; Check fault indicator and refer to manual.
PV charging not working	Insufficient solar input; PV array voltage too low/high; Loose PV connections.	Check solar panel exposure; Verify PV array voltage is within MPPT range (120VDC~450VDC); Secure PV wiring.
Fans constantly running	High internal temperature; Normal operation under load.	Ensure adequate ventilation; This may be normal during high load or charging.

The inverter is equipped with intelligent protection systems to prevent damage. Refer to the product overview for a list of protection modes.



Figure 7.1: The inverter features 15 intelligent protection modes, including charge low/high temperature, discharge low/high temperature, overcurrent, undervoltage, short-circuit, solar panel reverse connection, battery overvoltage, over temperature, and overload protection.

8. Specifications

Detailed technical specifications for the PowMr 5500W Hybrid Inverter.

Table 8.1: General Specifications

Feature	Value
Model Name	POW-HVM5.5K-48V
Rated Power	5500VA/5500W
DC Input	48VDC, 127A
AC Output	230VAC, 50/60Hz, 23.9A, 1Φ

Feature	Value
Operating Temperature Range	-10~55°C
Ingress Protection	IP21 (Indoor use)
Item Weight	23.9 pounds
Package Dimensions	22 x 15 x 7 inches

8.1 Solar Charger Mode Specifications

Table 8.2: Solar Charger Specifications

Feature	Value
Max PV Array Power	5500W
Min Solar Voltage	120VDC
Max Solar Voltage (VOC)	500VDC
Max Input Current	18A
PV Array MPPT Voltage Range	120VDC~450VDC

8.2 AC Charger Mode Specifications

Table 8.3: AC Charger Specifications

Feature	Value
AC Input	230VAC, 50/60Hz, 40A, 1Φ
DC Output	54VDC
Max Current	80A, Default 30A

8.3 PV Module Selection Guidelines

When selecting PV modules, ensure the Open Circuit Voltage (Voc) does not exceed the inverter's maximum PV array open circuit voltage (500VDC) and is higher than the minimum battery voltage.

Table 8.4: Recommended Solar Panel Configurations (Example: 330Wp Panel)

Solar Panel Spec. (reference)	SOLAR INPUT	Q'ty of panels	Total input power
- 330Wp - Vmp: 33.25Vdc - Imp: 9.925A - Voc: 40.35Vdc - Isc: 10.79A - Cells: 60	Min in serial: 6 pcs, max in serial: 12 pcs	6 pcs	1980W
	10 pcs in serial	10 pcs	3300W
	12 pcs in serial	12 pcs	3960W
	6 pieces in serial and 2 sets in parallel	12 pcs	3960W
	8 pieces in serial and 2 sets in parallel	16 pcs	5280W

9. Warranty and Support

For warranty information and technical support, please contact PowMr customer service. Keep your purchase receipt as proof of purchase.
You can find more information and contact details on the official PowMr store page:PowMr Amazon Store.

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