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## POWLAND SMH-3KW-24V-WiFi

# POWLAND 3.2KVA 3KW Hybrid Inverter 24V Pure Sine Wave Off-Grid Inverter

Model: SMH-3KW-24V-WiFi

## 1. Introduction

This manual provides essential information for the safe and efficient operation of your POWLAND 3.2KVA 3KW Hybrid Inverter. This off-grid pure sine wave inverter is designed for 24V battery systems and integrates an 80A MPPT solar charger and an AC charger. It can be connected to a generator or the public grid and is suitable for various household and office loads. A WiFi module is included for remote monitoring via an application.




*Image: POWLAND 3.2KVA 3KW Hybrid Inverter, model SMH-3KW-24V-WiFi.*

## 2. Safety Instructions

Please read and follow these safety instructions carefully before installation and operation to prevent injury or

damage to the inverter.

- Before installation, ensure all power switches are in the OFF position.
- Do not mount the inverter on flammable construction materials.
- Mount the inverter on a solid, non-combustible surface.
- Install the inverter at eye level to ensure the LCD display is easily readable.
- For proper air circulation and heat dissipation, allow approximately 20 cm clearance on the sides and 50 cm above and below the unit.
- The recommended ambient temperature for operation is between 0°C and 55°C.
- Always connect a circuit breaker to the PV input, battery, and AC input for protection.
- Ensure all positive (+) and negative (-) cables are connected correctly. Connections must not be reversed.

## 3. Product Overview

The POWLAND Hybrid Inverter combines the functions of an inverter, solar charger, and battery charger to offer uninterruptible power support. Key features include:

- 3000W rated power, 3.2KVA capacity.
- 24V battery voltage support.
- 80A maximum solar charge current.
- Maximum 450VDC PV open circuit voltage (Voc) and 55-430VDC operating voltage (Vmp).
- Maximum 3000W PV array power.
- Integrated WiFi module for remote monitoring via app.
- Pure sine wave output for high compatibility with various AC loads.

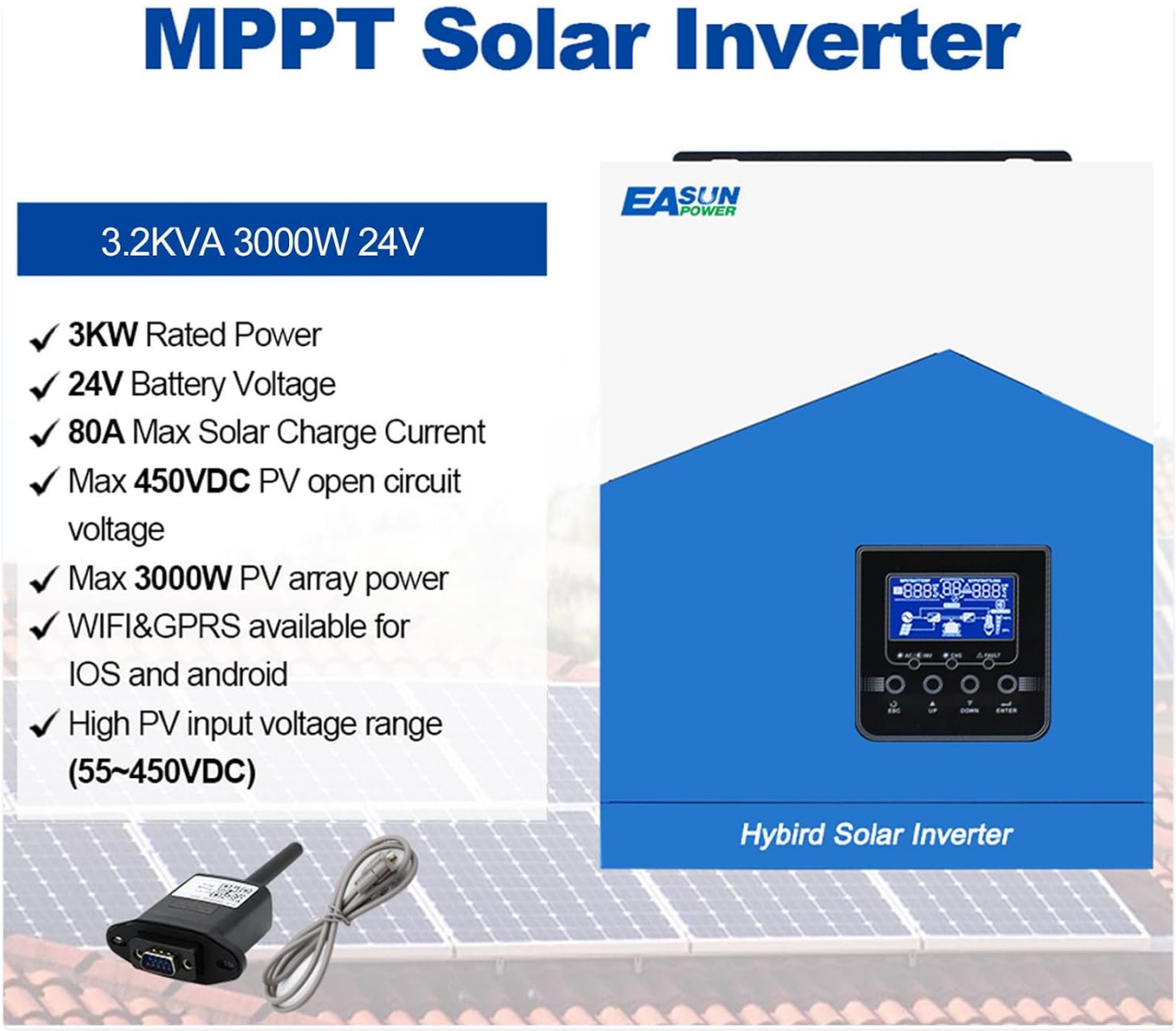



*Image: POWLAND Hybrid Inverter highlighting key features like 3KW rated power, 24V battery voltage, 80A max solar charge current, and WiFi connectivity.*

### 3.1. System Connection Diagram

The inverter can be integrated into a solar power system with solar panels, a generator, or the utility grid, and a 24V battery bank to power various home appliances.

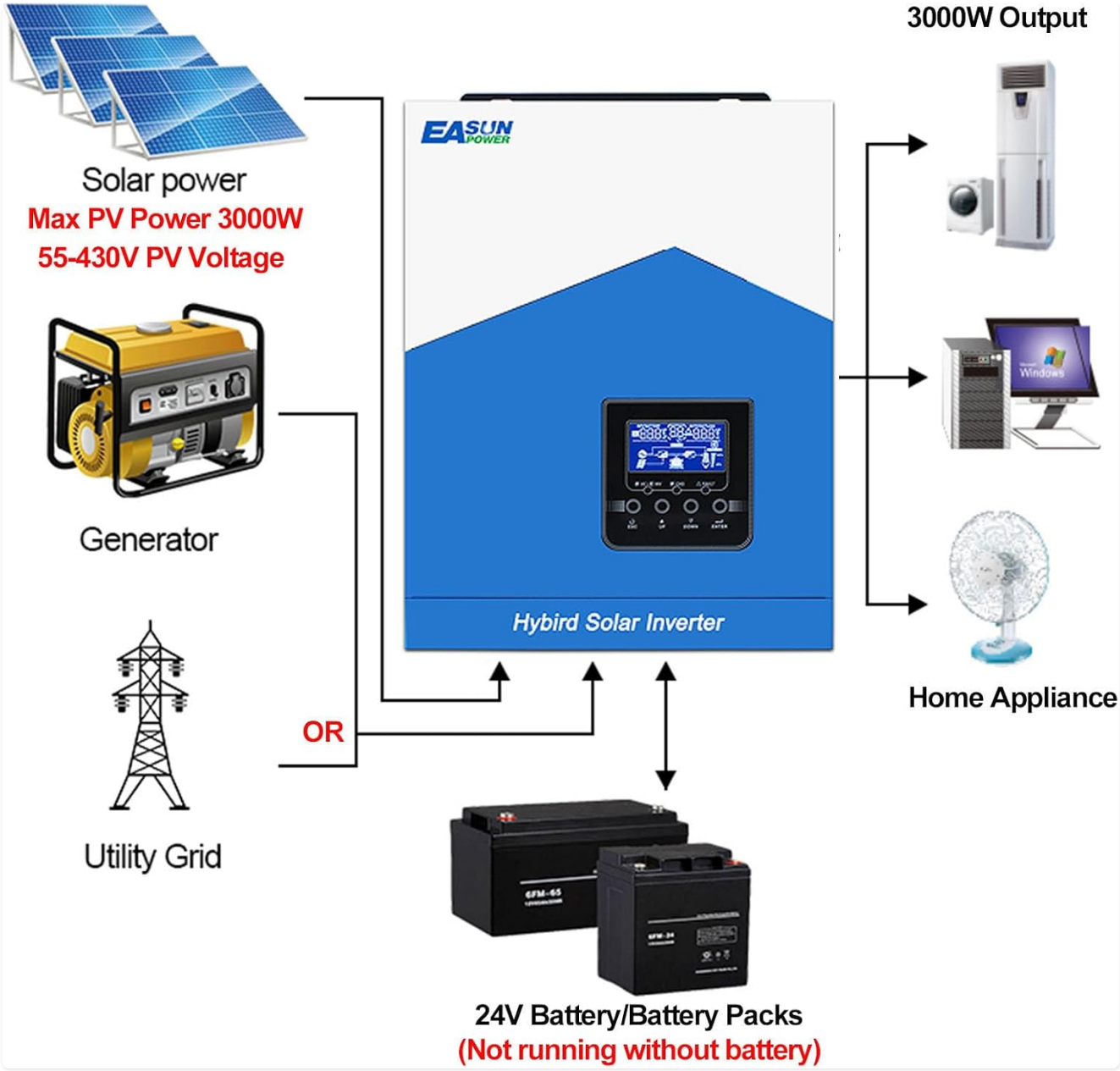



*Image: Diagram illustrating the connection of solar panels, generator/utility grid, battery, and home appliances to the hybrid inverter.*

### 3.2. Pure Sine Wave Output

The inverter provides a pure sine wave output, ensuring high-quality AC power with stable output and broad compatibility for sensitive electronics and inductive loads.




*Image: Visual representation of pure sine wave output and examples of compatible appliances like TVs, refrigerators, computers, and microwaves.*

### 3.3. Inverter Components and Ports

Familiarize yourself with the inverter's external components and connection ports:




*Image: Detailed view of the inverter's front and rear panels, labeling ports such as RS-232 Communication, Power on/off switch, AC input/output, Safety (Earth) ground, Circuit breaker, Battery input, and PV input.*

### 3.4. LCD Display and Function Keys

The LCD display and LED indicators provide dynamic system data and operating status. Use the function keys to navigate and configure settings.




**LED Indicator**

| 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. |
| ☀ CHG | 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. |

**Function Keys**

| Function Key | Description |
|---|---|
| ESC | To exit setting mode |
| UP | To go to previous selection |
| DOWN | To go to next selection |
| ENTER | To confirm the selection in setting mode or enter setting mode |

*Image: Close-up of the LCD display, LED indicators, and function keys (ESC, UP, DOWN, ENTER) with their respective messages and descriptions.*

**LED Indicator Messages**

| LED Indicator | Color | Messages |
|---|---|---|
| AC / INV | Green | Solid On: Output is powered by utility in Line mode.<br>Flashing: Output is powered by battery or PV in battery mode. |
| CHG | Green | Solid On: Battery is fully charged.<br>Flashing: Battery is charging. |
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**Function Keys Description**

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# 4. Setup and Installation

## 4.1. Mounting the Unit

Consider the following points when selecting an installation location:

- The recommended installation position is to adhere the unit to the wall vertically.
- Ensure sufficient space for heat dissipation and cable removal.

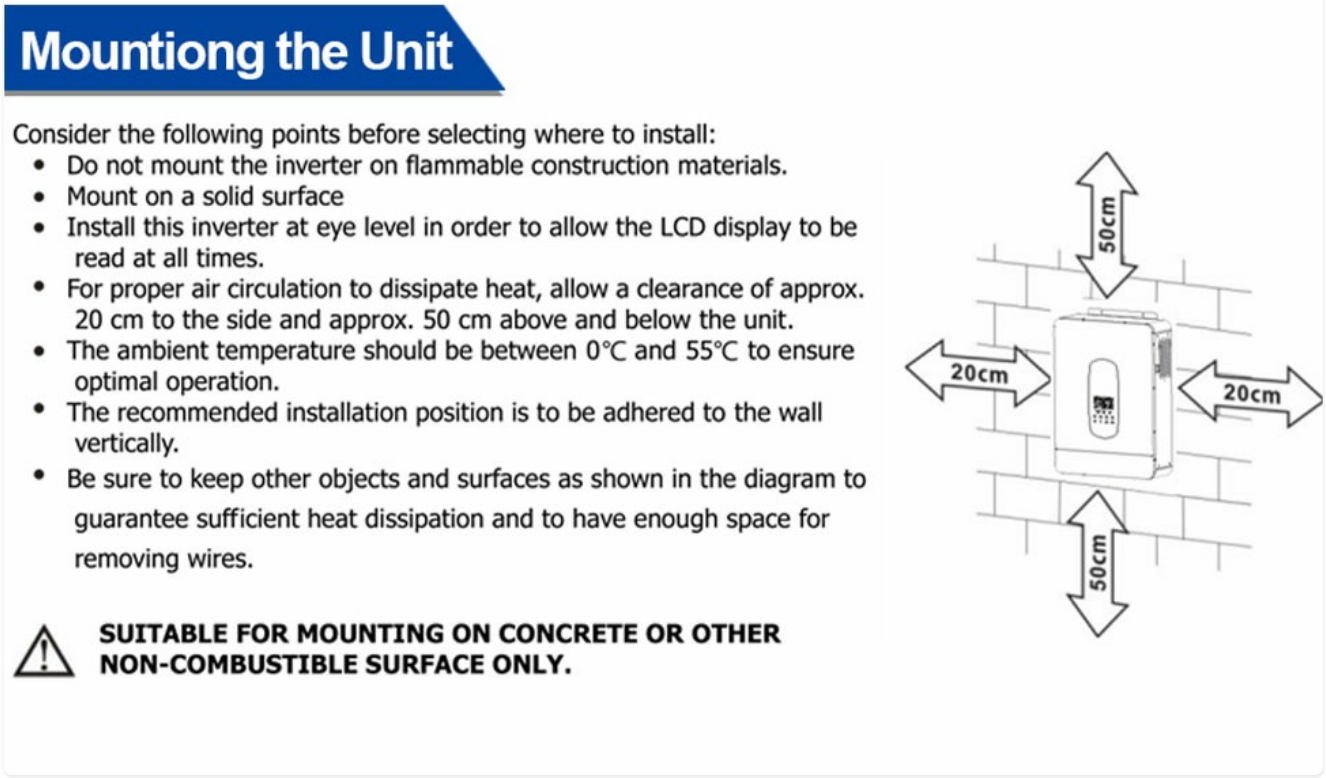



*Image: Diagram showing recommended mounting clearances: 20cm on sides, 50cm above and below the unit.*

## 4.2. Wiring Procedure for a Solar System

Follow these steps to connect your solar system:

1. Before installation, ensure all switches are turned off.
2. Connect the AC grid input cables, solar panel cables, AC output cables, and battery cables to the inverter one by one, ensuring secure connections.
3. Turn on the battery switch.
4. Turn on the solar module switch.
5. Turn on the AC input switch.
6. Press the ON/OFF switch on the inverter.
7. Check the inverter's operating status and verify that the display is normal. If no anomalies are present, turn on the output switch.
8. The unit will now operate normally.

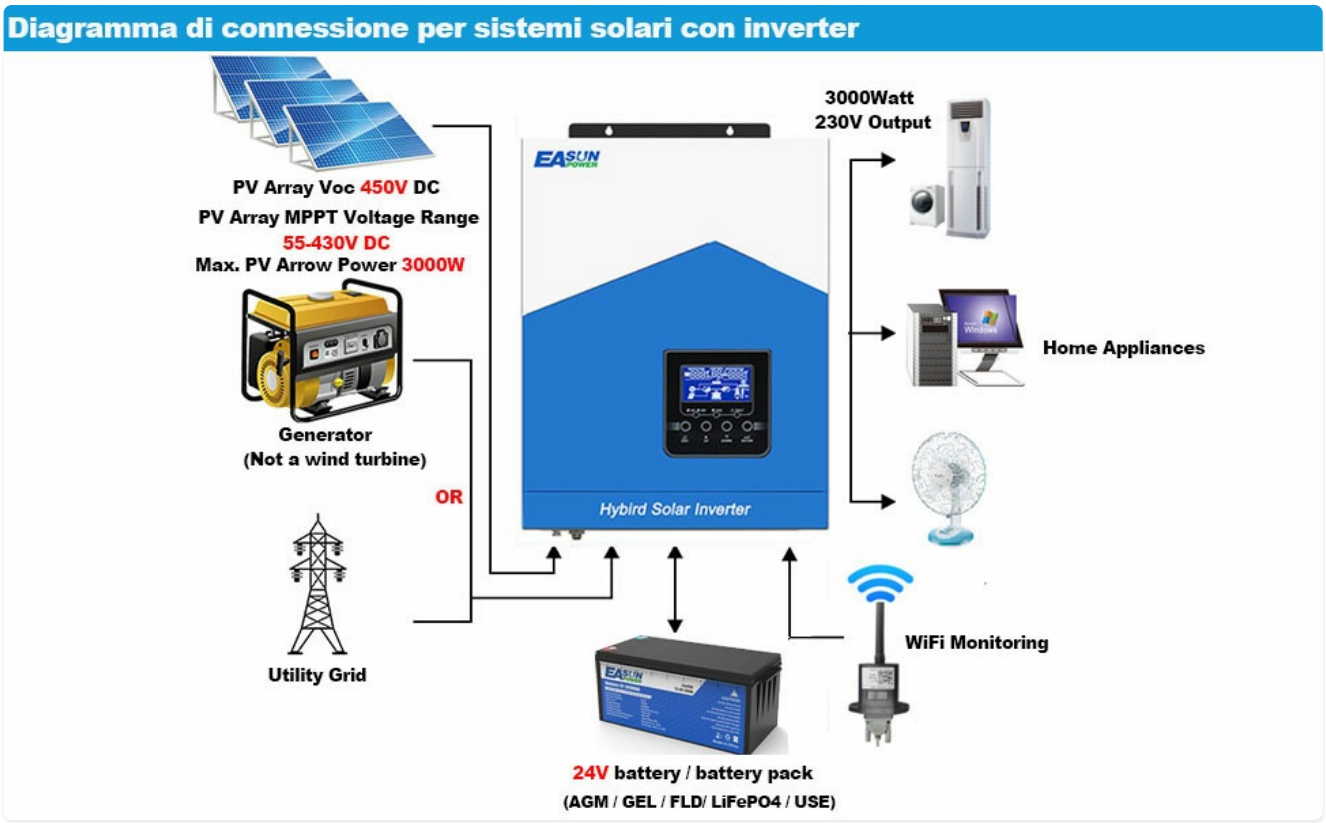



*Image: Diagram illustrating the complete wiring of a solar power system with the hybrid inverter, including solar panels, battery, generator, utility grid, and various loads.*

## 5. Operating Instructions

### 5.1. Starting the Inverter

To start the inverter, first ensure all connections are secure and then follow the power-up sequence described in Section 4.2.

### 5.2. Programmable LCD Display

The LCD display allows you to configure various parameters:

- Configurable battery charging current.
- AC/solar charger priority.
- Load source priority (utility, solar, battery).
- Two output modes: SUB and SBU.
- Three charging modes: Solar First, Solar and Utility, or Solar Only.

For lithium batteries, set program 05 to "USE" and then adjust program 26 (charging voltage), program 27 (floating charging voltage), and program 29 (low DC cut-off voltage, adjustable from 20V to 24V).

### 5.3. Remote Monitoring via App

The included WiFi module enables real-time data monitoring of your energy production through the SmartESS app, available for iOS and Android devices.




*Image: Illustration of the inverter's WiFi module connection and the SmartESS app interface for remote monitoring of energy data.*

## 6. Maintenance

To ensure optimal performance and longevity of your inverter, regular maintenance is recommended. Keep the unit clean and free from dust. Periodically check all cable connections for tightness and inspect for any signs of wear or damage. Ensure proper ventilation is maintained around the unit to prevent overheating.

## 7. Troubleshooting

If you encounter any issues with your inverter, refer to the LCD display for error codes or warning messages. Common issues can often be resolved by checking power connections, battery status, and solar panel input. If a fault indicator is solid red, consult the LED Indicator Messages table in Section 3.4 for guidance. For persistent problems, contact customer support.

## 8. Specifications

| Specification | Value |
|---|---|
| Brand | POWLAND |
| Model Name | ISolar-SMH-II-3.2K-Wifi |
| Recommended Uses | Domestic |
| Power Source | Batteries and Solar Energy |
| Rated Power | 3 KW (3000W) |
| Peak Power | 3000 Watts |
| Inverter Volt-Amp Capacity | 3200 VA |
| Input Voltage (DC) | 24 Volts |
| Output Voltage (AC) | 230 Volts |
| Output Waveform | Pure Sine Wave |
| Frequency | 60 Hz |
| Max PV Input Voltage (Voc) | 450Vdc |
| PV Operating Voltage (Vmp) | 55-430Vdc |
| Max Solar Input Power | 3000W |
| Max PV & AC Charge Current | 80A |
| Battery Capacity (Max) | 100 Ampere/hours |
| Standby Mode Shutdown | 93% |
| Number of Outlets | 2 |
| Screen Type | LCD |
| Dimensions (LxWxH) | 34.8L x 28.2W x 10.5H cm |
| Item Weight | 5.5 Kilograms |
| Package Contents | WiFi Module |
| Manufacturer | EASUN POWER |
| Country of Origin | China |

## 9. Warranty and Support

This POWLAND Hybrid Inverter comes with a**1-Year Warranty Against Manufacturer Defects**. For any product-related inquiries, technical assistance, or warranty claims, please contact the seller or manufacturer directly. Refer

to your purchase documentation for specific contact details.

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