5.5KVA

Generic 5.5KVA Hybrid Solar Inverter Instruction Manual

Model: 5.5K-48V

1. Introduction

This manual provides essential instructions for the installation, operation, and maintenance of your Generic 5.5KVA Hybrid Solar Inverter. This multi-function inverter/charger combines the capabilities of an inverter, solar charger, and battery charger, designed for efficient energy conversion in utility, generator, and solar energy applications. Please read this manual thoroughly before installation and use to ensure proper function and safety.

2. Safety Instructions

WARNING! All wiring must be performed by qualified personnel. Improper installation can lead to serious injury or damage to the equipment.

- Read all instructions and cautionary markings on the unit and in this manual before operating the inverter.
- Do not disassemble the inverter. Refer servicing to qualified service personnel.
- To reduce risk of electric shock, disconnect all wiring before attempting any maintenance or cleaning.
- Do not install the inverter on flammable construction materials.
- Ensure proper air circulation around the inverter to dissipate heat. Maintain a clearance of approximately 20 cm to the side and 50 cm above and below the unit.
- The ambient temperature should be between 0°C and 55°C for optimal operation.
- Always use appropriate cables and ensure proper torque for all connections to prevent loose connections and overheating.
- Install a DC circuit breaker between the inverter and PV modules.

3. Product Overview

3.1 Key Features

- 5500W pure sine wave inverter, 48V DC to 220V-230V AC output.
- Built-in 80A MPPT charge controller.
- Compatible with mains voltage or generator power.
- Supports parallel operation in 3 phases for increased capacity.
- Can operate without a battery.

- User-configurable and easy-accessible button operation via LCD display.

3.2 Product Display and Components

The inverter features an integrated control machine with an LCD display and various connection ports. Refer to the image below for a visual representation of the unit's front panel and connection points.

Image: Front and side view of the 5.5KVA Hybrid Solar Inverter, highlighting the LCD display, function buttons, and various input/output ports. This image helps identify the physical layout of the inverter.

1. **LCD display:** Shows operational status and settings.
2. **Status indicator:** Indicates the current operational status.
3. **Charging indicator:** Shows battery charging status.
4. **Fault indicator:** Alerts to system errors.
5. **Function buttons:** Used for navigation and setting adjustments.
6. **Power on/off switch:** Controls the inverter's power.

7. **AC input:** Connection for grid or generator power.
8. **AC output:** Connection for household appliances.
9. **PV input:** Connection for solar panel array.
10. **Battery input:** Connection for battery bank.
11. **RS-232 communication port:** For data communication.

4. Setup

4.1 Preparation

Before connecting any wiring, take off the bottom cover by removing two screws. Ensure all safety precautions are followed.

4.2 Mounting the Unit

Consider the following points when selecting where to install the inverter:

- Do not mount the inverter on flammable construction materials.
- Mount on a solid surface.
- Install this inverter at eye level to allow the LCD display to be read at all times.
- For proper air circulation to dissipate heat, allow a clearance of approximately 20 cm to the side and approximately 50 cm above and below the unit.
- The ambient temperature should be between 0°C and 55°C to ensure optimal operation.
- The recommended installation position is to be adhered to the wall vertically.
- Be sure to keep other objects and surfaces as shown in the diagram to guarantee sufficient heat dissipation and to have enough space for removing wires.

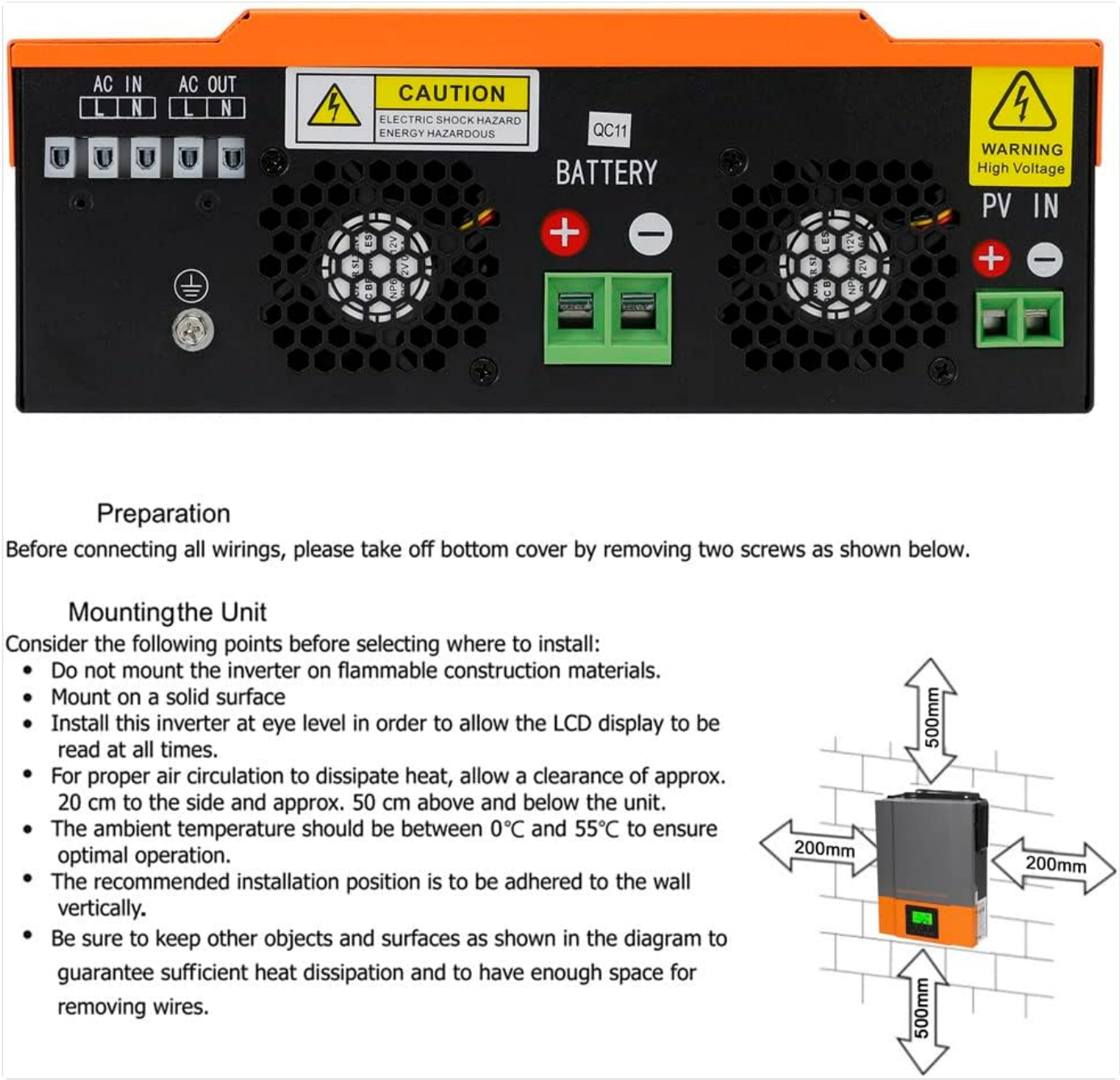

Image: Recommended mounting clearances for the inverter. This diagram illustrates the minimum distances required from surrounding surfaces for adequate ventilation and access.

4.3 Battery Connection

Please follow the steps below to implement battery connection:

1. Remove insulation sleeve 18 mm for positive and negative conductors.
2. Suggest to put bootlace ferrules on the end of positive and negative wires with a proper crimping tool.
3. Connect all battery packs as shown in the chart below.

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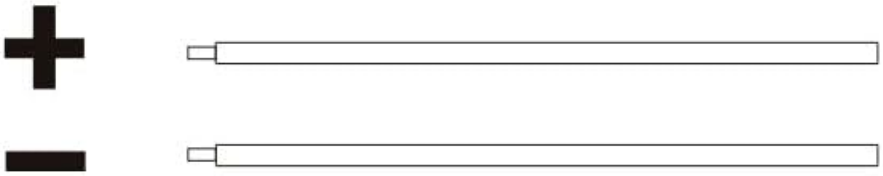


4. Connect all battery packs as below chart.

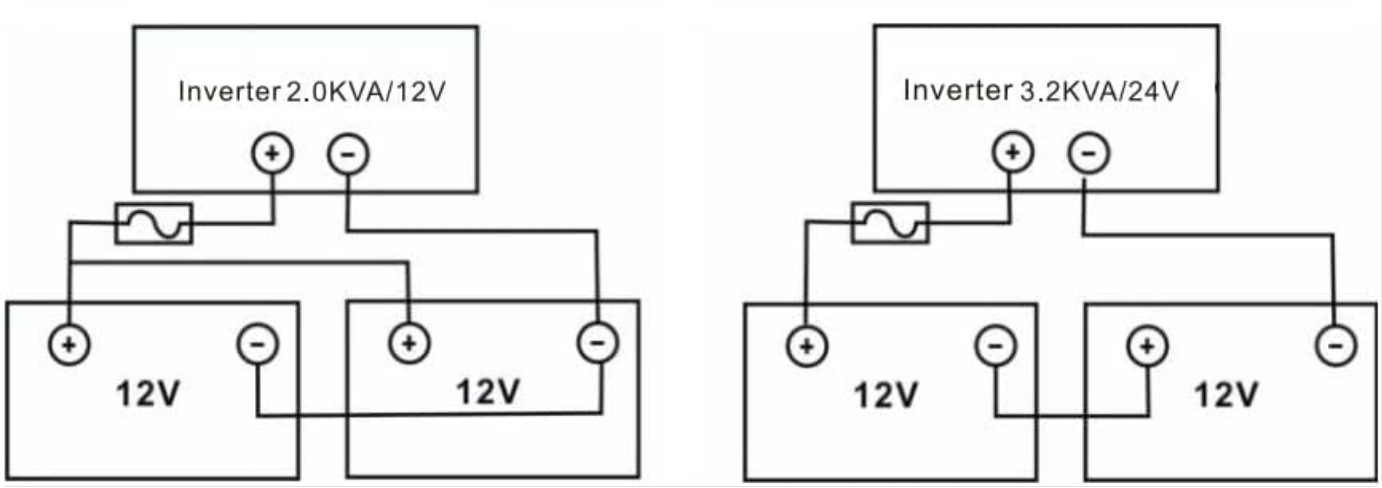
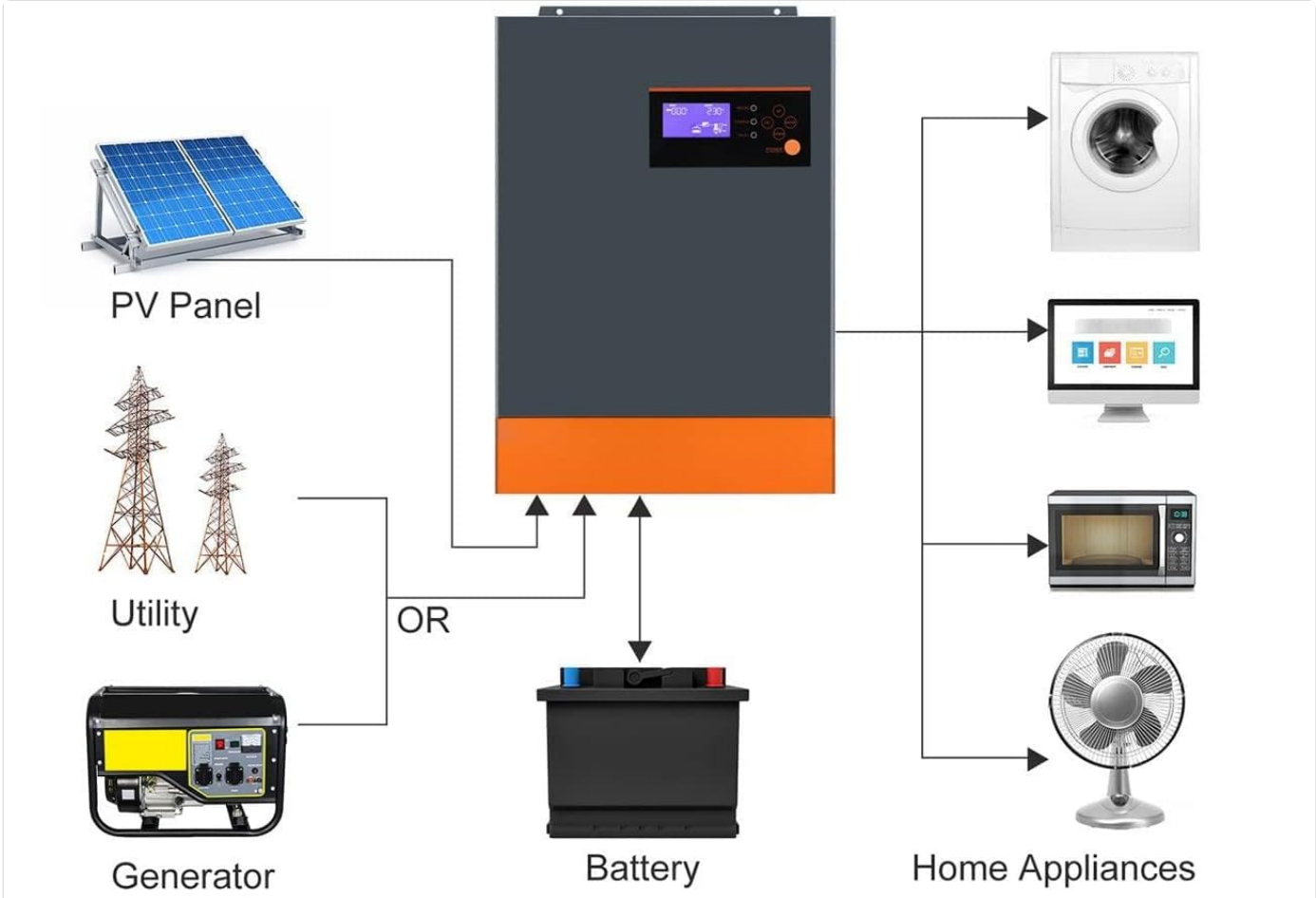


Image: Battery connection diagrams for different inverter capacities (e.g., 2.0KVA/12V and 3.2KVA/24V). This illustrates how to connect multiple 12V batteries in series or parallel to achieve the required voltage for the inverter.

4.4 PV Connection

CAUTION: Before connecting to PV modules, please install separately a DC circuit breaker between the inverter and PV modules. This is crucial for safety and system protection.

WARNING! It's very important for system safety and efficient operation to use appropriate cable for PV module connection. To reduce risk of injury, please use the proper recommended cable size as below:



PV Connection

CAUTION: Before connecting to PV modules, please install **separately** a DC circuit breaker between inverter and PV modules.

WARNING! All wiring must be performed by a qualified personnel.
WARNING! It' very important for system safety and efficient operation to use appropriate cable for PV module connection. To reduce risk of injury, please use the proper recommended cable size as below.

Model	Typical Amperage	Cable Size	Torque
1.5KVA	10A	12 AWG	1.2~1.4 Nm
3.5KVA	15A	12 AWG	1.4~1.6 Nm
5.5KVA	18A	12 AWG	1.4~1.6 Nm

Image: Comprehensive connection diagram illustrating how PV panels, utility grid, generator, battery, and home appliances connect to the hybrid solar inverter. Below the diagram, a table provides recommended cable sizes and torque specifications for different inverter models (1.5KVA, 3.5KVA, 5.5KVA) to ensure safe and efficient operation.

Recommended PV Connection Cable Sizes

General Specifications		Cable Size	Torque
Model	**Typical Amperage**	**Cable Size**	**Torque**
1.5KVA	10A	12 AWG	1.2~1.4 Nm
3.5KVA	15A	12 AWG	1.4~1.6 Nm
5.5KVA	18A	12 AWG	1.4~1.6 Nm

When selecting proper PV modules, please consider the following parameters:

- Open circuit voltage (Voc) of PV modules must not exceed the maximum PV array open circuit voltage of the inverter (500VDC for 5.5KVA).
- Open circuit voltage (Voc) of PV modules should be higher than the minimum battery voltage.

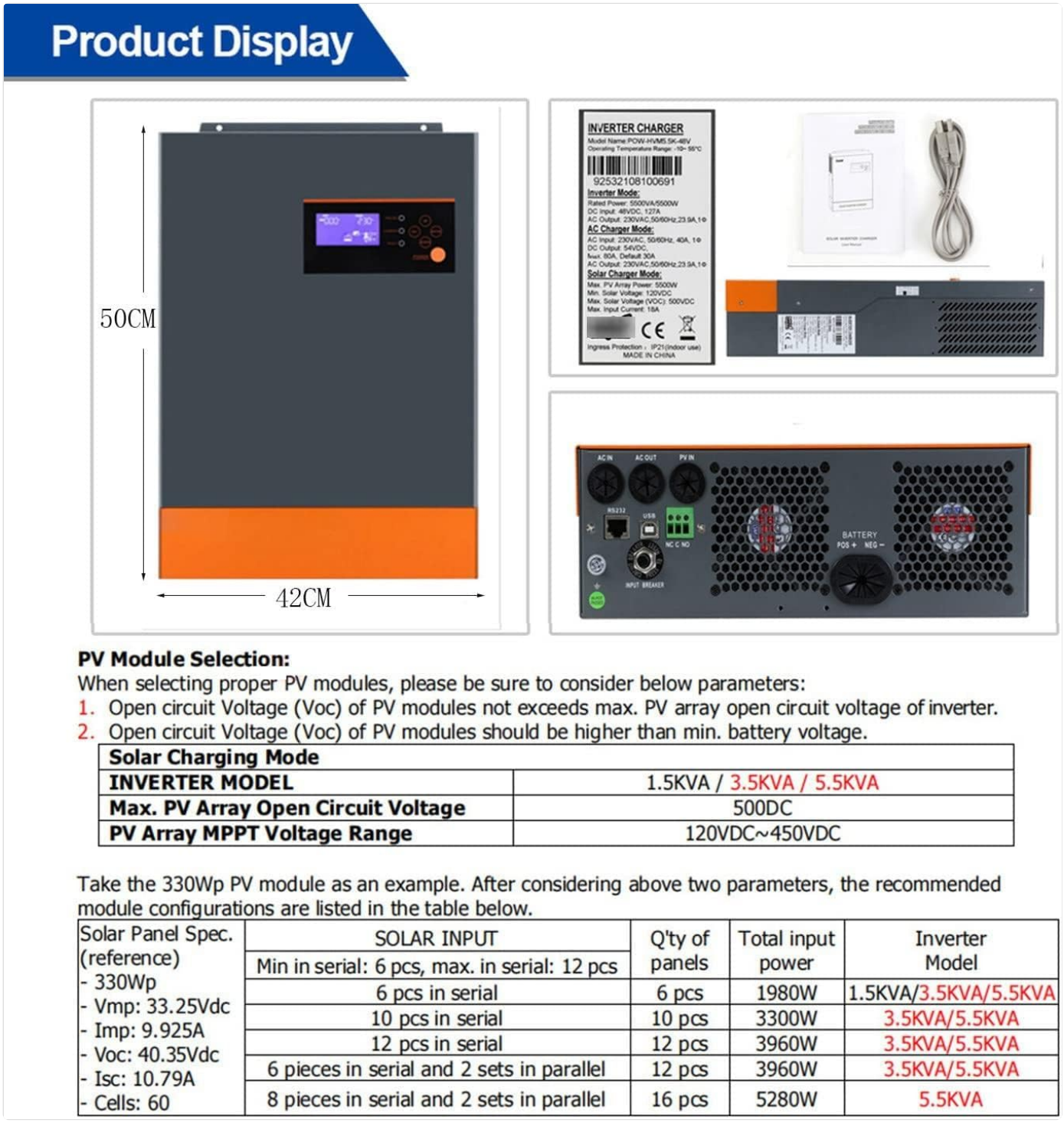


Image: This image shows the product display along with guidelines for PV module selection, including maximum PV array open circuit voltage and MPPT voltage range. A table provides an example of solar panel configuration (e.g., 330Wp modules) for different inverter models, detailing the quantity of panels in series and parallel to achieve the required total input power.

Solar Charging Mode - Inverter Model Parameters

Inverter Model	Max. PV Array Open Circuit Voltage	PV Array MPPT Voltage Range
1.5KVA / 3.5KVA / 5.5KVA	500VDC	120VDC ~ 450VDC

Example: For a 330Wp PV module, recommended module configurations are listed in the table below:

Solar Panel Configuration Example (330Wp Panels)

Solar Panel Spec. (reference)	Solar Input	Q'ty of panels	Total input power	Inverter Model
- 330Wp	6 pcs in serial	6 pcs	1980W	1.5KVA / 3.5KVA / 5.5KVA
- Vmp: 33.25Vdc	10 pcs in serial	10 pcs	3300W	3.5KVA / 5.5KVA
- Imp: 9.925A	12 pcs in serial	12 pcs	3960W	3.5KVA / 5.5KVA
- Voc: 40.35Vdc	6 pieces in serial and 2 sets in parallel	12 pcs	3960W	5.5KVA
- Isc: 10.79A	8 pieces in serial and 2 sets in parallel	16 pcs	5280W	5.5KVA
- Cells: 60				

4.5 AC Connection

The inverter supports connection to both utility grid and a generator for AC input. The AC output connects to your home appliances. Refer to the comprehensive connection diagram in section 4.4 for visual guidance on AC input and output connections.

5. Operation

5.1 LCD Display and Function Buttons

The comprehensive LCD display offers user-configurable and easy-accessible button operation for various settings such as battery charging current, alternating current/solar chargers priority, and acceptable input voltage range based on different applications. Use the function buttons (ESC, UP, DOWN, ENTER) to navigate through menus and adjust settings.

Image: A detailed view of the inverter's LCD display and the associated function buttons (ESC, UP, DOWN, ENTER). This image helps users understand how to interact with the inverter's interface for configuration and monitoring.

Detailed instructions for specific menu options and settings can be found in the full product manual (if available) or by navigating the on-screen menus.

6. Maintenance

- **Regular Inspection:** Periodically inspect the inverter and all connections for any signs of damage, corrosion, or loose wiring.
- **Cleaning:** Keep the inverter's ventilation openings clear of dust and debris to ensure proper airflow and cooling. Use a soft, dry cloth for cleaning the exterior. Do not use liquid cleaners.
- **Battery Check:** If using batteries, regularly check their terminals for corrosion and ensure they are properly charged. Follow battery manufacturer's maintenance guidelines.
- **Firmware Updates:** Check the manufacturer's website for any available firmware updates that may improve

performance or add features.

- **Professional Servicing:** Any internal servicing or repairs should only be performed by qualified technicians.

7. Troubleshooting

This section provides general guidance for common issues. For specific error codes or complex problems, refer to the detailed troubleshooting guide (if available) or contact technical support.

- **No Power Output:**
  - Check if the inverter is switched on.
  - Verify battery connections and voltage.
  - Ensure PV input is sufficient and connections are secure.
  - Check AC input from utility or generator.
  - Look for fault indicators on the LCD display.
- **Overheating:**
  - Ensure adequate ventilation and clearances around the unit as specified in the mounting section.
  - Clean any dust or obstructions from the cooling vents.
  - Reduce load if the inverter is consistently running at maximum capacity in high ambient temperatures.
- **Low Battery Voltage Warning:**
  - Check battery health and connections.
  - Verify solar panel output and charging current.
  - Ensure AC input is available for battery charging if configured.
- **Inverter Not Charging Batteries:**
  - Check PV input voltage and current.
  - Verify battery connections.
  - Ensure charging settings on the LCD are correctly configured.

8. Specifications

The following are the key specifications for the 5.5KVA Hybrid Solar Inverter (Model: 5.5K-48V).

General Specifications	
Model Number	5.5K-48V (General Version & Parallel Version)
Rated Load Power	5500W
Surge Power	11000VA
System Voltage	48V
Output Voltage	230V ±5%
Battery Type Compatibility	Lead-acid, Lithium Battery, or operation without battery
Charging Mode	MPPT

Solar (PV) Input Specifications	
Maximum PV Input Voltage	500VDC
Maximum MPPT Charging Current	80A
Maximum PV Input Current	18A
Maximum PV Input Power	5500W

Other Features	
Parallel Function	Yes, can achieve three-phase output
Optional Accessories	Wifi Module (not included in this 'NoWiFi' version)

9. Warranty and Support

For warranty information, please refer to the documentation provided with your purchase or contact the seller directly. Technical support is available through the seller or manufacturer's designated channels. When contacting support, please have your product model number (5.5K-48V) and purchase details ready.