WLLKIY ISolar-SMV-IV-5.6KW 48V

WLLKIY 5.6KW Hybrid Solar Power Inverter User Manual

Model: ISolar-SMV-IV-5.6KW 48V

1. Introduction

This manual provides essential information for the safe and efficient operation of your WLLKIY 5.6KW Hybrid Solar Power Inverter. Please read this manual thoroughly before installation and use, and keep it for future reference.

The WLLKIY 5.6KW Hybrid Solar Power Inverter is a versatile device designed to integrate solar power, utility grid, and battery power to provide continuous power supply. It features a high PV input, MPPT solar charger, and built-in Wi-Fi for convenient monitoring.

2. Key Features

- Customizable status LED ring with RGB light.
- Touchable button interface with a 4.3" colored LCD display.
- Built-in Wi-Fi for mobile monitoring via a dedicated application.
- Supports USB On-the-Go (OTG) function.
- Data log events stored directly within the inverter.
- Reserved communication port (RS485, CAN-BUS or RS232) for Battery Management System (BMS) integration.
- Battery independent design, allowing operation without a battery in certain configurations.
- Battery equalization feature to extend battery life cycle.
- User-friendly LCD operation for easy configuration.
- Improved charging power capabilities.
- Built-in anti-dust kit for enhanced durability.

3. Safety Instructions

Please observe the following safety precautions to prevent injury and damage to the inverter or connected equipment:

- Installation must be performed by qualified personnel only.
- Ensure all wiring is correctly sized and properly insulated.
- Do not disassemble the inverter. There are no user-serviceable parts inside.
- Keep the inverter away from water, excessive humidity, and flammable materials.
- Ensure adequate ventilation around the inverter to prevent overheating.
- Always disconnect all power sources (PV, utility, battery) before performing any maintenance or wiring.
- Wear appropriate personal protective equipment (PPE) during installation and maintenance.

4. Setup and Installation

4.1 Product Overview

The WLLKIY 5.6KW Hybrid Solar Power Inverter features a sleek design with a prominent circular LCD display and an LED ring on the front. The rear panel provides all necessary connection terminals.

Figure 4.1: Front view of the Inverter.

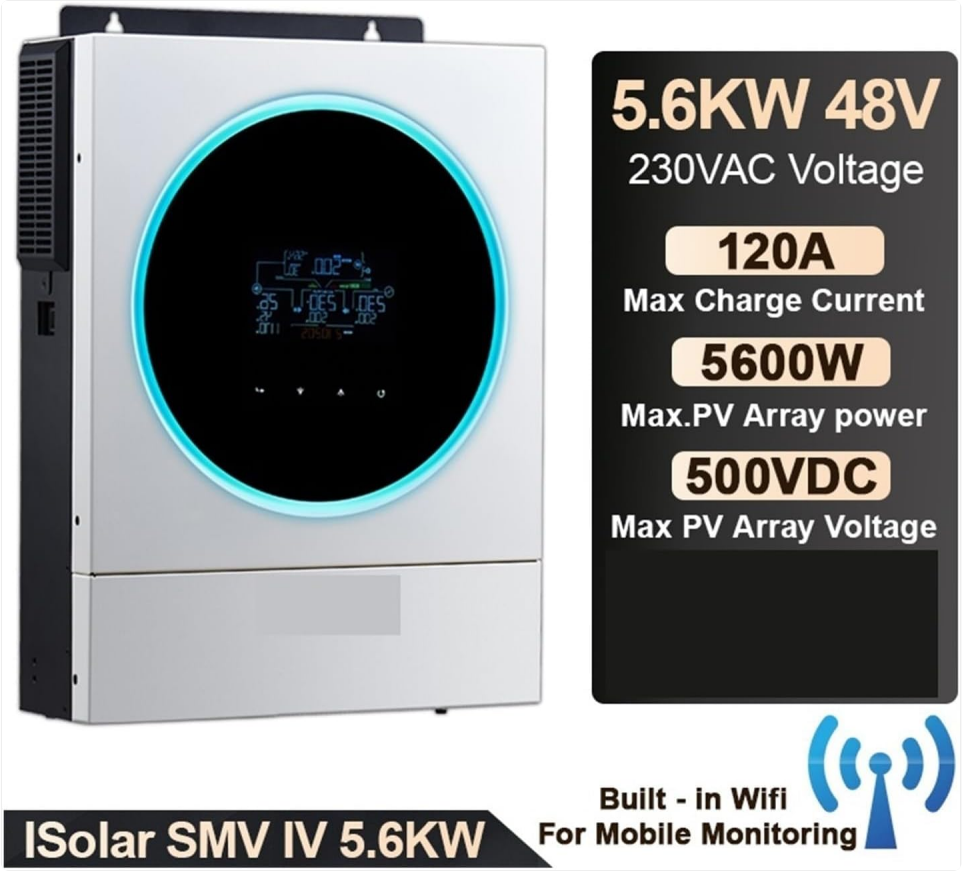


Figure 4.2: Inverter with highlighted specifications.

4.2 Connection Ports

The rear panel of the inverter provides various ports for connecting to solar panels, batteries, the utility grid, and loads. It also includes communication ports for advanced system integration.

Figure 4.3: Rear view of the Inverter with connection ports.

- **AC IN:** Connects to the utility grid or generator.
- **AC OUT:** Connects to household appliances/loads.
- **PV IN:** Connects to solar panel arrays. Ensure correct polarity (+/-).
- **Battery:** Connects to the battery bank. Ensure correct polarity (+/-).
- **Input Breaker:** Main AC input circuit breaker.
- **Grounding Point:** For system grounding.
- **USB:** For data transfer and firmware updates.
- **COM/BMS:** Communication ports for external devices like Battery Management Systems.

4.3 System Connection Diagram

The inverter can be integrated into various power systems, including solar, generator, and utility grid inputs, to power your home appliances and charge batteries.

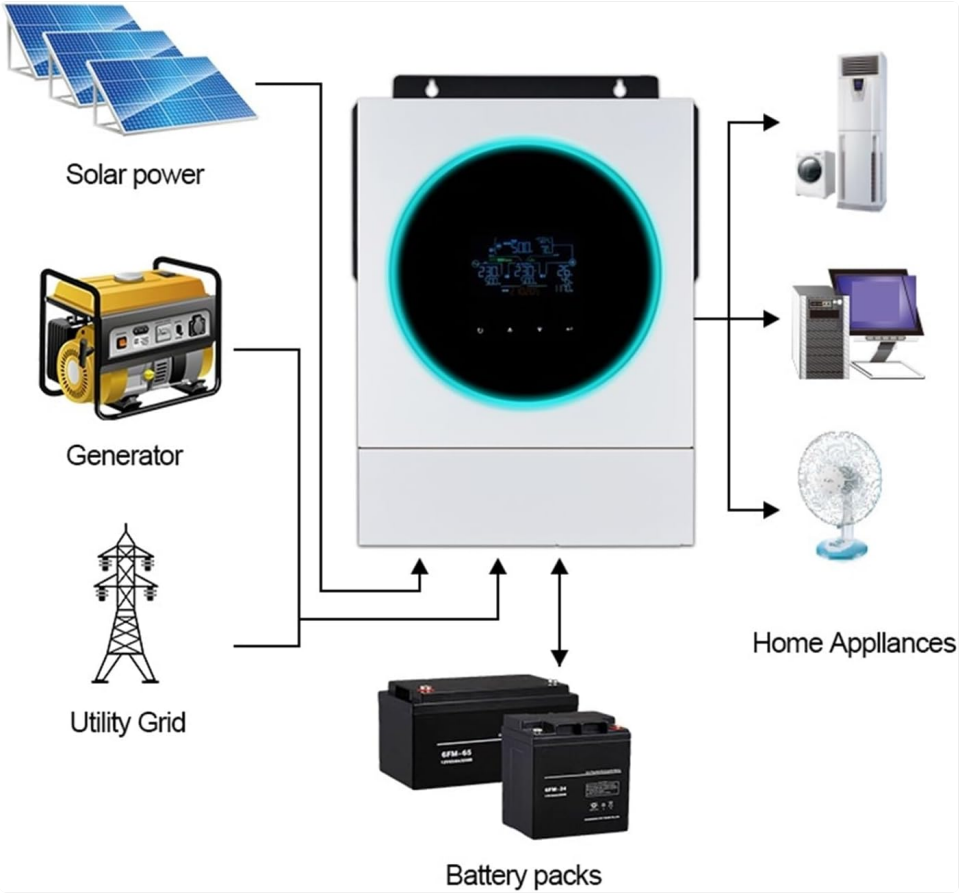
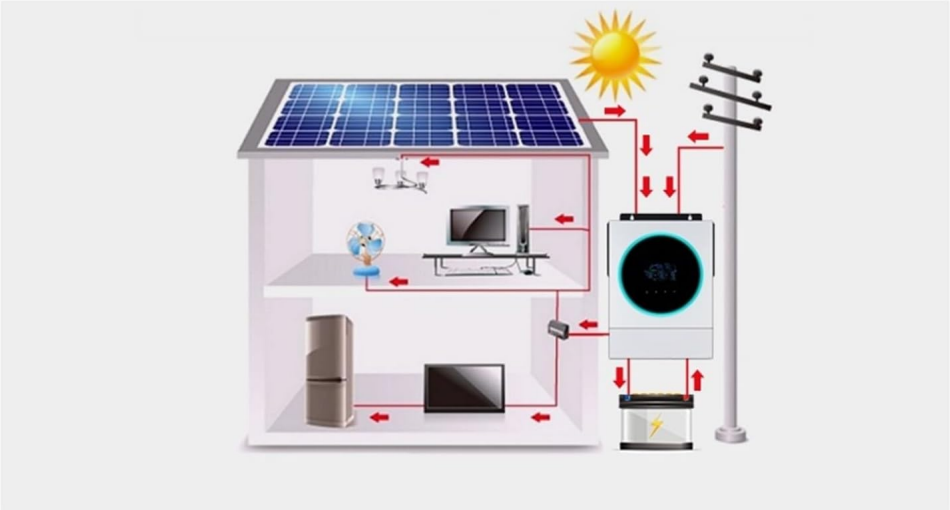


Figure 4.4: Typical System Connection Diagram.

4.4 PV Module Selection

When selecting appropriate PV modules for your system, it is crucial to consider the inverter's specifications to ensure compatibility and optimal performance. Pay close attention to the open circuit voltage (Voc) and maximum power voltage (Vmpp) of your PV modules.



When selecting proper PV modules, please be sure to consider below parameters:

1. Open circuit Voltage (Voc) of PV modules not exceeds max. PV array open circuit voltage of inverter.
2. Open circuit Voltage (Voc) of PV modules should be higher than min. battery voltage.

INVERTER MODEL	ISolar SMV IV 5.6KW	
Maximum output power	6000W	
Maximum PV open circuit voltage	500VDC	
Maximum charge current	120A	
Maximum Power(Pmax)	250W	Max.PV module numbers in senes 12 x 36V ≈120~450VDC
Max.Power Voltage Vmpp(V)	36V	
Max.Power Current Impp(A)	8.3A	PV module numbers in parallel 12 x 8.3 < 120A Total PV module numbers 2 x 12 = 24
Open Circuit Voltage Voc(V)	40V	
Short Circuit Current Isc(A)	8.9A	

Figure 4.5: PV Module Selection Guidelines and Parameters.

Key considerations for PV module selection:

1. The Open Circuit Voltage (Voc) of your PV modules must not exceed the maximum PV array open circuit voltage of the inverter (500VDC).
2. The Open Circuit Voltage (Voc) of your PV modules should be higher than the minimum battery voltage.

Refer to the table in Figure 4.5 for detailed parameters for the ISolar SMV IV 5.6KW model.

5. Operating the Inverter

5.1 LCD Display and Buttons

The inverter features a 4.3-inch color LCD display and touch-sensitive buttons for easy navigation and configuration. The display provides real-time information about the system status, input/output voltages, charging currents, and more.

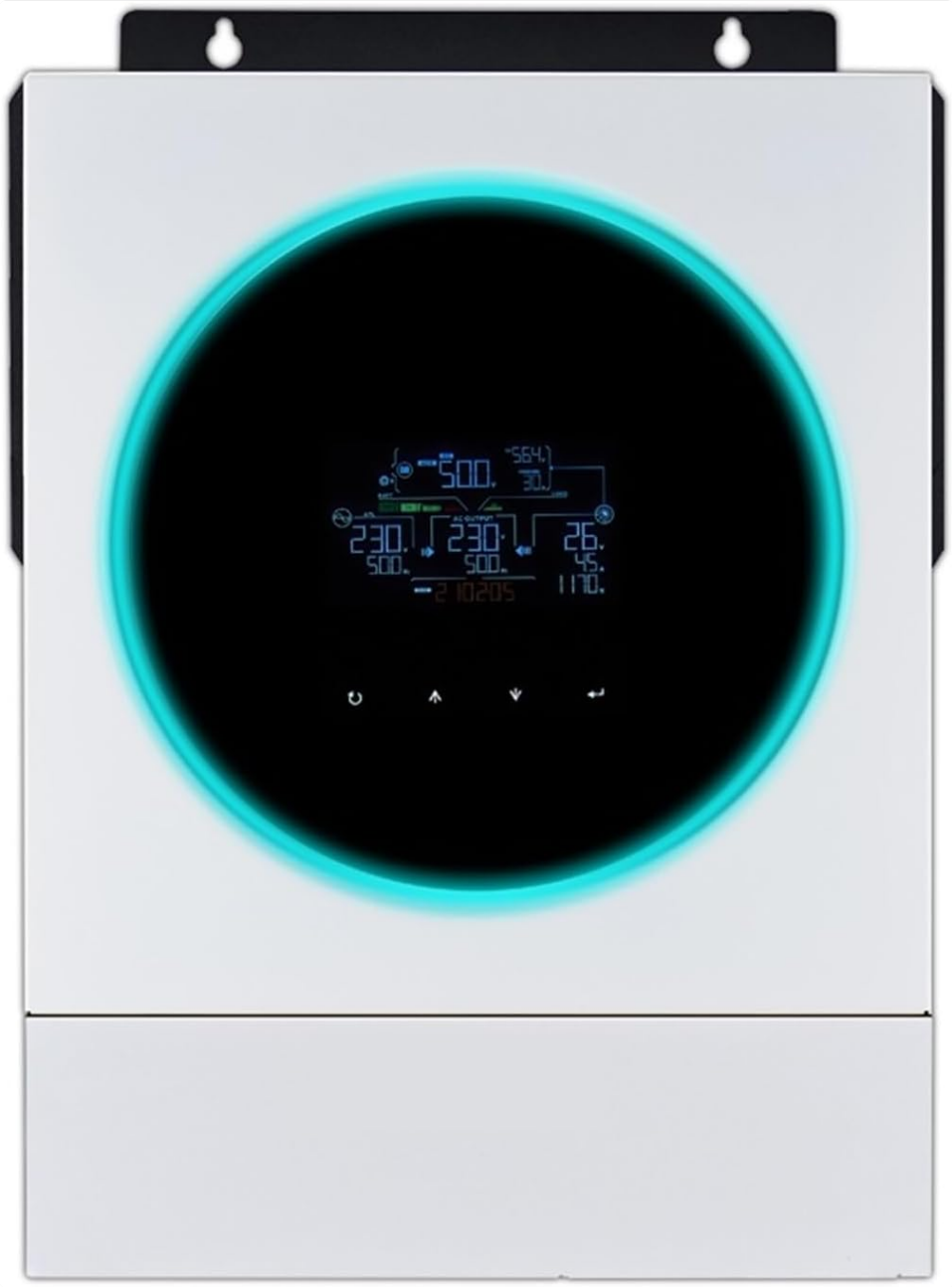


Figure 5.1: Inverter LCD Display.

Use the touch buttons to navigate through menus, view different parameters, and adjust settings. Refer to the on-screen prompts for specific operations.

5.2 Mobile Monitoring (Wi-Fi)

The built-in Wi-Fi module allows for convenient remote monitoring of your inverter's performance via a dedicated mobile application. Download the official app from your device's app store and follow the in-app instructions to connect your inverter.

5.3 Data Logging

The inverter automatically logs important system events and performance data. This data can be accessed via the LCD display or through the mobile monitoring application, providing valuable insights into your system's operation and history.

6. Specifications

Parameter	Value

Rated Power	5600VA/5600W
Input Voltage	230VAC
Selectable Voltage Range	170-280VAC (for personal computers); 90-280VAC (for home appliances)
Frequency Range	50Hz/60Hz (Auto Sensing)
AC Voltage Regulation (Batt. Mode)	230VAC±5%
Surge Power	11200VA
Efficiency (Peak)	90%~93%
Transfer Time	15ms (for personal computers); 20ms (for home appliances)
Wave Shape	Pure Sine Wave
Battery Voltage	48VDC
Float Charging Voltage	54VDC
Overcharge Protection	63VDC
Solar Charger Type	MPPT
Maximum PV Array Power	6000W
MPPT Range Operating Voltage	120-450VDC
Maximum PV Matrix Open Circuit Voltage	500VDC
Maximum Solar Charging Current	120A
Maximum AC Charging Current	100A
Maximum Total Charging Current	120A
Dimensions (LxWxH)	115x300x400 mm
Net Weight	10 kg
Operating Temperature	-10°C to 50°C
Storage Temperature	-15°C to 60°C

7. Maintenance

Regular maintenance ensures the longevity and optimal performance of your inverter:

- **Cleaning:** Periodically clean the exterior of the inverter with a dry, soft cloth. Ensure ventilation openings are free from dust and debris. The built-in anti-dust kit helps, but regular checks are recommended.
- **Connections:** Annually check all electrical connections for tightness and signs of corrosion. Loose connections can lead to overheating and poor performance.
- **Environment:** Ensure the operating environment remains within the specified temperature and humidity

ranges.

- **Battery Health:** If using batteries, monitor their health and perform recommended maintenance as per the battery manufacturer's guidelines. The inverter's battery equalization feature helps maintain battery health.

8. Troubleshooting

This section provides guidance for common issues. For problems not listed here, please contact customer support.

Problem	Possible Cause	Solution
Inverter not turning on	No input power (PV, battery, or AC), loose connections, tripped breaker.	Check all power connections, ensure breakers are on, verify battery voltage.
No AC output	Overload, short circuit, low battery voltage, inverter fault.	Reduce load, check for short circuits, charge batteries, check error codes on LCD.
PV input not charging	Insufficient sunlight, PV array voltage out of range, faulty PV connection.	Check sunlight conditions, verify PV array voltage is within MPPT range (120-450VDC), inspect PV connections.
Wi-Fi connection issues	Incorrect network settings, weak signal, app issues.	Ensure correct Wi-Fi credentials, move inverter closer to router, restart inverter and app.

9. Warranty and Support

For warranty information, please refer to the documentation provided at the time of purchase or contact your retailer. WLLKIY is committed to providing high-quality products and customer satisfaction.
If you encounter any issues or require technical assistance, please contact WLLKIY customer support through the following channels:

- **Website:** Visit the official WLLKIY website for FAQs and support resources.
- **Email:** Refer to your purchase documentation for support email addresses.
- **Phone:** Contact numbers may be available on the product packaging or official website.

Please have your product model (ISolar-SMV-IV-5.6KW 48V) and serial number (if applicable) ready when contacting support.