

WLLKIY ISolar SMX II 3.6KW

WLLKIY ISolar SMX II 3.6KW Hybrid Solar Inverter User Manual

Model: ISolar SMX II 3.6KW

1. INTRODUCTION

The WLLKIY ISolar SMX II 3.6KW Hybrid Solar Inverter is an advanced power solution designed for off-grid solar systems. It integrates a solar charge controller, inverter, and battery charger into one unit, offering a comprehensive power management system. This inverter features full digital voltage and current control with a dual closed-loop system, advanced SPWM technology for pure sine wave output, and multiple charging modes to optimize energy utilization.

Key features include:

- Pure sine wave output for sensitive electronics.
- Dual output modes: utility bypass and inverter output for uninterrupted power supply.
- Four charging modes: Solar Only, Utility Priority, Solar Priority, and Hybrid (Utility & Solar).
- Advanced MPPT technology for high solar charging efficiency.
- Configurable charging current for various battery types.
- Energy-saving mode to reduce no-load power consumption.
- Intelligent variable speed fan for effective heat dissipation and extended system life.
- Lithium battery activation design, compatible with both lead-acid and lithium batteries.
- Comprehensive 360-degree protection against overload, short circuit, and overcurrent.
- Multiple communication modules (RS485, GPRS, WiFi, USB) for remote monitoring and operation.



Figure 1: Front view of the WLLKIY ISolar SMX II 3.6KW Hybrid Solar Inverter.

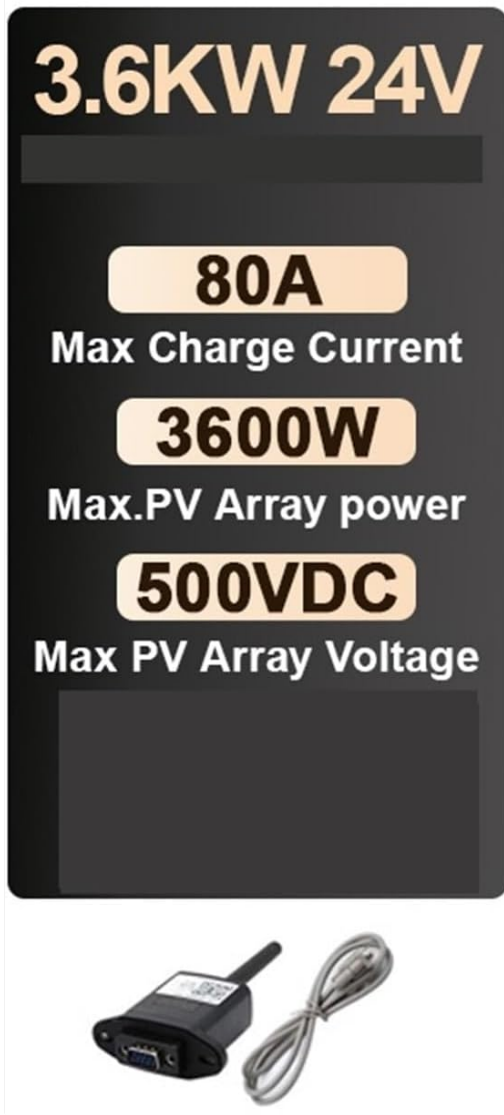


Figure 2: Key specifications highlighted on the inverter, including 3.6KW power, 24V system, 80A maximum charge current, 3600W maximum PV array power, and 500VDC maximum PV array voltage.

2. SETUP AND INSTALLATION

Before installation, ensure the inverter is placed in a well-ventilated area, away from direct sunlight, heat sources, and flammable materials. The mounting surface should be sturdy enough to support the inverter's weight.

2.1 System Connection Diagram

The inverter can be integrated into various power systems, including solar panels, utility grid, generators, and battery banks, to power home appliances.

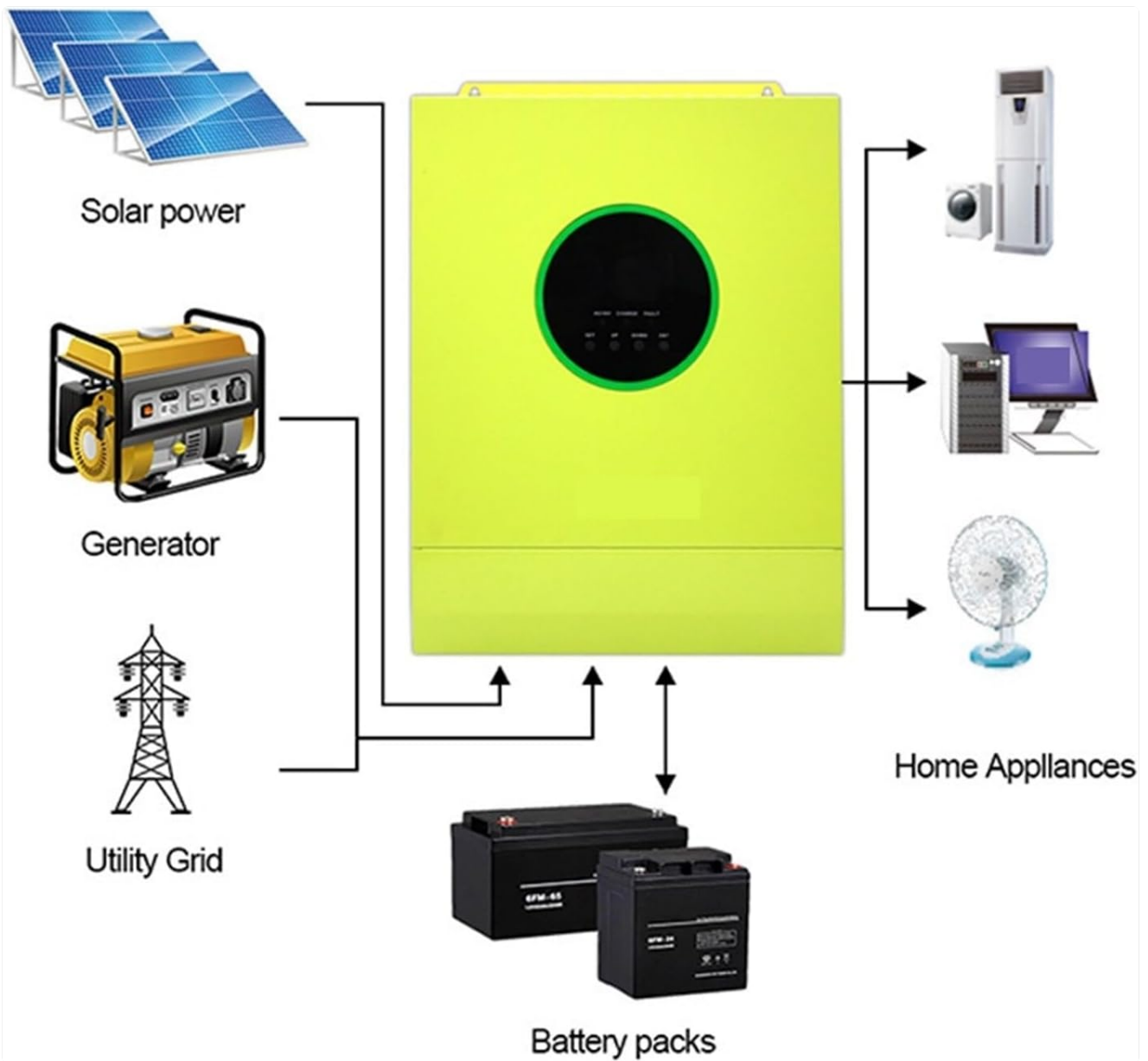
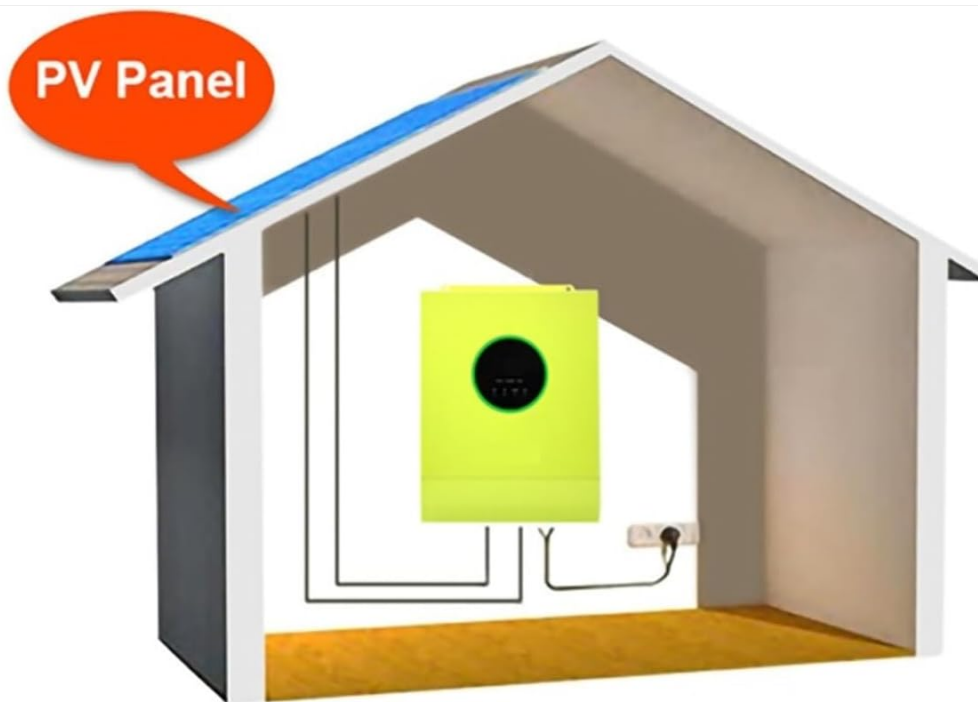


Figure 3: Diagram illustrating the typical connections for the hybrid solar inverter, including solar panels, a generator, the utility grid, battery packs, and various home appliances.

2.2 PV Panel Configuration

Proper configuration of your photovoltaic (PV) panels is crucial for optimal performance and safety.



ISoar SMX II 3.6KW PV Configuration		Max PV Panels: 4000W PV operating voltage range: 120-500VDC PV charging current range: 80A
Maximum Power (Pmax)	250W	Max. PV module numbers in series $8 \times 36V \approx 120 \sim 500VDC$
Max. Power Voltage Vmpp(V)	36V	
Max. Power Current Imp(A)	8.33A	PV module numbers in parallel $8 \times 8.33A < 80A$ Total PV module numbers $8 \times 2 = 16$
Open Circuit Voltage Voc(V)	43.2V	
Short Circuit Current Isc(A)	8.99A	

Figure 4: PV configuration details for the ISolar SMX II 3.6KW, including a diagram of PV panels connected to the inverter on a rooftop, and a table specifying maximum PV panels (4000W), PV operating voltage range (120-500VDC), PV charging current range (80A), and module connection details.

Important Safety Note: Ensure all connections are secure and correctly polarized. Consult a qualified electrician for installation if you are unsure. Always disconnect all power sources before performing any wiring or maintenance.

3. OPERATING INSTRUCTIONS

The inverter features an intuitive LCD screen for real-time operation monitoring and configuration.



Figure 5: The inverter's LCD screen for real-time operation display, alongside illustrations of the four available charging modes: Only Solar, Mains Priority, Solar Priority, and Mains & Solar Hybrid.

3.1 Charging Modes

The inverter supports four distinct charging modes, allowing you to optimize energy usage based on your preferences and available power sources:

1. **Only Solar:** The inverter prioritizes charging batteries exclusively from solar power. The utility grid will not be used for charging.
2. **Mains Priority:** The inverter prioritizes charging batteries from the utility grid. Solar power will be used as a secondary source if the grid is unavailable or insufficient.
3. **Solar Priority:** The inverter prioritizes charging batteries from solar power. The utility grid will only be used if solar power is insufficient or unavailable.
4. **Mains & Solar Hybrid:** The inverter uses both the utility grid and solar power simultaneously to charge the batteries, maximizing charging speed and efficiency.

3.2 AC Output Control

The inverter features an ON/OFF rocker switch to control the AC output. Ensure this switch is in the 'ON' position for the inverter to supply power to your loads.

3.3 Energy Saving Mode

To reduce power consumption when no load or a very light load is connected, the inverter can be configured to operate in an energy-saving mode. Refer to the detailed settings in the full manual for activation and configuration.

4. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your WLLKIY ISolar SMX II 3.6KW Hybrid Solar Inverter.

- **Cleaning:** Periodically clean the exterior of the inverter with a dry, soft cloth. Ensure ventilation openings are free from dust and debris. Do not use liquid cleaners.
- **Fan Inspection:** The inverter uses an intelligent variable speed fan for cooling. Ensure the fan is not obstructed and operates quietly. Excessive noise or lack of operation may indicate a problem.
- **Connection Checks:** Annually, inspect all electrical connections (PV, battery, AC input/output) for tightness and signs of corrosion. Loose connections can lead to overheating and system failure.
- **Battery Health:** Monitor your battery bank's health according to the battery manufacturer's guidelines. Ensure proper charging parameters are set on the inverter for your specific battery type.
- **Environmental Conditions:** Ensure the inverter's operating environment remains within specified temperature and humidity ranges.

Warning: Always turn off all power sources (PV, utility, battery) and wait for the inverter to fully discharge before performing any internal maintenance or inspection.

5. TROUBLESHOOTING

This section provides basic troubleshooting steps for common issues. For more complex problems, please contact customer support.

- **No Power Output:**
 - Check if the AC output switch is ON.
 - Verify battery connections and charge level.
 - Check for any tripped circuit breakers or blown fuses.
 - Ensure PV input is sufficient if operating in solar-only modes.
- **Inverter Overload Alarm:**
 - Reduce the connected load.
 - Check for short circuits in the load wiring.
- **Battery Not Charging:**
 - Verify PV panel connections and ensure adequate sunlight.
 - Check utility grid connection if using grid charging modes.
 - Ensure battery type and charging parameters are correctly set.
- **Communication Issues (WIFI/USB):**
 - Ensure communication modules are correctly installed.
 - Check network connectivity for WIFI.
 - Refer to the specific communication module manual for detailed setup.

6. SPECIFICATIONS


The following table provides detailed technical specifications for the WLLKIY ISolar SMX II 3.6KW Hybrid Solar

4 CHARGING MODES





ONLY SOLAR



MAINS PRIORITY



SOLAR PRIORITY



MAINS & SOLAR HYBRID



LCD SCREEN

Real-time Operation

Figure 6: Product label displaying detailed specifications for the ISolar-SMX-II-3.6KW model.

Feature	Specification
Brand	WLLKIY
Model Name	ISolar-SMX-II-3.6KW
AC Output Rated Power	3600VA / 3600W
AC Output Voltage	230Vac ±5%
AC Output Rated Current	15.6A
AC Input Voltage Range	(170V~280Vac)±2% or (90Vac-280Vac)±2%
AC Input Frequency	50Hz / 60Hz (Auto sensing)
Max. AC Bypass Overload Current	30A

Feature	Specification
Battery Rated Voltage	24VDC
Battery Voltage Range	20-33VDC
Max. AC Charge Current	80A
Max. PV Array Power	4000W
Max. PV Array Open Voltage (VOC)	500VDC
MPPT Input Voltage Range	120-450VDC
Max. PV Input Current	13A
Max. Solar Charge Current	80A
Efficiency (Bypass and Inverter)	>95%
Switching Time (Bypass and Inverter)	10 ms (typical)
Operating Temperature Range	-15°C to 55°C (derating above 45°C)
IP Grade	IP20
Safety Class	I

7. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided with your purchase or contact WLLKIY customer service. Ensure you have your product model number (ISolar SMX II 3.6KW) and purchase details available when seeking support.