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Y&H MPS-VX 4KW-24V-110V

Y&H 4000W Solar Hybrid Inverter User Manual

Model: MPS-VX 4KW-24V-110V

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your Y&H 4000W Solar Hybrid Inverter. This advanced all-in-one unit integrates a pure sine wave inverter, a built-in MPPT 140A charge controller, and a battery-free operation capability, designed to provide reliable power for various applications.

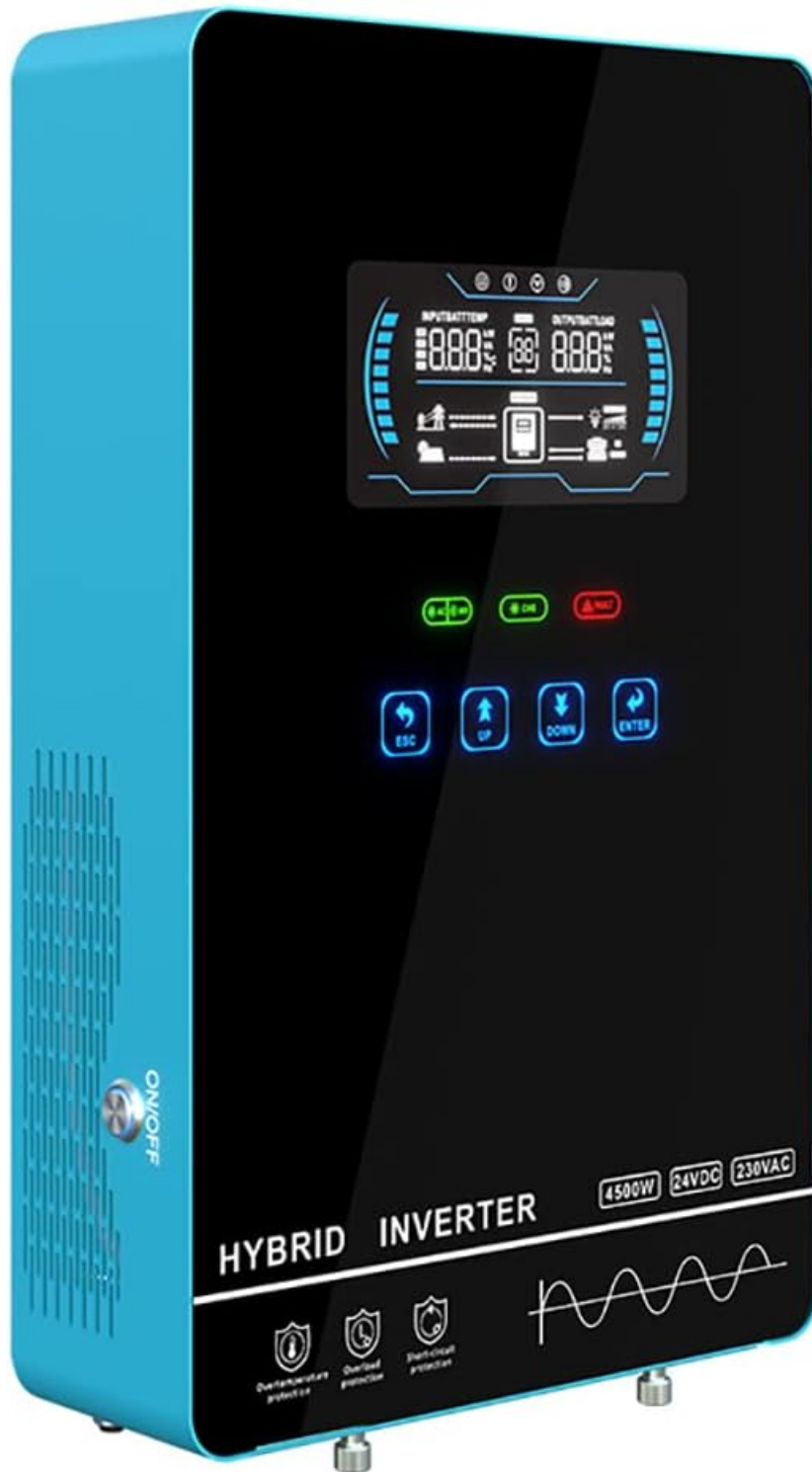


Figure 1.1: Front view of the Y&H 4000W Solar Hybrid Inverter, showcasing its sleek design and touch LCD panel.

2. SAFETY INFORMATION

WARNING: 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.

- Ensure all wiring is performed by qualified personnel.
- Do not disassemble the inverter. There are no user-serviceable parts inside.
- Keep the inverter away from water, excessive humidity, and flammable materials.

- Ensure proper ventilation around the inverter to prevent overheating.
- Always disconnect all power sources (solar, battery, utility) before performing any maintenance or wiring.
- Use appropriate circuit breakers and wiring gauges as specified in this manual.

3. PRODUCT FEATURES

The Y&H 4000W Solar Hybrid Inverter is equipped with advanced features for efficient and reliable power management:

- **Pure Sine Wave Output:** Provides clean and stable power, suitable for sensitive electronics.
- **Integrated MPPT Charge Controller:** Max. PV Input Power: 5600W, Voltage range: 55-350Vdc, Max. charge current: 140A.
- **Battery-Free Operation:** Significantly reduces system cost and maintenance by allowing direct utilization of photovoltaic power during daytime.
- **Multiple Operating Modes:** Features 4 charging modes (Only Solar, Mains First, Solar First, Mains & Solar hybrid) and 3 output modes (Solar First, Mains First, SBU Priority).
- **Touch LCD with Button Controls:** Intuitive interface for monitoring and configuration.
- **Built-in BMS Function:** Includes Lithium Battery Activation for awakening sleeping lithium batteries.
- **Enhanced Cooling:** Equipped with three cooling fans for improved heat dissipation and extended lifespan.
- **Comprehensive Protection:** Offers 360° protection against short circuit, overload, over current, over voltage, under voltage, over temperature, backfill, and over charge.

Y&H 4000W 110V Hybrid Solar Inverter

4000W

Rated Power

24VDC

Battery Voltage

8000W

Peak power

90V

Starting Voltage

140A

MPPT Solar Charging Current



Figure 3.1: Overview of key specifications including rated power, peak power, battery voltage, starting voltage, and MPPT charging current.

Comprehensive 360° protection



Figure 3.2: Visual representation of the inverter's comprehensive 360° protection mechanisms.

4. SETUP AND INSTALLATION

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

4.1 Wiring Connections

Refer to the wiring diagram below for correct connections of solar panels, battery, AC input (mains/generator), and AC load.

Wiring And Technical Specifications

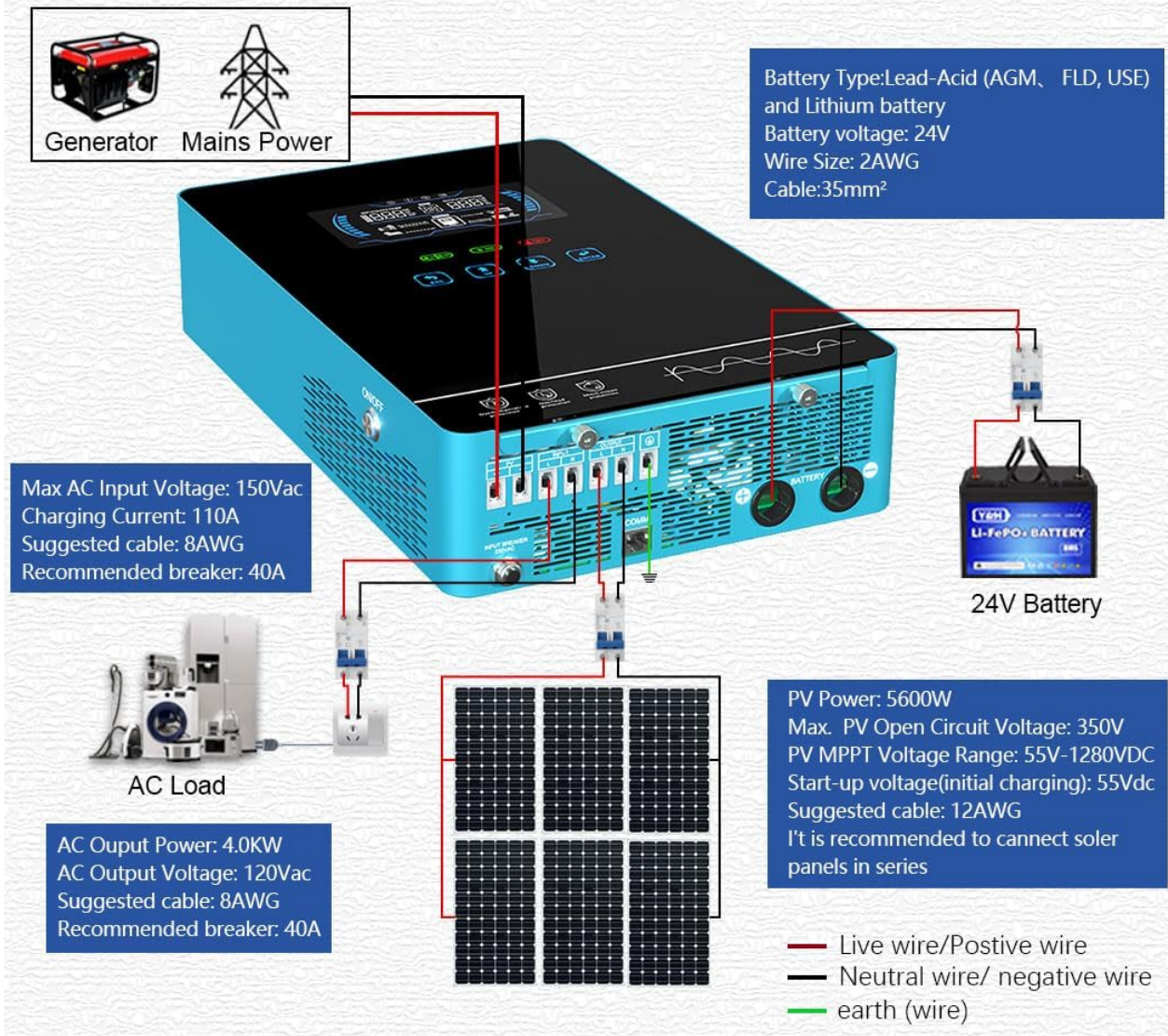


Figure 4.1: Detailed wiring diagram showing connections for solar panels, battery, AC input, and AC load. Note recommended wire sizes and breaker ratings.

- **Battery Connection:** Compatible with 24V Lead-Acid (Seal, AGM, Gel, Flooded) and Lithium batteries. Wire size: 2AWG, Cable: 35mm².
- **PV Input:** Max. PV Input Power: 5600W. Voltage range: 55-350Vdc. Max. PV Open Circuit Voltage: 350V DC. Best working voltage: 55-280V. Suggested cable: 12AWG. It is recommended to connect solar panels in series.
- **AC Input (Mains/Generator):** Max AC Input Voltage: 150Vac. Charging Current: 110A. Suggested cable: 8AWG. Recommended breaker: 40A.
- **AC Output (Load):** AC Output Power: 4.0KW. AC Output Voltage: 120Vac. Suggested cable: 8AWG. Recommended breaker: 40A.

4.2 Battery Compatibility and Activation

The inverter supports various 24V battery types and includes a built-in Battery Management System (BMS) function for lithium battery activation.



Figure 4.2: The inverter is compatible with AGM, USE, FLD (Flooded), and LI (Lithium) 24V battery types, featuring automatic lithium battery activation.

4.3 Battery-Free Operation

This inverter is designed for battery-less startup, allowing direct utilization of solar power. This feature is ideal for daytime high energy consumption scenarios and can significantly reduce system costs.

NO NEED FOR BATTERIES

SYSTEM TYPE	PANEL	INVERTER	BATTERY	TOTAL
OTHER (WITH BATTERY)	\$59.99	\$429.99	\$359	\$848.98
Y&H (WITHOUT BATTERY)	\$59.99	\$429.99	\$0	\$489.98

Power supply for agricultural irrigation/remote base station reduce system cost investment for users



Figure 4.3: Illustrates the cost savings achieved by utilizing the inverter's battery-free operation capability.

5. OPERATING MODES

The inverter offers flexible operating modes to optimize energy usage based on your needs:

5.1 Charging Modes

Select from four charging modes to prioritize solar, utility, or a combination:

- **Only Solar (CSO):** Charges batteries exclusively from solar power.
- **Mains First (SNU):** Prioritizes utility power for charging, supplementing with solar if needed. (Default)
- **Solar First (OSO):** Prioritizes solar power for charging, using utility only when solar is insufficient.
- **Mains & Solar Hybrid:** Utilizes both mains and solar power for charging.

5.2 Output Modes

Choose from three output modes to determine the power source for your loads:

- **Solar First (SUB):** Prioritizes solar power for loads, switching to battery or utility if solar is insufficient. (Default)
- **Mains First:** Prioritizes utility power for loads, switching to battery or solar if utility is unavailable.
- **SBU Priority:** Prioritizes solar, then battery, then utility for loads.

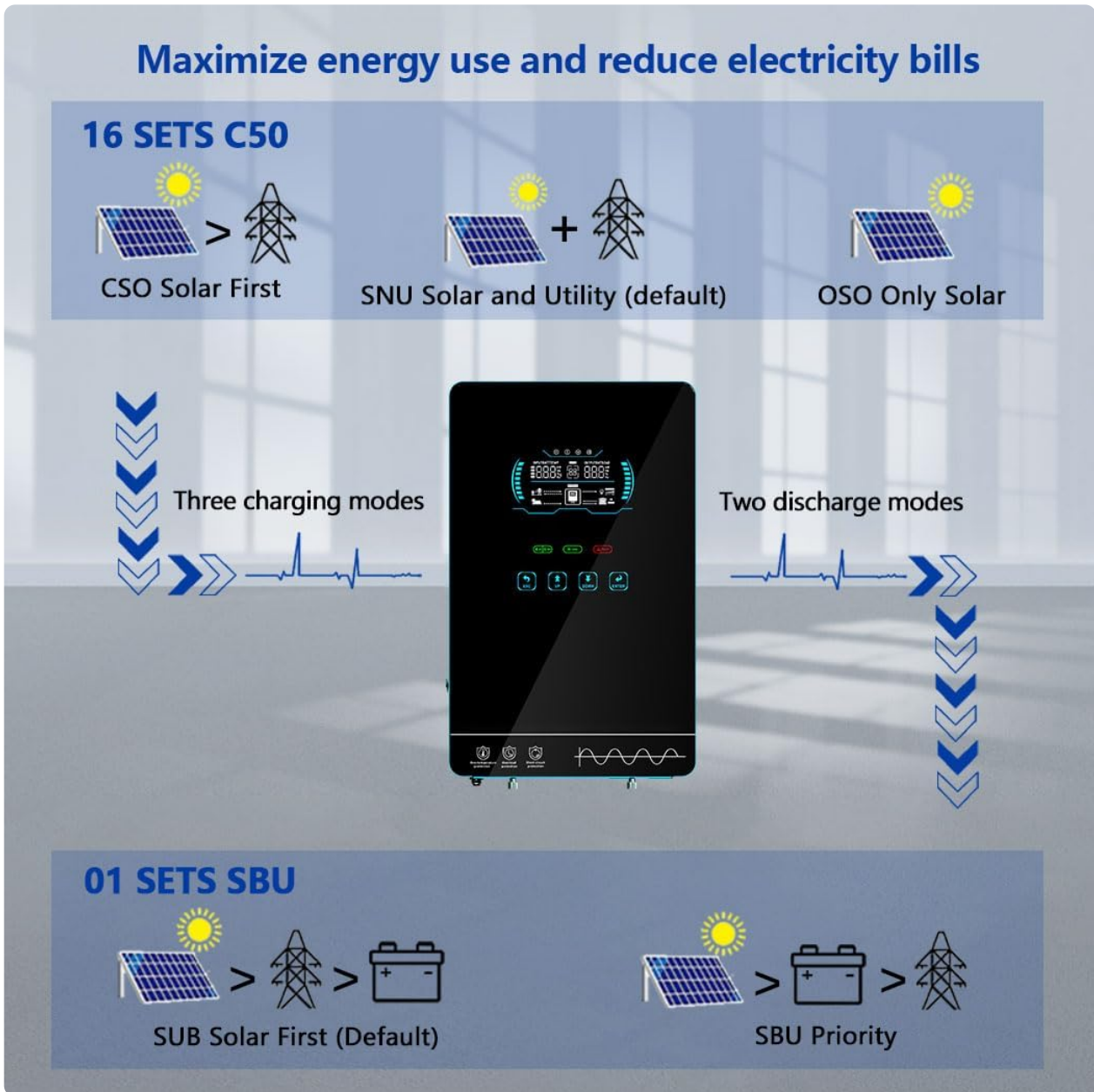


Figure 5.1: Diagram illustrating the various charging and output priority modes to maximize energy utilization and reduce electricity bills.

5.3 Typical Applications

The Y&H 4000W Solar Hybrid Inverter is versatile and can power a wide range of appliances and systems:

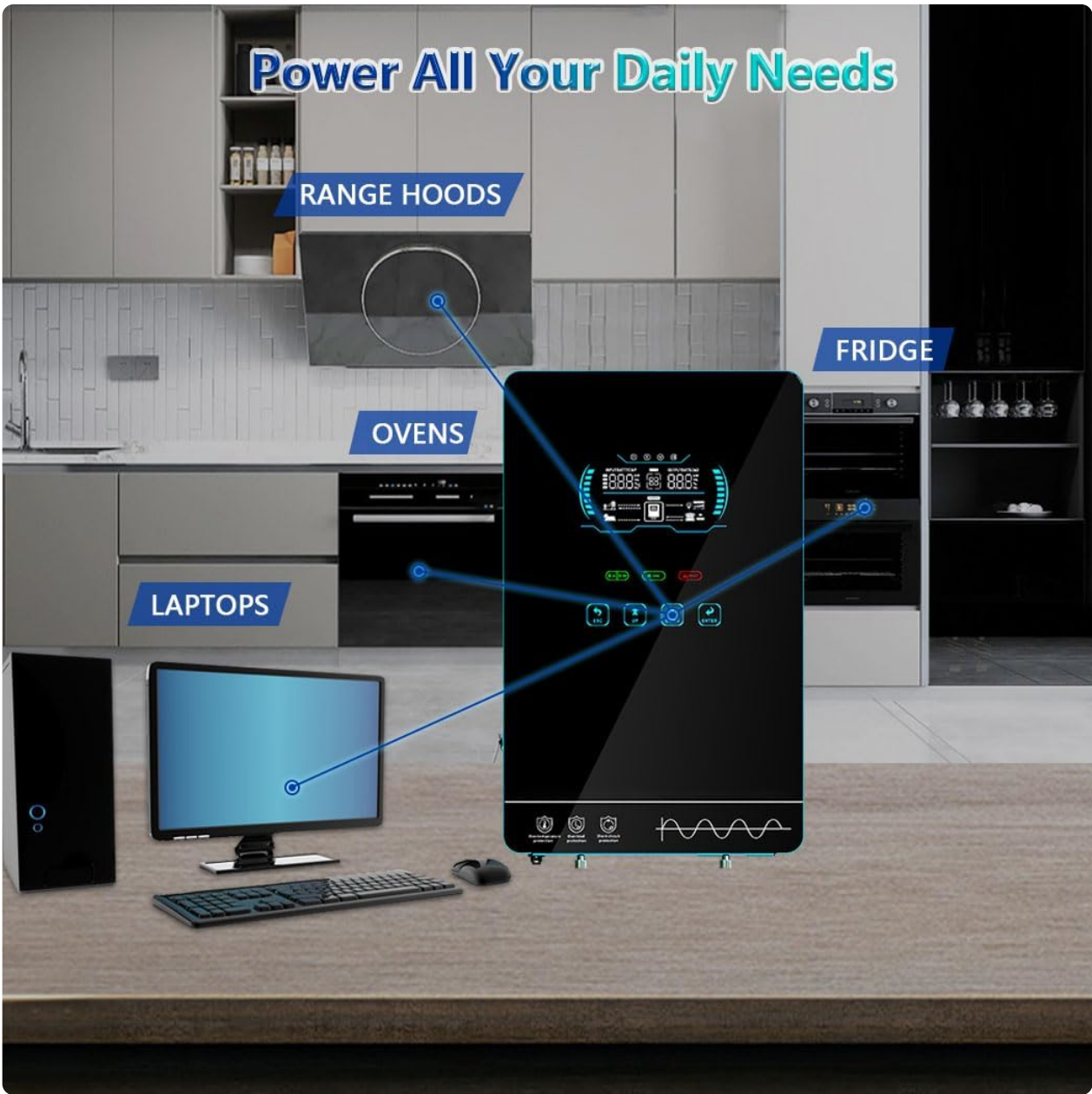


Figure 5.2: Examples of household appliances such as laptops, ovens, range hoods, and refrigerators that can be powered by the inverter.

PROTECT YOUR HOME APPLIANCE

Advanced pure sine wave technology provides power in a way that will protect and extend the life of your electronics and appliances.

INTELLIGENT TEMPERATURE CONTROL

Maintaining a cool working temperature for the device

MULTIPLE PROTECTION

Y&H

LCD SCREEN+ LED INDICATORS

For a dynamic display of system data and operating status

Figure 5.3: Demonstrates diverse applications including solar home systems, boats, farms, outdoor camping, and RVs.

6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your Y&H Solar Hybrid Inverter:

- **Cleaning:** Periodically clean the exterior of the inverter with a dry cloth. Ensure ventilation openings are free from dust and debris.
- **Connections:** Regularly check all electrical connections for tightness and signs of corrosion.
- **Environment:** Ensure the installation environment remains within specified temperature and humidity ranges.
- **Fan Operation:** Listen for unusual noises from the cooling fans. Ensure they are operating freely.



Figure 6.1: Visual details of the inverter's intelligent temperature control system with three cooling fans, contributing to its durability.

7. TROUBLESHOOTING

This section provides guidance for common issues. For complex problems, contact Y&H customer support.

Problem	Possible Cause	Solution
Inverter not turning on	No DC input from battery/solar; loose connections; power switch off.	Check battery voltage and solar input. Ensure all connections are secure. Turn on the power switch.
No AC output	Overload; short circuit; low battery voltage; inverter fault.	Reduce load. Check for short circuits. Recharge/replace battery. Check error codes on LCD.
Error Code 01 (Buzzer sound)	Indicates a specific internal fault or connection issue.	Refer to the detailed error code section in the full manual (if available). Often requires power cycle or professional inspection.
Settings not saving	Possible internal memory issue or incorrect saving procedure.	Ensure settings are confirmed and saved correctly via the LCD interface. If persistent, contact support.

8. SPECIFICATIONS

Parameter	Value
Model Name	MPS-VX 4KW-24V-110V
Rated Power	4000W
Surge Capacity	8000W
DC Voltage	24V
AC Output Voltage	120VAC
Nominal Input Frequency	50/60Hz
Max. PV Input Power	5600W
PV Voltage Range	55-350Vdc
Max. PV Input VOC	350V DC
Max. Charge Current	140A
Product Dimensions	18.43 x 12.52 x 6.26 inches
Item Weight	18.96 pounds
Power Source	Solar Powered

9. WARRANTY AND SUPPORT

Y&H has over 9 years of experience in inverter production and sales, backed by a professional technical team. Your satisfaction is their top priority.

For technical assistance, troubleshooting, or warranty inquiries, please contact Y&H customer support through their official channels. Refer to your purchase documentation for specific warranty terms and contact information.

You can visit the official Y&H Store on Amazon for more information and support:[Y&H Store](#)