

ZQFEE HGX

ZQFEE 4KW 24V 110/120V Pure Sine Wave MPPT Solar Inverter User Manual

Model: HGX

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your ZQFEE 4KW 24V 110/120V Pure Sine Wave MPPT Solar Inverter. This off-grid inverter is designed to convert DC power from solar panels or batteries into stable AC power for various home and remote applications. Please read this manual thoroughly before installation and use.

2. SAFETY INSTRUCTIONS

- **Electrical Safety:** Installation and maintenance must be performed by qualified personnel. Ensure all power sources are disconnected before working on the inverter.
- **Ventilation:** Install the inverter in a well-ventilated area to prevent overheating. Maintain adequate clearance around the unit.
- **Environment:** Avoid installing the inverter in direct sunlight, high humidity, or dusty environments. Keep away from flammable materials.
- **Battery Safety:** Always connect batteries with correct polarity. Wear protective eyewear and gloves when working with batteries.
- **Grounding:** Ensure the inverter is properly grounded according to local electrical codes.
- **Children:** Keep the inverter out of reach of children.

3. PRODUCT OVERVIEW

3.1 Key Features

- **High Efficiency:** 4KW off-grid solar inverter with MPPT technology for maximum solar energy conversion.
- **Pure Sine Wave Output:** Provides clean and stable power for sensitive electronics and appliances.
- **User-Friendly LCD Display:** Easy monitoring of system performance and battery status at a glance.
- **Versatile Compatibility:** Ideal for various applications including home use, RVs, and remote locations.

- Robust Safety Features: Built-in protection against overload, short circuit, and over-temperature for reliable operation.

3.2 Specifications

Parameter	Value
Model Number	HGX
Output Current	20A
Size	400*250*89MM
Weight	10KG (22 pounds)
Output Frequency	50/60Hz
Supported Battery Types	Lead-acid, Lithium, LiFePO4, and others
Input Voltage	110/120V
Selectable Voltage Range	90-140 VAC
Wave Form	Pure Sine Wave
Battery Voltage	24V
MPPT Voltage Range	55-280VDC
Max PV Array Power	6500W
Max. PV Array Open Circuit Voltage	350VDC
Max Charging Current	140A (AC charger + solar charger)

3.3 Product Components and System Overview

4KW Solar Inverter With 6.25 Inches LCD Screen & Touch Buttons Display

Max.PV Array Open Circuit Voltage:
350VDC

PV Array MPPT Voltage Range:
55-280VDC

Max. PV Array Power: 5600W



Solar Power

Max Charging current: 140A
(Ac charger+solar charger)



Generator

OR

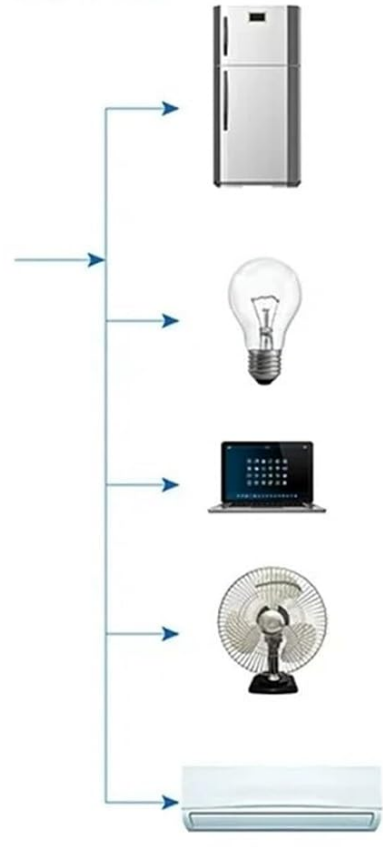


Utility



Battery
24V lithium battery
Lead-Acid battery

AC OUTPUT Voltage:
120VAC±5%



Home Appliances

Figure 3.3.1: System overview of the ZQFEE 4KW Solar Inverter, illustrating connections for solar power, generator, utility input, battery storage, and output to home appliances.

Compatible with Multiple Type of battery

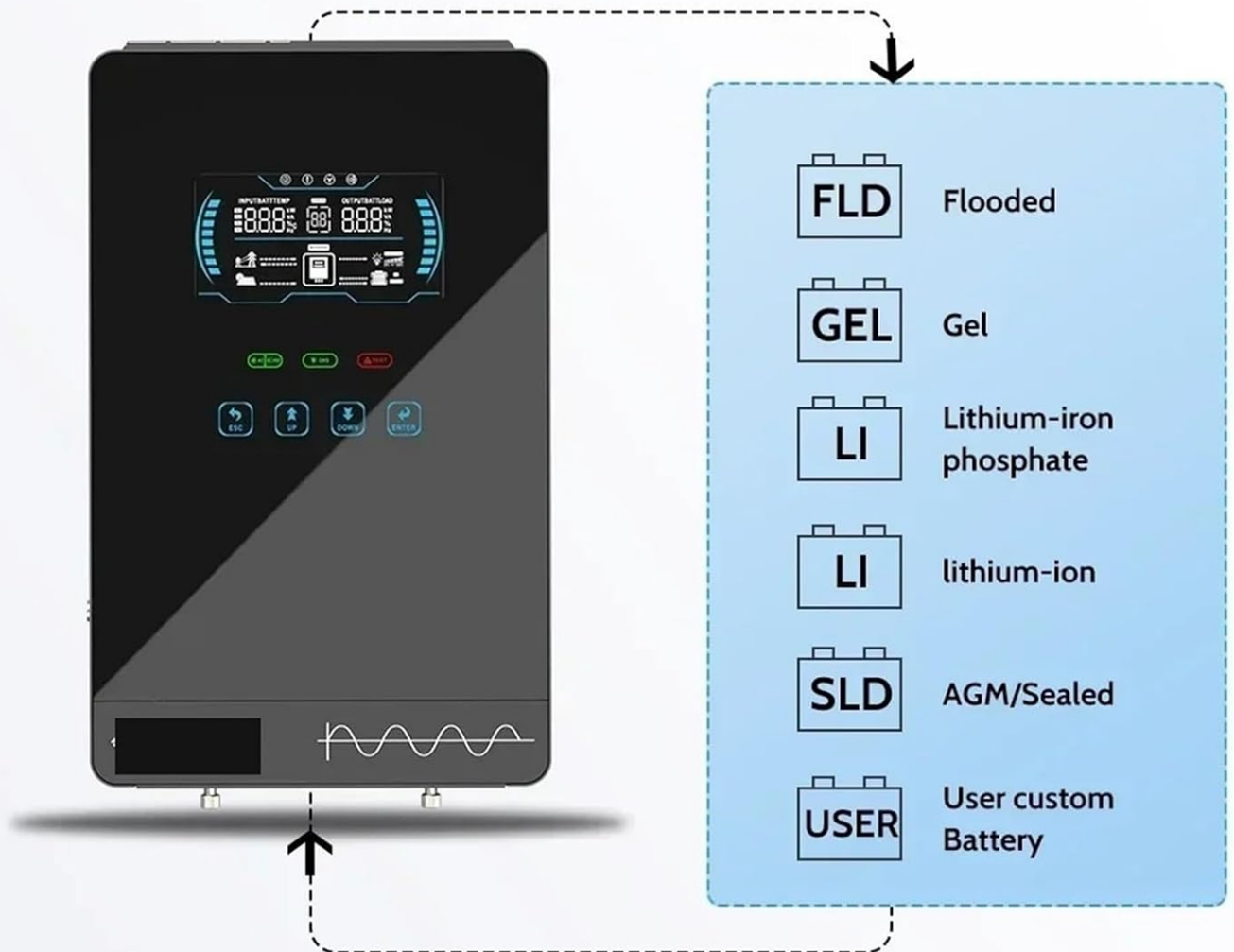


Figure 3.3.2: The inverter's compatibility with various battery types, including Flooded, Gel, Lithium-iron phosphate, Lithium-ion, AGM/Sealed, and user-defined settings.



Figure 3.3.3: Examples of typical applications for the ZQFEE Solar Inverter, demonstrating its ability to power a wide range of household and office electronics.

4. INSTALLATION

4.1 Mounting the Inverter

Choose a suitable location for mounting the inverter. It should be a dry, well-ventilated area, protected from direct sunlight and moisture. Ensure there is sufficient space around the unit for proper airflow and heat dissipation.

4.2 Wiring Connections

All wiring must comply with local electrical codes. Use appropriate wire gauges for all connections to prevent overheating and

ensure optimal performance.

1. **Battery Connection:** Connect the 24V battery bank to the designated battery input terminals on the inverter. Ensure correct polarity (positive to positive, negative to negative).
2. **PV Input Connection:** Connect the solar panel array to the PV input terminals. Observe the maximum PV array open circuit voltage (350VDC) and MPPT voltage range (55-280VDC).
3. **AC Input Connection:** If using a generator or utility grid as an AC input, connect it to the AC input terminals.
4. **AC Output Connection:** Connect your loads (appliances) to the AC output terminals.
5. **Communication Port:** The RS458/RS232 communication port allows for data monitoring and control.



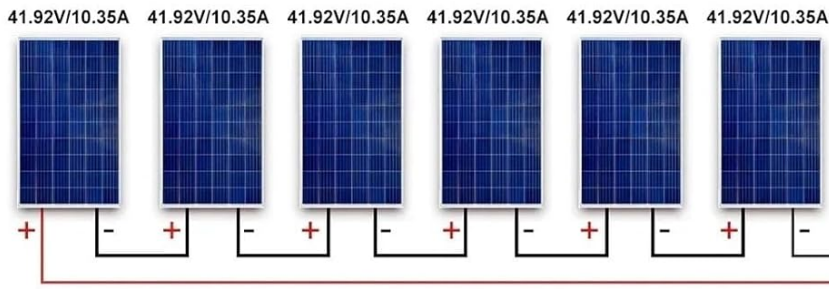
Figure 4.2.1: Detailed view of the inverter's connection ports, including PV input, AC input, AC output, communication port, and battery input terminals.

4.3 Solar Panel Wiring Methods

Proper wiring of solar panels is crucial for optimal performance and safety. The inverter supports both series and parallel configurations.



In series



Increase the voltage of the system in series, This voltage needs to be **less than** the hybrid inverter PV maximum input voltage $V_{oc}/\text{inverter}$.

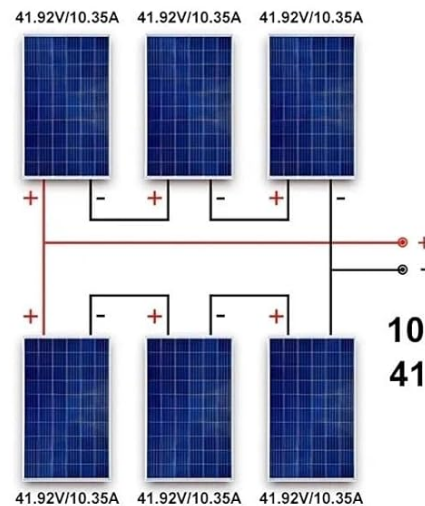
$$10.35A$$

$$41.92 \times 6 = 251.52V$$

The entire photovoltaic system should use the same type of photovoltaic panel

In parallel

Parallel increases the current of the system, This current **should not exceed** the maximum PV input current of the hybrid inverter.



$$10.35 \times 2 = 20.7A$$

$$41.92 \times 3 = 125.76V$$

PV cable dimensions: 6-8A/mm²

Figure 4.3.1: Solar panel wiring methods. **In series:** Increases voltage, ensuring the total voltage is less than the inverter's maximum input voltage. **In parallel:** Increases current, ensuring the total current does not exceed the inverter's maximum input current. Use PV cable dimensions of 6-8A/mm².

- **Series Connection:** Connect panels in series to increase the total voltage. Ensure the combined open circuit voltage of the array does not exceed the inverter's maximum PV input voltage (350VDC).
- **Parallel Connection:** Connect panels in parallel to increase the total current. Ensure the combined current does not exceed the inverter's maximum PV input current.
- **Cable Sizing:** Use PV cables with dimensions of 6-8A/mm² for optimal performance and safety.

5. OPERATION

5.1 Initial Startup

1. After completing all wiring connections, ensure they are secure.
2. Turn on the battery breaker first.

- 3. Turn on the PV array breaker (if applicable).
- 4. Turn on the AC input breaker (if applicable).
- 5. Finally, turn on the inverter's power switch. The LCD display will illuminate.

5.2 LCD Display and Monitoring

The user-friendly LCD display provides real-time information on system performance, battery status, input/output voltages, and current. Use the touch buttons to navigate through different display screens and monitor operational parameters. Refer to the on-screen indicators for charging status, load levels, and any warning messages.

6. MAINTENANCE

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

- **Cleaning:** Periodically clean the inverter's exterior with a dry cloth. Ensure ventilation openings are free from dust and debris. Do not use liquid cleaners.
- **Connection Check:** Annually inspect all wiring connections for tightness and signs of corrosion. Re-tighten if necessary.
- **Environmental Check:** Ensure the installation environment remains within specified conditions (temperature, humidity).
- **Battery Inspection:** Regularly check battery terminals for corrosion and ensure proper ventilation for lead-acid batteries.

7. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
Inverter not turning on	No battery power; loose connections; inverter switch off.	Check battery voltage and connections; ensure inverter switch is ON.
No AC output	Overload; short circuit; output breaker tripped; low battery voltage.	Reduce load; check for short circuits; reset output breaker; charge batteries.
PV charging not active	Insufficient sunlight; PV array disconnected; PV voltage out of range.	Check solar conditions; verify PV connections; ensure PV voltage is within MPPT range.
Error code on LCD	Specific system fault (e.g., over-temperature, battery fault).	Refer to the inverter's specific error code list (if available) or contact support.

8. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please contact your retailer or the manufacturer directly. Keep your purchase receipt and product model number (HGX) handy for faster assistance.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question