PQHUZSFYA PQHUZSFYA

Off-Grid Hybrid Inverter User Manual

Brand: PQHUZSFYA | Model: PQHUZSFYA

Product: 1.5KW 24V Off-Grid Hybrid Inverter with 80A MPPT Solar Charge

1. Introduction

This manual provides essential information for the safe and efficient operation of your PQHUZSFYA Off-Grid Hybrid Inverter. Please read this manual thoroughly before installation and use, and keep it for future reference.

The inverter is a versatile power solution, integrating an 80A MPPT solar charge controller, a high-frequency pure sine wave inverter, and a UPS function. It is designed to provide reliable power for various applications, converting DC 12V/24V to 230V AC with a pure sine wave output and supporting a maximum PV input of 150Vdc.

2. Safety Information

WARNING: ELECTRIC SHOCK HAZARD. ENERGY HAZARDOUS.

- Installation and wiring must be performed by qualified personnel.
- Ensure all power sources are disconnected before performing any wiring or maintenance.
- Do not disassemble the inverter. There are no user-serviceable parts inside.
- Ensure proper grounding of the unit.
- Do not expose the inverter to rain, snow, spray, or any liquids.
- Operate the inverter in a well-ventilated area to prevent overheating.

3. Product Overview

Figure 3.1: Front view of the Off-Grid Hybrid Inverter, showing the display and control buttons.

Figure 3.2: Detailed view of the inverter's display screen and control buttons (ESC, UP, DOWN, ENTER) with status indicators (INV/AC, CHG, FAULT).

Figure 3.3: Rear view of the inverter, highlighting the AC input/output terminals, battery terminals, PV input terminals, and input breaker.

Figure 3.4: Angled view of the inverter, providing a perspective of the side ventilation and the various connection ports on the rear panel.

4. Setup and Installation

4.1 Unpacking

Carefully unpack the inverter and inspect for any shipping damage. Retain the packaging materials for future transport or storage.

4.2 Mounting

- Mount the inverter vertically on a solid surface.
- Ensure adequate clearance (at least 20 cm) around the unit for proper ventilation.
- Avoid direct sunlight, heat sources, and moisture.
- Install in an area free from flammable materials.

4.3 Wiring Connections

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

1. **Grounding:** Connect the inverter's ground terminal to a reliable earth ground.
2. **Battery Connection:** Connect the DC 24V battery bank to the inverter's battery terminals (positive to positive, negative to negative). Ensure correct polarity.
3. **PV Input Connection:** Connect your solar panel array to the PV input terminals. Ensure the PV open circuit voltage does not exceed 150Vdc. Observe correct polarity.
4. **AC Output Connection:** Connect your AC loads to the AC output terminals.
5. **AC Input Connection (if applicable):** If using grid power as a backup or for charging, connect the AC utility supply to the AC input terminals.

5. Operating Instructions

5.1 Powering On/Off

1. **To Power On:** After all connections are secure, switch on the battery breaker, then the PV array breaker (if applicable), and finally the AC input breaker (if applicable). The inverter will initiate and the display will light up.
2. **To Power Off:** First, disconnect the AC input (if applicable), then the PV array, and finally the battery breaker.

5.2 Display and Control Panel

The front panel features an LCD display and four control buttons: ESC, UP, DOWN, and ENTER. These allow you to monitor system status, configure settings, and view operational data.

- **ESC:** Exit current menu or return to previous screen.
- **UP/DOWN:** Navigate through menu options or adjust settings.
- **ENTER:** Confirm selection or enter a submenu.

5.3 Operating Modes

The inverter supports various operating modes to optimize power usage based on your preferences and available sources.

Figure 5.1: Visual representation of inverter operating modes, including 'Only Solar', 'Utility Priority', and 'Solar & Utility' (which can be further configured as 'Solar Priority' or 'Utility Priority').

- **Solar Priority:** Solar power is the primary source for loads and battery charging. Utility power is used only when solar power is insufficient.
- **Utility Priority:** Utility power is the primary source for loads. Solar power is used to charge batteries or supplement loads when utility is unavailable.
- **Battery Priority (Off-Grid):** Loads are powered directly from the battery, charged by solar. Utility is not used.

5.4 Battery Type Selection

The inverter allows selection of different battery types to ensure optimal charging and discharge performance.

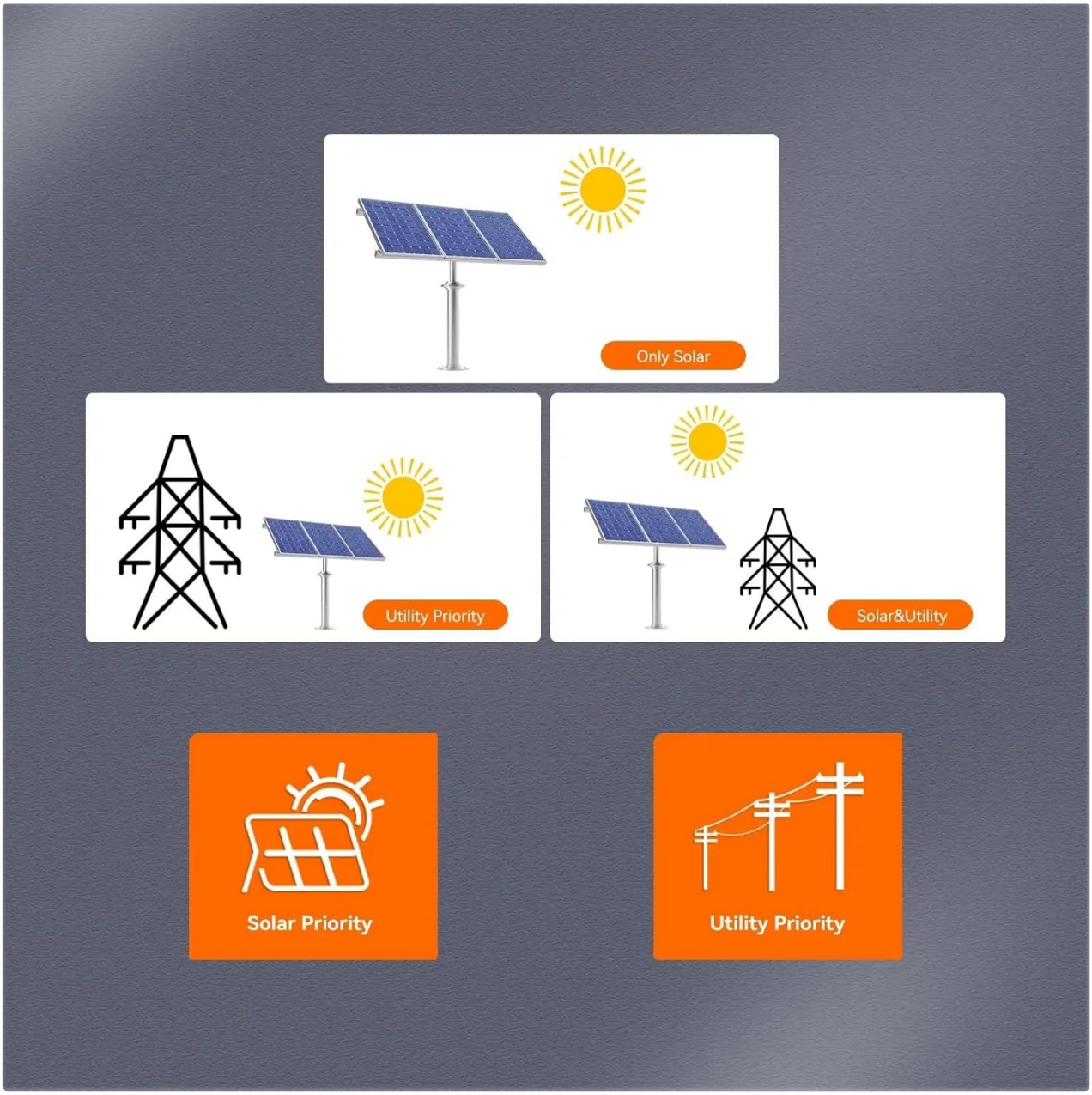

Figure 5.2: Illustration of supported battery types: GEL, FLD (Flooded), SLD (Sealed Lead Acid), LFE (LiFePO4), USE (User-defined), and LI (Lithium-ion).

- Access the settings menu to select the battery type that matches your installed battery bank (e.g., GEL, FLD, SLD, LFE, LI, or USE for user-defined parameters).

6. 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.
- **Connection Check:** Annually inspect all electrical connections for tightness and signs of corrosion.
- **Ventilation:** Ensure the area around the inverter remains clear to allow for proper airflow and heat dissipation.
- **Battery Inspection:** If using lead-acid batteries, check electrolyte levels and terminal conditions as per battery manufacturer guidelines.

7. Troubleshooting

This section provides solutions to common issues. If the problem persists, contact technical support.

Problem	Possible Cause	Solution
Inverter not powering on	No battery connection; Battery voltage too low; Power switch off	Check battery connections; Charge battery; Turn on power switch/breakers
No AC output	Overload; Short circuit; Inverter fault	Reduce load; Check for short circuits; Check fault indicator on display
PV charging not working	PV input voltage too low/high; PV polarity reversed; MPPT fault	Check PV array voltage; Verify PV wiring polarity; Contact support if MPPT fault persists
Fault indicator lit	Internal error; Over-temperature; Battery over/under voltage	Refer to the display for specific error code; Ensure proper ventilation; Check battery voltage

8. Specifications

Feature	Specification
Model Number	PQHUZSFYA
Rated Power	1.5KW
DC Input Voltage	24V
AC Output Voltage	230V AC
Output Frequency	50 Hz/60 Hz (Auto sensing)
Output Waveform	Pure Sine Wave
Max. PV Array Open Circuit Voltage	150Vdc
MPPT Charge Current	80A
Output Type	SINGLE

9. Warranty and Support

9.1 Warranty Information

Specific warranty terms and conditions for this product are provided by the manufacturer or seller at the time of

purchase. Please refer to your purchase documentation or contact your point of sale for detailed warranty information.

9.2 Technical Support

For technical assistance, troubleshooting beyond this manual, or service inquiries, please contact the seller or manufacturer directly. Have your product model number and purchase details ready when contacting support.