HFFFXRCY PV18-3024 VPM

HFFFXRCY Must PV1800 VPM 3KW 24V Hybrid Off-Grid Solar Inverter User Manual

Model: PV18-3024 VPM

1. Introduction

This manual provides essential information for the installation, operation, and maintenance of your HFFFXRCY Must PV1800 VPM 3KW 24V Hybrid Off-Grid Solar Inverter. This multi-function inverter/charger integrates an inverter, MPPT solar charger, and battery charger to provide reliable power support. It features a comprehensive LCD display and user-configurable settings for various applications.

2. Safety Instructions

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. Keep this manual for future reference.

- Ensure all wiring is performed by qualified personnel.
- Do not disassemble the inverter. There are no user-serviceable parts inside.
- Install the inverter in a well-ventilated area, away from flammable materials and direct sunlight.
- Ensure proper grounding of the inverter.
- Disconnect all power sources (solar, battery, AC utility) before performing any maintenance or wiring.
- Use appropriate circuit breakers and fuses as specified in the installation guidelines.

3. Product Overview

The HFFFXRCY Must PV1800 VPM series is designed to provide reliable power for off-grid applications. It efficiently converts DC power from solar panels and batteries into AC power for your appliances.

3.1 System Diagram

The following diagram illustrates a typical installation of the hybrid solar inverter, showing its connection to solar panels, batteries, AC input (utility/generator), and various AC loads.

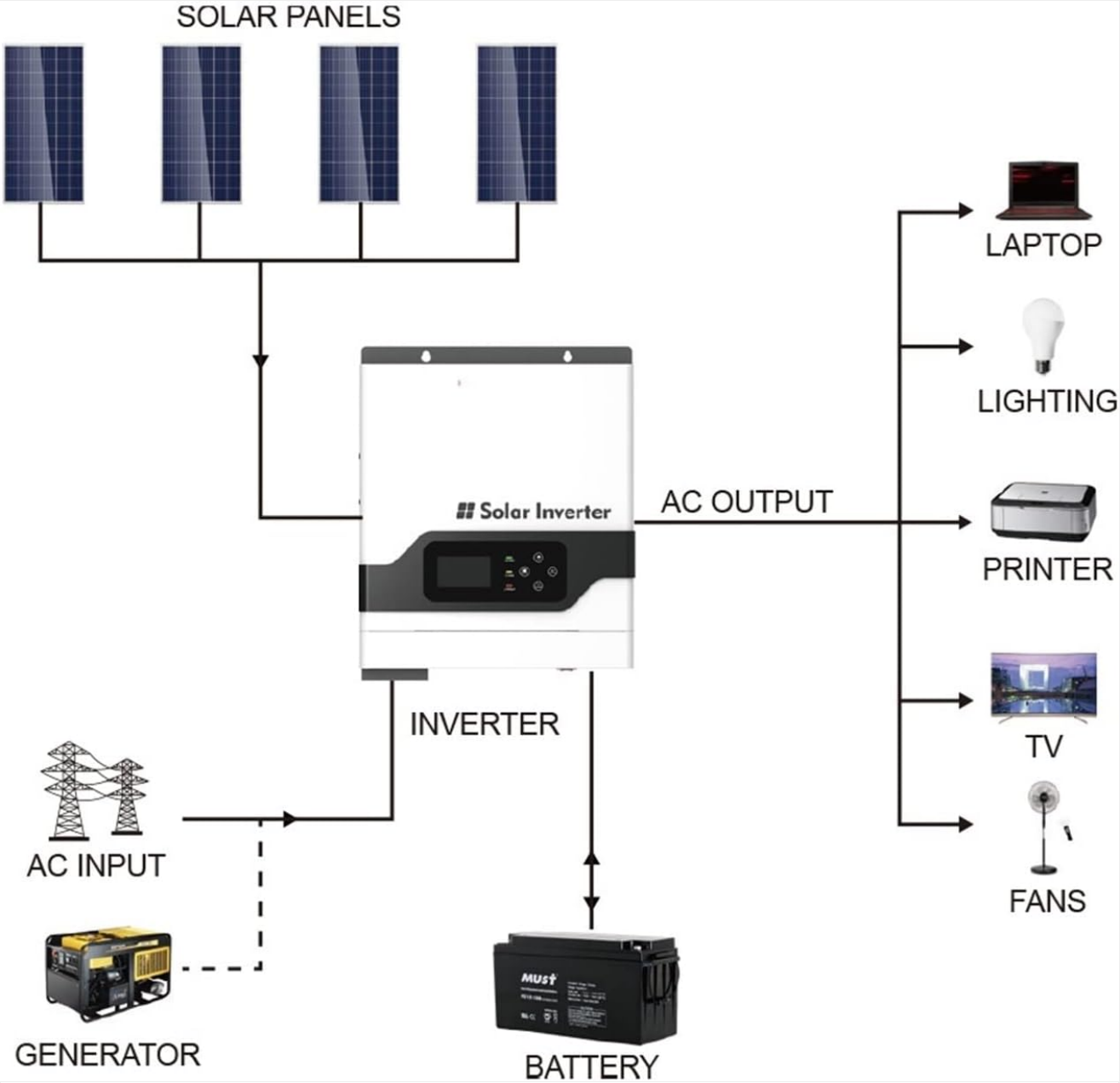

Figure 3.1: Typical System Connection Diagram. This diagram shows solar panels connected to the inverter, which is also connected to a battery bank and an optional AC input from a generator. The inverter provides AC output to various household appliances such as laptops, lighting, printers, TVs, and fans.

3.2 Inverter Front View

The front panel of the inverter features an LCD display and control buttons for monitoring and configuration.

Figure 3.2: Inverter Front Panel. The image displays the front of the inverter with its central LCD screen for status monitoring and several buttons for user interaction and settings adjustment.

3.3 Communication Ports

The side of the inverter houses various communication ports for monitoring and external connectivity, including USB, COM, and a dedicated port for the WiFi-Plug.

Figure 3.3: Inverter Communication Ports. This view shows the side panel of the inverter, highlighting the various communication interfaces such as COM, USB, and a dedicated slot for the WiFi module.

3.4 Input/Output Terminals

The bottom panel provides terminals for connecting solar panels (PV+ / PV-), batteries (DC+ / DC-), and AC input/output.

Figure 3.4: Inverter Input/Output Terminals. The image displays the bottom section of the inverter, detailing the connection points for the input breaker, AC input/output, DC battery connections, and PV (solar panel) connections.

3.5 WiFi-Plug

The WiFi-Plug enables remote monitoring and control of the inverter via a mobile application.

Figure 3.5: WiFi-Plug. This image shows the WiFi-Plug accessory, which connects to the inverter to provide wireless monitoring capabilities. It features a 'Reset' button and a 'Net Data' indicator light.

4. Setup and Installation

Proper installation is crucial for the safe and efficient operation of your inverter. Refer to the system diagram (Figure 3.1) for overall connection guidance.

4.1 Site Selection and Mounting

- Mount the inverter vertically on a solid surface.
- Ensure adequate clearance (at least 20 cm) around the inverter for proper heat dissipation.
- Avoid areas with high humidity, dust, or corrosive gases.
- Operating temperature range: 0°C to 55°C.

4.2 Wiring Connections

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

1. **Battery Connection:** Connect the battery bank to the DC+ and DC- terminals on the inverter (Figure 3.4).

Ensure correct polarity. The inverter is designed for a 24VDC battery system.

2. **Solar Panel Connection:** Connect the solar panel array to the PV+ and PV- terminals (Figure 3.4). Verify that the open-circuit voltage of the solar array does not exceed 145VDC.
3. **AC Input Connection:** Connect the AC utility grid or a generator to the AC input terminals (L, N, G) (Figure 3.4). Install an appropriate input breaker.
4. **AC Output Connection:** Connect your AC loads to the AC output terminals (L, N, G) (Figure 3.4).
5. **Grounding:** Ensure the inverter chassis is properly grounded to a reliable earth ground.

4.3 WiFi-Plug Installation

Insert the WiFi-Plug into the designated WiFi port on the side of the inverter (Figure 3.3). Follow the instructions provided with the WiFi-Plug for network configuration and mobile app setup.

5. Operating Instructions

Once all connections are secure, you can power on your inverter.

5.1 Powering On/Off

1. **Power On:** First, switch on the battery breaker, then the solar array breaker, and finally the AC input breaker (if connected). Press the power button on the inverter's front panel (Figure 3.2).
2. **Power Off:** Reverse the power-on sequence. First, press the power button to turn off the inverter, then switch off the AC input breaker, followed by the solar array breaker, and finally the battery breaker.

5.2 LCD Display and Button Operation

The LCD display provides real-time system status, input/output voltages, battery charge level, and error codes. The buttons allow navigation through menus and adjustment of settings such as battery charging current, AC/solar charger priority, and acceptable input voltage range.

- Refer to the detailed operational guide for specific menu navigation and setting adjustments.
- User-configurable settings allow optimization for different battery types and load requirements.

6. Maintenance

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

- **Cleaning:** Periodically clean the inverter's exterior and ventilation openings to prevent dust accumulation. Use a dry, soft cloth. Do not use liquid cleaners.
- **Connection Checks:** Annually inspect all wiring connections for tightness and signs of corrosion.
- **Battery Inspection:** Follow the battery manufacturer's maintenance guidelines. Ensure battery terminals are clean and free of corrosion.
- **Environmental Check:** Ensure the installation environment remains within specified temperature and humidity ranges.

7. Troubleshooting

This section provides solutions to common issues you might encounter. For problems not listed here, contact technical support.

Problem	Possible Cause	Solution
Inverter does not power on	No battery connection or low battery voltage; Power button not pressed; Input breaker off.	Check battery connections and voltage; Press power button; Ensure input breakers are on.
No AC output	Overload; Output breaker tripped; Inverter in fault mode.	Reduce load; Reset output breaker; Check LCD for error codes and refer to detailed manual.
Battery not charging	Solar panels not connected or insufficient sunlight; AC input not connected; Charger settings incorrect.	Verify solar panel connections and sunlight; Check AC input; Adjust charger settings via LCD.
WiFi-Plug not connecting	Incorrect network settings; WiFi signal weak; Plug not properly inserted.	Refer to WiFi-Plug manual for setup; Ensure strong WiFi signal; Reinsert plug firmly.

8. Specifications

Key technical specifications for the HFFFXRCY Must PV18-3024 VPM Hybrid Solar Inverter.

Parameter	Value
Model	PV18-3024 VPM
Default Battery System Voltage	24VDC
Rated Power	3000VA / 3000W
Surge Power	6000VA
Waveform	Pure sine wave
MPPT Solar Charger Max Voltage	145VDC
MPPT Solar Charger Max Current	60A (Max 80A)
Package Dimensions	0.39 x 0.39 x 0.39 inches (Product dimensions may vary)
Item Weight	1.76 ounces (Product weight may vary)
Manufacturer	HFFFXRCY

9. Warranty and Support

For warranty information and technical support, please refer to the documentation included with your purchase or contact your vendor. Keep your purchase receipt as proof of purchase.