NZXEDVHU PV1800 VHM 5.5KW

NZXEDVHU Must PV1800 VHM 5.5KW 48V Hybrid Solar Inverter User Manual

Model: PV1800 VHM 5.5KW

1. Introduction

The NZXEDVHU Must PV1800 VHM 5.5KW 48V Hybrid Solar Inverter is a multi-functional inverter/charger designed to provide uninterruptible power. It integrates the functions of a solar inverter, MPPT solar charger, and battery charger. This unit is suitable for various applications, offering user-configurable settings for battery charging current, AC/solar charger priority, and acceptable input voltage.

Figure 1.1: Front view of the Must PV1800 VHM 5.5KW Hybrid Solar Inverter, showing the LCD display and control buttons.

2. Safety Instructions

Please read all instructions and cautionary markings on the unit and in this manual before installation and operation. Failure to follow these instructions may result in electric shock, fire, or severe injury.

- Installation must be performed by qualified personnel.
- Ensure all wiring is correctly polarized and securely connected.
- Do not disassemble the inverter. There are no user-serviceable parts inside.
- Keep the inverter away from flammable materials and ensure adequate ventilation.
- Always disconnect all power sources (AC, DC, and solar) before performing any maintenance or wiring.

3. Product Features

The PV1800 VHM series inverter offers advanced features for reliable power management:

- **Pure Sine Wave Output:** Provides clean and stable power suitable for sensitive electronics.
- **High Output Power Factor:** Output power factor of 1.0.
- **Integrated MPPT Solar Charger:** Built-in 80A MPPT solar charge controller for efficient solar power harvesting.
- **Anti-Dust Kit:** Designed with an anti-dust kit for enhanced durability in harsh environments.
- **Parallel Operation (Optional):** Supports parallel operation of up to 3 units for increased capacity (available for 3KW-5.5KW 48V models).
- **Remote Monitoring (Optional):** Allows for remote monitoring capabilities.
- **Generator Compatibility:** Can be connected to a generator as an AC input source.
- **User-Configurable LCD Display:** Easy-to-access button operation for various settings.

4. Package Contents

Upon unpacking, please ensure all items are present and undamaged:

- PV1800 VHM 5.5KW 48V Hybrid Solar Inverter Unit
- User Manual
- Communication Cable (USB/RS232)
- AC Input/Output Terminal Block
- Battery Cables
- WiFi Plug (for models with WiFi functionality)

Figure 4.1: The optional WiFi plug for remote monitoring.

5. Installation

Proper installation is crucial for the safe and efficient operation of your inverter. Refer to the wiring diagram for connections.

5.1 Mounting the Inverter

Mount the inverter vertically on a sturdy wall in a well-ventilated area, away from direct sunlight, heat sources, and moisture. Ensure sufficient clearance around the unit for airflow.

5.2 Wiring Connections

All wiring must comply with local electrical codes. Use appropriate wire gauges for AC input/output, battery, and solar panel connections.

1. **Battery Connection:** Connect the battery bank to the inverter's DC terminals. Ensure correct polarity (+ to + and - to -).
2. **Solar Panel Connection:** Connect the solar array to the PV+ and PV- terminals. Verify open circuit voltage and short circuit current are within the inverter's specifications.
3. **AC Input Connection:** Connect the utility grid or generator AC input to the designated AC INPUT terminals.

4. **AC Output Connection:** Connect your loads to the AC OUTPUT terminals.
5. **Grounding:** Ensure the inverter chassis is properly grounded.

Figure 5.1: Rear view of the inverter, highlighting connection points for AC input/output, DC battery, and solar PV.

Figure 5.2: Side view of the inverter, displaying communication ports for monitoring and control.

5.3 System Wiring Diagram

The following diagram illustrates a typical system setup for the PV1800 VHM hybrid solar inverter.

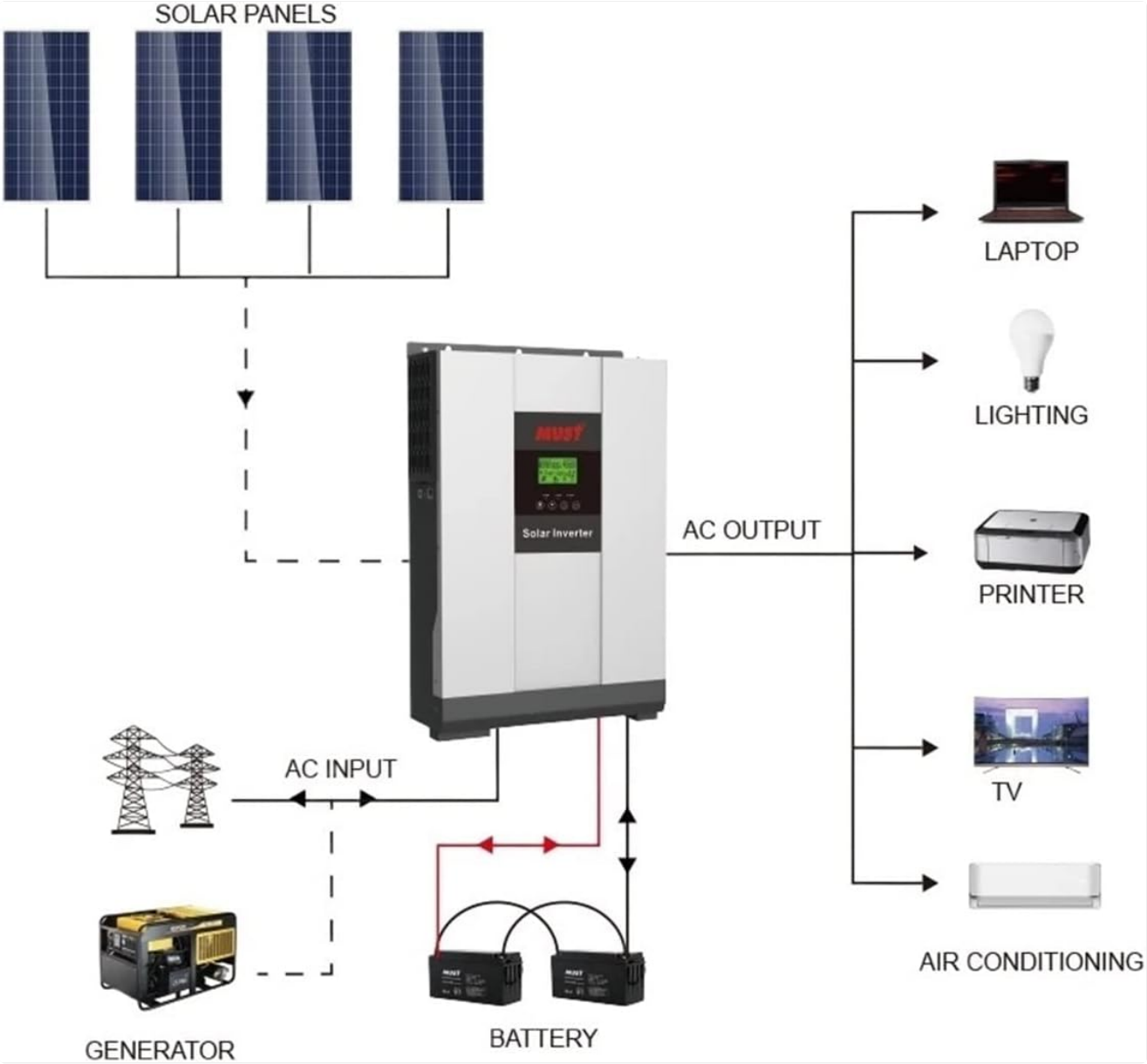

Figure 5.3: Comprehensive system wiring diagram for the PV1800 VHM inverter, detailing connections from solar panels, batteries, AC input (grid or generator), and AC output to various household appliances.

6. Operation

After successful installation, follow these steps to operate your inverter.

6.1 Powering On/Off

1. **To Power On:** First, switch on the battery breaker, then the solar array breaker, and finally the AC input breaker (if connected). Turn on the inverter's power switch.
2. **To Power Off:** Reverse the power-on sequence. First, turn off the inverter's power switch, then the AC input breaker, solar array breaker, and finally the battery breaker.

6.2 LCD Display and Settings

The LCD display provides real-time operational status and allows for configuration of various parameters. Use the buttons below the display to navigate menus and adjust settings such as:

- Output voltage and frequency
- Battery charging current
- AC input voltage range
- Charger source priority (Solar first, Utility first, SBU priority)
- Output source priority (Utility first, Solar first, SBU priority)

Refer to the detailed settings section in the full manual for a complete list of parameters and their functions.

7. Maintenance

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

- **Cleaning:** Periodically clean the inverter's exterior and ventilation openings to prevent dust accumulation. Use a dry, soft cloth. Do not use liquid cleaners.
- **Connections Check:** Annually inspect all wiring connections for tightness and signs of corrosion.
- **Battery Inspection:** If using lead-acid batteries, check electrolyte levels and terminal cleanliness regularly.
- **Environment:** Ensure the installation environment remains within specified temperature and humidity ranges.

8. Troubleshooting

This section provides solutions to common issues. For more complex problems, contact technical support.

Problem	Possible Cause	Solution
Inverter does not turn on	No battery connection; Battery voltage too low; Power switch off	Check battery connections; Charge batteries; Turn on power switch
No AC output	Overload; Output breaker tripped; Inverter in fault mode	Reduce load; Reset breaker; Check LCD for error codes and refer to manual
Low battery alarm	Insufficient charging; Excessive load	Check solar panel and AC input charging; Reduce load; Charge batteries
Error Code displayed	Internal fault; Specific system issue	Note the error code and consult the detailed troubleshooting section in the full manual or contact support.

9. Specifications

Key technical specifications for the PV1800 VHM 5.5KW 48V model:

Feature	Specification
Model	PV18-5548 VHM
Nominal Power	5.5KW
Nominal Battery System Voltage	48V DC
Output Voltage	220-240V AC
Output Waveform	Pure Sine Wave

Feature	Specification
Output Power Factor	1.0
MPPT Solar Charger Current	80A
Item Weight	1.76 ounces (Note: This appears to be an incorrect weight from product data, actual inverter weight will be significantly higher)
Package Dimensions	0.39 x 0.39 x 0.39 inches (Note: This appears to be incorrect dimensions from product data, actual inverter dimensions will be significantly larger)

Note: The item weight and package dimensions provided in the product data appear to be placeholders or incorrect. Please refer to the product packaging or manufacturer's official website for accurate physical specifications.

10. Warranty and Support

For warranty information, technical support, or service inquiries, please contact your vendor or the manufacturer directly. Keep your purchase receipt as proof of purchase for warranty claims.
Manufacturer: NZXEDVHU