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OAE FT-5000W24V

OAE Ampinvt FT-5000W24V Pure Sine Wave Inverter User Manual

Model: FT-5000W24V

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your OAE Ampinvt FT-5000W24V Pure Sine Wave Inverter. This device combines an inverter, battery charger, and AC auto-transfer switch, designed to provide reliable power for off-grid solar home systems. Please read this manual thoroughly before installation and use to ensure proper function and safety.

2. Safety Information

WARNING: Failure to follow these safety instructions may result in injury, damage to the inverter, or other property damage.

- Ensure all wiring is performed by qualified personnel and complies with local electrical codes.
- Do not operate the inverter in wet conditions or near flammable materials.
- Always disconnect the battery and AC power before performing any maintenance or wiring.
- Ensure proper ventilation around the inverter to prevent overheating.
- This inverter is designed for a 24V battery system only. Do not connect to other voltage systems.
- Do not attempt to open or repair the inverter yourself. Refer to qualified service personnel.

3. Product Overview

The Ampinvt FT-5000W24V inverter delivers 5000W continuous pure sine wave output with a peak power of 15000W. It features a built-in automatic 35A AC charger and an AC mains switcher, offering high transfer efficiency and stable output.

3.1 Key Features

- Pure Sine Wave Output: Provides clean power suitable for sensitive electronics.
- High Transfer Efficiency: Above 90% for efficient power conversion.
- Built-in AVR Stabilizer: Ensures continuous stable output.

- Adjustable Charging Current: Max charge current can be adjusted from 0-35A.
- Multiple Battery Types Supported: SLA, AGM, GEL, Li-ion, LiFePO4, and customizable settings.
- Five Working Modes: AC priority, Battery priority, ECO, Generator, Unattended.
- Comprehensive Protections: Battery low/high voltage, over temperature, overload, short circuit.

3.2 Inverter Components and Connections

Familiarize yourself with the various parts of your inverter for correct installation and operation.



This image displays the front and rear panels of the Ampinvt FT-5000W24V inverter. The front panel features an LCD display, LED indicators, and function keys for operation. The rear panel shows the battery negative and positive terminals, remote control port, AC fuse, AC input, and AC output connections.

Front Panel

- **LCD Display:** Shows real-time operating status, input/output voltage, battery status, and error codes.
- **LED Indicators:** Provide quick visual status of the inverter's operation.
- **Function Keys:** Used for navigating menus and adjusting settings.

Rear Panel

- **Battery Negative/Positive Terminals:** Connect to your 24V battery bank.
- **Remote Control Port:** For connecting an optional remote control unit.
- **AC Fuse:** Provides protection for the AC circuit.
- **AC Input:** Connects to the utility grid or generator for charging and bypass.
- **AC Output:** Provides 120V/240V split-phase AC power to your loads.

4. Setup and Installation

4.1 Unpacking and Inspection

Carefully unpack the inverter and inspect it for any shipping damage. Report any damage to your supplier immediately. Ensure all accessories listed in the packing list are present.

4.2 Mounting the Inverter

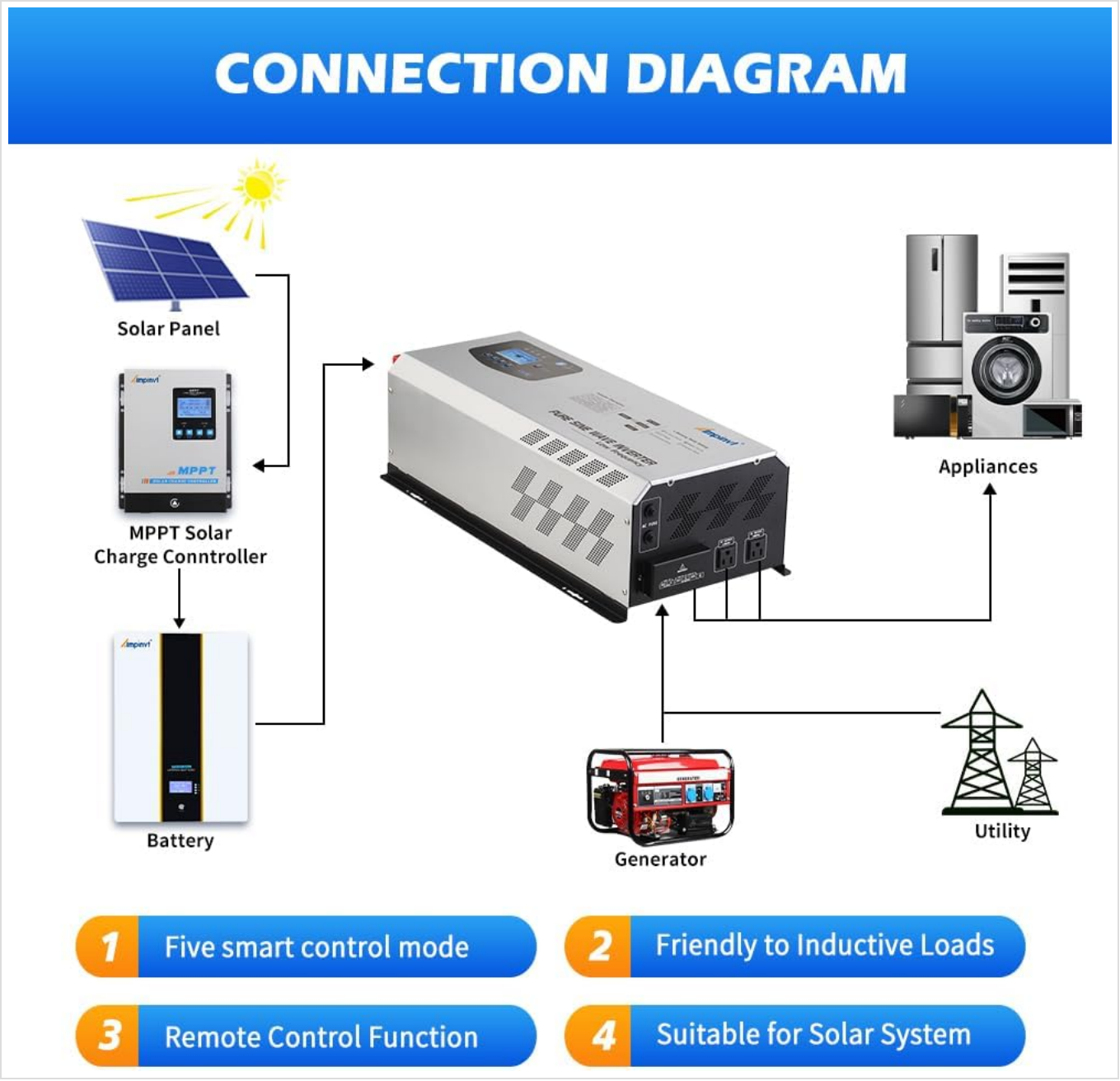
Mount the inverter in a clean, dry, and well-ventilated area. Ensure there is sufficient clearance around the unit for proper airflow. The inverter should be mounted vertically on a sturdy surface.



This image shows the dimensions of the Ampinvt FT-5000W24V inverter, indicating a length of 650mm, a width of 300mm, and a height of 185mm. These dimensions are crucial for planning the installation space.

4.3 Wiring Connections

Follow the wiring diagrams carefully. All connections must be secure and properly insulated.



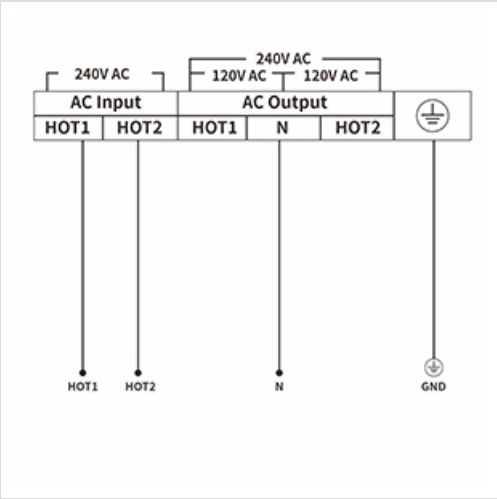
This diagram illustrates a typical connection setup for the Ampinvt FT-5000W24V inverter in a solar home system. It shows connections from solar panels to an MPPT solar charge controller, then to a battery bank, which connects to the inverter. The inverter also accepts input from a generator or utility and provides AC output to various household appliances.

4.3.1 DC Battery Connection

- Connect the positive (+) terminal of the 24V battery bank to the positive (+) terminal on the inverter.
- Connect the negative (-) terminal of the 24V battery bank to the negative (-) terminal on the inverter.
- Ensure correct polarity. Reverse polarity will damage the inverter.
- Use appropriate gauge cables for the battery connections to handle the current.

4.3.2 AC Input and Output Connection

The inverter supports 120V/240V split-phase AC output. Refer to the diagram for proper wiring.



This diagram illustrates the AC wiring for the inverter, showing connections for 240V AC input (HOT1, HOT2) and 120V/240V AC output (HOT1, N, HOT2). A dedicated ground (GND) connection is also shown, which is essential for safety.

- Connect the AC input from the utility grid or generator to the designated AC input terminals on the inverter.
- Connect your AC loads to the AC output terminals of the inverter.
- Ensure all AC wiring is properly sized and protected by circuit breakers.

4.3.3 Grounding

Connect the inverter's ground terminal to a reliable earth ground. This is critical for safety and to prevent electrical shock.

5. Operating Modes

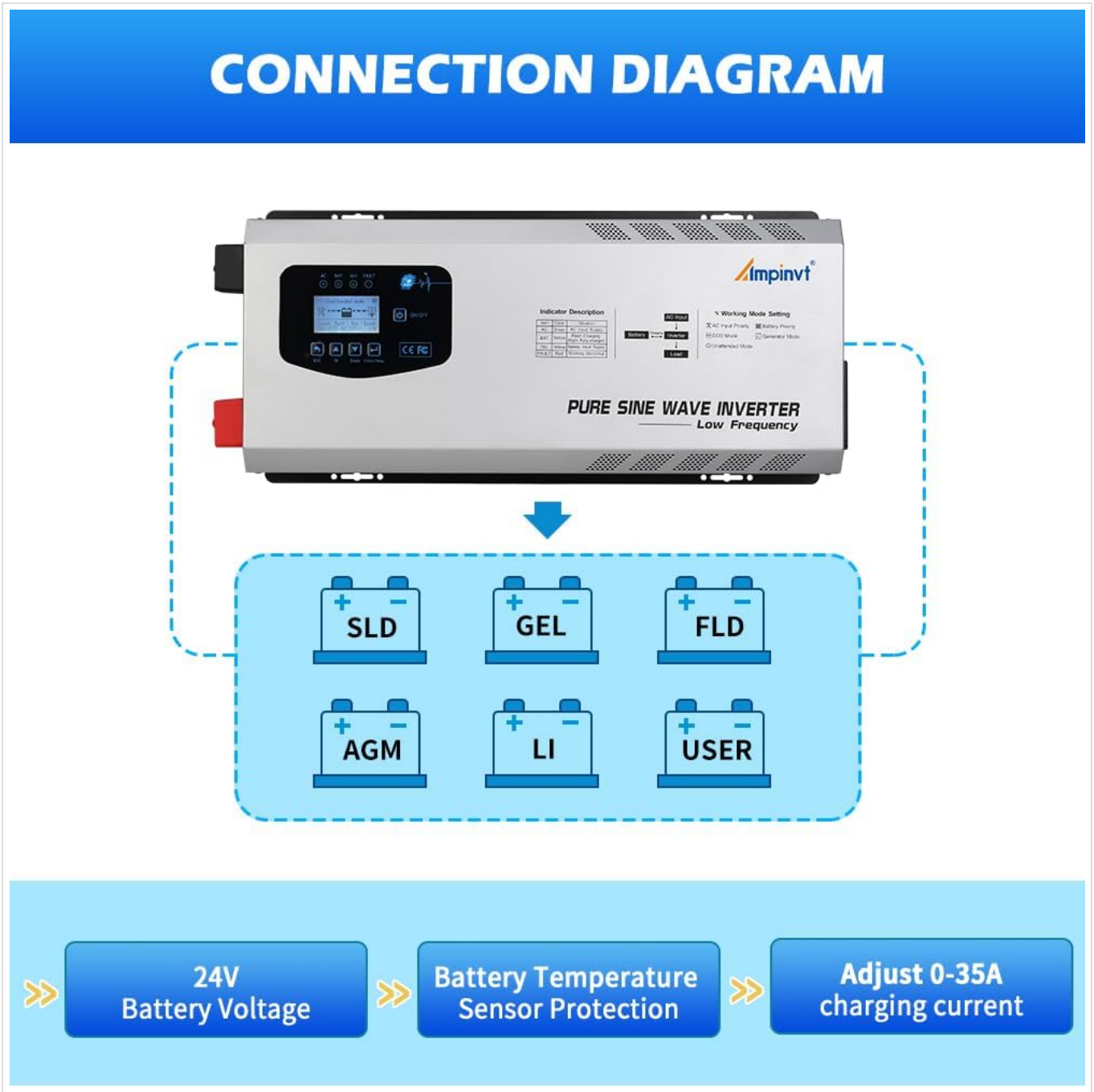
The inverter offers five distinct operating modes to suit various power management needs:

- **1. AC/Line Priority Mode:** In this mode, the inverter prioritizes AC power from the utility or generator. It will use AC input to provide output to loads and automatically charge the battery bank. If AC input is lost, it switches to battery power.
- **2. Battery Priority Mode:** This mode prioritizes power from the battery bank. The inverter will draw power from the batteries to supply AC output. If the battery voltage drops below a set low voltage protection threshold, it will transfer to AC input (utility/generator) if available. Once the battery is recharged to a sufficient level, it will switch back to battery power.
- **3. ECO Mode:** Designed for energy saving, the inverter will enter a sleep state and stop output if the load is less than 10% of its capacity. When the load exceeds 10%, it automatically wakes up and resumes normal inversion.
- **4. Generator Mode:** This mode is used when an unstable generator (e.g., 240V) is connected to the inverter's AC input. The inverter's built-in AVR regulator will stabilize the voltage and frequency (matching 60Hz municipal frequency) to provide a stable output.
- **5. Unattended Mode:** Similar to Battery Priority, but with advanced automation. When the battery voltage is low, the inverter enters a standby (power-saving) state. When the battery voltage restores to a user-defined value (e.g., after solar charging), the inverter automatically resumes normal output, enabling fully automatic, unattended operation.

6. Settings and Adjustments

6.1 Battery Type Selection

The inverter supports various battery types. Select the appropriate battery type from the settings menu to ensure optimal charging and discharge protection. Options include SLA, AGM, GEL, Li-ion, and a customizable 'USER' setting for specific battery chemistries like LiFePO4.



This diagram illustrates the various battery types supported by the Ampinvt FT-5000W24V inverter, including SLD (Sealed Lead-Acid), GEL, FLD (Flooded), AGM, LI (Lithium), and a USER-defined option. It also highlights the 24V battery voltage requirement, battery temperature sensor protection, and adjustable 0-35A charging current.

6.2 Adjustable Charging Current

The maximum charging current can be adjusted from 0 to 35 Amperes. Setting the value to 0A will disable the charging function. This allows you to optimize charging based on your battery bank's capacity and manufacturer recommendations.

7. Maintenance

- Regularly inspect all wiring connections for tightness and corrosion.
- Keep the inverter's ventilation openings clear of dust and debris to ensure proper cooling.

- Periodically check battery terminals for corrosion and clean if necessary.
- Monitor the LCD display for any error codes or unusual operating conditions.
- Ensure the environment around the inverter remains dry and within specified temperature ranges.

8. Troubleshooting

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

- **No Power Output:** Check battery connections, AC input (if in AC priority mode), and ensure the inverter is turned on. Verify battery voltage is within operating range.
- **Overload Alarm:** Reduce the connected load. The inverter will attempt to maintain output for 30 seconds at 110%-120% overload before switching to bypass or shutting down.
- **Low Battery Alarm:** Recharge batteries. Check charging source (solar, utility, generator).
- **Over Temperature Alarm:** Ensure adequate ventilation. Clear any obstructions from cooling fans. Reduce load if operating in high ambient temperatures.
- **Inverter Not Charging Batteries:** Check AC input connection. Verify charging current setting is not set to 0A. Ensure battery type is correctly selected.



This image serves as a warning against overloading the inverter. It depicts various household appliances such as air conditioners, drills, water pumps, TVs, washing machines, refrigerators, laptops, and kettles, emphasizing that the total power consumption of connected devices must not exceed the inverter's rated capacity.

9. Specifications

Specification	Value
Model	FT-5000W24V (FT-50224)
Continuous Power	5000W
Peak Power	15000W
DC Input Voltage	24 Volts
AC Output Voltage	120V/240V Split Phase
Waveform	Pure Sine Wave
Max Charge Current	35A (Adjustable)

Specification	Value
Transfer Efficiency	Above 90%
Product Dimensions	23.8 x 10.2 x 6.7 inches (650 x 300 x 185 mm)
Item Weight	53.9 pounds
Recommended Use	Home, RV, Office, Boat

10. Warranty and Support

AMPINVT provides free maintenance or product replacement services for one year from the date of purchase. For technical support, warranty claims, or any inquiries, please contact our customer service centers. Ensure you have your product model and purchase details available when contacting support.

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.

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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.

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