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› Liniotech 3600W Off-Grid Solar Inverter (Model LNT3600-48) User Manual

Liniotech LNT3600-48

Liniotech 3600W Off-Grid Solar Inverter

MODEL: LNT3600-48 USER MANUAL

Your guide to installation, operation, and maintenance.

1. Introduction

Thank you for choosing the Liniotech 3600W Off-Grid Solar Inverter. This device is a pure sine wave hybrid inverter designed to provide reliable power for off-grid applications. It integrates a 3600W pure sine wave inverter, a 4000W MPPT solar charge controller, and a battery charger into one compact unit. This manual provides essential information for safe installation, operation, and maintenance of your inverter.

Please read this manual thoroughly before installation and operation to ensure optimal performance and safety. Keep this manual for future reference.

2. Safety Information

Important Safety Instructions:

- Installation must be performed by qualified personnel in accordance with all local electrical codes.
- Before installation or maintenance, ensure all power sources (solar, battery, AC input) are disconnected.
- Do not attempt to repair the unit yourself. Refer all servicing to authorized service personnel.
- Ensure proper ventilation around the inverter to prevent overheating.
- Do not expose the inverter to rain, snow, spray, or any liquids.
- Use appropriate wiring and circuit breakers as specified in the installation guidelines.
- This inverter is designed for 48V battery systems. Do not connect to other voltage systems.

3. Product Features

- **Pure Sine Wave Output:** Delivers clean, stable 120V AC power, suitable for sensitive electronics and appliances.
- **High-Efficiency MPPT Solar Charge Controller:** Integrated 4000W MPPT with a wide 150-300VDC input range

for optimal solar energy harvesting.

- **Battery Compatibility:** Supports 48V Lithium (LiFePO₄) and Lead-Acid (AGM, GEL, Flooded) batteries with adjustable charging up to 80A.
- **Smart Monitoring:** Real-time remote monitoring and control via WiFi, USB, RS485, and GPRS through the Liniotech mobile app (iOS & Android).
- **Scalable Design:** Can be paralleled with up to 6 units for a total capacity of 21.6kW, allowing for system expansion.
- **Battery-Free Start:** Capable of starting without a battery connected, reducing system costs in certain configurations.
- **Dual Output UPS Power Supply:** Seamless switching between utility, solar, and energy storage for uninterrupted power.



Key Benefits



3600W Pure Sine Wave Output:

Clean 120V power for appliances + sensitive electronics.



4000W MPPT Solar Charging:

Efficient charging and improved solar harvest.



300V PV VOC High Input:

Supports higher voltage solar strings for easier system design.



Works with Lithium & Lead Acid:

Compatible with LiFePO4 + AGM/GEL/Flooded batteries.

Battery Free Start.

Image: Key benefits of the Liniotech 3600W Off-Grid Solar Inverter, highlighting pure sine wave output, 4000W MPPT solar charging, 300V PV VOC high input, compatibility with lithium and lead-acid batteries, and battery-free start capability.

4. Product Overview

4.1 Front Panel



AC INPUT
BREAKER

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SOLAR INVERTER



Image: Front view of the Liniotech 3600W Off-Grid Solar Inverter, showing the display screen and control buttons.

The front panel features an LCD display for system status monitoring and control buttons for navigation and settings adjustment.

4.2 Rear Panel



Image: Rear panel of the Liniotech 3600W Off-Grid Solar Inverter, displaying various connection ports including AC input/output, battery terminals, PV input, WiFi, USB, RS485, and parallel connection ports.

The rear panel provides all necessary connection terminals:

- **AC IN:** Terminal for grid or generator input.
- **AC OUT:** Terminal for connecting household appliances.
- **BAT+/BAT-:** Terminals for battery connection.
- **PV+/PV-:** Terminals for solar panel input.
- **WiFi:** Port for WiFi module for remote monitoring.
- **USB:** Port for local monitoring and data transfer.
- **RS485-1/RS485-2/CAN:** Communication ports for advanced monitoring and parallel operation.
- **DRY CONTACT:** Programmable relay contact.
- **PARALLEL CONNECTION:** Ports for connecting multiple inverters in parallel.
- **ON/OFF Switch:** Main power switch for the inverter.

4.3 Side Panel





Image: Side view of the Liniotech 3600W Off-Grid Solar Inverter, showing the AC input breaker and ventilation grilles.

The side panel includes an AC input breaker for protection and ventilation grilles for efficient heat dissipation.

5. Installation

Warning: All wiring must be performed by a qualified electrician. Incorrect wiring can cause severe damage to the inverter, batteries, and connected loads, and poses a risk of electric shock or fire.

5.1 Mounting the Inverter

- Choose a suitable location: indoors, dry, well-ventilated, and protected from direct sunlight, high temperatures, and moisture.
- Ensure sufficient clearance (at least 20 cm) around the inverter for proper airflow.
- Mount the inverter vertically on a sturdy wall using appropriate screws and anchors.

5.2 Wiring Connections

Before making any connections, ensure the inverter's ON/OFF switch is in the OFF position and all external power sources are disconnected.

1. **Battery Connection:** Connect the 48V battery bank to the BAT+ and BAT- terminals. Ensure correct polarity. Use appropriately sized cables and fuses.
2. **Solar PV Connection:** Connect the solar panel array to the PV+ and PV- terminals. Verify that the open-circuit voltage (VOC) of the solar array does not exceed 300VDC. Ensure correct polarity.
3. **AC Output Connection:** Connect your AC loads to the AC OUT terminals.
4. **AC Input Connection (Optional):** If using a grid or generator as a backup, connect it to the AC IN terminals.
5. **Grounding:** Connect the inverter's ground terminal to a reliable earth ground.

5.3 Initial Power-Up

1. Double-check all wiring connections for correctness and tightness.
2. Turn on the battery breaker/fuse.
3. Turn on the solar PV breaker (if applicable).
4. Turn on the AC input breaker (if applicable).
5. Finally, turn the inverter's ON/OFF switch to the ON position. The inverter will perform a self-test and then begin operation.

6. Operation

6.1 LCD Display and Control Buttons

The LCD display provides real-time information about the system status, including input/output voltage, current, power, battery status, and operating mode. Use the control buttons (ESC, UP, DOWN, ENTER) to navigate through menus and adjust settings.

6.2 Operating Modes

The inverter typically operates in several modes, which can be configured via the LCD display or monitoring software:

- **Utility Priority Mode:** AC loads are primarily powered by the utility grid. Solar and battery are used for charging

or as backup.

- **Solar Priority Mode:** AC loads are primarily powered by solar energy. Battery and utility act as backup.
- **Battery Priority Mode:** AC loads are primarily powered by the battery. Solar charges the battery, and utility acts as backup.

Refer to the detailed settings menu in the inverter's interface for specific configurations.

6.3 Smart Monitoring

The Liniotech 3600W inverter supports various communication interfaces for remote monitoring and control:

- **WiFi:** Connect the optional WiFi module to the WiFi port and configure it to your local network. Download the Liniotech mobile app (available on iOS and Android) to monitor and control your system remotely.
- **USB:** Connect the inverter to a computer via a USB cable for local monitoring using dedicated software.
- **RS485/GPRS:** These ports allow for advanced communication with external devices or remote monitoring systems, often used in larger or more complex installations.



Efficient Solar Power & Battery Management for Off-Grid Systems

- 3600W output with built-in MPPT charge controller
- Smart monitoring with mobile app control
- Supports lithium and lead-acid batteries
- Stackable design for scalable systems

Image: Diagram illustrating efficient solar power and battery management for off-grid systems, highlighting the 3600W output, built-in MPPT, battery support, smart monitoring, and stackable design.

Optimize Your Solar System with Smart Monitoring & Energy Efficiency



Smart monitoring via mobile app



Energy efficiency with low self-consumption



Seamless integration with various battery brands



Fast charging and easy system upgrades



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Image: Visual representation of optimizing a solar system with smart monitoring and energy efficiency, emphasizing mobile app control, low self-consumption, seamless battery integration, and fast charging.

7. Maintenance

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

- **Cleaning:** Periodically clean the exterior of the inverter and ensure ventilation openings are free from dust and debris. Use a dry cloth. Do not use liquid cleaners.
- **Connections Check:** Annually, inspect all wiring connections (battery, solar, AC) for tightness and signs of corrosion. Tighten any loose connections.
- **Environmental Check:** Ensure the installation environment remains dry, well-ventilated, and within the specified operating temperature range.
- **Firmware Updates:** Check the Liniotech website or app for any available firmware updates to ensure your inverter has the latest features and bug fixes.

8. Troubleshooting

If you encounter issues with your Liniotech inverter, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Inverter not turning on	No battery power, main switch off, loose connections.	Check battery voltage, ensure main switch is ON, verify all connections are secure.
No AC output	Overload, low battery voltage, AC output breaker tripped.	Reduce load, check battery charge, reset AC output breaker.

Problem	Possible Cause	Solution
Solar charging not working	PV input voltage too low/high, incorrect PV polarity, solar panels shaded.	Check PV voltage, verify polarity, clear shading, inspect PV connections.
Error code on display	Specific system fault.	Refer to the inverter's detailed error code list in the full manual or contact Liniotech support.

If the problem persists after attempting these solutions, please contact Liniotech customer support.

9. Specifications

Parameter	Value
Model	LNT3600-48
Rated Power	3600W
Input Voltage (DC)	48 Volts
Output Voltage (AC)	120 Volts
Waveform	Pure Sine Wave
MPPT Solar Charger Max Power	4000W
Max PV Open Circuit Voltage (VOC)	300VDC
Max Charging Current	80A
Efficiency	≥99%
Battery Compatibility	Lithium (LiFePO4), Lead-Acid (AGM, GEL, Flooded)
Communication Interfaces	WiFi, USB, RS485, GPRS
Parallel Capability	Up to 6 units (21.6kW)
Dimensions (L x W x H)	53.34 x 38.1 x 17.78 cm
Weight	9.53 kg
Recommended Uses	Home, Household appliances, Recreational Vehicle

10. Warranty and Support

Liniotech products are designed for reliability and performance. For warranty information, please refer to the warranty card included with your product or visit the official Liniotech website. For technical support, troubleshooting assistance, or service inquiries, please contact Liniotech customer service through the contact information provided on our website or in your product packaging.

