OLTEANP 12V-2500W Built-in ATS

OLTEANP 2500W Pure Sine Wave Inverter with Transfer Switch User Manual

Model: 12V-2500W Built-in ATS

1. Introduction

1.1 Product Overview

The OLTEANP 2500W Pure Sine Wave Inverter with built-in Automatic Transfer Switch (ATS) is designed to convert 12V DC battery power into stable 120V AC household power. This inverter is ideal for various applications including RVs, marine environments, semi-trucks, outdoor activities, and as a reliable backup power source during outages. Its pure sine wave output ensures compatibility with sensitive electronics, and the integrated ATS provides seamless transition between battery power and shore power.

Key features include:

- **Auto Switch to Shore Power:** Ensures continuous and dependable electricity supply by automatically switching to shore power when available, safeguarding against downtime.
- **Pure Sine Wave Output:** Delivers clean, stable power suitable for all types of electronics and appliances, eliminating buzzing sounds and ensuring smooth operation.
- **High Power Capacity:** Provides 2500W continuous power and 5000W peak power, capable of running a wide range of devices.
- **Remote Controller with LCD Display:** Allows for easy monitoring of inverter status, battery voltage, AC output, and troubleshooting through flashing symbols.
- **Multiple Output Ports:** Equipped with 2 AC outlets, a 5V/3.1A USB port, and a 30W Type-C port for versatile charging and powering options.
- **Multi-functional Safety Protection:** Features professional spark-free protection, high-voltage, overload, high-temperature, low-voltage, and short-circuit protection to ensure safety for both the user and connected devices.

Figure 1.1: The OLTEANP 2500W Pure Sine Wave Inverter, showing the main unit, remote control, and included battery cables.

1.2 What's in the Box

- 1 x OLTEANP 2500W Pure Sine Wave Power Inverter
- 1 x Remote Controller with LCD Display
- 1 x Set of Battery Cables (Red and Black)
- 1 x User Manual

2. Safety Information

Please read and understand all safety instructions before installing or operating the inverter. Failure to follow these instructions may result in electric shock, fire, serious injury, or death.

- **Electrical Safety:**
  - Ensure proper ventilation around the inverter to prevent overheating.
  - Do not expose the inverter to water, rain, snow, or spray.
  - Do not operate the inverter if it has been damaged in any way.
  - Always connect the inverter to a properly grounded electrical system.
  - Use appropriate wire gauge for battery connections to prevent overheating and voltage drop. Refer to the specifications for recommended cable sizes.
  - Disconnect all power sources before performing any maintenance or wiring.
- **Battery Safety:**
  - Work in a well-ventilated area when working with batteries.
  - Wear eye protection and protective clothing.
  - Avoid short-circuiting battery terminals.
  - Ensure battery voltage matches the inverter's input voltage (12V DC for this model).
- **General Precautions:**
  - Keep the inverter away from flammable materials, gases, or liquids.
  - Do not disassemble the inverter. Refer all servicing to qualified personnel.
  - This inverter is designed for specific applications. Do not use it for purposes other than its intended use.

Figure 2.1: The inverter features multiple safety protections including high-voltage, overload, high-temperature, low-voltage, and short-circuit protection.

3. Setup and Installation

3.1 Choosing a Location

Select a location that is:

- Dry and protected from moisture.
- Well-ventilated to allow for heat dissipation.
- Cool, away from direct sunlight or heat sources.
- Secure, to prevent accidental movement or damage.

3.2 Battery Connection

Connect the inverter directly to a 12V DC battery bank. Ensure the battery cables are securely fastened to the inverter terminals and battery terminals. Use the provided red cable for the positive (+) connection and the black cable for the negative (-) connection.

- Connect the **RED** battery cable to the inverter's **positive (+)** terminal and then to the battery's **positive (+)** terminal.
- Connect the **BLACK** battery cable to the inverter's **negative (-)** terminal and then to the battery's **negative (-)** terminal.
- Ensure all connections are tight to prevent arcing and overheating.

Figure 3.1: Illustration of the inverter working with a 12V battery, typically installed in an RV or similar vehicle.

3.3 AC Output Connection

Plug your 120V AC appliances directly into the two AC outlets on the inverter. Do not exceed the inverter's continuous power rating of 2500W.

Figure 3.2: The inverter provides 2 AC outlets, a USB port, and a Type-C port for connecting various devices.

3.4 Remote Controller Connection

Connect the remote controller cable to the designated port on the inverter. The remote controller allows you to monitor and control the inverter from a convenient location.

Figure 3.3: The remote controller with LCD screen provides real-time status and control of the inverter.

3.5 Shore Power Connection (for ATS Function)

For automatic transfer switch functionality, connect an external 120V AC shore power source to the inverter's dedicated shore power input. The inverter will automatically switch to shore power when detected, prioritizing it over battery power.

Figure 3.4: The inverter can seamlessly work with 120V shore power, providing continuous electricity.

4. Operating Instructions

4.1 Powering On/Off

To power on the inverter, press and hold the power button on the main unit or the remote controller until the display illuminates. To power off, press and hold the power button again.

4.2 Understanding the LCD Display

The remote controller's LCD display provides critical information about the inverter's operation:

- **Battery Voltage (DC Input):** Shows the current voltage of your 12V battery bank.
- **AC Output Voltage:** Displays the 120V AC output voltage.
- **Power Output (Watts):** Indicates the current power consumption of connected devices.
- **Battery Level Indicator:** Visual representation of battery charge (100%, 80%, 60%, 40%, 20%).
- **Status Indicators:** Symbols for High/Low Battery, Overheat, Overload, and other fault conditions.

Figure 4.1: The LCD display provides comprehensive information on battery status, AC output, power consumption, and fault indicators.

4.3 Automatic Transfer Switch (ATS) Function

When both battery power and shore power are connected, the inverter will automatically detect the presence of shore power. If shore power is stable, the inverter will switch to draw power from the shore power source, preserving your battery charge. If shore power is disconnected or unstable, the inverter will seamlessly switch back to battery power. This transition typically occurs within 12 milliseconds, ensuring uninterrupted power supply.

4.4 Connecting Appliances

The inverter can power a wide range of 120V AC appliances and devices, including but not limited to:

- Smartphones, tablets, laptops (via USB, Type-C, or AC outlets)
- LED lights, fans
- Small kitchen appliances (coffee grinders, toasters, microwaves within wattage limits)
- Televisions, entertainment devices
- Electric drills, small power tools

- Refrigerators, freezers (ensure starting wattage is within peak power capacity)

Always ensure the total continuous wattage of connected devices does not exceed 2500W. For devices with motors (e.g., refrigerators, pumps), consider their starting (surge) wattage, which should not exceed the inverter's 5000W peak power.

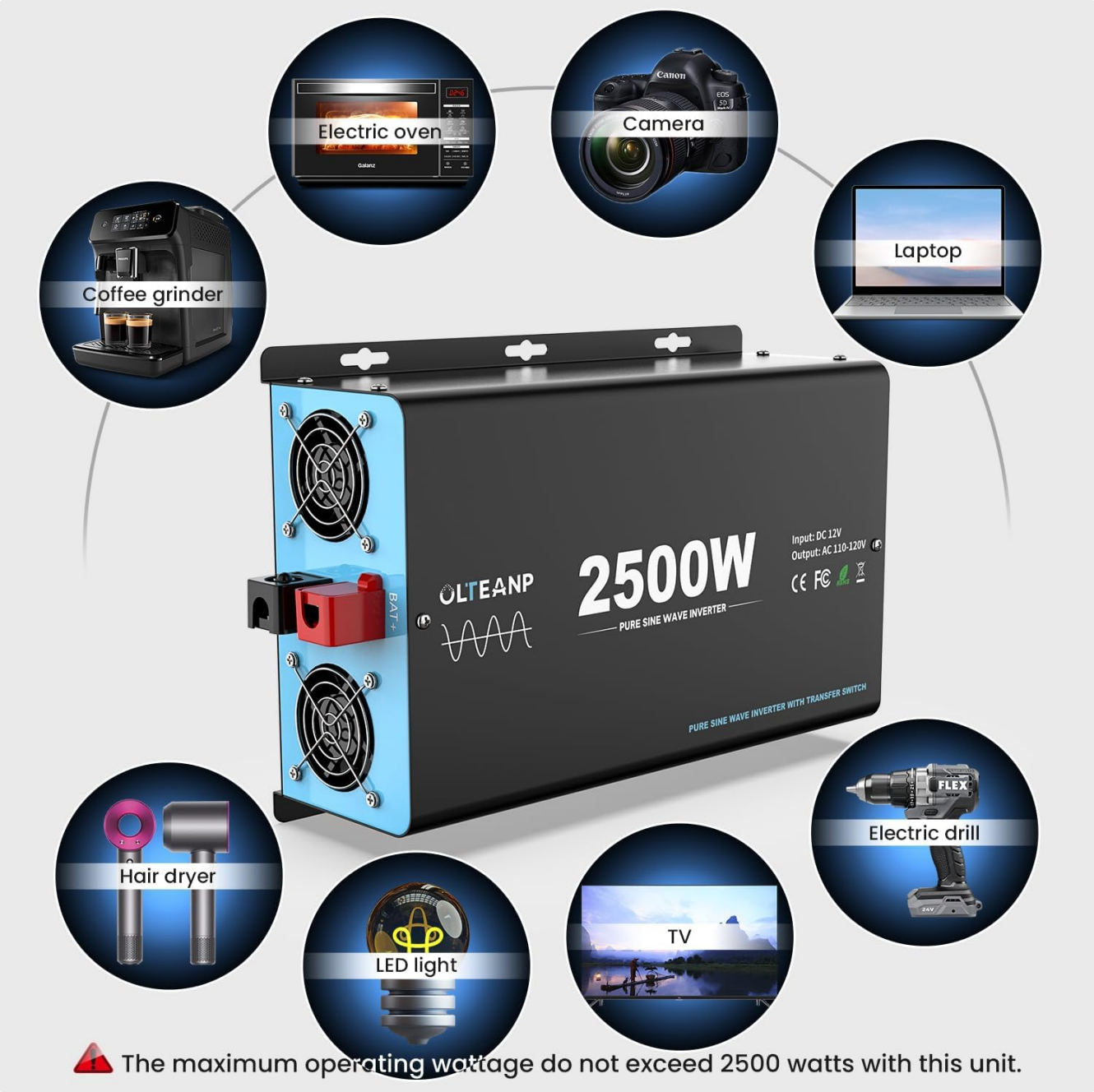

Figure 4.2: Examples of devices compatible with the 2500W inverter, including coffee grinders, cameras, laptops, hair dryers, LED lights, TVs, and electric drills.

5. Maintenance

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

- **Cleaning:** Keep the inverter clean and free from dust and debris. Use a dry, soft cloth to wipe the exterior. Do not use liquid cleaners or solvents.
- **Ventilation:** Ensure the ventilation openings are not blocked. Periodically check for any obstructions that might

hinder airflow.

- **Connections:** Regularly inspect all electrical connections (battery cables, AC output, remote control cable) to ensure they are secure and free from corrosion. Tighten any loose connections.
- **Storage:** If storing the inverter for an extended period, disconnect it from the battery and store it in a cool, dry place. Ensure batteries are properly maintained and charged according to their manufacturer's guidelines.

6. Troubleshooting

The remote controller's LCD display will show flashing symbols to indicate specific issues. Refer to the table below for common problems and their solutions.

Figure 6.1: The LCD display provides visual cues for troubleshooting, with flashing symbols indicating faults.

Table 6.1: Troubleshooting Guide

Problem/LCD Symbol	Possible Cause	Solution
Low Battery (Low symbol flashing)	Battery voltage is too low.	Recharge the battery. Disconnect non-essential loads.
High Battery (High symbol flashing)	Battery voltage is too high.	Check battery charging system. Disconnect charging source if overcharging.
Overload (Overload symbol flashing)	Connected load exceeds inverter's continuous or peak power rating.	Reduce the load by disconnecting some appliances. Restart the inverter.
Overheat (Overheat symbol flashing)	Inverter is too hot. Poor ventilation or excessive load.	Allow the inverter to cool down. Ensure proper ventilation. Reduce load.
Short Circuit	Short circuit detected on AC output.	Disconnect all AC loads. Check wiring for shorts. Restart the inverter.
No AC Output	Inverter is off, battery low, or fault condition.	Check power button. Check battery voltage. Refer to other fault indicators.

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

7. Specifications

Table 7.1: Product Specifications

Feature	Detail
Model Name	2500W Pure Sine Wave Inverter with Transfer Switch
Continuous Power	2500 Watts
Peak Power	5000 Watts
DC Input Voltage	12V DC
AC Output Voltage	120V AC
Output Waveform	Pure Sine Wave
Transfer Time (ATS)	Approx. 12ms
USB Port Output	5V/3.1A
Type-C Port Output	30W
AC Outlets	2
Item Weight	6.6 pounds
Package Dimensions	17.28 x 11.77 x 6.73 inches
Manufacturer	OLTEANP

Feature	Detail
ASIN	B0DF7BTYKP

Figure 7.1: Dimensions of the inverter and a visual representation of included accessories.

8. Warranty and Support

OLTEANP products are designed for reliability and performance. For warranty information, please refer to the specific warranty card included with your product or visit the official OLTEANP website.

For technical support, troubleshooting assistance, or replacement parts, please contact OLTEANP customer service. When contacting support, please have your product model number (12V-2500W Built-in ATS) and ASIN (B0DF7BTYKP) ready.

OLTEANP Customer Service:

- Visit the OLTEANP Store on Amazon for more information and contact options.