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› ZLPOWER 4000W 24V Pure Sine Wave Inverter Charger (Model UL1741) User Manual

ZLPOWER UL1741 4000W 24V

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Comprehensive instructions for installation, operation, and maintenance.

1. PRODUCT OVERVIEW

The ZLPOWER 4000W 24V Pure Sine Wave Inverter Charger is a robust power solution designed for off-grid and backup power applications. It converts DC power from batteries into clean AC power suitable for sensitive electronics, while also providing battery charging and automatic transfer capabilities.

Key Features:

- **High Power Output:** 4000W continuous pure sine wave output with a 12000W surge capacity for 20 seconds.
- **Versatile Input/Output:** 24V DC input, 220-240V AC input, and 110-120V/220-240V split phase AC output.
- **Integrated Charger & Transfer Switch:** Features a 40A battery charger and a 30A automatic transfer switch.
- **Remote Monitoring:** Includes a remote control with an LCD display and battery temperature sensor for convenient monitoring and control.
- **Safety Protections:** Built-in protections against over/low voltage, overload, short circuit, and over-temperature.
- **AC/Battery Priority Modes:** Configurable AC priority (default) or battery priority for flexible power management.
- **Adjustable Charging:** Charging current is adjustable from 0% to 100%.
- **DIP Switch Settings:** Five configurable DIP switch settings for utility/battery priority, low battery trip voltage, AC input range, output frequency, and power saver mode.
- **Automatic Generator Start (AGS):** Supports automatic generator starting for seamless power backup.
- **Low Frequency Transformer:** Equipped with a pure copper low frequency transformer for enhanced stability and ability to handle inductive loads like motors, pumps, and air conditioners.



Figure 1: ZLPOWER 4000W 24V Pure Sine Wave Inverter showing dimensions and key features. The inverter measures approximately 25.6 inches in length, 8.7 inches in height, and 7.5 inches in width, weighing 72.75 lbs (33 kg). It highlights 4000W continuous power, 12000W peak power, 70A fast charger, low frequency pure copper transformer, AC input/output 120V, and adjustable AC frequency (50-60Hz).

2. SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of your ZLPOWER inverter. Ensure all connections are secure and follow local electrical codes.

2.1 Connection Diagram

Refer to the diagram below for a visual guide on connecting the inverter to your power sources and loads.



Figure 2: Connection Diagram. This diagram illustrates how to connect the ZLPOWER inverter to various components: Solar Panel, Solar Controller, DC Input (Battery), AC Input (Utility Power or Generator), and AC Output (Home Appliances). It shows the flow of power from solar panels through a controller to the battery, and from utility/generator to the inverter, which then supplies power to home appliances.

2.2 Battery Connection

The inverter is compatible with various battery types. Ensure correct polarity when connecting the battery bank to the inverter's DC input terminals.

- Connect the positive (+) terminal of the battery bank to the positive (+) DC input terminal on the inverter.
- Connect the negative (-) terminal of the battery bank to the negative (-) DC input terminal on the inverter.
- Use appropriately sized cables to minimize voltage drop and ensure safe operation.

Compatible with various batteries



Figure 3: Battery Compatibility. The ZLPOWER inverter is compatible with various battery types including LiFePO4, Lithium-Ion, Flooded, AGM, Sealed Lead Acid (SLD), and GEL batteries. It features Battery Temperature Sensor Protection, a 9 Battery Type selector, and adjustable 0-100% charging current.

2.3 AC Input and Output Connections

- Connect the utility power or generator to the AC input terminals.
- Connect your appliances or electrical panel to the AC output terminals. The inverter provides 120V/240V split phase output.
- Ensure proper grounding of the inverter.

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Video 1: ZLPOWER Hybrid Inverter Overview. This video demonstrates the ZLPOWER inverter's physical features, connection points for battery and AC loads, and its ability to power various inductive and resistive loads like fans and refrigerators, highlighting its powerful capacity and stability.

3. OPERATING INSTRUCTIONS

The inverter features an LCD display and configurable settings for optimal performance.

3.1 LCD Display and Controls

The LCD display provides real-time information on voltage, load, battery status, and operational modes. Use the SELECT, CONFIRM, and FUNCTION buttons to navigate and adjust settings.



Figure 4: LCD HD Display Modes. The inverter's LCD screen displays real-time data and allows parameter settings. It shows three main modes: AC mode (displaying AC input/output voltage, frequency, and battery charge status), Battery inverter mode (displaying battery voltage, inverter output, and load percentage), and Power save mode.

3.2 AC/Battery Priority Settings

The inverter can operate in either AC priority or battery priority mode:

- **AC Priority (Default):** When AC input is available, the inverter charges the battery and passes the AC input directly to the load.
- **Battery Priority:** The inverter will draw power from the battery to supply the load, even when AC input is present. This mode is useful for maximizing self-consumption from solar or battery storage.

These settings, along with others like low battery trip voltage, AC input range, output frequency, and power saver mode, can be configured via DIP switches or the LCD interface.

4. MAINTENANCE

Regular maintenance ensures the longevity and reliable operation of your inverter.

- **Cleaning:** Keep the inverter's ventilation openings clear of dust and debris to ensure proper airflow and prevent overheating. Use a soft, dry cloth for cleaning.
- **Connection Checks:** Periodically inspect all electrical connections (DC and AC) for tightness and signs of corrosion. Loose connections can lead to poor performance or safety hazards.

- **Battery Health:** Monitor your battery bank's health according to the battery manufacturer's recommendations. Ensure proper charging and discharge cycles.
- **Environmental Conditions:** Ensure the inverter is operated within its specified temperature and humidity ranges. Avoid exposure to direct sunlight or moisture.

5. TROUBLESHOOTING

This section provides general guidance for common issues. For complex problems, contact technical support.

- **No Power Output:**
 - Check DC input voltage from batteries. Ensure batteries are charged.
 - Verify AC input connection if operating in AC priority mode.
 - Check for tripped circuit breakers or blown fuses.
 - Ensure the inverter is switched ON.
- **Overload Warning:**
 - Reduce the connected load. The inverter has a maximum continuous output of 4000W.
 - Ensure the surge capacity (12000W for 20s) is not exceeded for too long.
- **Over/Low Voltage Protection:**
 - Check battery voltage. Recharge or replace batteries if necessary.
 - Verify AC input voltage is within the specified range.
- **Over-Temperature Warning:**
 - Ensure adequate ventilation around the inverter. Clear any obstructions from cooling fans.
 - Reduce ambient temperature if possible.

Consult the LCD display for specific error codes or messages, and refer to the detailed manual (if provided separately) for further troubleshooting steps.

6. SPECIFICATIONS

Detailed technical specifications for the ZLPOWER 4000W 24V Pure Sine Wave Inverter Charger.

Feature	Specification
Brand	ZLPOWER
Model Number	UL1741 4000W 24V
Power Source	Battery Powered, Solar Powered
Input Voltage (DC)	24 Volts
Output Power (Continuous)	4000 Watts
Peak Output Power	12000 Watts
Output Voltage (AC)	110 Volts (AC) / 120Vac/240Vac Split Phase
Electrical Output Waveform	Pure Sine Wave

Feature	Specification
Standby Power Shutoff	90% or higher
Energy Specifications Met	ETL, UL
UPC	768383647785
Manufacturer	ZLPOWER

7. WARRANTY AND SUPPORT

The ZLPOWER 4000W 24V Pure Sine Wave Inverter Charger comes with a manufacturer's warranty. Specific warranty terms and duration are typically provided with the product packaging or can be obtained by contacting ZLPOWER directly.

For technical assistance, troubleshooting, or warranty claims, please contact ZLPOWER customer support. Refer to the contact information provided in your product documentation or visit the official ZLPOWER website.

Manufacturer: ZLPOWER

Brand Store: [Visit ZLPOWER Store on Amazon](#)