POERUNI. 51.2V 100Ah

POERUNI 51.2V 100Ah LiFePO4 Battery User Manual

Model: 51.2V 100Ah | Brand: POERUNI.

1. Introduction

Thank you for choosing the POERUNI 51.2V 100Ah LiFePO4 Battery. This manual provides essential information for the safe and efficient operation, installation, and maintenance of your battery. Please read this manual thoroughly before using the product to ensure proper handling and to maximize its lifespan and performance.
This LiFePO4 battery is designed for various applications including home energy storage, solar power systems, off-grid setups, RVs, marine use, golf carts, and backup power solutions. Its advanced technology offers superior longevity, safety, and efficiency compared to traditional lead-acid batteries.

2. Product Features

The POERUNI 51.2V 100Ah LiFePO4 Battery incorporates several key features for enhanced performance and reliability:

- **Exceptional Longevity:** Offers over 15,000 deep cycles at 80% Depth of Discharge (DOD), providing a lifespan of 10+ years. This significantly surpasses the lifespan of traditional lead-acid batteries.
- **Advanced Built-in BMS:** Equipped with a comprehensive Battery Management System (BMS) for protection against over-charge, over-discharge, over-current, short-circuit, and high/low temperature. The stable LiFePO4 chemistry ensures inherent safety.
- **Lightweight Design:** Weighs approximately 24 pounds, making it 70% lighter than comparable lead-acid batteries, which simplifies installation and transport.
- **Full Usable Capacity:** Allows for 100% utilization of its 5120Wh capacity without damaging the battery, unlike lead-acid batteries.
- **Versatile Applications:** Suitable for RVs, solar systems, boat trolling motors, off-grid cabins, golf carts, and home backup power.
- **Wide Operating Temperature Range:** Ensures reliable operation in extreme conditions, from -20°C to 60°C (-4°F to 140°F).

- **Maintenance-Free:** Sealed design requires no watering, prevents acid leaks, and has no memory effect, allowing for flexible mounting in any position (except inverted).



Image: POERUNI 51.2V 100Ah LiFePO4 Battery highlighting its core advantages and certifications.



Image: Comparison of POERUNI LiFePO4 battery with traditional lead-acid batteries, showing superior performance metrics.

3. Setup and Installation

Proper installation is crucial for the safety and performance of your battery. Always ensure all connections are secure and correctly polarized.

3.1 Safety Precautions

- Wear appropriate personal protective equipment (PPE) including gloves and eye protection.
- Ensure the installation area is well-ventilated and free from flammable materials.
- Do not short-circuit the battery terminals.
- Do not disassemble, puncture, or damage the battery.
- Keep children and pets away from the battery during installation and operation.

3.2 Connection Guidelines

- Connect batteries in parallel only to increase capacity. Do not connect in series unless specifically designed for higher voltage systems and confirmed by the manufacturer.
- Ensure all batteries in a parallel bank are of the same voltage, capacity, and brand.
- Use appropriate gauge cables for connections to handle the expected current.
- Connect the positive terminal of the battery to the positive terminal of your system, and the negative to the negative.
- Tighten all terminal connections securely to prevent resistance and overheating.



Image: Example of a 48V solar energy system setup, showing multiple batteries connected in parallel to an MPPT controller and inverter.

4. Operating Instructions

This section covers the general operation of your POERUNI LiFePO4 battery, including charging and discharging.

4.1 Charging

The POERUNI LiFePO4 battery can be charged using various methods:

- **LiFePO4 Battery Charger:** Use a dedicated LiFePO4 compatible charger with the correct voltage and current settings.
- **Solar Panels:** Connect to a solar charge controller (MPPT or PWM) that is compatible with LiFePO4 batteries and set to the appropriate charging profile.
- **Generator:** Use a generator connected to a compatible charger or inverter/charger system.

Ensure charging voltage and current are within the specified limits to prevent damage to the battery. The recommended charging temperature range is 0°C to 45°C (32°F to 113°F).



Image: Various methods for charging the POERUNI LiFePO4 battery, including dedicated chargers, solar panels, and generators.

4.2 Discharging

The battery can be discharged to power your devices. The BMS will protect the battery from over-discharge. The recommended discharging temperature range is -20°C to 60°C (-4°F to 140°F).



Image: The battery's ability to perform in extreme weather conditions, highlighting its low-temperature protection.

4.3 Versatile Use Cases

The POERUNI LiFePO4 battery is suitable for a wide range of applications:

- **RV & Camping:** Power refrigerators, lights, fans, and entertainment systems.
- **Marine & Boating:** Ideal for trolling motors, fish finders, and onboard electronics.
- **Solar & Off-Grid Systems:** Efficiently store solar energy for continuous power.
- **Golf Carts & Utility Vehicles:** Provides longer runtimes and faster charging.
- **Home Backup Power:** Keep critical devices running during power outages.



Image: The battery's versatility across different applications, including recreational and industrial uses.

5. Maintenance

One of the significant advantages of LiFePO4 batteries is their minimal maintenance requirements. The POERUNI battery is designed to be largely maintenance-free.

5.1 General Care

- Keep the battery terminals clean and free from corrosion.
- Ensure the battery is kept in a dry, well-ventilated area.
- Avoid exposing the battery to direct sunlight or extreme heat for prolonged periods.
- Regularly inspect cables and connections for any signs of wear or damage.

5.2 Storage

If storing the battery for an extended period:

- Charge the battery to approximately 50-70% State of Charge (SOC) before storage.
- Store in a cool, dry place, ideally between 0°C and 25°C (32°F and 77°F).
- Periodically check the battery voltage and recharge if it drops significantly.

6. Troubleshooting

This section provides general guidance for common issues. For complex problems, please contact POERUNI customer support.

6.1 Battery Not Charging

- **Check Connections:** Ensure all charging cables are securely connected and correctly polarized.
- **Verify Charger:** Confirm that the charger is compatible with LiFePO4 batteries and is functioning correctly.
- **Temperature:** Ensure the ambient temperature is within the recommended charging range (0°C to 45°C). The BMS may prevent charging outside this range.
- **BMS Protection:** The BMS might have activated due to over-discharge or other fault conditions. Disconnect the load and charger, wait a few minutes, then try reconnecting the charger.

6.2 Battery Not Discharging / No Power Output

- **Check Connections:** Verify all load connections are secure and correctly polarized.
- **Battery State of Charge (SOC):** The battery might be fully discharged, triggering the BMS low-voltage protection. Attempt to charge the battery.
- **Overload:** The load connected might exceed the battery's continuous discharge current. Reduce the load.
- **Temperature:** Ensure the ambient temperature is within the recommended discharging range (-20°C to 60°C). The BMS may prevent discharging outside this range.

6.3 Unusual Odor or Swelling

Immediately disconnect the battery from all loads and charging sources. Do not attempt to use or charge the battery. Contact POERUNI customer support immediately.

7. Specifications

Detailed technical specifications for the POERUNI 51.2V 100Ah LiFePO4 Battery:

Specification	Value
Brand	POERUNI.
Model	51.2V 100Ah
Rated Voltage	51.2V
Rated Capacity	100Ah
Watt-hour	5120Wh
Battery Cell Composition	Lithium Polymer (LiFePO4)
Reusability	Rechargeable
Number of Batteries (in pack)	4 (included)

Specification	Value
Battery Weight (per unit)	Approx. 24 lbs (10.9 kg)
Charging Current Range	40A-100A
Charging Voltage	58.4V
Charging Temperature	0°C to 45°C (32°F to 113°F)
Discharging Temperature	-20°C to 60°C (-4°F to 140°F)
Cycle Life	15,000+ cycles (at 80% DOD)
Lifespan	10+ Years
Recommended Uses	Solar Devices, RV, Marine, Off-Grid, Backup Power
Manufacturer	POERUNI.
ASIN	B0FVSWPL4L

8. Warranty and Support

8.1 Warranty Information

The POERUNI 51.2V 100Ah LiFePO4 Battery comes with a**2-Year Manufacturer Warranty**. This warranty covers defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims.
The warranty does not cover damage caused by improper installation, misuse, abuse, unauthorized modifications, or natural disasters. For specific terms and conditions, please refer to the warranty documentation provided with your product or contact POERUNI customer support.

8.2 Customer Support

For technical assistance, troubleshooting, warranty claims, or any other inquiries regarding your POERUNI battery, please contact POERUNI customer support through the retailer where you purchased the product or visit the official POERUNI website for contact information.
When contacting support, please have your product model number (51.2V 100Ah) and ASIN (B0FVSWPL4L) readily available.

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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.

Submit question