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PowMr POW-100AH-12.8V

PowMr LiFePO4 100Ah 12.8V Battery User Manual

Model: POW-100AH-12.8V

1. Introduction

This manual provides essential information for the safe and efficient operation, installation, and maintenance of your PowMr LiFePO4 100Ah 12.8V Battery. Please read this manual thoroughly before using the product and retain it for future reference.

The PowMr LiFePO4 battery is designed for various applications including RVs, marine vessels, solar energy storage systems, and off-grid power solutions, offering a reliable and long-lasting power source.



Figure 1.1: PowMr LiFePO4 100Ah 12.8V Battery. This image displays the main product, emphasizing its portable and durable design for easy mobility and green energy applications.

2. Product Features

- **Compact and Lightweight Design:** The battery features a small footprint and weighs approximately 11.5 kg, making it easy to transport and install in various setups. Dimensions are 325mm x 170mm x 215mm.
- **Extended Lifespan:** Offers over 6000 charge cycles, providing more than 10 years of service life, significantly outperforming traditional lead-acid batteries.
- **Integrated BMS Protection:** Equipped with an advanced Battery Management System (BMS) that protects against overcharge, overdischarge, overcurrent, short circuits, and extreme temperatures (both low and high). This ensures enhanced safety and battery performance.
- **Wide Application Range:** Ideal for recreational vehicles (RVs), caravans, boats, golf carts, solar power installations, and as a reliable backup power source.
- **Flexible Configuration:** Supports series connections of up to 4 batteries and parallel connections of up to 4

batteries, allowing for a total capacity of up to 400Ah, a total voltage of up to 51.2V, and a total energy of up to 20.48 kWh.

- **Efficient Charging:** Capable of accepting a maximum charging current of 100A, allowing for a full charge in approximately 1 hour. For optimal lifespan, a recommended charging current of 0.2C (20A) is advised.



Figure 2.1: Why Choose PowMr? This image highlights the benefits of the PowMr LiFePO4 battery, including 6000+ cycles, over 10 years of R&D and production experience, 50,000+ batteries sold annually, 5-year warranty, and comprehensive technical assistance.

3. Specifications

Parameter	Value
Model Number	POW-100AH-12.8V
Nominal Voltage	12.8 V
Nominal Capacity	100 Ah

Parameter	Value
Energy Capacity	1280 Wh
Cycle Life	6000+ cycles (at 0.2C, 25°C, 80% DOD)
Max Continuous Charge Current	100 A
Max Continuous Discharge Current	100 A
Max Continuous Load Power	1280 W
Dimensions (L x W x H)	325 mm x 170 mm x 215 mm
Weight	11.5 kg
BMS Protection	Overvoltage, Undervoltage, Overcurrent, Short-circuit, Overheat
Operating Temperature	(Specific range not provided, but includes low-temperature protection)



Figure 3.1: Product Dimensions and Terminal Specifications. This image illustrates the physical dimensions of the battery (325mm x 170mm x 215mm) and details of the M8 terminal screws.



Figure 3.2: Internal Structure and BMS. This image displays the internal A-grade cells and the integrated BMS, highlighting its protection features against overvoltage, undervoltage, overcurrent, short-circuit, and overheating.

4. Setup and Installation

4.1 Safety Precautions

- Always wear appropriate personal protective equipment (PPE), including safety glasses and insulated gloves, when handling batteries.
- Ensure all connections are secure and properly insulated to prevent short circuits.
- Do not disassemble, puncture, or modify the battery.
- Keep the battery away from heat sources, open flames, and flammable materials.
- Install the battery in a well-ventilated area.

4.2 Initial Inspection

Upon receiving your battery, inspect it for any visible damage. If any damage is found, contact your supplier immediately.

4.3 Connection

1. Ensure the battery is turned off or disconnected from any load before making connections.
2. Connect the positive (+) terminal of the battery to the positive terminal of your system (e.g., inverter, charge controller).
3. Connect the negative (-) terminal of the battery to the negative terminal of your system.
4. Tighten all terminal connections securely.
5. If connecting multiple batteries in series or parallel, refer to the "Flexible Configuration" section in Product Features and ensure proper wiring to achieve the desired voltage and capacity.



Figure 4.1: Wide Range of Applications. This image illustrates the versatility of the PowMr LiFePO4 battery, suitable for photovoltaic systems, yachts, camping-cars (RVs), and as a reliable power source during power outages.

5. Operating Instructions

5.1 Charging the Battery

- Use a compatible LiFePO4 charger. Do not use chargers designed for lead-acid batteries unless they have a specific LiFePO4 mode.
- Connect the charger to the battery terminals, ensuring correct polarity.
- The battery can accept a maximum charging current of 100A for rapid charging (approximately 1 hour).
- For optimal battery longevity, a recommended charging current of 0.2C (20A for this 100Ah battery) is advised.
- The integrated BMS will protect the battery from overcharging.



Figure 5.1: Fast Charging Capability. This image demonstrates the battery's ability to be fully charged in approximately 1 hour with a maximum charging current of 100A. A recommended charging current of 0.2C (20A) is suggested for optimal battery life.

5.2 Discharging the Battery

- Connect your load to the battery terminals, observing correct polarity.

- The battery supports a maximum continuous discharge current of 100A and a maximum continuous load power of 1280W.
- The BMS will protect the battery from over-discharging.
- Monitor your power consumption to ensure it stays within the battery's limits.



Figure 5.2: Energy Capacity and Appliance Runtimes. This image illustrates the 1280Wh energy capacity and provides estimated runtimes for common appliances: TV (100W) for 12.8 hours, Refrigerator (150W) for 8.5 hours, Microwave (500W) for 2.56 hours, and Lighting (10W) for 128 hours.

6. Maintenance

- **Regular Inspection:** Periodically check the battery terminals for corrosion or loose connections. Clean terminals as needed.
- **Cleaning:** Keep the battery clean and free of dust and debris. Use a dry cloth for cleaning. Do not use solvents or abrasive cleaners.
- **Storage:** If storing the battery for an extended period, ensure it is charged to approximately 50-70% State of

Charge (SOC) and stored in a cool, dry place. Avoid extreme temperatures.

- **Temperature:** While the battery has low-temperature protection, operating or charging in extremely cold conditions can reduce performance and lifespan.

7. Troubleshooting

7.1 Common Issues and Solutions

Problem	Possible Cause	Solution
Battery not charging	Incorrect charger, loose connections, BMS protection activated (over-discharge)	Ensure compatible LiFePO4 charger is used. Check all connections. If BMS is activated due to over-discharge, connect to a charger to reset.
No power output	Battery discharged, loose connections, BMS protection activated (over-discharge, overcurrent, short circuit)	Check battery charge level. Verify connections. If BMS is activated, remove load, check for short circuits, and recharge the battery.
Battery gets hot during operation/charging	Excessive current, poor ventilation, internal fault	Reduce load/charge current. Ensure adequate ventilation. If overheating persists, disconnect immediately and contact support.
Reduced capacity or runtime	Aging battery, operating in extreme temperatures, improper charging/discharging	Ensure proper charging practices. Avoid extreme temperatures. If battery is old, capacity reduction is normal.

If you encounter issues not listed here or if the suggested solutions do not resolve the problem, please contact PowMr customer support for assistance.

8. Warranty and Support

PowMr stands behind the quality of its products. This LiFePO4 battery comes with a**5-year warranty** from the date of purchase.
For technical assistance, warranty claims, or any product-related inquiries, please contact PowMr customer support. We offer comprehensive technical assistance and aim to provide a response within 24 hours.



Figure 8.1: Delivery and Support Information. This image highlights PowMr's commitment to customer service, including fast delivery, a 5-year warranty, comprehensive technical assistance, and a 24-hour response time.

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