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## PowMr 12.8V 100Ah

# PowMr 12V 100Ah LiFePO4 Lithium Battery User Manual

Model: 12.8V 100Ah

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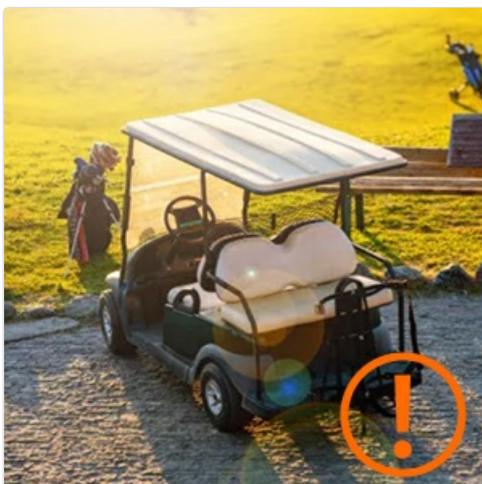
## 1. INTRODUCTION

This manual provides essential information for the safe and efficient use of your PowMr 12V 100Ah LiFePO4 Lithium Battery. This battery is designed for various applications including solar systems, RVs, boats, and off-grid setups, offering a reliable and long-lasting power solution. Please read this manual thoroughly before installation and operation.

## 2. SAFETY INFORMATION

Always prioritize safety when handling batteries. Failure to follow these instructions may result in serious injury, property damage, or damage to the battery.

- Do not short-circuit the battery terminals.
- Do not expose the battery to fire or extreme heat.
- Do not immerse the battery in water or other liquids. The battery is IP65 waterproof, but prolonged immersion is not recommended.
- Do not disassemble, crush, or puncture the battery.
- Use only compatible chargers and charging methods.
- Ensure proper ventilation during charging and discharging.
- Keep the battery away from children and pets.
- Wear appropriate personal protective equipment (PPE) such as gloves and eye protection when handling batteries.
- This battery is not intended for use as a starter battery.



*Image: A special reminder icon, emphasizing important safety notes.*

### 3. PACKAGE CONTENTS

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Upon opening the package, verify that all components are present and undamaged:

- 1 x PowMr 12V 100Ah LiFePO4 Lithium Battery
- 2 x M8 Terminal Bolts
- 2 x Washers

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*Video: Unboxing the PowMr 12V 100Ah LiFePO4 Lithium Battery, showing the battery, terminals, and screws. This video provides a visual guide to the package contents.*

# DIMENSIONS

size  
325\*170\*215mm(12.79\*6.69\*8.46inches)

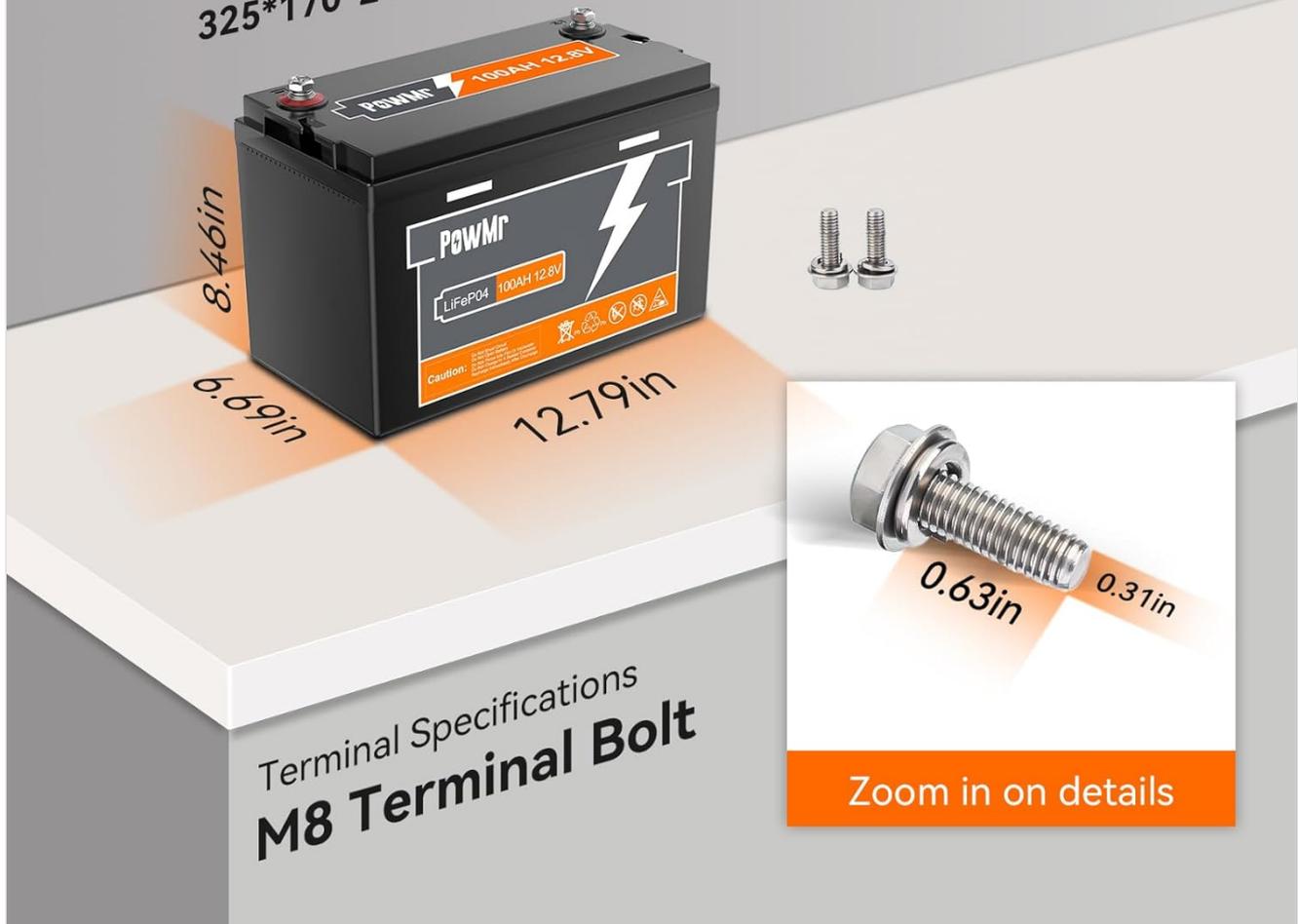
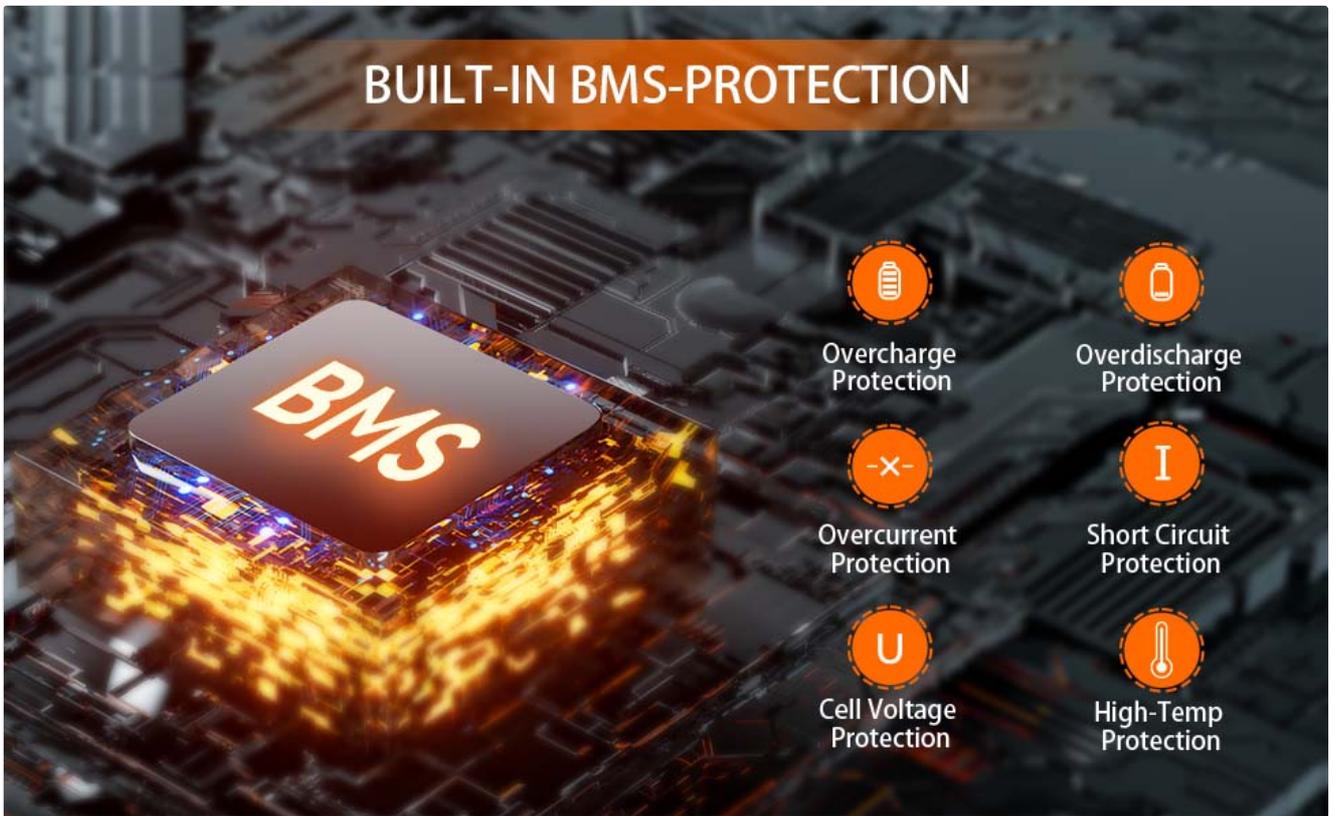


Image: The PowMr 12V 100Ah LiFePO4 battery with M8 terminal bolts, illustrating the included hardware.

## 4. PRODUCT FEATURES

- **Long Service Life:** Offers 4000+ cycles with 100% Depth of Discharge (DoD), providing a service life of up to 10 years.
- **Lightweight Design:** Weighs approximately 11.5kg, significantly lighter than traditional lead-acid batteries, enhancing portability.
- **Built-in 100A BMS:** Integrated Battery Management System protects against overcharge, overdischarge, overcurrent, and short circuits.
- **Expandable Capacity:** Supports series and parallel connections for increased capacity and voltage (up to 4S4P for max 51.2V and 400Ah).
- **Wide Application:** Suitable for RVs, camping, marine, solar systems, home energy storage, and off-grid applications.
- **IP65 Waterproof:** Provides protection against dust and water splashes, suitable for indoor and outdoor installations.

## BUILT-IN BMS-PROTECTION



*Image: A diagram illustrating the various protections offered by the built-in 100A BMS, including overcharge, overdischarge, overcurrent, short circuit, cell voltage, and high-temperature protection.*

# THE PERFECT REPLACEMENT

## FOR LEAD-ACID BATTERIES

12V100Ah  
LiFePO4 Battery



2\*12V100Ah  
Lead-Acid Batteries



Weight: 11Kg

Cycle Times: 4000~15000

Life Time: 10 Years

Discharge Depth: 100%

Weight: 66Kg

Cycle Times: 300~500

Life Time: 2 Years

Discharge Depth: 50%

*Image: A visual comparison highlighting the advantages of the PowMr LiFePO4 battery over traditional lead-acid batteries in terms of weight, cycle life, service life, and depth of discharge.*

## 5. SETUP AND INSTALLATION

### 5.1. Initial Inspection

Before installation, inspect the battery for any physical damage. Ensure the terminals are clean and free of corrosion.

### 5.2. Connecting the Battery

Connect the battery to your system using appropriate cables and connectors. Ensure correct polarity: positive (+) to positive and negative (-) to negative. Use the provided M8 terminal bolts to secure connections tightly.



Image: A diagram showing how to connect batteries, indicating positive and negative terminals.

### 5.3. Series and Parallel Connections

The PowMr 12V 100Ah LiFePO4 battery supports both series and parallel connections to achieve higher voltage or capacity. It can be connected in series up to 4 units (4S) and in parallel up to 4 units (4P), allowing for configurations such as 4S4P for a maximum of 51.2V and 400Ah.

- **Parallel Connection:** Connect positive terminals together and negative terminals together to increase capacity (Ah) while maintaining the same voltage (V).
- **Series Connection:** Connect the positive terminal of one battery to the negative terminal of the next battery to increase voltage (V) while maintaining the same capacity (Ah).
- Always ensure all batteries in a series or parallel bank are of the same type, capacity, and state of charge before connecting.

## EXPANDABLE CAPACITY

### MAX.15 BATTERY CONNECTIONS

Max. 20480Wh Energy (4S4P)

|                            |                       |                             |                           |
|----------------------------|-----------------------|-----------------------------|---------------------------|
| 2560Wh<br>2S/2P<br>X2      | 3840Wh<br>3S/3P<br>X3 | 5120Wh<br>4S/4P/2S2P<br>X4  | 7680Wh<br>2S3P/3S2P<br>X6 |
| 10240Wh<br>2S4P/4S2P<br>X8 | 11520Wh<br>3S3P<br>X9 | 15360Wh<br>3S4P/4S3P<br>X12 | 20480Wh<br>4S4P<br>X16    |

Image: A diagram illustrating various expandable capacity configurations, including a 4S4P setup for maximum energy storage.

# EXPANDABLE CAPACITY

Max. 51.2V400Ah, 20480Wh Energy(4S4P)



Image: A schematic showing the PowMr LiFePO4 battery integrated into a solar power system, connecting solar panels, an MPPT controller, and an inverter to power various household loads.

## 6. OPERATING INSTRUCTIONS

### 6.1. Charging

The battery supports a 50A charging current. Use a compatible LiFePO4 charger or a solar charge controller (MPPT recommended) designed for lithium iron phosphate batteries. Ensure the charging voltage is within the recommended range (typically 14.2V - 14.6V).



Image: A split image showing the battery being charged by a dedicated battery charger on one side and a solar panel setup with an MPPT controller charging the battery on the other.

## 6.2. Discharging

The battery supports a 100A continuous discharge current. The built-in BMS will protect the battery from over-discharge. Ensure your load does not exceed the maximum continuous discharge current to prevent the BMS from triggering protection mode.

## 6.3. Operating Temperature

Observe the recommended operating temperature ranges:

- **Charging:** 0°C to 50°C (32°F to 122°F)
- **Discharging:** -20°C to 60°C (-4°F to 140°F)
- **Storage:** -10°C to 50°C (14°F to 122°F)



Image: A thermometer graphic indicating the safe operating temperature range for the battery.

## 7. MAINTENANCE

- **Regular Inspection:** Periodically check the battery terminals for cleanliness and tightness. Ensure there are no signs of damage or swelling.
- **Cleaning:** Use a dry cloth to wipe the battery casing. 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 within the recommended storage temperature range. Recharge every 3-6 months to prevent deep discharge.

## 8. TROUBLESHOOTING

If you encounter issues with your PowMr LiFePO4 battery, refer to the following common problems and solutions:

| Problem                  | Possible Cause                                                                                                 | Solution                                                                                                                                                                                   |
|--------------------------|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Battery not charging     | Charger not connected, charger fault, BMS protection triggered (over-discharge, over-voltage, low temperature) | Check charger connection and functionality. Verify charging parameters. Allow battery to warm up if too cold. If BMS is in protection, disconnect load/charger for a few minutes to reset. |
| Battery not discharging  | BMS protection triggered (over-discharge, overcurrent, high temperature), loose connections                    | Check all connections. Reduce load if overcurrent. Allow battery to cool down if too hot. Recharge the battery if it's in over-discharge protection.                                       |
| Reduced capacity/runtime | Aging battery, improper charging, extreme operating temperatures                                               | Ensure proper charging voltage and current. Operate within recommended temperature ranges. If battery is very old, consider replacement.                                                   |

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

## 9. SPECIFICATIONS

| Parameter                           | Value                            |
|-------------------------------------|----------------------------------|
| Brand                               | PowMr                            |
| Model                               | 12.8V 100Ah                      |
| Battery Type                        | LiFePO4 (Lithium Iron Phosphate) |
| Nominal Voltage                     | 12.8V                            |
| Nominal Capacity                    | 100Ah                            |
| Energy                              | 1280Wh                           |
| Max. Charging Voltage               | 14.6V                            |
| Max. Continuous Charging Current    | 50A                              |
| Max. Continuous Discharging Current | 100A                             |

| Parameter               | Value                                     |
|-------------------------|-------------------------------------------|
| Built-in BMS            | 100A                                      |
| Cycle Life              | 4000+ cycles (100% DoD)                   |
| Dimensions (L*W*H)      | 325*170*215mm (12.79"D x 6.69"W x 8.46"H) |
| Weight                  | 11.5kg                                    |
| Terminal Type           | M8 Terminal                               |
| Waterproof Rating       | IP65                                      |
| Charging Temperature    | 0°C to 50°C                               |
| Discharging Temperature | -20°C to 60°C                             |
| Storage Temperature     | -10°C to 50°C                             |

## 12.8V 100AH LIFEPO4 BATTERIE

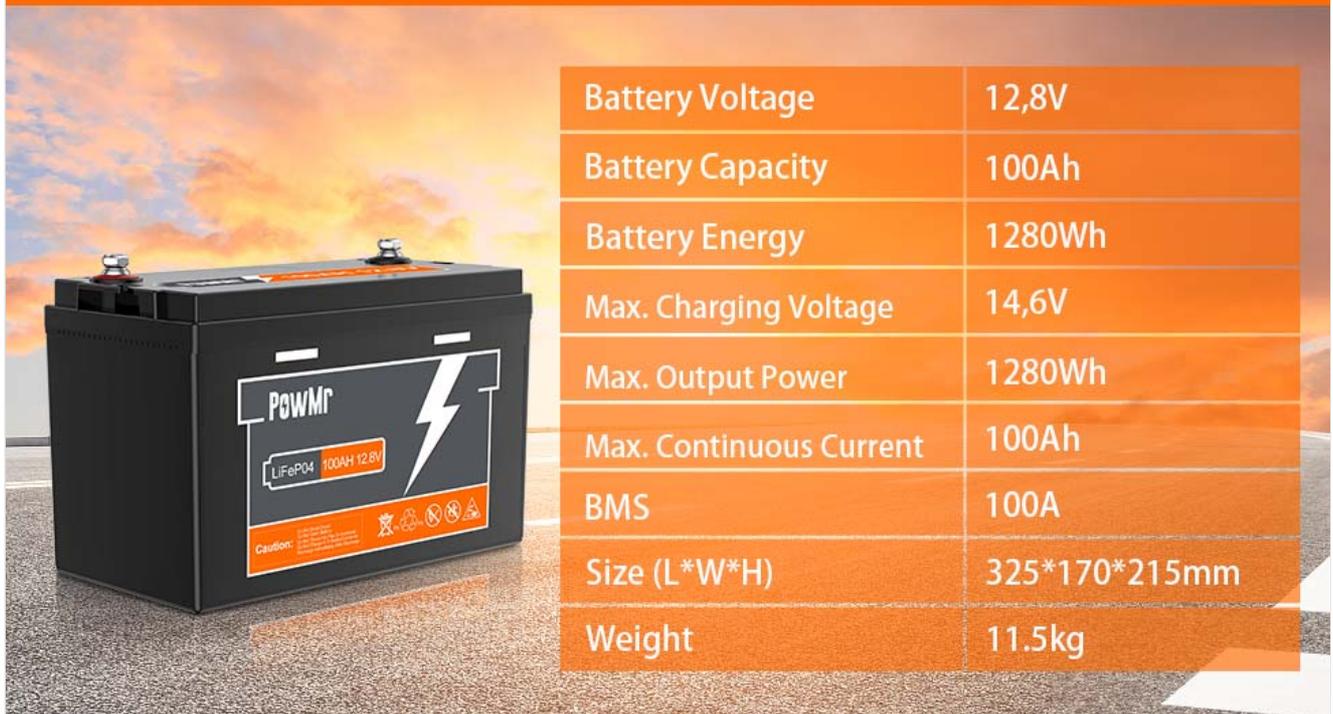


Image: The PowMr 12.8V 100Ah LiFePO4 battery displayed alongside a table summarizing its key technical specifications.

## 10. WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please refer to the official PowMr website or contact their customer service directly. Keep your purchase receipt as proof of purchase for warranty claims.

**PowMr Official Website:** [www.powmr.com](http://www.powmr.com)

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For the latest information and updates, please visit the official PowMr website.