

Mighty Max Battery ML100-48LI

Mighty Max Battery ML100-48LI 48V 100Ah Lithium Replacement Battery User Manual

1. PRODUCT OVERVIEW

The Mighty Max Battery ML100-48LI is a 48V 100Ah Lithium Iron Phosphate (LiFePO₄) sealed, rechargeable, and maintenance-free battery. It is designed as a direct replacement for traditional sealed lead-acid batteries, offering enhanced performance, lighter weight, and a significantly longer cycle life of over 2500 cycles. This battery is suitable for various applications including RVs, solar systems, marine vessels, and off-grid power setups.



Image 1.1: Mighty Max Battery ML100-48LI 48V 100Ah Lithium Iron Phosphate Battery.

Key Features:

- **Lithium Iron Phosphate (LiFePO₄) Technology:** Offers superior cycle life and performance compared to lead-acid batteries.
- **48V 100Ah Capacity:** Provides substantial power for demanding applications.
- **Maintenance-Free:** Sealed design eliminates the need for regular maintenance.
- **Built-in Battery Management System (BMS):** Ensures safety and optimal performance with protections against high voltage, low voltage, over current, high temperature, short circuit, and overcharge.
- **Direct Lead-Acid Replacement:** Designed for easy integration into existing systems.

Product Video:

Your browser does not support the video tag.

Video 1.1: An official video from Mighty Max Battery showcasing general features and applications of their battery products, including shock resistance, easy recharging, various terminal types, spill-proof design, and mounting versatility.

2. SETUP AND INITIAL CHARGE

Unpacking and Inspection:

Carefully remove the battery from its packaging. Inspect the battery for any signs of physical damage. Ensure all included accessories, such as screws for terminals, are present. The package includes the battery and screws only; no wire harness or mounting accessories are provided.

Initial Charging:

The battery ships minimally charged. For optimal performance and to maximize its lifespan, it is essential to fully charge the battery before its first use. Use a compatible LiFePO4 battery charger designed for 48V systems.

Physical Dimensions:

The battery dimensions are 23.50 inches (59.69 cm) in length, 9.25 inches (23.50 cm) in width, and 8.82 inches (22.40 cm) in height (including terminals). Ensure your installation space accommodates these measurements.



Image 2.1: Detailed dimensions of the Mighty Max Battery ML100-48LI, showing length, width, and height including terminals.

Terminal Connection:

The battery features internal thread terminals. Connect your system cables securely to these terminals using the

provided screws. Ensure proper polarity (positive to positive, negative to negative) to prevent damage to the battery and connected equipment.

3. OPERATION GUIDELINES

Battery Management System (BMS):

The ML100-48LI battery is equipped with an advanced Battery Management System (BMS) for enhanced safety and longevity. The BMS actively monitors and protects the battery against various conditions, including:

- High Voltage Protection
- Low Voltage Protection
- Over High Current Protection
- High Temperature Protection
- Short Circuit Protection
- Over Charge Protection

This integrated protection system ensures reliable and safe operation across its intended applications.

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Are You Powered To The Max?



Image 3.1: Diagram illustrating the internal configuration of the battery, highlighting the Battery Protector BMS and its integrated plate for various protections.

Extended Lifespan:

Lithium Iron Phosphate technology provides a significantly longer cycle life compared to traditional sealed lead-acid batteries, with an expected lifespan of over 2000 cycles. This translates to a more durable and cost-effective power solution over time.

Extended Lifespan

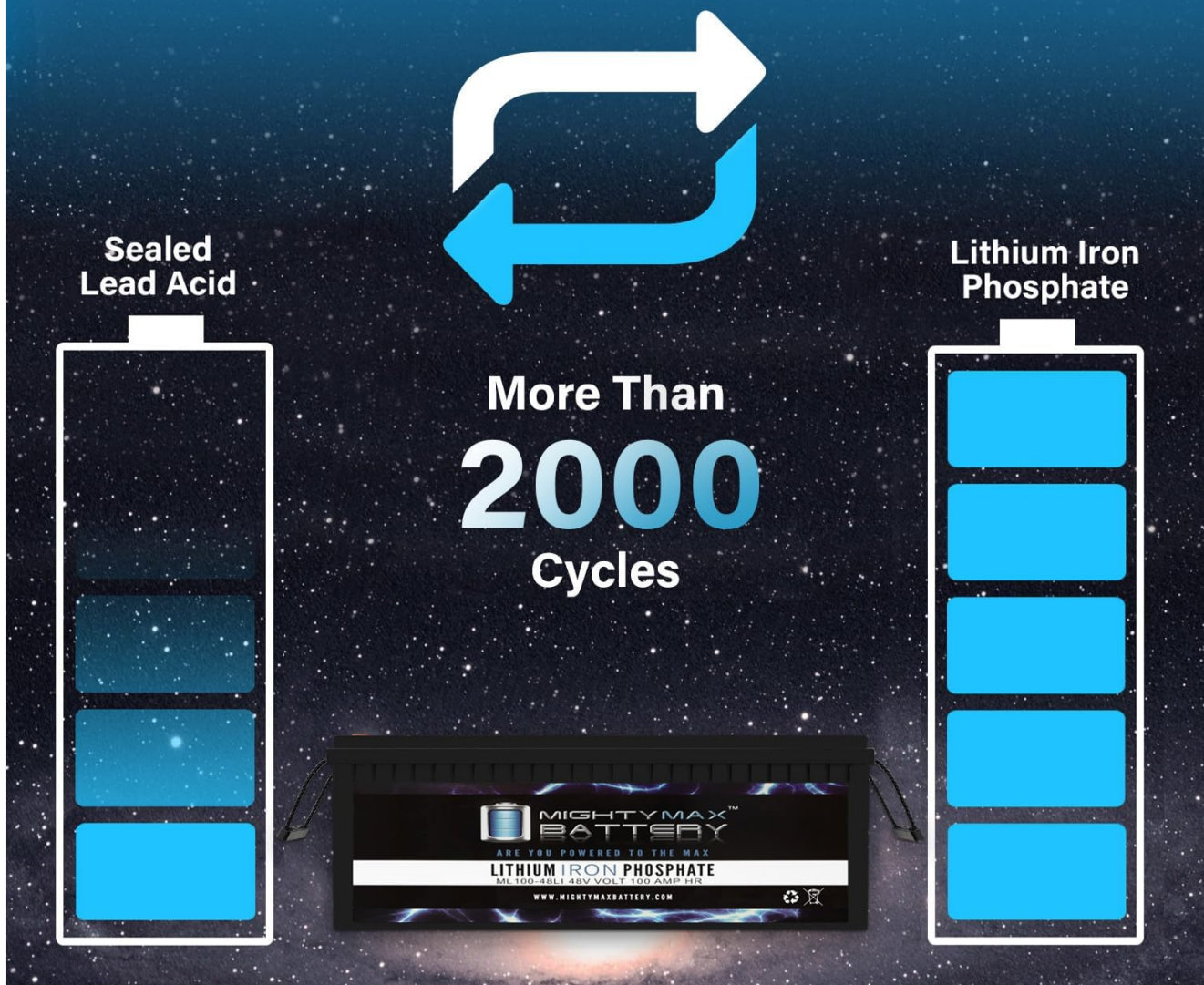


Image 3.2: Visual comparison demonstrating the extended lifespan of Lithium Iron Phosphate batteries (over 2000 cycles) versus sealed lead-acid batteries.

Efficiency and Convenience:

The ML100-48LI delivers high power output without the increased size or weight typically associated with multiple lead-acid batteries. Its compact design and lighter weight make it a convenient choice for various installations.

Efficient & Convenient

Same power
without the
increase in size or
weight as

2

sealed
Lead Acid
batteries



Image 3.3: Illustration highlighting the efficiency and convenient size of the Mighty Max Battery, providing equivalent power to two sealed lead-acid batteries in a single unit.

4. MAINTENANCE

The Mighty Max Battery ML100-48LI is a sealed, maintenance-free battery. This means it does not require regular fluid checks or terminal cleaning beyond ensuring connections remain secure.

Charging Practices:

- Always use a charger specifically designed for Lithium Iron Phosphate (LiFePO₄) batteries with a 48V output.
- Avoid overcharging or undercharging, as the integrated BMS will manage these conditions, but proper charging practices extend battery life.
- For optimal performance, ensure the battery is fully charged before prolonged storage.

Storage:

Store the battery in a cool, dry place away from direct sunlight and extreme temperatures. Ensure the battery is

adequately charged before storage to prevent deep discharge.

Cleaning:

Keep the battery's exterior clean and free of dust and debris. Use a dry cloth for cleaning. Do not use solvents or abrasive cleaners.

5. TROUBLESHOOTING

The built-in Battery Management System (BMS) in your ML100-48LI battery is designed to prevent most common issues by providing various protections. If you experience unexpected behavior, consider the following:

No Power Output:

- **Check Connections:** Ensure all terminal connections are secure and free from corrosion. Loose connections can interrupt power flow.
- **Battery Charge Level:** The BMS may have activated low voltage protection if the battery is deeply discharged. Attempt to recharge the battery with a compatible LiFePO4 charger.
- **BMS Protection Triggered:** If the battery was subjected to high voltage, over current, or short circuit, the BMS might have temporarily shut down the output. Disconnect the load, wait a few minutes, and then try to reconnect. If the issue persists, consult support.

Charging Issues:

- **Charger Compatibility:** Verify that you are using a LiFePO4 compatible charger with the correct voltage (48V).
- **Overcharge Protection:** The BMS will prevent overcharging. If the charger indicates a full charge but the battery seems low, ensure the charger is functioning correctly.
- **High Temperature Protection:** If the battery or charger is excessively hot, the BMS may halt charging. Allow the battery to cool down in a well-ventilated area before attempting to charge again.

Reduced Performance:

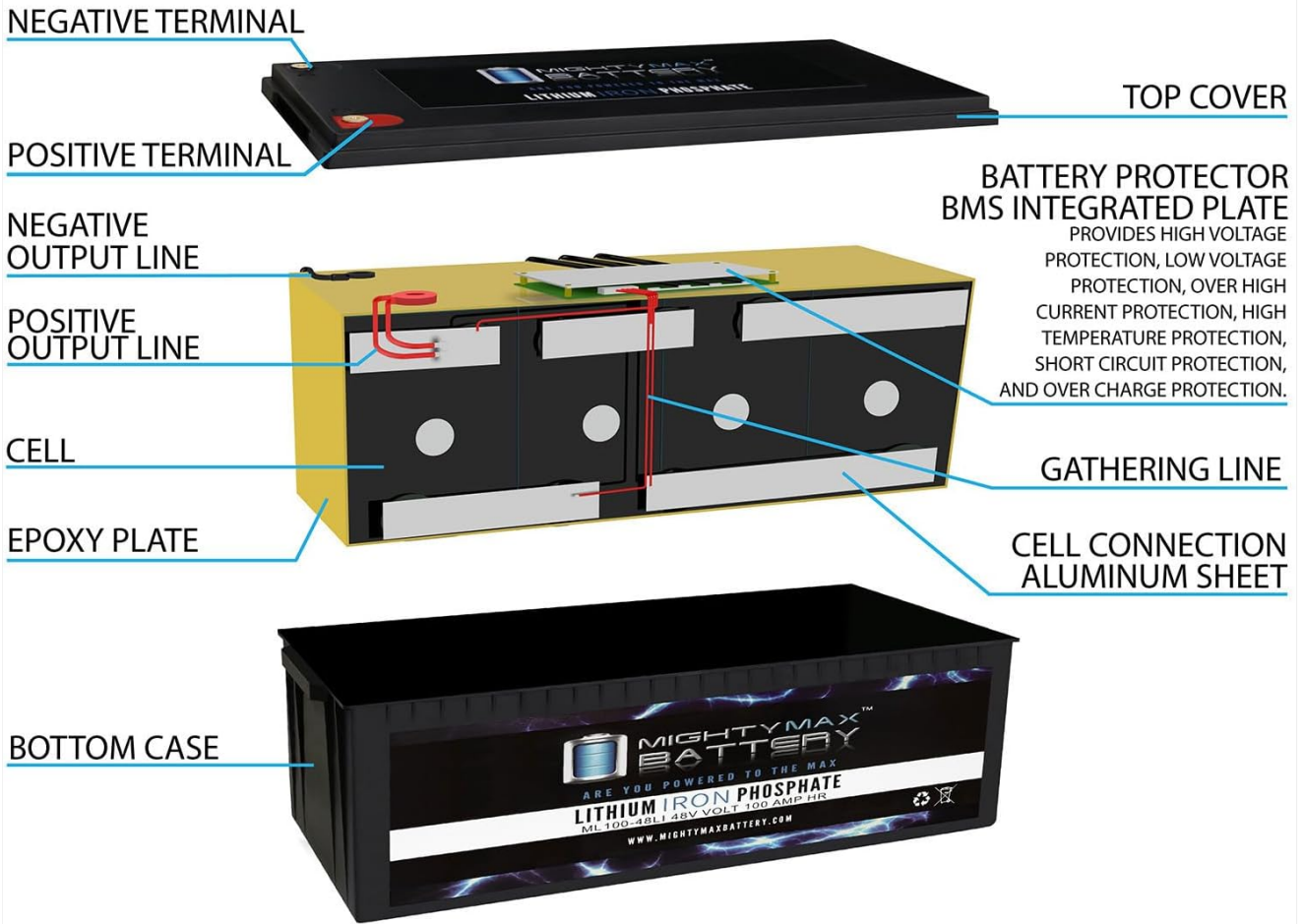
- **Age and Cycle Life:** While LiFePO4 batteries have a long cycle life, performance will gradually degrade over many years of use.
- **Environmental Conditions:** Extreme cold or heat can temporarily affect battery performance. Operate the battery within its specified temperature range.

If troubleshooting steps do not resolve the issue, please contact Mighty Max Battery customer support.

6. SPECIFICATIONS

Below are the detailed technical specifications for the Mighty Max Battery ML100-48LI:

CONFIGURATION



This is a model representation of the components within battery. It is not an actual depiction of said battery. 

Image 6.1: Visual representation of key specifications for the Mighty Max Battery ML100-48LI.

Specification	Value
Model Number	ML100-48LI
Brand	Mighty Max Battery
Voltage	48 Volts
Battery Capacity	100 Amp Hours
Amperage	100 Amps
Battery Cell Composition	Lithium Iron Phosphate (LiFePO4)
Reusability	Rechargeable
Item Dimensions (L x W x H)	23.5 x 9.25 x 8.82 inches
Item Weight	83.5 Pounds

Specification	Value
Recommended Uses	RV, Solar System, Marine, Off Grid Applications
Number of Batteries Required	1 (included)

7. WARRANTY INFORMATION

The Mighty Max Battery ML100-48LI comes with a comprehensive warranty to ensure your peace of mind.

- **Full Two-Year Warranty:** As stated in the product features, this battery is covered by a full two-year warranty.
- **Manufacturer's Warranty:** The manufacturer provides a 1-year warranty. Please note the discrepancy between the two-year warranty mentioned in product features and the one-year manufacturer's warranty in specifications. For clarification on warranty terms, please contact Mighty Max Battery directly.

For detailed terms and conditions of the warranty, including coverage and claims procedures, please refer to the official Mighty Max Battery website or contact their customer support.

8. CUSTOMER SUPPORT

For any questions, technical assistance, or warranty claims regarding your Mighty Max Battery ML100-48LI, please contact the manufacturer directly.

Manufacturer Contact:

Brand: Mighty Max Battery

Manufacturer: Mighty Max Battery

Please visit the official Mighty Max Battery website for the most current contact information, including phone numbers, email addresses, and support resources.