

MFUZOP 12V 300Ah LiFePO4 Battery

MFUZOP 12V 300Ah LiFePO4 Battery User Manual

Model: 12V 300Ah LiFePO4 Battery

1. INTRODUCTION AND PRODUCT OVERVIEW

The MFUZOP 12V 300Ah LiFePO4 Battery is a high-performance lithium iron phosphate battery designed for reliable and long-lasting power solutions. With a nominal capacity of 3840Wh and an integrated 200A Battery Management System (BMS), this battery is engineered for various energy storage applications, including RVs, campers, marine vessels, solar power systems, off-grid setups, and home backup solutions. Its compact design and lightweight nature make it an efficient choice for space-saving installations.



Figure 1.1: MFUZOP 12V 300Ah LiFePO4 Battery. This image shows the main product unit, highlighting its compact form factor and clear labeling of specifications and safety warnings.

2. KEY FEATURES

- **Compact and Powerful:** Offers 3840Wh of power in a compact size of 49 × 26 × 22 cm (19.3 × 10.2 × 8.7 inches), ideal for space-constrained setups.
- **Lightweight Design:** Weighs approximately 1/3 of a comparable lead-acid battery, simplifying handling and installation.
- **Extended Lifespan:** Provides over 4000 deep cycles and up to 10 years of service life, significantly outperforming traditional batteries.
- **High Usable Energy:** Delivers up to 100% usable capacity, ensuring efficient power delivery for various appliances.
- **Integrated 200A BMS:** Features a robust Battery Management System for comprehensive protection against overcharge, over-discharge, overcurrent, short circuit, overvoltage, and temperature fluctuations.
- **Expandable Capacity:** Supports both series connections (up to 48V) and parallel connections (up to 1200Ah) for increased voltage or capacity.



Figure 2.1: Overview of BMS Protection Features. This diagram illustrates the various safety protections provided by the integrated Battery Management System, including overvoltage, overcurrent, overload, short circuit, over-discharge, temperature, and overcharge protection.

MFUZOP Battery

- ★ Longer life
- ★ Lighter design
- ★ Greater security
- ★ Higher energy density
- ★ Faster charging speed
- ★ Wider application range
- ★ Lower self-discharge rate
- ★ Lower maintenance costs
- ★ Better performance stability



Flooded Battery

- ◆ Shallow cycles
- ◆ Limited suitability
- ◆ Require more maintenance
- ◆ Higher rate of self-discharge
- ◆ Affected by extremes in temperature
- ◆ Vulnerability to shock and vibration



Figure 2.2: Comparison of MFUZOP LiFePO₄ Battery with Traditional Flooded Batteries. This image highlights the advantages of LiFePO₄ technology, such as longer life, lighter design, greater security, higher energy density, faster charging, wider application range, lower self-discharge rate, lower maintenance costs, and better performance stability compared to flooded batteries.

3. SETUP AND INSTALLATION

3.1 Terminal Specifications

The MFUZOP 12V 300Ah LiFePO₄ battery is equipped with M8 terminal bolts for secure connections. Ensure proper torque is applied when connecting cables to prevent loose connections and potential arcing.

Terminal Specifications: M8 Terminal Bolts



Figure 3.1: Terminal Specifications and Product Dimensions. This image details the M8 terminal bolts and provides the overall dimensions of the battery (L*H*W: 50*25*22cm or 20*10*9in).

3.2 Series and Parallel Connections

This battery supports both series and parallel configurations to meet diverse power requirements.

- **Series Connection:** Up to 48V can be achieved by connecting multiple batteries in series. Ensure all batteries have similar state of charge before connecting in series.
- **Parallel Connection:** Up to 1200Ah can be achieved by connecting multiple batteries in parallel. This increases the total capacity while maintaining the nominal voltage.

Always consult a qualified professional for complex installations involving multiple batteries to ensure proper wiring and safety.

12V 300AH LIFEP04 BATTERY ENSURES SAFE OPERATION OF THE DEVICE



Figure 3.2: Internal Structure and Connection Points. This image provides a detailed view of the battery's internal components and how connections are made, emphasizing the robust design for safe operation.

4. OPERATING INSTRUCTIONS

4.1 Charging

Use a compatible LiFePO₄ charger with the correct voltage and current settings. The integrated BMS will manage the charging process to prevent overcharging.

4.2 Discharging

The battery is designed for deep cycle applications, providing consistent power until its usable capacity is depleted. The BMS protects against over-discharge.

4.3 Important Safety Notes

- Do not short-circuit the positive and negative poles.
- Do not modify or disassemble the battery without authorization.

- **Do not throw the battery into fire or water.**
- **Use the standard charger** that matches the output voltage of the lithium battery.
- This battery is designed for **energy storage only. Do not use as a starting battery**, or in golf carts, jacks, or engine-starting equipment.

5. MAINTENANCE

MFUZOP LiFePO4 batteries are known for their low maintenance requirements. Due to their advanced chemistry and integrated BMS, they do not require regular watering or equalization charges like lead-acid batteries.

- Keep the battery terminals clean and free of corrosion.
- Store the battery in a cool, dry place when not in use for extended periods.
- Avoid exposing the battery to extreme temperatures outside its operating range.

6. TROUBLESHOOTING

While MFUZOP LiFePO4 batteries are highly reliable, should you encounter any issues, consider the following general troubleshooting steps:

- **No Power Output:** Check all cable connections for tightness and proper polarity. Verify that the load is within the battery's discharge current limits. The BMS may have activated a protection mode (e.g., over-discharge, short circuit); disconnect the load and attempt to recharge.
- **Battery Not Charging:** Ensure the charger is compatible with LiFePO4 batteries and is functioning correctly. Check charger connections. The BMS may have activated overvoltage or temperature protection; allow the battery to cool down if it's hot.
- **Reduced Capacity:** Ensure the battery has been fully charged. Verify that the ambient temperature is within the optimal operating range.

For persistent issues or complex problems, please refer to the Warranty & Support section for assistance.

7. SPECIFICATIONS

Specification	Value
Brand	MFUZOP
Model	12.8V 300Ah Lithium Battery
Item Model Number	12V 300Ah LiFePO4 Battery
Nominal Capacity	300Ah
Energy	3840Wh
BMS	200A
Cycle Life	15000+ Cycles (4000+ deep cycles)
Low Temp Protection	Yes
Item Weight	134.2 pounds

Specification	Value
Package Dimensions	19.3 x 10.2 x 8.7 inches (49 x 26 x 22 cm)
Terminal Type	M8 Terminal Bolts
Series Connection	Up to 48V
Parallel Connection	Up to 1200Ah
Country of Origin	China

8. WARRANTY AND SUPPORT

The MFUZOP 12V 300Ah LiFePO4 Battery is backed by a **5-year warranty**, ensuring peace of mind regarding your investment.

Should you have any questions, require technical assistance, or need support, our dedicated team is ready to assist you.

We aim to provide responsive support within 24 hours.

For further information or to contact support, please visit the official MFUZOP Store: [MFUZOP Store on Amazon](#).

9. APPLICATIONS

The MFUZOP 12V 300Ah LiFePO4 battery is versatile and suitable for a wide range of applications requiring reliable and long-lasting power.

- **Recreational Vehicles (RVs) & Campers:** Provides stable power for onboard appliances and systems.
- **Marine Applications:** Ideal for boats and yachts, offering dependable power for navigation, lighting, and accessories.
- **Solar Energy Systems:** Excellent for energy storage in off-grid and grid-tied solar installations.
- **Off-Grid Living:** Ensures consistent power supply for remote cabins and properties.
- **Home Backup Power:** Can be integrated into home energy systems for emergency power during outages.
- **Other Portable Power Needs:** Suitable for various outdoor and mobile power requirements.

LITHIUM IRON PHOSPHATE BATTERIES ARE SUITABLE FOR ANY VEHICLE

Not Available For Starting Power



Figure 9.1: Lithium Iron Phosphate Battery in an RV Setting. This image demonstrates the battery's suitability for powering recreational vehicles and outdoor activities, emphasizing its role in providing reliable energy for mobile setups.

Perfect for many applications



Figure 9.2: Diverse Application Scenarios. This collage illustrates the wide range of environments and uses for the MFUZOP LiFePO4 battery, including RVs, marine, camping, solar, and general outdoor activities.