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> MFUZOP 48V 100Ah LiFePO4 Battery User Manual

MFUZOP 51.2V 100Ah LiFePO4

MFUZOP 48V 100Ah LiFePO4 Battery User Manual

Model: 51.2V 100Ah LiFePO4

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your MFUZOP 48V 100Ah LiFePO4 Battery. This battery is designed for solar energy storage, off-grid systems, and home backup applications, offering high performance and a long lifespan. Please read this manual thoroughly before installation and use.



Image 1.1: MFUZOP 48V 100Ah LiFePO4 Battery, front view.

2. SAFETY INSTRUCTIONS

Observe the following safety precautions to prevent injury or damage to the battery and connected equipment:

- Do not disassemble, modify, or attempt to repair the battery.
- Keep the battery away from fire, heat sources, and direct sunlight.
- Do not immerse the battery in water or expose it to excessive moisture.
- Ensure proper ventilation during operation and charging.
- Use only compatible chargers and inverters.
- Wear appropriate personal protective equipment (PPE), such as insulated gloves and eye protection, when handling the battery.
- Avoid short-circuiting the battery terminals.
- Dispose of the battery according to local regulations.

3. PRODUCT FEATURES

The MFUZOP 48V 100Ah LiFePO4 Battery offers advanced features for reliable power storage:

- **High Performance & Massive Energy:** Equipped with Grade A LiFePO4 cells, delivering 5.12kWh of energy with over 6000+ deep cycles and a 10-year lifespan.
- **100A Smart BMS Protection:** Integrated Battery Management System (BMS) provides protection against over-charging, over-discharging, over-current, short circuits, and extreme temperatures.
- **Bluetooth App & Real-time Monitoring:** Monitor real-time data (voltage, SOC, individual cell status, temperature) via a dedicated mobile application.
- **Scalable Design & Wide Compatibility:** Supports parallel connection of up to 15 units (76.8kWh). Features standard RS485/CAN/RS232 communication ports for compatibility with most hybrid and off-grid inverters.
- **Space-Saving Design:** Standard 19-inch rack-mount design for professional and compact installation.



Image 3.1: Internal structure showing Grade A LiFePO4 cells and the 100A BMS, highlighting protection features against over-discharge, over-current, short circuit, over-charge, and low/high temperature cut-off.

4. PACKAGE CONTENTS

Verify that all items are present in the package:

- MFUZOP 48V 100Ah LiFePO4 Battery (with housing)
- User Manual
- Communication Cable (RJ45)
- Battery Cables (Red and Black)
- Grounding Cable (Green/Yellow)
- Mounting Screws/Bolts



Image 4.1: The MFUZOP 48V 100Ah LiFePO4 Battery, user manual, communication cable, battery cables, grounding cable, and mounting hardware.

5. SETUP

5.1 Physical Installation

The battery features a standard 19-inch rack-mount design. Ensure the installation location is dry, well-ventilated, and within the recommended operating temperature range. Secure the battery firmly within a compatible server rack using the provided mounting ears and screws.



Image 5.1: Diagram showing the dimensions of the MFUZOP 48V 100Ah LiFePO4 Battery: 483mm (19in) width, 521mm (20in) depth, 110mm (4.3in) height.

5.2 Wiring Connections

Refer to the diagram below for proper connection of terminals and communication ports.

- **Positive Terminal (D):** Connect the red battery cable to the positive terminal.
- **Negative Terminal (C):** Connect the black battery cable to the negative terminal.
- **Grounding (B):** Connect the grounding cable to the designated grounding point on the battery chassis.
- **Communication Ports (N, O, P, Q):** Use RS485, CAN, or RS232 ports as required for inverter communication or parallel connections.



Image 5.2: Detailed view of the battery's front panel, indicating handles (A), grounding point (B), negative terminal (C), positive terminal (D), 125A breaker (E), power switch (F), ON/OFF indicator (G), Reset button (H), ADD button (I), RUN indicator (J), ALM indicator (K), Dry contact (L), SOC indicator (M), RS485-1 (N), CAN (O), RS232 (P), and RS485 IN/OUT ports (Q), and mounting ears (R).

6. OPERATING INSTRUCTIONS

6.1 Powering On/Off

1. Ensure all connections are secure before powering on.
2. Flip the **125A breaker (E)** to the ON position.
3. Press the **Power switch (F)** to the ON position. The **ON/OFF indicator (G)** will illuminate.
4. To power off, reverse these steps: turn off the power switch, then flip the breaker to OFF.

6.2 Status Indicators

- **RUN Indicator (J):** Indicates normal operation when lit.
- **ALM Indicator (K):** Illuminates to indicate an alarm or fault condition. Refer to the troubleshooting section if this indicator is active.

- **SOC Indicator (M):** Displays the State of Charge (SOC) of the battery.



Image 6.1: Close-up of the circuit breaker, power switch, and a representation of the Bluetooth app interface for monitoring.

7. BLUETOOTH APP CONNECTION

The MFUZOP battery can be monitored in real-time using a dedicated mobile application via Bluetooth.

1. Download the MFUZOP battery monitoring app from your smartphone's app store.
2. Ensure Bluetooth is enabled on your smartphone.
3. Open the app and search for available devices. Select your MFUZOP battery.
4. Once connected, you can view parameters such as voltage, State of Charge (SOC), individual cell status, and temperature.

Controland Monitor Your Battery Via Bluetooth And Wifi



Image 7.1: Illustration of the MFUZOP battery being monitored via a smartphone application, displaying various battery parameters.

8. PARALLEL CONNECTION

The MFUZOP 48V 100Ah LiFePO4 battery supports parallel connection of up to 15 units to increase total energy capacity (up to 76.8kWh). This allows for scalable energy storage solutions.

- Ensure all batteries are of the same model and have similar State of Charge (SOC) before connecting in parallel.
- Connect the positive terminals of all batteries together and the negative terminals of all batteries together.
- Use appropriate communication cables (RS485, CAN) to link the batteries for synchronized operation and monitoring.
- Consult a qualified electrician for complex parallel installations.

3U Rack Battery Up to 16 in Parallel

Meets 99% of home needs



Image 8.1: Multiple MFUZOP 3U rack batteries installed in a rack, demonstrating parallel connection capability for increased energy storage.

9. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your LiFePO4 battery:

- **Regular Inspection:** Periodically check battery terminals and cables for corrosion or loose connections. Clean as necessary.
- **Temperature Control:** Operate the battery within the recommended temperature range (typically -4°F to 140°F / -20°C to 60°C for discharge, 32°F to 113°F / 0°C to 45°C for charge).
- **Storage:** If storing the battery for an extended period, ensure it is charged to approximately 50% SOC and stored in a cool, dry place. Recharge every 3-6 months to prevent deep discharge.
- **Cleaning:** Use a dry cloth to clean the battery exterior. Do not use solvents or abrasive cleaners.

10. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
Battery not powering on	Breaker is off; Power switch is off; Loose connections	Flip breaker to ON; Turn power switch to ON; Check and secure all cable connections.
ALM indicator is lit	Over-charge/discharge; Over-current; High/low temperature	Check charging/discharging parameters; Reduce load; Ensure proper ventilation and ambient temperature. If alarm persists, contact support.
Bluetooth app not connecting	Bluetooth off on phone; App not updated; Battery too far	Ensure phone Bluetooth is on; Update app; Move closer to battery; Restart app/phone.
Reduced capacity/runtime	Aging battery; Improper charging; Extreme temperatures	Ensure charging parameters are correct; Operate within recommended temperature range.

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

11. SPECIFICATIONS

Detailed technical specifications for the MFUZOP 48V 100Ah LiFePO4 Battery:

Specification	Value
Brand	MFUZOP
Model Number	51.2V 100Ah LiFePO4 Lithium Battery
Voltage	48 Volts (DC) / 51.2V (Nominal)
Battery Cell Composition	Lithium Iron Phosphate (LiFePO4)
Battery Capacity	100 Amp Hours (Ah)
Nominal Energy	5.12 kWh
Max. Load Power	5.12 kW
Built-in BMS	100A Smart BMS
Cycle Life	6000+ Deep Cycles
Communication Ports	RS485, CAN, RS232
Parallel Connection	Up to 15 units
Dimensions (Approx.)	483mm (19in) W x 521mm (20in) D x 110mm (4.3in) H
Included Components	Battery with housing, cables, mounting hardware

Product Detail

Rated voltage	51.2V
Max. voltage range	40~58.4V
Charge voltage	58.4V
Low voltage cut-off	40.0V
Nominal energy	5.12KWh
Usable energy	5.12KWh
Nominal capacity	100Ah
Dimension	22.09*19.02*5.24in/56.1*48.3*13.3cm
Weight	94.8 lb / 43kg
Standard charge current	≤50A
Max. charge current	100A
Communication port	RS485 /CAN/RS232



Image 11.1: Visual representation of key product specifications and included accessories.

12. WARRANTY AND SUPPORT

MFUZOP stands by the quality of its products.

- **Warranty:** This product comes with a 10-year manufacturer's warranty. Please retain your proof of purchase for warranty claims.
- **Technical Support:** For technical assistance, troubleshooting, or warranty inquiries, please contact MFUZOP customer support. Refer to the product packaging or the official MFUZOP website for contact details.