MFUZOP MF-48314S

MFUZOP 48V 314Ah LiFePO4 Battery (Model MF-48314S) User Manual

Your guide to installation, operation, and maintenance

1. Introduction

This manual provides essential information for the safe and efficient use of your MFUZOP 48V 314Ah LiFePO4 Battery. Please read this manual thoroughly before installation and operation. Keep it for future reference.

Safety Precautions

- Always wear appropriate personal protective equipment (PPE) during installation and maintenance.
- Ensure all connections are secure and correctly polarized to prevent damage or injury.
- Do not disassemble, puncture, or modify the battery.
- Avoid exposure to extreme temperatures, direct sunlight, or moisture.
- In case of fire, use a Class D fire extinguisher. Water can exacerbate lithium battery fires.

2. Package Contents

Upon unpacking, verify that all items listed below are present and undamaged. If any items are missing or damaged, contact your supplier immediately.

Image: The MFUZOP 48V 314Ah LiFePO4 Battery unit shown with its dimensions and a list of included accessories such as solar cell module, mounting bracket, various screws, connecting wires, communication cable, and user manual.

- Solar cell module x 1
- Mounting bracket x 1
- Short screws x 3
- Short screws x 2 (Note: The image shows two types of short screws, quantities may vary slightly)
- Expansion screw x 8
- Positive and negative electrode connecting wire x 1 set
- Communication cable x 1
- User Manual x 1

3. Product Overview

The MFUZOP 48V 314Ah LiFePO4 Battery is a high-capacity energy storage solution designed for various applications including home energy storage, solar systems, off-grid setups, and RVs. It features a robust design with advanced safety

and communication capabilities.

Image: The MFUZOP 48V 314Ah LiFePO4 Battery unit displaying its total energy (16.07kWh), nominal operating voltage (51.2V), internal resistance (<13.9mΩ), standard input current (210A), standard output current (157A), cycle life (>8000 cycles), overcurrent protection (215A), communication protocols (RS232, RS485, CAN), dimensions, and product weight.

Key Features:

- **High Capacity:** 16.07kWh with 51.2V/314Ah configuration for stable power output.
- **Long Cycle Life:** Over 8,000 cycles at 77°F and over 3,000 cycles at 113°F, maintaining over 70% capacity.
- **Integrated BMS:** 200A intelligent Battery Management System for multi-layer protection (overvoltage, undervoltage, overcurrent, short circuit).
- **Wide Temperature Range:** Supports discharge at -20°C (-4°F) and charge/discharge up to 55°C (131°F).
- **Communication Protocols:** Compatible with RS485, CAN, and RS232 for integration with mainstream PV inverters.
- **Scalability:** Up to 15 units can be paralleled for a maximum capacity of 241.15kWh.
- **User-Friendly Display:** High-definition LCD screen for real-time monitoring of SOC, voltage, and temperature.
- **Flexible Installation:** Supports both wall-mounted and floor-standing options.

Interface Description

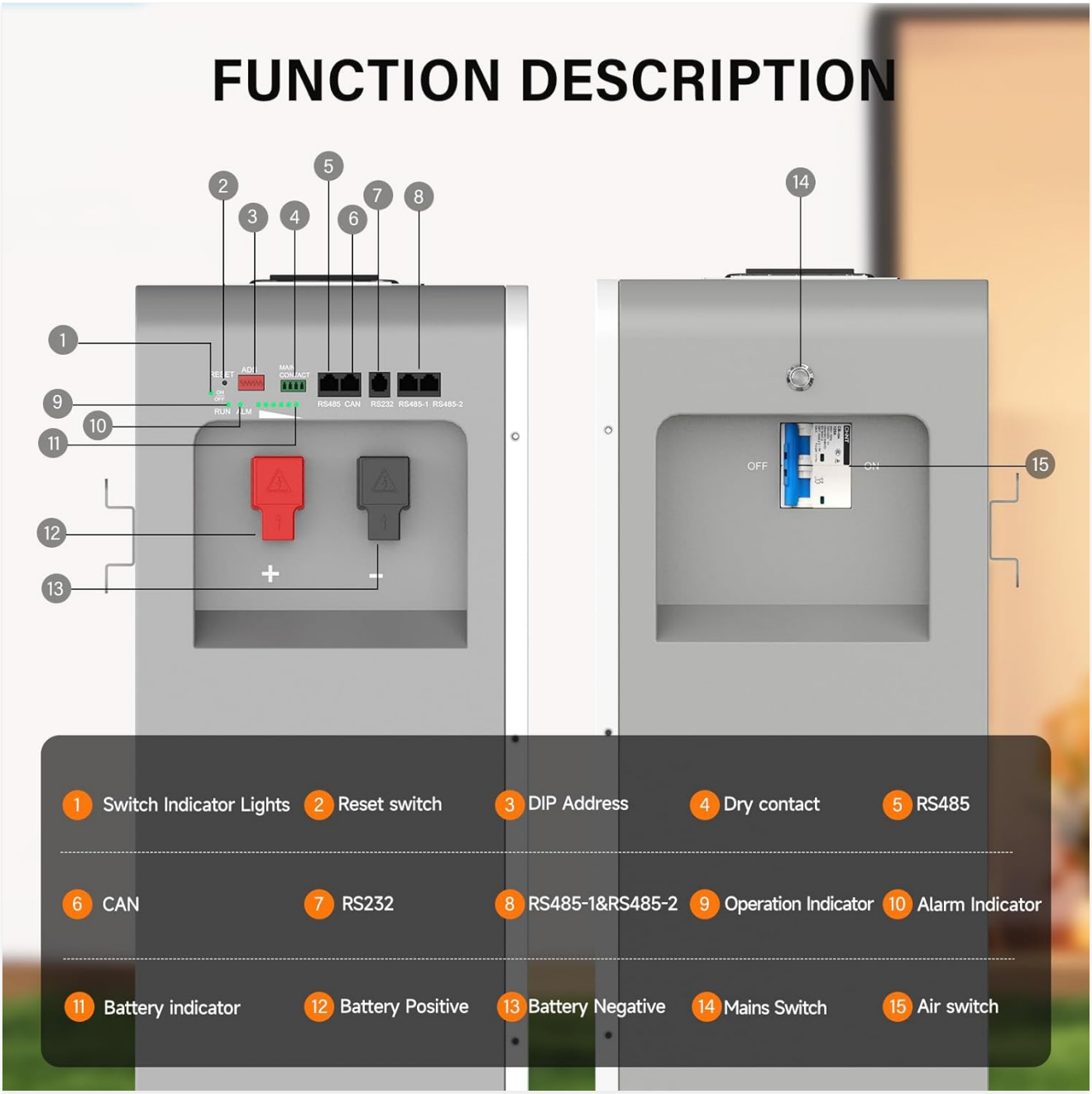


Image: A close-up view of the battery's connection panel, highlighting various ports and indicators. Numbered labels point to Switch Indicator Lights, Reset switch, DIP Address, Dry contact, RS485, CAN, RS232, RS485-1&RS485-2, Operation Indicator, Alarm Indicator, Battery indicator, Battery Positive terminal, Battery Negative terminal, Mains Switch, and Air switch.

1. **Switch Indicator Lights:** Indicate the status of the battery.
2. **Reset switch:** Used to reset the battery system.
3. **DIP Address:** DIP switches for setting communication addresses in parallel configurations.
4. **Dry contact:** For external control or signaling.
5. **RS485:** Communication port.
6. **CAN:** Communication port.
7. **RS232:** Communication port.
8. **RS485-1 & RS485-2:** Additional RS485 communication ports.
9. **Operation Indicator:** Shows operational status.
10. **Alarm Indicator:** Lights up during an alarm condition.
11. **Battery indicator:** Displays battery charge level.
12. **Battery Positive:** Positive terminal for power connection.

13. **Battery Negative:** Negative terminal for power connection.
14. **Mains Switch:** Main power switch for the unit.
15. **Air switch:** Circuit breaker for protection.

4. Setup and Installation

Installation Options

The MFUZOP battery supports both wall-mounted and floor-standing installations. Choose the option that best suits your space and requirements. Ensure the installation location is dry, well-ventilated, and within the specified operating temperature range.

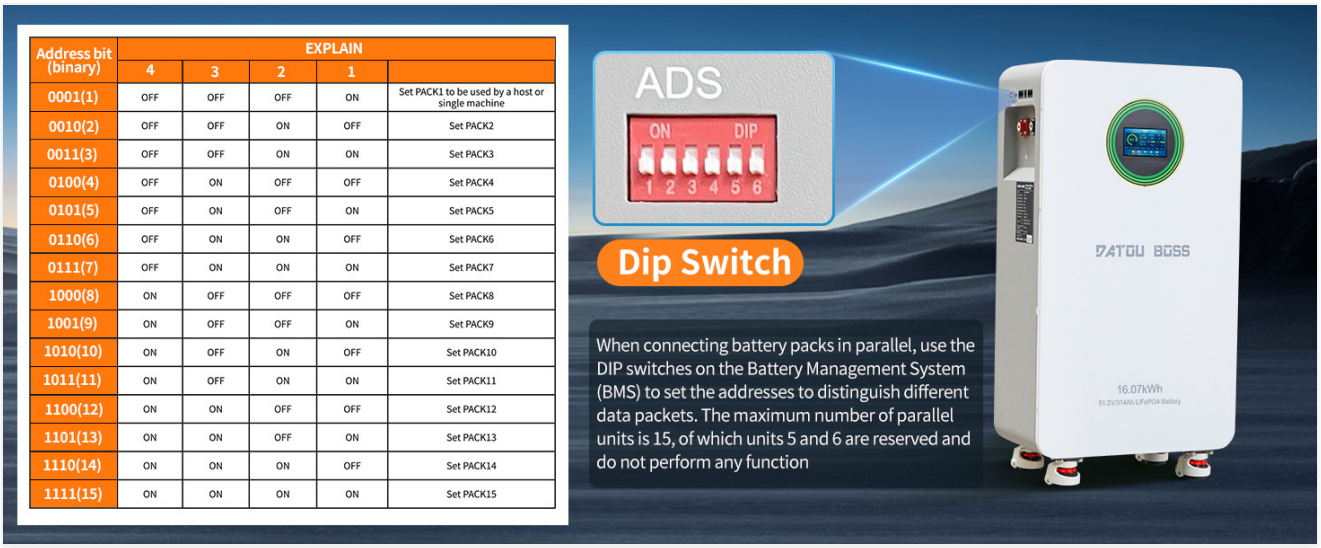
Parallel Configuration

For increased capacity, up to 15 units of the MFUZOP 48V 314Ah battery can be connected in parallel. This allows for a maximum capacity of 241.15kWh.

Image: Multiple MFUZOP battery units arranged in a parallel configuration, demonstrating how they can be connected to achieve higher power output for high-voltage electrical appliances.

DIP Switch Settings for Parallel Operation

When connecting multiple battery units in parallel, use the DIP switches on the Battery Management System (BMS) to assign unique addresses to each unit. This ensures proper communication and operation within the parallel system.



Address bit (binary)	EXPLAIN				
	4	3	2	1	
0001(1)	OFF	OFF	OFF	ON	Set PACK1 to be used by a host or single machine
0010(2)	OFF	OFF	ON	OFF	Set PACK2
0011(3)	OFF	OFF	ON	ON	Set PACK3
0100(4)	OFF	ON	OFF	OFF	Set PACK4
0101(5)	OFF	ON	OFF	ON	Set PACK5
0110(6)	OFF	ON	ON	OFF	Set PACK6
0111(7)	OFF	ON	ON	ON	Set PACK7
1000(8)	ON	OFF	OFF	OFF	Set PACK8
1001(9)	ON	OFF	OFF	ON	Set PACK9
1010(10)	ON	OFF	ON	OFF	Set PACK10
1011(11)	ON	OFF	ON	ON	Set PACK11
1100(12)	ON	ON	OFF	OFF	Set PACK12
1101(13)	ON	ON	OFF	ON	Set PACK13
1110(14)	ON	ON	ON	OFF	Set PACK14
1111(15)	ON	ON	ON	ON	Set PACK15

Image: A diagram showing a DIP switch with 6 positions and a table explaining how to set the address bits (1-4) for up to 15 parallel units (PACK1 to PACK15). Positions 5 and 6 are reserved and do not perform any function.

Refer to the table in the image for specific DIP switch configurations for each battery unit (PACK1 to PACK15). Ensure that each unit has a unique address.

Communication Connections

The battery supports RS485, CAN, and RS232 communication protocols for integration with various PV inverters and monitoring systems. Connect the appropriate communication cables as required by your system setup.

Interface	RS485-1	CAN1	RS232	RS485
Functional Description	Connection to host computer or inverter	Connection to host computer or inverter	Parallel communication	Parallel communication
Pin Descriptions	Pin Descriptions	Pin Descriptions	Pin Descriptions	Pin Descriptions
	1、8 RS485-B1	1、8 NC	1、2、6 NC	1、8 RS485-B2
	2、7 RS485-A1	2、7 NC	3 TX	2、7 RS485-A2
	4 NC	4 CANHI	4 RX	4 NC
	5 NC	5 CANLI	5 GND	5 NC(L)/OUT(R)
	3、6 GND	3、6 GND		3、6 GND

Image: A visual representation of the RS485, CAN, and RS232 communication ports, along with a table detailing the pin descriptions for each interface (RS485-1, CAN1, RS232, RS485) and their functional descriptions for connecting to a host computer or inverter.

Refer to the pin descriptions provided in the image for correct wiring of communication cables. Ensure compatibility with your inverter's communication standards.

5. Operating Instructions

LCD Monitor Operation

The integrated high-definition LCD display provides real-time information about the battery's status. This includes State of Charge (SOC), voltage, current, power, and temperature. The interface is designed for intuitive navigation between different data pages.

Image: A close-up of the battery's color touch screen showing an 83% State of Charge, 53.40V voltage, 0.0A current, and 0W power. It also displays minimum and maximum cell voltages and temperatures, with navigation options for 'master', 'slave', 'parameter', 'protocol', and 'setting'.

Use the touch screen to monitor key parameters and adjust settings as needed. The display provides a clear overview of the battery's performance and health.

Powering On/Off

- **To Power On:** Ensure all connections are secure. Flip the Mains Switch (14) and Air switch (15) to the 'ON' position. The operation indicator (9) should light up.
- **To Power Off:** Flip the Air switch (15) and Mains Switch (14) to the 'OFF' position.

6. Maintenance

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

General Care

- **Cleaning:** Keep the battery unit clean and free from dust. Use a dry, soft cloth for cleaning. Do not use liquid cleaners.

- **Connections:** Periodically check all electrical connections to ensure they are tight and free from corrosion.
- **Environment:** Ensure the battery operates within its specified temperature range (-20°C to 55°C for discharge, 0°C to 55°C for charge). Avoid environments with high humidity or direct water exposure (IP20 dustproof rating).
- **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 periodically to prevent deep discharge.

Battery Health Monitoring

Regularly monitor the battery's performance using the LCD display. Pay attention to any alarm indicators or unusual readings. The built-in BMS provides comprehensive protection, but proactive monitoring can help identify potential issues early.

7. Troubleshooting

This section provides guidance for common issues. For problems not listed here or if issues persist, please contact MFUZOP customer support.

Problem	Possible Cause	Solution
Battery not powering on	Mains switch or Air switch is off; Loose connections; Battery deeply discharged.	Ensure both switches are ON. Check all power cable connections. If deeply discharged, connect to a compatible charger.
No output power	Overload protection triggered; Short circuit; Inverter fault.	Reduce load. Check for short circuits in the system. Verify inverter operation. Reset the battery if necessary.
Alarm indicator is on	Overvoltage/Undervoltage; Overcurrent; Overtemperature.	Check LCD for specific alarm code. Address the underlying issue (e.g., reduce charge voltage, ensure proper ventilation).
Communication error	Incorrect wiring; Incompatible protocol; Incorrect DIP switch settings (for parallel).	Verify communication cable connections and pin assignments. Ensure inverter compatibility. Check DIP switch settings for parallel units.

8. Specifications

Detailed technical specifications for the MFUZOP 48V 314Ah LiFePO4 Battery (Model MF-48314S).

Image: A comprehensive table listing the product specifications for the MFUZOP LFP48-314-FSD battery, including Total Energy, Internal Resistance, Single Battery Capacity, Nominal Operating Voltage, Standard Input Current, Standard Output Current, Overpressure Protection, Short Circuit Protection, Power Delivery Rate, Equalization, Cycle Life, Protection Level, Communication Protocols, Dimensions, and Weight.

Parameter	Value
Brand	MFUZOP
Model Name	MF-48314S
Total Energy	16.07 kWh
Single Battery Capacity	314 Ah

Parameter	Value
Nominal Operating Voltage	51.2 V
Standard Input Current	210 A
Standard Output Current	157 A (210A Max)
Overcurrent Protection (Charging)	215 A
Overpressure Protection	58.4 V
Short Circuit Protection	Yes, method via load removal and charge disconnection
Power Delivery Rate	40% to 60%
Equalization	Passive balancing
Cycle Life	>8000 Cycle (70% SOH 25°C), >3000 Cycle (70% SOH 45°C)
Protection Level	IP20
Communication Protocols	RS232, RS485, CAN
Dimensions (L x W x H)	17.8 x 10.2 x 34.6 inches (453 x 260 x 879 mm)
Weight	113 kg (249 lbs)
UPC	717235298897
ASIN	B0GV7L7GB8

9. Warranty and Support

Warranty Information

For specific warranty terms and conditions, please refer to the documentation provided with your purchase or contact MFUZOP directly. Typically, LiFePO4 batteries come with a manufacturer's warranty covering defects in materials and workmanship under normal use.

Customer Support

If you encounter any issues or have questions regarding the installation, operation, or maintenance of your MFUZOP 48V 314Ah LiFePO4 Battery, please contact MFUZOP customer support. You can usually find contact information on the product packaging, the manufacturer's website, or through your point of purchase.
When contacting support, please have your product model number (MF-48314S) and purchase details readily available.