

48V/52V 45AH LFP 50A BMS

User Manual for 48V/52V 45AH LiFePO4 Ebike Battery

Model: 48V/52V 45AH LFP 50A BMS

INTRODUCTION

This manual provides essential information for the safe and efficient use of your 48V/52V 45AH LiFePO4 Ebike Battery. Please read this manual thoroughly before operating the battery to ensure proper function and longevity.



Image: The 48V/52V 45AH LiFePO4 Ebike Battery pack, accompanied by its fast charger and various connectors, ready for installation and use.

PACKAGE CONTENTS

Upon opening the package, verify that all the following items are included:

- 1x 48V 45AH LiFePO4 Battery
- 1x 5A Fast Charger
- 1x 3Pin Connector
- 2x Anderson Connectors
- 1x User Manual (this document)

PACKAGE INCLUDE



1X48V 45ah LiFePO4 Battery

1X5A Fast CHARGER

1X3PIN CONNECTOR

2XANDERSON CONNECTOR

1X MANUAL

The detected battery voltage during battery charging is 58.8V. Disconnect the charger and check that the voltage of the battery is $\geq 53.6V$, and battery capacity is 100%

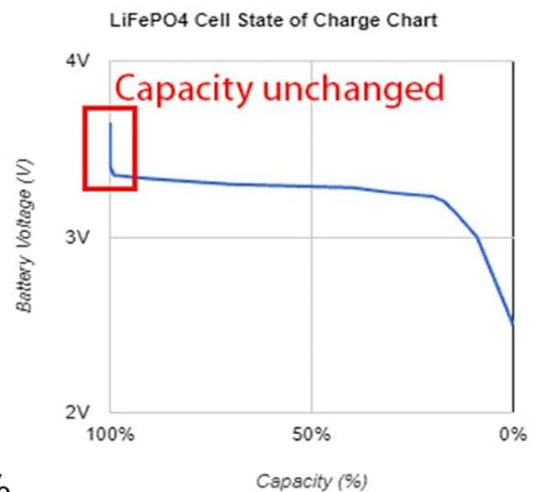


Image: A visual representation of the items included in the package: the LiFePO4 battery, fast charger, 3-pin connector, Anderson connectors, and the user manual.

SPECIFICATIONS


The following table details the key parameters of the 48V 45AH LiFePO4 Battery:


Parameter	Value
Battery Type	LiFePO4

Parameter	Value
Nominal Voltage	48V
Nominal Capacity	45Ah
Max Constant Discharge Current	50A
Peaking Discharge Current	100A (5 seconds)
Charger Voltage	58.8V
Charger Current	5A (Fast Charger)
Charge Time	Approximately 9 hours
Life Cycle	>85% capacity after 1500 cycles
Battery Dimensions (L*W*H)	12.6 x 7.9 x 4.7 inches (32 x 20 x 12 cm)
Battery Weight	33.73 lbs (15.3 kg)

BATTERY PARAMETERS

Name:	48V 45AH LiFePO4 Battery
Compatibility:	250W-1500W Motor
Nominal Voltage:	48V
Nominal Capacity:	45Ah
Charge Time:	9h
Range:	45-55 miles
Charger :	58.8V/ 5A
Rated Voltage:	51.2V
Cut-off Voltage:	40V
Life cycle:	>85% capacity after 1500 cycle
Max Charge Current:	10A
Fully Charged Voltage:	58.4V
Max Constant Discharge Current:	50A
Peaking Discharge Current:	100A 5S

 **Weight: 33.73LB(15.3KG)**

 **Size: 10.2 x 9.1x 5.9 inch**



$53.6v \leq \text{voltage} < 58.4v$, Battery capacity 99%-100%

After the 48V LiFePO4 Battery is fully charged, the voltage will drop within a few seconds.

As long as the voltage detected by the battery at full charge is between 53.6v ~ 58.4v, the battery will have no problem.

Image: A detailed table outlining the technical specifications of the 48V 45AH LiFePO4 battery, including its physical dimensions and electrical characteristics.

SAFETY INFORMATION AND BMS PROTECTION

The 48V 45AH LiFePO4 Battery is equipped with a 50A Battery Management System (BMS) protective board to ensure safe operation and extend battery life. This BMS provides multiple layers of protection:

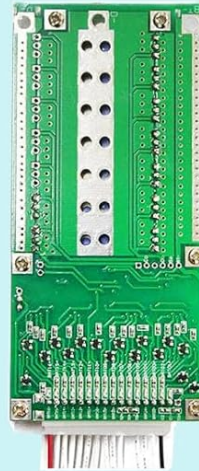
- **Overcharge Protection:** Prevents the battery from being charged beyond its safe voltage limit.
- **Over-discharge Protection:** Protects the battery from being discharged below its minimum safe voltage.
- **Overcurrent Protection:** Limits the current drawn from the battery to prevent damage.
- **Short Circuit Protection:** Automatically cuts off power in case of a short circuit.
- **Battery Cell Protection:** Monitors individual cell voltages to maintain balance.
- **Voltage Self-balance:** Helps maintain consistent voltage across all cells.

LiFePO4 (Lithium Iron Phosphate) chemistry is inherently safer than other lithium-ion battery types, offering enhanced stability and reduced risk of thermal runaway, explosion, or fire. It is also non-toxic and recyclable.

50A BMS PROTECTION



50A BMS protection



16xSeries

1xParallel



Max Constant Discharge Current: 50A



Over discharge protection



Overcurrent protection



Short circuit protection



Overcharge protection



Batties cell protection



Voltage self-balance

Image: An illustration detailing the various protective functions of the 50A BMS, including over-discharge, overcurrent, short circuit, overcharge, cell protection, and voltage self-balance.

LIFEPO4 BATTERY



50A BMS Makes Battery Safer ✓

Capacity Up to 85% After 1500 Cycles ✓

LiFePO4 cell, Super Safe, No Fire ✓

Recyclable and Environmentally Friendly ✓

LEAD ACID BATTERY



No Battery Protection Board ✗

Only 200-300 charge cycles ✗

Overcharge or short circuit may occur fires ✗

Not recyclable or not ecological ✗

Image: A comparative graphic highlighting the advantages of LiFePO4 batteries over traditional lead-acid batteries, emphasizing safety, cycle life, and environmental benefits.

SETUP AND INSTALLATION

Before installation, ensure the battery's specifications are compatible with your device. This battery is designed for 250W-3000W motors.

1. Check Compatibility:

- Your controller's voltage should be 48V or 52V.
- The rated current of your controller should be $\leq 50A$.
- Your motor wattage should be between 250W and 3000W.
- Verify that the battery size (12.6 x 7.9 x 4.7 inches) fits within the available space in your device.

2. **Mounting:** Securely mount the battery in a dry, well-ventilated area, away from direct sunlight and heat sources. Ensure it is protected from vibrations and impacts.

3. **Wiring:** Connect the battery to your system using the provided connectors. Pay close attention to polarity (positive

to positive, negative to negative) to avoid damage. If unsure, consult a qualified technician.

SUITABLE DEVICE PARAMETERS



How to determine whether the battery is suitable for your device?

- Voltage of your controller: 48V/52V
- Rated current of controller: $\leq 50A$
- Motor wattage: 250W-1500W
- Whether the battery size(10.2*9.1*5.9 inches) is suitable for your space.

Image: An electric motorcycle with the battery installed, illustrating the importance of checking device parameters like controller voltage, current, motor wattage, and battery size for proper fit and function.

OPERATING INSTRUCTIONS

This section outlines the general operation and charging procedures for your LiFePO4 battery.

Charging the Battery

1. Connect the 5A Fast Charger to a standard AC power outlet.
2. Connect the charger's output plug to the battery's charging port.
3. The charger's indicator light will typically show red during charging and turn green when charging is complete.
4. Charging time is approximately 9 hours for a full charge from empty.
5. Once fully charged (detected battery voltage is 58.8V), disconnect the charger. The battery capacity is 100% when

voltage is $\geq 53.6V$.

Discharging the Battery

The battery is designed to power electric bicycles, scooters, and motorcycles within the specified motor wattage range (250W-3000W). The maximum constant discharge current is 50A.

The estimated range is 45-55 miles, which can vary based on factors such as load bearing, speed, terrain, and riding style.

MAINTENANCE

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

- **Regular Charging:** Charge the battery regularly, even if not in frequent use, to maintain cell balance and prevent deep discharge.
- **Storage:** If storing the battery for an extended period, charge it to approximately 50-60% capacity and store it in a cool, dry place (0°C to 20°C or 32°F to 68°F). Avoid extreme temperatures.
- **Cleaning:** Keep the battery and its terminals clean and free of dust and debris. Use a dry cloth for cleaning.
- **Inspection:** Periodically inspect the battery casing and connectors for any signs of damage, swelling, or corrosion. Do not use a damaged battery.
- **Avoid Over-discharge:** While the BMS provides protection, avoid intentionally running the battery completely flat, as this can reduce its overall lifespan.

TROUBLESHOOTING

If you encounter issues with your battery, consider the following common troubleshooting steps:

- **Battery Not Charging:**
 - Ensure the charger is properly plugged into both the wall outlet and the battery.
 - Check if the charger's indicator light is functioning.
 - Verify the wall outlet is live.
 - Inspect the charging port and charger plug for damage.
- **Battery Not Providing Power:**
 - Check if the battery is sufficiently charged.
 - Ensure all connections to your device are secure and correctly polarized.
 - Verify that your device's motor wattage and controller current are within the battery's specifications.
 - The BMS may have activated a protection mode (e.g., due to overcurrent or low voltage). Disconnect the battery, wait a few minutes, and then reconnect.
- **Reduced Range or Performance:**
 - Ensure the battery is fully charged before each use.
 - Consider environmental factors (e.g., cold weather can temporarily reduce capacity).
 - Check for excessive load or resistance in your device.
 - Battery degradation over many cycles is normal; however, significant drops may indicate an issue.

If problems persist after attempting these steps, please contact customer support.

WARRANTY AND SUPPORT

Your 48V 45AH LiFePO4 Battery comes with a comprehensive warranty and support:

- **Warranty:** This product includes a 12-month warranty from the date of purchase.
- **Returns/Replacements:** Enjoy 3 months of free returns or replacements.
- **Customer Support:** For any product questions or assistance, please contact the seller directly. Our professional after-sales service team aims to resolve your issues promptly.

To contact support from your order:

1. Go to your Account & Lists.
2. Navigate to "Orders".
3. Select "Get help with order" for your specific purchase.
4. Enter your information and send an e-mail to the seller.