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LiTime 12V100AH

LiTime 12V 100Ah LiFePO4 Battery User Manual

MODEL: 12V100AH

Brand: LiTime

1. INTRODUCTION

The LiTime 12V 100Ah LiFePO4 Battery is a high-performance lithium iron phosphate battery designed for various applications including solar homes, RVs, campers, trolling motors, and off-grid energy storage. Manufactured with Grade A+ LiFePO4 cells, this battery offers superior energy density, stable performance, and enhanced power output.

Key features include a long cycle life of 4,000 to 15,000 cycles depending on depth of discharge, providing up to 10 times longer lifespan compared to traditional lead-acid batteries. It is significantly lighter, weighing only 24.25 lbs, which is approximately one-third the weight of a comparable lead-acid battery. The battery maintains a flat discharge curve, delivering over 12.8 volts for up to 95% of its capacity, ensuring consistent power delivery. It also features a built-in 100A Battery Management System (BMS) for comprehensive protection.



Figure 1: LiTime 12V 100Ah LiFePO4 Battery

2. WHAT'S IN THE BOX

- 12V100Ah LiFePO4 Battery x 1
- M8- 5/8" (16mm) Terminal Bolts x 2
- Insulating Caps for Bolts x 2

3. SAFETY GUIDELINES

WARNING: Improper installation or use can lead to serious injury or property damage. Always follow these guidelines.

- This 12V 100Ah battery is intended for energy storage purposes only. It is NOT suitable for engine starting applications.
- Do not use this battery for golf carts.
- Ensure proper ventilation when installing and operating the battery.
- Avoid short circuits. Always use appropriate fuses and circuit breakers in your system.
- When connecting multiple batteries in series or parallel, ensure they are of the same brand, type, voltage, amperage, and have been manufactured within 3 months of each other.
- Operating temperature ranges:
 - Charge Temperature: 32°F ~ 122°F (0°C ~ 50°C)
 - Discharge Temperature: -4°F ~ 140°F (-20°C ~ 60°C)
 - Storage Temperature: 14°F ~ 122°F (-10°C ~ 50°C)
- If OT terminals are attached directly with screws and their thickness is less than 2mm, add gaskets for

lock attachment to prevent loosening and overheating.

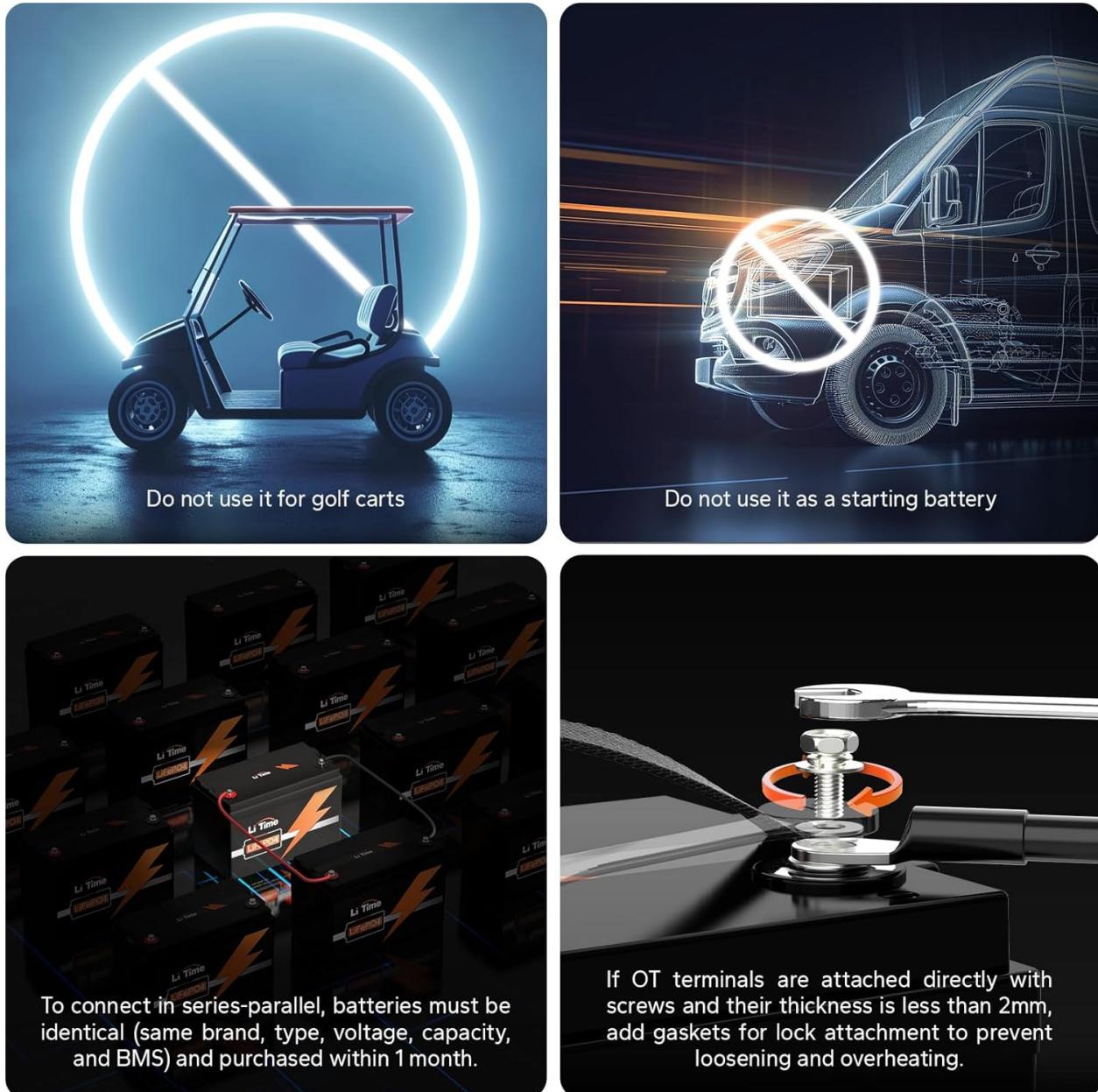


Figure 2: Important safety considerations for battery application and connection.

4. SETUP AND INSTALLATION

The LiTime 12V 100Ah LiFePO4 battery is designed for straightforward installation. Its compact dimensions (L13"xW6.77"xH8.43") and BCI Group 31 size make it a suitable replacement for many lead-acid battery setups.

4.1 Terminal Connections

The battery features M8 terminals. Ensure all connections are clean, secure, and properly tightened to prevent resistance and overheating. Use the provided M8 terminal bolts and insulating caps.



Figure 3: Battery dimensions and terminal details.

4.2 System Integration

This battery can be integrated into various power systems, including solar off-grid setups, RVs, marine vessels, and home energy storage solutions. Consider using a compatible LiFePO4 charger, solar panels, or a generator for charging.



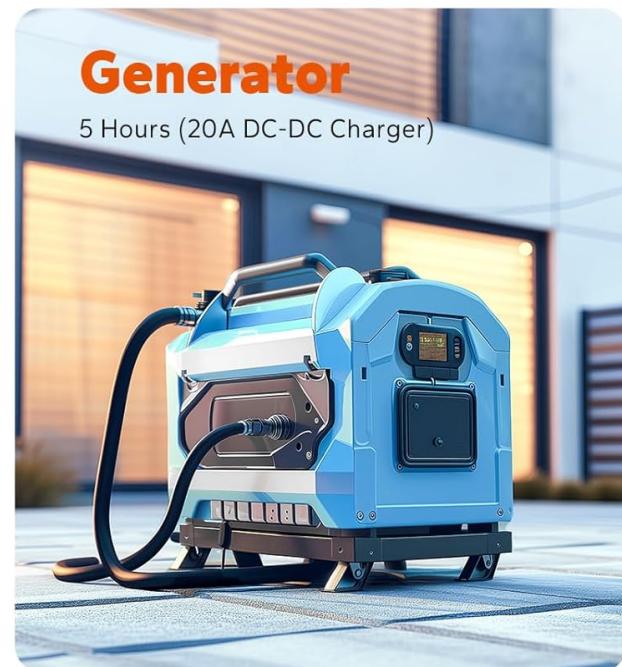
LiFePO4 Charger

5 Hours (14.6V 20A 0.2C)



Solar Panel

1 Sunny day ($\geq 400\text{W}$)



Generator

5 Hours (20A DC-DC Charger)

Figure 4: Various charging methods for the LiTime battery.

For complex installations involving multiple batteries in series or parallel, it is recommended to consult a qualified professional to ensure proper wiring and system compatibility. Always adhere to local electrical codes and safety regulations.

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Video 1: Overview of the LiTime 12V 100Ah LiFePO4 Battery's built-in 100A BMS system and features.

5. OPERATING INSTRUCTIONS

5.1 Charging

The recommended charge current for the LiTime 12V 100Ah battery is 20A (0.2C). The battery can be fully charged from empty in approximately 5 hours using a compatible 14.6V 20A charger. The built-in BMS protects against overcharging, ensuring battery longevity.

5.2 Discharging

The battery's flat discharge curve ensures consistent power output, holding above 12.8 volts for up to 95% of its capacity. This provides extended run-time compared to lead-acid batteries. The BMS also protects against over-discharge, over-current, and short circuits.

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Video 2: Explanation of the LiTime 12V 100Ah LiFePO4 Battery's cycle life and performance.

6. MAINTENANCE

LiFePO4 batteries require minimal maintenance. However, to ensure optimal performance and longevity, follow these recommendations:

- **Regular Recharging:** If the battery is stored for extended periods, it should be discharged and recharged every three months to protect the internal cells and maintain balancing.
- **Terminal Inspection:** Periodically check battery terminals for corrosion and ensure they remain tight. Clean as necessary.
- **Temperature Management:** Operate and store the battery within the specified temperature ranges to prevent damage and maximize lifespan.

7. TROUBLESHOOTING

The built-in Battery Management System (BMS) provides multiple layers of protection. If the battery appears to be malfunctioning, check the following:

- **No Power Output:** The BMS may have activated a protection mode (e.g., over-discharge, over-current, short circuit). Disconnect the load, wait a few minutes, and then attempt to reconnect. If the issue persists, check the battery voltage.
- **Not Charging:** Ensure the charger is compatible with LiFePO4 batteries and operating within the specified voltage and current ranges. The BMS may prevent charging if the battery temperature is too low (below 32°F/0°C) or if an over-voltage condition is detected.
- **Overheating:** The BMS will shut down the battery if it detects excessively high temperatures. Allow the battery to cool down before attempting further operation. Ensure adequate ventilation around the battery.
- **Voltage Drop Under Load:** While LiFePO4 batteries have a flat discharge curve, a significant voltage drop under load may indicate an undersized battery for the application or an issue with connections.

For persistent issues, refer to the detailed specifications and consider contacting LiTime customer support.

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Video 3: Detailed test of the LiTime 12V 100Ah LiFePO4 Battery's charge/discharge capacity and maximum BMS power output.

8. SPECIFICATIONS

Attribute	Value
Brand	LiTime
Model	12V100AH
Size	12V100Ah
Product Dimensions	6.77"D x 13"W x 8.43"H
Item Weight	24.2 pounds
Number Of Cells	4

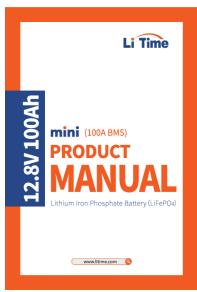
Attribute	Value
Resistance	40 Milliohms
Terminal	M8 Terminal
BMS (Continuous)	100A
Output Power (Max. Continuous)	1280W
Max Continuous Charge Current	100A
Max Continuous Discharge Current	100A
Max Discharge Current (5 Seconds)	280A
Charge Voltage	14.4V ± 0.2V
Recommended Charge Current	20A (0.2C)
Cycle Life	4000~15000 cycles (100% DOD)
Safety Rating	UN38.3, UL, FCC
Date First Available	October 4, 2020

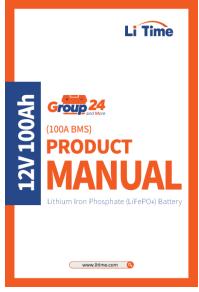
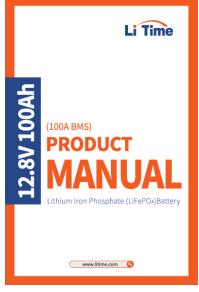
9. WARRANTY AND SUPPORT

LiTime batteries come with a 5-year warranty, demonstrating the brand's commitment to quality and customer satisfaction. For any product-related issues or questions, professional technical support and online customer service are available with fast feedback within 24 hours.

Contact the LiTime support team directly for assistance.

Related Documents - 12V100AH

	<p>LiTime 12.8V 100Ah Mini LiFePO4 Battery User Manual</p> <p>User manual for the LiTime 12.8V 100Ah Mini LiFePO4 battery, detailing specifications, safety precautions, installation, operation, and maintenance for deep cycle applications.</p>
	<p>LiTime 24V 50Ah TM Bluetooth Lithium Iron Phosphate Ion Battery User Manual</p> <p>Comprehensive user manual for the LiTime 24V 50Ah TM Bluetooth Lithium Iron Phosphate Ion Battery, covering specifications, features, operation, and safety instructions.</p>

 <p>Li Time 12V 100Ah Group 24 (100A BMS) PRODUCT MANUAL Lithium Iron Phosphate (LiFePO4) Battery www.litime.com</p>	<p>Li Time 12.8V 100Ah Group 24 LiFePO4 Battery Product Manual Specifications & Guide Comprehensive product manual for the Li Time 12.8V 100Ah Group 24 Lithium Iron Phosphate (LiFePO4) battery. Includes specifications, operating parameters, connection guides, and troubleshooting steps.</p>
 <p>Li Time 25.6V 100Ah Smart Bluetooth 製品 (100A BMS) マニュアル リン酸鉄リチウムイオン (LiFePO4) バッテリー www.litime.com</p>	<p>Li Time 25.6V 100Ah Bluetooth Li Time 25.6V 100Ah Bluetooth</p>
 <p>Li Time 12.8V 100Ah (100A BMS) PRODUCT MANUAL Lithium Iron Phosphate (LiFePO4) Battery www.litime.com</p>	<p>Li Time 12.8V 100Ah LiFePO4 Battery Product Manual - Specifications and Usage Comprehensive product manual for the Li Time 12.8V 100Ah LiFePO4 battery. Includes specifications, operating parameters, capacity estimation, series/parallel connection guidelines, and troubleshooting tips.</p>
 <p>Li Time 25.6V 100Ah (100A BMS) 製品 マニュアル リン酸鉄リチウムイオン (LiFePO4) バッテリー www.litime.com</p>	<p>Li Time 25.6V 100Ah LiFePO4 Battery Manual Official product manual for the Li Time 25.6V 100Ah LiFePO4 battery with 100A BMS. Includes specifications, dimensions, connection guides, and troubleshooting.</p>