LiTime L12V300-200-Basic-4-A200-IT-TC

LiTime 12V 300Ah Lithium LiFePO4 Battery User Manual

Model: L12V300-200-Basic-4-A200-IT-TC
Brand: LiTime

1. Introduction

The LiTime 12V 300Ah Lithium LiFePO4 Battery is a high-performance, long-lasting power solution designed for various applications including solar homes, off-grid systems, RV campers, and emergency backup power. Featuring Grade A Automotive LiFePO4 cells and a UL-certified 200A Battery Management System (BMS), this battery ensures safety, energy density, and stability. It offers significant advantages over traditional lead-acid batteries in terms of lifespan, weight, and energy efficiency.



Figure 1: LiTime 12V 300Ah LiFePO4 Battery. This image shows the main product, a black rectangular battery with orange and white LiTime branding, indicating its 12V 300Ah LiFePO4 specifications and safety warnings.

2. Safety Information

WARNING: Failure to follow these safety instructions may result in fire, explosion, electric shock, or other injury or damage.

- **DO NOT** short circuit the battery terminals.
- **DO NOT** reverse connections from charger to battery.
- **DO NOT** disassemble the battery.
- **DO NOT** throw into fire or incinerate.
- **DO NOT** heat above 70°C (158°F).
- Ensure proper ventilation when charging or discharging.
- Use only compatible chargers designed for LiFePO4 batteries.
- Keep out of reach of children.
- **DO NOT** use as a starter battery. For starting applications, consider LiTime 12V marine starting batteries.

3. Product Overview

Key Features:

- **Grade A Automotive Cells & UL Certified 200A BMS:** Ensures top-tier safety, energy density, power, and stability with protection against overcharge, over-discharge, over-current, and short circuits.
- **Scalable Capacity & Energy:** Offers 3840Wh energy and supports 2560W load power. Can connect up to 4 batteries in parallel and 4 in series for a massive 40.96kW capacity and 61.44kWh energy (4P4S).
- **Cost-Efficient & Longevity:** Lifespan of up to 10 years and 4000-15000 cycles, providing significant power savings.
- **Lightweight & High Energy Density:** Weighs only 1/3 of a comparable lead-acid battery with an energy density of 61.14Wh/lb.

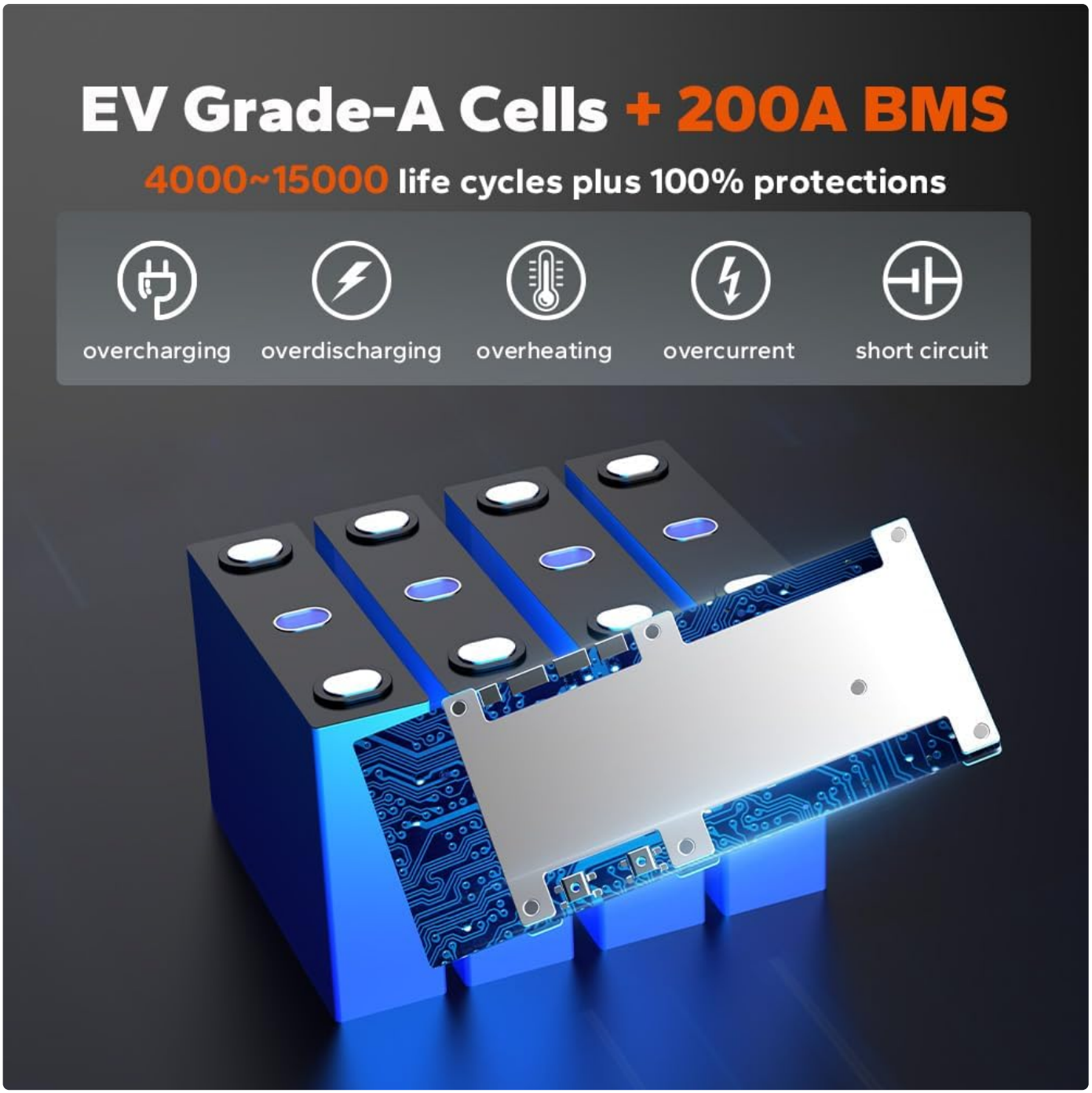


Figure 2: Comparison of LiFePO4 battery with traditional lead-acid batteries, highlighting advantages in energy, cycles, lifespan, and weight.



Figure 3: Illustration of EV Grade-A cells and the 200A BMS, showing protection features like overcharging, overdischarging, overheating, overcurrent, and short circuit protection.

4. Setup and Installation

Proper installation is crucial for optimal performance and safety. Always ensure all connections are secure and follow the recommended wiring diagrams.

4.1. Physical Installation

The LiTime 12V 300Ah battery is designed to be lightweight and compact, making installation easier. Ensure the installation location is dry, well-ventilated, and within the recommended operating temperature range.

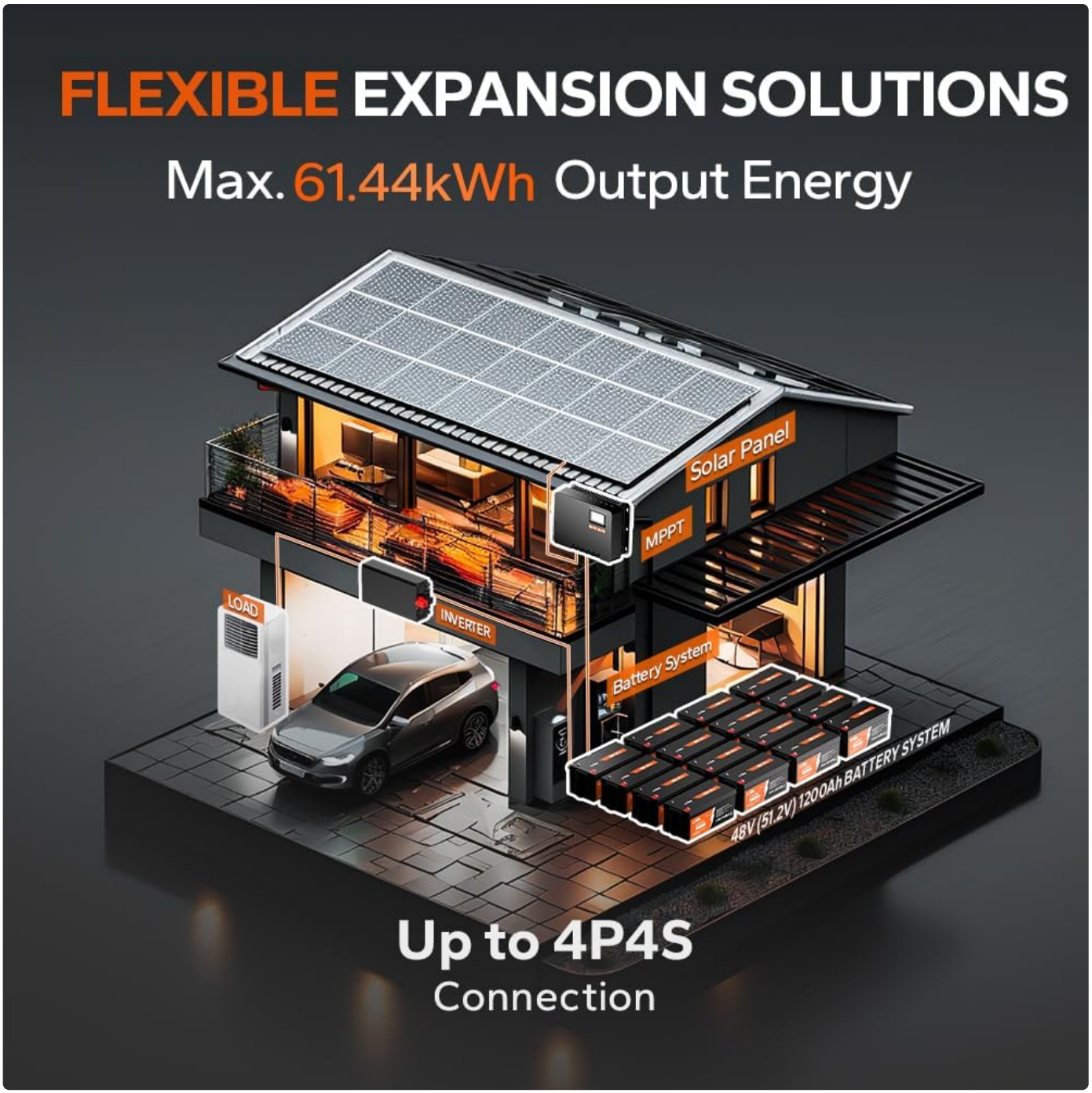


Figure 4: Product dimensions for the LiTime 12V 300Ah battery, showing length, width, and height, along with weight and M8 terminal size.

4.2. Wiring Connections

The battery features M8 terminals for secure connections. For single battery setups, connect the positive and negative terminals to your system. For expanding capacity, multiple batteries can be connected in parallel or series.



Figure 5: Simplified wiring diagram illustrating how LiFePO4 batteries can be connected for lower internal resistance and faster charging, saving space compared to individual charging.

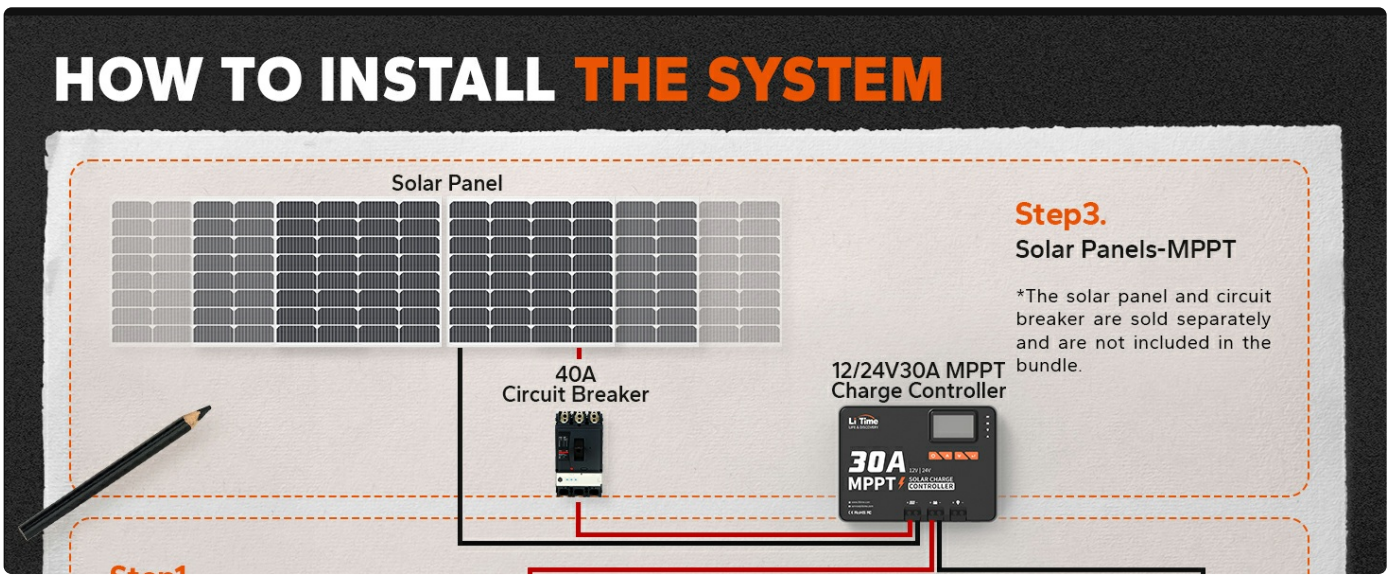


Figure 6: Diagram showing Step 3 of system installation: connecting solar panels to an MPPT charge controller. Note that solar panels and circuit breakers are sold separately.

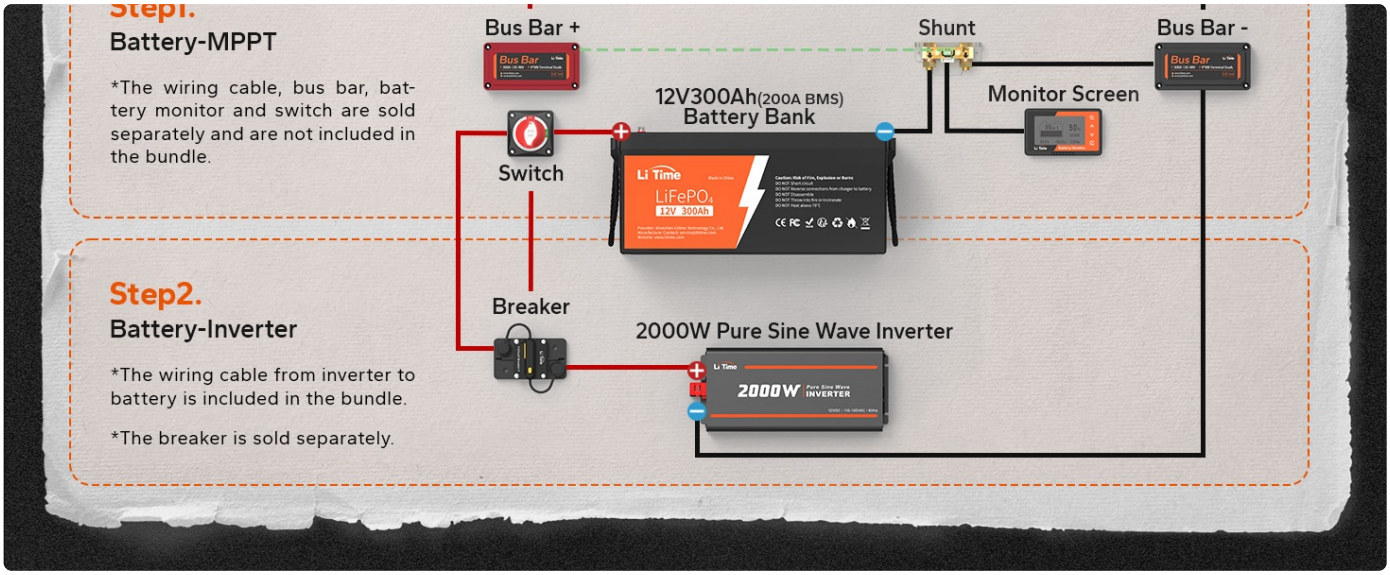


Figure 7: Diagram illustrating Step 1 (Battery to MPPT) and Step 2 (Battery to Inverter) for system installation. It shows connections for the battery bank, switch, breaker, inverter, shunt, and monitor screen. Wiring cables and breakers may be sold separately.

4.3. Parallel and Series Connection

The LiTime 12V 300Ah battery supports connecting up to 4 batteries in parallel and 4 in series (4P4S) to achieve higher voltage and capacity configurations, up to 61.44kWh energy.



Figure 8: Diagram illustrating flexible expansion solutions, showing a solar panel system connected to a battery system with multiple LiTime batteries configured for up to 4P4S connection, providing up to 61.44kWh output energy.

5. Operating Instructions

5.1. Charging

Use a LiFePO4 compatible charger. The built-in BMS protects against overcharging. For optimal performance and longevity, ensure your charging system has a low-temperature cutoff if operating in cold environments, as LiFePO4 batteries should not be charged below 0°C (32°F).

5.2. Discharging

The 200A BMS provides robust protection against over-discharge. The battery is designed for deep cycles (4000+ cycles at 100% Depth of Discharge), making it suitable for continuous power demands.

5.3. Typical Applications

This battery is ideal for powering various devices and systems, providing reliable energy for extended periods.



Figure 9: The LiTime 12V 300Ah battery providing 3840Wh usable energy and 2560W max continuous output power, capable of running a fan for 96 hours, a refrigerator for 76.8 hours, a kettle for 5.5 hours, and a cloth dryer for 3.8 hours.



Figure 10: Various applications for the LiTime battery, including RVs, marine vessels, off-grid homes, solar systems, and heavy-duty trucks, emphasizing its 10+ years service life.

6. Maintenance

The LiTime LiFePO4 battery is designed for minimal maintenance. It is a "Free Maintenance" battery.

- Regularly inspect terminals for corrosion and ensure connections are tight.
- Keep the battery clean and free from dust and debris.
- Store in a cool, dry place if not in use for extended periods.

7. Troubleshooting

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
Battery not charging	Charger not connected, faulty charger, BMS protection activated (over-discharge, low temperature)	Check all connections. Verify charger functionality. Ensure ambient temperature is above 0°C (32°F). Allow battery to warm up if cold.
No power output	BMS protection activated (over-discharge, over-current, short circuit), loose connections	Check for short circuits or excessive load. Disconnect load and reconnect. Verify all wiring connections are secure.
Reduced capacity/runtime	Incomplete charging, high discharge rate, extreme temperatures	Ensure battery is fully charged. Reduce load if possible. Operate within recommended temperature range.

8. Specifications

Specification	Value
Brand	LiTime
Size	12V 300Ah
Product Dimensions	20.55"W x 9.45"D x 8.58"H
Number Of Cells	4
Resistance	40 Milliohms
Terminal Type	M8
Manufacturer	Ampere Time
UPC	791571239486
Item Weight	60.8 pounds
Country of Origin	China
Item Model Number	L12V300-200-Basic-4-A200-IT-TC
Batteries Required	1 12V battery (included)
Safety Rating	UL, CE, FCC

9. Warranty and Support

The LiTime 12V 300Ah LiFePO4 battery comes with a lifespan of up to 10 years and 4000-15000 cycles. LiTime offers a 5-year service/protection plan.

- **Contact Support:** For technical assistance or warranty claims, please contact LiTime customer service at service@litime.com.
- **Website:** Visit the official LiTime website for more information and resources:www.litime.com.



Figure 11: Icon representing LiTime's 5-Year Service/Protection.

10. Official Product Videos

LiTime Brand Upgrading

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Video 1: This video showcases the LiTime brand's evolution and commitment to sustainable energy solutions. It highlights the brand's focus on innovation and future energy exploration.

LiTime LifePO4 Battery - Life & Discovery

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Video 2: This video demonstrates the practical applications of LiTime LiFePO4 batteries in various settings, including RV camping and off-grid living, emphasizing convenience and reliability.

Li Time Automotive Grade LiFePO4 Lithium Battery

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Video 3: This video highlights the automotive-grade quality of LiTime LiFePO4 batteries, showcasing their lightweight design, ease of installation, and ability to power various onboard systems in vehicles.

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Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question