DATOUBOSS 12V 100Ah LiFePO4 Lithium Battery

DATOUBOSS 12V 100Ah LiFePO4 Lithium Battery Instruction Manual

1. Product Overview

The DATOUBOSS 12V 100Ah LiFePO4 Lithium Battery is a high-performance, deep-cycle battery designed for a wide range of applications including RVs, solar energy systems, trolling motors, and camping setups. Featuring a built-in 100A Battery Management System (BMS), this battery offers advanced protection against common issues such as over-voltage, over-discharge, over-current, and high temperatures, ensuring safe and reliable operation. Its lightweight and compact design make it an ideal replacement for traditional lead-acid batteries, providing superior energy density and a longer lifespan.

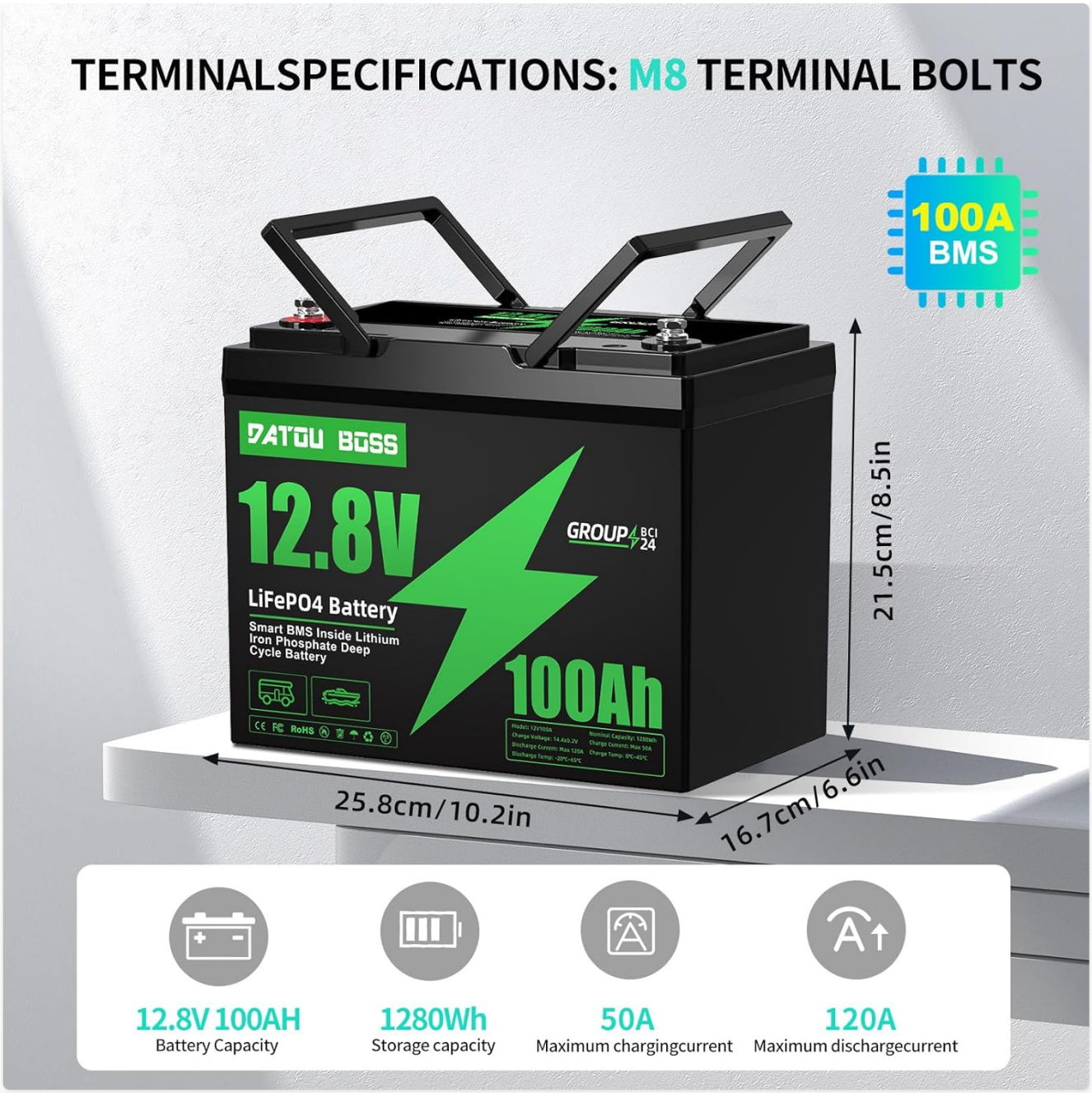

Figure 1: DATOUBOSS 12V 100Ah LiFePO4 Battery with key dimensions and specifications.

2. What's in the Box

Upon unboxing your DATOUBOSS 12V 100Ah LiFePO4 Lithium Battery, please ensure all components are present and undamaged.

- 1x DATOUBOSS 12V 100Ah LiFePO4 Battery
- Terminal Bolts (M8) and Washers
- Terminal Caps (Red and Black)
- User Manual

Video 1: Unboxing and initial inspection of the DATOUBOSS 12V 100Ah LiFePO4 Battery.

3. Specifications

Characteristic	Value
Rated Voltage	12.8V
Rated Capacity	100Ah
Energy	1280Wh
Built-in BMS	100A
Cycle Life	15000+ (Deep Cycle)
Weight	10.92kg (24.07 lbs)
Dimensions (L x W x H)	25.8cm x 16.7cm x 21.5cm (10.2in x 6.6in x 8.5in)
Terminal Size	M8
Max. Charge Current	50A
Max. Discharge Current	120A
Operating Temperature (Charge)	0°C to 45°C (32°F to 113°F)
Operating Temperature (Discharge)	-20°C to 60°C (-4°F to 140°F)
Waterproof Rating	IP65

4. Key Features

- **Built-in BMS Protection:** Equipped with a 100A BMS, the battery is protected against high temperature, over-voltage, overload, overcharge, over-discharge, overcurrent, and short circuit, ensuring safe operation.
- **Easy Battery Pack Expansion:** This battery supports series and parallel connections, allowing expansion up to 4P4S for a 48V (51.2V) 400Ah Li-Ion battery pack, delivering up to 20.48kWh energy.
- **Higher Performance & Safety:** Constructed with automotive-grade, UL-certified LiFePO4 cells and an IP65 waterproof rating, it offers stable performance, high energy density, and superior reliability.
- **1/3 Lighter & 1/2 Smaller Size:** Weighing only 10.92kg, it is significantly lighter and more compact than comparable lead-acid batteries, simplifying installation and portability.
- **Wide Application:** Suitable for various uses including backup power, home energy storage, lighting, trolling motors, fish finders, lawnmowers, golf carts, boats, solar power systems, UPS backup, RVs, and caravans.

Figure 2: Visual representation of the built-in BMS protection features.

5. Setup & Installation

5.1 Terminal Connection

Before connecting, ensure the battery is placed on a stable, non-conductive surface. Remove the protective caps from the positive (red) and negative (black) terminals. Securely attach your battery cables using the provided M8 terminal bolts and washers. Ensure connections are tight to prevent arcing and overheating.

Video 2: Demonstrates the unboxing and terminal connection process.

5.2 Series and Parallel Connections

The DATOUBOSS LiFePO4 battery can be connected in series (for higher voltage) or parallel (for higher capacity). For optimal performance and to reduce voltage differences between batteries, fully charge each battery separately before connecting them. After individual charging, connect them one by one in parallel and allow them to sit for 12-24 hours to balance. Then, you can connect your batteries in series or parallel as needed, up to 4P4S configuration.

Figure 3: Example configurations for series and parallel battery connections.

6. Charging

Use a dedicated LiFePO4 compatible charger. The recommended charging voltage is 14.4V ± 0.2V, and the maximum charge current is 50A. Avoid using chargers designed for lead-acid batteries unless they have a specific LiFePO4 mode, as this can damage the battery.

Video 3: Demonstrates battery charging and voltage testing.

7. Operating Guidelines

The DATOUBOSS LiFePO4 battery is designed for deep cycle applications, providing consistent power output. The built-in BMS actively monitors and protects the battery during use. Ensure your load does not exceed the maximum continuous discharge current of 100A or the peak discharge current of 120A.

- **Operating Temperature:** Discharge between -20°C to 60°C (-4°F to 140°F).

- **Voltage Stability:** The battery maintains voltage above 12.5V even at 90% discharged state, providing stable power.

Video 4: Example of battery discharge operation powering various devices.

8. Maintenance

LiFePO4 batteries are largely maintenance-free. However, following these guidelines will ensure optimal performance and longevity:

- **Regular Inspection:** Periodically check battery terminals for corrosion or loose connections. Clean as necessary.
- **Storage:** If storing the battery for extended periods, recharge it every 6 months to maintain cell health.
- **Cell Balancing:** The BMS includes a balancing function. To ensure optimal cell balance, fully charge the battery to 100% periodically.

9. Troubleshooting

9.1 BMS Cut-off for Protection

If the BMS cuts off the battery for protection (e.g., due to over-discharge, over-current, or high temperature), disconnect the load from the battery and let the battery rest for 30 minutes. The battery will automatically recover itself to normal voltage and can be used after being fully charged.

9.2 Battery Unable to Hold a Charge (Low Voltage)

If the battery's voltage is too low to hold a charge (e.g., 0V), you can activate it in two ways:

1. Use a charger with a 0V charging function. This can charge the battery starting from 0V, allowing it to be used normally after a full charge.
2. Connect an 18V-36V solar panel to charge the battery for 3-10 sunny days.

10. Safety Information

Please read and follow all safety instructions to prevent injury or damage:

- Do not immerse the battery in water or allow it to get wet.
- Do not use or store the battery near sources of heat such as a fire or heater.
- Use only chargers recommended by the manufacturer.
- Do not reverse the positive (+) and negative (-) terminals.
- Do not short-circuit the battery by connecting wires or other metal objects to the positive (+) and negative (-) terminals.
- Do not attempt to disassemble or modify the battery.
- Do not use the battery if it gives off an odor, generates heat, becomes discolored or deformed, or appears abnormal in any way.

11. Warranty Policy

DATOUBOSS provides a 2-year warranty for all batteries. This warranty covers manufacturing defects and ensures the battery performs according to the manual. If you encounter any problems, please contact customer support with your purchase details.

12. Customer Support

For technical assistance, troubleshooting, or warranty claims, please contact DATOUBOSS customer service. Refer to your purchase documentation for specific contact information or visit the official DATOUBOSS website.