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› DATOUBOSS 12V 100Ah LiFePO4 Battery Instruction Manual

DATOUBOSS 12V 100Ah LiFePO4 Battery

DATOUBOSS 12V 100Ah LiFePO4 Battery User Manual

Model: 12V 100Ah LiFePO4 Battery

1. INTRODUCTION AND OVERVIEW

The DATOUBOSS 12V 100Ah LiFePO4 Battery is a high-performance, lightweight, and durable energy storage solution. Utilizing advanced Lithium Iron Phosphate (LiFePO4) cell technology, it offers superior cycle life, energy density, and safety compared to traditional lead-acid batteries. This manual provides essential information for the safe and efficient installation, operation, and maintenance of your battery.

INTELLIGENT BMS AND CLASS A BATTERY CELLS

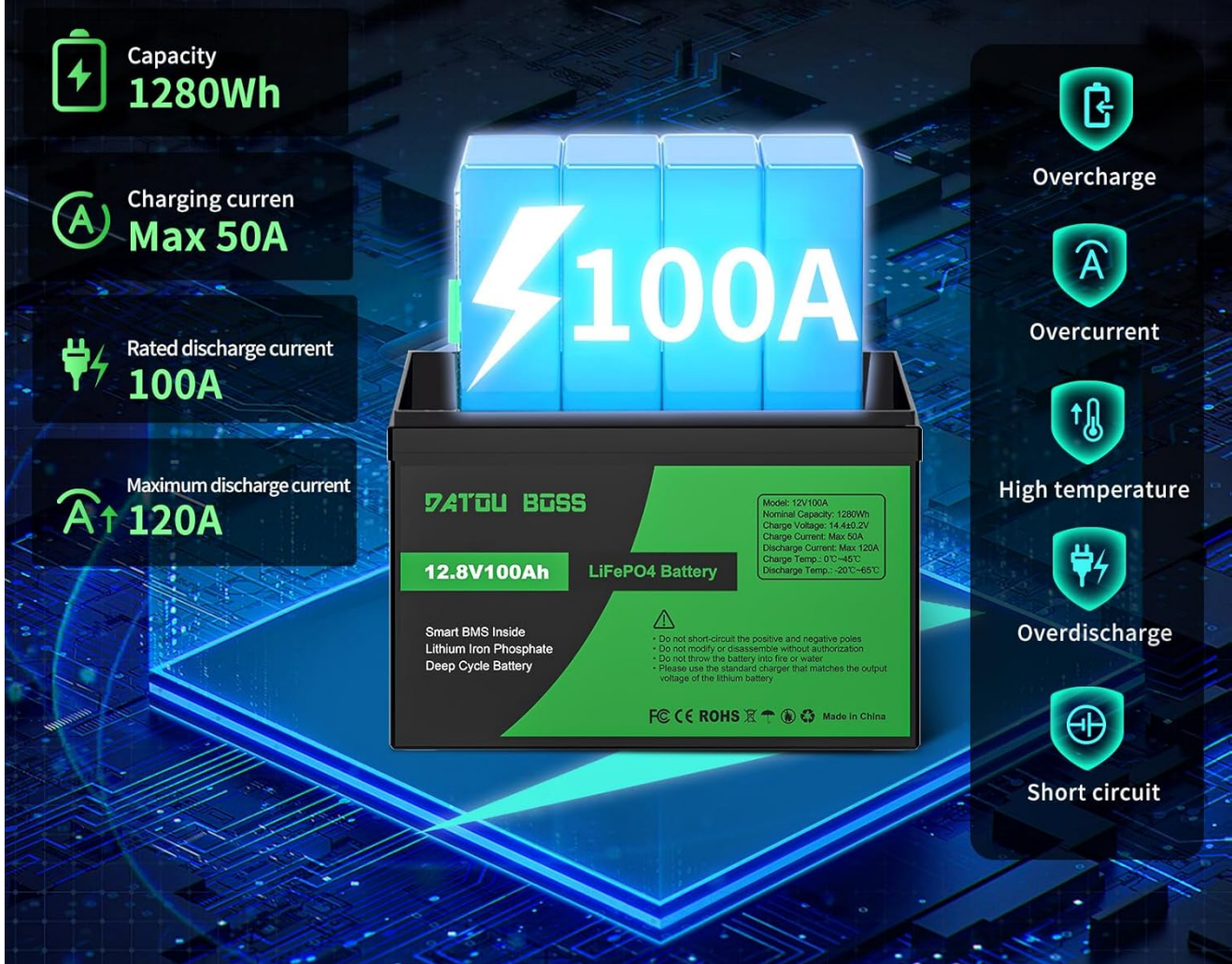


Image 1.1: The DATOUBOSS 12V 100Ah LiFePO4 Battery highlighting its intelligent BMS and Class A battery cells, along with protection features like overcharge, overcurrent, high temperature, overdischarge, and short circuit protection.

Key Features:

- **Lightweight & Portable:** Weighs only 11kg, approximately 1/3 the weight of comparable lead-acid batteries, facilitating easy transport and installation.
- **High Energy Density:** 1280Wh energy capacity, providing reliable power.
- **Long Lifespan:** Offers 8,000 to 15,000 deep cycles, ensuring over 10 years of service life.
- **Integrated BMS:** Equipped with a 100A Battery Management System for comprehensive protection and cell balancing.
- **Environmental Friendly:** Free from heavy metals and non-toxic, complying with European RoHS regulations.
- **Versatile Application:** Ideal for RVs, caravans, boats, electric scooters, golf carts, trolling motors, backup power, and off-grid solar systems.

2. SAFETY INFORMATION

Read all safety instructions carefully before installation and operation. Failure to follow these instructions may result in

electric shock, fire, or serious injury.

- Always wear appropriate personal protective equipment (PPE), including insulated gloves and eye protection, when handling batteries.
- Do not short-circuit the battery terminals. This can cause severe damage to the battery and pose a fire hazard.
- Use only chargers specifically designed for LiFePO₄ batteries with compatible voltage and current ratings.
- Do not disassemble, puncture, or modify the battery. Internal components are not user-serviceable.
- Ensure proper ventilation around the battery to prevent heat buildup.
- Keep the battery away from open flames, heat sources, and flammable materials.
- Avoid installing the battery in direct sunlight or in areas with extreme temperatures.
- In case of fire, use a Class D fire extinguisher. Water or foam may be ineffective.
- If the battery is damaged or leaking, do not touch it. Contact customer support immediately.



Image 2.1: Safety icon indicating potential fire hazard, emphasizing the importance of following safety guidelines.

3. SETUP AND INSTALLATION

Proper setup is crucial for the performance and longevity of your DATOUBOSS LiFePO₄ battery.

3.1 Unpacking and Inspection

- Carefully remove the battery from its packaging.
- Inspect the battery for any visible damage, such as cracks, dents, or loose terminals. Do not use a damaged battery.
- Verify that all accessories (if any) are included.

3.2 Series and Parallel Connection

The DATOUBOSS 12V 100Ah LiFePO₄ battery supports expansion up to 4 units in series and 4 units in parallel (4S4P) for increased voltage and capacity. When connecting multiple batteries:

- Ensure all batteries have the same voltage, capacity, and are from the same brand and model.
- Before connecting, fully charge each battery individually to ensure balanced voltage.
- Use appropriate gauge cables and connectors for the expected current.
- **Series Connection:** Connect the positive terminal of one battery to the negative terminal of the next. This increases the total voltage while maintaining the same capacity. Maximum 4 batteries in series (e.g., 4 x 12.8V = 51.2V).
- **Parallel Connection:** Connect positive terminals together and negative terminals together. This increases the total capacity while maintaining the same voltage. Maximum 4 batteries in parallel (e.g., 4 x 100Ah = 400Ah).
- **Series-Parallel Connection:** Combine both methods to achieve desired voltage and capacity (e.g., 4S4P for 51.2V 400Ah).
- Tighten all terminal connections securely to prevent resistance and overheating.

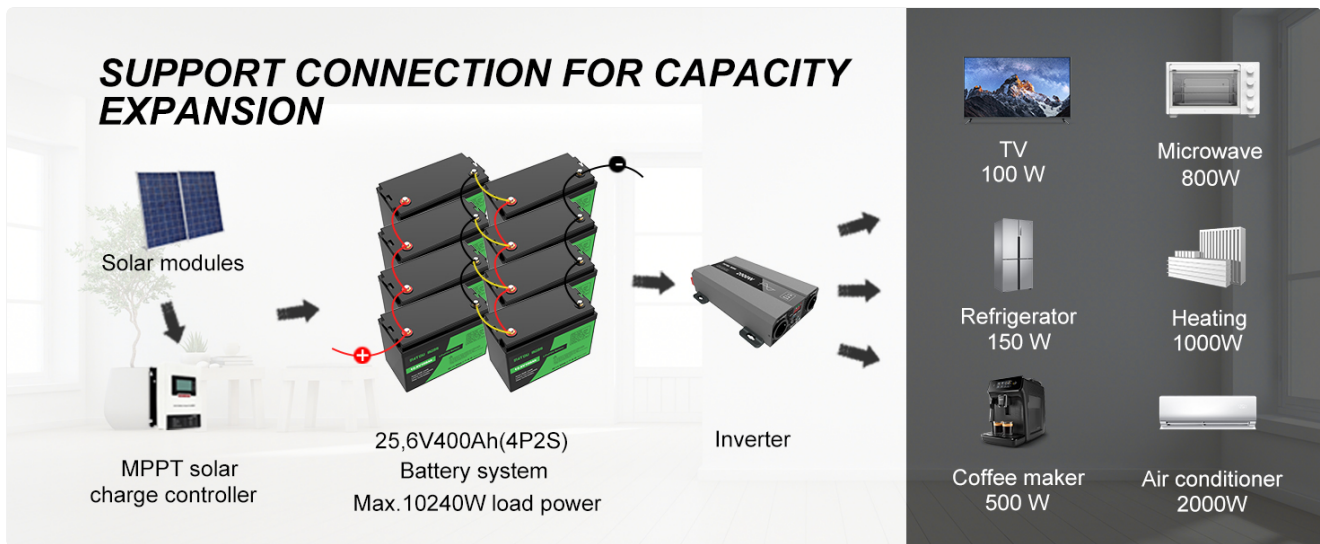


Image 3.1: Illustration of a typical power supply system showing solar modules connected to an MPPT solar charge controller, which charges a 25.6V 400Ah (4P2S) battery system. The battery system then powers an inverter to supply various household appliances.

3.3 Mounting

The battery can be installed in any orientation as it contains no liquid. Ensure the mounting location is:

- Clean, dry, and well-ventilated.
- Protected from direct sunlight, rain, and extreme temperatures.
- Strong enough to support the battery's weight.

4. OPERATING INSTRUCTIONS

Follow these guidelines for optimal operation of your LiFePO4 battery.

4.1 Charging

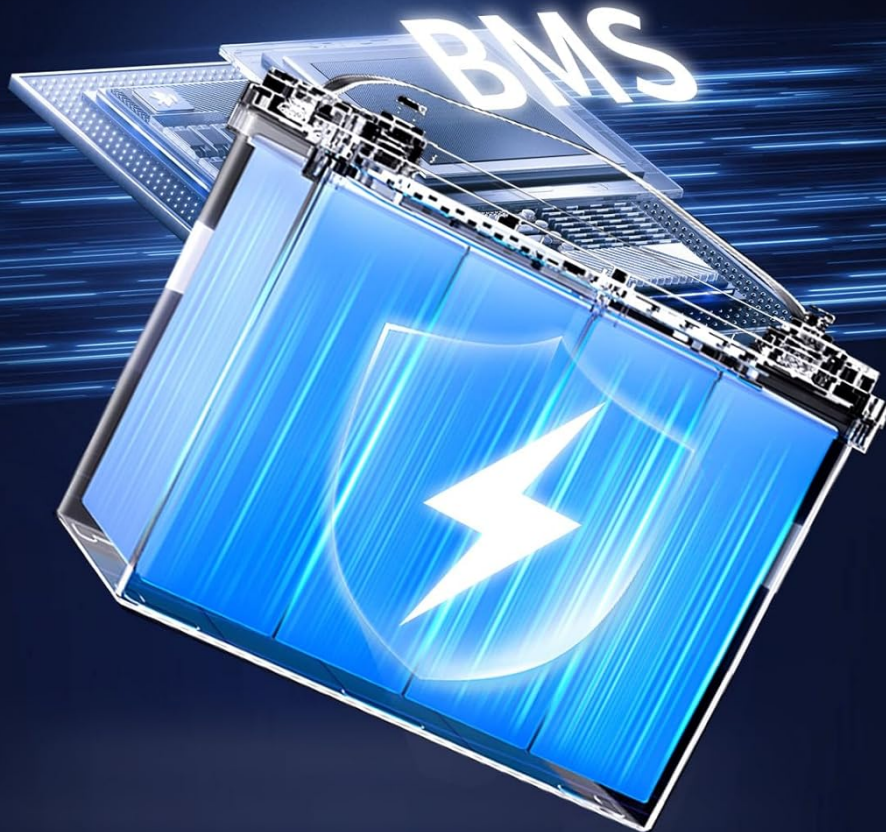
- Use a dedicated LiFePO4 battery charger. Do not use chargers designed for lead-acid batteries unless they have a specific LiFePO4 mode.
- Recommended charging voltage: 14.4V - 14.6V.
- Maximum charging current: 50A. Exceeding this can damage the battery.
- Operating temperature for charging: 0°C to 45°C (32°F to 113°F). The BMS will protect the battery if temperatures are outside this range.

4.2 Discharging

- Rated continuous discharge current: 100A.
- Maximum discharge current: 120A.
- Operating temperature for discharging: -20°C to 60°C (-4°F to 140°F).
- The BMS will automatically cut off power if the battery is over-discharged to protect its lifespan.

MORE PROFESSIONAL & SAFER BMS

The BMS will shut down all units and automatically turn them back on once the problem is corrected



Battery stability



10 years lifetime



Higher energy density
and lower weight



1280w charging power

Image 4.1: An internal diagram illustrating the Battery Management System (BMS) within the DATOUBOSS LiFePO4 battery, emphasizing its role in ensuring stability, long lifespan, higher energy density, and efficient charging.

5. MAINTENANCE

DATOUBOSS LiFePO4 batteries are largely maintenance-free, but following these simple steps can ensure maximum performance and longevity.

- **Regular Inspection:** Periodically check battery terminals for corrosion or looseness. Clean terminals with a wire brush if necessary and ensure they are securely tightened.
- **Cleaning:** Keep the battery surface clean and dry. Use a damp cloth to wipe off dust or dirt. Do not use solvents or abrasive cleaners.
- **Storage:** For long-term storage (more than 3 months), charge the battery to 50-70% of its capacity. Store in a cool, dry place with temperatures between -10°C and 50°C (14°F to 122°F). Recharge the battery every 3-6 months to prevent self-discharge.
- **Avoid Deep Discharges:** While the battery supports 100% Depth of Discharge (DoD), frequent deep discharges can slightly reduce overall cycle life.

6. TROUBLESHOOTING

If you encounter issues with your DATOUBOSS LiFePO4 battery, refer to the following common problems and solutions.

- **Battery Not Charging:**

- Check all cable connections between the charger and the battery. Ensure they are secure.
- Verify that the charger is specifically designed for LiFePO4 batteries and is functioning correctly.
- Confirm that the charging voltage and current settings on the charger are appropriate for a 12V 100Ah LiFePO4 battery.
- If the battery temperature is outside the charging range (0°C to 45°C), the BMS may prevent charging. Allow the battery to return to a safe temperature.
- If multiple batteries are in series/parallel, ensure all are balanced. The BMS has an auto-balancing function, but severe imbalance might require individual charging.

- **Battery Not Discharging / No Power Output:**

- Check all load connections and ensure they are secure.
- Verify that the load is not exceeding the battery's maximum discharge current (120A). The BMS will cut off power if overloaded.
- Check the battery's State of Charge (SoC). If the battery is fully discharged, the BMS will enter protection mode. Recharge the battery.
- Ensure the battery temperature is within the discharge range (-20°C to 60°C).

- **Reduced Capacity or Runtime:**

- Ensure the battery is being fully charged to its recommended voltage.
- Verify that the load is not drawing more power than expected.
- Check for any parasitic drains on your system when the battery is not in use.
- While LiFePO4 batteries have a long lifespan, capacity can gradually decrease after many thousands of cycles.

If these steps do not resolve the issue, please contact DATOUBOSS customer support for further assistance.

7. SPECIFICATIONS

Detailed technical specifications for the DATOUBOSS 12V 100Ah LiFePO4 Battery.

Specification	Value
Brand	DATOUBOSS
Model Number	12V 100Ah LiFePO4 Battery
Battery Composition	Lithium Iron Phosphate (LiFePO4)
Nominal Voltage	12.8V
Nominal Capacity	100Ah
Energy	1280Wh
Integrated BMS	100A
Max Continuous Charge Current	50A

Max Continuous Discharge Current	100A
Peak Discharge Current	120A
Cycle Life	8,000 - 15,000 cycles (at 100% DoD)
Lifespan	Over 10 years
Weight	11 kg
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)
Storage Temperature	-10°C to 50°C (14°F to 122°F)
Series/Parallel Connection	Up to 4S4P (Max 51.2V 400Ah)

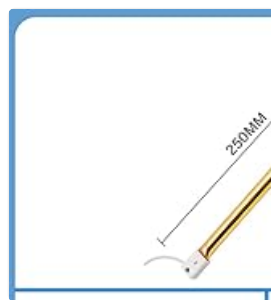


Image 7.1: Technical diagram illustrating key dimensions and specifications of the battery.

8. WARRANTY AND SUPPORT

DATOUBOSS is committed to providing high-quality products and excellent customer service.

8.1 Warranty Information

Your DATOUBOSS 12V 100Ah LiFePO4 Battery comes with a **5-year warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use. It does not cover damage caused by misuse, neglect, improper installation, unauthorized modifications, or natural disasters.

8.2 Customer Support

For technical assistance, warranty claims, or any questions regarding your DATOUBOSS battery, please contact our customer support team. We offer professional technical support and aim to respond within 24 hours.

- **Email:** [Insert Customer Support Email Here]
- **Phone:** [Insert Customer Support Phone Number Here]
- **Website:** [Insert Official Website Here]



Image 8.1: Icons representing DATOUBOSS's commitment to product quality and customer service, including a 10-year lifespan, 5-year guarantee, 24-hour response, and local warehouses.