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Elefast 12V100AH Group24

Elefast 12V 100AH LiFePO4 Battery Instruction Manual

Model: 12V100AH Group24

1. Introduction

This manual provides essential information for the safe and efficient use of your Elefast 12V 100AH LiFePO4 Battery. Please read these instructions carefully before installation and operation to ensure optimal performance and longevity of your battery.

2. Safety Instructions

Always prioritize safety when handling batteries. Failure to follow these instructions can result in serious injury or damage to the battery and connected equipment.

- **Personal Protective Equipment:** Always wear appropriate personal protective equipment, including safety glasses and insulated gloves, when working with batteries.
- **Ventilation:** Ensure adequate ventilation in the area where the battery is installed and operated.
- **Short Circuits:** Avoid short-circuiting the battery terminals. This can cause severe damage to the battery and pose a fire hazard. Use insulated tools.
- **Charging:** Use only chargers specifically designed for LiFePO4 batteries with the correct voltage and current settings. Overcharging or undercharging can damage the battery.
- **Temperature:** Operate and store the battery within the recommended temperature ranges. Avoid extreme heat or cold.
- **Water Exposure:** While the battery has an IP65 rating, avoid submerging it in water. Ensure terminals are dry before making connections.
- **Disposal:** Dispose of batteries according to local regulations. Do not incinerate.

3. What's in the Box

Upon unpacking, verify that all components are present:

- 12V100AH Bluetooth Battery
- M8 Terminal Bolts
- Instruction Manual (this document)

4. Product Overview and Features

The Elefast 12V 100AH LiFePO4 battery is designed for deep cycle applications, offering high performance and durability. It features a robust Battery Management System (BMS) and Bluetooth connectivity for enhanced monitoring.



Figure 1: Elefast 12V 100AH LiFePO4 Battery with Bluetooth App Interface

Key Features:

- **Advanced LiFePO4 Chemistry:** Utilizes A+ grade cells for superior performance and safety.
- **Integrated 100A BMS:** Provides comprehensive protection against overcharge, over-discharge, overcurrent, short circuit, and high temperature.
- **Low Temperature Cut-off Protection:** Automatically stops charging when the battery temperature drops below 32°F (0°C) and resumes when safe, ensuring optimal battery health in cold environments.
- **Bluetooth APP Monitoring:** Allows real-time monitoring of battery voltage, current, capacity (SOC), and individual cell voltages via a smartphone application within a 10-meter range.
- **Extended Cycle Life:** Supports over 4000 deep cycles at 100% Depth of Discharge (DOD), and up to 15000 cycles

at 60% DOD.

- **Long Lifespan:** Designed for a service life of up to 10 years.
- **Expandable:** Supports up to 4 batteries in series and 4 batteries in parallel for increased voltage or capacity.
- **Durable Construction:** Features a matte finish, compact layout, IP65 waterproof rating, and heat resistance.

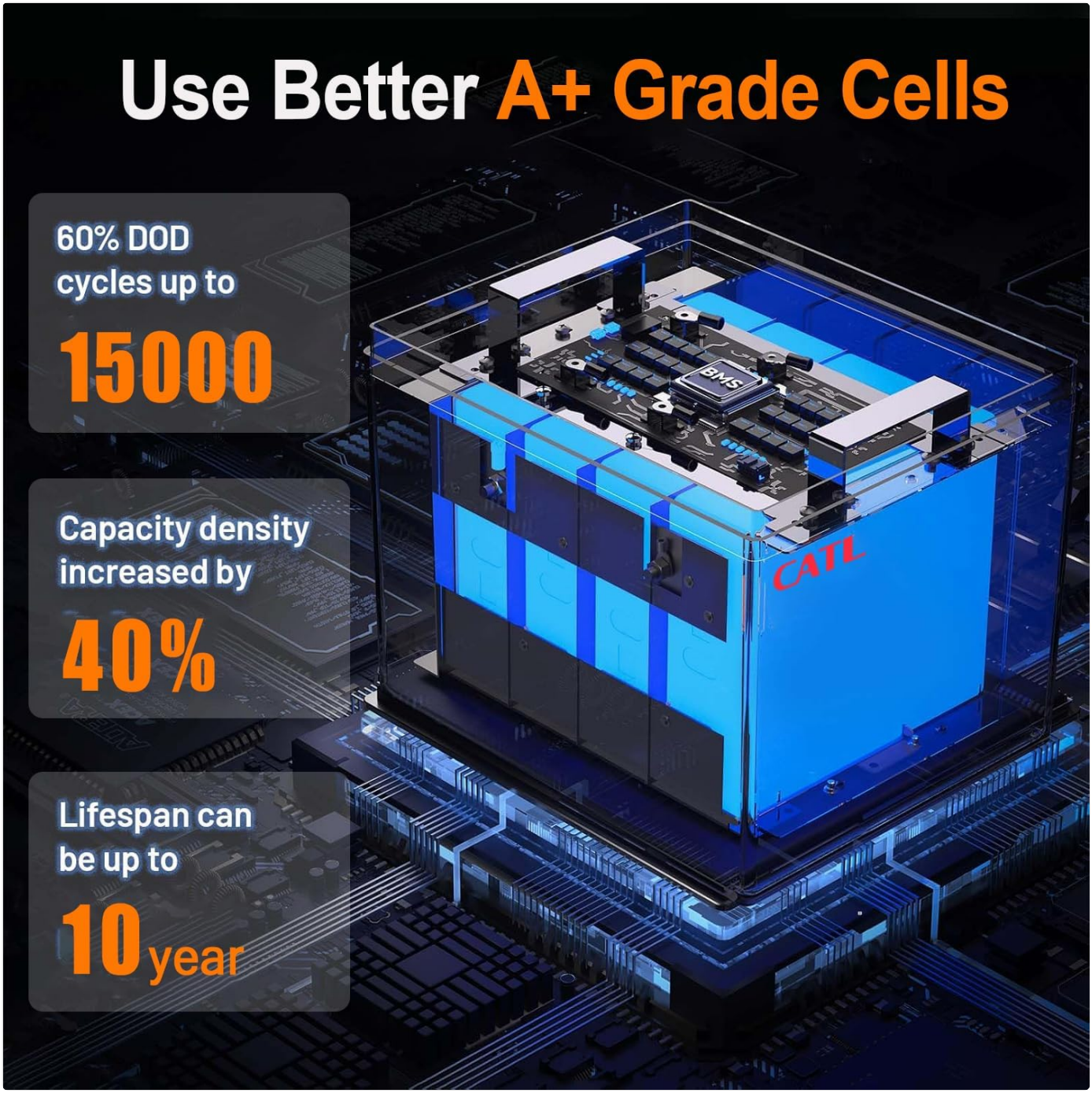


Figure 2: Internal A+ Grade Cells and Performance Metrics



Figure 3: Built-in BMS Protection Features

5. Specifications

Detailed technical specifications for the Elefast 12V 100AH LiFePO4 Battery:

Specification	Value
Brand	Elefast
Model	12V100AH Group24
Product Dimensions (D x W x H)	6.6" x 10.23" x 8.2"
Terminal Type	M8
Item Weight	23 pounds

Specification	Value
Amperage	100 Amps
Battery Type	Lithium Iron Phosphate (LiFePO4)
Max Charge Current	50A
Max Continuous Discharge Current	100A
Peak Discharge Current	200A
Charge / Discharge Capacity Efficiency	100%
Cycle Life (100% DOD)	4000+ cycles
Cycle Life (60% DOD)	15000+ cycles
Operating Temperature (Charging)	32°F to 113°F (0°C to 45°C)
Operating Temperature (Discharging)	-4°F to 140°F (-20°C to 60°C)
Waterproof Rating	IP65



Figure 4: Battery Dimensions and Terminal Type



Figure 5: Elefast Battery Comparison Chart

6. Setup

6.1 Initial Inspection

Before installation, visually inspect the battery for any signs of damage, such as cracks, bulges, or leaking. Ensure the terminals are clean and free of corrosion.

6.2 Terminal Connections

The battery is equipped with M8 terminals. Use appropriate M8 bolts and washers to secure connections. Ensure all connections are tight to prevent resistance and overheating.

- Connect the positive (+) terminal of the battery to the positive (+) terminal of your load or charging system.
- Connect the negative (-) terminal of the battery to the negative (-) terminal of your load or charging system.
- Always connect the load or charger after the battery is securely installed.

6.3 Series and Parallel Connections

The Elefast 12V 100AH battery supports expansion for higher voltage or capacity requirements:

- **Series Connection:** Up to 4 batteries can be connected in series to increase the voltage (e.g., two 12V batteries in series create a 24V system).
- **Parallel Connection:** Up to 4 batteries can be connected in parallel to increase the capacity (e.g., two 100AH batteries in parallel create a 200AH system).
- When connecting in series or parallel, ensure all batteries are of the same model, capacity, and state of charge before connecting. Consult a qualified technician if unsure.

7. Operating

7.1 Charging the Battery

The Elefast LiFePO4 battery can be charged using several methods. It is recommended to use only one charging method at a time.



Figure 6: Three Ways to Charge Your Elefast Battery

- **LiFePO4 Battery Charger:** Use a dedicated LiFePO4 charger (14.6V 20A recommended). Ensure the charger's voltage and current settings are compatible with LiFePO4 batteries.
- **Solar Panel with Controller:** Connect a solar panel through a compatible solar charge controller designed for LiFePO4 batteries.
- **Alternator (Generator):** The battery can be charged via an alternator, typically found in vehicles or generators, provided a suitable LiFePO4 charging system is in place.

7.2 Bluetooth APP Monitoring

The integrated Bluetooth function allows you to monitor your battery's status via a smartphone application.

1. Download the Elefast battery monitoring app from your device's app store.
2. Ensure Bluetooth is enabled on your smartphone.
3. Open the app and search for available Elefast batteries.
4. Connect to your battery. You can then view real-time data such as voltage, current, State of Charge (SOC), and

individual cell voltages.

7.3 Low Temperature Protection

The battery's BMS includes a low-temperature cut-off feature. If the battery temperature drops below 32°F (0°C), the BMS will automatically stop the charging process to prevent damage. Charging will resume once the temperature rises above this threshold. This ensures the battery operates safely and maintains its lifespan in cold conditions.



Figure 7: Typical Applications and Power Output

8. Maintenance

The Elefast 12V 100AH LiFePO4 battery is designed to be largely maintenance-free due to its advanced chemistry and integrated BMS.

- **Periodic Inspection:** Periodically check the battery terminals for cleanliness and tightness. Ensure there are no loose connections or signs of corrosion.
- **Cleaning:** If necessary, clean the battery casing with a dry or slightly damp cloth. Do not use harsh chemicals or

solvents.

- **Storage:** If storing the battery for an extended period, ensure it is charged to approximately 50% State of Charge (SOC) and stored in a cool, dry place away from direct sunlight and extreme temperatures.



Figure 8: Battery Durability Features

9. Troubleshooting

This section addresses common issues you might encounter with your Elefast LiFePO4 battery.

Problem	Possible Cause	Solution
Battery not charging	Charger not connected, charger fault, low temperature protection active, BMS in protection mode.	Check charger connections and functionality. Ensure ambient temperature is above 32°F (0°C). Disconnect and reconnect the battery to reset BMS if necessary.

Problem	Possible Cause	Solution
No power output from battery	Load not connected, BMS in protection mode (over-discharge, overcurrent, short circuit), battery fully discharged.	Check load connections. Reduce load if overcurrent protection is active. Recharge the battery if fully discharged. Disconnect and reconnect to reset BMS.
Bluetooth app not connecting	Bluetooth off on phone, battery out of range, app issue.	Ensure phone Bluetooth is on and within 10m of the battery. Restart the app or phone.
Battery overheating	Excessive load, poor ventilation, high ambient temperature.	Reduce load. Ensure adequate ventilation around the battery. Move battery to a cooler environment if possible. BMS will activate high-temperature protection.

10. Warranty and Support

Elefast is committed to customer satisfaction and product reliability.

- **Warranty:** Your Elefast 12V 100AH LiFePO4 battery comes with a generous 5-year warranty, providing peace of mind regarding manufacturing defects and performance issues.
- **Technical Support:** We offer personalized, one-on-one technical support within 24 hours to address any questions or concerns you may have about our products. Please refer to the contact information provided with your purchase for support.

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