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EF ECOFLOW EF-PK-B12-1

EF ECOFLOW 12V 100Ah LiFePO4 Battery Instruction Manual

Model: EF-PK-B12-1 | Brand: EF ECOFLOW



Image: EF ECOFLOW 12V 100Ah LiFePO4 Battery, front view.

1. INTRODUCTION

Thank you for choosing the EF ECOFLOW 12V 100Ah LiFePO4 Battery. This manual provides essential information for the safe and efficient use of your battery. Please read all instructions carefully before installation and operation. This battery is designed for deep cycle energy storage applications in RVs, solar systems, off-grid setups, and trolling motors, offering a long lifespan and reliable performance.

2. SAFETY INSTRUCTIONS

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

- **Dedicated Energy Storage:** This product is a dedicated energy storage battery. Do not use it as a starting battery for vehicles or as a power battery for electric vehicles.
 - **Avoid Damage:** Do not short circuit, disassemble, crush, heat, or incinerate the battery. Do not immerse it in any liquid.
 - **Terminal Connections:** Ensure all screws are properly tightened when connecting battery terminals to prevent loose connections and potential hazards.
 - **Temperature Limits:** Do not use the battery outdoors in high temperatures (over 40°C / 104°F), humid conditions, heavy rain, or other extreme environments.
 - **Long-Term Storage:** If the battery is not used for more than 3 months, ensure it is charged or discharged to approximately 50% capacity to avoid long-term dormancy.
 - **Disassembly:** Do not disassemble or deform the battery cells. Unauthorized modifications can be dangerous and void the warranty.
 - **Battery Compatibility:** Do not mix this LiFePO4 battery with different types of batteries (e.g., lead-acid, other lithium chemistries).
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3. PRODUCT FEATURES

- **Reliable 100A BMS with X-Guard:** Features a 100A Battery Management System (BMS) with X-Guard technology, providing protection against low temperatures, overdischarge, overcharge, high temperatures, short circuits, and overcurrent without performance degradation.
- **Enhanced Durability:** Incorporates industry-first Cell-to-Chassis (CTC) technology for higher strength, external security, and improved drop resistance.
- **Robust Casing:** IP65 rated and UL5VA flame-retardant casing ensures resistance to impact, compression, water, salt spray, and dust.
- **Versatile System Expansion:** Supports three expansion methods, allowing up to 8 batteries in parallel, 4 in series, or a combination of both, for a maximum of 48V and 20kWh.
- **Extended Lifespan:** Utilizes ultra-durable EV-grade LFP battery cells, achieving over 6000 charging cycles at 80% Depth of Discharge (DoD), ensuring more than 10 years of use.
- **Compact & Lightweight:** Weighs only 25 lb with Group 27 dimensions (11.93 × 6.81 × 8.82 inches), making it 58% lighter and 8% smaller than equivalent lead-acid batteries. Includes a carry handle for easy portability.
- **Fast-Charging:** Supports versatile charging methods (solar, generator, grid) and can be fully charged in as little as 2 hours, significantly faster than traditional lead-acid batteries.

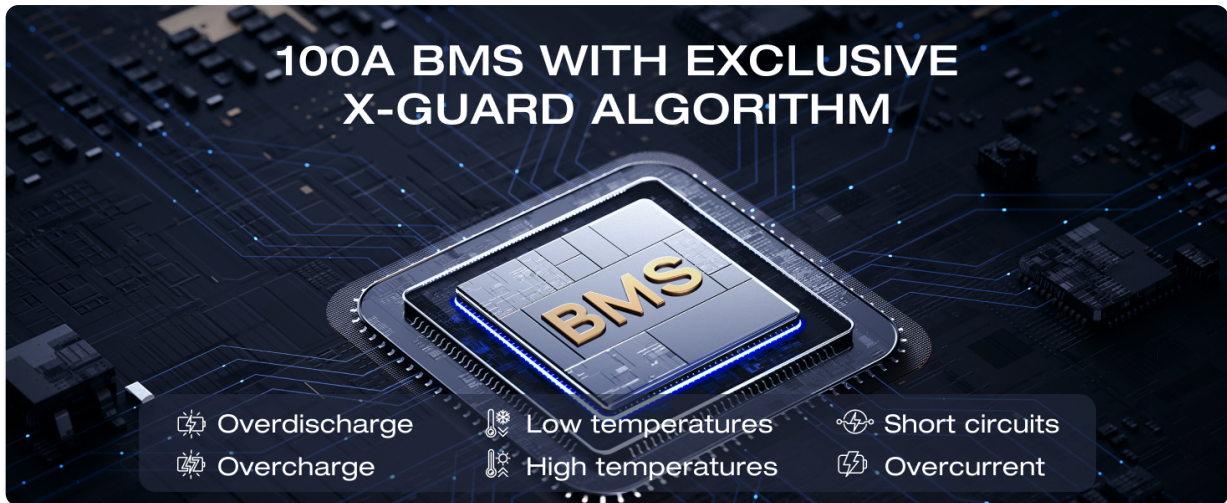


Image: Diagram illustrating the 100A BMS with X-Guard algorithm protecting against various conditions.

4. SETUP

4.1 Initial Inspection

Upon receiving your battery, inspect it for any visible damage. If damage is found, contact customer support immediately. Ensure all included accessories (terminal bolts, covers) are present.

4.2 Connecting Terminals

Connect your cables to the positive (+) and negative (-) terminals of the battery. Ensure the terminal bolts are securely tightened to prevent loose connections, which can cause overheating or power loss.

4.3 Battery Expansion (Series & Parallel)

The EF ECOFLOW 12V 100Ah LiFePO4 Battery supports flexible expansion methods:

- **Parallel Connection:** Connect up to 8 batteries in parallel to increase total capacity while maintaining 12V.
- **Series Connection:** Connect up to 4 batteries in series to increase voltage up to 48V while maintaining 100Ah capacity.
- **Combined Connection:** A combination of series and parallel connections can achieve up to 48V and 20kWh.

Always ensure proper wiring and consult a qualified professional for complex setups to avoid damage or safety risks.



Image: Various applications of the compact battery design in RVs, vans, motorhomes, and trolling motors.

5. OPERATING

5.1 Charging Methods

The battery supports multiple charging options:

- **Solar Charging:** Connect to compatible solar panels (e.g., $\geq 800\text{W}$ for fast charging) via a charge controller.
- **Generator Charging:** Use a compatible generator with an AC-DC charger.
- **Grid Charging:** Connect to a standard AC outlet using an appropriate charger.

The battery can be fully charged in as little as 2 hours, depending on the charging method and power source.

3 CHARGING METHODS

LiFePO4 Charger

2 Hours (14.6V, 50A, 0.5C)



Solar Panels

Half a sunny day ($\geq 800\text{W}$)



Generator

2 Hours (50A DC-DC charger)



Image: Visual representation of charging options including LiFePO4 charger, solar panels, and generator.

5.2 Usage Scenarios

This battery is ideal for various deep cycle applications:

- **RVs and Vans:** Powering onboard appliances and systems.
- **Solar Energy Systems:** Storing energy from solar panels for continuous power.
- **Off-Grid Living:** Providing reliable power for remote cabins or homes.
- **Trolling Motors:** Delivering consistent power for marine applications.

Remember, this battery is designed for energy storage, not for high-current engine starting or direct power to high-drain tools without an appropriate inverter.

6. MAINTENANCE

- **Regular Charging:** It is recommended to charge the battery to 50% every 3 months if the battery is to be left unused for a long time. This prevents deep discharge and extends battery life.
- **Temperature Control:** Store and operate the battery within the recommended temperature ranges (Charging: 0-55°C / 32-131°F; Discharging: -20-55°C / -4-131°F).
- **Cleanliness:** Keep the battery terminals clean and free from corrosion.
- **Physical Protection:** Avoid physical impact or dropping the battery. The IP65 rating provides protection against dust and water splashes, but it should not be submerged.

7. TROUBLESHOOTING

The integrated 100A BMS with X-Guard provides comprehensive protection. If the battery stops functioning unexpectedly, check the following:

- **Overdischarge:** If the battery voltage drops too low, the BMS will cut off output. Recharge the battery to reactivate.
- **Overcharge:** If the charging voltage exceeds safe limits, the BMS will stop charging.
- **High/Low Temperature:** The BMS will prevent charging or discharging if the internal temperature is outside the safe operating range. Allow the battery to return to a safe temperature.
- **Short Circuit:** The BMS will immediately cut off power in case of a short circuit. Disconnect the load and

reconnect to reset.

- **Overcurrent:** If the current draw exceeds the 100A continuous limit, the BMS will interrupt output. Reduce the load and reconnect.

If issues persist after checking these points, please contact EF ECOFLOW customer support.

8. SPECIFICATIONS

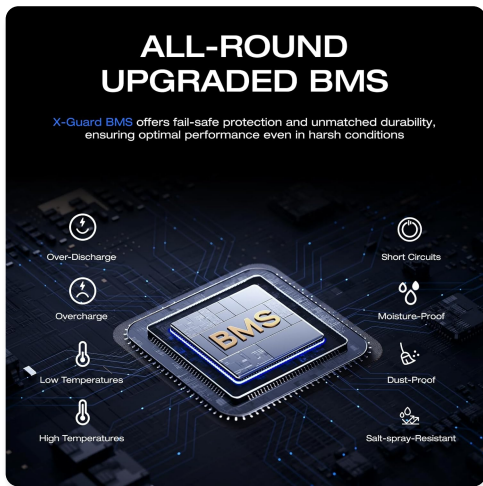
Specification	Value
Model Number	EF-PK-B12-1
Voltage	12 Volts
Capacity	100Ah
Battery Cell Composition	Lithium Iron Phosphate (LiFePO4)
Built-in BMS	100A with X-Guard
Product Dimensions	11.93 x 6.81 x 8.82 inches
Item Weight	25 pounds
IP Rating	IP65
Fire Resistance	UL5VA Flame-Retardant Casing
Lifespan	6000+ cycles (80% DoD) / 10+ Years
Recommended Uses	RV, Solar Energy, Off-Grid, Trolling Motor

9. WARRANTY AND SUPPORT

The EF ECOFLOW 12V 100Ah LiFePO4 Battery comes with a 5-year service warranty, ensuring long-term reliability and customer satisfaction. For technical support, warranty claims, or any inquiries, please contact EF ECOFLOW customer service.

10. VISUAL AIDS

10.1 Product Images



Front view of the EF ECOFLOW 12V 100Ah LiFePO4 Battery.



Illustration of Pioneering CTC (Cell-to-Chassis) Technology for enhanced strength.



Examples of battery usage in home backup, off-grid, and RV settings.



Demonstration of the battery's compact size, fitting Group 27 standard.

IDEAL REPLACEMENT FOR LEAD-ACID BATTERIES

2x the Power

200% Usable capacity vs
traditional batteries

1/2 the Weight yet

58% Lighter than industry
average

12x Longer Lifespan

6000+ Cycles to 80%

\$0.03 /kWh

High lifetime value,
low lifetime cost



Comparison showing the EF ECOFLOW battery as an
ideal replacement for lead-acid batteries.

10.2 Official Product Videos

Video: Overview of the 12V 100Ah LiFePO4 Battery, highlighting its features
and benefits. Creator: RV LithTime-US.

Video: A brief look at the EF EcoFlow 12V 100Ah LiFePO4 Battery. Creator:
EcoFlow-AU.
