Enjoybot 12V 150Ah-3Pack

Enjoybot 12V 150Ah LiFePO4 Lithium Battery User Manual

Model: 12V 150Ah-3Pack

Product Overview

The Enjoybot 12V 150Ah LiFePO4 Lithium Battery is a high-performance, deep-cycle battery designed for various applications including golf carts, RVs, trolling motors, and solar energy systems. It features an upgraded intelligent 150A Battery Management System (BMS) and an automatic self-heating function, ensuring reliable operation in diverse conditions.

This battery is built with Grade-A prismatic cells, offering a service life of over 6000 cycles at 80% Depth of Discharge (DOD). Its robust design includes multiple protection modes for enhanced safety and longevity.

Image: A set of three Enjoybot 12V 150Ah LiFePO4 Lithium Batteries, showcasing their compact design and orange and black casing.

Key Features

- **Upgraded Intelligent BMS:** Built-in 150A smart BMS with six protection modes: overcharge, over discharge,

overload, short circuit, high and low temperature protection, and self-balancing.

- **Automatic Self-Heating Function:** Activates automatically when charging temperature is below 32°F (0°C) and stops at 41°F (5°C) for normal charging.
- **Bluetooth-Enabled:** Monitor real-time battery data (voltage, current, capacity, temperature, cell voltage) via a user-friendly app within a 5-meter range.
- **Temperature Protection:** Operates within a temperature tolerance of -4°F to 140°F (-20°C to 60°C).
- **Flexible Capacity Expansion:** Can be connected in series for higher voltage (24V, 36V, 48V) and parallel for higher capacity (up to 600Ah).
- **High Load Power:** Max. load power of 1920W with a discharge current of 1C and peak current of 500A (3-5s).

Image: An internal view diagram illustrating the intelligent safety system, highlighting features like auto-heating, high/low temp cut-off, overcharge, over-discharge, overload, short-circuit protection, and cell self-balancing, all managed by the 150A BMS.

Setup and Installation

1. Initial Inspection

Upon receiving your Enjoybot LiFePO4 battery, carefully inspect the packaging and the battery for any signs of damage. Ensure all terminals are clean and free from debris. Verify that the model number matches your order.

2. Connecting Batteries (Series and Parallel)

The Enjoybot 12V 150Ah battery supports both series and parallel connections to achieve desired voltage and capacity. Always ensure all batteries are at a similar State of Charge (SoC) before connecting them.

- **Parallel Connection:** Connect positive terminals to positive terminals and negative terminals to negative terminals. This increases total capacity (Ah) while maintaining 12V. Maximum 4 batteries in parallel (600Ah).
- **Series Connection:** Connect the positive terminal of one battery to the negative terminal of the next. This increases total voltage (V). Maximum 4 batteries in series (48V).
- For optimal performance and safety, it is recommended to use appropriate battery cables and connectors.

Image: A visual representation of how Enjoybot batteries can be connected in series (4S) and parallel (4P) to achieve higher voltage (up to 48V) and capacity (up to 600Ah), enabling scalable energy storage solutions.

3. Charging the Battery

The battery can be recharged using a dedicated LiFePO4 battery charger, solar panels, or a generator with an appropriate DC charger. Ensure the charger's voltage and current specifications are compatible with the battery.

- **Dedicated LiFePO4 Charger:** Recommended for optimal charging and battery lifespan. A 12V (14.6V) 20A LiFePO4 battery charger typically takes about 7.5 hours for a full charge.
- **Solar Panel:** For solar charging, a minimum of 450W solar panel is recommended for charging within one sunny day.
- **Generator:** When using a generator, add a 20A DC to DC charger. Charging time is approximately 7.5 hours.
- *Note: Using an SLA charger may work but can reduce the performance and lifespan of the battery.*

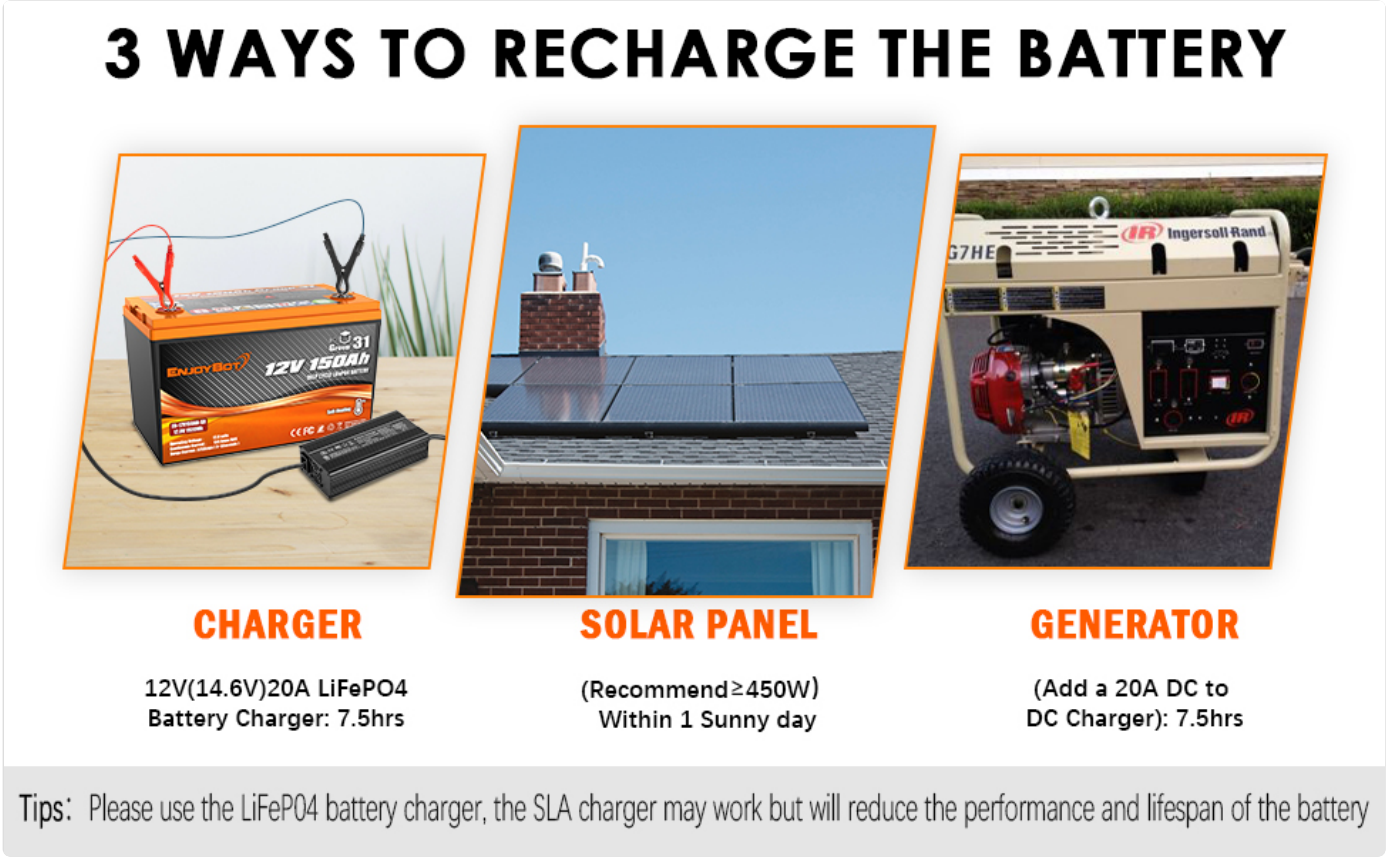

Image: A visual guide illustrating three methods for recharging the Enjoybot battery: using a dedicated charger, solar panels, and a generator with a DC charger.

4. Bluetooth App Setup

The Enjoybot battery features Bluetooth connectivity for real-time monitoring. Download the "BAT-BMS" app on your smartphone. Ensure Bluetooth is enabled on your device and within 5 meters of the battery for connection. The app allows you to monitor voltage, current, capacity, temperature, and individual cell voltage.

Image: A depiction of the Enjoybot battery with a smartphone displaying the Bluetooth 5.0 app interface, showing real-time monitoring, discharge switch, and auto-connection features.

Operating Instructions

1. General Operation

The Enjoybot LiFePO4 battery is designed for deep-cycle applications and energy storage, not for starting engines. Ensure your load requirements are within the battery's specifications (Max. load power of 1920W, continuous discharge current of 150A, peak current of 500A for 3-5 seconds).

2. Automatic Self-Heating Function

This battery is equipped with an intelligent self-heating function to ensure optimal charging performance in cold environments. When the battery's internal temperature drops below 32°F (0°C) during charging, the self-heating element will automatically activate. Once the temperature reaches 41°F (5°C), the heating will stop, and normal charging will resume. This prevents damage and maintains efficiency in low temperatures.

Image: A visual representation of the automatic self-heating function, showing the battery in a snowy landscape with heat waves emanating, indicating activation below 32°F (0°C) and stopping above 41°F (5°C).

3. BMS Protection Modes

The integrated 150A smart BMS provides comprehensive protection for the battery, ensuring safe and reliable operation. These protections include:

- **Overcharge Protection:** Prevents the battery from being charged beyond its safe voltage limit.
- **Over-discharge Protection:** Prevents the battery from being discharged below its safe voltage limit, extending lifespan.
- **Overload Protection:** Protects against excessive current draw.
- **Short Circuit Protection:** Automatically disconnects the battery in case of a short circuit.
- **High and Low Temperature Protection:** Manages charging and discharging based on temperature to prevent damage.
- **Self-balancing:** Balances individual cell voltages for optimal performance and longevity.

Maintenance

Enjoybot LiFePO4 batteries require minimal maintenance due to their robust design and intelligent BMS. However, following these guidelines will ensure maximum lifespan and performance:

- **Regular Inspection:** Periodically check battery terminals for corrosion or loose connections. Clean terminals with a wire brush if necessary.
- **Temperature Management:** While the battery has self-heating, avoid prolonged exposure to extreme temperatures outside its operating range (-4°F to 140°F).
- **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. Disconnect it from any loads.
- **Avoid Deep Discharges:** Although the BMS protects against over-discharge, consistently avoiding very deep discharges can further extend battery life.

Troubleshooting

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

Battery Not Charging / No Power Output

- **Check Connections:** Ensure all cables are securely connected to the battery terminals and the load/charger.
- **BMS Protection Activated:** The BMS may have triggered a protection mode (e.g., over-discharge, over-current, high/low temperature). Check the battery status via the Bluetooth app. Disconnect the load or charger, allow the battery to rest, and then attempt to reconnect.
- **Charger Compatibility:** Verify that your charger is specifically designed for LiFePO4 batteries and meets the correct voltage and current requirements.
- **Temperature:** If the temperature is below 32°F (0°C), the self-heating function should activate. Ensure the battery is connected to a charger for heating to occur.

Battery Trips Out (Overcurrent Protection)

- If the battery suddenly cuts off power, it may be due to the BMS activating overcurrent protection. This happens when the current draw exceeds the battery's continuous or peak current limits.
- **Reduce Load:** Disconnect some of the high-power loads.
- **Check Inrush Current:** Some devices, especially older golf cart solenoids, can have high inrush currents that momentarily exceed the battery's peak current (500A for 3-5s), causing the BMS to trip. Consider upgrading components if this is a recurring issue.
- **Reset:** Disconnect the load for a few moments to allow the BMS to reset, then reconnect.

Bluetooth Connectivity Issues

- **Proximity:** Ensure your device is within 5 meters of the battery.
- **App Restart:** Close and reopen the "BAT-BMS" app.
- **Device Bluetooth:** Turn your device's Bluetooth off and on again.
- **Single Battery Monitoring:** While the app can connect to multiple batteries, some users report better stability when monitoring one battery at a time.

Specifications

Image: A detailed product view showing the dimensions (12.95in x 8.42in x 6.77in) and key specifications such as M8*16mm (L) terminal, 1920WH energy, IP67 waterproof rating, 31.6lb/14.34kg weight, and 6000 cycles at 80% DoD.

Specification	Value
Model	12V 150Ah-3Pack
Nominal Voltage	12V
Nominal Capacity	150Ah
Energy	1920Wh
Max. Load Power	1920W
Continuous Discharge Current	150A

Specification	Value
Peak Discharge Current	500A (3-5s)
Cycle Life	6000+ cycles (80% DOD)
Operating Temperature Range	-4°F to 140°F (-20°C to 60°C)
Charging Temperature Range	32°F to 131°F (0°C to 55°C) with self-heating below 32°F
Dimensions (L x W x H)	12.9 x 8.42 x 6.77 inches (32.77 x 21.39 x 17.2 cm)
Weight	31.6 pounds (14.34 kg)
Terminal Type	M8
Waterproof Rating	IP67
BMS	Built-in 150A Smart BMS
Bluetooth	Yes, Bluetooth 5.0

Warranty and Support

Enjoybot stands behind the quality of its products. The 12V 150Ah LiFePO4 Lithium Battery comes with a **10-year warranty**, covering defects in materials and workmanship under normal use and service conditions.

For technical support, warranty claims, or any questions regarding your Enjoybot battery, please refer to the contact information provided with your purchase or visit the official Enjoybot website. When contacting support, please have your model number and purchase details ready.