FLLYROWER FX12400-1128

FLLYROWER 12V 400AH Lithium LiFePO4 Battery User Manual

Model: FX12400-1128

1. Product Overview

The FLLYROWER 12V 400AH Lithium LiFePO4 Battery is designed for deep cycle applications, offering a long lifespan and robust performance. It features Grade A cells and an advanced Battery Management System (BMS) for multiple layers of protection.

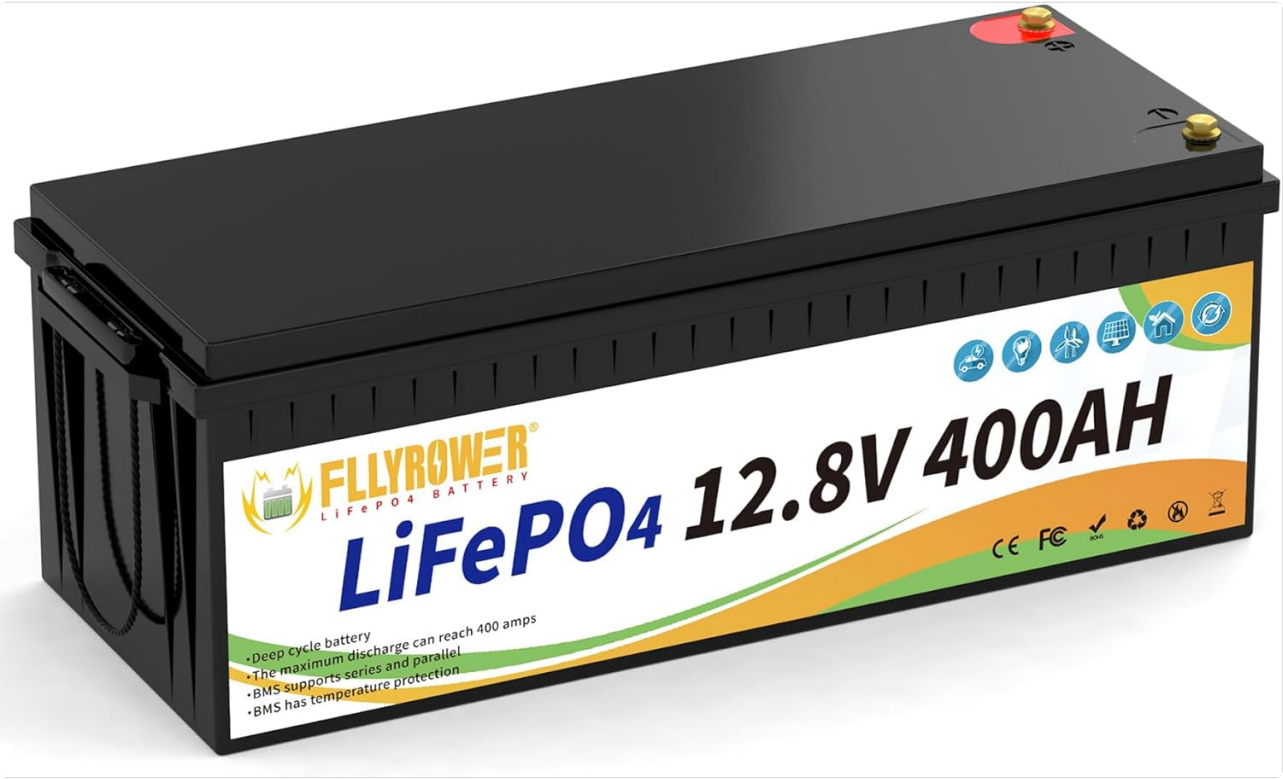

Figure 1: FLLYROWER 12V 400AH LiFePO4 Battery

This image displays the FLLYROWER 12V 400AH LiFePO4 battery, highlighting its compact design and terminal connections.

Key Features:

- **Extended Lifespan:** Up to 10 years with Grade A cells and a maximum of 16,500 deep cycles.

- **Advanced BMS Protection:** Includes low-temperature protection (automatic cut-off below 32°F/0°C), high-temperature protection, short circuit protection, over-discharge protection, over-charge protection, over-current protection, and overheating protection.
- **Capacity Expansion:** Supports up to 5 series connections (5S) for higher voltages (24V, 36V, 48V, 72V) and unlimited parallel connections for larger capacities (e.g., 800Ah, 1200Ah).
- **Lightweight and Portable:** Designed with a handle for convenient transportation and storage.
- **Versatile Applications:** Suitable for RVs, solar energy systems, home energy storage, lawn mowers, golf carts, off-grid systems, and marine trolling motors.

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Video 1: FLLYROWER LiFePO4 Battery Overview

This video provides a general overview of the FLLYROWER LiFePO4 battery, showcasing its features and potential applications.

2. Setup and Installation

2.1 Unpacking and Inspection

Upon receiving your FLLYROWER battery, carefully inspect the packaging for any signs of damage. Remove the battery and all accessories. Verify that all components are present according to the packing list.

2.2 Initial Charge

It is recommended to fully charge the battery before its first use. Use a compatible LiFePO4 battery charger. Ensure the charger's voltage and current settings match the battery's specifications.

2.3 Connection Guidelines

The FLLYROWER battery supports both series and parallel connections for increased voltage or capacity.

- **Series Connection:** Up to 5 batteries can be connected in series to achieve higher voltages (e.g., 24V, 36V, 48V, 72V). Ensure all batteries have the same voltage and capacity before connecting.
- **Parallel Connection:** There is no limit to the number of batteries that can be connected in parallel to increase overall capacity (e.g., 800Ah, 1200Ah). Ensure all batteries are at a similar state of charge before connecting in parallel.

Figure 2: Illustration of FLLYROWER Battery Series and Parallel Connection

This image demonstrates how multiple FLLYROWER batteries can be connected in series for increased voltage or in parallel for increased capacity.

3. Operating Instructions

3.1 General Use

Connect your loads to the battery terminals, ensuring correct polarity (positive to positive, negative to negative). The integrated BMS will manage the battery's performance and protect against various electrical faults.

Figure 3: FLLYROWER Battery Powering Various Appliances

This image illustrates the 5120Wh capacity of the FLLYROWER 12V 400AH battery and its ability to power common appliances like fans, Bluetooth speakers, fridges, and air conditioning units for extended durations.

3.2 BMS Functionality

The Battery Management System (BMS) is crucial for the safe and efficient operation of your LiFePO4 battery. It continuously monitors cell voltage, current, and temperature to prevent damage.

- **Low-Temperature Cut-off:** Charging will automatically cease if the battery temperature drops below 0°C (32°F) to prevent damage. Charging will resume once the temperature rises.
- **Over-Discharge Protection:** The BMS prevents the battery from discharging below a safe voltage level, extending its lifespan.
- **Over-Charge Protection:** Prevents overcharging, which can damage the battery cells.
- **Short Circuit Protection:** Automatically disconnects the battery in case of a short circuit.

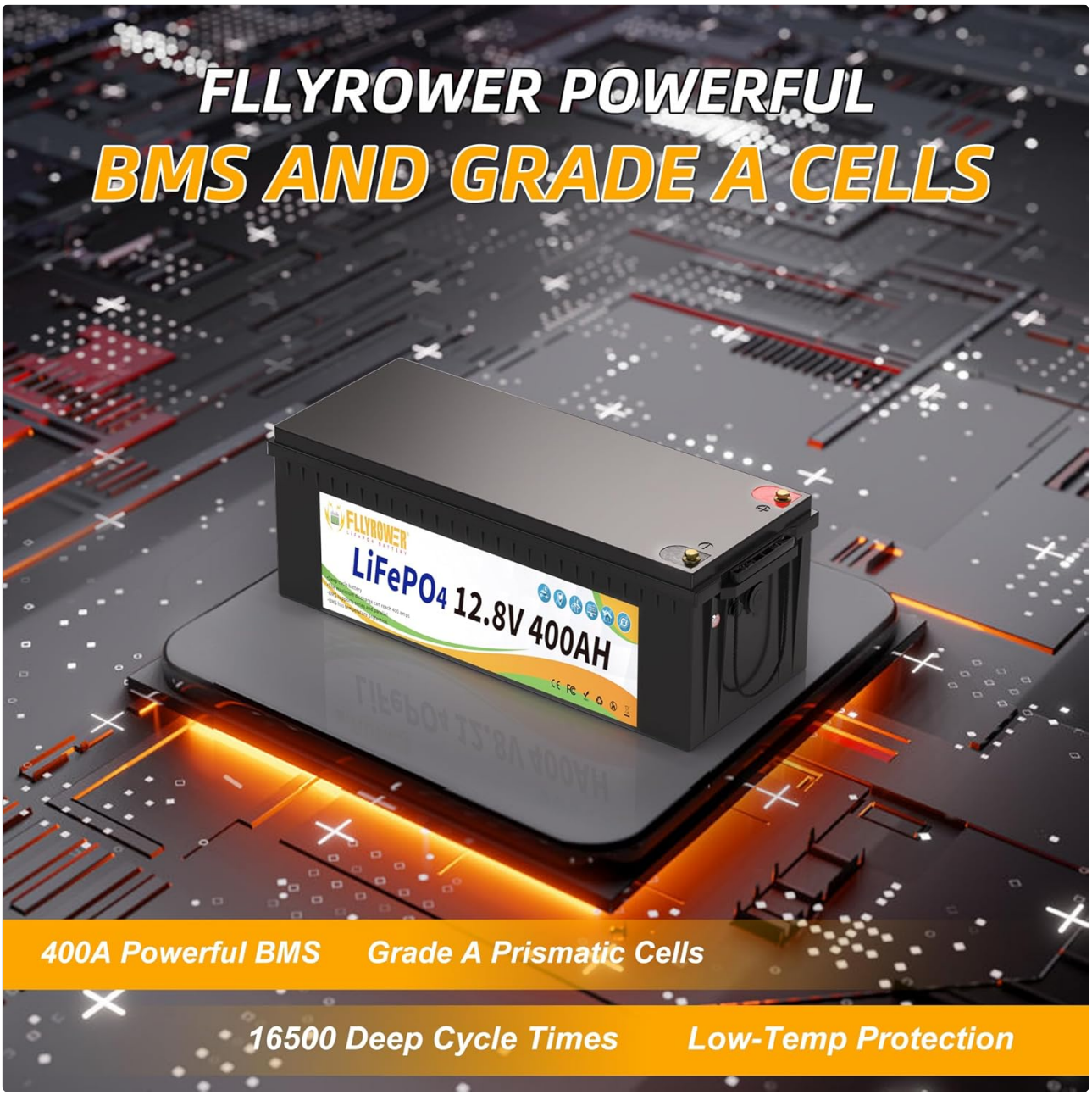

Figure 4: FLLYROWER Battery Management System (BMS) and Grade A Prismatic Cells

This image highlights the powerful BMS and Grade A prismatic cells used in the FLLYROWER battery, emphasizing its 16,500 deep cycle times and low-temperature protection feature.

3.3 Temperature Considerations

The battery is designed to operate across a wide temperature range. However, charging in sub-zero temperatures will be automatically prevented by the BMS. For optimal performance and longevity, avoid extreme temperatures when possible.

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Video 2: Low Temperature Cut-off Test for LiFePO4 Battery

This video demonstrates the low-temperature cut-off feature of a LiFePO4 battery, showing how charging is automatically stopped when the temperature drops below a safe threshold and resumes when it warms up.

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Video 3: FLLYROWER LiFePO4 Deep Cycle Battery Grade A Cells and BMS

This video highlights the advanced features of the FLLYROWER LiFePO4 deep cycle battery, including its Grade A cells and comprehensive BMS protection.

4. Maintenance

FLLYROWER LiFePO4 batteries are designed to be maintenance-free. Regular monitoring of connections and occasional cleaning of terminals are recommended.

4.1 Cleaning Terminals

Ensure battery terminals are clean and free of corrosion. Use a dry cloth to wipe away any dust or debris. If corrosion is present, disconnect the battery and clean terminals with a wire brush and a baking soda solution, then rinse and dry thoroughly before reconnecting.

4.2 Storage

For long-term storage, it is recommended to charge the battery to 50% every 3 months if it is to be left unused. Store in a cool, dry place away from direct sunlight and extreme temperatures.

Figure 5: Maintenance-Free Operation of FLLYROWER Battery

This image emphasizes the maintenance-free nature of the FLLYROWER battery, indicating that it requires minimal upkeep.

5. Troubleshooting

The BMS provides comprehensive protection, but if you encounter issues, consider the following:

- **Battery Not Charging:**
  - Check charger connections and ensure it's compatible with LiFePO4 batteries.
  - Verify battery temperature. If below 0°C (32°F), the low-temperature cut-off may be active.
  - Inspect for any BMS fault indicators (if available via app or external display).
- **Battery Not Discharging/Providing Power:**
  - Ensure all connections are secure and free of corrosion.
  - Check if the battery is in an over-discharge state (BMS may have cut off power). Recharge the battery.
  - Verify for any short circuit or over-current conditions.
- **Reduced Performance:**
  - Ensure the battery is fully charged.
  - Check for excessive load that might be triggering over-current protection.
  - Verify ambient temperature is within the optimal operating range.

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Video 4: 12V 300Ah LiFePO4 Battery Test

This video demonstrates the performance and features of a 12V 300Ah LiFePO4 battery, similar to the FLLYROWER model, under various test conditions.

6. Specifications

Attribute	Value
Brand	FLLYROWER
Model Number	FX12400-1128
Voltage	12V
Capacity	400AH
Cell Type	LiFePO4 Grade A Cells
Deep Cycles	Up to 16,500
BMS Features	Low/High Temp Protection, Over-Discharge/Charge, Short Circuit, Over-Current
Series Connection	Up to 5S

Parallel Connection	Unlimited
First Available Date	December 2, 2024

Figure 6: FLLYROWER 12V 400AH Battery Dimensions

This image provides a visual representation of the FLLYROWER 12V 400AH battery, detailing its dimensions and M8 terminal bolts.

7. Warranty and Support

FLLYROWER is committed to customer satisfaction. If you have any questions or require assistance with your battery, please contact the seller directly. They are dedicated to providing support and resolving any issues you may encounter.

For further information or inquiries, please refer to the official FLLYROWER store on Amazon or contact the manufacturer, Flypower Battery Company.