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VEMDIA 12V 8Ah

VEMDIA 12V 8Ah LiFePO4 Lithium Battery User Manual

Model: 12V 8Ah | Brand: VEMDIA

1. Introduction

Thank you for choosing the VEMDIA 12V 8Ah LiFePO4 Lithium Battery. This manual provides essential information for the safe and efficient use of your battery. Please read it thoroughly before installation and operation.

1.1 What's in the Box

- 12V 8Ah LiFePO4 Lithium Battery

2. Safety Information

Always observe the following safety precautions to prevent injury or damage to the battery.

- **DO NOT** short circuit the battery terminals.
- **DO NOT** reverse connections from charger to battery.
- **DO NOT** disassemble the battery.
- **DO NOT** heat above 60°C (140°F).
- **DO NOT** immerse the battery in water or allow it to get wet. The battery features IP67 waterproof protection, but prolonged submersion should be avoided.
- **DO NOT** use the battery in strong electrostatic and magnetic fields.
- Charge with a specified charger according to charging requirements.

2.1 Built-in Smart BMS (Battery Management System)

The integrated Smart BMS provides comprehensive protection for the battery, ensuring safe and reliable operation. This includes:

- Overcharge Protection
- Over-discharging Protection
- Overload Protection

- Short Circuit Protection
- Over-current Protection
- High-temperature cutoff (prevents charging temperatures from exceeding 50°C)



Image Description: A visual representation of the battery with its internal BMS, highlighting various protection features such as overcharge, over-discharge, overload, short circuit, and over-current protection.

3. Setup and Connections

3.1 Initial Charging

Before first use, it is recommended to fully charge the battery using a compatible LiFePO4 battery charger. The built-in BMS will manage the charging process.

3.2 Connecting for Higher Capacity or Voltage

The 12V 8Ah LiFePO4 batteries can be connected in parallel or series to achieve higher capacity or voltage configurations. Ensure all batteries are at a similar state of charge before connecting.

- **Parallel Connection (4P):** Connect up to four batteries in parallel to achieve a maximum capacity of 32Ah (12V, 32Ah, 412Wh). This increases the total current capacity while maintaining the nominal voltage.
- **Series Connection (2S):** Connect two batteries in series to achieve a higher voltage of 24V (24V, 8Ah, 206Wh). This increases the total voltage while maintaining the nominal capacity.
- **Series-Parallel Connection (4P4S):** For advanced configurations, up to 4S (series) or 4P (parallel) expansion is allowed, enabling a maximum voltage of 48V (51.2V nominal) and a maximum capacity of 32Ah (48V, 32Ah, 1648Wh).

Always use appropriate wiring and connectors for high current applications. Consult a professional if you are unsure about complex wiring configurations.



Image Description: An illustration demonstrating how multiple 12V 8Ah LiFePO4 batteries can be connected in parallel (4P), series (2S), or a combination (4P4S) to achieve different voltage and capacity outputs.

4. Operating Instructions

The VEMDIA 12V 8Ah LiFePO4 battery is designed for a wide range of applications due to its compact size, light weight, and robust performance.

4.1 General Use

Connect the battery to your device or system, ensuring correct polarity. The built-in BMS will manage the battery's discharge and charge cycles, protecting it from common electrical issues.

4.2 Charging Methods

The battery can be recharged using one of three methods:

1. A dedicated lithium iron phosphate battery charger.
2. A solar panel with a compatible charge controller.
3. An alternator (generator) designed for LiFePO4 batteries.

4.3 Applications

This battery is suitable for various uses, including but not limited to:

- Emergency Lighting (e.g., LED strips)
- 12V Routers
- RV/Outdoor Camping Power
- Kids Ride-on Toy Cars / Power Wheels
- Fish Finders
- Kayaks
- Ham Radios
- Home Alarm Systems
- Cellular Remote Cameras
- Solar/Wind Power Systems
- Electric Wheelchairs



Image Description: A collage showcasing diverse applications of the VEMDIA 12V 8Ah LiFePO4 battery, such as powering equipment for camping, ride-on toys, fish finders, home alarm systems, and electric wheelchairs.

5. Maintenance

5.1 Long Service Life

The VEMDIA LiFePO4 battery is designed for a long service life, boasting over 4000 deep cycles and a remarkable 10-year lifespan under optimal conditions. This superior longevity contributes to a lower total cost of ownership compared to traditional lead-acid batteries.



Image Description: A visual emphasizing the key benefits of the 12V 8Ah LiFePO4 battery, including its Smart Cell BMS, extended cycle life, enhanced stability, security features, and robust construction.

5.2 Storage

For long-term storage, ensure the battery is charged to approximately 50% of its capacity. Store the battery in a cool, dry place, away from direct sunlight and extreme temperatures. Periodically check the battery's charge level during extended storage.

5.3 Cleaning

Keep the battery terminals clean and free from corrosion. Use a dry cloth to wipe the battery casing. Do not use harsh chemicals or abrasive cleaners.

6. Troubleshooting

If you encounter issues with your VEMDIA LiFePO4 battery, consider the following:

- **Battery not charging:** Ensure the charger is compatible with LiFePO4 batteries and properly connected.

Check for any loose connections or damaged cables.

- **Battery not providing power:** Verify that the battery is adequately charged. Check all connections to the device or system. The BMS may have activated a protection mode (e.g., over-discharge protection); try recharging the battery.
- **Unusual heat:** Disconnect the battery immediately if it becomes excessively hot during charging or discharge. This could indicate an internal issue or an incompatible charger/load.

For persistent issues or concerns, please contact VEMDIA customer support.

7. Specifications



Image Description: A clear graphic summarizing the main specifications of the VEMDIA 12V 8Ah LiFePO4 battery, including its weight, voltage, cell composition, and energy capacity.

Feature	Detail
Brand	VEMDIA

Feature	Detail
Model Number	12V 8Ah
Nominal Voltage	12.8 V
Nominal Capacity	8 Ah
Energy	102.4 Wh
Battery Type	LiFePO4 (Lithium Iron Phosphate)
Cycle Life	5000+ Deep Cycles
Lifespan	Up to 10 years
Item Weight	2.2 pounds (1 kg)
Dimensions (L x W x H)	5.94 x 2.6 x 3.7 inches (15.1 x 6.6 x 9.4 cm)
Waterproof Rating	IP67
Special Features	Built-in Smart BMS (Overcharge, Over-discharge, Over-current Protection, High-temperature cutoff)
UPC	762849963242



Image Description: A detailed diagram illustrating the physical dimensions of the 12V 8Ah LiFePO4 battery, providing measurements for length, width, and height in both inches and centimeters.

8. Warranty and Support

VEMDIA is committed to providing quality products and customer satisfaction. If you have any questions or require assistance with your 12V LiFePO4 battery, please do not hesitate to contact our professional technical team. We aim to respond to all inquiries within 24 hours.
For support, please send us a message via the Amazon platform.

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