VEMDIA 2 Pack 12V 100AH

VEMDIA 12V 100Ah LiFePO4 Lithium Battery User Manual

Model: 2 Pack 12V 100AH

Brand: VEMDIA

1. Introduction

This user manual provides essential information for the safe and efficient operation of your VEMDIA 12V 100Ah LiFePO4 Lithium Battery. Please read this manual thoroughly before installation and use to ensure optimal performance and longevity of your battery. This battery is designed for various applications including RVs, marine vessels, and off-grid solar systems.



Image 1.1: Two VEMDIA 12V 100Ah LiFePO4 Lithium Batteries, showcasing their compact design and integrated handles.

2. Safety Information

Always observe the following safety precautions to prevent injury or damage to the battery and connected equipment:

- Do not short circuit the battery terminals.
- Do not reverse connections from charger to battery.
- Do not disassemble or modify the battery.
- Do not immerse the battery in water or allow it to get wet.
- Do not expose the battery to temperatures above 60°C (140°F).
- Keep the battery away from strong electromagnetic fields.
- Charge with a specified LiFePO4 charger according to charging requirements.
- Ensure proper ventilation during charging and discharging.

3. Product Features

The VEMDIA 12V 100Ah LiFePO4 Lithium Battery offers advanced features for reliable power:

- **Compact Size, High Power:** Measures 12.9 x 6.6 x 8.5 inches and weighs 22 pounds, fitting BCI Group 31 battery boxes. Provides 1280Wh of usable energy output.
- **Built-in 100A BMS:** The Battery Management System protects against overcharging, over-discharging, over-current, and includes a high-temperature cutoff at 50°C (122°F). It also manages an excellent self-discharge rate.
- **Long Cycle Life:** Achieves 4000 cycles at 100% Depth of Discharge (DOD), 6000 cycles at 80% DOD, and up to 15000 cycles at 60% DOD, providing a 10-year lifespan. This significantly surpasses lead-acid batteries.
- **Flexible Connections:** Batteries can be connected in parallel for increased capacity (up to 400Ah) or in series for higher voltage (up to 48V/51.2V), allowing for versatile system configurations.
- **Low Temperature Charge Protection:** Charging is automatically turned off at 0°C (32°F) to protect the battery, with an optimal charging temperature range of -20°C to 40°C (-4°F to 104°F).



Image 3.1: Illustration of the 100A BMS capabilities, including protection against over-discharging, overcharging, over-current, overheating, and short circuits, ensuring robust and secure operation.

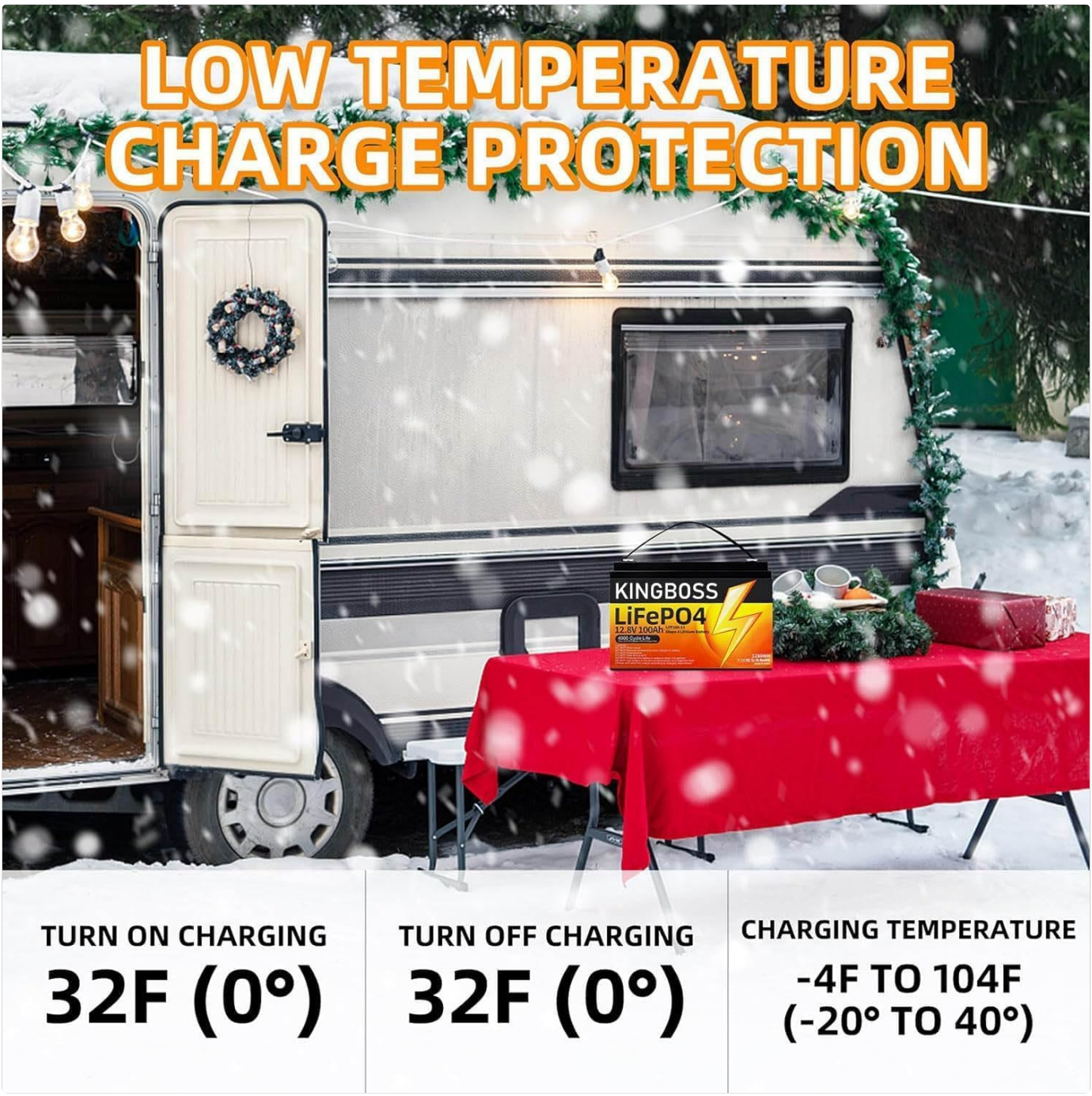


Image 3.2: The battery operating in a cold environment, highlighting its low temperature charge protection feature, which prevents charging below 0°C (32°F).

4. Setup and Installation

Follow these guidelines for proper setup and installation:

4.1 Unpacking

Carefully remove the battery from its packaging. Inspect for any visible damage. If damage is found, contact customer support immediately.

4.2 Connections

Ensure all connections are secure and properly insulated. Use appropriate gauge cables for your application to prevent

overheating and power loss. The battery can be connected in parallel or series:

- **Parallel Connection:** Connect positive terminals together and negative terminals together to increase total capacity while maintaining 12V. Up to 4 batteries can be connected in parallel for a maximum of 400Ah.
- **Series Connection:** Connect the positive terminal of one battery to the negative terminal of the next to increase total voltage. Up to 4 batteries can be connected in series for a maximum of 48V (51.2V).

Important: When connecting batteries in series or parallel, ensure all batteries are of the same type, capacity, and state of charge before making connections.

4.3 Charging

The battery can be recharged using one of three methods:

1. **LiFePO4 Battery Charger:** A 14.6V 20A charger is recommended for fast charging, achieving a full charge in approximately 5 hours.
2. **Solar Panel with Controller:** Connect a compatible solar panel system with a charge controller.
3. **Alternator (Generator):** Can be charged via an alternator in vehicles or generators, ensuring the charging system is compatible with LiFePO4 batteries.

5. Operating Instructions

5.1 General Use

The 12V 100Ah LiFePO4 battery is suitable for a wide range of applications, including:

- Recreational Vehicles (RVs)
- Marine applications (boats, yachts)
- Off-grid solar systems
- Backup power systems
- Lighting systems
- Powering 30-70 lbs trolling motors (mini version)



Image 5.1: The battery providing power for various outdoor activities, demonstrating its versatility for devices such as cell phones, fans, sound systems, microwaves, and coffee makers.



Image 5.2: Examples of the battery's portability and convenience across different applications, including yachting, RV travel, camping, and fishing.

5.2 Discharge

The battery provides a maximum 100A continuous discharge current, capable of powering most electrical equipment. LiFePO4 batteries can be discharged to 100% Depth of Discharge (DOD) without significantly shortening their lifespan, unlike lead-acid batteries.

6. Maintenance

LiFePO4 batteries require minimal maintenance compared to lead-acid batteries. However, following these practices will ensure optimal performance and longevity:

- **Regular Inspection:** Periodically check battery terminals for corrosion or loose connections. Clean terminals if

necessary.

- **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. Recharge every 3-6 months to prevent deep discharge.
- **Temperature:** Avoid exposing the battery to extreme temperatures outside its operating range (-20°C to 60°C / -4°F to 140°F for discharge, -20°C to 40°C / -4°F to 104°F for charge).

7. Troubleshooting

If you encounter issues with your VEMDIA LiFePO4 battery, consider the following common problems and solutions:

Problem	Possible Cause	Solution
Battery not charging	Loose connections, charger malfunction, temperature too low/high, BMS protection activated.	Check all cable connections. Verify charger output. Move battery to suitable temperature range. Allow BMS to reset if tripped.
Battery not providing power	Battery discharged, BMS protection activated, faulty wiring, overloaded circuit.	Charge the battery. Check for short circuits or overloads. Inspect wiring for damage. Reduce load if exceeding continuous discharge current.
Reduced capacity/runtime	Battery not fully charged, excessive load, aging.	Ensure battery is fully charged. Reduce power consumption. Consider battery replacement if significantly past expected lifespan.

If problems persist, contact VEMDIA customer support for further assistance.

8. Specifications

Attribute	Value
Brand	VEMDIA
Model Number	2 Pack 12V 100AH
Manufacturer Part Number	12v 100Ah
Nominal Voltage	12V
Capacity	100Ah
Usable Energy Output	1280Wh
Built-in BMS	100A
Cycle Life (100% DOD)	4000 cycles
Cycle Life (80% DOD)	6000 cycles

Attribute	Value
Cycle Life (60% DOD)	15000 cycles
Expected Lifespan	10 years
Item Weight	22 pounds
Product Dimensions (L x W x H)	12.9 x 6.6 x 8.5 inches (approx. 6.93 x 13.07 x 8.7 inches)
Charging Temperature Range	-20°C to 40°C (-4°F to 104°F)
High-Temperature Cutoff	50°C (122°F)
UPC	734383657710



Image 8.1: Detailed dimensions of the VEMDIA 12V 100Ah LiFePO4 battery, indicating its length, width, and height.

9. What's in the Box

The product package includes:

- 12V 100Ah LiFePO4 Lithium Battery (quantity as per purchase, e.g., 2 batteries for a 2-pack)

10. Warranty and Support

For warranty information and customer support, please refer to the official VEMDIA website or contact the seller directly. Protection plans may be available for purchase separately to extend coverage beyond the manufacturer's warranty.

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Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

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