HumsiENK HS24V320AH200BT

HumsiENK 24V 320Ah LiFePO4 Lithium Battery User Manual

Model: HS24V320AH200BT

1. Introduction

This manual provides detailed instructions for the safe and efficient use of your HumsiENK 24V 320Ah LiFePO4 Lithium Battery. This high-capacity battery is designed for various applications including RVs, solar energy systems, off-grid power, and home energy storage. Please read this manual thoroughly before installation and operation to ensure proper usage and longevity of the product.

Image 1.1: HumsiENK 24V 320Ah LiFePO4 Lithium Battery.

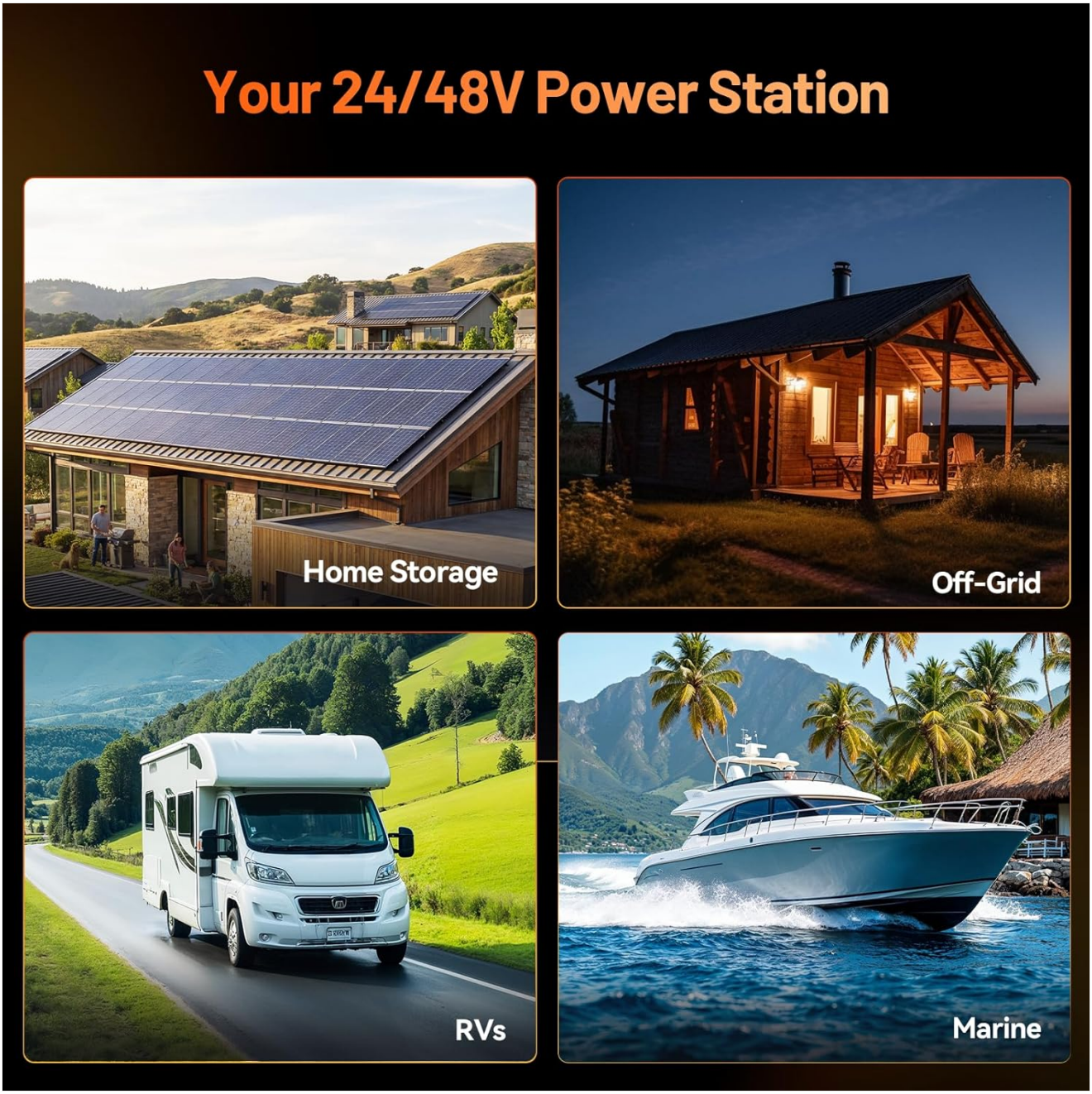

Image 1.2: The HumsiENK 24V 320Ah LiFePO4 battery is suitable for home storage, off-grid systems, RVs, and marine applications.

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 expose the battery to fire, excessive heat, or direct sunlight.
- Do not immerse the battery in water or other liquids.
- Ensure proper ventilation during charging and discharging.
- Use only compatible chargers designed for LiFePO4 batteries.
- Keep the battery away from children and pets.
- Wear appropriate personal protective equipment (PPE) such as gloves and eye protection when handling the battery.
- Do not attempt to open, disassemble, or repair the battery. Contact qualified personnel for service.

3. Package Contents

Verify that all items are present in the package:

- 1 x HumsiENK 24V 320Ah LiFePO4 Battery
- 1 x Instruction Manual (this document)
- 2 x Insulated Terminal Caps
- 4 x M8 Screws

4. Product Features

The HumsiENK 24V 320Ah LiFePO4 Lithium Battery offers advanced features for reliable power storage:

- **Compact Design & High Capacity:** This 24V 320Ah battery is designed to replace multiple 12V batteries, reducing wiring complexity and saving installation space. It measures 24.92 x 9.53 x 8.58 inches and weighs 107.92 lbs.

Image 4.1: The 24V 320Ah battery offers a compact design compared to six 12V 100Ah batteries.

- **Advanced LiFePO4 Cells & Bluetooth Monitoring:** Built with Grade-A LiFePO4 cells, providing over 15,000 deep cycles at 60% Depth of Discharge (DOD) for an extended lifespan. Integrated Bluetooth connectivity

allows remote monitoring of battery status via a dedicated app.

Image 4.2: Internal view highlighting Grade-A LiFePO4 cells and the 200A Battery Management System (BMS).

- **High Energy & Power Output:** Delivers 8192Wh of energy storage and a 5120W high-power output, capable of supporting multiple high-power devices simultaneously.

Image 4.3: Visual representation of the battery's 8192Wh energy and 5120W power capabilities.

- **Flexible System Expansion:** Supports a maximum 2S4P (2 series, 4 parallel) connection, allowing for system expansion up to 65.53 kWh to meet diverse energy requirements.
- **Comprehensive BMS Protection:** Features a built-in 200A high-performance Battery Management System (BMS) offering over 20 protections, including over-charge, over-discharge, over-current, over-voltage, high-temperature, low-temperature, and short-circuit protection. It includes an intelligent low-temperature cut-off feature, automatically stopping discharge below -4°F (-20°C) and charging below 32°F (0°C), with recovery above 41°F (5°C).

Image 4.4: Illustration of the battery's low-temperature cut-off protection features.

5. Setup

5.1 Pre-Installation Checklist

- Inspect the battery for any visible damage.
- Ensure all included accessories are present.
- Confirm that your charging system (charger, solar controller, inverter) is compatible with 24V LiFePO4 batteries.
- Prepare the installation location, ensuring it is dry, well-ventilated, and protected from extreme temperatures.

5.2 Physical Installation

The battery features M8 bolt terminals for secure connections. Use the provided M8 screws and insulated caps. Ensure all connections are tight to prevent resistance and overheating.

5.3 Wiring for Expansion

The battery supports a maximum configuration of 2 units in series and 4 units in parallel (2S4P) to achieve higher voltage or capacity. When connecting batteries in series or parallel, ensure all batteries are of the same model,

capacity, and state of charge before connection.

5.4 Charging Methods

The battery can be charged using three primary methods:

- **LiFePO4 24V Charger:** Use a dedicated 24V LiFePO4 charger.
- **Solar Panel:** Connect to a solar charge controller with a minimum output of 800W.
- **Generator:** Utilize a 60A DC-DC charger connected to a generator.

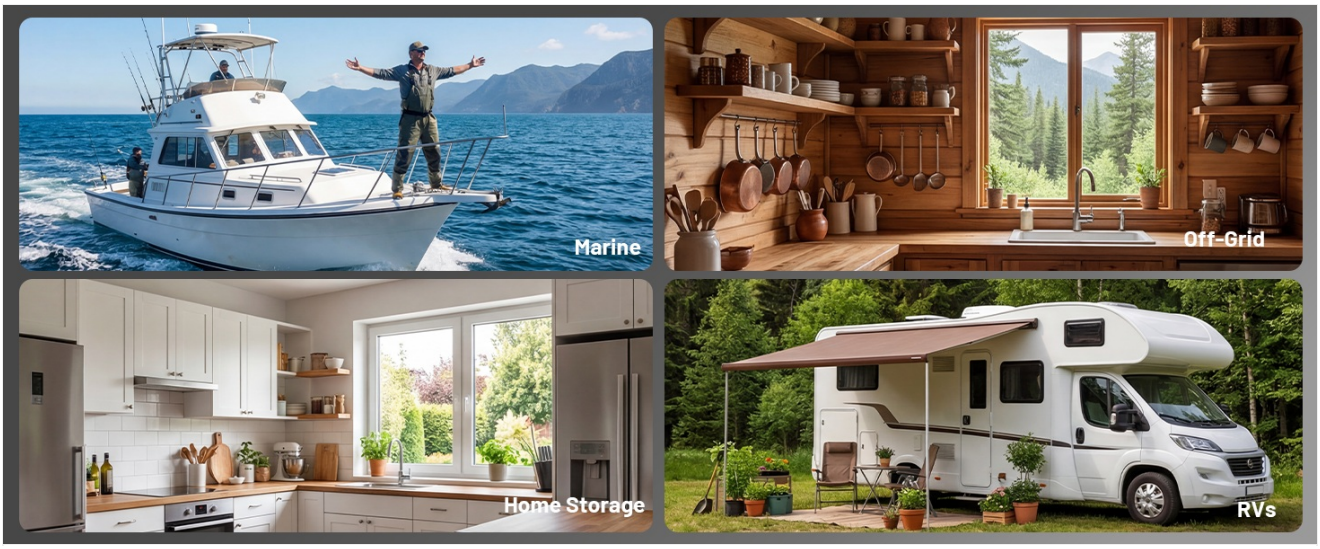

Image 5.1: Various charging options for the HumsiENK LiFePO4 battery, including LiFePO4 charger, solar panel, and generator.

5.5 Bluetooth App Connection

Download the HumsiENK Bluetooth APP from your device's app store. Enable Bluetooth on your smartphone or tablet and open the app. The app will automatically detect nearby HumsiENK batteries. Select your battery from the list to connect and view real-time data.

Image 5.2: The Bluetooth App allows monitoring of cell voltage, remaining capacity, and charge/discharge status.

6. Operating Instructions

6.1 Initial Charge

It is recommended to fully charge the battery before its first use to ensure optimal performance and calibration of the BMS.

6.2 Monitoring Battery Status

Use the HumsiENK Bluetooth APP to monitor critical battery parameters such as:

- Cell voltage
- Remaining capacity (State of Charge)
- Charge/discharge status
- Temperature

The app also allows for remote control of charge/discharge functions and data diagnosis.

6.3 Low-Temperature Protection

The integrated BMS features intelligent low-temperature protection:

- **Discharging Cut-off:** Automatically stops discharging when the battery temperature drops below -4°F (-20°C).
- **Charging Cut-off:** Automatically stops charging when the battery temperature drops below 32°F (0°C).
- **Charge Recovery:** Charging will resume automatically when the battery temperature rises above 41°F (5°C).

These features ensure safe operation and extend battery life in cold environments.

7. Maintenance

Proper maintenance ensures the longevity and performance of your battery:

- **Regular Inspection:** Periodically check the battery for any physical damage, loose connections, or corrosion on the terminals.
- **Cleaning:** Keep the battery terminals clean and free of dirt or debris. Use a dry cloth to wipe the battery casing. Do not use solvents or abrasive cleaners.
- **Storage:** If storing the battery for an extended period, ensure it is charged to approximately 50-70% State of Charge (SOC) and stored in a cool, dry place, away from direct sunlight and extreme temperatures. Disconnect it from all loads and chargers.
- **Avoid Deep Discharge:** While LiFePO4 batteries tolerate deep cycles, avoiding consistent full discharge cycles can further extend their lifespan.

8. Troubleshooting

If you encounter issues with your HumsiENK battery, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Battery not charging	Loose connections, incompatible charger, low temperature, BMS protection activated	Check all cable connections. Ensure charger is compatible with 24V LiFePO4. Move battery to a warmer environment if below 0°C (32°F). Check BMS status via Bluetooth app.
No power output	BMS protection activated (over-discharge, over-current, short-circuit), loose connections	Check connections. Reduce load if over-current. Recharge battery if over-discharged. Check BMS status via Bluetooth app.
Bluetooth app not connecting	Bluetooth disabled, app issue, battery too far	Ensure Bluetooth is enabled on your device. Restart the app. Move closer to the battery. Restart the battery (if possible, by disconnecting and reconnecting).
Battery capacity seems low	Incomplete initial charge, high load, aging	Perform a full charge cycle. Reduce simultaneous high-power loads. Battery capacity naturally degrades over many years of use.

If the problem persists after attempting these solutions, please contact HumsiENK customer support.

9. Specifications

Detailed technical specifications for the HumsiENK 24V 320Ah LiFePO4 Lithium Battery:

Specification	Value
Brand	HumsiENK
Model Number	HS24V320AH200BT
Voltage	24 Volts
Capacity	320Ah
Energy	8192Wh
Max Output Power	5120W
BMS Continuous Discharge Current	200A
Deep Cycles	15000+ (at 60% DOD)
Lifespan	10+ Years
Low-Temp Protection	Discharge cut-off below -4°F (-20°C), Charge cut-off below 32°F (0°C), Charge recovery above 41°F (5°C)
Product Dimensions (D x W x H)	9.53" x 24.92" x 8.58"
Item Weight	107.92 Pounds
Terminal Type	M8 Bolt
Max Expansion	2S4P (up to 65.53 kWh)
Certifications	IEC/RoHS/CE/FCC/UN38.3/Class9/UL

10. Warranty and Support

The HumsiENK 24V 320Ah LiFePO4 Lithium Battery is backed by a**5-year manufacturer's warranty**. This warranty covers defects in materials and workmanship under normal use and service conditions.
For technical assistance, troubleshooting, or warranty claims, please contact HumsiENK customer support. Our team is available 24/7 to provide support and ensure your peace of mind.
Please retain your proof of purchase for warranty validation.