HumsiENK HS48V100AH100RACK-3UBT

HumsiENK 48V 100Ah LiFePO4 Lithium Battery User Manual

Model: HS48V100AH100RACK-3UBT

1. Introduction and Overview

This manual provides essential information for the safe and efficient use of your HumsiENK 48V 100Ah LiFePO4 Lithium Battery. This battery is designed for various applications including home energy storage, off-grid solar systems, and UPS. It features advanced BYD cells, active balancing, and a robust Battery Management System (BMS).

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Video: HumsiENK 48V 100Ah Battery Overview. This video provides a visual introduction to the battery's features, internal components, and connectivity options.

The HumsiENK 48V 100Ah LiFePO4 battery offers a high-performance alternative to traditional lead-acid batteries, providing superior energy density, longer cycle life, and advanced safety features. Its 3U server rack design allows for flexible installation and scalability.

Image: Comparison of HumsiENK LiFePO4 battery with lead-acid batteries, highlighting advantages in dimensions, weight, energy, cycles, BMS, Bluetooth, and low-temp protection.

2. Safety Information

Your HumsiENK LiFePO4 battery is designed with safety in mind and is UL 1973 listed. It incorporates a high-performance 100A Battery Management System (BMS) to protect against various conditions:

- Overcharging
- Over-discharging
- Overload
- Short circuits
- Low-temperature cutoff
- Overheat protection

Additionally, the system provides dual safety guarantees: power forced off/on and an air switch for automatic shut-off on overload. Always adhere to local electrical codes and safety guidelines during installation and operation.

3. Product Features

3.1. Advanced Cell Technology & Protection

The battery utilizes premium BYD LiFePO4 cells, which are officially tested to UL 1973 safety standards. The integrated 100A BMS ensures comprehensive protection and reliable operation.

Image: Internal design showcasing BYD A+ cells, an anti-swelling design, and active balancing technology for enhanced durability and lifespan.

3.2. Active Balancing & Durability

A maximum balancing current of 3A, combined with fast multi-channel equalization, improves efficiency, reduces energy loss, and extends battery life. The battery features premium core components housed within a robust internal metal structure, all encased in a high-quality, fireproof, and wear-resistant sheet metal casing that offers excellent heat dissipation.

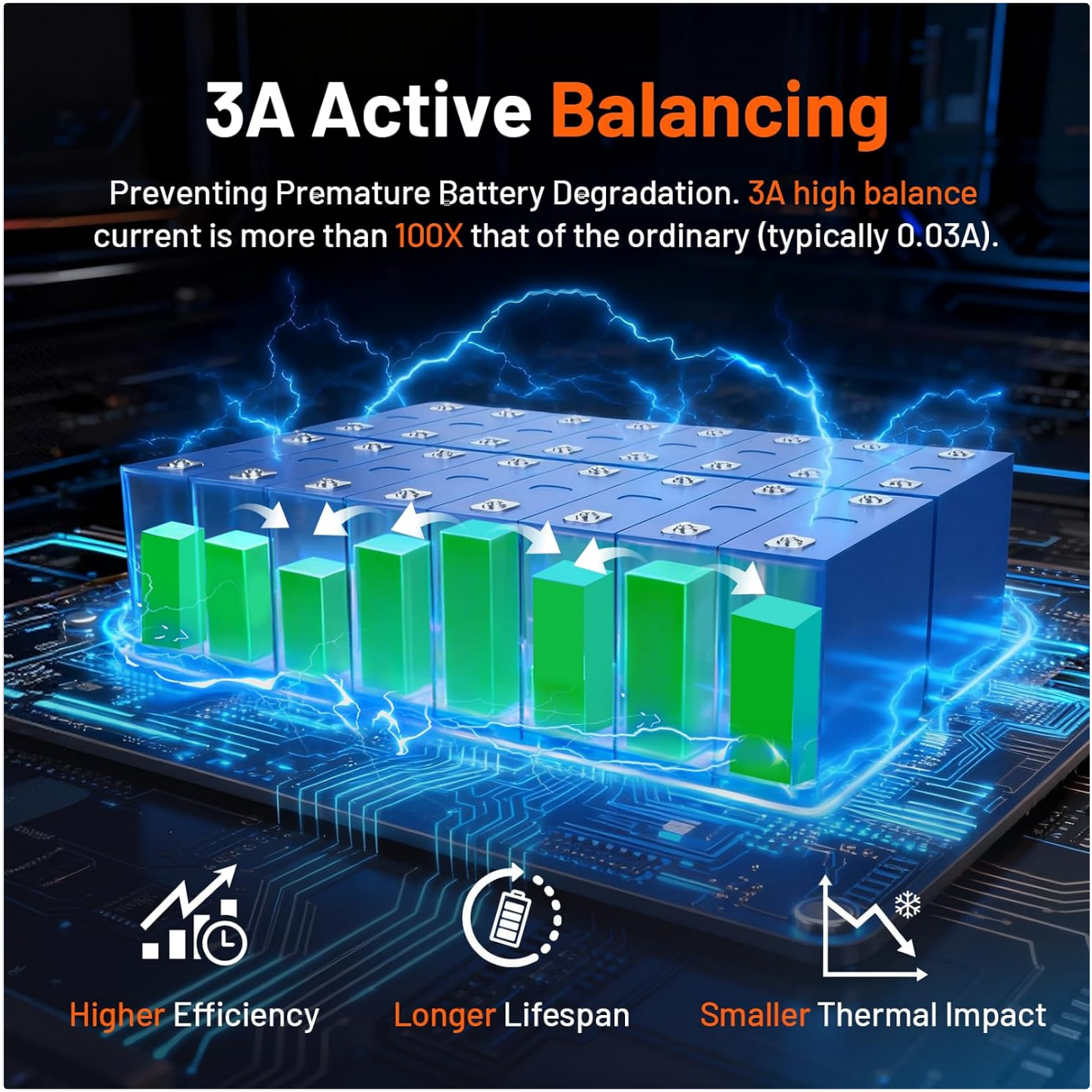

Image: Visual representation of 3A active balancing, highlighting its role in preventing premature battery degradation and contributing to higher efficiency, longer lifespan, and reduced thermal impact.

3.3. High Capacity & Scalability

The server rack battery offers an impressive capacity of 5120Wh and an output power of 5120W, supporting high-power appliances for extended periods. It supports automatic addressing with a maximum of 20 parallel connections, allowing for a substantial 102.4kWh energy storage system. It also features automatic host-slave identification and rapid 1C charging from multiple sources, including solar and generators.

Image: Example run times for common household appliances (TV, microwave, water heater, refrigerator, air conditioner, washing machine) powered by a 5.12 kWh battery, demonstrating its capacity for sustainable living.

3.4. Smart Monitoring & Communication

Equipped with a mobile app for quick connection and remote monitoring of single or multiple battery statuses (voltage, current, capacity). It supports CAN/RS232/RS485 communication protocols for seamless compatibility with all-in-one inverter chargers, and features a built-in indicator for convenient local status checks.

Image: A smartphone screen showing the Bluetooth 5.0 app interface, which allows real-time monitoring of battery status including charge level, voltage, temperature, power, and current.

3.5. Design & Installation

This 48V lithium battery features a compact, lightweight 3U server rack design (17.32" x 19.69" x 5.24", weight: 96.45 lbs), offering easy installation and facilitating the use of multiple batteries. It is 60% lighter and 33% smaller compared to four 12V 100Ah lead-acid batteries.

3.6. Included Accessories & Certifications

The product comes as a complete plug-and-play kit, including parallel cables, communication cables, and all necessary accessories for a quick setup. It is certified to SDS, UN38.3, FCC, CE, and RoHS standards.

4. Setup and Installation

Before installation, ensure all components are present and undamaged. Refer to the included accessories for proper connections.

4.1. Physical Installation

The 3U server rack design allows for flexible installation. You can install the battery using stacking brackets or directly plug it into a 3U server rack cabinet.

Image: Illustration of two installation methods: stacking with brackets or direct integration into a 3U server rack cabinet.

4.2. Electrical Connections

Connect the positive (P+) and negative (P-) terminals to your system. Ensure all connections are secure. For parallel connections, the battery supports automatic addressing and host-slave identification for up to 20 units.

Image: Detailed view of the battery's front panel, labeling key components such as handles, power switch, DIP switches, communication ports (CAN, RS485, RS232), LED indicator, air switches, and positive/negative terminals.

5. Operation

5.1. Powering On/Off

Locate the power switch and start button on the front panel. Use these to power the battery on or off as needed.

5.2. Monitoring with Bluetooth App

Download the HumsiENK mobile app to connect via Bluetooth 5.0. The app allows you to monitor real-time battery status, including voltage, current, capacity, and temperature information for individual cells.

5.3. Communication Ports

The battery is equipped with CAN, RS232, and RS485 communication ports for integration with compatible inverter chargers and other system components. Refer to your inverter's manual for specific connection details.

6. Maintenance

To ensure optimal performance and longevity of your HumsiENK LiFePO4 battery, consider the following maintenance guidelines:

- **Regular Inspection:** Periodically check all cable connections for tightness and signs of corrosion.
- **Temperature Management:** While the battery has low-temp cutoff and overheat protection, operating within recommended temperature ranges will extend its life.
- **Software Updates:** Keep the mobile app updated to ensure access to the latest features and performance enhancements.
- **Active Balancing:** The built-in 3A active balancing system continuously works to maintain cell balance, contributing to the battery's overall health and lifespan.

7. Troubleshooting

If you encounter issues with your HumsiENK battery, consider the following common troubleshooting steps:

- **No Power Output:** Check the main power switch and the air switch (circuit breaker) on the front panel to ensure they are in the 'ON' position. Verify all cable connections are secure.
- **App Connectivity Issues:** Ensure Bluetooth is enabled on your device and the battery is powered on. Try restarting the app or the battery.
- **LED Indicators:** Observe the LED indicators on the front panel. They provide status information (e.g., SOC, run status, alarm status). Refer to the product's detailed guide for specific LED patterns and their meanings.
- **System Overload:** If the air switch trips, it indicates an overload. Reduce the load on the battery before resetting the switch.

For persistent issues, contact HumsiENK customer support.

8. Specifications

Image: Visual representation of the battery's physical dimensions (width, depth, height) and weight, confirming its 3U server rack form factor.

Specification	Value
Brand	HumsiENK
Model Number	HS48V100AH100RACK-3UBT
Size	48V 100Ah (2Pack)
Voltage	48 Volts
Item Weight	66 Pounds
Number Of Cells	2
Terminal Type	M8 Bolt

Specification	Value
Manufacturer Warranty	5 Year Manufacturer
Included Components	Battery Cells
Vehicle Service Type	RV
Automotive Fit Type	Universal Fit
Compatible with Vehicle Type	RV

9. Warranty and Support

Your HumsiENK 48V 100Ah LiFePO4 Lithium Battery is backed by a 10-year limited warranty. HumsiENK provides dedicated 24/7 customer support and shipping insurance to ensure a hassle-free experience.

For warranty claims, technical assistance, or any inquiries, please contact HumsiENK customer support through the official channels provided with your product or on the HumsiENK website.