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› 48V 100AH LiFePO4 Battery Pack, 3U Rack Mount, 2-Pack User Manual

HumsiENK HS48V100AH100RACK-3U

HumsiENK 48V 100AH LiFePO4 Battery Pack User Manual

Model: HS48V100AH100RACK-3U

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1. PRODUCT OVERVIEW

The HumsiENK 48V 100AH LiFePO4 Battery Pack is a high-performance energy storage solution designed for various applications, including solar energy systems, uninterruptible power supplies (UPS), and industrial power backup. This system features advanced Lithium Iron Phosphate (LiFePO4) chemistry, offering superior cycle life, enhanced safety, and stable performance compared to traditional battery technologies.

Each battery pack is designed for convenient 3U rack installation, allowing for efficient space utilization in standard 19-inch equipment racks. The robust construction and professional-grade components ensure reliable operation in demanding environments.



Figure 1: Humsienk 48V 100AH LiFePO4 Battery Packs (Front View)

This image displays two Humsienk 48V 100AH LiFePO4 battery packs, stacked one above the other. Each unit features a black casing with orange accents. The front panel of each battery pack includes large red positive (P+) and black negative (P-) terminals, a power button, CAN/485 and Link-In/Out communication ports, a console port, a main circuit breaker switch (OFF/ON), and LED indicators for 'RUN' and 'ALM' (Alarm). The branding 'Humsienk Smart Edition' and '51.2V 100Ah' are prominently visible.

2. SETUP AND INSTALLATION

2.1 Unpacking

Carefully unpack the battery packs from their packaging. Inspect for any signs of damage during transit. If any damage is observed, contact your supplier immediately.

What's in the Box:

- Humsienk 48V 100AH LiFePO4 Battery Pack(s)
- Mounting Hardware (for rack installation)
- User Manual (this document)
- Battery Cells (pre-installed within the pack)

2.2 Site Preparation

Ensure the installation environment is clean, dry, and well-ventilated. Maintain an ambient temperature within the recommended operating range (refer to Specifications section). The battery packs should be installed in a standard 19-inch equipment rack.

2.3 Rack Mounting

1. Position the battery pack(s) into the desired 3U space within the 19-inch equipment rack.
2. Secure the battery pack(s) using the provided mounting hardware (screws, cage nuts, etc.) to the rack rails.

Ensure all mounting points are firmly fastened to prevent movement.

3. For multiple units, ensure adequate airflow between units if stacking or placing in close proximity.

2.4 Electrical Connections

WARNING: Before making any electrical connections, ensure the main circuit breaker on the battery pack is in the **OFF** position. Always use appropriate personal protective equipment (PPE) and follow local electrical codes.

- **Positive (P+) Terminal:** Connect the positive cable from your inverter/charger or load to the red P+ terminal. Ensure a secure, tight connection.
- **Negative (P-) Terminal:** Connect the negative cable from your inverter/charger or load to the black P- terminal. Ensure a secure, tight connection.
- **Grounding:** Connect the battery pack to a proper earth ground as per local regulations.
- **Communication Ports (Optional):** If integrating with a compatible Battery Management System (BMS) or monitoring system, connect CAN/485, Link-In, Link-Out, or Console ports as required by your system's architecture. Refer to your system's documentation for specific wiring diagrams.

3. OPERATION

3.1 Powering On the Battery Pack

1. Ensure all electrical connections are correctly made and secure.
2. Flip the main circuit breaker switch on the front panel from **OFF** to **ON**.
3. Press the **POWER** button on the front panel. The battery pack will initiate its startup sequence.
4. Observe the **RUN** LED indicator. A solid green light typically indicates normal operation.
5. The **ALM** (Alarm) LED indicator should be off during normal operation. If it illuminates, refer to the Troubleshooting section.

3.2 Powering Off the Battery Pack

1. Ensure any connected loads are disconnected or powered down.
2. Press and hold the **POWER** button until the battery pack powers down.
3. Flip the main circuit breaker switch on the front panel from **ON** to **OFF**.

3.3 LED Indicators

- **RUN LED (Green):**
 - Solid: Normal operation.
 - Flashing: Communication activity or specific operational state (refer to detailed technical manual for specific flash codes).
- **ALM LED (Red):**
 - Solid: Critical alarm or fault condition. Immediate attention required.
 - Flashing: Warning or non-critical alarm. Investigate the cause.
- **State of Charge (SOC) Indicators (Green Dots):** A series of green LEDs typically indicate the approximate state of charge of the battery pack. More illuminated LEDs mean a higher charge level.

4. MAINTENANCE

LiFePO4 batteries are generally low-maintenance. However, regular checks can help ensure optimal performance and longevity.

- **Visual Inspection:** Periodically inspect the battery pack for any physical damage, loose connections, or corrosion on terminals. Clean terminals if necessary using a dry cloth.
- **Ventilation:** Ensure that the ventilation openings on the battery pack and in the rack are not obstructed. Proper airflow is crucial for thermal management.
- **Temperature Monitoring:** Ensure the operating environment temperature remains within the specified range. Extreme temperatures can affect battery performance and lifespan.
- **Firmware Updates:** If applicable, check with Humsienk for any recommended firmware updates for the battery's internal BMS.
- **Cleaning:** Keep the battery pack clean and free of dust. Use a dry, soft cloth for cleaning. Do not use liquid cleaners or solvents.

5. TROUBLESHOOTING

This section provides basic troubleshooting steps for common issues. For more complex problems, contact Humsienk technical support.

Problem	Possible Cause	Solution
Battery pack does not power on.	<ul style="list-style-type: none"> • Main circuit breaker is OFF. • Power button not pressed correctly. • Battery is deeply discharged. • Internal fault. 	<ul style="list-style-type: none"> • Flip the main circuit breaker to ON. • Press the POWER button firmly. • Connect to a compatible charger. • Contact technical support.
ALM LED is illuminated.	<ul style="list-style-type: none"> • Over-voltage/Under-voltage. • Over-current. • Over-temperature/Under-temperature. • Cell imbalance. 	<ul style="list-style-type: none"> • Check charging/discharging parameters. • Reduce load. • Ensure proper ventilation and ambient temperature. • Allow BMS to balance cells (may take time). If persistent, contact support.
Battery not charging.	<ul style="list-style-type: none"> • Charger not connected or faulty. • Battery Management System (BMS) protection activated. • Incorrect charging parameters. 	<ul style="list-style-type: none"> • Verify charger connection and functionality. • Check ALM LED. Disconnect load/charger, wait a few minutes, then retry. • Ensure charger voltage and current settings match battery requirements.

6. SPECIFICATIONS

The following table outlines the key technical specifications for the Humsienk 48V 100AH LiFePO4 Battery Pack:

Feature	Detail
Model Number	HS48V100AH100RACK-3U
Battery Type	LiFePO4 (Lithium Iron Phosphate)
Nominal Voltage	48 Volts (51.2V nominal)

Feature	Detail
Nominal Capacity	100 AH (Ampere-Hours)
Product Dimensions (D x W x H)	19"D x 19"W x 5.2"H (48.26 cm D x 48.26 cm W x 13.21 cm H)
Item Weight	66 Pounds (29.94 kg)
Rack Unit Size	3U
Manufacturer	HumsiENK
First Available	June 20, 2025

7. WARRANTY AND SUPPORT

7.1 Warranty Information

Specific warranty terms and conditions for the HumsiENK 48V 100AH LiFePO4 Battery Pack are provided by the manufacturer. Please refer to the warranty card included with your product or visit the official HumsiENK website for detailed warranty coverage, duration, and claim procedures. Keep your proof of purchase for warranty validation.

7.2 Technical Support

For technical assistance, troubleshooting beyond this manual, or service inquiries, please contact HumsiENK customer support. When contacting support, please have your product model number (HS48V100AH100RACK-3U) and purchase details ready.

You can typically find contact information on the HumsiENK official website or through your point of purchase.