

Humsienk 12V 100Ah LiFePO4

Humsienk 12V 100Ah LiFePO4 Battery User Manual

Model: 12V 100Ah LiFePO4

1. INTRODUCTION

The Humsienk 12V 100Ah LiFePO4 battery is designed to provide reliable and long-lasting power for various applications. Utilizing Grade A+ LiFePO4 cells, this battery offers up to 15,000 deep charge cycles and an expected lifespan of up to 10 years, significantly outperforming traditional lead-acid batteries. It is certified with SDS, UN38.3, FCC, CE, and RoHS, ensuring safety, stability, and dependable performance.

This manual provides essential information for the safe and efficient use of your Humsienk LiFePO4 battery. Please read it thoroughly before installation and operation.

2. SAFETY INFORMATION

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

- Read this manual completely before installation and use.
- Wear appropriate personal protective equipment, including eye protection and insulated gloves, when handling batteries.
- Do not short-circuit the battery terminals. This can cause severe damage to the battery and pose a fire hazard.
- Do not disassemble, puncture, or modify the battery. Internal components are not user-serviceable.
- Use only chargers specifically designed for LiFePO4 batteries with compatible voltage and current ratings.
- Avoid exposing the battery to extreme temperatures outside its specified operating range (-20°C to 70°C).
- Ensure proper ventilation when charging or discharging the battery.
- Keep the battery away from flammable materials, heat sources, and direct sunlight.
- In case of fire, use a Class D fire extinguisher (for lithium fires). Water or standard extinguishers may be ineffective or dangerous.
- Dispose of the battery according to local regulations. Do not dispose of it in household waste.

3. PRODUCT OVERVIEW

The Humsienk 12V 100Ah LiFePO4 battery is engineered for high performance and versatility. Its compact design and

lightweight construction make it an ideal replacement for heavier lead-acid batteries.

Key Features:

- **Reliable Power & Long Lifespan:** Up to 15,000 deep cycles and 10 years of service life.
- **Compact & Lightweight:** Meets BCI Group 24–31 standards, saving up to 30% space and weight compared to lead-acid batteries.
- **Expandable Energy System:** Supports 4S4P configurations, allowing expansion up to 48V and 20.48 kWh.
- **Smart BMS 100A:** Integrated Battery Management System provides comprehensive protection against overcharge, over-discharge, overcurrent, short circuit, and extreme temperatures.
- **Optimal Low-Temperature Performance:** Operates reliably from -20°C to 70°C, with automatic charging cutoff below -20°C to protect cells.
- **Wide Compatibility:** Suitable for RVs, marine applications (trolling motors, fish finders), off-grid solar systems, emergency power, and portable devices.
- **Integrated Nylon Handle:** Facilitates easy transport and installation.



Figure 1: Humsienk 12V 100Ah LiFePO4 battery with dimensions (Length: 26cm, Width: 17cm, Height: 21cm) and weight (10.5 kg).

Includes M8 bolts and insulating caps.



Figure 2: Overview of Humsienk LiFePO4 battery features, highlighting 5000 cycles at 100% DOD, Group 24 size, 1280Wh energy, IP67 waterproof rating, 10-year lifespan, low-temperature charging cut-off, A+ grade cells, and expandability up to 20.48kWh.

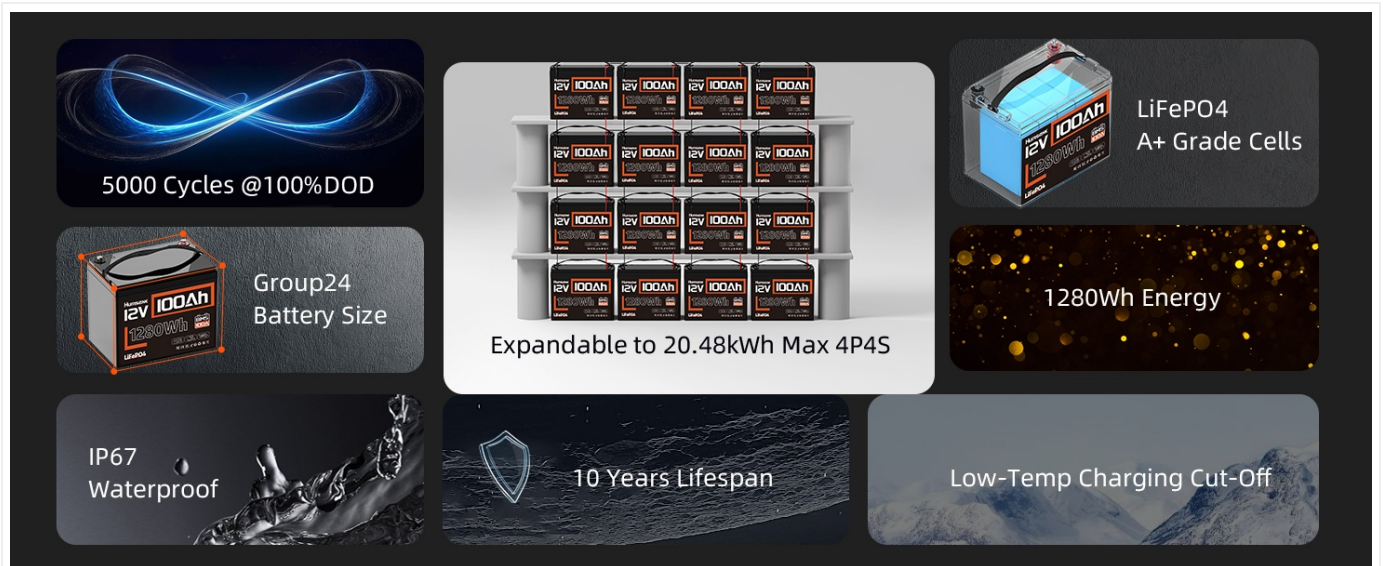


Figure 3: Built-in 100A Smart BMS protections, including overcharge, over-discharge, overload, overcurrent, low temperature, equalization, short circuit, and high temperature.

4. SPECIFICATIONS

Specification	Value
Brand	Humsienk
Model	12V 100Ah LiFePO4
Nominal Voltage	12.8 Volts
Capacity	100 Ah
Energy	1280 Wh
BMS	Built-in 100A Smart BMS

Specification	Value
Max Discharge Current (BMS cutoff)	300±50A
Cycle Life	Up to 15,000 cycles (60% DOD)
Lifespan	Up to 10 years
Operating Temperature Range	-20°C to 70°C
Charging Cutoff Temperature	Below -20°C (automatic)
Dimensions (L x W x H)	26 cm x 17 cm x 21 cm (10.2 in x 6.6 in x 8.2 in)
Weight	10.5 kg (23 lbs)
Reusability	Rechargeable
Certifications	SDS, UN38.3, FCC, CE, RoHS
Manufacturer	Humsienk
ASIN	B0GS8R43YR

PERFECT REPLACEMENT FOR LEAD-ACID BATTERY



3 Years	Lifespan	10 Years
300-500	Cycle Times	15000+
×	BMS	✓
80%	Depth of Discharge	100%
65lbs	Weight	23lbs
IP65	Waterproof	IP67

Figure 4: Performance comparison between Humsienk LiFePO4 battery and a typical lead-acid battery.

5. SETUP

5.1 Unpacking and Inspection

Upon receiving your Humsienk LiFePO4 battery, carefully unpack it and inspect for any visible damage. If damage is found, contact customer support immediately.

5.2 Terminal Connections

- Ensure all connections are clean, tight, and free of corrosion.
- Connect the positive (+) terminal of the battery to the positive (+) terminal of your system, and the negative (-) terminal to the negative (-) terminal.
- Use appropriate M8 bolts (included) and ensure they are tightened to the recommended torque specifications to prevent loose connections and arcing.

- Always use insulating caps on terminals after connection to prevent accidental short circuits.

5.3 Series and Parallel Connections

The Humsienk 12V 100Ah LiFePO4 battery supports configurations up to 4S4P (4 batteries in series, 4 parallel strings). This allows for system voltages up to 48V and total energy capacity up to 20.48 kWh.

- **Series Connection:** Connect the positive terminal of one battery to the negative terminal of the next to increase voltage. Ensure all batteries have the same capacity and state of charge before connecting in series.
- **Parallel Connection:** Connect positive terminals together and negative terminals together to increase capacity. Ensure all batteries have the same voltage and state of charge before connecting in parallel.
- Always use appropriate cabling and fusing for your system's voltage and current requirements.

5.4 Initial Charge

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



DIY YOUR RV POWERHOUSE

4S4P | Expandable to 20.48kWh

4P4S 48V 400Ah 20.48kWh	4P 12V 400Ah 5.12kWh	4S 48V 100Ah 5.12kWh
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Figure 5: Example of a DIY RV Powerhouse setup, demonstrating battery integration with solar panels and an inverter for expandable energy.

6. OPERATING

6.1 Charging Procedures

The Humsienk LiFePO4 battery can be charged using several methods:

- **Solar Panel + MPPT Charger:** For off-grid and RV applications. A 400W solar panel system is recommended for a full charge in approximately 5 hours.
- **Specialized Lithium Iron Phosphate Charger:** Use a dedicated LiFePO4 charger (e.g., 14.6V/20A) for optimal charging. A full charge typically takes about 5 hours.
- **Engine Running Charger (DC-DC):** Suitable for charging while driving in RVs or vehicles. Full charge in approximately 5 hours.

The integrated BMS ensures safe charging by protecting against overcharge and automatically cutting off charging below -20°C to prevent cell damage.



Figure 6: Three recommended methods for charging the Humsienk LiFePO4 battery.

6.2 Discharging Limits

The BMS protects the battery from over-discharge. If the discharge current exceeds $300 \pm 50A$, the BMS will automatically disconnect the circuit to prevent damage and ensure safety.

6.3 Operating Temperature

The battery is designed to operate reliably in a wide temperature range from -20°C to 70°C. For optimal performance and longevity, avoid prolonged operation at the extreme ends of this range.

6.4 Applications

This battery is highly versatile and ideal for:

- RV and Camper Power Systems
- Marine Applications (trolling motors, fish finders)
- Off-Grid Solar Energy Storage
- Home Energy Storage Systems

- Emergency Backup Power (UPS)
- Powering LED lighting, laptops, security cameras, and portable devices

EXPLORE YOUR OWN LIVES

Yacht



Off-Grid



Home Energy Storage



UPS



Figure 7: Diverse applications for the Humsienk LiFePO4 battery, including marine, off-grid, home energy storage, and UPS.



Figure 8: The Humsienk LiFePO₄ battery supports up to 20.48KW load power in 4P4S configurations for various applications.

7. MAINTENANCE

7.1 Regular Inspection

- Periodically inspect the battery for any physical damage, swelling, or leaks.
- Check terminal connections for tightness and ensure they are free of corrosion. Clean terminals with a dry cloth if necessary.

7.2 Storage

- If storing the battery for an extended period, ensure it is charged to approximately 50-70% of its capacity.
- Store the battery in a cool, dry place, away from direct sunlight and extreme temperatures.
- Avoid storing the battery below -20°C or above 70°C.

7.3 BMS Self-Protection

The integrated BMS actively monitors the battery's state and will initiate protective measures under abnormal conditions. These include:

- Overcharge protection
- Over-discharge protection
- Overcurrent protection
- Short circuit protection
- High and low temperature protection (charging cutoff below -20°C)

LOW TEMPERATURE PROTECTION

Intelligently cut off charging and discharging



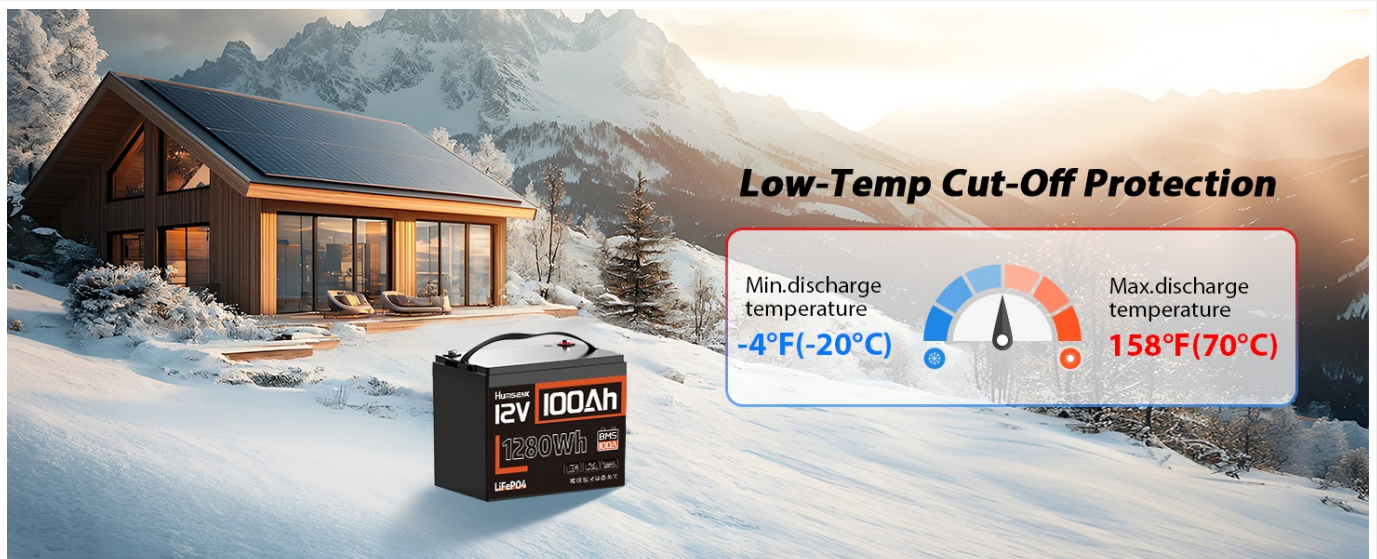
Min. discharge temp
-4°F (-20°C)



Max. discharge temp
158°F (70°C)



Figure 9: Low temperature protection feature, showing the battery's operational range.



8. TROUBLESHOOTING

If you encounter issues with your Humsienk LiFePO4 battery, consider the following common troubleshooting steps:

- **Battery Not Charging:**

- Check all cable connections for tightness and correct polarity.
- Ensure the charger is compatible with LiFePO4 batteries and is functioning correctly.
- Verify that the ambient temperature is within the acceptable charging range (above -20°C). The BMS will prevent charging below this temperature.
- If the battery was deeply discharged, some chargers may require a specific activation procedure.

- **Battery Not Discharging/No Power Output:**

- Check all load connections and ensure they are secure.
- Verify that the battery's voltage is above the low voltage cutoff threshold. The BMS will disconnect the load if the voltage is too low.
- Check for an overcurrent condition. If the load draws too much current (above 300±50A), the BMS will shut down output. Reduce the load and attempt to reconnect.
- Ensure the operating temperature is within the specified range (-20°C to 70°C).

- **Unusual Odor or Heat:**

- Immediately disconnect the battery from all loads and chargers.
- Move the battery to a safe, well-ventilated area.
- Contact customer support. Do not attempt to use or repair the battery.

If these steps do not resolve the issue, please contact Humsienk customer support for further assistance.

9. WARRANTY

The Humsienk 12V 100Ah LiFePO4 battery comes with a **5-year manufacturer's warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use and service conditions.

The warranty does not cover:

- Damage caused by improper installation, misuse, abuse, or neglect.
- Damage caused by unauthorized repairs or modifications.
- Damage due to environmental factors outside the specified operating range.
- Normal wear and tear.

To make a warranty claim, please retain your proof of purchase and contact Humsienk customer support with a detailed description of the issue.

10. SUPPORT

For technical assistance, product inquiries, or warranty claims, please contact Humsienk customer support through the following channels:

- **Website:** Visit the official Humsienk website for FAQs, product information, and contact forms.

- **Email:** Refer to your product packaging or the Humsienk website for the customer support email address.
- **Online Retailer:** If purchased through an online retailer, you may also contact their customer service for initial support.

When contacting support, please have your product model (12V 100Ah LiFePO4) and ASIN (B0GS8R43YR) readily available.

ASK A QUESTION ABOUT THIS MANUAL

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.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

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.

Submit question