

HumsiENK USHS12V100AH10020ACHARGER

HumsiENK 12V 100Ah LiFePO4 Battery Instruction Manual

Model: USHS12V100AH10020ACHARGER

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1. INTRODUCTION

This manual provides essential information for the safe and efficient use of your HumsiENK 12V 100Ah LiFePO4 Deep Cycle Battery. Please read these instructions carefully before installation and operation to ensure optimal performance and longevity of the battery. This battery is designed for various applications including RVs, solar energy systems, off-grid setups, marine use, and trolling motors.

2. SAFETY INSTRUCTIONS

- Always wear appropriate personal protective equipment (PPE) including safety glasses and gloves when handling batteries.
- Ensure proper ventilation during installation and operation.
- Do not short-circuit the battery terminals.
- Use only compatible chargers designed for LiFePO4 batteries. Using an incompatible charger can damage the battery and pose a safety risk.
- Avoid exposing the battery to extreme temperatures outside its specified operating range.
- Do not disassemble, puncture, or modify the battery.
- Keep the battery away from open flames, heat sources, and flammable materials.
- In case of fire, use a Class D fire extinguisher. Water or foam may not be effective.
- Dispose of the battery according to local regulations for lithium batteries.

3. PRODUCT OVERVIEW

The HumsiENK 12V 100Ah LiFePO4 battery is a high-performance deep cycle battery featuring a built-in 100A Battery Management System (BMS). It offers a nominal voltage of 12V and a capacity of 100Ah, providing 1280Wh of energy. The battery is designed for durability and safety, with an IP67 waterproof rating and certifications including SDS, UN38.3, FCC, CE, and ROHS.



Image: HumsiENK 12V 100Ah LiFePO4 Battery, showing its compact design and terminals.

Key Features:

- **Long Cycle Life:** Offers 15,000+ deep cycles, providing a lifespan of up to 10 years.
- **Integrated BMS:** The 100A BMS protects against overcharge, over-discharge, overcurrent, and short-circuit conditions. It also features automatic disconnection if discharge current exceeds 300±50A.
- **Robust Construction:** A+ grade battery cells, shock-resistant, and IP67 waterproof for reliable performance in various environments.
- **Low Temperature Protection:** Operates from -4°F (-20°C) to 158°F (70°C) and automatically shuts down below -4°F (-20°C) to prevent damage.
- **Expandable System:** Supports up to 4 batteries in series (48V) or 4 batteries in parallel, allowing for a maximum system capacity of 20.48kWh.

Perfect Replacement For 100Ah Lead-acid Batteries



Other 12V 100Ah Lead-acid Batteries



Lifespan
Cycles
Pulse
Charging Rate

Humsienk 12V 100Ah LiFePO4 Battery

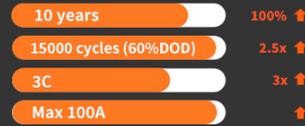


Image: Comparison highlighting the advantages of the Humsienk LiFePO4 battery over traditional lead-acid batteries in terms of lifespan, cycle times, depth of discharge, weight, and waterproof rating.



Image: Illustration emphasizing the safety and reliability of the battery, showing IEC/UN/SDS/FCC/CE/ROHS certifications and 15000+ cycles with BMS Smart Protection.

4. SETUP AND INSTALLATION

4.1 Unpacking and Inspection

Upon receiving your Humsienk battery, carefully unpack all components. The package includes one 12V 100Ah LiFePO4 battery and one 14.6V 20A charger. Inspect the battery and charger for any visible damage. If any damage is found, contact customer support immediately.

Note: The battery and charger may be shipped in separate packages. Please ensure both components are received before proceeding with setup.

4.2 Initial Charging

Before first use, fully charge the battery using the provided 14.6V 20A charger. Connect the charger to a standard AC outlet and then connect the charging cable to the battery terminals. The charging process typically takes approximately 5 hours.

100Ah -Approx. 5hrs to Fully Charge



20A DC Charging Current



100Ah - Approx. **5hrs** to Fully Charge



Image: The Humsienk 12V 100Ah LiFePO4 battery connected to its 20A DC charger, illustrating the charging process which takes approximately 5 hours.

4.3 Connecting Multiple Batteries (Optional)

The Humsienk 12V LiFePO4 battery supports configurations of up to 4 batteries in series or 4 batteries in parallel, or a combination of both, to achieve higher voltage or capacity. This allows for a maximum system capacity of 48V and 20.48kWh.

- **Series Connection:** Connect the positive terminal of one battery to the negative terminal of the next to increase voltage. Ensure all batteries have similar state of charge before connecting in series.
- **Parallel Connection:** Connect positive terminals together and negative terminals together to increase capacity. Use appropriate busbars and cables for parallel connections.

MAX 4P4S 20.48KW LOAD POWER

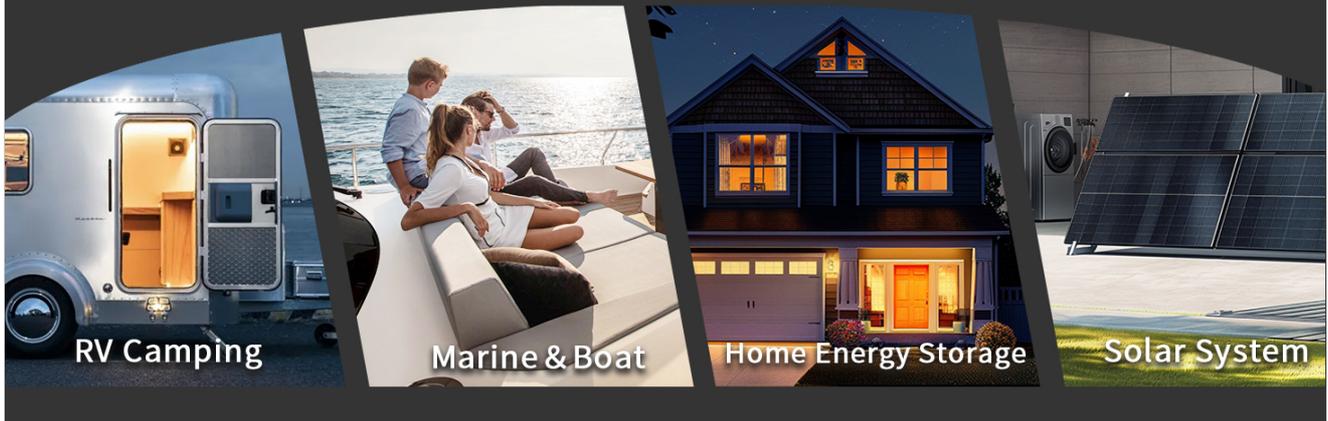


Image: Diagram illustrating how to connect multiple batteries in series and parallel to create a scalable power system for an RV, showing configurations like 4P4S for 20.48kWh.

5. OPERATING INSTRUCTIONS

5.1 General Usage

The battery is suitable for powering various electrical appliances, lighting, and electronic equipment. Its deep cycle capability makes it ideal for sustained power delivery in applications such as RVs, solar systems, off-grid homes, marine vessels (fish finders, trolling motors), and garden equipment.

5.2 Temperature Considerations

The battery is designed to operate in a wide temperature range from -4°F (-20°C) to 158°F (70°C). For safety and to prevent damage, the built-in BMS will automatically cut off charging and discharging if the temperature falls below -4°F (-20°C). This low-temperature protection is crucial for maintaining battery health, especially in cold climates.

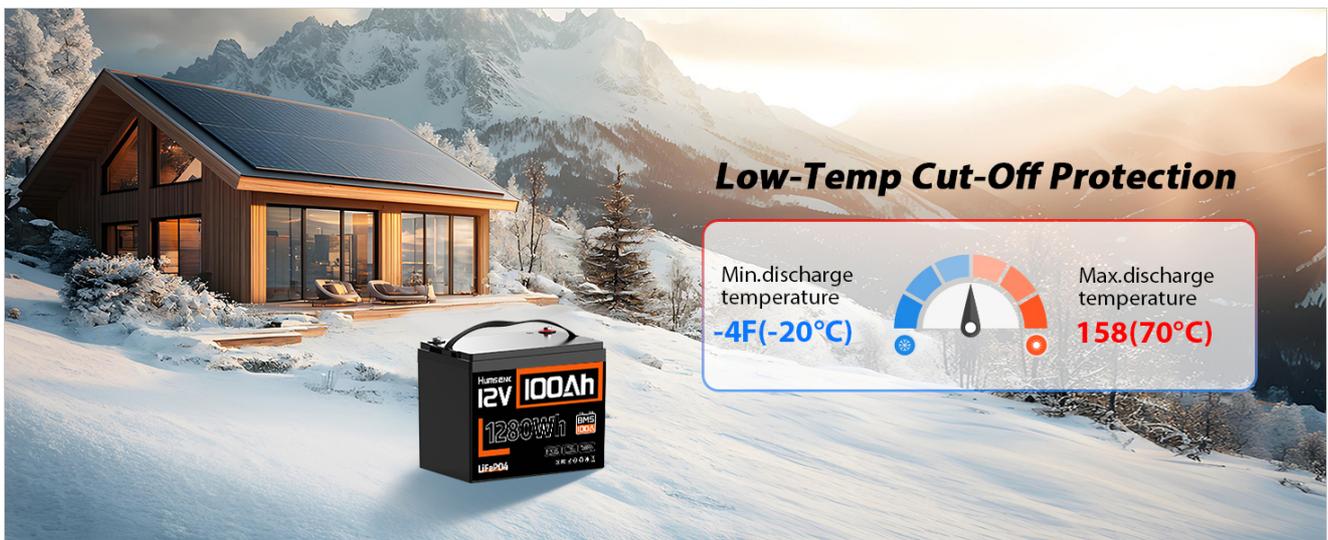


Image: Visual representation of the battery's low-temperature cut-off protection, showing its operational range from -4°F (-20°C) to 158°F (70°C) in a snowy landscape.

5.3 Charging Methods

The HumsiENK LiFePO4 battery can be charged using several methods:

- **Solar Panel + MPPT Charger:** For optimal solar charging, a solar panel system with a recommended output of $\geq 400\text{W}$ and an MPPT charger can fully charge the battery in approximately 5 hours.

- **Specialized Lithium Iron Phosphate Charger:** Use the included HumsiENK 14.6V/20A charger for a full charge in about 5 hours.
- **Engine Running Charger (DC-DC):** A DC-DC charger connected to a vehicle's alternator can also charge the battery, typically achieving a full charge in about 5 hours.

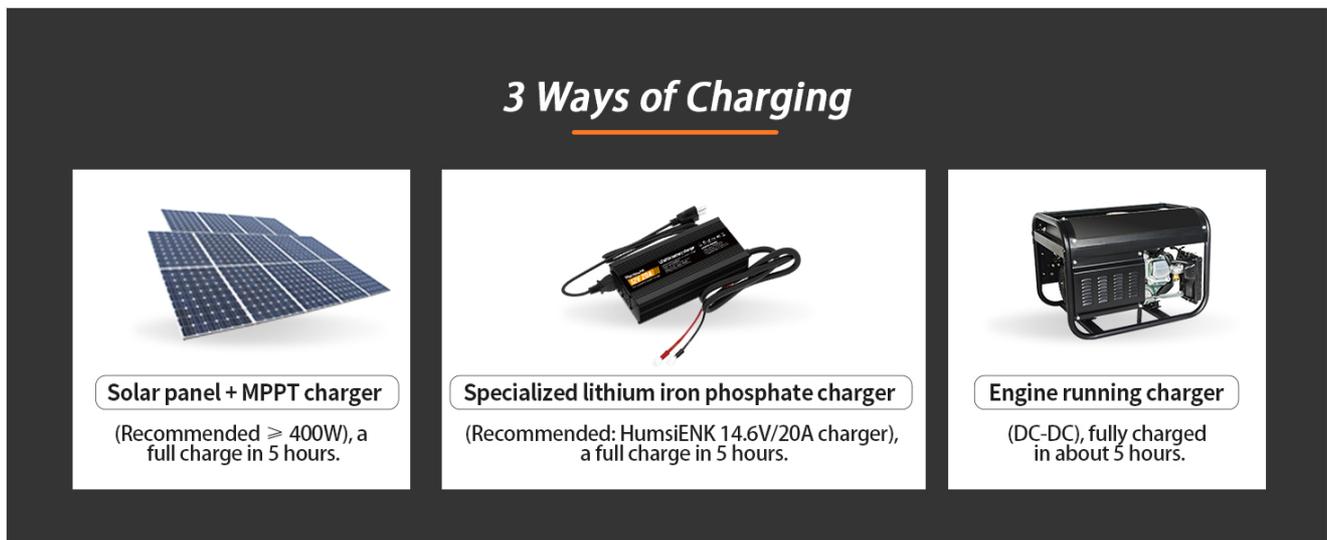


Image: Illustration depicting three charging methods: solar panel with MPPT charger, specialized lithium iron phosphate charger, and engine running (DC-DC) charger, each capable of fully charging the battery in approximately 5 hours.

6. MAINTENANCE

- **Regular Inspection:** Periodically check the battery terminals for corrosion or loose connections. Clean terminals with a wire brush if necessary and ensure they are securely fastened.
- **Cleaning:** Keep the battery surface clean and dry. Use a damp cloth to wipe away dust or dirt. Do not use harsh chemicals or solvents.
- **Storage:** If storing the battery for an extended period, ensure it is charged to approximately 50-70% State of Charge (SOC). Store in a cool, dry place away from direct sunlight and extreme temperatures. Recharge every 3-6 months to prevent deep discharge.
- **Avoid Deep Discharge:** While LiFePO4 batteries tolerate deep discharge well, consistently discharging to 0% can reduce overall lifespan. The BMS will protect against over-discharge.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
Battery not charging	<ul style="list-style-type: none"> • Charger not connected properly or faulty. • Battery temperature too low (BMS protection activated). • Charger incompatible with LiFePO4 batteries. 	<ul style="list-style-type: none"> • Verify charger connection and check charger indicator lights. • Move battery to a warmer environment above -4°F (-20°C). • Ensure you are using a 14.6V LiFePO4 compatible charger.

Problem	Possible Cause	Solution
Battery not providing power / BMS trip	<ul style="list-style-type: none"> • Over-discharge (battery voltage too low). • Overcurrent (load exceeds 100A continuous or 300±50A peak). • Short circuit. • Battery temperature too high or too low. 	<ul style="list-style-type: none"> • Recharge the battery. • Reduce the load or check for faulty appliances. The BMS will automatically reset after the overcurrent condition is removed. • Inspect wiring for short circuits. • Allow battery to return to its optimal operating temperature range.
Reduced capacity or runtime	<ul style="list-style-type: none"> • Battery not fully charged. • Aging of battery (after many years of use). • High discharge rate. 	<ul style="list-style-type: none"> • Ensure battery is fully charged before use. • This is normal wear over time. • Consider a higher capacity battery or reduce power consumption.

If you encounter issues not listed here or require further assistance, please contact HumsiENK customer support.

8. SPECIFICATIONS

Feature	Specification
Model Number	USHS12V100AH10020ACHARGER
Brand	HumsiENK
Battery Type	LiFePO4 (Lithium Iron Phosphate)
Nominal Voltage	12V
Capacity	100Ah
Energy	1280Wh
BMS	Built-in 100A
Max Discharge Current	100A (Continuous), 300±50A (Peak Disconnect)
Cycle Life	15,000+ cycles
Lifespan	Up to 10 years
Operating Temperature	-4°F (-20°C) to 158°F (70°C)
Low Temperature Protection	Automatic cut-off below -4°F (-20°C)
Waterproof Rating	IP67
Certifications	SDS, UN38.3, FCC, CE, ROHS
Charger Included	14.6V 20A
Dimensions (Approx.)	10.2in (26cm) x 6.6in (17cm) x 8.2in (21cm) (Group 24 Size)
Weight (Approx.)	19.73 lbs (8.95 kg)

UNIVERSAL & GROUP 24 FITTING

For All Types of RVs



Weight
19.73lbs(8.95KG)



Image: The Humsienk 12V 100Ah LiFePO4 battery with its dimensions (10.2in x 6.6in x 8.2in) and weight (19.73lbs), confirming its Group 24 size fitting.

9. WARRANTY AND SUPPORT

The Humsienk 12V 100Ah LiFePO4 Battery comes with a 5-year warranty, reflecting the manufacturer's commitment to quality and durability. The product is designed for a lifespan of up to 10 years.

For technical assistance, troubleshooting, or warranty claims, please contact Humsienk customer support. They offer 24/7 customer support to address any inquiries you may have.



Image: Information graphic detailing Humsienk's customer support availability (24/7), 5-year warranty, and 10-year lifespan for their batteries.

10. PRODUCT VIDEOS

Product Overview Video

Your browser does not support the video tag.

Video: A general overview of the HumsiENK LiFePO4 battery, showcasing its features and applications.

Battery Features Highlight

Your browser does not support the video tag.

Video: This video highlights key features of the HumsiENK LiFePO4 battery, such as its BMS and durability.