HumsiENK Lfp314bt

HumsiENK 12V 314Ah LiFePO4 Lithium Battery MINI User Manual

1. Introduction

This manual provides essential information for the safe and efficient use of your HumsiENK 12V 314Ah LiFePO4 Lithium Battery MINI. Please read it thoroughly before installation and operation to ensure optimal performance and longevity of your battery. This battery is designed for various applications including RVs, solar systems, marine, and off-grid power solutions.

The HumsiENK 12V 314Ah LiFePO4 Lithium Battery MINI, showcasing its compact design and the Bluetooth app interface for real-time monitoring.

2. Safety Information

Always adhere to the following safety guidelines 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 or extreme heat.
- Do not immerse the battery in water or other liquids.
- Do not disassemble, puncture, or modify the battery.
- Use only compatible chargers designed for LiFePO4 batteries.
- Ensure proper ventilation during charging and discharging.
- Keep the battery away from children and pets.
- Wear appropriate personal protective equipment (PPE) such as gloves and eye protection when handling the battery.
- The integrated Battery Management System (BMS) provides protection against overcharge, over-discharge, over-current, short-circuit, and high-temperature conditions.

3. Product Overview

3.1 Key Features

- **Bluetooth APP Monitoring:** Real-time monitoring of battery voltage, current, capacity, and other parameters via a dedicated smartphone application (Bluetooth 5.0, range up to 15 meters).
- **High Energy Density:** Compact size (15.24 × 9.72 × 7.6 inches) and lightweight (61.73 lbs) design, offering twice the usable capacity of lead-acid batteries.
- **Extended Lifespan:** Provides over 15,000 deep cycles at 60% Depth of Discharge (DOD), resulting in a lifespan of up to 10 years.
- **Scalable Energy Storage:** Supports configurations up to 4-series, 4-parallel (4S4P) for a maximum energy system of 51.2V 1256Ah (64.3kWh).
- **Advanced BMS:** Built-in 100A Battery Management System (BMS) with Grade A+ cells, offering comprehensive protection against overcharge, over-discharge, over-current, short-circuit, and high-temperature cut-off (above 145°F / 65°C).
- **Low-Temperature Protection:** Automatic charging cut-off under low-temperature conditions to prevent battery damage and ensure performance in extreme environments.
- **Wide Application:** Suitable for home energy storage, UPS backup power, RVs, campers, golf carts, trolling motors, yachts, solar systems, and off-grid applications.

An overview of the battery's key features, including its A+ grade cells, integrated 100A Battery Management System (BMS), wide operating temperature range, extended cycle life, and compatible charging methods.

3.2 Components

The HumsiENK 12V 314Ah LiFePO4 battery typically includes:

- **Battery Unit:** The main 12V 314Ah LiFePO4 battery.
- **M8 Terminals:** For secure electrical connections.
- **Integrated Handles:** For ease of transport and installation.

Detailed view of the battery's compact dimensions (15.24 x 9.72 x 7.6 inches) and weight (61.73 lbs), highlighting its space-saving design.

4. Setup

4.1 Unpacking and Inspection

Upon receiving your battery, carefully unpack it and inspect for any signs of physical damage. If any damage is found, contact customer support immediately.

4.2 Initial Charge

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

4.3 Electrical Connection

Ensure all connections are secure and correctly polarized. Incorrect wiring can cause damage to the battery and connected devices.

- **Cable Sizing:** Use appropriately sized cables for your application to handle the expected current draw. Refer to electrical guidelines for proper cable gauge selection.
- **Terminal Connection:** Connect cables to the M8 terminals. Ensure a tight and secure connection to prevent resistance and overheating.
- **Series/Parallel Configuration:** The battery supports up to 4-series and 4-parallel connections for increased voltage or capacity. When connecting multiple batteries, ensure all batteries are at a similar state of charge before connecting them in parallel. For series connections, ensure all batteries are of the same voltage and capacity.

Visual representation of how multiple batteries can be configured in a 4-series, 4-parallel (4S4P) setup to achieve a large-scale 64.3kWh energy storage system.

4.4 Bluetooth App Setup

The HumsiENK battery features Bluetooth connectivity for real-time monitoring.

1. **Download App:** Search for the official HumsiENK battery monitoring application on your smartphone's app store.
2. **Pairing:** Enable Bluetooth on your device and open the app. The app should detect the battery within a 15-

meter range. Follow the in-app instructions to pair.

3. **Monitor:** Once connected, you can view battery voltage, current, state of charge, temperature, and other diagnostic information.

An image depicting the convenience of monitoring the battery remotely via the Bluetooth application, suitable for RV and outdoor applications.

5. Operating Instructions

5.1 Charging

The HumsiENK LiFePO4 battery can be charged using various methods:

- **LiFePO4 Charger:** Use a dedicated LiFePO4 battery charger with appropriate voltage and current settings.
- **Solar Panel + MPPT:** Connect to a solar panel system with a Maximum Power Point Tracking (MPPT) charge controller optimized for LiFePO4 batteries.
- **Generator:** A generator with a compatible charger can also be used.

Ensure the charging voltage is within the specified range (typically 14.2V - 14.6V for 12V LiFePO4 batteries) and the charging current does not exceed the BMS limit (100A).

5.2 Discharging

The battery can deliver a continuous discharge current up to 100A, as managed by the built-in BMS. Avoid exceeding this limit to prevent the BMS from triggering protection and disconnecting the load.

Illustration demonstrating the battery's capacity to power common appliances, providing estimated runtimes for a TV, bread maker, microwave, and air conditioner.

5.3 Temperature Ranges

The battery is designed to operate within specific temperature ranges:

- **Discharge Temperature:** -4°F to 158°F (-20°C to 70°C)
- **Charge Temperature:** 32°F to 158°F (0°C to 70°C)

The BMS will automatically cut off charging if the temperature falls below 32°F (0°C) to prevent damage.

Visual explanation of the battery's extreme temperature protection, detailing its safe discharge and charge temperature ranges.

6. Maintenance

Proper maintenance ensures the longevity and reliability of your battery:

- **Regular Inspection:** Periodically check battery terminals for corrosion or loose connections. Clean terminals as needed.
- **Keep Clean:** Keep the battery surface clean and dry.
- **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 within the recommended temperature range. Avoid storing in direct sunlight or extreme temperatures.
- **Avoid Deep Discharge:** While the BMS protects against over-discharge, regularly charging the battery before it reaches very low levels can extend its overall lifespan.

7. Troubleshooting

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

- **Battery Not Charging:**
  - Check charger connections and ensure the charger is compatible with LiFePO4 batteries.
  - Verify that the charging temperature is above 32°F (0°C). The BMS will prevent charging below this temperature.
  - Inspect battery terminals for loose connections or corrosion.
- **No Power Output:**
  - Check if the battery is fully discharged. Recharge if necessary.
  - Ensure all connections to the load are secure.
  - The BMS may have triggered a protection mode (e.g., over-discharge, over-current, short-circuit). Disconnect the load, wait a few minutes, and reconnect. If the issue persists, contact support.
- **Bluetooth App Connectivity Issues:**
  - Ensure your smartphone's Bluetooth is enabled and you are within 15 meters of the battery.
  - Restart the app and try reconnecting.
  - Check for app updates.
- **Unusual Odor or Swelling:** Immediately disconnect the battery from all loads and chargers. Do not attempt to use or repair. Contact customer support.

For issues not resolved by these steps, please contact HumsiENK customer support.

8. Specifications

Feature	Specification
Brand	HumsiENK
Model Number	Lfp314bt
Battery Type	12V 314Ah LiFePO4
Nominal Voltage	12.8V
Energy Capacity	4190Wh (4.19kWh)
Built-in BMS	100A
Cycle Life	15,000+ cycles (60% DOD)
Lifespan	Up to 10 years
Low-Temperature Protection	Yes (charging cut-off below 0°C/32°F)
Discharge Temperature Range	-4°F to 158°F (-20°C to 70°C)
Charge Temperature Range	32°F to 158°F (0°C to 70°C)
Item Weight	61.7 pounds (28 kg)

Feature	Specification
Product Dimensions	15.24 x 9.72 x 7.6 inches (38.7 x 24.7 x 19.3 cm)
Terminal Type	M8 Terminal
Max Scalable Energy	64.3kWh (4S4P configuration)

9. Warranty and Support

9.1 Warranty Information

HumsiENK provides a five-year warranty for all batteries, covering defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims.

9.2 Customer Support

For any questions, technical assistance, or warranty inquiries, HumsiENK offers 24-hour friendly and professional customer support. Please refer to the contact information provided with your product or visit the official HumsiENK website for assistance.