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› KEPWORDH 48V 100Ah LiFePO4 Deep Cycle Battery User Manual

KEPWORDH KEP48100A640NS

KEPWORDH 48V 100Ah LiFePO4 Deep Cycle Battery User Manual

Model: KEP48100A640NS

1. INTRODUCTION

This manual provides essential information for the safe and efficient use of your KEPWORDH 48V 100Ah LiFePO4 Deep Cycle Battery. Please read this manual thoroughly before installation, operation, or maintenance to ensure proper handling and to prevent damage or injury.

The KEPWORDH 48V 100Ah LiFePO4 battery is a high-performance lithium iron phosphate battery designed for deep cycle applications. It features a 200A Bluetooth Battery Management System (BMS) for enhanced safety and monitoring, offering a long service life and stable power output for various applications including golf carts, marine vessels, solar systems, and off-grid setups.



Image 1.1: KEP WORTH 48V 100Ah LiFePO4 Deep Cycle Battery.

2. SAFETY INFORMATION

Always prioritize safety when handling batteries. Failure to follow these instructions can result in serious injury, property damage, or voiding the warranty.

- **Read the Manual:** Always read and understand this entire manual before installing or operating the battery.
- **Qualified Personnel:** Installation and maintenance should be performed by qualified personnel familiar with battery systems and safety procedures.
- **Personal Protective Equipment (PPE):** Wear appropriate PPE, including safety glasses, gloves, and protective clothing, when working with batteries.
- **Avoid Short Circuits:** Do not short-circuit the battery terminals. This can cause severe damage to the battery and pose a fire hazard.
- **Compatible Charger:** Use only a LiFePO4 compatible charger with the recommended charging voltage of 58.4V. Using incompatible chargers can damage the battery and create safety risks.

- **Ventilation:** Ensure adequate ventilation around the battery during charging and discharging to prevent heat buildup.
- **Temperature:** Operate and store the battery within the specified temperature ranges. Avoid extreme heat or cold.
- **Water and Moisture:** Keep the battery dry and away from water or excessive moisture.
- **Physical Damage:** Do not drop, puncture, or subject the battery to severe impacts. Inspect the battery for any damage before use.
- **Disposal:** Dispose of batteries according to local regulations. Do not incinerate.

3. PRODUCT FEATURES

The KEPWORTH 48V 100Ah LiFePO4 battery offers advanced features for reliable power delivery:

- **High Capacity:** 48V 100Ah lithium iron phosphate battery.
- **Integrated BMS:** Equipped with a 200A Bluetooth Battery Management System (BMS) for comprehensive protection.
- **Robust Protection:** The BMS provides protection against overcharge, overdischarge, overcurrent, short circuit, high temperature, and low temperature.
- **High Discharge Rate:** Supports a maximum continuous discharging current of 200A, with an inrush current capability of 300A within 3-5 seconds, and up to 500A (1s) or 400A (3-5s) for high power demands.
- **Long Lifespan:** Utilizes Automotive Grade A LiFePO4 cells, offering over 4000 deep cycles.
- **Mobile App Connectivity:** Monitor real-time battery information via a dedicated mobile phone application.
- **Expandable Capacity:** Supports parallel connection for increased capacity.
- **Compact Design:** Dimensions are approximately L25.2 x W9.65 x H9.06 inches (640 x 245 x 230 mm).
- **Versatile Applications:** Ideal for golf carts (Club Car, EZGO, ICON, Yamaha), boats, trolling motors, lawn mowers, solar energy storage, RVs, camping, and off-grid systems.
- **Included Charger:** Comes with a 5A charger.

Green Energy

Grade A Cells, 4000+ Deep Cycles



Overcharge
Protection



Overdischarge
Protection



Overcurrent
Protection



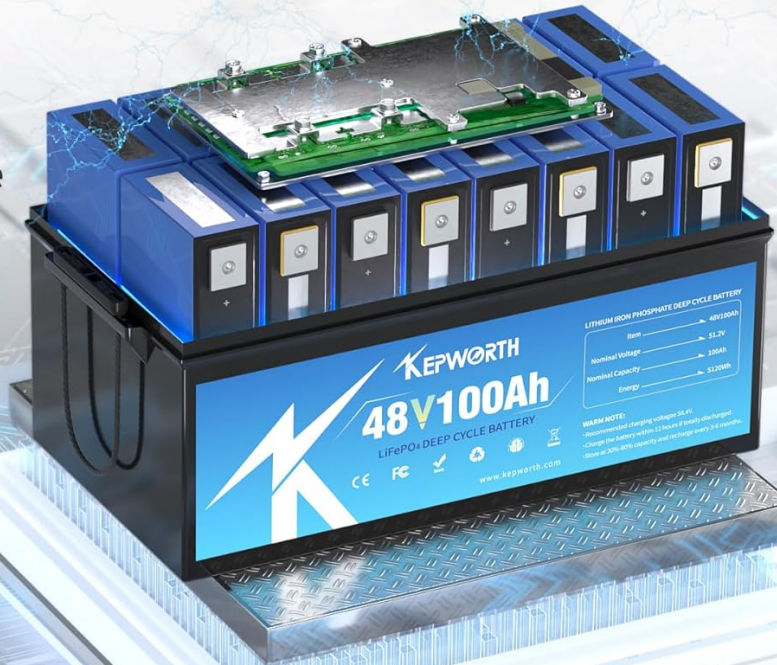
Short Circuit
Protection



High Temperature
Protection



Low Temperature
Protection



200A SMART BMS

Image 3.1: Smart BMS with overcharge, overdischarge, overcurrent, short circuit, high temperature, and low temperature protection.

SMART BLUETOOTH BMS

REAL-TIME VIEW BATTERY INFORMATION FROM APP



Image 3.2: Real-time battery information viewable via the mobile app with Bluetooth BMS.



Image 3.3: Battery dimensions and M8 terminal details.

4. SETUP

4.1 Unpacking and Inspection

1. Carefully remove the battery from its packaging.
2. Inspect the battery for any signs of physical damage, such as cracks, dents, or swollen casing. Do not use a damaged battery.
3. Verify that all components, including the 5A charger, are present.

4.2 Initial Charging

Before first use, it is recommended to fully charge the battery.

1. Connect the included 5A charger to the battery terminals, ensuring correct polarity (positive to positive, negative to negative).
2. Plug the charger into a suitable power outlet.

3. The recommended charging voltage for the 48V LiFePO4 battery is 58.4V.
4. Allow the battery to charge until the charger indicates a full charge.

INVERTER SETTINGS

For 48V LIFEPO4 BATTERY

- Charge Voltage: 58.4V
- Over Voltage Disconnect Voltage: 60V
- Float Charging Voltage: 58.4V
- Low Voltage Disconnect Voltage: 40V
- Low Voltage Reconnect Voltage: 50.4V

Please refer to the product manual for other detailed parameters.

Recommended Charging Methods for reference

Solar Pannel	Charger	Generator
		

Image 4.1: Recommended charging methods including solar panel, charger, and generator. Inverter settings for 48V LiFePO4 battery are also shown: Charge Voltage: 58.4V, Over Voltage Disconnect Voltage: 60V, Float Charging Voltage: 58.4V, Low Voltage Disconnect Voltage: 40V, Low Voltage Reconnect Voltage: 50.4V.

4.3 Installation

1. **Placement:** Install the battery in a secure, dry, and well-ventilated area. Ensure it is protected from direct sunlight, extreme temperatures, and moisture.
2. **Mounting:** Secure the battery to prevent movement or vibration during operation.
3. **Connections:** Connect the battery to your system using appropriate cables and M8 terminals. Ensure all connections are tight and secure to prevent arcing or overheating. Observe correct polarity: connect positive (+) to positive (+) and negative (-) to negative (-).
4. **Parallel Connection (Optional):** If connecting multiple KEPWORTH 48V 100Ah batteries in parallel for increased capacity, ensure all batteries are at a similar state of charge before connecting. Use appropriate busbars and cables for parallel connections. Consult a professional if unsure.

4.4 Bluetooth App Connection

To utilize the smart monitoring features, download the KEPWORTH mobile application from your device's app store.

1. Ensure Bluetooth is enabled on your mobile device.
2. Open the KEPWORTH app.
3. The app will scan for nearby KEPWORTH batteries. Select your battery from the list to connect.
4. Once connected, you can view real-time battery information such as voltage, current, state of charge (SOC), temperature, and cycle count.

5. OPERATING

5.1 General Operation

- Ensure all connections are secure before activating your system.
- Monitor battery performance through the mobile app for optimal usage.
- The battery is designed for deep cycle applications, providing consistent power over extended periods.

5.2 Discharge and Charge Parameters

- **Maximum Continuous Discharge Current:** 200A. Avoid exceeding this limit to prevent BMS activation or damage.
- **Inrush Current:** The battery can handle up to 300A for 3-5 seconds, or 500A for 1 second / 400A for 3-5 seconds for high power demands.
- **Recommended Charging Voltage:** 58.4V.
- **Operating Temperature:** Refer to the specifications table for optimal operating temperature ranges for charging and discharging.

6. MAINTENANCE

Proper maintenance ensures the longevity and performance of your KEPWORTH LiFePO4 battery.

- **Regular Inspection:** Periodically inspect the battery for any signs of damage, loose connections, or corrosion.
- **Terminal Cleaning:** Keep the battery terminals clean and free of dirt or corrosion. Use a dry cloth to wipe them if necessary.
- **Connection Tightness:** Ensure all cable connections to the battery terminals remain tight.
- **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 away from direct sunlight. Periodically check the charge level and recharge if necessary.
- **Temperature Management:** Avoid operating or storing the battery in extreme temperatures. The BMS will protect the battery outside safe operating ranges, but consistent exposure to harsh conditions can reduce lifespan.

7. TROUBLESHOOTING

This section addresses common issues you might encounter with your KEPWORTH LiFePO4 battery.

7.1 Battery Not Charging

- **Check Charger:** Ensure the charger is properly connected to both the battery and the power outlet, and that it is functioning correctly. Verify it is a LiFePO4 compatible charger.
- **Check Connections:** Inspect all charging cable connections for tightness and correct polarity.
- **BMS Protection:** The BMS may have activated due to low voltage (overdischarge protection) or high/low temperature. Allow the battery to return to a safe temperature range or attempt to wake the BMS with a compatible charger if it's in a deep sleep state.
- **Charger Voltage:** Confirm the charger's output voltage matches the recommended 58.4V for a 48V LiFePO4 battery.

7.2 Low Power Output or System Shutdown

- **State of Charge (SOC):** Check the battery's SOC via the mobile app. A low SOC will result in reduced power or shutdown. Recharge the battery.
- **Overcurrent Protection:** The BMS may have activated due to excessive current draw. Reduce the load on the battery.
- **Temperature Protection:** Extreme high or low temperatures can trigger BMS protection, leading to reduced performance or shutdown. Allow the battery to return to its optimal operating temperature range.
- **Loose Connections:** Inspect all power connections for tightness. Loose connections can cause voltage drops and reduced power.

7.3 Bluetooth Connectivity Issues

- **Bluetooth Enabled:** Ensure Bluetooth is active on your mobile device.
- **App Permissions:** Check if the KEPWORTH app has the necessary Bluetooth permissions.
- **Proximity:** Be within close range of the battery for a stable Bluetooth connection.
- **Restart:** Try restarting the app or your mobile device.

If you encounter issues not covered here or if troubleshooting steps do not resolve the problem, please contact KEPWORTH customer support.

8. SPECIFICATIONS

Feature	Specification
Brand	KEPWORTH
Model Number	KEP48100A640NS
Battery Type	Lithium Iron Phosphate (LiFePO4)
Nominal Voltage	51.2 Volts (48V System)
Battery Capacity	100 Amp Hours (Ah)
Max Continuous Discharging Current	200A
Inrush Current	300A (3-5 seconds) / 500A (1s), 400A (3-5s)

Feature	Specification
Recommended Charging Voltage	58.4V
Battery Cell Composition	Lithium
Product Dimensions (D x W x H)	9.65" x 25.2" x 9.06" (245mm x 640mm x 230mm)
Unit Count	1 Count
Vehicle Service Type Compatibility	Boat, Golf Cart, Lawn Mower, Solar, Off-Grid, RV, Trolling Motor
Automotive Fit Type	Universal Fit

9. WARRANTY AND SUPPORT

9.1 Warranty Information

The KEPWORTH 48V 100Ah LiFePO4 battery is designed for a long service life, often referred to as a "10 Years-Lifetime" product. For specific warranty terms and conditions, please refer to the warranty card included with your product or contact KEPWORTH customer service directly. The warranty typically covers manufacturing defects and ensures the battery performs according to its specifications under normal use.

9.2 Customer Support

For technical assistance, troubleshooting, or warranty claims, please contact KEPWORTH customer support. Have your model number (KEP48100A640NS) and purchase details ready when contacting support. You can typically find contact information on the KEPWORTH official website or through the retailer where you purchased the product.