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› KEPWORDH 24V 150Ah Lithium Battery User Manual

KEPWORDH KEP24V150Ah520

KEPWORDH 24V 150Ah Lithium Battery User Manual

Model: KEP24V150Ah520

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your KEPWORDH 24V 150Ah Lithium Iron Phosphate (LiFePO₄) Deep Cycle Battery. Please read this manual thoroughly before installation and use to ensure proper handling and longevity of the battery. This battery is designed for various applications including solar energy systems, RVs, boats, motorhomes, trolling motors, and off-grid power backups.



Image 1.1: KEPWORDH 24V 150Ah LiFePO₄ Deep Cycle Battery, front view, showing brand and specifications label.

2. KEY FEATURES

- **Group 8D Size Compatibility:** Designed to fit the ubiquitous BCI Group 8D battery size standard, suitable for a wide range of vehicles and applications.

- **Lightweight Design:** Approximately 1/3 lighter than a traditional Group 8D AGM battery, offering enhanced portability and ease of installation.
- **High Energy Density:** Features an 8X Mass Energy Density (MED) and delivers 100% usable energy (3840Wh).
- **Integrated 100A BMS:** Built-in Battery Management System provides comprehensive protection against overcharging, over-discharging, over-current, and short-circuits.
- **Low-Temperature Protection:** Upgraded low-temperature cut-off function ensures safe operation and charging in cold environments.
- **Automotive Grade Cells:** Constructed with high-quality automotive grade lithium iron phosphate cells for superior performance, stability, and power output.
- **Expandable System:** Supports series and parallel connections for flexible energy expansion, suitable for home backup, off-grid systems, RVs, and marine applications.

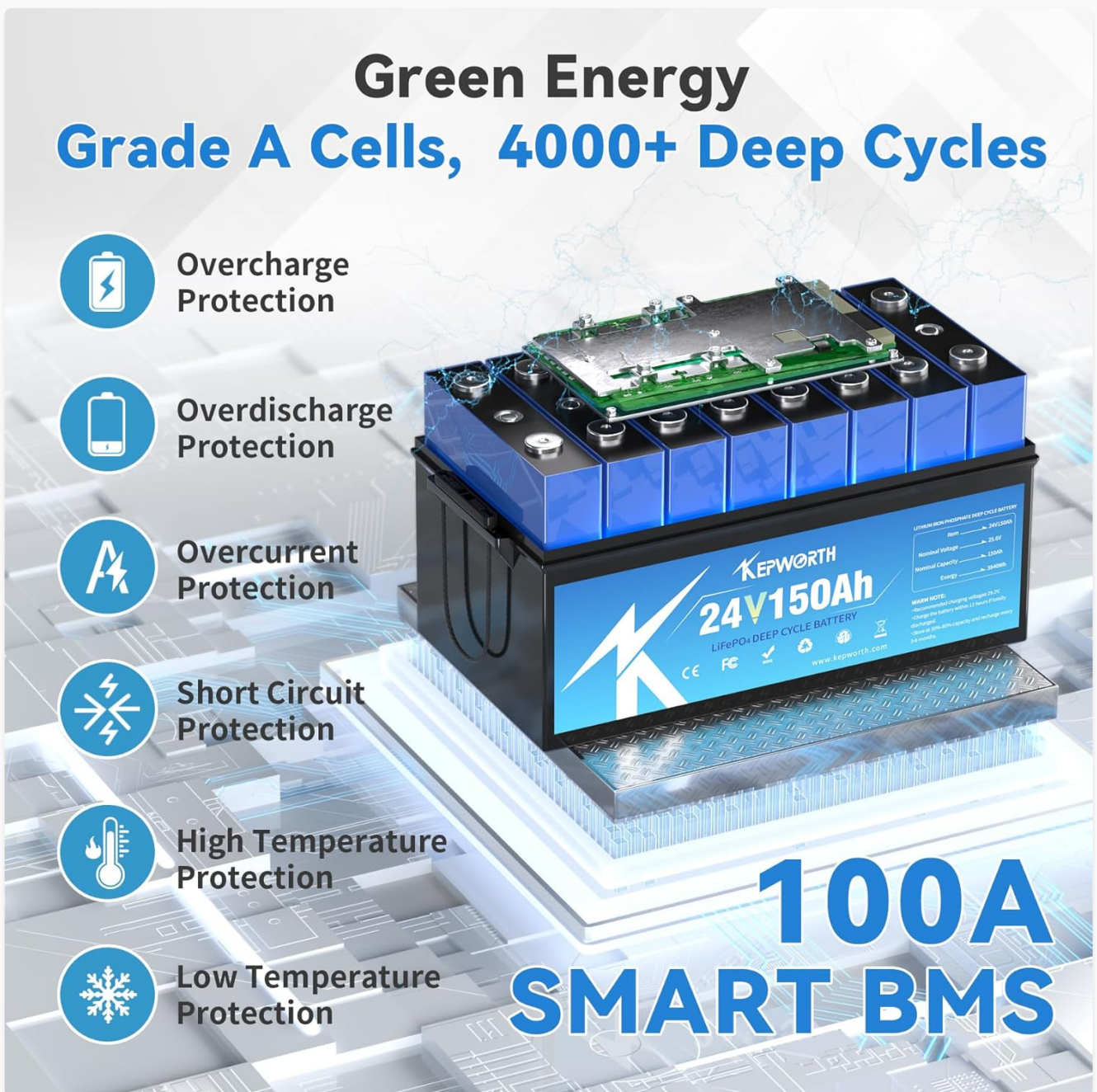


Image 2.1: Diagram illustrating the 100A Smart BMS and its protective functions, including overcharge, overdischarge, overcurrent, short circuit, high temperature, and low temperature protection.

3. SETUP AND INSTALLATION

Before installation, ensure the battery is inspected for any physical damage. Always wear appropriate personal protective equipment (PPE) such as gloves and eye protection.

3.1 Unpacking and Inspection

Carefully remove the battery from its packaging. Check for any signs of damage during transit. If damage is found, do not proceed with installation and contact customer support.

3.2 Battery Dimensions and Terminal Specifications

The battery is designed to fit Group 8D battery boxes. Ensure your installation space accommodates the dimensions provided below. The battery uses M8 terminal bolts for secure connections.



Image 3.1: Detailed dimensions of the KEPWORTH 24V 150Ah LiFePO4 battery (L 520mm/20.47in, W 269mm/10.59in, H 220mm/8.66in) and M8 terminal bolt specifications.

3.3 Connection Guidelines

This battery supports both series and parallel connections to expand your energy system. When connecting multiple batteries, ensure all batteries are at a similar state of charge before making connections. Use appropriate gauge

cables for your application to prevent overheating and voltage drop.

- For parallel connections, connect positive to positive and negative to negative.
- For series connections, connect the positive of one battery to the negative of the next.
- Always connect the load to the outermost terminals of the battery bank for balanced discharge.

Note: This battery is not intended for use as a car starting battery or golf cart battery.

4. OPERATING INSTRUCTIONS

4.1 Charging Parameters

For optimal performance and longevity, adhere to the recommended charging parameters:

- **Recommended Charging Voltage:** 29.2V
- **Over Voltage Disconnect Voltage:** 30V
- **Float Charging Voltage:** 29.2V

Recommended charging methods include solar panels ($\geq 900\text{W}$), a 29.2V LiFePO₄ charger (10A-50A), or a generator.

INVERTER SETTINGS



For 24V LIFEPO4 BATTERY

- Charge Voltage: 29.2V
- Over Voltage Disconnect Voltage: 30V
- Float Charging Voltage: 29.2V
- Low Voltage Disconnect Voltage: 21.6V
- Low Voltage Reconnect Voltage: 24.8V

Please refer to the product manual for other detailed parameters.

Recommended Charging Methods for reference

Solar Panel >900W

29.2V LiFePO4 Charger
(10A-50A)

Generator
(Car, Rv, Boat...)



Image 4.1: Visual guide for inverter settings (charge, over voltage disconnect, float charging, low voltage disconnect/reconnect) and recommended charging methods (solar, dedicated charger, generator).

4.2 Discharging Parameters

- Low Voltage Disconnect Voltage: 21.6V
- Low Voltage Reconnect Voltage: 24.8V

4.3 Low-Temperature Operation

The battery features an intelligent low-temperature cut-off protection. This system automatically stops discharging below -4°F (-20°C) and stops charging below 32°F (0°C). Charging will resume when the battery temperature reaches 41°F (5°C) or above.

LOW-TEMP CUT-OFF PROTECTION

Intelligently cut off charging and discharging



< -4 °F
stop discharging

< 32 °F
stop charging

≥ 41 °F
resume charging

Image 4.2: Illustration of the low-temperature cut-off thresholds: stop discharging below -4°F, stop charging below 32°F, and resume charging at or above 41°F.

4.4 Typical Applications

The KEPWORTH 24V 150Ah LiFePO₄ battery is versatile and can be used in various applications:

- RV & Camping power systems
- Trolling motors and marine applications
- Home backup power solutions
- Solar energy storage systems
- Off-grid living setups



Image 4.3: Collage showing diverse applications for the KEPWORTH LiFePO₄ battery, such as RVs, trolling motors, home backup, solar energy, and off-grid systems.

5. MAINTENANCE

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

- **Regular Inspection:** Periodically check the battery terminals for corrosion or loose connections. Ensure all cables are securely fastened.
- **Cleaning:** Keep the battery surface clean and dry. Use a soft, damp cloth to wipe away dust or dirt. Do not use harsh chemicals or abrasive materials.
- **Storage:** If storing the battery for an extended period, it is recommended to charge it to 30-80% capacity. Recharge the battery every 3-6 months to prevent deep discharge and maintain cell health. Store in a cool, dry place away from direct sunlight and extreme temperatures.
- **Charging After Deep Discharge:** If the battery has been deeply discharged, recharge it within 12 hours to prevent potential damage.

6. TROUBLESHOOTING

This section addresses common issues you might encounter with your KEPWORTH LiFePO4 battery. The built-in BMS is designed to protect the battery from most common faults.

Problem	Possible Cause	Solution
Battery not charging	Charger not connected, charger fault, battery temperature too low, BMS protection activated (over-discharge, over-voltage)	Check charger connection and functionality. Ensure battery temperature is above 32°F (0°C). If BMS protection is active, disconnect load/charger, allow battery to rest, and then attempt to charge with a compatible charger.
No power output from battery	Load too high, short circuit, battery deeply discharged, BMS protection activated (over-current, low voltage)	Reduce load. Check for short circuits in wiring. If deeply discharged, attempt to charge. If BMS protection is active, disconnect load, allow battery to rest, and then reconnect.
Battery capacity seems low	Inaccurate capacity reading, battery not fully charged, high discharge rate	Ensure battery is fully charged according to specifications. High discharge rates can temporarily reduce usable capacity. Perform a full charge/discharge cycle if possible to recalibrate.

If the issue persists after attempting these solutions, please contact KEPWORTH customer support for further assistance.

7. SPECIFICATIONS

Attribute	Value
Brand	KEPWORTH
Model Number	KEP24V150Ah520
Nominal Voltage	25.6 Volts
Nominal Capacity	150Ah
Energy	3840Wh
BMS Continuous Discharge Current	100A (Built-in)
Dimensions (L x W x H)	520mm x 269mm x 220mm (20.47in x 10.59in x 8.66in)
Weight	Approx. 70.5 lbs (32 kg)
Terminal Type	M8 Terminal Bolts
Cycle Life	4000+ cycles (at 80% DoD)
Operating Temperature (Discharge)	-4°F to 140°F (-20°C to 60°C)
Operating Temperature (Charge)	32°F to 113°F (0°C to 45°C)

KEPWORTH 24V 150Ah LiFePO4 Battery

4*12V 100Ah Lead Acid Batteries

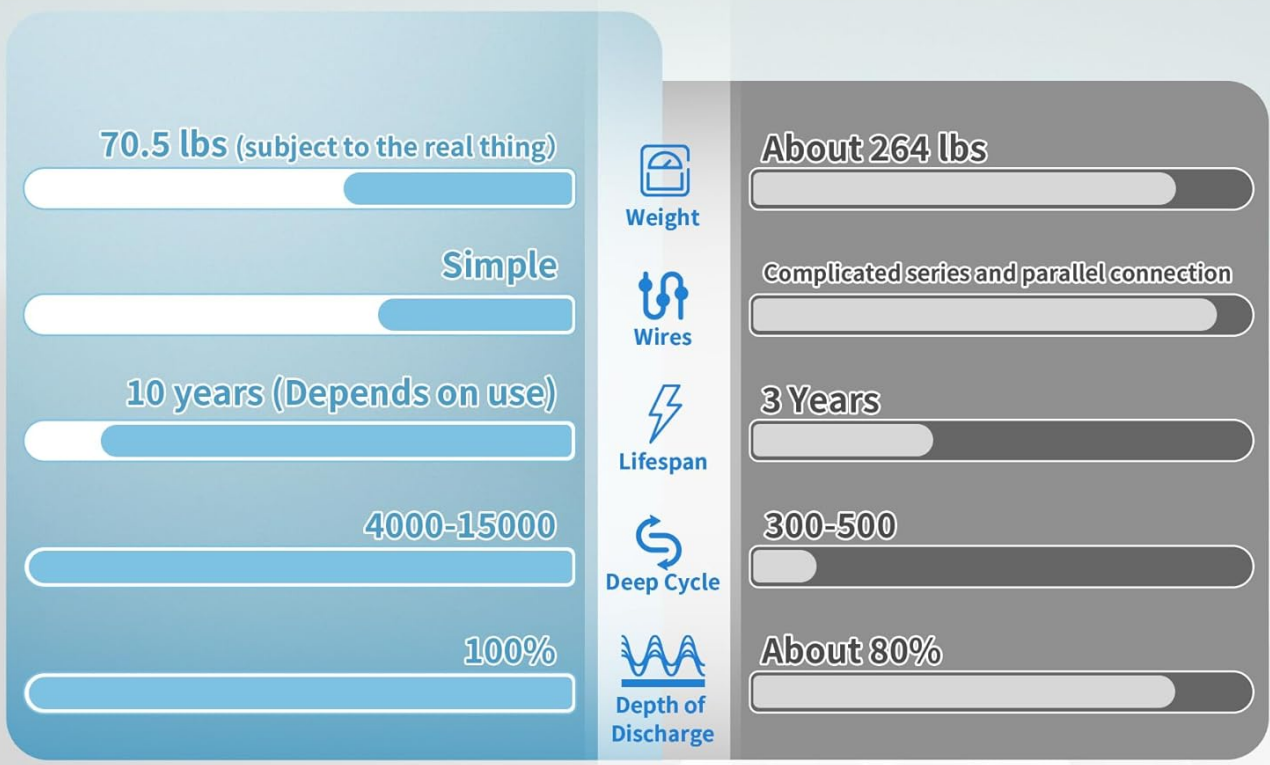


Image 7.1: Comparative chart highlighting advantages of KEPWORTH LiFePO4 battery over lead-acid batteries in terms of weight, wiring complexity, lifespan, deep cycle capability, and depth of discharge.

8. WARRANTY AND SUPPORT

KEPWORTH products are manufactured to high quality standards. For warranty information and technical support, please refer to the warranty card included with your product or visit the official KEPWORTH website. Keep your purchase receipt as proof of purchase for any warranty claims.

For direct support, you may contact KEPWORTH Tech, the seller on Amazon.

