OGRPHY OG-LAF48100

OGRPHY 48V 100AH Smart LiFePO4 Lithium Battery Instruction Manual

Model: OG-LAF48100

1. Introduction

Thank you for choosing the OGRPHY 48V 100AH Smart LiFePO4 Lithium Battery. This manual provides essential information for the safe and efficient use, installation, and maintenance of your battery. Please read this manual thoroughly before operating the battery to ensure optimal performance and longevity.

The OGRPHY LiFePO4 battery is designed for various applications, including golf carts, trolling motors, RVs, solar systems, and marine uses. It features a robust 200A Battery Management System (BMS) and Bluetooth connectivity for real-time monitoring.

Image 1.1: OGRPHY 48V 100AH Smart LiFePO4 Lithium Battery. This image displays the main product unit, highlighting its compact design and terminal connections. The battery is shown with an accompanying smartphone screen illustrating the Bluetooth monitoring application.

2. Safety Information

Always prioritize safety when handling and operating batteries. Failure to follow safety guidelines can result in injury or damage to 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.
- Use only compatible chargers designed for LiFePO4 batteries with the specified voltage range (56.8V-58.4V).
- Ensure proper ventilation during charging and discharging.
- Avoid dropping or subjecting the battery to severe impacts.
- Keep out of reach of children.
- In case of damage or unusual behavior, disconnect the battery immediately and contact support.

The integrated Battery Management System (BMS) provides protection against overcharge, over-discharge, over-current, short circuit, and extreme temperatures (both charging and discharging).

3. Product Overview

The OGRPHY 48V 100AH LiFePO4 battery is a high-performance power solution featuring Grade A cells with UL certification. Its design emphasizes durability, efficiency, and safety.

Key Features:

- **Long Cycle Life:** Over 2000 cycles at 100% Depth of Discharge (DOD) and over 5000 cycles at 80% DOD.
- **Lightweight Design:** Approximately 40% the weight of comparable lead-acid batteries.
- **Deep Cycle Capability:** Designed for consistent deep discharge and recharge cycles.
- **Wide Operating Temperature:** Functions effectively from -20°C to 60°C.
- **Advanced BMS:** 200A continuous discharge, 1000A peak current (3-5 seconds), with comprehensive protection features.
- **Bluetooth Monitoring:** Connects to a smartphone app for real-time battery parameter display.
- **IP65 Waterproof Rating:** Provides protection against dust and water splashes.

Image 3.1: Various Usage Scenarios. This image illustrates the versatility of the OGRPHY 48V 100AH LiFePO4 battery, showing its application in golf carts, solar systems, RVs, and marine environments.

4. Setup and Installation

Proper installation is crucial for the battery's performance and safety. Ensure all connections are secure and correct.

4.1 Unpacking and Inspection

1. Carefully remove the battery from its packaging.
2. Inspect the battery for any visible damage. If damage is found, do not proceed with installation and contact OGRPHY support.
3. Verify that all included accessories are present: 48V 100AH LiFePO4 Battery, M8 terminals, and this product manual.

4.2 Installation Steps

1. **Preparation:** Ensure the power system is turned off and disconnected from any power sources before installation. Wear appropriate personal protective equipment (PPE), including gloves and eye protection.
2. **Placement:** Position the battery in a secure, well-ventilated location that is protected from direct sunlight, moisture, and extreme temperatures. Ensure the battery is stable and cannot move during operation.
3. **Connections:** Connect the positive (+) terminal of the battery to the positive (+) terminal of your system, and the negative (-) terminal of the battery to the negative (-) terminal of your system. Use the provided M8 terminals and ensure all connections are tight and secure to prevent arcing or overheating.
4. **Charger Connection:** If using an external charger, connect it to the battery according to the charger's instructions. Ensure the charger is compatible with 48V LiFePO4 batteries and outputs 56.8V-58.4V DC.
5. **BMS Bluetooth App:** Download the OGRPHY battery monitoring app from your smartphone's app store (refer to the manual for specific app details or QR code). Turn on Bluetooth on your phone and connect to the battery to monitor its parameters.

Image 4.1: OGRPHY LiFePO4 Battery in a Golf Cart. This image shows the OGRPHY battery installed in the battery compartment of a golf cart, demonstrating its fit and the potential for upgrading from heavier lead-acid batteries.

5. Operating Instructions

The OGRPHY LiFePO4 battery is designed for ease of use. Follow these guidelines for optimal operation.

5.1 Initial Use

- Before first use, it is recommended to fully charge the battery.
- Monitor the battery status via the Bluetooth app to ensure proper charging and discharge rates.

5.2 General Operation

- The battery can deliver a maximum continuous discharge current of 200A. Peak discharge current can reach 1000A for 3-5 seconds, 600A for 30 seconds, and 300A for 32 seconds.
- The Bluetooth BMS allows you to view real-time voltage, current, capacity, temperature, and other critical parameters directly on your smartphone.
- The battery is suitable for powering 3KW golf motors, providing approximately 30 miles of range under test

conditions.

Image 5.1: Solar System Integration with Bluetooth Monitoring. This image illustrates multiple OGRPHY 48V 100AH LiFePO4 batteries connected in a solar power system, with a smartphone displaying the real-time monitoring data from the Bluetooth app.

6. Maintenance and Storage

Proper maintenance and storage practices will maximize your battery's capacity and cycle life.

6.1 Charging

- **Charger Compatibility:** Use a charger specifically designed for LiFePO4 batteries with a charge voltage between 56.8V and 58.4V.
- **Recommended Current:** The recommended charge current is 30A. The maximum charge current is 150A.
- **Temperature:** Charge the battery within the temperature range of 0°C to 55°C (32°F to 131°F).
- **Recharge Point:** It is recommended to recharge the battery when approximately 20% capacity remains.

6.2 Storage

- For long-term storage, store the battery at a state of charge between 50% and 70%.

- Store the battery in a cool, dry place, away from direct sunlight and heat sources.
- The optimal storage temperature range is -10°C to 45°C (14°F to 113°F).
- The self-discharge rate is less than 3% per month, minimizing the need for frequent top-up charges during storage.

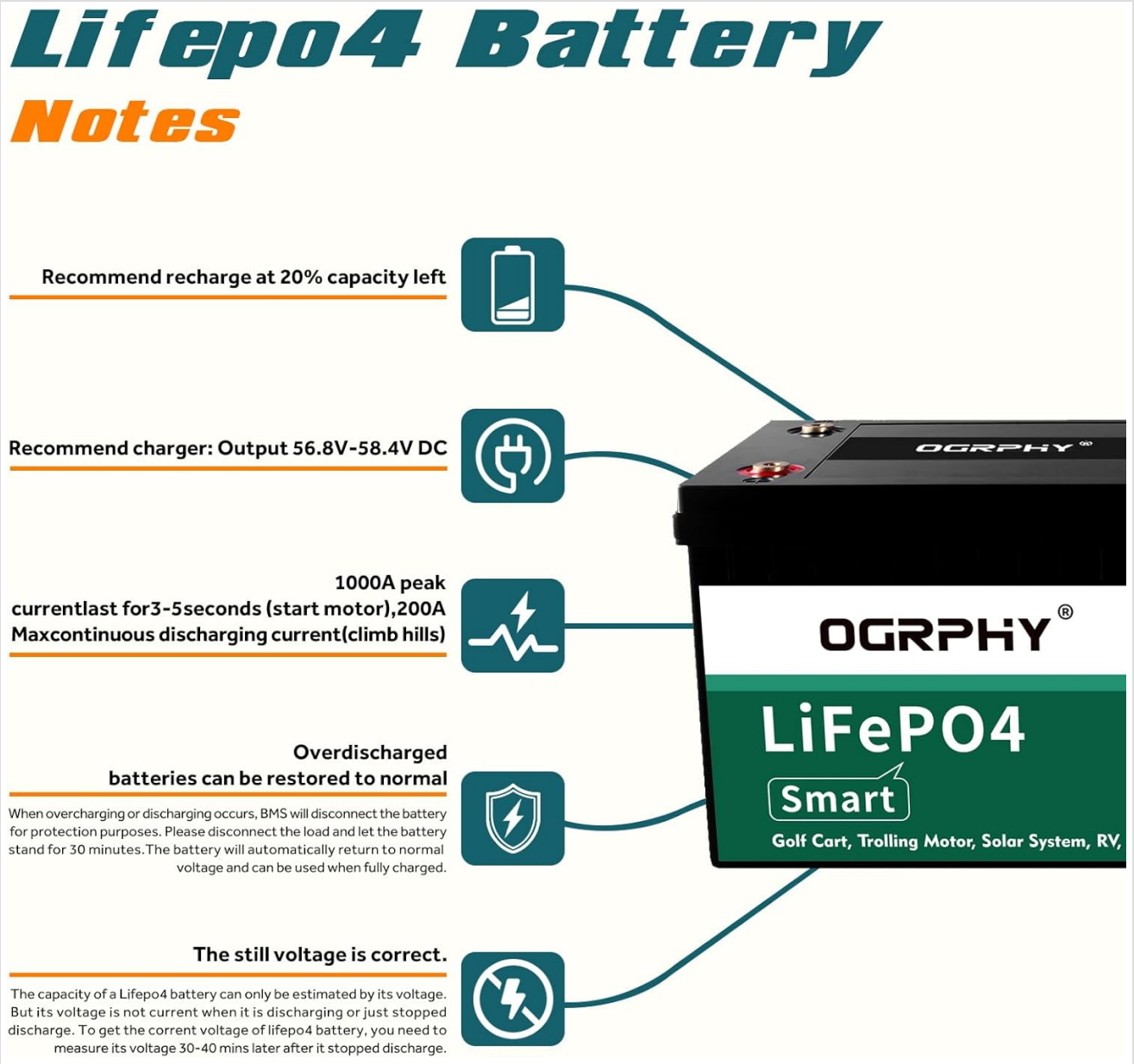

Image 6.1: LiFePO4 Battery Usage Notes. This infographic provides key recommendations for battery care, including the optimal recharge point, compatible charger specifications, peak current capabilities, and information on recovering over-discharged batteries.

7. Troubleshooting

The integrated BMS protects the battery from various issues. If you encounter problems, refer to the following common scenarios:

- **Battery Not Charging:** Ensure the charger is correctly connected and compatible with LiFePO4 batteries. Check the charge temperature is within 0°C to 55°C. The BMS may have activated overcharge or low-temperature charge protection.
- **Battery Not Discharging:** Check for secure connections. The BMS may have activated over-discharge, over-current, short circuit, or low/high-temperature discharge protection.
- **Over-Discharged Battery:** If the battery has been over-discharged (BMS discharge voltage cut-off at 40V), the BMS will disconnect the load. Disconnect the load and allow the battery to rest for 30 minutes. The battery will

automatically return to normal voltage and can be used when fully charged.

- **Inaccurate Voltage Reading:** The capacity of a LiFePO4 battery can only be estimated by its voltage. Voltage is not current when discharging or stopped. To get an accurate voltage reading, measure it 30-40 minutes after it stops discharging.
- **Bluetooth Connectivity Issues:** Ensure Bluetooth is enabled on your smartphone and the battery is within range. Restart the app or your phone if necessary.

For issues not covered here, please contact OGRPHY customer support.

8. Specifications

Parameter	Value
Normal Voltage	51.2V
Normal Capacity	100Ah
Energy	5.12kWh (5120Wh)
Cycle Life	>2000 cycles @0.5C 100%DOD, >5000 cycles @0.5C 80%DOD
Months Self Discharge	<3%
Efficiency of Charge	100% @0.5C
Efficiency of Discharge	96 ~ 99% @0.5C
BMS Functions	Over charge, over discharge, over current, short circuit, Charge high/low temperature, Discharge high/low temperature protection, Bluetooth
Maximum Modules in Series	1 pcs
Charge Voltage	56.8V-58.4V
Recommended Charge Current	30A
Max Charge Current	150A
Max Continuous Discharge Current	200A
Peak Discharge Current	1000A (3-5S), 600A (30S), 300A (32S)
BMS Discharge Voltage Cut-Off	40 V (2.5 ±0.05 v) (1-2s)
BMS Charge Voltage Cut-Off	58.4 V (3.65 ±0.05 v) (1.0 s)
Charge Temperature	0 ℃ to 55 ℃ (32°F to 131°F)
Discharge	-20 ℃ to 60 ℃ (-4°F to 140°F)

Parameter	Value
Temperature	-20 °C to 60 °C (-4°F to 140°F)
Storage Temperature	-10 °C to 45 °C (14°F to 113°F)
Waterproof IP Class	IP65
Plastic Case Material	ABS
Approx. Dimensions	20.4 x 10.6 x 8.66 inches
Approx. Weight	83.7 lbs
Terminal Type	M8

Image 8.1: Battery Dimensions and Features. This diagram provides a visual representation of the battery's physical dimensions and highlights key features such as the M8 terminal type and IP65 waterproof rating.

9. Warranty and Support

9.1 Warranty Information

OGRPHY LiFePO4 batteries are designed for a long operational life, with a stated lifetime of 10 years and over 5000 deep cycles. Specific warranty details are typically provided with your purchase documentation. Please retain your proof of purchase for warranty claims.

9.2 Customer Support

For technical assistance, troubleshooting, or warranty inquiries, please contact OGRPHY customer support. Contact information can typically be found on the OGRPHY website or your purchase invoice. OGRPHY aims to respond to inquiries within 24 hours.
