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Renogy RBT12300LFP-Mx2-US

Renogy 12V 300Ah LiFePO4 Lithium Battery User Manual

Model: RBT12300LFP-Mx2-US | Brand: Renogy

1. INTRODUCTION AND OVERVIEW

Thank you for choosing the Renogy 12V 300Ah LiFePO4 Lithium Battery. This manual provides essential information for the safe and efficient use of your battery. Designed for deep cycle applications, this battery offers superior performance, extended lifespan, and enhanced safety features, making it ideal for RVs, cabins, marine vessels, and off-grid solar systems.



Image 1.1: Two Renogy 12V 300Ah LiFePO4 Lithium Batteries, showcasing their compact design.

Key features include an industry-leading lightweight and ultra-compact design, a robust 200A Battery Management System (BMS) with low-temperature cut-off, and Grade-A prismatic cells for an extended lifespan of over 5,000 cycles at 80% Depth of Discharge (DOD).

2. SAFETY INFORMATION

Your Renogy LiFePO₄ battery is equipped with advanced safety features. Always adhere to safety guidelines to prevent damage and ensure personal safety.

2.1 Battery Management System (BMS)

The built-in 200A BMS provides comprehensive protection against:

- Overcharging
- Over-discharge
- Charge over-current
- Discharge over-current
- Short circuits

The BMS also self-balances cell voltage for optimal performance and longevity.

2.2 Low-Temperature Cut-Off

To prevent damage in cold weather, the BMS automatically pauses charging when the cell temperature drops below 32°F (0°C) and pauses discharge below -4°F (-20°C).



Image 2.1: The battery's low-temperature cut-off feature ensures safe operation in cold climates.

2.3 Certifications

This battery meets high safety standards, backed by MSDS, UN38.3, FCC, CE, PSE, RCM, and UKCA certifications. It also meets ABYC standards for marine use.

3. PRODUCT FEATURES

3.1 Lightweight & Ultra-Compact Design

Weighing only 55.1 lbs (25 kg), this 12V 300Ah battery is significantly lighter than comparable lead-acid

batteries (57% lighter than a 12V 200Ah lead-acid battery). Its compact dimensions (15.12 × 7.64 × 9.96 inches) optimize space, offering 31% more space efficiency compared to other 12V 300Ah LiFePO4 batteries.



Image 3.1: The battery's lightweight design makes it easier to handle and install.



Image 3.2: Its compact size allows for efficient space utilization in various installations.

3.2 Grade-A Prismatic Cells & Extended Lifespan

Manufactured with Grade-A prismatic cells, the battery ensures enhanced safety and an extended lifespan. It supports over 5,000 cycles at 80% DOD, translating to a lifespan of more than ten years under typical usage conditions.

3.3 High Storage Capacity

The Renogy 12V 300Ah Core Mini LiFePO4 Battery offers a 3840Wh real storage capacity, capable of powering a 1 kWh device for nearly 4 hours. This makes it suitable for extended off-grid living and various power needs.



Image 3.3: Illustrates the battery's capacity to power common appliances for extended periods.

4. SETUP AND INSTALLATION

Proper installation is crucial for the battery's performance and safety. Always consult a qualified professional if you are unsure about any steps.

4.1 Connection Options

The battery supports flexible configurations:

- Up to 4 batteries in series (Max 4S) for a 48V (51.2V) system.
- Up to 4 batteries in parallel (Max 4P) for a 12V (12.8V) 1200Ah system.
- Combined series and parallel configurations up to 4S4P for a 48V (51.2V) 1200Ah battery system, providing up to 61.44kWh.



Image 4.1: Illustrates various battery configurations for different power requirements.

4.2 Wiring

Use appropriate gauge cables for your application to minimize voltage drop and ensure safe operation. Ensure

all connections are secure and properly insulated.

5. OPERATING INSTRUCTIONS

5.1 Charging

Use a compatible LiFePO4 charger. Ensure the charger's voltage and current settings are appropriate for a 12V LiFePO4 battery. The BMS will protect against overcharging.

5.2 Discharging

The battery can be discharged up to 80% DOD for optimal lifespan. The BMS will prevent over-discharge by cutting off power when the voltage drops below a safe threshold.

5.3 Monitoring

For remote monitoring capabilities, refer to the specific instructions for any compatible Renogy monitoring devices or apps.

6. MAINTENANCE

LiFePO4 batteries require minimal maintenance compared to lead-acid batteries. However, following these guidelines can help maximize their lifespan:

- **Regular Inspection:** Periodically check battery terminals for corrosion or loose connections. Clean as necessary.
- **Temperature Control:** Operate and store the battery within its recommended temperature range to ensure optimal performance and longevity.
- **Storage:** If storing the battery for an extended period, ensure it is charged to approximately 50% State of Charge (SOC) and stored in a cool, dry place.

7. TROUBLESHOOTING

If you encounter issues with your Renogy LiFePO4 battery, consider the following common troubleshooting steps:

- **Battery Not Charging:** Check charger connections, ensure the charger is compatible with LiFePO4 batteries, and verify the battery temperature is above 32°F (0°C).
- **No Power Output:** Check all cable connections for tightness. Verify the battery voltage is above the low-voltage cut-off threshold. The BMS may have activated a protection mode; disconnect and reconnect the load to reset.
- **Reduced Capacity:** Ensure the battery is fully charged. Over time, some capacity degradation is normal,

but significant drops may indicate an issue.

For persistent issues, please refer to the warranty and support section for contact information.

8. SPECIFICATIONS

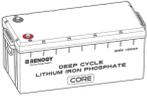
Attribute	Value
Brand	Renogy
Model	Mini Size, 200A BMS with Low-Temperature Cut-Off
Item Model Number	2PCS 12V 300Ah LiFePO4 Lithium Battery
Manufacturer Part Number	RBT12300LFP-Mx2-US
ASIN	B0DLNMWTY6
Size	300Ah
Weight	55.1 lbs (25 kg)
Dimensions (L x W x H)	15.12 x 7.64 x 9.96 inches
BMS Current	200A
Low-Temperature Cut-Off (Charge)	32°F (0°C)
Low-Temperature Cut-Off (Discharge)	-4°F (-20°C)
Cycle Life	5,000+ cycles at 80% DOD
Storage Capacity	3840Wh
Max Series/Parallel Configuration	4S4P
UPC	840315232921

9. WARRANTY AND SUPPORT

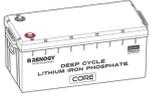
The Renogy 12V 300Ah LiFePO4 Lithium Battery includes a 5-year service plan, demonstrating our commitment to quality and customer satisfaction. For technical support, warranty claims, or any inquiries, please contact Renogy customer service through their official website or authorized channels.

Please retain your proof of purchase for warranty validation.

Related Documents - RBT12300LFP-Mx2-US

  USER MANUAL	<p>Renogy Core LT 12.8V 300Ah Deep Cycle Lithium Iron Phosphate Battery User Manual</p> <p>Comprehensive user manual for the Renogy Core LT (Low Temperature) Series 12.8V 300Ah Deep Cycle Lithium Iron Phosphate Battery, covering installation, operation, maintenance, safety, and specifications. Learn about key features, connection methods, charging logic, and troubleshooting.</p>
  USER MANUAL	<p>Renogy 12V 300Ah Core Mini Lithium Battery - User Manual & Specifications</p> <p>Comprehensive guide to the Renogy 12V 300Ah Core Mini Lithium Iron Phosphate (LiFePO4) Battery (Model RBT12300LFP-M-G1). Features, specifications, installation, safety, and warranty information for RV, caravan, and off-grid applications.</p>
  USER MANUAL	<p>Renogy Core Series 12.8V 300Ah Lithium Iron Phosphate Battery User Manual</p> <p>Comprehensive user manual for the Renogy Core Series 12.8V 300Ah Mini Deep Cycle Lithium Iron Phosphate Battery, covering installation, operation, maintenance, safety, and specifications.</p>
  USER MANUAL	<p>Renogy Core Series 12.8V 300Ah Deep Cycle Lithium Iron Phosphate Battery User Manual</p> <p>Comprehensive user manual for the Renogy Core Series 12.8V 300Ah Deep Cycle Lithium Iron Phosphate Battery (RBT12300LFP SH). Includes installation, operation, maintenance, safety, and troubleshooting guides.</p>
  USER MANUAL	<p>Renogy Core Series 12.8V 200Ah LiFePO4 Battery User Manual</p> <p>User manual for the Renogy Core Series 12.8V 200Ah Mini Deep Cycle Lithium Iron Phosphate (LiFePO4) Battery. Details installation, operation, safety, maintenance, troubleshooting, and specifications for off-grid and RV applications.</p>

RENOGY
Core LT (Low Temperature) Series
Deep Cycle Lithium Iron Phosphate Battery
25.6V 100Ah
REN200LPSH



USER MANUAL

[Renogy Core LT Series 25.6V 100Ah Deep Cycle Lithium Iron Phosphate Battery User Manual](#)
User manual for the Renogy Core LT (Low Temperature) Series 25.6V 100Ah Deep Cycle Lithium Iron Phosphate Battery, covering operation, maintenance, safety, specifications, and troubleshooting.