CYCCLEVOLT C24100mi-BT

CYCCLEVOLT 24V 100Ah LiFePO4 Battery User Manual

Model: C24100mi-BT

1. Product Overview

The CYCCLEVOLT 24V 100Ah LiFePO4 Battery is a high-performance lithium iron phosphate battery designed for various applications including RVs, marine systems, trolling motors, and off-grid energy storage. This manual provides essential information for the safe and efficient use of your battery.

Image 1.1: The CYCCLEVOLT 24V 100Ah LiFePO4 Battery, featuring its integrated Bluetooth monitoring system displayed on a smartphone.

This battery utilizes Grade A LiFePO4 cells, offering a long cycle life and enhanced safety. It features an advanced 100A Battery Management System (BMS) with comprehensive protection functions and integrated Bluetooth for real-time monitoring via a smartphone application.

2. Safety Information

Read all safety instructions before installation and use. Failure to follow these instructions may result in electric shock, fire, serious injury, or death.

- **General Precautions:**
  - Always wear appropriate personal protective equipment (PPE), including safety glasses and insulated gloves, when handling batteries.
  - Do not short-circuit the battery terminals.
  - Do not disassemble, puncture, or modify the battery.
  - Keep the battery away from heat sources, open flames, and flammable materials.

- Ensure proper ventilation during charging and discharging.
- Do not immerse the battery in water or other liquids.
- Keep out of reach of children.

- **Charging and Discharging:**
  - Use only chargers specifically designed for LiFePO4 batteries.
  - Do not charge or discharge the battery outside its specified temperature range. The integrated BMS provides low-temperature cut-off protection, preventing charging below 0°C (32°F) and discharging below -20°C (-4°F).
  - Ensure charging current does not exceed the maximum recommended current.
- **Installation:**
  - Install the battery in a dry, cool, and well-ventilated location.
  - Secure the battery to prevent movement or damage.
  - Ensure all connections are tight and free from corrosion.
  - When connecting multiple batteries in parallel, ensure they are of the same voltage and capacity, and follow proper wiring procedures.
- **Emergency Procedures:**
  - In case of fire, use a Class D fire extinguisher (for metal fires) or a large amount of water.
  - If the battery is damaged or leaking, avoid contact with the electrolyte. Ventilate the area and seek professional assistance.

3. Product Features

- **Premium Grade A LiFePO4 Cells:** Utilizes high-quality Grade A cells for superior energy density, stability, and longevity. Offers over 8,000 charge cycles and a lifespan of up to 10 years.
- **Compact and Lightweight Design:** Measures 13.6 x 7.5 x 9.8 inches and weighs approximately 39.6 lbs, making it significantly lighter and more portable than traditional lead-acid batteries.
- **Integrated 100A Battery Management System (BMS):**
  - Supports a maximum continuous discharge current of 100A and a load power of up to 2560W.
  - Provides protection against overcharging, over-discharging, over-current, short circuits, and cell balancing.
  - Features a low self-discharge rate.

Image 3.1: The advanced BMS protects the battery from various electrical issues and temperature extremes.

- **Low Temperature Protection:** Automatic cut-off for charging at temperatures below 0°C (32°F) and discharging below -20°C (4°F) to prevent damage and ensure safety.
- **Bluetooth App Monitoring:** Monitor battery status and performance in real-time via a smartphone application. Displays State of Charge (SOC), cell voltage, current, and fault codes.

Image 3.2: Real-time battery monitoring is available through the dedicated smartphone application.

- **Scalable Capacity:** Can be connected in parallel to achieve higher capacities, up to 48V 800Ah, suitable for various energy storage needs.
- **Wide Application Range:** Ideal for RVs, trolling motors, marine applications, off-grid systems, home energy storage, UPS backup, and portable power solutions.

4. Setup and Installation

Proper installation is crucial for the performance and safety of your CYCCLEVOLT LiFePO4 battery. If you are unsure about any steps, consult a qualified professional.

4.1 Unpacking and Inspection

- Carefully remove the battery from its packaging.
- Inspect the battery for any visible damage. If damage is found, do not proceed with installation and contact customer support.
- Verify that all included accessories (e.g., M8 terminals) are present.

4.2 Mounting Location

- Choose a dry, cool, and well-ventilated location.

- Ensure the mounting surface is sturdy enough to support the battery's weight (approximately 39.6 lbs).
- The battery can be safely mounted in any position due to its sealed, non-acidic design.
- Avoid locations exposed to direct sunlight, excessive heat, or moisture.

4.3 Wiring Connections

Use appropriate gauge cables for your application to handle the maximum continuous discharge current of 100A. Ensure all connections are secure and tight to prevent resistance and overheating.

- Connect the positive (+) terminal of the battery to the positive (+) terminal of your system.
- Connect the negative (-) terminal of the battery to the negative (-) terminal of your system.
- The battery uses M8 terminals. Ensure proper terminal bolts are used and tightened to the recommended torque.

Image 4.1: Battery dimensions and M8 terminal details for proper installation.

4.4 Parallel Connection (Optional)

For increased capacity, multiple CYCCLEVOLT 24V 100Ah batteries can be connected in parallel. Ensure all batteries are at a similar State of Charge (SOC) before connecting them in parallel.

- Connect all positive (+) terminals together.

- Connect all negative (-) terminals together.
- Use appropriately sized bus bars and cables for parallel connections to ensure even current distribution.
- The system supports up to 48V 800Ah configurations.

Image 4.2: Example of a parallel connection setup for an energy storage system.

5. Operating Instructions

5.1 Initial Use and Charging

- It is recommended to fully charge the battery before its first use.
- Connect a compatible LiFePO4 charger to the battery terminals.
- Monitor the charging process via the Bluetooth app.

5.2 Bluetooth App Usage

The CYCCLEVOLT battery features integrated Bluetooth for real-time monitoring. Follow these steps to connect and use the app:

1. Download the official CYCCLEVOLT app from your smartphone's app store.
2. Ensure Bluetooth is enabled on your smartphone.
3. Open the app and search for available devices.
4. Select your battery from the list to connect.
5. The app will display key parameters such as State of Charge (SOC), individual cell voltages, total voltage, current, temperature, and any fault codes.

5.3 Temperature Considerations

The battery's BMS includes temperature protection:

- **Charging Cut-off:** The battery will automatically stop charging if its internal temperature drops below 0°C (32°F).
- **Discharging Cut-off:** The battery will automatically stop discharging if its internal temperature drops below -20°C (-4°F).
- These features protect the battery from damage in extreme cold conditions.

Image 5.1: The battery's low-temperature protection ensures safe operation in cold climates.

6. Maintenance

CYCCLEVOLT LiFePO4 batteries require minimal maintenance compared to lead-acid batteries. However, following these guidelines will ensure optimal performance and longevity:

- **Regular Inspection:** Periodically check the battery terminals for cleanliness and tightness. Ensure there is no corrosion.
- **Cleaning:** Wipe the battery case with a dry or slightly damp cloth. Do not use harsh chemicals or abrasive cleaners.
- **Storage:** If storing the battery for an extended period, ensure it is charged to approximately 50-70% State of Charge (SOC). Store in a cool, dry place, away from direct sunlight and extreme temperatures.
- **Avoid Deep Discharge:** While the BMS protects against over-discharge, it is generally good practice to avoid consistently running the battery to its absolute minimum charge level to maximize lifespan.

7. Troubleshooting

This section addresses common issues you might encounter. For more complex problems, refer to the Bluetooth app for fault codes or contact customer support.

Problem	Possible Cause	Solution
Battery not charging	• Charger not connected or faulty. • Battery temperature too low (below 0°C/32°F). • BMS in protection mode (e.g., over-discharge).	• Check charger connection and functionality. • Move battery to a warmer environment. • Check app for fault codes; if BMS protection is active, it may require a small charge to reset.
Battery not discharging/no power output	• Load exceeding maximum discharge current (100A). • Battery temperature too low (below -20°C/-4°F). • BMS in protection mode (e.g., over-discharge, short circuit). • Loose connections.	• Reduce load. • Move battery to a warmer environment. • Check app for fault codes. • Inspect and tighten all cable connections.
Bluetooth app not connecting	• Bluetooth disabled on phone. • Battery too far from phone. • App permissions not granted.	• Enable Bluetooth on your device. • Move closer to the battery. • Check app permissions in your phone settings. • Restart the app or your phone.

8. Specifications

Feature	Detail
Model Number	C24100mi-BT
Nominal Voltage	24V
Nominal Capacity	100Ah
Energy	2560Wh
Max Continuous Discharge Current	100A
Max Load Power	2560W
Cycle Life	8000+ cycles (at 80% DoD)
Lifespan	Up to 10 years
Dimensions (L x W x H)	13.6 x 7.5 x 9.8 inches (345 x 190 x 245 mm)
Weight	39.6 lbs (18 kg)
Terminal Type	M8
Operating Temperature (Discharge)	-20°C to 60°C (-4°F to 140°F)
Operating Temperature (Charge)	0°C to 45°C (32°F to 113°F)
Protection Features	Overcharge, Over-discharge, Over-current, Short Circuit, Low/High Temperature, Cell Balancing

Feature	Detail
Connectivity	Bluetooth for APP monitoring

9. Warranty and Support

The CYCCLEVOLT 24V 100Ah LiFePO4 Battery comes with a**5-year assurance**. This warranty covers defects in materials and workmanship under normal use and service conditions.

9.1 How to Obtain Service

For any inquiries, technical assistance, or warranty claims, please contact CYCCLEVOLT customer support. You can typically reach us via the Amazon page where you purchased the product, or through the official CYCCLEVOLT website.

- Our support team aims to respond within 24 hours.
- Please have your purchase details and model number (C24100mi-BT) ready when contacting support.

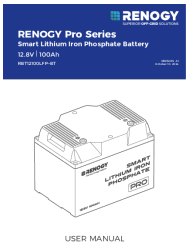
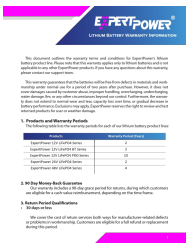
9.2 Limitations

The warranty does not cover damage resulting from:

- Improper installation or wiring.
- Misuse, abuse, or neglect.
- Unauthorized modification or repair.
- Operating outside specified environmental conditions.
- Natural disasters or external causes.

Related Documents - C24100mi-BT

	Renogy 12.8V 100Ah Trolling Motor Deep Cycle Lithium Iron Phosphate Battery w/ Bluetooth User Manual Comprehensive user manual for the Renogy 12.8V 100Ah Trolling Motor Deep Cycle Lithium Iron Phosphate Battery with Bluetooth. Covers specifications, installation, operation, maintenance, safety, and troubleshooting.
	Enjoybot 12V 30Ah LiFePO4 Battery User Manual - Low-Temp Bluetooth Version User manual for Enjoybot 12V 30Ah LiFePO4 battery, covering specifications, low-temperature operation, Bluetooth connectivity, charging methods, MPPT settings, capacity estimation, series/parallel connections, advantages, applications, first use, precautions, troubleshooting, product features, and warranty information.

	[ENJOYBOT 12V 320AH LiFePO4 Battery User Manual with Bluetooth] Comprehensive user manual for the ENJOYBOT 12V 320AH LiFePO4 Deep Cycle Battery with Low-Temp and Bluetooth functionality. Covers specifications, charging, connection, troubleshooting, and warranty.
	[iTechworld X Range Waterproof Lithium Batteries User Guide] Comprehensive user guide for iTechworld X Range waterproof lithium batteries, covering overview, installation, operation, specifications, maintenance, and safety precautions. Learn about key features like Bluetooth monitoring, LiFePO4 technology, and IP67 rating.
	[Renogy Pro Series 12.8V 100Ah Smart Lithium Iron Phosphate Battery User Manual] This user manual provides comprehensive instructions for the Renogy Pro Series 12.8V 100Ah Smart Lithium Iron Phosphate Battery, covering installation, operation, maintenance, safety, troubleshooting, and specifications.
	[ExpertPower Lithium Battery Warranty Information and Terms] Detailed warranty terms and conditions for ExpertPower's lithium battery product line, including warranty periods, return policies, RMA guidelines, and exclusions.