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Wattcycle 12V 100Ah 100Mini LiFePO4

WattCycle 12V 100Ah Mini LiFePO4 Lithium Battery User Manual

Model: 12V 100Ah 100Mini LiFePO4



1. INTRODUCTION

This manual provides essential information for the safe and efficient use of your WattCycle 12V 100Ah Mini LiFePO4 Lithium Battery. Please read this manual thoroughly before installation and operation to ensure optimal performance and longevity of your battery.

The WattCycle 12V 100Ah Mini LiFePO4 battery is a compact and powerful energy storage solution designed for various applications, including marine, RV, solar, golf carts, and off-grid systems. It features a built-in 100A Battery Management System (BMS) for enhanced protection and a long cycle life.

2. SAFETY INFORMATION

WARNING: Failure to follow these safety instructions may result in electric shock, fire, serious injury, or death.

- Always wear appropriate personal protective equipment (PPE), including safety glasses and insulated gloves, when handling batteries.
- Do not short-circuit the battery terminals. This can cause severe damage to the battery and pose a fire hazard.
- Do not expose the battery to open flames, high temperatures, or direct sunlight for extended periods.
- Do not immerse the battery in water or other liquids.
- Do not disassemble, puncture, or modify the battery. Internal components are dangerous.
- Ensure proper ventilation when charging or discharging the battery.
- Use only chargers specifically designed for LiFePO4 batteries.
- Keep the battery out of reach of children and pets.
- In case of fire, use a Class D fire extinguisher (for metal fires) or a large amount of water.

3. WHAT'S IN THE BOX

Upon unpacking, please verify that all items listed below are included and in good condition:

- 1 x WattCycle 12V 100Ah 100 Mini LiFePO4 Battery
- 4 x M8 Screws
- 2 x Insulated Caps
- 1 x Instruction Manual (this document)



Image: The package contents, showing the WattCycle 12V 100Ah Mini LiFePO4 battery, M8 terminal screws, insulated caps, and the user manual.

4. PRODUCT FEATURES

- **Compact and Lightweight Design:** The 12V 100Ah Mini LiFePO4 battery is significantly smaller and lighter than traditional Group 24 lead-acid batteries, offering an 11% weight reduction and 39% volume reduction compared to Group 24, and 30% smaller than Group 24, 48% smaller than Group 31. It weighs approximately 20.9 pounds.
- **High Energy Density:** Achieves an impressive 195Wh/L, providing substantial power in a small footprint.
- **Advanced LiFePO4 Cells:** Utilizes EV Grade A+ cells for a lifespan of up to 10 years and over 15,000 deep cycles at 60% Depth of Discharge (DOD).
- **Integrated 100A Smart BMS:** Provides comprehensive protection against overvoltage, undervoltage, overcurrent, short circuits, overheating, and low-temperature conditions.
- **Low-Temperature Protection:** Automatically shuts off charging when temperatures drop below 32°F (0°C) and allows discharge down to -4°F (-20°C), ensuring safe operation in various climates.
- **High Load Capacity:** Supports pulse discharge up to 3C (300A for 5 seconds, 200A for 2 minutes) for applications requiring high power bursts.
- **Durable Construction:** Features an IP67 waterproof and drop-proof design, using ABS and PC materials with ultrasonic welding technology.

- **Flexible Configuration:** Supports up to 4S4P (4 series, 4 parallel) configurations for increased voltage and capacity, reaching up to 48V (51.2V) 400Ah (20.48 kWh).
- **Portable Nylon Handle:** Ergonomically designed for easy carrying and installation.



Image: Size and weight comparison of the WattCycle Mini LiFePO4 battery against a traditional lead-acid battery, showing its compact dimensions (9x5.4x8.2 inches) and lighter weight (20.9 lbs).



Image: The WattCycle Mini LiFePO4 battery is shown to be significantly smaller than BCI Group 24 and Group 31 batteries, allowing for more flexible installation.



Image: Close-up of the durable nylon handle, designed for easy and safe transport of the battery.



Image: An illustration of the internal 100A Smart BMS, detailing its protective functions including overvoltage, undervoltage, overcurrent, short circuit, overheating, and low-temperature protection.



Image: Visual representation of the battery's robust protection features, including crash, wear, temperature, and IP67 waterproof testing.



Image: The battery is depicted operating reliably across a wide temperature range, from -4°F (-20°C) to 158°F (70°C).

5. SETUP AND INSTALLATION

Proper installation is crucial for the safety and performance of your WattCycle LiFePO4 battery. Consult a qualified professional if you are unsure about any steps.

5.1 Pre-Installation Checks

- Inspect the battery for any physical damage. Do not install if damaged.
- Ensure all cables and connectors are appropriately sized for your application and rated for the expected current.
- Verify that your charging system (charger, solar charge controller, inverter) is compatible with LiFePO4 batteries and set to the correct charging parameters.

5.2 Connecting the Battery

1. **Single Battery Connection:** Connect the positive (+) terminal of the battery to the positive terminal of your load/charger, and the negative (-) terminal to the negative terminal of your load/charger. Use the provided M8 screws and insulated caps to secure connections.
2. **Series Connection (for higher voltage):** To increase voltage, connect batteries in series. Connect the positive terminal of one battery to the negative terminal of the next. Ensure all batteries have the same voltage and capacity. The WattCycle 12V 100Ah Mini supports up to 4S (48V) configuration.
3. **Parallel Connection (for higher capacity):** To increase capacity, connect batteries in parallel. Connect all positive terminals together and all negative terminals together. Ensure all batteries have the same voltage and capacity. The WattCycle 12V 100Ah Mini supports up to 4P (400Ah) configuration.
4. **Series-Parallel Connection:** For both higher voltage and capacity, batteries can be configured in series-parallel. Consult a professional for complex configurations. The battery supports up to 4S4P (48V 400Ah) configuration.

Big Power Station DIY



► 4S 4P

48V(51.2V) 400Ah
20.48 kWh



► Up to 4P

100/200/300/400Ah
12V(12.8V) 5120Wh



► Up to 4S

12/24/36/48V (51.2V)
100Ah 5120Wh

Image: Examples of battery configurations, illustrating how multiple WattCycle 12V 100Ah batteries can be connected in series or parallel to achieve desired voltage and capacity for a DIY power station.

5.3 Mounting

The battery can be mounted in any direction due to its sealed design. Ensure the mounting location is secure, well-ventilated, and protected from extreme temperatures and direct impact.

NO WORRIES ON BOARD

UNRESTRICTED IN MOUNTING ALL DIRECTIONS

Space Occupied: 0.39 ft³
IP67 Waterproof



Image: The WattCycle battery installed in a boat, highlighting its compact size and ability to be mounted in various orientations, suitable for marine applications.



Image: Example of a WattCycle battery system providing power to an RV, demonstrating its use in mobile off-grid applications.

6. OPERATING INSTRUCTIONS

6.1 Charging

- Use a dedicated LiFePO4 charger with a voltage range of 14.2V to 14.6V.
- The recommended charging current is 20A (0.2C), with a maximum continuous charging current of 100A (1C).
- The BMS will automatically stop charging if the temperature is below 32°F (0°C) to prevent damage.

6.2 Discharging

- The maximum continuous discharge current is 100A.
- The battery can handle pulse discharges of up to 300A for 5 seconds or 200A for 2 minutes.
- The BMS will disconnect the battery if the voltage drops below the safe discharge limit (typically around 10V) to protect the cells.
- Operating temperature for discharge is -4°F (-20°C) to 158°F (70°C).

6.3 Storage

- For long-term storage, charge the battery to approximately 50% of its capacity (around 13.2V).
- Store the battery in a cool, dry place, away from direct sunlight and extreme temperatures.
- Periodically check the battery voltage during storage and recharge if it drops significantly.

7. MAINTENANCE

- **Regular Inspection:** Periodically check the battery terminals for corrosion or loose connections. Clean terminals with a wire brush if necessary and ensure connections are tight.
- **Cleaning:** Keep the battery casing clean and free of dust and debris. Use a dry cloth for cleaning. Do not use solvents or abrasive cleaners.
- **Voltage Monitoring:** If your battery has Bluetooth connectivity (check your specific model), use the WattCycle app to monitor voltage, current, temperature, and state of charge.
- **Avoid Deep Discharges:** While LiFePO4 batteries tolerate deep discharges, regularly discharging to very low levels can reduce overall cycle life. Aim to recharge before the battery is fully depleted.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Battery not charging	Charger not connected, charger fault, low-temperature cutoff, BMS protection activated.	Check charger connection and functionality. Ensure ambient temperature is above 32°F (0°C). If BMS is active, disconnect load/charger for a few minutes to reset.
Battery not discharging/no power output	Loose connections, load exceeding maximum current, undervoltage protection, BMS fault.	Check all cable connections. Reduce load. Recharge the battery if undervoltage protection is active. Contact support if the issue persists.
Battery gets unusually hot	Overcurrent, internal short, poor ventilation.	Immediately disconnect the battery from all loads and chargers. Ensure adequate ventilation. Contact support.

Problem	Possible Cause	Solution
Reduced capacity or runtime	Partial charge, aging cells, extreme operating conditions.	Ensure the battery is fully charged. Review operating conditions. If the battery is old, its capacity may naturally degrade over time.

9. SPECIFICATIONS

Feature	Detail
Brand	Wattcycle
Model	12V 100Ah 100Mini LiFePO4
Nominal Voltage	12V
Nominal Capacity	100Ah
Energy	1280Wh
Product Dimensions (LxWxH)	9.02" x 5.43" x 8.19"
Item Weight	20.9 pounds
Number of Cells	4
Terminal Type	M8
BMS	Built-in 100A Smart BMS
Max Continuous Charge Current	100A
Max Continuous Discharge Current	100A
Pulse Discharge Current	300A (5s), 200A (2min)
Charge Temperature Range	32°F to 149°F (0°C to 65°C)
Discharge Temperature Range	-4°F to 158°F (-20°C to 70°C)
Cycle Life	15,000+ cycles (60% DOD), 8,000+ cycles (80% DOD), 5,000+ cycles (100% DOD)
Waterproof Rating	IP67
UPC	753570987614

10. WARRANTY AND SUPPORT

WattCycle stands behind its products with a commitment to customer satisfaction.

10.1 Warranty

Your WattCycle 12V 100Ah Mini LiFePO4 battery comes with a **5-year warranty** covering manufacturing

defects. This warranty ensures free replacement for eligible issues.

10.2 Customer Support

For any product-related concerns, inquiries, or technical assistance, please contact WattCycle's dedicated support team. They are available 24/7 and can be reached via the Amazon platform or through their official email address.

WattCycle offers lifetime technical support and has local warehouses in the US for efficient service.









Image: WattCycle's commitment to customer service, highlighting 24/7 support and a 5-year warranty.



Image: Summary of WattCycle's support and product longevity, including 24/7 customer support, 5-year warranty, 10+ years service life, and US-based warehouses.

Related Documents - 12V 100Ah 100Mini LiFePO4

	<p>WattCycle LiFePO4 Deep Cycle Battery User Manual for Golf Carts</p> <p>Comprehensive user manual for WattCycle LiFePO4 deep cycle batteries, including features, specifications, installation, charging, and best practices for golf carts and other applications.</p>
	<p>WattCycle 12V LiFePO4 Deep Cycle Battery User Manual</p> <p>Comprehensive user manual for WattCycle 12V LiFePO4 deep cycle batteries, covering features, specifications, installation, charging, BMS functions, warranty, and troubleshooting. Includes detailed product information and best practices.</p>
	<p>WattCycle 12V LiFePO4 Batteries: Specifications and Usage Guide</p> <p>Detailed specifications, safety guidelines, and connection information for WattCycle's 12V LiFePO4 battery series, including models from 50Ah to 400Ah.</p>
	<p>WattCycle 12V 100Ah LiFePO4 Battery with Bluetooth App User Manual</p> <p>User manual for the WattCycle 12V 100Ah LiFePO4 battery, covering its features, operation, and management via the integrated Bluetooth application. Provides guidance on installation, usage, and troubleshooting for optimal performance.</p>
	<p>WattCycle LiFePO4 Deep Cycle Battery User Manual</p> <p>Comprehensive user manual for WattCycle LiFePO4 Deep Cycle Batteries, covering features, specifications, installation, charging, best practices, and warranty for golf carts and other applications.</p>
	<p>WattCycle 24V 314Ah LiFePO4 Battery User Manual Bluetooth Enabled</p> <p>Comprehensive user manual for the WattCycle 24V 314Ah Ultra Lithium LiFePO4 Battery with Bluetooth. Learn about installation, operation, safety, specifications, and maintenance for reliable power.</p>