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› **ECO-WORTHY** /

› ECO-WORTHY 12V 300AH LiFePO4 Lithium Battery Bluetooth with Battery LED Indication, Built-in 200A BMS, Low-Temp Protection, 3840Wh, for RV, Off-Grid, Home Backup, Solar Power System

ECO-WORTHY L13080202127-1

ECO-WORTHY 12V 300AH LiFePO4 Lithium Battery User Manual

Model: L13080202127-1

Information	Features	Setup	Operation	Introduction	Safety	Troubleshooting	Specifications	Warranty
				Maintenance & Support				

1. INTRODUCTION

This user manual provides comprehensive instructions for the ECO-WORTHY 12V 300AH LiFePO4 Lithium Battery. It covers product features, installation, operation, maintenance, and troubleshooting to ensure safe and efficient use in various applications such as RVs, off-grid systems, home backup, and solar power setups. Please read this manual thoroughly before using the battery.



Figure 1: ECO-WORTHY 12V 300AH LiFePO4 Lithium Battery

2. SAFETY INFORMATION

Always observe the following safety precautions to prevent personal injury or damage to the battery and connected equipment.

- Do not disassemble, modify, or attempt to repair the battery.
- Keep the battery away from fire, heat sources, and direct sunlight.
- Do not immerse the battery in water or other liquids.
- Ensure proper ventilation when operating the battery.
- Use only compatible chargers and charging methods.
- Avoid short-circuiting the battery terminals.
- Keep out of reach of children.
- In case of fire, use a Class D fire extinguisher. Water can be dangerous.
- The battery features a low-temperature protection function that automatically cuts off charging when the temperature is below $-7\text{ }^{\circ}\text{C}$ ($19.4\text{ }^{\circ}\text{F}$) to prevent cell damage.
- A built-in buzzer alarm signals a BMS fault, requiring immediate battery deactivation to avoid safety hazards.

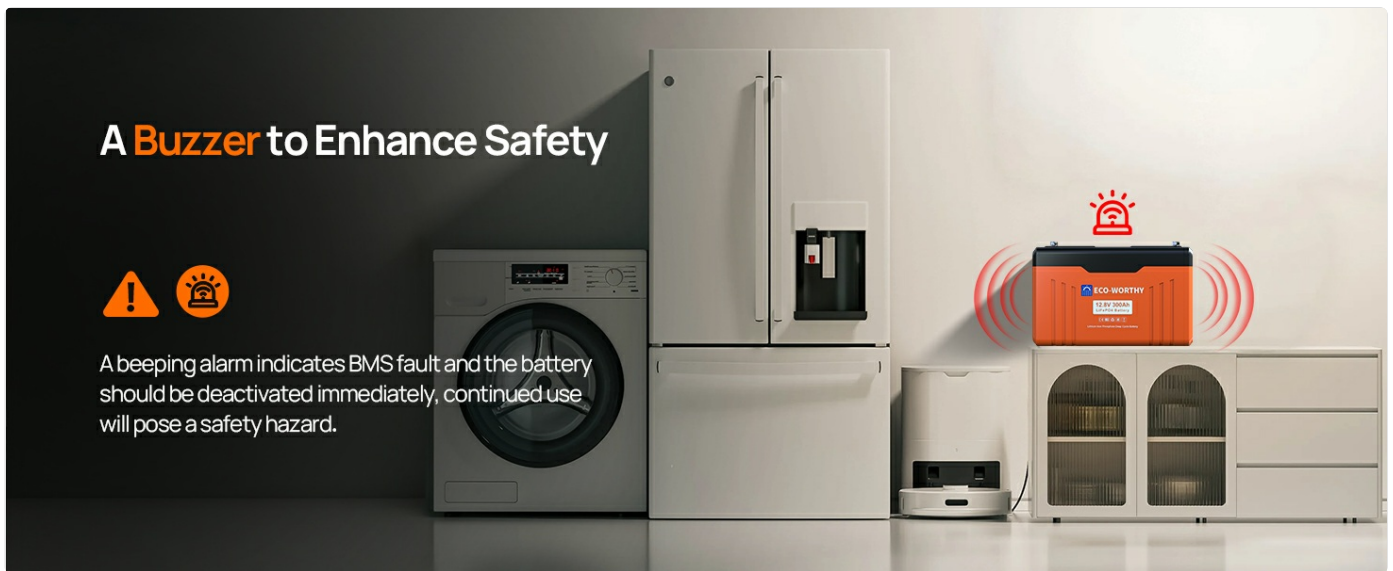


Figure 2: Battery with Buzzer Alarm indicating BMS fault

3. PRODUCT FEATURES

The ECO-WORTHY 12V 300AH LiFePO₄ Lithium Battery is designed with advanced features for optimal performance and safety:

- **Smart Status LED Indicators:** An intelligent LED display shows battery level and status in real-time for easy tracking of capacity and health.
- **Remote Monitoring:** Bluetooth functionality allows remote monitoring of battery status via the ECO-WORTHY APP, providing real-time access to critical information.
- **Low-Temp Protection:** The 200A BMS includes comprehensive high/low voltage, overload, and high/low temperature protection mechanisms. Charging automatically cuts off below -7 °C (19.4 °F).
- **Rapid Battery Error Addressing:** With 3840Wh of energy, the battery supports 4P2S/2P4S expansion up to 30.72kWh. The app facilitates checking the status of all connected batteries and quickly troubleshooting faults.
- **Superior Performance:** Lighter than other LiFePO₄ batteries and significantly lighter than lead-acid batteries. Utilizes Grade A battery cells and is certified by UN38.3, FCC, CE, and ROHS, offering a lifespan exceeding three times that of lead-acid batteries.
- **Integrated PACK Process:** Ensures durability and reliability through rigorous testing including vibration, low-temp, high-temp, drop, and volumetric tests.
- **Exclusive Fixture Design:** Provides triple protection for battery cells, preventing issues like cell expansion, safety valve failure, and wiring detachment due to vibrations.

Battery Status at a Glance

on/off

0% 25% 50% 75% 100%

H temp L temp OVP UVP OCP BMS fault



0% 25% 50% 75% 100%

SOC light

Say goodbye to power mystery

H temp L temp OVP UVP OCP BMS fault

Abnormal light

No more tedious troubleshooting

Figure 3: Smart Status LED Indicators

Full Monitoring in APP



Battery status page



Real-time monitoring page



Control page



Notification page



Works up to
98
feet away

Note: APP shows SOH < 70%, replace battery

Figure 4: Full Monitoring via ECO-WORTHY APP

Low temp? Battery **safe!**

Low temperature cut-off protection

19.4°F

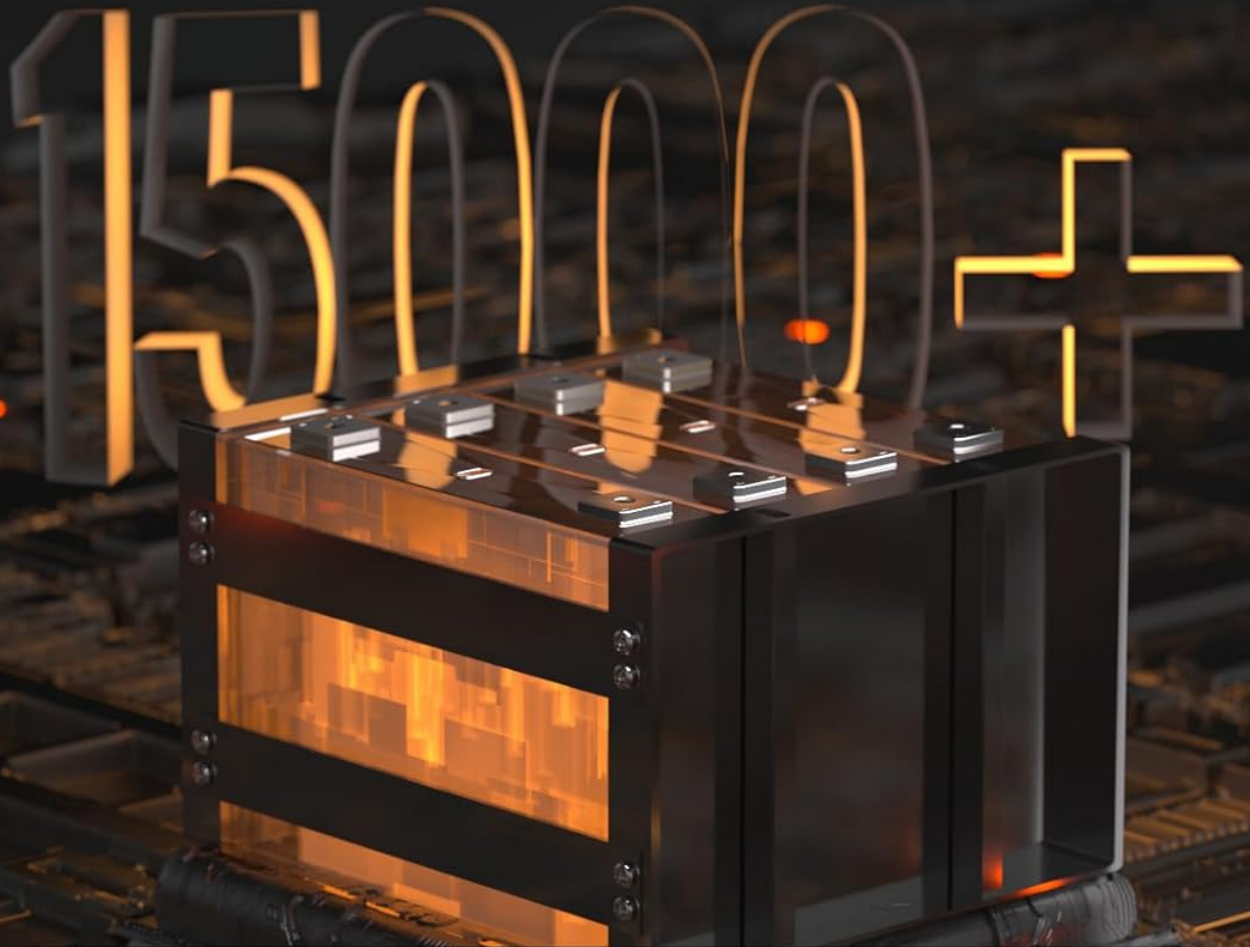
ECO-WORTHY
12.8V 30Ah
LiFePO4 Battery
Lithium Iron Phosphate Deep Cycle Battery

Temperature	Action
Below -7°C/19.4°F	Charging off automatically
Above 0°C/32°F	Charging resumes automatically
Below -20°C/-4°F	Discharging off automatically

Figure 5: Low Temperature Cut-off Protection

Exclusive **Fixture** Design

Triple protection for battery cells



**No Fixture
Protection
on Cells**

- ❗ Cell expansion cuts battery life by 30%
- ❗ Safety valve failure and hazards arise from cell expansion
- ❗ Vibrations may cause wiring detachment and failure

Figure 6: Exclusive Fixture Design

Experience Assurance with Every Use



Figure 7: Integrated PACK Process and Testing

4. SETUP AND INSTALLATION

4.1 Unpacking

Carefully remove the battery from its packaging. Inspect for any visible damage. If damage is found, contact customer

support immediately.

4.2 Initial Charge

It is recommended to fully charge the battery before its first use. Use a compatible LiFePO4 battery charger. The ECO-WORTHY 12V/24V 20A Automatic Smart Battery Charger (ASIN: B0DYHGR9FR) is recommended.

4.3 Wiring and Connection

Ensure all connections are secure and properly insulated. Connect the positive terminal of the battery to the positive input of your system and the negative terminal to the negative input. For parallel or series connections, refer to the specific wiring diagrams for your application. The battery supports 4P2S/2P4S expansion.



Figure 8: Example of Battery Expansion for Home Backup

4.4 App Installation (Bluetooth Monitoring)

Download the ECO-WORTHY APP from your device's app store. Follow the in-app instructions to connect to your battery via Bluetooth for real-time monitoring and fault troubleshooting.

5. OPERATING INSTRUCTIONS

5.1 Powering On/Off

The battery features an on/off button. Long press for 3 seconds to activate the battery storage mode for long-term healthy storage.

5.2 Monitoring Battery Status

The intelligent LED display on the battery provides immediate visual feedback on battery level (0%, 25%, 50%, 75%, 100% SOC) and abnormal conditions (High Temp, Low Temp, Over Voltage, Under Voltage, Over Current, BMS Fault). For detailed information, use the ECO-WORTHY APP.



Figure 9: Battery SOC and Abnormal LED Indication

5.3 Charging the Battery

The ECO-WORTHY LiFePO4 battery supports three primary charging methods:

- **LiFePO4 Battery Charger:** Connect a compatible LiFePO4 charger directly to the battery terminals.
- **Solar Panels + MPPT Controller:** Integrate the battery into a solar power system with an MPPT charge controller.
- **Alternator + DC-DC Charger:** For RV or vehicle applications, charge the battery using an alternator via a DC-DC charger.

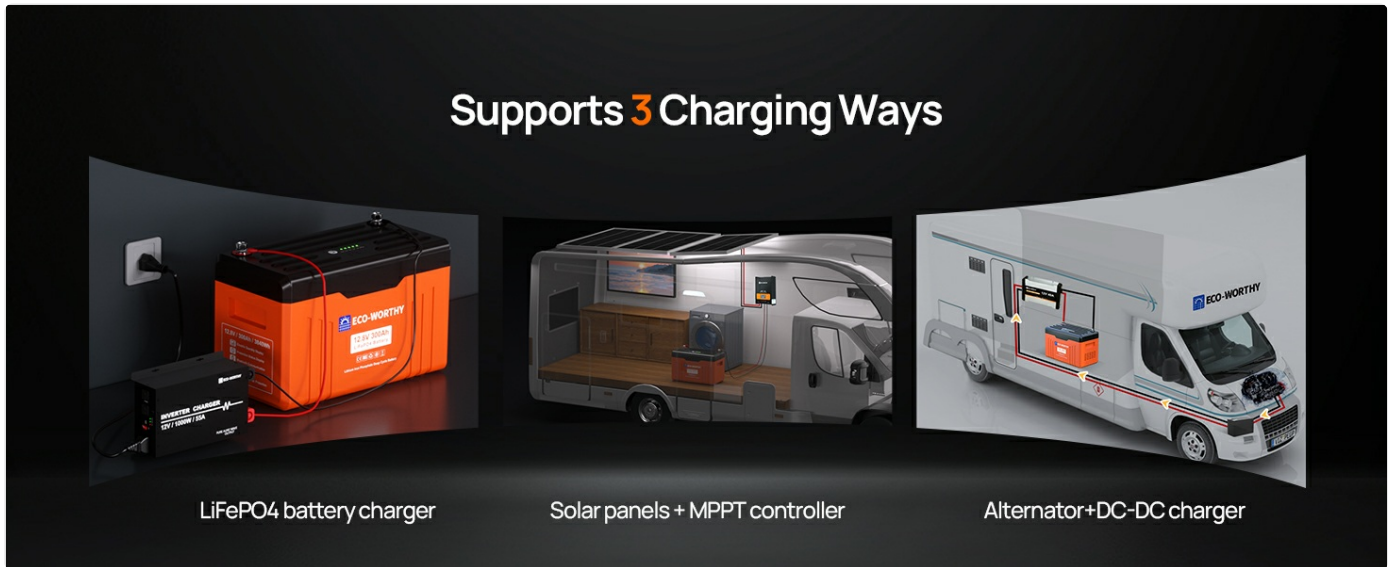


Figure 10: Supported Charging Methods

5.4 Discharge and Capacity

The battery provides 3840Wh of energy. When expanding the system, it can reach up to 30.72kWh. Ensure your load does not exceed the battery's continuous discharge current rating.

Great Energy to Explore Further Trip

Note: Max 30.72kWh, 4P2S/2P4S config

3840Wh



Oven
1800W 2Hrs



Coffee Machine
1200W 3Hrs



Washer
1100W 3Hrs



Air Conditioner
800W 4.5Hrs



TV
130W 29.5Hrs



Refrigerator
120W 32Hrs

Figure 11: 3840Wh Energy Capacity and Typical Appliance Run Times

6. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your ECO-WORTHY LiFePO4 battery.

- **Regular Inspection:** Periodically check the battery terminals for corrosion or loose connections. Clean as

necessary.

- **Cleaning:** Wipe the battery casing with a dry, soft cloth. Do not use harsh chemicals or abrasive cleaners.
- **Storage:** For long-term storage, activate the battery storage mode by long-pressing the on/off button for 3 seconds. Store the battery in a cool, dry place, away from direct sunlight and extreme temperatures. Ensure the battery is charged to approximately 50% before storage.
- **Temperature Management:** The built-in BMS protects against extreme temperatures. Avoid operating or storing the battery outside its recommended temperature range.

7. TROUBLESHOOTING

This section addresses common issues you might encounter with your ECO-WORTHY LiFePO4 battery.

Problem	Possible Cause	Solution
Battery not charging	Charger not connected, charger fault, low temperature protection active, BMS fault.	Check charger connection and functionality. Verify ambient temperature is above -7 °C (19.4 °F). Check ECO-WORTHY APP for BMS fault codes. If BMS is protected, use a compatible charger to activate it.
No power output	Battery discharged, BMS protection active (over-discharge, over-current, high/low voltage), loose connections.	Charge the battery. Check ECO-WORTHY APP for BMS fault codes and address the cause. Ensure all connections are secure.
Buzzer alarm sounds	BMS fault detected (e.g., over-voltage, over-current, temperature anomaly).	Immediately deactivate the battery. Check the ECO-WORTHY APP for specific fault details. Contact customer support if the issue persists after addressing the indicated fault.
Bluetooth connection issues	Battery too far, Bluetooth disabled on device, app not updated.	Ensure device is within 98 feet of the battery. Enable Bluetooth on your device. Update the ECO-WORTHY APP to the latest version.

If you encounter issues not listed here or if solutions do not resolve the problem, please contact ECO-WORTHY customer support.

8. SPECIFICATIONS

Attribute	Value
Brand	ECO-WORTHY
Model Name	12.8V 300AH
Part Number	L13080202127-1
Voltage	12.8 Volts
Battery Capacity	300 Amp Hours
Energy	3840Wh
Battery Cell Composition	Lithium Iron Phosphate (LiFePO4)
BMS	Built-in 200A BMS
Low-Temp Protection	Charging cut-off below -7 °C (19.4 °F)
Dimensions (L x W x H)	41.4 x 21.48 x 26 cm (16.3 x 8.46 x 10.24 inches)
Weight	27.4 kg (60.4 lbs)
Certifications	UN38.3, FCC, CE, ROHS
Expansion Capability	Supports 4P2S/2P4S expansion up to 30.72kWh

9. WARRANTY & SUPPORT

9.1 Warranty Information

ECO-WORTHY is committed to customer satisfaction. For specific warranty terms and conditions, please refer to the official ECO-WORTHY website or contact customer support. The product is designed for a lifespan exceeding three times that of lead-acid batteries.

9.2 Price Protection Policy

ECO-WORTHY provides price protection for orders. If the actual price is lower than the price you paid within 30 days from the purchase date, you can contact ECO-WORTHY via Amazon with the following information:

1. Original order number and order screenshot.
2. Price screenshot of the item's detail page after the price reduction.

A refund for the price difference will be processed within 72 hours. This policy is limited to this platform and does not apply to cross-platform price differences.

ECO-WORTHY PRICE PROTECTION POLICY

Customer satisfaction is vital to ECO-WORTHY! ECO-WORTHY will provide price protection for the order, if the actual price on hand is lower than the price you paid within 30 days from the time you purchased the item, you can contact us via AMZ with the following information:

1. Original order number and order screenshot.
2. Price screenshot of the item's detail page after the price reduction. We will refund the price difference within 72 hours.

Tips: This policy is limited to within this platform and does not apply to cross-platform price differences.

Figure 12: ECO-WORTHY Price Protection Policy Details

9.3 Customer Support

For technical assistance, warranty claims, or general inquiries, please visit the official ECO-WORTHY website or contact their customer service team through the platform where the product was purchased.

ECO-WORTHY Mission: Our mission is to make solar products cost less and let more people enjoy life far away from the city.



Our Mission is to Make
Solar Products Cost Less
and Let More People
Enjoy the Life Far Away
From City

— ECO-WORTHY Team

Figure 13: ECO-WORTHY Mission Statement