

ECO-WORTHY EPA2420L

ECO-WORTHY 12V/24V 20A LiFePO4 Battery Charger User Manual

Model: EPA2420L | Brand: ECO-WORTHY

1. INTRODUCTION

This manual provides essential instructions for the safe and efficient operation of your ECO-WORTHY 12V/24V 20A LiFePO4 Battery Charger. This intelligent charger is designed for various battery types, including LiFePO4, AGM, Gel, and traditional lead-acid batteries, offering flexible current options and advanced features for optimal battery health and longevity. Please read this manual thoroughly before use and retain it for future reference.

2. SAFETY INFORMATION

WARNING: Improper use can result in electric shock, fire, or serious injury. Always follow safety guidelines.

- Always connect the charger to the battery before plugging it into the AC power outlet.
- Ensure the charger is compatible with your battery type and voltage.
- Do not charge frozen or damaged batteries.
- Use in a well-ventilated area. Batteries can produce explosive gases.
- Avoid sparks or flames near the battery during charging.
- Wear eye protection and gloves when handling batteries.
- Keep out of reach of children.
- Disconnect AC power before making or breaking connections to the battery.



Figure 2.1: The charger features multiple protection functions for safe operation, including protection against reverse connection, short circuits, and high temperatures.

3. PRODUCT OVERVIEW

The ECO-WORTHY 12V/24V 20A Battery Charger is a versatile and intelligent device designed to efficiently charge and maintain various battery types. Its key features include:

- **Dual Voltage & Multi-Current Options:** Automatically detects 12V/24V and offers selectable charging currents (5A/10A/15A/20A for 12V; 5A/10A for 24V).
- **0V Activation for LiFePO4:** Restores normal voltage levels for deeply discharged 12V/24V LiFePO4 batteries.
- **Low-Temperature Charging:** Capable of charging 12V/24V lead-acid batteries in cold conditions.
- **Lead-Acid Battery Reconditioning:** Uses 15V pulse charging to recondition old, sulfated, or stratified lead-acid batteries, extending their lifespan.
- **Smart LCD Display:** Provides real-time information on voltage, current, battery power, and error indicators.
- **Multiple Safety Protections:** Includes reverse polarity, short-circuit, and high-temperature protection.
- **Efficient Cooling Fan:** Integrated fan ensures stable and efficient charging performance by dissipating internal heat.



Figure 3.1: The ECO-WORTHY 12V/24V 20A LiFePO4 Battery Charger.

Attivazione della batteria LiFePO4

CONNESSIONE ANDERSON

DISPLAY LCD INTELLIGENTE

MODALITÀ DI RICARICA INTELLIGENTE A 3 FASI

PROTEZIONE MULTIFASE

VENTOLA DI RAFFREDDAMENTO

Figure 3.2: Key features of the ECO-WORTHY Smart Battery Charger.

ATTIVARE OV

Progettazione per batteria LiFePO4



Figure 3.3: Smart LCD Display showing charging status and indicators.

4. SETUP

Follow these steps to set up your ECO-WORTHY battery charger:

1. **Connect to AC Power:** Plug the charger's AC power cord into a standard wall outlet. The LCD display will illuminate.
2. **Select Battery Mode:** Press the 'MODE' button to select the appropriate battery type (LiFePO4, AGM, Gel, STD). **Important:** The battery type cannot be changed once connected to the battery.
3. **Connect to Battery:** Connect the charger's positive (+) clamp (red) to the positive (+) terminal of the battery and the negative (-) clamp (black) to the negative (-) terminal of the battery. Ensure a secure connection.
4. **Start Charging:** The charger will automatically detect the battery voltage and begin charging according to the selected mode and current.

6 LIVELLI DI CORRENTE SELEZIONABILI

Rilevamento automatico della tensione della batteria

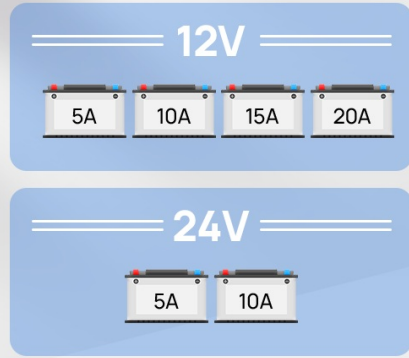


Figure 4.1: Step-by-step guide for connecting the charger.

5. OPERATING INSTRUCTIONS

5.1 Current Selection

The charger offers multiple current options to suit different battery capacities. Press the 'AMP' button to cycle through the available current settings:

- **12V Mode:** 5A, 10A, 15A, 20A
- **24V Mode:** 5A, 10A

Select a current appropriate for your battery's capacity to ensure safe and efficient charging. For example, a 100Ah battery might be charged at 10A or 20A depending on desired charging speed and battery specifications.

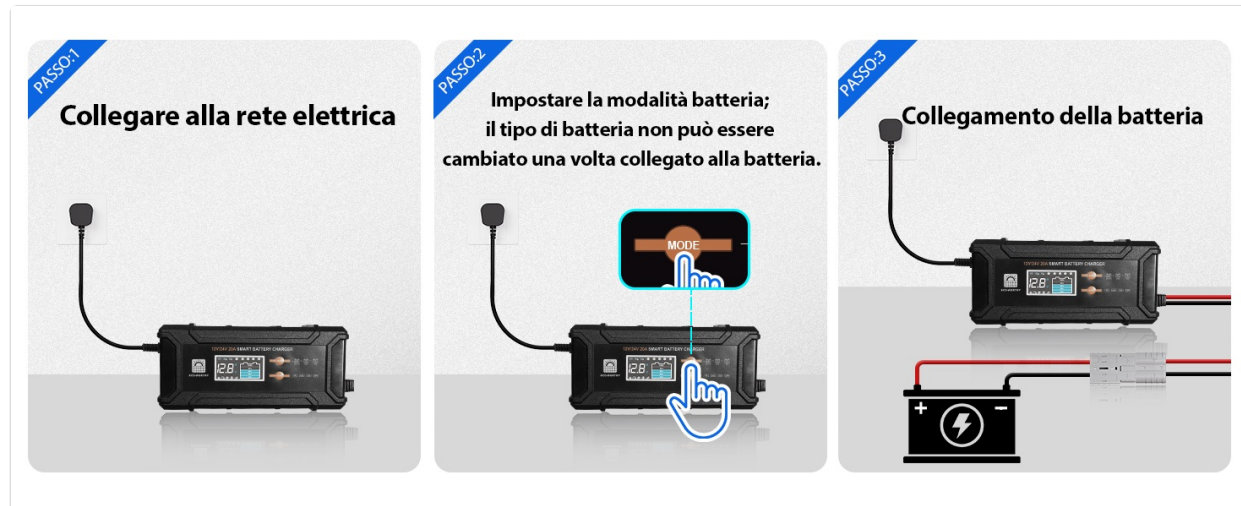


Figure 5.1: Selectable current levels for 12V and 24V batteries.

5.2 0V Activation for LiFePO4 Batteries

The charger can activate deeply discharged 12V/24V LiFePO4 batteries that have dropped to 0V. This function attempts to restore the battery to a normal voltage level, allowing for a regular charging cycle. Chargers without this feature may fail to recognize and charge such batteries.

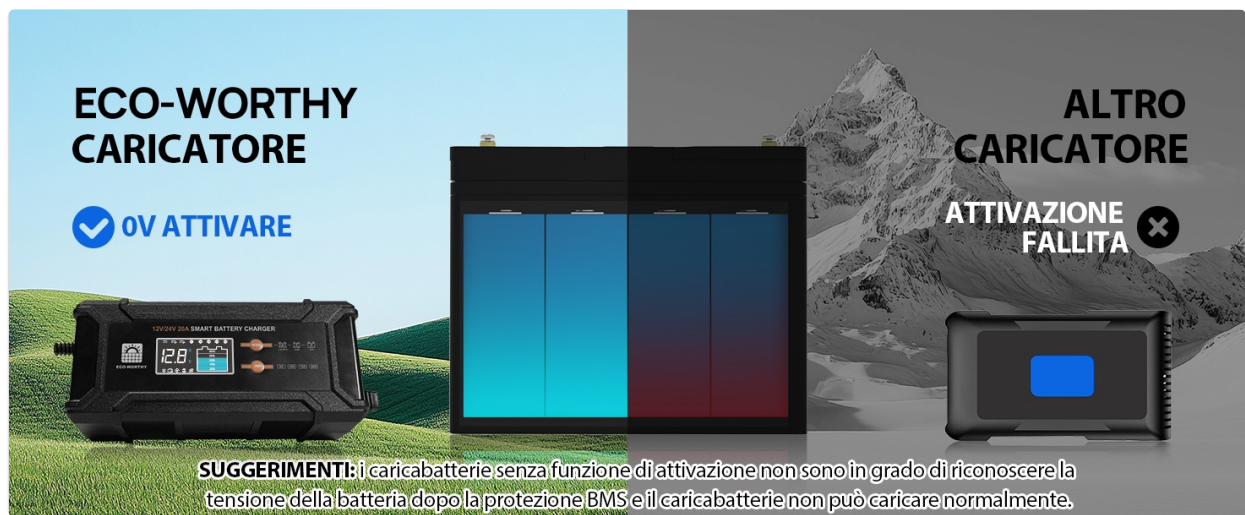


Figure 5.2: 0V Activation capability for LiFePO4 batteries.

5.3 Low-Temperature Charging

For lead-acid batteries, the charger can operate in low-temperature mode, ensuring efficient charging even in cold environments. This is particularly useful for winter maintenance of vehicle batteries.

5.4 Lead-Acid Battery Reconditioning

The 12V lead-acid reconditioning mode uses a 15V pulse charge to revitalize old, unused, damaged, stratified, or sulfated lead-acid batteries. This process can significantly extend battery life and improve performance.

5.5 Charging Efficiency

The charger is designed for efficient power transfer, minimizing charging times. For example, a 12V 100Ah LiFePO4 battery can be fully charged in approximately 5 hours using the 12V 20A setting.

EFFICIENZA DI CARICA

	12V 100Ah Carica completa con corrente 12V 20A in circa 5 ore .
	12V 280Ah Carica completa con corrente da 12V 20A in circa 14 ore
	24V 100Ah Carica completa con corrente da 24V 10A in circa 10 ore



Figure 5.3: Charging efficiency and estimated times for various battery configurations.

6. MAINTENANCE

To ensure the longevity and optimal performance of your ECO-WORTHY battery charger, follow these maintenance guidelines:

- **Cleaning:** Regularly wipe the charger's exterior with a dry, soft cloth. Do not use abrasive cleaners or solvents.

- **Storage:** Store the charger in a cool, dry place away from direct sunlight, moisture, and extreme temperatures.
- **Cable Inspection:** Periodically inspect the AC power cord and battery connection cables for any signs of damage, fraying, or corrosion. Replace if necessary.
- **Ventilation:** Ensure the cooling fan and ventilation openings are free from dust and debris to prevent overheating.

7. TROUBLESHOOTING

If you encounter issues with your charger, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Charger not turning on	No AC power; Faulty power cord	Check wall outlet and power cord connection. Try a different outlet.
Charger not charging battery	Incorrect battery connection; Battery deeply discharged (0V); Incorrect battery mode selected; Battery fault	Ensure correct polarity (+ to +, - to -). For LiFePO4, allow 0V activation. Verify selected battery mode. Test battery with another device.
LCD shows error code	Reverse polarity; Short circuit; Overheating	Disconnect immediately. Check connections for correct polarity. Inspect cables for shorts. Allow charger to cool down.
Slow charging	Low current setting; Large battery capacity; Battery degradation	Increase current setting if battery allows. Charging large batteries takes longer. Consider battery replacement if degradation is severe.

If the problem persists after attempting these solutions, please contact ECO-WORTHY customer support.

8. SPECIFICATIONS

Specification	Value
Brand	ECO-WORTHY
Model Number	EPA2420L
Product Dimensions (DxWxH)	9P x 19.4l x 7.4H cm (3.54 x 7.64 x 2.91 inches)
Input Voltage	AC 100-240V, 50-60Hz
Output Voltage	12V / 24V (DC)
Rated Current	20 Ampere

Specification	Value
Selectable Current (12V)	5A / 10A / 15A / 20A
Selectable Current (24V)	5A / 10A
Battery Connector Type	12V/24V Car Battery Connector (Clamps/Anderson)
Number of Ports	1
Supported Battery Types	LiFePO4, AGM, Gel, Lead-Acid (STD)
Standard Met	CE
Country of Origin	China
UPC	810127139381
GTIN	810127139381

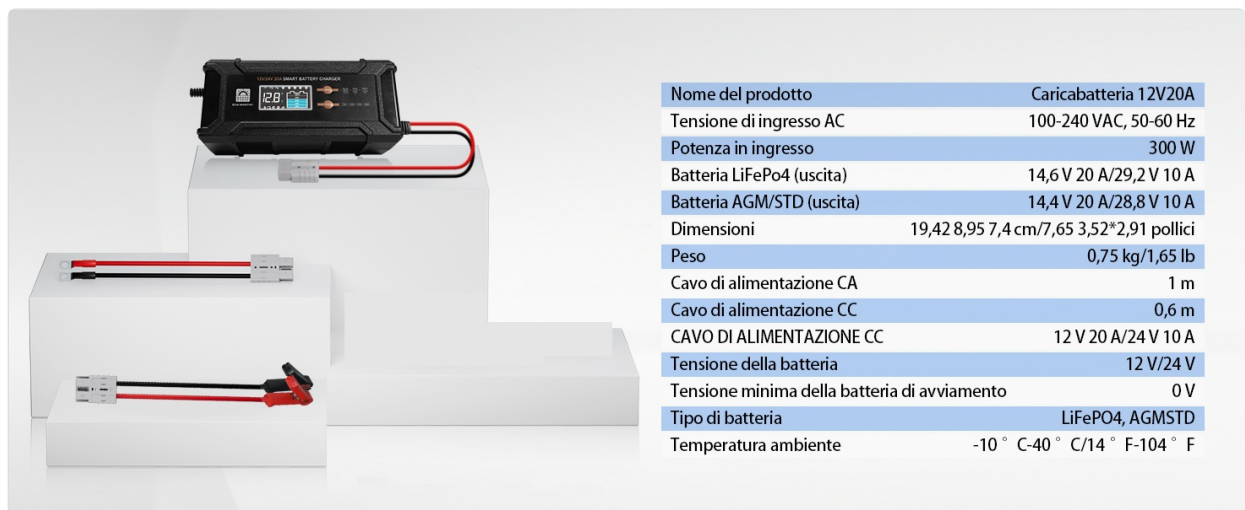


Figure 8.1: Detailed technical specifications of the charger.

9. WARRANTY AND SUPPORT

ECO-WORTHY products are manufactured to high-quality standards and come with a manufacturer's warranty. For specific warranty details, please refer to the warranty card included with your product or visit the official ECO-WORTHY website.

If you require technical assistance, have questions about product operation, or need to report a defect, please contact ECO-WORTHY customer support through their official channels. When contacting support, please have your model number (EPA2420L) and purchase information ready.

Online Support: Visit the ECO-WORTHY official website for FAQs, troubleshooting guides, and contact information.

Email Support: Refer to your product packaging or the official website for the customer service email address.

