

## ExpertPower EPC4810

# ExpertPower 48V 10A Smart Charger User Manual

Model: EPC4810

## INTRODUCTION

Thank you for choosing the ExpertPower 48V 10A Smart Charger. This charger is specifically designed for 48V Lithium Iron Phosphate (LiFePO4) deep cycle rechargeable batteries. It utilizes an advanced 2-stage constant current/constant voltage (CC/CV) charge algorithm to optimize charging efficiency and extend battery lifespan. Please read this manual thoroughly before operation to ensure safe and correct usage.

## SAFETY INSTRUCTIONS

- Always connect the charger to the battery terminals correctly: positive to positive (red clip to red terminal) and negative to negative (black clip to black terminal).
- Ensure the charger is disconnected from the power outlet before connecting or disconnecting the battery.
- Use this charger exclusively for 48V LiFePO4 batteries. Do not attempt to charge other battery types.
- Operate the charger in a well-ventilated area. Avoid exposing the charger to rain, moisture, or extreme temperatures.
- Do not operate the charger if it has been dropped, damaged, or if the power cord or clips are compromised.
- Keep out of reach of children.
- Do not disassemble the charger. Refer all servicing to qualified personnel.

## PACKAGE CONTENTS

- ExpertPower 48V 10A Smart Charger (Model: EPC4810)
- AC Power Cord
- DC Output Cable with Alligator Clips

## PRODUCT OVERVIEW

The ExpertPower 48V 10A Smart Charger is engineered for optimal performance with LiFePO4 batteries. It features a robust design and intelligent charging capabilities.



Image: The ExpertPower 48V 10A Smart Charger, showing its main unit, attached AC power cord, and DC output cables terminating in red and black alligator clips.

## Key Features:

- **Dedicated LiFePO4 Charging:** Specifically designed for 48V Lithium Iron Phosphate batteries.
- **2-Stage CC/CV Algorithm:** Implements a precise constant current/constant voltage charging method for efficient and safe charging.
- **Smart LED Indicators:** Provides clear status updates on power and charging progress.
- **BMS Reset Capability:** Designed to reset battery BMS (Battery Management System) when active by allowing current into batteries reading from down to 0V.
- **High Efficiency:** Boosts charging efficiency and maximizes battery lifespan.

## Smart LiFePO4 Charger Features

 **Weight:** 4.25 lbs

Smart Charger

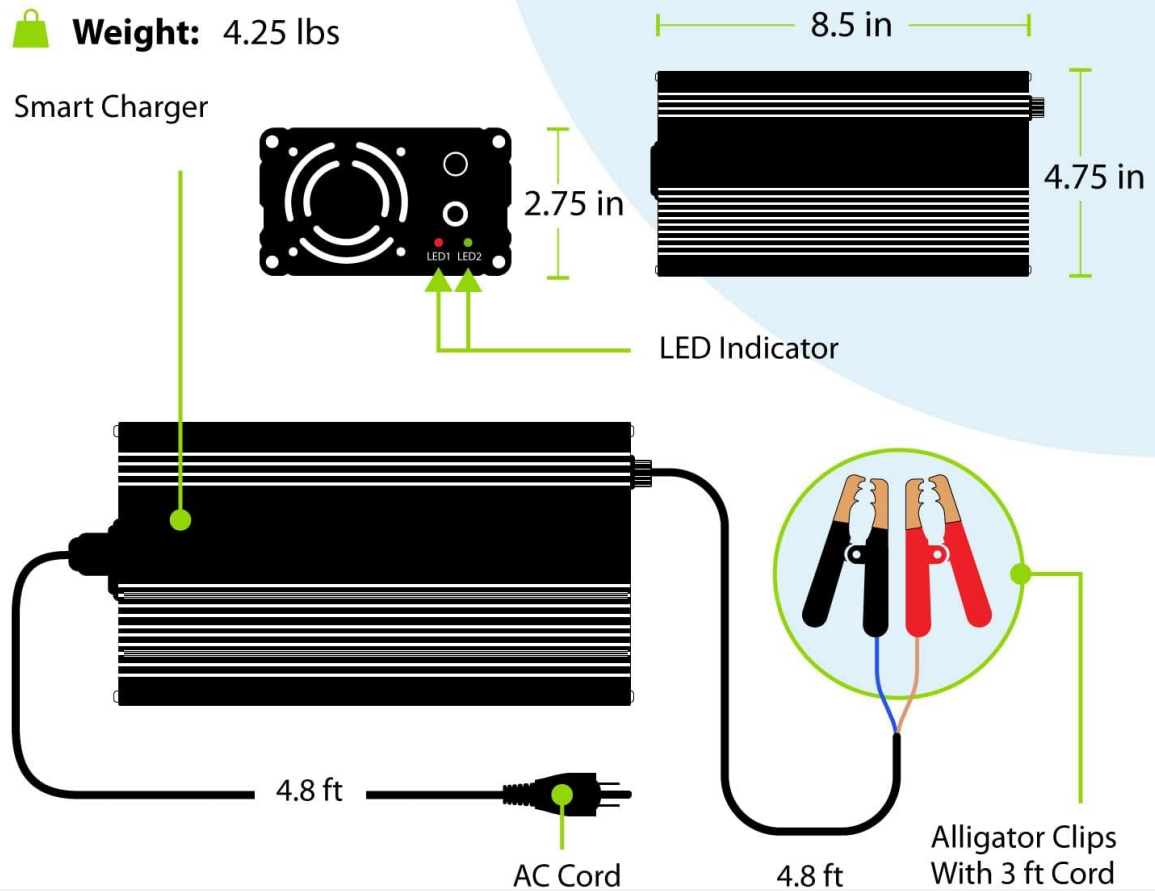


Image: A diagram illustrating the physical features and dimensions of the ExpertPower Smart LiFePO4 Charger, including its weight (4.25 lbs), length (8.5 in), width (4.75 in), height (2.75 in), AC cord length (4.8 ft), and 3 ft DC cord with alligator clips. It also highlights the LED indicator.

# Smart BMS Reset & Charge Technology

- The LiFePO4 Smart Charger is uniquely designed for 48V LiFePO4 batteries, implementing the special 2-stage constant current/constant voltage (CC/CV) charge algorithm with smart LED indicators.



- Additionally, the LiFePO4 Smart Charger is designed to reset battery BMS when active by allowing current into batteries reading from down to 0V.

Image: A diagram explaining the Smart BMS Reset & Charge Technology. It shows the charger connected to a LiFePO4 battery, with an arrow indicating a '0V Reset' function, signifying the charger's ability to reactivate batteries with a low voltage BMS trigger.

## SPECIFICATIONS

Specification	Value
Model Number	EPC4810
Charging Voltage	57.6V
Charging Current	10A
Cut-off Current	1.0-2.0A
Input Voltage	100-240VAC
Item Weight	4.53 pounds (2.06 kg)
Package Dimensions	11.34 x 7.87 x 3.62 inches

## SETUP

Follow these steps to properly set up your ExpertPower 48V 10A Smart Charger:

1. **Prepare the Battery:** Ensure your 48V LiFePO4 battery is clean and its terminals are free from corrosion.
2. **Connect to Battery:** Connect the red positive (+) alligator clip from the charger to the positive (+) terminal of your battery. Then, connect the black negative (-) alligator clip to the negative (-) terminal of your battery. Ensure a secure connection.
3. **Connect to Power:** Plug the AC power cord into the charger, then plug the other end into a standard 100-240VAC wall outlet.
4. **Verify Connection:** The charger's LED indicators will illuminate to show the power and charging status.

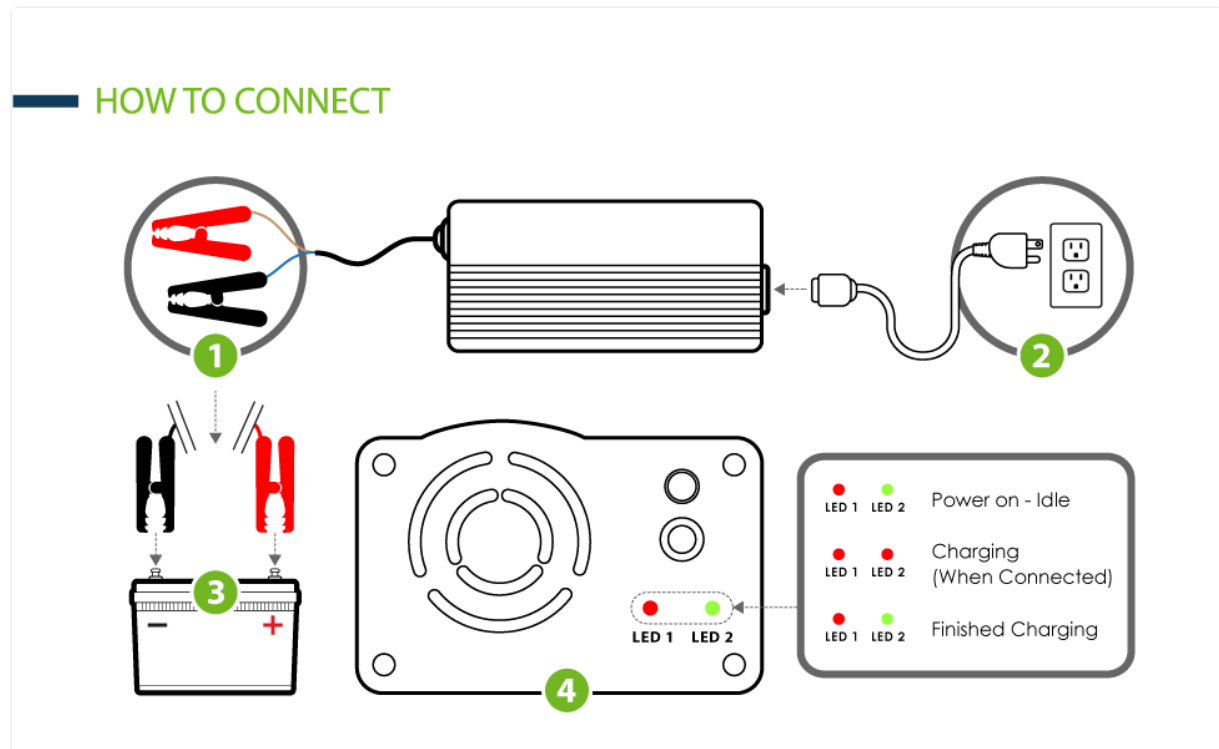


Image: A step-by-step diagram illustrating the connection process. Step 1 shows connecting the alligator clips to the battery, Step 2 shows plugging the charger into a power outlet, Step 3 shows the battery terminals, and Step 4 displays the LED indicator status (LED1 for power, LED2 for charging status).

## OPERATING INSTRUCTIONS

Once properly connected, the charger will automatically begin the charging process. Monitor the LED indicators for status updates:

- **LED 1 (Power Indicator):** Illuminates when the charger is plugged into a power source.
- **LED 2 (Charging Status):**
  - **Red:** Indicates the battery is currently charging.
  - **Green:** Indicates the battery is fully charged.

### Charging Process (CC/CV Algorithm):

The charger employs a 2-stage Constant Current (CC) / Constant Voltage (CV) algorithm:

1. **Constant Current (CC) Stage:** The charger delivers a steady 10A current to the battery until the battery

voltage reaches approximately 57.6V. This is the bulk charging phase.

2. **Constant Voltage (CV) Stage:** Once the battery voltage reaches 57.6V, the charger maintains this voltage while gradually decreasing the current. This continues until the battery is fully charged and the current drops to the cut-off threshold (1.0-2.0A).

This intelligent algorithm ensures efficient charging, prevents overcharging, and helps prolong the battery's overall lifespan.

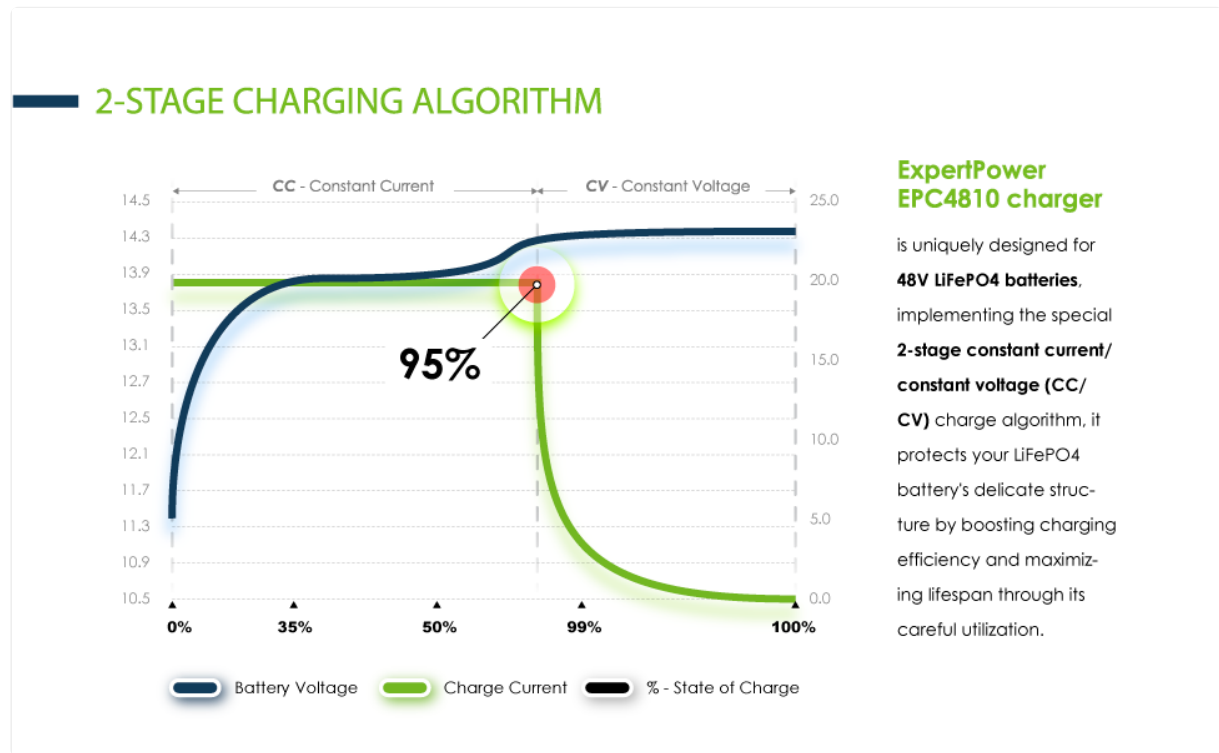


Image: A graph depicting the 2-stage Constant Current (CC) and Constant Voltage (CV) charging algorithm. It shows battery voltage increasing during the CC phase, then stabilizing at 57.6V during the CV phase as charge current decreases, reaching 95% state of charge.

### Approximate Charging Times:

Charging time will vary based on the battery's capacity and its initial state of charge. Below are estimated charging times for common LiFePO4 battery capacities:



## CHARGING TIME



Image: A bar chart illustrating the approximate charging times for different LiFePO4 battery capacities using the 10A charger. Examples include 20Ah (2 hours), 30Ah (3 hours), 50Ah (5 hours), 80Ah (8 hours), and 100Ah (10 hours).

## MAINTENANCE

- **Cleaning:** Disconnect the charger from both the power outlet and the battery before cleaning. Use a dry, soft cloth to wipe the exterior. Do not use liquid cleaners or solvents.
- **Storage:** Store the charger in a cool, dry place when not in use. Avoid areas with high humidity or extreme temperatures.
- **Cable Inspection:** Periodically inspect the AC power cord and DC output cables for any signs of damage, fraying, or exposed wires. Replace if damaged.

## TROUBLESHOOTING

If you encounter issues with your ExpertPower 48V 10A Smart Charger, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Charger not powering on (LED 1 off)	No power from outlet; loose connection; faulty power cord.	Check the power outlet with another device. Ensure the AC cord is securely plugged into both the charger and the wall. Inspect the power cord for damage.
LED 2 remains red (not fully charged)	Battery not fully charged; battery capacity is very large; battery issue.	Allow more time for charging, especially for larger capacity batteries. Verify battery health.

Problem	Possible Cause	Solution
LED 2 does not turn red (no charging)	Incorrect battery connection; battery voltage too low (BMS triggered); charger malfunction.	Ensure alligator clips are correctly connected (red to +, black to -). The charger has a BMS reset function, but if the battery is severely discharged or faulty, it may not initiate charging. Contact support if the issue persists.
Charger makes a loud fan noise	Normal operation for cooling; fan obstruction.	The charger has a cooling fan that may be audible during operation. Ensure the fan vents are not obstructed to allow proper airflow.

If these steps do not resolve the issue, please contact ExpertPower customer support for further assistance.

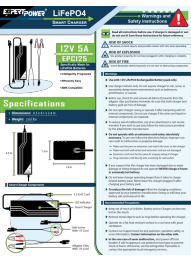

## WARRANTY AND SUPPORT

ExpertPower stands behind the quality of its products. This charger comes with a:

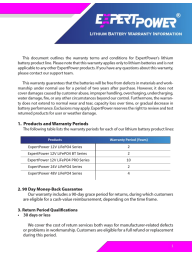
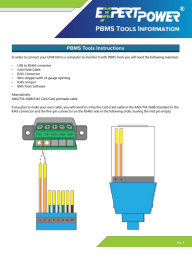


- **30-Day Money Back Guarantee:** If you are not satisfied with your purchase, you may return it within 30 days for a full refund.
- **1-Year Hassle-Free Warranty:** This warranty covers defects in materials and workmanship under normal use for one year from the date of purchase.

For warranty claims, technical support, or any questions regarding your ExpertPower 48V 10A Smart Charger, please refer to the contact information provided with your purchase or visit the official ExpertPower website.

## Related Documents - EPC4810

	<p><a href="#">EXPERTPOWER EPC125 12V 5A LiFePO4 Smart Battery Charger: User Guide &amp; Safety Instructions</a></p> <p>Learn how to safely and effectively use the EXPERTPOWER EPC125 12V 5A LiFePO4 Smart Battery Charger. This guide provides essential safety instructions, operating procedures, specifications, and troubleshooting tips for optimal battery charging.</p>
	<p><a href="#">ExpertPower 24V 20A LiFePO4 Smart Charger Manual and Safety Instructions</a></p> <p>Comprehensive guide to connecting, operating, and maintaining the ExpertPower 24V 20A LiFePO4 Smart Charger. Includes safety warnings, specifications, and troubleshooting tips.</p>



	<p><a href="#">ExpertPower Lithium Battery Warranty Information and Terms</a></p> <p>Detailed warranty terms and conditions for ExpertPower's lithium battery product line, including warranty periods, return policies, RMA guidelines, and exclusions.</p>
	<p><a href="#">EXPERTPOWER EP48100 PBMS Tools Connection and Monitoring Guide</a></p> <p>Instructions for connecting and monitoring the EXPERTPOWER EP48100 battery system using the PBMS Tools software, including hardware setup and software configuration.</p>
	<p><a href="#">ExpertPower 12V Inverter Charger IVOCH2KW/IVOCH3KW User Manual</a></p> <p>Comprehensive user manual for the ExpertPower 12V Pure Sine Wave Inverter Charger (Models IVOCH2KW, IVOCH3KW), covering installation, operation, AC/DC modes, wiring, alarms, and troubleshooting.</p>
	<p><a href="#">ExpertPower IVOCH2KW/IVOCH3KW 12V Pure Sine Wave Inverter Charger User Manual</a></p> <p>Comprehensive user manual for ExpertPower's IVOCH2KW and IVOCH3KW 12V Pure Sine Wave Inverter Chargers. Covers installation, operation, AC/DC modes, wiring, safety, and troubleshooting for RVs and solar power systems.</p>