

# USER MANUAL

## 48V Charger

**EX-CHG-48022**



# EXPION360®

POWER THE PURSUIT

## Disclaimer

While every precaution has been taken to ensure the accuracy of the contents of this guide, Expion360 assumes no responsibility for errors or omissions. In addition, note that specifications and product functionality may change without notice.

## Important

Please read this manual in its entirety before using your Expion360 battery and save it for future reference. Misuse may result in damage to the product(s) and/or cause harm or serious injury, potentially voiding the warranty.

## Safety

Expion360 lithium batteries use lithium iron phosphate (LiFePO<sub>4</sub>/LFP) chemistry and are designed for RV, marine, and off-grid power storage. LiFePO<sub>4</sub> is considered the best choice for these applications because of its high degree of safety, long life, and excellent dependability.

## Quality

Every battery uses cylindrical 26650, stainless steel-encased LiFePO<sub>4</sub> cells. The cells are UL 1642 recognized (file no. MH64383) and are certified to the highest standard in safety and performance. Internal power distribution cables are mechanically connected (bolted), rather than soldered, to lower contact resistance and provide a robust physical connection point. The internal power-distribution plates connecting the cells, battery management system (BMS), and internal terminals are solid copper.

Our proprietary case contains structural elements to protect the battery pack and BMS inside from the effects of vibration and movement. The battery's oversized power terminals provide a large electrical and physical connection point to accommodate high ampacity power cables and our unique and innovative bus bars.

**Please Read Each Warning Carefully to Prevent Damage to the Unit and Injury to Operators.**

**Ignoring Warnings Voids Warranty.**

**WARNINGS:**

- ⚠ DO NOT drop the charger.**
- ⚠ DO NOT open the charger.**
- ⚠ DO NOT short-circuit the charger.**
- ⚠ DO NOT connect chargers in parallel.**
- ⚠ DO NOT use it with other batteries. This charger is made for the EX-GC2-48036. Other batteries will not accept the charging profile.**
- ⚠ DO NOT submerge the charger in water.**
- ⚠ DO NOT attempt to repair the charger if it malfunctions.**
- ⚠ DO NOT charge the battery above 58.4 VDC.**
- ⚠ DO NOT charge the battery at or below 32°F or 0°C.**
- ⚠ DO NOT charge the battery above its maximum charge rate.**
- ⚠ DO NOT leave the battery connected to the charger when in storage.**
- ⚠ This charger is not ignition-protected and may produce arcs or sparks. To prevent fire or explosion, DO NOT install in compartments containing flammable gas or materials.**

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## About the EX-CHG-48022

The EX-CHG-48022 was designed specifically to charge Expion360 48V golf cart batteries. The EX-CHG-48022 charger provides the precise charging profile for efficient charging and maximum cycle life. The exterior case of the EX-CHG-48022 is IP66 rated, which can protect against powerful water jets, but not full immersion into water. The EX-CHG-48022 can be used as a portable charger or mounted in a fixed position. It should be used to charge **two or more** EX-GC2-48036 batteries in parallel. **IT IS NOT to be used for charging one battery at a time.** The charger comes with a 3-prong 120Vac 15A plug to connect to a standard electrical receptacle and a 5ft DC split cable with ring terminals to connect to the battery terminal studs.



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## Using the Charger

Before connecting the charger to the battery, ensure the battery is turned off by checking that the button on the top of the battery is in the up (flush with the top of the enclosure of the button) position.

Once the battery is off, connect the positive and negative ring terminals to the battery studs and ensure the connection to the charger is plugged in. With the battery button in the off (up) position, the battery can accept a charge but will not discharge across the terminals. Be aware, this does not prevent electric shock from the charger, or any other components that may be present and connected in the system. See “Installation” for further information.

## Installation

### Portable

Connect the negative ring terminal (black) of the DC split cable to the **MAIN** negative terminal of the battery system. Connect the positive ring terminal (red) of the DC split cable to the **MAIN** positive terminal of the battery system. Tighten all connections and torque to 8lb-ft (96lb-in).

### Using as a Portable Charger

1. Connect the two Anderson Power SB® connectors together. They should click together and only fit together in one position.
2. Plug the 3-prong 120Vac 15A plug into the wall receptacle. The green LED turns on. The charger is in standby mode for 2 to 5 seconds.
3. When the charger begins to charge, the green LED flashes, and the cooling fan turns on.
4. Once the battery system is full, the green LED changes to solid, charger turns to standby mode.



*Anderson Power  
SB® Connector*

### Mounted

Connect the negative ring terminal (black) of the DC split cable to the **MAIN** negative terminal of the battery system. Connect the positive ring terminal (red) of the DC split cable to the **MAIN** positive terminal of the battery system. Tighten all connections and torque to 8lb-ft (96lb-in).

Mount the charger securely in a well-ventilated place, and make sure the cooling fan is not blocked.

Connect the two 50A Anderson connectors together. They should click together and only fit together in one position.

Plug the 3-prong AC plug into the on-board charging receptacle. (Optional)

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## Using as a Mounted Charger

1. Plug the 3-prong 120Vac 15A plug into the wall receptacle. Or use an extension cord to connect the on-board charging adapter to the wall outlet. The green LED turns on. The charger is now in standby mode for 2 to 5 seconds.
2. When the charger begins to charge, the green LED flashes, and the cooling fan turns on.
3. Once the battery system is full, the green LED changes to solid, charger turns to standby mode.

## Charger Operation Mode

LED Status	Operation Mode
Green LED on	Standby or 100% Charged
Green LED flashing	Charging

## Error Codes and Solutions

LED Status	Malfunction	Solution
Red LED flashes constantly.	Input power failure.	Plug the charger into a different wall receptacle or power source.
Red and green LED flash alternately.	Output short circuit or battery reverse connection.	Unplug the charger from power source. Check the DC split cable connection.  Ensure the positive wire (red) connects to the MAIN positive terminal and the negative wire (black) to the MIAN negative terminal of the battery system.
Red LED flashes twice, turns off for 1 second.	Charger temperature too high.	Unplug the charger from the power source, remove the connections to the batteries, and allow the charger to cool down to room temperature before using it again.  Check the installation of the charger, make sure the charger is mounted in a well-ventilated place, and cooling fan is not blocked.
Red LED flashes 3 times, turns off for 2 seconds.	Output overcurrent.	Unplug the charger from the power source and remove the connections to the batteries. Contact Technical Support.
Red LED flashes 4 times, turns off for 2 seconds.	Output overvoltage.	Unplug the charger from the power source and remove the connections to the batteries. Contact Technical Support.



## Charger Specifications

Input Parameters	
AC Input Operating Voltage	85 Vac to 120 Vac
AC Input Frequency Range	40 Hz to 70 Hz
Input	3 prong 120V AC plug
Suitable for Batteries	EX-GC2-48036 LiFePO4 battery
Output Parameters	
Max. Output Voltage	58.4 V
Max. Output Current	22 A @ 120 Vac input
Output	Anderson quick disconnect with 5 ft. DC cable
Mechanical Parameters	
Dimensions	11.1 in. x 6.6 in. x 3.7 in.
	282 mm x 168 mm x 95 mm
Weight	8.5 lb (3.9 kg)
Waterproof Rating	IP66
Cooling Mode	Active Fan
Temperature Parameters	
Operating and Storage Temperature	-4°F to 120°F (-20°C to 50°C)

## Warranty

### What this Warranty Covers

Expion360 sells its products with the intent that they are free of defects in material and workmanship under normal use and service for a period of 12 months (1 year) for the EX-CHG-48022 from the date of original purchase.

### Non-Transferable

This Limited Warranty is for the original purchaser only. It is not transferable to any other person or entity.

### Warranty Exclusions

Expion360 has no obligation under this Limited Warranty for any Battery subject to the following conditions (including but not limited to):

- Damage caused by road debris or collision.
- Damage due to over/undercharging, over-discharging, under-sizing for application, and reverse polarity connections.
- Damage due to improper installations: loose connections, parallel and series connections, and not maintaining cables.
- A charger that has been opened, tampered with, and/or modified.
- Used in any application not intended use for.
- Improper use of an electrical/power supply that causes malfunction.
- Loss of power.
- Dropped or crushed product.
- Malfunction or damage of an operating part from a failure to provide the manufacturer's recommended maintenance.
- Transportation damage.
- Theft, neglect, vandalism, or environmental conditions.
- Environmental damage such as water submersion, fire, and extreme weather conditions.
- Or any other conditions whatsoever that are beyond the control of Expion360.

This warranty does not extend to the purchase of used, repaired, refurbished, repackaged, and/or resealed products, including but not limited to the sale of such products on Internet auction sites and/or sales of such products by surplus or bulk resellers. Any and all warranties or guarantees shall immediately cease and terminate any products or parts thereof that are repaired, replaced, altered, or modified without the prior express and written consent of Expion360.

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Expion360 shall not in any way be liable to you or any third party for any damages you or any third party may suffer as a result of the use, intended or unintended, or misuse of this product in conjunction with any device, equipment or accessory other than the appropriate device or equipment for which this product is designed. Expion360 will not be responsible for any damage you or any third party may suffer as a result of the misuse of this product outlined above. If you are responsible for this product's use with any unintended device and damages resulting from such use, you agree to indemnify Expion360 for any resulting injuries to any third parties.

### Water Submersion

E360 chargers are not designed to be submerged in water for any length of time and are not intended for use in environments where prolonged water exposure could be reasonably expected. If damage to the charger is incurred from water ingress into the charger case, the charger is damaged beyond repair and will not be covered under warranty.

### Period of Warranty Coverage

This warranty starts on the date of original purchase and extends 12 months (1 year) for the EX-CHG-48022 from the date of original purchase. The duration of any implied warranty of merchantability or fitness for a particular purpose of this product shall be limited in duration to the express warranty set forth above, 12 months from the date of original purchase.

### Product Return and Shipping

The Product must be returned to Expion360 before authorizing warranty coverage to determine if it is defective. If the product is faulty and determined to be a warranted item, it may be repaired and returned or replaced as determined by Expion360. Expion360 will cover Continental US ground shipping of the repaired, replacement, and defective items within the warranty period. If the item is found not to be a warranted issue, the customer will be billed for the shipping cost to send the item back to the customer.

### Warranty Process

If Expion360 determines that a returned product has a defect in manufacture or workmanship under normal use, Expion360 will, at its sole discretion, repair or replace the defective part or parts or, if necessary, provide a like or comparable product from its product line. Expion360 will repair or replace the defective product free of charge and return the product to the stated consumer's US address only, free of charge. If replacement parts for defective materials are not available, Expion360 reserves the right to make comparable product substitutions in lieu of repair or replacement. No refunds will be given. If Expion360 determines that the product is not defective, it will return the product to the consumer at the consumer's expense.

## Warranty Disclaimer

THIS LIMITED WARRANTY REPRESENTS THE TOTAL LIABILITY OF EXPION360 FOR THE EX-CHG-48022 CHARGER. ALL OTHER WARRANTIES IMPLIED BY LAW APPLICABLE TO THE EX-CHG-48022 CHARGER SHALL BE LIMITED TO THE WARRANTY PERIOD STATED. EXPION360 MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. EXPION360 SHALL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES.

## Legal Rights

Some states do not allow limitations on how long an implied warranty lasts or exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state. This warranty shall be governed by and interpreted by the laws of Oregon. This warranty is understood to be the exclusive agreement between the parties relating to the subject matter hereof. No employee or representative of Expion360 is authorized to make any warranty in addition to those made in this agreement.

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