
USER MANUAL

MODEL EX-25C

MOBILE CHARGER MODEL EX-25C

DESCRIPTION

The Expion360 DC to DC mobile charger is designed to charge Lithium Iron Phosphate (LiFePO₄/LFP) chemistry deep cycle house batteries from the vehicle alternator through the chassis battery. The mobile charger is unique in that it uses a 2-stage constant current (CC) constant voltage (CV) charge profile at 14.6V / 25A. The charger is compact, easy to install and simple to use. The mobile charger is specifically designed to charge the Expion360 VPR 4Ever Classic and Platinum batteries and can be used with other LFP chemistry batteries that recommend the same charge profile.

INSTALLATION

The Expion360 mobile charger needs to be installed in a location with some air movement as it is convection air cooled using a heat sink. The charger is IP68 rated and can be installed on an outside location such as a vehicle frame rail. Make sure to secure the charger to its mounting location to prevent its movement. If the charger is installed on an outside location make sure it stays clean and free of debris to prevent overheating. Do not install in the engine compartment to prevent overheating. Install the charger with the LED green and red indicator lights visible by the user for trouble shooting purposes if needed. Please make sure to follow all wiring diagram instructions provided in this manual.

MULTIPLE CHARGER CONNECTION

The Expion360 mobile charger can be parallel connected with up to two units. By parallel connecting the chargers the charge rate will increase from 25A to 50A while maintaining 14.6V. We do not recommend parallel connecting more than two chargers as this can exceed the output capability of the vehicle alternator.

CHARGE PROFILE

The Expion360 mobile charger uses the CC/CV (bulk/absorption) 2-stage charge profile with no float or equalization stages. LFP batteries have a very low self-discharge rate and do not sulfate by being left at a partial state of charge so a maintenance float stage and desulfation equalization stage are not required.

Constant Current Stage (Bulk): During this stage, the charger will provide the full rated current at 25A (1 charger) or 50A (2 chargers) until the full charge voltage has been achieved at 14.6V. The battery is approximately 97% full and will now transition to the constant voltage stage. The red LED indicator light will be lit when in the constant current stage - bulk.

Constant Voltage Stage (Absorption): During this stage, the charger will hold the full charge voltage while gradually decreasing the current to zero or near zero. This stage will take 15-20Min on average depending on how many batteries are being charged. During this stage, the final cell balancing is completed. The charger will then enter a standby mode waiting for the batteries voltage to drop to provide another charge cycle. The red and green indicator lights will be lit simultaneously during the constant current – absorption stage. The green light will be lit when fully charged and in a standby mode.

MODEL EX-25DC TECHNICAL SPECIFICATIONS

MECHANICAL PARAMETERS

| | |
|-------------------------------|--------------------|
| DIMENSIONS (L X W X H) INCHES | 7.08 X 4.72 X 1.57 |
| WEIGHT | 2.5Lbs |
| WIRE SIZE | 8GA |
| CASE TYPE | DIE-CAST ALUMINUM |
| CASE PROTECTION | IP68 |
| ELECTRONIC PROTECTION | EPOXY POTTING |
| COOLING | CONVECTION |
| BATTERY ISOLATION | NO |
| SAFETY | RoHS / CE |

INPUT PARAMETERS

| | |
|-----------------|-----------|
| NOMINAL VOLTAGE | 12.8V |
| MINIMUM VOLTAGE | 10.0V |
| MAXIMUM VOLTAGE | 16.0V |
| EFFICIENCY | 91% @ 12V |

OUTPUT PARAMETERS

| | |
|-------------------------|----------------|
| PROFILE | CC/CV 2-STAGE |
| VOLTAGE | 14.6±0.1V |
| OVER VOLTAGE PROTECTION | YES |
| CURRENT | 25A |
| OVER CURRENT PROTECTION | YES |
| ENERGY | 365W |
| PROFILE CHEMISTRY | LiFePO4/LFP |
| PARALELL CONNECTION | 2 CHARGERS 50A |
| NO LOAD CURRENT | 60mA @ 12V |

TEMPERATURE PARAMETERS

| | |
|-----------------------------|--------------|
| OPERATING TEMPERATURE | -4 TO 132°F |
| HIGH TEMPERATURE PROTECTION | YES |
| STORAGE TEMPERATURE | -20 TO 150°F |
| OPERATING HUMIDTY | 20-100% RH |



NOTICE

TO PREVENT DAMAGE AND EXTEND THE LIFE OF THE CHARGER PLEASE FOLLOW THESE PRECAUTIONS

- ⚠ DO NOT DROP THE CHARGER
- ⚠ DO NOT OPEN THE CHARGER
- ⚠ DO NOT SHORT CIRCUIT THE CHARGER
- ⚠ DO NOT SUBMERGE THE CHARGER IN WATER
- ⚠ DO NOT CONNECT MORE THAN 2 CHARGERS IN PARALELL
- ⚠ DO NOT ATTEMPT TO REPAIR THE CHARGER IF MALFUNCTIONING
- ⚠ DO NOT USE THE CHARGER TO CHARGE OTHER BATTERY CHEMISTRIES
- ⚠ DO NOT USE THE CHARGER AS A 12VDC POWER SUPPLY ONLY USE TO CHARG

EXPION360 24 MONTH WARRANTY

Expion360 warrants The Expion360 branded DC to DC mobile charger sold by Expion360 or any of its authorized dealers, distributors, and OEM partners to be free of defects for 24 months from the date of sale as determined by the customer's sales receipt for proof of purchase.

Within the 24-month warranty period, subject to the exclusions listed below, Expion360 will repair or replace the charger and or parts of the components in question are determined to be defective in material and or workmanship.

INSTALLATION

Expion360 recommends a professional installation by a qualified RV, Marine, or 12VDC technician. However, the full warranty applies whether professionally installed or not if installation instructions are followed in the User Manual.

NON-TRANSFERABLE

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

WARRANTY EXCLUSIONS

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

- Damage caused by road debris or collision.
- Damage due to short circuit or other electrical condition caused by mishandling.
- Damage due to improper installation, incorrect parallel connections, improper wire and or fuse sizing.
- A charger that has been opened, tampered with, and or modified.
- Environmental damage, such as water, moisture, and fire.

WARRANTY DISCLAIMER

THIS LIMITED WARRANTY REPRESENTS THE TOTAL LIABILITY OF EXPION360 FOR ANY BATTERY. ALL OTHER WARRANTIES IMPLIED BY LAW APPLICABLE TO THE BATTERY 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.

SUBMITTING A WARRANTY CLAIM

To submit a warranty claim, please contact Expion360 at support@expion360.com

EXPION360

(541) 797-6714

support@expion360.com

expion360.com