

Emergency Vehicle Battery Charger

Model: EVC-45

Operation Manual



TABLE OF CONTENTS

General Information	Page 2
Features.....	Page 2
Specifications.....	Page 2
Dual Cooling Fans.....	Page 2
Battery Selector Type Switch.....	Page 2
Charger LED Indicator Lights.....	Page 2
Installation Instructions	Page 3
Troubleshooting	Page 4
Battery Charger Status.....	Page 4
Remote Meter Status.....	Page 4
Warranty Policy	Page 5



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GENERAL INFORMATION

Powerwerx model EVC-45 is a new generation of battery charger designed for installation in emergency and specialty vehicles. It's ultra low profile design allows this charger to be installed in a variety of vehicle locations. The EVC-45 battery charger features super energy efficient design using only 6.1 amps (115VAC) input while producing 40 amps @ 14VDC output at full output. EVC-45 battery charger is designed to charge from one to six (12V) batteries on most vehicles. Ultra quiet DC output is ideal for today's vehicles with two-way radio's, mobile computers and other sensitive electronics. The RM12-2 battery/charger meter is available to remotely monitor your charger/battery status.

FEATURES

- **Auto AC Voltage Input (90~260VAC, 50/60 Hz)**
- **Thermally Controlled Dual Cooling fan design**
- **Ultra Clean DC Output protects electronics**
- **Large DC Output connection-up to 4 ga wire**
- **40 Amp maximum DC output**
- **Smart 3 Stage Charging**
- **Compact design only: 3"H x 6.75"W x 13"L**
- **Charger LED Status Lights show:**
 - **AC Input Power ON**
 - **DC Power Output ON**
 - **Charging Status Fast or Float**

SPECIFICATIONS

Input Voltage Range..... 90-260VAC (50/60 Hz)

Input Amps (max output)..... 115V@6.2A, 230V@3.3A

EVC-45 Battery Charger DC Output Voltages:

- Lead Acid: 14.2V @ 50% Load, 13.4V @ 0.2A Load
- AGM Type:14.2V @ 50% Load, 13.4V @ 0.2A Load
- GEL Type: 14.0V @ 50% Load, 13.6V @ 0.2A Load

3 Stage Automatic Charging Modes:

Bulk Phase / Absorption Phase / Float Phase

Temperature Ratings: -20C to +60C, Derate linearly from 100% @ 50C to 60% @ 60C

AC Input Fuse Value..... 8 amps/glass type

DC Output Fuse Value..... ATC-30, blade type (QTY-2)

Case Size..... 3 1/16"H x 6 3/4"W x 13"L

Weight..... 6.9 lbs

Warranty..... 3 Years

DUAL COOLING FANS

EVC-45 includes a twin fan design to maximize the life of the internal components and to allow continuous operation at full rating. The Charger uses dual fan design that draws air through the front of the unit and exhaust it out the rear to improve cooling. The fans operate at low speed and will increase in speed whenever load and/or ambient air temperature increases.

BATTERY SELECTOR TYPE SWITCH

For maximum battery charging, a user selectable battery type switch is provided. Please move the rocker switch to the type of battery or batteries you will be charging. The Battery Type switch LED also shows the status of the charger output (see below). NOTE: When using more than one battery, never mix battery types.

CHARGER LED INDICATOR LIGHTS

There are four LED indicators on the front panel of the EVC-45 charger.

- **AC Input OK** - Green LED, indicates AC voltage is reaching the charger. If LED does not light up, replace the glass fuse located under where the AC mains cord is plugged in.
- **DC Output OK** - Green LED, indicates DC power being produced by the charger
- **METER Power OK** - Green LED, indicates DC voltage applied to Meter output terminal block. The meter contacts have a maximum output of 12 amps.
- **Battery Type LED** - Green or Amber, flashing LED light shows the mode the charger is currently in the FAST charging mode with DC output from 3-40 amps. Solid LED (non-flashing) the charger is now in the "FLOAT" maintenance mode which is 2.0 amps or less which maintains the battery after the fast charging mode.

INSTALLATION INSTRUCTIONS

The EVC-45 battery charger can be installed in any position or any orientation provided you have good air circulation and a dry location. It is recommended you mount the EVC-45 as close as possible to the batteries you will be charging. This unit will take wire size from 12 gauge to 4 gauge wire. The larger the wire size the less loss of voltage to the batteries.

Please follow the following steps to ensure proper battery charger installation:

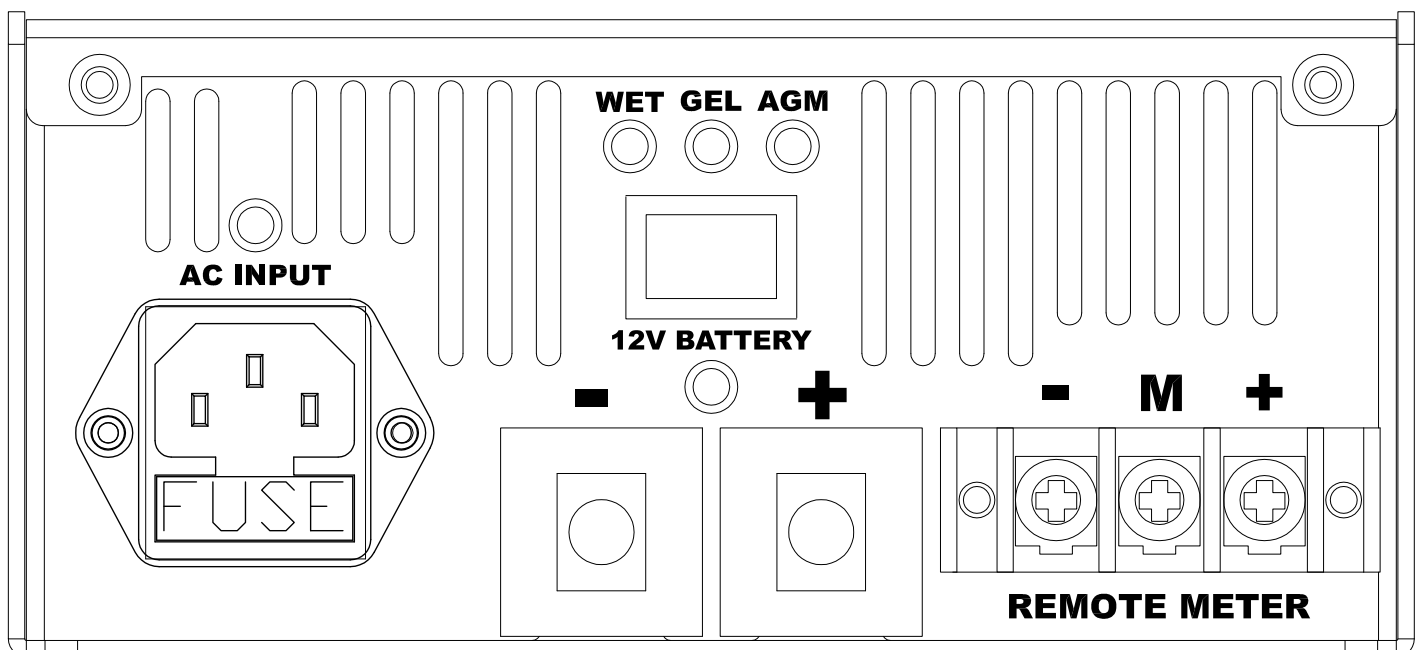
1. Make sure the charger AC cord is unplugged to any AC power sources.
2. Mount the charger in the desired location using up to four mounting screws (user supplied). Use caution when mounting the front right screw as it is very close to the meter connections.
3. Install the positive and negative cables from the charger to your battery or batteries. Recommended wire sizes are: 4, 6, 8 or 10 Gauge.
4. Install the remote meter (RM12-2) in the desired location (user supplied screws). Next, connect a 3-wire cable from the remote meter to the battery charger.
 - Remote Meter #1 terminal to “+” charger meter connection
 - Remote Meter #3 terminal to “-” charger meter connection
 - Remote Meter #4 terminal to “M” charger meter connection

PLEASE NOTE:

Single battery bank operation: Leave the wire jumper installed between the #1 and #2 terminals on the remote (RM12-2) meter.

Dual battery bank operation: Connect Remote Meter #2 terminal to the 2nd battery bank “+” positive terminal.

5. On the front of the charger, select the proper battery type (AGM/WET/GEL) with the front mounted rocker switch for optimized battery charging.
6. Connect the AC cord from the front of the charger into an approved 100V-260V AC outlet.
7. Check the remote meter to make sure it is showing the battery voltage level.
8. Installation complete



TROUBLESHOOTING

<i>Problem</i>	<i>Solution</i>
Charger - AC LED Light OFF	<ul style="list-style-type: none"> • Check that AC cord is plugged in • Check / Replace glass type AC fuse if blown in front of charger • Reset the AC outlet breaker or Reset the outlet "GFI" type plug
Charger - AC LED Light ON / DC LED Light OFF & No DC Output	<ul style="list-style-type: none"> • Check / replace the (2) ATC-30 fuses located inside of charger • Turn OFF AC Power for wait 5 minutes. Plug back into AC power • Check charger rear fans for blockage / clean as needed

BATTERY CHARGER STATUS

Battery Type LED Light - Flashing	Normal "Bulk" or "Absortion" fast charging mode
Battery Type LED Light - Steady ON	Normal "Float" slow charging mode

REMOTE METER STATUS:

(6) Green segments ON	Battery 95-100% fully charged (13.0 - 14.5V)
(4-5) Green segments ON	Battery 85-95% level (12.3 - 12.9 V)
(3) Yellow meter segments ON	Battery at 70-80% level - needs charging (12.2 - 12.0V)
(2) Red meter segments ON	Battery less than 70% level - needs charging (11.9 - 11.5V)
(2) Red meter segments flashing	Battery depleted - needs charging (11.4 - 10.5V)
No remote meter display	Battery is dead - needs charging (battery less than 10.5V)
(6) Red meter segments flashing	Input battery overcharging (15.5+ VDC)
Blue LED light ON	Battery charger in fast mode charging
Blue LED light OFF	Battery charger in float, slow charge mode
Remote Meter Flashing once every 2 sec	Meter in energy saving "Sleep Mode" Battery charger or engine has been OFF for more than 60 hours

WARRANTY POLICY

Battery Chargers and remote meters (models: EVC-45, EVC-25, RM12-2) manufactured by Powerwerx are warranted to be free of defects of material or workmanship for a (3) three year warranty period from the date the equipment was shipped. Liability is limited to repairing or replacing at our factory, without charge, any parts or defects. Equipment is to be returned, shipping charges prepaid and will be returned, after repair, shipping charges paid.

Powerwerx assumes no liability for damages of any kind to associated equipment arising from the installation or use of Powerwerx products. The purchaser, by the acceptance of the equipment, assumes all liability for any damages which may result from its installation, use or misuse, by the purchaser, his or its employees or others.