RECPRO RV CONVERTER USER MANUAL

RECPRO®

INSTALLATION & MAINTENANCE INSTRUCTIONS

FOR YOUR SAFETY, READ ALL INSTRUCTIONS BEFORE INSTALLATION AND OPERATION.

⚠ WARNING

WARNING - Avoid Personal Injury or Product Damage

NEVER store electrical devices in compartments where flammable liquids (such as gasoline) exist.

DO NOT mount/install the unit in compartments designed for the storage of batteries or flammable liquids.

1. DISCONNECT DC POWER. Disconnect the battery POS (+) wire at the battery end before connecting this Converter/Charger to any vehicle/device wiring.

2. LOCATION. The mounting location may be on any interior (out of direct weather) surface. The location chosen must be accessible after installation. When mounted inside a cabinet, the cabinet must be large enough to allow the dissipation of heated air. Make sure that there is a minimum of 1**"** (one inch) free air space at each end of the unit so that cooling air can move through the unit properly. AVOID foreign contaminants such as dirt, metal particles, or moisture.

3. MOUNTING. This converter can be mounted on its side or upside down. Flanges with holes are provided for ease of mounting using standard fasteners. Confirm that the surface the converter is mounted to is solid and will hold the weight (6 lbs) during vehicle operation.

4. ELECTRICAL REQUIREMENTS. A 120V AC receptacle needs to be located within 36**"** of the Converter/Charger to supply power. Electrical consideration should also be given to mounting near the locations of the batteries and the 12-volt DC distribution panel.

5. ELECTRICAL CONNECTIONS. Be sure to tighten all connections securely. A loose connection can quickly cause terminals and wires to overheat. Review unit labels for recommended terminal torque values.

6. THE FAN WILL NOT RUN ALL THE TIME. The fan is temperature-controlled and will only run when needed.

Avoid Possible Injury or Death

120V AC Connection - First, confirm that the 120V AC power source AC circuit breaker(s) are in the OFF position. DO NOT turn on AC circuit breakers until installation is complete.

• For 12V DC wiring measure the distance between the converter and your batteries, then reference the Wire Gauge Sheet to determine the appropriate wire gauge for your application.

• Using the appropriate gauge wire, attach it from the vehicle/device chassis to the Converter/Charger Bonding Lug.

• Using the attached power cord on the Converter/Charger, connect firmly to the 120V AC receptacle.

The terminal marked + or POS is for the RV 12V DC positive connection.

The terminal marked - or NEG is for the RV 12V DC negative connection.

The terminal marked FG is for the RV Frame Ground connection. The 12V DC output wiring does not require overcurrent protection because the Converter/Charger limits current output. However, all electrical connections need to comply with the appropriate NEC code.

7. 4-STAGE CHARGING MODE:
These are the Factory Settings with Smart Charging mode 'ON' with the Output Voltages preset to 14.6V. Smart Charging mode will activate when the potentiometer is between 13V and 14.6V, and will turn off when it is between 13V and 16.5V.
NOTE: 4-Stage Smart Charging is best used for Lead Acid and AGM batteries. For Lithium batteries, turn the 4-Stage Smart Charging off by setting the potentiometer at the appropriate voltage for our battery between 13V and 16.5V.

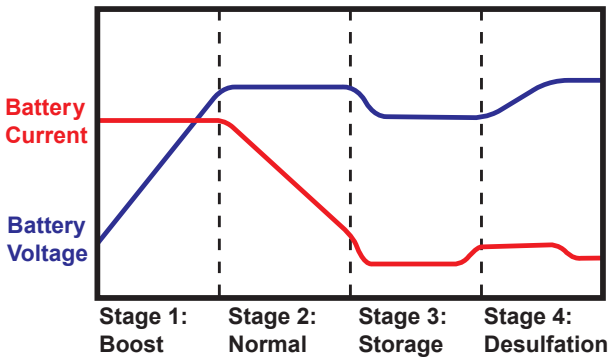
This mode provides an automatic charging system in four steps.

1. A Fast Charge to bring a drained battery back up to full voltage rapidly ("Boost").

2. A Standard Charge to bring the battery up to a full charge at a safe rate to prolong the life of the battery and provide power to run 12V lighting and appliances in the vehicle/device ("Normal").

3. A Trickle Charge to keep the battery fresh during times of load inactivity ("Storage").

4. An Equalization Charge to help remove sulfate build-up and balance the voltage of each cell to prolong battery life and capacity. The charger automatically changes modes to accommodate changes in conditions. The chart below is for reference only, voltages may vary. ("Desulfation")



8. TEST.
First, disconnect all loads and batteries on the Converter/Charger by removing all
12V DC connections + or POS. Second, attach a multimeter instrument between
the positive and negative terminals of the Converter/Charger. Then energize the 120V AC converter circuit.

Test for proper output power using the multimeter. Measure the output voltage from the positive and negative terminals. The voltage should read 14.6 +/- 0.2V DC. Add 12V DC load connections to about 2/3 of the rated capacity of the converter. Re-check the voltage, which should remain approximately the same as at no load. NOTE: If the charger 's output voltage is set below the battery voltage, the charger will not charge the battery, and the LED will not come on.

9. BATTERY.
With the 120V AC disconnected, reconnect the + or POS terminal to a known good battery. With the converter 120V AC energized, measure the voltage at the converter and at the battery. The voltage should be about the same in both locations. As with any battery, it is important that the fluid level be checked on a regular basis. When continuously connected to any charging source, all batteries will "Gas" and lose some fluid.

LED Light

STATUS 1: The light will flash green when the battery is charging.
STATUS 2: The light will stay solid green when the battery is fully charged.
STATUS 3: The light will flash red when a fault or issue is detected.

BATTERY OPT

The default power supply voltage is 14.6V.
When you rotate the potentiometer at a certain angle, the voltage will change between 13V to 16.5V.
You can rotate the potentiometer to the appropriate voltage depending on the kind of battery you wish to use.

TROUBLESHOOTING

NOTE: Before removing and replacing the Converter/Charger, perform the following checks:

A. Disconnect the AC power from the vehicle/device.

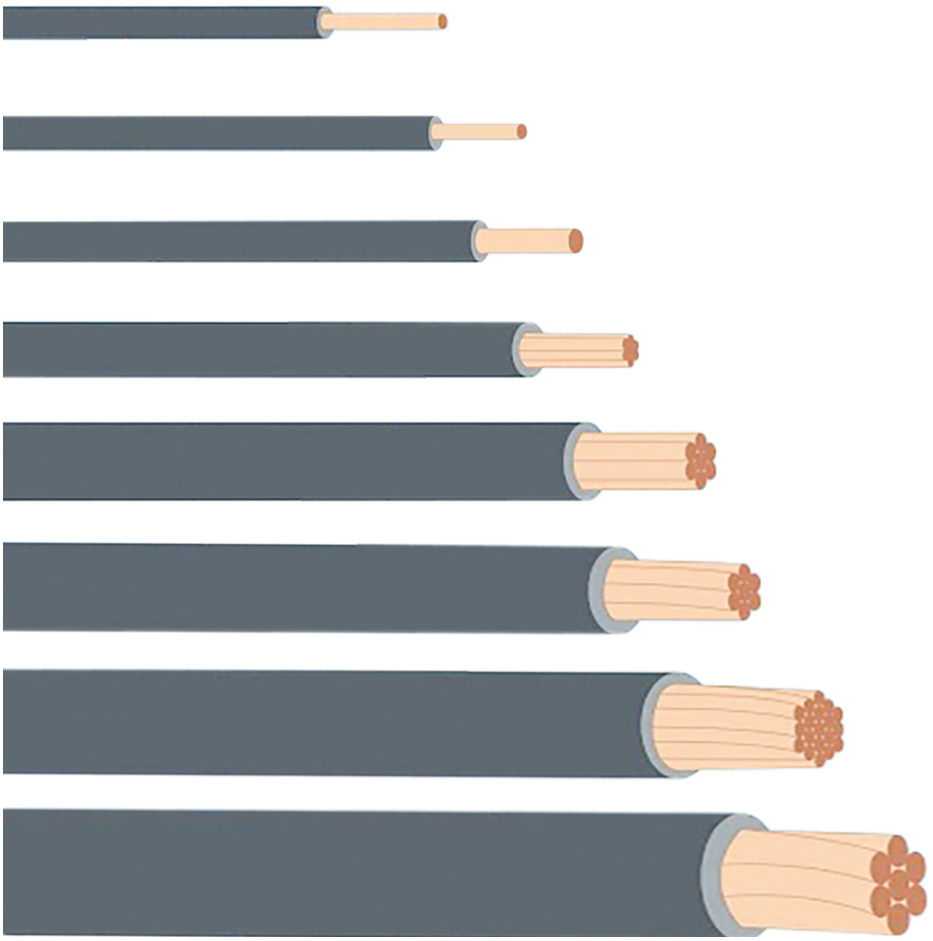
B. Disconnect the wiring and Battery from the Converter Positive + output terminal.

C. Re-connect the AC power to energize the Converter.

D. Using a voltmeter, measure the voltage at the Converter - and + Output terminals.
a. The Converter is OK if the voltage reading is between 13V DC and 14V DC (typically 13.6V DC).
b. Otherwise, check the table below:

No 12V DC output	**• 120V AC is not connected to the coach, or the coach AC circuit breaker is in the off position. • Reversed battery fuses are blown. (Battery wiring connections are reversed). • Severe overload or shorted load. Remove all loads and retest per the above instructions.**
Converter cycles On & Off	**• Fan air flow is inadequate or reversed. (1" minimum free air space at each end is required).**
Reversed Battery fuses blown	**• Battery wiring connections are reversed. • Defective battery, possible dead cells.**
12V DC output is too low	**• The attached load exceeds the rating of the Converter/Charger. • Defective battery, possibly bad cells.**
LED light is not on	**• The output voltage of the charger has dropped below the battery voltage. If charging a battery, the unit is best to be in its factory starting at 14.6V, unless the Battery Manufacturer recommends otherwise.**

Wire gauge is based on length of wire used					
Converter Amperage	**up to 6ft**	**up to 10ft**	**up to 15ft**	**up to 20ft**	**up to 25ft**
35 Amps	10 AWG	9 AWG	7 AWG	6 AWG	5 AWG
45 Amps	8 AWG	8 AWG	6 AWG	5 AWG	4 AWG
55 Amps	6 AWG	6 AWG	6 AWG	4 AWG	3 AWG
65 Amps	6 AWG	6 AWG	6 AWG	4 AWG	3 AWG
75 Amps	3 AWG	3 AWG	3 AWG	3 AWG	2 AWG
85 Amps	3 AWG	3 AWG	3 AWG	2 AWG	1 AWG
100 Amps	3 AWG	3 AWG	3 AWG	2 AWG	1 AWG
125 Amps	1 AWG	1 AWG	1 AWG	1 AWG	0 AWG



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