AC/DC DISTRIBUTION PANEL with CONVERTER & CHARGER

PPC models: 35, 45, 55, 75 and 100 Amp with 3 Stage Charging

AC/DC Distribution Panel with Converter & Charger

Installation & Maintenance

SAFETY ALERT

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

INSTALLER: Provide these instructions to the end user or consumer.
CONSUMER: Keep these instructions for future reference.

NOTICE: Products are not to be used nor are warranted in aerospace, medical or life safety applications.

WARNING – Avoid Possible Injury or Death

120 VAC is present. This Converter/Charger is designed to convert **120 VAC** to **12 VDC**. It also provides low voltage power for charging on-board **12 VDC** batteries. The SRV series Converter/Charger is a "*switch mode*" type and is designed to be maintenance-free with no user serviceable components. The Converter/Charger power output is "*current limiting*" by design.

The Converter/Charger is integrated with a **120 VAC** and **12 VDC** Distribution Panel that allows easy installation and centralizes all power connections. Stab type AC breakers with branch circuits are used. The DC fuse block has individually fused branch circuits. The Converter/Charger can easily be removed without removing the Distribution Panel wiring.

WARNING – Avoid Personal Injury or Product Damage

NEVER store electrical devices in compartments where flammable liquids (such as gasoline) exist.
DO NOT mount/install unit in compartments designed for storage of batteries of flammable liquids.

1. **DISCONNECT RV DC POWER.** Disconnect the RV battery POS (+) wire at the battery end before connecting this Converter/Charger and Distribution Panel to any RV wiring.

2. **LOCATION.** The mounting location may be on any interior (out of direct weather) surface. Location chosen must be accessible after installation. When mounted inside a cabinet, the cabinet must be large enough to allow 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.** Flanges with holes are provided for ease of mounting using standard fasteners. Confirm that the surface that the Distribution Panel with converter is mounted to is solid and will hold the weight (14 lbs) during vehicle operation.

4. **ELECTRICAL REQUIREMENTS.** For PPC models, a **120 VAC** with 30 Amp source, preferably a separate breaker, is required to supply power. Electrical consideration should also be given to mounting near the locations of the RV batteries and the **12-VDC** distribution panel.

5. **ELECTRICAL CONNECTIONS**. Be sure to tighten all connections securely. A loose connection can quickly cause terminals and wires to overheat.

6. **THE FAN WILL NOT RUN ALL THE TIME. THE FAN RUNS ONLY WHEN NEEDED.**

WARNING – Avoid Possible Injury or Death

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

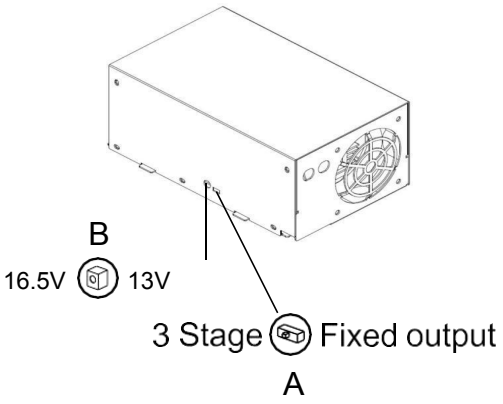
- Using an 8 AWG minimum size copper wire, attach from the RV chassis to the chassis bar inside the Distribution Panel.
- Connect the **120 VAC** power source to the AC circuit breakers that are mounted inside the Distribution panel.

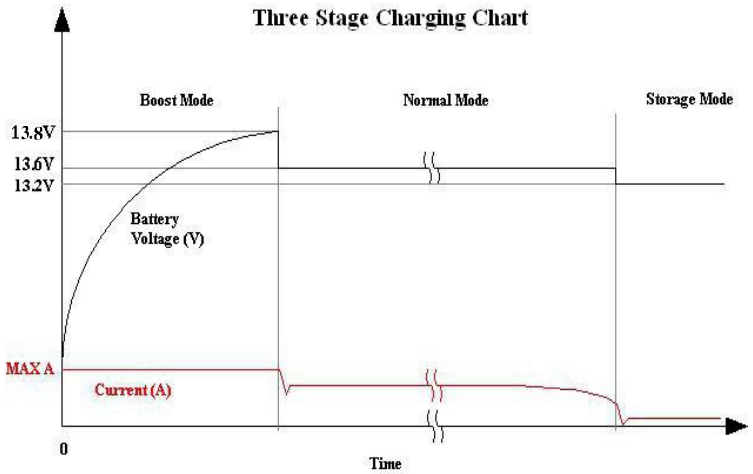
12 VDC Wiring– It is important to use the correct wire gauge for the specific model 1**20 VAC** to **12 VDC** Converter/Charger selected. As an example the model SRV-32 is a 32 amp Converter/Charger that requires at least 10 AWG wire.

- Confirm that the RV chassis is firmly connected to the chassis bar inside the Distribution Panel.
- Inside the Distribution Panel, "**INPUT-12 +**" is for the Converter/Charger **12 VDC positive** connection.
- Inside the Distribution Panel, "**OUTPUT-12V+**"is for RV battery **12 VDC positive** connection.
- Inside the Distribution Panel, "**OUTPUT- GND"** is for the RV battery and all **12 VDC negative** connections.
- Inside the Distribution Panel, "**OUT1~OUT11**" and fuses are for branch **12 VDC positive** distribution.

The SRV Converter/ Charger limits overall current output. However, with or without output current limits on the Converter/ Charger unit, all electrical connections must comply with the appropriate NEC codes.

7. **3 STAGE CHARGING OPTION DESCRIPTION**. This optional system provides an automatic charging system in three steps. 1. A fast charge to bring a good, 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"). The charger automatically changes modes to accommodate changes in conditions. The chart below is for reference only, voltages may vary.





Factory settings:Three stage charging mode Starting voltage:13.8V

8. **ADJUSTFIXEDVOLTAGE**

DESCRIPTION: The unit is on the three stage charging mode firstly. 1. move the switch A to right "Adjust Fixed Voltage", move switch B gently to adjust voltage from 13~16.5V, and get a fixed output voltage. 2. make sure the voltage as 13.8V, move the switch A to left for "Three stage charging", then the unit back to standard "Three Stage Charging", run 13.8V almost 2 hours, 13.6V almost 9 hours and then to 13.2V. The voltage value of 3 stage charging will be changed with fixed voltage changed when the unit on "Three stage charging".

9. **TEST.** First, disconnect all loads and battery on the Converter/Charger by removing all DC fuses **F1-F11** Second, attach a multimeter instrument between the positive and negative terminals of the Converter/Charger. Then energize the **120 VAC** converter circuit. Test for proper output power using the multimeter. Measure the output voltage from the positive and negative terminals. The voltage should read 13.8 **+/- 0.2 VDC**. Add **12 VDC** load connections/fuses to about 2/3 of the rated capacity of the converter. Recheck the voltage, which should remain approximately the same as at no load.

10. **BATTERY.** With the **120 VAC** disconnected, reconnect the **OUTPUT-12V+** positive a known good battery. With the converter **120 VAC** 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.

⚠ **WARNING – Avoid Personal Injury / Product Damage**

TROUBLESHOOTING

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

a. Disconnect the **120 VAC** power from the RV coach.

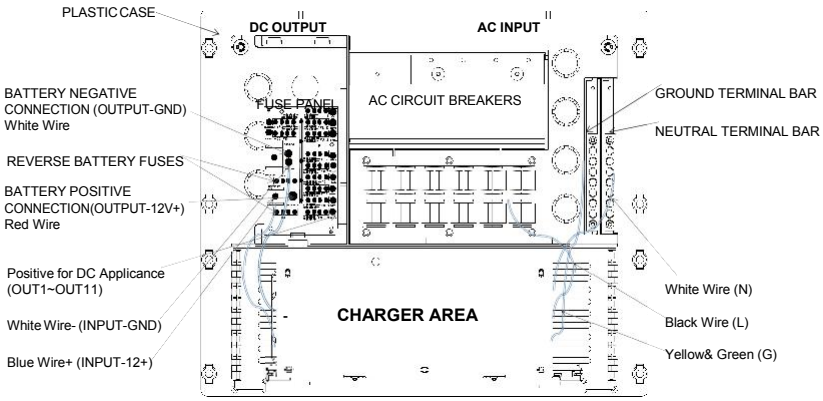
b. Disconnect all DC fuses **F1-F11** and the Battery from the Distribution Panel.

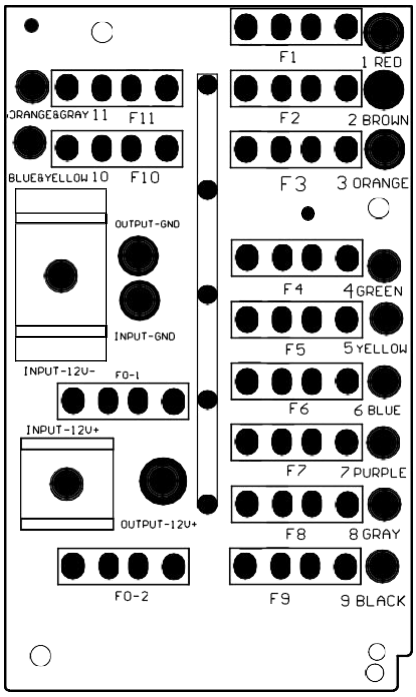
c. Re-connect the **120 VAC** power to energize the Converter.

d. Using a voltmeter, measure the voltage between the Converter **+** terminal and the 12 VDC distribution Negative bar.
   > The Converter is OK if the voltage reading is between 13.3 VDC and 14.3 VDC (typically 13.8 VDC).
   > Otherwise, check the table below:

e. The LED light of fuse panel is red when short circuit.

PPC DISTRIBUTION PANEL





CONDITION	POSSIBLE CAUSE
No 12 VDC output	• **120 VAC** not connected to coach or the coach AC circuit breaker is in the off position. • Reversed battery fuses blown. (Battery wiring connections are reversed), • Severe overload or shorted load. Remove all loads and retest per above instructions. • Converter internal failure.
Converter cycles On & Off	• Fan air flow is inadequate or blocked. (Ensure 1 min. free air space at each end required.) • Converter internal failure.
Reversed Battery fuses blown	• Battery wiring connections are reversed. • Defective battery, possible bad cells.
12 VDC output is too low	• Attached load exceeds rating of the Converter. • Defective battery, possible bad cells. • Converter internal failure.

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