

# 120v Power to RV

**Problem:** I recently de-winterized my motorhome and hooked up to shore power but I am not getting any 120 VAC. I can measure it at the end of my extension line but it is not getting to the circuit breaker panel. I am on a 30 amp outlet. When I run my generator everything works fine.

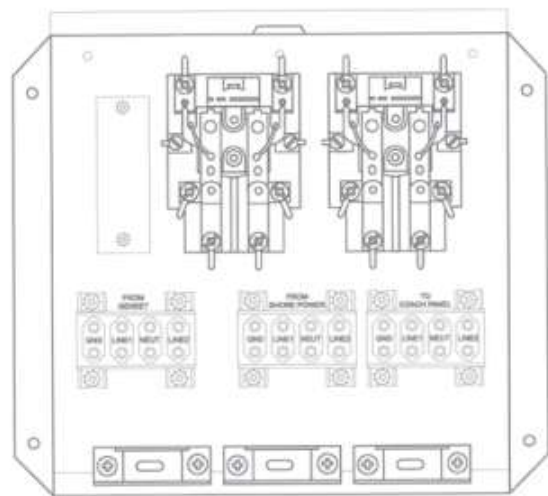
**Answer:** The usual cause of this problem is the transfer relay which switches your AC circuit breaker panel from the shore power cable to the generator output. This relay is either a single 4-pole or two 2-pole relays. This provides the ability to switch the 4-wire, 50 amp input from shore power to the generator. The normal configuration is with shore power connected so that your coach gets power as soon as you plug in. When you run the generator it provides 12 volts DC to the relay and after a time delay it switches to the generator AC output. The relay, Figure (1), usually fails because of burned contacts which is the normal shore power position.

## **DISCONNECT FROM SHORE POWER AND REMOVE ALL VOLTAGE FROM THE RIG!**

The failure mode is usually burned contacts which block shore power to the rig. Operate the relay by hand and clean both sides of each contact with crocus

If the system is still not operating after you clean the contacts then you should check the connections between your input line and the coach. Usually in your rearmost compartment on the driver's side there will be an electrical box which has the shore power feed line connections. **After removing all power to the coach** remove the cover of this electrical junction box and examine the connections. I have found wire nut connections that are defective in several trailers and motorhomes. Check the wire nuts for tightness. If they just go around and will not tighten then they are probably too large. Replace them with the next smaller size, and securely tighten them.

50 AMP TRANSFER RELAY DELAY - DUAL INPUT GENSET  
SERVICE MANUAL



To use wire nuts for an RV (3M recommendation) use the following procedure:

1. Strip insulation from each wire about 1/2 to 5/8 (depending on wire size) inch.
2. Firmly grasp wires, making sure insulation ends are even and tightly bundled (wires may be twisted or untwisted). For one stranded wire it should be slightly longer. Slip the proper size connector over the wire tips.
3. Turn the connector onto the wires in a clockwise direction until it is secure.
4. Wrap the wire and connector (2 layers) in electrical tape to keep the wire nuts from loosening under vibration. A complete set of tables for wire connections can be found at:

[http://www.crcorp.com/DCT\\_HardwareEssentials/E/pdf/E12.pdf](http://www.crcorp.com/DCT_HardwareEssentials/E/pdf/E12.pdf) which includes proper wire nut sizes.

**Results:** Cleaning the relay contacts did not fix the problem. However, all of the wire nuts in the main AC

electrical box were loose and turned around just as you said. The wires were twisted together which is why I guess the rig worked for 9 years. I really appreciate this help.