

Wiring Modification for Xantrex RC/GS Inverter Thermostat Enable

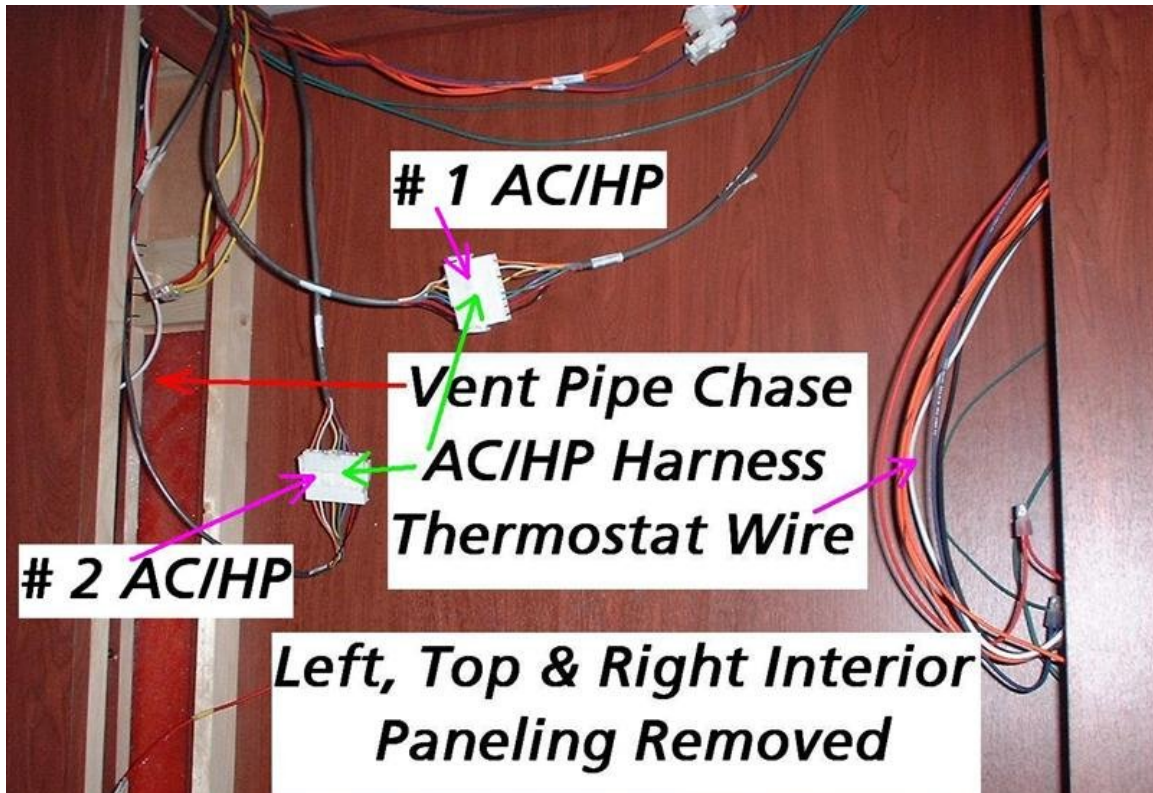
Just received a request for additional information on the modification I made on my Xantrex RC/GS AGS for the THERMOSTAT ENABLE feature. The information I am providing is specific to the Xantrex RV series inverter Tiffin has been installing in the Phaetons for about the past four years.

To enable this feature Tiffin modified the wiring between the # 1 AC/HP Thermostat and the Xantrex inverter. This modification allows a thermostat demand for power through the inverter to start the generator. After starting the generator will power the AC/HP unit until the thermostat demand has been satisfied at that time the generator will shut down until another # 1 thermostat demand is sent. Tiffin does not wire the # 2 AC/HP or if available the # 3 AC/HP for the auto generator start function.

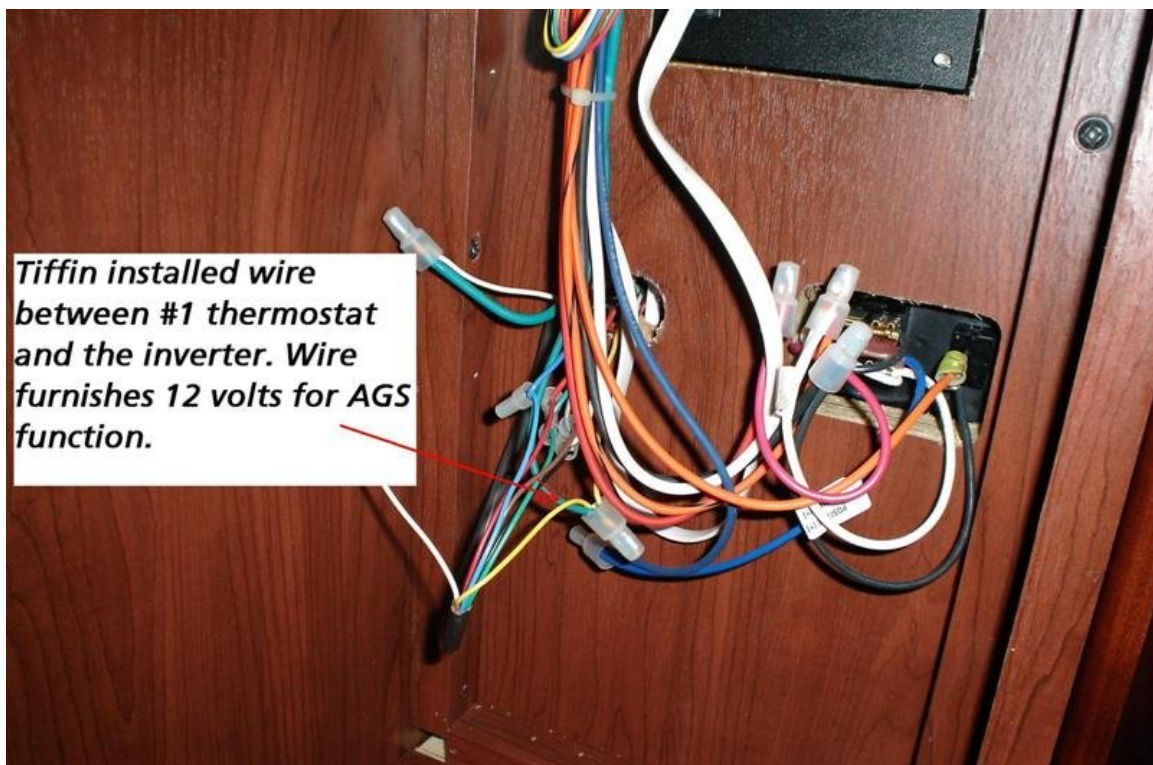
We dry camp a good bit so I decided to modify both thermostat circuits to enable either or both of my coach AC/HP units to call for the generator to start. Our coach is a 2007 40QSH Phaeton the # 1 thermostat is mounted on the passenger side hallway wall which is adjacent to the pantry. My modification required the removal of the interior paneling in the shelf portion in the top of the pantry. The interior left, top and right side panels were removed. Tiffin installed these panels with small staples. I used a small angled pick to get under the panel edge and then lifted the panels. The small staples pulled through the panel (with minimal panel damage). Before reinstallation of the panels I removed the old staples, and then used small screws during reinstallation of the panels in place of staples.



Tiffin on our coach and they probably do the same on all coaches routes all of the 12 volt AC/HP control harnesses through the roof then into the coach near the chase for the tank vent pipes. The chase on my coach is on the passenger side, as seen in the below picture. However on the QTH models I believe the vent pipe chase is on the driver's side. The AC/HP control wiring and Tiffin's modification will be behind the # 1 thermostat.

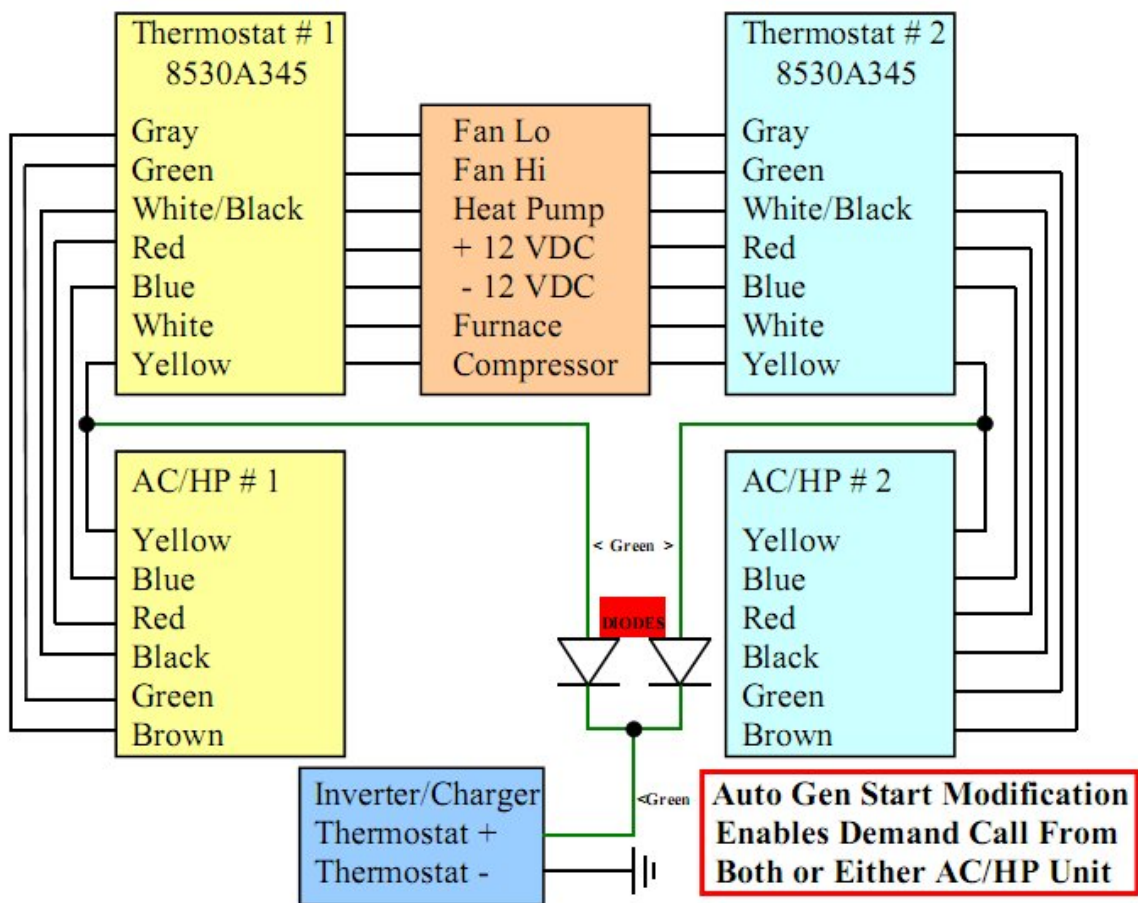


Regardless of which side of the coach the vent pipe chase is located, the interior pantry panels must be removed to find the AC/HP 12 volt control harnesses.



Tiffin used a green insulated wire on my coach for the jumper wire between the thermostat and the inverter. As seen in the above picture. The modification requires a second jumper installed on the # 2 12 volt control harness. On my coach that # 2 control harness enters, loops around and runs back out of the top of the pantry and is routed to the bedroom thermostat. I intercepted and tapped into the yellow (Compressor) control harness wire with my new green insulated wire and then routed the new wire down to the # 1 thermostat green wire connection as seen in the above picture. I now have two green wires connected to both of the AC/HP control harness yellow wires. Cut the original green wire about three inches from the yellow splice. Now we have three green wires, two connected to each of the two yellow (Compressor) control wires and the third running to the + thermostat connection on the inverter.

I installed two 1N4000 series 1 amp diodes (one for each AC/HP) in the circuit. Any 1N4001, 1N4002, 1N4003, or 1N4004 diode should work for this project. The bar ends of the diodes are connected to the green inverter wire, while the arrow end of the diodes is connected to the control harnesses. Below is an electrical schematic of the two thermostat 12 volt control circuits and the diode and wire modification. A third diode could be installed and connected if your coach has three AC/HP units.



Both diodes were installed between the inner and outer pantry panels that area is shown in the above picture. All connections were soldered, after they had cooled were then covered with shrink fit tubing. The diodes are also protected with heat shrink tubing. The picture below is informational only. Your auto generator start (AGS) feature will operate when called from thermostat # 1 while dry camping if the wiring is connected to the inverter as shown in the following picture and the inverter remote control panel has been properly programmed. The wire insulation color may be different. When you get to the # 1 thermostat harness behind the thermostat you will be able to see the wire insulation color. The same color wire should be present at the inverter thermostat + terminal as shown below. In my case the wire insulation color was green.



After this modification while dry camping, following the programming directions will allow you to enjoy your Xantrex RV series inverter remote control panel automatically operate any one or all of your heating or cooling systems based on individual thermostat temperature settings.