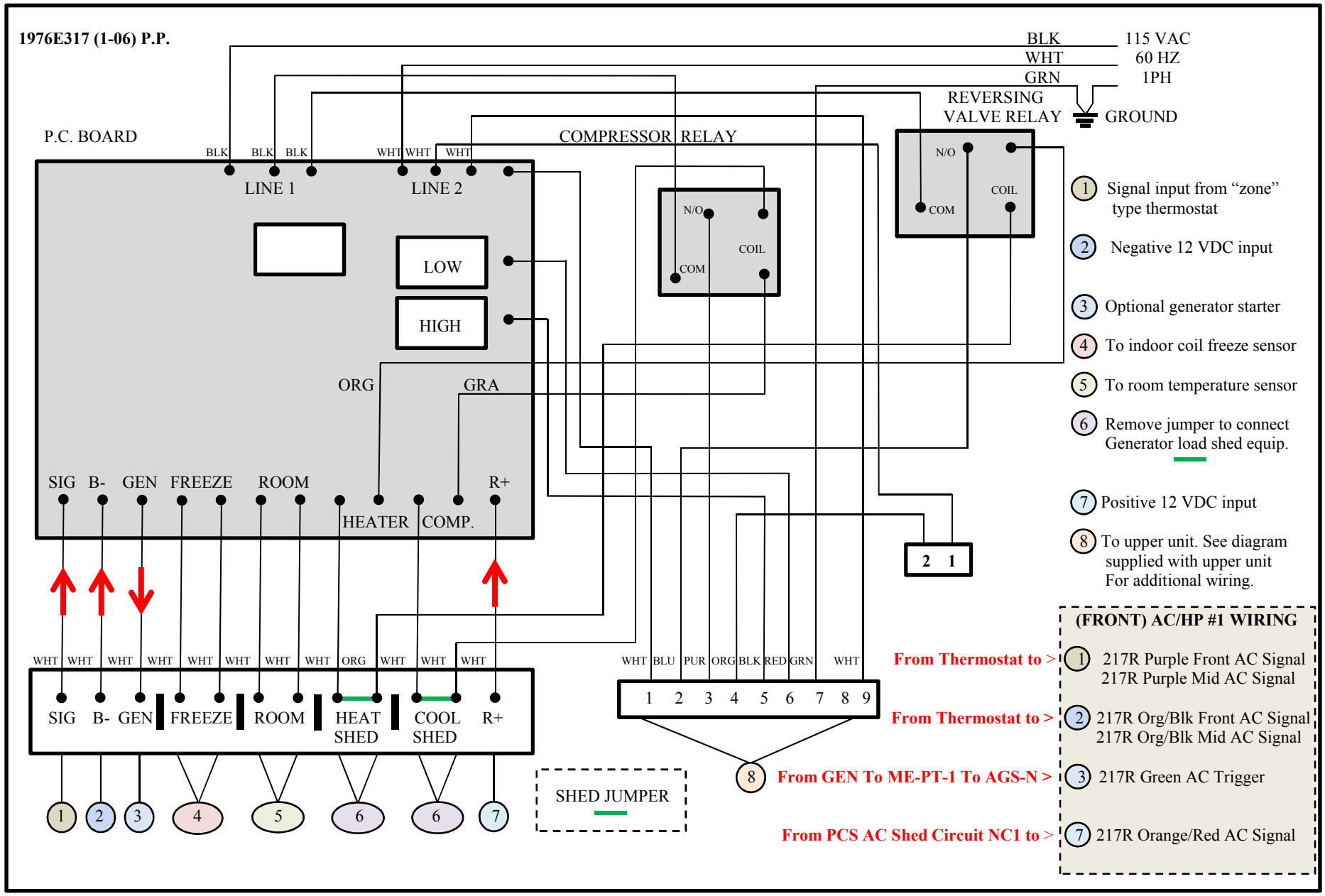
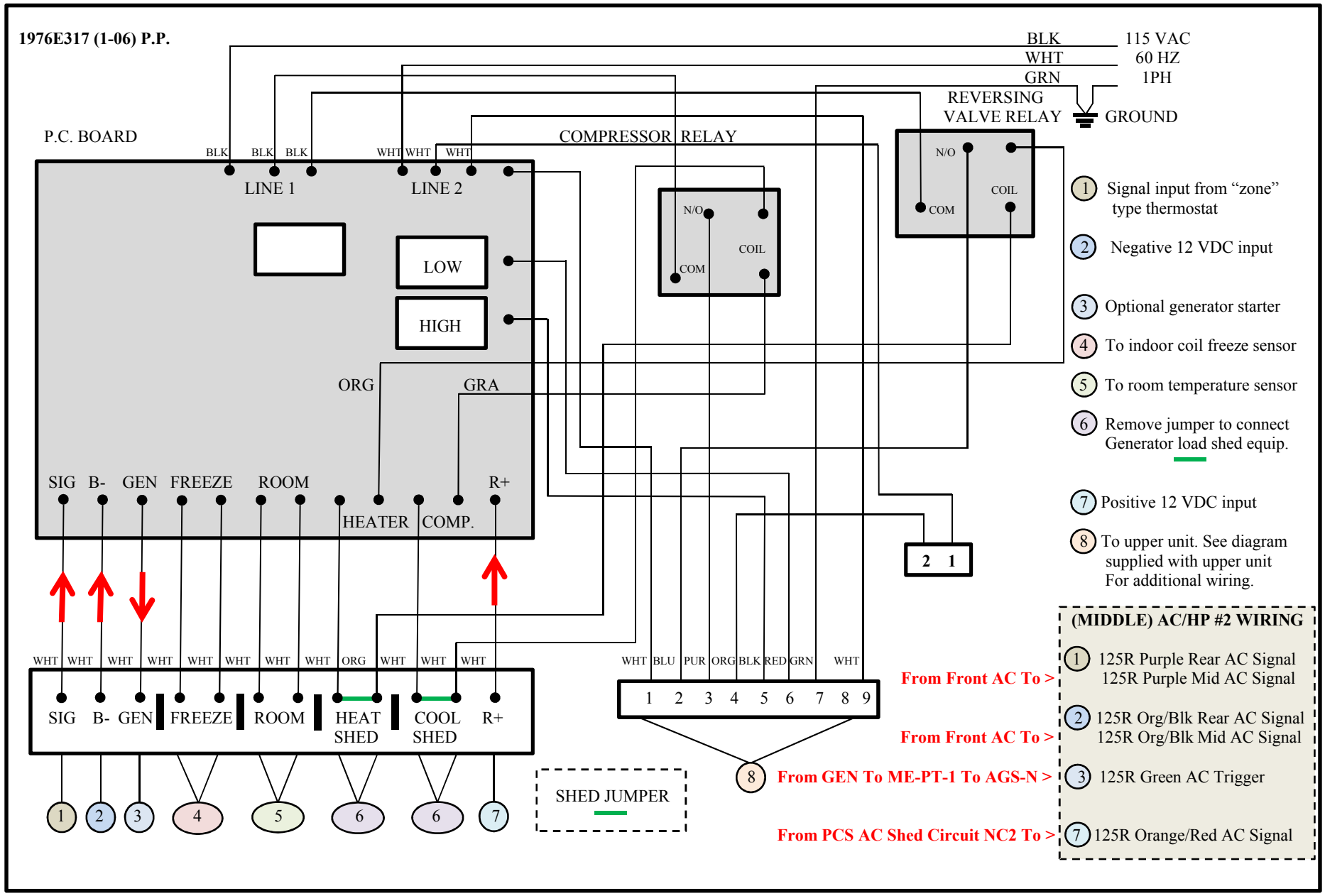
2/22/2013

81-3 – FYI – <u>AC-HP COMMUNICATIONS AND ELECTRICAL SYSTEM.</u> After two years of coach ownership it is finally time to document how this system is wired and communicates with each individual component in the system.
In an effort to keep this file to a manageable size for uploading to the TRVN forum it will be broken into several parts.
Part 81- 3 will consist of the Coleman Heat Pump Zone Control Box located in the RETURN air plenum in each of the three AC/HP's installed on our Allegro Bus.
SIG TERMINAL: As seen in the following pages, the thermostat's **PURPLE** AC signal wire is connected to the SIG terminal in the FRONT AC control box. From the same SIG terminal another **PURPLE** wire is routed to the MIDDLE AC control boxes SIG terminal, then from the same SIG terminal a third **PURPLE** wire is routed to the REAR AC control boxes SIG terminal.
B- TERMINAL: As seen in the following pages, the thermostat's **ORANGE/BLACK** AC signal wire is connected to the B- terminal in the FRONT AC control box. From the same B- terminal another **ORANGE/BLACK** SIGNAL wire is routed to the MIDDLE AC control boxes B- terminal, then from the same B- terminal a third **ORANGE/BLACK** wire is routed to the REAR AC control boxes B- terminal.
SHED CIRCUIT WIRING: The three AC/HPs are controlled by 12 VDC delivered to the **R+** terminal on the AC/HP control box from the Zone Control Thermostat's **ORANGE/RED** AC Signal wire . However getting that voltage is further controlled by the **SHED circuits** (NC1), (NC2) and (NC3) located in the Power Control System's (PCI) Precision Control Industries Electrical Panel. Those three circuits are shed (temporarily TURNED OFF) during periods where 120 VAC has been interrupted. Such as connecting the coach to shore power or cranking the generator or powering part of the coach from the Magnum Inverter. Each AC/HP receives its 12 VDC thru one of the SHED circuits. AC/HP 1 thru the NC1 shed circuit, AC/HP2 thru the NC2 shed circuit and AC/HP 3 thru the NC3 shed circuit.
AC/HP TRIGGER WIRE: Each AC/HP has a separate **GEN** trigger wire. When all parameters have been met for the operation (**DEMAND**) of either the Air Conditioner or Heat Pump at one or all units, 12 VDC is sent from the control box(s) to the ME-PT-1 unit plugged into the network port of the Auto Generator Start Network (AGS-N) module. When the 12 VDC is received the AGS-N begins it generator start sequence with the generator. After the generator is running and stabilized the thermostat times out sending 12 VDC to the PCI SHED circuits NC1, NC2 or NC3. When the PCS has timed out 12 volts is sent to each AC/HP units **R+** terminal. The above applies when the Magnum Remote Control has been programmed to start the generator based on DEMAND for either Air Conditioning or Heat Pump operation when shore power is not connected or the generator is not operating. Shore Power or Generator Power DOES NOT REQUIRE AGS-N operation to operate the AC/HPs.

8530C751 Control Assembly Wiring for FRONT AC/HP (#1)



8530C751 Control Assembly Wiring for MIDDLE AC/HP (#2)



8530C751 Control Assembly Wiring for REAR AC/HP (#3)