

FIGURE 12: Typical 2-Stage Conventional Field Wiring - AC

FIELD CONNECTIONS POWER WIRING

1. Install the proper size weatherproof disconnect switch outdoors and within sight of the unit, per local code.
2. Remove the screws at the top and sides of the corner cover. Slide the control box cover down and remove from unit.
3. Run power wiring from the disconnect switch to the unit.
4. Route wires from disconnect through power wiring exit provided and into the unit control box as shown in Figure 1 and view the openings in Figure 11.
5. Make the power supply connections to the contactor.

FIELD CONNECTIONS CONTROL WIRING FOR OUTDOOR EQUIPMENT

The 17 SEER 2-stage models are equipped for conventional control wiring only. The 19 SEER 2-stage models are equipped for either serial communications (COMM) or conventional control wiring. Determine first which outdoor equipment you are installing. If installing the 19 SEER 2-stage model, determine which method of control wiring will be utilized. Once this determination has been made, follow the necessary steps for control wiring.

On 19 SEER models determine what method of low voltage control wiring will be utilized. Cut the Molex connector off of the low voltage wiring harness that will be used for unit control and connect field low voltage wiring using spring type wire connectors. Leave the unused wiring harness Molex connector in place.

- Conventional wiring (17 SEER 2-stage or 19 SEER 2-stage) consists of five wires leaving the control board connected to (R, C, Y1, Y2, Y2OUT) where four wires end up in a 12 pin Molex connector, and the fifth wire is tied back on the harness with heat shrink on the end.



FIGURE 13: Conventional Low Voltage Molex Plug

- Serial Communication (19 SEER 2-stage applications) consists of four wires leaving the control connected to (B-, C, R, A+) where four wires end up in a 4 pin Molex connector.

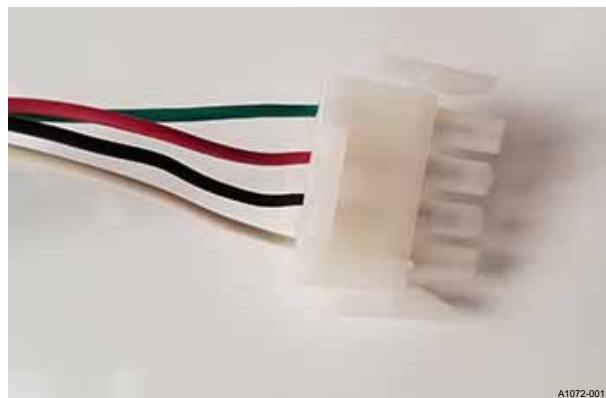


FIGURE 14: Communicating Low Voltage Molex Plug (19 SEER)

Terminals on the board from the following pin locations will have power applied:

- Communicating block (B-, C, R, A+); the R terminal/wire will have 24VAC.
- Conventional block (R, C, Y1, Y2, Y2OUT); the R & Y2OUT terminal/wires will have 24VAC.

If any of these connections have an unterminated wire at the end, it needs to be properly capped to prevent a possible short to ground.

Conventional Wiring (17 SEER 2-Stage & 19 SEER 2-Stage)

1. Route the 24-volt control wiring (NEC Class 2) from the outdoor unit, to the indoor unit, and to the thermostat in the steps below.
2. If utilizing the Demand Response or the Y2Lock feature, a minimum of five thermostat wires will need to be ran to the outdoor unit from the indoor equipment. If the features are not applied, only four wires are needed.
3. Trace the harness out where it ends in a large 12 pin Molex connector, inside the low voltage box. Clip the 12 pin Molex connector and discard.
4. If utilizing the Demand Response or the Y2Lock feature, Y2out needs to be connected to the indoor control to cycle between high and low speed airflow. Pull the wire from under the label, strip the end of it, and connect it to the thermostat wire. If you are not applying the features above, do not strip the end. Figures 16-21 indicate proper wiring implementation.
5. Strip the remaining four wires that run to R, C, Y1, Y2 and make the necessary thermostat connections, noted in the thermostat wiring diagrams. Refer to Figures 16-21.
6. Replace the control box cover, removed in Step 2 of the FIELD CONNECTIONS POWER WIRING procedures.
7. All field wiring should be in accordance with national electrical codes (NEC) and/or local-city codes.
8. Mount the thermostat approximately 5 ft. above the floor, where it will be exposed to normal room air circulation. Do not place it on an outside wall or where it is exposed to the radiant effects from exposed glass, appliances, drafts from outside doors, or supply air vents.

Serial Communication Wiring (19 SEER 2-Stage Only)

1. Route the 24-volt control wiring (NEC Class 2) from the outdoor unit, to the indoor unit, and to the thermostat in the steps below.
2. Trace the communicating harness from the (B-, R, C, A+) block where it ends in a 4 pin Molex connector, inside the low voltage box. Clip the 4 pin Molex connector and discard.
3. Strip the four wires and make the necessary thermostat connections noted in the thermostat wiring diagrams. Refer to Figures 14 & 16.
4. Replace the control box cover, removed in Step 2 of the FIELD CONNECTIONS POWER WIRING procedures.
5. All field wiring should be in accordance with national electrical codes (NEC) and/or local-city codes.
6. Mount the thermostat approximately 5 ft. above the floor, where it will be exposed to normal room air circulation. Do not place it on an outside wall or where it is exposed to the radiant effects from exposed glass, appliances, drafts from outside doors, or supply vents.

NOTICE

To eliminate erratic operation, seal the hole in the wall at the thermostat with permagum or equivalent to prevent air drafts affecting the operation of in the thermostat.

Demand Response (Load Shedding)

The main outdoor control has a conventional 24VAC input (DR) for utility demand response signals. When a 24VAC signal is present on the DR input with a **communicating system**, the HX™ thermostat will adjust the indoor temperature setpoint by the installer selected setting. For further details on available settings, please refer to the HX™ thermostat installation and operation manual. With a **non-communicating system**, a 24VAC signal on the DR terminal will not allow the system to run in second stage, cooling operation only. The DR input terminal location can be found in Figure 15.

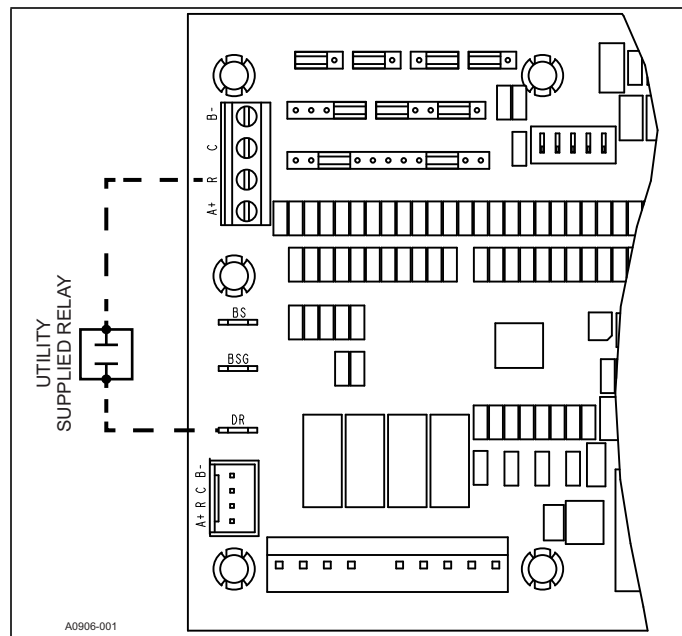


FIGURE 15: Demand Response Wiring

DEHUMIDIFICATION CONTROL

A dehumidification control accessory 2HU06700124 may be used with variable speed air handlers or furnaces wired conventionally in high humidity areas. This control works with the variable speed indoor unit to provide cooling at a reduced air flow, lowering indoor coil temperature and increasing latent capacity. The humidistat in this control opens the humidistat contacts on humidity rise. To install, refer to instructions packaged with the accessory. Prior to the installation of the dehumidification control, the HUM STAT jumper on the indoor variable speed air handler or furnace control board must be set to YES.

During cooling, if the relative humidity in the space is higher than the desired set point of the dehumidification control, the variable speed blower motor will operate at a lower speed until the dehumidification control is satisfied. A 40-60% relative humidity level is recommended to achieve optimum comfort.

If a dehumidification control is installed, it is recommended that a minimum airflow of 325 cfm/ton be supplied at all times.

If wired using communication, refer to the Hx3 thermostat installation manual for dehumidification settings.

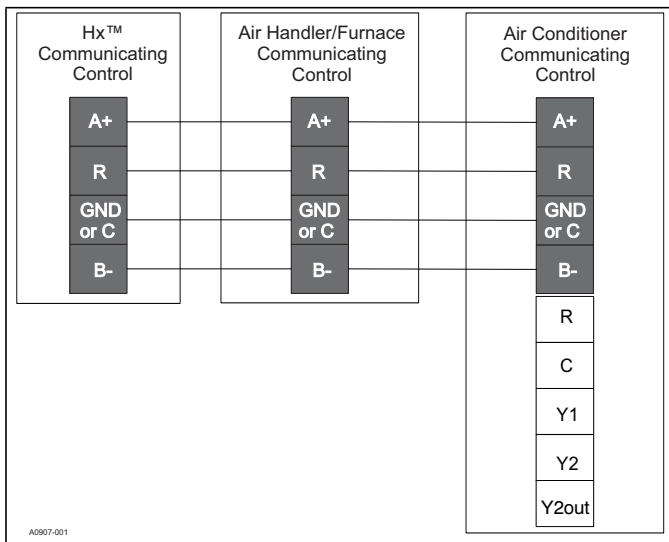


FIGURE 16: 19 SEER 2-Stage Only - Communicating AC with Communicating Air Handler or Furnace

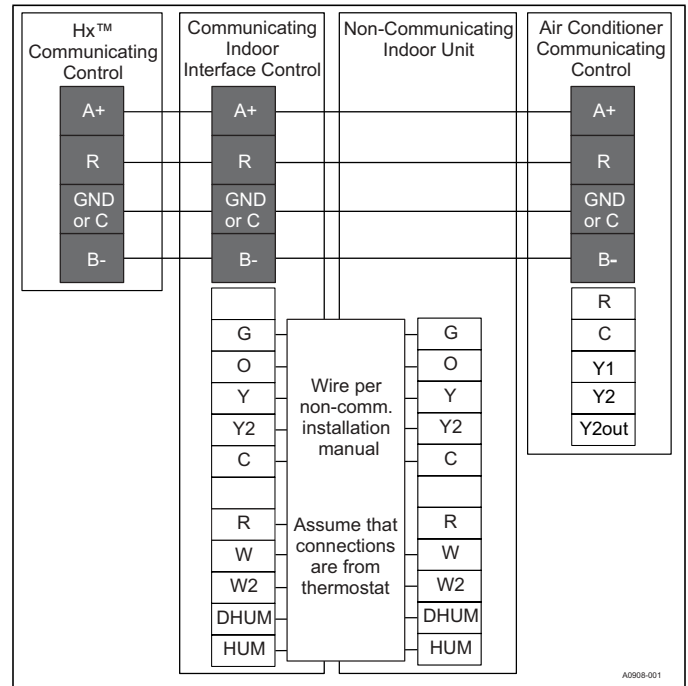


FIGURE 17: 19 SEER 2-Stage Only using Communicating Interface Control

INDOOR CFM CONFIGURATION

For proper system operation, the indoor CFM must be set properly.

The recommended airflow settings for each outdoor units size and associated match can be found in the Outdoor Unit Technical Guide.

Manually setting the airflow on the Indoor Control is required with the Hx™ communicating thermostat.

Set the cooling speed per the instructions defined in the air handler or furnace. Verify the airflow, after the configuration has be set on the Indoor Control.

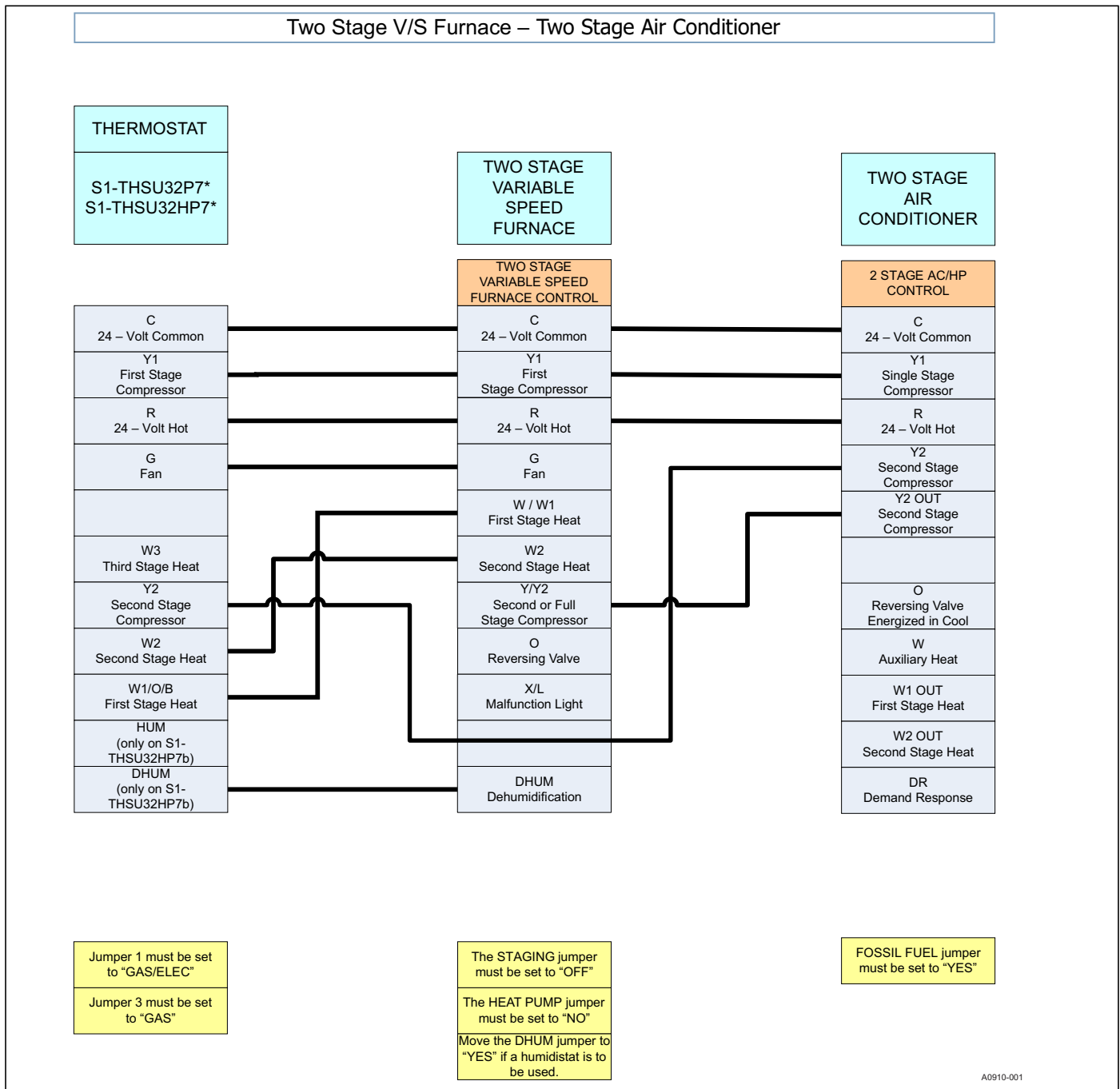


FIGURE 18: Thermostat Chart - Two Stage AC – Two Stage Furnace

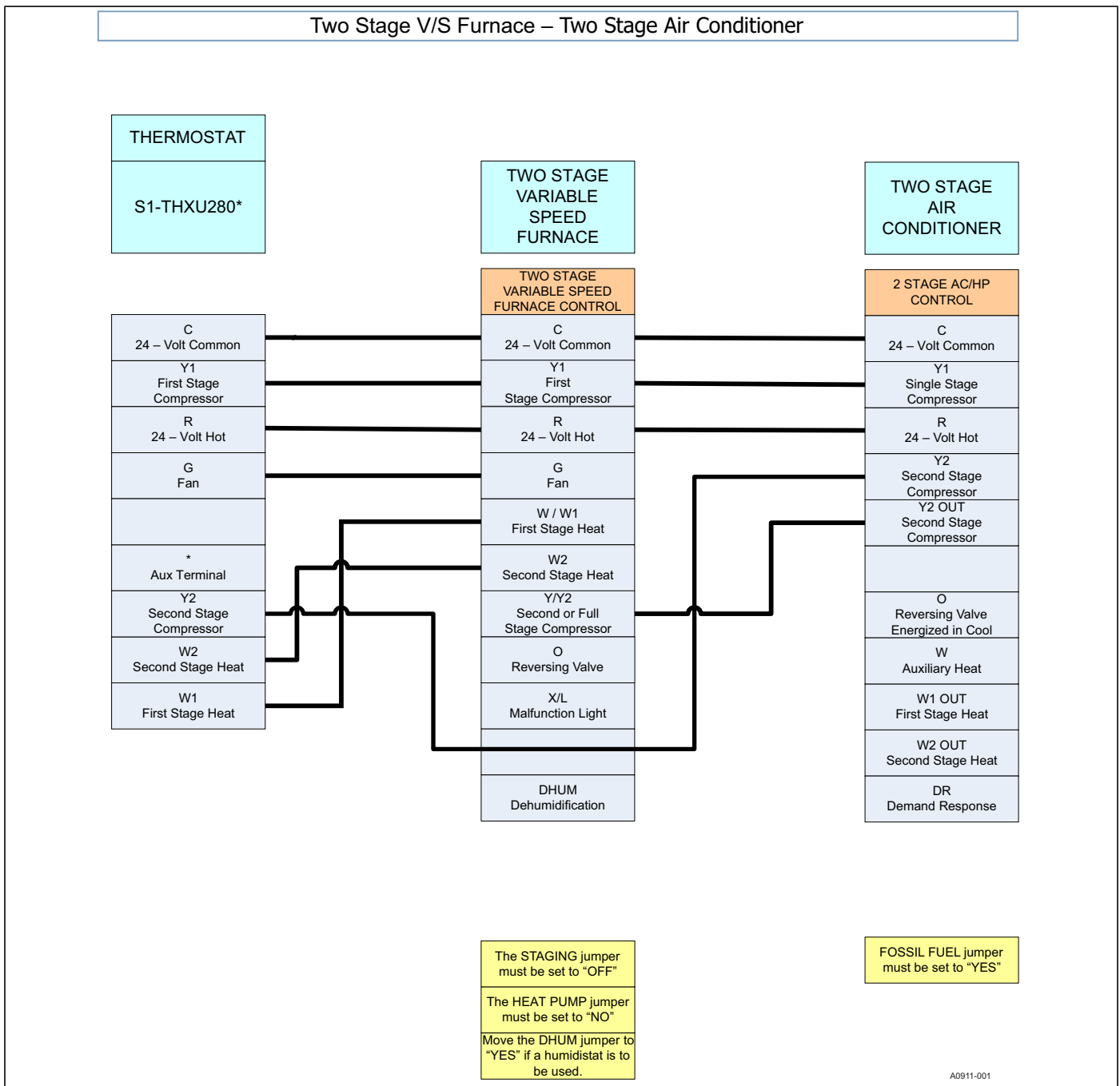


FIGURE 19: Thermostat Chart - Two Stage AC – Two Stage Furnace

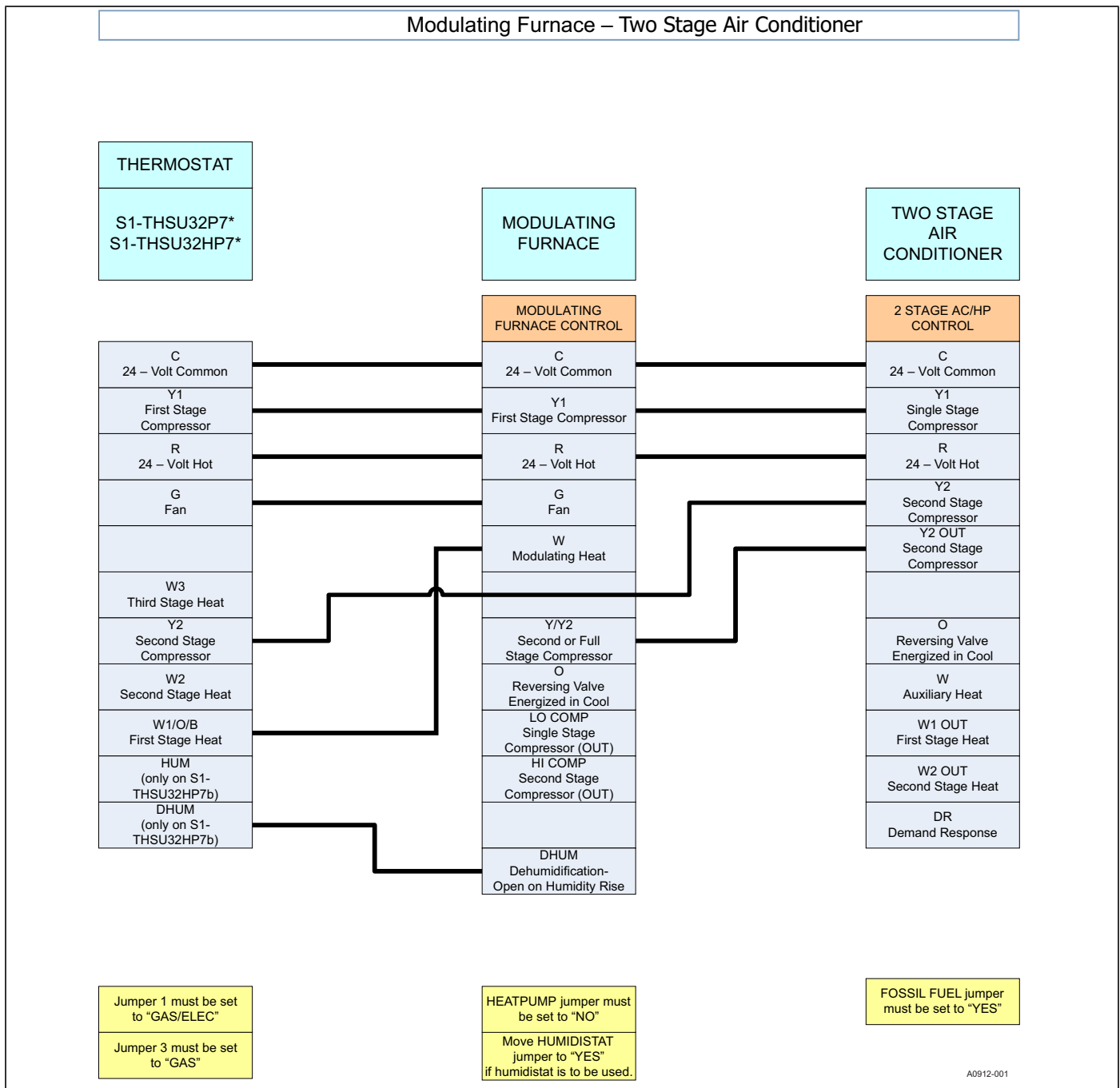


FIGURE 20: Thermostat Chart - Two Stage AC – Modulating Furnace

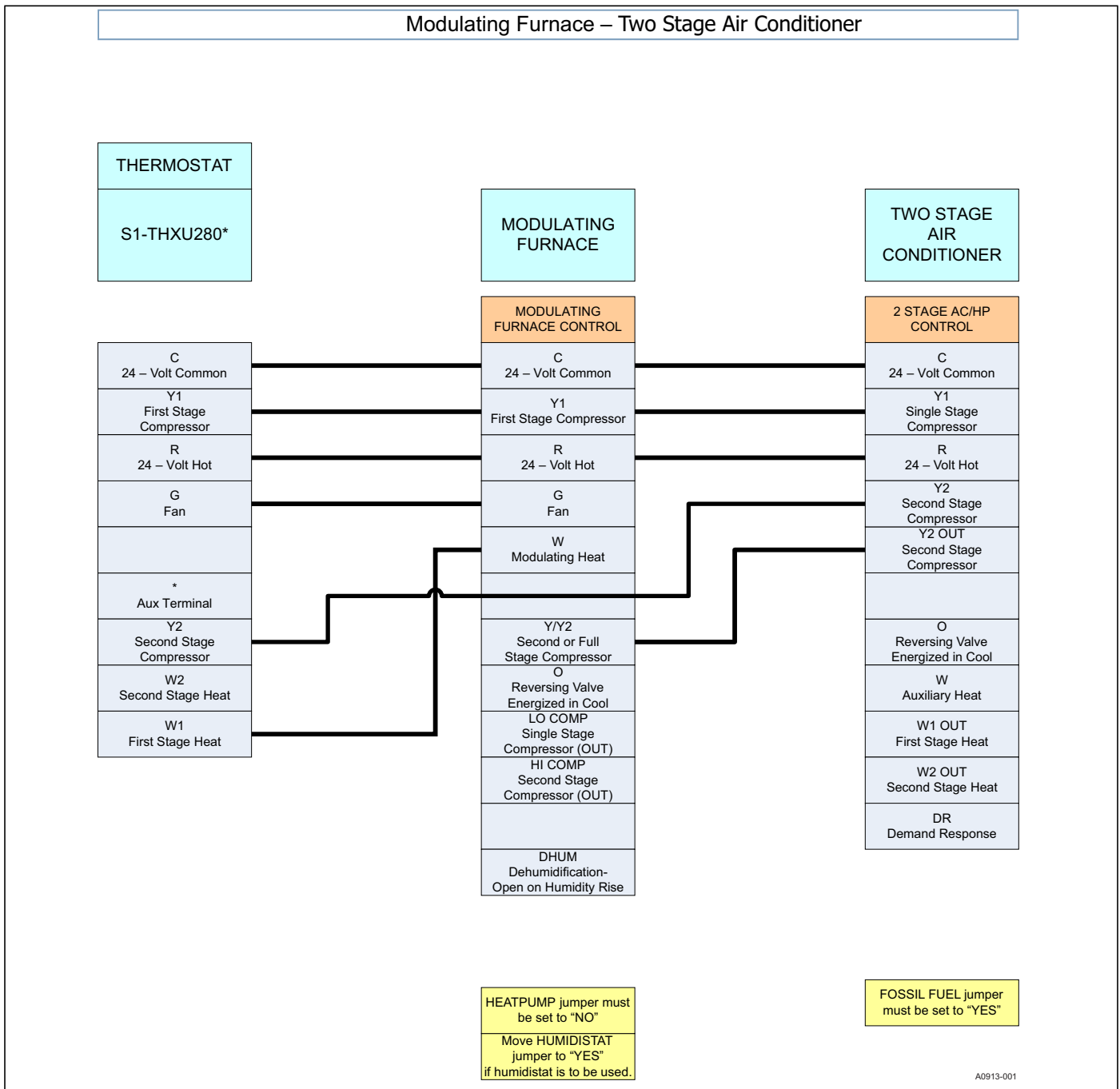


FIGURE 21: Thermostat Chart - Two Stage AC – Modulating Furnace

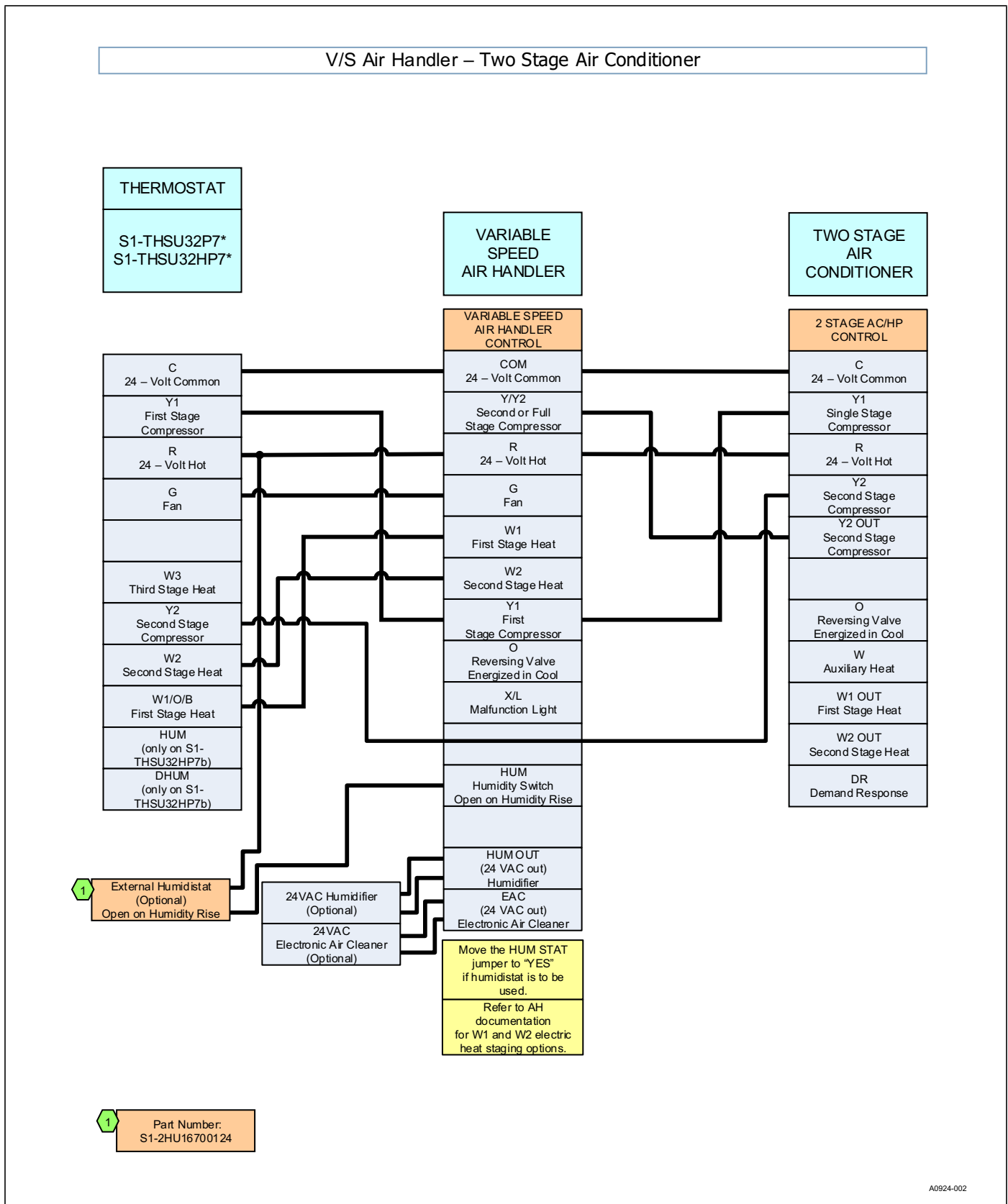


FIGURE 22: Thermostat Chart - Two Stage AC – Variable Speed Air Handler

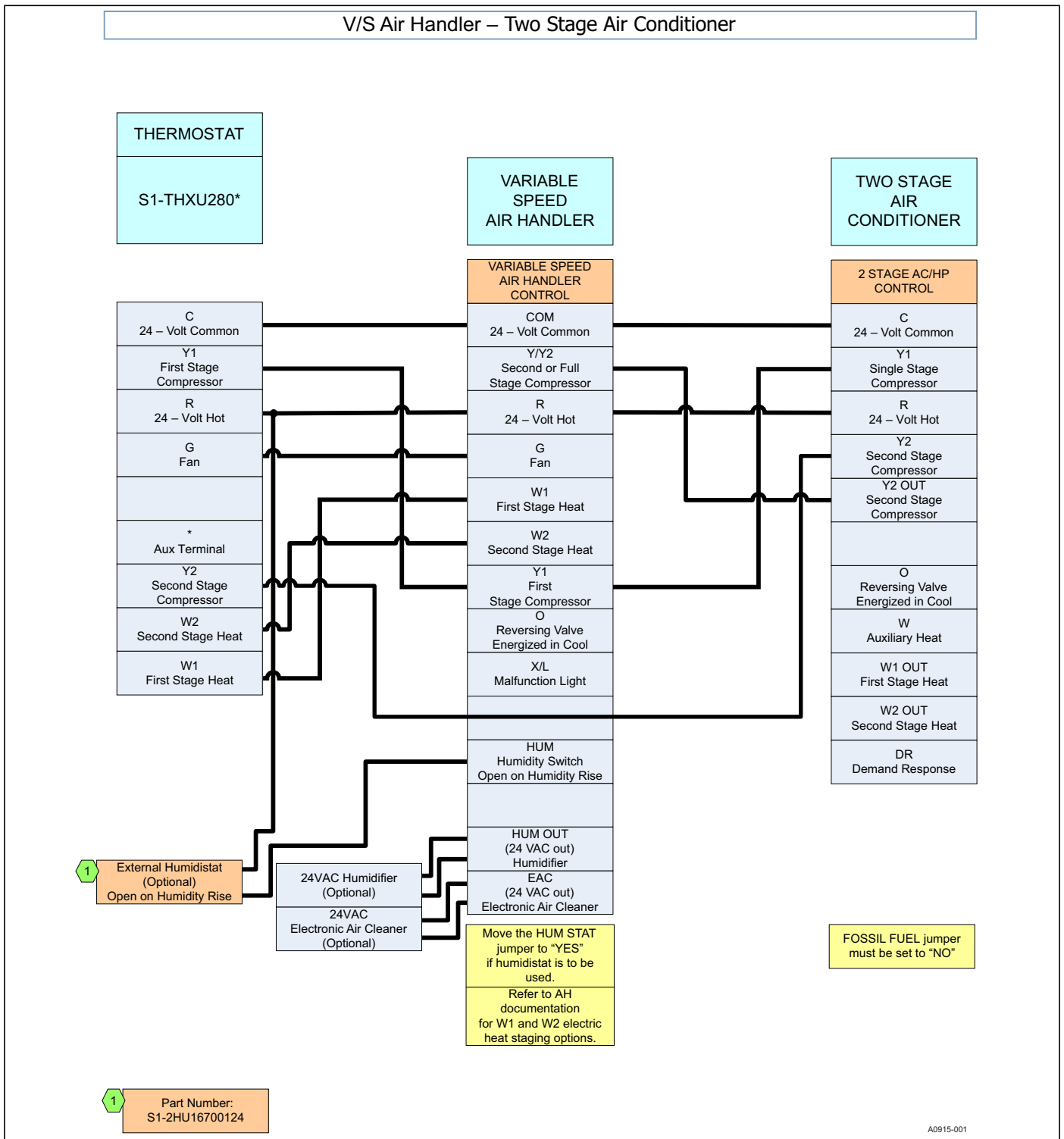


FIGURE 23: Thermostat Chart - Two Stage AC – Variable Speed Air Handler