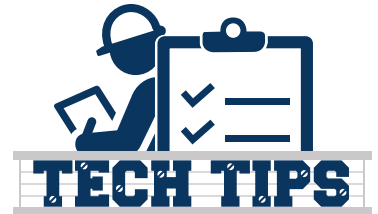


GOT “G” WITH “Y”?

For the history of Trane and American Standard, we have always needed a “G/fan” call along with the “Y/cooling” call to the furnace with constant torque, variable speed and most PSC motors. We have seen some confusion lately, so we would like to address the S-Series furnaces and how to properly wire them for proper airflow demand in cooling mode.



You may or may not have seen our Tech Tip on how to configure the S-Series furnace IFC, but if not watch [this board configuration video](#) for **S8** or **S9X** units.

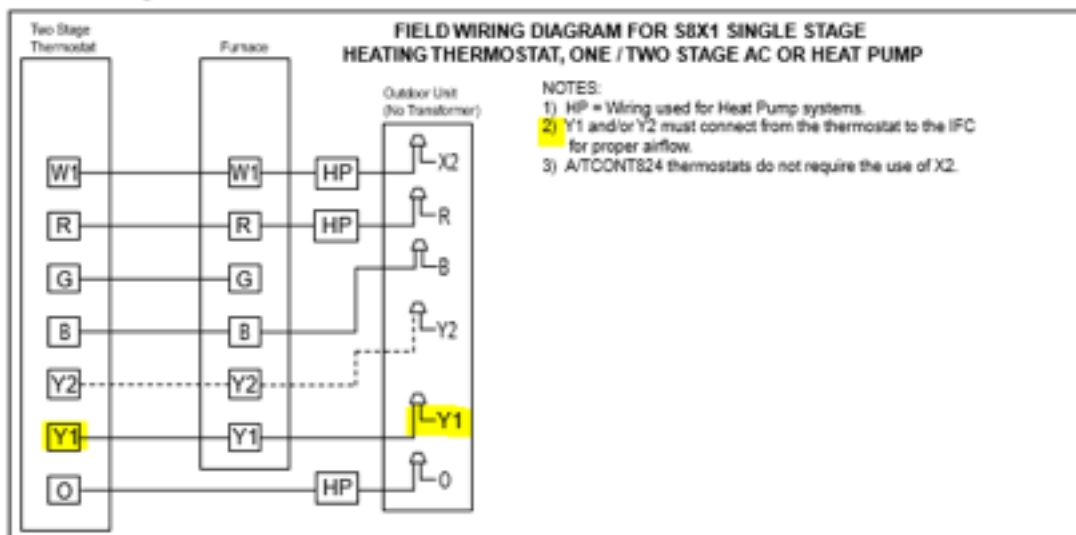
If we apply a cooling “Y” call without the fan “G,” the board will not recognize a demand for cooling. It will display “IDL” as it is idle. You should see “CL1” on the furnace. This is showing us that you are in cooling mode. If you have a “Y” call on the IFC and it states “IDL,” be sure to check your “G” terminal is energized with 24VAC when measured to common.

If you bypass the furnace with your “Y” wire and go straight to the outdoor unit and apply a cooling call, you will more than likely see “COF” if just your “G” is energized. If this is the case, you will be running on TAP 1 on the S*X units or 25% of your configured cooling CFM on the S9V furnace, which is your lowest CFM the furnace will provide.

The S-Series furnace also requires you to wire a single-stage air conditioner to “Y1.” If you wire it to “Y2” on the furnace IFC, the furnace will not recognize this input. Think of it this way: “Y1” is for single stage or “first stage cooling” if utilizing a two-stage air conditioner. The second stage wire would land on “Y2.” Remember, we configure the board to understand what kind of compressor is installed. See **Figure 1**.

Figure 1

Field Wiring



These furnace IFCs/boards must see “Y” and “G” input when asking for cooling CFM. If not, you will run into low suction pressures, low superheat, freeze-ups and cooling performance issues.

If the control/thermostat is not providing a “G” with a cooling demand, check the settings for the control. Most controls will have an option to “provide a ‘G’ call with a cooling demand.” Our assumption is that the “G” wire is being borrowed and utilized for a common. If you are short on wires, you may need to pull a new wire with more conductors or a Fast-Stat product.

Take notice to the service and installation guides. Wiring diagrams and sequence of operations (see **Figure 2**) are available in the literature.

Figure 2

S8B, S8X, S9B, S9X

Single Stage Cooling

1. R-Y1-G contacts on the thermostat close sending 24VAC to the Y1 and G low voltage terminals on the IFC. Technician should read 24VAC between Y1-B/C and between G-B/C.

Note: For S8X2 units, the factory supplied Y1-O jumper must remain in place for proper seven-segment LED readout, and furnace operation. If removed, the seven-segment LED will read “HP 1”.

2. 24VAC is sent to the OD unit via thermostat wiring.
3. The indoor blower ramps to the cooling airflow. The seven-segment LED for example will alternately read:
 - CL 1 = Cooling, Stage 1 (S8X2)
 - CP 1 = Cooling, Stage 1 (S8X1)
 - EP 3 = Tap 3
4. When the temperature is lowered enough to satisfy the thermostat setting, contacts R-Y-G will open.
5. The OD unit shuts off and the indoor blower shuts off, unless a blower “Cool Off Delay” has been enabled in the IFC setup menu options. The seven-segment LED will read “i dL ” = Idle, no thermostat demand.

S9V2

Single Stage Cooling

1. R-Y1-G contacts on the thermostat close sending 24VAC to the Y1 and G low voltage terminals on the IFC. Technician should read 24VAC between Y1-B/C and between G-B/C.

Note: Factory supplied Y1-O jumper must remain in place for proper seven segment LED readout. If removed, seven segment LED will read “HP 1”.

2. 24VAC is sent to the OD unit via thermostat wiring.
3. The indoor blower ramps to the cooling airflow. The seven segment LED for example will alternately read:
 - CL 1 = Cooling, Stage 1
 - R-F = Airflow
 - 080 = 800 requested cfm (value shown x 10)
4. When the temperature is lowered enough to satisfy the thermostat setting, contacts R-Y1-G will open.
5. The OD unit shuts off and the indoor blower shuts off, unless a blower off delay has been enabled in the IFC setup menu options. The seven segment LED will read “i dL ” = Idle, no thermostat demand.