Digital Duct Stat Option

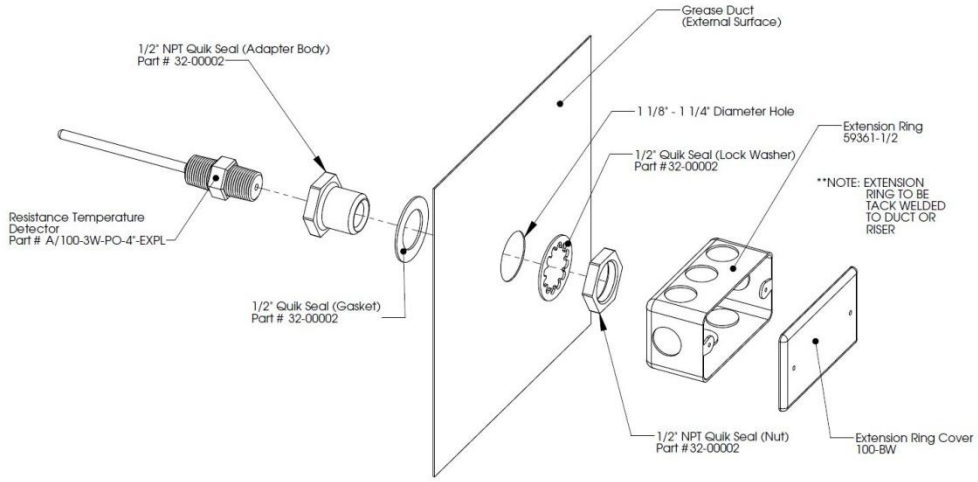
WARNING!!

Installation of this control should only be performed by a qualified professional who has read and understands these instructions and is familiar with proper safety precautions. Improper installation poses serious risk of injury due to electric shock, and other potential hazards. Read this manual thoroughly before installing or servicing this equipment. ALWAYS disconnect all power sources prior to working on this control. Most controls have more than one power source.

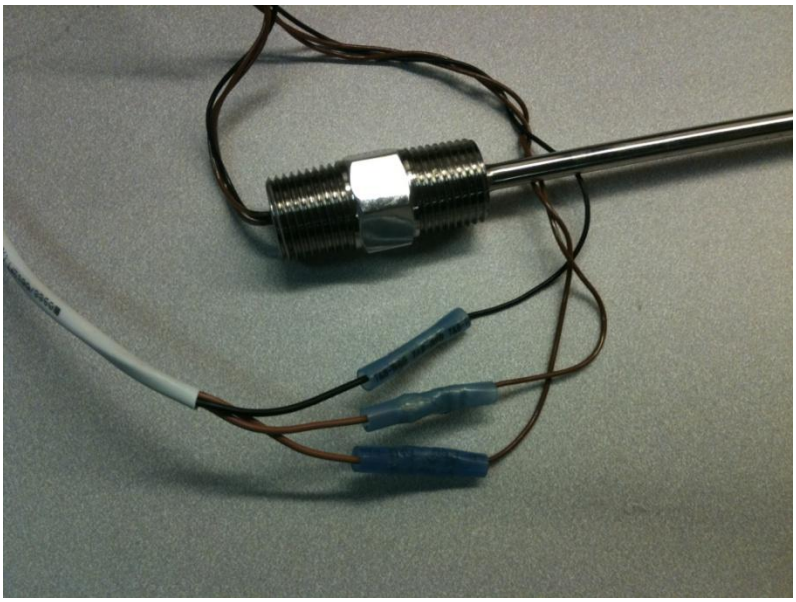
The Digital Duct Stats function is to automatically turn on the exhaust fan whenever the cooking equipment is in use. It is comprised of one or more RTD (resistive temperature detector) sensors mounted in the risers and one or more digital temperature controllers mounted in the pre-wire cabinet. Each RTD is connected to its controller through a 3 conductor 18AWG thermostat wire. The temperature controller has two displays on it; the upper (PV) display is the current temperature in the riser. The lower (SV) display is the temperature at which the controller will turn on the exhaust fan. The UP and DOWN buttons are used to adjust the 85 degree default SV value up or down to the desired setting. The controller has a default 2 degree hysteresis value so that once the rising temperature reaches the SV value and the fan turns on, it will stay on until the temperature drops 2 degrees below the SV value. If 2 degrees proves undesirable it can be changed, see the changing the hysteresis example section of this document. The C1, AL1 and SV LEDs will all normally be illuminated. The C1 LED will go out when the temperature controller turns on the fans.

RTD Sensor Installation

RTD sensors are shipped factory installed in factory assembled hood risers. If the risers are field cut, the sensor and other components are shipped loose for field installation as shown below. A hole must be cut in the grease duct and the quick seal and sensor must be assembled as shown.

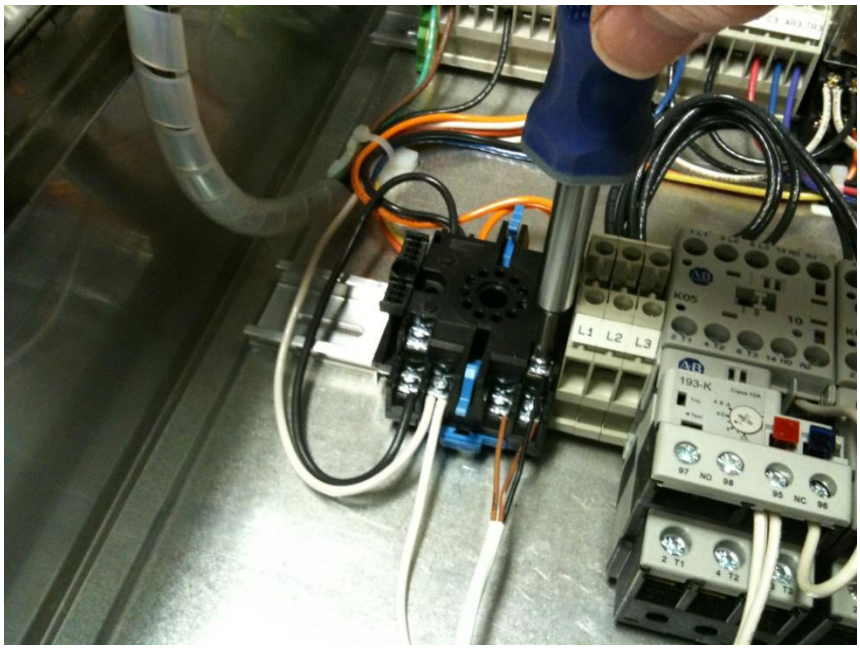


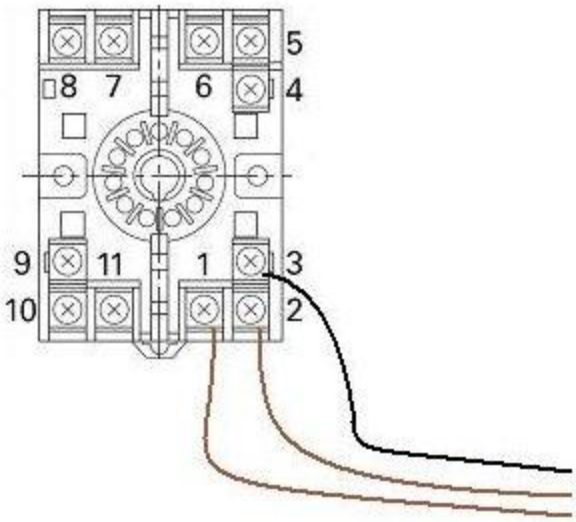
The wire used to connect to the RTD sensor is 3 conductor 18AWG stranded plenum rated thermostat wire with conductors that are Brown, Brown, Black. The thermostat wire is connected to the matching color leads coming from the RTD inside the junction box. The 2 Brown leads are interchangeable. Use the appropriate wire nuts or butt splices to make the connections as shown below.

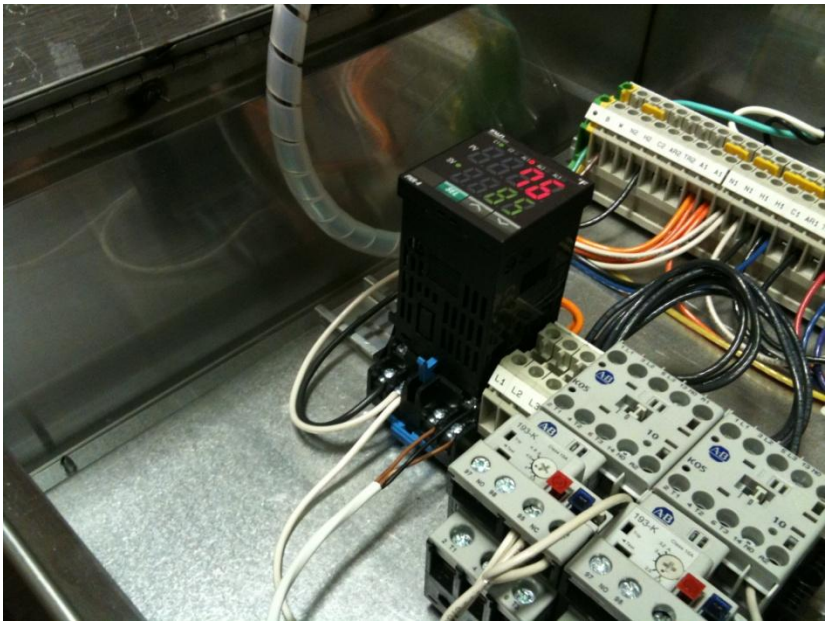


Temperature Controller Connection

To attach the wires from the RTD to the temperature controller, first remove all power sources from the pre-wire, most pre-wires have more than one power source. Remove the temperature controller from its socket by folding the blue catches down away from the controller and pulling the controller straight out of its socket. The 3 conductor thermostat wire is connected to the 3 screw terminals in the lower right corner of the temperature controller socket as shown below. Using a #2 Philips screwdriver attach the first Brown wire to terminal #1, attach the second Brown wire to terminal #2 and attach the Black wire to terminal #3. Reinsert the temperature controller into its socket and re-latch the blue catches

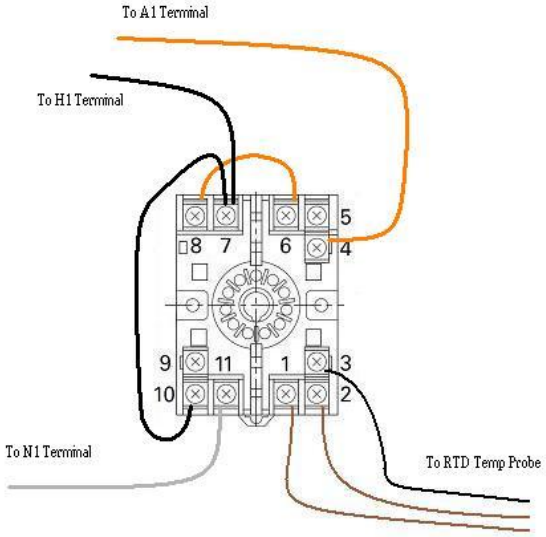






Digital Duct Stat Retrofit

The Digital Duct Stat option can be retrofit in an existing pre-wire if sufficient DIN rail space is available. Each temperature controller requires about 2” of DIN rail space. They should be wired as shown below. The temperature controller contacts are rated for one Amp so motor starters or contactors must be used even for fractional horsepower motors. If more than one RTD temperature sensor/controller set is used for one exhaust fan, terminals 7, 11 and 4 are paralleled on the controllers. Each RTD temperature sensor is wired to its own separate temperature controller.



Changing the Hysteresis from 2 to 4 Example

	1. Press and hold the SEL key for three seconds. HYS will be displayed on the PV display.
	2. Press the SEL key once. The current setting (2) will flash in the SV display
	3. Press the UP key twice to change the setting to 4.
	4. Press the SEL key once. The 4 will stop flashing and the new setting is saved.
	5. Press and hold the SEL key for 2 seconds. Both displays will return to their normal states.