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Single (Dual) Set Point Controller *Instruction / Installation Guide*

Model: TC2



User Guide

This controller is designed to operate an auxiliary motor (pump) based on one or two (single/dual) air temperatures as controls.

Setting Temperature Points

To set the temperature control point of each Temperature Controller (T1 and T2), press “Set” on the face of the controller. The text “SP” will appear on the digital display. Press set again to show the currently set temperature value. Press the “Up” or “Down” Arrow Buttons to modify the value. Press “Set” again to enter the new value. Finally, press “Set” and “Down” concurrently to exit the programming mode. See Love Digital Temperature Controller Instructions for more details on programming and additional options for the controller.

WIRING

To connect the Set Point Controller to the pump to be used in conjunction with the UltimateAir Water-to-Air Coil, four wiring connections must be made. All wiring is installed in the terminal block located on the back of the Set Point Controller; it has ten connection points, 1 through 10 oriented left to right when viewed directly from the back of the control box. See accompanying diagrams for detailed wiring instruction.

Max rating:

SPDT Relay resistive load 16A

1HP 240Vac—10FLA, 60LRA 250Vac

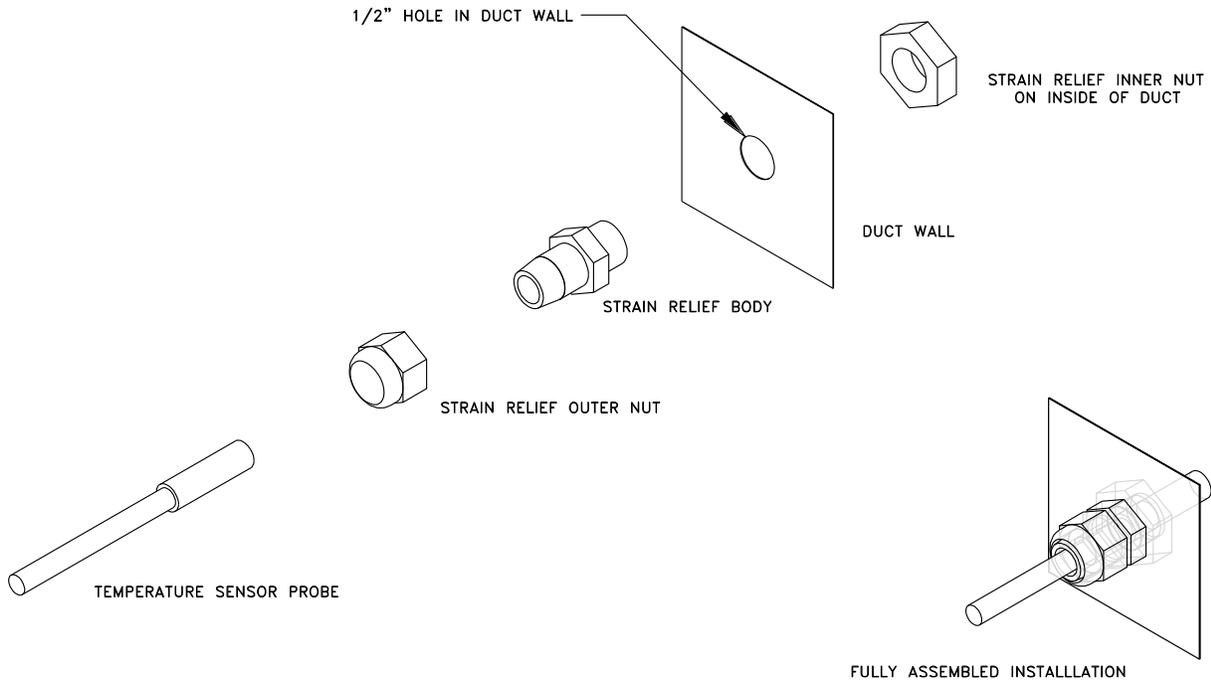
Temperature Sensor Installation

The Dual controller comes with two temperature set point controllers. The controllers are prewired for turning a motor ‘on’ at above a set temperature (T2), and for turning a motor ‘on’ at below a set temperature (T1). Each controller has a temperature sensing probe (also labeled 1 and 2).

Installing the temperature sensor probes:

To install the two temperature sensor probes in the duct work, first determine which sensor(s) will be used for your application and what locations they need to be installed at (see subsequent section of manual and Water-to-Air Coil installation options). Once you have determined which sensor(s) are to be used and where they are going to be located, drill ½” holes in the sheet metal duct at these locations. This is best done before the duct work is installed as access to the interior of the duct is required.

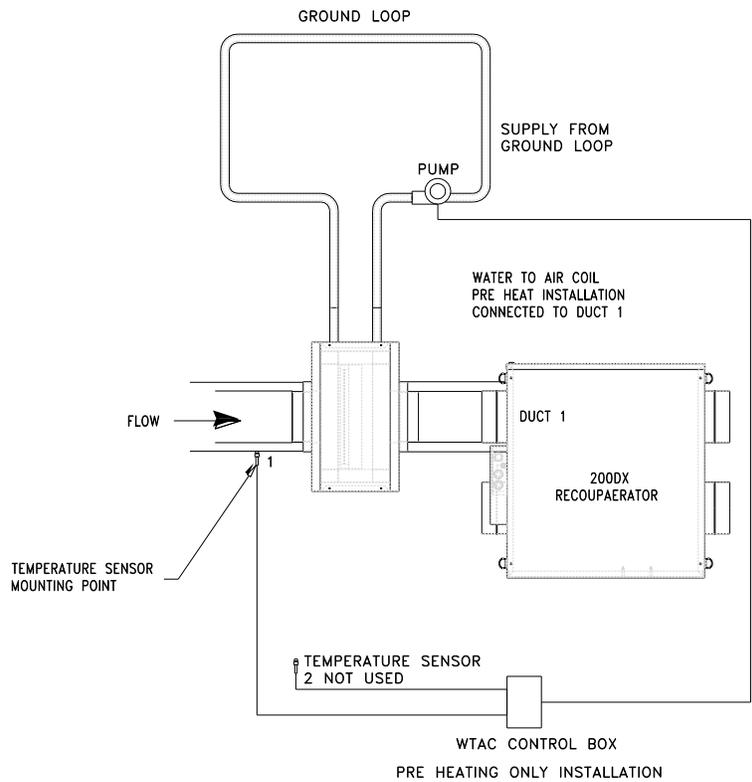
Insert the strain relief body into the ½” hole in the duct and loosely attach the strain relief inner nut on the inside of the duct. Loosely attach the stain relief outer nut on the outside of the strain relief and then insert the temperature sensor probe. It should protrude into the duct ½”. Tighten both strain relief nuts until the probe is locked in position. See illustration for details.



Temperature Sensor Probe Installation Assembly Drawing

Installation locations for possible Water-to-Air Coil setups:

Example (1): Pre Heating (Defrost) With a Ground Loop

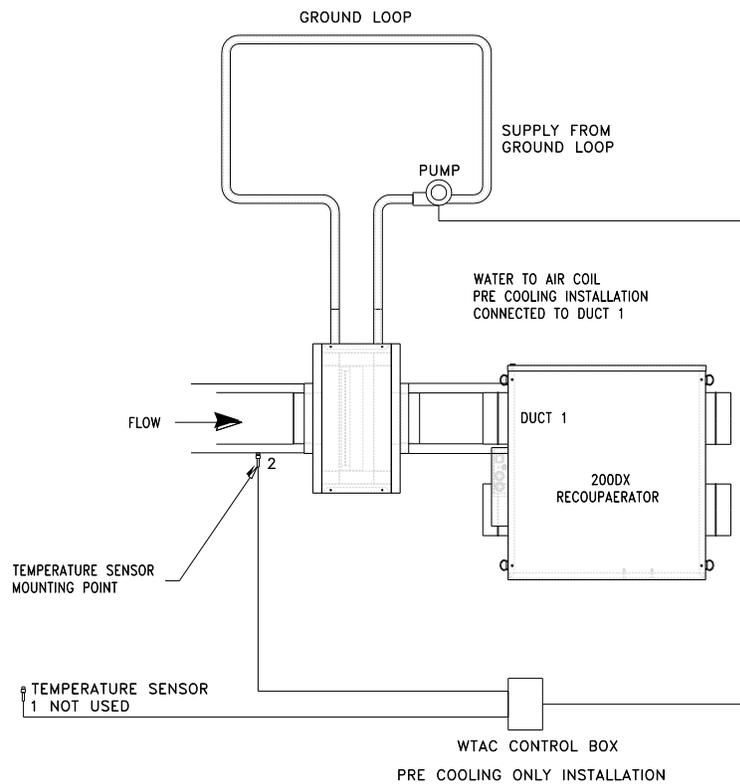


UltimateAir 12” WTAC (water coil) module is located in the incoming fresh air stream before the ERV.

Install Temperature Sensor 1 into the fresh air duct (Duct 1) from outside, between the exterior penetration and the water coil to measure the incoming air temperature. Set the Controller 1 set point to 12 F. The controller will close the contact when the temperature of the incoming air drops below 12 F, and energize the connected water pump to circulate water through the coil thereby warming the incoming air.

The ground loop length, ground depth, and material can be of many forms per climate and application. In order to determine these parameters – a local mechanical engineer should be consulted.

Example (2): Pre Cooling with a Ground Loop

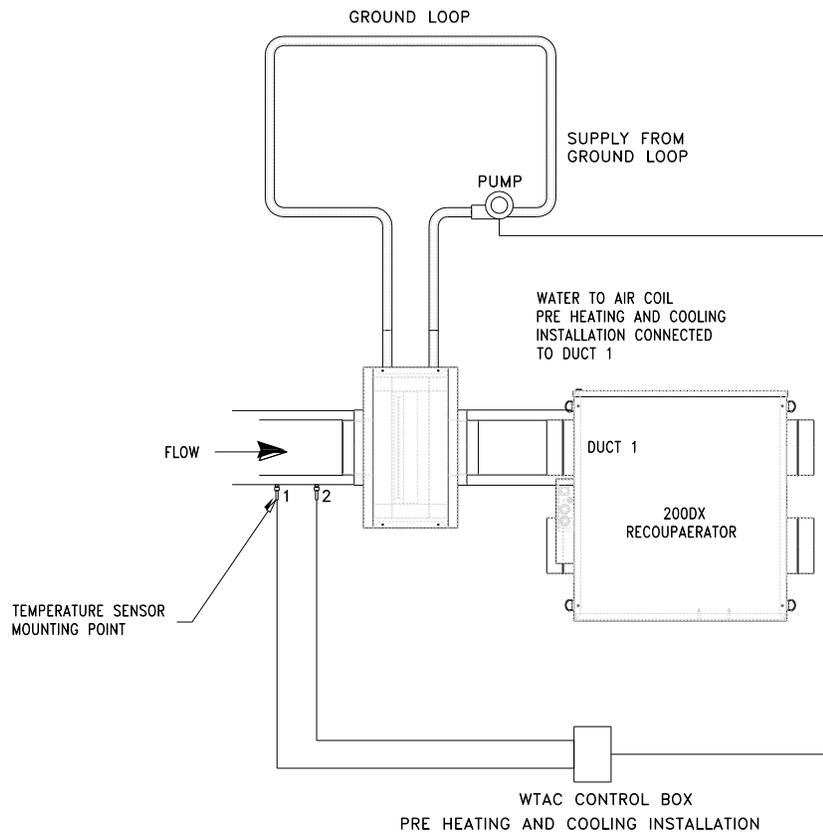


UltimateAir 12" WTAC (water coil) module is located in the incoming fresh air stream before the ERV.

Install Temperature Sensor 2 into the fresh air duct from the outside (Duct 1), between the exterior penetration and the water coil to measure the incoming air temperature. Set T2 to 74 F, to allow the pump to operate when the incoming outside air is above 74 F.

The ground loop length, ground depth, and material can be of many forms per climate and application. In order to determine these parameters – a local mechanical engineer should be consulted.

Example (3): Pre Heating and Cooling with a Ground Loop

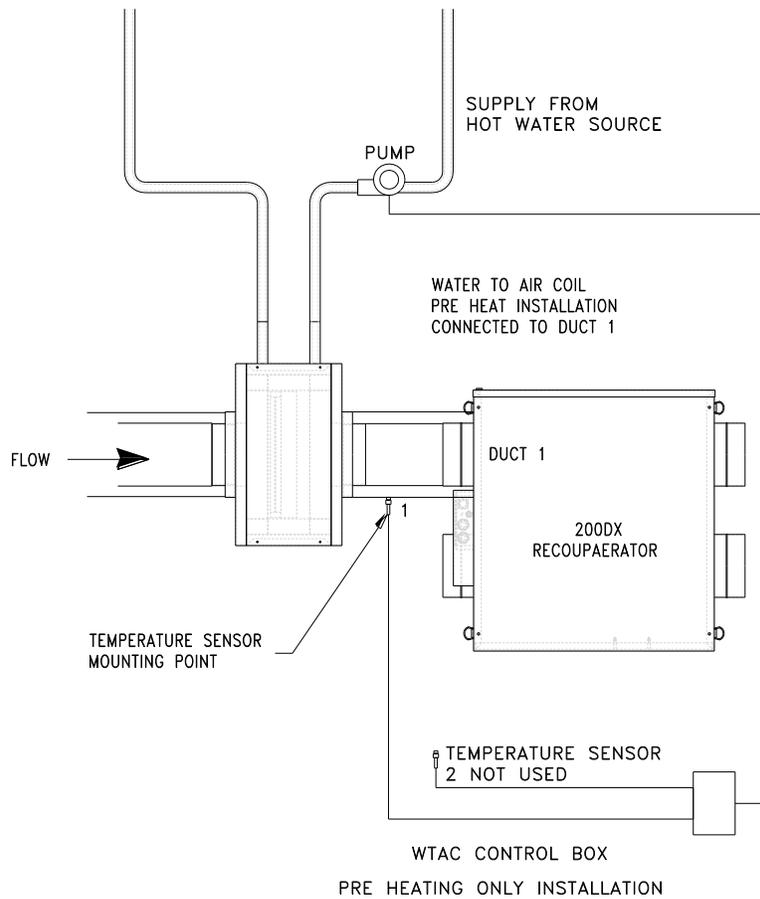


UltimateAir 12" WTAC (water coil) module is located in the incoming fresh air stream before the ERV.

Install Temperature Sensors 1 and 2 in the fresh air duct from the outside (Duct 1) before the Water-to-Air Coil and the RecoupAerator. Set T2 to 74 F, to allow the pump to operate when the incoming outside air is above 74 F. Set the Controller 1 set point to 12 F to operate the pump when the temperature of the incoming air drops below 12 F

The ground loop length, ground depth, and material can be of many forms per climate and application. In order to determine these parameters – a local mechanical engineer should be consulted.

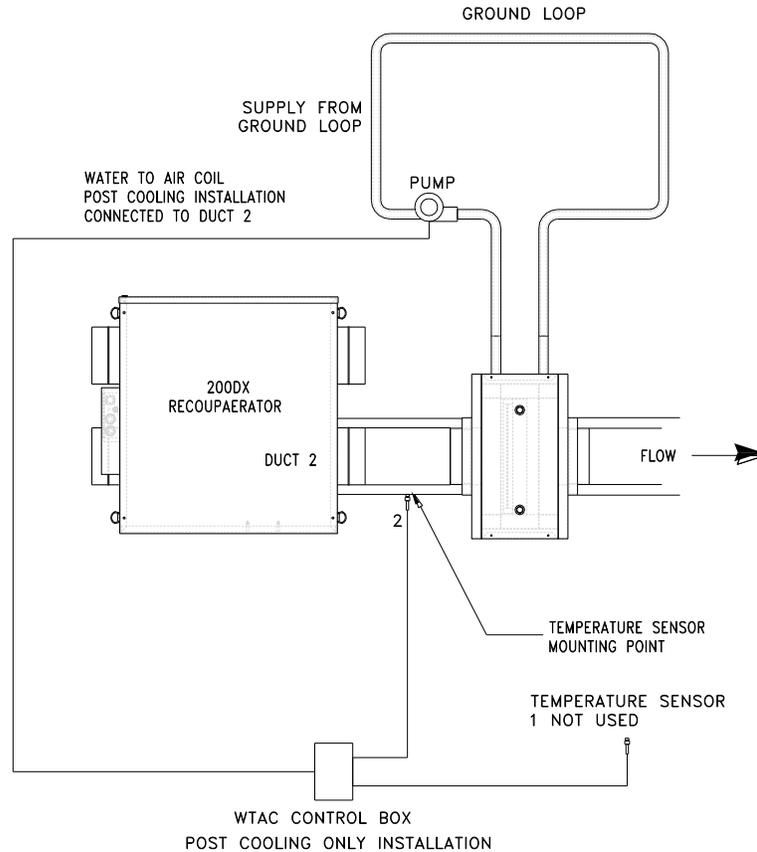
Example (4) Pre Heating with a Hot Water Source



UltimateAir 12" WTAC (water coil) module is located in the incoming fresh air stream before the ERV.

Install Temperature Sensor 1 in the ducting between the Water-to-Air Coil and the Recouperator in the fresh air intake (Duct 1). Set T1 to 12 F. With the temperature sensor installed here, the controller will operate the circulation pump as needed to maintain 12 F air temperature.

Example (5): Post Cooling with a Ground Loop



UltimateAir 12" WTAC (water coil) module is located in the incoming fresh air stream after the ERV.

Install Temperature Sensor 2 in the ducting between the RecoupAerator and the Water-to-Air Coil in the fresh air supply duct (Duct 2). Set T2 to 74 F to operate the pump anytime that the incoming air is above 74 F to assist with cooling.

The ground loop length, ground depth, and material can be of many forms per climate and application. In order to determine these parameters – a local mechanical engineer should be consulted.

