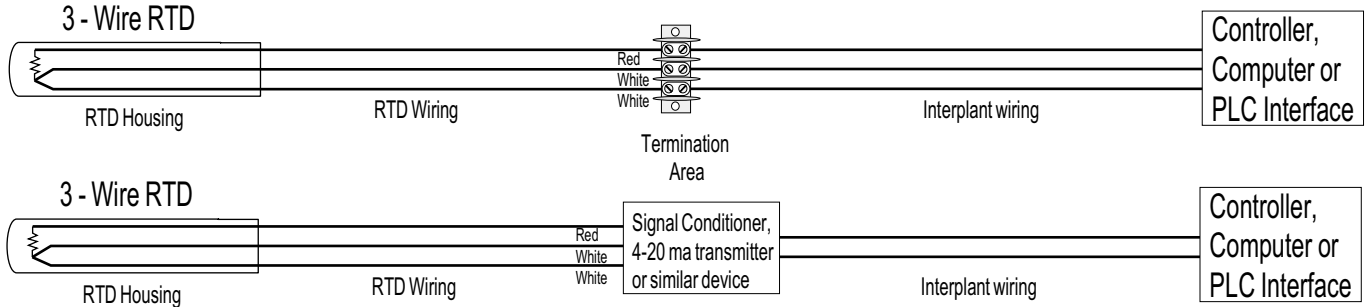
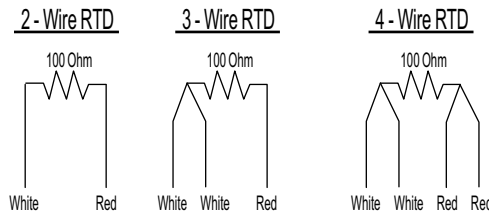


TYPICAL INDUSTRIAL CONFIGURATIONS



SCHEMATICS



The resistance value of the RTD sensor can be measured by any type Resistance measuring device, like an Ohmmeter. The schematics shown above shows the three ways that an RTD can have the lead wires connected. The 3-wire and the 4-wire configurations have 2 wires that are the same color and connected to the same point on one side of the RTD. To measure the value of the RTD sensor first remove the RTD wires or the Interplant wiring from one side of the terminal block so the sensor is isolated from the system loop. Then measure the resistance value of the sensor as below:

2-wire

Measuring between the 2 wires will be the resistance value of the RTD sensor and the lead wires resistance added together, this adds an error to your calculations. There is no way to calculate just the resistance value of the RTD sensor unless you know the value that the lead wires are adding to the loop. If you know the value of the lead wires you could subtract the leadwire resistance and find out the value of just the RTD and use this value to calculate the temperature from a table for the RTD that shows the association of temperature to resistance.

3-wire

Measuring between the Red lead and one of the White leads as in the above diagram will give you the resistance value of the RTD sensor and the lead wires added together, this adds an error to your calculations. Measuring between the 2 wires that are the same color and connected to the same side of the RTD will give you the resistance value that the lead wires are adding to your measurements. You can subtract the value of the lead wires resistance from the value measured between the Red and the White lead to find the resistance of just the RTD and use this value to calculate the temperature from a table for the RTD that shows the association of temperature to resistance.

4-wire

Measuring between one of the Red leads and one of the White leads as in the above diagram will give you the resistance value of the RTD sensor and the lead wires added together, this adds an error to your calculations. Measuring between either of the 2 wires that are the same color and connected to the same side of the RTD will give you the resistance value that the lead wires are adding to your measurements. You can subtract the value of the lead wires resistance from the value measured between the Red and the White lead to find the resistance of just the RTD and use this value to calculate the temperature from a table for the RTD that shows the association of temperature to resistance.

The above calculations will verify that the RTD sensor is functioning properly and also check the temperature of your system. Comparing the value that you think your system is at to the value calculated above will tell you if everything is functioning properly.