

# SENSOR INSTALLATION & MAINTENANCE

## APPLICATION NOTE

### Ensuring Accurate Performance

To ensure good performance of the sensor, the sensor must be in good thermal contact with the process. When using a sensor in conjunction with a thermowell you should use a suitable heat transfer compound to fill the air space between the sensor and the bore of the thermowell. This will improve the heat transfer between the process and the sensor, reducing the stem conduction error and improving the response time of the sensor.

For moderate temperature applications (less than 250°C) a silicone based heat transfer compound should be used. Higher temperature applications will require a graphite based material.

An easy way to apply the heat transfer compound is to apply a generous amount to the tip of the sensor and insert the sensor into the thermowell, pressing the sensor firmly into the well until the tip reaches the bottom of the thermowell bore.

The RTD sensor should be isolated from the sensor sheath and other metal components. Checking the insulation resistance of the sensor is an easy test to ensure the integrity of the sensor. Measure the resistance between the sensor leads, and the metal sheath of the sensor. The resistance should measure at least 100 megohms (100,000,000 ohms). Lower insulation resistance could be an indication that the sensor has suffered damage.

### Mechanical Connection

RTD sensor assemblies typically use pipe threads (NPT) for the mechanical connections between the connection heads, extensions and thermowells. For proper operation you should tighten the threads at least 1-2 turns past hand tight. This will ensure that the threads mate tightly, and that the proper sensor assembly length is obtained.

To prevent thread galling RTD Company recommends that anitsize compound or Teflon plumbing tape is used on all NPT threads.

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