

Temperature Probes for Thermowells with Limited Access

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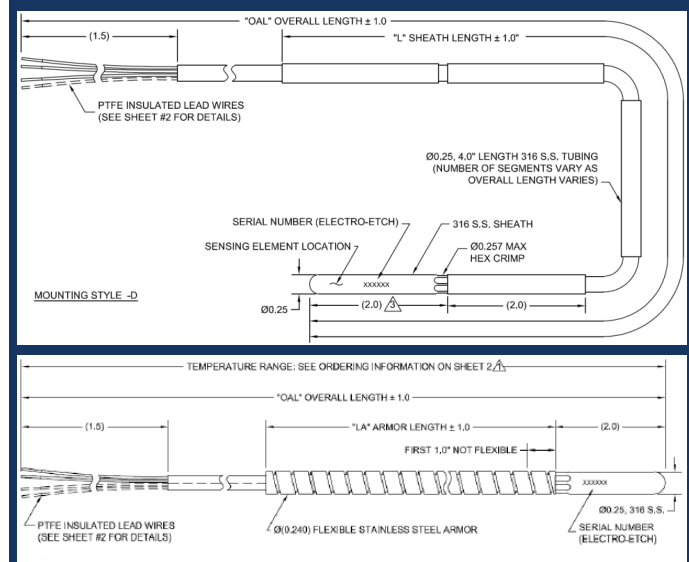
Application

Spring loaded RTDs and thermocouples for installation into thermowells are a popular choice for accurate temperature measurements in pharmaceutical and industrial applications.

A separable sensor and thermowell assembly simplifies the replacement or calibration of the sensor because the piping does not need to be opened or drained of product. Thermowells also add strength and durability to the measurement point. Spring loading ensures that the probe is firmly contacting the thermowell for improved heat transfer and it prevents the probe from rattling around in the well if vibration is present. Occasionally, by necessity or oversight, a thermowell installation may be obstructed by a wall or support structure limiting the space needed to install a rigid probe.

Challenge

In those situations where standard probes are too long to fit into a thermowell because of obstructions such as a wall, piping or supports the solutions are few. Moving the obstructions or cutting a hole in a wall works but is expensive and time consuming and may not even be possible or desirable. The same goes for moving the temperature measurement point. Fortunately, there is a simple solution.



Segmented Tubing or Flexible Armor Probes

Solution

The Burns Series E temperature probes use a segmented or flexible armor sheath that allows the probe to flex and still spring load into a thermowell. The E02 standard segment sizes are 4" but can be cut to any length desired to easily fit between the obstruction and the thermowell. The spring loading feature is important for maintaining thermal contact with the thermowell and minimizing the damaging effects of vibration. Each tube segment slides over an insulated cable that provides enough stiffness for insertion into the well and when pressure is applied to the tube segments they stiffen up and allow the spring loading fittings to keep the probe firmly planted in the well.

The spiral wrap SS armor on the E03 probe provides the spring loading and is available with a 1/2" NPT threaded connection or the Burns exclusive twist lock fitting for use with our HD05 connection head.