

## Flexible “Green” RTD

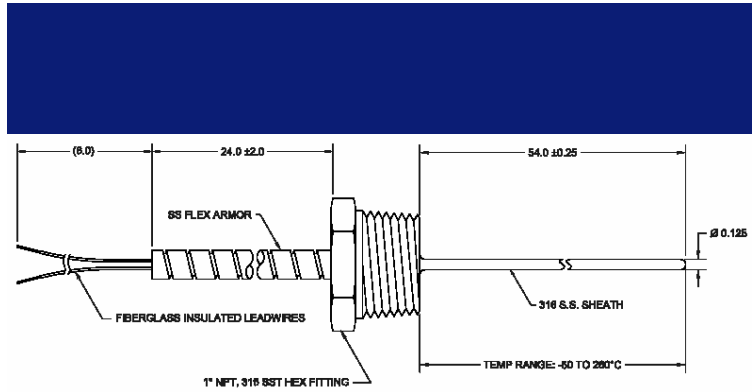
### APPLICATION

We received an inquiry for an RTD that could be inserted into a small tube and follow a bend about 4 feet from the opening. The tube is part of a heat exchanger in a furnace which is fired with “green” renewable fuels. An accurate measure of the fluid temperature was required to determine efficiency and act as a high temperature alarm.



### CHALLENGE

The 1” tube is buried in an inaccessible portion of the heating system with the only access through a tee fitting about 4 feet from the bend. Desired measurement location was at the highest point in the tubing system at the midpoint of the bend. Temperature was expected to be the highest at this point and provided for optimal monitoring of efficiency and alarm for over heating.



### Description

### SOLUTION

A modified Series 300 thin film sensor was chosen as the base platform for this design. Flexibility was obtained by using the 1/8” diameter option and annealed stainless steel tubing. Normal temperature limit of 200C was extended by using a special potting material and that would fully support the sensing element and still allow the probe to bend as it was installed in the heat exchanger tube.

The rugged design of the Series 300 sensor guarantees that the sensing element will survive the installation process without shifting out of tolerance. Its short sensitive length allows bends very near the tip so the sensor could be installed straight and follow the curved tube as it was inserted.