

Surface Mount Thermocouple for Pipeline Skin Temperature

APPLICATION

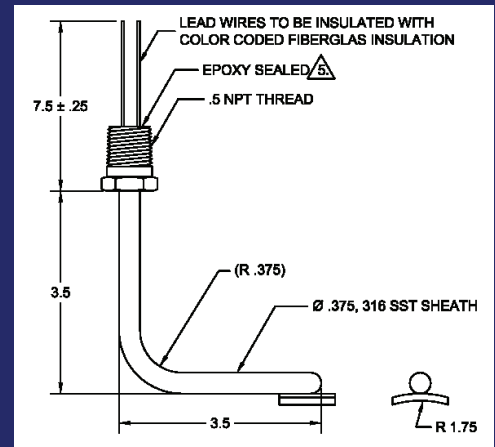
A petroleum company in Indonesia is constructing a pipeline to move crude oil from the fields to the coast where it can be exported. They need a way to monitor the health of the pipeline over vast stretches so they can respond to issues quickly and efficiently. They determined that temperature sensors distributed at regular intervals would alert them to changes in the pipes condition. Since a large number of points will be required, cost became a significant design factor. They came to Burns Engineering to design a cost effective way to measure the temperature of the pipeline at regular intervals.

CHALLENGE

The challenge became to create a design that was the absolute lowest cost solution that still met the temperature measurement requirements.

A thermowell assembly requires not only the extra expense of the thermowell but the labor to install the insertion port in the line. The port also creates additional long term maintenance costs and potential failure points as well.

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Surface Mount Thermocouple

SOLUTION

Since cost was the driving design factor, a thermocouple was the sensor of choice. To eliminate the additional costs of installing and maintaining a thermowell, a surface mounted design was selected. To further facilitate installation, a weld pad was incorporated so that only a couple of spot welds were required to mount to the surface of the pipeline. A simple 90 degree bend keeps the transmitter enclosure away from the pipe.