

Long Length RTDs for Those Hard to Reach Places

APPLICATION



Occasionally a need arises for a really long length RTD to reach into inaccessible places and make an accurate temperature measurement. We recently had a request for an RTD that needed to stretch 156 feet down a stilling well in an oil industry application. As you may imagine the area was classified as hazardous so the RTD assembly had to have an explosion proof rating. Time response of the measurement was also an important criteria with the goal being less than 10 second time constant.

CHALLENGE



The probe was to be exposed to crude oil and salt water but at a fairly low temperature range of -5° to 20°C . The customer wanted to have the option of easily removing the probe from an ANSI B16.5 style flange connection for calibration or replacement which meant the probe could not be threaded directly into the flange.

200A10CI4SI872



Direct immersion RTD

SOLUTION



Fortunately the solution turned out to be fairly simple. The Burns Series 200A style RTD is built with a mineral insulated cable that is quite flexible in longer lengths and is available in very long lengths. It can be formed into a coil for shipping and then straightened as it is fed into a thermowell or in this case a 2" pipe stilling well. It carries an FM explosion proof rating when mated to an approved enclosure. We chose the Burns 14S connection head in 316 SS for corrosion resistance and the explosion proof rating it carries. An ANSI B16.5 flange was supplied with a 1/2" NPT hole tapped into the center which the probe could be threaded into directly. Addition of a pipe union to the probe allowed for connection to the flange thereby avoiding having to spin the probe during installation.