BURNS ENGINEERING

Variable Immersion for Measurement Flexibility

300B

▲ **Series 300 'B' Style**

Variable Immersion PRT

APPLICATION

▲ An HVAC equipment manufacturer verifies the performance of each model they design by taking measurement data in an environmental chamber. This includes measuring the temperature of many points during operation in a variety of conditions. The size and complexity of each model vary greatly so the instrumentation needs the flexibility to be used in different positions and immersion depths.

CHALLENGE

▲ To have the ability to move the sensors around the environmental chamber, the sensors need to be attached to cable rather than in conduit. The control and data acquisition units are located outside the environmental chamber This requires long lengths of cable and this cable is susceptible to abuse during the installation process.
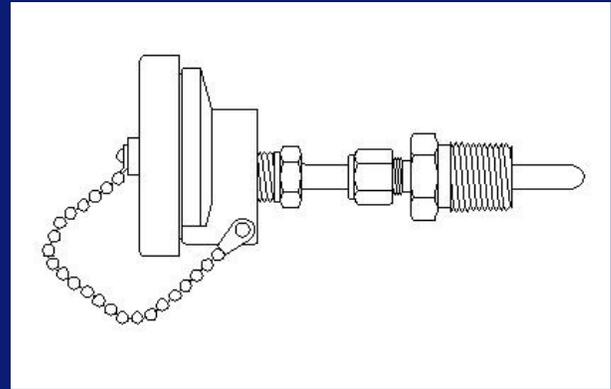
To have the flexibility to measure at various immersion depths, a probe is needed that is easy to install and position.

In addition, the company would like to standardize on a probe and cable length that would accommodate all their measurement needs. This would simplify installation and spare parts inventory.

SOLUTION

▲ The obvious choice might be a capsule style PRT with a compression fitting to allow for a variable immersion depth. However, since the instrumentation was located outside the chamber, it was impractical to run the cabling every time a sensor needs to be changed out or calibrated.

We selected the 'B' style sensor which allows for the variable immersion depth in the same manner, but also accommodates a connection head for terminating an extension cable. Burns has two small connection head options, the #4 and #6 heads, which allowed for a similar "ease of handling" as a capsule style probe.

We also decided that the cable should protected from handling and added a flexible stainless steel armor over the cable. The cabling can now remain permanently installed in the chamber and the sensor still has the flexibility to be repositioned when necessary.