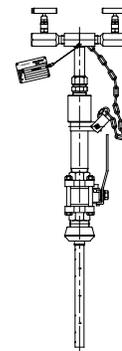


INDUSTRIAL PRODUCTS

ELLIPSE® Model: AHR (Annular Low Pressure Wet Tap)**Flow Measurement Instrumentation (Differential Pressure)****General:**

Furnish and install as shown on the drawings a flow element of the multi-ported, self averaging differential pressure type ELLIPSE® as manufactured by Preso.

Configuration:

The flow element shall be of maximum two (2) piece construction, of an elliptical shape with two (2) 100% independent flow sensing chambers to prevent signal degradation and mixing or that require dampening hardware or software. The impact velocity sensing holes shall be located along the leading edge and the true static sensing holes shall be on the exterior probe side. The quantity and position shall be as determined by the manufacturer. The probe must not generate any vortices or vacuum effects that impinge on the static pressure measurement sensing area and have a drag coefficient of 0.32 or less. Each flow sensor shall be complete with instrument shut-off valves with provisions to accept a transmitter or direct indicating meter supplied by the same manufacturer as the primary element. An identification tag shall be supplied with specific flow station measurement information as required.

Materials:

All sensing elements shall be of 316/316L stainless steel. The mounting coupling shall be of the same material as the process pipe material and must include ball valve with safety chain assembly for removal under system insertion conditions. The station shall be rated to 150 °F (66 °C) and 75 PSIG (5 Bar) for insertion and to 150 °F (66 °C) and 150 PSIG (10 Bar) operational conditions and be selected to meet actual design conditions.

Accuracy & Repeatability:

The accuracy of the flow element shall be within $\pm 0.75\%$ with a repeatability of $\pm 0.1\%$ and turndown of 17:1 in the corresponding and appropriate range of Reynolds' Numbers. Certified, independent test data shall be available from NIST laboratories in similar line sizes as well as in liquids and gases upon request.

Quality:

All flow sensors shall be manufactured under an ISO 9001:2008 certified quality program. Certification documentation shall be available for inspection. To prevent corrosion no welds, rough surfaces or longitudinal depressions shall be part of the sensor in the fluid stream.

Applicable Fluids:

Liquids and gases (low pressure)

Components:

All sensors will be furnished with ½" instrument valves, threaded weld fitting, threaded ball valve, threaded cage nipple, threaded compression fitting, and ID tag as standard equipment. Available options include: Integral 3-valve or 5-valve transmitter mount manifold and integral RTD temperature sensor.

Sensor Type:

The sensor shall be as follows: **ELLIPSE® Model: AHR**
(Annular Low Pressure Wet Tap)

