

Averaging Pitot Tube - APT

DESCRIPTION

Averaging pitot tubes (APT) measure the difference between the flowing pressure (Impact Head) and the static pressure (Static Head). Multi-port Averaging pitot tubes are DP flow elements used for flow measurement of gases, vapors and liquids. In comparison to DP flow elements according to ISO 5167, they offer low pressure losses, flexible and low cost installation. They are not recommended for slurry, high viscous fluids.

DESIGN

Averaging pitot tubes (APT) work in a similar fashion to other type of flow elements. The APT is mounted into the pipe and spans the complete flow profile in the pipe. It is divided into two pressure chambers (upstream and downstream), with multiple bore holes.

The impact pressures sensed by upstream ports continually average the flow profile in an isolated plenum chamber, while the static pressure at the downstream port is sensed in a second isolated chamber. The differential pressure output of the pitot tube is normally connected to a differential pressure measuring instrument in order to generate an electrical signal from the differential pressure.

This electrical signal is proportional to the flow rate. A differential pressure measuring instrument, or a differential pressure switch can be used to provide a local indication of the flow rate or for switching tasks. This reduces the requirements for a uniform flow profile, i.e. it reduces the required straight pipe length in front of the pitot tube. APT features very low-pressure loss, typically less than 10% and easy, cost-effective installation. Typical accuracy of measurement is +/- 1% of the actual flow.

VARIANTS

- In-line
- Direct Insertion
- Retractable

APPLICATIONS

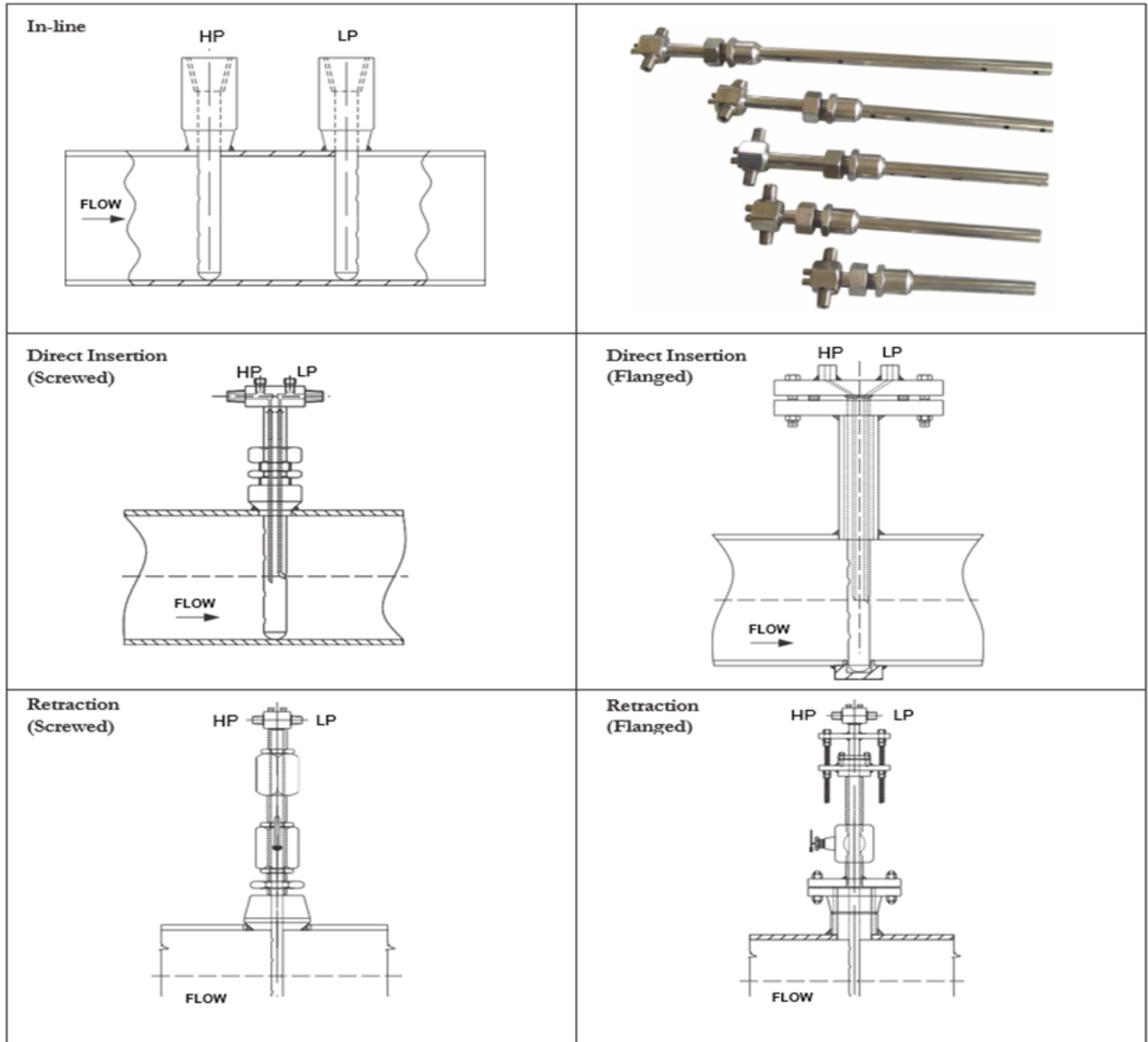
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SIZES AND MATERIALS

Element Profile: Circular Probe ½” , 1” , 2 3/8”
Lines sizes from 2” to 72” offered. Larger sizes on request.
Stainless steel as standard. Others on Request.

ACCESSORIES

Pressure taps, valves, transmitter, and end support mechanisms can be provided on request.



Type	Mounting	Top Hardware	Bottom Hardware*	Insertion Valve	Remarks
In-line	Integral	None	None	None	Directly fixed to pipe End connection 1/2" to 3" BSPM (or) plain end to effect welding (or) RF flange.
Direct Insertion	Screwed	Thread-o-let, Hexagonal Nipple & Packing (includes Ferrule & nut)	Thread-o-let, Pipe Plug	None	Process shut down needed during installation and maintenance
	Flanged	Mounting Flange, Weld-o-let, Weld Nipple & Packing	Thread-o-let, Pipe Plug	None	
Retraction	Screwed	Thread-o-let, Hex. Nipple, Extension, Nipple & Packing Gland	Thread-o-let, Pipe Plug	Ball Valve Threaded	Connection size to suit probe diameter Insert-Retract mechanism when ordered.
	Flanged	Weld-o-let, Weld nipple, extension nipple, weld neck flange & packing gland. To suit probe diameter Packing	Thread-o-let Pipe Plug	Ball Valve Threaded	
*Supplied when Bottom Support is ordered					