

Magwell's MAP is a Multi-port Averaging Pitot Tube, which produces a differential pressure which has a square root relationship with the flow rate. The MAP measures the difference between the flowing pressure (Impact Head) and the static pressure (Static Head). Based on the pipe or duct size the MAP is designed and built so that strategically placed sensing ports sample the Impact and Static pressures produced by the APT's obstruction of the flow stream profile.

Since the flow element spans the complete flow profile in the pipe and the multiple sensing ports continually average the flow profile resulting in differential pressure that represents the mean flow rate across the pipe line. The impact pressures sensed by upstream ports are averaged in an isolated plenum chamber, while the static pressure at the downstream port is sensed in a second isolated chamber.

The MAP enables accurate measurement of flow rate at a very low permanent pressure loss, typically less than 10% of the differential pressure.

Compared to conventional primary flow elements, the APT offers excellent advantages such as

- ◆ Lower operating costs. Maximum energy savings
- ◆ Lower material cost for large line sizes
- ◆ Reduced installation time & cost

APT can be designed & manufactured suitable for

- ◆ In line integral sensor for small diameter pipes: sizes up to 3"
- ◆ Direction Insertion Type in to the pipe: Screwed or Flanged process connection
- ◆ Retraction Type (Hot Tap) insertion and removal without the need to shut down the process: Screwed or Flanged process connection

All conventional secondary instruments like DP Indicators and DP Transmitters can be used to measure the differential pressure produced to monitor and control flow.

Standard Features

- ◆ Measurement of Liquids, Gases, or Steam. (Not recommended for dirty, sticky fluids)
- ◆ Low pressure loss
- ◆ Easy, Cost-efficient Installation and Operation.

Applications

- ◆ Flow Elements - Circular profiled
- ◆ Type: In line, Insertion and Hot Tap versions
- ◆ Size: 1/2", 1", 2 3/8" nominal dia.
- ◆ Material: 316 SS standard. Others on request
- ◆ Line size: 1/2" to 72" standard. Larger sizes optional
- ◆ Process connections: Screwed, flanged
- ◆ Support: Single or Double
- ◆ Instrument Connections: 1/4" / 1/2" FNPT
- ◆ Accuracy: Up to +/- 1.0% of Actual Flow,
- ◆ Repeatability: +/- 0.1%.
- ◆ Instrument Valves (Needle): CS or SS
- ◆ Direct Transmitter Mounting: Available on request



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MAP - Magwell Averaging Pitot Tubes

Type	Mounting	Top	Bottom	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	None	Connection size to suit probe dia. 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	Threaded Ball valve	



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Magwell LLC
537 Cajundome Boulevard, Suite 111
Lafayette, LA 70506

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