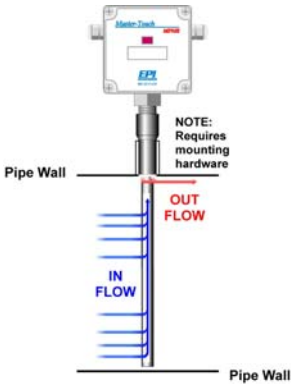
ELDRIDGE PRODUCTS Solutions

Flow Averaging Tubes (FAT ™) Patented*

Eldridge Products, Inc.'s innovative new Flow Averaging Tubes provide accurate flow measurement in large pipes and ducts without the expense and complexity of traditional multipoint systems, and are well suited to most applications with limited available straight run.

The Master-Touch FAT™ probes utilize a flow averaging tube to give a stable flow signal in applications where the flow profile is less than ideal, such as downstream of a bend, valve, tee or obstruction. In most installations, the up-stream straight run can be as short as three diameters. The FAT™ probe has a number of large diameter (0.125") inlet ports along the length of the upstream impact surface. The impact pressure at each inlet port is averaged inside the tube to create the axial flow through the tube and across our flow sensor. The gas returns to the main flow stream through the ports located near the sensing elements.



Anomalies in the actual flow profile or installations in non-circular ducts may require minor adjustments for the best accuracy. The velocity impact pressure follows a square root function. Therefore, the average velocity pressure in the FAT™ probe may vary slightly from the average of the velocities at each inlet port. The Master-Touch software supports three methods of flow signal adjustments for superior accuracy.

Configurations

Flow Averaging Tubes are available in all of our standard EPI configurations. These choices include enclosures rated for use in hazardous locations as well as general purpose enclosures, integral and remote electronics, and both inline and insertion style installation.

Inline style Flow Averaging Tubes are typically flanged and measure 14" face-to-face, though special sizes are available. Insertion style Flow Averaging Tubes are fabricated for the specific installation line size. The installation of the insertion tubes in the pipe or duct typically uses tube to pipe compression fittings or flanges, though ball valve retractor assemblies are also available. Multiple tubes can be used with a Model 9601MP System Control Panel for a grand-averaged output.

Thermal Technology

Thermal mass flowmeters are solid state instruments that use the principle of convective heat transfer to directly measure mass flow. EPI's sensors consist of two resistance temperature detectors (RTDs). A forced null, Wheatstone bridge preferentially heats one RTD; the other RTD acts as the temperature reference. The process gas flow dissipates heat from the first RTD, causing an increase in the power required to maintain a balance between the RTDs. This increase is directly related to the rate of gas flow. Our sensors are temperature compensated and insensitive to pressure changes so the output signal is a true mass flow signal.

Tel: 800/321-3569 • Fax: 831/648-7780 • Email: sales@epiflow.com • www.epiflow.com

Master-Touch™ Advantages

The Master-Touch flowmeter provides you with a powerful set of features that include:

- Continuous, real-time tracking;
- A turndown ratio of at least 100:1;
- Repeatability of 0.2% full scale;
- Time and date stamping of maximum and minimum flow rates;
- A 2-line, 16-character display for rate, total, and relay status.

Flow Averaging Tube Specifications

Linear signal output	0–5 VDC & 4–20 mA
Signal Interface	RS232 & RS485
Accuracy, including linearity (Ref.: 21°C)	±[1.0% of Reading + (0.5% + 0.05%/°C of Full Scale)]
Repeatability	±0.2% of Full Scale
Sensor response time	1 second
Turn down ratio	100:1 minimum (but not less than 50 SFPM)
Electronics temperature range	0°–50°C (32°–122°F)
Gas temperature range	-40°–66°C (-40°–150°F)
Gas pressure effect	Negligible over ± 20% of absolute calibration pressure
Pressure rating maximum	500 PSI Std., > 500 PSI special
Input power requirement	24VDC @ 250mA 115 VAC 50/60 Hz optional 230 VAC 50/60 Hz optional
Flow Transmitter power requirements	5 watts maximum
Wetted materials	316 Stainless Steel
Standard temperature & pressure (STP)	70°F & 29.92" Hg (Air .075 lb./cubic foot)
NIST traceable calibration	Standard

MP integral style and remote style flow transmitter enclosures:
Class I Division 1 Groups B, C and D; Class II E, F and G; Class III; Type 4X, 7; Ex d IIC; AEx d IIC, IP66; EEx d IIC, IP66; T2 (consult factory for T3 or T4).
Certified to US requirements; Certified to Canadian requirements

Certified to European ATEX requirements 0344 II 2 GD KEMA 04 ATEX 2276

MP remote enclosure and MPNH enclosures for use in Ordinary (Non-Hazardous) area locations:
Type 4X, IP66
Certified to US requirements;
Certified to Canadian requirements

***U. S. Patent No. 6,883,389 Other U.S. & foreign patents pending**

SPECIFICATION NOTICE

The specifications contained herein are subject to change without notice. *EPI* cannot guarantee the applicability or suitability of our products in all situations since it is impossible to anticipate or control every condition under which our products and specifications may be used.

LIMITED WARRANTY

EPI warrants its products to be free from defects in materials and workmanship for one year from the date of factory shipment. If there is a defect, the purchaser must notify EPI of the defect within the warranty period. Upon receipt of the defective product, EPI will either repair or replace the defective product or refund the purchase price at its sole option. EPI MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AS TO THE PRODUCTS. EPI MAKES NO WARRANTY THAT THE GOODS SOLD TO ANY PURCHASER ARE FIT FOR ANY PARTICULAR PURPOSE. FURTHERMORE, EPI MAKES NO WARRANTY OF MERCHANTABILITY WITH RESPECT TO ANY PRODUCTS SOLD TO ANY PURCHASERS. There are no other warranties that extend beyond the description on any brochure or price quote.

Eldridge Products, Inc.
2700 Garden Road
Building A
Monterey, CA 93940

Tel: 800/321-FLOW (3569)
Fax: 831/648-7780
Email: sales@epiflow.com
Internet: www.epiflow.com