



Laminar Flow Elements and Systems



With inherently high accuracy, stable calibration, excellent response time and repeatability, Laminar Flow Elements (LFEs) excel in critical gas and air flow measurements and are frequently utilized in validating calibration standards. Standard models are available to measure as little as 0.2 SCCM (5.9 E-06 SCFM) to as much as 2250 SCFM at standard conditions. Custom models for up to 15,000 SCFM of air are available; flow rates of gas mixtures can also be measured when the percentages of component gases and mixture properties are known. Higher accuracies can be achieved when used in conjunction with the Meriam MDT500 multivariable transmitter and software package. Stainless steel or aluminum materials make LFEs compatible with most gasses



The LFE matrix is made from individual SS tubes or windings of SS foil. These tubes are long enough, relative to their inside diameter to cause laminar flow to occur inside each tube; the result is a near linear relationship between DP and flow rate. The Differential Pressure generated across the matrix responds very quickly to changes in flow and pressure loss to the system is reduced as each LFE is sized to produce no greater than 8" water column at maximum flowing conditions. The individual tube diameters are very small, so flowing gases need to be clean and dry to preserve the calibration. Filtered inlet versions of most LFE models are available to keep the matrix clean and the calibration constant.



The MDT500 Flow Measurement System is designed to allow users to accurately measure air and gas flow rates. The direct mounted, multivariable transmitter mounts to any Meriam LFE Model. LabVIEW® Drivers and Software Development Kit are included to make using the MDT500 even easier. When using LabVIEW® executable ACFM, SCFM and mass flow can be displayed on your PC. The MDT500 delivers impressive system accuracy of +/- 0.8% FS and a response time of less than 0.1 second. With long term stability and no moving parts the unit is maintenance free. The MDT500 provides a wide flow range, while maintaining accuracy and there is no drift over time and temperature. It delivers the best repeatability and is also independent of orientation. The MDT500 offers linear response and a low head loss model is also available.

Applications Include

- Process Air and Gas Measurement
- Engine Air Intake Measurement
- Flow Benches
- Calibration Reference Standards
- Leak Detection

Manometers



U-Tube Manometers

The U-tube manometer is the most basic and widely used style of manometer, it is a versatile, economical instrument for the measurement of both liquids and gasses. There are no cams, gears, or levers to operate in the manometer, measurements are functions of gravity, therefore it does not require re-calibration. Due to these physical properties and its simplicity of operation, it is recognized by NIST as a primary standard

Well Type Manometers

Well manometers are a direct reading device designed for process monitoring, general purpose production testing or laboratory measurement. Designed for a maximum line pressure of 250 PSI (500 PSI optional) these instruments may also be used for tank level, flow measurement and leak detection.

Inclined Manometers

Inclined manometers provide greater readability by stretching a vertical differential along an inclined indicating column, giving more graduations per unit of vertical height, effectively increasing the sensitivity and accuracy of the manometer. Scales are typically graduated to the hundredth of an inch. The Model 40HEX inclined manometer is individually calibrated and the angle of inclination is set relative to the instrument level mounted above the channel. It is also capable of operating with 350-PSI line pressure.

Service and Repair

Let Meriam's factory trained technicians repair and re-calibrate your calibrators and instrumentation to original specifications in our NIST traceable facility. Quick turnaround is available when required.

Visit our website for an online form or downloadable PDF to start the process.