

Flow Measurement Systems

Meriam Instrument's Flow Measurement Systems are used in conjunction with differential pressure producing primary flow elements (such as Laminar Flow Elements, Accutubes, Orifice Plates, Venturis etc...) to quickly and automatically determine volumetric flow rate, mass flow rate and total flow. Meriam offers several options to suit your application requirements. The systems are usually ordered with all transducers necessary to measure the critical parameters of the application. Flow can be calculated using our state of the art flow computers or in some cases by using the power of your own PC. Any head type (square root) primary element can be modeled as well as Laminar Flow Elements (LFEs). See the following pages for more details.

LFS-1 Flow Measurement System



The LFS-1 Flow Measurement Systems for Meriam Laminar Flow Elements take advantage of the wide flow turndown and the percent of Reading precision of the LFE, as well as the application and calibration expertise of Meriam, to provide a superior gas flow measurement solution. LFEs are industry standards for the calibration of a wide variety of flow devices such as variable area meters, orifice plates, flow nozzles, thermal mass flow meters, turbine meters, regulators and valves. The broad range of flow measurement

they offer make LFE Measurement Systems excellent choices for measurements of engine intake air flow, electronics cooling, leak detection and quantification, production line quality control, component design and product certification applications. The integral flow computer makes real time corrections for changes in static pressure, temperature and relative humidity to provide the most accurate results possible. Calibration coefficients for up to five (5) LFEs can be stored in memory and called up for use later with a push of a button.

Special application requirements can often be accommodated by the LFS. For example, simultaneous flow measurement of two LFEs can be made and the summation of the two flows calculated and displayed. Or, for testing over a wide range for flow, the LFS can be set up to automatically switch from one LFE to another as flow rates change. Standard digital outputs on the LFS change state as the flow rate moves from the capability of one LFE to another. External solenoid valves can be used to switch the DP and P transducers to the active LFE. For control or data transmission purposes, the LFS Flow Measurement System has both analog and digital outputs. 4 – 20 mA and 0 – 10 volts analog output options are ideal for control and recording functions. RS-232 or RS-485 digital communications are standard to facilitate communication with a PC and documentation of test results.

The LFS Flow Measurement Systems (LFS) provide standard system accuracy's of $\pm 1.0\%$ of Reading over a 10:1 flow turndown and $\pm 1.1\%$ over 20:1 turndown. Calibration of the LFE and LFS Flow Measurement System together makes this possible. By using better calibration standards, Meriam can offer LFS accuracy as low as 0.60% of Reading over a 10:1 flow turndown. All LFS packages include complete system calibration and NIST traceable documentation. LFEs and systems cover gas flow ranges from 0.5 SCCM to 15,000 SCFM. See the Laminar Flow Element section of this catalog for more details on the LFE models available.