

Keep Gas Compressors Safe, Green & Efficient With The Seal-Leak Monitoring ST75 Mass Flow Meter

*Thermal Dispersion Mass Flow Monitoring For
Dry Seal Centrifugal Gas Compressors*

San Marcos, CA — Engineers who monitor natural gas compressors for seal leaks of methane (CH₄) for safety, plant efficiency and to meet environmental regulations will find the [ST75 Series thermal mass flow meter](#) from [Fluid Components International \(FCI\)](#) provides precision measurement in small lines for the detection of hazardous, non-compliant and costly gas leaks.

The continuous monitoring of gas compressor equipment for seal leaks is essential for safety, predictive maintenance, operational efficiency and to meet various federal and state environmental regulations. The U.S. Environmental Protection Agency's (EPA) 40 CFR Part 60, Subparts OOOO and OOOOa, identifies CH₄ as a significant greenhouse gas, global warming concern in the oil and gas industry. Production fields, pipelines and storage facilities all rely on centrifugal gas compressor stations that require monitoring of fugitive emissions.

Natural gas compressor stations commonly utilize dry gas seals that can be a considerable source of fugitive methane emissions. The use of a flow meter to monitor the primary and secondary vent gas on a dry seal serves two purposes. An increase in vent gas can indicate the need for preventative maintenance as the seal quality degrades. Secondly, the meter can be used to quantify the amount of methane leaked into the environment, or sent to the flare, for reporting of greenhouse gas emissions.

FCI's ST75 Series air/gas flow meter is well suited for small line, low flow measurements in various applications throughout oil and gas industry's production, processing, transportation and storage industry segments. It measures air or gases from 0.01 SCFM to 559 SCFM [0,01 NCMH to 950 NCMH] depending on line size and actual process conditions. The ST75 is factory calibrated and can provide a flow turndown range up to 100:1; surpassing the capabilities of other flow meter technologies

With built-in temperature compensation, the ST75 flow meter offers highly repeatable performance in harsh industrial process environments. It features accuracy to ±2% of reading with ±0.5% repeatability over varying process temperatures and pressures in line sizes from 0.25 inches to 2 inches [6 mm to 51 mm]. With an integral Vortab flow conditioner, the Models ST75V or ST75AV are ideal for installations



with limited straight-run and/or for operating in the Reynolds Number transitional flow range with accuracy of $\pm 1\%$ reading, $\pm 0.5\%$ full scale.

The ST75 flow meter's flow sensor design is elegant in that it does not utilize any moving parts by employing platinum RTD sensors that are precision matched and embedded in equal mass thermowells. The sensor design is less prone to fouling than other flow measurement technologies when there is a concern about particulate laden gas streams. In addition, there is minimal permanent pressure loss associated with the compact sensor design, making it more advantageous to use in low pressure, low flow applications than devices such as an orifice plate. This versatile instrument is suitable for mixed or single process gases depending on the application. It is calibrated to NIST laboratory standards that ensure its performance.

Ideal for the oil and gas industry, the durable and highly reliable ST75 flow meter features remote mounting capabilities for hazardous environments where space is at a premium or the measurement point is not easily accessed. The remote mount transmitter, which has an option for local indication of flow, temperature and totalized flow, can be mounted up to 50 feet [15 meters] away from the flow sensor in the process piping and has two 0.50-inch FNPT or M20 conduit connections for power and output wiring.

The ST75 flow meter's scalable dual 4-20 mA outputs are standard and user assignable to flow rate and/or temperature and has a 0-1 kHz pulse output suitable for remote flow totalization. The instrument can be configured for either 18 Vdc to 36 Vdc or 85 to 265 Vac input power, with or without a built-in, two-line indicating display (LCD). The ST75A version also includes either HART or Modbus RS485 (RTU or ASCII) communication protocols. The microprocessor based design also allows for self-diagnostics and features failsafe output configuration per NAMUR NE43.

Offering mass flow measurement for higher performance at an economical price with proven thermal dispersion technology, the ST75 or ST75A flow meter eliminates the need for additional pressure and temperature sensors, flow computers, or other devices that are required with orifice plates, Venturis, Vortex shedding, and other volumetric meters. The ST75 flow meter also requires virtually no maintenance for both a low installed and low life-cycle cost.

The FM/FMC approved ST75 flow meter is enclosed in an industrial grade, all-metal, dust and water resistant NEMA Type 4X (IP66) rated package designed for Class 1, Div 1/Div 2 hazardous area installations and includes a robust, all welded sensing element constructed with 316 stainless steel and Hastelloy-C tips. ATEX/IEC approvals include: Zone 1, II 2 G Ex d IIC T6 . . . T3; II 2 D Ex tD A21, IP67 T90° . . . T300°.

Fluid Components International is a global company committed to meeting the needs of its customers through innovative solutions for the most challenging requirements for sensing, and measuring flow, pressure and temperature of gases.