

Detecting Gas Compressor Fugitive Methane Leaks For Safety & Environmental Compliance To Avoid Fines

Thermal Dispersion Mass Flow Meter Continuously Monitors Centrifugal Gas Compressors for Dry Seal Failures

San Marcos, CA — Engineers monitoring natural gas compressors for dry seal leaks of toxic, combustible methane (CH₄) gas will find the [ST75 Series Thermal Mass Flow Meter](#) from [Fluid Components International \(FCI\)](#) provides them with precision CH₄ gas monitoring to detect hazardous, non-compliant and costly gas leaks.

The compact ST75 Series Air/Gas Flow Meters offer accurate, repeatable CH₄ measurement to meet environmental regulations, making them the perfect choice for crowded equipment areas where gas monitoring and measurement is essential. They are direct mass flow measuring, producing flow rate and totalized flow output signals and readouts in pounds or tons (kg, tonne) of emitted gases for mandated monitoring and reporting.

The ST75 Flow Meter detects slight changes in flow, making it ideal for use in leak detection. Gas compressor stations commonly utilize dry gas seals that can be a source of fugitive methane emissions. Using a flow meter to monitor the primary and secondary vent gas on dry seals serves two purposes. An increase in vent gas can indicate the need for 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 Air/Gas Flow Meter is also suitable for small line, low flow measurements in applications in oil and gas industry's production, processing, transportation and storage segments. It measures air or gases from 0.01 to 559 SCFM (0.01 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 $\pm 2\%$ of reading with $\pm 0.5\%$ repeatability over varying process temperatures and pressures in line sizes from 0.25 to 2 inches (6 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. This 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/gas industry, the highly reliable ST75 Flow Meter features remote mounting for equipment crowded hazardous areas or where 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) 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 standard scalable dual 4-20mA outputs are user assignable to flow rate and/or temperature and has a 0-1kHz pulse output suitable for remote flow totalization. The instrument can be configured for either 18 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) communications. The microprocessor based design also allows for self-diagnostics and features failsafe output configuration per NAMUR NE43.

Offering high performance at an economical price, 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. It 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°.

FCI solves flow and level measurement applications with advanced thermal dispersion technologies. With almost 60 years' experience and the largest installed base of thermal flow meters, flow switches and level switches, you can count on FCI to know your application and have the right solutions.