

Measuring Methane in Natural Gas, Biogas, BioMethane Upgrading, Co-Generation, Environmental Monitoring and Pollution Control Systems

Accurate, Dependable, Safe Thermal Mass Flow Gas Measurement

San Marcos, CA — Engineers responsible for methane-fueled electric power co-generation systems, oil/gas production and storage, and pollution control, will find the [ST80 Series](#) thermal mass flow meter from [Fluid Components International \(FCI\)](#) is the solution to measuring methane (CH₄) and providing emissions data to meet emerging government environmental regulations and reporting requirements.



As a greenhouse gas, methane remains in the atmosphere for approximately 9 to 15 years according to various U.S. and global government sources. CH₄ is over 20 times more effective in trapping heat in the atmosphere than carbon dioxide (CO₂) over a 100-year period and is emitted from a variety of natural and human-influenced sources.

Sources of methane emissions include: natural gas and petroleum systems, landfills, wastewater treatment plants, agricultural activities, coal mining and other industrial stationary and mobile combustion processes. Methane gas is the primary component of natural gas, and is also an important energy source in the U.S. and around the world. In the U.S., government regulators are now looking at ways to reduce methane emissions.

Thermal mass flow meters using Adaptive Sensor Technology™ (AST™) such as the ST80 Series, with their robust, open and cleanable, no-moving parts sensor design provide an ideal methane gas application solution in demanding industrial processes. Furthermore, their international approvals for Div.1/ Zone 1 ensure safe installation in hazardous gas processing areas.

The ST80 Series flow meter features FCI's Adaptive Sensor Technology™ (AST™), which is an innovative, patented hybrid sensor drive. This measuring technique combines, for the first time, both of the industry's highly proven constant power (CP) and constant temperature (CT) thermal dispersion sensing technologies in the same instrument.

Complementing this new measurement drive technique are a choice of four different precision flow sensor element designs to ensure best installed performance, including FCI's new wet gas solution. The Wet Gas MASter™ sensor developed for the ST80 Series optimizes the sensor head design and

installation to prevent condensation droplets, entrained moisture or rain from contacting the thermowells, which ensures steady, reliable measurement.

The ST80 Series flow meters are suitable for pipe diameters from 1 inch to 99 inches [25 mm to 2500 mm] and air/gas temperatures up to 850 °F [454 °C]. They feature accuracy of $\pm 1\%$ of reading, $\pm 0.5\%$ of full scale and repeatability of $\pm 0.5\%$ of reading with flow rates as low as 0.25 SFPS up to 1000 SFPS [0.07 NMPS to 305 NMPS] and 100:1 turndown.

This meter's outputs and user interface choices are extensive to interface with virtually any control system and/or set-up or configuration devices. Standard outputs include dual, NAMUR NE43 compliant 4-20 mA analog outputs, HART (version 7), Modbus 485 and a USB port. FOUNDATION Fieldbus or PROFIBUS PA or DP can be optionally added. The optional backlit LCD display provides digital and bar graph readouts of the flow rate and temperature, totalized flow, alarms, diagnostics feedback and even a user defined label/tag field.

The ST80 Series transmitter enclosure is NEMA 4X/IP67 rated, selectable for NPT or metric conduit port threading and is available in both aluminum and stainless steel and may be remotely located up to 1000 feet [305 m] apart from the flow element. The instrument also carries an independent, third-party evaluated SIL compliance.

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.