

Natural Gas: Achieving Higher Efficiency at Lower Cost With Fast-Response, Extended-Range AST™ Flow Measurement

Ideal for Chemicals, Electric Power Generation, Upstream and Midstream Oil and Gas, Food/Beverage, Manufacturing, Cement, Glass, Industrial Furnaces and Boiler Controls, Submetering

San Marcos, CA — Those responsible for the extraction, processing, storage, industrial plant distribution, consumption or sub metering of [natural gas](#) will find the latest advances in thermal mass flow measurement with [Adaptive Sensing Technology™ \(AST\)](#) from [Fluid Components International \(FCI\)](#) can help them achieve higher efficiencies at lower costs while reducing their carbon footprint to protect the planet and boost profits.

The accurate, reliable measurement of natural gas is critical in a wide range of industrial processes and manufacturing applications. For example during oil extraction, refining, transport and storage, it is sometimes necessary to flare off excess gas at the well-head, or later on during the separation process to remove water and contaminants, or aboard LNG vessels or at land-based storage facilities and distribution depots.

Many manufacturing and processing industries, as well as large commercial buildings and campuses, also rely on natural gas as a fuel source to power boilers, burners, dryers, engines, furnaces, generators, kilns and more. Controlling natural gas costs is critical to product quality, competitiveness and profits.

FCI's green-friendly AST thermal flow meters help process and plant operation engineers in these industries conserve natural gas resources by measuring it more accurately and consistently with an innovative, patent-pending flow meter hybrid sensor drive. This measuring technique combines both of the industry's highly proven constant power (CP) and constant temperature (CT) thermal dispersion sensing technologies in one flow meter.

AST thermal flow meters measure in CT mode during start-up and through the lower flow ranges, and will then seamlessly shift into CP mode at mid-range and higher flow rates. The result is AST achieves a best of both technologies performance level to deliver extremely fast response with extended measuring ranges at low power consumption to maximize sensor reliability and reduce instrument energy expenses as well.

FCI's AST technology flow meters feature a rugged no-moving parts thermal flow element design, which provides direct mass flow measurement of air and gases with just a single process penetration. This approach saves plant real estate space and eliminates unnecessary installation labor, additional wiring and



other expenses. It also prevents the performance degradation encountered with other flow technologies, which require the addition of expensive temperature and pressure sensors to compute an inferred mass flow.

With no moving parts to plug or foul, and virtually no pressure drop, AST thermal flow meters deliver extensive life cycle cost savings over higher maintenance technologies. The result is more accurate, repeatable mass flow measurement at the lowest total installed cost. In today's complex process and manufacturing plant control schemes, AST thermal flow meters economically provide the accurate gas flow measurements essential for greater process consistency, quality, plant safety and environmental compliance.

The FCI [Model ST80 Series](#) and the [Model ST100 Series](#) AST technology thermal mass air/gas flow meters are highly responsive (within 1 second) and accurate to $\pm 0.75\%$ of reading, $\pm 0.5\%$ of full scale, with repeatability of $\pm 0.5\%$ of reading. They are suitable for use in air/gas temperatures up to 850 °F [450 °C]. Their wide flow range, from 0.25 SFPS to 1000 SFPS [0.08 NMPS to 300 NMPS] and array of analog outputs and digital bus communications allow their application in almost any industrial process or manufacturing application.

The Models ST80 and ST100 Series flow meters come with impressive global HazEx certifications for Div.1/Zone 1 level safety in the most demanding environments. Best-in-class integrated or remote displays feature full graphics and text with touch controls, offering flow rate or totalized flow data as well as sophisticated diagnostics.

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 air and gases.