FLUID COMPONENTS INTERNATIONAL LLC

ST80 Thermal Mass Flow Meter Launches with Breakthrough Adaptive Sensing Technology

Innovative Hybrid Sensor Drive Combines Two Technologies To Deliver Superior Application Performance

San Marcos, CA — With the launch of its state-of-the-art **ST80 Series Thermal Mass Flow Meter** featuring breakthrough ***Adaptive Sensor Technology™ (AST™)***, the process industry's air/gas flow measurement bar has been reset higher again for rangeability, accuracy, extended service life, reliability and application-matched solutions by **Fluid Components International (FCI).**

FCI's innovative AST thermal mass flow technology for the ST80 flow meters features an innovative hybrid sensor drive. This patent-pending 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 flow sensor element designs to further ensure best installed performance, including FCI's new wet gas solution.

When operating in AST mode, the new ST80 flow meters measure in CT 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 a best of both technologies performance level where the advanced ST80 meters deliver extremely fast response with extended measuring ranges, at low power consumption to maximize sensor reliability and reduce instrument energy expenses.

The ST80 flow meters feature FCI's rugged no-moving parts flow element design, which provides direct mass flow measurement with just a single process penetration. This approach saves plant real estate space and eliminates unnecessary installation labor 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 clean, the ST80 flow meters deliver extensive lifecycle cost savings over higher maintenance technologies. The result is accurate and highly repeatable mass flow measurement at the lowest total installed cost. In today's complex process control schemes, the ST80 meters provide the accurate air and gas flow measurements essential for process consistency, quality, plant safety and environmental compliance.

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Designed for performance, the ST80 flow meters are accurate to ±1% of reading, ±0.5% of full scale and repeatability of ±0.5% of reading. The turndown ratio is factory preset to meet the requirements of the application from a minimum of 2:1 up to 100:1. This meter series operates over a wide flow range; the insertion style configuration range is: 0.25 SFPS to 1000 SFPS [0,07 NMPS to 305 NMPS]; the in-line style configuration range is: 0.0062 SCFM to 1850 SCFM [0,01 NCMH to 3140 NCMH].

While a single calibration is sufficient for many processes, the ST80 meters can optionally provide two unique calibration groups. Depending on the application need, this feature can provide significant cost and time savings. For example, the meter can be calibrated for two different compositions of mixed gases or two completely different gases. This is especially helpful in processes that are seasonally affected by environmental temperature changes, such as wastewater treatment digester gas and landfill gas reporting or recovery systems.

A three-point calibration drift self-test feature is built-in standard with all ST80 flow meters. The tests, run at a low, mid and upper points across the flow range, can be performed on demand from the front panel buttons or programmed to run automatically based on day and time to save the user time and maintenance expense. The self-test is performed in-situ – there is never a need for the ST80 meter to be removed or retracted from process piping, or to suspend the processes' operation. There are no unnecessary spares sitting on the shelf and shipping costs and lab fees for unneeded recalibration service.

The ST80 Series features multiple outputs to interface with control systems and/or set-up or configuration devices. The standard ST80 meter configuration includes: dual 4-20 mA, NAMUR NE43 compliant analog outputs, HART (version 7) and Modbus 485. Optionally available are: Foundation Fieldbus and PROFIBUS PA. All digital bus communications are full two-way I/O.

The easy-to-use ST80 Series is offered in three styles: (1) no display, (2) with display, or (3) with display and through-the-glass user programming buttons. The display is a best-in-class, backlighted information LCD. It provides users with both digital and bar graph readout of the processes flow rate and temperature, totalized flow, alarm conditions, diagnostics feedback and even a user defined label field.

The versatile ST80 flow meters are offered in a wide range of process connection, mounting and installation options including compression fittings, flanged and packing glands and with the transmitter/electronics integrally mounted with the flow element or remote mounted up to 1000 feet (300m) apart. They are suitable for a wide range of applications in pipe diameters from 1 to 99 inches (25 to 2500 mm)--from compressed air to hydrocarbon gases, single process or specialty gases to biogas mixtures and more. The meter is available for media temperature service up to 850°F [454°C]. The ST80 transmitter enclosure is NEMA 4X/IP67 rated, selectable for NPT or metric conduit port threading and is available in both aluminum and stainless steel.

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The ST80 can be ordered for either 24 Vdc or AC input powering. The 24 Vdc unit is a fully isolated DC supply that operates over a wide 19.2 Vdc to 28.8 Vdc range. The AC powered unit will operate from 85 to 265 Vac to ensure universal operation throughout the world. As with all FCI thermal flow meters, the ST80 meter requires less than 10 Watts maximum power, which is typically half that of other thermal flow meters, which minimizes plant energy cost and enhances the service life of the meter.

The ST80 Series meters feature extensive global HazEx agency safety approvals for potentially dangerous environment installations. FCI products undergo rigorous agency testing and obtain their approvals on the entire instrument, not just the enclosure. Approvals include: FM, FMc, ATEX, IECEx, and the meter is CE marked. CPA, NEPSI, EAC (TR CU) and CRN approvals have been submitted and are pending. The ST80 meter also has been independently evaluated to meet and comply as a SIL 1 device.

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.

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