

## New FCI Mass Flow Meter Optimized For Biofuel and Biomethane Applications

Biogas, Biogas Fueled Co-Gen Engines, On-Farm and Fermentation Biogas Systems,  
Landfill Methane Recovery, Coal Mine Methane Recovery,  
Municipal and Industrial Wastewater Treatment Digesters



**San Marcos, CA—** Fluid Components International (FCI) has released its new Model ST51 Mass Flow Meter for owners, operators and manufacturers of biogas production and methane capture and recovery systems. These users will find the new Model ST51 provides the high performance and features required of these applications in an explosion-proof instrument that is easy-to-install, safe and

requires virtually no-maintenance to deliver a truly best cost solution.

“This flow meter is designed specifically to solve the unique challenges to flow metering in bioprocess generated methane,” said Randy Brown, FCI’s Marketing Manager. “The ST51 is the optimum biogas flow meter solution at an affordable price. It features a no-moving parts design that’s non-clogging and operates over a wide flow range with low-flow sensitivity. It’s packaged in an explosion-proof transmitter, and the calibration is matched to the user’s actual gas composition and installation conditions.”

In anaerobic digester produced biogas, gas flow measurement is challenged by the wet, dirty nature of biogas. The biogas produced is a potentially dangerous mixed composition of primarily methane (CH<sub>4</sub>) and carbon dioxide (CO<sub>2</sub>), with smaller percentages of hydrogen sulfide (H<sub>2</sub>S) and other gases. The wetness, H<sub>2</sub>S and other particulates in the gas create a corrosive condensate that deposits itself on the pipe wall and instruments in the pipe. The gas flow varies widely too—based on fluctuating plant process demands and seasonal variations in temperature and humidity.

FCI’s innovative new ST51 Flow Meter is designed specifically to measure biogas and all methane composition gases including natural gas. The ST51 features a thermal mass, insertion-style flow element with flow accuracy to ±1% of reading over a broad flow range from 0.3 to 400 SFPS (0.08 to 122 MPS), and repeatability of ±0.5 percent of reading. The flow element is available for use in line sizes from 2 to 24 inches (51 to 610 mm) diameters. It operates over a

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wide turndown range of 100:1, which is essential due to the variable gas flows in wastewater treatment. It operates at temperatures from 0 to 250°F (-18 to 121°C) and withstands pressures up to 500 psig [34 bar(g)].

The new ST51's robust thermal mass flow sensing element has no moving parts and no orifices to clog or foul to attain virtually maintenance-free service in wet, dirty biogas applications. It also includes built-in temperature compensation circuitry for accurate, repeatable measurement year-round as temperatures rise and fall seasonally.

The flow element is constructed with a 316L stainless steel body and Hastelloy C-22 thermowell sensors to resist corrosion. It is approved for use in hazardous environments with approvals that include: FM, CSA/CRN, Class 1, Div 1, Groups B, C, D; Class 1, Div II, Groups A-D, ATEX Zone 1, II 2 G Ex d IIC T6 ...T3, II 2 D Ex tD A21 IP67 T90°C...T300°C.

For ease of use and applications flexibility, the ST51 flow meter is rich with outputs for user interfaces and information. Dual 4-20mA analog outputs are user assignable to flow rate and/or temperature, and there is a 0-1kHz pulse output for totalized flow. The transmitter's digital communications include an RS-232C port, and

With units that have the digital display option there is a wireless IR link for PDA use.

The ST51's optional integral digital display features a two-line, 16-character LCD screen that is easy to read and can be rotated in 90-degree increments for optimum viewing and installation flexibility. The LCD screen's top line is assigned to flow rate, and the bottom line is user assignable for temperature readings or totalized flow.

For applications with difficult access or display readability, the ST51's flow transmitter is also available in a remote mount configuration that can be mounted up to 50 feet (15m) away from the flow element inserted the pipe. Both the remote mount and integral transmitters are housed in an aluminum enclosure that is NEMA 4X approved and meets IP67 requirements for water and dust ingress protection. Input power for the ST51 can be selected as either 18 to 36 Vdc or 85 to 265 Vac.

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