

FCI Model ST98 Biogas Flow Meter Excels In Biomass Fermentation and Biogas Processes

Dairies, Meat and Poultry Production, Fruit/Vegetable Processors



San Marcos, CA—February 24, 2009—

Process engineers at large food/beverage industry operations, which are harvesting their bio-waste in fermentors or digesters to generate heat or power and reduce pollution will find the ST98 Biogas Flow Meter from Fluid Components International (FCI) provides

precise measurement of these wet, dirty, mixed methane composition gases.

On dairy farms, for example, large amounts of cow manure accumulate that are a rich source of biogas gas that can be harnessed for the eco-friendly production of green electric power. The output from the manure biomass digestion process results in a complex gas mixture that includes methane (CH₄), carbon dioxide (CO₂), water and trace amounts of hydrogen sulfide (H₂S).

The biomass production process requires optimizing gas creation, cleansing, drying, storage (tank or bag-type accumulator) to ultimately use the biogas as a fuel source for heating or powering a co-gen engine to produce electricity. Biogas flow must be measured at several points in the system to provide operators with critical information for optimal gas production, control and reporting. A ground flare is an integral part of the safety system for the process.

Mass flow measurement of biogas is challenging. This gas is typically 65 percent CH₄ and 35 percent CO₂. Biogas is dirty and corrosive with particulates that will quickly clog any flow meter designed with orifices, and it will foul meters with moving parts. Low flow measurement sensitivity and a wide turndown are essential due to biogas flow variability based on biomass supply and environmental fluctuations.

-More-

With its highly reliable thermal mass sensing element, the advanced ST98 Mass Flow Meter from FCI delivers precision gas flow rate, totalized flow and temperature measurement. It is ideal for biogas measurement and features high accuracy to $\pm 1\%$ of reading, 0.5% of full scale. Exceptionally consistent, the ST98 offers repeatability to $\pm 0.5\%$ of reading and is temperature-compensated for accurate measurement under variable environments.

The insertion style ST98 Flow Meter operates over a wide flow range from 0.75 to 600 SFPS (0.21 to 172 NMPS). It features a turndown ratio that is factory preset from 10:1 up to 100:1 within the calibrated flow range and operates at pressures up to 250 psig [17 bar (g)].

The ST98's thermal mass sensing element is comprised of two all-welded 316L stainless steel thermowells that protect two matched platinum precision resistance temperature detectors (RTDs). With a highly reliable no-moving parts design, one RTD is heated relative to the reference RTD, and the temperature difference between the two is proportional to the processes biogas mass flow rate.

The ST98's transmitter features robust, microprocessor-based electronics. The transmitter can be located integral with the sensor or remote mounted up to 1000 feet [350m]. A NEMA/CSA Type 4X (IP66) rated enclosure and explosion-proof, Division 1 [Zone1] rated enclosures are available for the toughest environments.

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.