



## PRESS RELEASE

For Immediate Release

### **New Biogas Flow Measurement White Paper: Overcoming the Challenges of Changing Gas Composition**

**Monterey, CA — August 27, 2013 —** [Sierra Instruments](#), a leading global mass flow instrument manufacturer, announces their new biogas measurement white paper available now for free download. Sierra's new white paper offers engineers, as well as plant and facilities managers, solutions for precise biogas measurement even with the changing gas composition, an inherent application challenge in biogas energy flow measurement. With advancements in thermal dispersion technology, Sierra's new QuadraTherm® 640i four-sensor mass flow meter provides end users with +/- 0.75% of reading above 50% of the full scale, far better than the 2.0 % of reading possible with other thermal technologies. Sierra's new four-sensor QuadraTherm technology provides end users with an optimal solution for accurately measuring and managing biogas even with its changing gas composition to produce higher energy yields.

"For the first time in our industry, we have a mass flow meter with the ability to change gas and composition without losing accuracy. In the past, this has been a major obstacle for facilities manager. Most meters need to be sent back to the factory for recalibration if the gas composition changes. Now facilities managers have an accurate turn-key biogas measurement solution—a breakthrough in the industry," says Scott Rouse, Vice President of Product Management at Sierra Instruments.

With renewable biogas energy on the rise, facilities managers require precise mass flow measurement of landfill gas (LFG) or digester gas to produce optimal heating value from the process. Sierra's new white paper "[Precise Biogas Measurement: Overcoming the Challenges of Changing Gas Composition](#)" explores the application challenges in biogas flow measurement and offers solutions to measure biogas and manage variable composition. Biogas composition changes over time with the changing conditions in the landfill or digester tank. This variable composition makes biogas very difficult to accurately measure with traditional flow measurement technology. Most flow meters are calibrated for one specific gas mix composition; thus they cannot provide accurate mass flow meter readings if the composition changes without sending the meter back to the factory for recalibration.

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New advances in thermal technology, moving from two-sensor to four-sensor technology yields unprecedented accuracy for thermal insertion flowmeters of +/- 0.75% of reading above 50% of the full scale. Along with this four-sensor technology, traditional analog measurement circuits, like the Wheatstone bridge, have been superseded by more powerful hyper-fast microprocessors that run comprehensive flow-measurement algorithms to compute mass flow. This proprietary algorithm set uses the inputs from the four sensors to solve the first law of thermodynamics for the sensor in the biogas flow stream. This algorithm allows for the management of gas composition because recalibration every time the gas changes is no longer required—a true breakthrough in mass flow measurement. With the new technology, the meter can hold up to four user customizable gas mixtures onboard and store biogas composition in a proprietary gas library, easily accessed through user software.

Sierra has an extensive library of other applications stories and white papers to guide users into the optimal flow meter selection for their application.

[Download Biogas Flow Measurement White Paper](#)  
[Sierra Application Library](#)

## **ABOUT SIERRA**

A global leader in flow measurement and control for over 40 years, Sierra instruments designs and manufactures high performance flow instrumentation for gas, liquid and steam applications commonly found in the pharmaceutical, scientific research, health, energy and semi-conductor industries. With over 150 offices in 50 countries, Sierra is uniquely positioned to provide their innovative products and lifetime support for the leading companies of today and the growth enterprises of tomorrow and lifetime support for the leading companies of today and the growth enterprises of tomorrow.

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