

New Flare Gas Flow Measurement Applications Brochure For Oil/Gas Land-Based and Offshore Installations

Petrochemical Flares and Feed Lines for Production and Refining Operations



San Marcos, CA—Process engineers will find a new [ST100 Flare Gas Flow Meter Applications Brochure](#) from [Fluid Components International \(FCI\)](#) explains how the precision metering of flare gases and feed lines optimizes the disposal of waste gases in oil/gas land-based and offshore production fields as well as refineries, improving

efficiency and safety while avoiding environmental reporting issues.

Flaring systems are used to burn-off and dispose of waste, excess or off-gases, and as a safety system to protect processes and equipment. They are found throughout the world in oil and gas processing systems, refineries and petrochemical plants. Flare flow meters are a critical component used in these systems to monitor, measure and report the gas flows within these systems. Flare flow meters provide plant operations with a tool to signal abnormal process changes, early leak detection, and report on flared gases to comply with environmental agency reporting.

FCI has been a leading provider of flare gas flow meter solutions for more than two decades. FCI flow meters are installed in both land-based and offshore platform flare systems throughout the world. The new [ST100 Series Air/Gas Flow Meters](#) leverage these experiences with extensive features and functions that extend and optimize their application in flare flow measurement.

Whether a rig's, platform's or plant's flares are single-line or a large flaring system with a complex array of tributary lines and mixed gases, there is an FCI solution. From superior low flow measurement to detect the smallest leaks and up to 1000 SFPS [305 NMPS] to accurately measure major upset conditions at very high flows, FCI ST100 Series Flow Meters provide flexibility and reliability in rugged environments.

The ST100 Series is comprised of two core model families: the ST and STP. The ST family measures both mass flow and temperature, and the exclusive STP family adds a third parameter—pressure. The STP configuration makes the ST100 the world's first triple-

variable thermal flow meter, measuring flow, temperature and pressure. Both families include single-point and dual-element models as configurations outfitted with FCI's exclusive in-situ calibration option, **VeriCal System**.

Many flare meter installations, either per plant edict or for compliance with environmental regulations, require regular validation of calibration. Traditionally this has required a cumbersome and costly project to remove the meter from service and return it to a lab, which is particularly frustrating if the meter is found to still be within calibrated specifications. FCI's exclusive VeriCal System option eliminates the need for unnecessary de-installation.

The VeriCal system provides a simple-to-use tool to verify the FCI flow meter is still within calibration without extracting the meter from pipe. The VeriCal System consists of a special VeriCal ready flow sensor, a portable VeriCal Kit (which can be used with any number of VeriCal-ready ST100 Flow Meters) and an additional benchmark calibration document to which field verification samples are compared.

The ST100 Series Flow Meters combine a broad range of easy to install insertion flow elements with the industry's most powerful and flexible electronics/transmitter and specialized, precision flare gas calibrations. With wide turn downs, specific calibrations for mixed gas compositions, FCI ST100 Series Flow Meters provide maximum output flexibility with 4-20 mA analog outputs or bus communications such as HART, Foundation™ Fieldbus, or Modbus. The ST100 Series delivers a truly state-of-the-art gas flow meter for industrial process, plant and offshore flare applications.

Should an application's needs change over time or an upgrade be desirable, ST100 Series Flow Meters adapt as necessary with a plug-in card replacement that can be changed out by plant technicians in the field. This unique capability takes "never obsolete" to a whole new level in flow measurement instrumentation.

The ST100 Flow Meter's sophisticated LCD display/readout brings new meaning to the term "process information". The ST100's unique graphical, multivariable, backlit LCD display provides the industry's most comprehensive information with continuous display of all process measurements and alarm status, and the ability to interrogate for service diagnostics.

The comprehensive ST100 measures gas mass flow rate, total flow, temperature and pressure depending on the model family. The ST100 stores up to five unique calibration

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groups to accommodate broad flow ranges, differing mixtures of the same gas and multiple gases, and obtains up to 1000:1 turndown. Also standard is an on-board data logger with an easily accessible, removable 2-GB micro-SD memory card capable of storing 21 million readings.

With the ST100, FCI becomes the industry's first thermal manufacturer to offer three different types of flow sensors to best match user applications. The FPC-style is a fast response type that features an integral, patent pending flow conditioner and protective shroud optimized for compressed air and clean gas applications. The FP-style is a fast response, general purpose design with a protective shroud and is also the sensor used with FCI's VeriCal™ in-situ calibration option. For applications with wet or dirty gases, or erratic flows, the unshrouded S-style facilitates easy cleaning and provides a smoothed response.

The ST100 can be calibrated to measure virtually any process gas, including wet gas, mixed gases and dirty gases. The basic insertion style air/gas meter features a thermal flow sensing element that measures flow from 0.25 to 1000 SFPS (0.07 NMPS to 305 NMPS) with accuracy of ± 0.75 percent of reading, ± 0.5 percent of full scale.

ST100 Flow Meters are designed for rugged industrial process and plant applications, including service up to 850°F (454°C). Both integral and remote (up to 1000 feet [300 meters]) electronics versions are available. The ST100 is agency approved for hazardous environments, including the entire instrument, the transmitter and the enclosure. Instrument approvals (submitted and pending) include: FM and FMc: Class 1, Division 1, hazardous locations, Groups B, C, D, E, F, G; ATEX and IECEx: Zone 1, II 2 GD Ex d IIC T4; The rugged enclosure is NEMA 4X/IP67 rated.

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