



SIEMENS



SITRANS F US

# Unique Flow Solutions to Meet Unique Challenges

Siemens has the ideal flowmeter for every oil & gas application

The Siemens SITRANS F US family of both wetted and clamp-on ultrasonic flowmeters goes beyond expectations to meet your hydrocarbon process challenges.

Our high-performance, accurate and easy-to-use ultrasonic flowmeters offer you an extra edge in the oil & gas business. They feature ATEX and custody transfer approvals, diagnostic capabilities, Fieldbus communication and a wide range of different coating and housing materials. Maintenance expenses are minimized because there are no moving parts to wear. Performance is maximized because there is no pressure drop or energy loss.

#### **Reliable, accurate hydrocarbon flow measurement**

If your flowmetering system were a bank, would you make money or lose money? Every segment of the oil & gas industry features flow measurement applications that have an impact on the bottom line. Doesn't your business deserve the best ultrasonic flowmetering technology available?

#### **In-line solutions**

SITRANS F US SONO 3100/SITRANS FUS060 flowmeter is ideal for challenging applications within the petrochemical flow, distribution and on/offshore industries. Together, this sensor and transmitter combination is capable of meeting demanding accuracy and repeatability requirements and offers an optimal solution for fiscal metering.

#### **SITRANS F US SONO 3100 sensor**

- Available in carbon steel and stainless steel
- Includes integrated transducers that can be changed easily without downtime or process shutdown

#### **SITRANS FUS060 transmitter**

- Meets OIML R117 custody transfer standards
- ATEX approved
- Designed for remote installation in both hazardous and non-hazardous environments
- HART and Profibus PA communication

[siemens.com/flow](http://siemens.com/flow)

## Clamp-on solutions

### SITRANS FUH1010 flowmeter

- Perfect fit for liquid hydrocarbon applications including crude oil, refined petroleum and liquefied gas
- Available in three versions: Standard Volume for accurate measurement of standard volume and mass flow, Precision Volume for dynamic gross volume and Reynolds number compensation, and Interface Detection for precise interface and multi-product identification

### SITRANS FUG1010 flowmeter

- Ideal for most natural and process gas industry applications
- Immune to most pressure-reducing valve noises
- Tolerant of challenging wet gas environments where most competing meters would be incapable of delivering readings

### SITRANS FUT1010 flowmeter

- Features the newly developed TransLoc mounting system, allowing for permanent mounting of the sensors outside the pipe to eliminate contact with the medium
- Available in two versions: one for liquid hydrocarbon applications and one for gas applications
- Liquid version meets OIML R117 and API requirements, making it ideal for custody transfer pipeline, terminal, refinery and transportation applications
- Gas version utilizes an internal AGA-8 table that allows for reporting of standard volume flow without the need for a separate volume-compensating flow computer, which makes it useful for fixed gas composition

## Leak detection solution

With the Siemens FUS-LDS Leak Detection System based on SITRANS FUH1010 flowmeters, pipeline operators will find a unique combination of sensitivity, accuracy, reliability and robustness.

- Designed to detect and locate leaks within hydrocarbon storage sites, tank farms and pipelines
- Turnkey solution offering all components from one vendor: instrumentation, software and service
- Detects releases in real time by means of pre-set alarm thresholds
- SIMATIC WinCC leak detection software features a dynamic graphic user interface allowing for easy identification of leak locations, including very small releases that occur before the alarm thresholds are breached
- Capable of operating in low- and no-flow conditions

By means of alarm thresholds that can be set to accommodate specific operating conditions, the leak detection system detects releases in real-time. If an imbalance between the inlet and outlet data is detected, an alarm is activated. The Siemens leak detection software features a new and dynamic graphic user interface allowing pipeline operators to easily identify pipeline locations on a map and quickly pinpoint the locations of any leaks, including very small releases that occur before the alarm thresholds are breached.

## Best in class

No matter what type of flow solution you may require, rest assured that Siemens has the answer. With more than 40 years of experience in the field of ultrasonic flow measurement, we are the only place the oil & gas industry needs to turn.

	In-line Solutions		Clamp-on Solutions		
	SONO 3100 / FUS060	SONOKIT / FUS060	FUH1010 / FUG1010 FUS-LD Wall Mount	FUH1010 / FUG1010 Compact	FUT1010 Liquid / Gas Wall Mount
Display	LCD 2 x 16 characters with backlight		128 x 240 pixel LCD with backlight	2 x 16 alphanumeric LCD	128 x 240 pixel LCD with backlight
Keypad	4 infrared keys		33 keypad buttons	5 magnetic switches	33 keypad buttons
Repeatability	<math>\pm 0.25\%</math> of flowrate		<math>\pm 0.15\% \dots 0.3\%</math> of flow <math>\pm 0.05</math> of API # for Interface Detectors/Density Meters		<math>\pm 0.05 \dots 0.1\%</math> of actual reading
Flow range	$Q_N = 28\text{--}13\,200\text{ m}^3/\text{h}$	$Q_N = 380\text{--}144\,000\text{ m}^3/\text{h}$	Oil: $\pm 12\text{ m/s}$ ( $\pm 40\text{ ft/s}$ ) Gas: $\pm 30\text{ m/s}$ ( $\pm 100\text{ ft/s}$ ), both bidirectional		Liquid: $\pm 12\text{ m/s}$ ( $\pm 40\text{ ft/s}$ ) Gas: up to $\pm 36.5\text{ m/s}$ ( $\pm 120\text{ ft/s}$ ), both bidirectional
Pipe diameters	DN 100–1200 (4"–48")	DN 100–4000 (4"–160")	Oil: 6.4 mm ... 9140 mm (0.25" ... 360") Gas: 25 mm ... 1520 mm (1" ... 60")		DN100 to DN600 (4" ... 24")
Data outputs	1 x analog, 1 x pulse, 1 x relay		2 x current, 2 x voltage, 2 x pulse rate, 4 x relays	2 x current, 2 x output, 1 x pulse rate	4 x isolated 4-20 mA, 2 x 0-10 VDC, 4 x digital pulse outputs (2 x open collector, 2x 0-5V TTL)
Communication	PROFIBUS PA, HART		RS 232, MODBUS, Ethernet	RS 232	RS 232 (standard) and Modbus RS 485/422 (optional)
Enclosure ratings	Transmitter: IP65 (NEMA 4X) Transducer: Up to IP68 (NEMA 6P)		IP65 (NEMA 4X) IP66 (NEMA 7)	IP65 (NEMA 7)	IP65 (NEMA 4X), IP66 (NEMA 7)
Approvals	ATEX		FM, CSA, ATEX		INMETRO, FM, CSA, ATEX and CRN

Siemens A/S, Flow Instruments  
DK-6430 Nordborg  
DENMARK

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