

Flow Measurement

SITRANS F C

Flowmeter SITRANS FC410 and FC430 for OEM customers

Overview



The complete flowmeter system SITRANS FC consist of a new FCS400 sensor in sizes DN 15 to DN50 mm and a FCT030 multichannel/multifunctional in compact or remote versions, or a single Modbus-channel FCT010 transmitter in compact version. The flowmeter is based on the latest developments within digital signal processing technology – engineered for high measuring performance:

- Fast response to rapid changes in flow
- Fast dosing applications
- High immunity against process noise
- High turndown ratio of flowrates
- Suitable for liquid and gas service
- Easy to install, commission and maintain
- Aerated flow filtering system, for advanced filtering of fluids with gas or air bubbles
- Build in Data logger for all process variables and status messages (FCT030)
- Build in Batch functionality (FCT030)

The SITRANS FC430 is available with current output HART 7.5, Modbus RS485 RTU, PROFIBUS DP or PROFIBUS PA as standard on Channel 1. Additional I/O functions can be freely configured for analog, pulse, frequency, relay or status output, or binary input.

The transmitter comes with a user configurable graphical display and SensorFlash, a micro SD card for configuration backup, firmware update and data storage.

The SITRANS FC410 is available with a Modbus RTD output transferring all process values to a any PLC or DCS system like SIMATIC S7-1200; S7-1500 or PCS7. True multi-parameter measurements i.e. massflow, density, temperature.

The SITRANS FC410 is available with MODBUS RTU (RS 485) multi-drop serial communication.

Benefits

- It is truly compact and light, fitting neatly into dense piping arrangements
- Easy maintenance because modules can be exchanged rapidly
- Effective separation of measurement from plant vibration
- Highly secure operation in safety critical applications
- Non-volatile memory of all setup and operation data
- Reliable measurements due to high signal to noise ratio
- Secure, digital transfer of measurement data from the sensor
- Shortest overall length; easy drop-in replacement into most existing installations

Application

SITRANS FCS400 mass flowmeters are especially suitable for applications for machinebuilder, skid manufacturer and OEM's in general for the process industry where there is a demand for accurate flow measurement. The meter is capable of measuring both liquid and gas flow.



Coriolis flowmeters can be applied in all industries, such as:

- Chemical: detergents, bulk chemicals, acids, alkalis, paint mixing systems, solvents and resins, fertilizer, technical gases
- Oil & Gas Processing Up- Mid- Down stream: Well-head monitoring, oil separators, refineries control, furnace control
- Hydrocarbon processing: oil refining, derivatives manufacturing, polymerization
- Power industry processing
- Marine Application: Fuel management & consumption; bunkering solutions; Boiler control
- Food & Beverage: dairy products, beer, wine, Alcohol / spirit, soft drinks, °Brix/°Plato, fruit juices and pulps, bottling, CO₂ dosing, CIP/SIP-liquids, mixture recipe control

The multiple outputs and bus communication mean that all of the process information can be read either instantaneously (10 ms update) or periodically as plant operation requires.

Flowmeter SITRANS FC410 and FC430 for OEM customers

Technical specifications

Flowmeter	SITRANS FC430	SITRANS FC410
		
Sizes	DN 15 (1/2") DN 25 (1") DN 50 (2")	
Accuracy	± 0.10 % for liquids additional ± 0.25 for gases	
• Massflow	± 5 kg/m ³ or 0.5 kg/m ³ (in preparation)	
Repeatability	± 0.05 %	
Flow range (liquids) Q _{nom} (water @ 1 bar pres- sure loss) (Q _{max} approx. 2 x Q _{nom})	3 700 kg/h (8 200 lb/h) 11 500 kg/h (25 300 lb/h) 52 000 kg/h (115 000 lb/h)	
• DN 15 (1/2")		
• DN 25 (1")		
• DN 50 (2")		
Installation	Compact or remote	Compact
Display	Full graphical display, 240 x 160 pixels with selection of 6 languages	No display
Totalizer	Three eight-digit counters for forward, net or reverse flow	One Totalizer
Process values	Mass, volume, corrected volume, temperature, density, fraction e.g. Brix, Plato % Alc., concentration	Mass, volume, temperature, density
Power supply	20 ... 27 V DC ± 10%; 100 ... 240 V AC ± 10 %, 47 ... 63 Hz ± 10%	24 V DC ± 20%; 110 mA

Flowmeter	SITRANS FC430	SITRANS FC410
Materials	<ul style="list-style-type: none"> • Sensor <ul style="list-style-type: none"> - Wetted parts 316L stainless steel - Enclosure 304 stainless steel • Transmitter Aluminum with corrosion-resistant coating 	
Enclosure rating	IP67	
Pressure ratings	<ul style="list-style-type: none"> • Measuring tubes <ul style="list-style-type: none"> - 316L 100 bar (1450 psi) • Sensor enclosure 20 bar (DN 15, DN 25) 17 bar (DN 50) Burst pressure >100 bar 	
Temperature ratings	<ul style="list-style-type: none"> • Process medium <ul style="list-style-type: none"> - DN 15 ... DN 50 -50 ... +200 °C (-58 ... +392 °F) • Ambient -40 ... +60 °C (-40 ... +140 °F) • Display -20 ... +60 °C -4 ... +140 °F 	
Process connections	<ul style="list-style-type: none"> • Flanges EN 1092-1 B1, EN 1092-1 D, ANSI/ASME B16.5, JIS B 2220, DIN 11864-2 • Pipe threads ASME B1.20 (NPT) male pipe thread, ISO228-1 G male pipe thread, VCO Quick-connect • Hygienic threads DIN 11851, DIN 11864-1A, ISO 2853, SMS 1145 • Hygienic clamps DDIN 11864-3A, DIN 32676, ISO 2852 	
Approvals	<ul style="list-style-type: none"> • Hazardous area (zone 1 / 21) ATEX, IECEx, cCSA us • Pressure equipment PED, CRN 	
NAMUR	NAMUR-compliant (e.g. NE 21, NE 41, NE 107 and NE 132)	
I/O	Up to 4 channels combining analog, relay or digital outputs and binary input	-
Communication	HART PROFIBUS PA PROFIBUS DP Modbus RTU (RS 485)	Modbus RTU (RS 485)

Selection and Ordering data (please contact Siemens sales office)

SITRANS FC430 Digital Coriolis flowmeter with SITRANS FCS400 sensor compact or remote mounting with FCT030 transmitter

Article No.

7 ME 4 6 1 3 -



SITRANS FC410 Digital Coriolis flowmeter with SITRANS FCS400 sensor compact mounting FCT010 transmitter

7 ME 4 6 1 1 -

