

Overview



The complete flowmeter system SITRANS FC consist of a new FCS400 sensor in sizes DN 15 to DN 50 mm and a FCT030 multichannel/multifunctional in compact or remote versions. 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 RS 485 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.

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
- Marine Application: fuel management & consumption; bunkering solutions; boiler control

Technical specifications

SITRANS FC430	
Sizes	DN 15 (½") DN 25 (1") DN 50 (2")
Accuracy	± 0.10 %
Repeatability	± 0.05 %
Flow range (liquids)	
Q _{nom} (water @ 1 bar pressure loss)	
• DN 15 (½")	3 700 kg/h (8 157 lb/h)
• DN 25 (1")	11 500 kg/h (25 353 lb/h)
• DN 50 (2")	52 000 kg/h (114 640 lb/h)
Architecture	Compact or remote configuration
Display	Full graphical display, 240 × 160 pixels with selection of 6 languages
Power supply	20 ... 90 V DC ± 10 %; 100 ... 240 V AC ± 10 %, 47 ... 63 Hz ± 10 %
Materials	
• Sensor	
- Wetted parts	316L stainless steel
- Enclosure	304 stainless steel
• Transmitter	Aluminum with corrosion-resistant coating class C4
Enclosure rating	IP67 ¹⁾
Pressure ratings	
• Measuring tubes	
- 316L	100 bar (1 450 psi)
- Sensore enclosure	20 bar (DN 15, DN 25) 17 bar (DN 50) >160 bar (depending on size)
• Sensor enclosure burst pressure	
Temperature ratings	
• Process medium	
- DN 15 ... DN 50	-50 ... +200 °C (-58 ... +392 °F)
• Ambient	-40 ... +60 °C (-40 ... +140 °F) ¹⁾
• Display	-20 ... +60 °C (-4 ... +140 °F)
Process connections	
• 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), ISO 228-1 G (BSPP), VCO Quick-connect
• Hygienic threads	DIN 11851, DIN 11864-1A, ISO 2853, SMS 1145
• Hygienic clamps	DIN 11864-3A, DIN 32676-C Tri-clamp, ISO 2852
Approvals	
• Hazardous area	ATEX, IECEx, EAC Ex, NEPSI, CSA, cCSA us
• Pressure equipment	PED, CRN
• Hygienic (in preparation)	3A, EHEDG
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)
EMC performance	
• Emission	EN 55011/CISPR-11 (Class A)
• Immunity	EN/IEC 61326-1 (Industry)
Mechanical load	18 ... 400 Hz random The flow meter will mechanically tolerate 3.17 g RMS in all directions. Flow accuracy cannot be guaranteed under all conditions.

¹⁾ If operating outdoors, avoid direct sunlight, particularly in warm climatic regions.

Flow Measurement

SITRANS FC (Coriolis)

Sensors and Flowmeter systems

SITRANS FC430 flowmeter for OEM customers

Selection and ordering data

Article No.

Article No.

SITRANS FC430 digital coriolis flowmeter with SITRANS FCS400 standard flow sensor compact or remote mounting with FCT030 transmitter

Click on the Article No. for the online configuration in the PIA Life Cycle Portal.

Sensor size, connector size

Article No.	Order code
3 E	
3 F	
3 G	
3 H	
3 J	
3 L	
3 M	
3 N	
4 B	
4 C	
4 D	

Process connection

Article No.	Order code
A 0	
A 1	
A 2	
A 3	
A 5	
A 6	
A 7	
A 8	
D 1	
D 2	
D 3	
D 4	
E 1	
E 3	
F 1	
G 1	
H 1	
H 2	
H 3	
J 1	
J 2	
K 1	
K 5	
L 2	
L 4	
L 6	
L 7	

SITRANS FC430 digital coriolis flowmeter with SITRANS FCS400 standard flow sensor compact or remote mounting with FCT030 transmitter

Wetted parts material

AISI 316L/1.4435/1.4404

AISI 316L/1.4435/1.4404 (polished; EHEDG; 3A) (in preparation)

Calibration/Accuracy class

0.1 % flow, 5 kg/m³ density0.1 % flow, 0.5 kg/m³ densityStandard fraction (with density 0.5 kg/m³)

Mounting style,

transmitter housing and material

None (replacement sensor)

Compact, IP67 fieldmount, aluminum

Remote, IP67 fieldmount, aluminum, M12

Remote, IP67 fieldmount, aluminum, T/Box

Remote, IP67, wall mount, aluminium

Ex approval (depending on variant)

Non-Ex

ATEX (zone 1 / zone 21)

IECEx (zone 1 / zone 21)

US (cCSAus), Div 1

Canada (cCSAus), zone 1

NEPSI

INMETRO (in preparation)

KCC (in preparation)

EAC

Local User Interface

None (replacement sensor, DSL only)

Blind

Graphical, 240 × 160 pxl

SITRANS FC430 digital coriolis flowmeter with SITRANS FCS400 standard flow sensor compact or remote mounting with FCT030 transmitter

Article No.	Order code
1	
2	
1	
4	
8	
A	
D	
G	
K	
U	
A	
C	
F	
L	
M	
N	
P	
Q	
U	
0	
1	
3	

Selection and ordering data	Order code	Order code	
Further designs		Add-on options and accessories	
Please add "-Z" to Article No. and specify Order code(s).		Please add "-Z" to Article No. and specify Order code(s).	
Cable glands		Certificates	
None (replacement sensor)	A00	Pressure testing certificate CRN	C01
Metric, no glands	A01	Pressure testing certificate PED	C02
Metric, nylon, limited to -20 °C/-4 °F	A02	Material certificate EN 10204-3.1 (wetted parts)	C05
Metric, brass/Ni plated	A05	Welding inspection certificate	C07
Metric, stainless steel	A06	Factory certificate EN 10204 2.1	C10
NPT, no glands	A11	Factory certificate EN 10204 2.2	C11
NPT, nylon, limited to -20 °C/-4 °F	A12	Cleaned for oil and grease	C50
NPT, brass/Ni plated	A15		
NPT, stainless steel	A16	Customer selected calibration	
Metric thread with M12 socket fitted	A20	Multi-point (5 flows × 2 pass) Flow 10 ... 100 % of Q_{norm}	Y60
		Multi-point (10 flows × 1 pass) Flow 10 ... 100 % of Q_{norm}	Y61
Software functions and CT approvals		Multi-point calibration (5 flows × 2 pass) Flow 2 ... 20 % of Q_{norm}	Y69
None (replacement sensor)	B10	Multi-point calibration (5 flows × 2 pass) Flow 5 ... 50 % of Q_{norm}	Y71
Standard	B11	Multi-point calibration (10 flows × 1 pass) Flow 2 ... 20 % of Q_{norm}	Y72
		Multi-point calibration (10 flows × 1 pass) Flow 5 ... 50 % of Q_{norm}	Y73
I/O configuration Ch1		Cable	
No output channel	E00	None	L50
4 ... 20 mA HART Active/Passive (non-Ex)	E02	5 m (16.4 ft), sensor cable, 4 wire, with 2 pcs M12 plugs mounted	L51
Ca 4 ... 20 mA HART active (Ex)	E06	5 m (16.4 ft), sensor cable, 4 wire, without plugs for terminal connection	L52
Ca 4 ... 20 mA HART passive (Ex)	E07	10 m (32.8 ft), sensor cable, 4 wire, with 2 pcs M12 plugs mounted	L55
PROFIBUS PA	E10	10 m (32.8 ft), sensor cable, 4 wire, without plugs for terminal connection	L56
PROFIBUS DP (non-Ex)	E11	25 m (82 ft), sensor cable, 4 wire, with 2 pcs M12 plugs mounted	L59
Modbus RTU RS 485	E14	25 m (82 ft), sensor cable, 4 wire, without plugs for terminal connection	L60
		50 m (164 ft), sensor cable, 4 wire, with 2 pcs M12 plugs mounted	L63
I/O configuration Ch2, Ch3 and Ch4		50 m (164 ft), sensor cable, 4 wire, without plugs for terminal connection	L64
None	F00	75 m (246 ft), sensor cable, 4 wire, with 2 pcs M12 plugs mounted	L67
• Non Ex: Sig O, None, None	F01	75 m (246 ft), sensor cable, 4 wire, without plugs for terminal connection	L68
• Non Ex: Sig O, Sig I/O, None	F02		
• Non Ex: Sig O, Sig I/O, Sig I/O	F03	Sensor options	
• Non Ex: Sig O, Sig I/O, R	F04	FCS400 marine approval	S22
• Non Ex: Sig O, R, R	F05	SD-Card accessibility via USB	
• Non Ex: Sig O, R, None	F06	(not allowed in USA by Patent)	
• Ex: pSig O, None, None	F11	Mass storage enabled	S30
• Ex: pSig O, pSig I/O, None	F12	Region-specific approvals and certificates	
• Ex: pSig O, pSig I/O, pSig I/O	F13	South Korea (KCC)	W28
• Ex: pSig O, pSig I/O, R	F14	Additional data	
• Ex: pSig O, R, R	F15	Please add "-Z" to Article No. and specify Order code(s) and plain text.	
• Ex: pSig O, R, None	F16	Tag name	
• Ex: aSig O, None, None	F21	Tag name plate, stainless steel	Y17
• Ex: aSig O, aSig I/O, None	F22		
• Ex: aSig O, aSig I/O, aSig I/O	F23		
• Ex: aSig O, aSig I/O, R	F24		
• Ex: aSig O, R, R	F25		
• Ex: aSig O, R, None	F26		
Notes on I/O configurations:			
a or p suffix: The I/O module is selected at ordering with either active or passive function.			
Signal: The output can be selected for Current (0 or 4 to 20 mA), frequency or pulse function in the menu.			
I: Discrete status input to the flowmeter. Functions are selected in the menu including 'Freeze output', 'Reset totalizer' (only CH3&4).			
R: Relay output for discrete status reporting. Function is selected in the menu, including 'Error', 'High flow warning'.			
The MLFB structure for FC330 systems must be filled to this level , including "-Z" options A., B., E. and F.			

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Selection and ordering data (continued)

Operating instructions for SITRANS FC430

Description	Article No.
English • for firmware V 4.0 and onwards	A5E39789392
German • for firmware V 4.0 and onwards	TBD

All literature is available to download for free, in a range of languages, at

www.siemens.com/processinstrumentation/documentation

Heating jacket for FCS400

Description	Article No.	
Heating jacket, indoor use, 0 ... 200 °C (32 ...392 °F) max. temperature. Complete with 5 m (16.4 ft) high temperature cable fitted. Dedicated plug connection to included controller • 230 V AC - DN 15 electric - DN 25 electric - DN 50 electric	A5E33035287 A5E33035324 A5E33035325	
• 115 V AC - DN 15 electric - DN 25 electric - DN 50 electric	A5E32877520 A5E32877556 A5E32877557	
Heating jacket controller, IP65. Digital display for 0 ... 200 °C (32 ...392 °F) control setpoint • 230 V AC • 115 V AC	A5E03839193 A5E03839194	