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 truely 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)
• Sensor enclosure burst pressure	>160 bar (depending on size)
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 Triclamp, 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 ana- log, 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, paritcularly in warm climatic regions.

SITRANS FC430 flowmeter for OEM customers

Selection and ordering data

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.	7ME4613-	Ord. code
Sensor size, connector size		
DN 15, DN 6 (½", ¼")	3 E	
DN 15, DN 10 (½", 3/8")	3 F	
DN 15, DN 15 (½", ½")	3 G	
DN 15, DN 20 (½", ¾")	3 H	
DN 15, DN 25 (½", 1")	3 J	
DN 25, DN 25 (1", 1")	3 L	
DN 25, DN 32 (1", 1¼")	3 M	
DN 25, DN 40 (1", 1½")	3 N	
DN 50, DN 40 (2", 1½")	4 B	
DN 50, DN 50 (2", 2")	4 C	
DN 50, DN 65 (2", 2½")	4 D	
Process connection		
EN 1092-1 B1, PN 16	A 0	
EN 1092-1 B1, PN 40	A 1	
EN 1092-1 B1, PN 63	A 2	
EN 1092-1 B1, PN 100	A 3	
EN 1092-1 D, PN 40	A 5	
EN 1092-1 D, PN 63	A 6	
EN 1092-1 D, PN 100	A 7	
EN 1092-1 D, PN 160 (max operation pressure 100 bar)	A 8	
ASME B16.5 RF, Class 150	D 1	
ASME B16.5 RF, lass 300	D 2	
ASME B16.5 RF, lass 600	D 3	
ASME B16.5 RF, Class 900 (p- and t-rating as Class 600)	D 4	
ISO 228-1G female pipe thread	E 1	
ASME B1.20.1 NPT female pipe thread	E 3	
DIN 11851 hygienic screwed	F 1	
DIN 32676, ASME, Form C (inch) (tri-clamp)	G 1	
DIN 11864-1 GS Form A Row A, Form A = O-ring type hygienic, aseptic thread connector, hygienic class H3	H 1	
DIN 11864-2 BF Form A Row A, Form A = O-ring type hygienic, aseptic flange connector, hygienic class H3	H 2	
DIN 11864-3 BKS Form A Row A, Form A = O-ring type hygienic, aseptic clamp connector, hygienic class H3	H 3	
ISO 2852 hygienic clamp	J 1	
ISO 2853 hygienic thread	J 2	
SMS 1145 hygienic screwed	K 1	
Quick connect	K 5	
JIS B2220/10K	L 2	
JIS B2220/20K	L 4	
JIS B2220/40K	L 6	
JIS B2220/63K	L 7	

Article No.

SITRANS FC430 digital coriolis flowmeter with SITRANS FCS400 standard flow sensor compact or remote mounting with FCT030 transmitter	7ME4613-	Ord. code
Wetted parts material		
AISI 316L/1.4435/1.4404	1	
AISI 316L/1.4435/1.4404 (polished; EHEDG; 3A) (in preparation)	2	
Calibration/Accuracy class		
0.1 % flow, 5 kg/m³ density	1	
0.1 % flow, 0.5 kg/m³ density	4	
Standard fraction (with density 0.5 kg/m³)	8	
Mounting style, transmitter housing and material		
None (replacement sensor)	A	
Compact, IP67 fieldmount, aluminum	D	
Remote, IP67 fieldmount, aluminum, M12	G	
Remote, IP67 fieldmount, aluminum, T/Box	K	
Remote, IP67, wall mount, aluminium	U	
Ex approval (depending on variant)		
Non-Ex	A	
ATEX (zone 1 / zone 21)	C	
IECEx (zone 1 / zone 21)	F	
US (cCSAus), Div 1	L	
Canada (cCSAus), zone 1	M	
NEPSI	N	
INMETRO (in preparation)	P	
KCC (in preparation)	Q	
EAC	U	
Local User Interface		
None (replacement sensor, DSL only)	0	
Blind	1	
Graphical, 240 × 160 pxl	3	

Selection and ordering data

	Order code
Further designs	
Please add "**-Z**" to Article No. and specify Order code(s).	
Cable glands	
None (replacement sensor)	**A00**
Metric, no glands	**A01**
Metric, nylon, limited to -20 °C/-4 °F	**A02**
Metric, brass/Ni plated	**A05**
Metric, stainless steel	**A06**
NPT, no glands	**A11**
NPT, nylon, limited to -20 °C/-4 °F	**A12**
NPT, brass/Ni plated	**A15**
NPT, stainless steel	**A16**
Metric thread with M12 socket fitted	**A20**
Sofware functions and CT approvals	
None (replacement sensor)	**B10**
Standard	**B11**
I/O configuration Ch1	
No output channel	**E00**
4 ... 20 mA HART Active/Passive (non-Ex)	**E02**
Ca 4 ... 20 mA HART active (Ex)	**E06**
Ca 4 ... 20 mA HART passive (Ex)	**E07**
PROFIBUS PA	**E10**
PROFIBUS DP (non-Ex)	**E11**
Modbus RTU RS 485	**E14**
I/O configuration Ch2, Ch3 and Ch4	
None	**F00**
• Non Ex: Sig O, None, None	**F01**
• Non Ex: Sig O, Sig I/O, None	**F02**
• Non Ex: Sig O, Sig I/O, Sig I/O	**F03**
• Non Ex: Sig O, Sig I/O, R	**F04**
• Non Ex: Sig O, R, R	**F05**
• Non Ex: Sig O, R, None	**F06**
• Ex: pSig O, None, None	**F11**
• Ex: pSig O, pSig I/O, None	**F12**
• Ex: pSig O, pSig I/O, pSig I/O	**F13**
• Ex: pSig O, pSig I/O, R	**F14**
• Ex: pSig O, R, R	**F15**
• Ex: pSig O, R, None	**F16**
• Ex: aSig O, None, None	**F21**
• 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.

	Order code
Add-on options and accessories	
Please add "**-Z**" to Article No. and specify Order code(s).	
Certificates	
Pressure testing certificate CRN	**C01**
Pressure testing certificate PED	**C02**
Material certificate EN 10204-3.1 (wetted parts)	**C05**
Welding inspection certificate	**C07**
Factory certificate EN 10204 2.1	**C10**
Factory certificate EN 10204 2.2	**C11**
Cleaned for oil and grease	**C50**
Customer selected calibration	
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**
Multi-point calibration (5 flows × 2 pass) Flow 2 ... 20 % of Q_{norm}	**Y69**
Multi-point calibration (5 flows × 2 pass) Flow 5 ... 50 % of Q_{norm}	**Y71**
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**
Cable	
None	**L50**
5 m (16.4 ft), sensor cable, 4 wire, with 2 pcs M12 plugs mounted	**L51**
5 m (16.4 ft), sensor cable, 4 wire, without plugs for terminal connection	**L52**
10 m (32.8 ft), sensor cable, 4 wire, with 2 pcs M12 plugs mounted	**L55**
10 m (32.8 ft), sensor cable, 4 wire, without plugs for terminal connection	**L56**
25 m (82 ft), sensor cable, 4 wire, with 2 pcs M12 plugs mounted	**L59**
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**
50 m (164 ft), sensor cable, 4 wire, without plugs for terminal connection	**L64**
75 m (246 ft), sensor cable, 4 wire, with 2 pcs M12 plugs mounted	**L67**
75 m (246 ft), sensor cable, 4 wire, without plugs for terminal connection	**L68**
Sensor options	
FCS400 marine approval	**S22**
SD-Card accessibility via USB	
(not allowed in USA by Patent)	
Mass storage enabled	**S30**
Region-specific approvals and certificates	
South Korea (KCC)	**W28**
Additional data	
Please add "**-Z**" to Article No. and specify Order code(s) and plain text.	
Tag name	
Tag name plate, stainless steel	**Y17**

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	**A5E33035287**	
- DN 25 electric	**A5E33035324**	
- DN 50 electric	**A5E33035325**	
• 115 V AC		
- DN 15 electric	**A5E32877520**	
- DN 25 electric	**A5E32877556**	
- DN 50 electric	**A5E32877557**	
Heating jacket controller, IP65. Digital display for 0 ... 200 °C (32 ...392 °F) control setpoint		
• 230 V AC	**A5E03839193**	
• 115 V AC	**A5E03839194**	