

## Flow Measurement

SITRANS FC (Coriolis)

Sensors and Flowmeter systems

### MASS 2100 / FC300 DN 4 with FCT030 transmitter

#### Overview



Sensors MASS 2100 and FC300 DN 4 with FCT010 / FCT030 transmitters

The SITRANS MASS 2100 and FC300 DN 4 system consists of a SITRANS sensor and a SITRANS FCT030 transmitter.

The flowmeter comes in a compact and remote design depending for all MASS 2100 DI 3 to DI 15.

MASS 2100 DI 1.5 and FC300 DN4 are only available with analogue connection of the FCT030 transmitter.

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

FCT030 is available with current output HART 7.5, Modbus RS 485 RTU, PROFIBUS DP or PROFIBUS PA as standard on Channel 1. Additional 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 microSD card for configuration backup, firmware update and data storage.

#### Benefits

- High accuracy better than 0.1 % of mass flow rate
- Large dynamic turn-down ratio better than 500:1
- Densitometer performance available through density accuracy (depending upon sensor size) ranging from 0.0005 to 0.0015 g/cm<sup>3</sup> with a typical repeatability better than 0.0001 to 0.0002 g/cm<sup>3</sup>
- Single continuous tube design, with no internal welds, reductions or flow splitters offers optimal hygiene, safety and CIP cleanability for food and beverage and pharmaceutical applications
- Markets biggest wall thickness, ensuring optimal life-time and corrosion resistance and high-pressure durability
- Balanced pipe design with little mechanical energy-loss, ensures optimal performance and stability under non-ideal and unstable process conditions (pressure, temperature, density-changes etc.)
- Full bore design provides lower pressure loss due to same internal diameter throughout the entire sensor
- 4-wire Pt1000 temperature measurement ensures optimum accuracy on mass flow, density and fraction flow
- Multi-plug electrical connector enables true “plug & play”
- Sensor pipe available in high-quality stainless steel AISI 316L/1.4435 or Hastelloy C22/2.4602 offering optimum corrosion resistance
- Centre-block design decouples process noise from the environment such as vibrations, pulsations, pressure shocks etc. making installation flexible and versatile
- Rugged and space-saving sensor design in stainless steel matching all environments
- High-pressure program as standard

## Technical specifications

<b>Sensors MASS 2100 / FC300 DN 4 with FCT030 transmitter</b>	
<b>Sizes mm ( inch)</b>	MASS 2100 DI 1.5 (1/16) MASS 2100 DI 3 (1/8") MASS 2100 DI 6 (1/4") MASS 2100 DI 15 (1/2") FC300 DN 4 (1/6")
<b>Accuracy</b>	± 0.10 % for liquids additional ±0.40 for gases
<b>Repeatability</b>	± 0.05 %
<b>Flow range Q norm (liquids)</b> (water @ 1 bar pressure loss) (Q <sub>nom</sub> )	<ul style="list-style-type: none"> <li>• DI 1.5 19 kg/h (42 lb/h)</li> <li>• DI 3 90 kg/h (198 lb/h)</li> <li>• DI 6 500 kg/h (1 102 lb/h)</li> <li>• DI 15 3 800 kg/h (8 370 lb/h)</li> <li>• DN 4 140 kg/h (308 lb/h)</li> </ul>
<b>Architecture</b>	Compact: DI 3, DI 6, DI 15 Remote digital: DI 3, DI 6, DI 15 Remote analoge: DI 1.5, DI 3, DI 6, DI 15, DN 4
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 %
<b>Material</b>	<ul style="list-style-type: none"> <li>• Sensor <ul style="list-style-type: none"> <li>- Wetted parts 316L stainless steel or Hastelly C 22</li> <li>- Enclosure 316L stainless steel</li> </ul> </li> <li>• Transmitter Aluminum with corrosion-resistant coating Class C4</li> </ul>
<b>Enclosure rating</b>	IP67 <sup>1)</sup>
<b>Pressure ratings</b>	<ul style="list-style-type: none"> <li>• Measuring tubes <ul style="list-style-type: none"> <li>- 316L Up to 265 bar (3 844 psi), depending on size and process connection</li> <li>- Nickel Alloy C4 Up to 410 bar (5 945 psi), depending on size and process connection</li> </ul> </li> <li>• Sensor enclosure No pressure containment</li> </ul>
Temperature ratings	<ul style="list-style-type: none"> <li>• Process medium -50 ... +180 °C (-58 ... +356 °F)</li> <li>• Ambient -20 ... +50 °C (-4 ... +122 °F)<sup>1)</sup></li> </ul>

<b>Sensors MASS 2100 / FC300 DN 4 with FCT030 transmitter</b>	
<b>Process connections (depending on size and pressure rating)</b>	
• Flanges	EN 1092-1 B1, ANSI/ASME B16.5
• Pipe threads	ASME B1.20 (NPT), ISO 228
• Hygienic threads	DIN 11851, ISO 2853/BS 4825 part 4 (SS3016)
• Hygienic clamps	ISO Clamp 2852
<b>Approvals</b>	
• Hazardous area	ATEX, IECEEx, EAC Ex, CSA, cCSAus, EAC
• Pressure equipment	PED
<b>NAMUR</b>	NAMUR-compliant (e.g. NE 21, NE 41, NE 107 and NE 132)
<b>I/O</b>	Up to 4 channels combining analog, relay or digital outputs and binary input
<b>Communication</b>	HART PROFIBUS PA PROFIBUS DP Modbus RTU (RS 485)
<b>EMC performance</b>	
• Emission	EN 55011/CISPR-11 (Class A)
• Immunity	EN/IEC 61326-1 (Industry)
<b>Mechanical load</b>	18 ... 1 000 Hz random The flow meter will mechanically tolerate 3.17 g RMS in all directions. Flow accuracy cannot be guaranteed under all conditions.

<sup>1)</sup> If operating outdoors, avoid direct sunlight, particularly in warm climatic regions.

## Flow Measurement

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Sensors and Flowmeter systems

### MASS 2100 / FC300 DN 4 with FCT030 transmitter

Selection and ordering data	Article No.	Article No.
<b>SITRANS FC sensors MASS 2100/FC300 with FCT030 transmitter</b>	7ME4813-	Ord. code
↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.		
<b>Sensor type and connector size</b>		
MASS 2100 DI 1.5, 1/4"	1 G	
MASS 2100 DI 3, 1/4"	3 A	
MASS 2100 DI 3, 1/4" Heated w. DIN	3 B	
MASS 2100 DI 3,1/4" Heated w. ANSI	3 C	
FC300 DN 4, 1/4"	4 A	
MASS 2100 DI 6, 1/4"	6 A	
MASS 2100 DI 6,1/4" Heated w. EN	6 B	
MASS 2100 DI 6, 1/4" Heated w. ANSI	6 C	
MASS 2100 DI 6, DN 10	6 D	
MASS 2100 DI 6, DN 10 Heated w. EN	6 E	
MASS 2100 DI 6, DN 10 Heated w. ANSI	6 F	
MASS 2100 DI 6, DN 15 (1/2")	6 G	
MASS 2100 DI 6, DN 15 (1/2") Heated w. EN	6 H	
MASS 2100 DI 6, DN 15 (1/2") Heated w. ANSI	6 J	
MASS 2100 DI 6, DN 20 (3/4")	6 K	
MASS 2100 DI 6, DN 20 (3/4") Heated w. EN	6 L	
MASS 2100 DI 6, DN 20 (3/4") Heated w. ANSI	6 M	
MASS 2100 DI 6, DN 25 (1")	6 N	
MASS 2100 DI 6, DN 25 (1") Heated w. EN	6 P	
MASS 2100 DI 6, DN 25 (1") Heated w. ANSI	6 Q	
MASS 2100 DI 15, DN 15 (1/2")	7 A	
MASS 2100 DI 15, DN 15 (1/2") Heated w. EN	7 B	
MASS 2100 DI 15, DN 15 (1/2") Heated w. ANSI	7 C	
MASS 2100 DI 15, DN 20 (3/4")	7 D	
MASS 2100 DI 15, DN 20 (3/4") Heated w. EN	7 E	
MASS 2100 DI 15, DN 20 (3/4") Heated w. ANSI	7 F	
MASS 2100 DI 15, DN 25 (1")	7 G	
MASS 2100 DI 15, DN 25 (1") Heated w. EN	7 H	
MASS 2100 DI 15, DN 25 (1") Heated w. ANSI	7 J	
<b>Process connection/Pressure</b>		
No connections (spare part transmitter)	A 0	
EN 1092-1 B1, PN 40	A 1	
EN 1092-1 B1, PN 100	A 3	
ASME B16.5, RF, Class 150	D 1	
ASME B16.5, RF, Class 600	D 3	
DIN 11851 crewed connection	F 1	
ISO 2852 hygienic clamped	J 1	
ISO 2853 hygienic screwed	J 5	
ISO 228-1 pipe thread, PN 100	C 1	
ISO 228-1 ipe thread, PN 130	C 2	
ISO 228-1 pipe thread, PN 200	C 3	
ISO 228-1 ipe thread, PN 230	C 4	
ISO 228-1 pipe thread, PN 265	C 5	
ISO 228-1 pipe thread, PN 350	C 6	
ISO 228-1 pipe thread, PN 365	C 7	
ISO 228-1 pipe thread, PN 410	C 8	
NPT ASME B 1.20.1 pipe thread, PN 100	N 1	
NPT ASME B 1.20.1 pipe thread, PN 130	N 2	
NPT ASME B 1.20.1 pipe thread, PN 200	N 3	
NPT ASME B 1.20.1 pipe thread, PN 230	N 4	
NPT ASME B 1.20.1 pipe thread, PN 265	N 5	
NPT ASME B 1.20.1 pipe thread, PN 350	N 6	
NPT ASME B 1.20.1 pipe thread, PN 365	N 7	
NPT ASME B 1.20.1 pipe thread, PN 410	N 8	
<b>Tube material (wetted) and max. operational temperature</b>		
AISI 316L/EN 1.4435, max. 115 °C	1	
AISI 316L/EN 1.4435, max. 125 °C	2	
AISI 316L/EN 1.4435, max. 180 °C	3	
Hastelloy C22/UNS N06022/EN 2.4602, max. 115 °C	5	
Hastelloy C22/UNS N06022/EN 2.4602, max. 125 °C	6	
Hastelloy C22/UNS N06022/EN 2.4602, max. 180 °C	7	
<b>Calibration</b>		
Mass flow calibration 2 flow x 2 points	1	
Mass flow calibration 2 flow x 2 points + density calibration	4	
Standard fraction (selectable by menu) incl density calibration	8	
Individual fraction (on demand)	9	N O Y

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3

Selection and ordering data	Article No.	Order code
SITRANS FC sensors MASS 2100/FC300 with FCT030 transmitter	7ME4813-	Ord. code
<b>Mounting style, transmitter housing and material</b>		
Compact mounted, IP67, Aluminium transmitter housing (DI 3, DI 6 and DI 15 )	D	
Remote field mounted, IP67, Aluminium housing, M12 socket for digital cable connection (DI 3, DI6 and DI 15 only)	G	
Remote field mount, IP67, Aluminium housing, terminal box for digital cable connection (DI 3, DI6 and DI 15)	K	
Wall mount aluminum transmitter housing, M12 socket for digital cable connection (DI 3, DI 6 and DI 15 )	U	
Remote field mount, IP67, Aluminium transmitter housing, analog cable connection with M20 connectors	Z	P O D
Remote wall mount, IP67, aluminum transmitter housing, analog cable connection with M20 connectors	Z	P O E
<b>Ex approvals</b>	A C F H M U	
Non-Ex		
ATEX Zone 1 / 21		
IECEx Zone 1 / 21 (in preparation)		
USA (FM, CSA, UL), Zone 1/Div 1		
Canada (CSA, UL), Zone 1/Div 1		
EAC Zone 1 / 21		
<b>Local User Interface</b>	1 3	
Blind		
Graphical, 240 × 160 pixels, glass lid		
<b>Further designs</b>		
Please add "-Z" to Article No. and specify Order code(s).		
<b>Cable glands</b>		
None (mechanical sensor)		A00
Metric, no glands		A01
Metric, plastic		A02
Metric, brass/Ni plated		A05
Metric, stainless steel		A06
NPT, no glands		A11
NPT, plastic		A12
NPT, brass/Ni plated		A15
NPT, stainless steel		A16
Integral M12 socket		A20
<b>SW functions &amp; CT approvals</b>		
Standard		B11
<b>I/O configuration Ch1</b>		
None (replacement sensor)		E00
4 ... 20 mA, HART, active/passive output (non-Ex)		E02
4 ... 20 mA, HART, active Ex		E06
4 ... 20 mA, HART, passive Ex		E07
PROFIBUS PA		E10
PROFIBUS DP		E11
Modbus RTU RS 485 (none-Ex)		E14
<b>I/O configuration Ch2, Ch3 and Ch4</b>		
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

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### MASS 2100 / FC300 DN 4 with FCT030 transmitter

Selection and ordering data	Order code	Accessories for MASS 2100 and FC300 DN 4 with FCT030 transmitter	
		Description	Article No.
<b>Further designs</b> Please add "-Z" to Article No. and specify Order code(s).		Mounting bracket for flow sensor MASS 2100 DI 1.5	A5E02590427
<b>Certificates</b>		Mounting bracket for FC300 DN 4 in AISI 304	A5E02590439
Press test certificate CRN	C01		
Press test certificate PED	C02		
Material certificate EN 10204-3.1	C12		
Welding inspection report	C13		
Factory certificate according to EN 10204 2.2	C14		
Factory certificate according to EN 10204 2.1	C15		
Cleaning for oil and grease/ASTM-A380	C50		
<b>Sensor data storage</b>			
Sensor with SensorFlash for FCT	S20		
Sensor with SensorProm for MASS 6000 (in preparation)	S21		
<b>SD-Card accessibility via USB</b> (not allowed in USA by Patent)			
Mass storage enabled	S30		
<b>Digital cable sensor-transmitter</b>			
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		
<b>Analog cable sensor-transmitter</b>			
1 m cable, analog, with 2 x M20 connectors	L85		
2 m cable, analog with 2 x M20 connectors	L86		
5 m cable, analog with 2 x M20 connectors	L87		
10 m cable, analog with 2 x M20 connectors	L88		
15 m cable, analog with 2 x M20 connectors	L89		
<b>Additional data</b> Please add "-Z" to Article No. and specify Order code(s) and plain text.			
<b>Tag name</b>			
Tag name plate, stainless steel	Y17		
<b>Extended calibration</b>			
Multi-point high, (5 flows x 2 passes), 10 ... 100 % of Q <sub>nom</sub>	Y61		
Multi-point high, (10 flows x 1 pass), 10 ... 100 % of Q <sub>nom</sub>	Y63		

## Overview



Sensors MASS 2100 and FC300 DN 4 with FCT010 / FCT030 transmitters

The SITRANS MASS 2100 and FC300 DN 4 system consists of a SITRANS sensor and a SITRANS FCT010 transmitter. The flowmeter comes in a compact design for all MASS 2100 DI 3 to DI 15.

MASS 2100 DI 1.5 to DI 15 and FC300 DN4 are available as remote FCT010 transmitter with analogue connection. Intended for integration into OEM skids, machines or pre-assembled plant systems, 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 with control in host system
- High immunity against process noise
- High turndown ratio of flowrates
- Suitable for liquid and gas service
- Easy to install, commission and maintain

The FCT010 transmitter delivers true multi-parameter measurements i.e. massflow, density, temperature.

FCT010 is available with Modbus RTU (RS 485) multi-drop serial communication. The flowmeter is supplied with SensorFlash, a microSD card containing all relevant certificates.

## Benefits

- High accuracy better than 0.1 % of mass flow rate
- Large dynamic turn-down ratio better than 500:1
- Densitometer performance available through density accuracy (depending upon sensor size) ranging from 0.0005 to 0.0015 g/cm<sup>3</sup> with a typical repeatability better than 0.0001 to 0.0002 g/cm<sup>3</sup>
- Single continuous tube design, with no internal welds, reductions or flow splitters offers optimal hygiene, safety and CIP cleanability for food and beverage and pharmaceutical applications
- Markets biggest wall thickness, ensuring optimal life-time and corrosion resistance and high-pressure durability
- Balanced pipe design with little mechanical energy-loss, ensures optimal performance and stability under non-ideal and unstable process conditions (pressure, temperature, density-changes etc.)
- Full bore design provides lower pressure loss due to same internal diameter throughout the entire sensor
- 4-wire Pt1000 temperature measurement ensures optimum accuracy on mass flow, density and fraction flow
- Multi-plug electrical connector enables true "plug & play"
- Sensor pipe available in high-quality stainless steel AISI 316L/1.4435 or Hastelloy C22/2.4602 offering optimum corrosion resistance
- Centre-block design decouples process noise from the environment such as vibrations, pulsations, pressure shocks etc. making installation flexible and versatile
- Rugged and space-saving sensor design in stainless steel matching all environments
- High-pressure program as standard

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### MASS 2100 / FC300 DN 4 with FCT010 transmitter

#### Technical specifications

<b>Sensors MASS 2100 / FC300 DN 4 with FCT010 transmitter</b>	
<b>Sizes mm (inch)</b>	MASS 2100 DI 1.5 (1/16) MASS 2100 DI 3 (1/8") MASS 2100 DI 6 (1/4") MASS 2100 DI 15 (1/2") FC300 DN 4 (1/6")
<b>Accuracy</b>	± 0.10 % for liquids additional ± 0.40 for gases
<b>Repeatability</b>	± 0.05 %
<b>Flow range Q norm (liquids)</b> (water @ 1 bar pressure loss) (Q <sub>nom</sub> )	<ul style="list-style-type: none"> <li>• DI 1,5 19 kg/h (42 lb/h)</li> <li>• DI 3 90 kg/h (198 lb/h)</li> <li>• DI 6 500 kg/h (1 102 lb/h)</li> <li>• DI 15 3 800 kg/h (8 370 lb/h)</li> <li>• DN 4 140 kg/h (308 lb/h)</li> </ul>
<b>Architecture</b>	Compact: DI 3, DI 6, DI 15 Remote analoge: DI 1.5, DI 3, DI 6, DI 15, DN 4
<b>Power supply</b>	12-27 V DC; 1.1 W for Ex d: 12 – 24 V DC; Intrinsic safety power supply: Ui: 20 V, Ii: 484 mA, Pi: 2.3 W, Li: 0.6 uH, Ci: 1.9 nF.
<b>Material</b>	<ul style="list-style-type: none"> <li>• Sensor           <ul style="list-style-type: none"> <li>- Wetted parts 316L stainless steel or Hastelly C 22</li> <li>- Enclosure 316L stainless steel</li> </ul> </li> <li>• Transmitter Aluminum with corrosion-resistant coating Class C4</li> </ul>
<b>Enclosure rating</b>	IP67 <sup>1)</sup>
<b>Pressure ratings</b>	<ul style="list-style-type: none"> <li>• Measuring tubes           <ul style="list-style-type: none"> <li>- 316L Up to 265 bar (3 844 psi), depending on size and process connection</li> <li>- Nickel Alloy C4 Up to 410 bar (5 945 psi), depending on size and process connection</li> </ul> </li> <li>• Sensor enclosure No pressure containment</li> </ul>
<b>Temperature ratings</b>	<ul style="list-style-type: none"> <li>• Process medium -50 ... +180 °C (-58 ... +356 °F)</li> <li>• Ambient -20 ... +50 °C (-4 ... +122 °F)<sup>1)</sup></li> </ul>

<b>Sensors MASS 2100 / FC300 DN 4 with FCT010 transmitter</b>	
<b>Process connections (depending on size and pressure rating)</b>	
<ul style="list-style-type: none"> <li>• Flanges EN 1092-1 B1, ANSI/ASME B16.5</li> <li>• Pipe threads ASME B1.20 (NPT), ISO 228</li> <li>• Hygienic threads DIN 11851, ISO 2853/BS 4825 part 4 (SS3016)</li> <li>• Hygienic clamps ISO Clamp 2852</li> </ul>	
<b>Approvals</b>	
<ul style="list-style-type: none"> <li>• Hazardous area ATEX, IECEEx, EAC Ex, CSA, cCSAus, EAC PED</li> <li>• Pressure equipment</li> </ul>	
<b>NAMUR</b>	NAMUR-compliant (e.g. NE 21, NE 41, NE 107 and NE 132)
<b>I/O</b>	Up to 4 channels combining analog, relay or digital outputs and binary input
<b>Communication</b>	Modbus RTU (RS 485)
<b>EMC performance</b>	
<ul style="list-style-type: none"> <li>• Emission EN 55011/CISPR-11 (Class B)</li> <li>• Immunity EN/IEC 61326-1 (Industry)</li> </ul>	
<b>Mechanical load</b>	<p>18 ... 1 000 Hz random The flow meter will mechanically tolerate 3.17 g RMS in all directions. Flow accuracy cannot be guaranteed under all conditions.</p>

<sup>1)</sup> If operating outdoors, avoid direct sunlight, particularly in warm climatic regions.

# Flow Measurement

## SITRANS FC (Coriolis) Sensors and Flowmeter systems

### MASS 2100 / FC300 DN 4 with FCT010 transmitter

Selection and ordering data	Article No.	Article No.
SITRANS FC sensors MASS 2100/FC300 with FCT010 transmitter	7ME4811-	Ord. code
↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.		
<b>Sensor type and connector size</b>		
MASS 2100 DI 1.5, 1/4"	1 G	
MASS 2100 DI 3, 1/4"	3 A	
MASS 2100 DI 3, 1/4" Heated w. DIN	3 B	
MASS 2100 DI 3,1/4" Heated w. ANSI	3 C	
FC300 DN 4, 1/4"	4 A	
MASS 2100 DI 6, 1/4"	6 A	
MASS 2100 DI 6,1/4" Heated w. EN	6 B	
MASS 2100 DI 6, 1/4" Heated w. ANSI	6 C	
MASS 2100 DI 6, DN 10	6 D	
MASS 2100 DI 6, DN 10 Heated w. EN	6 E	
MASS 2100 DI 6, DN 10 Heated w. ANSI	6 F	
MASS 2100 DI 6, DN 15 (1/2")	6 G	
MASS 2100 DI 6, DN 15 (1/2") Heated w. EN	6 H	
MASS 2100 DI 6, DN 15 (1/2") Heated w. ANSI	6 J	
MASS 2100 DI 6, DN 20 (3/4")	6 K	
MASS 2100 DI 6, DN 20 (3/4") Heated w. EN	6 L	
MASS 2100 DI 6, DN 20 (3/4") Heated w. ANSI	6 M	
MASS 2100 DI 6, DN 25 (1")	6 N	
MASS 2100 DI 6, DN 25 (1") Heated w. EN	6 P	
MASS 2100 DI 6, DN 25 (1") Heated w. ANSI	6 Q	
MASS 2100 DI 15, DN 15 (1/2")	7 A	
MASS 2100 DI 15, DN 15 (1/2") Heated w. EN	7 B	
MASS 2100 DI 15, DN 15 (1/2") Heated w. ANSI	7 C	
MASS 2100 DI 15, DN 20 (3/4")	7 D	
MASS 2100 DI 15, DN 20 (3/4") Heated w. EN	7 E	
MASS 2100 DI 15, DN 20 (3/4") Heated w. ANSI	7 F	
MASS 2100 DI 15, DN 25 (1")	7 G	
MASS 2100 DI 15, DN 25 (1") Heated w. EN	7 H	
MASS 2100 DI 15, DN 25 (1") Heated w. ANSI	7 J	
<b>Process connection/Pressure</b>		
No connections (spare part transmitter)	A 0	
EN 1092-1 B1, PN 40	A 1	
EN 1092-1 B1, PN 100	A 3	
ASME B16.5, RF, Class 150	D 1	
ASME B16.5, RF, Class 600	D 3	
DIN 11851 screwed connection	F 1	
ISO 2852 hygienic clamped	J 1	
ISO 2853 hygienic screwed	J 5	
ISO 228-1 pipe thread, PN 100	C 1	
ISO 228-1 pipe thread, PN 130	C 2	
ISO 228-1 pipe thread, PN 200	C 3	
ISO 228-1 pipe thread, PN 230	C 4	
<b>Tube material (wetted) and max. operational temperature</b>		
ISO 228-1 pipe thread, PN 265	C 5	
ISO 228-1 pipe thread, PN 350	C 6	
ISO 228-1 pipe thread, PN 365	C 7	
ISO 228-1 pipe thread, PN 410	C 8	
NPT ASME B 1.20.1 pipe thread, PN 100	N 1	
NPT ASME B 1.20.1 pipe thread, PN 130	N 2	
NPT ASME B 1.20.1 pipe thread, PN 200	N 3	
NPT ASME B 1.20.1 pipe thread, PN 230	N 4	
NPT ASME B 1.20.1 pipe thread, PN 265	N 5	
NPT ASME B 1.20.1 pipe thread, PN 350	N 6	
NPT ASME B 1.20.1 pipe thread, PN 365	N 7	
NPT ASME B 1.20.1 pipe thread, PN 410	N 8	
<b>Calibration</b>		
Mass flow calibration 2 flow × 2 points	1	
Mass flow calibration 2 flow × 2 points + density calibration	4	
<b>Mounting style, transmitter housing and material</b>		
Compact mounted, IP67, Aluminium transmitter housing (DI 3, DI 6 and DI 15 only)	D	
Remote mounted, IP67, Aluminium transmitter housing, analog cable connection with M20 connectors	Z	P O D
<b>Ex approvals</b>		
Non-Ex	A	
ATEX Zone 1 / 21	C	
IECEx Zone 1 / 21 (in preparation)	F	
USA (FM, CSA, UL), Zone 1/Div 1	H	
Canada (CSA, UL), Zone 1/Div 1	M	
EAC Zone 1 / 21	U	
<b>Local User Interface</b>		
Blind	1	

## Flow Measurement

SITRANS FC (Coriolis)

Sensors and Flowmeter systems

### MASS 2100 / FC300 DN 4 with FCT010 transmitter

Selection and ordering data	Order code	Order code
<b>Futher designs</b> Please add "-Z" to Article No. and specify Order code(s).		
<b>Cable glands</b>		
None (mechanical sensor)	A00	
Metric, no glands	A01	
Metric, plastic	A02	
Metric, brass/Ni plated	A05	
Metric, stainless steel	A06	
NPT, no glands	A11	
NPT, plastic	A12	
NPT, brass/Ni plated	A15	
NPT, stainless steel	A16	
Integral M12 socket	A20	
<b>SW functions &amp; CT approvals</b>		
Standard	B11	
<b>I/O configuration Ch1</b>		
Modbus RTU RS 485	E14	
<b>I/O configuration Ch2, Ch3 and Ch4</b>		
None	F00	
<b>Certificates</b>		
Press test certificate CRN	C01	
Press test certificate PED	C02	
Material certificate EN 10204-3.1	C12	
Welding inspection report	C13	
Factory certificate according to EN 10204 2.2	C14	
Factory certificate according to EN 10204 2.1	C15	
Cleaning for oil and grease/ASTM-A380	C50	
Cleaned according to PWIS	C51	
<b>Digital cable sensor-transmitter</b>		
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	
5 m (16.4 ft), sensor cable, 4 wire, with 1 pcs M12 plugs mounted	L53	
10 m (32.8 ft) standard with M12 connectors fitted	L55	
10 m (32.8 ft), standard, without plugs	L56	
10 m (32.8 ft), sensor cable, 4 wire, with 1 pcs M12 plugs mounted	L57	
25 m (82 ft), standard with M12 connectors fitted	L59	
25 m (82 ft), standard, without plugs	L60	
25 m (82 ft), sensor cable, 4 wire, with 1 pcs M12 plugs mounted	L61	
50 m (164 ft), standard with M12 connectors fitted	L63	
50 m (164 ft), standard, without plugs	L64	
50 m (164 ft), sensor cable, 4 wire, with 1 pcs M12 plugs mounted	L65	
75 m (246 ft), standard with M12 connectors fitted	L67	
75 m (246 ft), standard, without plugs	L68	
75 m (246 ft), sensor cable, 4 wire, with 1 pcs M12 plugs mounted	L69	
<b>Futher designs</b> Please add "-Z" to Article No. and specify Order code(s).		
<b>Analog cable sensor-transmitter</b>		
1 m cable, analog, with 2 × M20 connectors	L85	
2 m cable, analog, with 2 × M20 connectors	L86	
5 m cable, analog, with 2 × M20 connectors	L87	
10 m cable, analog, with 2 × M20 connectors	L88	
15 m cable, analog, with 2 × M20 connectors	L89	
<b>Additional data</b> Please add "-Z" to Article No. and specify Order code(s) and plain text.		
<b>Tag name</b>		
Tag name plate, stainless steel	Y17	
<b>Extended calibration</b>		
Multi-point high, (5 flows × 2 passes), 10 ... 100 % of $Q_{nom}$	Y61	
Multi-point high, (10 flows × 1 pass), 10 ... 100 % of $Q_{nom}$	Y63	
<b>Accessories for MASS 2100 and FC300 DN 4 with FCT010 transmitter</b>		
<b>Description</b>	<b>Article No.</b>	
SITRANS I300 – Isolating power supply – Ex barrier	A5E39832532	
Mounting bracket for flow sensor MASS 2100 DI 1.5	A5E02590427	
Mounting bracket for FC300 DN 4 in AISI 304	A5E02590439	

## Overview



Sensors MASS 2100 and FC300 DN 4 (left) with FCT070 transmitter (right)

Full integration in the Siemens SIMATIC systems PCS7 or in TIA portal with FCT070 Faceplates with the ET 200SP ST & HF powerful IO system for compact control cabinets.

The SITRANS MASS 2100 and FC300 DN 4 system consists of a SITRANS sensor and a SITRANS FCT070 transmitter.

The flowmeter comes in a compact design for all MASS 2100 DI 3 to DI 15.

MASS 2100 DI and FC300 DN 4 the DSL is remote mounted with a analogue connection.

The complete flowmeter system consists of a sensor and a SIMATIC ET 200SP ST & HF Coriolis module FCT070 transmitter.

TM FCT070 offers real-time data processing and the display of all measuring and status data of the Coriolis flowmeter.

For hazardous area the MASS 2100 and the FSC300 sensor can be placed in Ex Zone 1 or Class 1 Div 1 locations . Together with the SITRANS I300 power/barrier module the FCT070 transmitter can be place in Zone 2 or Div 2 areas.

## Benefits

- High accuracy better than 0.1 % of mass flow rate
- Large dynamic turn-down ratio better than 500:1
- Densitometer performance available through density accuracy (depending upon sensor size) ranging from 0.0005 to 0.0015 g/cm<sup>3</sup> with a typical repeatability better than 0.0001 to 0.0002 g/cm<sup>3</sup>
- Single continuous tube design, with no internal welds, reductions or flow splitters offers optimal hygiene, safety and CIP cleanability for food and beverage and pharmaceutical applications
- Markets biggest wall thickness, ensuring optimal life-time and corrosion resistance and high-pressure durability
- Balanced pipe design with little mechanical energy-loss, ensures optimal performance and stability under non-ideal and unstable process conditions (pressure, temperature, density-changes etc.)
- Full bore design provides lower pressure loss due to same internal diameter throughout the entire sensor
- 4-wire Pt1000 temperature measurement ensures optimum accuracy on mass flow, density and fraction flow
- Multi-plug electrical connector enables true "plug & play"
- Sensor pipe available in high-quality stainless steel AISI 316L/1.4435 or Hastelloy C22/2.4602 offering optimum corrosion resistance
- Centre-block design decouples process noise from the environment such as vibrations, pulsations, pressure shocks etc. making installation flexible and versatile
- Rugged and space-saving sensor design in stainless steel matching all environments
- High-pressure program as standard
- Full hazardous area solutions
- Easy integration into automation process control as TIA portal and PCS7
- Easy selection and integration of flow meters via TIA-Selector
- Cost effective integration of Coriolis flow meters for PLC controlled machines
- SITRANS FCT070 ET 200SP technology module and can combined with all other SIMATIC ET200 ST & HF modules
- The FCT070 has all high -end transmitter functionality integrated including the advanged fraction tables on bord
- Fast and trouble-free communication between the flow meter and the PLC through digital data communication with up to 10 ms update rate
- Integrated advanced Two-stage batch controller functionality without additional modules. I/Os are onboard

## Flow Measurement

SITRANS FC (Coriolis)

Sensors and Flowmeter systems

### MASS 2100 / FC300 DN 4 with FCT070 transmitter

#### Technical specifications

<b>Sensors MASS 2100 / FC300 DN 4 with FCT070 transmitter</b>	
<b>Sizes mm (inch)</b>	MASS 2100 DI 1.5 (1/16) MASS 2100 DI 3 (1/8") MASS 2100 DI 6 (1/4") MASS 2100 DI 15 (1/2") FC300 DN 4 (1/6")
<b>Accuracy</b>	± 0.10 % for liquids additional ±0.40 for gases
<b>Repeatability</b>	± 0.05 %
<b>Flow range Q norm (liquids)</b> (water @ 1 bar pressure loss) (Q <sub>nom</sub> )	• DI 1.5 19 kg/h (42 lb/h) • DI 3 90 kg/h (198 lb/h) • DI 6 500 kg/h (1 102 lb/h) • DI 15 3 800 kg/h (8 370 lb/h) • DN 4 140 kg/h (308 lb/h)
<b>Architecture</b>	Remote configuration
<b>System integration</b>	PCS7 and TIA portal with faceplates
<b>Power supply</b>	24 V DC; 19.2 ... 28.8 V
<b>Material</b>	<ul style="list-style-type: none"> <li>• Sensor           <ul style="list-style-type: none"> <li>- Wetted parts 316L stainless steel or Hastelly C 22</li> <li>- Enclosure 316L stainless steel</li> </ul> </li> <li>• Transmitter Aluminum with corrosion-resistant coating Class C4</li> </ul>
<b>Enclosure rating</b>	Sensor: IP67 FCT070 transmitter: IP20
<b>Pressure ratings</b>	<ul style="list-style-type: none"> <li>• Measuring tubes           <ul style="list-style-type: none"> <li>- 316L Up to 265 bar (3 844 psi), depending on size and process connection</li> <li>- Nickel Alloy C4 Up to 410 bar (5 945 psi), depending on size and process connection</li> </ul> </li> <li>• Sensor enclosure No pressure containment</li> </ul>
<b>Temperature ratings</b>	<ul style="list-style-type: none"> <li>• Process medium -50 ... +180 °C (-58 ... +356 °F)</li> <li>• Ambient -40 ... +60 °C (-4 ... +122 °F)<sup>1)</sup></li> </ul>

<b>Sensors MASS 2100 / FC300 DN 4 with FCT070 transmitter</b>	
<b>Process connections (depending on size and pressure rating)</b>	
<ul style="list-style-type: none"> <li>• Flanges</li> <li>• Pipe threads</li> <li>• Hygienic threads</li> <li>• Hygienic clamps</li> </ul>	EN 1092-1 B1, ANSI/ASME B16.5 ASME B1.20 (NPT), ISO 228 DIN 11851, ISO 2853/BS 4825 part 4 (SS3016) ISO Clamp 2852
<b>Approvals</b>	
<ul style="list-style-type: none"> <li>• Hazardous area</li> <li>• Pressure equipment</li> </ul>	Sensor : ATEX, IECEEx, EAC Ex, CSA, cCSAus, EAC FCT070 transmitter: Zone 2 & Class 1 Div 2 ATEX, IECEEx, EAC Ex, CSA, cCSAus, FM; NEPSI, EAC PED
<b>NAMUR</b>	NAMUR-compliant (e.g. NE 21, NE 41, NE 107 and NE 132)
<b>I/O</b>	2 digital Input and 2 digital output Single and 2 stage batch function
<b>Communication</b>	Integrated PROFINET for SIMATIC integration and other PROFINET Controllers
<b>Totalizer</b>	3 totalizer
<b>EMC performance</b>	<ul style="list-style-type: none"> <li>• Emission</li> <li>• Immunity</li> </ul> EN 55011/CISPR-11 (Class A) EN/IEC 61326-1 (Industry)
<b>Mechanical load</b>	18 ... 1 000 Hz random The flow meter will mechanically tolerate 3.17 g RMS in all directions. Flow accuracy cannot be guaranteed under all conditions.

<sup>1)</sup> If operating outdoors, avoid direct sunlight, particularly in warm climatic regions.

# Flow Measurement

## SITRANS FC (Coriolis) Sensors and Flowmeter systems

### MASS 2100 / FC300 DN 4 with FCT070 transmitter

<b>Selection and ordering data</b>		<b>Article No.</b>	<b>Article No.</b>
SITRANS FC sensors MASS 2100/FC300 DN 4 with DSL ready for FCT070	↗	7ME4817-	Ord. code
↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.			
<b>Sensor type and connector size</b>			
MASS 2100 DI 1.5, 1/4"	1 G		
MASS 2100 DI 3, 1/4"	3 A		
MASS 2100 DI 3, 1/4" Heated w. DIN	3 B		
MASS 2100 DI 3,1/4" Heated w. ANSI	3 C		
FC300 DN 4, 1/4"	4 A		
MASS 2100 DI 6, 1/4"	6 A		
MASS 2100 DI 6,1/4" Heated w. EN	6 B		
MASS 2100 DI 6, 1/4" Heated w. ANSI	6 C		
MASS 2100 DI 6, DN 10	6 D		
MASS 2100 DI 6, DN 10 Heated w. EN	6 E		
MASS 2100 DI 6, DN 10 Heated w. ANSI	6 F		
MASS 2100 DI 6, DN 15 (1/2")	6 G		
MASS 2100 DI 6, DN 15 (1/2") Heated w. EN	6 H		
MASS 2100 DI 6, DN 15 (1/2") Heated w. ANSI	6 J		
MASS 2100 DI 6, DN 20 (3/4")	6 K		
MASS 2100 DI 6, DN 20 (3/4") Heated w. EN	6 L		
MASS 2100 DI 6, DN 20 (3/4") Heated w. ANSI	6 M		
MASS 2100 DI 6, DN 25 (1")	6 N		
MASS 2100 DI 6, DN 25 (1") Heated w. EN	6 P		
MASS 2100 DI 6, DN 25 (1") Heated w. ANSI	6 Q		
MASS 2100 DI 15, DN 15 (1/2")	7 A		
MASS 2100 DI 15, DN 15 (1/2") Heated w. EN	7 B		
MASS 2100 DI 15, DN 15 (1/2") Heated w. ANSI	7 C		
MASS 2100 DI 15, DN 20 (3/4")	7 D		
MASS 2100 DI 15, DN 20 (3/4") Heated w. EN	7 E		
MASS 2100 DI 15, DN 20 (3/4") Heated w. ANSI	7 F		
MASS 2100 DI 15, DN 25 (1")	7 G		
MASS 2100 DI 15, DN 25 (1") Heated w. EN	7 H		
MASS 2100 DI 15, DN 25 (1") Heated w. ANSI	7 J		
<b>Process connection/Pressure</b>			
No connections (spare part transmitter)	A 0		
EN 1092-1 B1, PN 40	A 1		
EN 1092-1 B1, PN 100	A 3		
ASME B16.5, RF, Class 150	D 1		
ASME B16.5, RF, Class 600	D 3		
DIN 11851 crewed connection	F 1		
ISO 2852 hygienic clamped	J 1		
ISO 2853 hygienic screwed	J 5		
ISO 228-1 pipe thread, PN 100	C 1		
ISO 228-1 ipe thread, PN 130	C 2		
ISO 228-1 pipe thread, PN 200	C 3		
<b>Tube material (wetted) and max. operational temperature</b>			
AISI 316L/EN 1.4435, max. 115 °C	1		
AISI 316L/EN 1.4435, max. 125 °C	2		
AISI 316L/EN 1.4435, max. 180 °C	3		
Hastelloy C22/UNS N06022/EN 2.4602, max. 115 °C	5		
Hastelloy C22/UNS N06022/EN 2.4602, max. 125 °C	6		
Hastelloy C22/UNS N06022/EN 2.4602, max. 180 °C	7		
<b>Calibration</b>			
Mass flow calibration 2 flow × 2 points	1		
Mass flow calibration 2 flow × 2 points + density calibration	4		
<b>Mounting style, transmitter housing and material</b>			
Compact mounted, IP67, Aluminium transmitter housing (DI 3, DI 6 and DI 15 )	D		
Remote field mount, IP67, Aluminium transmitter housing, analog cable connection with M20 connectors	Z	P O D	
<b>Ex approvals</b>			
Non-Ex		A	
ATEX Zone 1 / 21		C	
IECEx Zone 1 / 21 (in preparation)		F	
USA (FM, CSA, UL), Zone 1/Div 1		H	
Canada (CSA, UL), Zone 1/Div 1		M	
EAC Zone 1 / 21		U	
<b>Local User Interface</b>			
Blind		1	

## Flow Measurement

SITRANS FC (Coriolis)

Sensors and Flowmeter systems

### MASS 2100 / FC300 DN 4 with FCT070 transmitter

Selection and ordering data	Order code	Order code
<b>Further designs</b> Please add "-Z" to Article No. and specify Order code(s).		
<b>Cable glands</b>		
None (mechanical sensor)	A00	L85
Metric, no glands	A01	L86
Metric, plastic	A02	L87
Metric, brass/Ni plated	A05	L88
Metric, stainless steel	A06	L89
NPT, no glands	A11	
NPT, plastic	A12	
NPT, brass/Ni plated	A15	
NPT, stainless steel	A16	
Integral M12 socket	A20	
<b>SW functions &amp; CT approvals</b>		
Standard	B10	Y61
<b>I/O configuration Ch1</b>		
None (replacement sensor)	E00	Y63
<b>I/O configuration Ch2, Ch3 and Ch4</b>		
None	F00	
<b>Certificates</b>		
Press test certificate CRN	C01	
Press test certificate PED	C02	
Material certificate EN 10204-3.1	C12	
Welding inspection report	C13	
Factory certificate according to EN 10204 2.2	C14	
Factory certificate according to EN 10204 2.1	C15	
Cleaning for oil and grease/ASTM-A380	C50	
<b>Digital cable sensor-transmitter</b>		
None	L50	
5 m (16.4 ft), sensor cable, 4 wire, without plugs for terminal connection	L52	
5 m (16.4 ft), sensor cable, 4 wire, with 1 pcs M12 plugs mounted	L53	
10 m (32.8 ft), sensor cable, 4 wire, without plugs for terminal connection	L56	
10 m (32.8 ft), sensor cable, 4 wire, with 1 pcs M12 plugs mounted	L57	
25 m (82 ft), sensor cable, 4 wire, without plugs for terminal connection	L60	
25 m (82 ft), sensor cable, 4 wire, with 1 pcs M12 plugs mounted	L61	
50 m (164 ft), sensor cable, 4 wire, without plugs for terminal connection	L64	
50 m (164 ft), sensor cable, 4 wire, with 1 pcs M12 plugs mounted	L65	
75 m (246 ft), sensor cable, 4 wire, without plugs for terminal connection	L68	
75 m (246 ft), sensor cable, 4 wire, with 1 pcs M12 plugs mounted	L69	
<b>Further designs</b> Please add "-Z" to Article No. and specify Order code(s).		
<b>Analog cable sensor-transmitter</b>		
1 m cable, analog, with 2 x M20 connectors		
2 m cable, analog with 2 x M20 connectors		
5 m cable, analog with 2 x M20 connectors		
10 m cable, analog with 2 x M20 connectors		
15 m cable, analog with 2 x M20 connectors		
<b>Additional data</b> Please add "-Z" to Article No. and specify Order code(s) and plain text.		
<b>Tag name</b>		
Tag name plate, stainless steel		Y17
<b>Extended calibration</b>		
Multi-point high, (5 flows x 2 passes), 10 ... 100 % of $Q_{nom}$		
Multi-point high, (10 flows x 1 pass), 10 ... 100 % of $Q_{nom}$		
<b>Description</b>	<b>Article No.</b>	
<b>SITRANS FCT070 Transmitter for ET 200SP</b>	7ME4138-6AA00-0BB1	
<b>BU20-P12+A0+4B, PU1 Baseunit plate for ET 200SP</b>	6ES7193-6BP20-0BB0 6ES7193-6BP20-0BB1	
<b>SITRANS I300 Isolating power supply – Ex barrier</b>	A5E39832532	
<b>Accessories for MASS 2100 and FC300 DN 4 with FCT070 transmitter</b>		
<b>Description</b>	<b>Article No.</b>	
<b>Mounting bracket for flow sensor MASS 2100 DI 1.5</b>	A5E02590427	
<b>Mounting bracket for FC300 DN 4 in AISI 304</b>	A5E02590439	

**Selection and ordering data****Accessories and spare parts for flowmeters**

Description	Article No.	Description	Article No.
CT connector	<b>A5E31478498</b>	Standard cable (non-Ex) f with M12 connector on one side, PO insulation and PUR sleeve, gray, -40 ... +80 °C (-40 ... +176 °F)	
Tamper cover for CT locking. Fits over the M12 connector at both sensor and transmitter ends of the remote system cable (2 pcs.)		<ul style="list-style-type: none"> <li>• 5 m (16.4 ft)</li> <li>• 10 m (32.8 ft)</li> <li>• 25 m (82 ft)</li> <li>• 50 m (164 ft)</li> <li>• 75 m (246 ft)</li> <li>• 150 m (492 ft)</li> </ul>	
Bag of glands (metric) <sup>1)</sup> in black plastic	<b>A5E03907414</b>	Standard cable (Ex) with 2 x M12 connectors, PO insulation and PUR sleeve, blue, -40 ... +80 °C (-40 ... +176 °F)	<b>A5E03914929</b>
Bag of glands, (metric) <sup>1)</sup> in gray plastic Ex e/i <sup>1)</sup>	<b>A5E03907424</b>	<ul style="list-style-type: none"> <li>• 5 m (16.4 ft)</li> <li>• 10 m (32.8 ft)</li> <li>• 25 m (82 ft)</li> <li>• 50 m (164 ft)</li> <li>• 75 m (246 ft)</li> <li>• 150 m (492 ft)</li> </ul>	<b>A5E03914962</b>
Bag of glands (metric) <sup>1)</sup> in AISI 316 SS Ex e/i <sup>1)</sup>	<b>A5E03907429</b>	<ul style="list-style-type: none"> <li>• 5 m (16.4 ft)</li> <li>• 10 m (32.8 ft)</li> <li>• 25 m (82 ft)</li> <li>• 50 m (164 ft)</li> <li>• 75 m (246 ft)</li> <li>• 150 m (492 ft)</li> </ul>	<b>A5E03914995</b>
Bag of glands (metric) <sup>1)</sup> in Ni-plated brass Ex e/i <sup>1)</sup>	<b>A5E03907430</b>	<ul style="list-style-type: none"> <li>• 5 m (16.4 ft)</li> <li>• 10 m (32.8 ft)</li> <li>• 25 m (82 ft)</li> <li>• 50 m (164 ft)</li> <li>• 75 m (246 ft)</li> <li>• 150 m (492 ft)</li> </ul>	<b>A5E03915004</b>
Bag of glands (NPT) in black plastic <sup>2)</sup>	<b>A5E03907435</b>	Standard cable (Ex) for termination, PO insulation and PUR sleeve, blue, -40 ... +80 °C (-40 ... +176 °F)	<b>A5E03915074</b>
Bag of glands (NPT) in gray plastic Ex e/i <sup>2)</sup>	<b>A5E03907451</b>	<ul style="list-style-type: none"> <li>• 5 m (16.4 ft)</li> <li>• 10 m (32.8 ft)</li> <li>• 25 m (82 ft)</li> <li>• 50 m (164 ft)</li> <li>• 75 m (246 ft)</li> <li>• 150 m (492 ft)</li> </ul>	<b>A5E03915088</b>
Bag of glands (NPT) in AISI 316 SS Ex e/i <sup>2)</sup>	<b>A5E03907467</b>	Standard cable (Ex) with M12 connector on one side, PO insulation and PUR sleeve, blue, -40 ... +80 °C (-40 ... +176 °F)	<b>A5E03914945</b>
Bag of glands (NPT) in Ni-plated brass Ex e/i <sup>2)</sup>	<b>A5E03907473</b>	<ul style="list-style-type: none"> <li>• 5 m (16.4 ft)</li> <li>• 10 m (32.8 ft)</li> <li>• 25 m (82 ft)</li> <li>• 50 m (164 ft)</li> <li>• 75 m (246 ft)</li> <li>• 150 m (492 ft)</li> </ul>	<b>A5E03914973</b>
Standard cable (non-Ex) with 2 x M12 connectors, PO insulation and PUR sleeve, gray, -40 ... +80 °C (-40 ... +176 °F)	<b>A5E03914805</b> <b>A5E03914850</b> <b>A5E03914853</b> <b>A5E03914859</b> <b>A5E03914861</b> <b>A5E03914874</b>	<p>Analog signal cable For analog cable connection between MASS 2100/ FC300 sensor and FCT010/FCT030/FCT070 transmitters. 5 x 2 x Ø 0.34 mm screened and twisted in pairs. Blue PVC insulation and sleeve. With two M20 connectors, female/female.</p> <p>-20 ... 105 °C (-4 ... +221 °F), Ex</p> <ul style="list-style-type: none"> <li>• 5 m (16.4 ft)</li> <li>• 10 m (32.8 ft)</li> <li>• 25 m (82 ft)</li> <li>• 50 m (164 ft)</li> <li>• 75 m (246 ft)</li> <li>• 150 m (492 ft)</li> </ul>	<b>A5E42815465</b> <b>A5E42521862</b> <b>A5E42522447</b> <b>A5E42523233</b> <b>A5E42523347</b>
Standard cable (non-Ex) for termination, PO insulation and PUR sleeve, gray, -40 ... +80 °C (-40 ... +176 °F)	<b>A5E03914833</b> <b>A5E03914849</b> <b>A5E03914854</b> <b>A5E03914856</b> <b>A5E03914864</b> <b>A5E03914873</b>		

<sup>1)</sup> 2 pcs M20; 1 pce M25 with single and dual cable inserts.<sup>2)</sup> 2 pcs ½" NPT; 1 pce ½" NPT with single and dual cable inserts.

## Flow Measurement

SITRANS FC (Coriolis)

Spare parts

### Digital - Spare parts

#### Selection and ordering data (continued)

##### 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	

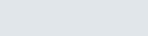
##### Spare parts - sensor FCS400/FCS300 and MASS 2100/FC300

Description	Article No.	
Blind lid in painted aluminum with silicone o-ring seal	A5E03549295	
Sensor housing • Metric • NPT	A5E03549313 A5E03906080	
Bag of loose parts for sensor; including cable strain relief components, washer, seals, silicone o-rings, and assorted screws	A5E03549324	
M12 option for sensor housing in stainless steel. Pre-wired and potted to replace M12 socket in DSL housing	A5E03906095	

##### Spare parts - Transmitter FCT030 field mount enclosure (all FW versions)

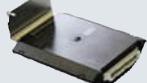
Description	Article No.	
Display lid in painted aluminum with Ex glass plate and silicone o-ring seal	A5E03549344	
Ex and Non-Ex		
Blind lid in painted aluminum with silicone o-ring seal	A5E03549429	
Bag of loose spare parts; including cable strain relief components, mounting tool, seals and gasket, assorted screws and washers, hex cap nut, blind connectors, and silicone o-rings	A5E03549396	
Mounting bracket - FCT030 field mount; in painted aluminum for pipe or wall mounting of transmitter FCT030 remote version. Including lock ring, pressure pads and seal cap	A5E03906091	
M12 option - remote - in painted aluminum. Pre-wired and potted replacement M12 connection for FCT030 field mount transmitter remote version	A5E03906104	
Remote terminal house painted aluminum for sensor cable termination at FCT030 transmitter remote version. Pre-wired and potted • M20 • NPT	A5E03906112 A5E03906130	

**Selection and ordering data (continued)****Spare parts - Transmitter FCT030 (FW 3.1)**

Description	Article No.	
Display and keypad assembly for field mount enclosure, with Siemens logo. For HW 2 and FW 3.1 version	A5E03548971	
Sensor cassette (compact) (HW version 2, FW 3.1.x)	A5E03549142	
Sensor cassette (remote) (HW version 2, FW 3.1.x)	A5E03549098	
Frontend cassette Spare part frontend cassette for remote version of FC430 and cassette for FC410 For firmware V 3.x	A5E03549191	
Power supply for field mount enclosure 100 ... 240 V AC, 47 ... 63 Hz, 24 ... 90 V DC (HW version 2 and FW 3.1.x)	A5E03549413	
Transmitter cassette (active) 4 ... 20 mA output and HART 7.2 (HW version 2 and FW 3.1.x)	A5E03549357	
Transmitter cassette (passive) 4 ... 20 mA output and HART 7.2 (HW version 2 and FW 3.1.x)	A5E03549383	
I/O assembly Advise Order code F40 to F97, Selection and Ordering data <sup>1)</sup>	A5E03939114	
SensorFlash (micro SD card 1G)	A5E03915258	

<sup>1)</sup> The I/O configuration must be stated in the "Remark" field.  
The I/O configuration is found in the F option of the ordering code. e.g. code "F40" for ordering Ch2 Active Current/Freq/Pulse, Ch3 Active Current/Freq/Pulse, Ch4 Active Input.

**Spare parts FCT030 - Fieldmount enclosure (FW 4.0)**

Description	Article No.	
Display and keypad assembly • From firmware 4.0, with Siemens logo	A5E37705139	
• From firmware 4.0, neutral version - no company logo	A5E39844362	
Power supply for field mount enclosure FCT030 V 4.0 Fieldmount 100 ... 240 V AC, 47 ... 63 Hz 19.2 ... 28.8 V DC	A5E38264471	
Sensor cassette (compact) for systems without DSL and for systems with analog sensor connection, HW version 3, FW version 4.0	A5E41526318	
Sensor cassette (remote) Ex barrier module digital sensor connection (HW version 3, FW version 4.0)	A5E03549098	
Sensor cassette (remote) for systems with DSL, HW version 3, FW version 4.0	A5E03549098	
Frontend cassette Spare part frontend DSL for remote version. For firmware V 4.0	A5E41526286	
SensorFlash (micro SD card 4G)	A5E38288507	
Transmitter cassette for firmware 4.0 • Ch1 E02: I/O and comm (active/passive) 4 ... 20 mA output and HART 7.5, Non-Ex	A5E38013040	
• Ch1 E06: I/O and comm (-active) 4 ... 20 mA output and HART 7.5, Ex	A5E38012278	
• Ch1 E07: I/O and comm (-passive) 4 ... 20 mA output and HART 7.5, Ex	A5E38013025	
• Ch1 E10: Communication PROFIBUS PA, Non-Ex & Ex	A5E41216315	
• Ch1 E11: Communication PROFIBUS DP, Non-Ex	A5E41216042	
• Ch1: Communication Modbus RTU 485, Ex	A5E38013054	
• Ch1: Communication Modbus RTU 485, Non-Ex	A5E38013069	

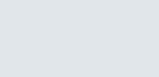
## Flow Measurement

SITRANS FC (Coriolis)

Spare parts

### Digital - Spare parts

#### Selection and ordering data (continued)

Description	Article No.		Description	Article No.	
I/O Cassette for firmware 4.0 • Ch2: Current/Frequ./Pulse, Ch3: None, Ch4: None, F01, Non-Ex	<b>A5E38006256</b>		Adapter cable for FCS400 sensor with new transmitter DSL/FCT010/FCT030 Version 4.0	<b>A5E50371933</b>	
• Ch2: Current/Frequ./Pulse, Ch3: Current/Frequ./Pulse, Ch4: None, F02, Non-Ex	<b>A5E38006558</b>		Remote adapter for wall bracket M20 cable connection • Ex	<b>A5E42404417</b>	
• Ch2: Current/Frequ./Pulse, Ch3: Current/Frequ./Pulse, Ch4: Current/Frequ./Pulse, F03, Non-Ex	<b>A5E38006598</b>		• Non-Ex	<b>A5E42846478</b>	
• Ch2: Current/Frequ./Pulse, Ch3: Current/Frequ./Pulse, Ch4: Relay, F04, Non-Ex	<b>A5E38006896</b>		Wall bracket for FCT030 for M20 analog cable connector	<b>A5E42404426</b>	
• Ch2: Current/Frequ./Pulse, Ch3: Relay, Ch4: Relay, F05, Non-Ex	<b>A5E38006900</b>				
• Ch2: Current/Frequ./Pulse, Ch3: Relay, Ch4: None, F06, Non-Ex	<b>A5E38011432</b>		Wall bracket for FCT010 for M20 analog cable connector	<b>A5E42404447</b>	
• Ch2: Current/Frequ./Pulse, Ch3: None, Ch4: None, F11, Ex-passive	<b>A5E38011478</b>				
• Ch2: Current/Frequ./Pulse, Ch3: Current/Frequ./Pulse, Ch4: None, F12, Ex-passive	<b>A5E38011509</b>		Compact adapter for DSL/FCT030 For upgrade from MASS 2100 DI 3, DI 6, DI 15 with MASS 6000 compact to DSL/FCT030 • Ex	<b>A5E42846758</b>	
• Ch2: Current/Frequ./Pulse, Ch3: Current/Frequ./Pulse, Ch4: Current/Frequ./Pulse, F13, Ex-passive	<b>A5E38011541</b>		• Non-Ex	<b>A5E42846760</b>	
• Ch2: Current/Frequ./Pulse, Ch3: Current/Frequ./Pulse, Ch4: Relay, F14, Ex-passive	<b>A5E38011600</b>		Compact adapter for DSL/FCT030 FCS300 and FCS400 (DN 100 and DN 150 sensor) adapter for compact mount DSL, FCT010 or FCT030	<b>TBD</b>	
• Ch2: Current/Frequ./Pulse, Ch3: Relay, Ch4: Relay, F15, Ex-active	<b>A5E38011618</b>		Ex and Non-Ex		
• Ch2: Current/Frequ./Pulse, Ch3: Relay, Ch4: None, F16, Ex-active	<b>A5E38011908</b>				
• Ch2: Current/Frequ./Pulse, Ch3: None, Ch4: None, F21, Ex-active	<b>A5E38012039</b>				
• Ch2: Current/Frequ./Pulse, Ch3: Current/Frequ./Pulse, Ch4: None, F22, Ex-active	<b>A5E38012056</b>				
• Ch2: Current/Frequ./Pulse, Ch3: Current/Frequ./Pulse, Ch4: Current/Frequ./Pulse, F23, Ex-active	<b>A5E38012121</b>				
• Ch2: Current/Frequ./Pulse, Ch3: Relay, Ch4: Relay, F24, Ex-active	<b>A5E38019235</b>				
• Ch2: Current/Frequ./Pulse, Ch3: Current/Frequ./Pulse, Ch4: Relay, F25, Ex-passive	<b>A5E38019263</b>				
• Ch2: Current/Frequ./Pulse, Ch3: Relay, Ch4: None, F26, Ex-passive	<b>A5E38019378</b>				

**Selection and ordering data (continued)**
**Spare parts - FCT030 wall mount enclosure**

Description	Article No.	
Display and keypad -assembly • For wall mount enclosure, Siemens logo	<b>A5E37697615</b>	
• For wall mount enclosure, neutral version	<b>A5E39844261</b>	
Power supply for wall mount 100 ... 240 V AC, 47 ... 63 Hz 19.2 ... 28.8 V DC	<b>A5E38263021</b>	
Sensor cassette for FCT030 wall mounting enclosure	<b>TBD</b>	
Foam insert set for wall mount with connectors	<b>A5E38287828</b>	
Wall mount enclosure front Versions: • blind, Siemens version • blind, neutral version - no company logo • with glass	<b>A5E</b>	

Description	Article No.	
Wall mount enclosure bracket for pipe mounting	<b>A5E38288020</b>	
Wall bracket panel mounting	<b>A5E38288032</b>	
Bag of loose spare parts for wall mount including cable strain relief components, mounting tool, seals and gasket, assorted screws and washers, hex cap nut, blind connectors and O-rings	<b>A5E38288072</b>	
Metall kit PSU cover back pane for wall mount enclosure	<b>A5E38415145</b>	
Power input cover plate for wall mount enclosure	<b>A5E38415205</b>	