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Overview



The SITRANS FMS100 is a magnetic flow sensor suitable for volume flow measurement of liquids (conductive) with a large variety of product options to meet the demands of almost any flow application.

The sensor model provides a high level of flexibility and has a comprehensive set of product features. The FMS100 is deliverable in small sizes for precise dosing, with a high variety of flanges as standard and F&B approvals.

Combined with a flow meter transmitter it is a traditional externally powered electromagnetic flow meter system.

Benefits

- Sensor sizes: DN 2 to DN 100 ($^1/_{12}$" to 4")
- Compact wafer-type design matching for mating flange according to EN 1092-1 and ANSI B16.5 standard
- Unique mechanical design with a wide range of sanitary process connections for the F&B version
- Sanitary design for CIP/SIP cleaning for the F&B version
- Corrosion resistant AISI 316 stainless steel sensor housing
- Highly resistant liner and electrodes fitting most extreme process media
- High temperature version is available for applications with temperatures up to 200 °C (392 °F)
- Hose proof IP66/NEMA 4X enclosure rating
- Option for IP68/NEMA 6P protection class ex works or for upgrading on site
- No moving parts for maintenance-free operation over many years
- Smooth surface with minimal risk of build-up
- SENSORPROM™ Technology provides an automatic upload of start-up settings and calibration data for easy commissioning
- Designed to allow in-situ verification for easy performance check
- Meets PED, 2014/68/EU pressure directive

Application

The SITRANS FMS100 is designed to meet the most common specifications within the chemical and process as well as F&B industries. The field proven flow sensor with high temperature resistance is also the ideal solution for the toughest and challenging applications.

The main applications of the SITRANS FMS100 flow sensor can be found in the following fields:

- Process industry
- Chemical industry
- Water treatment
- Food industry
- Beverage industry
- Pharmaceutical industry

For a complete magnetic flowmeter, the FMS100 flow sensor can be combined with a FMT020 transmitter. The entire flowmeter system either mounted remotely or as a compact unit is operated under the product name SITRANS FM120.

SITRANS FM120: This versatile magnetic flowmeter finds its primary applications in the food and beverage industry as well as in the process, chemical and pharmaceutical industry.

Available sensor sizes from DN 2 to DN 100 ($^1/_{12}$ ... 4").

Measuring accuracy ±0.4% of flow rate, optional ±0.2% of flow rate available.

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Selection and ordering data

Sensor SITRANS FMS100	Article No. 7ME616 ● - ● ● ● ● ● - ● ● A ●
Click on the Article No. for the online configuration in the PIA Life Cycle Portal.	
Transmitter variant	
No transmitter (sensor only)	0
Transmitter SITRANS FMT020	2
Diameter	
DN 2, $^{1}/_{12}$ inch	1 D
DN 3, $^{1}/_{8}$ inch	1 H
DN 6, ¼ inch	1 M
DN 10, $^{3}/_{8}$ inch	1 R
DN 15, ½ inch	1 V
DN 25, 1 inch	2 D
DN 40, 1½ inch	2 R
DN 50, 2 inch	2 Y
DN 65, 2½ inch	3 F
DN 80, 3 inch	3 M
DN 100, 4 inch	3 T
Process connection	
No process connection	A
Pipe connection R ½", AISI 316L	B
Pipe connection ½" NPT, AISI 316L	C
Pipe connection R ½", Hastelloy C	D
Pipe connection ½" NPT, Hastelloy C	E
Pipe connection R ½", PVDF	F
Pipe connection ½" NPT, PVDF	G
Weld in, DIN 11850 / EN10357	H
Weld in, ISO 2037 / SMS 3008	J
Weld in, Tri-Weld / BS 4825-1	K
Clamp type, DIN 32676	M
Clamp type, ISO 2852 / SMS 3016	N
Clamp type, Tri-Clamp / BS 4825-3	P
Threaded type, DIN 11851	R
Threaded type, SMS 1145	S
Gasket material	
EPDM flat gasket	0
Graphite flat gasket	1
EPDM P gasket	3
PTFE flat gasket	4
Liner material	
PFA	1
Ceramic	2
Electrode material	
Hastelloy C22 / 2.4602 (only with PFA liner)	1
Platinum (only with ceramic liner, with gold brazing alloy ≥ DN 10)	2
Transmitter mounting & enclosure type	
No transmitter (sensor only)	A
Polycarbonate housing, compact design	G
Polycarbonate housing, remote design (wall-mounting unit and sensor terminal board included)	J
Terminal box, electrical connection	
Polycarbonate terminal box, M20 thread	B
Polycarbonate terminal box, M20 thread with ½" NPT adapter	C
Stainless steel terminal box, M20 thread	P
Stainless steel terminal box, M20 thread with ½" NPT adapter	Q

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Selection and ordering data (continued)

Sensor SITRANS FMS100	Article No. 7ME616 ● - ● ● ● ● ● - ● ● A ●
Power supply	
No transmitter (sensor only)	0
12 ... 42 V DC	2
100 ... 240 V AC, 50/60 Hz	3

	Order code
Additional information	
Please add "**-Z**" to Article No. and specify Order code(s) and plain text.	
Cable glands	
Without cable glands (blind plugs)	**A00**
M20×1.5 cable glands, material Polyamide	**A02**
½ inch NPT cable glands, material Polyamide	**A05**
M20x1.5 cable glands, material Brass	**A12**
½ inch NPT cable glands, material Brass	**A15**
M20x1.5 cable glands, material Stainless steel	**A22**
½ inch NPT cable glands, material Stainless steel	**A25**
Certificates	
Test report 2.1 (EN 10204)	**C00**
Inspection certificate 3.1 (EN 10204) - Material of pressure-containing and wetted parts	**C12**
Test report 2.2 (EN 10204)	**C14**
Declaration of compliance with the order 2.1 (EN 10204)	**C18**
High accuracy calibration	
High accuracy factory calibration 0.2% of act. vol. flow	**D01**
5-point calibration	
5-point factory calibration	**D10**
10-point calibration	
10-point factory calibration	**D15**
General safety	
CSA General Purpose	**E06**
Country specific approvals	
CRN (Canada)	**E70**
Special certificates	
3A approval	**E85**
Country of origin	
France	**E90**
Communication	
HART with 4 ... 20 mA output, active or passive	**F01**
Modbus RTU / RS 485	**F04**
PROFIBUS PA	**F05**
PROFIBUS PA	**F06**
PROFINET	**F07**
EtherNet/IP	**F09**
MODBUS TCP/IP	**F10**
I/O Extension	
Digital input or output, passive	**F30**
Device options	
Sensor terminal board factory mounted	**J00**
Sensor cables factory mounted	**J01**
Factory preconfigured for transmitter mounting in compact design (integral mount)	**J02**
Display with protection cover	**J03**
Breathing vent M20 thread	**J04**

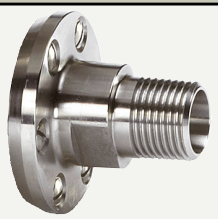
	Order code
Micro-SD memory card, 20 GB	**J06**
Special sensor design	
High temperature version 200 °C (ceramic liner only)	**J30**
Food grade Version	**J33**
Type of protection (IP)	
IP68 (NEMA 6P) protection type for transmitter and sensor, without potting (to 2 m depth, 10 days)	**L50**
IP68 (NEMA 6P) protection class for sensor in remote design, factory potted (to 10 m depth, continuously)	**L51**
Sensor cables	
Cable kit with coil and electrode cable, standard type (3 × 1.5 mm^2), PVC jacket	
• 5 m (16 ft)	**T00**
• 10 m (33 ft)	**T01**
• 20 m (65 ft)	**T03**
• 30 m (98 ft)	**T05**
• 40 m (131 ft)	**T06**
• 50 m (164 ft)	**T07**
Cable kit with coil cable standard type (3 × 1.5 mm^2) and electrode cable special type (3 × 0.25 mm^2), PVC jacket	
• 5 m (16 ft)	**T50**
• 10 m (33 ft)	**T51**
• 15 m (49 ft)	**T52**
• 20 m (65 ft)	**T53**
• 25 m (82 ft)	**T54**
• 30 m (98 ft)	**T55**
• 40 m (131 ft)	**T56**
• 50 m (164 ft)	**T57**
Device settings	
Measuring range: Upper range value for analog and frequency output (Q_{max}), unit, analog output is activated	**Y01**
Current output damping	**Y02**
Current output signal range	**Y03**
Flow direction (default setting: Positive)	**Y05**
Empty pipe detection (default setting: On)	**Y06**
Mains frequency (default setting: 50 Hz)	**Y07**
Operation language display (default setting English)	**Y24**
Device address (PROFIBUS 0 ... 125)	**Y25**
Device identification	
Stainless steel TAG shield for transmitter, line 1, max. 32 characters	**Y11**
Stainless steel TAG shield for transmitter, line 2, max. 32 characters	**Y12**
TAG adhesive label for transmitter, line 1, max. 32 characters	**Y13**
TAG adhesive label for transmitter, line 2, max. 32 characters	**Y14**
Stainless steel TAG shield for sensor, line 1, max. 32 characters	**Y15**
Stainless steel TAG shield for sensor, line 2, max. 32 characters	**Y16**
TAG adhesive label for sensor, line 1, max. 32 characters	**Y18**

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Selection and ordering data (continued)

	Order code
TAG adhesive label for sensor, line 2, max. 32 characters	**Y19**
Totalizer 1 settings	
Preset value	**Y30**
Unit (Default setting: m^3)	**Y31**
Direction (Default setting: Forward counting)	**Y32**
Failure mode (Default setting: Stop counting)	**Y33**
Decimal places (Default setting: 2)	**Y34**
Totalizer 2 settings	
Preset value	**Y35**
Unit (Default setting: m^3)	**Y36**
Direction (Default setting: Backward counting)	**Y37**
Failure mode (Default setting: Stop counting)	**Y38**
Decimal places (Default setting: 2)	**Y39**

	Order code
Totalizer 3 settings	
Preset value	**Y40**
Unit (Default setting: m^3)	**Y41**
Direction (Default setting: Forward / backward counting, net)	**Y42**
Failure mode (Default setting: Stop counting)	**Y43**
Decimal places (Default setting: 2)	**Y44**
Pulse output settings	
Volume per pulse	**Y50**
Pulse width	**Y51**

Description	Article No.	
Pipe connection ½" external thread		
For DN 2 ... 10 (1/12" ... 3/8") sensor Material: Stainless steel AISI 316L 2 pcs. pipe connections, 2 pcs. EPDM gaskets, 12 pcs. M4×14 screws		
• R½" ISO 7-1 tapered thread	**FDK:083G0080**	
• ½" NPT thread	**FDK:083G4330**	
For DN 2 ... 10 (1/12" ... 3/8") sensor Material: Hastelloy C, 2 pcs. pipe connections, 2 pcs. PTFE gaskets, 12 pcs. M4x14 screws		
• R½" ISO 7-1 tapered thread	**FDK:083G4332**	
• ½" NPT thread	**FDK:083G4331**	
For DN 2 ... 10 (1/12" ... 3/8") sensor Material PVDF (Kynar 1000) 2 pcs. pipe connections (Max. 70 °C, PN 8 bar/max 158 °F, 116 PSI), 1 pc. grounding ring made of C22[1)], 1 pc. grounding wire, 3 pcs. PTFE gaskets, 2 pcs. space rings, 6 pcs. M4×14 and M4×25		
• R½" ISO 7-1 tapered thread incl. grounding ring	**A5E01018395**	
• ½" NPT thread incl. grounding ring	**A5E01018400**	
EPDM gaskets Material: EPDM; each set includes: 2 pcs. EPDM gaskets, 1 pc. grounding wire, 1 pc. M6 screw, 1 pc. nut, 1 pc. washer, 1 pc. bolt grounding plate		
• DN 2 ... 10 (1/12" ... 3/8")	**FDK:083G3116**	
• DN 15 (½")	**FDK:083G3117**	
• DN 25 (1")	**FDK:083G3119**	
• DN 40 (1½")	**FDK:083G3121**	
• DN 50 (2")	**FDK:083G3122**	
• DN 65 (2½")	**FDK:083G3123**	
• DN 80 (3")	**FDK:083G3124**	
• DN 100 (4")	**FDK:083G3125**	
PTFE gaskets Material: PTFE; each set includes: 2 pcs. gaskets, 2 pcs. grounding wires, 3 pcs. M6 screws (DN 2 ... 10: 12 pcs. M4×14)		
• DN 2 ... 10 (1/12" ... 3/8")	**FDK:083G0156**	
• DN 15 (½")	**FDK:083G0157**	
• DN 25 (1")	**FDK:083G0159**	
• DN 40 (1½")	**FDK:083G0161**	
• DN 50 (2")	**FDK:083G0162**	
• DN 65 (2½")	**FDK:083G0163**	

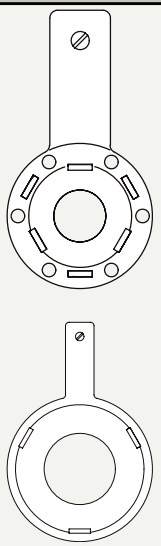
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Selection and ordering data (continued)

Description	Article No.	
• DN 80 (3")	FDK:083G0164	
• DN 100 (4")	FDK:083G0165	
Graphite gaskets Material: Graphite; conductive, each set includes: 2 pcs. gaskets (can also be used as grounding ring)		
• DN 2 ... 10 (1/12" ... 3/8")	FDK:083G0116	
• DN 15 (½")	FDK:083G0117	
• DN 25 (1")	FDK:083G0119	
• DN 40 (1½")	FDK:083G0121	
• DN 50 (2")	FDK:083G0122	
• DN 65 (2½")	FDK:083G0123	
• DN 80 (3")	FDK:083G0124	
• DN 100 (4")	FDK:083G0125	
Grounding ring (stainless steel) Material: AISI 316L/1.4404; each set includes: 1 pc. grounding ring[1)], 3 pcs. PTFE gaskets, 1 pc. earth wire, 1 pc. M6 screw		
• DN 2 ... 10 (1/12" ... 3/8")	FDK:083G0686	
• DN 15 (½")	FDK:083G0687	
• DN 25 (1")	FDK:083G0689	
• DN 40 (1½")	FDK:083G0691	
• DN 50 (2")	FDK:083G0692	
• DN 65 (2½")	FDK:083G0693	
• DN 80 (3")	FDK:083G0694	
• DN 100 (4")	FDK:083G0695	
Grounding ring (Hastelloy C) Material: Hastelloy C22/2.4602; each set includes: 1 pc. grounding ring[1)], 3 pcs. PTFE gaskets, 1 pc. earth wire, 1 pc. M6 screw		
• DN 2 ... 10 (1/12" ... 3/8")	FDK:083G3256	
• DN 15 (½")	FDK:083G3257	
• DN 25 (1")	FDK:083G3259	
• DN 40 (1½")	FDK:083G3261	
• DN 50 (2")	FDK:083G3262	
• DN 65 (2½")	FDK:083G3263	
• DN 80 (3")	FDK:083G3264	
• DN 100 (4")	FDK:083G3265	
Grounding ring (Tantalum) Material: Tantalum; each set includes: 1 pc. grounding ring[1)], 3 pcs. PTFE gaskets, 1 pc. earth wire, 1 pc. M6 screw		
• DN 2 ... 10 (1/12" ... 3/8")	A5E01181599	
• DN 15 (½")	A5E01181606	
• DN 25 (1")	A5E01181610	
• DN 40 (1½")	A5E01181613	
• DN 50 (2")	A5E01181615	

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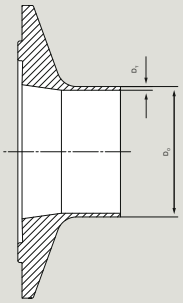
Selection and ordering data (continued)

Description	Article No.	
• DN 65 (2½")	**A5E01181616**	
• DN 80 (3")	**A5E01181619**	
• DN 100 (4")	**A5E01181622**	
Studs and nuts For DN 100 PN 25/40, 8 pcs. M20 studs, 16 pcs. M20 nuts Material: AISI 304/1.4305		
• DN 100 (4")	FDK:083G0226	

1) Thickness of grounding ring is 2 mm (0.08 inch)

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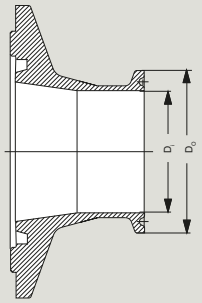
Selection and ordering data (continued)

Description				Article No.
Weld-in connection fittings for use with P gaskets (stainless steel) Material: AISI 316L (1.4404) Only for PFA liner 2 pcs. fittings 2 pcs. clamps (to join flow sensor and fitting), P gaskets not included				
DIN 11850[1]				
Adapter			Sensor	
DN (mm)	D_o (mm)	D_T (mm)	DN (mm)	
10	13	1.5	10	**A5E02054630**
15	19	1.5	15	**A5E02054633**
20	23	1.5	15	**A5E02054634**
25	29	1.5	25	**A5E02054635**
32	35	1.5	25	**A5E02054637**
40	41	1.5	40	**A5E02054638**
50	53	1.5	50	**A5E02054640**
65	70	2.0	65	**A5E02054643**
80	85	2.0	80	**A5E02054644**
100	104	2.0	100	**A5E02054646**
ISO 2037[1]				
Adapter			Sensor	
DN (mm)	D_o (mm)	D_T (mm)	DN (mm)	
12.7	12.7	1.0	10	**A5E03727946**
17.2	17.2	1.0	15	**A5E03728098**
25	25	1.6	25	**A5E02196073**
33	33.7	1.6	25	**A5E02196074**
38	38	1.6	40	**A5E02196075**
40	40	1.6	40	**A5E02196076**
51	51	1.6	50	**A5E02196077**
63.5	63.5	1.6	65	**A5E02196078**
76.1	76.1	1.6	80	**A5E02196080**
101.6	101.6	2.0	100	**A5E02196082**
Tri-Weld (BS 4825-1)[1]				
Adapter			Sensor	
DN (mm)	D_o (mm)	D_T (mm)	DN (mm)	
12.7	12.7	1.2	10	**A5E02199113**
19.05	19.05	1.2	15	**A5E02199114**
25.4	25.4	1.6	25	**A5E02199115**
38.1	38.1	1.6	40	**A5E02199116**
50.8	50.8	1.6	50	**A5E02199117**
63.5	63.5	1.6	65	**A5E02199118**
76.2	76.2	1.6	80	**A5E02199119**
101.6	101.6	2.0	100	**A5E02199120**

[1] Suitable for 3A

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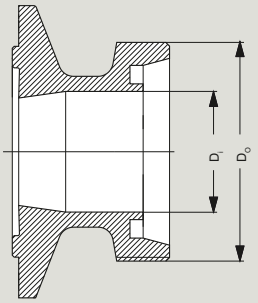
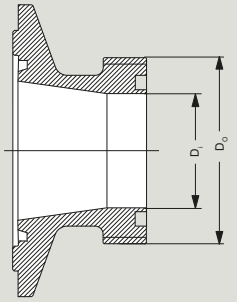
Selection and ordering data (continued)

Description				Article No.
Clamp-type connection fittings for use with P gaskets (stainless steel) Material: AISI 316L (1.4404) Only for liner PFA 2 pcs. fittings 2 pcs. clamps (to join flow sensor and fitting), P gaskets not included				
DIN 32676[1)]				
Adapter			Sensor	
DN (mm)	D_o (mm)	D_i (mm)	DN (mm)	
10	34	10	10	**A5E02211143**
15	34	16	15	**A5E02211144**
25	50.5	22.6	25	**A5E02211146**
40	50.5	38	40	**A5E02211147**
50	64	50	50	**A5E02211148**
65	91	66	65	**A5E02211151**
80	106	81	80	**A5E02211152**
100	119	100	100	**A5E02211153**
ISO 2852[1)]				
Adapter			Sensor	
DN (mm)	D_o (mm)	D_i (mm)	DN (mm)	
25	50.5	22.6	25	**A5E02213581**
33.7	50.5	31.3	25	**A5E02213582**
38	50.5	35.6	40	**A5E02213583**
51	64	48.6	50	**A5E02213584**
63.5	77.5	60.3	65	**A5E02213585**
76.1	91	72.9	80	**A5E02213586**
101.6	119	97.6	100	**A5E02213587**
Tri-Clamp (BS 4825-3)[1)]				
Adapter			Sensor	
DN (mm)	D_o (mm)	D_i (mm)	DN (mm)	
12.7	25.4	9.5	10	**A5E02213596**
19.05	25.4	15.85	15	**A5E02213597**
25.4	50.5	22.2	25	**A5E02213598**
38.1	50.5	34.9	40	**A5E02213599**
50.8	64	47.6	50	**A5E02213600**
63.5	77.5	60.3	65	**A5E02213601**
76.2	91	73	80	**A5E02213602**
101.6	119	97.6	100	**A5E02213603**

D_o: Outer diameter
D_i: Inner diameter
1) Suitable for 3A

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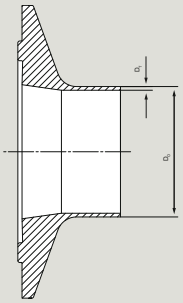
Selection and ordering data (continued)

Description				Article No.
Threaded type connection fittings for use with P gaskets (stainless steel) Material: AISI 316L (1.4404) Only for PFA liner 2 pcs. fittings 2 pcs. clamps (to join flow sensor and fitting), P gaskets not included				
DIN 11851[1]				
Adapter			Sensor	
DN (mm)	D_o (mm)	D_i (mm)	DN (mm)	
10	28	10	10	**A5E02218293**
15	34	16	15	**A5E02218294**
20	44	20	15	**A5E02218295**
25	52	26	25	**A5E02218296**
32	58	32	25	**A5E02218297**
40	65	38	40	**A5E02218298**
50	78	50	50	**A5E02218299**
65	95	66	65	**A5E02218300**
80	110	81	80	**A5E02218301**
100	130	100	100	**A5E02218302**
SMS 1145[2]				
Adapter			Sensor	
DN (mm)	D_o (mm)	D_i (mm)	DN (mm)	
25	40	22.6	25	**A5E02218310**
38	60	35.6	40	**A5E02218312**
51	70	48.6	50	**A5E02218313**
63.5	85	60.3	65	**A5E02218314**
76	98	72	65	**A5E02218315**

D_o: Outer diameter
D_i: Inner diameter
1) Suitable for 3A
2) Not suitable for 3A

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Selection and ordering data (continued)

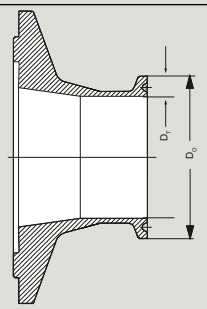
Description				Article No.
Weld-in connection fittings for use with flat gaskets (stainless steel) Material: AISI 316L (1.4404) For PFA liner and ceramic 2 pcs. fittings 2 pcs. clamps (to join flow sensor and fitting), Flat gaskets not included				
DIN 11850[1)]				
Adapter			Sensor	
DN (mm)	D_o (mm)	D_T (mm)	DN (mm)	
10	13	1.5	10	**FDK:083G2116**
15	19	1.5	15	**FDK:083G2117**
20	23	1.5	15	**FDK:083G2118**
25	29	1.5	25	**FDK:083G2119**
32	35	1.5	25	**FDK:083G2120**
40	41	1.5	40	**FDK:083G2121**
50	53	1.5	50	**FDK:083G2122**
65	70	2.0	65	**FDK:083G2123**
80	85	2.0	80	**FDK:083G2124**
100	104	2.0	100	**FDK:083G2125**
ISO 2037[1)]				
Adapter			Sensor	
DN (mm)	D_o (mm)	D_T (mm)	DN (mm)	
12.7	12.7	1.0	10	**A5E03720273**
17.2	17.2	1.0	15	**FDK:083G2107**
25	25.6	1.6	25	**FDK:083G2109**
33.7	33.7	1.6	25	**FDK:083G2100**
38	38	1.6	40	**FDK:083G2111**
40	40	1.6	40	**FDK:083G2101**
51	51	1.6	50	**FDK:083G2112**
63.5	63.5	1.6	65	**FDK:083G2113**
76.1	76.1	1.6	80	**FDK:083G2114**
101.6	101.6	2.0	100	**FDK:083G2115**
114.3	118.3	2.0	100	**FDK:083G2105**
Tri-Weld (BS 4825-1)[1)]				
Adapter			Sensor	
DN (mm)	D_o (mm)	D_T (mm)	DN (mm)	
12.7	12.7	1.2	10	**FDK:083G2276**
19.05	19.05	1.2	15	**FDK:083G2277**
25.4	25.4	1.6	25	**FDK:083G2279**
38	38.1	1.6	40	**FDK:083G2281**
50.8	50.8	1.6	50	**FDK:083G2282**
63.5	63.5	1.6	65	**FDK:083G2283**
76.2	76.2	1.6	80	**FDK:083G2284**

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Selection and ordering data (continued)

Description				Article No.
101.6	101.6	2.0	100	**FDK:083G2285**

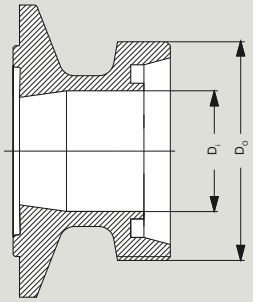
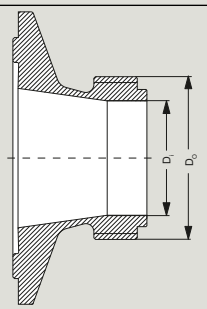
1) Suitable for 3A

Description				Article No.
Clamp-type connection fittings for use with flat gaskets (stainless steel) Material: AISI 316L (1.4404) For PFA liner and ceramic 2 pcs. fittings 2 pcs. clamps (to join flow sensor and fitting), Flat gaskets not included				
DIN 32676[1)]				
Adapter			Sensor	
DN (mm)	D_o (mm)	D_T (mm)	DN (mm)	
10	34	10	10	**FDK:083G2186**
15	34	16	15	**FDK:083G2187**
25	50.5	26	25	**FDK:083G2179**
40	50.5	38	40	**FDK:083G2181**
50	64	50	50	**FDK:083G2182**
65	91	66	65	**FDK:083G2183**
80	106	81	80	**FDK:083G2184**
100	119	100	100	**FDK:083G2185**
ISO 2852[1)]				
Adapter			Sensor	
DN (mm)	D_o (mm)	D_T (mm)	DN (mm)	
25	50.5	22.6	25	**FDK:083G2189**
33.7	50.5	31.3	25	**FDK:083G2190**
38	50.5	35.6	40	**FDK:083G2191**
51	64	48.6	50	**FDK:083G2192**
63.5	77.5	60.3	65	**FDK:083G2193**
76.1	91	72.9	80	**FDK:083G2194**
101.6	119	97.6	100	**FDK:083G2195**
Tri-Clamp (BS 4825-3)[1)]				
Adapter			Sensor	
DN (mm)	D_o (mm)	D_T (mm)	DN (mm)	
12.7	25.4	9.5	10	**FDK:083G2286**
19.05	25.4	15.85	15	**FDK:083G2287**
25.4	50.5	22.2	25	**FDK:083G2289**
38.1	50.5	34.9	40	**FDK:083G2291**
50.8	64	47.6	50	**FDK:083G2292**
63.5	77.5	60.3	65	**FDK:083G2293**
76.2	91	73	80	**FDK:083G2294**
101.6	119	97.6	100	**FDK:083G2295**

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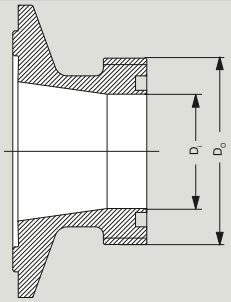
Selection and ordering data (continued)

D_o: Outer diameter
D_i: Inner diameter
1) Suitable for 3A

Description				Article No.
Threaded type connection fittings for use with flat gaskets (stainless steel) Material: AISI 316L (1.4404) For PFA liner and ceramic 2 pcs. fittings 2 pcs. clamps (to join flow sensor and fitting), Flat gaskets not included				
DIN 11851[1]				
Adapter			Sensor	
DN (mm)	D_o (mm)	D_i (mm)	DN (mm)	
10	28	10	10	**FDK:083G2156**
15	34	16	15	**FDK:083G2157**
20	44	20	15	**FDK:083G2158**
25	52	26	25	**FDK:083G2159**
32	58	32	25	**FDK:083G2160**
40	65	38	40	**FDK:083G2161**
50	78	50	50	**FDK:083G2162**
65	95	66	65	**FDK:083G2163**
80	110	81	80	**FDK:083G2164**
100	130	100	100	**FDK:083G2165**
ISO 2853[1]				
Adapter			Sensor	
DN (mm)	D_o (mm)	D_i (mm)	DN (mm)	
25	37	22.6	25	**FDK:083G2149**
38	51	35.6	40	**FDK:083G2151**
51	64	48.6	50	**FDK:083G2152**
63.5	78	60.3	65	**FDK:083G2153**
76.1	91	72.9	80	**FDK:083G2154**
BS 4825-4[2]				
Adapter			Sensor	
DN (mm)	D_o (mm)	D_i (mm)	DN (mm)	
101.6	126	97.6	100	**FDK:083G2145**
SMS 1145[2]				
Adapter			Sensor	

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Selection and ordering data (continued)

Description				Article No.
DN (mm)	D_o (mm)	D_i (mm)	DN (mm)	
25	40	22.6	25	**FDK:083G2139**
38	60	35.6	40	**FDK:083G2141**
51	70	48.6	50	**FDK:083G2142**
63.5	85	60.3	65	**FDK:083G2143**
76	98	72	65	**FDK:083G2144**

D_o: Outer diameter
D_i: Inner diameter
1) Suitable for 3A
2) Not suitable for 3A

Description	Article No.
Gaskets (delivered in pairs, to be placed between flow sensor and adapter)	
FMS100 (PFA) - P gaskets	
Rubber: EPDM[1)]	
• DN 10	**A5E02055286**
• DN 15	**A5E02055287**
• DN 25	**A5E02055290**
• DN 40	**A5E02055291**
• DN 50	**A5E02055292**
• DN 65	**A5E02055293**
• DN 80	**A5E02055295**
• DN 100	**A5E02055297**

Description	Article No.
FMS100 (PFA, ceramic) - Flat gaskets	
Rubber: EPDM[1)]	
• DN 10	**FDK:083G2206**
• DN 15	**FDK:083G2207**
• DN 25	**FDK:083G2209**
• DN 40	**FDK:083G2211**
• DN 50	**FDK:083G2212**
• DN 65	**FDK:083G2213**
• DN 80	**FDK:083G2214**
• DN 100	**FDK:083G2215**

1) Suitable for 3A
2) Not suitable for 3A

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Technical specifications

SITRANS FMS100	
Product characteristic	Versatile product to meet the diverse demands of various industries such as process, chemical, Pharmaceutical, Beverage, Food, Water treatment.
Measurement of	Volume flow, flow velocity, electrical conductivity
Nominal diameter	Full bore sensor: DN 2 ... 100 (1/12" ... 4")
Mode of operation	
Measuring principle	Electromagnetic induction
Medium conductivity	Liquids with an electrical conductivity ≥ 5 µS/cm
Excitation frequency (Main supply: 50 Hz / 60 Hz)	DN 2 ... 65 (1/12" ... 2½"): 12.5 Hz / 15 Hz DN 80 ... 100 (3" ... 4"): 6.25 Hz / 7.5 Hz
Performance characteristics	
Electrical conductivity	Repeatability: Max. ±5% of measured value
Process connection	
Flanges	
• No process connection	PN 40 (580 psi) DN 2 ... 65 (1/12" ... 2½") PN 37.5 (540 psi) DN 80 (3") PN 30 (435 psi) DN 100 (4")
• Pipe connection R ½"	DN 2 ... 10 (1/12" ... 3/8")
• Pipe connection ½" NPT	DN 2 ... 10 (1/12" ... 3/8")
• Weld in, DIN 11850 (EN 10357)	PN 40 (600 psi) DN 10 ... 65 (3/8" ... 2½") PN 25 (350 psi) DN 80 ... 100 (3" ... 4")
• Weld in, ISO 2037 (SMS 3008)	PN 40 (600 psi) DN 10 ... 65 (3/8" ... 2½") PN 25 (350 psi) DN 80 ... 100 (3" ... 4")
• Weld in, Tri-Weld (BS 4825-1)	PN 40 (600 psi) DN 10 ... 65 (3/8" ... 2½") PN 25 (350 psi) DN 80 ... 100 (3" ... 4")
• Clamp type, DIN 32676	PN 16 (200 psi) DN 10 ... 50 (3/8" ... 2") PN 10 (150 psi) DN 65 ... 100 (2½" ... 4")
• Clamp type, ISO 2852 (SMS 3016)	PN 16 (200 psi) DN 10 ... 50 (3/8" ... 2") PN 10 (150 psi) DN 65 ... 100 (2½" ... 4")
• Clamp type, Tri-Clamp (BS 4825-3)	PN 16 (200 psi) DN 10 ... 50 (3/8" ... 2") PN 10 (150 psi) DN 65 ... 100 (2½" ... 4")
• Threaded type, DIN 11851	PN 40 (600 psi) DN 10 ... 40 (3/8" ... 1½") PN 25 (350 psi) DN 50 ... 100 (2" ... 4")
• Threaded type, SMS 1145	PN 6 (80 psi) DN 25 ... 65 (1" ... 2½")
Rated operating conditions	
Ambient temperature	
• Sensor	-40 ... +100 °C (-40 ... +212 °F)
• Compact with transmitter	-40 ... +65 °C (-40 ... +149 °F)
• Display	-20 ... +60 °C (-4 ... +140 °F)
Operating pressure (Maximum operating pressure depending on flange	
• Ceramic	DN 2 ... 65: 40 bar_g (1/12" ... 2 ½": 580 psi_g) DN 80: 37.5 bar_g (3": 540 psi_g) DN 100: 30 bar_g (4": 435 psi_g) Vacuum: 1 × 10^{-6} bar_{abs}(1.5 × 10^{-5} psi_{abs})
• Ceramic & Option J30	DN 15 ... 50: 40 bar_g (½" ... 2": 580 psi_g) DN 80: 37.5 bar_g (3": 540 psi_g) DN 100: 25 bar_g (4": 363 psi_g) Vacuum: 1 × 10^{-6} bar_{abs} (1.5 × 10^{-5} psi_{abs})
• Ceramic & Option J33	DN 10 ... 65: 40 bar_g (3/8" ... 2 ½": 580 psi_g) DN 80 ... 100: 25 bar_g (3" ... 4": 363 psi_g) Vacuum: 1 × 10^{-6} bar_{abs} (1.5 × 10^{-5} psi_{abs})
• PFA	20 bar_g (290 psi_g) Vacuum: 0.02 bar_{abs} (0.3 psi_{abs}) DN 80 ... 100: CO_2 pressure max. 7 bar_g (101.5 psi_g)
Temperature of medium	
• Ceramic	-20 ... +150 °C (-4 ... 302 °F) Suitable for steam sterilization
• Ceramic & Option J30	-20 ... +200 °C (-4 ... +392 °F)
• PFA	-30 ... +130 °C (-22 ... +266 °F) Suitable for steam sterilization at 150 °C (302°F)
Temperature shock	Duration ≤ 1 min, followed by 10 min rest
• Ceramic	DN 2, DN 3 (1/12", 1/8") No limitations DN 6, DN 10, DN 15, DN 25: Max. ΔT ≤ 80 °C/min (¼",3/8", ½", 1": Max. ΔT ≤ 144 °F/min) DN 40, DN 50, DN 65: Max. ΔT ≤ 70 °C/min (1½",2", 2½": Max. ΔT ≤ 126 °F/min) DN 80, DN 100: Max. ΔT ≤ 60 °C/min (3",4": Max. ΔT ≤ 108 °F/min)

Technical specifications (continued)

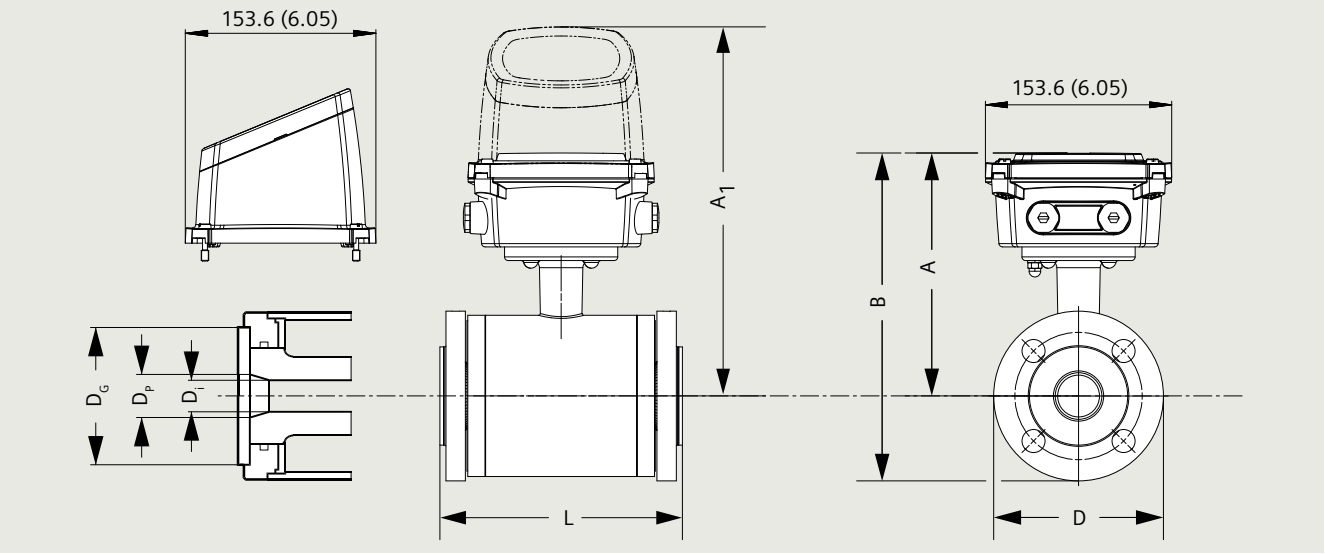
SITRANS FMS100	
• Ceramic & Option J30	DN 10, DN 15, DN 25: Max. ΔT ≤ 80 °C/min (3/8", ½", 1": Max. ΔT ≤ 144 °F/min) DN 40, DN 50, DN 65: Max. ΔT ≤ 70 °C/min (1½", 2", 2½": Max. ΔT ≤ 126 °F/min) DN 80, DN 100: Max. ΔT ≤ 60 °C/min (3", 4": Max. ΔT ≤ 108 °F/min)
• Ceramic & Option J33	DN 15, DN 25:Max. ΔT ≤ 80 °C/min (½", 1": Max. ΔT ≤ 144 °F/min) DN 40, DN 50:Max. ΔT ≤ 70 °C/min (1½", 2": Max. ΔT ≤ 126 °F/min) DN 80, DN 100:Max. ΔT ≤ 60 °C/min (3", 4": Max. ΔT ≤ 108 °F/min)
• PFA	DN 15, 25, 40, 50, 65: Max. ΔT 120 °C/min (½", 1", 1½", 2", 2½": Max. ΔT 248 °F/min) DN 80, DN 100: Max. ΔT 110 °C/min (3", 4": Max. ΔT 230 °F/min)
Degree of protection	
• Standard	IP66/67, NEMA 4X/6
• Optional	IP68 and NEMA 6P (2 m, 10 days) IP68 and NEMA 6P (10 m, continuously) (only in remote design)
Mechanical load (vibration)	
Integral mount / compact version	• 2 ... 8.4 Hz, 3.5 mm peak • 8.4 ... 500 Hz, 1 g peak Vibration broad-band random, according to IEC 60068-2-64 • 10 ... 200 Hz, 0.003 g2/Hz • 200 ... 500 Hz, 0.001 g2/Hz • Total: 0.93 g rms
• Remote version	Vibration, sinusoidal according to IEC 60068-2-6 **Sensor** • 2 ... 8.4 Hz, 7.5 mm peak • 8.4 ... 500 Hz, 2 g peak **Transmitter** • 2 ... 8.4 Hz, 1.5 mm peak • 8.4 ... 500 Hz, 0.7 g peak Vibration broad-band random, according to IEC 60068-2 64 **Sensor** • 10 ... 200 Hz, 0.01 g^2/-Hz • 200 ... 500 Hz, 0.003 g^2/Hz • Total: 1.67 g rms **Transmitter** • 10 ... 200 Hz, 0.003 g^2/-Hz • 200 ... 500 Hz, 0.001 g^2/Hz • Total: 0.93 g rms
Pressure drop	insignificant
Test pressure	1.5 × PN (where applicable)
Design	
Dimensions	See dimensional drawings
Weight	See dimensional drawings
Material	
• Housing and flanges	Stainless steel AISI 316L / 1.4404 flanges and housing, polished
• Measuring electrode	Hastelloy C22 / 2.4602 Platinum
• Measuring tube	Stainless steel AISI 316L / 1.4404
• Terminal box	Polycarbonate Optional Stainless steel AISI 316 / 1.4436
Cable entries	4 × metric thread (size M20 × 1.5)
Pressure equipment	Conforming with PED 2014/68/EU
Electromagnetic compatibility	Conforming with EMC 2014/30/EU
Calibration	
• Standard	Zero-point, 2 × 25% and 2 × 90%
• Optional	5-point calibration: 20%, 40%, 60%, 80%, 100% of factory Q_{max} 10-point calibration: ascending and descending at 20%, 40%, 60%, 80%, 100% of factory Qmax
Certificates and approvals	
General purpose	CE (LVD, PED, EMC, RoHS), UKCA
Hygienic	
• Ceramic & Option J33 & E85	3A certificate (Hygienic – US)
• PFA & Option J33 [& E85]	FDA declaration of conformity (food contact - US) EC/1935/2004 Food contact declaration of conformity (food contact - EU) [3A certificate (Hygienic – US)]

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Technical specifications (continued)

SITRANS FMS100	
Others	Environmental Product Declaration (EPD) CRN (Canadian Registration Number) UL 61010 (ordinary locations US/C) RCM (Australia) EAC (KZ) KC (Ko)

Dimensional drawings



SITRANS FMS100 in compact (integral-mount transmitter) and remote design. Dimensions in mm (inch)

Metric

DN [mm]	A[1] [mm]	B[1] [mm]	A_1 [mm]	D [mm]	D_i [mm]	D_i (PFA) [mm]	D_p [mm]	D_G [mm]	Weight[2] [kg]
2	154	179	258	48.7	2		17.3	34	2.2
3	154	179	258	48.7	3		17.3	34	2.2
6	154	179	258	48.7	6		17.3	34	2.2
10	154	179	258	48.7	10	10	13.6	34	2.2
15	154	179	258	48.7	15	16	17.3	40	2.2
25	162	194	266	63.5	25	26	28.5	56	2.7
40	172	214	276	84.0	40	38	43.4	75	3.4
50	181	232	285	101.6	50	50	54.5	90	4.2
65	191	251	294	120.9	65	66	68.0	112	5.5
80	197	263	300	133.0	80	81	82.5	124	7.0
100	210	289	313	159.0	100	100	107.1	150	10.0

1) 7.5 mm shorter when the stainless steel terminal box is used (High temperature 200 °C (392 °F) version).
2) With transmitter FMT020 installed, weight is increased by approximately 1 kg.

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Dimensional drawings (continued)

Imperial

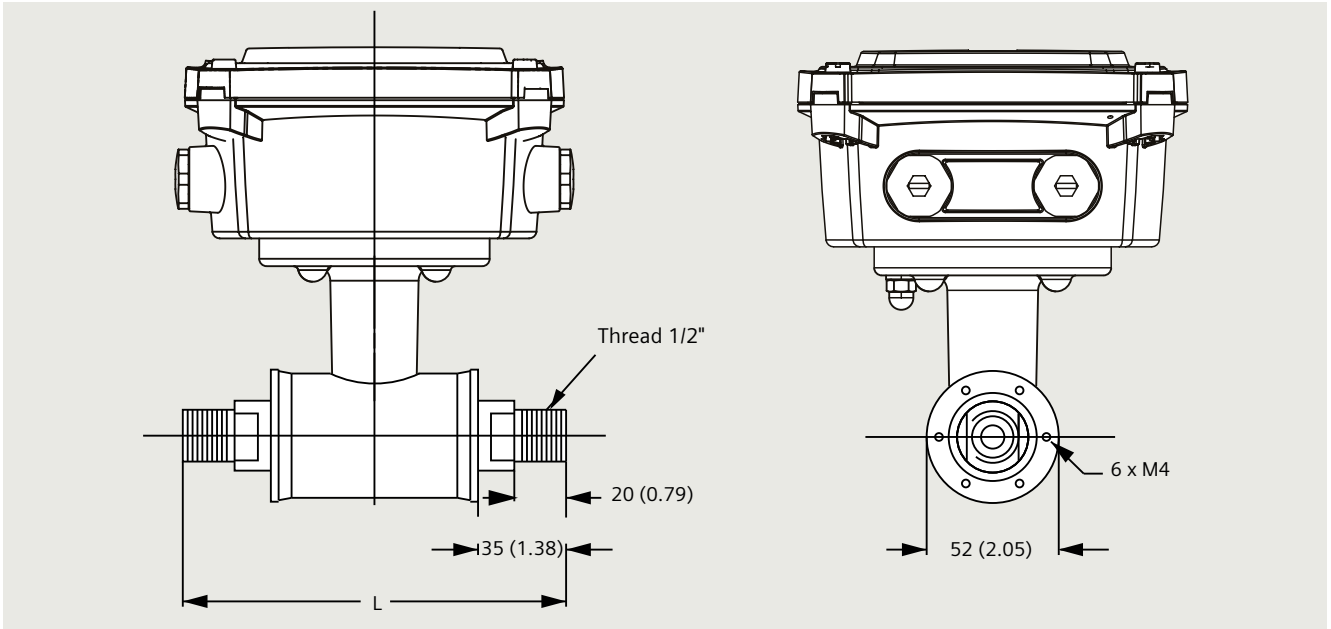
DN [inch]	A[1] [inch]	B[1] [inch]	A_1 [inch]	D [inch]	D_i [inch]	D_i (PFA) [inch]	D_p [inch]	D_G [inch]	Weight[2] [lb]
1/12	6.1	7.05	10.2	1.92	0.08		0.68	1.34	4.8
1/8	6.1	7.05	10.2	1.92	0.12		0.68	1.34	4.8
¼	6.1	7.05	10.2	1.92	0.24		0.68	1.34	4.8
3/8	6.1	7.05	10.2	1.92	0.39	0.39	0.53	1.34	4.8
½	6.1	7.05	10.2	1.92	0.59	0.63	0.68	1.57	4.8
1	6.4	7.64	10.5	2.50	0.98	1.02	1.12	2.20	5.9
1½	6.8	8.42	10.9	3.31	1.57	1.50	1.71	2.95	7.5
2	7.1	9.13	11.2	4.00	1.97	1.97	2.15	3.54	9.2
2½	7.5	9.88	11.6	4.76	2.56	2.60	2.68	4.41	12
3	7.8	10.35	11.8	5.24	3.15	3.19	3.25	4.88	15
4	8.3	11.37	12.3	6.26	3.94	3.94	4.22	5.91	22

1) 0.29 inch shorter when the stainless steel terminal box is used (High temperature 200 °C (392 °F) version).
2) With transmitter FMT020 installed, weight is increased by approximately 2.2 lb.

SITRANS FMS100 built-in length without flanges (sandwich version)

Nominal size		L[1] EN 1092-1-201									
		EPDM		Graphite		PTFE (Teflon)		Without gasket		Grounding ring	
DN	inch	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
2 ... 10[1]	1/12 ... 3/8[1]	64	2.52	66	2.60	70	2.75	64	2.52	77	3.03
15	½	65	2.56	66	2.60	70	2.75	64	2.52	77	3.03
25	1	80	3.15	81	3.19	85	3.35	79	3.10	92	3.62
40	1½	95	3.74	96	3.78	100	3.94	94	3.70	107	4.21
50	2	105	4.13	106	4.17	110	4.33	104	4.05	117	4.61
65	2½	130	5.12	131	5.15	135	5.31	129	5.05	142	5.60
80	3	155	6.10	156	6.14	160	6.30	154	6.00	167	6.57
100	4	185	7.28	186	7.31	190	7.48	184	7.20	197	7.76

1) When earthing flanges are used, the thickness of the earthing flange must be added to the built-in length.

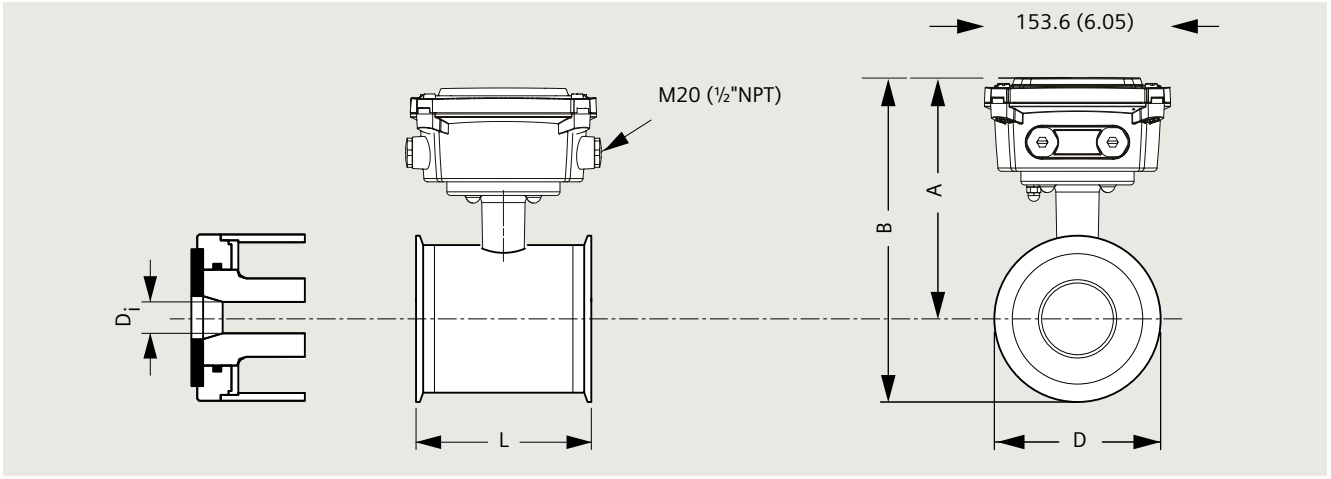


SITRANS FMS100 built-in length DN 2 ... 10 (1/12" ... 3/8") with adapters

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Dimensional drawings (continued)

Stainless steel and Hastelloy pipe connections								PVDF pipe connections	
Without gasket		EPDM		Graphite		PTFE		PTFE	
DN	inch	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
150	5.9	150	5.9	152	6.0	156	6.1	133	5.2



SITRANS FMS100 Food grade version remote design

Metric

DN [mm]	L [mm]	A [mm]	B [mm]	D [mm]	D_i (Al_2O_3) [mm]	Di (PFA) [mm]	Weight[1] [kg]
10	64	161	193.7	64.0	10	10	2.2
15	64	161	193.7	64.0	15	16	2.2
25	79	169	207.5	77.5	25	26	2.7
40	94	179	228.0	91.0	40	38	3.4
50	104	188	247.7	119.0	50	50	4.2
65	131	197.5	262.6	130.0	65	66	5.5
80	156	204	281.0	155.0	80	81	7.0
100	186	217	308.0	183.0	100	100	10.0

1) With transmitter FMT020 installed, weight is increased by approximately 1 kg.

Imperial

DN [inch]	L [inch]	A [inch]	B [inch]	D [inch]	D_i (Al_2O_3) [inch]	Di (PFA) [inch]	Weight[1] lb
3/8	2.52	6.34	7.62	2.52	0.39	0.39	4.8
½	2.52	6.34	7.62	2.52	0.59	0.63	4.8
1	3.11	6.66	8.17	3.05	0.98	1.02	5.9
1½	3.70	7.05	8.98	3.58	1.57	1.50	7.5
2	4.09	7.40	9.75	4.68	1.97	1.97	9.2
2½	5.16	7.78	10.34	5.12	2.56	2.60	12.0
3	6.14	8.03	11.06	6.10	3.15	3.19	15.0
4	7.32	8.54	12.13	7.20	3.94	3.94	22.0

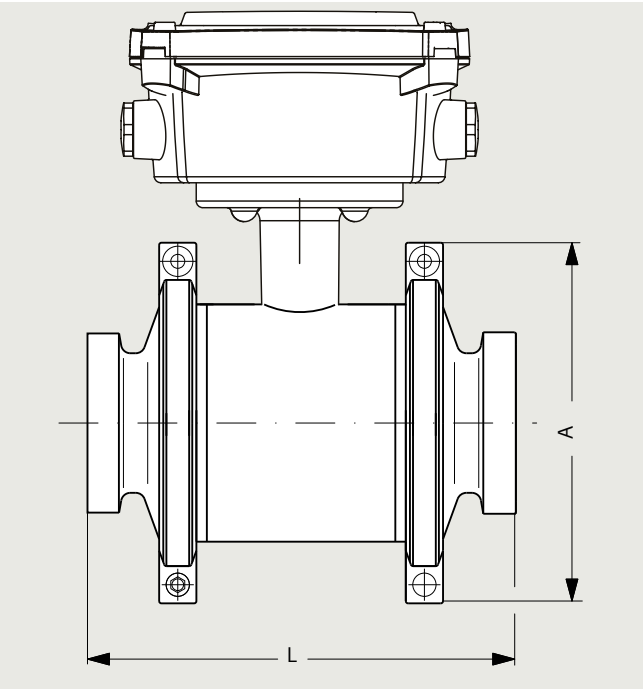
1) With transmitter FMT020 installed, weight is increased by approximately 2.2 lb.

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Dimensional drawings (continued)

DN [inch]	A[1] [inch]	B[1] [inch]	A_1 [inch]	D [inch]	D_i [inch]	Di (PFA) [inch]	D_p [inch]	D_G [inch]	Weight[2] [lb]
1/12	6.1	7.05	10.2	1.92	0.08		0.68	1.34	4.8
1/8	6.1	7.05	10.2	1.92	0.12		0.68	1.34	4.8
¼	6.1	7.05	10.2	1.92	0.24		0.68	1.34	4.8
3/8	6.1	7.05	10.2	1.92	0.39	0.39	0.53	1.34	4.8
½	6.1	7.05	10.2	1.92	0.59	0.63	0.68	1.57	4.8
1	6.4	7.64	10.5	2.50	0.98	1.02	1.12	2.20	5.9
1½	6.8	8.42	10.9	3.31	1.57	1.50	1.71	2.95	7.5
2	7.1	9.13	11.2	4.00	1.97	1.97	2.15	3.54	9.2
2½	7.5	9.88	11.6	4.76	2.56	2.60	2.68	4.41	12
3	7.8	10.35	11.8	5.24	3.15	3.19	3.25	4.88	15
4	8.3	11.37	12.3	6.26	3.94	3.94	4.22	5.91	22

1) 0.29 inch shorter when the stainless steel terminal box is used (High temperature 200 °C (392 °F) version).
2) With transmitter FMT020 installed, weight is increased by approximately 2.2 lb.



SITRANS FMS100 Food grade version built-in length with flanges

DN [mm]	[inch]	A [mm]	[inch]	L[1] [mm]	[inch]
10	3/8	99	3.90	146	5.75
15	½	99	3.90	146	5.75
25	1	113	4.45	161	6.34
40	1½	126	4.96	176	6.93
50	2	154	6.06	186	7.32
65	2½	165	6.50	223	8.78
80	3	200	7.87	258	10.16
100	4	225	8.86	288	11.34

1) The total built-in length "L" is independent of the adapter type selected.