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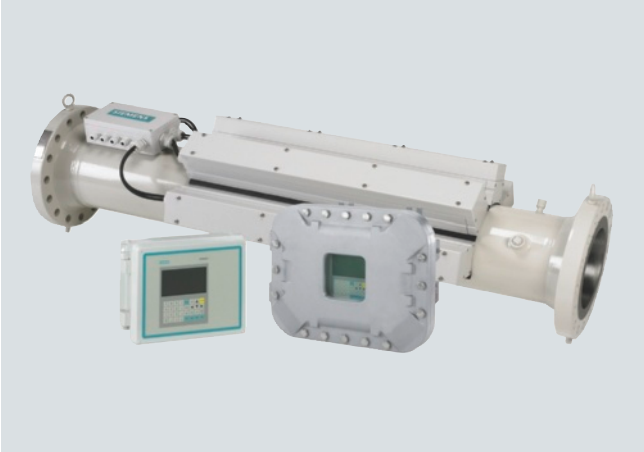
Overview



SITRANS FUT1010 is the latest ultrasonic flow meter from Siemens. Ideal for applications within the liquid and gas hydrocarbon industry capable of providing custody transfer accuracy. With the newly developed permanent TransLoc™ mounting system, the sensors are permanently mounted on the outside of the pipe, eliminating any contact with the medium.

SITRANS FUT1010 is available in two different configurations; a version for liquid hydrocarbon applications and a version for precise gas measurement. Both versions are offered in pipe sizes ranging from 4 inch to 24 inch (DN 100 to DN 600) with flange ratings of ANSI Class 150/300/600 for liquid and 300/600 for gas.

Benefits

- Calibrated performance that meets custody transfer accuracy
- WideBeam® technology allows for precision flow measurement by reducing the meter's sensitivity to changes in the medium's physical properties
- TransLoc™ permanent mounting system ensures sealing and virtually no maintenance
- Available in a wide range of sizes
- High viscosity range (up to 2800 Cst)
- ZeroMatic Path™ capability automatically corrects for zero drift with no interruption of flow
- Completely cavity free design which eliminates any signal degrading buildup or ports to clog
- Large bi-directional flow range
- MODBUS RTU RS 232/485 output available
- Dynamic Reynolds Number compensation

Application

Liquid applications		Gas applications	
Pipelines	Custody transfer, allocation, line balance, interface/densitometer	**Upstream**	Production wells, gathering, separation and dehydration
Terminals	Check metering, transmix metering, product identification	**Midstream**	Underground storage, transmission, compressor stations
Refineries	Process control, blending, tank measurement, ship loading and unloading	**Downstream**	Electric power generation, industrial use, gas processing plants
Transportation	Crude oil pipelines, LPG pipelines, multiple product pipelines, airport facilities, liquid terminals		
Downstream	Petrochemical and processing plants		

Design

SITRANS FUT1010 is available in two different configurations, both featuring the TransLoc mounting system:

- A version for liquid hydrocarbon applications
- A version for precise gas measurement

Transmitter

SITRANS FUT1010 is available with two, three or four paths and IP65 (NEMA 4X) wall mount or IP66 (NEMA 7) wall mount explosionproof enclosures.

Sensor

Available sizes include 4 to 24 inches (DN 100 to DN 600) with flange ratings of ANSI Class 150, 300 and 600 for the liquid meter and ANSI Class 300 and 600 for gas.

If the installation warrants, SITRANS FUT1010 can be delivered with a ten diameter upstream and five diameter downstream tubes and a flow conditioner.

Function

- IP65 (NEMA 4X) and IP66 (NEMA 7) transmitters have integral 33 button keypads and large (128 x 240 pixel) graphic displays readable up to 12 m (40 ft) away
- Current, voltage, status alarm, frequency and RS 232 outputs (see specification section for details)
- Analog inputs (see specification section for details)
- 1 MByte data logger with both site and data logger storage
- Standard or actual volume flow outputs
- Standard or actual totalize outputs
- Complete application and operation diagnostics, to ensure operational integrity
- Temperature provided by non-intrusive sensor (¾" tap available for insert temperature sensor)
- Detection of aeration or contamination

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SITRANS FUT1010 (Liquid and Gas)

Technical specifications

Input	
Flow range (Gas)	± 36.5 m/s (± 120 f/s) for DN 100 ... DN 200 (4" ... 8") pipes bi-directional ± 30.5 m/s (± 100 ft/s) for DN 250 ... DN 600 (10" ... 24") pipes bi-directional
Flow range (Liquid)	± 12 m/s (± 40 f/s) including zero flow, bi-directional
Flow sensitivity	0.0003 m/s (0.001 f/s) flow rate independent
Flow temperature range	-28 ... +93 °C (-20 ... +200°F)
Analog inputs	4 x 4 ... 20 mA, (Programmable to Density, Pressure, viscosity or Temperature)
Output	
Standard outputs	• 4x isolated 4 ... 20 mA, programmable • 2x 0 ... 10 V DC, programmable • 4x Digital Pulse outputs (2x open collector and 2x 0-5V TTL) One each for positive flow, one each for negative flow • Standard RS 232 Serial Port or Optional RS 485/422
Status/Alarm I/O	• Programmable, 4x Form C Relays • Clear Switch Input Totalizer Hold Switch Input
Calibrated accuracy	
Gas	
2-path	0.5 ... 1.0 % (4" ... 6" < 0.25 %)
3-path	< 0.5 %
4-path	< 0.2 %
Liquid	
2-path	0.5 ... 1.0 % (4" ... 6" < 0.25 %)
3-path	< 0.5 %
4-path	< 0.15 %
Repeatability	± 0.05 ... 0.1 %
Data refresh rate	5 Hz
Design	
Design Flow transmitter	
Dimensions	see SITRANS F US Clamp-on "System info and selection guide"
Weight	see diagrams
Power supply	
Power supply	90 ... 240 V AC, 50 … 60 Hz, 30 VA or 9 ... 36 V DC, 12 W
Indication and operation	
Data logger memory	1 MByte, programmable for all available data variables
Display	128 x 240 pixel LCD with back-light
Keypad	33 keypad buttons with tactile feedback
Language options	English, Spanish, German, Italian, French

Design Flow sensor	
Nominal pipe sizes	4" ... 24" (DN 100 ... DN 600)
Pipe material specification	API 5L ERW
Temperature tap	¾"
Pressure tap	¼"
Flange class	
• Liquid	150, 300, 600
• Gas	300, 600
Flange specification	• ASME B16.5 • Liquid 150, 300, 600 • Gas 300, 600
Flange facing	Raised face weld neck
Flange material	A105
Flow sensor paths	Two, three, or four
Sensor length	See diagram
Design temperature	-28 ... +93 °C (-20 ... +200 °F)
Exterior finish	Marine/offshore grade per ASTM B117
Optional pipe sections	• 10 D upstream (with optional flow conditioner) • 5 D downstream
Certificates and approvals	
Flow transmitter IP65 (NEMA 4X)	
FM and CSA	• Transmitter N-I Class I, Div 2 S Class II, Div 2 • Sensor I.S. Class I, II, Div 1
ATEX	Ex II (1) G [Ex ia] IIC EX II 3 (1) G Ex nC [ia] IIC T5
CE markings	EMC 2004/108/EC ATEX 94/9/EC
INMETRO (Brazil)	[BR-Ex ia] IIC BR-Ex nC [ia] IIC T5
IECEx	Pending
Flow Transmitter - IP66 (NEMA 7)	
FM and CSA	• Transmitter Ex Class I, Div 1 D-I Class II, Div 1 N-I Class I, Div 2 S Class II, Div 2 • Sensor I.S. Class I, II, Div 1
ATEX	Ex II (1) G [Ex ia] IIC Ex II 3 (1) G Ex nC [ia] IIC T5 Ex II 2 (1) G Ex d [ia IIC] IIB + H2 T5
CE markings	EMC 2004/108/EC ATEX 94/9/EC
INMETRO (Brazil)	[BR-Ex ia] IIC BR-Ex d [ia IIC] IIB T5
IECEx	Pending
Sensor	
FM and CSA	I.S. Class I, Div 1 N-I Class I, Div 2 S Class II, Div 2
ATEX	Ex II 1 G Ex ia IIC T5
CE markings	EMC 2004/108/EC PED 97/23/EEC ATEX 94/9/EC

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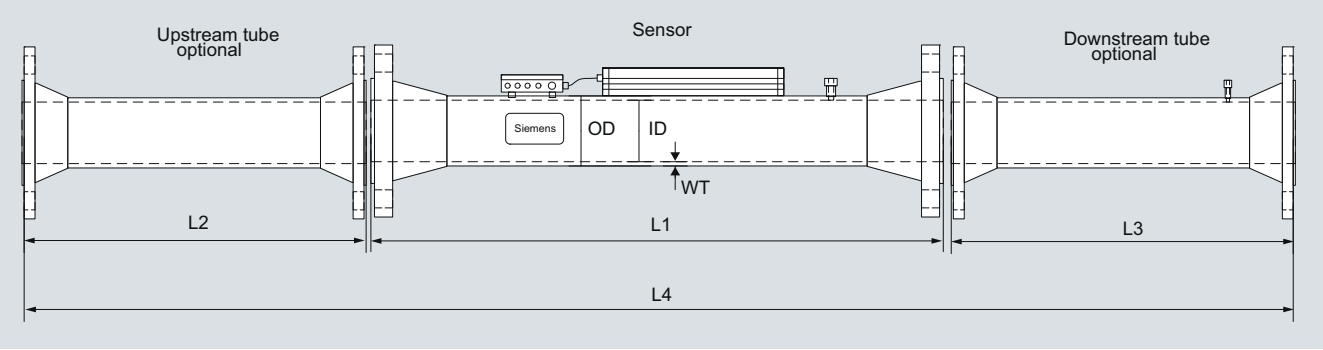
Dimensional drawings



Length

Liquid Flange Class 150		Nominal O.D.		Nominal I.D.		Max operating pressure (psi)		Mat. Grade	Length L1		Length L2		Length L3		Length L4	
mm	inch	mm	inch	mm	inch	bar	psi		mm	inch	mm	inch	mm	inch	mm	inch
101.6	4.0	114.3	4.5	102.3	4.026	19.7	285.0	B	1828.8	72.0	1023.6	40.3	510.5	20.1	3369.3	132.65
152.4	6.0	168.3	6.625	154.1	6.065	19.7	285.0	B	1828.8	72.0	1541.8	60.7	769.6	30.3	4146.6	163.25
203.2	8.0	219.1	8.625	202.7	7.981	19.7	285.0	B	1828.8	72.0	2026.9	79.8	1013.5	39.9	4875.5	191.95
254.0	10.0	273.1	10.75	254.5	10.02	19.7	285.0	B	2184.4	86.0	2545.1	100.2	1272.5	50.1	6008.4	236.55
304.8	12.0	323.9	12.75	304.8	12.0	19.7	285.0	B	2184.4	86.0	3048.0	120.0	1524.0	60.0	6762.8	266.25
406.4	16.0	406.4	16.0	387.4	15.25	19.7	285.0	B	2184.4	86.0	3873.5	152.5	1938.0	76.3	8002.3	315.05
457.2	18.0	457.2	18.0	438.2	17.25	19.7	285.0	B	2501.9	98.5	4381.5	172.5	2192.0	86.3	9081.8	357.55
508.0	20.0	508.0	20.0	489.0	19.25	19.7	285.0	B	2501.9	98.5	4889.5	192.5	2446.0	96.3	9843.8	387.55
609.6	24.0	609.6	24.0	590.6	23.25	19.7	285.0	B	2501.9	98.5	5905.5	232.5	2954.0	116.3	11367.8	447.55

Length

Liquid Flange Class 300		Nominal O.D.		Nominal I.D.		Max operating pressure (psi)		Mat. Grade	Length L1		Length L2		Length L3		Length L4	
mm	inch	mm	inch	mm	inch	bar	psi		mm	inch	mm	inch	mm	inch	mm	inch
101.6	4.0	114.3	4.5	102.3	4.026	51.0	740.0	B	1828.8	72.0	1023.6	40.3	510.5	20.1	3369.3	132.65
152.4	6.0	168.3	6.625	154.1	6.065	51.0	740.0	B	1828.8	72.0	1541.8	60.7	769.6	30.3	4146.6	163.25
203.2	8.0	219.1	8.625	202.7	7.981	51.0	740.0	B	1828.8	72.0	2026.9	79.8	1013.5	39.9	4875.5	191.95
254.0	10.0	273.1	10.75	254.5	10.020	51.0	740.0	B	2184.4	86.0	2544.1	100.2	1272.5	50.1	6008.4	236.55
304.8	12.0	323.9	12.75	304.8	12.0	51.0	740.0	B	2184.4	86.0	3048.0	120.0	1524.0	60.0	6762.8	266.25
406.4	16.0	406.4	16.0	381.0	15.0	51.0	740.0	B	2184.4	86.0	3810.0	150.0	1905.0	75.0	7905.8	311.25
457.2	18.0	457.2	18.0	428.7	16.876	51.0	740.0	B	2501.9	98.5	4287.5	168.8	2143.8	84.4	8939.5	351.95
508.0	20.0	508.0	20.0	477.9	18.814	51.0	740.0	X42	2501.9	98.5	4777.7	188.1	2390.1	94.1	9676.1	380.95
609.6	24.0	609.6	24.0	574.7	22.626	51.0	740.0	X42	2501.9	98.5	5748.0	226.3	2872.7	113.1	11129.0	438.15

Length

Liquid Flange Class 600		Nominal O.D.		Nominal I.D.		Max operating pressure (psi)		Mat. Grade	Length L1		Length L2		Length L3		Length L4	
mm	inch	mm	inch	mm	inch	bar	psi		mm	inch	mm	inch	mm	inch	mm	inch
101.6	4.0	114.3	4.5	102.3	4.026	96.6	1400.0	B	1828.8	72.0	1023.6	40.3	510.5	20.1	3369.3	132.65
152.4	6.0	168.3	6.625	154.1	6.065	81.0	1175.0	B	1828.8	72.0	1541.8	60.7	769.6	30.3	4146.6	163.25
203.2	8.0	219.1	8.625	193.7	7.625	102.1	1480.0	B	1828.8	72.0	1938.0	76.3	967.7	38.1	4740.9	186.65
254.0	10.0	273.1	10.75	247.7	9.75	82.8	1200.0	B	2184.4	86.0	2476.5	97.5	1239.5	48.8	5906.8	232.55
304.8	12.0	323.9	12.75	298.5	11.75	79.3	1150.0	B	2184.4	86.0	2984.5	117.5	1493.5	58.8	6668.8	262.55
406.4	16.0	406.4	16.0	373.1	14.688	82.8	1200.0	B	2184.4	86.0	3731.3	146.9	1864.4	73.4	7786.4	306.55
457.2	18.0	457.2	18.0	419.1	16.5	86.2	1250.0	B	2501.9	98.5	4191.0	165.0	2095.5	82.5	8794.8	346.25
508.0	20.0	508.0	20.0	466.8	18.376	82.8	1200.0	X42	2501.9	98.5	4668.5	183.8	2334.3	91.9	9511.0	374.45
609.6	24.0	609.6	24.0	560.4	22.064	77.6	1125.0	X42	2501.9	98.5	5603.2	220.6	2801.6	110.3	10913.1	429.65

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SITRANS FUT1010 (Liquid and Gas)

Length Gas Class 300		Nominal O.D.		Nominal I.D.		Max operating pressure (psi)		Mat. Grade	Length L1		Length L2		Length L3		Length L4	
mm	inch	mm	inch	mm	inch	bar	psi		mm	inch	mm	inch	mm	inch	mm	inch
101.6	4.0	114.3	4.5	102.3	4.026	51.0	740.0	B	1828.8	72.0	1023.6	40.3	510,5	20.1	3369.3	132.65
152.4	6.0	168.3	6.625	154.1	6.065	51.0	740.0	B	1828.8	72.0	1541.8	60.7	769.6	30.3	4146.6	163.25
203.2	8.0	219.1	8.625	202.7	7.981	51.0	740.0	X42	1828.8	72.0	2026.9	79.8	1013.5	39.9	4875.5	191.95
254.0	10.0	273.1	10.75	254.5	10.020	51.0	740.0	X42	1828.8	72.0	2545.1	100.2	1272.5	50.1	5652.8	222.55
304.8	12.0	323.9	12.75	303.2	11.938	51.0	740.0	X42	1828.8	72.0	3032.8	119.4	1516.4	59.7	6384.3	251.35
406.4	16.0	406.4	16.0	381.0	15.0	51.0	740.0	X42	1981.2	78.0	3810.0	150.0	1905.0	75.0	7702.6	303.25
457.2	18.0	457.2	18.0	428.7	16.876	51.0	740.0	X42	1981.2	78.0	4287.5	168.8	2143.8	84.4	8418.8	331.45
508.0	20.0	508.0	20.0	477.9	18.814	51.0	740.0	B	1981.2	78.0	4777.7	188.1	2390.1	94.1	9155.4	360.45
609.6	24.0	609.6	24.0	574.7	22.626	51.0	740.0	B	1981.2	78.0	5748.0	226.3	2872.7	113.1	10608.3	417.65

Length Gas Class 600		Nominal O.D.		Nominal I.D.		Max operating pressure (psi)		Mat. Grade	Length L1		Length L2		Length L3		Length L4	
mm	inch	mm	inch	mm	inch	bar	psi		mm	inch	mm	inch	mm	inch	mm	inch
101.6	4.0	114.3	4.5	102.3	4.026	102.1	1480.0	X42	1828.8	72.0	1023.6	40.3	510.5	20.1	3369.3	132.65
152.4	6.0	168.3	6.625	154.1	6.065	96.6	1400.0	X42	1828.8	72.0	1541.8	60.7	769.9	30.3	4146.6	163.25
203.2	8.0	219.1	8.625	202.7	7.981	87.9	1275.0	X42	1828.8	72.0	2026.9	79.8	1013.5	39.9	4875.5	191.95
254.0	10.0	273.1	10.75	247.7	9.75	102.1	1480.0	X42	1981.2	78.0	2476.5	97.5	1239.5	48.8	5703.6	224.55
304.8	12.0	323.9	12.75	298.5	11.75	94.8	1375.0	X42	1981.2	78.0	2984.5	117.5	1493.5	58.8	6465.6	254.55
406.4	16.0	406.4	16.0	381.0	15.0	75.9	1100.0	X42	1981.2	78.0	3810.0	150.0	1905.0	75.0	7702.6	303.25
457.2	18.0	457.2	18.0	428.7	16.876	75.9	1100.0	X42	1981.2	78.0	4287.5	168.8	2143.8	84.4	8418.8	331.45
508.0	20.0	508.0	20.0	477.9	18.814	75.9	1100.0	X42	1981.2	78.0	4777.7	188.1	2390.1	94.1	9155.4	360.45
609.6	24.0	609.6	24.0	574.7	22.626	72.4	1050.0	X42	1981.2	78.0	5748.0	226.3	2872.7	113.1	10608.3	417.65

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SITRANS FUT1010 Liquid sizing chart

Nominal diameter		Q_{min}	Q_{max}	Q_{min}	Q_{max}
mm	inch	[m^3/h]	[m^3/h]	[42 GAL BBL/h]	[42 GAL BBL/h]
100	4	14	360	85	2267
150	6	29	818	180	5146
200	8	46	1417	290	8910
250	10	67	2233	421	14045
300	12	80	3203	504	20143
400	16	103	5172	651	32532
450	18	116	6618	728	41625
500	20	124	8241	778	51836
600	24	150	12022	945	75617

SITRANS FUT1010 Gas sizing chart

	SITRANS FUT1010 maximum flow rate (MMSCFD) [Millions of standard cubic feet per day]							
	Meter size and maximum velocity							
	4"	6"	8"	10"	12"	16"	20"	24"
Pressure (psig)	135 ft/s	126 ft/s	117 ft/s	144 ft/s	126 ft/s	99 ft/s	81 ft/s	90 ft/s
100	8.2	17.3	27.9	54.1	67.1	83.3	107.1	174.9
200	15.5	32.9	52.9	102.7	127.6	158.2	203.4	332.3
300	23.1	49.0	78.7	152.8	189.8	235.4	302.6	494.5
400	30.9	65.5	105.3	204.4	253.9	315.0	404.8	661.5
500	39.0	82.6	132.8	257.6	320.0	396.9	510.1	833.6
600	47.3	100.1	161.0	312.4	388.0	481.2	618.5	1010.8
700	55.8	118.2	190.0	368.7	457.9	568.1	730.1	1193.1
800	64.6	136.8	219.8	426.6	529.9	657.3	844.8	1380.5
900	73.6	155.8	250.5	486.1	603.8	749.0	962.6	1573.1
1000	82.8	175.4	282.0	547.2	679.6	843.0	1083.5	1770.6
1100	92.3	195.4	314.1	609.6	757.1	939.2	1207.1	1972.7
1200	101.9	215.9	347.0	673.3	836.3	1037.4	1333.3	2178.9

	SITRANS FUT1010 maximum flow rate (MMSCFD) [Millions of standard cubic feet per day]							
	Meter size and maximum velocity			[Minimum flow rate above which 0.2 % accuracy can be maintained]				
	4"	6"	8"	10"	12"	16"	20"	24"
Pressure (psig)	1.55 ft/s	1.4 ft/s	1.3 ft/s	1.65 ft/s	1.35 ft/s	1.1 ft/s	0.85 ft/s	1 ft/s
100	0.1	0.2	0.3	0.6	0.7	0.9	1.1	1.9
200	0.2	0.4	0.6	1.2	1.4	1.8	2.1	3.7
300	0.3	0.5	0.9	1.8	2.0	2.6	3.2	5.5
400	0.4	0.7	1.2	2.3	2.7	3.5	4.2	7.4
500	0.4	0.9	1.5	3.0	3.4	4.4	5.4	9.3
600	0.5	1.1	1.8	3.6	4.2	5.3	6.5	11.2
700	0.6	1.3	2.1	4.2	4.9	6.3	7.7	13.3
800	0.7	1.5	2.4	4.9	5.7	7.3	8.9	15.3
900	0.8	1.7	2.8	5.6	6.5	8.3	10.1	17.5
1000	1.0	1.9	3.1	6.3	7.3	9.4	11.4	19.7
1100	1.1	2.2	3.5	7.0	8.1	10.4	12.7	21.9
1200	1.2	2.4	3.9	7.7	9.0	11.5	14.0	24.2

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SITRANS FUT1010 (Liquid and Gas)

	SITRANS FUT1010 Maximum Flow Rate (Nm^3/h x 1000) [Thousands of normal cubic meters per hour]							
	DIN meter size and maximum velocity							
	100 mm	150 mm	200 mm	250 mm	300 mm	400 mm	500 mm	600 mm
Pressure (barg)	41.1 m/s	38.4 m/s	35.6 m/s	43.9 m/s	38.4 m/s	30.1 m/s	24.6 m/s	27.4 m/s
10	13.5	28.7	46.1	89.5	111.2	137.9	177.2	289.6
20	26.4	55.9	89.9	174.5	216.7	268.8	345.5	564.6
30	39.8	84.4	135.6	263.2	326.9	405.5	521.2	851.8
40	53.9	114.1	183.4	355.8	441.9	548.2	704.6	1151.4
50	68.5	145.0	233.1	452.4	561.9	697.0	895.9	1464.0
60	83.7	177.2	284.9	552.9	686.7	851.9	1094.8	1789.2
70	99.5	210.7	338.7	657.2	816.3	1012.6	1301.5	2126.9
80	115.8	245.3	394.3	765.1	950.2	1178.7	1514.9	2475.8
90	132.6	280.8	451.4	875.9	1087.8	1349.4	1734.3	2834.3
100	149.7	317.1	509.7	989.1	1228.5	1523.9	1958.6	3200.8
110	167.1	353.8	568.8	1103.8	1370.9	1700.6	2185.7	3571.9
120	184.5	390.8	628.2	1218.9	1514.0	1878.0	2413.7	3944.5

	SITRANS FUT1010 Transition Flow Rate (Nm^3/h x 1000) [Thousands of normal cubic meters per hour]							
	DIN meter size and maximum velocity			Minimum flow rate above which 0.2 % accuracy can be maintained				
	100 mm	150 mm	200 mm	250 mm	300 mm	400 mm	500 mm	600 mm
Pressure (barg)	0.47 m/s	0.42 m/s	0.39 m/s	0.50 m/s	0.41 m/s	0.33 m/s	0.25 m/s	0.30 m/s
10	0.2	0.3	0.5	1.0	1.2	1.5	1.9	3.2
20	0.3	0.6	1.0	2.0	2.3	3.0	3.6	6.3
30	0.5	0.9	1.5	3.0	3.5	4.5	5.5	9.5
40	0.6	1.3	2.0	4.1	4.7	6.1	7.4	12.8
50	0.8	1.6	2.6	5.2	6.0	7.7	9.4	16.3
60	1.0	2.0	3.2	6.3	7.4	9.5	11.5	19.9
70	1.1	2.3	3.8	7.5	8.7	11.3	13.7	23.6
80	1.3	2.7	4.4	8.8	10.2	13.1	15.9	27.5
90	1.5	3.1	5.0	10.0	11.7	15.0	18.2	31.5
100	1.7	3.5	5.7	11.3	13.2	16.9	20.6	35.6
110	1.9	3.9	6.3	12.6	14.7	18.9	22.9	39.7
120	2.1	4.3	7.0	14.0	16.2	20.9	25.3	43.8

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Selection and Ordering data	Order No.	Order Code
SITRANS FUT1010 (Liquid)	**7ME3620-** ■■■■■ **-0** ■■■	■■■
Transmitter type		
No Transmitter	**0**	
IP65 NEMA 4X (2 path)	**1**	
IP65 NEMA 4X (2 path) with MODBUS	**2**	
IP65 NEMA 4X (3 or 4 path)	**3**	
IP65 NEMA 4X (3 or 4 path) with MODBUS	**4**	
IP66 NEMA 7 wall mount/explosionproof (2 Path)	**5**	
P66 NEMA 7 wall mount/explosionproof (2 Path) with MODBUS	**6**	
P66 NEMA 7 wall mount/explosionproof (3 or 4 Path)	**7**	
P66 NEMA 7 wall mount/explosionproof (3 or 4 Path) lwith MODBUS	**8**	
Input power		
90 ... 240 V AC	**1**	
9 ... 36 V DC	**2**	
Number of ultrasonic paths		
2 path	**B**	
3 path	**C**	
4 path	**D**	
Pipe size		
DN 100 (4") (Dual Path only)	**A**	
DN 150 (6")(Dual Path only)	**B**	
DN 200 (8")	**C**	
DN 250 (10")	**D**	
DN 300 (12")	**E**	
DN 400 (16")	**F**	
DN 450 (18")	**G**	
DN 500 (20")	**H**	
DN 600 (24")	**J**	
Flange rating		
Class 150 (Raised Face)	**0**	
Class 300 (Raised Face)	**1**	
Class 600 (Raised Face)	**2**	
Upstream/downstream meter run		
None	**0**	
10 pipe diameter upstream Tube only	**1**	
10 pipe diameter upstream Tube with flow conditioner	**2**	
5 pipe diameter downstream tube only	**3**	
10D up and 5D downstream tubes	**4**	
10D up and 5D downstream tubes with flow conditioner	**5**	
Liquid type range (select closest match)		
Water	**A**	
Multiple Crude Oils	**B**	
Light Crude only	**C**	
Heavy Crude only	**D**	
Multiple Finished Products	**E**	
Gasolines Only	**F**	
Kerosene	**G**	
Jet Fuel	**H**	
Diesel	**J**	
Multiple Fuel Oils	**K**	
Heavy Fuel Oils	**L**	
Liquified Gases	**M**	
Liquid temperature range		
-28 ... +65 °C (-20 ... +150 °F)	**A**	
1 ... 93 °C (30 ... 200 °F)	**B**	
Transmitter and sensor approval		
FM/CSA, CE	**1**	
ATEX and PED, CE, C-TICK	**2**	
INMETRO	**3**	

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SITRANS FUT1010 (Liquid and Gas)

Selection and Ordering data	Order code
Further designs Please add "**-Z**" to Order No. and specify Order code(s).	
Cable assembly for flow sensor (add one K.. per flow path)	
• Cable and termination for one sensor path (see "Sensor cable chart for options")	**K..**
• Termination for user supplied cable	**T01**
Cable assembly for temperature sensor (only 1 required)	
• Cable and termination for temperature sensor (see "Transducer cable chart for options").	**R..**
• Termination for user supplied RTD cable	**T31**
Nace Certification	
• Nace, Spool only	**C10**
• Nace, W/10D upstream	**C11**
• Nace, W/10D upstream, cond	**C12**
• Nace, W/5D downstream	**C13**
• Nace, W/10D up, 5D dn	**C14**
• Nace, W/10D up, cond, 5D dn	**C15**
Standard Cal: Oil (2 cst), Forward flow direction, 6 points, 6 verification points, Range 2 ... 20 ft/sec, Lab pressure and temperature	
• Calibration, 100 DN (4 inch)	**D10**
• Calibration, 150 DN (6 inch)	**D11**
• Calibration, 200 DN (8 inch)	**D12**
• Calibration, 250 DN (10 inch)	**D13**
• Calibration, 300 DN (12 inch)	**D14**
• Calibration, 400 DN (16 inch)	**D15**
• Calibration, 450 DN (18 inch)	**D16**
• Calibration, 500 DN (20 inch)	**D17**
• Calibration, 600 DN (24 inch) D18	**D18**
• Calibration, Other contact factory for quote	**Y28**
Tag name plate	
• Stainless steel tags with 3.2 mm (0.13 inch) character size (68 characters max.)	**Y19**

Selection and Ordering data	Order No.
Operating Instructions for SITRANS FUT1010 (Liquid)	
English NEMA 4X wall mount& NEMA 7 wall mount explosionproof	**A5E02639184**
German NEMA 4X wall mount & NEMA 7 wall mount explosionproof	**A5E03086468**

This device is shipped with a Quick Start Guide and a CD containing further SITRANS F literature.

All literature is also available for free at:
http://www.siemens.com/flowdocumentation

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Selection and Ordering data	Order No.	Order Code
SITRANS FUT1010 (Gas)	**7 ME3 6 3 -** ▢ ▢▢▢▢ **- 0** ▢▢▢	▢▢▢
Transmitter type		
No meter	**0**	
IP65 NEMA 4X (2 path)	**1**	
IP65 NEMA 4X (2 path) with MODBUS	**2**	
IP65 NEMA 4X (3 or 4 path)	**3**	
IP65 NEMA 4X (3 or 4 path) with MODBUS	**4**	
IP66 NEMA 7 wall mount flame/explosion proof (2 Path)	**5**	
IP66 NEMA 7 wall mount flame/explosion proof (2 Path) with MODBUS	**6**	
IP66 NEMA 7 wall mount flame/explosion proof (3 or 4 Path)	**7**	
IP66 NEMA 7 wall mount flame/explosion proof (3 or 4 Path) with MODBUS	**8**	
Input power		
90 ... 240 V AC	**1**	
9 ... 36 V DC	**2**	
Number of ultrasonic paths		
2 path (standard enclosure material)	**B**	
3 path (standard material)	**C**	
4 path (standard material)	**D**	
Pipe size		
DN 100 (4") (Dual Path only)	**A**	
DN 150 (6")(Dual Path only)	**B**	
DN 200 (8")	**C**	
DN 250 (10")	**D**	
DN 300 (12")	**E**	
DN 400 (16")	**F**	
DN 450 (18")	**G**	
DN 500 (20")	**H**	
DN 600 (24")	**J**	
Flange rating		
Class 300 (Raised Face)	**1**	
Class 600 (Raised Face)	**2**	
Upstream/downstream meter run		
None	**0**	
10 pipe diameter upstream Tube only	**1**	
10 pipe diameter upstream Tube with flow conditioner	**2**	
5 pipe diameter downstream tube only	**3**	
10D up and 5D downstream tubes	**4**	
10D up and 5D downstream tubes with flow conditioner	**5**	
Gas type range (select closest match)		
Natural Gas (mostly CH_4)	**A**	
Process Gases (N_2, O_2, CO, Ar)	**B**	
Helium	**C**	
Hydrogen	**D**	
Gas temperature range		
-28 ... +65 °C (-20 ... +150 °F)	**A**	
1 ... 93 °C (30 ... 200 °F)	**B**	
Transmitter and sensor approval		
FM/CSA, CE	**1**	
ATEX and PED, CE, C-TICK	**2**	
INMETRO	**3**	

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SITRANS FUT1010 (Liquid and Gas)

Selection and Ordering data	Order code
Further designs Please add "**-Z**" to Order No. and specify Order code(s).	
Cable assembly for flow sensor (Add one K.. per flow path)	
• Cable and termination for one sensor path (see "Transducer cable chart for options")	**K..**
• Termination for user supplied cable	**T01**
Cable assembly for temperature sensor (only 1 required)	
• Cable and termination for temperature sensor (see "Transducer cable chart for options").	**R..**
• Termination for user supplied RTD cable	**T31**
Nace Certification	
• Nace, Spool only	**C10**
• Nace, W/10D upstream	**C11**
• Nace, W/10D upstream, cond	**C12**
• Nace, W/5D downstream	**C13**
• Nace, W/10D up, 5D dn	**C14**
• Nace, W/10D up, cond, 5D dn	**C15**
Standard Cal: Nat Gas, Forward flow direction, 7 points, 2 verification points, Range 10 ... 100 ft/sec, Lab pressure and temperature	
• Calibration, 100 DN (4 inch)	**D10**
• Calibration, 150 DN (6 inch)	**D11**
• Calibration, 200 DN (8 inch)	**D12**
• Calibration, 250 DN (10 inch)	**D13**
• Calibration, 300 DN (12 inch)	**D14**
• Calibration, 400 DN (16 inch)	**D15**
• Calibration, 450 DN (18 inch)	**D16**
• Calibration, 500 DN (20 inch)	**D17**
• Calibration, 600 DN (24 inch)	**D18**
• Calibration, Other contact factory for quote	**Y28**
Tag name plate	
• Stainless steel tags with 3.2 mm (0.13 inch) character size (68 characters max.)	**Y19**

Selection and Ordering data	Order No.
Operating Instructions for SITRANS FUT1010 (Gas)	
English NEMA 4X wall mount & NEMA 7 wall mount explosionproof	**A5E02639185**
German NEMA 4X wall mount & NEMA 7 wall mount explosionproof	**A5E03086485**

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