

Level Measurement

Continuous level measurement - Capacitance transmitters

SITRANS LC300

Overview



SITRANS LC300 is an inverse frequency shift capacitance continuous level transmitter for liquids and solids applications. It is ideal for standard industrial applications in chemical, hydrocarbon processing, food and beverage, water, wastewater, and mining, aggregate, and cement industries.

Benefits

- Patented Active-Shield technology so measurement is unaffected by material buildup in active shield section
- Highly accurate and reliable PFA-lined probes
- Integrated local LCD display
- 2-wire (4 to 20 mA) current loop design
- Current signalling according to NAMUR NE 43
- Push-button calibration and programming
- Stilling well (ground tube) version for low dielectric media and non-metallic vessels

Application

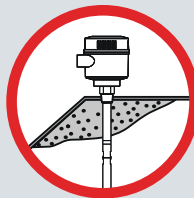
SITRANS LC300 is a 2-wire level measurement instrument combining a sophisticated, yet easy-to-adjust microprocessor with field-proven probes. It is available in four versions: rod, rod with stilling well, cable with PFA insulation, and cable without PFA insulation.

Materials with low or high dielectric properties are accurately measured and patented Active-Shield technology helps in ignoring the effects of buildup or condensation near vessel nozzle.

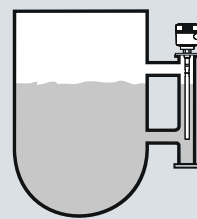
- Key Applications: Conductive and non-conductive media including: liquids and solids in standard industrial processes, bulk solids applications involving dust, and chemical processes involving vapour

Configuration

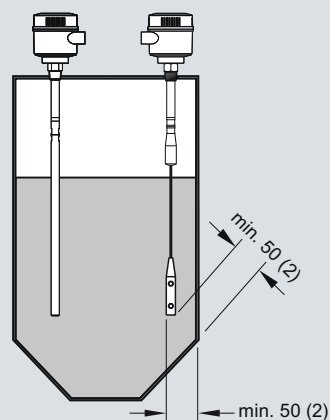
Installation



Build up of material in active shield area does not affect switch operation.



Mounting on a bypass area does not affect switch operation.



Install probe at least 50 mm (2") from tank wall.
Note angle of repose and adjust accordingly.

SITRANS LC300 installation, dimensions in mm (inch)

Level Measurement

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Technical specifications

Input	
Measuring range	1.66 ... 3300 pF
Span	Min. 3.3 pF
Output	
Loop current	Continuous signal 4 ... 20 mA/20 ... 4 mA according to NAMUR 43
Accuracy (transmitter)	
Temperature stability	0.25 % of actual capacitance value
Non-linearity and repeatability	< 0.4 % of full scale and actual measurement value
Accuracy	Deviation < 0.5 % of actual measurement value
Rated operating conditions¹⁾	
Ambient conditions	
• Ambient temperature	-40 ... +85 °C (-40 ... +185 °F) ²⁾
• Installation category	I
• Pollution degree	4
• Ingress protection	Type 4/NEMA 4/IP65 (optional IP68)
Installation conditions	
• Location	Indoor/outdoor
Process pressure	-1 to +35 bar g (-14.6 ... +511 psi g)
Process temperature	-40 ... +200 °C (-40 ... +392 °F) ³⁾
Min. dielectric constant ϵ_r	1.5
Design	
Material	
• Enclosure	Aluminum, epoxy-coated
Probe diameter	
• Rod version	19 mm (0.75") with PFA jacket
• Cable version	9 mm (0.35") with PFA jacket, 6 mm (0.24") without PFA jacket
Active shield length	
• Rod version	threaded: 120 mm (4.72") flanged: 100 mm (3.94")
• Cable version	threaded: 125 mm (4.92") flanged: 105 mm (4.13")
Process connection of probe	
• Threaded rod mounting	¾", 1", 1¼", 1½" NPT [(Taper), ANSI/ASME B1.20.1] R ¾", 1", 1½" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] G ¾", 1", 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]
• Threaded cable mounting	1½" NPT [(Taper), ANSI/ASME B1.20.1] R 1½" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] G 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]
• Flange mounting	1 ... 4" ASME, DN 25 ... 100
Enclosure cable inlet	2 x ½" NPT or 2 x M20x1.5
Power supply	
12 ... 30 V DC any polarity, 2-wire current loop circuit	
User Interface	
Display	Local LCD, 4 digit, each 0 ... 9 and limited alpha characters

Safety	
Measurement current signalling	According to NAMUR NE 43, signal 3.8 ... 20.5 mA, fault ≤ 3.6 or ≥ 21 mA (22 mA)
Certificates and approvals	
General	CE, CSA _{US/C} , FM, C-TICK
Dust Ignition Proof (Intrinsically Safe probe circuit)	(Europe) ATEX 1/2 D T100 °C (US/Canada) FM/CSA: Class II, Div. 1, Groups E,F,G Class III T4
Flame Proof (Intrinsically Safe probe circuit)	(Europe) ATEX II 1/2 G EEx d [ia] IIC T6...T1 ATEX II 1/2 D T100 °C
Explosion Proof (Intrinsically Safe probe circuit)	(US/Canada) Class I, Div. 1, Groups A,B,C,D Class II, Div. 1, Groups E,F,G Class III T4
Marine	Bureau Veritas Type Approval ABS Type Approval
Overfill Protection	AIB-Vincotte
Other	Pattern Approval (China)

¹⁾ When operation is in areas classified as hazardous, observe restrictions according to relevant certificate. See also Pressure/Temperature curves on page 5/277.

²⁾ Thermal isolator is used if process connection temperature exceeds +85 °C (+185 °F)

³⁾ Not suitable for steam environments

Design: Probe	Rod version	Stilling well version	Cable version
Length	Min. 300 mm (12"), max. 5000 mm (197")	Min. 300 mm (12"), max. 5000 mm (197")	Min. 1000 mm (40"), max. 25000 mm (984")
Sensor wetted parts	PFA, 316L stainless steel	PFA, 316L stainless steel	316L stainless steel or 316L stainless steel with PFA insulation
O-ring seal material	FKM or FFKM	FKM or FFKM	FKM or FFKM
Thermal isolator	Optional	Optional	Optional
Options	N/A	N/A	Mounting eye for PFA insulated cable version

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Selection and Ordering data	Order No.
SITRANS LC300, rod version	C) 7ML5670 -
An inverse frequency shift capacitance continuous level transmitter for liquids and solids applications.	 0
Process Connection	
Threaded, 316L stainless steel	
¾" NPT [(Taper), ANSI/ASME B1.20.1]	0 A
1" NPT [(Taper), ANSI/ASME B1.20.1]	0 B
1¼" NPT [(Taper), ANSI/ASME B1.20.1]	0 C
1½" NPT [(Taper), ANSI/ASME B1.20.1]	0 D
R ¾" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203]	1 A
R 1" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203]	1 B
R 1½" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203]	1 D
G ¾" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]	3 A
G 1" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]	3 B
G 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]	3 D
<u>Welded flange, 316L stainless steel, raised face¹⁾</u>	
1" ASME, 150 lb	5 A
1" ASME, 300 lb	5 B
1" ASME, 600 lb	5 C
1½" ASME, 150 lb	5 D
1½" ASME, 300 lb	5 E
1½" ASME, 600 lb	5 F
2" ASME, 150 lb	5 G
2" ASME, 300 lb	5 H
2" ASME, 600 lb	5 J
3" ASME, 150 lb	5 K
3" ASME, 300 lb	5 L
3" ASME, 600 lb	5 M
4" ASME, 150 lb	5 N
4" ASME, 300 lb	5 P
4" ASME, 600 lb	5 Q
<u>Welded flange, 316L stainless steel, Type A flat faced¹⁾</u>	
DN 25, PN 16	6 A
DN 25, PN 40	6 B
DN 40, PN 16	6 C
DN 40, PN 40	6 D
DN 50, PN 16	6 E
DN 50, PN 40	6 F
DN 80, PN 16	6 G
DN 80, PN 40	6 H
DN 100, PN 16	6 J
DN 100, PN 40	6 K
Probe Length (from flange face or including process thread)	
<u>Add order code Y01 and plain text:</u>	
<u>"Insertion length ... mm"</u>	
300 ... 1000 mm (11.81 ... 39.37")	A
1001 ... 2000 mm (39.41 ... 78.74")	B
2001 ... 3000 mm (78.78 ... 118.11")	C
3001 ... 4000 mm (118.15 ... 157.48")	D
4001 ... 5000 mm (157.52 ... 196.85")	E
Thermal Isolator	
Without thermal isolator	0
With thermal isolator [for process connection temperatures over +85 °C (+185 °F)]	1
Wetted Seals	
FKM	0
FFKM [for process temperatures above -20 °C (-4 °F)]	1
Probe Material	
19 mm (0.75") diameter 316L stainless steel, PFA lined rod	0

Selection and Ordering data	Order No.
SITRANS LC300, rod version	C) 7ML5670 -
An inverse frequency shift capacitance continuous level transmitter for liquids and solids applications.	 0
Approvals	
General Safety (CSA, FM, CE, C-TICK)	A
Dust Ignition Proof With IS Probe	B
CE, C-TICK, ATEX II 1/2 D T100 °C	C
Flame Proof Enclosure With IS Probe	D
CE, C-TICK, ATEX II 1/2 G EEx d [ia] IIC T6...T1, ATEX II 1/2 D T100 °C	E
Dust Ignition Proof With IS Probe	D
CSA/FM Class II, Div. 1, Gr. E, F, G	E
CSA/FM Class III T4	
Explosion Proof Enclosure With IS Probe	D
CSA/FM Class I, Div. 1, Gr. A, B, C, D	E
CSA/FM Class II, Div. 1, Gr. E, F, G	
CSA/FM Class III T4	
Enclosure	
Aluminum epoxy coated 2 x ½" NPT via adapter - cable inlet, IP65	A
Aluminum epoxy coated 2 x M20 x 1.5 cable inlet, IP65	B
Aluminum epoxy coated 2 x ½" NPT via adapter - cable inlet, IP68	C
Aluminum epoxy coated 2 x M20 x 1.5 cable inlet, IP68	D
1) Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5 or EN 1092-1 standard.	

Selection and Ordering data	Order code
Further designs	
Please add "-Z" to Order No. and specify Order code(s).	
Insertion length, specify in plain text: Y01: ... mm	Y01
Stainless steel tag [69 x 50 mm (2.71 x 1.97")]: Measuring-point number/identification (max. 16 characters) specify in plain text	Y15
Acceptance test certificate: Manufacturer's test certificate M to DIN 55350, Part 18 and ISO 9000	C11
Inspection Certificate Type 3.1 per EN 10204	C12
Operating Instructions	Order No.
English	C) 7ML1998-5HE02
French	7ML1998-5HE11
German	C) 7ML1998-5HE32
Spanish	7ML1998-5HE21
Note: The Operating Instructions should be ordered as a separate line item on the order.	
This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and Operating Instructions library.	
Accessories	
Electronic transmitter kit (includes transmitter and driver)	C) 7ML1830-1KN
SITRANS RD100 Remote display - see Chapter 8	
SITRANS RD200 Remote display - see Chapter 8	
SITRANS RD500 Remote display - see Chapter 8	
C) Subject to export regulations AL: N, ECCN: EAR99	

Level Measurement

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Selection and Ordering data

SITRANS LC300, stilling well version

An inverse frequency shift capacitance continuous level transmitter for liquid applications.

Process Connection

Threaded, 316L stainless steel

1½" NPT [(Taper), ANSI/ASME B1.20.1]

R 1½" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203]

G 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]

Welded flange, 316L stainless steel, raised face¹⁾

1½" ASME, 150 lb

1½" ASME, 300 lb

1½" ASME, 600 lb

2" ASME, 150 lb

2" ASME, 300 lb

2" ASME, 600 lb

3" ASME, 150 lb

3" ASME, 300 lb

3" ASME, 600 lb

4" ASME, 150 lb

4" ASME, 300 lb

4" ASME, 600 lb

Welded flange, 316L stainless steel, Type A flat faced¹⁾

DN 40, PN 16

DN 40, PN 40

DN 50, PN 16

DN 50, PN 40

DN 80, PN 16

DN 80, PN 40

DN 100, PN 16

DN 100, PN 40

Probe Length (from flange face or including process thread)

Add order code Y01 and plain text:

"Insertion length ... mm"

300 ... 1000 mm (11.81 ... 39.37")

1001 ... 2000 mm (39.41 ... 78.74")

2001 ... 3000 mm (78.78 ... 118.11")

3001 ... 4000 mm (118.15 ... 157.48")

4001 ... 5000 mm (157.52 ... 196.85")

Thermal Isolator

Without thermal isolator

With thermal isolator [for process connection temperatures over +85 °C (+185 °F)]

Wetted Seals

FKM

FFKM [for process temperatures above -20 °C (-4 °F)]

Probe Material

35 mm (1.38") diameter stilling well, with 19 mm (0.75") diameter 316L stainless steel, PFA lined rod with PTFE spacers

Approvals

General Safety (CSA, FM, CE, C-TICK)

Dust Ignition Proof With IS Probe

CE, C-TICK, ATEX II 1/2 D T100 °C

Flame Proof Enclosure With IS Probe

CE, C-TICK, ATEX II 1/2 G EEx d [ia] IIC T6...T1, ATEX II 1/2 D T100 °C

Dust Ignition Proof With IS Probe

CSA/FM Class II, Div. 1, Gr. E, F, G

CSA/FM Class III T4

Explosion Proof Enclosure With IS Probe

CSA/FM Class I, Div. 1, Gr. A, B, C, D

CSA/FM Class II, Div. 1, Gr. E, F, G

CSA/FM Class III T4

Order No.

7 M L 5 6 7 1 -

0

0 D

1 D

3 D

5 D

5 E

5 F

5 G

5 H

5 J

5 K

5 L

5 M

5 N

5 P

5 Q

6 C

6 D

6 E

6 F

6 G

6 H

6 J

6 K

A

B

C

D

E

0

1

0

1

1

A

B

C

D

E

Selection and Ordering data

SITRANS LC300, stilling well version

An inverse frequency shift capacitance continuous level transmitter for liquid applications.

Enclosure

Aluminum epoxy coated 2 x 1½" NPT via adapter - cable inlet, IP65

Aluminum epoxy coated 2 x M20 x 1.5 cable inlet, IP65

Aluminum epoxy coated 2 x 1½" NPT via adapter - cable inlet, IP68

Aluminum epoxy coated 2 x M20 x 1.5 cable inlet, IP68

¹⁾ Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5 or EN 1092-1 standard.

Selection and Ordering data

Order code

Further designs

Please add **"-Z"** to Order No. and specify Order code(s).

Insertion length, specify in plain text: Y01: ... mm

Stainless steel tag [69 x 50 mm (2.71 x 1.97")]:
Measuring-point number/identification (max. 16 characters) specify in plain text

Acceptance test certificate: Manufacturer's test certificate M to DIN 55350, Part 18 and ISO 9000

Inspection Certificate Type 3.1 per EN 10204

Operating Instructions

English

French

German

Spanish

Note: The Operating Instructions should be ordered as a separate line item on the order.

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Accessories

Electronic transmitter kit (includes transmitter and driver) C) **7ML1830-1KN**

SITRANS RD100 Remote display - see Chapter 8

SITRANS RD200 Remote display - see Chapter 8

SITRANS RD500 Remote display - see Chapter 8

C) Subject to export regulations AL: N, ECCN: EAR99

Order No.

7 M L 5 6 7 1 -

0

A

B

C

D

Order code

Y01

Y15

C11

C12

Order No.

C) **7ML1998-5HE02**

7ML1998-5HE11

C) **7ML1998-5HE32**

7ML1998-5HE21

C) **7ML1830-1KN**

see Chapter 8

see Chapter 8

see Chapter 8

Subject to export regulations

AL: N, ECCN: EAR99

Level Measurement

Continuous level measurement - Capacitance transmitters

SITRANS LC300

Selection and Ordering data		Order No.
SITRANS LC300, cable version C)		7ML5672 -
An inverse frequency shift capacitance continuous level transmitter for non-conductive liquids and solids applications.		
Process Connection		
Threaded, 316L stainless steel		
1½" NPT [(Taper), ANSI/ASME B1.20.1]		0 D
R 1½" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203]		1 D
G 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]		3 D
<u>Welded flange, 316L stainless steel, raised face¹⁾</u>		
1½" ASME, 150 lb		5 D
1½" ASME, 300 lb		5 E
1½" ASME, 600 lb		5 F
2" ASME, 150 lb		5 G
2" ASME, 300 lb		5 H
2" ASME, 600 lb		5 J
3" ASME, 150 lb		5 K
3" ASME, 300 lb		5 L
3" ASME, 600 lb		5 M
4" ASME, 150 lb		5 N
4" ASME, 300 lb		5 P
4" ASME, 600 lb		5 Q
<u>Welded flange, 316L stainless steel, Type A flat faced¹⁾</u>		
DN 40, PN 16		6 C
DN 40, PN 40		6 D
DN 50, PN 16		6 E
DN 50, PN 40		6 F
DN 80, PN 16		6 G
DN 80, PN 40		6 H
DN 100, PN 16		6 J
DN 100, PN 40		6 K
Probe Length (from flange face or including process thread)		
<u>Add order code Y01 and plain text:</u> "Insertion length ... mm"		
1000 ... 2000 mm (39.37 ... 78.74")		A
2001 ... 4000 mm (78.78 ... 157.48")		B
4001 ... 6000 mm (157.52 ... 236.22")		C
6001 ... 8000 mm (236.26 ... 314.96")		D
8001 ... 10000 mm (315.00 ... 393.70")		E
10001 ... 12000 mm (393.74 ... 472.44")		F
12001 ... 14000 mm (472.48 ... 551.18")		G
14001 ... 16000 mm (551.22 ... 629.92") ²⁾		H
16001 ... 18000 mm (629.96 ... 708.66") ²⁾		J
18001 ... 20000 mm (708.70 ... 787.40") ²⁾		K
20001 ... 22000 mm (787.44 ... 866.14") ²⁾		L
22001 ... 24000 mm (866.18 ... 944.88") ²⁾		M
24001 ... 25000 mm (944.92 ... 984.25") ²⁾		N
Thermal Isolator		
Without thermal isolator		0
With thermal isolator [for process connection temperatures over +85 °C (+185 °F)]		1
Wetted Seals		
FKM		0
FFKM [for process temperatures above -20 °C (-4 °F)]		1
Probe Material		
Bare 316L stainless steel cable and 316L stainless steel cable weight, tinned copper crimp, PTFE backing ring, PEEK isolator and PFA lined active shield		0

Selection and Ordering data		Order No.
SITRANS LC300, cable version C)		7ML5672 -
An inverse frequency shift capacitance continuous level transmitter for non-conductive liquids and solids applications.		
Approvals		
General Safety (CSA, FM, CE, C-TICK)		A
Dust Ignition Proof With IS Probe		B
CE, C-TICK, ATEX II 1/2 D T100 °C		
Flame Proof Enclosure With IS Probe		C
CE, C-TICK, ATEX II 1/2 G EEx d [ia] IIC T6...T1, ATEX II 1/2 D T100 °C		
Dust Ignition Proof With IS Probe		D
CSA/FM Class II, Div. 1, Gr. E, F, G		
CSA/FM Class III T4		
Explosion Proof Enclosure With IS Probe		E
CSA/FM Class I, Div. 1, Gr. A, B, C, D		
CSA/FM Class II, Div. 1, Gr. E, F, G		
CSA/FM Class III T4		
Enclosure		
Aluminum epoxy coated 2 x ½" NPT via adapter - cable inlet, IP65		A
Aluminum epoxy coated 2 x M20 x 1.5 cable inlet, IP65		B
Aluminum epoxy coated 2 x ½" NPT via adapter - cable inlet, IP68		C
Aluminum epoxy coated 2 x M20 x 1.5 cable inlet, IP68		D
1) Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5 or EN 1092-1 standard.		
2) Cable lengths from 15000 (590.55") to 25000 mm (984.25") can be used in non-conductive media. Contact Factory for assistance.		

Selection and Ordering data		Order code
Further designs		
Please add "Z" to Order No. and specify Order code(s).		
Insertion length, specify in plain text: Y01: ... mm		Y01
Stainless steel tag [69 x 50 mm (2.71 x 1.97")]: Measuring-point number/identification (max. 16 characters) specify in plain text		Y15
Acceptance test certificate: Manufacturer's test certificate M to DIN 55350, Part 18 and ISO 9000		C11
Inspection Certificate Type 3.1 per EN 10204		C12
Operating Instructions		Order No.
English		C) 7ML1998-5HE02
French		7ML1998-5HE11
German		C) 7ML1998-5HE32
Spanish		7ML1998-5HE21
Note: The Operating Instructions should be ordered as a separate line item on the order.		
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Accessories		
Electronic transmitter kit (includes transmitter and driver)		C) 7ML1830-1KN
SITRANS RD100 Remote display - see Chapter 8		
SITRANS RD200 Remote display - see Chapter 8		
SITRANS RD500 Remote display - see Chapter 8		
C) Subject to export regulations AL: N, ECCN: EAR99		

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SITRANS LC300

Selection and Ordering data	Order No.
SITRANS LC300, PFA coated cable version C)	7 M L 5 6 7 3 -
An inverse frequency shift capacitance continuous level transmitter for liquids and solids applications.	
Process Connection	
Threaded, 316L stainless steel	
1½" NPT [(Taper), ANSI/ASME B1.20.1]	0 D
R 1½" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203]	1 D
G 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]	3 D
<u>Welded flange, 316L stainless steel, raised face¹⁾</u>	
1½" ASME, 150 lb	5 D
1½" ASME, 300 lb	5 E
1½" ASME, 600 lb	5 F
2" ASME, 150 lb	5 G
2" ASME, 300 lb	5 H
2" ASME, 600 lb	5 J
3" ASME, 150 lb	5 K
3" ASME, 300 lb	5 L
3" ASME, 600 lb	5 M
4" ASME, 150 lb	5 N
4" ASME, 300 lb	5 P
4" ASME, 600 lb	5 Q
<u>Welded flange, 316L stainless steel, Type A flat faced¹⁾</u>	
DN 40, PN 16	6 C
DN 40, PN 40	6 D
DN 50, PN 16	6 E
DN 50, PN 40	6 F
DN 80, PN 16	6 G
DN 80, PN 40	6 H
DN 100, PN 16	6 J
DN 100, PN 40	6 K
Probe Length (from flange face or including process thread)	
<u>Add order code Y01 and plain text:</u>	
<u>"Insertion length ... mm"</u>	
1000 ... 2000 mm (39.37 ... 78.74")	A
2001 ... 4000 mm (78.78 ... 157.48")	B
4001 ... 6000 mm (157.52 ... 236.22")	C
6001 ... 8000 mm (236.26 ... 314.96")	D
8001 ... 10000 mm (315.00 ... 393.70")	E
10001 ... 12000 mm (393.74 ... 472.44")	F
12001 ... 14000 mm (472.48 ... 551.18")	G
14001 ... 16000 mm (551.22 ... 629.92") ²⁾	H
16001 ... 18000 mm (629.96 ... 708.66") ²⁾	J
18001 ... 20000 mm (708.70 ... 787.40") ²⁾	K
20001 ... 22000 mm (787.44 ... 866.14") ²⁾	L
22001 ... 24000 mm (866.18 ... 944.88") ²⁾	M
24001 ... 25000 mm (944.92 ... 984.25") ²⁾	N
Thermal Isolator	
Without thermal isolator	0
With thermal isolator [for process connection temperatures over +85 °C (+185 °F)]	1
Wetted Seals	
FKM	0
FFKM [for process temperatures above -20 °C (-4 °F)]	1
Probe Material	
PFA coated cable and 316L stainless steel cable weight, PEEK isolator and PFA lined active shield	1
Approvals	
General Safety (CSA, FM, CE, C-TICK)	A
Dust Ignition Proof With IS Probe	B
CE, C-TICK, ATEX II 1/2 D T100 °C	

Selection and Ordering data	Order No.
SITRANS LC300, PFA coated cable version C)	7 M L 5 6 7 3 -
An inverse frequency shift capacitance continuous level transmitter for liquids and solids applications.	
Flame Proof Enclosure With IS Probe	C
CE, C-TICK, ATEX II 1/2 G EEx d [ia] IIC T6...T1, ATEX II 1/2 D T100 °C	
Dust Ignition Proof With IS Probe	D
CSA/FM Class II, Div. 1, Gr. E, F, G	
CSA/FM Class III T4	
Explosion Proof Enclosure With IS Probe	E
CSA/FM Class I, Div. 1, Gr. A, B, C, D	
CSA/FM Class II, Div. 1, Gr. E, F, G	
CSA/FM Class III T4	
Enclosure	
Aluminum epoxy coated 2 x ½" NPT via adapter - cable inlet, IP65	A
Aluminum epoxy coated 2 x M20 x 1.5 cable inlet, IP65	B
Aluminum epoxy coated 2 x ½" NPT via adapter - cable inlet, IP68	C
Aluminum epoxy coated 2 x M20 x 1.5 cable inlet, IP68	D
Mounting eye	
Without Mounting eye	0
With mounting eye	1

- 1) Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5 or EN 1092-1 standard.
- 2) Cable lengths from 15000 (590.55") to 25000 mm (984.25") can be used in non-conductive media. Contact Factory for assistance.

Selection and Ordering data	Order code
Further designs	
Please add "-Z" to Order No. and specify Order code(s).	
Insertion length, specify in plain text: Y01: ... mm	Y01
Stainless steel tag [69 x 50 mm (2.71 x 1.97")]:	Y15
Measuring-point number/identification (max. 16 characters) specify in plain text	
Acceptance test certificate: Manufacturer's test certificate M to DIN 55350, Part 18 and ISO 9000	C11
Inspection Certificate Type 3.1 per EN 10204	C12
Operating Instructions	Order No.
English	C) 7ML1998-5HE02
French	7ML1998-5HE11
German	C) 7ML1998-5HE32
Spanish	7ML1998-5HE21
Note: The Operating Instructions should be ordered as a separate line item on the order.	
This device is shipped with the Siemens Milltronics manual CD containing the complete ATEX Quick Start and Operating Instructions library.	
Accessories	
Electronic transmitter kit (includes transmitter and driver)	C) 7ML1830-1KN
SITRANS RD100 Remote display - see Chapter 8	
SITRANS RD200 Remote display - see Chapter 8	
SITRANS RD500 Remote display - see Chapter 8	
C) Subject to export regulations AL: N, ECCN: EAR99	

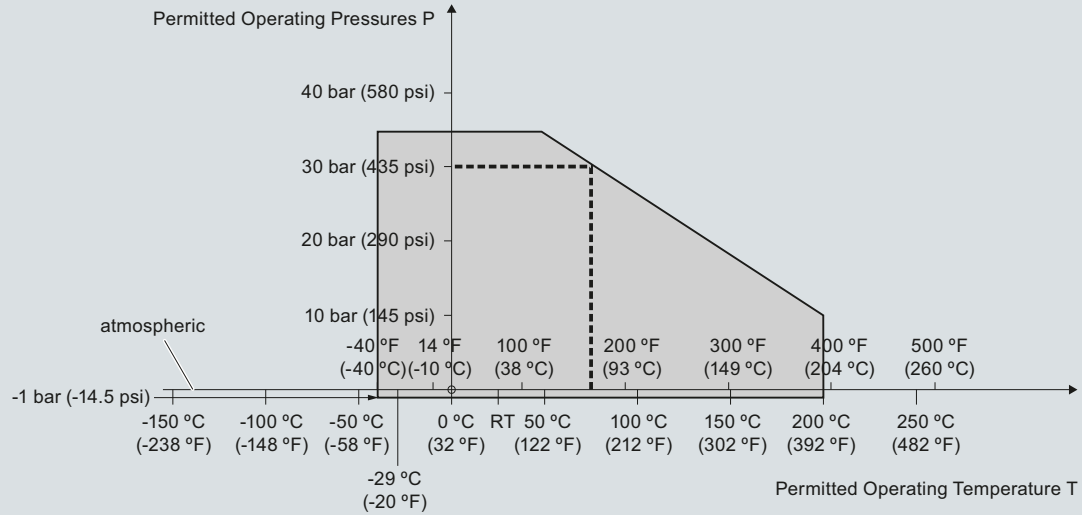
Level Measurement

Continuous level measurement - Capacitance transmitters

SITRANS LC300

Characteristic curves

Pressure/Temperature Curve
LC300 Standard, Extended Rod and Cable Probes
Threaded Process Connections
(7ML5670, 7ML5671, 7ML5672 and 7ML5673)



----- Example:
 Permitted operating pressure = 30 bar (435 psi) at 75 °C

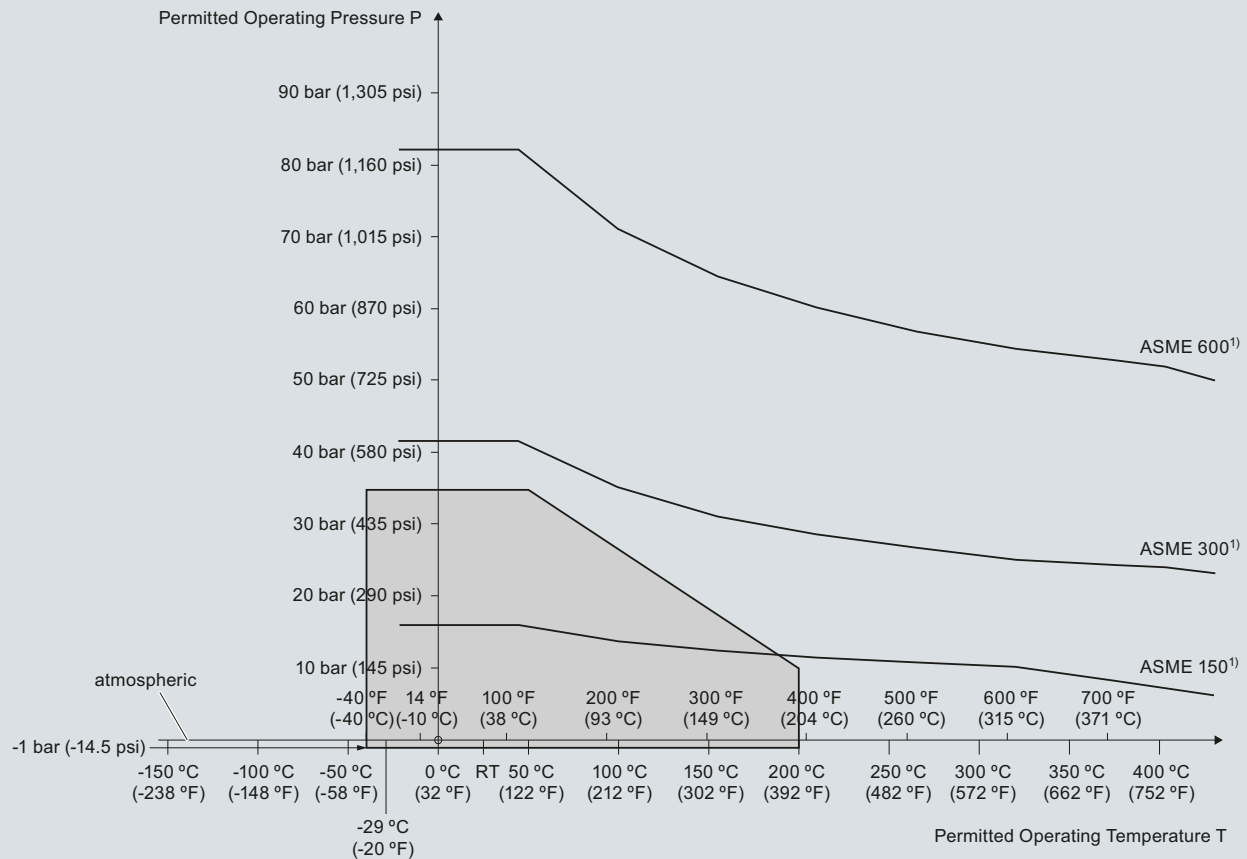
SITRANS LC300 Process Pressure/Temperature derating curves (7ML5670, 7ML5671, 7ML5672 and 7ML5673)

Level Measurement

Continuous level measurement - Capacitance transmitters

SITRANS LC300

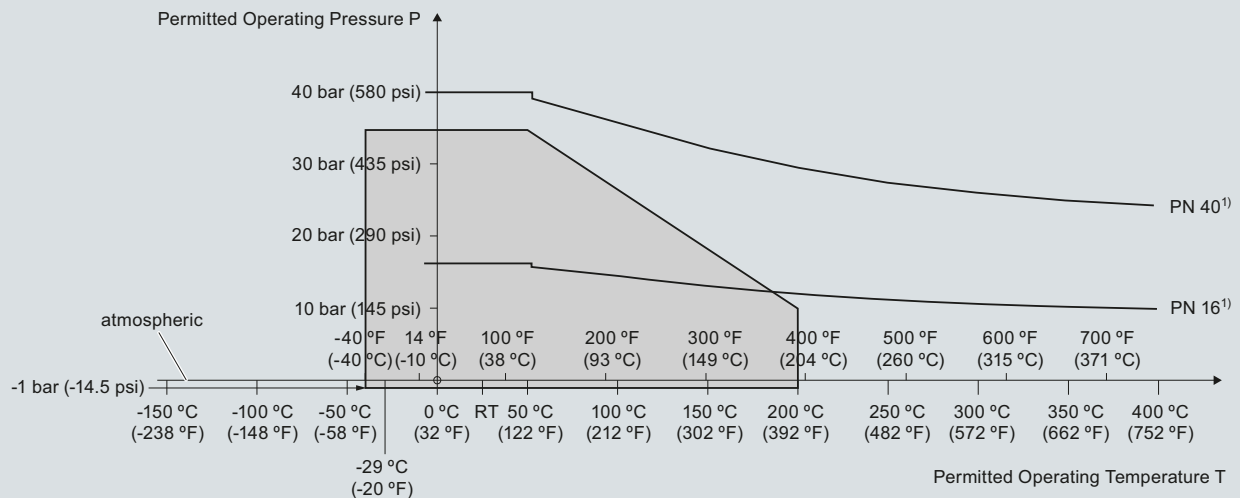
Pressure/Temperature Curve
LC300 Standard, Extended Rod and Cable Probes
ASME Flanged Process Connections
(7ML5670, 7ML5671, 7ML5620 and 7ML5673)



¹⁾ The curve denotes the minimum allowable flange class for the shaded area below.

SITRANS LC300 Process Pressure/Temperature derating curves (7ML5670, 7ML5671, 7ML5672 and 7ML5673)

Pressure/Temperature Curve
LC300 Standard, Extended Rod and Cable Probes
EN Flanged Process Connections
(7ML5670, 7ML5610, 7ML5620 and 7ML5670)



¹⁾ The curve denotes the minimum allowable flange class for the shaded area below.

SITRANS LC300 Process Pressure/Temperature derating curves (7ML5670, 7ML5671, 7ML5672 and 7ML5673)

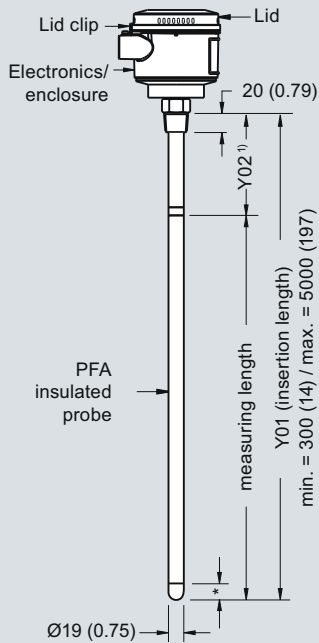
Level Measurement

Continuous level measurement - Capacitance transmitters

SITRANS LC300

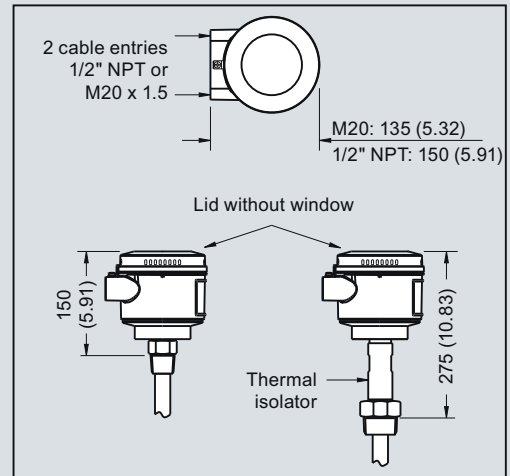
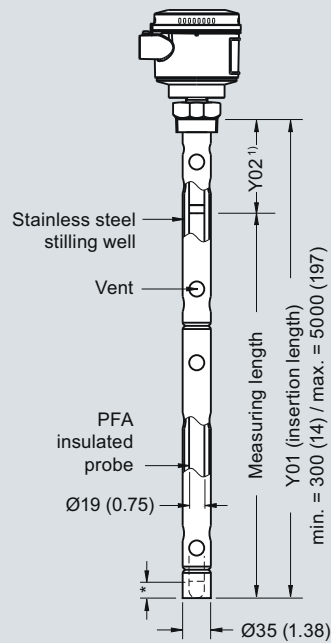
Dimensional drawings

Threaded (7ML5670)

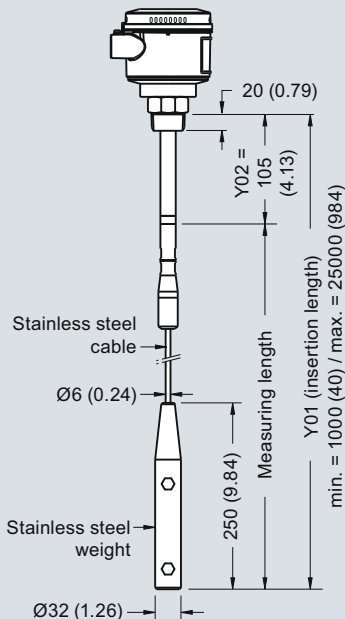
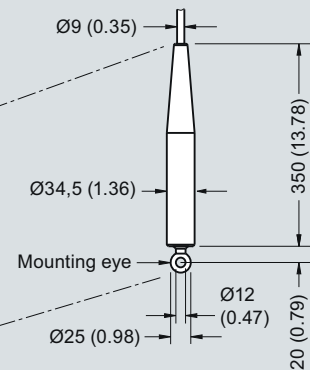
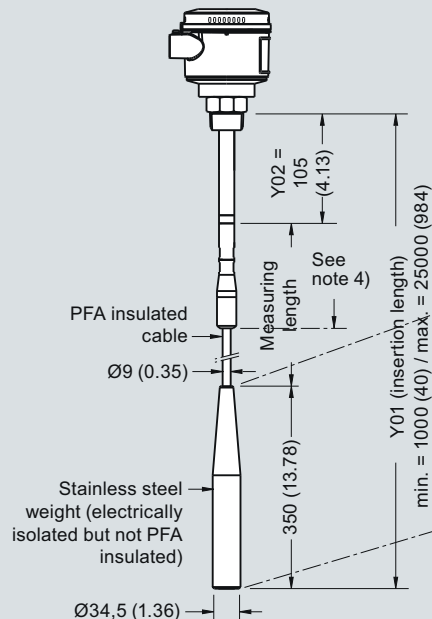


* = 30 (1.18) Inactive tip

Threaded (7ML5671)


Note:

- 1) Rod version Y02: Shield length = 100 mm (3.9") for threaded including process connection thread length, 100 mm (3.9") for welded flange
- 2) For non-conductive applications only. Non-insulated cable can be shortened on site. Weight is included in measuring length.
- 3) For liquids and solids applications. Insulated cable cannot be shortened. Weight is **not** included in measuring length.
- 4) For conductive materials, the measuring length includes the exposed PFA insulated cable only. Any fluid contact with the upper rod assembly will result in a short circuit and incorrect readings.

Cable version, non-insulated ²⁾
Threaded (7ML5672)Cable version, insulated ³⁾
Threaded (7ML5673)

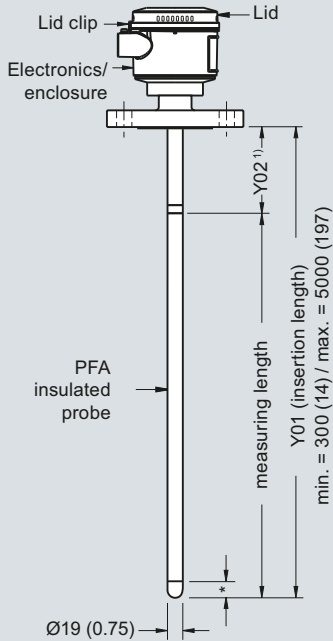
SITRANS LC300 - Threaded Process Connections, dimensions in mm (inch)

Level Measurement

Continuous level measurement - Capacitance transmitters

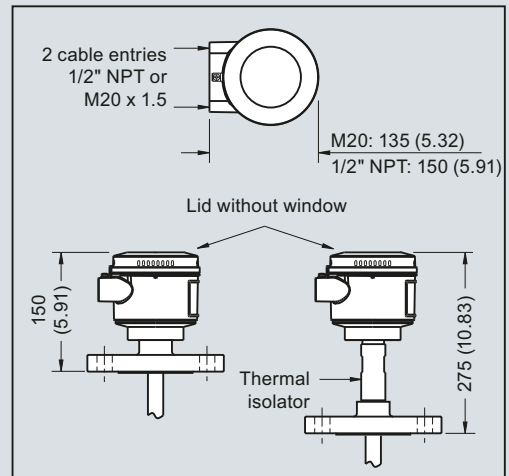
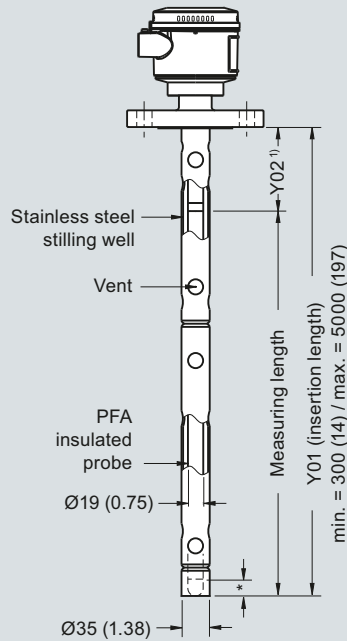
SITRANS LC300

Welded Flange (7ML5670)



* = 30 (1.18) inactive tip

Welded Flange (7ML5671)

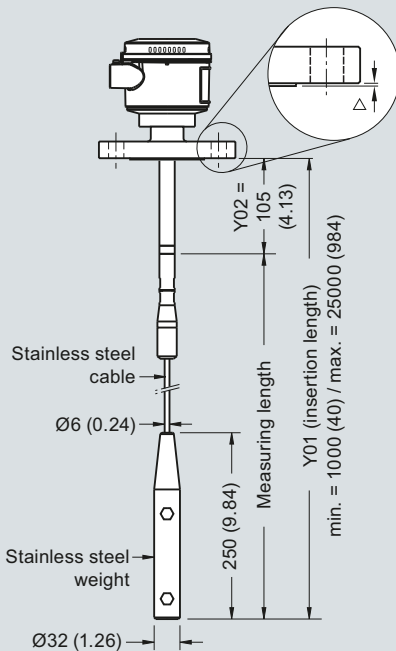


Flange Facing (raised face)	
Flange Class	Facing thickness
△ ASME 150/300	2 (0.08)
△ ASME 600/900	7 (0.28)
△ PN16/40	2 (0.08)

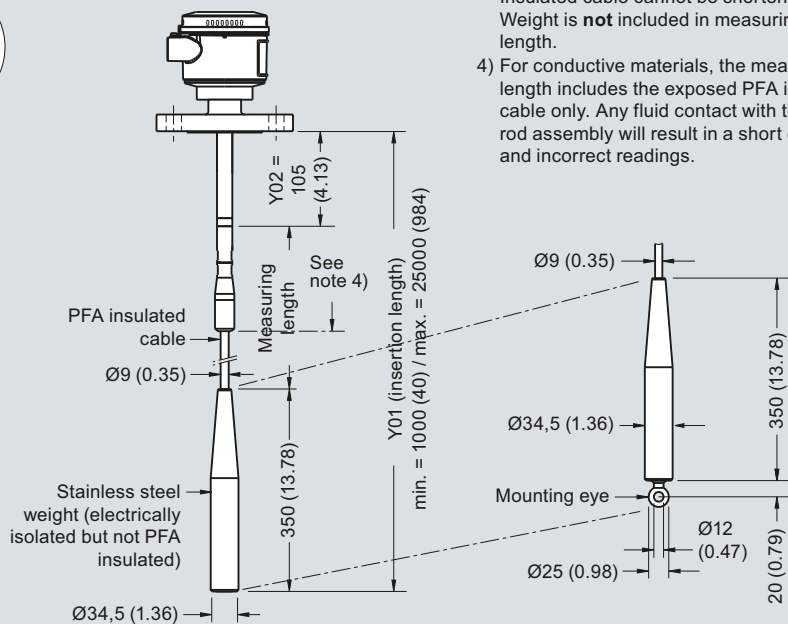
Note:

- 1) Rod version Y02: Shield length = 100 mm (3.9") for threaded including process connection thread length, 100 mm (3.9") for welded flange.
- 2) For non-conductive applications only. Non-insulated cable can be shortened on site. Weight is included in measuring length.
- 3) For liquids and solids applications. Insulated cable cannot be shortened. Weight is **not** included in measuring length.
- 4) For conductive materials, the measuring length includes the exposed PFA insulated cable only. Any fluid contact with the upper rod assembly will result in a short circuit and incorrect readings.

Cable version, non-insulated²⁾ Welded Flange (7ML5672)



Cable version, insulated³⁾ Welded Flange (7ML5673)



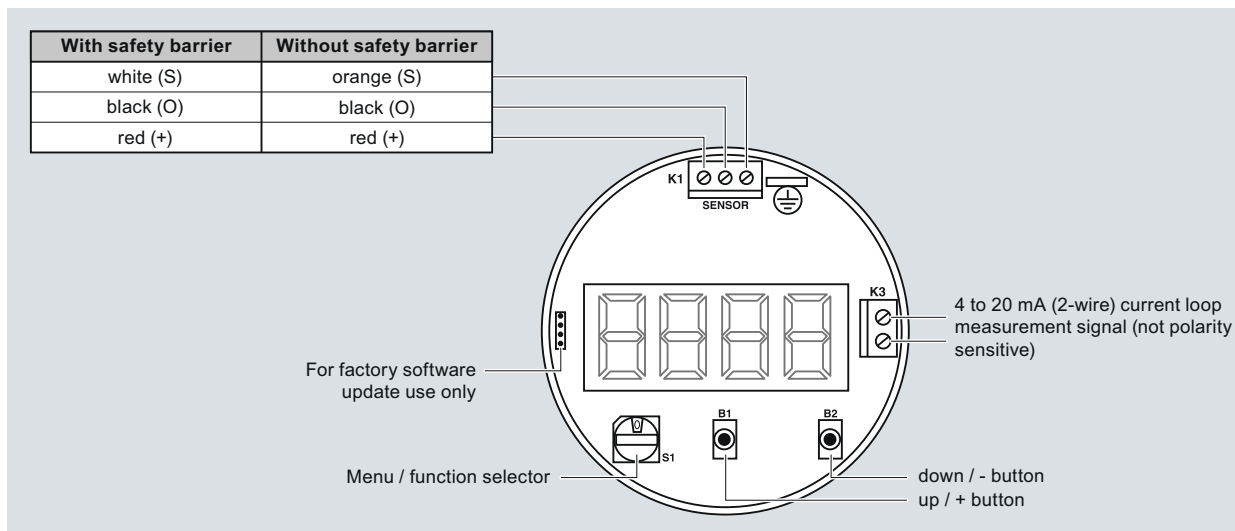
SITRANS LC300 - Flanged Process Connections, dimensions in mm (inch)

Level Measurement

Continuous level measurement - Capacitance transmitters

SITRANS LC300

Schematics



SITRANS LC300 connections