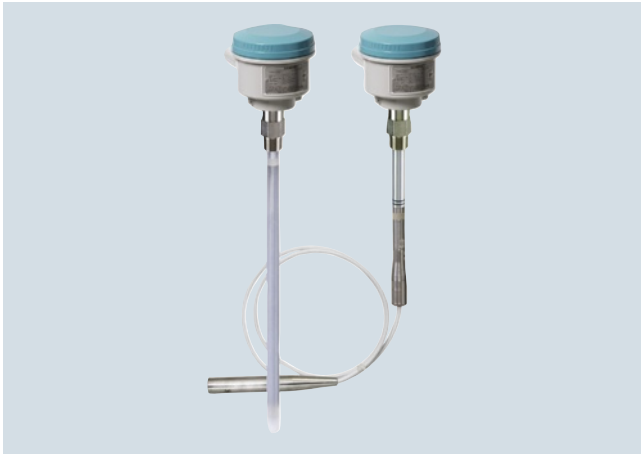


Level Measurement

Continuous level measurement - Capacitance transmitters

SITRANS LC300

Overview



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

Benefits

- Active-Shield technology so measurement is unaffected by material build-up 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 signaling according to NAMUR NE 43
- Push-button calibration and programming
- Stilling well (ground tube) version for low dielectric media, agitated materials, 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 Active-Shield technology helps in ignoring the effects of build-up or condensation near vessel nozzle.

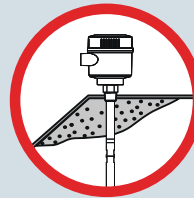
- Key Applications: conductive ($dK \geq 20$) and non-conductive ($dK < 20$) media including: liquids and solids in standard industrial processes, bulk solids applications involving dust, and chemical processes involving vapor

Probe applications

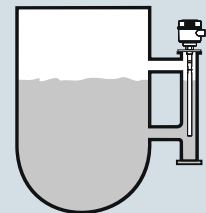
Rod version	Conductive liquids, slurries or solids
Rod version with stilling well	<ul style="list-style-type: none"> • Conductive liquids or slurries in non-conductive tanks • Non-conductive liquids in non-conductive tanks • Tanks with agitation or turbulent liquids • Liquids with a dielectric constant below 2 • Non-linear tanks, such as parabolic or spherical tanks • Interface measurements
Cable version	Non-conductive solids or liquids
PFA coated cable version	Conductive or sticky liquids, slurries or solids

Configuration

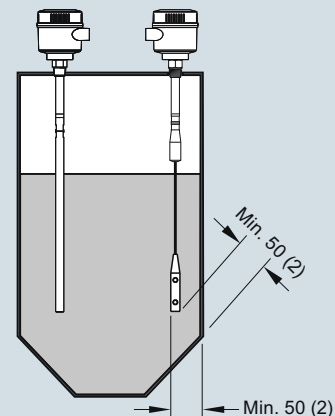
Installation



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



Mounting on a bypass



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

SITRANS LC300 installation, dimensions in mm (inch)

Technical specifications

Input	
Measuring range	1.66 ... 3 300 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⁾³⁾
• Installation category	I
• Pollution degree	4
• Ingress protection	Type 4/NEMA 4/IP65 (optional IP68)
Installation conditions	
• Location	Indoor/outdoor
Process pressure	-1 ... +35 bar g (-14.6 ... +511 psi g)
Process temperature	-40 ... +200 °C (-40 ... +392 °F) ⁴⁾
Min. dielectric constant ϵ_r	1.5
Minimum difference in dielectric constant for interface measurement	5
Design	
Material	
• Enclosure	Aluminum, epoxy-coated
Probe diameter	
• Rod version	19 mm (0.75 inch) with PFA jacket
• Cable version	9 mm (0.35 inch) with PFA jacket, 6 mm (0.24 inch) without PFA jacket
Active shield length	
• Rod version	Threaded: 120 mm (4.72 inch) Flanged: 100 mm (3.94 inch)
• Cable version	Threaded: 125 mm (4.92 inch) Flanged: 105 mm (4.13 inch)
Process connection of probe	
• Threaded rod mounting	$\frac{3}{4}$ ", 1", 1 $\frac{1}{4}$ ", 1 $\frac{1}{2}$ " NPT [(Taper), ANSI/ASME B1.20.1] R $\frac{3}{4}$ ", 1", 1 $\frac{1}{2}$ " [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] G $\frac{3}{4}$ ", 1", 1 $\frac{1}{2}$ " [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]
• Threaded cable mounting	1 $\frac{1}{2}$ " NPT [(Taper), ANSI/ASME B1.20.1] R 1 $\frac{1}{2}$ " [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] G 1 $\frac{1}{2}$ " [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]
• Flange mounting	1 ... 4" ASME, DN 25 ... 100
Enclosure cable inlet	2 x $\frac{1}{2}$ " 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 signaling	According to NAMUR NE 43, signal 3.8 ... 20.5 mA, fault \leq 3.6 or \geq 21 mA (22 mA)
Certificates and approvals	
General Purpose	CE, CSA _{US/C} , FM, RCM, KCC, GOST-R
Dust Ignition Proof (Intrinsically Safe probe circuit)	
• Canada/USA	FM/CSA: Class II, Div. 1, Groups E, F, G Class III T4
• Europe	ATEX 1/2 D T100 °C
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
• Brazil	Ex d [ia Ga] IIC T6 ... T4 Gb Ex tb IIC T85 °C ... T100 °C Db IP65/IP68
• Russia	GOST-R Ex
Explosion Proof (Intrinsically Safe probe circuit)	
• Canada/USA	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, Lloyds Register, BV
Overfill Protection	AIB-Vincotte
Other	Pattern Approval (AQSIQ, China), CRN, PED

¹⁾ When operation is in areas classified as hazardous, observe restrictions according to relevant certificate. See also Pressure/Temperature curves on page 5/16.

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

³⁾ Minimum voltage of 15 V DC is required for use at -40 °C (-40 °F)

⁴⁾ Not suitable for steam environments

Design: Probe

	Rod version	Stilling well version	Cable version
Length	Min. 300 mm (12 inch), max. 5 000 mm (197 inch)	Min. 300 mm (12 inch), max. 5 000 mm (197 inch)	Min. 1 000 mm (40 inch), max. 25 000 mm (984 inch)
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

Level Measurement

Continuous level measurement - Capacitance transmitters

SITRANS LC300

Selection and Ordering data

Article No.

SITRANS LC300, rod version

7ML5670-

An inverse frequency shift capacitance continuous level transmitter for liquids and solids applications.

➤ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.

Process connection

Threaded, 316L stainless steel

¾" NPT [(Taper), ANSI/ASME B1.20.1]

1" NPT [(Taper), ANSI/ASME B1.20.1]

1¼" NPT [(Taper), ANSI/ASME B1.20.1]

1½" NPT [(Taper), ANSI/ASME B1.20.1]

R ¾" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203]

R 1" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203]

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

G ¾" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]

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

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

Welded flange, 316L stainless steel, raised face¹⁾

1" ASME, 150 lb

1" ASME, 300 lb

1" ASME, 600 lb

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 25, PN 16

DN 25, PN 40

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

Sanitary, hastelloy, duplex or other custom process connections available, contact ceg.smpi@siemens.com for details.

0 A

0 B

0 C

0 D

1 A

1 B

1 D

3 A

3 B

3 D

5 A

5 B

5 C

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 A

6 B

6 C

6 D

6 E

6 F

6 G

6 H

6 J

6 K

Selection and Ordering data

Article No.

SITRANS LC300, rod version

7ML5670-

An inverse frequency shift capacitance continuous level transmitter for liquids and solids applications.

➤ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.

Probe Length

(from flange face or including process thread)

Add Order code Y01 and plain text:

"Insertion length ... mm"

300 ... 1 000 mm (11.81 ... 39.37 inch)

1 001 ... 2 000 mm (39.41 ... 78.74 inch)

2 001 ... 3 000 mm (78.78 ... 118.11 inch)

3 001 ... 4 000 mm (118.15 ... 157.48 inch)

4 001 ... 5 000 mm (157.52 ... 196.85 inch)

Bent probes also available, contact ceg.smpi@siemens.com for details.

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

19 mm (0.75 inch) diameter 316L stainless steel, PFA lined rod

Approvals

General Safety (CSA, FM, CE, RCM)

Dust Ignition Proof With IS Probe

CE, RCM, ATEX II 1/2 D T100 °C

Flame Proof Enclosure With IS Probe

CE, RCM, 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, Groups E, F, G

CSA/FM Class III T4

Explosion Proof Enclosure With IS Probe

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

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

CSA/FM Class III T4

Enclosure

Aluminum epoxy coated 2 x ½" NPT via adapter - cable inlet, IP65

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

Aluminum epoxy coated 2 x ½" NPT via adapter - cable inlet, IP68

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

Stainless steel, contact ceg.smpi@siemens.com for details.

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

A

B

C

D

E

0

1

0

1

0

A

B

C

D

E

A

B

C

D

Selection and Ordering data	Order code
Further designs	
Please add "-Z" to Article 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 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text	Y15
Manufacturer's Test Certificate: M to DIN 55350, Part 18 and to ISO 9000	C11
Inspection Certificate Type 3.1 per EN 10204	C12
Operating Instructions	
English	7ML1998-5HE03
French	7ML1998-5HE11
German	7ML1998-5HE33
Spanish	7ML1998-5HE21
Multi-language Quick Start manual Note: The Operating Instructions should be ordered as a separate line item on the order. This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and Operating Instructions library.	A5E32268590
Accessories	
Electronic transmitter kit (includes transmitter and driver)	7ML1830-1KN
SITRANS RD100, loop powered display - see Chapter 7	7ML5741-...
SITRANS RD200, universal input display with Modbus conversion - see Chapter 7	7ML5740-...
SITRANS RD300, dual line display with totalizer and linearization curve and Modbus conversion - see Chapter 7	7ML5744-...
SITRANS RD500 web, universal remote monitoring solution for instrumentation - see Chapter 7	7ML5750-...
For applicable back up point level switch - see point level measurement section	

Level Measurement

Continuous level measurement - Capacitance transmitters

SITRANS LC300

Selection and Ordering data

Article No.

SITRANS LC300, stilling well version

7ML5671-

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

➤ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.

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

Sanitary, hastelloy, duplex or other custom process connections available, contact ceg.smpi@siemens.com for details.

Probe Length

(from flange face or including process thread)

Add Order code Y01 and plain text:

"Insertion length ... mm"

300 ... 1 000 mm (11.81 ... 39.37 inch)

1 001 ... 2 000 mm (39.41 ... 78.74 inch)

2 001 ... 3 000 mm (78.78 ... 118.11 inch)

3 001 ... 4 000 mm (118.15 ... 157.48 inch)

4 001 ... 5 000 mm (157.52 ... 196.85 inch)

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 inch) diameter stilling well,

with 19 mm (0.75 inch) diameter 316L

stainless steel, PFA lined rod with PTFE spacers

Approvals

General Safety (CSA, FM, CE, RCM)

Dust Ignition Proof With IS Probe
CE, RCM, ATEX II 1/2 D T100 °CFlame Proof Enclosure With IS Probe
CE, RCM, ATEX II 1/2 G EEx d [ia] IIC T6 ... T1,
ATEX II 1/2 D T100 °C

Selection and Ordering data

Article No.

SITRANS LC300, stilling well version

7ML5671-

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

Dust Ignition Proof With IS Probe
CSA/FM Class II, Div. 1, Groups E, F, G
CSA/FM Class III T4

Explosion Proof Enclosure With IS Probe
CSA/FM Class I, Div. 1, Groups A, B, C, D
CSA/FM Class II, Div. 1, Groups E, F, G
CSA/FM Class III T4

Enclosure

Aluminum epoxy coated 2 x ½" NPT via adapter - cable inlet, IP65

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

Aluminum epoxy coated 2 x ½" NPT via adapter - cable inlet, IP68

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

Stainless steel, contact ceg.smpi@siemens.com for details.

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 Article 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 inch)]:
Measuring-point number/identification
(max. 27 characters) specify in plain text

Y15

Manufacturer's Test Certificate: M to DIN 55350,
Part 18 and to ISO 9000

C11

Inspection Certificate Type 3.1 per EN 10204

C12

Operating Instructions

English

Article No.

French

7ML1998-5HE03

German

7ML1998-5HE11

Spanish

7ML1998-5HE33

Multi-language Quick Start manual

7ML1998-5HE21

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

A5E32268590

This device is shipped with the Siemens Milltronics
manual DVD containing the ATEX Quick Start and
Operating Instructions library.

Accessories

Electronic transmitter kit
(includes transmitter and driver)

7ML1830-1KN

SITRANS RD100, loop powered display -
see Chapter 7

7ML5741-...

SITRANS RD200, universal input display with
Modbus conversion - see Chapter 7

7ML5740-...



SITRANS RD300, dual line display with totalizer
and linearization curve and Modbus conversion -
see Chapter 7

7ML5744-...

SITRANS RD500 web, universal remote monitoring
solution for instrumentation - see Chapter 7

7ML5750-...

For applicable back up point level switch -
see point level measurement section

Selection and Ordering data	Article No.	Selection and Ordering data	Article No.
SITRANS LC300, cable version	7ML5672-	SITRANS LC300, cable version	7ML5672-
An inverse frequency shift capacitance continuous level transmitter for non-conductive liquids and solids applications.		An inverse frequency shift capacitance continuous level transmitter for non-conductive liquids and solids applications.	
Click on the Article No. for the online configuration in the PIA Life Cycle Portal.			
Process connection		Approvals	
Threaded, 316L stainless steel		General Safety (CSA, FM, CE, RCM)	A
1½" NPT [(Taper), ANSI/ASME B1.20.1]	0 D	Dust Ignition Proof With IS Probe	B
R 1½" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203]	1 D	CE, RCM, ATEX II 1/2 D T100 °C	C
G 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]	3 D	Flame Proof Enclosure With IS Probe	D
<u>Welded flange, 316L stainless steel, raised face¹⁾</u>		CE, RCM, ATEX II 1/2 G EEx d [ia] IIC T6 ... T1, ATEX II 1/2 D T100 °C	E
1½" ASME, 150 lb	5 D	Dust Ignition Proof With IS Probe	A
1½" ASME, 300 lb	5 E	CSA/FM Class II, Div. 1, Groups E, F, G	B
1½" ASME, 600 lb	5 F	CSA/FM Class III T4	C
2" ASME, 150 lb	5 G	Explosion Proof Enclosure With IS Probe	D
2" ASME, 300 lb	5 H	CSA/FM Class I, Div. 1, Groups A, B, C, D	E
2" ASME, 600 lb	5 J	CSA/FM Class II, Div. 1, Groups E, F, G	A
3" ASME, 150 lb	5 K	CSA/FM Class III T4	B
3" ASME, 300 lb	5 L	Enclosure	C
3" ASME, 600 lb	5 M	Aluminum epoxy coated 2 x ½" NPT via adapter - cable inlet, IP65	D
4" ASME, 150 lb	5 N	Aluminum epoxy coated 2 x M20 x 1.5 cable inlet, IP65	
4" ASME, 300 lb	5 P	Aluminum epoxy coated 2 x ½" NPT via adapter - cable inlet, IP68	
4" ASME, 600 lb	5 Q	Aluminum epoxy coated 2 x M20 x 1.5 cable inlet, IP68	
<u>Welded flange, 316L stainless steel, Type A flat faced¹⁾</u>		Stainless steel, contact ceg.smpi@siemens.com for details.	
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		
Sanitary, hastelloy, duplex or other custom process connections available, contact ceg.smpi@siemens.com for details.			
Probe Length (from flange face or including process thread)			
Add Order code Y01 and plain text: "Insertion length ... mm"			
1 000 ... 2 000 mm (39.37 ... 78.74 inch)	A		
2 001 ... 4 000 mm (78.78 ... 157.48 inch)	B		
4 001 ... 6 000 mm (157.52 ... 236.22 inch)	C		
6 001 ... 8 000 mm (236.26 ... 314.96 inch)	D		
8 001 ... 10 000 mm (315.00 ... 393.70 inch)	E		
10 001 ... 12 000 mm (393.74 ... 472.44 inch)	F		
12 001 ... 14 000 mm (472.48 ... 551.18 inch)	G		
14 001 ... 16 000 mm (551.22 ... 629.92 inch) ²⁾	H		
16 001 ... 18 000 mm (629.96 ... 708.66 inch) ²⁾	J		
18 001 ... 20 000 mm (708.70 ... 787.40 inch) ²⁾	K		
20 001 ... 22 000 mm (787.44 ... 866.14 inch) ²⁾	L		
22 001 ... 24 000 mm (866.18 ... 944.88 inch) ²⁾	M		
24 001 ... 25 000 mm (944.92 ... 984.25 inch) 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			

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

²⁾ Cable lengths from 15 000 mm (590.55 inch) to 25 000 mm (984.25 inch) can be used in non-conductive media. Contact Factory for assistance.

Level Measurement

Continuous level measurement - Capacitance transmitters

SITRANS LC300

Selection and Ordering data	Order code
Further designs	
Please add "-Z" to Article 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 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text	Y15
Manufacturer's Test Certificate: M to DIN 55350, Part 18 and to ISO 9000	C11
Inspection Certificate Type 3.1 per EN 10204	C12
Operating Instructions	
English	7ML1998-5HE03
French	7ML1998-5HE11
German	7ML1998-5HE33
Spanish	7ML1998-5HE21
Multi-language Quick Start manual Note: The Operating Instructions should be ordered as a separate line item on the order.	A5E32268590
This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and Operating Instructions library.	
Accessories	
Electronic transmitter kit (includes transmitter and driver)	7ML1830-1KN
SITRANS RD100, loop powered display - see Chapter 7	7ML5741-...
SITRANS RD200, universal input display with Modbus conversion - see Chapter 7	7ML5740-...
SITRANS RD300, dual line display with totalizer and linearization curve and Modbus conversion - see Chapter 7	7ML5744-...
SITRANS RD500 web, universal remote monitoring solution for instrumentation - see Chapter 7	7ML5750-...
For applicable back up point level switch - see point level measurement section	

Selection and Ordering data	Article No.	Selection and Ordering data	Article No.
SITRANS LC300, PFA coated cable version	7ML5673-	SITRANS LC300, PFA coated cable version	7ML5673-
An inverse frequency shift capacitance continuous level transmitter for liquids and solids applications.		An inverse frequency shift capacitance continuous level transmitter for liquids and solids applications.	
↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.			
Process connection		Probe material	
Threaded, 316L stainless steel		PFA coated cable and 316L stainless steel cable weight, PEEK isolator and PFA lined active shield	1
1½" NPT [(Taper), ANSI/ASME B1.20.1]	0 D	Approvals	
R 1½" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203]	1 D	General Safety (CSA, FM, CE, RCM)	A
G 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]	3 D	Dust Ignition Proof With IS Probe CE, RCM, ATEX II 1/2 D T100 °C	B
<u>Welded flange, 316L stainless steel, raised face¹⁾</u>		Flame Proof Enclosure With IS Probe CE, RCM, ATEX II 1/2 G EEx d [ia] IIC T6 ... T1, ATEX II 1/2 D T100 °C	C
1½" ASME, 150 lb	5 D	Dust Ignition Proof With IS Probe CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4	D
1½" ASME, 300 lb	5 E	Explosion Proof Enclosure With IS Probe CSA/FM Class I, Div. 1, Groups A, B, C, D CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4	E
1½" ASME, 600 lb	5 F	Enclosure	
2" ASME, 150 lb	5 G	Aluminum epoxy coated 2 x ½" NPT via adapter - cable inlet, IP65	A
2" ASME, 300 lb	5 H	Aluminum epoxy coated 2 x M20 x 1.5 cable inlet, IP65	B
2" ASME, 600 lb	5 J	Aluminum epoxy coated 2 x ½" NPT via adapter - cable inlet, IP68	C
3" ASME, 150 lb	5 K	Aluminum epoxy coated 2 x M20 x 1.5 cable inlet, IP68	D
3" ASME, 300 lb	5 L	Stainless steel, contact ceg.smpi@siemens.com for details.	
3" ASME, 600 lb	5 M	Mounting eye	
4" ASME, 150 lb	5 N	Without Mounting eye	0
4" ASME, 300 lb	5 P	With mounting eye	1
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		
Sanitary, hastelloy, duplex or other custom process connections available, contact ceg.smpi@siemens.com for details.			
Probe Length (from flange face or including process thread)			
Add Order code Y01 and plain text: "Insertion length ... mm"			
1 000 ... 2 000 mm (39.37 ... 78.74 inch)	A		
2 001 ... 4 000 mm (78.78 ... 157.48 inch)	B		
4 001 ... 6 000 mm (157.52 ... 236.22 inch)	C		
6 001 ... 8 000 mm (236.26 ... 314.96 inch)	D		
8 001 ... 10 000 mm (315.00 ... 393.70 inch)	E		
10 001 ... 12 000 mm (393.74 ... 472.44 inch)	F		
12 001 ... 14 000 mm (472.48 ... 551.18 inch)	G		
14 001 ... 16 000 mm (551.22 ... 629.92 inch) ²⁾	H		
16 001 ... 18 000 mm (629.96 ... 708.66 inch) ²⁾	J		
18 001 ... 20 000 mm (708.70 ... 787.40 inch) ²⁾	K		
20 001 ... 22 000 mm (787.44 ... 866.14 inch) ²⁾	L		
22 001 ... 24 000 mm (866.18 ... 944.88 inch) ²⁾	M		
24 001 ... 25 000 mm (944.92 ... 984.25 inch) 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		

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

²⁾ Cable lengths from 15 000 mm (590.55 inch) to 25 000 mm (984.25 inch) can be used in non-conductive media. Contact Factory for assistance.

Level Measurement

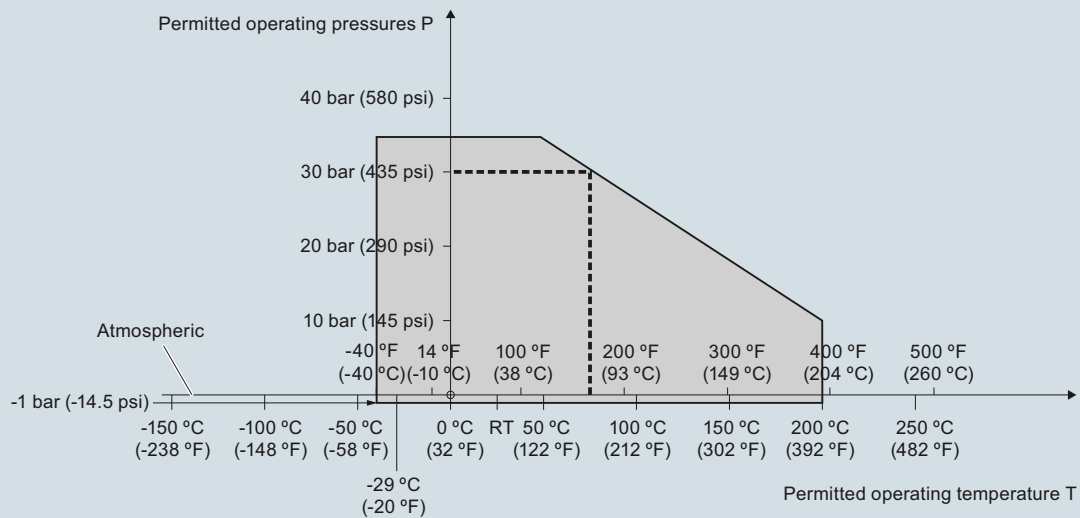
Continuous level measurement - Capacitance transmitters

SITRANS LC300

Selection and Ordering data	Order code
Further designs	
Please add "-Z" to Article 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 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text	Y15
Manufacturer's Test Certificate: M to DIN 55350, Part 18 and to ISO 9000	C11
Inspection Certificate Type 3.1 per EN 10204	C12
Operating Instructions	
English	7ML1998-5HE03
French	7ML1998-5HE11
German	7ML1998-5HE33
Spanish	7ML1998-5HE21
Multi-language Quick Start manual	A5E32268590
Note: The Operating Instructions should be ordered as a separate line item on the order. This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and Operating Instructions library.	
Accessories	
Electronic transmitter kit (includes transmitter and driver)	7ML1830-1KN
SITRANS RD100, loop powered display - see Chapter 7	7ML5741-...
SITRANS RD200, universal input display with Modbus conversion - see Chapter 7	7ML5740-...
SITRANS RD300, dual line display with totalizer and linearization curve and Modbus conversion - see Chapter 7	7ML5744-...
SITRANS RD500 web, universal remote monitoring solution for instrumentation - see Chapter 7	7ML5750-...
For applicable back up point level switch - see point level measurement section	

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

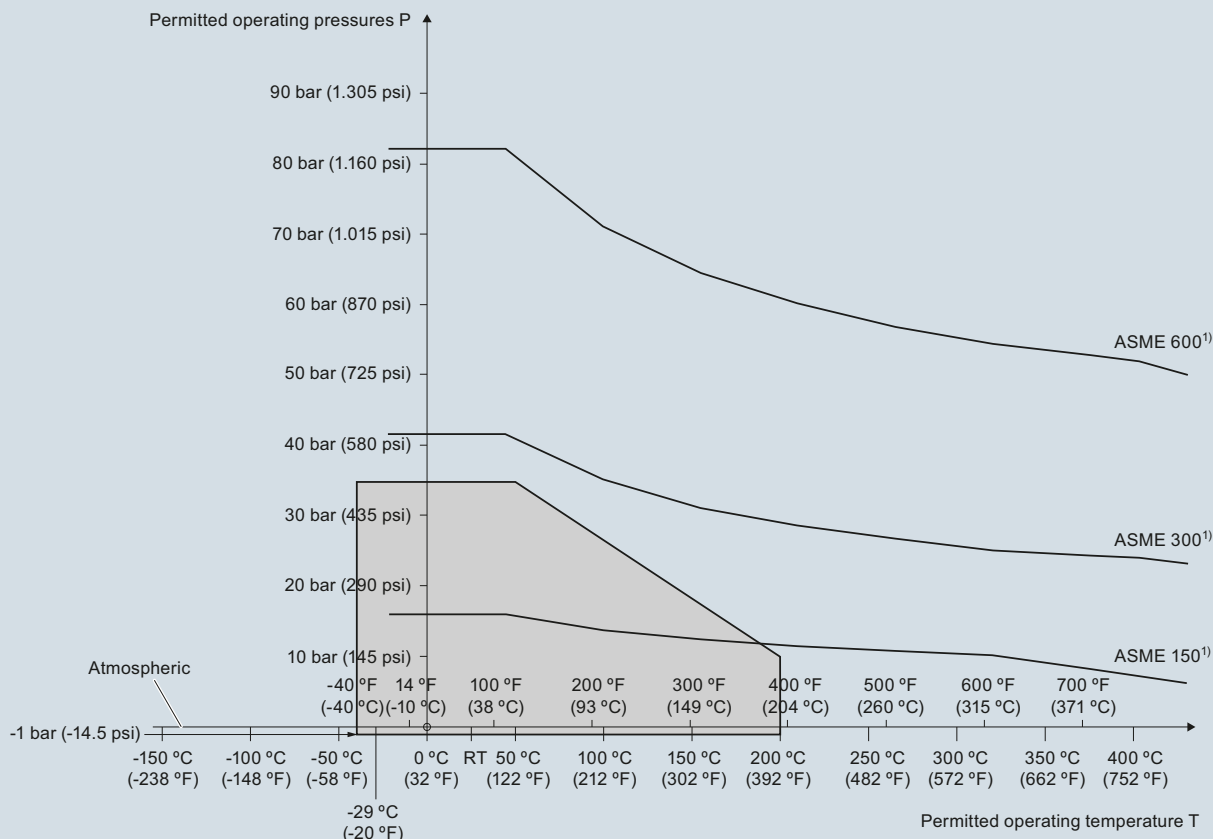
SITRANS LC300 Process Pressure/Temperature derating curves (7ML5625)

Level Measurement

Continuous level measurement - Capacitance transmitters

SITRANS LC300

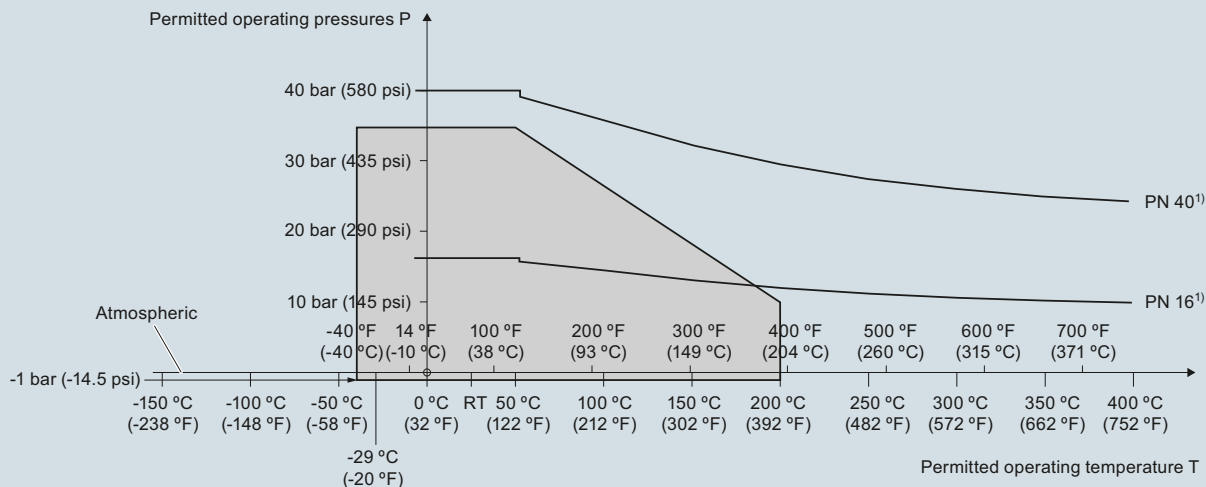
Pressure/temperature curve
 LC300 standard, extended rod and cable probes
 ASME flanged process connections
 (7ML5670, 7ML5671, 7ML5672 and 7ML5673)



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

SITRANS LC300 Process Pressure/Temperature derating curves (7ML5626)

Pressure/temperature curve
 LC300 standard, extended rod and cable probes
 EN flanged process connections
 (7ML5670, 7ML5671, 7ML5672 and 7ML5673)

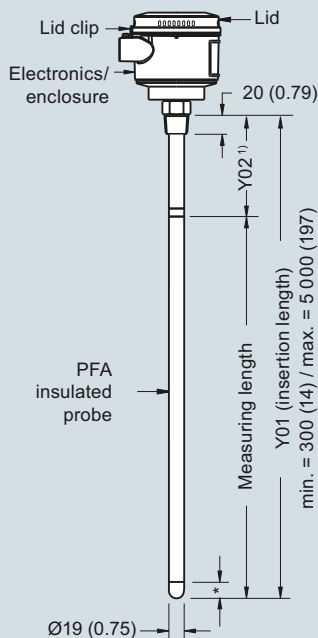


¹⁾ The curve denotes the minimum allowable flange class for the shaded area below.

SITRANS LC300 Process Pressure/Temperature derating curves (7ML5626)

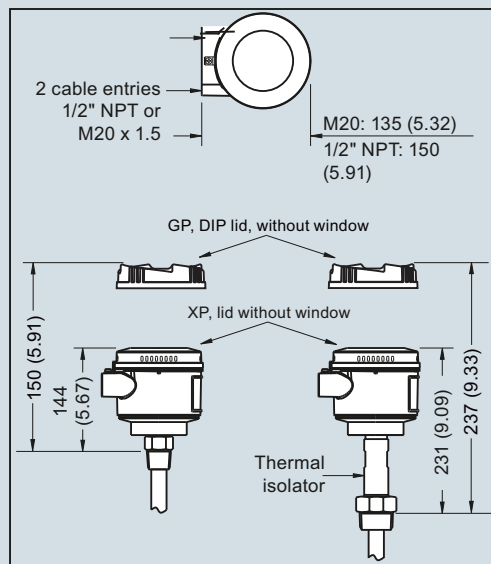
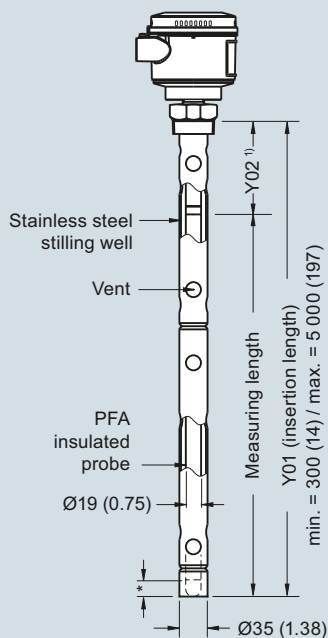
Dimensional drawings

Threaded (7ML5670)



* = 30 (1.18) Inactive tip

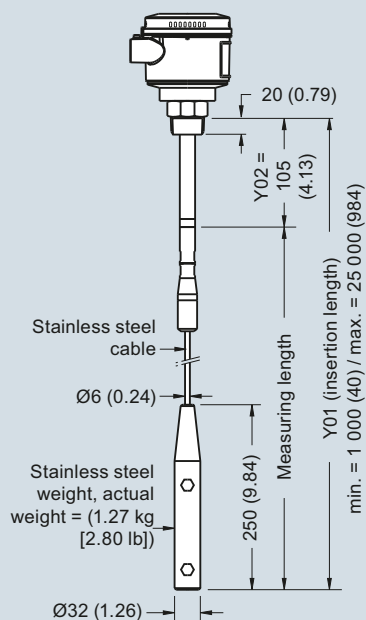
Threaded (7ML5671)



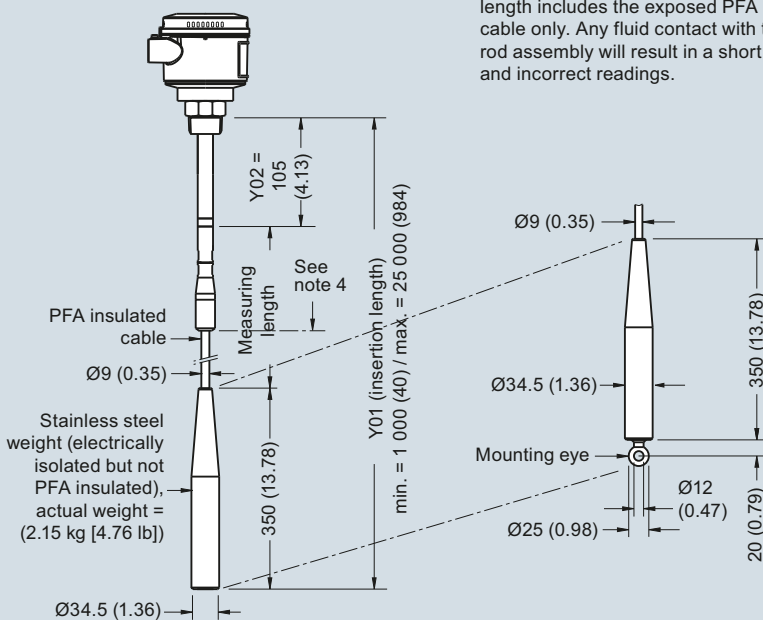
Note:

- 1) Rod version Y02: Shield length = 100 (3.9) for threaded including process connection thread length, 100 (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 liquid and solid 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)

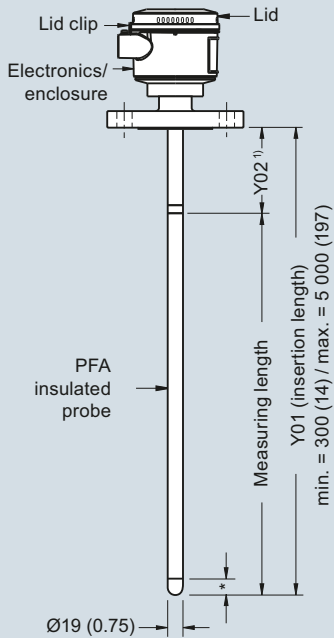
Level Measurement

Continuous level measurement - Capacitance transmitters

SITRANS LC300

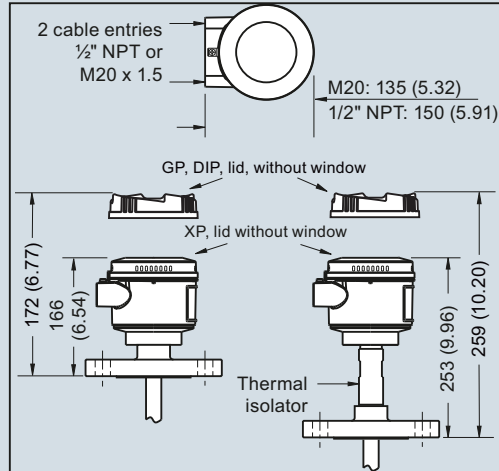
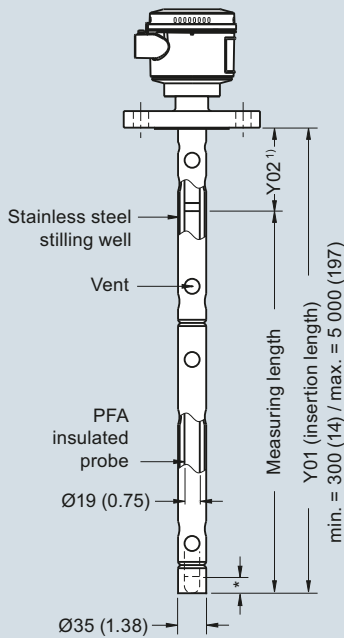
4

Welded Flange (7ML5670)



* = 30 (1.18) inactive tip

Welded Flange (7ML5671)



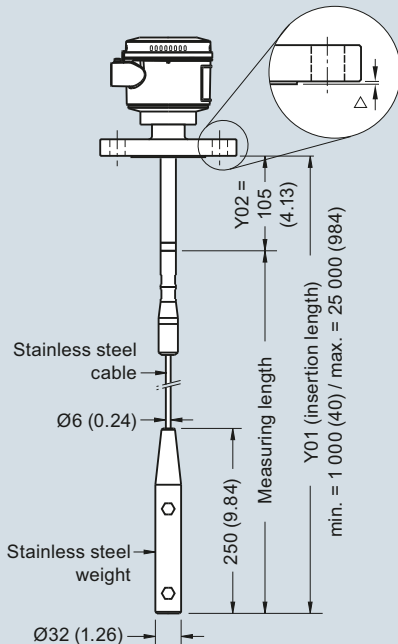
Flange Facing (raised face)

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

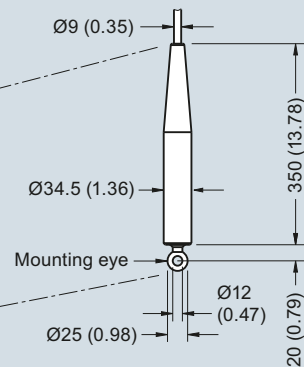
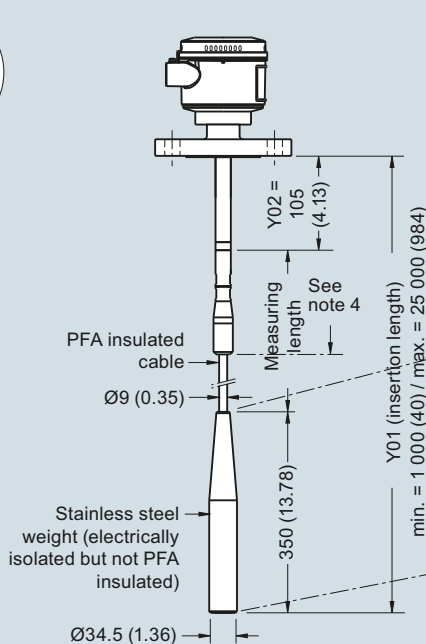
Notes:

- 1) Rod version Y02: Shield length = 100 (3.9) for threaded including process connection thread length, 100 (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 liquid and solid 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)

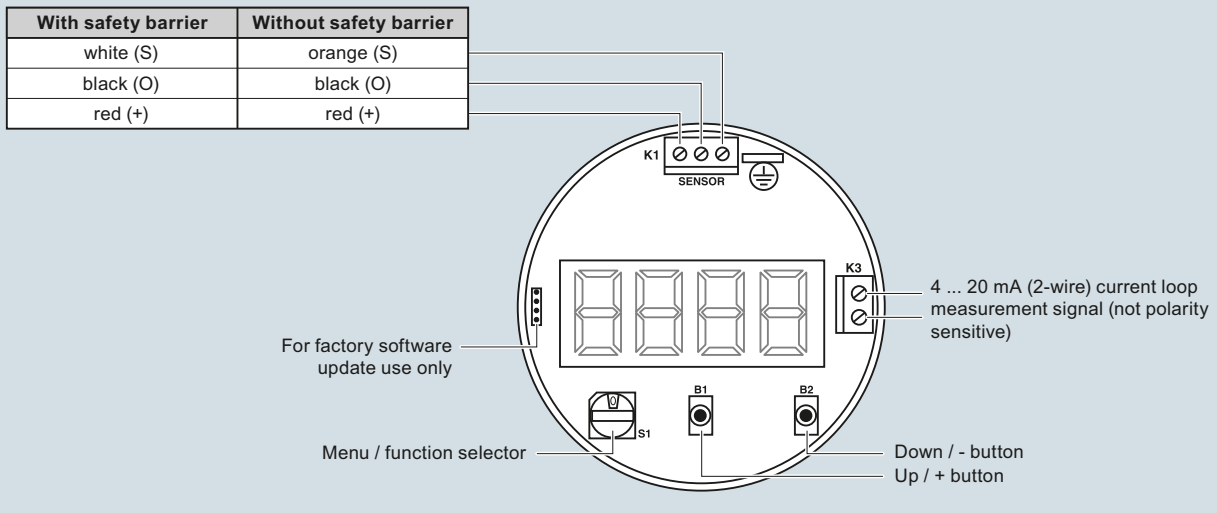


Cable version, insulated³⁾ Welded Flange (7ML5673)





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

Schematics


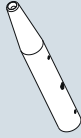
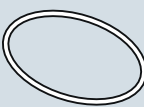
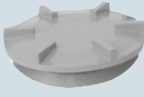





SITRANS LC300 connections

Selection and ordering data**LC300 and LC500 Specials¹⁾**

	Article No.
LC300 Cable Extensions, 316L stainless steel	
Kit, stainless steel cable extension, 1 m, adjustable by customer	A5E01163688
Kit, stainless steel cable extension, 3 m, adjustable by customer	A5E01163689
Kit, stainless steel cable extension, 5 m, adjustable by customer	A5E01163690
Kit, stainless steel cable extension, 10 m, adjustable by customer	A5E01163691
Kit, stainless steel cable extension, 15 m, adjustable by customer	A5E01163693
Kit, stainless steel cable extension, 20 m, adjustable by customer	A5E01163695
LC300 Cable Extensions, 316 stainless steel with PFA coating	
Kit, PFA cable extension, 1 m	A5E01163709
Kit, PFA cable extension, 3 m	A5E01163710
Kit, PFA cable extension, 5 m	A5E01163711
Kit, PFA cable extension, 10 m	A5E01163712
Kit, PFA cable extension, 15 m	A5E01163713
Kit, PFA cable extension, 20 m	A5E01163714

LC300 and LC500 Specials¹⁾

	Article No.
LC300 Mounting Eye	
Spare mounting eye (LC300 PFA versions only)	A5E01163717
LC300 Weight Kit, 316L stainless steel	
Kit, Spare stainless steel weight. To be used in any cable version of CLS300, or stainless steel cable version of LC300	A5E01163727
LC500 Gasket (IP65), Silicone	
Spare gasket, LC500 enclosure version, IP65	A5E01163728
LC500 Blind Lid	
Spare LC500 aluminum blind lid	A5E01163729
LC500 Mounting Eye	
Spare mounting eye (PFA cable version only)	A5E01163717
LC500 Mounting Bracket	
Spare mounting bracket	A5E01163730
LC500 Sanitary Versions²⁾	

¹⁾ Special flange sizes and facings are available. Please contact ceg.smpi@siemens.com for part number and pricing. Submit Application Questionnaire found on page 4/11.

²⁾ Please contact ceg.smpi@siemens.com for part number and pricing. Submit Application Questionnaire found on page 4/11.

Please contact ceg.smpi@siemens.com for special requests.