

# Level Measurement

## Continuous level measurement – Capacitance transmitters

SITRANS LC300

Selection and Ordering data	Article No.
<b>SITRANS LC300, rod version</b>	<b>7ML5670-</b>
An inverse frequency shift capacitance continuous level transmitter for liquids and solids applications.	0
<b>Process connection</b>	
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 face<sup>1)</sup></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 faced<sup>1)</sup></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
<b>Probe Length (from flange face or including process thread)</b>	
<u>Add Order code Y01 and plain text: "Insertion length ... mm"</u>	
300 ... 1 000 mm (11.81 ... 39.37 inch)	A
1 001 ... 2 000 mm (39.41 ... 78.74 inch)	B
2 001 ... 3 000 mm (78.78 ... 118.11 inch)	C
3 001 ... 4 000 mm (118.15 ... 157.48 inch)	D
4 001 ... 5 000 mm (157.52 ... 196.85 inch)	E
<b>Thermal isolator</b>	
Without thermal isolator	0
With thermal isolator [for process connection temperatures over 85 °C (185 °F)]	1

Selection and Ordering data	Article No.
<b>SITRANS LC300, rod version</b>	<b>7ML5670-</b>
An inverse frequency shift capacitance continuous level transmitter for liquids and solids applications.	0
<b>Wetted seals</b>	
FKM	0
FFKM [for process temperatures above -20 °C (-4 °F)]	1
<b>Probe material</b>	
19 mm (0.75 inch) diameter 316L stainless steel, PFA lined rod	0
<b>Approvals</b>	
General Safety (CSA, FM, CE, C-TICK)	A
Dust Ignition Proof With IS Probe CE, C-TICK, ATEX II 1/2 D T100 °C	B
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	C
Dust Ignition Proof With IS Probe CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4	D
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
<b>Enclosure</b>	
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

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

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Selection and Ordering data	Order code
<b>Further designs</b>	
Please add <b>"-Z"</b> to Article No. and specify Order code(s).	
Insertion length, specify in plain text: Y01: ... mm	<b>Y01</b>
Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]; Measuring-point number/identification (max. 27 characters) specify in plain text	<b>Y15</b>
Manufacturer's Test Certificate: M to DIN 55350, Part 18 and to ISO 9000	<b>C11</b>
Inspection Certificate Type 3.1 per EN 10204	<b>C12</b>
<b>Operating Instructions</b>	
English	<b>7ML1998-5HE03</b>
French	<b>7ML1998-5HE11</b>
German	<b>7ML1998-5HE33</b>
Spanish	<b>7ML1998-5HE21</b>
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.	<b>A5E32268590</b>
<b>Accessories</b>	
Electronic transmitter kit (includes transmitter and driver)	<b>7ML1830-1KN</b>
SITRANS RD100 Remote display - see Chapter 7	
SITRANS RD200 Remote display - see Chapter 7	
SITRANS RD500 web, datalogging, alarming, ethernet, and modem support for instrumentation - see Chapter 7	<b>7ML5750- 1AA00-0</b>

# Level Measurement

## Continuous level measurement – Capacitance transmitters

SITRANS LC300

Selection and Ordering data	Article No.
<b>SITRANS LC300, stilling well version</b>	<b>7ML5671-</b>
An inverse frequency shift capacitance continuous level transmitter for liquid applications.	0
<b>Process connection</b>	
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 face<sup>1)</sup></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 faced<sup>1)</sup></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
<b>Probe Length (from flange face or including process thread)</b>	
<u>Add Order code Y01 and plain text: "Insertion length ... mm"</u>	
300 ... 1 000 mm (11.81 ... 39.37 inch)	A
1 001 ... 2 000 mm (39.41 ... 78.74 inch)	B
2 001 ... 3 000 mm (78.78 ... 118.11 inch)	C
3 001 ... 4 000 mm (118.15 ... 157.48 inch)	D
4 001 ... 5 000 mm (157.52 ... 196.85 inch)	E
<b>Thermal isolator</b>	
Without thermal isolator	0
With thermal isolator [for process connection temperatures over 85 °C (185 °F)]	1
<b>Wetted seals</b>	
FKM	0
FFKM [for process temperatures above -20 °C (-4 °F)]	1
<b>Probe material</b>	
35 mm (1.38 inch) diameter stilling well, with 19 mm (0.75 inch) diameter 316L stainless steel, PFA lined rod with PTFE spacers	1
<b>Approvals</b>	
General Safety (CSA, FM, CE, C-TICK)	A
Dust Ignition Proof With IS Probe CE, C-TICK, ATEX II 1/2 D T100 °C	B
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	C
Dust Ignition Proof With IS Probe CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4	D
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

Selection and Ordering data	Article No.
<b>SITRANS LC300, stilling well version</b>	<b>7ML5671-</b>
An inverse frequency shift capacitance continuous level transmitter for liquid applications.	0
<b>Enclosure</b>	
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
<sup>1)</sup> Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5 or EN 1092-1 standard.	
Selection and Ordering data	Order code
<b>Further designs</b>	
Please add "-Z" to Article No. and specify Order code(s).	
Insertion length, specify in plain text: Y01: ... mm	<b>Y01</b>
Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text	<b>Y15</b>
Manufacturer's Test Certificate: M to DIN 55350, Part 18 and to ISO 9000	<b>C11</b>
Inspection Certificate Type 3.1 per EN 10204	<b>C12</b>
<b>Operating Instructions</b>	Article No.
English	<b>7ML1998-5HE03</b>
French	<b>7ML1998-5HE11</b>
German	<b>7ML1998-5HE33</b>
Spanish	<b>7ML1998-5HE21</b>
Multi-language Quick Start manual Note: The Operating Instructions should be ordered as a separate line item on the order.	<b>7ML1998-5QH81</b>
This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and Operating Instructions library.	
<b>Accessories</b>	
Electronic transmitter kit (includes transmitter and driver)	<b>7ML1830-1KN</b>
SITRANS RD100 Remote display - see Chapter 7	
SITRANS RD200 Remote display - see Chapter 7	
SITRANS RD500 web, cataloging, alarming, ethernet, and modem support for instrumentation - see Chapter 7	<b>7ML5750-1AA00-0</b>

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Selection and Ordering data	Article No.
<b>SITRANS LC300, cable version</b>	<b>7ML5672-</b>
An inverse frequency shift capacitance continuous level transmitter for non-conductive liquids and solids applications.	0
<b>Process connection</b>	
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 face<sup>1)</sup></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 faced<sup>1)</sup></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
<b>Probe Length (from flange face or including process thread)</b>	
<u>Add Order code Y01 and plain text: "Insertion length ... mm"</u>	
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) <sup>2)</sup>	H
16 001 ... 18 000 mm (629.96 ... 708.66 inch) <sup>2)</sup>	J
18 001 ... 20 000 mm (708.70 ... 787.40 inch) <sup>2)</sup>	K
20 001 ... 22 000 mm (787.44 ... 866.14 inch) <sup>2)</sup>	L
22 001 ... 24 000 mm (866.18 ... 944.88 inch) <sup>2)</sup>	M
24 001 ... 25 000 mm (944.92 ... 984.25 inch) <sup>2)</sup>	N
<b>Thermal isolator</b>	
Without thermal isolator	0
With thermal isolator [for process connection temperatures over 85 °C (185 °F)]	1
<b>Wetted seals</b>	
FKM	0
FFKM [for process temperatures above -20 °C (-4 °F)]	1
<b>Probe material</b>	
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	Article No.
<b>SITRANS LC300, cable version</b>	<b>7ML5672-</b>
An inverse frequency shift capacitance continuous level transmitter for non-conductive liquids and solids applications.	0
<b>Approvals</b>	
General Safety (CSA, FM, CE, C-TICK)	A
Dust Ignition Proof With IS Probe CE, C-TICK, ATEX II 1/2 D T100 °C	B
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	C
Dust Ignition Proof With IS Probe CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4	D
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
<b>Enclosure</b>	
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

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

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

# Level Measurement

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Selection and Ordering data	Order code
<b>Further designs</b>	
Please add "-Z" to Article No. and specify Order code(s).	
Insertion length, specify in plain text: Y01: ... mm	<b>Y01</b>
Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]; Measuring-point number/identification (max. 27 characters) specify in plain text	<b>Y15</b>
Manufacturer's Test Certificate: M to DIN 55350, Part 18 and to ISO 9000	<b>C11</b>
Inspection Certificate Type 3.1 per EN 10204	<b>C12</b>
<b>Operating Instructions</b>	
English	<b>7ML1998-5HE03</b>
French	<b>7ML1998-5HE11</b>
German	<b>7ML1998-5HE33</b>
Spanish	<b>7ML1998-5HE21</b>
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.	<b>7ML1998-5QH81</b>
<b>Accessories</b>	
Electronic transmitter kit (includes transmitter and driver)	<b>7ML1830-1KN</b>
SITRANS RD100 Remote display - see Chapter 7	
SITRANS RD200 Remote display - see Chapter 7	
SITRANS RD500 web, datalogging, alarming, ethernet, and modem support for instrumentation - see Chapter 7	<b>7ML5750- 1AA00-0</b>

# Level Measurement

## Continuous level measurement – Capacitance transmitters

### SITRANS LC300

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Selection and Ordering data	Article No.
<b>SITRANS LC300, PFA coated cable version</b>	<b>7ML5673-</b>
An inverse frequency shift capacitance continuous level transmitter for liquids and solids applications.	
<b>Process connection</b>	
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 face<sup>1)</sup></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 faced<sup>1)</sup></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
<b>Probe Length (from flange face or including process thread)</b>	
<u>Add Order code Y01 and plain text: "Insertion length ... mm"</u>	
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) <sup>2)</sup>	H
16 001 ... 18 000 mm (629.96 ... 708.66 inch) <sup>2)</sup>	J
18 001 ... 20 000 mm (708.70 ... 787.40 inch) <sup>2)</sup>	K
20 001 ... 22 000 mm (787.44 ... 866.14 inch) <sup>2)</sup>	L
22 001 ... 24 000 mm (866.18 ... 944.88 inch) <sup>2)</sup>	M
24 001 ... 25 000 mm (944.92 ... 984.25 inch) <sup>2)</sup>	N
<b>Thermal isolator</b>	
Without thermal isolator	0
With thermal isolator [for process connection temperatures over 85 °C (185 °F)]	1
<b>Wetted seals</b>	
FKM	0
FFKM [for process temperatures above -20 °C (-4 °F)]	1

Selection and Ordering data	Article No.
<b>SITRANS LC300, PFA coated cable version</b>	<b>7ML5673-</b>
An inverse frequency shift capacitance continuous level transmitter for liquids and solids applications.	
<b>Probe material</b>	
PFA coated cable and 316L stainless steel cable weight, PEEK isolator and PFA lined active shield	1
<b>Approvals</b>	
General Safety (CSA, FM, CE, C-TICK)	A
Dust Ignition Proof With IS Probe CE, C-TICK, ATEX II 1/2 D T100 °C	B
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	C
Dust Ignition Proof With IS Probe CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4	D
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
<b>Enclosure</b>	
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
<b>Mounting eye</b>	
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 15 000 (590.55 inch) to 25 000 mm (984.25 inch) can be used in non-conductive media. Contact Factory for assistance.

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## Continuous level measurement – Capacitance transmitters

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Selection and Ordering data	Order code
<b>Further designs</b>	
Please add "-Z" to Article No. and specify Order code(s).	
Insertion length, specify in plain text: Y01: ... mm	<b>Y01</b>
Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]; Measuring-point number/identification (max. 27 characters) specify in plain text	<b>Y15</b>
Manufacturer's Test Certificate: M to DIN 55350, Part 18 and to ISO 9000	<b>C11</b>
Inspection Certificate Type 3.1 per EN 10204	<b>C12</b>
<b>Operating Instructions</b>	
English	<b>7ML1998-5HE03</b>
French	<b>7ML1998-5HE11</b>
German	<b>7ML1998-5HE33</b>
Spanish	<b>7ML1998-5HE21</b>
Multi-language Quick Start manual	<b>7ML1998-5QH81</b>
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.	
<b>Accessories</b>	
Electronic transmitter kit (includes transmitter and driver)	<b>7ML1830-1KN</b>
SITRANS RD100 Remote display - see Chapter 7	
SITRANS RD200 Remote display - see Chapter 7	
SITRANS RD500 web, datalogging, alarming, ethernet, and modem support for instrumentation - see Chapter 7	<b>7ML5750-1AA00-0</b>