

# Level Measurement

## Continuous level measurement – Capacitance transmitters

SITRANS LC500

### Overview



SITRANS LC500 is an inverse frequency shift capacitance level or interface transmitter for extreme and critical process conditions, such as oil and liquified natural gas (LNG) as well as toxic and aggressive chemicals and vapours.

### Benefits

- Patented Active-Shield technology so measurement is unaffected by material buildup in active shield section
- Simple push-button calibration and integrated local display
- Inverse frequency approach provides high resolution
- 2-wire loop powered 4 to 20/20 to 4 mA measurement signal
- Pre-detection alarm and full function diagnostics
- High temperature and pressure resistant (optional)
- Full-function diagnostics comply with NAMUR NE 43
- Easy calibration locally or via HART (using SIMATIC PDM software)

### Application

SITRANS LC500's advanced electronics provide one-step, push-button calibration and local display for easy on-site installation and setup.

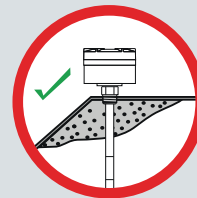
The unique mechanical probe design coupled with a high performance transmitter gives superior performance in toxic and aggressive chemicals, acids, caustics, adhesives and in viscous conductive and non-conductive materials.

The SMART 2-wire transmitter has HART communications for remote commissioning and inspection.

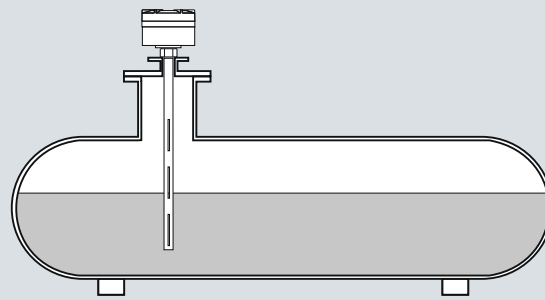
- Key Applications: Oil/water or foam/liquid interface measurement in separators or coalescers, cryogenic applications including CO<sub>2</sub> and liquified natural gas (LNG), distillation/regeneration tanks with high temperatures

### Configuration

#### Installation



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



Mounting on non-linear vessels in non-conductive fluids using stilling well.

SITRANS LC500 installation

### Technical specifications

<b>Input</b>	
Measuring range	1 ... 3300 pF
Span	Min. 3.3 pF
<b>Output</b>	
Solid-state switch	
• Output	Galvanically isolated
• Protection	Bipolar
• Max. switching voltage	<ul style="list-style-type: none"> <li>• 30 V (DC)</li> <li>• 30 V peak (AC)</li> </ul>
• Max. load current	82 mA
• Voltage drop	< 1 V, typical at 50 mA
• Time delay (pre or post switching)	1 ... 60 s
Loop current	3.6 ... 22 mA/22 ... 3.6 mA (2-wire current loop)
<b>Accuracy (transmitter)</b>	
Temperature stability	0.15 pF (0 pF) or < 0.25% (typically < 0.1%) of actual measured value, whichever is greater over the full temperature range
Non-linearity and repeatability	< 0.1% of range and actual measured value respectively
Accuracy	Deviation < 0.1% of measured value

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#### Rated operating conditions<sup>1)</sup>

Installation conditions	
• Location	Indoor/outdoor
Ambient conditions	
• Ambient temperature (transmitter)	-40 ... +85 °C (-40 ... +185 °F) <sup>2)</sup>
• Installation category	II
• Pollution degree	4
Medium conditions	
• Relative dielectric constant $\epsilon_r$	Min. 1.5
• Process temperature	Temperature rating of process seal is pressure dependent. See Pressure/Temperature curves on page 5/321.
- Standard (PFA) <sup>3)</sup>	-50 ... +200 °C (-58 ... +392 °F)
- Cryogenic version	-200 ... +200 °C (-328 ... +392 °F)
	Contact <a href="mailto:ceg.smpi@siemens.com">ceg.smpi@siemens.com</a> for details.
• Process pressure	Pressure rating of process seal is temperature dependent. See Pressure/Temperature curves on page 5/321.
• Standard (PFA)	-1 ... 150 bar g (2175 psi g)

#### Design

Material	
• Wetted parts material	
- Standard rod	316L stainless steel
• Probe insulation (rod)	PFA
• Cable	316 stainless steel/ 316 stainless steel PFA
Probe diameter	
• Rod version	16 mm (0.63 inch) or 24 mm (0.95 inch)
• Cable version	9 mm (0.35 inch) with PFA jacket, 6 mm (0.24 inch) without PFA jacket
Active shield length	
• Minimum (rod version)	50 mm (1.97 inch), customer selectable (order number Y02)
Probe length	
• Rod version	Max. 3.5 m (138 inch) with 16 mm rod, PFA Max. 5.5 m (216 inch) with 24 mm rod, PFA
• Cable version	Max. 35 m (1378 inch)
Process connection of probe	
• Threaded mounting	NPT [(Taper), ANSI/ASME B1.20.1] R [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] G [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]
• Flange mounting	ASME, EN 1092-1
Enclosure	
• Material	Aluminium, epoxy-coated
• Cable inlet	2 x 1/2" NPT (2 x M20x1.5, IP68 adapter, optional)
• Degree of protection	Type 4X/NEMA4X/IP65, IP68

<b>Power supply</b>	12 ... 33 V DC
<b>User Interface</b>	
Display	Local LCD, 4 digit, each 0 ... 9 and limited alpha characters
Rotary function switch	For selecting programmable menu items
Push buttons	Red +, blue -, used in conjunction with rotary switch for programming
<b>Features</b>	
Measurement current signalling	According to NAMUR NE 43, signal 3.8 ... 20.5 mA, fault $\leq 3.6$ or $\geq 21$ mA (22 mA)
Safety	<ul style="list-style-type: none"> <li>• Inputs/outputs fully galvanically isolated</li> <li>• Polarity-insensitive current loop</li> <li>• Fully potted</li> <li>• Integrated safety barrier</li> </ul>
Diagnostics with fault alarm when:	Primary variable (PV) out of limits, system failure in measurement circuit, deviation between A/D and D/A converter, check sum, watch dog and self-checking facility
Function rotary switch	Positions 0 ... 9, A ... F
SMART communication	Conforming to HART Communication Foundation (HCF)
<b>Certificates and approvals</b>	
General Purpose	CE, CSA, FM, C-TICK
Non-incendive/Non-sparking	<ul style="list-style-type: none"> <li>• CSA/FM Class 1, Div. 2, Groups A, B, C, D T4 ATEX II 3G 2D EEx nA [ib] IIC</li> <li>• T6 ... T4 T100 °C</li> </ul>
Dust Ignition Proof (Intrinsically Safe Probe Circuit)	<ul style="list-style-type: none"> <li>• CSA/FM Class II and III, Div. 1, Groups E, F, G</li> <li>• ATEX II 1/2 GD EEx d [ia] T6 ... T1 T100 °C</li> </ul>
Explosion Proof (Intrinsically Safe Probe Circuit)	<ul style="list-style-type: none"> <li>• FM Class 1, Div. 1, Groups A, B, C, D T4</li> <li>• ATEX II 1/2 GD EEx d [ia] IIC T6 ... T1</li> </ul>
Marine	Lloyds Register of Shipping, Categories ENV1, ENV2, ENV3 and ENV5, Bureau Veritas

<sup>1)</sup> When operation is in areas classified as hazardous, observe restrictions according to relevant certificate. See also Pressure/Temperature curves on page 5/321.

<sup>2)</sup> Thermal isolator is used if process connection temperature exceeds +85 °C (+185 °F).

<sup>3)</sup> Not recommended for steam environments

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SITRANS LC500 probe version	Standard		Extended Cable version with Rod Sensor
<b>Process connection types</b>	Threaded or welded flange	Single piece flanged	Threaded or welded flange
Threaded	Available as standard	–	Available as standard
Flange	Available as standard	Available as standard	Available as standard
<b>Process connection materials</b>			
Stainless steel 316L	Available as standard	Available as standard	Available as standard
<b>Probe insulation</b>			
PFA	Available as standard	Available as standard	Available as standard
<b>Length and Process parameters<sup>1)</sup></b>			
Rod length for PFA 16 mm version	Min. 200 mm (7.87 inch) Max. 3 500 mm (137.80 inch)	Min. 200 mm (7.87 inch) Max. 3 500 mm (137.80 inch)	Min. 200 mm (7.87 inch) Max. 3 500 mm (137.80 inch)
Rod length for PFA 24 mm version	Min. 200 mm (7.87 inch) Max. 5 500 mm (216.54 inch)	Min. 200 mm (7.87 inch) Max. 5 500 mm (216.54 inch)	Min. 200 mm (7.87 inch) Max. 5 500 mm (216.54 inch)
Cable length	Min. 1 000 mm (39.37 inch) Max. 35 000 mm (1377.95 inch)	Min. 1 000 mm (39.37 inch) Max. 35 000 mm (1377.95 inch)	Min. 5 000 mm (196.85 inch) <sup>2)</sup> Max. 35 000 mm (1377.95 inch) <sup>2)</sup>
Maximum process pressure	See Pressure/Temperature curves for specific probe type		5 bar g (73 psi g)
Maximum process temperature			+100 °C (+212 °F)

<sup>1)</sup> See Pressure/Temperature curves for specific probe type

<sup>2)</sup> Refers to total insertion length. See dimension drawing on page 5/331 for further explanation - Not available as standard

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<b>SITRANS LC500, Threaded or Welded Flange with Cable Sensor</b>	<b>7ML5513-</b>
Inverse frequency shift capacitance level and interface transmitter for extreme and critical process conditions, such as oil and liquid gas, toxic and aggressive chemicals and vapours.	
<b>Version<sup>1)</sup></b>	
Cable, 9 mm (0.35 inch) diameter, 316 stainless steel with PFA insulation, weighted <u>Add order code Y01 and plain text:</u> <u>"Insertion length ... mm"</u> 1000 ... 2000 mm (39.37 ... 78.74 inch)	<b>0 E</b>
2001 ... 4000 mm (78.78 ... 157.48 inch)	<b>1 E</b>
4001 ... 6000 mm (157.52 ... 236.22 inch)	<b>2 E</b>
6001 ... 8000 mm (236.26 ... 314.96 inch)	<b>3 E</b>
8001 ... 10000 mm (315 ... 393.70 inch)	<b>4 E</b>
Longer lengths possible to a max. of 35000 mm (114.83 ft). Contact <a href="mailto:ceg.smpi@siemens.com">ceg.smpi@siemens.com</a> for details.	
Cable, 6 mm (0.24 inch) diameter, 316L stainless steel, non-insulated, weighted (non-conductive media only) <u>Add order code Y01 and plain text:</u> <u>"Insertion length ... mm"</u> 1000 ... 2000 mm (39.37 ... 78.74 inch) <sup>2)</sup> 2001 ... 4000 mm (78.78 ... 157.48 inch) <sup>2)3)</sup> 4001 ... 6000 mm (157.52 ... 236.22 inch) <sup>2)3)</sup> 6001 ... 8000 mm (236.26 ... 314.96 inch) <sup>2)3)</sup> 8001 ... 10000 mm (315 ... 393.70 inch) <sup>2)3)</sup> Cable lengths up to 25000 mm (984.25 inch) are possible for non-conductive media. Cable lengths up to 15000 mm (590.55 inch) are possible for conductive media. Contact <a href="mailto:ceg.smpi@siemens.com">ceg.smpi@siemens.com</a> for details.	<b>0 F</b> <b>1 F</b> <b>2 F</b> <b>3 F</b> <b>4 F</b>
<b>Process connection (316L Stainless steel)</b>	
<b>Threaded connection</b>	<b>C 0</b>
1½" NPT [(Taper), ANSI/ASME B1.20.1]	<b>F 0</b>
R 1½" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203]	<b>K 0</b>
1¼" NPT [(Taper), ANSI/ASME B1.20.1]	<b>L 0</b>
G 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]	
<b>Welded flange, raised face</b>	<b>B 1</b>
1½", ASME, 150 lb	<b>B 2</b>
1½", ASME, 300 lb	<b>B 3</b>
1½", ASME, 600 lb	
2", ASME, 150 lb	<b>C 1</b>
2", ASME, 300 lb	<b>C 2</b>
2", ASME, 600 lb	<b>C 3</b>
3", ASME, 150 lb <sup>3)</sup>	<b>D 1</b>
3", ASME, 300 lb <sup>3)</sup>	<b>D 2</b>
3", ASME, 600 lb <sup>3)</sup>	<b>D 3</b>
4", ASME, 150 lb <sup>3)</sup>	<b>E 1</b>
4", ASME, 300 lb <sup>3)</sup>	<b>E 2</b>
4", ASME, 600 lb <sup>3)</sup>	<b>E 3</b>
6", ASME, 150 lb <sup>3)</sup>	<b>F 1</b>
6", ASME, 300 lb <sup>3)</sup>	<b>F 2</b>
6", ASME, 600 lb <sup>3)</sup>	<b>F 3</b>
<b>Welded flange, Type A flat faced</b>	
DN 40, PN 16	<b>K 4</b>
DN 40, PN 40	<b>K 5</b>
DN 50, PN 16	<b>L 4</b>
DN 50, PN 40	<b>L 5</b>
DN 80, PN 16	<b>M 4</b>
DN 80, PN 40 <sup>3)</sup>	<b>M 5</b>
DN 100, PN 16 <sup>3)</sup>	<b>N 4</b>
DN 100, PN 40 <sup>3)</sup>	<b>N 5</b>
DN 125, PN 16 <sup>3)</sup>	<b>P 4</b>
DN 125, PN 40 <sup>3)</sup>	<b>P 5</b>
(Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5, or EN 1092-1 standard.)	

Selection and Ordering data	Order No.
<b>SITRANS LC500, Threaded or Welded Flange with Cable Sensor</b>	<b>7ML5513-</b>
Inverse frequency shift capacitance level and interface transmitter for extreme and critical process conditions, such as oil and liquid gas, toxic and aggressive chemicals and vapours.	
<b>Approvals</b>	
General Purpose: CE, CSA, FM, C-TICK, KC	<b>1</b>
CSA / FM Class I, Div 2, Groups A, B, C, D	<b>2</b>
CSA / FM Class II, III, Div 1, Groups E, F, G T4	
ATEX II 3G 2D EEx nA [ib] IIC T6 ... T4 T 100°C	<b>4</b>
ATEX II 1/2 GD EEx d [ia] IIC T6 ... T1 T 100°C	<b>6</b>
FM Class I, Div.1, Groups A, B, C, D, T4	
<b>Enclosure/Cable inlet</b>	
Aluminum epoxy coated	
2 x ½" NPT, IP68	<b>1</b>
2 x M20x1.5 (IP68, adapter)	<b>2</b>
<b>Options</b>	
No additional options	
With mounting eye <sup>4)</sup>	<b>A</b> <b>B</b>
<b>Thermal isolator</b>	
Without thermal isolator	
Isolator, only for use when temperature range is outside of -40 ... +85 °C (-40 ... +185 °F), explosion proof approval -40 ... +70 °C (-40 ... +158 °F)	<b>A</b> <b>B</b>
<b>Electronic output</b>	
2-wire loop current 4 ... 20 mA (transmitter MSP 2002-2 _3300 pF)	<b>1</b>
1) A minimum span of 3 pF must be maintained	
2) Available with non-conductive media only	
3) Custom shipping methods required. Contact factory for more details.	
4) Available in PFA insulated version only	
C) Subject to export regulations AL: N, ECCN: EAR99.	

Selection and Ordering data	Order code
<b>Further designs</b>	
Please add <b>"-Z"</b> to Order 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. 16 characters) specify in plain text	<b>Y15</b>
Acceptance test certificate: Manufacturer's test certificate M to DIN 55350, Part 18 and ISO 9000	<b>C11</b>
Inspection Certificate Type 3.1 per EN 10204	<b>C12</b>
<b>Operating Instructions</b>	<b>See page 5/320</b>
<b>Accessories</b>	<b>See page 5/320</b>

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Selection and Ordering data	Order No.	Selection and Ordering data	Order No.
<b>SITRANS LC500, Threaded or Welded Flange, with Rod Sensor</b> Inverse frequency shift capacitance level and interface transmitter for extreme and critical process conditions, such as oil and liquid gas, toxic and aggressive chemicals and vapours.	<b>7ML5515-</b>	<b>SITRANS LC500, Threaded or Welded Flange, with Rod Sensor</b> Inverse frequency shift capacitance level and interface transmitter for extreme and critical process conditions, such as oil and liquid gas, toxic and aggressive chemicals and vapours.	<b>7ML5515-</b>
<b>Version</b> Rod, 16 mm (0.63 inch), PFA insulated <u>Add order code Y01 and Y02 and plain text:</u> <u>"Insertion length ... mm and active shield length ... mm"</u> 200 ... 1000 mm (7.87 ... 39.37 inch) <sup>1)</sup> 1001 ... 2000 mm (39.41 ... 78.74 inch) 2001 ... 3000 mm (78.78 ... 118.11 inch) <sup>2)</sup> 3001 ... 3500 mm (118.15 ... 137.80 inch) <sup>2)</sup>	<b>0 A</b> <b>1 A</b> <b>2 A</b> <b>3 A</b>	<b>Welded flange, raised face</b> 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 <sup>2)</sup> 3", ASME, 300 lb <sup>2)</sup> 3", ASME, 600 lb <sup>2)</sup> 4", ASME, 150 lb <sup>2)</sup> 4", ASME, 300 lb <sup>2)</sup> 4", ASME, 600 lb <sup>2)</sup> 6", ASME, 150 lb <sup>2)</sup> 6", ASME, 300 lb <sup>2)</sup> 6", ASME, 600 lb <sup>2)</sup>	<b>B 1</b> <b>B 2</b> <b>B 3</b> <b>C 1</b> <b>C 2</b> <b>C 3</b> <b>D 1</b> <b>D 2</b> <b>D 3</b> <b>E 1</b> <b>E 2</b> <b>E 3</b> <b>F 1</b> <b>F 2</b> <b>F 3</b>
Rod, 16 mm (0.63 inch), PFA insulated with 35 mm (1.38 inch) stilling well in 316L stainless steel <u>Add order code Y01 and Y02 and plain text:</u> <u>"Insertion length ... mm and active shield length ... mm"</u> 200 ... 1000 mm (7.87 ... 39.37 inch) <sup>1)3)</sup> 1001 ... 2000 mm (39.41 ... 78.74 inch) <sup>3)</sup> 2001 ... 3000 mm (78.78 ... 118.11 inch) <sup>2)3)</sup> 3001 ... 3500 mm (118.15 ... 137.80 inch) <sup>2)3)</sup>	<b>0 B</b> <b>1 B</b> <b>2 B</b> <b>3 B</b>	<b>Welded flange, Type A flat faced</b> DN 40, PN 16 DN 40, PN 40 DN 50, PN 16 DN 50, PN 40 DN 80, PN 16 DN 80, PN 40 <sup>2)</sup> DN 100, PN 16 <sup>2)</sup> DN 100, PN 40 <sup>2)</sup> DN 125, PN 16 <sup>2)</sup> DN 125, PN 40 <sup>2)</sup>	<b>K 4</b> <b>K 5</b> <b>L 4</b> <b>L 5</b> <b>M 4</b> <b>M 5</b> <b>N 4</b> <b>N 5</b> <b>P 4</b> <b>P 5</b>
Rod, 24 mm (0.94 inch), PFA insulated <u>Add order code Y01 and Y02 and plain text:</u> <u>"Insertion length ... mm and active shield length ... mm"</u> 200 ... 1000 mm (7.87 ... 39.37 inch) <sup>4)</sup> 1001 ... 2000 mm (39.41 ... 78.74 inch) <sup>4)</sup> 2001 ... 3000 mm (78.78 ... 118.11 inch) <sup>2)4)</sup> 3001 ... 4000 mm (118.15 ... 157.48 inch) <sup>2)4)</sup> 4001 ... 5000 mm (173.26 ... 196.88 inch) <sup>2)4)</sup> 5001 ... 5500 mm (196.89 ... 216.54 inch) <sup>2)4)</sup>	<b>0 C</b> <b>1 C</b> <b>2 C</b> <b>3 C</b> <b>4 C</b> <b>5 C</b>	(Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5, or EN 1092-1 standard.)	
Rod, 24 mm (0.94 inch), PFA insulated with 48 mm (1.89 inch) stilling well in 316L stainless steel <u>Add order code Y01 and Y02 and plain text:</u> <u>"Insertion length ... mm and active shield length ... mm"</u> 200 ... 1000 mm (7.87 ... 39.37 inch) <sup>5)</sup> 1001 ... 2000 mm (39.41 ... 78.74 inch) <sup>5)</sup> 2001 ... 3000 mm (78.78 ... 118.11 inch) <sup>2)5)</sup> 3001 ... 4000 mm (118.15 ... 157.48 inch) <sup>2)5)</sup> 4001 ... 5000 mm (173.26 ... 196.88 inch) <sup>2)5)</sup> 5001 ... 5500 mm (196.89 ... 216.54 inch) <sup>2)5)</sup>	<b>0 D</b> <b>1 D</b> <b>2 D</b> <b>3 D</b> <b>4 D</b> <b>5 D</b>	<b>Approvals</b> General Purpose: CE, CSA, FM, C-TICK, KC CSA / FM Class I, Div 2, Groups A, B, C, D CSA / FM Class II, III, Div 1, Groups E, F, G, T4 ATEX II 3G 2D EEx nA [ib] IIC T6 ... T4 T 100°C ATEX II 1/2 GD EEx d [ia] IIC T6 ... T1 T 100°C FM Class I, Div.1, Groups A, B, C, D, T4	<b>1</b> <b>2</b> <b>4</b> <b>6</b>
<b>Process connection (316L Stainless steel)</b> Threaded connection ¾" NPT [(Taper), ANSI/ASME B1.20.1] 1" NPT [(Taper), ANSI/ASME B1.20.1] 1½" NPT [(Taper), ANSI/ASME B1.20.1] 2" 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] R 2" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] 1¼" NPT [(Taper), ANSI/ASME B1.20.1] 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] G 2" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]	<b>A 0</b> <b>B 0</b> <b>C 0</b> <b>D 0</b> <b>E 0</b> <b>F 0</b> <b>J 0</b> <b>K 0</b> <b>N 0</b> <b>P 0</b> <b>R 0</b> <b>S 0</b> <b>T 0</b>	<b>Enclosure/Cable inlet</b> Aluminum epoxy coated 2 x ½" NPT, IP68 2 x M20 x1.5 (IP68, adapter)	<b>1</b> <b>2</b>
		<b>Options</b> No additional options Slotted holes instead of standard vent holes in stilling well (refer to Operating Instructions for dimensions.) <sup>6)</sup>	<b>A</b> <b>B</b>
		<b>Thermal isolator/remote version</b> Without thermal isolator or remote electronics Thermal isolator, only for use when temperature range is outside of -40 ... +85 °C (-40 ... +185 °F), explosion proof approval -40 ... +70 °C (-40 ... +158 °F) Remote electronics with mounting bracket and cable <sup>7)</sup>	<b>A</b> <b>B</b>
		<ul style="list-style-type: none"> <li>Length: 2 m (79 inch)</li> <li>Length: 3 m (118 inch)</li> <li>Length: 4 m (158 inch)</li> <li>Length: 5 m (197 inch)</li> </ul>	<b>C</b> <b>D</b> <b>E</b> <b>F</b>

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#### Selection and Ordering data

Order No.

#### SITRANS LC500, Threaded or Welded Flange, with Rod Sensor

Inverse frequency shift capacitance level and interface transmitter for extreme and critical process conditions, such as oil and liquid gas, toxic and aggressive chemicals and vapours.

C) 7ML5515-



#### Electronic output

2-wire loop current 4 ... 20 mA  
(transmitter MSP 2002-2\_3300 pF)

1

- 1) A minimum span of 3 pF must be maintained
  - 2) Custom shipping methods required. Contact factory for more details.
  - 3) Available with process connection 1½" or larger
  - 4) Available with process connection 1" or larger
  - 5) Available with process connection 2" or larger
  - 6) Available with version 0B ... 3B, 0D ... 5D and 0F only
  - 7) Available with approval option 1 only
- C) Subject to export regulations AL: N, ECCN: EAR99.

#### 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

Active shield length, specify in plain text [min. length is 50 mm (2 inch)]: Y02: ... mm

Y02

Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]: 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

Manufacturing Test Report (Electrode Test)

C18

#### Operating Instructions

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#### Accessories

See page 5/320

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<b>SITRANS LC500, Single Piece Flanged with Rod C)</b>	<b>7ML5517-</b>	<b>SITRANS LC500, Single Piece Flanged with Rod C)</b>	<b>7ML5517-</b>
<b>Sensor</b>		<b>Sensor</b>	
Inverse frequency shift capacitance level and interface transmitter for extreme and critical process conditions, such as oil and liquid gas, toxic and aggressive chemicals and vapours.		Inverse frequency shift capacitance level and interface transmitter for extreme and critical process conditions, such as oil and liquid gas, toxic and aggressive chemicals and vapours.	
<b>Version</b>		<b>Single piece flange, Type B1 raised face</b>	
Rod, 16 mm (0.63 inch), PFA insulated		DN 40, PN 16	<b>K 4</b>
<u>Add order code Y01 and Y02 and plain text:</u>		DN 40, PN 40	<b>K 5</b>
<u>"Insertion length ... mm and active shield length ... mm"</u>		DN 50, PN 16	<b>L 4</b>
250 ... 1000 mm (9.84 ... 39.37 inch) <sup>1)</sup>	<b>0 A</b>	DN 50, PN 40	<b>L 5</b>
1001 ... 2000 mm (39.41 ... 78.74 inch)	<b>1 A</b>	DN 80, PN 16	<b>M 4</b>
2001 ... 3000 mm (78.78 ... 118.11 inch) <sup>2)</sup>	<b>2 A</b>	DN 80, PN 40 <sup>2)</sup>	<b>M 5</b>
3001 ... 3500 mm (118.15 ... 137.80 inch) <sup>2)</sup>	<b>3 A</b>	DN 100, PN 16 <sup>2)</sup>	<b>N 4</b>
		DN 100, PN 40 <sup>2)</sup>	<b>N 5</b>
Rod, 16 mm (0.63 inch), PFA insulated with 35 mm (1.34 inch) stilling well in 316L stainless steel		DN 125, PN 16 <sup>2)</sup>	<b>P 4</b>
<u>Add order code Y01 and Y02 and plain text:</u>		DN 125, PN 40 <sup>2)</sup>	<b>P 5</b>
<u>"Insertion length ... mm and active shield length ... mm"</u>		<b>Single piece flange with PTFE flange facing (applicable with versions 0A ... 3A and 0C ... 5C)<sup>4)</sup></b>	
250 ... 1000 mm (9.84 ... 39.37 inch)	<b>0 B</b>	1½", ASME, 150 lb	<b>B 4</b>
1001 ... 2000 mm (39.41 ... 78.74 inch)	<b>1 B</b>	1½", ASME, 300 lb	<b>B 5</b>
2001 ... 3000 mm (78.78 ... 118.11 inch) <sup>2)</sup>	<b>2 B</b>	1½", ASME, 600 lb	<b>B 6</b>
3001 ... 3500 mm (118.15 ... 137.80 inch) <sup>2)</sup>	<b>3 B</b>	2", ASME, 150 lb	<b>C 4</b>
		2", ASME, 300 lb	<b>C 5</b>
Rod, 24 mm (0.94 inch), PFA insulated		2", ASME, 600 lb	<b>C 6</b>
<u>Add order code Y01 and Y02 and plain text:</u>		3", ASME, 150 lb <sup>2)</sup>	<b>D 4</b>
<u>"Insertion length ... mm and active shield length ... mm"</u>		3", ASME, 300 lb <sup>2)</sup>	<b>D 5</b>
250 ... 1000 mm (9.84 ... 39.37 inch)	<b>0 C</b>	3", ASME, 600 lb <sup>2)</sup>	<b>D 6</b>
1001 ... 2000 mm (39.41 ... 78.74 inch)	<b>1 C</b>	4", ASME, 150 lb <sup>2)</sup>	<b>E 4</b>
2001 ... 3000 mm (78.78 ... 118.11 inch) <sup>2)</sup>	<b>2 C</b>	4", ASME, 300 lb <sup>2)</sup>	<b>E 5</b>
3001 ... 4000 mm (118.15 ... 157.48 inch) <sup>2)</sup>	<b>3 C</b>	4", ASME, 600 lb <sup>2)</sup>	<b>E 6</b>
4001 ... 5000 mm (173.26 ... 196.88 inch) <sup>2)</sup>	<b>4 C</b>	6", ASME, 150 lb <sup>2)</sup>	<b>F 4</b>
5001 ... 5500 mm (196.89 ... 216.54 inch) <sup>2)</sup>	<b>5 C</b>	6", ASME, 300 lb <sup>2)</sup>	<b>F 5</b>
		6", ASME, 600 lb <sup>2)</sup>	<b>F 6</b>
Rod, 24 mm (0.94 inch), PFA insulated with 48 mm (1.89 inch) stilling well in 316L stainless steel		<b>Single piece flange with PTFE flange facing (applicable with versions 0A ... 3A, 0C ... 5C)<sup>4)</sup></b>	
<u>Add order code Y01 and Y02 and plain text:</u>		DN 40, PN 16	<b>K 6</b>
<u>"Insertion length ... mm and active shield length ... mm"</u>		DN 40, PN 40	<b>K 7</b>
250 ... 1000 mm (9.84 ... 39.37 inch)	<b>0 D</b>	DN 50, PN 16	<b>L 6</b>
1001 ... 2000 mm (39.41 ... 78.74 inch) <sup>2)3)</sup>	<b>1 D</b>	DN 50, PN 40	<b>L 7</b>
2001 ... 3000 mm (78.78 ... 118.11 inch) <sup>2)3)</sup>	<b>2 D</b>	DN 80, PN 16	<b>M 6</b>
3001 ... 4000 mm (118.15 ... 157.48 inch) <sup>2)3)</sup>	<b>3 D</b>	DN 80, PN 40 <sup>2)</sup>	<b>M 7</b>
4001 ... 5000 mm (173.26 ... 196.88 inch) <sup>2)3)</sup>	<b>4 D</b>	DN 100, PN 16 <sup>2)</sup>	<b>N 6</b>
5001 ... 5500 mm (196.89 ... 216.54 inch) <sup>2)3)</sup>	<b>5 D</b>	DN 100, PN 40 <sup>2)</sup>	<b>N 7</b>
		DN 125, PN 16 <sup>2)</sup>	<b>P 6</b>
		DN 125, PN 40 <sup>2)</sup>	<b>P 7</b>
<b>Process connection (316L Stainless steel)</b>		(Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5, or EN 1092-1 standard.)	
<b>Single piece flange, raised face</b>			
1½", ASME, 150 lb	<b>B 1</b>		
1½", ASME, 300 lb	<b>B 2</b>		
1½", ASME, 600 lb	<b>B 3</b>		
2", ASME, 150 lb	<b>C 1</b>		
2", ASME, 300 lb	<b>C 2</b>		
2", ASME, 600 lb	<b>C 3</b>		
3", ASME, 150 lb <sup>2)</sup>	<b>D 1</b>		
3", ASME, 300 lb <sup>2)</sup>	<b>D 2</b>		
3", ASME, 600 lb <sup>2)</sup>	<b>D 3</b>		
4", ASME, 150 lb <sup>2)</sup>	<b>E 1</b>		
4", ASME, 300 lb <sup>2)</sup>	<b>E 2</b>		
4", ASME, 600 lb <sup>2)</sup>	<b>E 3</b>		
6", ASME, 150 lb <sup>2)</sup>	<b>F 1</b>		
6", ASME, 300 lb <sup>2)</sup>	<b>F 2</b>		
6", ASME, 600 lb <sup>2)</sup>	<b>F 3</b>		

# Level Measurement

## Continuous level measurement – Capacitance transmitters

### SITRANS LC500

#### Selection and Ordering data

Order No.

#### SITRANS LC500, Single Piece Flanged with Rod C)

7ML5517-

#### Sensor

Inverse frequency shift capacitance level and interface transmitter for extreme and critical process conditions, such as oil and liquid gas, toxic and aggressive chemicals and vapours.

#### Approvals

General Purpose: CE, CSA, FM, C-TICK, KC  
 CSA / FM Class I, Div 2, Groups A, B, C, D  
 CSA / FM Class II, III, Div 1, Groups E, F, G T4  
 ATEX II 3G 2D EEx nA [ib] IIC T6 ... T4 T 100°C  
 ATEX II 1/2 GD EEx d [ia] IIC T6 ... T1 T 100°C  
 FM Class I, Div.1, Groups A, B, C, D, T4

#### Enclosure/Cable inlet

Aluminum epoxy coated  
 2 x ½" NPT, IP68  
 2 x M20 x1.5 (IP68, adapter)

#### Options

None  
 Slotted holes instead of standard vent holes in stilling well (Refer to manual for dimensions)<sup>5)</sup>

#### Thermal isolator/remote version

Without thermal isolator  
 Isolator, only for use when temperature range is outside of -40 ... +85 °C (-40 ... +185 °F), explosion proof approval -40 ... +70 °C (-40 ... +158 °F)

Remote electronics with mounting bracket and cable<sup>6)</sup>

- Length: 2 m (79 inch)
- Length: 3 m (118 inch)
- Length: 4 m (158 inch)
- Length: 5 m (197 inch)

#### Electronic output

2-wire loop current 4 ... 20 mA  
 (transmitter MSP 2002-2\_3300 pF)

- 1) A minimum span of 3 pF must be maintained
  - 2) Custom shipping methods required. Contact factory for more details.
  - 3) Available with process connection 2" or larger, and only available with process connection options C1 to F3, L4 to P5
  - 4) Not available with versions 0E and 0F
  - 5) Available with version 0B to 3B, 0D to 5D and 0F only
  - 6) Available with approval option 1 only
- C) Subject to export regulations AL: N, ECCN: EAR99.

1	1
2	2
4	4
6	6
1	1
2	2
A	A
B	B
A	A
B	B
C	C
D	D
E	E
F	F
1	1

#### 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

Active shield length, specify in plain text [min. length is 50 mm (2 inch)]: Y02: ... mm

Y02

Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]:  
 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

Manufacturing Test Report (Electrode Test)

C18

#### Operating Instructions

See page 5/320

#### Accessories

See page 5/320



# Level Measurement

## Continuous level measurement – Capacitance transmitters

SITRANS LC500

Selection and Ordering data	Order No.	Selection and Ordering data	Order No.
<b>SITRANS LC500, Extended Cable version with Rod Sensor, threaded connection or welded flange<sup>1)</sup></b> Inverse frequency shift capacitance level and interface transmitter for short range continuous measurement in large storage vessels.	<b>7ML5523-</b> 	<b>SITRANS LC500, Extended Cable version with Rod Sensor, threaded connection or welded flange<sup>1)</sup></b> Inverse frequency shift capacitance level and interface transmitter for short range continuous measurement in large storage vessels.	<b>7ML5523-</b> 
<b>Version<sup>2)</sup></b> Rod, 16 mm (0.63 inch), PFA insulated and 316L stainless steel flexible extension tube Total insertion length: <u>Add order code Y01 and Y02 and plain text: "Total insertion length ... mm and Y02 and plain text: Active shield length ... mm"<sup>3)4)</sup></u> <ul style="list-style-type: none"> <li>• 5000 ... 10000 mm (196.85 ... 393.70 inch)<sup>1)</sup></li> <li>• 10001 ... 15000 mm (393.74 ... 590.55 inch)<sup>1)</sup></li> <li>• 15001 ... 20000 mm (590.59 ... 787.40 inch)<sup>1)</sup></li> <li>• 20001 ... 25000 mm (787.44 ... 984.25 inch)<sup>1)</sup></li> <li>• 25001 ... 30000 mm (984.29 ... 1181.10 inch)<sup>1)</sup></li> <li>• 30001 ... 35000 mm (1181.14 ... 1377.95 inch)<sup>1)</sup></li> </ul> Rod, 24 mm (0.94 inch), PFA insulated and 316L stainless steel flexible extension tube Total insertion length: <u>Add order code Y01 and plain text: "Total insertion length ... mm and Y02 and plain text: Active shield length ... mm"<sup>3)4)</sup></u> <ul style="list-style-type: none"> <li>• 5000 ... 10000 mm (196.85 ... 393.70 inch)<sup>1)</sup></li> <li>• 10001 ... 15000 mm (393.74 ... 590.55 inch)<sup>1)</sup></li> <li>• 15001 ... 20000 mm (590.59 ... 787.40 inch)<sup>1)</sup></li> <li>• 20001 ... 25000 mm (787.44 ... 984.25 inch)<sup>1)</sup></li> <li>• 25001 ... 30000 mm (984.29 ... 1181.10 inch)<sup>1)</sup></li> <li>• 30001 ... 35000 mm (1181.14 ... 1377.95 inch)<sup>1)</sup></li> </ul>	<b>0 A</b> <b>1 A</b> <b>2 A</b> <b>3 A</b> <b>4 A</b> <b>5 A</b>	<b>Enclosure/Cable inlet</b> <u>Aluminum epoxy coated</u> 2 x 1/2" NPT, IP68 2 x M20x1.5 (IP68, adapter)	<b>1</b> <b>2</b>
<b>Process connection (316L stainless steel)</b> <u>Threaded connection</u> 2" NPT [(Taper), ANSI/ASME B1.20.1] R 2" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] G 2" [(BSPP), EN ISO 228-1/PF (JIS-P) JIS B 0202] <u>Welded flange, raised face</u> 2", ASME, 150 lb 2", ASME, 300 lb 3", ASME, 150 lb <sup>1)</sup> 3", ASME, 300 lb <sup>1)</sup> 4", ASME, 150 lb <sup>1)</sup> 4", ASME, 300 lb <sup>1)</sup> 6", ASME, 150 lb <sup>1)</sup> 6", ASME, 300 lb <sup>1)</sup> <u>Welded flange, Type A flat faced</u> DN 50, PN 16 DN 50, PN 40 DN 80, PN 16 DN 80, PN 40 <sup>1)</sup> DN 100, PN 16 <sup>1)</sup> DN 100, PN 40 <sup>1)</sup> DN 125, PN 16 <sup>1)</sup> DN 125, PN 40 <sup>1)</sup> (Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5, or EN 1092-1 standard.)	<b>0 B</b> <b>1 B</b> <b>2 B</b> <b>3 B</b> <b>4 B</b> <b>5 B</b>	<b>Options</b> No additional options With mounting eye	<b>A</b> <b>B</b>
<b>Approvals</b> General Purpose: CE, CSA, FM, C-TICK, KC CSA / FM Class I, Div 2, Groups A, B, C, D CSA / FM Class II, III, Div 1, Groups E, F, G T4 ATEX II 3G 2D EEx nA [ib] IIC T6 ... T4 T 100°C ATEX II 1/2 GD EEx d [ia] IIC T6 ... T1 T 100°C FM Class I, Div 1, Groups A, B, C, D T4	<b>1</b> <b>2</b> <b>4</b> <b>6</b>	<b>Thermal isolator</b> Without thermal isolator Isolator, only for use when temperature range is outside of -40 ... +85 °C (-40 ... +185 °F), explosion proof approval -40 ... +70 °C (-40 ... +158 °F)	<b>A</b> <b>B</b>
		<b>Electronic output</b> 2-wire loop current 4 ... 20 mA (transmitter MSP 2002-2 _3300 pF)	<b>1</b>

- 1) Custom shipping methods required. Contact factory for more details.
- 2) A minimum span of 3 pF must be maintained.
- 3) See dimension drawings on page 5/331 for further explanation of Y01.
- 4) Inactive length is equal to the flexible extension plus transition. See dimension drawings on page 5/331 for further explanation of Y02.

# Level Measurement

## Continuous level measurement – Capacitance transmitters

### SITRANS LC500

Selection and Ordering data	Order code
<b>Further designs</b>	
Please add <b>"-Z"</b> to Order No. and specify Order code(s).	
Insertion length, specify in plain text: Y01: to mm	<b>Y01</b>
Active shield length, specify in plain text [min. length is 50 mm (2 inch)]: Y02: to mm	<b>Y02</b>
Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]: Measuring-point number/identification (max. 16 characters) specify in plain text	<b>Y15</b>
Acceptance test certificate: Manufacturer's test certificate M to DIN 55350, Part 18 and ISO 9000	<b>C11</b>
Inspection Certificate Type 3.1 per EN 10204	<b>C12</b>
<b>Operating Instructions</b>	
English	C) <b>7ML1998-5GE03</b>
French	C) <b>7ML1998-5GE12</b>
Spanish	C) <b>7ML1998-5GE21</b>
German	<b>7ML1998-5GE33</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 CD containing the complete ATEX Quick Start and Operating Instructions library.	
<b>Accessories</b>	
Transmitter, MSP 2002-1, 330 PF <sup>1)</sup>	C) <b>7ML1830-1JP</b>
Transmitter, MSP 2002-2, 3300 PF <sup>1)</sup>	C) <b>7ML1830-1JQ</b>
Transmitter, MSP 2002-3, 6600 PF (used with conductive fluids and probe lengths >10000 mm) <sup>1)</sup>	D) <b>7ML1830-1JR</b>
SITRANS RD100 Remote display - see Chapter 8	
SITRANS RD200 Remote display - see Chapter 8	
SITRANS RD500 web, datalogging, alarming, ethernet, and modem support for instrumentation - see Chapter 8	K) <b>7ML5750-1AA00-0</b>

<sup>1)</sup> Transmitters not suitable for Intrinsically Safe application (ATEX II 1G EEx ia IIC T4 or CSA/FM Class 1 Div 1 Grp A,B,C and D)

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

D) Subject to export regulations AL: N, ECCN: EAR99H.

K) Subject to export regulations AL: N, ECCN: 5A991X.

Please contact [ceg.smpi@siemens.com](mailto:ceg.smpi@siemens.com) for special requests.

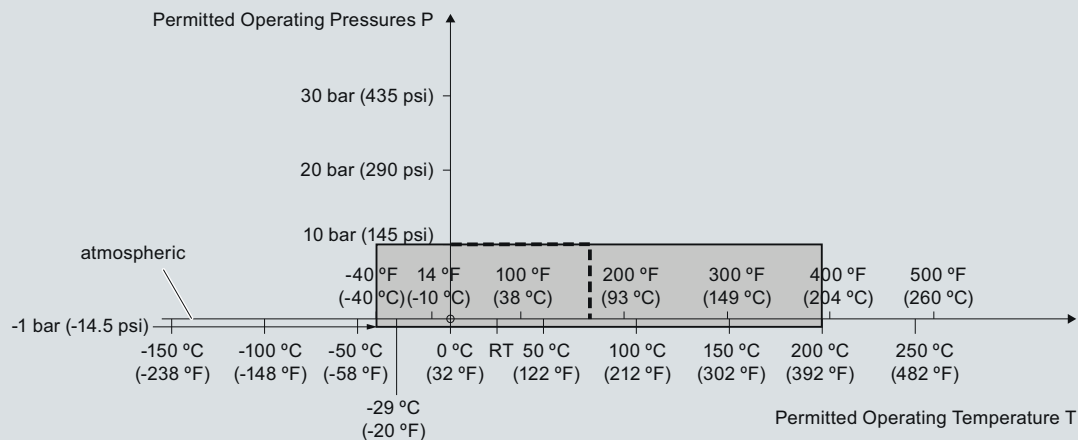
# Level Measurement

## Continuous level measurement – Capacitance transmitters

SITRANS LC500

### Characteristic curves

Pressure/Temperature Curve  
 LC500 Cable Probes  
 Threaded Process Connections  
 (7ML5513)



----- Example:  
 Permitted operating pressure = 10 bar (145 psi) at 75 °C

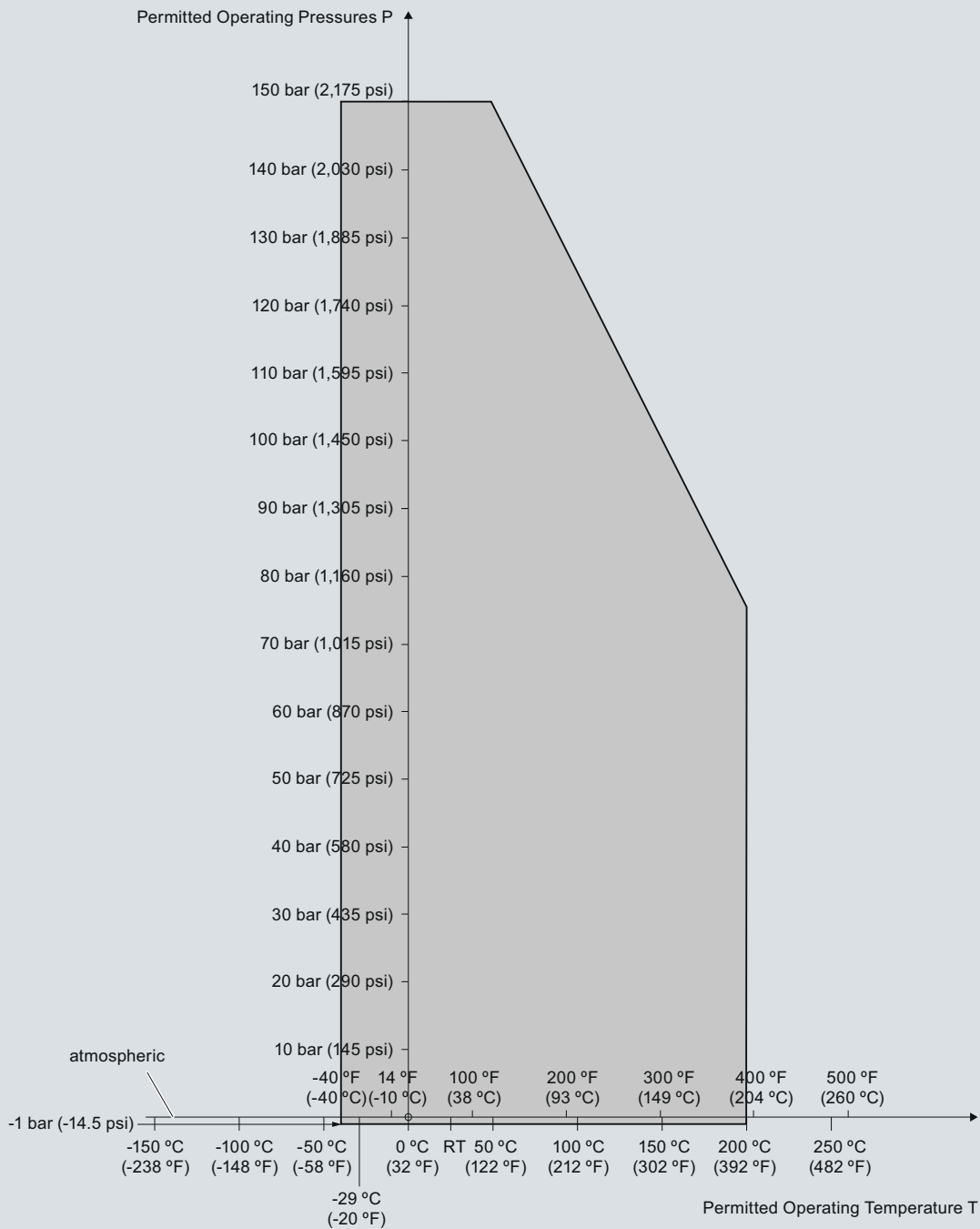
SITRANS LC500 Process Pressure/Temperature derating curves (7ML5513)

# Level Measurement

## Continuous level measurement – Capacitance transmitters

### SITRANS LC500

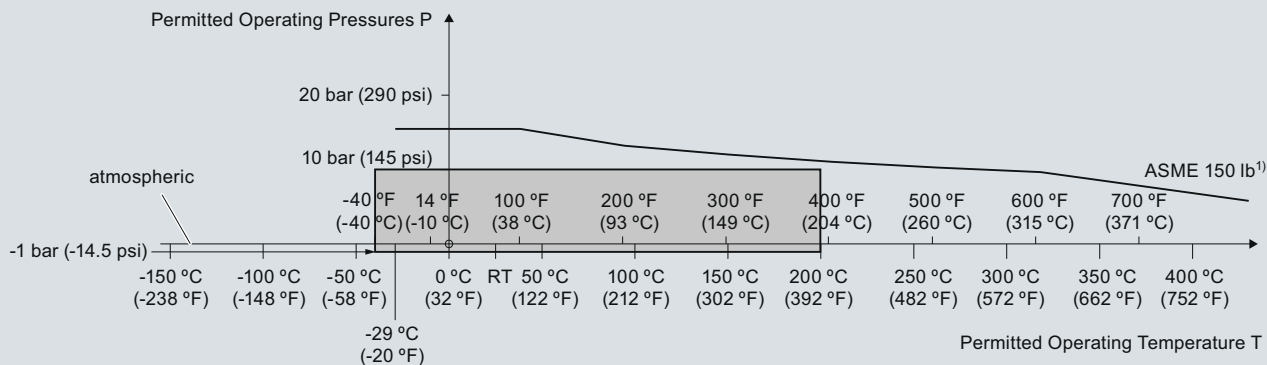
**Pressure/Temperature Curve**  
**LC500 PFA Rod Probes**  
**Threaded Process Connections**  
**(7ML5515)**



SITRANS LC500 Process Pressure/Temperature derating curves (7ML5515)

5

**Pressure/Temperature Curve**  
**LC500 Cable Probes**  
**ASME Flanged Process Connections**  
**(7ML5513)**



<sup>1)</sup> The curve denotes the minimum allowable flange class for the shaded area below.

SITRANS LC500 Process Pressure/Temperature derating curves (7ML5513)

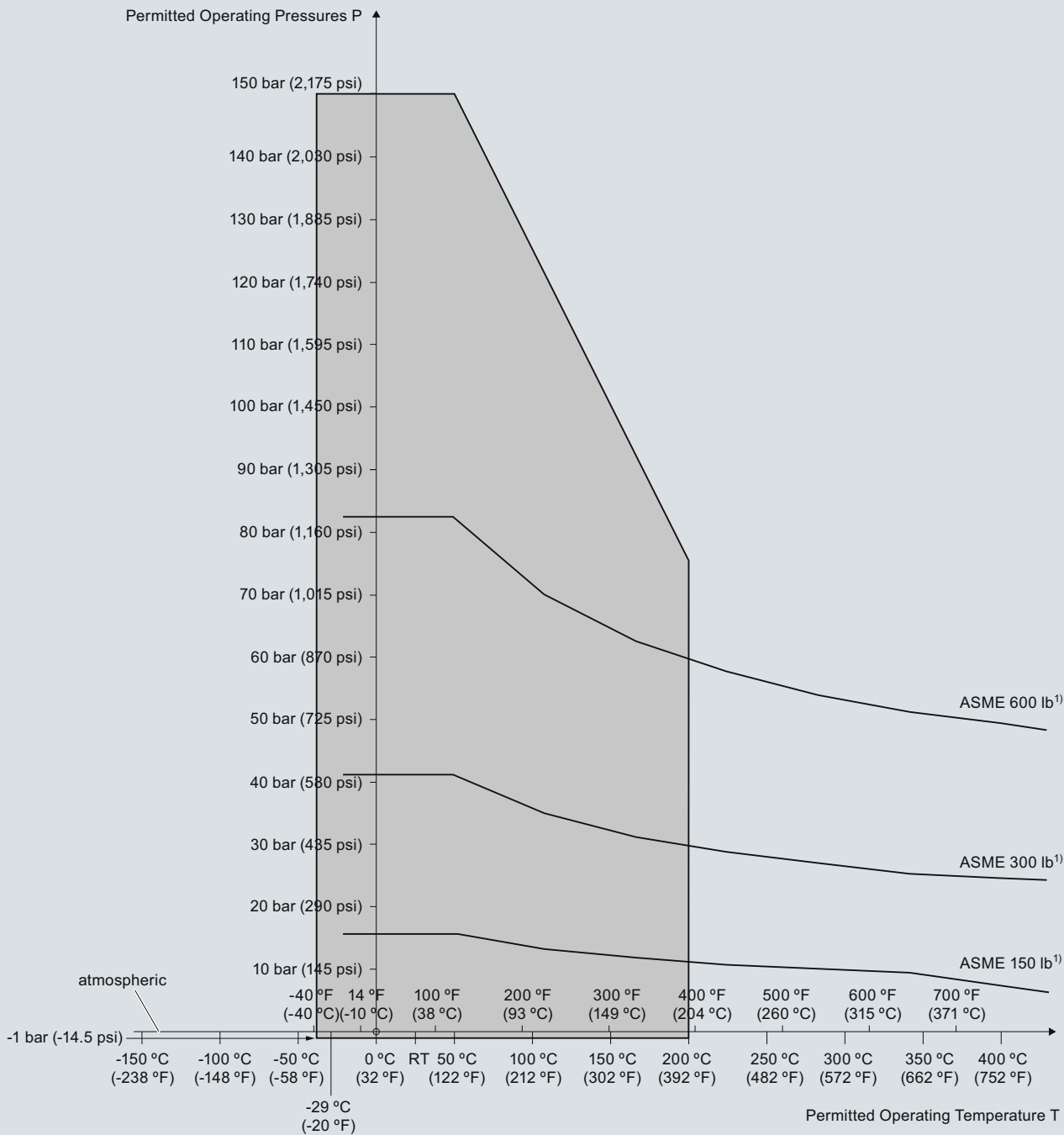
# Level Measurement

## Continuous level measurement – Capacitance transmitters

### SITRANS LC500

**Pressure/Temperature Curve**  
**LC500 PFA Rod Probes**  
**ASME Flanged Process Connections**  
**(7ML5515 and 7ML5517)**

5



<sup>1)</sup> The curve denotes the minimum allowable flange class for the shaded area below.

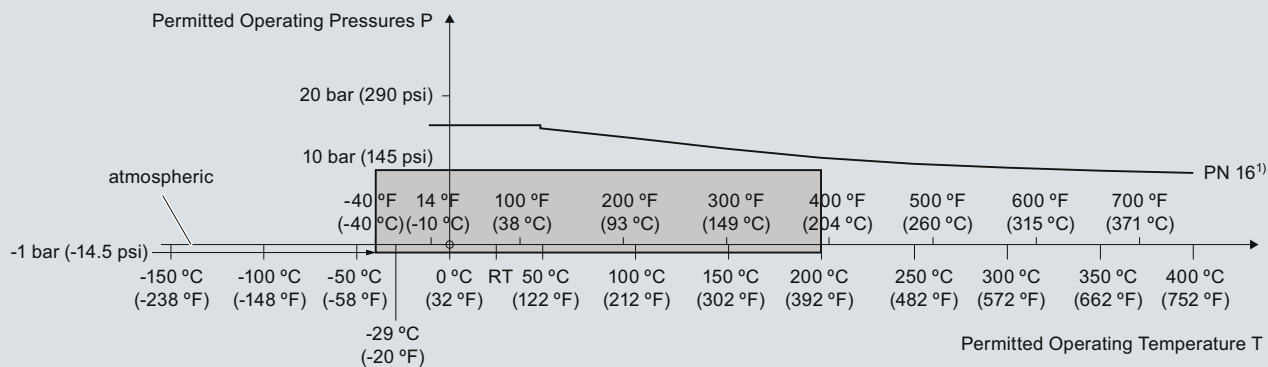
SITRANS LC500 Process Pressure/Temperature derating curves (7ML5515 and 7ML5517)

# Level Measurement

## Continuous level measurement – Capacitance transmitters

SITRANS LC500

**Pressure/Temperature Curve**  
**LC500 Cable Probes**  
**EN Flanged Process Connections**  
**(7ML5513)**



<sup>1)</sup> The curve denotes the minimum allowable flange class for the shaded area below.

SITRANS LC500 Process Pressure/Temperature derating curves (7ML5513)

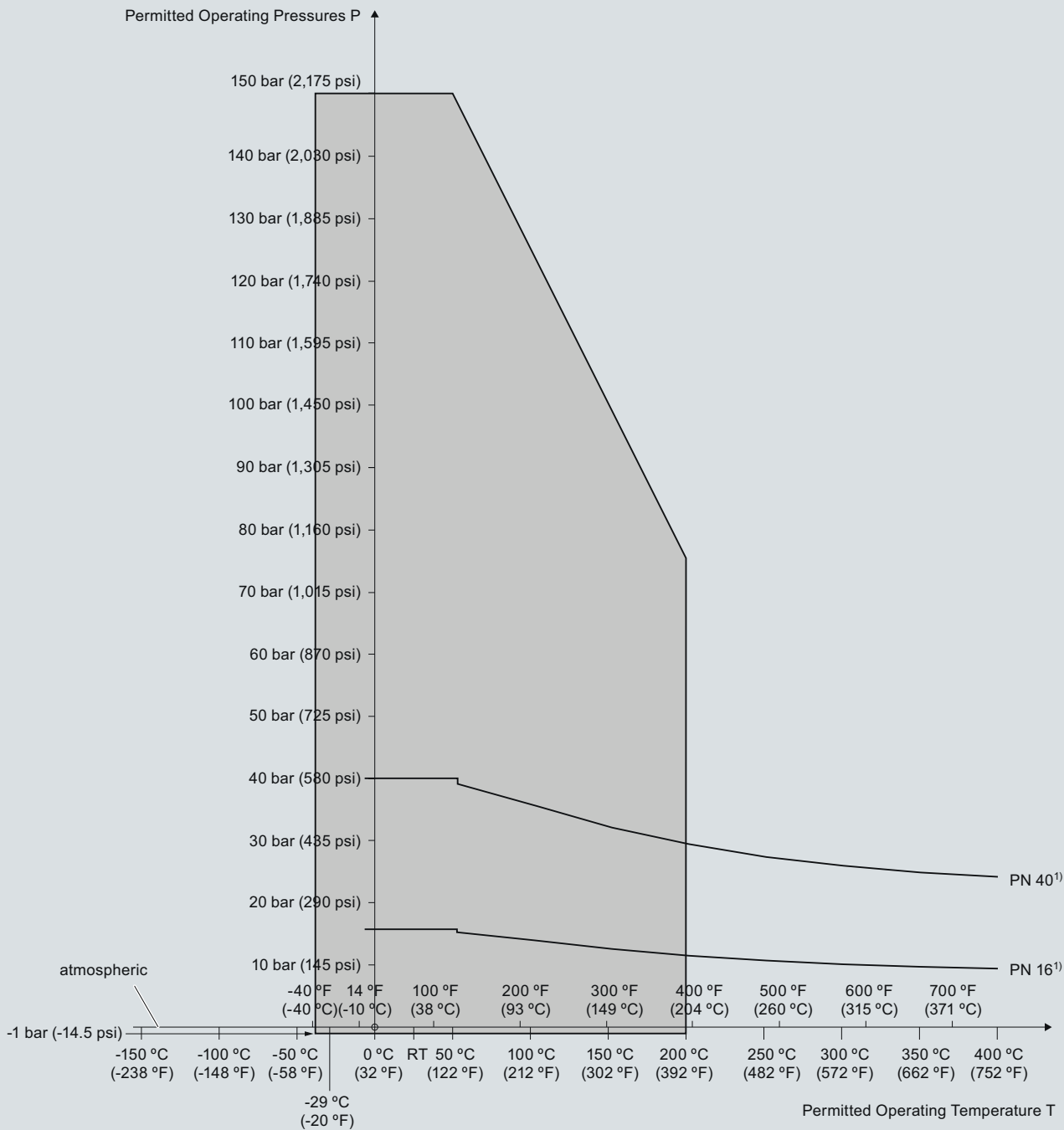
# Level Measurement

## Continuous level measurement – Capacitance transmitters

### SITRANS LC500

**Pressure/Temperature Curve**  
**LC500 PFA Rod Probes**  
**EN Flanged Process Connections**  
**(7ML5515 and 7ML5517)**

5

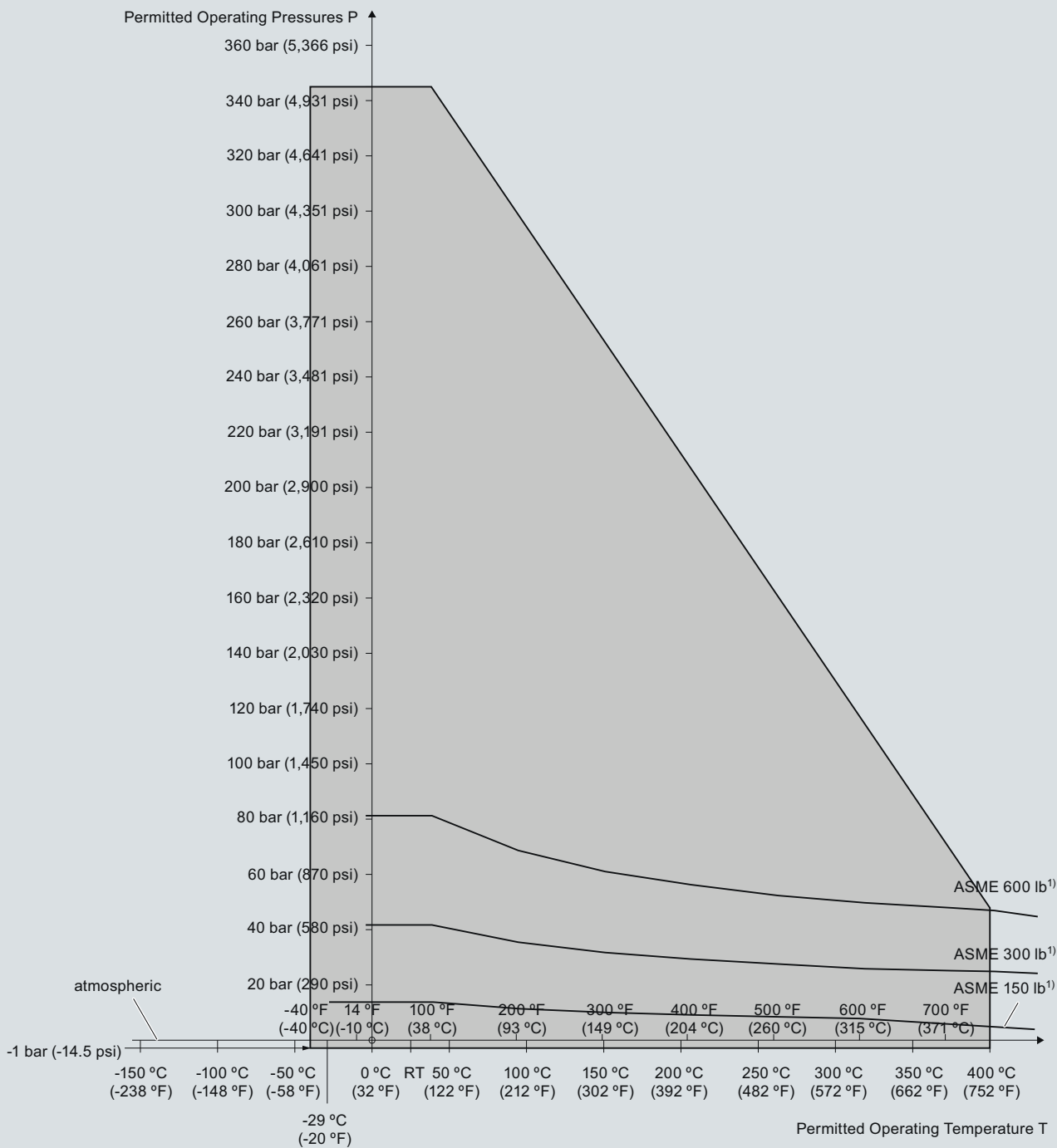


<sup>1)</sup> The curve denotes the minimum allowable flange class for the shaded area below.

SITRANS LC500 Process Pressure/Temperature derating curves (7ML5515 and 7ML5517)



**Pressure/Temperature Curve**  
**LC500 Enamel Rod Probes**  
**ASME Flanged Process Connections (7ML5515 and 7ML5517)**



<sup>1)</sup> The curve denotes the minimum allowable flange class for the shaded area below.

SITRANS LC500 Process Pressure/Temperature derating curves (7ML5515 and 7ML5517)

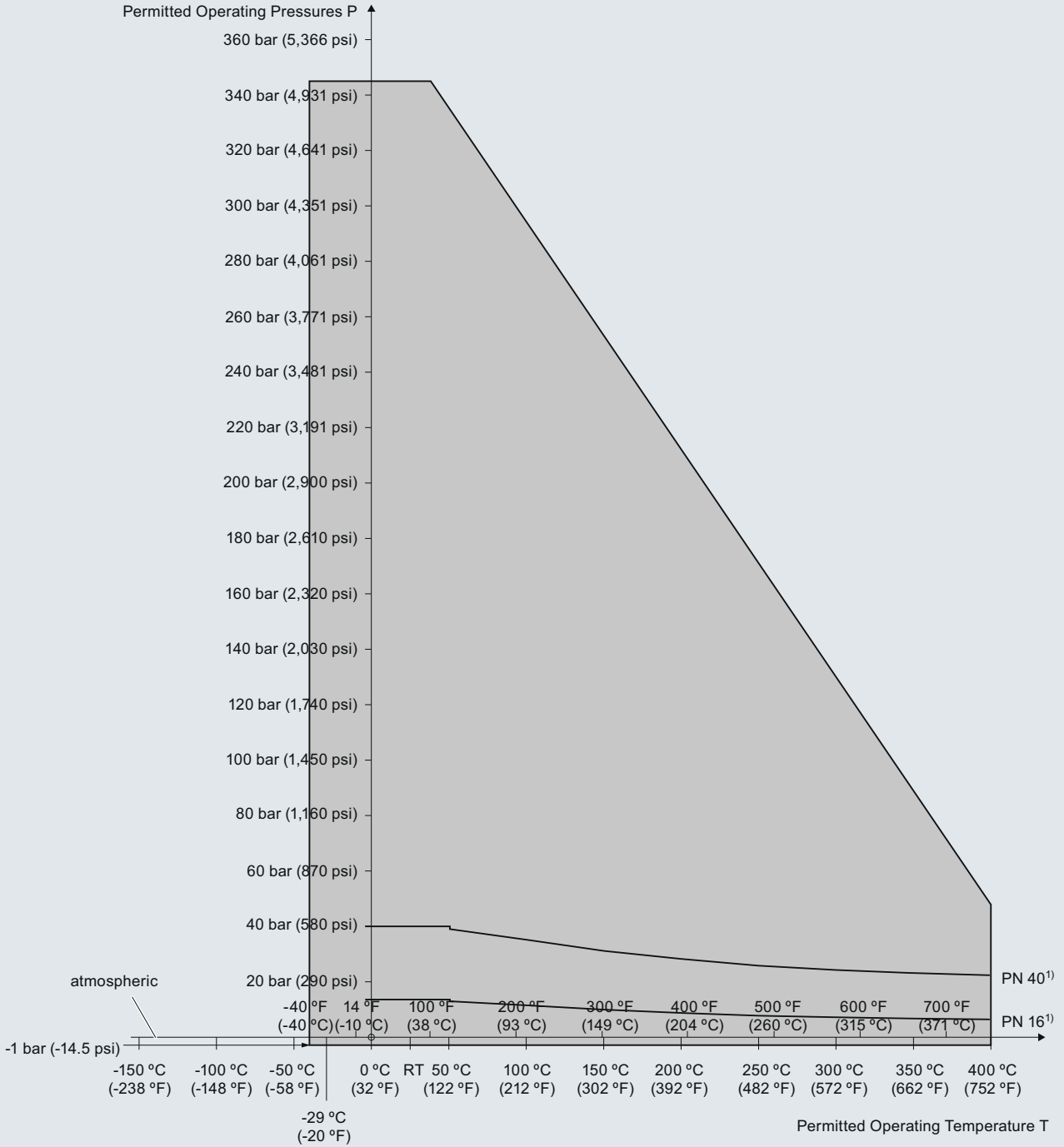
# Level Measurement

## Continuous level measurement – Capacitance transmitters

### SITRANS LC500

**Pressure/Temperature Curve**  
**LC500 Enamel Rod Probes**  
**EN Flanged Process Connections (7ML5515 and 7ML5517)**

5



<sup>1)</sup> The curve denotes the minimum allowable flange class for the shaded area below.

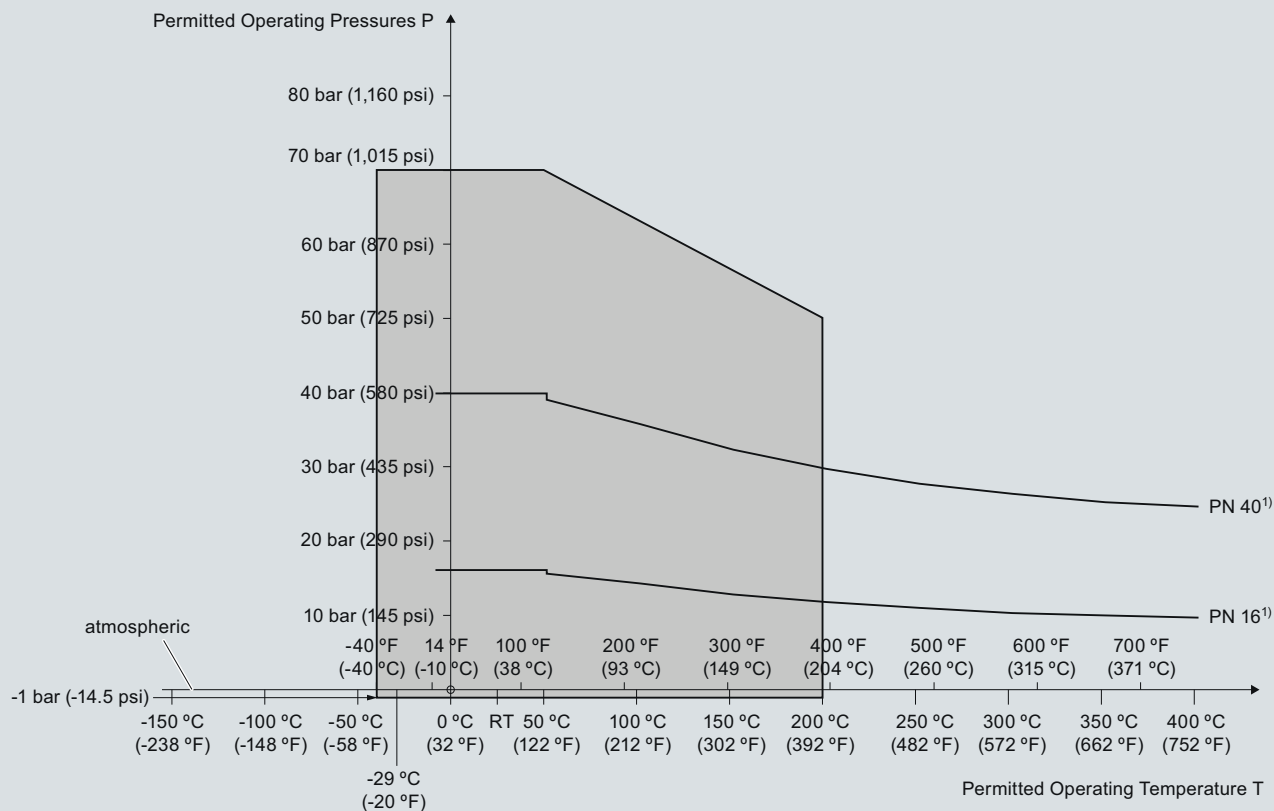
SITRANS LC500 Process Pressure/Temperature derating curves (7ML5515 and 7ML5517)

# Level Measurement

## Continuous level measurement – Capacitance transmitters

SITRANS LC500

**Pressure/Temperature Curve**  
**LC500 Single Piece Flanged Rod Probes with PTFE facing**  
**EN Flanged Process Connections**  
**(7ML5517)**



<sup>1)</sup> The curve denotes the minimum allowable flange class for the shaded area below.

SITRANS LC500 Process Pressure/Temperature derating curves (7ML5517)

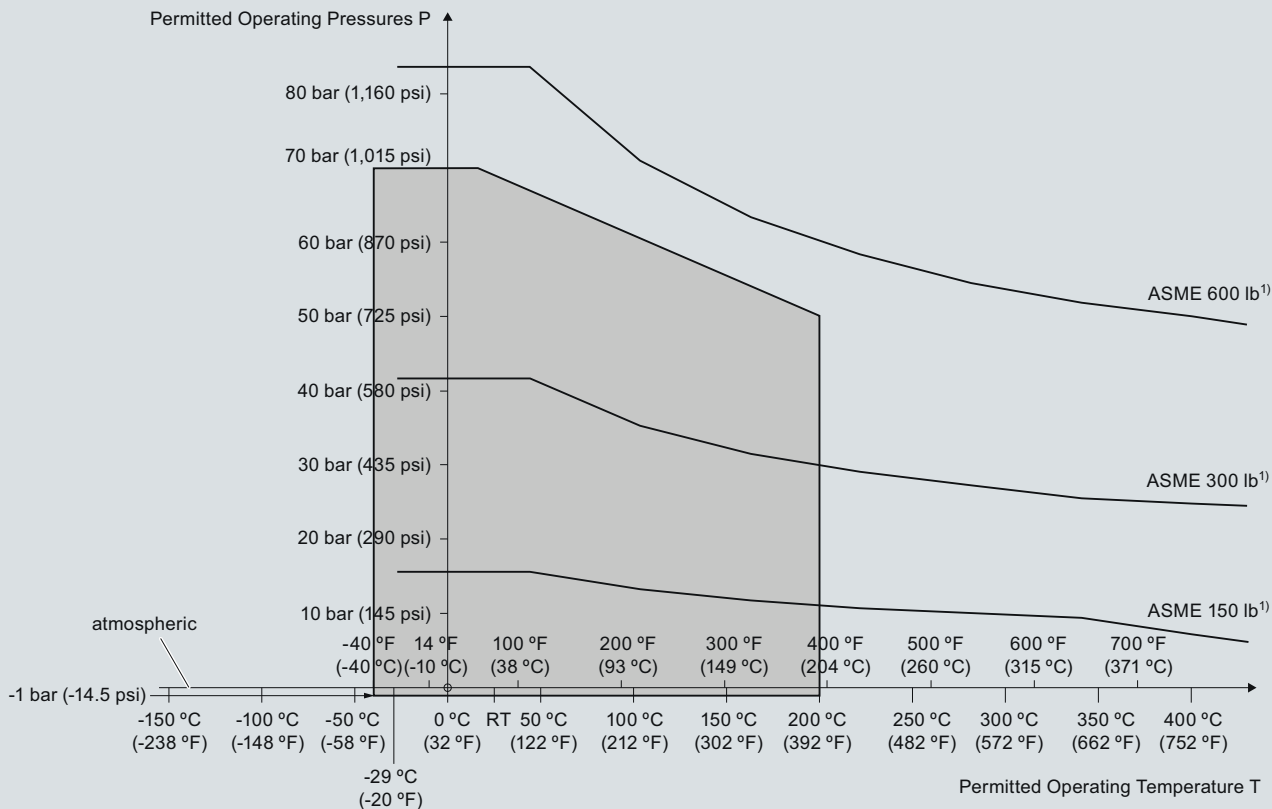
5

# Level Measurement

## Continuous level measurement – Capacitance transmitters

### SITRANS LC500

**Pressure/Temperature Curve**  
**LC500 Single Piece Flanged Rod Probes with PTFE facing**  
**ASME Flanged Process Connections**  
**(7ML5517)**



<sup>1)</sup> The curve denotes the minimum allowable flange class for the shaded area below.

SITRANS LC500 Process Pressure/Temperature derating curves (7ML5517)

5

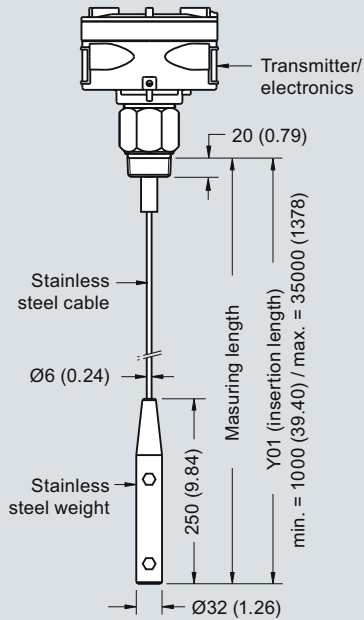
# Level Measurement

## Continuous level measurement – Capacitance transmitters

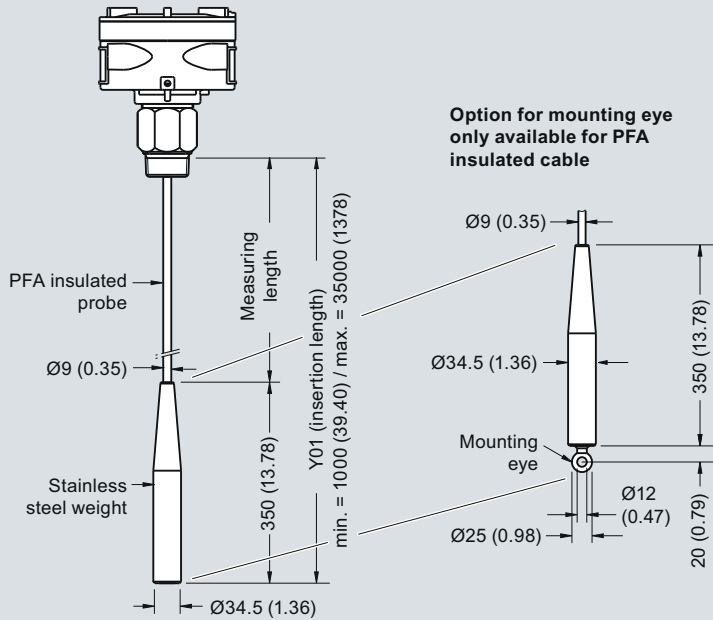
SITRANS LC500

### Dimensional drawings

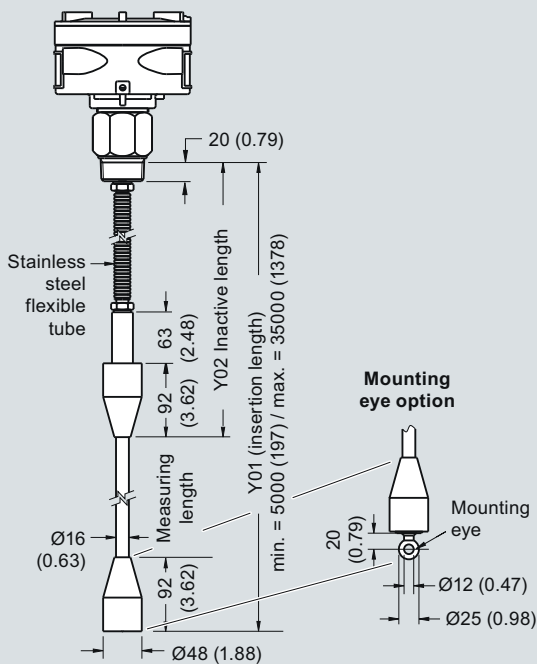
**Cable version, non-insulated welded flange (7ML5513)**



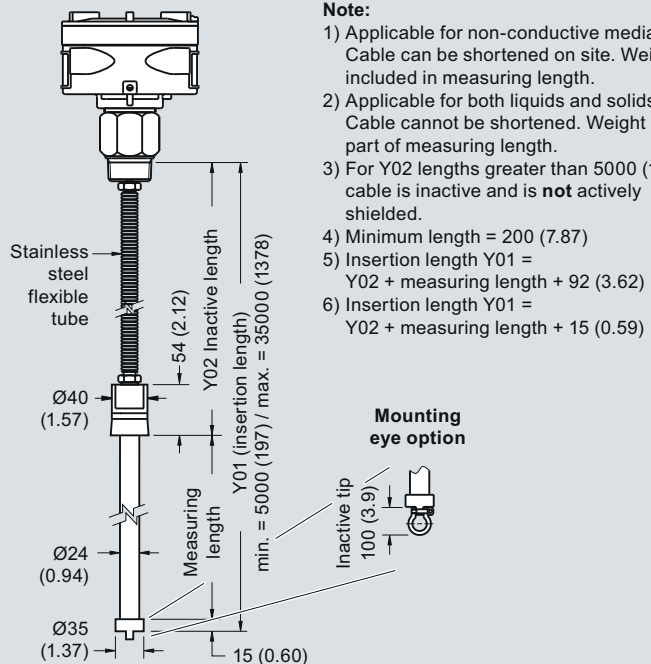
**Cable version, insulated welded flange (7ML5513)**



**Extended cable version with rod sensor welded flange (7ML5523)**



**Extended cable version with rod sensor welded flange (7ML5523)**



**Note:**

- 1) Applicable for non-conductive media only. Cable can be shortened on site. Weight is included in measuring length.
- 2) Applicable for both liquids and solids. Cable cannot be shortened. Weight is **not** part of measuring length.
- 3) For Y02 lengths greater than 5000 (197), cable is inactive and is **not** actively shielded.
- 4) Minimum length = 200 (7.87)
- 5) Insertion length Y01 = Y02 + measuring length + 92 (3.62)
- 6) Insertion length Y01 = Y02 + measuring length + 15 (0.59)

SITRANS LC500 - Cable Versions, dimensions in mm (inch)

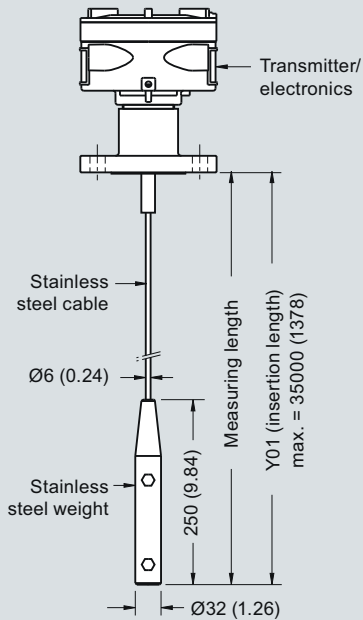
# Level Measurement

## Continuous level measurement – Capacitance transmitters

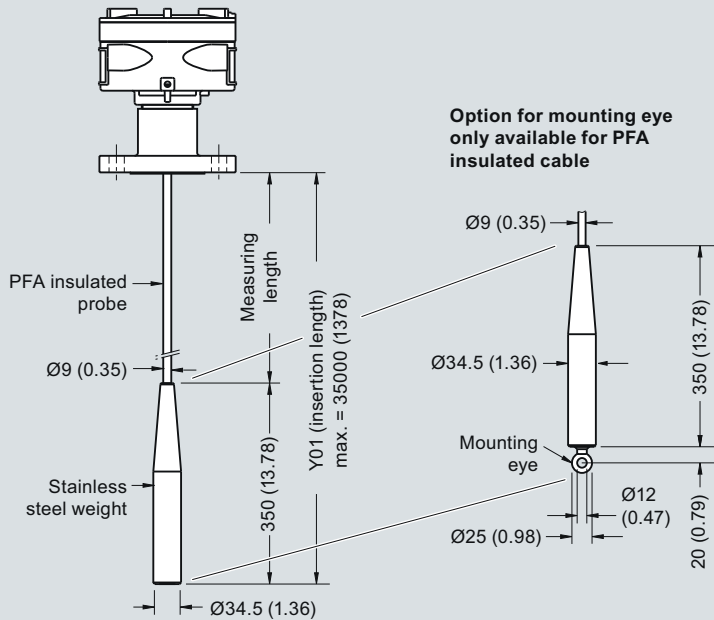
### SITRANS LC500

5

**Cable version, non-insulated<sup>1)</sup>**  
Welded flange (7ML5513)

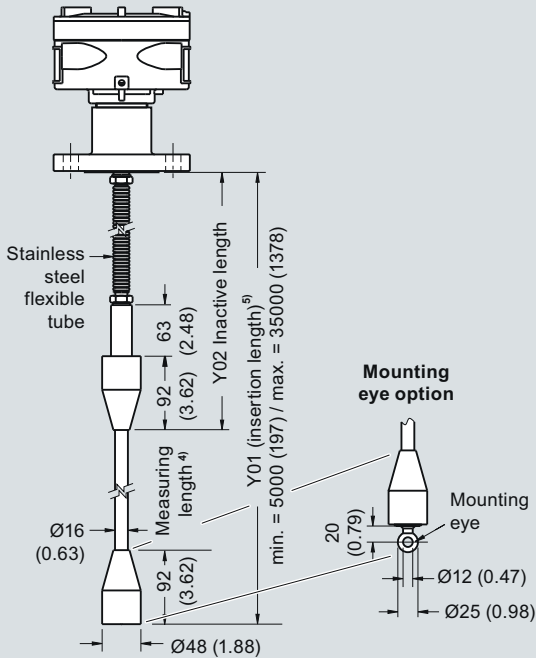


**Cable version, insulated<sup>2)</sup>**  
Welded flange (7ML5513)

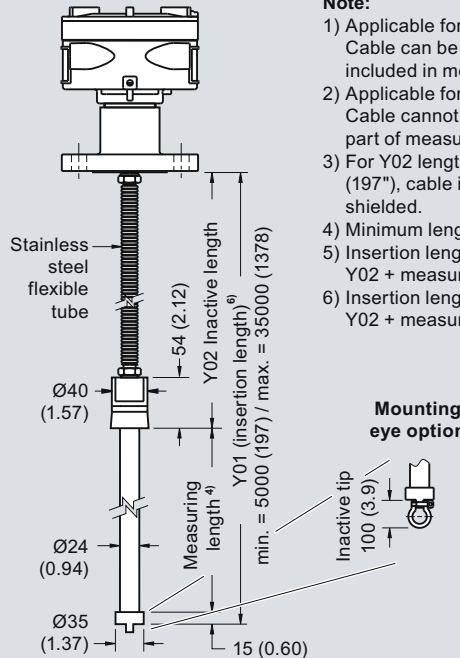


Option for mounting eye only available for PFA insulated cable

**Extended cable version with rod sensor<sup>3)</sup>**  
Welded flange (7ML5523)



**Extended cable version with rod sensor<sup>3)</sup>**  
Welded flange (7ML5523)



**Note:**

- 1) Applicable for non-conductive media only. Cable can be shortened on site. Weight is included in measuring length.
- 2) Applicable for both liquids and solids. Cable cannot be shortened. Weight is **not** part of measuring length.
- 3) For Y02 lengths greater than 5000 mm (197"), cable is inactive and is **not** actively shielded.
- 4) Minimum length = 200 mm (7.87")
- 5) Insertion length Y01 = Y02 + measuring length + 92 mm (3.62")
- 6) Insertion length Y01 = Y02 + measuring length + 15 mm (0.59")

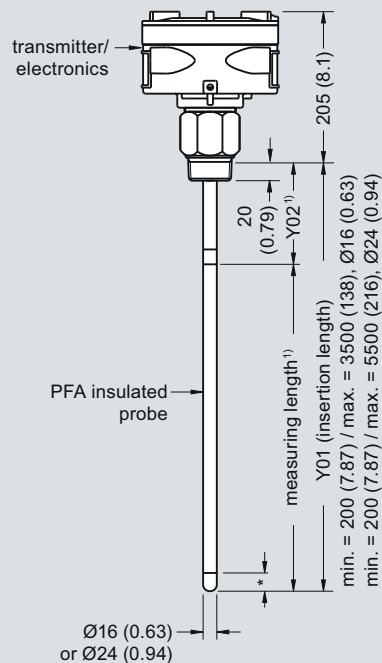
SITRANS LC500 - Cable Versions, dimensions in mm (inch)

# Level Measurement

## Continuous level measurement – Capacitance transmitters

SITRANS LC500

### Rod version Threaded (7ML5515)

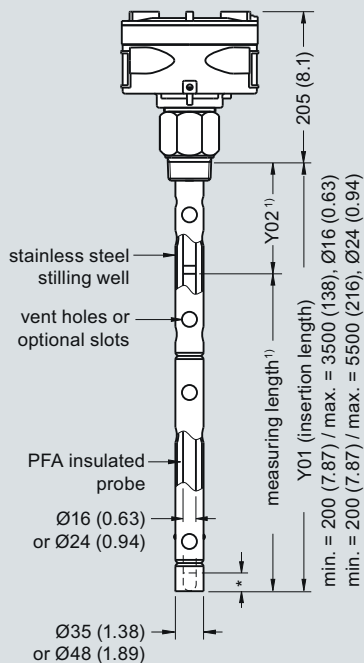


\* = 30 (1.18) Inactive tip

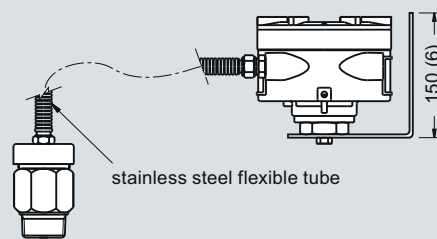
**Note:**

1) Minimum Y02 (active shield length) = 50 (1.96),  
minimum measuring length = 200 (7.87)

### Rod version with stilling well Threaded (7ML5515)

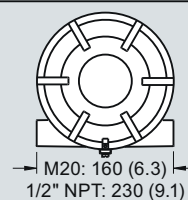
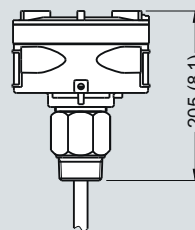


### Remote electronics with mounting bracket option Threaded (7ML5515)

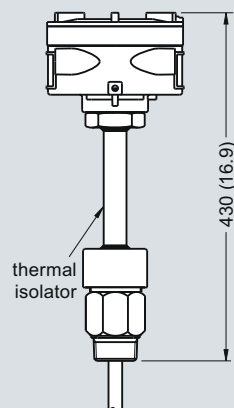


General Purpose approval only.

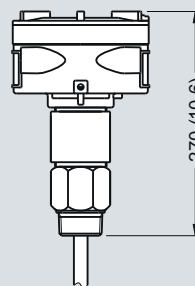
### Standard configuration (all versions)



### With thermal isolator option (all versions)



### With explosion-proof seal option (all versions)



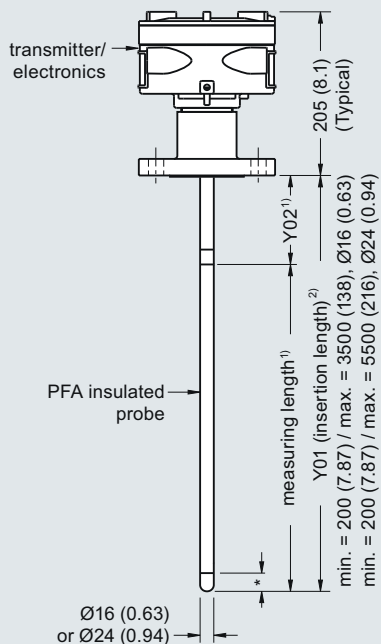
SITRANS LC500 - Rod Versions, dimensions in mm (inch)

# Level Measurement

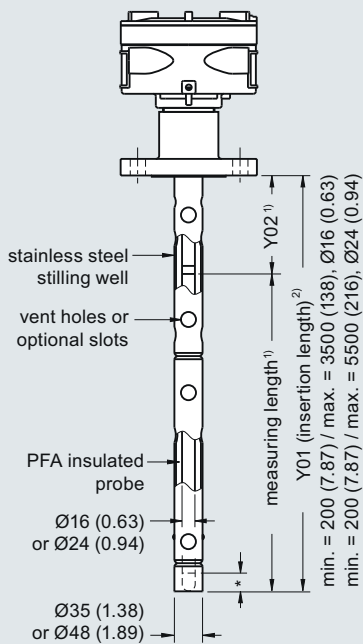
## Continuous level measurement – Capacitance transmitters

### SITRANS LC500

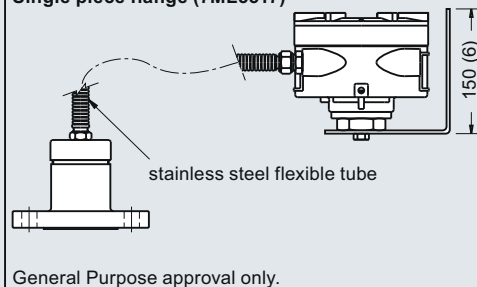
**Rod version**  
**Welded flange (7ML5515)**  
**Single piece flange (7ML5517)**



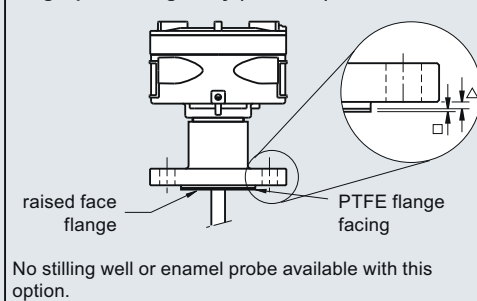
**Rod version with stilling well**  
**Welded flange (7ML5515)**  
**Single piece flange (7ML5517)**



**Remote electronics with mounting bracket option**  
**Welded flange (7ML5515)**  
**Single piece flange (7ML5517)**

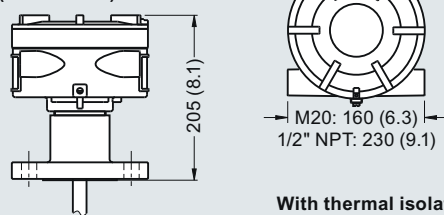


**PTFE flange facing option**  
**Single piece flange only (7ML5517)**

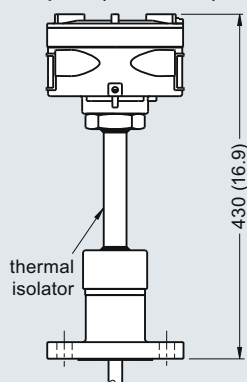


\* = 30 (1.18) Inactive tip

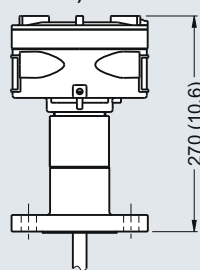
**Standard configuration**  
**(all versions)**



**With thermal isolator**  
**option (all versions)**



**With explosion-proof**  
**seal option**  
**(all versions)**



**Flange Facing (raised face)**

Flange Class	Facing thickness
△ ASME 150/300	2 (0.08)
△ ASME 600/900	7 (0.28)
△ PN16/25/40/64	2 (0.08)
□ PTFE facing (additional)	2 (0.08)

**Notes:**

- 1) Minimum Y02 (active shield length) = 50 (1.96), minimum measuring length = 200 (7.87)
- 2) Insertion length does not include any raised face/gasket face dimension (see Flange Facing table above).

SITRANS LC500 - Rod Versions, dimensions in mm (inch)

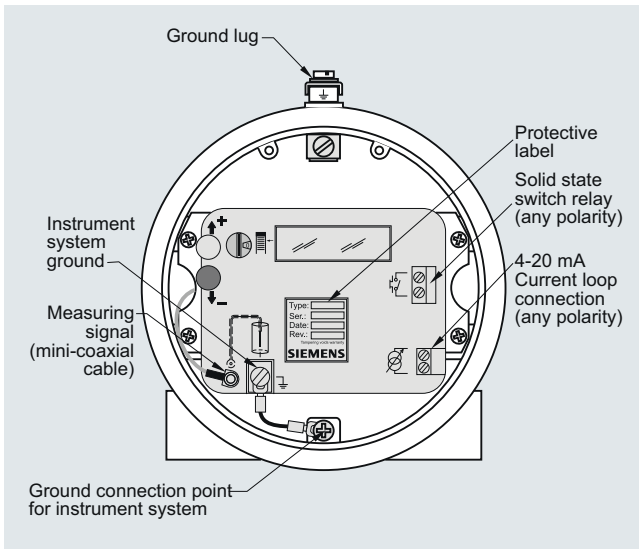


# Level Measurement

## Continuous level measurement – Capacitance transmitters

SITRANS LC500

### Schematics



SITRANS LC500 connections




# Level Measurement

## Continuous level measurement – Capacitance transmitters

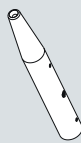

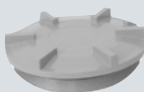


### SITRANS LC300/LC500 Specials

#### Selection and ordering data

##### LC300 and LC500 Specials. See note 1.

	Order No.
<b>LC300 Cable Extensions, 316L stainless steel</b>	
Kit, Stainless steel cable extension, 1 m, adjustable by customer	<b>A5E01163688</b>
Kit, Stainless steel cable extension, 3 m, adjustable by customer	<b>A5E01163689</b>
Kit, Stainless steel cable extension, 5 m, adjustable by customer	<b>A5E01163690</b>
Kit, Stainless steel cable extension, 10 m, adjustable by customer	<b>A5E01163691</b>
Kit, Stainless steel cable extension, 15 m, adjustable by customer	<b>A5E01163693</b>
Kit, Stainless steel cable extension, 20 m, adjustable by customer	<b>A5E01163695</b>
<b>LC300 Cable Extensions, 316 stainless steel with PFA coating</b>	
Kit, PFA cable extension, 1 m	<b>A5E01163709</b>
Kit, PFA cable extension, 3 m	<b>A5E01163710</b>
Kit, PFA cable extension, 5 m	<b>A5E01163711</b>
Kit, PFA cable extension, 10 m	<b>A5E01163712</b>
Kit, PFA cable extension, 15 m	<b>A5E01163713</b>
Kit, PFA cable extension, 20 m	<b>A5E01163714</b>
<b>LC300 Mounting Eye</b>	
Spare mounting eye (LC300 PFA versions only)	<b>A5E01163717</b>

##### LC300 and LC500 Specials. See note 1.

	Order No.
<b>LC300 Weight Kit, 316L stainless steel</b>	
Kit, Spare stainless steel weight. To be used in any cable version of CLS300, or stainless steel cable version of LC300	<b>A5E01163727</b>
<b>LC500 Gasket (IP65), Silicone</b>	
Spare gasket, LC500 enclosure version, IP65 J)	<b>A5E01163728</b>
<b>LC500 Blind Lid</b>	
Spare LC500 aluminum blind lid	<b>A5E01163729</b>
<b>LC500 Mounting Eye</b>	
Spare mounting eye (PFA cable version only)	<b>A5E01163717</b>
<b>LC500 Mounting Bracket</b>	
Spare mounting bracket	<b>A5E01163730</b>
<b>LC500 Sanitary Versions</b>	<b>See note 2.</b>

J) Subject to export regulations AL: 91999, ECCN: EAR99.

**Note 1:** Special flange sizes and facings are available. Please contact [ceg.smpi@siemens.com](mailto:ceg.smpi@siemens.com) for part number and pricing. Submit Application Questionnaire found on page 5/9.

**Note 2:** Please contact [ceg.smpi@siemens.com](mailto:ceg.smpi@siemens.com) for part number and pricing. Submit Application Questionnaire found on page 5/9.

Please contact [ceg.smpi@siemens.com](mailto:ceg.smpi@siemens.com) for special requests.