

# Level instruments

## 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)
- SIL/IEC61508 compliant for use in safety integrated level applications [SIL-1 (overflow or underfill)]

### Application

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

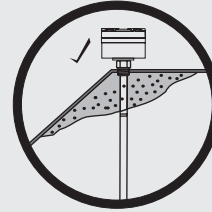
The unique mechanical probe design coupled with a high performance transmitter gives superior performance in toxic and aggressive chemicals, acids, caustics, adhesives and in viscous conductive and non-conductive materials.

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

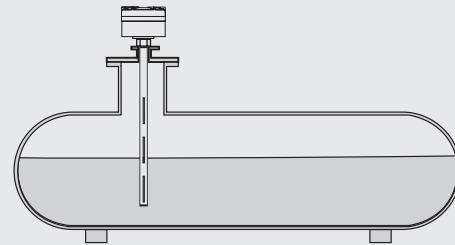
- Key Applications: Oil/water or foam/liquid interface measurement in separators or coalescers, cryogenic applications including CO<sub>2</sub> and liquified natural gas (LNG), distillation/regeneration tanks with high temperatures

### 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

Input	
Measuring range	1 to 3300 pF
Span	Min. 3.3 pF
Output	
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 to 60 s
Loop current	3.6 to 22 mA/22 to 3.6 mA (2-wire current loop)
Accuracy (transmitter)	
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 to +85 °C (-40 to +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 5/282.

- Standard (PFA) -50 to +200 °C (-58 to +392 °F)
- High temperature version with thermal isolator and enamel insulation -60 to +400 °C (-76 to +752 °F)
- Cryogenic version -200 to +200 °C (-328 to +392 °F)

- Process pressure Pressure rating of process seal is temperature dependent. See Pressure/Temperature curves on page 5/282.

- Standard (PFA) -1 to 150 bar g (2175 psi g)
- High temperature version (Enamel) -1 to 345 bar g (5004 psi g)

#### Design

##### Material

- Wetted parts material
  - Standard rod 316L stainless steel
- Probe insulation (rod) PFA, enamel
- Cable 316 stainless steel/  
316 stainless steel PFA

##### Probe diameter

- Rod version 16 mm (0.63") or 24 mm (0.95")
- Cable version 9 mm (0.35") with PFA jacket,  
6 mm (0.24") without PFA jacket

##### Active shield length

- Minimum (rod version) 50 mm (1.97"), customer selectable (order number Y02)

##### Probe length

- Rod version Max. 3.5 m (138") with 16 mm rod, PFA  
Max. 1.5 m (59") with 16 mm rod, enamel  
Max. 5.5 m (216") with 24 mm rod, PFA
- Cable version Max. 35 m (1378")

##### 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 to 33 V DC
<b>User Interface</b>	
Display	Local LCD, 4 digit, each 0 to 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 to 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 to 9, A to 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</li> <li>• ATEX II 3G 2D EEx nA [Ib] IIC T6 to 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 to 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 to T1</li> </ul>
• Marine	Lloyds Register of Shipping, Categories ENV1, ENV2, ENV3 and ENV5, Bureau Veritas
• Other	SIL/IEC61508 Declaration of Conformity [SIL-1 (overfill or underfill)]

<sup>1)</sup> When operation is in areas classified as hazardous, observe restrictions according to relevant certificate. See also Pressure/Temperature curves on page 5/282.

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

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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
Enamel	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") Max. 3500 mm (137.80")	Min. 200 mm (7.87") Max. 3500 mm (137.80")	Min. 200 mm (7.87") Max. 3500 mm (137.80")
Rod length for PFA 24 mm version	Min. 200 mm (7.87") Max. 5500 mm (216.54")	Min. 200 mm (7.87") Max. 5500 mm (216.54")	Min. 200 mm (7.87") Max. 5500 mm (216.54")
Rod length for enamel 16 mm version	Min. 250 mm (9.84") Max. 1500 mm (59.06")	Min. 250 mm (9.84") Max. 1500 mm (59.06")	–
Cable length	Min. 1000 mm (39.37") Max. 35000 mm (1377.95")	Min. 1000 mm (39.37") Max. 35000 mm (1377.95")	Min. 5000 mm (196.85") <sup>2)</sup> Max. 35000 mm (1377.95") <sup>2)</sup>
Maximum process pressure	See Pressure/Temperature curves for specific probe type		5 bar g (73 psi g)
Maximum process temperature	See Pressure/Temperature curves for specific probe type		+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 5/292 for further explanation

- Not available as standard

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### SITRANS LC500

#### Selection and Ordering data

Order No.

**SITRANS LC500, Threaded or Welded Flange with Cable Sensor** C) 7ML5513-

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.

#### Version<sup>1)</sup>

Cable, 9 mm (0.35") diameter, 316 stainless steel with PFA insulation, weighted

Add order code Y01 and plain text:

"Insertion length ... mm"

- 1000 to 2000 mm (39.37 to 78.74")
- 2001 to 4000 mm (78.78 to 157.48")
- 4001 to 6000 mm (157.52 to 236.22")
- 6001 to 8000 mm (236.26 to 314.96")

- 8001 to 10000 mm (315 to 393.70")
- Longer lengths possible to a max. of 35000 mm (114.83 ft). Contact [nacc.smpi@siemens.com](mailto:nacc.smpi@siemens.com) for details.

Cable, 6 mm (0.24") diameter, 316L stainless steel, non-insulated, weighted (non-conductive media only)

Add order code Y01 and plain text:

"Insertion length ... mm"

- 1000 to 2000 mm (39.37 to 78.74")<sup>2)</sup>
  - 2001 to 4000 mm (78.78 to 157.48")<sup>2) 3)</sup>
  - 4001 to 6000 mm (157.52 to 236.22")<sup>2) 3)</sup>
  - 6001 to 8000 mm (236.26 to 314.96")<sup>2) 3)</sup>
  - 8001 to 10000 mm (315 to 393.70")<sup>2) 3)</sup>
- Cable lengths up to 25000 mm (984.25") are possible for non-conductive media. Cable lengths up to 15000 mm (590.55") are possible for conductive media. Contact

[nacc.smpi@siemens.com](mailto:nacc.smpi@siemens.com) for details.

#### Process connection (316L Stainless steel)

##### Threaded connection

- 1½" NPT [(Taper), ANSI/ASME B1.20.1] C 0  
 R 1½" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] F 0  
 1¼" NPT [(Taper), ANSI/ASME B1.20.1] K 0  
 G 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] L 0

##### Welded flange, raised face

- 1½", ASME, 150 lb B 1  
 1½", ASME, 300 lb B 2  
 1½", ASME, 600 lb B 3

- 2", ASME, 150 lb C 1  
 2", ASME, 300 lb C 2  
 2", ASME, 600 lb C 3

- 3", ASME, 150 lb<sup>3)</sup> D 1  
 3", ASME, 300 lb<sup>3)</sup> D 2  
 3", ASME, 600 lb<sup>3)</sup> D 3

- 4", ASME, 150 lb<sup>3)</sup> E 1  
 4", ASME, 300 lb<sup>3)</sup> E 2  
 4", ASME, 600 lb<sup>3)</sup> E 3

- 6", ASME, 150 lb<sup>3)</sup> F 1  
 6", ASME, 300 lb<sup>3)</sup> F 2  
 6", ASME, 600 lb<sup>3)</sup> F 3

##### Welded flange, Type A flat faced

- DN 40, PN 16 K 4  
 DN 40, PN 40 K 5

- DN 50, PN 16 L 4  
 DN 50, PN 40 L 5

- DN 80, PN 16 M 4  
 DN 80, PN 40<sup>3)</sup> M 5

- DN 100, PN 16<sup>3)</sup> N 4  
 DN 100, PN 40<sup>3)</sup> N 5

- DN 125, PN 16<sup>3)</sup> P 4  
 DN 125, PN 40<sup>3)</sup> P 5

(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.

**SITRANS LC500, Threaded or Welded Flange with Cable Sensor** C) 7ML5513-

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  
 CSA/FM Class 1, Div. 2, Groups A, B, C, D T4;  
 ATEX II 3G 2D EExn A [ib] IIC T6 to T4 T100 °C;  
 CSA/FM Class II and III, Div. 1, Groups E, F, G  
 ATEX II 1/2 GD EEx d [ia] IIC T6 to T1

FM Class I, Div.1, Groups A, B, C, D, T4

#### Enclosure/Cable inlet

Aluminum epoxy coated

2 x ½" NPT, IP68

2 x M20x1.5 (IP68, adapter)

#### Options

No additional options

With mounting eye<sup>4)</sup>

#### Thermal isolator

Without thermal isolator

Isolator, only for use when temperature range is outside of -40 to +85 °C (-40 to +185 °F), explosion proof approval -40 to +70 °C (-40 to +158 °F)

#### Electronic output

No transmitter supplied

2-wire loop current 4 to 20 mA

(transmitter MSP 2002-2 \_3300 pF)

#### Further designs

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

Insertion length, specify in plain text:

**Y01: ... mm**

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

Measuring-point number/identification (max. 16 characters) specify in plain text

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

Inspection Certificate Type 3.1 per EN 10204

SIL/IEC61508 Declaration of Conformity [SIL-1 (overfill)]

#### Instruction manual

See page 5/281

#### Accessories

See page 5/281

<sup>1)</sup> A minimum span of 3 pF must be maintained

<sup>2)</sup> Available with non-conductive media only

<sup>3)</sup> Custom shipping methods required. Contact factory for more details.

<sup>4)</sup> Available in PFA insulated version only

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

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<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.	7 ML 5 5 1 5 -	<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.	7 ML 5 5 1 5 -
<b>Version</b> Rod, 16 mm (0.63"), PFA insulated Add order code Y01 and Y02 and plain text: "Insertion length ... mm and active shield length ... mm" <ul style="list-style-type: none"> <li>• 200 to 1000 mm (7.87 to 39.37")<sup>1)</sup></li> <li>• 1001 to 2000 mm (39.41 to 78.74")</li> <li>• 2001 to 3000 mm (78.78 to 118.11")<sup>2)</sup></li> <li>• 3001 to 3500 mm (118.15 to 137.80")<sup>2)</sup></li> </ul> Rod, 16 mm (0.63"), PFA insulated with 35 mm (1.38") stilling well in 316L stainless steel Add order code Y01 and Y02 and plain text: "Insertion length ... mm and active shield length ... mm" <ul style="list-style-type: none"> <li>• 200 to 1000 mm (7.87 to 39.37")<sup>1) 3)</sup></li> <li>• 1001 to 2000 mm (39.41 to 78.74")<sup>3)</sup></li> <li>• 2001 to 3000 mm (78.78 to 118.11")<sup>2) 3)</sup></li> <li>• 3001 to 3500 mm (118.15 to 137.80")<sup>2) 3)</sup></li> </ul> Rod, 24 mm (0.94"), PFA insulated Add order code Y01 and Y02 and plain text: "Insertion length ... mm and active shield length ... mm" <ul style="list-style-type: none"> <li>• 200 to 1000 mm (7.87 to 39.37")<sup>4)</sup></li> <li>• 1001 to 2000 mm (39.41 to 78.74")<sup>4)</sup></li> <li>• 2001 to 3000 mm (78.78 to 118.11")<sup>2) 4)</sup></li> <li>• 3001 to 4000 mm (118.15 to 157.48")<sup>2) 4)</sup></li> <li>• 4001 to 5000 mm (173.26 to 196.88")<sup>2) 4)</sup></li> <li>• 5001 to 5500 mm (196.89 to 216.54")<sup>2) 4)</sup></li> </ul> Rod, 24 mm (0.94"), PFA insulated with 48 mm (1.89") stilling well in 316L stainless steel Add order code Y01 and Y02 and plain text: "Insertion length ... mm and active shield length ... mm" <ul style="list-style-type: none"> <li>• 200 to 1000 mm (7.87 to 39.37")<sup>5)</sup></li> <li>• 1001 to 2000 mm (39.41 to 78.74")<sup>5)</sup></li> <li>• 2001 to 3000 mm (78.78 to 118.11")<sup>2) 5)</sup></li> <li>• 3001 to 4000 mm (118.15 to 157.48")<sup>2) 5)</sup></li> <li>• 4001 to 5000 mm (173.26 to 196.88")<sup>2) 5)</sup></li> <li>• 5001 to 5500 mm (196.89 to 216.54")<sup>2) 5)</sup></li> </ul> Rod, 16 mm (0.63"), Glassteel Enamel insulated Add order code Y01 and Y02 and plain text: "Insertion length ... mm and active shield length ... mm" <ul style="list-style-type: none"> <li>• 250 to 1500 mm (9.84 to 59.06")<sup>2) 5)</sup></li> </ul> Rod, 16 mm (0.63"), Glassteel Enamel insulated, with 40 mm (1.57") stilling well in 316L stainless steel Add order code Y01 and Y02 and plain text: "Insertion length ... mm and active shield length ... mm" <ul style="list-style-type: none"> <li>• 250 to 1500 mm (9.84 to 59.06")<sup>2) 5)</sup></li> </ul>	0 A 1 A 2 A 3 A  0 B 1 B 2 B 3 B  0 C 1 C 2 C 3 C 4 C 5 C  0 D 1 D 2 D 3 D 4 D 5 D  0 E  0 F	<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>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> (Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5, or EN 1092-1 standard.)	B 1 B 2 B 3  C 1 C 2 C 3  D 1 D 2 D 3  E 1 E 2 E 3  F 1 F 2 F 3  K 4 K 5  L 4 L 5  M 4 M 5  N 4 N 5  P 4 P 5  1 2  4 6  1 2  A B  A B  C D E F
<b>Process connection (316L Stainless steel)</b> <b>Threaded connection</b> 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]	A 0 B 0 C 0 D 0  E 0 F 0 J 0 K 0  N 0 P 0 R 0 S 0  T 0	<b>Approvals</b> General Purpose: CE, CSA, FM, C-TICK CSA/FM Class 1, Div. 2, Groups A, B, C, D T4; ATEX II 3G 2D EExn A [ib] IIC T6 to T4 T100 °C; CSA/FM Class II and III, Div. 1, Groups E, F, G ATEX II 1/2 GD EEx d [ia] IIC T6 to T1 FM Class I, Div.1, Groups A, B, C, D, T4	1 2  4 6  1 2  A B  A B  C D E F
<b>Enclosure/Cable inlet</b> <b>Aluminum epoxy coated</b> 2 x ½" NPT, IP68 2 x M20x1.5 (IP68, adapter)		<b>Options</b> No additional options Slotted holes instead of standard vent holes in stilling well (refer to instruction manual for dimensions.) <sup>6)</sup>	1 2  A B  C D E F
<b>Thermal isolator/remote version</b> Without thermal isolator or remote electronics Thermal isolator, only for use when temperature range is outside of -40 to +85 °C (-40 to +185 °F), explosion proof approval -40 to +70 °C (-40 to +158 °F) Remote electronics with mounting bracket and cable <sup>7)</sup> <ul style="list-style-type: none"> <li>• Length: 2 m (79")</li> <li>• Length: 3 m (118")</li> <li>• Length: 4 m (158")</li> <li>• Length: 5 m (197")</li> </ul>			C D E F

# Level instruments

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### SITRANS LC500

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.	D) <b>7 ML 5 5 1 5 -</b>
<b>Electronic output</b> No transmitter supplied 2-wire loop current 4 to 20 mA (transmitter MSP 2002-2 _3300 pF)	<b>0</b> <b>1</b>
<b>Further designs</b> Please add <b>"-Z"</b> to Order No. and specify Order code(s).	Order code
Insertion length, specify in plain text: Y01: ... mm [ <b>minimum 200 mm (7.87")</b> ]	<b>Y01</b>
Active shield length, specify in plain text [min. length is 50 mm (2")]: Y02: ... mm	<b>Y02</b>
Stainless steel tag [69 x 50 mm (2.71 x 1.97")]: 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>
Manufacturing Test Report (Electrode Test)	<b>C18</b>
SIL/IEC61508 Declaration of Conformity [SIL-1 (overfill)]	<b>C20</b>
<b>Instruction manual</b>	<b>See page 5/281</b>
<b>Accessories</b>	<b>See page 5/281</b>

- 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 to 3B, 0D to 5D and 0F only
  - 7) Available with approval option 1 only
- D) Subject to export regulations AL: N, ECCN: EAR99H

# Level instruments

## Continuous level measurement - Capacitance transmitters

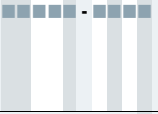
SITRANS LC500

Selection and Ordering data	Order No.	Selection and Ordering data	Order No.
<b>SITRANS LC500, Single Piece Flanged with Rod C) Sensor</b>	<b>7 ML 5 5 1 7 -</b>	<b>SITRANS LC500, Single Piece Flanged with Rod C) Sensor</b>	<b>7 ML 5 5 1 7 -</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>			
Rod, 16 mm (0.63"), PFA insulated		DN 80, PN 40 <sup>2)</sup>	<b>M 5</b>
<u>Add order code Y01 and Y02 and plain text:</u> <u>"Insertion length .... mm and active shield length .... mm"</u>		DN 100, PN 16 <sup>2)</sup>	<b>N 4</b>
• 250 to 1000 mm (9.84 to 39.37") <sup>1)</sup>	<b>0 A</b>	DN 100, PN 40 <sup>2)</sup>	<b>N 5</b>
• 1001 to 2000 mm (39.41 to 78.74")	<b>1 A</b>	DN 125, PN 16 <sup>2)</sup>	<b>P 4</b>
• 2001 to 3000 mm (78.78 to 118.11") <sup>2)</sup>	<b>2 A</b>	DN 125, PN 40 <sup>2)</sup>	<b>P 5</b>
• 3001 to 3500 mm (118.15 to 137.80") <sup>2)</sup>	<b>3 A</b>	<u>Single piece flange with PTFE flange facing (applicable with versions 0A to 3A and 0C to 5C)<sup>4)</sup></u>	
Rod, 16 mm (0.63"), PFA insulated with 35 mm (1.34") stilling well in 316L stainless steel		1½", ASME, 150 lb	<b>B 4</b>
<u>Add order code Y01 and Y02 and plain text:</u> <u>"Insertion length .... mm and active shield length .... mm"</u>		1½", ASME, 300 lb	<b>B 5</b>
• 250 to 1000 mm (9.84 to 39.37")	<b>0 B</b>	1½", ASME, 600 lb	<b>B 6</b>
• 1001 to 2000 mm (39.41 to 78.74")	<b>1 B</b>	2", ASME, 150 lb	<b>C 4</b>
• 2001 to 3000 mm (78.78 to 118.11") <sup>2)</sup>	<b>2 B</b>	2", ASME, 300 lb	<b>C 5</b>
• 3001 to 3500 mm (118.15 to 137.80") <sup>2)</sup>	<b>3 B</b>	2", ASME, 600 lb	<b>C 6</b>
Rod, 24 mm (0.94"), PFA insulated		3", ASME, 150 lb <sup>2)</sup>	<b>D 4</b>
<u>Add order code Y01 and Y02 and plain text:</u> <u>"Insertion length .... mm and active shield length .... mm"</u>		3", ASME, 300 lb <sup>2)</sup>	<b>D 5</b>
• 250 to 1000 mm (9.84 to 39.37")	<b>0 C</b>	3", ASME, 600 lb <sup>2)</sup>	<b>D 6</b>
• 1001 to 2000 mm (39.41 to 78.74")	<b>1 C</b>	4", ASME, 150 lb <sup>2)</sup>	<b>E 4</b>
• 2001 to 3000 mm (78.78 to 118.11") <sup>2)</sup>	<b>2 C</b>	4", ASME, 300 lb <sup>2)</sup>	<b>E 5</b>
• 3001 to 4000 mm (118.15 to 157.48") <sup>2)</sup>	<b>3 C</b>	4", ASME, 600 lb <sup>2)</sup>	<b>E 6</b>
• 4001 to 5000 mm (173.26 to 196.88") <sup>2)</sup>	<b>4 C</b>	6", ASME, 150 lb <sup>2)</sup>	<b>F 4</b>
• 5001 to 5500 mm (196.89 to 216.54") <sup>2)</sup>	<b>5 C</b>	6", ASME, 300 lb <sup>2)</sup>	<b>F 5</b>
Rod, 24 mm (0.94"), PFA insulated with 48 mm (1.89") stilling well in 316L stainless steel		6", ASME, 600 lb <sup>2)</sup>	<b>F 6</b>
<u>Add order code Y01 and Y02 and plain text:</u> <u>"Insertion length .... mm and active shield length .... mm"</u>		Single piece flange with PTFE flange facing (applicable with versions 0A to 3A, 0C to 5C) <sup>4)</sup>	
• 250 to 1000 mm (9.84 to 39.37")	<b>0 D</b>	DN 40, PN 16	<b>K 6</b>
• 1001 to 2000 mm (39.41 to 78.74") <sup>2) 3)</sup>	<b>1 D</b>	DN 40, PN 40	<b>K 7</b>
• 2001 to 3000 mm (78.78 to 118.11") <sup>2) 3)</sup>	<b>2 D</b>	DN 50, PN 16	<b>L 6</b>
• 3001 to 4000 mm (118.15 to 157.48") <sup>2) 3)</sup>	<b>3 D</b>	DN 50, PN 40	<b>L 7</b>
• 4001 to 5000 mm (173.26 to 196.88") <sup>2) 3)</sup>	<b>4 D</b>	DN 80, PN 16	<b>M 6</b>
• 5001 to 5500 mm (196.89 to 216.54") <sup>2) 3)</sup>	<b>5 D</b>	DN 80, PN 40 <sup>2)</sup>	<b>M 7</b>
Rod, 16 mm (0.63"), Glassteel Enamel insulated		DN 100, PN 16 <sup>2)</sup>	<b>N 6</b>
<u>Add order code Y01 and Y02 and plain text:</u> <u>"Insertion length .... mm and active shield length .... mm"</u> - 300 to 1500 mm (11.81 to 59.01") <sup>2) 3)</sup>	<b>0 E</b>	DN 100, PN 40 <sup>2)</sup>	<b>N 7</b>
Rod, 16 mm (0.63"), Glassteel Enamel insulated, with 40 mm (1.57") stilling well in 316L stainless steel		DN 125, PN 16 <sup>2)</sup>	<b>P 6</b>
<u>Add order code Y01 and Y02 and plain text:</u> <u>"Insertion length .... mm and active shield length .... mm"</u> - 300 to 1500 mm (11.81 to 59.01") <sup>2) 3)</sup>	<b>0 F</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.)	
<u>Single piece flange, raised face</u>		<b>Approvals</b>	
1½", ASME, 150 lb	<b>B 1</b>	General Purpose: CE, CSA, FM, C-TICK	<b>1</b>
1½", ASME, 300 lb	<b>B 2</b>	CSA/FM Class 1, Div. 2, Groups A, B, C, D T4;	<b>2</b>
1½", ASME, 600 lb	<b>B 3</b>	ATEX II 3G 2D EExn A [ib] IIC T6 to T4 T100 °C;	
2", ASME, 150 lb	<b>C 1</b>	CSA/FM Class II and III, Div. 1, Groups E, F, G	
2", ASME, 300 lb	<b>C 2</b>	ATEX II 1/2 GD EEx d [ia] IIC T6 to T1	<b>4</b>
2", ASME, 600 lb	<b>C 3</b>	FM Class I, Div. 1, Groups A, B, C, D, T4	<b>6</b>
3", ASME, 150 lb <sup>2)</sup>	<b>D 1</b>	<b>Enclosure/Cable inlet</b>	
3", ASME, 300 lb <sup>2)</sup>	<b>D 2</b>	<u>Aluminum epoxy coated</u>	<b>1</b>
3", ASME, 600 lb <sup>2)</sup>	<b>D 3</b>	2 x ½" NPT, IP68	<b>2</b>
4", ASME, 150 lb <sup>2)</sup>	<b>E 1</b>	2 x M20x1.5 (IP68, adapter)	
4", ASME, 300 lb <sup>2)</sup>	<b>E 2</b>	<b>Options</b>	
4", ASME, 600 lb <sup>2)</sup>	<b>E 3</b>	None	<b>A</b>
6", ASME, 150 lb <sup>2)</sup>	<b>F 1</b>	Slotted holes instead of standard vent holes in stilling well (Refer to manual for dimensions) <sup>5)</sup>	<b>B</b>
6", ASME, 300 lb <sup>2)</sup>	<b>F 2</b>	<b>Thermal isolator/remote version</b>	
6", ASME, 600 lb <sup>2)</sup>	<b>F 3</b>	Without thermal isolator	<b>A</b>
<u>Single piece flange, Type B1 raised face</u>		Isolator, only for use when temperature range is outside of -40 to +85 °C (-40 to +185 °F), explosion proof approval -40 to +70 °C (-40 to +158 °F)	<b>B</b>
DN 40, PN 16	<b>K 4</b>	Remote electronics with mounting bracket and cable <sup>6)</sup>	
DN 40, PN 40	<b>K 5</b>	• Length: 2 m (79")	<b>C</b>
DN 50, PN 16	<b>L 4</b>	• Length: 3 m (118")	<b>D</b>
DN 50, PN 40	<b>L 5</b>	• Length: 4 m (158")	<b>E</b>
DN 80, PN 16	<b>M 4</b>	• Length: 5 m (197")	<b>F</b>

# Level instruments

## Continuous level measurement - Capacitance transmitters

### SITRANS LC500

Selection and Ordering data	Order No.
<b>SITRANS LC500, Single Piece Flanged with Rod C)</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.	<b>7 ML 5 5 1 7 -</b> 
<b>Electronic output</b> No transmitter supplied 2-wire loop current 4 to 20 mA (transmitter MSP 2002-2 _3300 pF)	<b>0</b> <b>1</b>
<b>Further designs</b> Please add <b>"-Z"</b> to Order No. and specify Order code(s).	Order code
<b>Insertion length, specify in plain text:</b> <b>Y01: ... mm</b> Y01 for version 0A to 5D: min. = 200 mm (7.87") Y01 for version 0E and 0F: min. = 250 mm (9.84") Active shield length, specify in plain text [min. length is 50 mm (2")]: <b>Y02: ... mm</b> Y02 for version 0A to 5D: min. = 50 mm (1.97") Y02 for version 0E and 0F: min. = 100 mm (3.94") Stainless steel tag [69 x 50 mm (2.71 x 1.97")]: Measuring-point number/identification (max. 16 characters) specify in plain text	<b>Y01</b>  <b>Y02</b>  <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>
Manufacturing Test Report (Electrode Test)	<b>C18</b>
SIL/IEC61508 Declaration of Conformity [SIL-1 (overfill)]	<b>C20</b>
<b>Instruction manual</b>	<b>See page 5/281</b>
<b>Accessories</b>	<b>See page 5/281</b>

- 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



# Level instruments

## Continuous level measurement - Capacitance transmitters

SITRANS LC500

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.	7 ML 5 5 2 3 -
<b>Version<sup>2)</sup></b> Rod, 16 mm (0.63"), 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"</u> <sup>3) 4)</sup>	
<ul style="list-style-type: none"> <li>• 5000 to 10000 mm (196.85 to 393.70")<sup>1)</sup></li> <li>• 10001 to 15000 mm (393.74 to 590.55")<sup>1)</sup></li> <li>• 15001 to 20000 mm (590.59 to 787.40")<sup>1)</sup></li> <li>• 20001 to 25000 mm (787.44 to 984.25")<sup>1)</sup></li> <li>• 25001 to 30000 mm (984.29 to 1181.10")<sup>1)</sup></li> <li>• 30001 to 35000 mm (1181.14 to 1377.95")<sup>1)</sup></li> </ul>	0 A 1 A 2 A 3 A 4 A 5 A
Rod, 24 mm (0.94"), 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"</u> <sup>3) 4)</sup>	
<ul style="list-style-type: none"> <li>• 5000 to 10000 mm (196.85 to 393.70")<sup>1)</sup></li> <li>• 10001 to 15000 mm (393.74 to 590.55")<sup>1)</sup></li> <li>• 15001 to 20000 mm (590.59 to 787.40")<sup>1)</sup></li> <li>• 20001 to 25000 mm (787.44 to 984.25")<sup>1)</sup></li> <li>• 25001 to 30000 mm (984.29 to 1181.10")<sup>1)</sup></li> <li>• 30001 to 35000 mm (1181.14 to 1377.95")<sup>1)</sup></li> </ul>	0 B 1 B 2 B 3 B 4 B 5 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]	A 0 B 0 D 0
<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>	C 1 C 2 D 1 D 2 E 1 E 2 F 1 F 2
<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.)	L 4 L 5 M 4 M 5 N 4 N 5 P 4 P 5
<b>Approvals</b> General Purpose: CE, CSA, FM, C-TICK CSA/FM Class 1, Div. 2, Groups A, B, C, D T4; ATEX II 3G 2D EExn A [ib] IIC T6 to T4 T100 °C; CSA/FM Class II and III, Div. 1, Groups E, F, G ATEX II 1/2 GD EEx d [ia] IIC T6 to T1 FM Class I, Div.1, Groups A, B, C, D, T4	1 2 4 6
<b>Enclosure/Cable inlet</b> <u>Aluminum epoxy coated</u> 2 x 1/2" NPT, IP68 2 x M20x1.5 (IP68, adapter)	1 2
<b>Options</b> No additional options With mounting eye	A B

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.	7 ML 5 5 2 3 -
<b>Thermal isolator</b> Without thermal isolator Isolator, only for use when temperature range is outside of -40 to +85 °C (-40 to +185 °F), explosion proof approval -40 to +70 °C (-40 to +158 °F)	A B
<b>Electronic output</b> No transmitter supplied 2-wire loop current 4 to 20 mA (transmitter MSP 2002-2_3300 pF)	0 1
<b>Further designs</b> Please add "-Z" to Order No. and specify Order code(s).	Order code
Total Insertion length, specify in plain text: Y01: ... mm <b>[min. PFA rod length 200 mm (7.87")]<sup>3)</sup></b>	Y01
Active shield length, specify in plain text: Y02: ... mm <b>[min. length 50 mm (2")]<sup>4)</sup></b>	Y02
Stainless steel tag [69 x 50 mm (2.71 x 1.97")]: Measuring-point number/identification (max. 16 characters) specify in plain text	Y15
Acceptance test certificate: Manufacturer's test certificate M to DIN 55350, Part 18 and ISO 9000	C11
Inspection Certificate Type 3.1 per EN 10204 SIL/IEC61508 Declaration of Conformity [SIL-1 (overfill)]	C12 C20
<b>Instruction manual</b>	See page 5/281
<b>Accessories</b>	See page 5/281

- 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 5/292 for further explanation of Y01.
- 4) Inactive length is equal to the flexible extension plus transition.  
See dimension drawings on page 5/292 for further explanation of Y02.

Selection and Ordering data	Order No.
<b>Instruction manual for SITRANS LC500</b>	
English	C) 7ML1998-5GE01
French	7ML1998-5GE11
Spanish	7ML1998-5GE21
German	7ML1998-5GE31
Note: The instruction manual 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 instruction manual library.	
<b>Accessories</b>	
Transmitter, MSP 2002-1, 330 PF <sup>1)</sup>	C) 7ML1830-1JP
Transmitter, MSP 2002-2, 3300 PF <sup>1)</sup>	D) 7ML1830-1JQ
Transmitter, MSP 2002-3, 6600 PF (used with conductive fluids and probe lengths > 10000 mm) <sup>1)</sup>	D) 7ML1830-1JR
SITRANS RD100 Remote display - see RD100 on page 5/304	
SITRANS RD200 Remote display - see RD200 on page 5/306	

- 1) 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

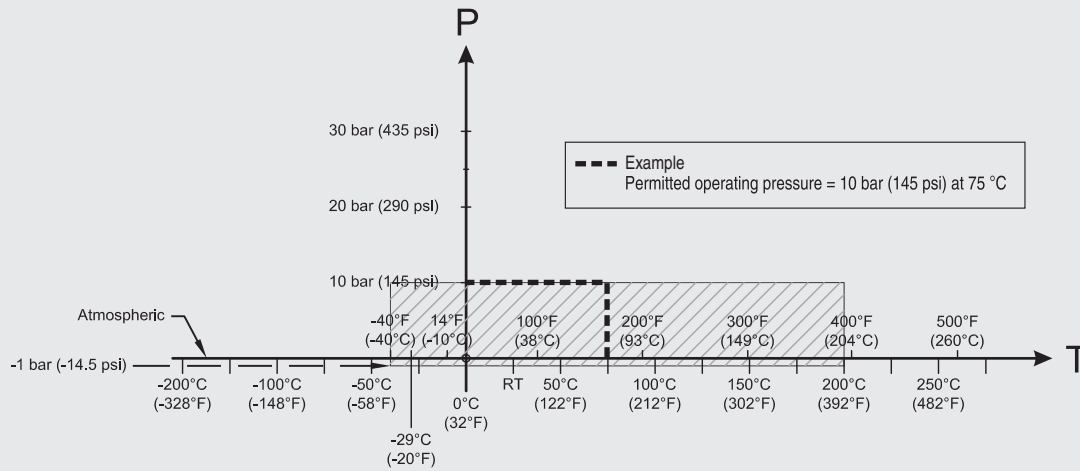
Please contact [nacc.smpi@siemens.com](mailto:nacc.smpi@siemens.com) for special requests.

# Level instruments

## Continuous level measurement - Capacitance transmitters

SITRANS LC500

### Characteristic curves

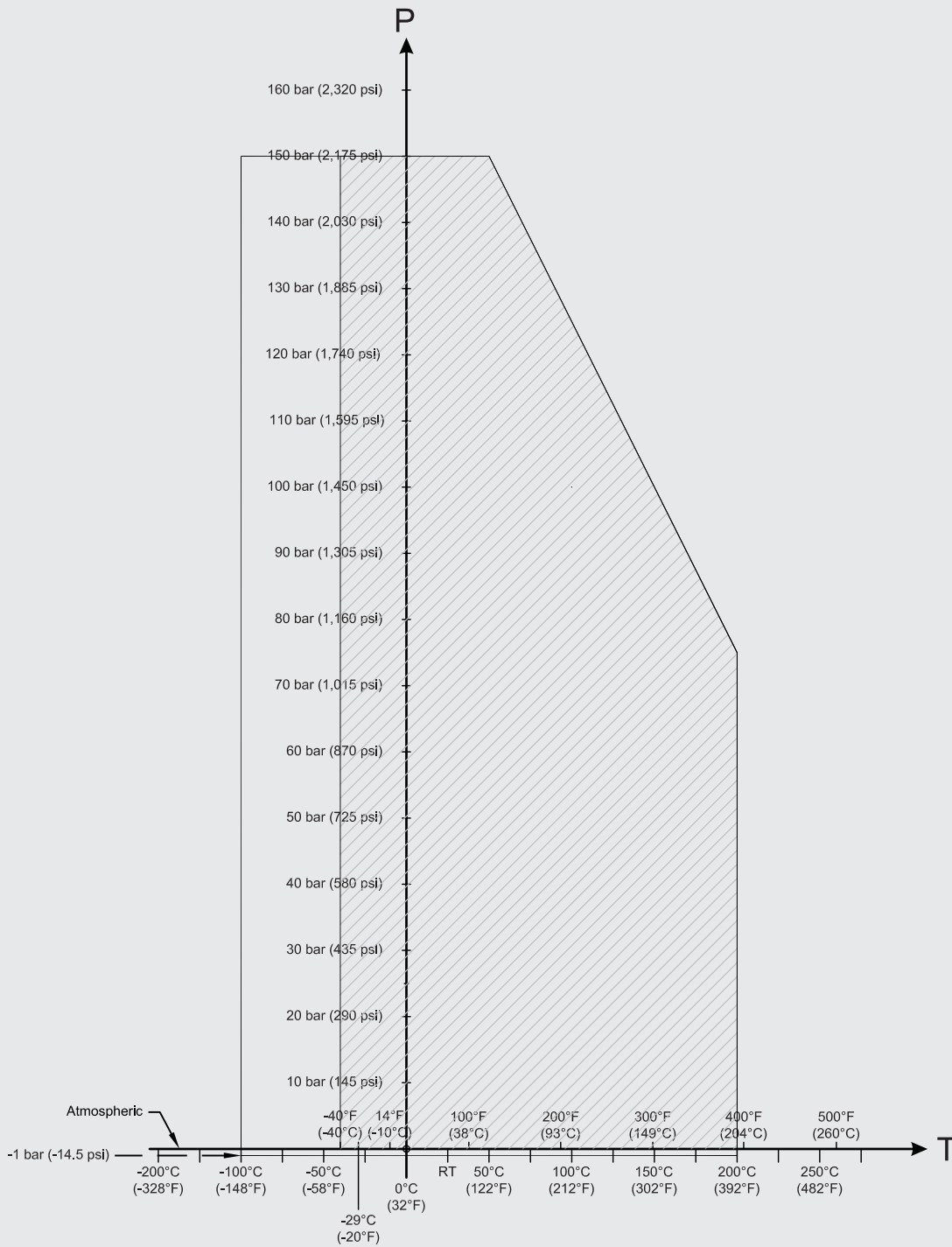


### Pressure/Temperature Curve LC500 Cable Probes Threaded Process Connections (7ML5513)

P = Permitted Operating Pressures

T = Permitted Operating Temperature

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



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

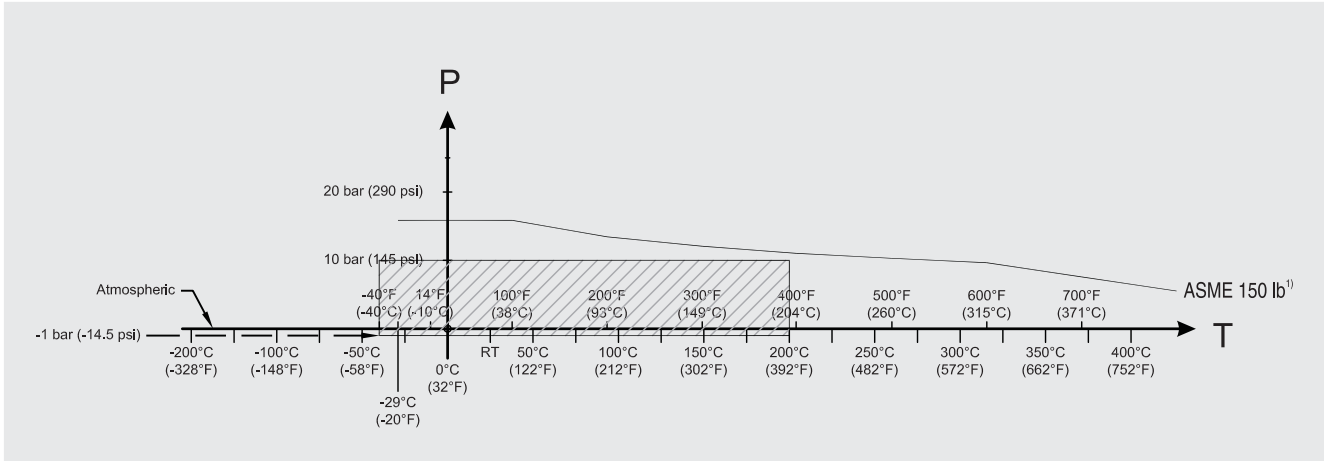
P = Permitted Operating Pressures  
T = Permitted Operating Temperature

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

# Level instruments

## Continuous level measurement - Capacitance transmitters

### SITRANS LC500



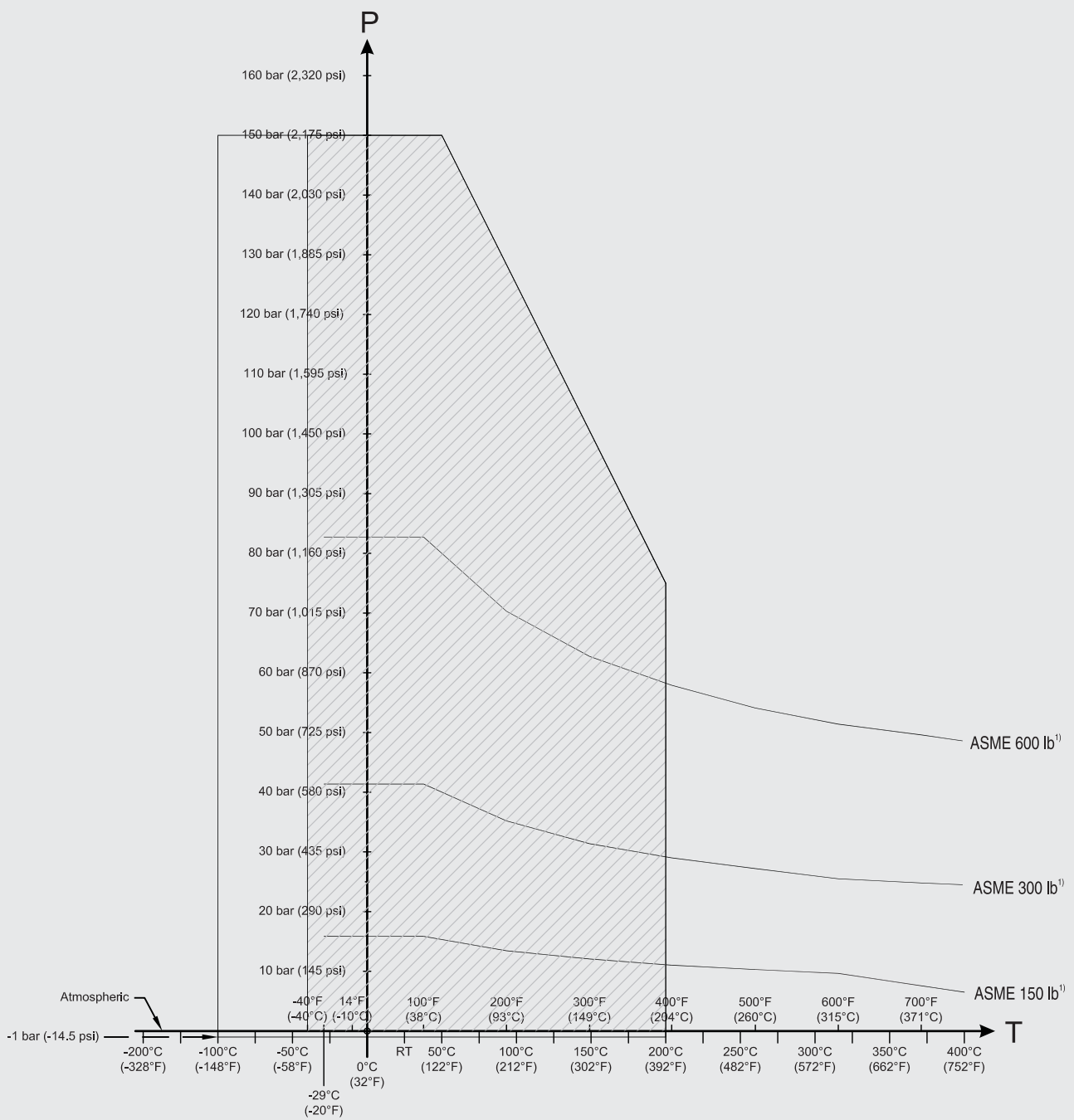
### Pressure/Temperature Curve LC500 Cable Probes ASME Flanged Process Connections (7ML5513)

P = Permitted Operating Pressures  
T = Permitted Operating Temperature

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

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

5



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

P = Permitted Operating Pressures  
T = Permitted Operating Temperature

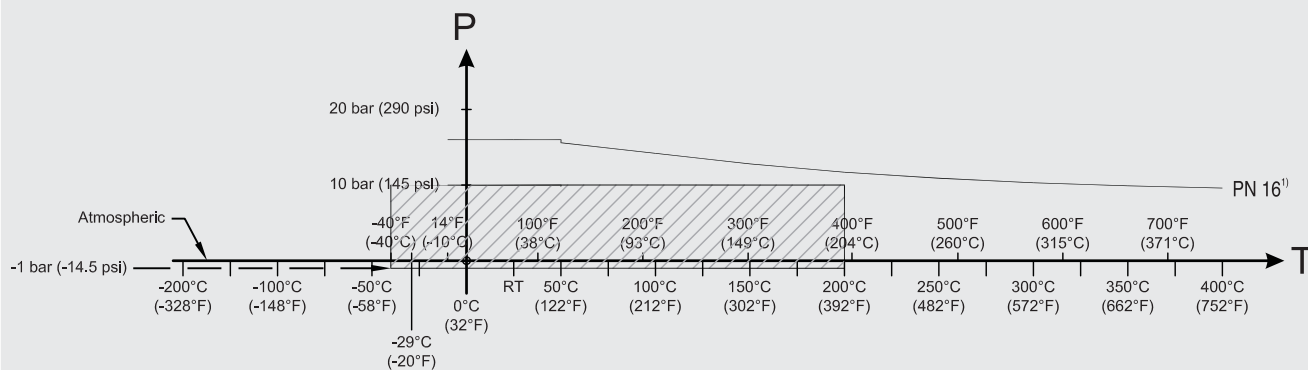
1) The curve denotes the minimum allowable flange class for the shaded area below.

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

# Level instruments

## Continuous level measurement - Capacitance transmitters

### SITRANS LC500

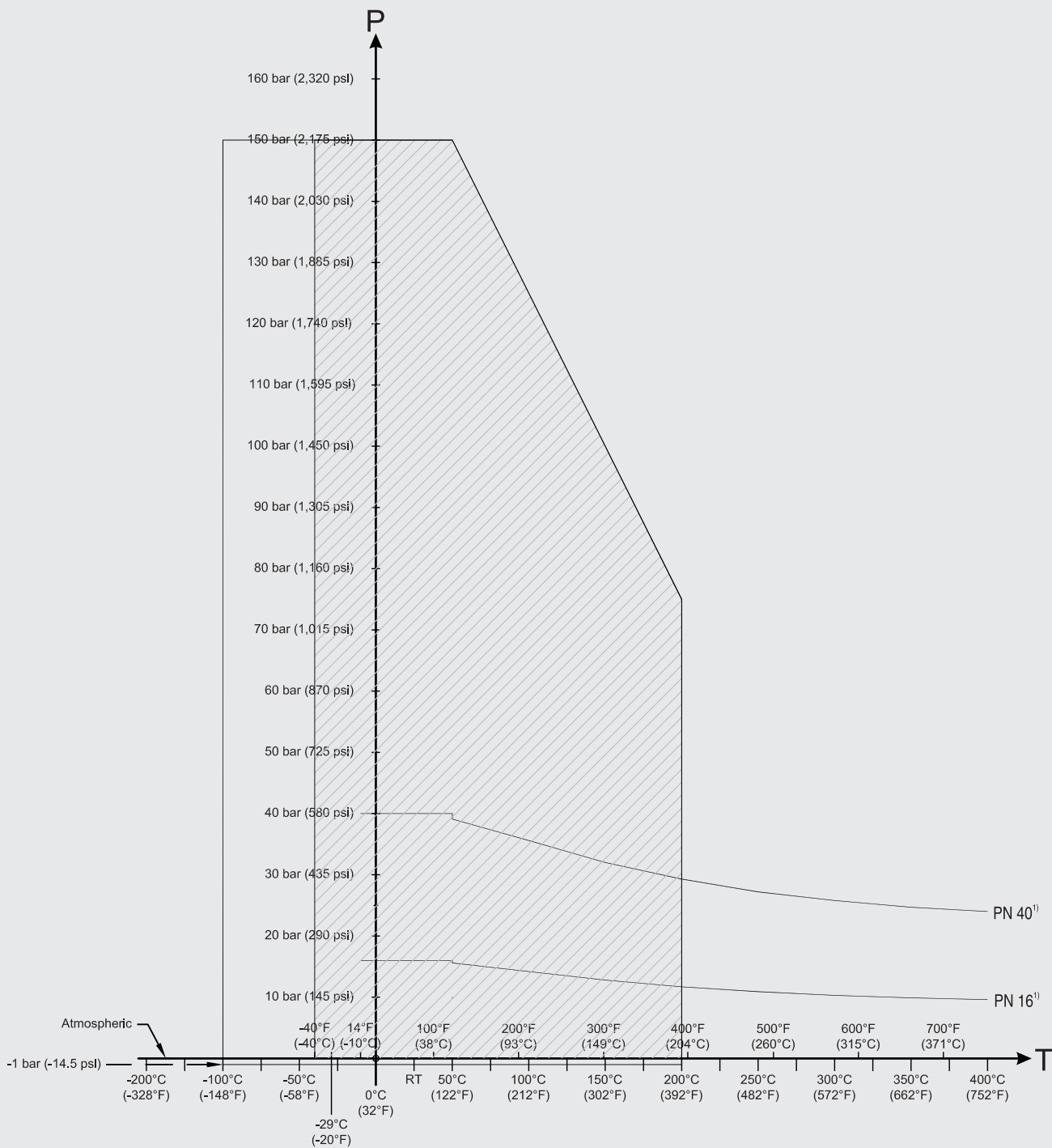


### Pressure/Temperature Curve LC500 Cable Probes EN Flanged Process Connections (7ML5513)

P = Permitted Operating Pressures  
T = Permitted Operating Temperature

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

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



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

P = Permitted Operating Pressures  
T = Permitted Operating Temperature

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

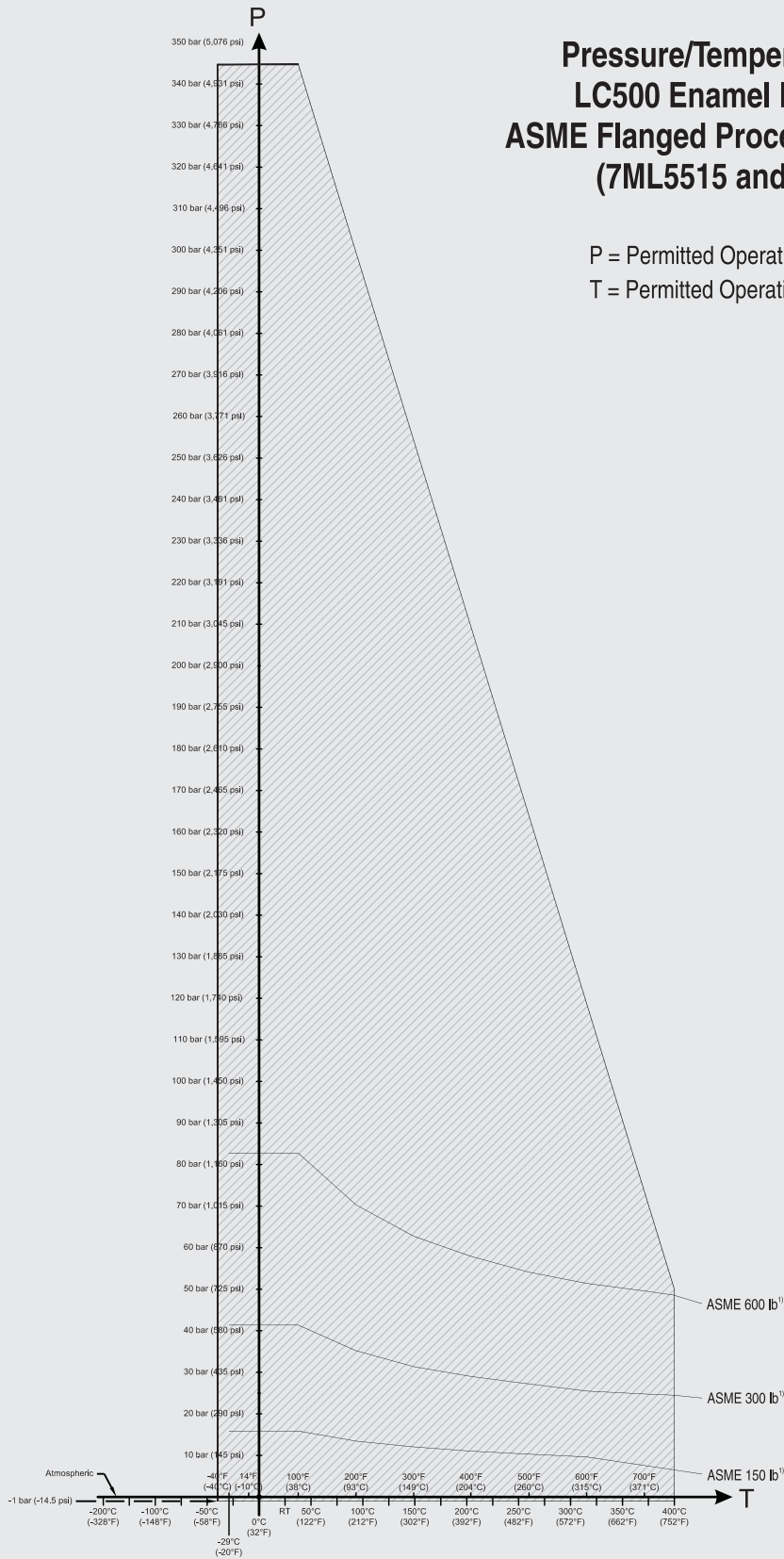
SITRANS LC500 Process Pressure/Temperature derating curves (7ML5515 and 7ML5517)

# Level instruments

## Continuous level measurement - Capacitance transmitters

### SITRANS LC500

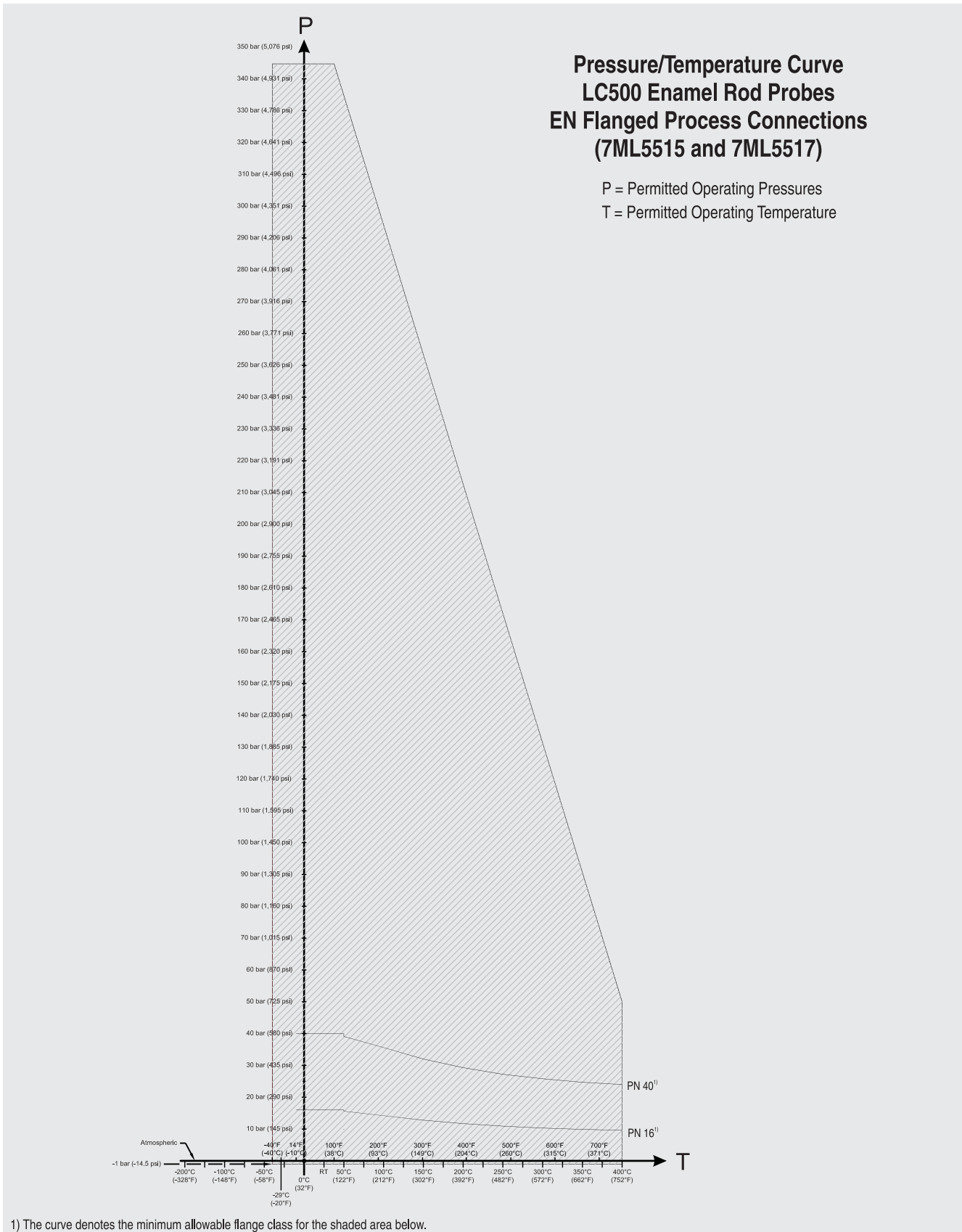
5



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

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





5

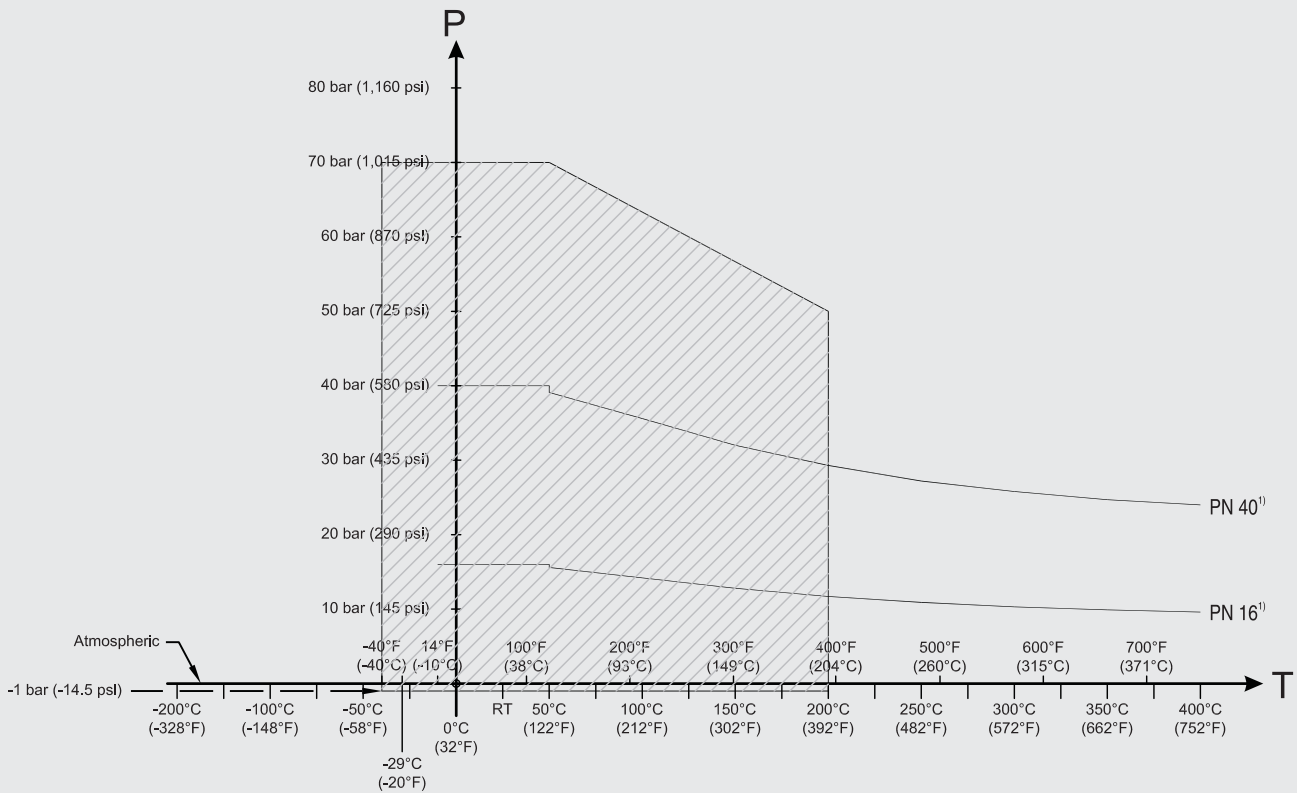
1) The curve denotes the minimum allowable flange class for the shaded area below.

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

# Level instruments

## Continuous level measurement - Capacitance transmitters

SITRANS LC500



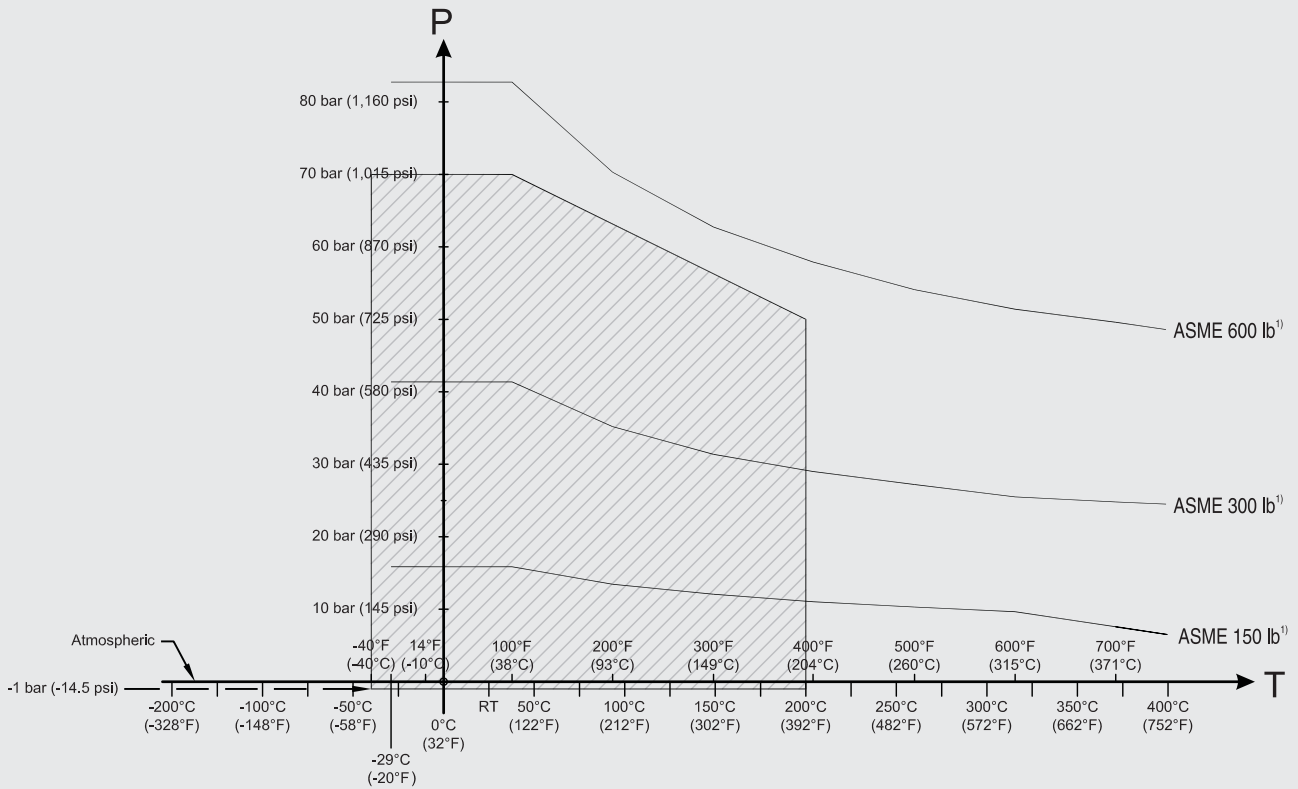
### Pressure/Temperature Curve LC500 Single Piece Flanged Rod Probes with PTFE facing EN Flanged Process Connections (7ML5517)

P = Permitted Operating Pressures

T = Permitted Operating Temperature

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

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



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

P = Permitted Operating Pressures  
T = Permitted Operating Temperature

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

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

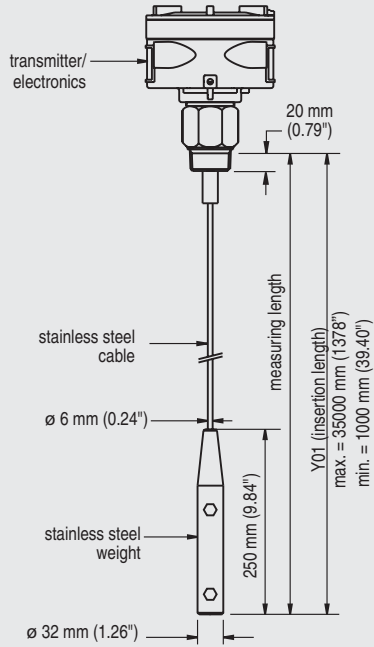
# Level instruments

## Continuous level measurement - Capacitance transmitters

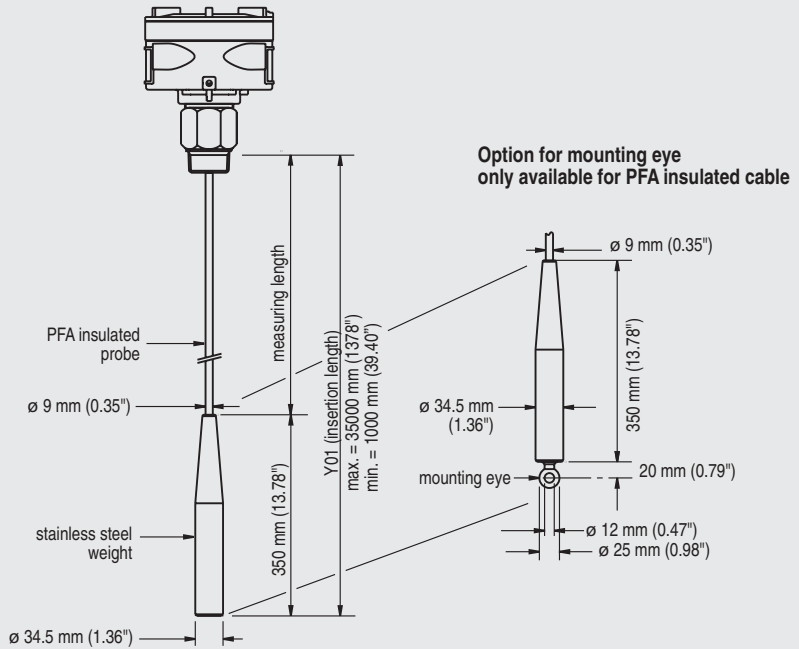
### SITRANS LC500

#### Dimensional drawings

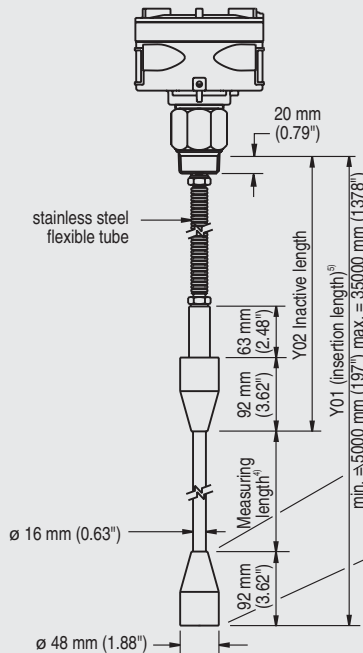
Cable version (non-insulated)<sup>1)</sup>  
Threaded (7ML5513)



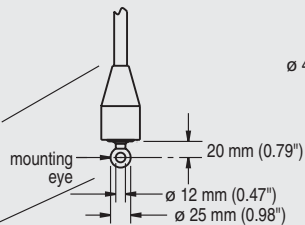
Cable version (insulated)<sup>2)</sup>  
Threaded (7ML5513)



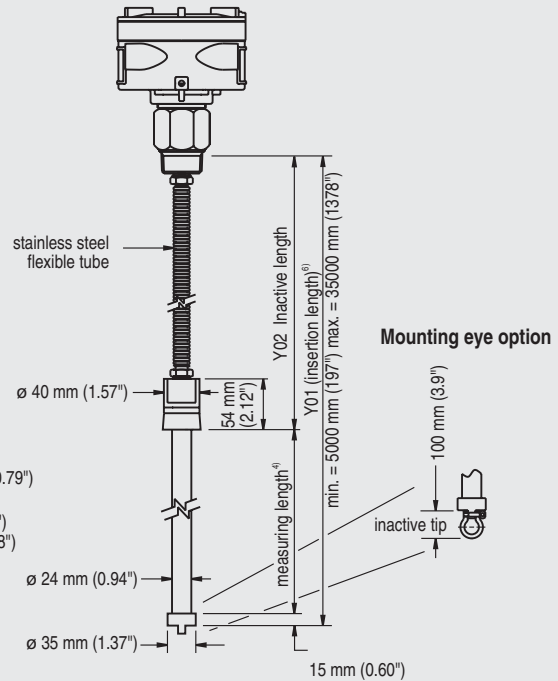
Extended cable version with rod sensor<sup>3)</sup>  
Threaded (7ML5523)



Mounting eye option



Extended cable version with rod sensor<sup>3)</sup>  
Threaded (7ML5523)



Mounting eye option

#### Notes:

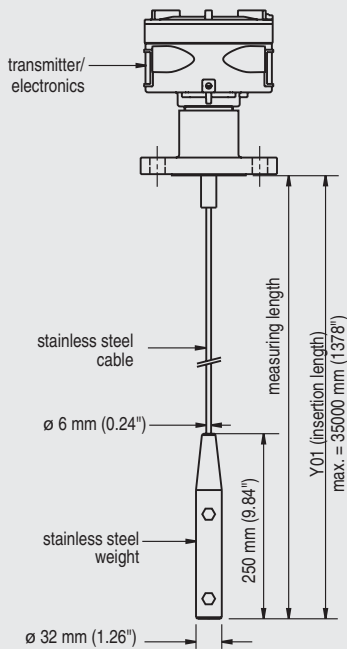
- 1) Applicable for non-conductive media only. Cable can be shortened on site. Weight is included in measuring length.
- 2) Applicable for both liquids and solids. Cable cannot be shortened. Weight is **not** part of measuring length.
- 3) For Y02 lengths greater than 5000 mm (197"), cable is inactive 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")

# Level instruments

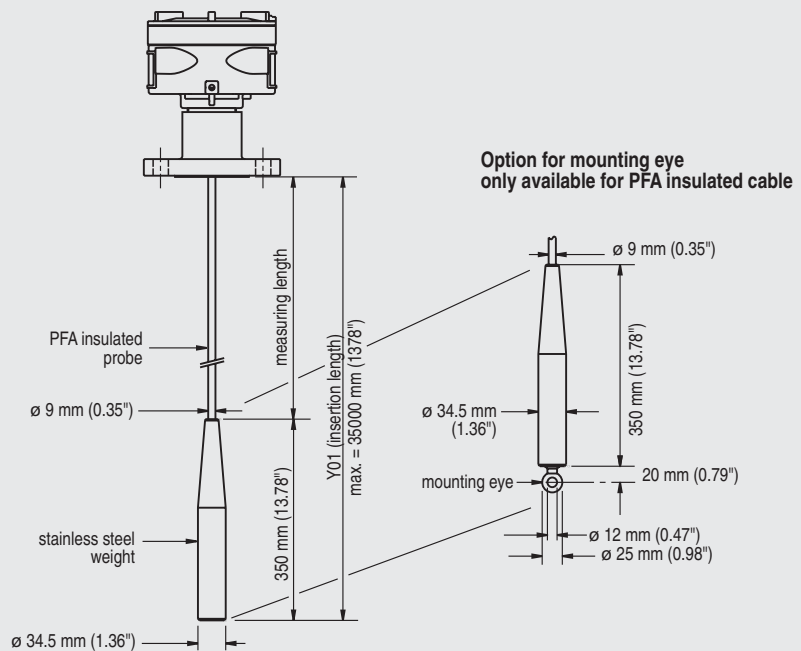
## Continuous level measurement - Capacitance transmitters

SITRANS LC500

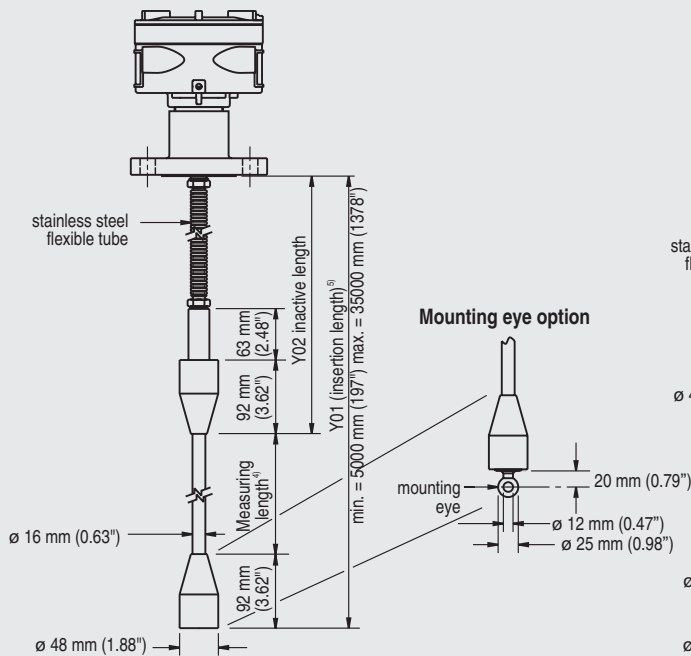
Cable version (non-insulated)<sup>1)</sup>  
Welded flange (7ML5513)



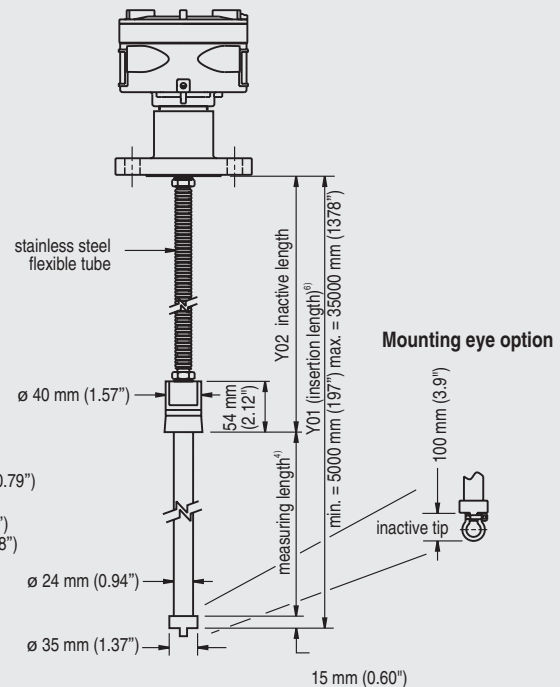
Cable version (insulated)<sup>2)</sup>  
Welded flange (7ML5513)



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



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



### Notes:

- 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 dimensions - Cable Versions

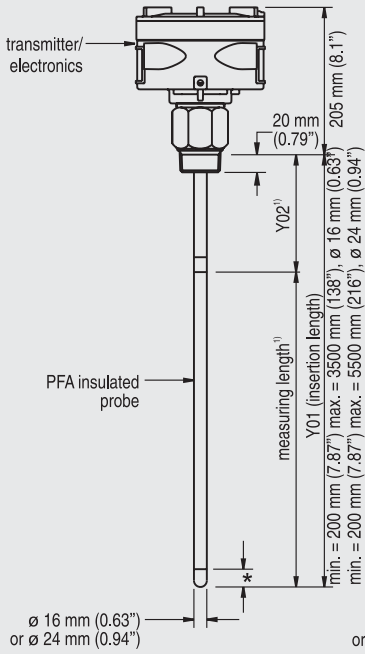
# Level instruments

## Continuous level measurement - Capacitance transmitters

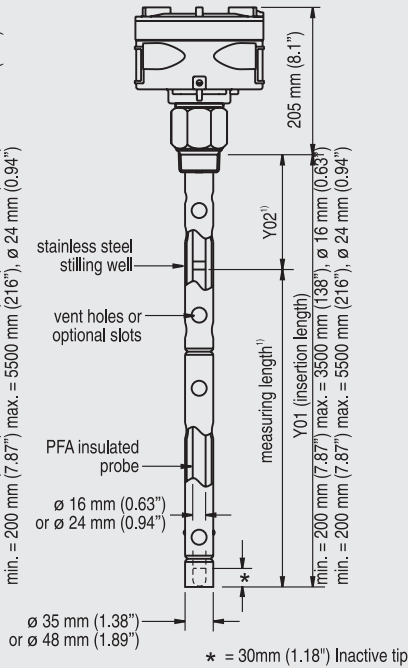
### SITRANS LC500

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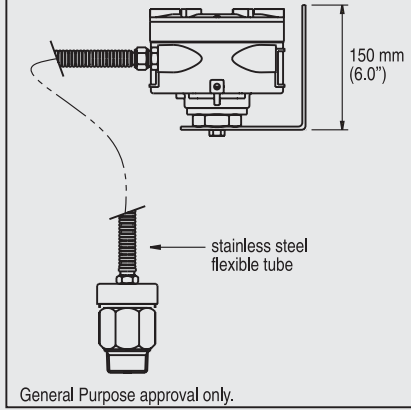
**Rod version  
Threaded (7ML5515)**



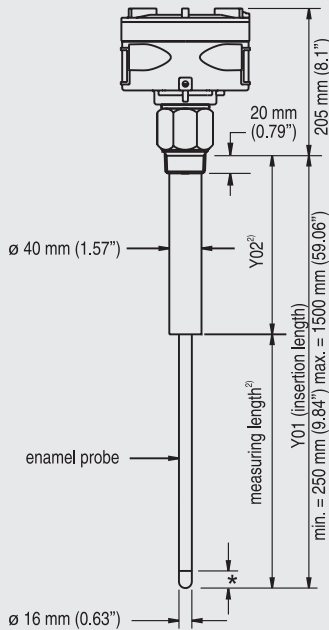
**Rod version with stilling well  
Threaded (7ML5515)**



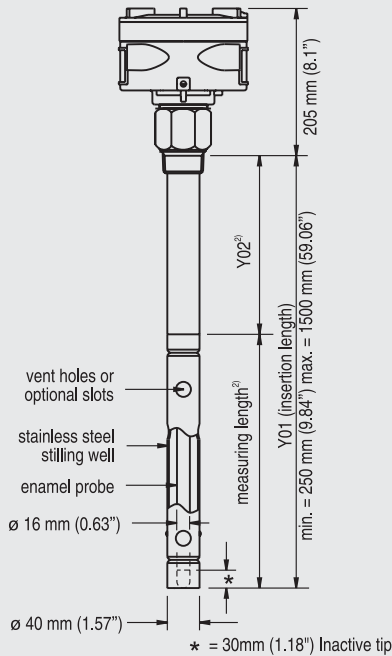
**Remote electronics with mounting  
bracket option  
Threaded (7ML5515)**



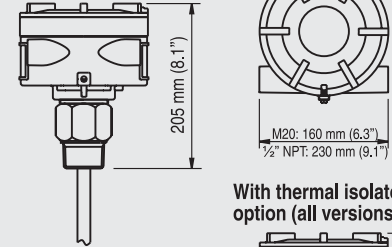
**Enamel rod version  
Threaded (7ML5515)**



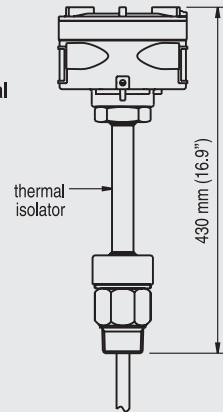
**Enamel rod version with stilling well  
Threaded (7ML5515)**



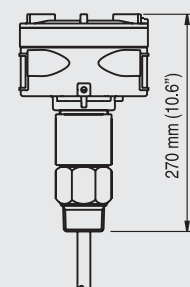
**Standard configuration  
(all versions)**



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



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

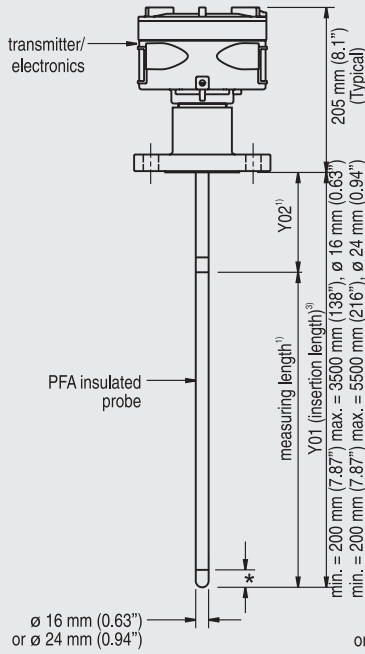


**Notes:**

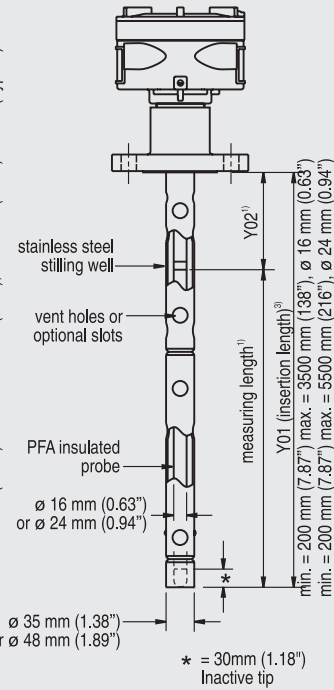
- 1) Minimum Y02 (active shield length) = 50 mm (1.96"), minimum measuring length = 200 mm (7.87")
- 2) Minimum Y02 (active shield length) = 100 mm (3.94"), minimum measuring length = 250 mm (9.84")

SITRANS LC500 dimensions - Rod Versions

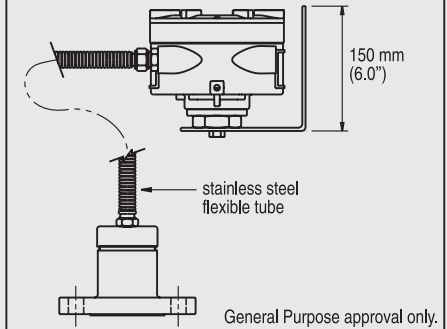
**Rod version**  
Welded flange (7ML5515)  
Single Piece Flange (7ML5517)



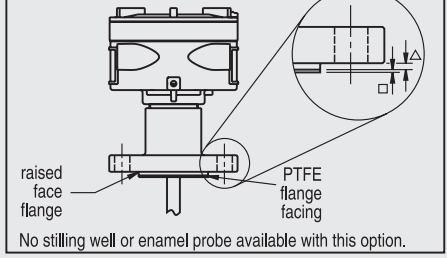
**Rod version with stilling well**  
Welded flange (7ML5515)  
Single Piece Flange (7ML5517)



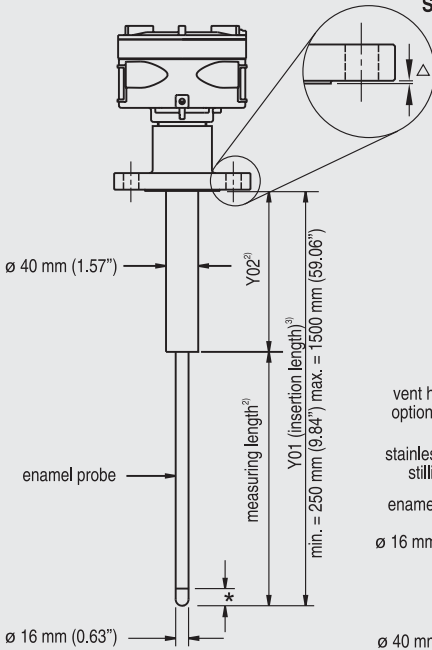
**Remote electronics with mounting bracket option**  
Welded flange (7ML5515)  
Single piece flange (7ML5517)



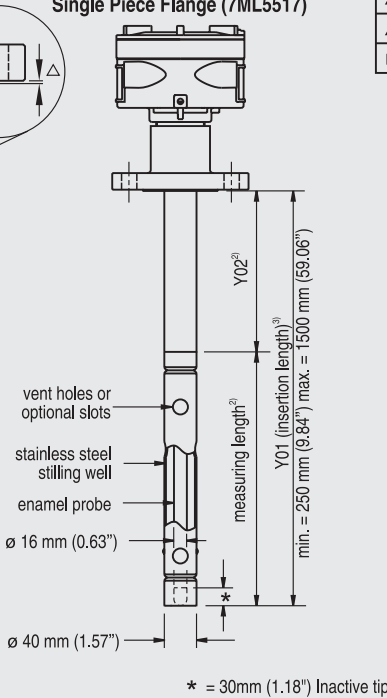
**PTFE flange facing option**  
Single piece flange only (7ML5517)



**Enamel rod version**  
Welded flange (7ML5515)  
Single Piece Flange (7ML5517)

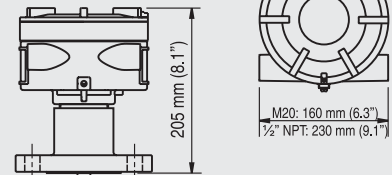


**Enamel rod version with stilling well**  
Welded flange (7ML5515)  
Single Piece Flange (7ML5517)

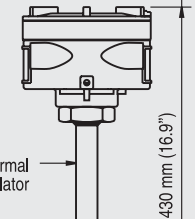


Flange Facing (raised face)	
Flange Class	Facing thickness
△ ASME 150/300	2 mm (0.08")
△ ASME 600/900	7 mm (0.28")
△ PN16/25/40/63	2 mm (0.08")
□ PTFE facing (additional)	2 mm (0.08")

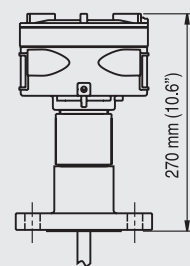
**Standard configuration (all versions)**



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



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



**Notes:**

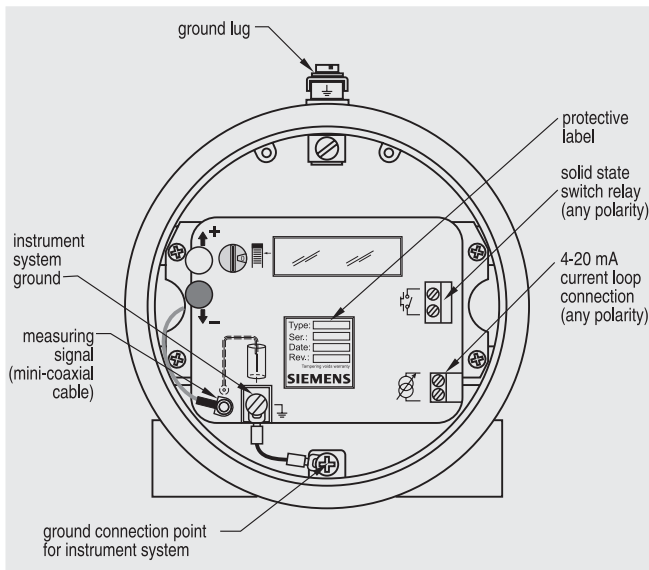
- 1) Minimum Y02 (active shield length) = 50 mm (1.96"), minimum measuring length = 200 mm (7.87")
- 2) Minimum Y02 (active shield length) = 100 mm (3.94"), minimum measuring length = 250 mm (9.84")
- 3) Insertion length does not include any raised face/gasket face dimension (see Flange Facing table above).

# Level instruments

## Continuous level measurement - Capacitance transmitters

### SITRANS LC500

#### Schematics



SITRANS LC500 connections

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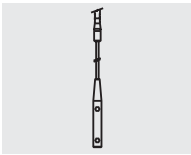
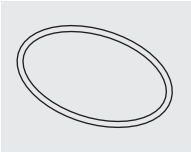





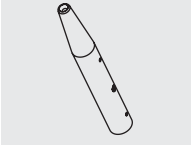
# Level instruments

## Continuous level measurement - Capacitance transmitters

### SITRANS LC300 and LC500 Specials

#### Selection and ordering Data

*LC300 and LC500 Specials. See note 1.*

	Order No.		Order No.
<b>LC300 Cable Extensions, 316L stainless steel</b>		<b>LC500 Gasket (IP65), Silicone</b>	
Kit, Stainless steel cable extension, 1 m, adjustable by customer	<b>A5E01163688</b>	Spare gasket, LC500 enclosure version, IP65 C)	<b>A5E01163728</b>
Kit, Stainless steel cable extension, 3 m, adjustable by customer	<b>A5E01163689</b>	<b>LC500 Blind Lid</b>	
Kit, Stainless steel cable extension, 5 m, adjustable by customer	<b>A5E01163690</b>	Spare LC500 aluminum blind lid	<b>A5E01163729</b>
Kit, Stainless steel cable extension, 10 m, adjustable by customer	<b>A5E01163691</b>	<b>LC500 Mounting Eye</b>	
Kit, Stainless steel cable extension, 15 m, adjustable by customer	<b>A5E01163693</b>	Spare mounting eye (PFA cable version only)	<b>A5E01163717</b>
Kit, Stainless steel cable extension, 20 m, adjustable by customer	<b>A5E01163695</b>	<b>LC500 Mounting Bracket</b>	
<b>LC300 Cable Extensions, 316 stainless steel with PFA coating</b>		Spare mounting bracket	<b>A5E01163730</b>
Kit, PFA cable extension, 1 m	<b>A5E01163709</b>	<b>LC500 Sanitary Versions</b>	<b>See note 2.</b>
Kit, PFA cable extension, 3 m	<b>A5E01163710</b>	Note 1: Special flange sizes and facings are available. Please contact <a href="mailto:nacc.smpi@siemens.com">nacc.smpi@siemens.com</a> for part number and pricing. Submit Application Questionnaire found on page 5/8.	
Kit, PFA cable extension, 5 m	<b>A5E01163711</b>	Note 2: Please contact <a href="mailto:nacc.smpi@siemens.com">nacc.smpi@siemens.com</a> for part number and pricing. Submit Application Questionnaire found on page 5/8.	
Kit, PFA cable extension, 10 m	<b>A5E01163712</b>	Please contact <a href="mailto:nacc.smpi@siemens.com">nacc.smpi@siemens.com</a> for special requests.	
Kit, PFA cable extension, 15 m	<b>A5E01163713</b>	C) Subject to export regulations AL: N, ECCN: EAR99	
Kit, PFA cable extension, 20 m	<b>A5E01163714</b>		
<b>LC300 Mounting Eye</b>			
Spare mounting eye (LC300 PFA versions only)	<b>A5E01163717</b>		
<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>		