

**Overview**

Pointek CLS500 is an inverse frequency shift capacitance level and material detection switch ideal for detecting interfaces, solids, liquids, toxic, and aggressive chemicals in critical conditions of high temperature and pressure. CLS500 also has the ability to tune out buildup on the probe.

**Benefits**

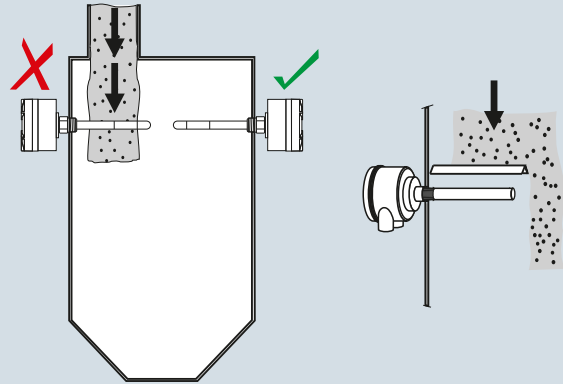
- Active-Shield technology so measurement is unaffected by material buildup in active shield section
- 2-wire loop powered with solid-state switch or 4 to 20/20 to 4 mA output
- Simple push-button calibration and integrated local display
- Full function diagnostics
- HART communications for remote commissioning and inspection

**Application**

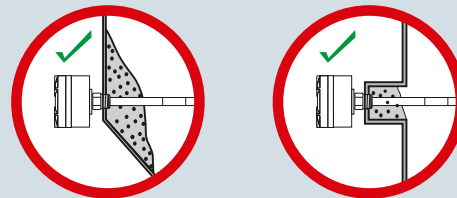
Active-Shield technology ensures that measurement is unaffected by vapors, product deposits, dust, and condensation. The unique mechanical probe design coupled with a high performance transmitter gives superior performance in a wide range of level detection applications.

Pointek CLS500's microprocessor-based electronics provide one-point calibration, making setup possible without shutting down your production process.

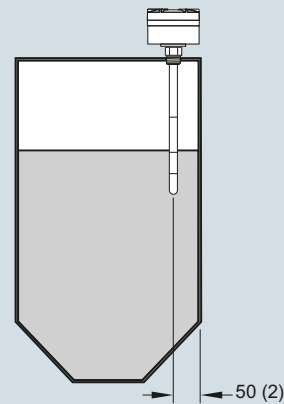
- Key Applications: foam or liquid/foam level, glycol regenerators, high-pressure coalescers, LNG applications

**Configuration****Installation**

Keep unit out of path of falling material, or protect probe from falling material.



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



Install probe at least 50 (2) from tank wall.

Pointek CLS500 installation, dimensions in mm (inch)

## Level Measurement

### Point level measurement - RF Capacitance switches

#### Pointek CLS500

#### Technical specifications

Input	Output	Design
Measuring range	0 ... 330 pF	Material
Span	Min. 1 pF	<ul style="list-style-type: none"> <li>Wetted parts material</li> <li>- Standard rod</li> <li>Probe isolation (rod)</li> </ul>
<b>Output</b>		316L stainless steel PFA
Solid-state switch		Probe diameter
<ul style="list-style-type: none"> <li>Output</li> <li>Protection</li> <li>Max. switching voltage</li> </ul>	Galvanically isolated Against reversed polarity (bipolar)	<ul style="list-style-type: none"> <li>Standard rod version (PFA)</li> <li>High temperature rod version (Stainless steel)</li> </ul>
<ul style="list-style-type: none"> <li>Max. load current</li> <li>Voltage drop</li> <li>Time delay (pre or post switching)</li> </ul>	82 mA < 1 V, typical at 50 mA 1 ... 60 s	Probe length
Current loop	4 ... 20 mA/20 ... 4 mA	<ul style="list-style-type: none"> <li>Standard rod version (PFA)</li> <li>High temperature rod version (Stainless steel)</li> </ul>
<b>Accuracy (transmitter)</b>		Process connection of probe
Temperature stability	0.15 pF (0 pF) or < 0.25 % (typical < 0.1 %) of actual measurement value, whichever is greater over the full temperature range	<ul style="list-style-type: none"> <li>Threaded mounting</li> </ul>
Non-linearity and repeatability	0.1 % of full scale and actual measurement respectively	<ul style="list-style-type: none"> <li>Flange mounting</li> </ul>
Accuracy	Deviation < 0.1 % of measured value	Enclosure
<b>Rated operating conditions<sup>1)</sup></b>		<ul style="list-style-type: none"> <li>Material</li> </ul>
Installation conditions		<ul style="list-style-type: none"> <li>Cable inlet</li> <li>Degree of protection</li> </ul>
<ul style="list-style-type: none"> <li>Location</li> </ul>	Indoor/outdoor	Type 4X/NEMA4X/IP65, IP68
Ambient conditions		<b>Power supply</b>
<ul style="list-style-type: none"> <li>Ambient temperature (transmitter)</li> <li>Installation category</li> <li>Pollution degree</li> </ul>	-40 ... +85 °C (-40 ... +185 °F) <sup>2)</sup> I 4	Max. 33 V DC
Medium conditions		<b>Features</b>
<ul style="list-style-type: none"> <li>Relative dielectric constant <math>\epsilon_r</math></li> <li>Process temperature</li> </ul>	Min. 1.5 Temperature ratings are pressure dependent. See Pressure/Temperature curves on page 4/71.	Measurement current signaling
<ul style="list-style-type: none"> <li>Standard (PFA)</li> <li>High temperature stainless steel version with thermal isolator</li> <li>Cryogenic version<sup>3)</sup></li> </ul>	-50 ... +200 °C (-58 ... +392 °F) -60 ... +400 °C (-76 ... +752 °F) -200 ... +200 °C (-328 ... +392 °F)	Safety
Process pressure	Pressure rating of process seal is temperature dependent. See Pressure/Temperature curves on page 4/71.	<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>
<ul style="list-style-type: none"> <li>Standard (PFA)</li> <li>High temperature version (Stainless steel)</li> </ul>	-1 ... +150 bar g (-14.6 ... +2 175 psi g) -1 ... +35 bar g (-14.6 ... +507.6 psi g)	<ul style="list-style-type: none"> <li>Diagnostics with fault alarm when:</li> </ul>
		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
		Positions 0 ... 9, A ... F
		Conforming to HART Communication Foundation (HCF)
		<b>Certificates and approvals</b>
		General Purpose
		CE, CSA/FM, RCM
		Non incandive/Non sparking
		CSA/FM Class I, Div. 2, Groups A, B, C, D T4 ATEX II 3G 2D EEx n A [ib] IIC T6 ... T4 T100 °C
		Dust Ignition Proof
		CSA/FM Class II and III, Div. 1, Groups E, F, G T4 ATEX II 1/2 GD EEx d [ia] T6 ... T1 T100 °C
		Explosion Proof
		FM Class I, Div. 1, Groups A, B, C, D T4 ATEX II 1/2 GD EEx d [ia] IIC T6 ... T1 T100 °C
		Marine
		Lloyds Register of Shipping, Categories ENV1, ENV2, ENV3, ENV5, Bureau Veritas

- When operation is in areas classified as hazardous, observe restrictions according to relevant certificate. See also Pressure/Temperature curves on page 4/71.
- Thermal isolator is used if process connection temperature exceeds 85 °C (185 °F)
- Customers interested in a custom designed device should consult a local sales person. For more information, please visit [http://www.automation.siemens.com/aspa\\_app](http://www.automation.siemens.com/aspa_app).

## Level Measurement

### Point level measurement - RF Capacitance switches

Pointek CLS500

Pointek CLS500 probe version	Standard	HT Series
Process connection types	Standard (PFA) (7ML5601, 7ML5602, 7ML5603)	High Temperature (Stainless steel) (7ML5604)
Threaded	Available as standard	–
Flange	Available as standard	Available as standard
<b>Process connection materials</b>		
316L stainless steel	Available as standard	Available as standard
<b>Probe insulation</b>		
None	–	HT Stainless: available as standard
PFA	Available as standard	–
<b>Length parameters</b>		
Max. rod length	1 000 mm (40 inch)	1 000 mm (40 inch)
<b>Process conditions<sup>1)</sup></b>		
Max. process pressure	150 bar g (2 175 psi g)	Stainless steel <sup>2)</sup> : 35 bar g (507 psi g)
Max. process temperature	200 °C (392 °F)	400 °C (752 °F)

<sup>1)</sup> When operation is in areas classified as hazardous, observe restrictions according to relevant certificate. See also Pressure/Temperature curves on page 4/71. Pressure rating of process seal is temperature dependent. See Pressure/Temperature curves on page 4/71.

<sup>2)</sup> Pressure rating of process seal is temperature dependent. See Pressure/Temperature curves on page 4/71.

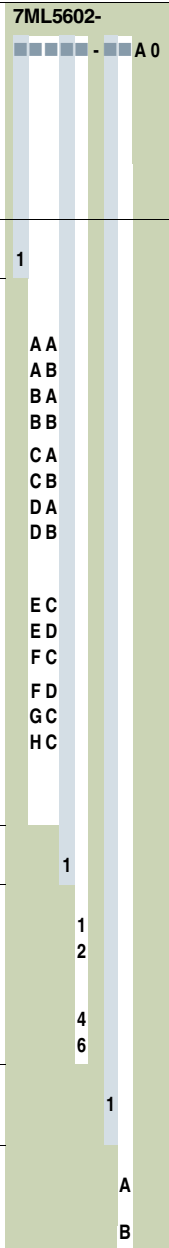
– Not available as standard

## Level Measurement

### Point level measurement - RF Capacitance switches

#### Pointek CLS500

Selection and Ordering data	Article No.	Selection and Ordering data	Order code	
<b>Pointek CLS500, threaded</b> Inverse frequency shift capacitance level and material detection switch for detecting interfaces, solids, liquids, toxic and aggressive chemicals in critical conditions of extreme temperature and pressure. CLS500 also has the ability to tune out buildup on the probe. ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.	<b>7ML5601-</b> 	<b>Further designs</b> Please add "-Z" to Article No. and specify Order code(s).		
<b>Electronic transmitter</b> No transmitter supplied MSP 2002-1 (330 pF)			Total insertion length: enter the total insertion length in plain text description	<b>Y01</b>
<b>Process connection</b> 3/4" 1" 1 1/4" 1 1/2" 2"			Note: The difference between Y01 and Y02 must be a minimum of 150 mm	
<b>Threaded connection and rating</b> 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]			Active Shield length - minimum length is 50 mm Y02: to mm <sup>1)</sup>	<b>Y02</b>
<b>Probe insulation/material of process connection</b> PFA insulation/316L stainless steel			Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text	<b>Y15</b>
<b>Approvals</b> General Purpose: CE, CSA/FM, RCM CSA/FM Class I, Div. 2, Groups A, B, C, D T4; ATEX II 3GD 2D EEx nA [ib] IIC T6 ... T4 T100 °C; CSA/FM Class II and III Div. 1, Groups E, F, G T4 ATEX II 1/2 GD EEx d [ia] IIC T6 ... T1 T100 °C FM Class I, Div. 1, Groups A, B, C, D T4			Manufacturer's test certificate: M to DIN 55350, Part 18 and to ISO 9000	<b>C11</b>
<b>Probe/electrode diameter</b> 16 mm (0.63 inch) rigid rod, minimum insertion length 200 mm (7.9 inch), maximum insertion length 1 000 mm (39.4 inch) <sup>1)</sup>		Inspection Certificate Type 3.1 per EN 10204	<b>C12</b>	
<b>Thermal isolator/remote version</b> Rigid thermal isolator [for process connection temperature over 85 °C (185 °F)] No thermal isolator		<b>Operating Instructions</b> All literature is available to download for free, in a range of languages, at <a href="http://www.siemens.com/processinstrumentation/documentation">http://www.siemens.com/processinstrumentation/documentation</a>		
<sup>1)</sup> Add Order code Y01 and Y02 in plain text: "Insertion/active shield length to mm"		This device is shipped with the Siemens Level and Weighing manual DVD containing the ATEX Quick Start and manual library.		
		<b>Pointek Specials</b>	<b>See page 4/79</b>	
		<sup>1)</sup> See dimension drawings on page 4/76 for further explanation of Y02		

Selection and Ordering data	Article No.	Selection and Ordering data	Order code
<b>Pointek CLS500, welded flange</b> Inverse frequency shift capacitance level and material detection switch for detecting interfaces, solids, liquids, toxic and aggressive chemicals in critical conditions of extreme temperature and pressure. CLS500 also has the ability to tune out buildup on the probe.  ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.	<b>7ML5602-</b> 	<b>Further designs</b> Please add "-Z" to Article No. and specify Order code(s).  Total insertion length: enter the total insertion length in plain text description  Active Shield length - minimum length is 50 mm. Y02: to mm <sup>1)</sup>  Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text  Manufacturer's test certificate: M to DIN 55350, Part 18 and to ISO 9000  Inspection Certificate Type 3.1 per EN 10204	    <b>Y01</b>  <b>Y02</b>  <b>Y15</b>  <b>C11</b>  <b>C12</b>
<b>Electronic transmitter</b> MSP 2002-1 (330 pF)	1		
<b>Process connection and pressure rating</b> Welded flange, 316L stainless steel, raised face 2" ASME, 150 lb 2" ASME, 300 lb 3" ASME, 150 lb 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> Welded flange, 316L stainless steel, Type A flat faced DN 50 PN 16 DN 50 PN 40 DN 80 PN 16 DN 80 PN 40 DN 100 PN 16 <sup>1)</sup> DN 125 PN 16 <sup>1)</sup> (Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5 or EN 1092-1 standard.)	AA AB BA BB CA CB DA DB  EC ED FC  FD GC HC		
<b>Probe insulation/material of process connection</b> PFA insulation/316L stainless steel	1		
<b>Approvals</b> General Purpose CSA/FM Class I, Div. 2, Groups A, B, C, D T4; ATEX II 3GD 2D EEx nA [ib] IIC T6 ... T4 T100 °C; CSA/FM Class II and III Div. 1, Groups E, F, G T4 ATEX II 1/2 GD EEx d [ja] IIC T6 ... T1 T100 °C FM Class I, Div. 1, Groups A, B, C, D T4	1 2  4 6		
<b>Probe/electrode diameter</b> 16 mm (0.63 inch) rigid rod, min. length 200 mm (7.9 inch), max. length 1 000 mm (39.4 inch)	1		
<b>Thermal isolator</b> Rigid thermal isolator [for process temperature over 85 °C (185 °F)] No thermal isolator	A B		
		<b>Operating Instructions</b> All literature is available to download for free, in a range of languages, at <a href="http://www.siemens.com/processinstrumentation/documentation">http://www.siemens.com/processinstrumentation/documentation</a>  This device is shipped with the Siemens Level and Weighing manual DVD containing the ATEX Quick Start and manual library.	
		<b>Pointek Specials</b>	<b>See page 4/79</b>

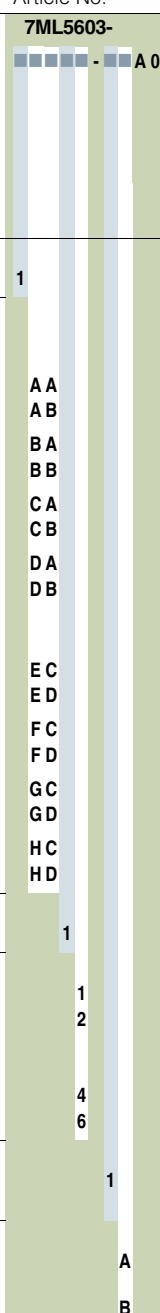
<sup>1)</sup> See dimensional drawings on page 4/77 for further explanation of Y02

<sup>1)</sup> Custom shipping methods required. Contact factory for more details.

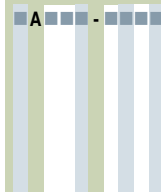
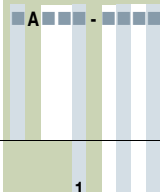
## Level Measurement

### Point level measurement - RF Capacitance switches

#### Pointek CLS500

Selection and Ordering data	Article No.	Selection and Ordering data	Order code
<b>Pointek CLS500, single piece flange</b> Inverse frequency shift capacitance level and material detection switch for detecting interfaces, solids, liquids, toxic and aggressive chemicals in critical conditions of extreme temperature and pressure. CLS500 also has the ability to tune out buildup on the probe. <a href="#">Click on the Article No. for the online configuration in the PIA Life Cycle Portal.</a>	<b>7ML5603-</b> 	<b>Further designs</b> Please add "-Z" to Article No. and specify Order code(s).  Total insertion length: enter the total insertion length in plain text description  Active Shield length - minimum length is 50 mm. Y02: to mm <sup>1)</sup>  Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text  Manufacturer's test certificate: M to DIN 55350, Part 18 and to ISO 9000  Inspection Certificate Type 3.1 per EN 10204  <b>Operating Instructions</b> All literature is available to download for free, in a range of languages, at <a href="http://www.siemens.com/processinstrumentation/documentation">http://www.siemens.com/processinstrumentation/documentation</a>  This device is shipped with the Siemens Level and Weighing manual DVD containing the ATEX Quick Start and manual library.	
<b>Electronic transmitter</b> MSP 2002-1 (330 pF)	1		
<b>Process connection and pressure rating</b> <u>Single piece flange, 316L stainless steel, raised face</u> 2" ASME, 150 lb 2" ASME, 300 lb 3" ASME, 150 lb 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>Single piece flange, 316L stainless steel, Type B1 raised faced</u> DN 50 PN 16 DN 50 PN 25 DN 80 PN 16 DN 80 PN 25 DN 100 PN 16 <sup>1)</sup> DN 100 PN 25 <sup>1)</sup> DN 125 PN 16 <sup>1)</sup> DN 125 PN 25 <sup>1)</sup>	AA AB BA BB CA CB DA DB  EC ED FC FD GC GD HC HD		Y01 Y02 Y15 C11 C12
<b>Probe insulation/material of process connection</b> PFA insulation/316L stainless steel	1		
<b>Approvals</b> General Purpose: CE, CSA/FM, RCM CSA/FM Class I, Div. 2, Groups A, B, C, D T4; ATEX II 3GD 2D EEx nA [ib] IIC T6 ... T4 T100 °C; CSA/FM Class II and III Div. 1, Groups E, F, G T4 ATEX II 1/2 GD EEx d [ia] IIC T6 ... T1 T100 °C FM Class I, Div. 1, Groups A, B, C, D T4	1 2 4 6		
<b>Probe/electrode diameter</b> 16 mm (0.63 inch) rigid rod, maximum length 1 000 mm (39.4 inch) (Y01)	1		
<b>Thermal isolator</b> Rigid thermal isolator [for process connection temperature over 85 °C (185 °F)] No thermal isolator	A B		

<sup>1)</sup> Custom shipping methods required. Contact factory for more details

Selection and Ordering data	Article No.	Selection and Ordering data	Article No.
<b>Pointek CLS500 High temperature</b> Inverse frequency shift capacitance level and material detection switch for detecting interfaces, solids, liquids, toxic and aggressive chemicals in critical conditions of extreme temperature and pressure. CLS500 also has the ability to tune out buildup on the probe. <a href="#">Click on the Article No. for the online configuration in the PIA Life Cycle Portal.</a>	<b>7ML5604-</b> 	<b>Pointek CLS500 High temperature</b> Inverse frequency shift capacitance level and material detection switch for detecting interfaces, solids, liquids, toxic and aggressive chemicals in critical conditions of extreme temperature and pressure. CLS500 also has the ability to tune out buildup on the probe.	<b>7ML5604-</b> 
<b>Electronic transmitter</b> None <sup>5)</sup> MSP 2002-1 (330 pF)	0 1	<b>Probe material of process connection</b> No insulation/316L stainless steel <sup>3)4)</sup>	1
<b>Process connection and pressure rating</b> 316L stainless steel, raised face <sup>1)</sup> 2" ASME, 150 lb 2" ASME, 300 lb 2" ASME, 600 lb 2" ASME, 900 lb 3" ASME, 150 lb 3" ASME, 300 lb <sup>2)</sup> 3" ASME, 600 lb <sup>2)</sup> 3" ASME, 900 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> 4" ASME, 900 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> 6" ASME, 900 lb <sup>2)</sup> 316L stainless steel, Type B1 flat faced DN 50 PN 16 DN 50 PN 25 DN 50 PN 40 DN 50 PN 63 DN 80 PN 16 DN 80 PN 25 DN 80 PN 40 <sup>2)</sup> DN 80 PN 63 <sup>2)</sup> DN 100 PN 16 <sup>2)</sup> DN 100 PN 25 <sup>2)</sup> DN 100 PN 40 <sup>2)</sup> DN 100 PN 64 <sup>2)</sup> DN 125 PN 16 <sup>2)</sup> DN 125 PN 25 <sup>2)</sup> DN 125 PN 40 <sup>2)</sup> DN 125 PN 64 <sup>2)</sup> (Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5 or EN 1092-1 standard.)	A 1 A 2 A 3 A 4 B 1 B 2 B 3 B 4 C 1 C 2 C 3 C 4 D 1 D 2 D 3 D 4 E 1 E 2 E 3 E 4 F 1 F 2 F 3 F 4 G 1 G 2 G 3 G 4 H 1 H 2 H 3 H 4	<b>Stilling well</b> No stilling well	0
		<b>Approvals</b> General Purpose CSA/FM Class I, Div. 2, Groups A, B, C, D T4; ATEX II 3GD 2D EEx nA [ib] IIC T6 ... T4 T100 °C; CSA/FM Class II and III Div. 1, Groups E, F, G T4 ATEX II 1/2 GD EEx d [ia] IIC T6 ... T1 T100 °C FM Class I, Div. 1, Groups A, B, C, D T4	A B D F
		<b>Probe/electrode diameter</b> Maximum length 1 000 mm (39.37 inch) <sup>4)</sup>	A
		<b>Thermal isolator</b> Rigid thermal isolator [for process connection temperature over 85 °C (185 °F)]	1
		<sup>1)</sup> Welded flange for no insulation option only <sup>2)</sup> Custom shipping methods required <sup>3)</sup> Non-conductive material only, stainless steel non-insulated probe diameter 19 mm (0.75 inch) <sup>4)</sup> Add Order code Y01 and Y02 in plain text: "Insertion/active shield length to mm" Minimum insertion length depends on probe version selected. See dimensional drawings on page 4/76 for more details <sup>5)</sup> Only available with Approvals option A	

## Level Measurement

### Point level measurement - RF Capacitance switches

#### Pointek CLS500

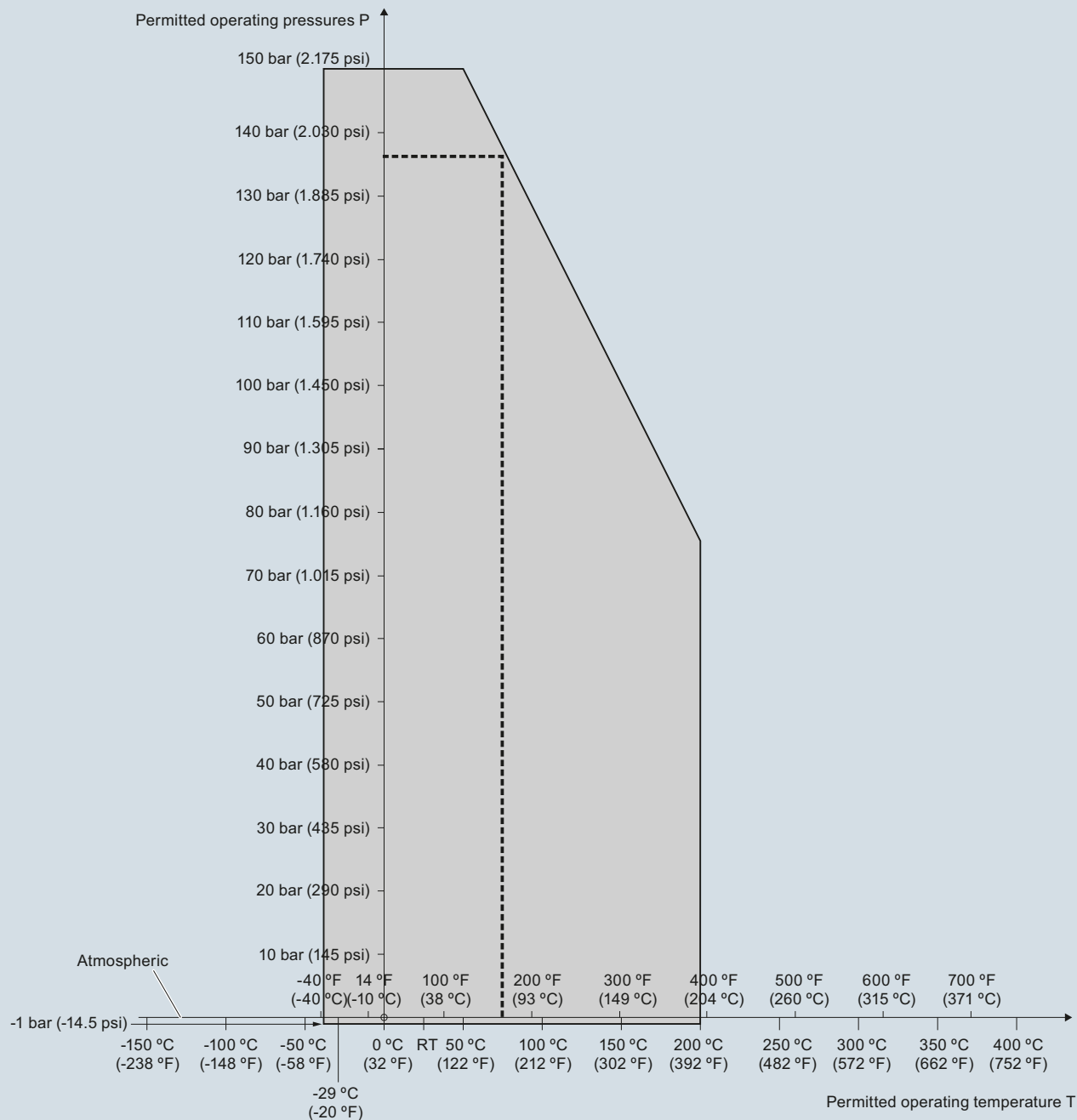
Selection and Ordering data	Order code
<b>Further designs</b>	
Please add <b>"-Z"</b> to Article No. and specify Order code(s).	
Total insertion length: enter the total insertion length in plain text description	<b>Y01</b>
Active Shield length - minimum length is 50 mm. Y02: to mm <sup>1)</sup>	<b>Y02</b>
Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text	<b>Y15</b>
Manufacturer's test certificate: M to DIN 55350, Part 18 and to ISO 9000	<b>C11</b>
Inspection Certificate Type 3.1 per EN 10204	<b>C12</b>
<b>Operating Instructions</b>	
All literature is available to download for free, in a range of languages, at <a href="http://www.siemens.com/processinstrumentation/documentation">http://www.siemens.com/processinstrumentation/documentation</a>	
This device is shipped with the Siemens Level and Weighing manual DVD containing the ATEX Quick Start and Operating Instructions library.	
<b>Accessories</b>	
<u>General Purpose</u>	
1/2" NPT General Purpose Cable Entry IP68/IP69K NEMA6, -40 ... +100 °C (-40 ... +212 °F), cable size 6 ... 12 mm (0.236 ... 0.472 inch)	<b>7ML1830-1JA</b>
M20 x 1.5 General Purpose Cable Entry IP68/IP69K NEMA6, -40 ... +100 °C (-40 ... +212 °F), cable size 7 ... 12 mm (0.275 ... 0.472 inch)	<b>7ML1830-1JC</b>
Transmitter, MSP 2002-1, 330 PF	<b>7ML1830-1JP</b>
<u>Hazardous Locations</u>	
1/2" NPT EMC rated Cable Gland: Dust Ignition Proof, Flameproof Exd, and Increased Safety ATEX II 2 GD ExtD A21 (Zone 1, Zone 2, Zone 21, Zone 22, and in Gas Groups IIA, IIB, and IIC) -60 ... +80 °C IP66, IP67, IP68, NEMA4X, cable sizes 5.5 ... 12 mm (0.216 ... 0.472 inch)	<b>7ML1830-1JB</b>
M20 EMC rated Cable Gland: Dust Ignition Proof, Flameproof Exd, and Increased Safety ATEX II 2 GD ExtD A21 (Zone 1, Zone 2, Zone 21, Zone 22, and in Gas Groups IIA, IIB and IIC) -60 ... +80 °C IP66, IP67, IP68, NEMA4X, cable sizes 5.5 ... 12 mm (0.216 ... 0.472 inch)	<b>7ML1830-1JD</b>
<b>Pointek Specials</b>	<b>See page 4/79</b>

<sup>1)</sup> See dimensional drawings on page 4/77 for further explanation of Y02



Characteristic curves

Pressure/temperature curve  
CLS500 rod probes  
Threaded process connections  
(7ML5601)



----- Example:  
Permitted operating pressure = 137 bar (1988 psi) at 75 °C

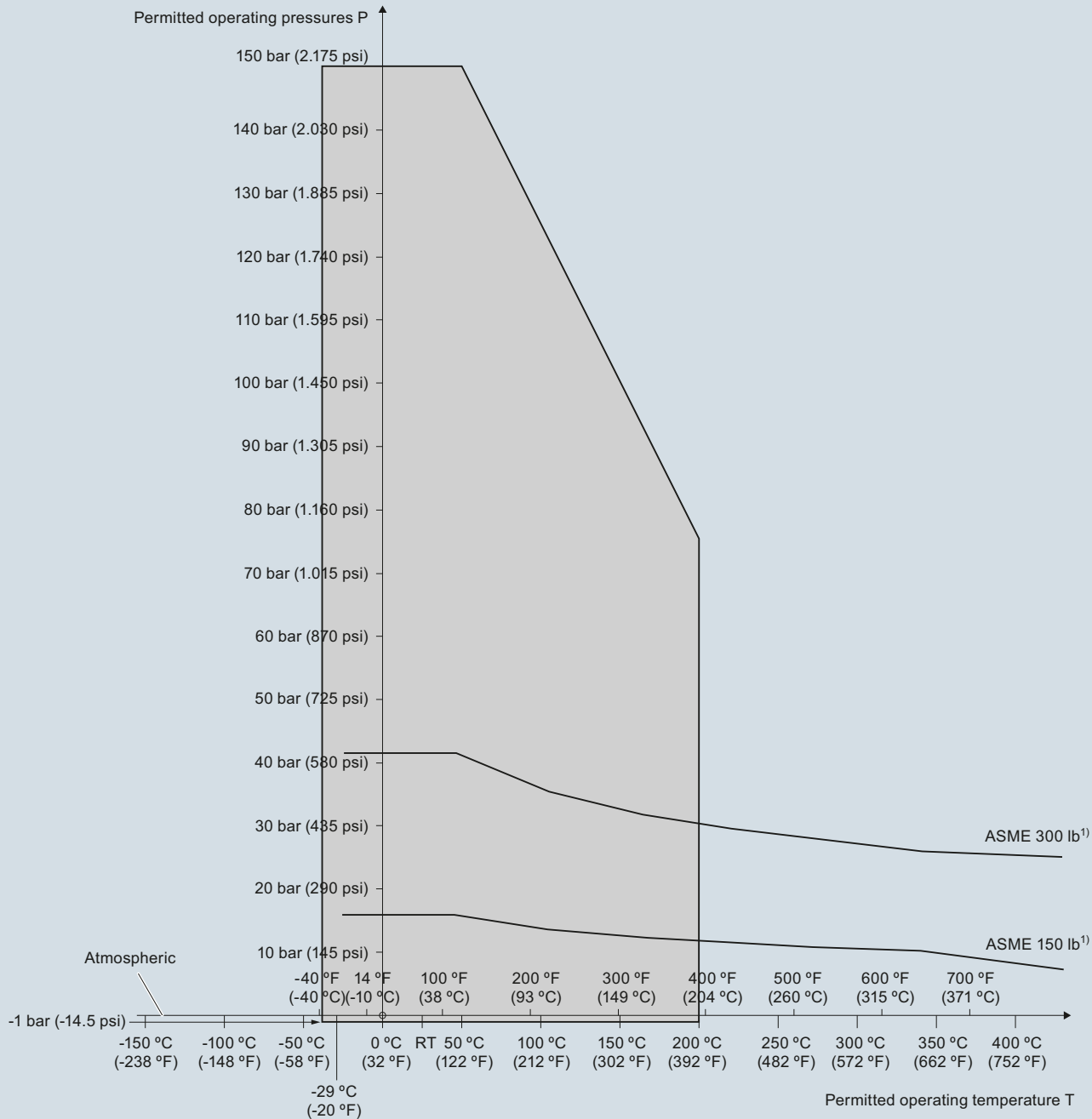
Pointek CLS500 process pressure/temperature derating curves (7ML5601)

# Level Measurement

## Point level measurement - RF Capacitance switches

### Pointek CLS500

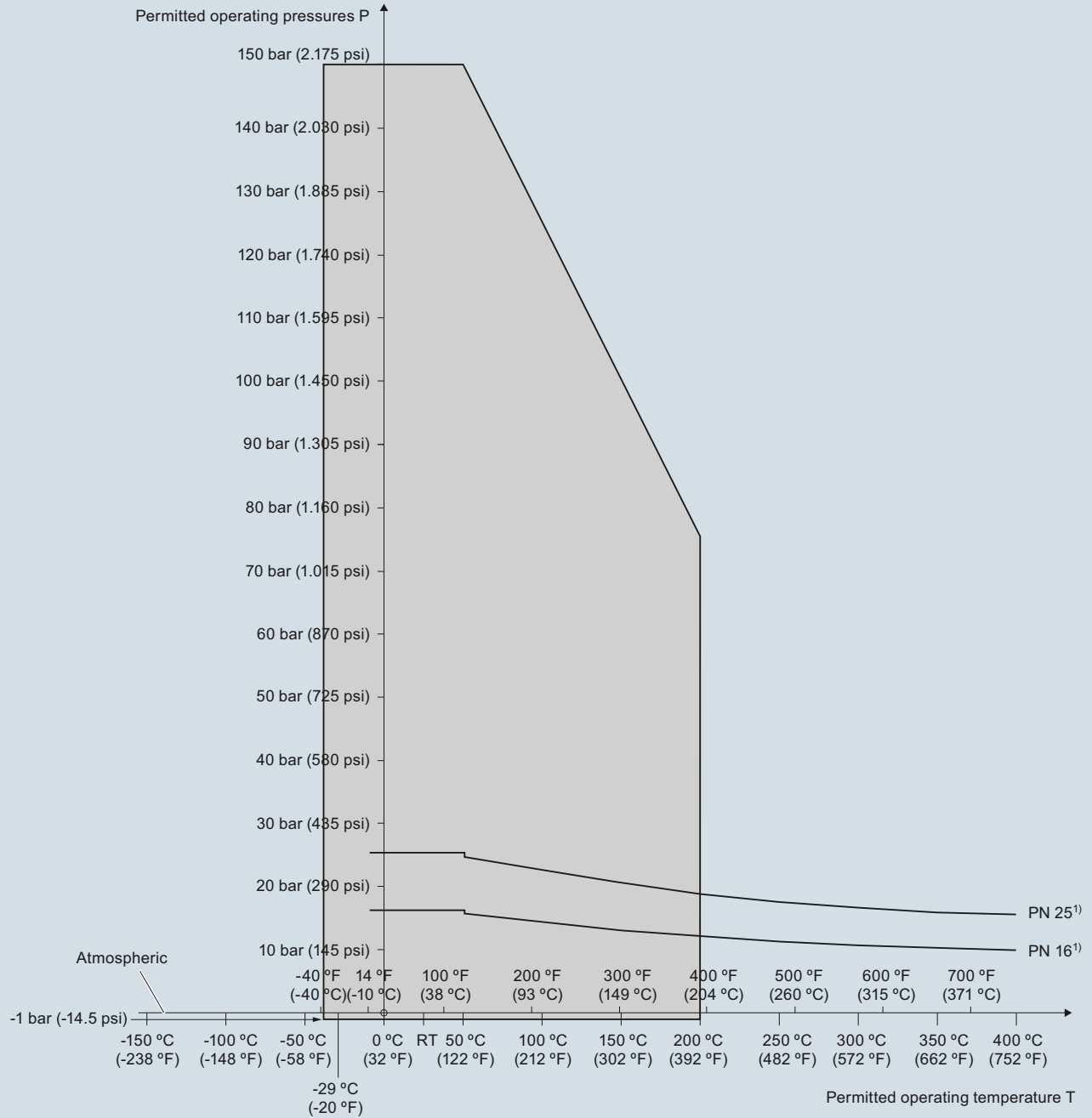
Pressure/temperature curve  
 CLS500 rod probes  
 ASME flanged process connections  
 (7ML5602 and 7ML5603)



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

Pointek CLS500 process pressure/temperature derating curves (7ML5602 and 7ML5603)

**Pressure/temperature curve**  
**CLS500 rod probes**  
**EN flanged process connections**  
**(7ML5602 and 7ML5603)**



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

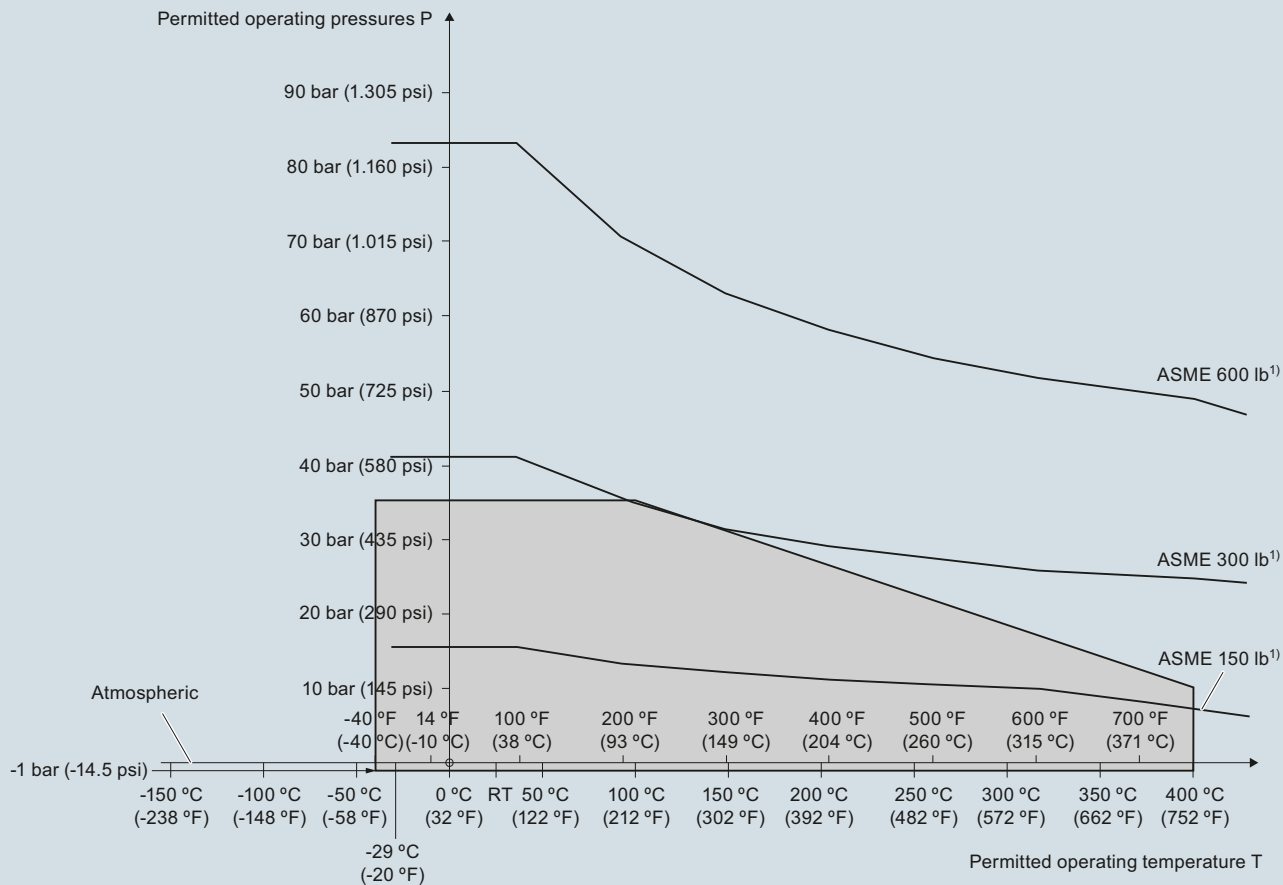
Pointek CLS500 process pressure/temperature derating curves (7ML5602 and 7ML5603)

# Level Measurement

## Point level measurement - RF Capacitance switches

### Pointek CLS500

**Pressure/temperature curve**  
**CLS500 high temperature (no insulation)**  
**ASME flanged process connections**  
**(7ML5604)**

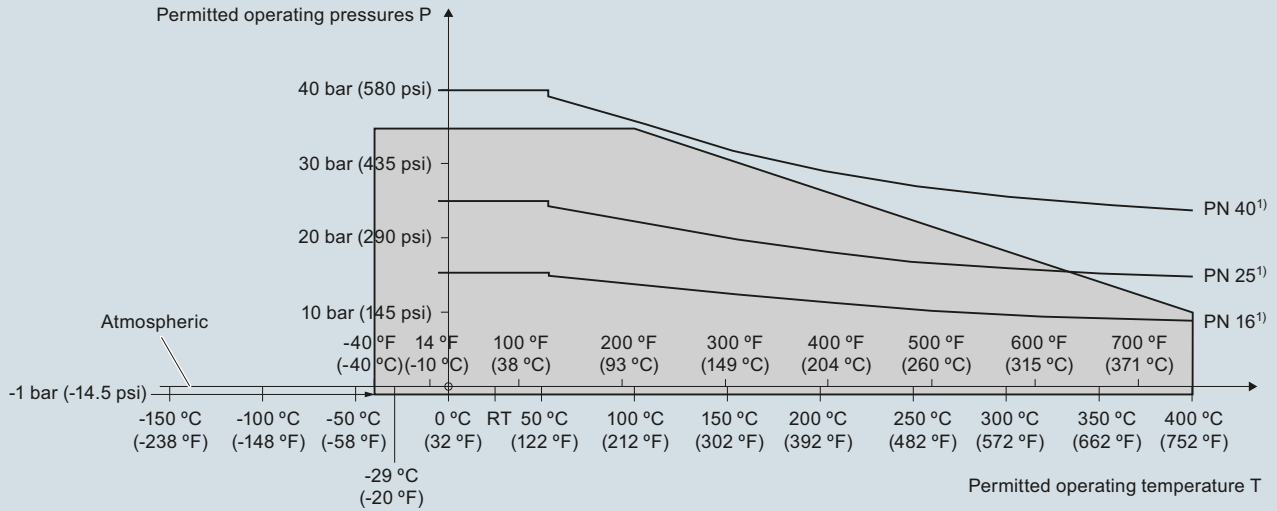


<sup>1)</sup> The curve denotes the minimum allowable flange class for the shaded area below.

Pointek CLS500 process pressure/temperature derating curves (7ML5604)

4

**Pressure/temperature curve**  
**CLS500 high temperature (no insulation)**  
**EN flanged process connections**  
**(7ML5604)**



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

Pointek CLS500 process pressure/temperature derating curves (7ML5604)

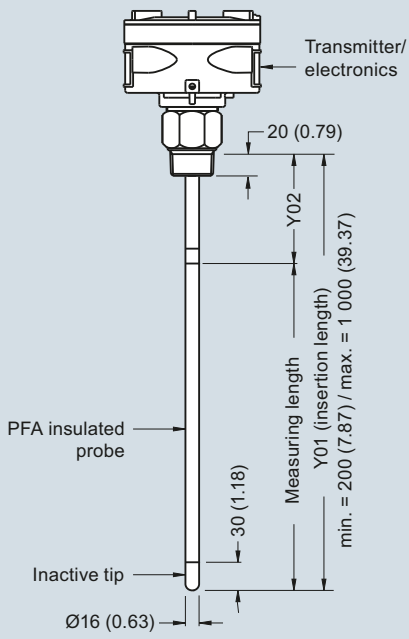
## Level Measurement

Point level measurement - RF Capacitance switches

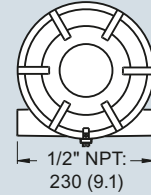
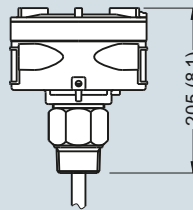
Pointek CLS500

### Dimensional drawings

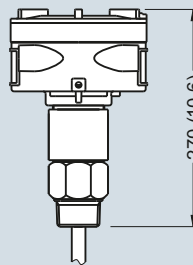
Standard rod version  
Threaded (7ML5601)



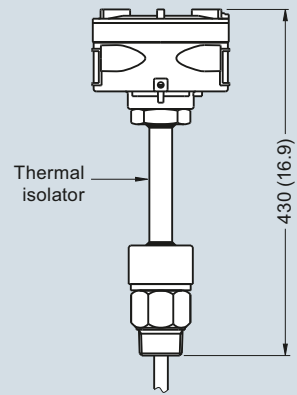
Standard configuration  
(7ML5601)



With explosion-proof seal option  
(all versions)

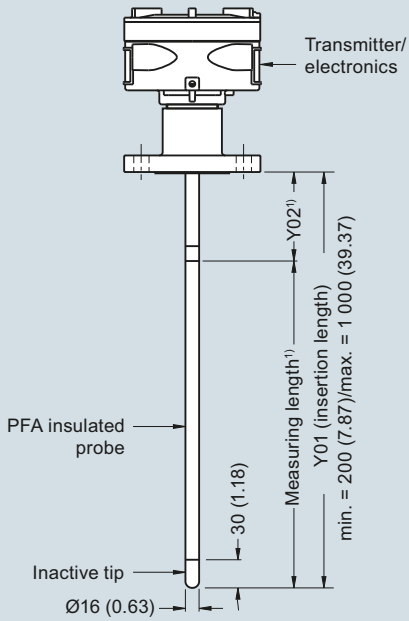


With thermal isolator option  
(all versions)

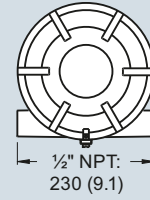
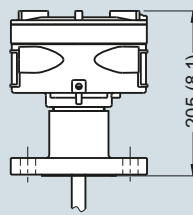


Pointek CLS500 threaded process connections, dimensions in mm (inch)

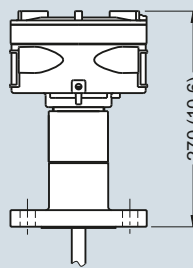
**Standard Rod version**  
**Welded Flange (7ML5602)**  
**Single Piece Flange (7ML5603)**



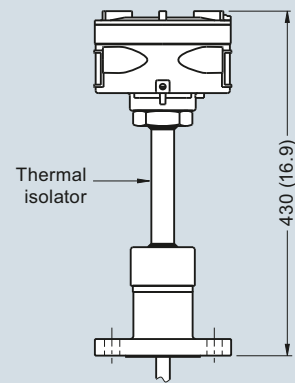
**Standard configuration**  
**(7ML5602, 7ML5603)**



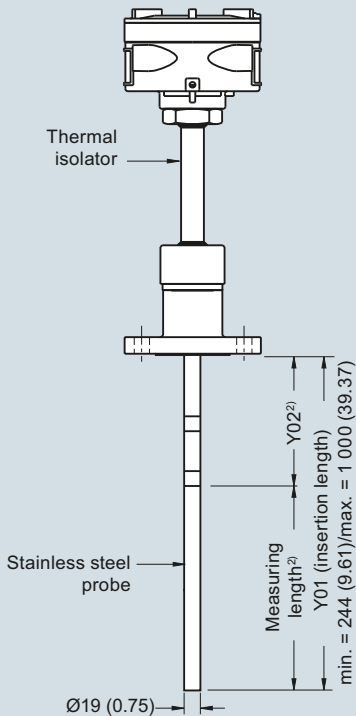
**With explosion-proof seal option**  
**(all versions)**



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



**High temperature rod version**  
**Welded Flange (7ML5604), Stainless steel rod<sup>4)</sup>**



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)

**Notes:**

- <sup>1)</sup> Min. Y02 (active shield length) = 50 (1.96)
- <sup>2)</sup> Min. Y02 (active shield length) = 138 (5.43)
- <sup>3)</sup> Min. Y02 (active shield length) = 100 (3.94)
- <sup>4)</sup> Non conductive materials only

Insertion length does not include any raised face/gasket face dimension (see Flange Facing Table above)

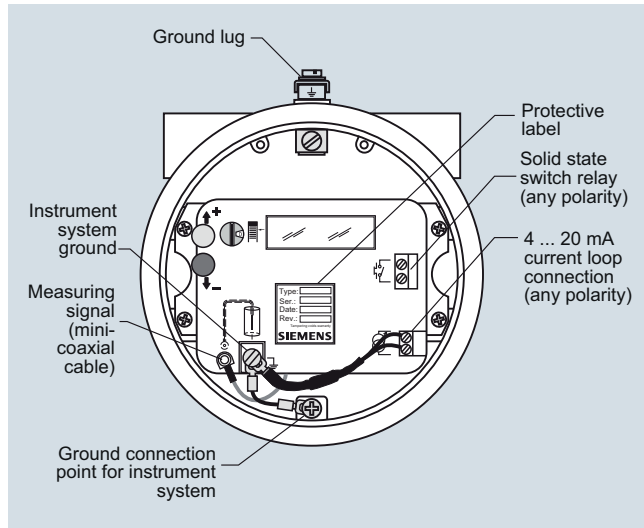
Pointek CLS500 flanged process connections, dimensions in mm (inch)

## Level Measurement

### Point level measurement - RF Capacitance switches

#### Pointek CLS500

#### Schematics

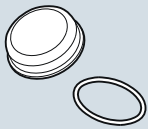
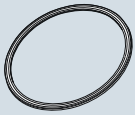
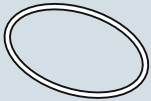
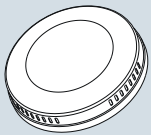
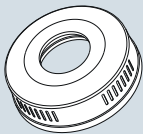



Pointek CLS500 connections

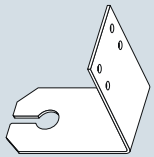




## Selection and ordering data

Pointek Specials<sup>1)</sup>

	Article No.
<b>CLS100 Polycarbonate Lid and Gasket, FKM</b>	
	
Kit, Lid and gasket, CLS100 enclosure version	<b>A5E01163671</b>
<b>CLS100 Miscellaneous Parts</b>	
Custom length of cable is available only for 7ML5501-xxx1x and 7ML5501-xxx5x <sup>2)</sup>	
<b>CLS200 Gasket (IP65), Synprene</b>	
	
Spare gasket, enclosure version (IP65 versions only)	<b>A5E01163672</b>
<b>CLS200 Gasket (IP68), Silicone</b>	
	
Spare gasket, enclosure version (IP68 versions)	<b>A5E01163673</b>
<b>CLS200 Blind Lid</b>	
	
Spare aluminum blind lid (for standard versions only)	<b>A5E01163674</b>
<b>CLS200 Lid with window</b>	
	
Spare aluminum lid with window	<b>A5E01163676</b>
<b>CLS200 Sensor Kit for cable units</b>	
	
Kit, sensor for cable units, PPS, Standard, FKM	<b>A5E01163677</b>

Pointek Specials<sup>1)</sup>

	Article No.
Kit, sensor for cable units, PPS, digital, FKM	<b>A5E01163678</b>
Kit, sensor for cable units, PPS, standard, FFKM	<b>A5E01163679</b>
Kit, sensor for cable units, PPS, digital, FFKM	<b>A5E01163680</b>
Kit, sensor for cable units, PVDF, standard, FKM	<b>A5E01163681</b>
Kit, sensor for cable units, PVDF, digital, FFKM	<b>A5E01163682</b>
Kit, sensor for cable units, PVDF, standard, FFKM	<b>A5E01163683</b>
Kit, sensor for cable units, PVDF, digital, FFKM	<b>A5E01163684</b>
<b>CLS200 Mounting Bracket, 316L stainless steel</b>	
	
Spare mounting bracket	<b>A5E01163685</b>
<b>CLS200 PROFIBUS Connector (IP65)</b>	
	
Spare, PROFIBUS connector (IP65 versions only)	<b>A5E01163686</b>
<b>CLS200 Miscellaneous Parts</b>	
CLS200 with FFKM O-rings (any version) <sup>2)</sup>	
<b>CLS200 Electronics</b>	
Test magnet, digital version	<b>7ML1830-1JE</b>
Amplifier/power supply kit, standard version	<b>A5E03251681</b>
Amplifier/power supply, digital version	<b>7ML1830-1JF</b>
LCD display, digital version	<b>7ML1830-1JK</b>
<b>CLS300 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>

## Level Measurement

### Point level measurement - RF Capacitance switches

#### Pointek CLS Specials

##### Pointek Specials<sup>1)</sup>

###### CLS300 Cable Extensions, 316 stainless steel with PFA coating

Article No.



Kit, PFA cable extension, 1 m,  
adjustable by customer

A5E01163697

Kit, PFA cable extension, 3 m,  
adjustable by customer

A5E01163698

Kit, PFA cable extension, 5 m,  
adjustable by customer

A5E01163699

Kit, PFA cable extension, 10 m,  
adjustable by customer

A5E01163700

Kit, PFA cable extension, 15 m,  
adjustable by customer

A5E01163701

Kit, PFA cable extension, 20 m,  
adjustable by customer

A5E01163702

###### CLS300 Rod Kits, 316L stainless steel



Kit, stainless steel rod 180 mm (7.09 inch) to  
be used with CLS300 units only (with standard  
active shield). Insertion length after installation  
is 350 mm (13.78 inch).

A5E01163719

Kit, stainless steel rod 330 mm (12.99 inch) to  
be used with CLS300 units only (with standard  
active shield). Insertion length after installation  
is 500 mm (19.69 inch).

A5E01163720

Kit, stainless steel rod 580 mm (22.83 inch) to  
be used with CLS300 units only (with standard  
active shield). Insertion length after installation  
is 750 mm (29.53 inch).

A5E01163721

Kit, stainless steel rod 830 mm (32.68 inch) to  
be used with CLS300 units only (with standard  
active shield). Insertion length after installation  
is 1 000 mm (39.37 inch).

A5E01163722

Kit, stainless steel rod 1 330 mm (52.36 inch) to  
be used with CLS300 units only (with standard  
active shield). Insertion length after installation  
is 1 500 mm (59.06 inch).<sup>2)</sup>

Kit, stainless steel rod 1 830 mm (72.05 inch) to  
be used with CLS300 units only (with standard  
active shield). Insertion length after installation  
is 2 000 mm (78.74 inch).<sup>2)</sup>

Kit, stainless steel rod customized length  
up to 1 m<sup>2)</sup>

Kit, stainless steel rod customized length  
up to 2 m<sup>2)</sup>

##### Pointek Specials<sup>1)</sup>

Article No.

###### CLS300 Electronics Kits with drivers (for rod or cable versions)



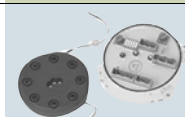
Kit, electronics with driver, standard CLS300.  
To be used in rod or cable versions with  
length less than 5 m.<sup>3)4)</sup>

A5E01163723

Kit, electronics with driver, digital CLS300.  
To be used in rod or cable versions with  
length less than 5 m.<sup>3)4)</sup>

A5E01163725

###### CLS300 Electronics Kits with drivers (for cable versions)



Kit, electronics with driver, standard CLS300.  
To be used in cable versions with  
length greater than 5 m.<sup>3)4)</sup>

A5E01163724

Kit, electronics with driver, digital CLS300.  
To be used in cable versions with  
length greater than 5 m.<sup>3)4)</sup>

A5E01163726

###### CLS300 Electronics

Test magnet, digital version

7ML1830-1JE

Amplifier/power supply kit, standard version

A5E03251683

Amplifier/power supply, digital version

7ML1830-1JF

LCD display, digital version

7ML1830-1JK

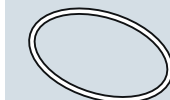
###### CLS300 Weight Kit, 316L stainless steel



Kit, spare stainless steel weight. To be used in  
any cable version of CLS300

A5E01163727

###### CLS500 Gasket (IP65), Silicone



Spare gasket, CLS500 enclosure version, IP65

A5E01163728

###### CLS500 Blind Lid



Spare CLS500 aluminum blind lid

A5E01163729

###### CLS500 Electronics Kit

Transmitter, MSP 2002-1, 330 PF

7ML1830-1JP

<sup>1)</sup> Special flange sizes and facings are available. Please consult a local sales person for details.

<sup>2)</sup> Please consult a local sales person for part number and pricing

<sup>3)</sup> For General Purpose approvals only

<sup>4)</sup> To maintain approvals, qualified trained Siemens personnel required for part replacement

Customers interested in a custom designed device should consult a local sales person. For more information, please visit [http://www.automation.siemens.com/aspa\\_app](http://www.automation.siemens.com/aspa_app).