

# Level measurement

Point level measurement **RF** Capacitance switches

## Overview



Pointek CLS100 is a compact, 2-wire, inverse frequency shift capacitance switch for level and material detection in constricted spaces, interfaces, solids, liquids, slurries, and foam; with the ability to tune out buildup on probe.

#### Benefits

- Easy installation with verification by built-in LED
- Low maintenance with no moving parts
- · Sensitivity adjustment
- Integrated cable or PBT enclosure versions available
- Intrinsically Safe, Dust Ignition Proof, and General Purpose options available

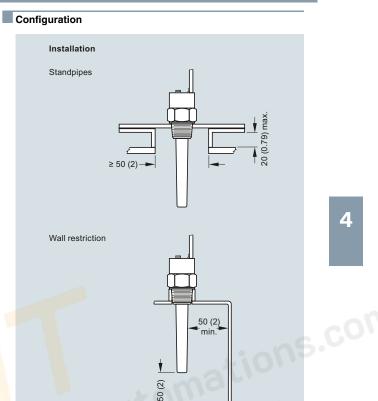
#### Application

Pointek CLS100's short insertion length of 100 mm (4 inch) and versatility in various applications and in vessels or pipes makes it a good replacement for traditional capacitance sensors.

Its advanced tip-sensing technology provides accurate, repeat-able switchpoint performance. The PPS (Polyphenylene sulfide) probe [optional PVDF (Polyvinylidene Fluoride)] is chemically resistant with an effective process operating temperature range from -30 to +100 °C (-22 to +212 °F) (7ML5501), and -10 to +100 °C (14 to 212 °F) (7ML5610). The fully potted design ensures reliability in a vibrating environment such as agi-tated tanks up to 4 g. When used with a SensGuard protection cover, the CLS100 is protected from shearing, impact, and abrasion in tough primary processes.

The Pointek CLS100 is available in three versions. The integral cable version has a stainless steel process connection and probe options of PPS or PVDF. The fully synthetic version has a thermoplastic polyester enclosure with a PPS process connec-tion combined with a PPS probe. The standard enclosure version has a thermoplastic polyester enclosure with a stainless steel process connection in combination with a PPS or PVDF probe.

· Key Applications: liquids, slurries, powders, granules, food and pharmaceuticals, chemicals, hazardous areas



Pointek CLS100 installation, dimensions in mm (inch) menta

### Level measurement

Point level measurement RF Capacitance switches

# Pointek CLS100

## Technical specifications

| Construction     capacitive level<br>detection     capacitive level<br>detection     capacitive level<br>detection     material of probe/wetled<br>parts <sup>2</sup> fmathers steel;<br>parts <sup>2</sup> mathers steel;<br>parts <sup>2</sup> and PPS senser<br>process steel;<br>parts <sup>2</sup> and PPS senser<br>(In-Construction)       Dutput<br>Output signal<br>• Alarn output<br>• Alarn output<br>• Switch output <sup>1</sup> Change in picoFarad<br>(PF)     Change in picoFarad<br>(PF)     Connection (Enclosue<br>VEX)     Internal Spont terminal block<br>process scenes     Renovable internal<br>Spont terminal block<br>process scenes       • Alarn output<br>• Switch output <sup>1</sup> 420204 mA<br>2.wire loop<br>Solid-state 30 V DC/30<br>VAC, max 82 mA<br>Accuracy<br>Repeatability     420204 mA<br>2.wire loop<br>Solid-state 30 V DC/30<br>VAC, max 82 mA<br>Accuracy<br>Repeatability     420204 mA<br>2.wire loop<br>VAC, max 82 mA<br>Min. or max.     4   |   | Stainless steel process<br>connection<br>(integral cable or<br>enclosure version)<br>(7ML5501) | Fully synthetic process<br>connection<br>(enclosure version<br>only) (7ML5610) |                           | Stainless steel process<br>connection<br>(integral cable or<br>enclosure version)<br>(7ML5501) | Fully synthetic process<br>connection<br>(enclosure version<br>only) (7ML5610) |
|---|---|--|--|---------------------------|--|--|
| capacitive ievel<br>detection     capacitive ievel<br>detection     capacitive ievel<br>detection     material of probe/wetled     stainless steel;<br>process search<br>Sensor (PKM);<br>Sensor, PKO; 4)     and PPS sensor<br>(Di-Construction)       Input     Change in picoFarad<br>(pF)     Change in picoFarad<br>(pF)     Change in picoFarad<br>(pF)     conductors       Output<br>Cutput signal  | Mode of operation                         |  |  | Sensor length (nominal)   | 100 mm (4 inch)  | 100 mm (4 inch)  |
| Measured variable         Change in picoFarad<br>(pF)         Change in picoFarad<br>(pF)         Change in picoFarad<br>(pF)         Connection (Enclosure<br>version)         Connection (Enclosure<br>Version)         Connection (Enclosure<br>Version)         Connection (Enclosure<br>Version)         Connection (Enclosure<br>Version)         Removable internal<br>block.         Removable internal<br>Spont terminal<br>Version)         Removable internal<br>Spont terminal<br>Spont terminal<br>Version)         Not applicable           • Anison output         420204 mA<br>2virte loop<br>VAC, max 82 mA         Not applicable         Not applicable           * Fail-safe mode         Min. or max.         Min. or max.         Min. or max.         Not applicable         Not applicable           Accuracy<br>Read opergrating<br>contitions <sup>9</sup> 2 mm (0.08 inch)         2 mm (0.08  |   | capacitive level   | capacitive level   | material of probe/wetted  | stainless steel;<br>Process seal: FKM<br>(optional FFKM);                                      |  |
| Metail       Comparison building       Connection (Enclosure<br>(PF)       Connection (Enclosure<br>version)       Internal 5-point terminal<br>block,<br>Weision       Removable internal<br>S-point terminal<br>block,<br>Weision         Output<br>Alarm output       4,2020, 4 mA<br>2,4 mA<br>4,4  | •   |  |  |                           |  |  |
| Output         Output<   | Measured variable                         |  |  | Connection (Enclosure     |  | Demovable internel   |
| <ul> <li>Alarm output</li> <li>Switch output<sup>1</sup>)</li> <li>Switch output<sup>1</sup>)</li></ul>   | •   |  |  |                           | block,<br>1/2" NPT wiring entrance,  | 5-point terminal block,<br>1/2" NPT wiring entrance,                           |
| <ul> <li>Switch output<sup>1</sup>)</li> <li>Switch output<sup>1</sup>)&lt;</li></ul> | <ul> <li>Alarm output</li> </ul>          |  |  | Connection                |  |  |
| 1 A       Process connection       ¾' NPT [(Taper),<br>ANSI/ASME B1.20.1]<br>R 1' [(BSPT),<br>EN 10226/PT (US-T),<br>US B 0203]       ¾' NPT [(Taper),<br>ANSI/ASME B1.20.1]<br>R 1' [(BSPT),<br>EN 10226/PT (US-T),<br>US B 0203]       ¾' NPT [(Taper),<br>ANSI/ASME B1.20.1]<br>R 1' [(BSPT),<br>EN 10226/PT (US-T),<br>US B 0203]       ¾' NPT [(Taper),<br>ANSI/ASME B1.20.1]<br>R 1' [(BSPT),<br>EN 10226/PT (US-T),<br>US B 0203]       ¾' NPT [(Taper),<br>ANSI/ASME B1.20.1]<br>R 1' [(BSPT),<br>EN 10226/PT (US-T),<br>US B 0203]       ¾' NPT [(Taper),<br>ANSI/ASME B1.20.1]<br>R 1' [(BSPT),<br>EN 10226/PT (US-T),<br>US B 0203]       ¾' NPT [(Taper),<br>ANSI/ASME B1.20.1]<br>R 1' [(BSPT),<br>EN 10226/PT (US-T),<br>US B 0203]       ¾' NPT [(Taper),<br>ANSI/ASME B1.20.1]<br>R 1' [(BSPT),<br>EN 10226/PT (US-T),<br>US B 0203]       ¾' NPT [(Taper),<br>ANSI/ASME B1.20.1]<br>R 1' [(BSPT),<br>EN 10226/PT (US-T),<br>US B 0203]       ¾' NPT [(Taper),<br>ANSI/ASME B1.20.1]<br>R 1' [(BSPT),<br>EN 10226/PT (US-T),<br>US B 0203]       ¾' NPT [(Taper),<br>ANSI/ASME B1.20.1]<br>R 1' [(BSPT),<br>EN 10226/PT (US-T),<br>US D 0203]       ¾' NPT [(Taper),<br>ANSI/ASME B1.20.1]<br>R 1' [(BSPT),<br>EN 10226/PT (US-T),<br>US D 0203]       ¾' NPT [(Taper),<br>ANSI/ASME B1.20.1]<br>R 1' [(BSPT),<br>EN 10226/PT (US-T),<br>US D 0203]       ¾' NPT [(Taper),<br>ANSI/ASME B1.20.1]<br>R 1' [(BSPT),<br>EN 10226/PT (US-T),<br>US D 0203]       ¾' NPT [(Taper),<br>ANSI/ASME B1.20.1]<br>R 1' [(BSPT),<br>EN 10226/PT,<br>C 2 33 V DC       12 33 V DC       12 33 V DC         1 - 10 barg 0 (-14.6+136 5°F)       1       1       10 30 V DC       Not applicable       Not applicable       Not applicable         • Process temperature30+100 °C<br>(-22+212 °F)       -10+100 °C<br>(-14.6+146 psi g), nominal       1       1       1       <   | • Switch output <sup>1)</sup>             | Solid-state: 30 V DC/30  | Max. switching voltage:<br>60 V DC/30 V AC                                     |                           | (3.3 ft), 0.5 mm <sup>2</sup><br>(22 AWG), shielded,   |  |
| The sum of Male       Mills of Male       R 11 ([GSPT), ST ([GSPT   |   |  | 1 A  | Process connection        |  |  |
| Pepeatability       2 mm (0.08 inch)       2 mm (0.08 inch)       2 mm (0.08 inch)       JIS B 0203]       JIS B 0203]       JIS B 0203]         Rated operating<br>conditions       Indoor/outdoor       Indoor/outdoor       Indoor/outdoor       G 1 (IRSPP),<br>JIS B 02021       JIS B 0203]         Installation conditions       Indoor/outdoor       Indoor/outdoor       Indoor/outdoor       JIS B 0203]       JIS B 0203]<   |   | Min. or max.   | Min. or max.   |                           | R 1" [(BSPT),  | R 1" [(BSPT),  |
| Refere operating<br>conditions <sup>31</sup> 2 mm (0.06 mCh)       2 mm (0.06 mCh)       2 mm (0.06 mCh)         Rate operating<br>conditions <sup>31</sup> Indoor/outdoor       Indoor/outdoor       Indoor/outdoor         Ambient conditions       Indoor/outdoor       Indoor/outdoor       Indoor/outdoor         Ambient conditions       -30 +85 °C       -10 +85 °C       -10 +85 °C         • Storage temperature       -30 +85 °C       -40 +85 °C       -40 +85 °C         • Installation category       I       Intrinsically Safe barrier<br>required)       Not applicable         • Installation category       I       Intrinsically Safe barrier<br>required)       • General: CE, CSA, FM, • General: CSA, FM<br>RCM         • Pollution degree       4       Intrinsically Safe barrier<br>required)       • General: CE, CSA, FM, • General: CSA, FM         • Process temperature       • Goneral: CE, CSA, FM, • Intrinsically Safe barrier<br>required)       • General: CE, CSA, FM, • General: CSA, FM         • Process temperature       • Goneral: CE, CSA, FM, • Intrinsically Safe barrier<br>(-22 + 212 °F)       -10 + 100 °C<br>(-14.6 + 146 psi g),<br>nominal       • Intrinsically Safe barrier<br>required)         • Degree of protection<br>• Enclosure version       IP68/Type 4/NEMA 4<br>• Integria cable version       IP68/Type 4/NEMA 4<br>• Integria cable version       IP68/Type 4/NEMA 4<br>• Not applicable         • Naterial<br>• Body<br>(Enclosure version)   |   |  |  |                           |  |  |
| conditions <sup>3</sup> JIS B 0202]         Installation conditions       Indoor/outdoor       Indoor/outdoor         Ambient conditions       Indoor/outdoor       Indoor/outdoor         Ambient temperature       -30 +85 °C       -10 +85 °C         Storage temperature       -40 +85 °C       -40 +85 °C         (40 + 185 °F)       (14 185 °F)       (40 + 185 °F)         Installation category       I       Intrinsically Safe       Oceneral: CE, CSA, FM, • General: CSA, FM         Pollution degree       4       Marine: Lloyds       Register of Shipping, categories ENV1, ENV2, and ENV5         Process temperature       -30 +100 °C       -10 +100 °C       -10 +100 °C         (-14.6 + 146 psi g), nominal       -11 +10 bar g       (-14.6 + 146 psi g), nominal       Ocentral: CE, CSA, FM, • General: CE,   |   | 2 mm (0.08 inch)   | 2 mm (0.08 inch)   |                           | G 1" [(BSPP),  | 010 D 0200]  |
| Location       Indoor/outdoor       Indoor/outdoor       Standard       12 33 V DC       12 33 V DC       12 33 V DC       12 33 V DC       Not applicable         Ambient conditions       -30 +85 °C       -10 +85 °C       14 185 °F)       Intrinsically Safe       10 30 V DC       Not applicable         • Storage temperature       -40 +85 °C       -40 +120 °C       Certificates and approvals       -General: CE, CSA, FM, •General: CSA, FM       -General: CE, CSA,  | conditions <sup>2)</sup>                  |  |  | Provenski -               |  | 12 33 V DC<br>Not applicable   |
| Ambient conditions       -30+85 °C       -10+85 °C       -10+185 °F       Not applicable         • Storage temperature       -40+85 °C       -40+185 °F       -40+10 °C       -50+100 °C       -20+100 °C       -20+100 °C       -20+100 °C       -20   |   | Indoor/outdoor   | Indoor/outdoor   |                           | 10 001/00  | 10 001/00  |
| <ul> <li>Ambient temperature</li> <li>-30 + 85 °C</li> <li>-10 + 85 °C</li> <li>(-22 + 185 °F)</li> <li>(14 185 °F)</li> <li>(-40 + 85 °C</li> <li>(-40 + 185 °F)</li> <li>(-40 + 100 °C</li> <li>(-11 + 100 °C</li> <li>(-11 + 10 bar g</li> <li>(-14 + 146 psi g), nominal</li> <li>Pressure (vessel)</li> <li>-1 + 10 bar g</li> <li>(-14 + 146 psi g), nominal</li> <li>(-14 + 146 psi g), nominal</li> <li>P68/Type 4/NEMA 4</li> <li>Integral cable version</li> <li>Enclosure version</li> <li>Enclosure version</li> <li>P68/Type 4/NEMA 4</li> <li>Integral cable version</li> <li>P68/Type 4/NEMA 4</li> <li>Not applicable</li> <li>Went synthetic version</li> <li>Version</li> <li>Thermoplastic polyester</li> </ul>  |   | Indoor/oddoor  | madonyoutadon  |                           |  | 12 33 V DC   |
| (-40 + 185 °F)       (-40 + 185 °F)       (-40 + 185 °F)       (-40 + 185 °F)         Installation category       I       I       I         Pollution degree       4       4         Medium conditions       I       I         Pollution degree       4       4         Medium conditions       Image: Constant error of the integral color of the integ  |   | (-22 +185 °F)  | (14 185 °F)  | Intrinsically Safe        | (Intrinsically Safe barrier  | Not applicable   |
| <ul> <li>Pollution degree 4 4 4</li> <li>Marine: Lloyds</li> <li>Rediative dielectric constant <i>e<sub>r</sub></i></li> <li>Process temperature -30 +100 °C (-22 +212 °F) (14 212 °F)</li> <li>Pressure (vessel) -1 +10 bar g (-14.6 +146 psi g), nominal<sup>2</sup></li> <li>Degree of protection - Enclosure version in [P68/Type 4/NEMA 4]</li> <li>Integral cable version in [P68/Type 4/NEMA 4]</li> <li>Cable inlet ½<sup>4</sup> NPT (M20 x 1.5 optional)</li> <li>Design Enclosure/Integral cable</li> <li>Fully synthetic version Version</li> <li>Thermoplastic polyester</li> <li>Thermoplastic polyester</li> </ul>   |   |  |  |                           |  | General: CSA, FM   |
| Medium conditions       Relative dielectric constant $e_r$ Min. 1.5       Min. 1.5       Min. 1.5         Process temperature       -30 +100 °C (-22 +212 °F)       -10 +100 °C (-22 +212 °F)       C14 212 °F)         Pressure (vessel)       -1 +10 bar g (-14.6 +146 psi g), nominal <sup>2</sup> )       -1 +10 bar g (-14.6 +146 psi g), nominal <sup>2</sup> )       Div. 1, Groups E, F, G         Degree of protection       IP68/Type 4/NEMA 4       IP68/Type 4/NEMA 4       Intrinsically Safe (barrier required): CSA/FM Class I, II, and III, Div. 1, Groups A, B, C, D, E, F, G T4         Integral cable version       IP68/Type 4/NEMA 4       Not applicable       C, D, E, F, G T4         Actexial       V* NPT (M20 x 1.5 optional)       ½* NPT (M20 x 1.5 optional)       Enclosure/Integral cable         Material       Thermoplastic polyester       Thermoplastic polyester       Thermoplastic polyester       Thermoplastic polyester  | 0,  | 4  | 4  |                           |  |  |
| • Netative diffecting<br>constant $\epsilon_r$ Will, 1.3       Dust Ignition Proof<br>(barrier required):<br>CSA/FM Class II and III,<br>Div. 1, Groups E, F, G         • Process temperature       -30 +100 °C<br>(-22 +212 °F)       -10 +100 °C<br>(14 212 °F)       CSA/FM Class II and III,<br>Div. 1, Groups E, F, G         • Pressure (vessel)       -1 +10 bar g<br>(-14.6 +146 psi g),<br>nominal <sup>2</sup> -1 +10 bar g<br>(-14.6 +146 psi g),<br>nominal       -1 +10 bar g<br>(-14.6 +146 psi g),<br>nominal       -1 +10 bar g<br>(-14.6 +146 psi g),<br>nominal         • Degree of protection       IP68/Type 4/NEMA 4       IP68/Type 4/NEMA 4       IP68/Type 4/NEMA 4         • Integral cable version       IP68/Type 4/NEMA 4       Not applicable<br>½' NPT (M20 x 1.5<br>optional)       IP68/Type 4/NEMA 4         • Cable inlet       ½' NPT (M20 x 1.5<br>optional)       ½' NPT (M20 x 1.5<br>optional)       ½' NPT (M20 x 1.5<br>optional)         • Body<br>(Enclosure version)       Thermoplastic polyester       Thermoplastic polyester       Thermoplastic polyester  | Medium conditions                         |  |  |                           | categories ENV1,   |  |
| <ul> <li>Process temperature</li> <li>-30 + 100 °C</li> <li>-10 + 100 °C</li> <li>-22 + 212 °F)</li> <li>(14 212 °F)</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>(-14.6 + 146 psi g), nominal</li> <li>-1 + 10 bar g</li> <li>-1 + 10 bar</li></ul>  | constant $\epsilon_r$                     |  |  |                           | Dust Ignition Proof  |  |
| <ul> <li>Pressure (vessel)</li> <li>-1+10 bar g<br/>(-14.6+146 psi g),<br/>nominal<sup>2</sup>)</li> <li>Degree of protection</li> <li>Enclosure version</li> <li>IP68/Type 4/NEMA 4</li> <li>P68/Type 4/NEMA 4</li> <li>P68/Type 4/NEMA 4</li> <li>Not applicable</li> <li>Cable inlet</li> <li>Version</li> <li>Version</li> <li>Thermoplastic polyester</li> <li>Thermoplastic polyester</li> <li>Thermoplastic polyester</li> </ul>   | <ul> <li>Process temperature</li> </ul>   |  |  |                           | CSA/FM Class II and III,   |  |
| Degree of protection     Enclosure version     P68/Type 4/NEMA 4     IP68/Type 4/NEMA 4     IP68/Type 4/NEMA 4     IP68/Type 4/NEMA 4     Not applicable     Yz' NPT (M20 x 1.5     optional)     Pesign     Thermoplastic polyester     Thermoplastic po   | <ul> <li>Pressure (vessel)</li> </ul>     |  |  |                           | T4   |  |
| Degree of protection     Enclosure version     Pf68/Type 4/NEMA 4     Integral cable version     Pf65/Type 4/NEMA 4     Not applicable     Yz' NPT (M20 x 1.5     optional)     Pf5/Type 4/NEMA 4     Not applicable     Yz'' NPT (M20 x 1.5     optional)     Pesign     Enclosure/Integral cable     Fully synthetic version     Version     Thermoplastic polyester  |   | nominal <sup>2)</sup>  |  |                           |  |  |
| Integral cable version     IP65/Type 4/NEMA 4     Var applicable  |   |  |  |                           | CSA/FM Class I, II, and  |  |
| Cable inlet   |   |  |  |                           |  |  |
| Design       Enclosure/Integral cable       Fully synthetic version       Overfill protection:<br>WHG (Germany)         Material       * Body<br>(Enclosure version)       Thermoplastic polyester       Thermoplastic polyester       Thermoplastic polyester  |   | 1/2" NPT (M20 x 1.5  | 1/2" NPT (M20 x 1.5  |                           | ATEX II 1 GD 1/2GD<br>EEx ia IIC T4 to T6  |  |
| version         1)         When synthetic process connection version (7ML5610) is used in wet locations, switching voltage of the relay is limited to 35 V DC/16 V AC.           • Body (Enclosure version)         Thermoplastic polyester         Thermoplastic polyester         2)         When operation is in areas classified as hazardous, observe restriction according to relevant certificate.   | Design                                    | Enclosure/Integral cable   | Fully synthetic version  |                           | Overfill protection:   |  |
| <ul> <li>Material</li> <li>Body<br/>(Enclosure version)</li> <li>Thermoplastic polyester</li> <li>Thermoplasti</li></ul>  |   | version  |  | 1) When synthetic proces  | ss connection version (7MI   | _5610) is used in wet  |
| (Enclosure version) according to relevant certificate.  |   | Theorem is a first in the second   | The sum and so the state   | locations, switching vo   | oltage of the relay is limited   | to 35 V DC/16 V AC.  |
|   |   | i nermoplastic polyester   | i nermoplastic polyester   |                           |  | us, observe restrictions   |
| Lid (Enclosure version) Transparent thermoplas- Transparent thermoplas- See also Pressure/Temperature curves on page 5/13.  |   |  |  | See also Pressure/Terr    | perature curves on page (  | 5/13.  |
| tic polycarbonate (PC) tic polycarbonate (PC)     Integrated cable body 316L stainless steel Not applicable     Not applicable     State of the polycarbonate (PC) Not applicable     State of the polycarbonate (PC) Sta   | <ul> <li>Integrated cobie body</li> </ul> |  |  | 3) For caustic materials, | consult a local sales perso  | n for alternative O-rings.   |

 $^{4)}$  When FFKM O-ring (Option A22) is selected, process temperature is restricted to -20  $^{\circ}\text{C}$  (-4  $^{\circ}\text{F}\text{)}.$ 

# Level measurement

Article No.

Point level measurement RF Capacitance switches

# Pointek CLS100

| Selection and ordering data   | A  | rti         | Clo         | e N                   | 0. |
|---|----|-------------|-------------|-----------------------|----|
| Pointek CLS100 RF Capacitance point level<br>switch, stainless steel process connection<br>Detects level and interface in liquids, solids, slurries<br>and foam. Compact, with 100 mm (4 inch) insertion,<br>adaptable sensitivity, with the ability to tune out<br>build-up on probe.  |    | -           | <b></b>     | i01-                  |    |
| Click on the Article No. for the online configuration in the PIA Life Cycle Portal.   |    |             |             |                       |    |
| Process Connection<br>¾" NPT [(Taper), ANSI/ASME B1.20.1]<br>R 1" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203]<br>G 1" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]   |    | A<br>E<br>J |             |                       |    |
| Approvals           General Purpose: CE, CSA, FM, RCM           CSA/FM Class I, II, and III, Div. 1,           Groups A, B, C, D, E, F, G T4; ATEX II 1 GD ½           GD EEx ia IIC 74 T6 T107 °C <sup>1)</sup> CSA/FM Class II and III, Div. 1, Groups E, F, G <sup>1)</sup>  |    |             | A<br>C<br>G |                       |    |
| Device version<br>Integral cable version (PPS probe)<br>Enclosure version (PPS probe), ½" NPT cable inlet<br>Integral cable version with PVDF probe body<br>Enclosure version with PVDF probe body<br>(½" NPT cable inlet)<br>Enclosure version (PPS probe), M20 x 1.5<br>cable inlet<br>Enclosure version with PVDF probe body,<br>M20 x 1.5 cable inlet |    |             |             | 1<br>3<br>5<br>6<br>7 |    |
| Overfill protection<br>Not required<br>Required (WHG)<br><sup>1)</sup> Barrier or Intrinsically Safe power supply required<br>Safe protection.  | or | Inti        | rins        | C<br>1<br>Sica        |    |
| Further designs Please add "-Z" to Article No.  | C  | )rd         | er          | coc                   | de |

| randici accigito  | 01001 0000 |
|---|------------|
| Please add "-Z" to Article No.<br>and specify Order code(s).  |            |
| Stainless steel tag [70 x 13 mm (2.75 x 0.5 inch)]:<br>Measuring-point number/identification<br>(max. 20 characters) specify in plain text                                  | ¥17        |
| FFKM seal O-ring <sup>1)</sup>  | A22        |
| Material inspection Certificate Type 3.1 per<br>EN 10204  | C12        |
| INMETRO <sup>2)</sup>   | E34        |
| Operating Instructions  |            |
| Note: due to ATEX regulations one Quick start<br>manual is included with every product. All literature<br>is available to download for free, in a range of<br>languages, at |            |

http://www.siemens.com/processinstrumentation/documentation

<sup>1)</sup> See Temperature restriction on page 4/14.

<sup>2)</sup> Available only with Approvals option C.

| a set of the set of th |               |
|--|---------------|
| Accessories  | Article No.   |
| SensGuard, ¾" NPT (PPS).<br>Only available for CLS100 with ¾" NPT thread.  | 7ML1830-1DL   |
| SensGuard, R 1" (BSPT) (PPS).<br>Only available for CLS100 with 3/4" NPT thread.   | 7ML1830-1DM   |
| Tag, stainless steel, 12 x 45 mm (0.47 x 1.77 inch), one text line, suitable for enclosures  | 7ML1930-1AC   |
| Siemens Intrinsically Safe Barrier (DC powered),<br>ATEX II 1 G EEx ia   | 7NG4124-0AA00 |
| ½* NPT General Purpose Cable Entry IP68/IP69K<br>NEMA 6, -40 +80 °C (-40 +176 °F),<br>Dust Ignition Proof, cable size 6 12 mm<br>(0.236 0.472 inch)  | 7ML1830-1JA   |
| M20 x 1.5 General Purpose Cable Entry IP68/IP69K<br>NEMA 6, -40 +80 °C (-40 +176 °F),<br>Dust Ignition Proof, cable size 7 12 mm<br>(0.275 0.472 inch)   | 7ML1830-1JC   |
|  |               |

|   | AILICIE NO. |
|---|-------------|
| Pointek CLS100 RF Capacitance point level<br>switch, PPS process connection   | 7ML 3610-   |
| Detects level and interface in liquids, solids, slurries, and foam. Compact, with 100 mm (4 inch) insertion, adaptable sensitivity, with the ability to tune out build-up on probe. |             |
| Click on the Article No. for the online<br>configuration in the PIA Life Cycle Portal.  |             |
| Process connection (PPS)<br>3/4" NPT [(Taper), ANSI/ASME B1.20.1]   | Α           |
| (PPS probe body)  | ^           |
| R 1" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203]<br>(PPS probe body)  | В           |
| Approvals   |             |
| General Purpose: CSA, FM  | D           |
| Versions/Options  |             |
| Enclosure version, PPS process connection,<br>1/2" NPT cable inlet  | 1           |
| Enclosure version, PPS process connection,<br>M20 x 1.5   | 2           |
| Overfill protection   |             |
| Not required  | 0           |
| Required  | 1           |
| Further designs   | Order code  |
| Please add "-Z" to Article No.<br>and specify Order code(s).  |             |
| Stainles <mark>s ste</mark> el tag [70 x 13 mm (2.75 x 0.5 inch)]:<br>Measuring-point number/identification<br>(max. 20 characters) specify in plain text                           | Y17         |
| Material in <mark>spe</mark> ction Certificate Type 3.1 per<br>EN 10204   | C12         |
| Operating Instructions  |             |
| Note: due to ATEX regulations one Quick start<br>manual is included with every product. All literature<br>is available to download for free, in a range of<br>languages, at         | ding        |
| http://www.siemens.com/processinstrumentation/docu  | umentation  |
| Accessories   | Article No. |
| SensGuard, ¾" NPT (PPS).<br>Only available for CLS100 with ¾" NPT thread.   | 7ML1830-1DL |
| SensGuard, R 1" (BSPT) (PPS).<br>Only available for CLS100 with 3/4" NPT thread.  | 7ML1830-1DM |
| Tag, stainless steel, 12 x 45 mm, (0.47 x 1.77 inch) one text line, suitable for enclosures   | 7ML1930-1AC |

<sup>1)</sup> See Temperature restriction on page 4/14.

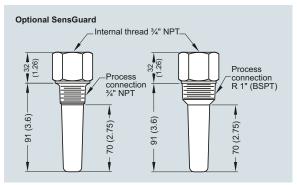
## Level measurement

Point level measurement RF Capacitance switches

### Pointek CLS100

### Options

4



Optional SensGuard, dimensions in mm (inch)

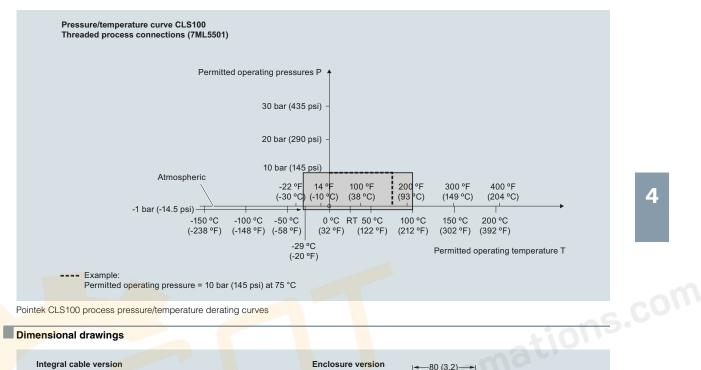
www.gotautomations.com www.gotautomations.com GreatOrientalTrading

# Level measurement

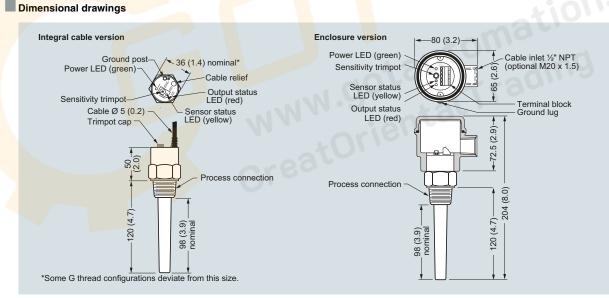
Point level measurement **RF** Capacitance switches

### Pointek CLS100

# Characteristic curves



Pointek CLS100 process pressure/temperature derating curves



Pointek CLS100, dimensions in mm (inch)

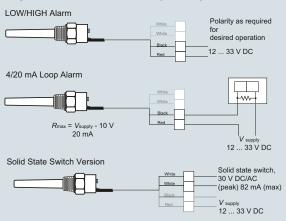
#### Level measurement

Point level measurement **RF** Capacitance switches

#### Pointek CLS100

## Circuit diagrams

#### Integral Cable Version - Non Intrinsically Safe only



#### **Enclosure and Fully Synthetic Version**



When driving an inductive load (for example, an external relay), a protection diode must be connected in the correct polarity to prevent possible switch damage due to inductive spikes generated by switching the inductor (please refer to instruction manual). Intrinsically Safe Models - please follow local regulations and area classifications; refer to instruction manual for more details.

Pointek CLS100 connections

Note:

บริษัท เกรทโอเรียนเต็ล เทรดดิ้ง จำกัด เลขที่ 1049 ถนนร่วมธรรม ตำบลคอหงส์ อำเภอหาดใหญ่ จังหวัดสงขลา 90110 074-300212-4



4