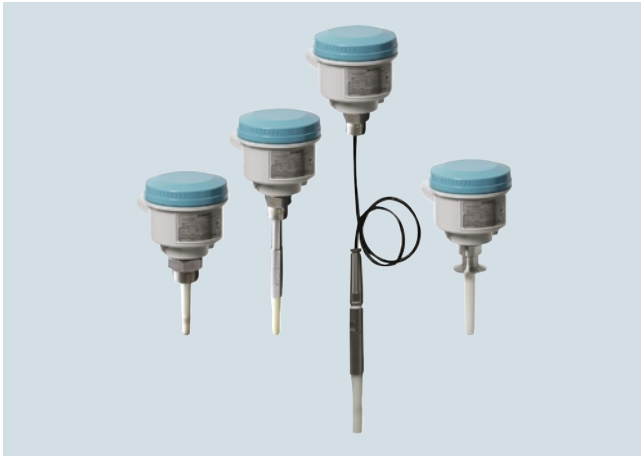


Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Standard

Overview



Pointek CLS200 (standard version) is a versatile inverse frequency shift capacitance level switch with optional rod/cable choices and configurable output, ideal for detection of liquids, solids, slurries, foam and interfaces.

Benefits

- Potted construction protects signal circuit from shock, vibration, humidity and/or condensation
- High chemical resistance
- Level detection independent of tank or pipe earth reference
- Insensitive to product buildup due to high frequency oscillation
- 3 LED indicators for sensor status, output status, and power

Application

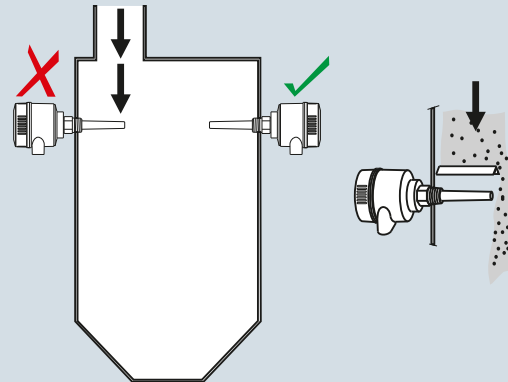
Pointek CLS200 standard version has 3 LED indicators with basic relay and solid-state switch alarms. Universal switch for solids/liquids and interface.

The power supply is galvanically isolated and accepts a wide range of voltages (12 to 250 V AC/DC). When used with thermal isolator, the stainless steel and PPS (PVDF optional) materials used in the probe construction provide a temperature rating up to 125 °C (257 °F) on the process wetted portion of the probe. The switch responds to any material with a dielectric constant of 1.5 or more by detecting a change in oscillating frequency, and it can be set to detect before contact or on contact with the probe. The CLS200 operates independently of the tank wall or pipe so it does not require an external reference electrode for level detection in a non-conductive vessel such as concrete or plastic (EMC regulations applicable in some regions).

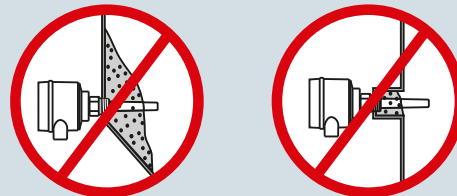
- Key Applications: liquids, slurries, powders, granules, pressurized applications, hazardous areas

Configuration

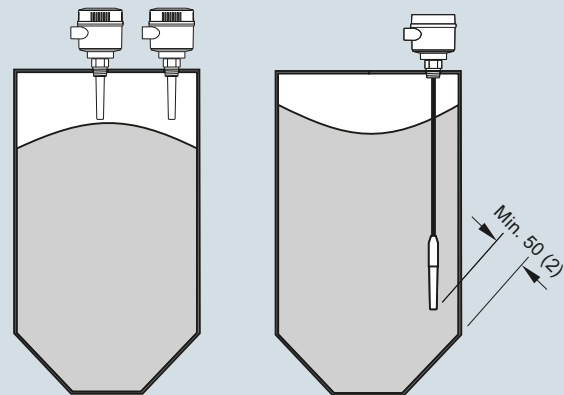
Installation



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



Avoid areas where material build up occurs.



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

Pointek CLS200 installation, dimensions in mm (inch)

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Standard

Technical specifications

| Mode of operation | |
|--|--|
| Measuring principle | Inverse frequency shift capacitive level detection |
| Input | |
| Measured variable | Change in picoFarad (pF) |
| Output | |
| Output signal | 1 SPDT Form C relay |
| • Relay output | <ul style="list-style-type: none"> • 30 V DC • 250 V AC |
| - Max. contact voltage | <ul style="list-style-type: none"> • 5 A DC • 8 A AC |
| - Max. contact current | 150 W DC |
| - Max. switching capacity | 2 000 VA AC |
| - Time delay (ON and/or OFF) | 1 ... 60 s |
| • Solid-state output | |
| - Output | Galvanically isolated |
| - Protection | Against reversed polarity (bipolar) |
| - Max. switching voltage | <ul style="list-style-type: none"> • 30 V DC • 30 V peak AC |
| - Max. load current | 82 mA |
| - Voltage drop | < 1 V, typical at 50 mA |
| - Time delay (pre or post switching) | 1 ... 60 s |
| Rated operating conditions ¹⁾ | |
| Installation conditions | |
| • Location | Indoor/outdoor |
| Ambient conditions | |
| • Ambient temperature | -40 ... +85 °C (-40 ... +185 °F) ²⁾ |
| • Installation category | II |
| • Pollution degree | 4 |
| Medium conditions | Liquids, bulk solids, slurries and interfaces |
| • Relative dielectric constant ϵ_r | Min. 1.5 |
| • Process temperature | |
| - Without thermal isolator | -40 ... +85 °C (-40 ... +185 °F) ²⁾ |
| - With thermal isolator | -40 ... +125 °C (-40 ... +257 °F) |
| • Process pressure (rod version) | -1 ... +25 bar g (-14.6 ... +365 psi g) (nominal) |
| • Process pressure (cable version) ³⁾ | -1 ... +10 bar g (-14.6 ... +150 psi g) (nominal) |
| • Process pressure (sliding coupling version) | -1 ... +10 bar g (-14.6 ... +150 psi g) (nominal) |
| Electromagnetic Compatibility | To comply with CE EMC regulations (where applicable); the CLS200 should be installed per the instruction manual. |

| Design | |
|---|---|
| Material | Epoxy-coated aluminum with gasket |
| • Enclosure | 316L stainless steel |
| • Optional thermal isolator | Removable terminal block, max. 2.5 mm ² |
| Connection | IP65/Type 4/NEMA 4 (optional IP68) |
| Degree of protection | IP65/Type 4/NEMA 4 (optional IP68) |
| Cable inlet | 2 x M20x1.5 thread (option: 2 x 1/2" NPT conduit entry including 1 plugged entry) |
| Power supply | |
| | 12 ... 250 V AC/DC, 0 ... 60 Hz max. 2 W |
| Certificates and approvals | |
| General Purpose | CSA, FM, CE, C-TICK |
| Dust Ignition Proof | ATEX II 1/2 D T100 °C |
| Flameproof Enclosure With IS Probe | ATEX II 1 G EEx d[ia] IIC T6...T4 |
| Dust Ignition Proof with IS Probe | CSA/FM Class II, Div. 1, Groups E, F, G |
| | CSA/FM Class III T4 |
| Explosion Proof Enclosure With IS Probe | CSA/FM Class I, Div. 1, Groups A, B, C, D |
| | CSA/FM Class II, Div. 1, Groups E, F, G |
| | CSA/FM Class III T4 |
| Marine | Lloyds Register of Shipping, Categories ENV 1, ENV2 and ENV5 |
| Overfill Protection | WHG (Germany) VLAREM II |
| Others | Pattern Approval (China) |

¹⁾ When operation is in areas classified as hazardous, observe restrictions according to relevant certificate. See also Pressure/Temperature curves on page 4/38.

²⁾ Thermal isolator is used if process connection temperature exceeds 85 °C (185 °F)

³⁾ Pressure rating of process seal is temperature dependent. See Pressure/Temperature curves on page 4/38.

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Standard

Design: Probe

| | Rod version | Sanitary version | Cable version | Sliding Coupling version |
|--------------------------------|---|---|--|---|
| Max. length | 5 500 mm (216.53 inch) | 5 500 mm (216.53 inch) | 30 000 mm (1 181.1 inch) liquids and slurries 5 000 mm (196.85 inch) solids (under loads) | 5 500 mm (216.53 inch) |
| Process connection | R ¾", 1", 1¼", 1½" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] ¾", 1", 1¼", 1½" NPT [(Taper), ANSI/ASME B1.20.1] G ¾", 1", 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] 316L stainless steel ASME/EN flange | 1½", 2" sanitary fitting clamp 316L stainless steel | R ¾", 1", 1¼", 1½" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] ¾", 1", 1¼", 1½" NPT [(Taper), ANSI/ASME B1.20.1] G ¾", 1", 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] 316L stainless steel ASME/EN flange | R ¾", 1", 1¼", 1½" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] ¾", 1", 1¼", 1½" NPT [(Taper), ANSI/ASME B1.20.1] G ¾", 1", 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] |
| Extension material | 316L stainless steel optional PFA coated ¹⁾ | 316L stainless steel | Fluoroethylene propylene (FEP) cable with stainless steel core | 316L stainless steel |
| Sensor wetted parts | PPS (optional PVDF) | PPS (optional PVDF) | PPS (optional PVDF) | PPS (optional PVDF) |
| O-ring seal material | FKM (optional FFKM) ²⁾ | FKM (optional FFKM) ²⁾ | FKM (optional FFKM) ²⁾ | FKM (optional FFKM) ²⁾ |
| Thermal isolator ³⁾ | Optional | Optional | Optional | Optional |
| Extension | User selected length | User selected length | Cable extension | User selected length |

¹⁾ PFA coating (7ML5634 and 7ML5644) has 120 micron thickness.

²⁾ For Caustic Materials please contact ceg.smpi@siemens.com for alternative O-Rings

³⁾ Thermal isolator is used if process connection temperature exceeds 85 °C (185 °F).

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Standard

| Selection and Ordering data | Article No. | Selection and Ordering data | Article No. |
|--|-----------------|--|-----------------|
| Pointek CLS200 - Standard - Rod Version with Threaded or Flanged process connection | 7ML5630- | Pointek CLS200 - Standard - Rod Version with Threaded or Flanged process connection | 7ML5630- |
| Versatile inverse frequency shift capacitance level switch with optional rod/cable choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces | 0 | Versatile inverse frequency shift capacitance level switch with optional rod/cable choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces | 0 |
| Process connection | | Under Order code Y01 and plain text: | |
| <u>Threaded, 316L stainless steel</u> | | "Insertion length ... mm" | |
| ¾" NPT [(Taper), ANSI/ASME B1.20.1] | 0 A | Extended rod, 210 ... 1 000 mm (8.27 ... 39.37 inch) | M |
| 1" NPT [(Taper), ANSI/ASME B1.20.1] | 0 B | Extended rod, 1 001 ... 2 000 mm (39.41 ... 78.74 inch) | N |
| 1¼" NPT [(Taper), ANSI/ASME B1.20.1] | 0 C | Extended rod, 2 001 ... 3 000 mm (78.78 ... 118.11 inch) | P |
| 1½" NPT [(Taper), ANSI/ASME B1.20.1] | 0 D | Extended rod, 3 001 ... 4 000 mm (118.15 ... 157.48 inch) | Q |
| R ¾" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] | 1 A | Extended rod, 4 001 ... 5 000 mm (157.52 ... 196.85 inch) | R |
| R 1" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] | 1 B | Extended rod, 5 001 ... 5 500 mm (196.89 ... 216.53 inch) | S |
| R 1½" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] | 1 D | | |
| G ¾" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] | 3 A | | |
| G 1" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] | 3 B | | |
| G 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] | 3 D | | |
| <u>Welded flange, 316L stainless steel, raised face</u> | | Thermal isolator | |
| 1" ASME, 150 lb | 5 A | Without thermal isolator | 0 |
| 1" ASME, 300 lb | 5 B | With thermal isolator [for process connection temperatures over 85 °C (185 °F)] | 1 |
| 1" ASME, 600 lb | 5 C | | |
| 1½" ASME, 150 lb | 5 D | Remote mount electronics and mounting bracket | |
| 1½" ASME, 300 lb | 5 E | With 2 m (79 inch) of cable ¹⁾ | 2 |
| 1½" ASME, 600 lb | 5 F | With 5 m (197 inch) of cable ¹⁾ | 3 |
| 2" ASME, 150 lb | 5 G | | |
| 2" ASME, 300 lb | 5 H | Wetted seals | |
| 2" ASME, 600 lb | 5 J | FKM | 0 |
| 3" ASME, 150 lb | 5 K | FFKM [for process temperatures above -20 °C (-4 °F)] | 1 |
| 3" ASME, 300 lb | 5 L | | |
| 3" ASME, 600 lb | 5 M | Probe material | |
| 4" ASME, 150 lb | 5 N | 316L stainless steel with PPS probe body | 0 |
| 4" ASME, 300 lb | 5 P | 316L stainless steel with PVDF probe body | 1 |
| 4" ASME, 600 lb | 5 Q | | |
| <u>Welded flange, 316L stainless steel, Type A flat faced</u> | | Approvals | |
| DN 25, PN 16 | 6 A | Dust Ignition Proof: | |
| DN 25, PN 40 | 6 B | CE, C-TICK, ATEX II 1/2 D T100 °C | C |
| DN 40, PN 16 | 6 C | Flameproof Enclosure with IS Probe: | |
| DN 40, PN 40 | 6 D | CE, C-TICK, ATEX II 1 G EEx d[ia] IIC T6...T4, ATEX II 1/2 D T100 °C | D |
| DN 50, PN 16 | 6 E | Flameproof Enclosure with IS Probe, with WHG approval: | |
| DN 50, PN 40 | 6 F | CE, C-TICK, ATEX II 1/2 G EEx d[ia] IIC T6...T4, ATEX II 1/2 D T100 °C | E |
| DN 80, PN 16 | 6 G | Dust Ignition Proof with IS Probe: | |
| DN 80, PN 40 | 6 H | CSA/FM Class II, Div. 1, Groups E, F, G | F |
| DN 100, PN 16 | 6 J | CSA/FM Class III T4 | |
| DN 100, PN 40 | 6 K | Explosion Proof Enclosure with IS Probe: | |
| (Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5 or EN 1092-1 standard.) | | CSA/FM Class I, Div. 1, Groups A, B, C, D | G |
| | | CSA/FM Class II, Div. 1, Groups E, F, G | |
| | | CSA/FM Class III T4 | |
| | | General Purpose (CSA, FM) | H |
| | | General Purpose (CE, C-TICK) | J |
| | | General Purpose (CSA, FM, CE, C-TICK) with WHG approval | K |
| Probe length (length from flange face) (threaded lengths include process thread) | | Enclosure and lid | |
| <u>Note: No Y01 needed in Order code for standard lengths</u> | | Aluminum epoxy coated | |
| Compact [threaded 120 mm (4.72 inch), Flanged 98 mm (3.86 inch)] | A | 2 x ½" NPT via adapter - cable inlet, IP65 | A |
| Extended rod, 250 mm (9.84 inch) | B | 2 x M20 x 1.5 cable inlet IP65 | B |
| Extended rod, 350 mm (13.78 inch) | C | 2 x ½" NPT via adapter - cable inlet, IP68 | C |
| Extended rod, 500 mm (19.69 inch) | D | 2 x M20 x 1.5 cable inlet IP68 | D |
| Extended rod, 750 mm (29.53 inch) | E | | |
| Extended rod, 1 000 mm (39.37 inch) | F | | |
| Extended rod, 1 250 mm (49.21 inch) | G | | |
| Extended rod, 1 350 mm (53.15 inch) | H | | |
| Extended rod, 1 500 mm (59.06 inch) | J | | |
| Extended rod, 1 750 mm (68.90 inch) | K | | |
| Extended rod, 2 000 mm (78.74 inch) | L | | |

¹⁾ Available with Approvals options F ... H

• We can offer shorter delivery times for configurations designated with the Quick Ship Symbol •. For details see page 9/5 in the appendix.

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Standard

Selection and Ordering data

Order code

Further designs

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

Total insertion length: enter the total insertion length in plain text description **Y01**

Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text **Y15**

Manufacturer's test certificate: M to DIN 55350, Part 18 and ISO 9000 **C11**

Inspection Certificate Type 3.1 per EN 10204 **C12**

Operating Instructions

Note: The Operating Instructions should be ordered as a separate line on the order. This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and manual library.

See page 4/36

Accessories

See page 4/36

◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 9/5 in the appendix.

Selection and Ordering data

Article No.

Pointek CLS200 - Standard - Cable Version with Threaded or Flanged process connection

7ML5631-

Versatile inverse frequency shift capacitance level switch with optional process connection choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces

- - - - - 0

Process connection

Threaded, 316L stainless steel

¾" NPT [(Taper), ANSI/ASME B1.20.1] **0 A**

1" NPT [(Taper), ANSI/ASME B1.20.1] **0 B**

1¼" NPT [(Taper), ANSI/ASME B1.20.1] **0 C**

1½" NPT [(Taper), ANSI/ASME B1.20.1] **0 D**

R ¾" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] **1 A**

R 1" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] **1 B**

R 1½" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] **1 D**

G ¾" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] **3 A**

G 1" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] **3 B**

G 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] **3 D**

Welded flange, 316L stainless steel, raised face

1" ASME, 150 lb **5 A**

1" ASME, 300 lb **5 B**

1" ASME, 600 lb **5 C**

1½" ASME, 150 lb **5 D**

1½" ASME, 300 lb **5 E**

1½" ASME, 600 lb **5 F**

2" ASME, 150 lb **5 G**

2" ASME, 300 lb **5 H**

2" ASME, 600 lb **5 J**

3" ASME, 150 lb **5 K**

3" ASME, 300 lb **5 L**

3" ASME, 600 lb **5 M**

4" ASME, 150 lb **5 N**

4" ASME, 300 lb **5 P**

4" ASME, 600 lb **5 Q**

Welded flange, 316L stainless steel,

Type A flat faced

DN 25, PN 16 **6 A**

DN 25, PN 40 **6 B**

DN 40, PN 16 **6 C**

DN 40, PN 40 **6 D**

DN 50, PN 16 **6 E**

DN 50, PN 40 **6 F**

DN 80, PN 16 **6 G**

DN 80, PN 40 **6 H**

DN 100, PN 16 **6 J**

DN 100, PN 40 **6 K**

(Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5 or EN 1092-1 standard.)

Probe length (length from flange face)

(threaded lengths include process thread)

Note: No Y01 needed in Order code for

standard lengths

Extended cable, 3 000 mm (118.11 inch), length can be determined by customer on assembly¹⁾ **A**

Extended cable, 6 000 mm (236.22 inch), length can be determined by customer on assembly¹⁾ **B**

Add Order code Y01 and plain text:

"Insertion length ... mm"

Extended cable, 500 ... 5 000 mm **C**

(19.69 ... 196.85 inch)

Extended cable, 5 001 ... 10 000 mm **D**

(196.89 ... 393.70 inch)

Extended cable, 10 001 ... 15 000 mm **E**

(393.74 ... 590.55 inch)

Extended cable, 15 001 ... 20 000 mm **F**

(590.59 ... 787.4 inch)

Extended cable, 20 001 ... 25 000 mm **G**

(787.44 ... 984.25 inch)

Extended cable, 25 001 ... 30 000 mm **H**

(984.29 ... 1 181.1 inch)

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Standard

| Selection and Ordering data | Article No. | Selection and Ordering data | Order code |
|---|-------------|--|---------------|
| Pointek CLS200 - Standard - Cable Version with Threaded or Flanged process connection Versatile inverse frequency shift capacitance level switch with optional process connection choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces | 7ML5631- | Further designs Please add "-Z" to Article No. and specify Order code(s). | |
| Thermal isolator Without thermal isolator | 0 | Total insertion length: enter the total insertion length in plain text description | Y01 |
| With thermal isolator [for process connection temperatures over 85 °C (185 °F)] | 1 | Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text | Y15 |
| Remote mount electronics and mounting bracket With 2 m (79 inch) of cable ²⁾ | 2 | Manufacturer's test certificate: M to DIN 55350, Part 18 and ISO 9000 | C11 |
| With 5 m (197 inch) of cable ²⁾ | 3 | Inspection Certificate Type 3.1 per EN 10204 | C12 |
| Wetted seals FKM and PTFE | 0 | Operating Instructions Note: The Operating Instructions should be ordered as a separate line on the order. This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and manual library. | See page 4/36 |
| FFKM and PTFE [for process temperatures above -20 °C (-4 °F)] | 1 | Accessories We can offer shorter delivery times for configurations designated with the Quick Ship Symbol. For details see page 9/5 in the appendix. | See page 4/36 |
| Probe material FEP jacketed cable with PPS probe body | 0 | | |
| FEP jacketed cable with PVDF probe body | 1 | | |
| Approvals Dust Ignition Proof: CE, C-TICK, ATEX II 1/2 D T100 °C | | | C |
| Flameproof Enclosure with IS Probe: CE, C-TICK, ATEX II 1 G EEx d[ia] IIC T6...T4, ATEX II 1/2 D T100 °C | | | D |
| Flameproof Enclosure with IS Probe, with WHG approval: CE, C-TICK, ATEX II 1/2 G EEx d[ia] IIC T6...T4, ATEX II 1/2 D T100 °C | | | E |
| Dust Ignition Proof with IS Probe: CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4 | | | F |
| Explosion Proof Enclosure with IS Probe: CSA/FM Class I, Div. 1, Groups A, B, C, D CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4 | | | G |
| General Purpose (CSA, FM) | | | H |
| General Purpose (CE, C-TICK) | | | J |
| General Purpose (CSA, FM, CE, C-TICK) with WHG approval | | | K |
| Enclosure and lid Aluminum epoxy coated | | | |
| 2 x ½" NPT via adapter - cable inlet, IP65 | | | A |
| 2 x M20 x1.5 cable inlet, IP65 | | | B |
| 2 x ½" NPT via adapter - cable inlet, IP68 | | | C |
| 2 x M20 x1.5 cable inlet, IP68 | | | D |

1) Sensor detached to allow customer to set desired cable length

2) Available with Approvals options F ... H

◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol. For details see page 9/5 in the appendix.

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Standard

Selection and Ordering data

Article No.

Pointek CLS200 - Standard - Rod with Sanitary process connection

7ML5632-

- - - - - 0

Versatile inverse frequency shift capacitance level switch with optional process connection choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces

Process connection

Sanitary 316L stainless steel

- 1" sanitary fitting clamp
- 1½" sanitary fitting clamp
- 2" sanitary fitting clamp
- 2½" sanitary fitting clamp
- 3" sanitary fitting clamp

(Note: Sanitary connection dimensionally corresponds to the applicable ISO 2852 standard)

Probe length (length from process connection face)

Note: No Y01 needed in Order code for standard lengths

- Compact 98 mm (3.86 inch)
- Extended rod, 250 mm (9.84 inch)
- Extended rod, 350 mm (13.78 inch)

- Extended rod, 500 mm (19.69 inch)
- Extended rod, 750 mm (29.53 inch)
- Extended rod, 1 000 mm (39.37 inch)

- Extended rod, 1 250 mm (49.21 inch)
- Extended rod, 1 350 mm (53.15 inch)
- Extended rod, 1 500 mm (59.06 inch)

- Extended rod, 1 750 mm (68.90 inch)
- Extended rod, 2 000 mm (78.74 inch)

Add Order code Y01 and plain text:

"Insertion length ... mm"

- Extended rod, 110 ... 350 mm (4.3 ... 13.78 inch)
- Extended rod, 351 ... 1 000 mm (13.78 ... 39.37 inch)
- Extended rod, 1 001 ... 2 000 mm (39.41 ... 78.74 inch)

- Extended rod, 2 001 ... 3 000 mm (78.78 ... 118.11 inch)

- Extended rod, 3 001 ... 4 000 mm (118.15 ... 157.48 inch)

- Extended rod, 4 001 ... 5 000 mm (157.52 ... 196.85 inch)

- Extended rod, 5 001 ... 5 500 mm (196.89 ... 216.53 inch)

Thermal isolator

- Without thermal isolator
- With thermal isolator [for process connection temperatures over 85 °C (185 °F)]

Remote mount electronics and mounting bracket

- Remote mount electronics with 2 m (79 inch) of cable¹⁾
- Remote mount electronics with 5 m (197 inch) of cable¹⁾

Wetted seals

- FKM
 - FFKM
- [for process temperatures above -20 °C (-4 °F)]

Probe material

- 316L stainless steel with PPS probe body
- 316L stainless steel with PVDF probe body

Selection and Ordering data

Article No.

Pointek CLS200 - Standard - Rod with Sanitary process connection

7ML5632-

- - - - - 0

Versatile inverse frequency shift capacitance level switch with optional process connection choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces

Approvals

- Dust Ignition Proof: CE, C-TICK, ATEX II 1/2 D T100 °C
- Flameproof Enclosure with IS Probe: CE, C-TICK, ATEX II 1 G EEx d[ia] IIC T6...T4, ATEX II 1/2 D T100 °C
- Flameproof Enclosure with IS Probe, with WHG approval: CE, C-TICK, ATEX II 1/2 G EEx d[ia] IIC T6...T4, ATEX II 1/2 D T100 °C
- Dust Ignition Proof with IS Probe: CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4
- Explosion Proof Enclosure with IS Probe: CSA/FM Class I, Div. 1, Groups A, B, C, D CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4
- General Purpose (CSA, FM)
- General Purpose (CE, C-TICK)
- General Purpose (CSA, FM, CE, C-TICK) with WHG approval

Enclosure and lid

Aluminum epoxy coated

- 2 x ½" NPT via adapter - cable inlet, IP65
- 2 x M20x1.5 cable inlet, IP65
- 2 x ½" NPT via adapter - cable inlet, IP68
- 2 x M20x1.5 cable inlet, IP68

¹⁾ Available with Approvals options F ... H

◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 9/5 in the appendix.

Selection and Ordering data

Order code

Further designs

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

Total insertion length: enter the total insertion length in plain text description ◆ **Y01**

Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text ◆ **Y15**

Manufacturer's test certificate: M to DIN 55350, Part 18 and ISO 9000 ◆ **C11**

Inspection Certificate Type 3.1 per EN 10204 ◆ **C12**

Operating Instructions

Note: The Operating Instructions should be ordered as a separate line on the order. This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and manual library.

See page 4/36

Accessories

See page 4/36

◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 9/5 in the appendix.

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Standard

| Selection and Ordering data | Article No. |
|---|-----------------|
| Pointek CLS200 - Standard - Sliding Coupling with Threaded process connection | 7ML5633- |
| Versatile inverse frequency shift capacitance level switch with optional process connection choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces | 0 |
| Process connection <u>Threaded, 316L stainless steel</u> | |
| ¾" NPT [(Taper), ANSI/ASME B1.20.1] | 0 A |
| 1" NPT [(Taper), ANSI/ASME B1.20.1] | 0 B |
| 1¼" NPT [(Taper), ANSI/ASME B1.20.1] | 0 C |
| 1½" NPT [(Taper), ANSI/ASME B1.20.1] | 0 D |
| R ¾" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] | 1 A |
| R 1" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] | 1 B |
| R 1½" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] | 1 D |
| G ¾" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] | 3 A |
| G 1" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] | 3 B |
| G 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] | 3 D |
| Probe length (length from flange face) (threaded lengths include process thread) | |
| <u>Note: No Y01 needed in Order code for standard lengths</u> | |
| Extended rod, 350 mm (13.78 inch) | C |
| Extended rod, 500 mm (19.69 inch) | D |
| Extended rod, 750 mm (29.53 inch) | E |
| Extended rod, 1 000 mm (39.37 inch) | F |
| Extended rod, 1 250 mm (49.21 inch) | G |
| Extended rod, 1 350 mm (53.15 inch) | H |
| Extended rod, 1 500 mm (59.06 inch) | J |
| Extended rod, 1 750 mm (68.90 inch) | K |
| Extended rod, 2 000 mm (78.74 inch) | L |
| <u>Add Order code Y01 and plain text:</u> <u>"Insertion length ... mm"</u> | |
| Extended rod, 350 ... 1 000 mm (13.78 ... 39.37 inch) | M |
| Extended rod, 1 001 ... 2 000 mm (39.41 ... 78.74 inch) | N |
| Extended rod, 2 001 ... 3 000 mm (78.78 ... 118.11 inch) | P |
| Extended rod, 3 001 ... 4 000 mm (118.15 ... 157.48 inch) | Q |
| Extended rod, 4 001 ... 5 000 mm (157.52 ... 196.85 inch) | R |
| Extended rod, 5 001 ... 5 500 mm (196.89 ... 216.53 inch) | S |
| Thermal isolator | |
| Without thermal isolator | 0 |
| With thermal isolator [for process connection temperatures over 85 °C (185 °F)] | 1 |
| Remote mount electronics and mounting bracket | |
| With 2 m (79 inch) of cable ¹⁾ | 2 |
| With 5 m (197 inch) of cable ¹⁾ | 3 |
| Wetted seals | |
| FKM and PTFE | 0 |
| FFKM and PTFE [for process temperatures above -20 °C (-4 °F)] | 1 |
| Probe material | |
| 316L stainless steel with PPS probe body | 0 |
| 316L stainless steel with PVDF probe body | 1 |

| Selection and Ordering data | Article No. |
|---|-----------------|
| Pointek CLS200 - Standard - Sliding Coupling with Threaded process connection | 7ML5633- |
| Versatile inverse frequency shift capacitance level switch with optional process connection choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces | 0 |
| Approvals | |
| Dust Ignition Proof: CE, C-TICK, ATEX II 1/2 D T100 °C | C |
| Flameproof Enclosure with IS Probe: CE, C-TICK, ATEX II 1 G EEx d[ia] IIC T6...T4, ATEX II 1/2 D T100 °C | D |
| Flameproof Enclosure with IS Probe, with WHG approval: CE, C-TICK, ATEX II 1/2 G EEx d[ia] IIC T6...T4, ATEX II 1/2 D T100 °C | E |
| Dust Ignition Proof with IS Probe: CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4 | F |
| Explosion Proof Enclosure with IS Probe: CSA/FM Class I, Div. 1, Groups A, B, C, D CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4 | G |
| General Purpose (CSA, FM) | H |
| General Purpose (CE, C-TICK) | J |
| General Purpose (CSA, FM, CE, C-TICK) with WHG approval | K |
| Enclosure and lid | |
| Aluminum epoxy coated | |
| 2 x ½" NPT via adapter - cable inlet, IP65 | A |
| 2 x M20x1.5 cable inlet, IP65 | B |
| 2 x ½" NPT via adapter - cable inlet, IP68 | C |
| 2 x M20x1.5 cable inlet, IP68 | D |

¹⁾ Available with Approvals options F ... H

◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 9/5 in the appendix.

| Selection and Ordering data | Order code |
|---|---------------|
| Further designs | |
| Please add "-Z" to Article No. and specify Order code(s). | |
| Total insertion length: enter the total insertion length in plain text description | Y01 |
| Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]; Measuring-point number/identification (max. 27 characters) specify in plain text | Y15 |
| Manufacturer's test certificate: M to DIN 55350, Part 18 and ISO 9000 | C11 |
| Inspection Certificate Type 3.1 per EN 10204 | C12 |
| Operating Instructions | |
| Note: The Operating Instructions should be ordered as a separate line on the order. This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and manual library. | See page 4/36 |
| Accessories | |
| | See page 4/36 |

◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 9/5 in the appendix.

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Standard

4

| Selection and Ordering data | Article No. |
|---|-----------------|
| Pointek CLS200 - Standard - PFA Coated Rod with PFA Coated Flanged process connection | 7ML5634- |
| Versatile inverse frequency shift capacitance level switch with optional process connection choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces | |
| Process connection | |
| <u>Welded flange, 316L stainless steel, raised face</u> | |
| 1" ASME, 150 lb | 5 A |
| 1" ASME, 300 lb | 5 B |
| 1" ASME, 600 lb | 5 C |
| 1½" ASME, 150 lb | 5 D |
| 1½" ASME, 300 lb | 5 E |
| 1½" ASME, 600 lb | 5 F |
| 2" ASME, 150 lb | 5 G |
| 2" ASME, 300 lb | 5 H |
| 2" ASME, 600 lb | 5 J |
| 3" ASME, 150 lb | 5 K |
| 3" ASME, 300 lb | 5 L |
| 3" ASME, 600 lb | 5 M |
| 4" ASME, 150 lb | 5 N |
| 4" ASME, 300 lb | 5 P |
| 4" ASME, 600 lb | 5 Q |
| <u>Welded flange, 316L stainless steel, Type A flat faced</u> | |
| DN 25, PN 16 | 6 A |
| DN 25, PN 40 | 6 B |
| DN 40, PN 16 | 6 C |
| DN 40, PN 40 | 6 D |
| DN 50, PN 16 | 6 E |
| DN 50, PN 40 | 6 F |
| DN 80, PN 16 | 6 G |
| DN 80, PN 40 | 6 H |
| DN 100, PN 16 | 6 J |
| DN 100, PN 40 | 6 K |
| (Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5 or EN 1092-1 standard.) | |
| Probe length (length from flange face) (threaded lengths include process thread) | |
| <u>Note: No Y01 needed in Order code for standard lengths</u> | |
| Compact 98 mm (3.86 inch) | A |
| Extended rod, 250 mm (9.84 inch) | B |
| Extended rod, 350 mm (13.78 inch) | C |
| Extended rod, 500 mm (19.69 inch) | D |
| Extended rod, 750 mm (29.53 inch) | E |
| Extended rod, 1 000 mm (39.37 inch) | F |
| Extended rod, 1 250 mm (49.21 inch) | G |
| Extended rod, 1 350 mm (53.15 inch) | H |
| Extended rod, 1 500 mm (59.06 inch) | J |
| Extended rod, 1 750 mm (68.90 inch) | K |
| Extended rod, 2 000 mm (78.74 inch) | L |
| <u>Add Order code Y01 and plain text: "Insertion length ... mm"</u> | |
| Extended rod, 200 ... 1 000 mm (7.87 ... 39.37 inch) | M |
| Extended rod, 1 001 ... 2 000 mm (39.41 ... 78.74 inch) | N |
| Extended rod, 2 001 ... 3 000 mm (78.78 ... 118.11 inch) | P |
| Extended rod, 3 001 ... 4 000 mm (118.15 ... 157.48 inch) | Q |
| Extended rod, 4 001 ... 5 000 mm (157.52 ... 196.85 inch) | R |
| Extended rod, 5 001 ... 5 500 mm (196.89 ... 216.53 inch) | S |

| Selection and Ordering data | Article No. |
|---|-----------------|
| Pointek CLS200 - Standard - PFA Coated Rod with PFA Coated Flanged process connection | 7ML5634- |
| Versatile inverse frequency shift capacitance level switch with optional process connection choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces | |
| Thermal isolator | |
| Without thermal isolator | 0 |
| With thermal isolator [for process connection temperatures over 85 °C (185 °F)] | 1 |
| Remote mount electronics and mounting bracket | |
| With 2 m (79 inch) of cable | 2 |
| With 5 m (197 inch) of cable | 3 |
| Wetted seals | |
| FKM | 0 |
| FFKM [for process temperatures above -20 °C (-4 °F)] | 1 |
| Probe material | |
| PFA Coated 316L stainless steel with PPS probe body | 0 |
| PFA Coated 316L stainless steel with PVDF probe body | 1 |
| Approvals | |
| Dust Ignition Proof with IS Probe: CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4 | F |
| Explosion Proof Enclosure with IS Probe: CSA/FM Class I, Div. 1, Groups A, B, C, D CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4 | G |
| General Purpose (CSA, FM) | H |
| Enclosure and lid | |
| Aluminum epoxy coated | |
| 2 x ½" NPT via adapter - cable inlet, IP65 | A |
| 2 x M20x1.5 cable inlet, IP65 | B |
| 2 x ½" NPT via adapter - cable inlet, IP68 | C |
| 2 x M20x1.5 cable inlet, IP68 | D |

| Selection and Ordering data | Order code |
|--|---------------|
| Further designs | |
| Please add "-Z" to Article No. and specify Order code(s). | |
| Total insertion length: enter the total insertion length in plain text description | Y01 |
| Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text | Y15 |
| Manufacturer's test certificate: M to DIN 55350, Part 18 and ISO 9000 | C11 |
| Inspection Certificate Type 3.1 per EN 10204 | C12 |
| Operating Instructions | |
| Note: The Operating Instructions should be ordered as a separate line on the order. This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and manual library. | See page 4/36 |
| Accessories | |
| | See page 4/36 |

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Digital

Overview



Pointek CLS200 (digital version) is a versatile inverse frequency shift capacitance level switch with optional rod/cable choices and configurable output, ideal for detection of liquids, slurries, foam and interfaces. The digital version includes PROFIBUS PA, an LCD display, and advanced diagnostic features.

Benefits

- Potted construction protects signal circuit from shock, vibration, humidity and/or condensation
- High chemical resistance
- Level detection independent of tank or pipe earth reference
- Insensitive to product buildup due to high frequency oscillation
- High sensitivity allows installation in a wide range of liquids, solids or slurry applications
- Integral LCD display allows for easy menu-driven setup
- PROFIBUS PA communication (SIMATIC PDM compatible)

Application

Pointek CLS200 digital version provides an integral LCD display for stand-alone use, and also provides PROFIBUS PA communication (Profile version 3.0, Class B) for connection to a network.

The power supply is galvanically isolated and accepts a wide range of voltages (12 to 30 V DC). When used with thermal isolator, the stainless steel and PPS (PVDF optional) materials used in the probe construction provide a temperature rating up to 125 °C (257 °F) on the process wetted portion of the probe. The switch responds to any material with a dielectric constant of 1.5 or more by detecting a change in oscillating frequency, and it can be set to detect before contact or on contact with the probe. The menu-driven setup allows precise control of the switch point signal damping and alarm functions.

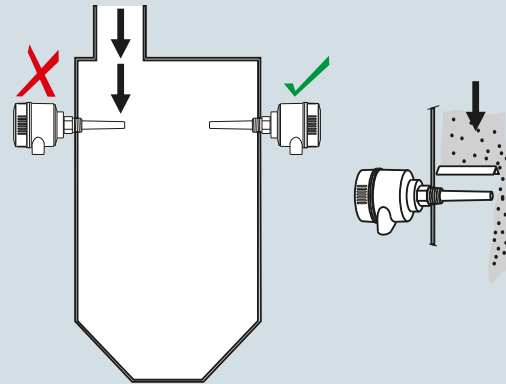
When connected to the PROFIBUS network, advanced diagnostics and set up using SIMATIC PDM are possible.

The CLS200 operates independently of the tank wall or pipe so it does not require an external reference electrode for level detection in a non-conductive vessel such as concrete or plastic (EMC regulations applicable in some regions).

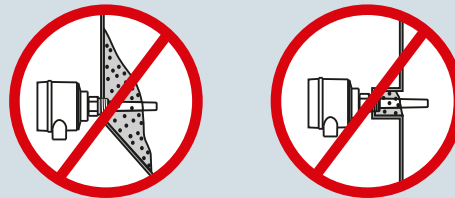
- Key Applications: liquids, slurries, powders, granules, pressurized applications, hazardous areas

Configuration

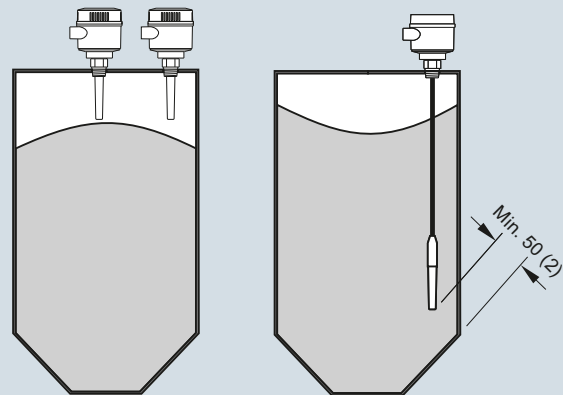
Installation



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



Avoid areas where material build up occurs.



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

Pointek CLS200 installation, dimensions in mm (inch)

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Digital

Technical specifications

| | | | |
|--|---|------------------------------------|--|
| Mode of operation | | Power supply | |
| Measuring principle | Inverse frequency shift capacitive level detection | Bus voltage | Standard: 12 ... 30 V DC Intrinsically Safe: 12 ... 24 V DC 12.5 mA |
| Input | | Current consumption | |
| Measured variable | Change in picoFarad (pF) | Certificates and approvals | |
| Output | | General Purpose | CSA, FM, CE, C-TICK ATEX II 1/2 D T100 °C |
| Output signal | | Dust Ignition Proof | CSA/FM Class II, Div. 1, Groups E, F, G |
| • Solid-state output | | Dust Ignition Proof with IS Probe | CSA/FM Class III T4 ATEX II 1/2 D T100 °C |
| - Output | Galvanically isolated | Flameproof Enclosure with IS Probe | ATEX II 1/2 G EEx d[ia] IIC T6...T4 ATEX II 1/2 D T100 °C |
| - Protection | Against reversed polarity (bipolar) | Explosion Proof with IS Probe | CSA/FM Class I, Div. 1, Groups A, B, C, D CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4 |
| - Max. switching voltage | • 30 V DC • 30 V peak AC | Intrinsically Safe ⁴⁾ | ATEX II 1 G EEx ia IIC T6 ... T4 ATEX II 1/2 D IP6X T100 °C CSA/FM Class I, Div. 1, Groups A, B, C, D CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4 |
| - Max. load current | 82 mA | Non-incendive | CSA/FM Class I, Div. 2, Groups A, B, C, D CSA/FM Class II, Div. 2, Groups F, G CSA/FM Class III T4 or T6 |
| - Voltage drop | < 1 V, typical at 50 mA | Non-Sparking | ATEX II 3 G Ex nA II T6...T4 ATEX II 2 D IP6X T100 °C |
| - Time delay (ON and/or OFF) | Programmable by user (0 ... 100 s) | Marine | Lloyds Register of Shipping, Categories ENV1, ENV2 and ENV5 |
| • Fail-safe mode | Min. or max. | Others | Pattern Approval (China) |
| • Connection | Removable terminal block | Communication | PROFIBUS PA (IEC 61158 CPF3/2) Bus physical layer: IEC 61158-2 MBP (IS) Device profile: PROFIBUS PA profile for Process Control Devices Version 3.0, Class B FISCO field device |
| Rated operating conditions¹⁾ | | | |
| Installation conditions | | | |
| • Location | Indoor/outdoor | | |
| Ambient conditions | | | |
| • Ambient temperature | -40 ... +85 °C (-40 ... +185 °F) ²⁾ | | |
| • Installation category | II | | |
| • Pollution degree | 4 | | |
| Medium conditions | | | |
| | Liquids, bulk solids, slurries and interfaces | | |
| • Relative dielectric constant ϵ_r | Min. 1.5 | | |
| • Process temperature | | | |
| - Without thermal isolator | -40 ... +85 °C (-40 ... +185 °F) ²⁾ | | |
| - With thermal isolator | -40 ... +125 °C (-40 ... +257 °F) | | |
| • Process pressure (rod version) | -1 ... +25 bar g (-14.6 ... +365 psi g) (nominal) | | |
| • Process pressure (cable version) ³⁾ | -1 ... +10 bar g (-14.6 ... +150 psi g) (nominal) | | |
| • Process pressure (sliding coupling version) | -1 ... +10 bar g (-14.6 ... +150 psi g) (nominal) | | |
| Design | | | |
| • Material | | | |
| - Enclosure | Epoxy-coated aluminum with gasket | | |
| - Optional thermal isolator | 316L stainless steel | | |
| • Connection | Removable terminal block, max. 2.5 mm ² | | |
| • Degree of protection | IP65/Type 4/NEMA 4 (optional IP68) | | |
| • Cable inlet | 2 x M20x1.5 thread (option: 2 x 1/2" NPT conduit entry including 1 plugged entry) | | |
| Electromagnetic Compatibility | To comply with CE EMC regulations (where applicable); the CLS200 should be installed per the instruction manual. | | |

¹⁾ When operation is in areas classified as hazardous, observe restrictions according to relevant certificate.
See also Pressure/Temperature curves on page 4/38.

²⁾ Thermal isolator is used if process connection temperature exceeds 85 °C (185 °F)

³⁾ Pressure rating of process seal is temperature dependent.
See Pressure/Temperature curves on page 4/38.

⁴⁾ Barrier or Intrinsically Safe power supply required for Intrinsically Safe protection

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Digital

| Design: Probe | | | | |
|--------------------------------|---|---|---|--|
| | Rod version | Sanitary version | Cable version | Sliding Coupling version |
| Max. length | 5 500 mm (216.53 inch) | 5 500 mm (216.53 inch) | 30 000 mm (1 181.1 inch) liquids and slurries 5 000 mm (196.85 inch) solids (under loads) | 5 500 mm (216.53 inch) |
| Process connection | R 3/4", 1", 1 1/4", 1 1/2" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] 3/4", 1", 1 1/4", 1 1/2" NPT [(Taper), ANSI/ASME B1.20.1] G 3/4", 1", 1 1/2" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] 316L stainless steel ASME/EN flange | 1 1/2", 2" sanitary fitting clamp 316L stainless steel | R 3/4", 1", 1 1/4", 1 1/2" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] 3/4", 1", 1 1/4", 1 1/2" NPT [(Taper), ANSI/ASME B1.20.1] G 3/4", 1", 1 1/2" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] 316L stainless steel ASME/EN flange | R 3/4", 1", 1 1/4", 1 1/2" inch [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] 3/4", 1", 1 1/4", 1 1/2" NPT [(Taper), ANSI/ASME B1.20.1] G 3/4", 1", 1 1/2" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] |
| Extension material | 316L stainless steel optional PFA coated ¹⁾ | 316L stainless steel | Fluoroethylene propylene (FEP) cable with stainless steel core | 316L stainless steel |
| Sensor wetted parts | PPS (optional PVDF) | PPS (optional PVDF) | PPS (optional PVDF) | PPS (optional PVDF) |
| O-ring seal material | FKM (optional FFKM) ²⁾ | FKM (optional FFKM) ²⁾ | FKM (optional FFKM) ²⁾ | FKM (optional FFKM) ²⁾ |
| Thermal isolator ³⁾ | Optional | Optional | Optional | Optional |
| Extension | User selected length | User selected length | Cable extension | User selected length |

¹⁾ PFA coating (7ML5634 and 7ML5644) has 120 micron thickness

²⁾ For Caustic Materials, please contact ceg.smpi@siemens.com for alternative O-Rings

³⁾ Thermal isolator is used if process connection temperature exceeds 85 °C (185 °F).

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Digital

4

| Selection and Ordering data | Article No. |
|---|-----------------|
| Pointek CLS200 - Digital - Rod with Threaded or Flanged process connection | 7ML5640- |
| Versatile inverse frequency shift capacitance level switch with optional process connection choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces | 0 |
| Process connection <u>Threaded, 316L stainless steel</u> | |
| 3/4" NPT [(Taper), ANSI/ASME B1.20.1] | 0 A |
| 1" NPT [(Taper), ANSI/ASME B1.20.1] | 0 B |
| 1 1/4" NPT [(Taper), ANSI/ASME B1.20.1] | 0 C |
| 1 1/2" NPT [(Taper), ANSI/ASME B1.20.1] | 0 D |
| R 3/4" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] | 1 A |
| R 1" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] | 1 B |
| R 1 1/2" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] | 1 D |
| G 3/4" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] | 3 A |
| G 1" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] | 3 B |
| G 1 1/2" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] | 3 D |
| <u>Welded flange, 316L stainless steel, raised face</u> | |
| 1" ASME, 150 lb | 5 A |
| 1" ASME, 300 lb | 5 B |
| 1" ASME, 600 lb | 5 C |
| 1 1/2" ASME, 150 lb | 5 D |
| 1 1/2" ASME, 300 lb | 5 E |
| 1 1/2" ASME, 600 lb | 5 F |
| 2" ASME, 150 lb | 5 G |
| 2" ASME, 300 lb | 5 H |
| 2" ASME, 600 lb | 5 J |
| 3" ASME, 150 lb | 5 K |
| 3" ASME, 300 lb | 5 L |
| 3" ASME, 600 lb | 5 M |
| 4" ASME, 150 lb | 5 N |
| 4" ASME, 300 lb | 5 P |
| 4" ASME, 600 lb | 5 Q |
| <u>Welded flange, 316L stainless steel, Type A flat faced</u> | |
| DN 25, PN 16 | 6 A |
| DN 25, PN 40 | 6 B |
| DN 40, PN 16 | 6 C |
| DN 40, PN 40 | 6 D |
| DN 50, PN 16 | 6 E |
| DN 50, PN 40 | 6 F |
| DN 80, PN 16 | 6 G |
| DN 80, PN 40 | 6 H |
| DN 100, PN 16 | 6 J |
| DN 100, PN 40 | 6 K |
| (Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5 or EN 1092-1 standard.) | |
| Probe length (length from flange face) (threaded lengths include process thread) | |
| <u>Note: No Y01 needed in Order code for standard lengths</u> | |
| Compact [threaded 120 mm (4.72 inch), Flanged 98 mm (3.86 inch)] | A |
| Extended rod, 250 mm (9.84 inch) | B |
| Extended rod, 350 mm (13.78 inch) | C |
| Extended rod, 500 mm (19.69 inch) | D |
| Extended rod, 750 mm (29.53 inch) | E |
| Extended rod, 1 000 mm (39.37 inch) | F |
| Extended rod, 1 250 mm (49.21 inch) | G |
| Extended rod, 1 350 mm (53.15 inch) | H |
| Extended rod, 1 500 mm (59.06 inch) | J |
| Extended rod, 1 750 mm (68.90 inch) | K |
| Extended rod, 2 000 mm (78.74 inch) | L |

| Selection and Ordering data | Article No. |
|---|-----------------|
| Pointek CLS200 - Digital - Rod with Threaded or Flanged process connection | 7ML5640- |
| Versatile inverse frequency shift capacitance level switch with optional process connection choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces | 0 |
| Add Order code Y01 and plain text: <u>"Insertion length ... mm"</u> | |
| Extended rod, 210 ... 1 000 mm (8.27 ... 39.37 inch) | M |
| Extended rod, 1 001 ... 2 000 mm (39.41 ... 78.74 inch) | N |
| Extended rod, 2 001 ... 3 000 mm (78.78 ... 118.11 inch) | P |
| Extended rod, 3 001 ... 4 000 mm (118.15 ... 157.48 inch) | Q |
| Extended rod, 4 001 ... 5 000 mm (157.52 ... 196.85 inch) | R |
| Extended rod, 5 001 ... 5 500 mm (196.89 ... 216.53 inch) | S |
| Thermal isolator | |
| Without thermal isolator | 0 |
| With thermal isolator [for process connection temperatures over 85 °C (185 °F)] | 1 |
| Remote mount electronics and mounting bracket | |
| With 2 m (79 inch) of cable | 2 |
| With 5 m (197 inch) of cable | 3 |
| Wetted seals | |
| FKM | 0 |
| FFKM [for process temperatures above -20 °C (-4 °F)] | 1 |
| Probe material | |
| 316L stainless steel with PPS probe body | 0 |
| 316L stainless steel with PVDF probe body | 1 |
| Approvals | |
| Non-Sparking: | B |
| CE, C-TICK, ATEX II 3 G Ex nA II T6...T4, ATEX II 2 D IP6X T100 °C | |
| Dust Ignition Proof: | C |
| CE, C-TICK, ATEX II 1/2 D T100 °C | |
| Intrinsically Safe: ¹⁾ | D |
| CE, C-TICK, ATEX II 1 G EEx ia IIC T6...T4, ATEX II 1/2 D IP6X T100 °C | |
| Flameproof Enclosure with IS Probe: | E |
| CE, C-TICK, ATEX II 1/2 G EEx d[ia] IIC T6...T4, ATEX II 1/2 D T100 °C | |
| Non-incendive: | F |
| CSA/FM Class I, Div. 2, Groups A, B, C, D CSA/FM Class II, Div. 2, Groups F, G CSA/FM Class III T4 or T6 | |
| Dust Ignition Proof with IS Probe: | G |
| CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4 | |
| Intrinsically Safe: ¹⁾ | H |
| CSA/FM Class I, Div. 1, Groups A, B, C, D CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4 | |
| Explosion Proof with IS Probe: | J |
| CSA/FM Class I, Div. 1, Groups A, B, C, D CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4 | |
| General Purpose (CSA, FM) | K |
| General Purpose (CE, C-TICK) | L |
| Enclosure and lid <u>Aluminum epoxy coated</u> | |
| 2 x 1/2" NPT via adapter - cable inlet, IP65 | A |
| 2 x M20x1.5 cable inlet, IP65 | B |
| 2 x 1/2" NPT via adapter - cable inlet, IP68 | C |
| 2 x M20x1.5 cable inlet, IP68 | D |

¹⁾ Barrier or Intrinsically Safe power supply required for Intrinsically Safe protection

• We can offer shorter delivery times for configurations designated with the Quick Ship Symbol •. For details see page 9/5 in the appendix.

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Digital

| Selection and Ordering data | Order code | Selection and Ordering data | Article No. |
|--|---------------|---|-----------------|
| Further designs | | Pointek CLS200 - Digital - Cable with Threaded or Flanged process connection | 7ML5641- |
| Please add "-Z" to Article No. and specify Order code(s). | | Versatile inverse frequency shift capacitance level switch with optional process connection choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces | 0 |
| Total insertion length: enter the total insertion length in plain text description | Y01 | Process connection | |
| Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text | Y15 | <u>Threaded, 316L stainless steel</u> | |
| Manufacturer's test certificate: M to DIN 55350, Part 18 and ISO 9000 | C11 | ¾" NPT [(Taper), ANSI/ASME B1.20.1] | 0 A |
| Inspection Certificate Type 3.1 per EN 10204 | C12 | 1" NPT [(Taper), ANSI/ASME B1.20.1] | 0 B |
| Operating Instructions | | 1¼" NPT [(Taper), ANSI/ASME B1.20.1] | 0 C |
| Note: The Operating Instructions should be ordered as a separate line on the order. This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and manual library. | See page 4/36 | 1½" NPT [(Taper), ANSI/ASME B1.20.1] | 0 D |
| Accessories | See page 4/36 | R ¾" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] | 1 A |
| ◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 9/5 in the appendix. | | R 1" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] | 1 B |
| | | R 1½" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] | 1 D |
| | | G ¾" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] | 3 A |
| | | G 1" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] | 3 B |
| | | G 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] | 3 D |
| | | <u>Welded flange, 316L stainless steel, raised face</u> | |
| | | 1" ASME, 150 lb | 5 A |
| | | 1" ASME, 300 lb | 5 B |
| | | 1" ASME, 600 lb | 5 C |
| | | 1½" ASME, 150 lb | 5 D |
| | | 1½" ASME, 300 lb | 5 E |
| | | 1½" ASME, 600 lb | 5 F |
| | | 2" ASME, 150 lb | 5 G |
| | | 2" ASME, 300 lb | 5 H |
| | | 2" ASME, 600 lb | 5 J |
| | | 3" ASME, 150 lb | 5 K |
| | | 3" ASME, 300 lb | 5 L |
| | | 3" ASME, 600 lb | 5 M |
| | | 4" ASME, 150 lb | 5 N |
| | | 4" ASME, 300 lb | 5 P |
| | | 4" ASME, 600 lb | 5 Q |
| | | <u>Welded flange, 316L stainless steel, Type A flat faced</u> | |
| | | DN 25, PN 16 | 6 A |
| | | DN 25, PN 40 | 6 B |
| | | DN 40, PN 16 | 6 C |
| | | DN 40, PN 40 | 6 D |
| | | DN 50, PN 16 | 6 E |
| | | DN 50, PN 40 | 6 F |
| | | DN 80, PN 16 | 6 G |
| | | DN 80, PN 40 | 6 H |
| | | DN 100, PN 16 | 6 J |
| | | DN 100, PN 40 | 6 K |
| | | (Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5 or EN 1092-1 standard.) | |
| | | Probe length (length from flange face) (threaded lengths include process thread) | |
| | | Note: No Y01 needed in Order code for standard lengths | |
| | | Extended cable, 3 000 mm (118.11 inch), length can be determined by customer on assembly | A |
| | | Extended cable, 6 000 mm (236.22 inch), length can be determined by customer on assembly | B |
| | | <u>Add Order code Y01 and plain text:</u> "Insertion length ... mm" | |
| | | Extended cable, 500 ... 5 000 mm (19.69 ... 196.85 inch) | C |
| | | Extended cable, 5 001 ... 10 000 mm (196.89 ... 393.70 inch) | D |
| | | Extended cable, 10 001 ... 15 000 mm (393.74 ... 590.55 inch) | E |
| | | Extended cable, 15 001 ... 20 000 mm (590.59 ... 787.40 inch) | F |
| | | Extended cable, 20 001 ... 25 000 mm (787.44 ... 984.25 inch) | G |
| | | Extended cable, 25 001 ... 30 000 mm (984.29 ... 1 181.10 inch) | H |

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Digital

| Selection and Ordering data | Article No. |
|---|-----------------|
| Pointek CLS200 - Digital - Cable with Threaded or Flanged process connection | 7ML5641- |
| Versatile inverse frequency shift capacitance level switch with optional process connection choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces | 0 |
| Thermal isolator | |
| Without thermal isolator | 0 |
| With thermal isolator [for process connection temperatures over 85 °C (185 °F)] | 1 |
| Remote mount electronics and mounting bracket | |
| With 2 m (79 inch) of cable | 2 |
| With 5 m (197 inch) of cable | 3 |
| Wetted seals | |
| FKM and PTFE | 0 |
| FFKM and PTFE [for process temperatures above -20 °C (-4 °F)] | 1 |
| Probe material | |
| FEP jacketed cable with PPS probe body | 0 |
| FEP jacketed cable with PVDF probe body | 1 |
| Approvals | |
| Non-Sparking: CE, C-TICK, ATEX II 3 G Ex nA II T6...T4, ATEX II 2 D IP6X T100 °C | B |
| Dust Ignition Proof: CE, C-TICK, ATEX II 1/2 D T100 °C | C |
| Intrinsically Safe: ¹⁾ CE, C-TICK, ATEX II 1 G EEx ia IIC T6...T4, ATEX II 1/2 D IP6X T100 °C | D |
| Flameproof Enclosure with IS Probe: CE, C-TICK, ATEX II 1/2 G EEx d[ia] IIC T6...T4, ATEX II 1/2 D T100 °C | E |
| Non-incendive: CSA/FM Class I, Div. 2, Groups A, B, C, D CSA/FM Class II, Div. 2, Groups F, G CSA/FM Class III T4 or T6 | F |
| Dust Ignition Proof with IS Probe: CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4 | G |
| Intrinsically Safe: ¹⁾ CSA/FM Class I, Div. 1, Groups A, B, C, D CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4 | H |
| Explosion Proof with IS Probe: CSA/FM Class I, Div. 1, Groups A, B, C, D CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4 | J |
| General Purpose (CSA, FM) | K |
| General Purpose (CE, C-TICK) | L |
| Enclosure and lid | |
| <u>Aluminum epoxy coated</u> | |
| 2 x 1/2" NPT via adapter - cable inlet, IP65 | A |
| 2 x M20x1.5 cable inlet, IP65 | B |
| 2 x 1/2" NPT via adapter - cable inlet, IP68 | C |
| 2 x M20x1.5 cable inlet, IP68 | D |

¹⁾ Barrier or Intrinsically Safe power supply required for Intrinsically Safe protection

◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 9/5 in the appendix.

| Selection and Ordering data | Order code |
|---|----------------------|
| Further designs | |
| Please add "-Z" to Article No. and specify Order code(s). | |
| Total insertion length: enter the total insertion length in plain text description | ◆ Y01 |
| Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text | ◆ Y15 |
| Manufacturer's test certificate: M to DIN 55350, Part 18 and ISO 9000 | ◆ C11 |
| Inspection Certificate Type 3.1 per EN 10204 | ◆ C12 |
| Operating Instructions | |
| Note: The Operating Instructions should be ordered as a separate line on the order. This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and manual library. | See page 4/36 |
| Accessories | |
| ◆ We can offer shorter delivery times for configurations designated with the Quick Ship Symbol ◆. For details see page 9/5 in the appendix. | See page 4/36 |

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Digital

| Selection and Ordering data | Article No. | Selection and Ordering data | Article No. |
|---|-------------------------|---|-------------------------|
| Pointek CLS200 - Digital - Rod with Sanitary process connection Versatile inverse frequency shift capacitance level switch with optional process connection choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces | 7ML5642- - - - - - 0 | Pointek CLS200 - Digital - Rod with Sanitary process connection Versatile inverse frequency shift capacitance level switch with optional process connection choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces | 7ML5642- - - - - - 0 |
| Process connection Sanitary 316L stainless steel | | Non-incendive: | F |
| 1" sanitary fitting clamp | 8 A | CSA/FM Class I, Div. 2, Groups A, B, C, D | |
| 1½" sanitary fitting clamp | 8 B | CSA/FM Class II, Div. 2, Groups F, G | |
| 2" sanitary fitting clamp | 8 C | CSA/FM Class III T4 or T6 | |
| 2½" sanitary fitting clamp | 8 D | Dust Ignition Proof with IS Probe: | G |
| 3" sanitary fitting clamp | 8 E | CSA/FM Class II, Div. 1, Groups E, F, G | |
| (Note: Sanitary connection dimensionally corresponds to the applicable ISO 2852 standard.) | | CSA/FM Class III T4 | |
| Probe length (length from process connection face) <u>Note: No Y01 needed in Order code for standard lengths</u> | | Intrinsically Safe: ¹⁾ | H |
| Compact 98 mm (3.86 inch) | A | CSA/FM Class I, Div. 1, Groups A, B, C, D | |
| Extended rod, 250 mm (9.84 inch) | B | CSA/FM Class II, Div. 1, Groups E, F, G | |
| Extended rod, 350 mm (13.78 inch) | C | CSA/FM Class III T4 | |
| Extended rod, 500 mm (19.69 inch) | D | Explosion Proof with IS Probe: | J |
| Extended rod, 750 mm (29.53 inch) | E | CSA/FM Class I, Div. 1, Groups A, B, C, D | |
| Extended rod, 1 000 mm (39.37 inch) | F | CSA/FM Class II, Div. 1, Groups E, F, G | |
| Extended rod, 1 250 mm (49.21 inch) | G | CSA/FM Class III T4 | |
| Extended rod, 1 350 mm (53.15 inch) | H | General Purpose (CSA, FM) | K |
| Extended rod, 1 500 mm (59.06 inch) | J | General Purpose (CE, C-TICK) | L |
| Extended rod, 1 750 mm (68.90 inch) | K | Enclosure and lid Aluminum epoxy coated | |
| Extended rod, 2 000 mm (78.74 inch) | L | 2 x ½" NPT via adapter - cable inlet, IP65 | A |
| Add Order code Y01 and plain text: "Insertion length ... mm" | | 2 x M20x1.5 cable inlet, IP65 | B |
| Extended rod, 110 ... 350 mm (4.3 ... 13.78 inch) | M | 2 x ½" NPT via adapter - cable inlet, IP68 | C |
| Extended rod, 351 ... 1 000 mm (13.82 ... 39.37 inch) | N | 2 x M20x1.5 cable inlet, IP68 | D |
| Extended rod, 1 001 ... 2 000 mm (39.41 ... 78.74 inch) | P | ¹⁾ Barrier or Intrinsically Safe power supply required for Intrinsically Safe protection | |
| Extended rod, 2 001 ... 3 000 mm (78.78 ... 118.11 inch) | Q | We can offer shorter delivery times for configurations designated with the Quick Ship Symbol. For details see page 9/5 in the appendix. | |
| Extended rod, 3 001 ... 4 000 mm (118.15 ... 157.48 inch) | R | | |
| Extended rod, 4 001 ... 5 000 mm (157.52 ... 196.85 inch) | S | | |
| Extended rod, 5 001 ... 5 500 mm (196.89 ... 216.53 inch) | T | | |
| Thermal isolator Without thermal isolator | 0 | | |
| With thermal isolator [for process connection temperatures over 85 °C (185 °F)] | 1 | | |
| Remote mount electronics and mounting bracket With 2 m (79 inch) of cable | 2 | | |
| With 5 m (197 inch) of cable | 3 | | |
| Wetted seals FKM | 0 | | |
| FFKM [for process temperatures above -20 °C (-4 °F)] | 1 | | |
| Probe material 316L stainless steel with PPS probe body | 0 | | |
| 316L stainless steel with PVDF probe body | 1 | | |
| Approvals Non-Sparking: | | | B |
| CE, C-TICK, ATEX II 3 G Ex nA II T6...T4, ATEX II 2 D IP6X T100 °C | | | |
| Dust Ignition Proof: | | | C |
| CE, C-TICK, ATEX II 1/2 D T100 °C | | | |
| Intrinsically Safe: ¹⁾ | | | D |
| CE, C-TICK, ATEX II 1 G EEx ia IIC T6...T4, ATEX II 1/2 D IP6X T100 °C | | | |
| Flameproof Enclosure with IS Probe: | | | E |
| CE, C-TICK, ATEX II 1/2 G EEx d[ia] IIC T6...T4, ATEX II 1/2 D T100 °C | | | |
| | | Selection and Ordering data | Order code |
| | | Further designs Please add "-Z" to Article No. and specify Order code(s). | |
| | | Total insertion length: enter the total insertion length in plain text description | Y01 |
| | | Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text | Y15 |
| | | Manufacturer's test certificate: M to DIN 55350, Part 18 and ISO 9000 | C11 |
| | | Inspection Certificate Type 3.1 per EN 10204 | C12 |
| | | Operating Instructions Note: The Operating Instructions should be ordered as a separate line on the order. This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and manual library. | See page 4/36 |
| | | Accessories | See page 4/36 |

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Digital

4

| Selection and Ordering data | Article No. |
|---|--------------------------------|
| Pointek CLS200 - Digital - Rod with Sliding coupling with Threaded process connection | 7ML5643- - - - - - 0 |
| Versatile inverse frequency shift capacitance level switch with optional process connection choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces | |
| Process connection <u>Threaded, 316L stainless steel</u> | |
| 3/4" NPT [(Taper), ANSI/ASME B1.20.1] | 0 A |
| 1" NPT [(Taper), ANSI/ASME B1.20.1] | 0 B |
| 1 1/4" NPT [(Taper), ANSI/ASME B1.20.1] | 0 C |
| 1 1/2" NPT [(Taper), ANSI/ASME B1.20.1] | 0 D |
| R 3/4" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] | 1 A |
| R 1" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] | 1 B |
| R 1 1/2" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203] | 1 D |
| G 3/4" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] | 3 A |
| G 1" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] | 3 B |
| G 1 1/2" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202] | 3 D |
| Probe length (length from flange face) (threaded lengths include process thread) <u>Note: No Y01 needed in Order code for standard lengths</u> | |
| Extended rod, 350 mm (13.78 inch) | C |
| Extended rod, 500 mm (19.69 inch) | D |
| Extended rod, 750 mm (29.53 inch) | E |
| Extended rod, 1 000 mm (39.37 inch) | F |
| Extended rod, 1 250 mm (49.21 inch) | G |
| Extended rod, 1 350 mm (53.15 inch) | H |
| Extended rod, 1 500 mm (59.06 inch) | J |
| Extended rod, 1 750 mm (68.90 inch) | K |
| Extended rod, 2 000 mm (78.74 inch) | L |
| Add Order code Y01 and plain text: "Insertion length ... mm" | |
| Extended rod, 350 ... 1 000 mm (13.82 ... 39.37 inch) | M |
| Extended rod, 1 001 ... 2 000 mm (39.41 ... 78.74 inch) | N |
| Extended rod, 2 001 ... 3 000 mm (78.78 ... 118.11 inch) | P |
| Extended rod, 3 001 ... 4 000 mm (118.15 ... 157.48 inch) | Q |
| Extended rod, 4 001 ... 5 000 mm (157.52 ... 196.85 inch) | R |
| Extended rod, 5 001 ... 5 500 mm (196.89 ... 216.53 inch) | S |
| Thermal isolator | |
| Without thermal isolator | 0 |
| With thermal isolator [for process connection temperatures over 85 °C (185 °F)] | 1 |
| Remote mount electronics and mounting bracket | |
| With 2 m (79 inch) of cable | 2 |
| With 5 m (197 inch) of cable | 3 |
| Wetted seals | |
| FKM and PTFE | 0 |
| FFKM and PTFE [for process temperatures above -20 °C (-4 °F)] | 1 |
| Probe material | |
| 316L stainless steel with PPS probe body | 0 |
| 316L stainless steel with PVDF probe body | 1 |
| Approvals | |
| Non-Sparking: CE, C-TICK, ATEX II 3 G Ex nA II T6...T4, ATEX II 2 D IP6X T100 °C | B |
| Dust Ignition Proof: CE, C-TICK, ATEX II 1/2 D T100 °C | C |
| Intrinsically Safe: ¹⁾ CE, C-TICK, ATEX II 1 G EEx ia IIC T6...T4, ATEX II 1/2 D IP6X T100 °C | D |

| Selection and Ordering data | Article No. |
|---|--------------------------------|
| Pointek CLS200 - Digital - Rod with Sliding coupling with Threaded process connection | 7ML5643- - - - - - 0 |
| Versatile inverse frequency shift capacitance level switch with optional process connection choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces | |
| Flameproof Enclosure with IS Probe: CE, C-TICK, ATEX II 1/2 G EEx d[ia] IIC T6...T4, ATEX II 1/2 D T100 °C | E |
| Non-incendive: CSA/FM Class I, Div. 2, Groups A, B, C, D CSA/FM Class II, Div. 2, Groups F, G CSA/FM Class III T4 or T6 | F |
| Dust Ignition Proof with IS Probe: CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4 | G |
| Intrinsically Safe: ¹⁾ CSA/FM Class I, Div. 1, Groups A, B, C, D CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4 | H |
| Explosion Proof with IS Probe: CSA/FM Class I, Div. 1, Groups A, B, C, D CSA/FM Class II, Div. 1, Groups E, F, G CSA/FM Class III T4 | J |
| General Purpose (CSA, FM) | K |
| General Purpose (CE, C-TICK) | L |
| Enclosure and lid <u>Aluminum epoxy coated</u> | |
| 2 x 1/2" NPT via adapter - cable inlet, IP65 | A |
| 2 x M20x1.5 cable inlet, IP65 | B |
| 2 x 1/2" NPT via adapter - cable inlet, IP68 | C |
| 2 x M20x1.5 cable inlet, IP68 | D |
| ¹⁾ Barrier or Intrinsically Safe power supply required for Intrinsically Safe protection | |
| • We can offer shorter delivery times for configurations designated with the Quick Ship Symbol •. For details see page 9/5 in the appendix. | |

| Selection and Ordering data | Order code |
|--|---------------|
| Further designs | |
| Please add "-Z" to Article No. and specify Order code(s). | |
| Total insertion length: enter the total insertion length in plain text description | Y01 |
| Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text | Y15 |
| Manufacturer's test certificate: M to DIN 55350, Part 18 and ISO 9000 | C11 |
| Inspection Certificate Type 3.1 per EN 10204 | C12 |
| Operating Instructions | |
| Note: The Operating Instructions should be ordered as a separate line on the order. This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and manual library. | See page 4/36 |
| Accessories | See page 4/36 |

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Digital

| Selection and Ordering data | Article No. |
|---|--------------------------------|
| Pointek CLS200 - Digital - PFA Rod with PFA Flanged process connection | 7ML5644- - - - - - 0 |
| Versatile inverse frequency shift capacitance level switch with optional process connection choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces | |
| Process connection | |
| <u>Welded flange, PFA coated, 316L stainless steel, raised face</u> | |
| 1" ASME, 150 lb | 5 A |
| 1" ASME, 300 lb | 5 B |
| 1" ASME, 600 lb | 5 C |
| 1½" ASME, 150 lb | 5 D |
| 1½" ASME, 300 lb | 5 E |
| 1½" ASME, 600 lb | 5 F |
| 2" ASME, 150 lb | 5 G |
| 2" ASME, 300 lb | 5 H |
| 2" ASME, 600 lb | 5 J |
| 3" ASME, 150 lb | 5 K |
| 3" ASME, 300 lb | 5 L |
| 3" ASME, 600 lb | 5 M |
| 4" ASME, 150 lb | 5 N |
| 4" ASME, 300 lb | 5 P |
| 4" ASME, 600 lb | 5 Q |
| <u>Welded flange, PFA coated, 316L stainless steel, Type A flat faced</u> | |
| DN 25, PN 16 | 6 A |
| DN 25, PN 40 | 6 B |
| DN 40, PN 16 | 6 C |
| DN 40, PN 40 | 6 D |
| DN 50, PN 16 | 6 E |
| DN 50, PN 40 | 6 F |
| DN 80, PN 16 | 6 G |
| DN 80, PN 40 | 6 H |
| DN 100, PN 16 | 6 J |
| DN 100, PN 40 | 6 K |
| (Note: Flange bolting patterns and facings dimensionally correspond to the applicable ASME B16.5 or EN 1092-1 standard.) | |
| Probe length (length from process connection face) | |
| <u>Note: No Y01 needed in Order code for standard lengths</u> | |
| Compact 98 mm (3.86 inch) | A |
| Extended rod, 250 mm (9.84 inch) | B |
| Extended rod, 350 mm (13.78 inch) | C |
| Extended rod, 500 mm (19.69 inch) | D |
| Extended rod, 750 mm (29.53 inch) | E |
| Extended rod, 1 000 mm (39.37 inch) | F |
| Extended rod, 1 250 mm (49.21 inch) | G |
| Extended rod, 1 350 mm (53.15 inch) | H |
| Extended rod, 1 500 mm (59.06 inch) | J |
| Extended rod, 1 750 mm (68.90 inch) | K |
| Extended rod, 2 000 mm (78.74 inch) | L |
| <u>Add Order code Y01 and plain text: "Insertion length ... mm"</u> | |
| Extended rod, 200 ... 1 000 mm (7.87 ... 39.37 inch) | M |
| Extended rod, 1 001 ... 2 000 mm (39.41 ... 78.74 inch) | N |
| Extended rod, 2 001 ... 3 000 mm (78.78 ... 118.11 inch) | P |
| Extended rod, 3 001 ... 4 000 mm (118.15 ... 157.48 inch) | Q |
| Extended rod, 4 001 ... 5 000 mm (157.52 ... 196.85 inch) | R |
| Extended rod, 5 001 ... 5 500 mm (196.89 ... 216.53 inch) | S |
| Thermal isolator | |
| Without thermal isolator | 0 |
| With thermal isolator [for process connection temperatures over 85 °C (185 °F)] | 1 |
| Remote mount electronics and mounting bracket | |
| With 2 m (79 inch) of cable | 2 |
| With 5 m (197 inch) of cable | 3 |

| Selection and Ordering data | Article No. |
|---|--------------------------------|
| Pointek CLS200 - Digital - PFA Rod with PFA Flanged process connection | 7ML5644- - - - - - 0 |
| Versatile inverse frequency shift capacitance level switch with optional process connection choices and configurable output, ideal for detection of liquids, solids, slurries, foam, and interfaces | |
| Wetted seals | |
| FKM | 0 |
| FFKM [for process temperatures above -20 °C (-4 °F)] | 1 |
| Probe material | |
| PFA Coated 316L stainless steel with PPS probe body | 0 |
| PFA Coated 316L stainless steel with PVDF probe body | 1 |
| Approvals | |
| Non-incendive: | |
| CSA/FM Class I, Div. 2, Groups A, B, C, D | F |
| CSA/FM Class II, Div. 2, Groups F, G | |
| CSA/FM Class III T4 or T6 | |
| Dust Ignition Proof with IS Probe: | |
| CSA/FM Class II, Div. 1, Groups E, F, G | G |
| CSA/FM Class III T4 | |
| Intrinsically Safe: ¹⁾ | |
| CSA/FM Class I, Div. 1, Groups A, B, C, D | H |
| CSA/FM Class II, Div. 1, Groups E, F, G | |
| CSA/FM Class III T4 | |
| Explosion Proof with IS Probe: | |
| CSA/FM Class I, Div. 1, Groups A, B, C, D | J |
| CSA/FM Class II, Div. 1, Groups E, F, G | |
| CSA/FM Class III T4 | |
| General Purpose (CSA, FM) | K |
| Enclosure and lid | |
| <u>Aluminum epoxy coated</u> | |
| 2 x ½" NPT via adapter - cable inlet, IP65 | A |
| 2 x M20x1.5 cable inlet, IP65 | B |
| 2 x ½" NPT via adapter - cable inlet, IP68 | C |
| 2 x M20x1.5 cable inlet, IP68 | D |
| ¹⁾ Barrier or Intrinsically Safe power supply required for Intrinsically Safe protection | |

| Selection and Ordering data | Order code |
|--|---------------|
| Further designs | |
| Please add "-Z" to Article No. and specify Order code(s). | |
| Total insertion length: enter the total insertion length in plain text description | Y01 |
| Stainless steel tag [69 x 50 mm (2.71 x 1.97 inch)]: Measuring-point number/identification (max. 27 characters) specify in plain text | Y15 |
| Manufacturer's test certificate: M to DIN 55350, Part 18 and ISO 9000 | C11 |
| Inspection Certificate Type 3.1 per EN 10204 | C12 |
| Operating Instructions | |
| Note: The Operating Instructions should be ordered as a separate line on the order. This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and manual library. | See page 4/36 |
| Accessories | See page 4/36 |

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Standard and Digital

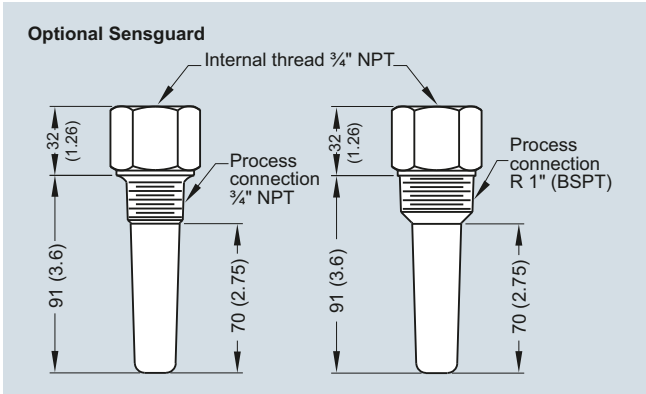
| Selection and Ordering data | Article No. |
|--|----------------------|
| Operating Instructions - Standard | |
| English | 7ML1998-5JH04 |
| German | 7ML1998-5JH34 |
| Note: The Operating Instructions should be ordered as a separate line on the order. | |
| Quick Start manual, multi-language | A5E32221251 |
| This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and Operating Instructions library. | |
| Operating Instructions - Digital | |
| English | 7ML1998-5JJ05 |
| German | 7ML1998-5JJ34 |
| French | 7ML1998-5JJ11 |
| Note: The Operating Instructions should be ordered as a separate line on the order. | |
| Quick Start manual, multi-language | A5E32221496 |
| This device is shipped with the Siemens Milltronics manual DVD containing the ATEX Quick Start and Operating Instructions library. | |
| Accessories | |
| Sensguard, ¾" NPT (PPS) Only available for CLS200 with ¾" NPT thread | 7ML1830-1DL |
| Sensguard, R 1" (BSPT) (PPS) Only available for CLS200 with ¾" NPT thread | 7ML1830-1DM |
| One metallic cable gland M20x1.5, -40 ... +80 °C (-40 ... +176 °F) with integrated shield connection (available for PROFIBUS PA) | 7ML1930-1AQ |
| General Purpose | |
| 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) | 7ML1830-1JA |
| M20x1.5 General Purpose Cable Entry IP68/IP69K NEMA6, -40 ... -100 °C (-40 ... -212 °F), cable size 7 ... 12 mm (0.275 ... 0.472 inch) | 7ML1830-1JC |
| Hazardous Locations | |
| 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) | 7ML1830-1JB |
| 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) | 7ML1830-1JD |
| Blind threaded flanges are available. Please contact ceg.smpi@siemens.com with a completed application data sheet on page 4/11 | |
| Pointek Specials | See page 4/82 |

Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Standard and Digital

Options



Optional Sensguard, dimensions in mm (inch)

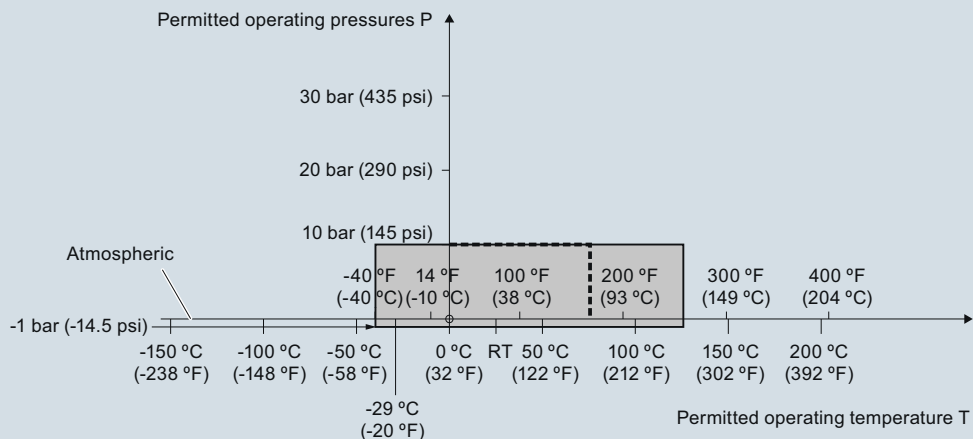
Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Standard and Digital

Characteristic curves

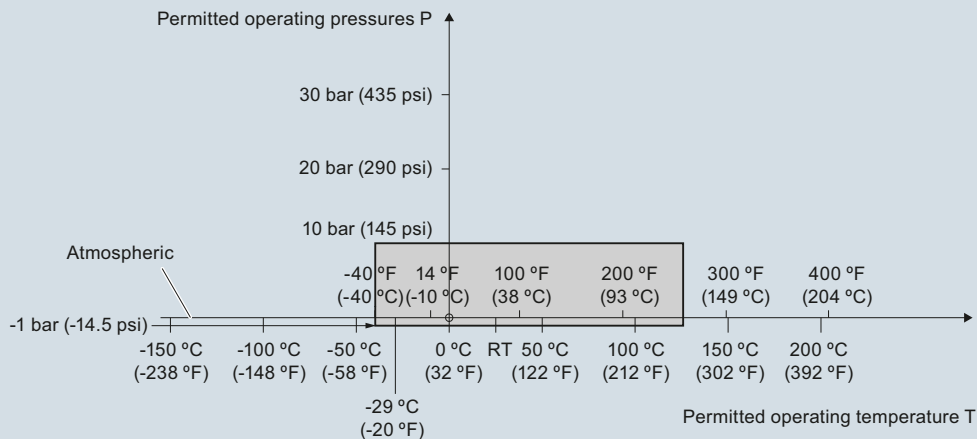
Pressure/temperature curve
CLS200 sliding coupling
threaded process connections
(7ML5633 and 7ML5643)



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

Pointek CLS200 Process Pressure/Temperature derating curves (7ML5633 and 7ML5643)

Pressure/temperature curve
CLS200 cable
Threaded process connections
(7ML5631 and 7ML5641)



Pointek CLS200 Process Pressure/Temperature derating curves (7ML5631 and 7ML5641)

4

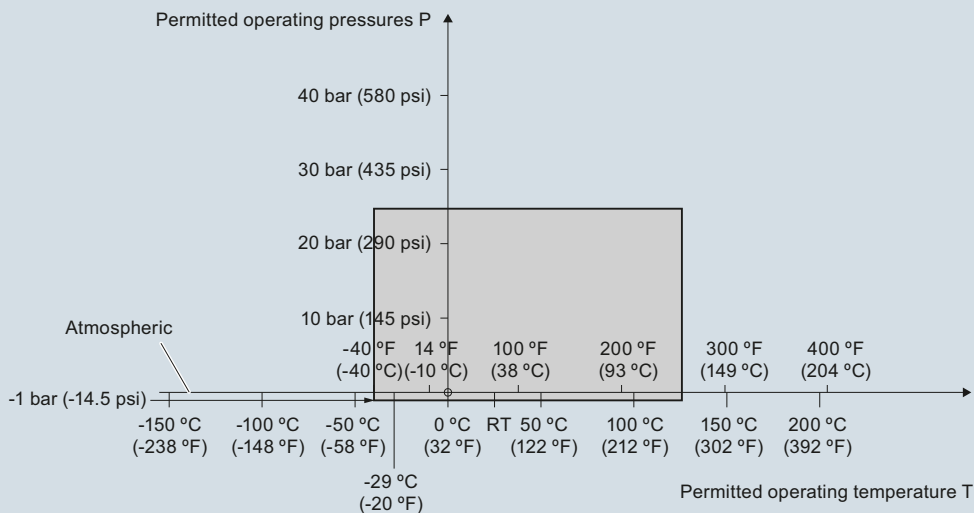
Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Standard and Digital

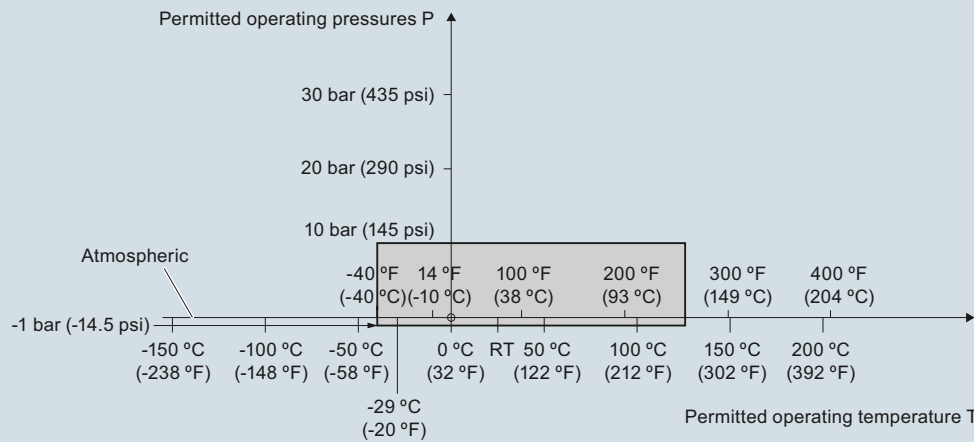
4

Pressure/temperature curve
CLS200 compact and extended rod
Threaded process connections
(7ML5630 and 7ML5640)



Pointek CLS200 Process Pressure/Temperature derating curves (7ML5630 or 7ML5640)

Pressure/temperature curve
CLS200 compact and extended sanitary type
Sanitary process connections
(7ML5632 and 7ML5642)



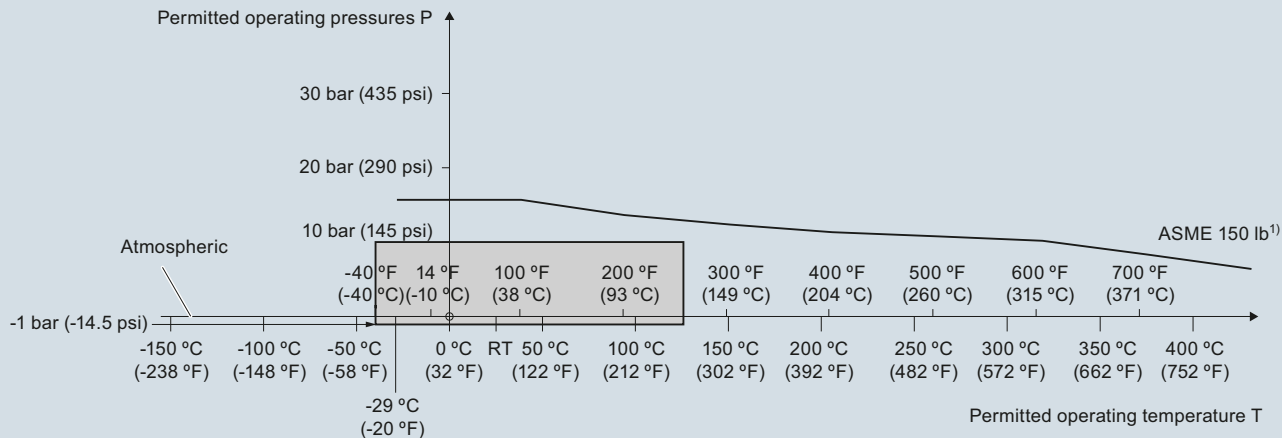
Pointek CLS200 Process Pressure/Temperature derating curves (7ML5632 and 7ML5642)

Level Measurement

Point level measurement – Capacitance switches

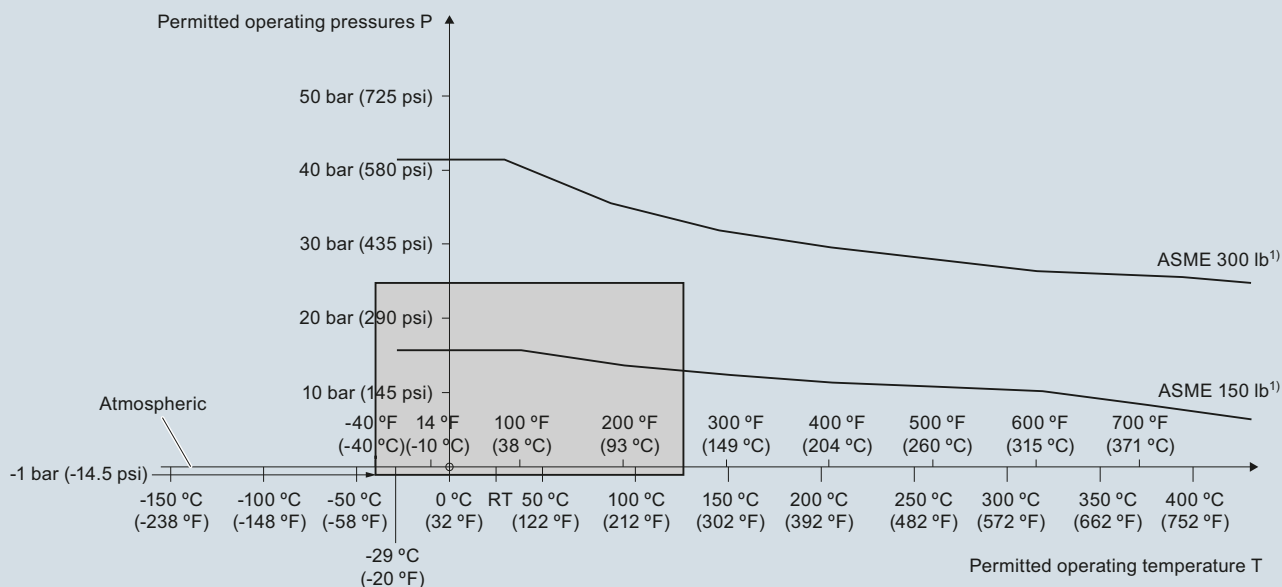
Pointek CLS200 – Standard and Digital

Pressure/temperature curve
CLS200 cable
ASME flanged process connections
(7ML5631 and 7ML5641)



Pointek CLS200 Process Pressure/Temperature derating curves (7ML5631 and 7ML5641)

Pressure/temperature curve
CLS200 compact and extended rod
ASME flanged process connections
(7ML5630 and 7ML5640)



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

Pointek CLS200 Process Pressure/Temperature derating curves (7ML5630 and 7ML5640)

4

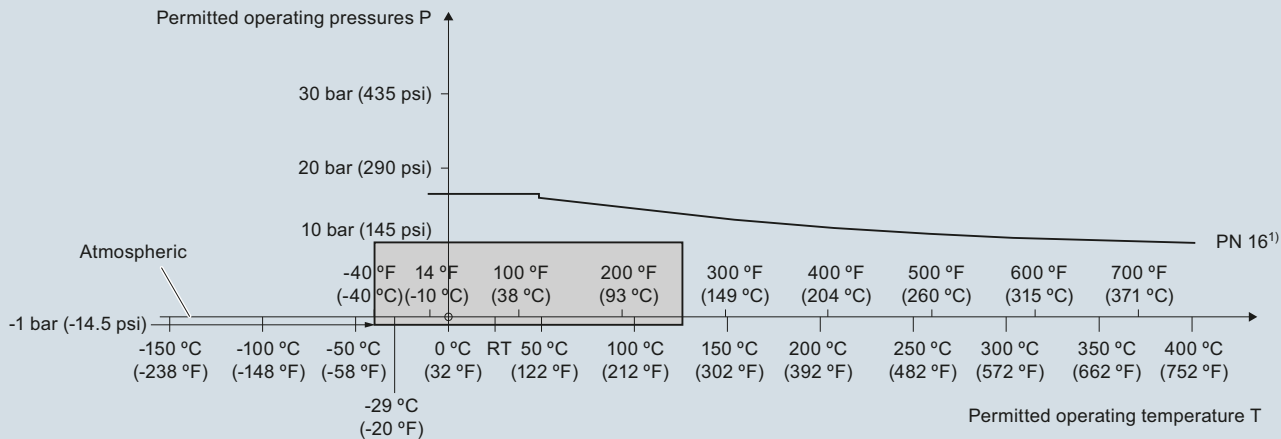
Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Standard and Digital

4

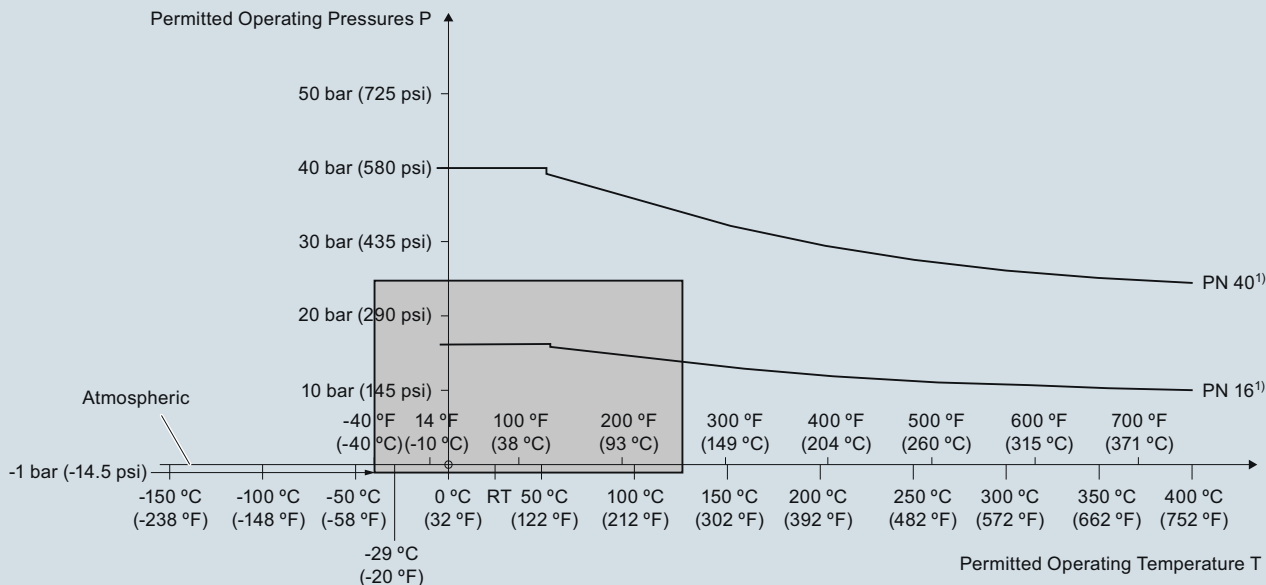
Pressure/temperature curve
CLS200 cable
EN flanged process connections
(7ML5631 and 7ML5641)



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

Pointek CLS200 Process Pressure/Temperature derating curves (7ML5631 and 7ML5641)

Pressure/Temperature Curve
CLS200 Compact and Extended Rod
EN Flanged Process Connections
(7ML5630 and 7ML5640)



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

Pointek CLS200 Process Pressure/Temperature derating curves (7ML5630 and 7ML5640)

Level Measurement

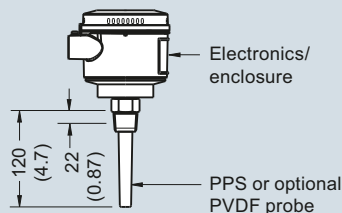
Point level measurement – Capacitance switches

Pointek CLS200 – Standard and Digital

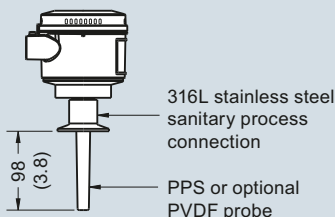
Dimensional drawings

4

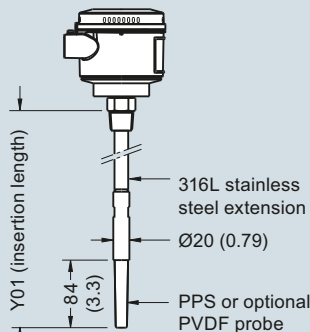
Compact version
Threaded
(7ML5630 and 7ML5640)



Sanitary compact version
Sanitary fitting
(7ML5632 and 7ML5642)

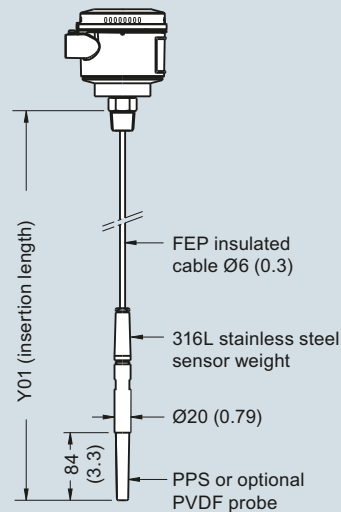


Extended rod version
Threaded
(7ML5630 and 7ML5640)

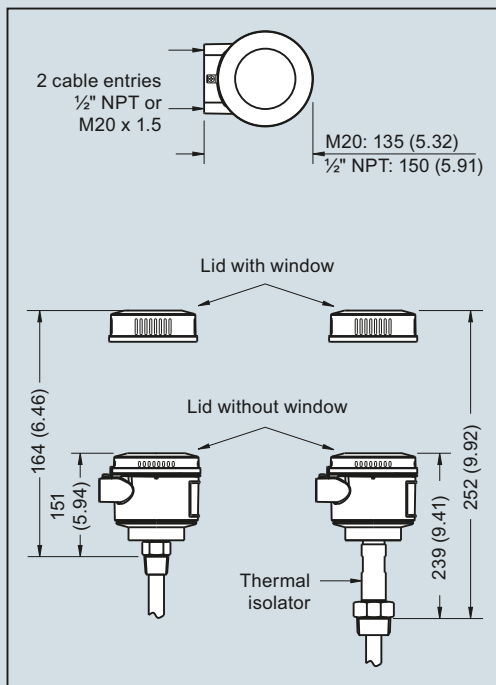


Min. insertion length = 200 (7.87)
Max. insertion length = 5 500 (216)

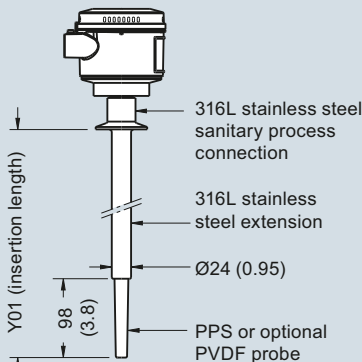
Extended cable version
Threaded
(7ML5631 and 7ML5641)



Min. insertion length = 500 (19.69)
Max. insertion length = 30 000 (1 181)
Applicable for liquids and solids applications. Cable can be shortened on site.

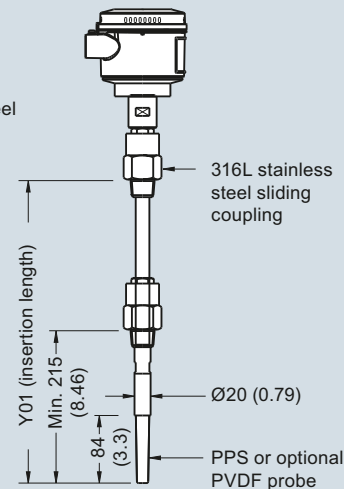


Sanitary extended version
Sanitary fitting
(7ML5632 and 7ML5642)



Min. insertion length = 110 (4.3)
Max. insertion length = 5 500 (216)

Sliding coupling version
Threaded
(7ML5633 and 7ML5643)



Min. insertion length = 350 (13.82)
Max. insertion length = 5 500 (216)

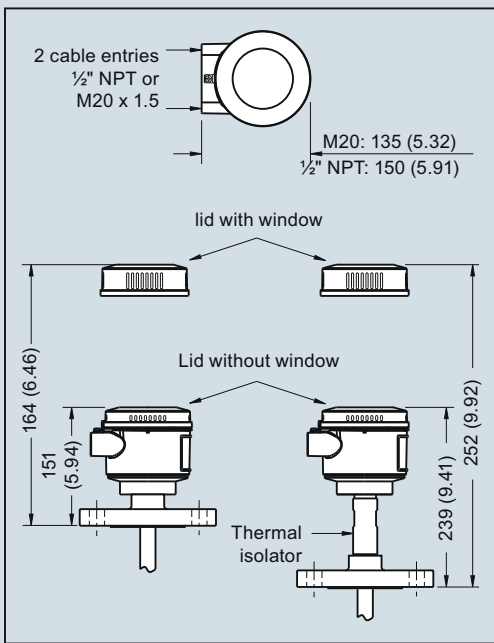
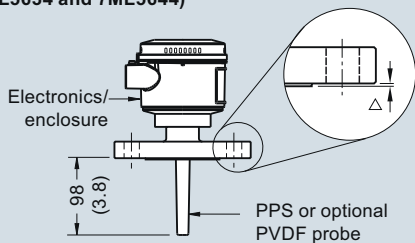
Pointek CLS200 - Threaded/sanitary process connections, dimensions in mm (inch)

Level Measurement

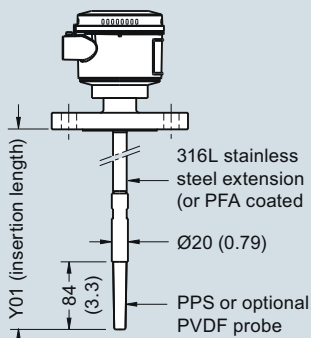
Point level measurement – Capacitance switches

Pointek CLS200 – Standard and Digital

Compact version
Welded Flange (7ML5630 and 7ML5640)
Welded Flange, PFA coated
(7ML5634 and 7ML5644)

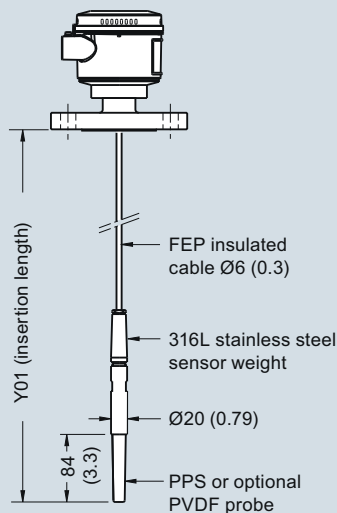


Extended rod version
Welded Flange (7ML5630 and 7ML5640)
Welded Flange, PFA coated
(7ML5634 and 7ML5644)



Min. insertion length = 200 (7.87)
 Max. insertion length = 5 500 (216)

Extended cable version
Welded Flange
(7ML5631 and 7ML5641)



Min. insertion length = 500 (19.69)
 Max. insertion length = 30 000 (1 181)
 Applicable for liquids and solids applications. Cable can be shortened on site.

| Flange Facing (raised face) | |
|-----------------------------|------------------|
| Flange Class | Facing thickness |
| △ ASME 150/300 | 2 (0.08) |
| △ ASME 600/900 | 7 (0.28) |
| △ PN16/40 | 2 (0.08) |

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

Pointek CLS200 - Flanged Process Connections, dimensions in mm (inch)

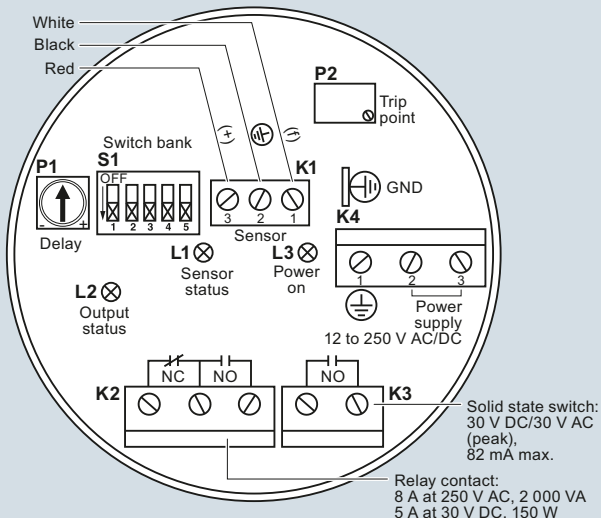
Level Measurement

Point level measurement – Capacitance switches

Pointek CLS200 – Standard and Digital

Schematics

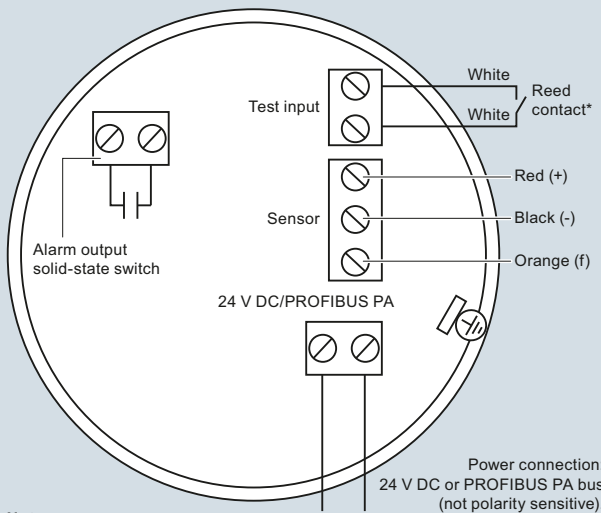
Wiring: Pointek CLS200 standard



Notes:

- Identification label is on underside of lid. Switch and potentiometer settings are for illustration purposes only (refer to operation/setup in manual).
- All field wiring must have insulation suitable for at least 250 V.
- Relay contact terminals are for use with equipment having no accessible live parts and wiring having insulation suitable for at least 250 V.
- Maximum working voltage between adjacent relay contacts shall be 250 V.
- Refer to the Instruction Manual or contact Siemens representative for detailed wiring information.

Wiring: Pointek CLS200 Digital



Notes:

Refer to the instruction manual or contact a Siemens representative for detailed wiring information.

***Magnet activated sensor Test**

A magnet can be used to test the sensor without opening the lid of the Pointek CLS200 Digital version. Bring the magnet close to the test area indicated on the enclosure. The sensor test starts and finishes automatically after 10 seconds.



4

Pointek CLS200 connections

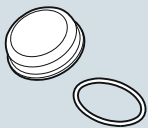
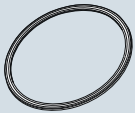
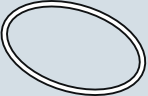
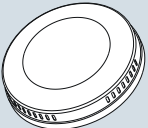
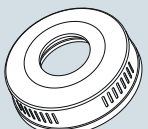

Level Measurement

Point level measurement – Capacitance switches

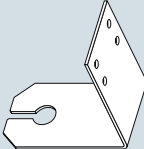


Pointek CLS Specials

Selection and ordering data

Pointek Specials¹⁾

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

Pointek Specials¹⁾

| | Article No. |
|---|--------------------|
| Kit, Sensor for cable units, PPS, Digital, FKM | A5E01163678 |
| Kit, Sensor for cable units, PPS, Standard, FFKM | A5E01163679 |
| Kit, Sensor for cable units, PPS, Digital, FFKM | A5E01163680 |
| Kit, Sensor for cable units, PVDF, Standard, FKM | A5E01163681 |
| Kit, Sensor for cable units, PVDF, Digital, FKM | A5E01163682 |
| Kit, Sensor for cable units, PVDF, Standard, FFKM | A5E01163683 |
| Kit, Sensor for cable units, PVDF, Digital, FFKM | A5E01163684 |
| CLS200 Mounting Bracket, 316L stainless steel | |
|  | |
| Spare mounting bracket | A5E01163685 |
| CLS200 PROFIBUS Connector (IP65) | |
|  | |
| Spare, PROFIBUS connector (IP65 versions only) | A5E01163686 |
| CLS200 Miscellaneous Parts | |
| CLS200 with FFKM O-rings (any version) ²⁾ | |
| CLS200 Electronics | |
| Test magnet, digital version | 7ML1830-1JE |
| Amplifier/power supply kit, standard version | A5E03251681 |
| Amplifier/power supply, digital version | 7ML1830-1JF |
| LCD display, digital version | 7ML1830-1JK |
| CLS300 Cable Extensions, 316L stainless steel | |
|  | |
| Kit, stainless steel cable extension, 1 m, adjustable by customer | A5E01163688 |
| Kit, stainless steel cable extension, 3 m, adjustable by customer | A5E01163689 |
| Kit, stainless steel cable extension, 5 m, adjustable by customer | A5E01163690 |
| Kit, stainless steel cable extension, 10 m, adjustable by customer | A5E01163691 |
| Kit, stainless steel cable extension, 15 m, adjustable by customer | A5E01163693 |
| Kit, stainless steel cable extension, 20 m, adjustable by customer | A5E01163695 |