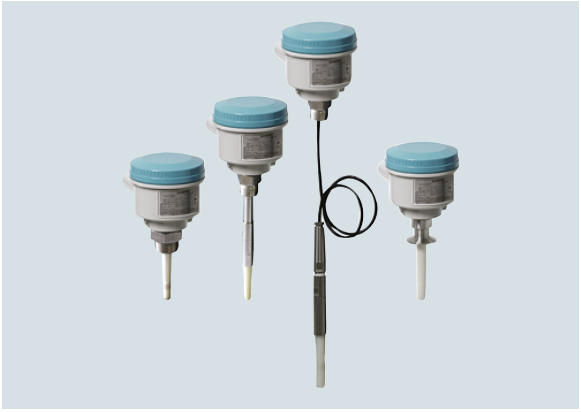
Overview



Pointek CLS200 (standard version) is a versatile inverse frequency shift capacitance level and material detection switch with optional rod/cable choices and configurable output. CLS200 is ideal for detection of liquids, solids, slurries, foam, and interfaces and has the ability to tune out buildup on the probe.

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
- Suitable for API 2350

Application

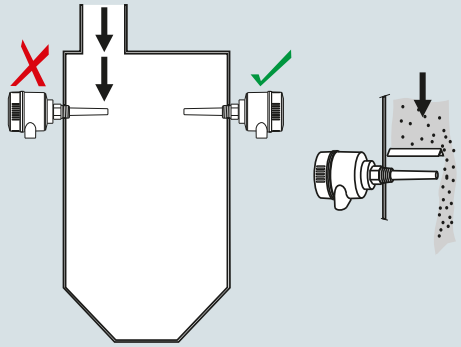
Pointek CLS200 standard version has 3 LED indicators with basic relay and solid-state switch alarms. Universal switch for solids/liquids and interface.

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

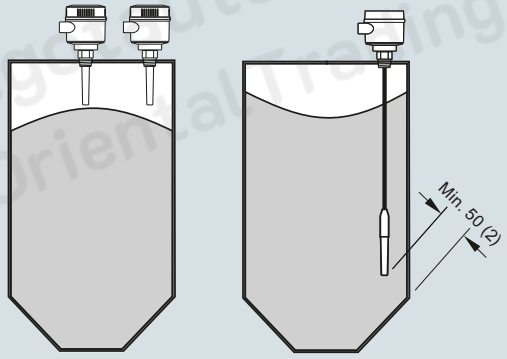
Configuration

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)

4

4

Technical specifications

Mode of operation	
Measuring principle	Inverse frequency shift capacitive level detection
Input	
Measured variable	Change in picoFarad (pF)
Output	
Output signal	
• Relay output	1 SPDT Form C relay
- Max. contact voltage	• 30 V DC • 250 V AC
- Max. contact current	• 5 A DC • 8 A AC
- Max. switching capacity	150 W DC 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	• 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]
• Storage temperature	-40 ... +85 °C (-40 ... +185 °F)
• 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	
• Enclosure	Epoxy-coated aluminum with gasket
• Optional thermal isolator	316L stainless steel
Connection	Removable terminal block, max. 2.5mm²
Degree of protection	IP65/Type 4/NEMA 4 (optional IP68)
Cable inlet	2 x M20 x 1.5 thread (option: 2 x ½" 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, RCM
Dust Ignition Proof	ATEX II ½ D T100 °C
Flameproof Enclosure With IS Probe	ATEX II 1 G EEx d[ia] IIC T6 ... T4 ATEX II ½ 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
Marine	Lloyds Register of Shipping, Categories ENV1, ENV2, and ENV5
Overfill Protection	WHG (Germany) VLAREM II
Others	Pattern Approval (China), SIL

1) When operation is in areas classified as hazardous, observe restrictions according to relevant certificate. See also Pressure/Temperature curves on page 5/34.

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 5/34.

Technical specifications (continued)

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]	1½", 2" sanitary fitting clamp 316L stainless steel	R ¾", 1", 1¼", 1½" [(BSPT), EN 10226/PT (JIS-T), JIS B 0203]	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]		¾", 1", 1¼", 1½" NPT [(Taper), ANSI/ASME B1.20.1]	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]		G ¾", 1", 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]	G ¾", 1", 1½" [(BSPP), EN ISO 228-1/PF (JIS-P), JIS B 0202]
	316L stainless steelASME/EN flange		316L stainless steel ASME/EN flange	
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, consult a local sales person for alternative O-rings. For more information, please visit http://www.usa.siemens.com/level.
3) Thermal isolator is used if process connection temperature exceeds 85 °C (185 °F)

Pointek CLS200 - Standard

Selection and ordering data

	Article No.									
Pointek CLS200 RF Capacitance point level switch, rod design	7ML5630-					-				0
Detects level and interface in liquids, solids, slurries, and foam. Adjustable, 5.5 m (18.04 ft), insertion, adaptable sensitivity, with the ability to tune out build-up on probe.										
↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.										
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 SO 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										
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					

	Article No.									
Pointek CLS200 RF Capacitance point level switch, rod design	7ML5630-					-				0
Detects level and interface in liquids, solids, slurries, and foam. Adjustable, 5.5 m (18.04 ft), insertion, adaptable sensitivity, with the ability to tune out build-up on probe.										
Add Order code Y01 and plain text: "Insertion length ... mm"										
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[1)2)]					2					
With 5 m (197 inch) of cable[1)2)]					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										
Dust Ignition Proof:CE, RCM, ATEX II 1/2 D T100 °C								C		
Flameproof Enclosure with IS Probe: CE, RCM, 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, RCM, 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, RCM)								J		
General Purpose (CSA, FM, CE, RCM) with WHG approval								K		
Enclosure and lid										
Aluminum epoxy coated										
2 x ½" NPT via adapter - cable inlet, IP65									A	
2 x M20 x 1.5 cable inlet, IP65									B	
2 x ½" NPT via adapter - cable inlet, IP68									C	
2 x M20 x 1.5 cable inlet IP68									D	

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

2) Available with Approval options F, G, and H.

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 [70 x 13 mm (2.75 x 0.5 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**
Material inspection Certificate Type 3.1 per EN 10204	**C12**
SIL/IEC 61508 Declaration of Conformity [SIL 2 (overspill)]	**C20**
INMETRO[1)]	**E34**
Operating Instructions	
All literature is available to download for free, in a range of languages, at	
http://www.siemens.com/processinstrumentation/documentation	
Accessories	See page **4/41**

[1)] Available only with Approvals options C, D, E.

	Article No.
Pointek CLS200 RF Capacitance point level switch, cable design	**7ML5631-**
Detects level and interface in liquids, solids, slurries, and foam. Cable extension options to 30 m (98.43 ft), adaptable sensitivity, with the ability to tune out build-up on probe.	■ ■ ■ ■ ■ - ■ ■ ■ **0**
↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.	
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.)	

4

Pointek CLS200 - Standard

Selection and ordering data

	Article No.
Pointek CLS200 RF Capacitance point level switch, cable design	**7ML5631-**
Detects level and interface in liquids, solids, slurries, and foam. Cable extension options to 30 m (98.43 ft), adaptable sensitivity, with the ability to tune out build-up on probe.	■ ■ ■ ■ ■ - ■ ■ ■ **0**
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[1]	**A**
Extended cable, 6 000 mm (236.22 inch), length can be determined by customer on assembly[1]	**B**
Add Order code Y01 and plain text: "Insertion length ... mm"	
Extended cable, 500 ... 5 000 mm (19.69 ... 196.85 inch)	**C**
Extended cable, 5 001 ... 10 00 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 ... 787.4 inch)	**F**
Extended cable, 20 001 ... 25 000 mm (787.44 ... 984.25 inch)	**G**
Extended cable, 25 001 ... 30 000 mm (984.29 ... 1 181.1 inch)	**H**
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]	**2**
With 5 m (197 inch) of cable[2]	**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	
Dust Ignition Proof: CE, RCM, ATEX II 1/2 D T100 °C	**C**
Flameproof Enclosure with IS Probe: CE, RCM, 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, RCM, 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, RCM)	**J**
General Purpose (CSA, FM, CE, RCM) with WHG approval	**K**
Enclosure and lid	
Aluminum epoxy coated	
2 x ½" NPT via adapter - cable inlet, IP65	**A**
2 x M20 x 1.5 cable inlet, IP65	**B**
2 x ½" NPT via adapter - cable inlet, IP68	**C**
2 x M20 x 1.5 cable inlet, IP68	**D**

[1] Sensor detached to allow customer to set desired cable length.

[2] Available with Approvals options F ... H.

	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 [70 x 13 mm (2.75 x 0.5 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**
Material inspection Certificate Type 3.1 per EN 10204	**C12**
SIL/IEC 61508 Declaration of Conformity [SIL 2 (overspill)]	**C20**
INMETRO[1]	**E34**
Operating Instructions	
All literature is available to download for free, in a range of languages, at	
http://www.siemens.com/processinstrumentation/documentation	
Accessories	See page **4/41**

[1] Available only with Approvals options C, D, E.

Selection and ordering data

Article No. 7ML5632-

						-				0

Pointek CLS200 RF Capacitance point level switch, sanitary rod design

Detects level and interface in liquids, solids, slurries, and foam. Adjustable, 5.5 m (18.04 ft), insertion, adaptable sensitivity, with the ability to tune out build-up on probe.

↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.

Process connection

Sanitary 316L stainless steel

1" sanitary fitting clamp	8	A								
1½" sanitary fitting clamp	8	B								
2" sanitary fitting clamp	8	C								
2½" sanitary fitting clamp	8	D								
3" sanitary fitting clamp (Note: Sanitary connection dimensionally corresponds to the applicable ISO 2852 standard)	8	E								

Probe length

(length from process connection face)

Note: No Y01 needed in Order code for standard lengths

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							

Add Order code Y01 and plain text: "Insertion length ... mm"

Extended rod, 110 ... 350 mm (4.3 ... 13.78 inch)			M							
Extended rod, 351 ... 1 000 mm (13.78 ... 39.37 inch)			N							
Extended rod, 1 001 ... 2 000 mm (39.41 ... 78.74 inch)			P							
Extended rod, 2 001 ... 3 000 mm (78.78 ... 118.11 inch)			Q							
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

Thermal isolator				0						
With thermal isolator [for process connection temperatures over 85 °C (185 °F)]				1						

Remote mount electronics and mounting bracket

Remote mount electronics and mounting bracket				2						
Remote mount electronics 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				

Article No. 7ML5632-

						-				0

Pointek CLS200 RF Capacitance point level switch, sanitary rod design

Detects level and interface in liquids, solids, slurries, and foam. Adjustable, 5.5 m (18.04 ft), insertion, adaptable sensitivity, with the ability to tune out build-up on probe.

Approvals

Dust Ignition Proof: CE, RCM, ATEX II ½ D T100 °C							C			
Flameproof Enclosure with IS Probe: CE, RCM, ATEX II 1 G EEx d[ia] IIC T6 ... T4, ATEX II ½ D T100 °C							D			
Flameproof Enclosure with IS Probe: CE, RCM, ATEX II 1 G EEx d[ia] IIC T6 ... T4, ATEX II ½ D T100 °C							E			
Flameproof Enclosure with IS Probe, with WHG approval: CE, RCM, ATEX II ½ G EEx d[ia] IIC T6 ... T4, ATEX II ½ D T100 °C							F			
Dust Ignition Proof with IS Probe: CSA/FM Class II, Div. 1, Groups E, F, G, CSA/FM Class III T4							G			
General Purpose (CSA, FM)							H			
General Purpose (CE, RCM)							J			
General Purpose (CSA, FM, CE, RCM) with WHG approval							K			

Enclosure and lid

Aluminum epoxy coated

2 x ½" NPT via adapter - cable inlet, IP65								A		
2 x M20 x 1.5 cable inlet, IP65								B		
2 x ½" NPT via adapter - cable inlet, IP68								C		
2 x M20 x 1.5 cable inlet, IP68								D		

Further designs	Order code
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 [70 x 13 mm (2.75 x 0.5 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**
Material inspection Certificate Type 3.1 per EN 10204	**C12**
SIL/IEC 61508 Declaration of Conformity [SIL 2 (overspill)]	**C20**
INMETRO[1)]	**E34**

Operating Instructions

All literature is available to download for free, in a range of languages, at

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

Accessories See page **4/41**

1) Available only with Approvals options C, D, E.

Pointek CLS200 - Standard

Selection and ordering data

	Article No. 7ML5633-									
						-				0
Pointek CLS200 RF Capacitance point level switch, sliding coupling design Detects level and interface in liquids, solids, slurries, and foam. Adjustable, 5.5 m (18.04 ft), insertion, adaptable sensitivity, with the ability to tune out build-up on probe. ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.										
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								
Probe length										
(length from flange face) (threaded lengths include process thread)										
Note: No Y01 needed in Order code for standard lengths										
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 (13.78 ... 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			

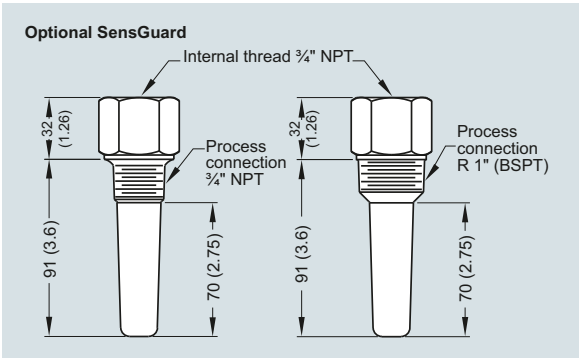
	Article No. 7ML5633-									
						-				0
Pointek CLS200 RF Capacitance point level switch, sliding coupling design Detects level and interface in liquids, solids, slurries, and foam. Adjustable, 5.5 m (18.04 ft), insertion, adaptable sensitivity, with the ability to tune out build-up on probe.										
Approvals										
Dust Ignition Proof: CE, RCM, ATEX II 1/2 D T100 °C								C		
Flameproof Enclosure with IS Probe: CE, RCM, 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, RCM, 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, RCM)								J		
General Purpose (CSA, FM, CE, RCM) with WHG approval								K		
Enclosure and lid										
Aluminum epoxy coated 2 x ½" NPT via adapter - cable inlet, IP65									A	
2 x M20 x 1.5 cable inlet, IP65									B	
2 x ½" NPT via adapter - cable inlet, IP68									C	
2 x M20 x 1.5 cable inlet, IP68									D	

[1] Available with Approvals options F ... H.

Further designs	Order code
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 [70 x 13 mm (2.75 x 0.5 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**
Material inspection Certificate Type 3.1 per EN 10204	**C12**
SIL/IEC 61508 Declaration of Conformity [SIL 2 (overspill)]	**C20**
INMETRO[1]	**E34**
Operating Instructions	
All literature is available to download for free, in a range of languages, at	
http://www.siemens.com/processinstrumentation/documentation	
Accessories	See page **4/41**

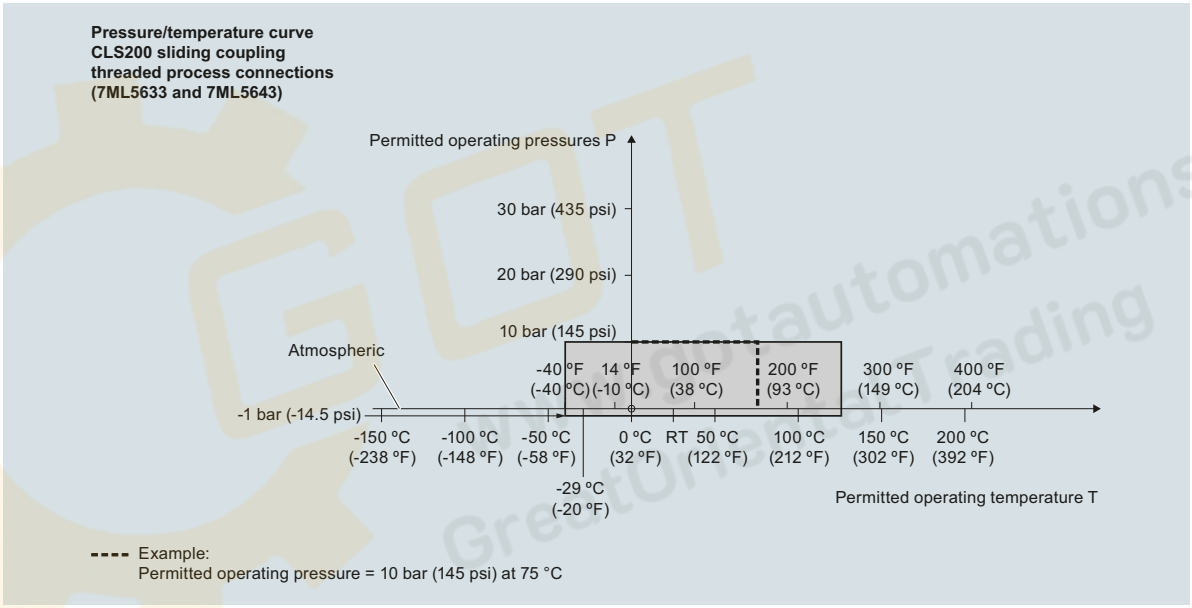
[1] Available only with Approval options C, D, E.

Options



Optional SensGuard, dimensions in mm (inch)

Characteristic curves

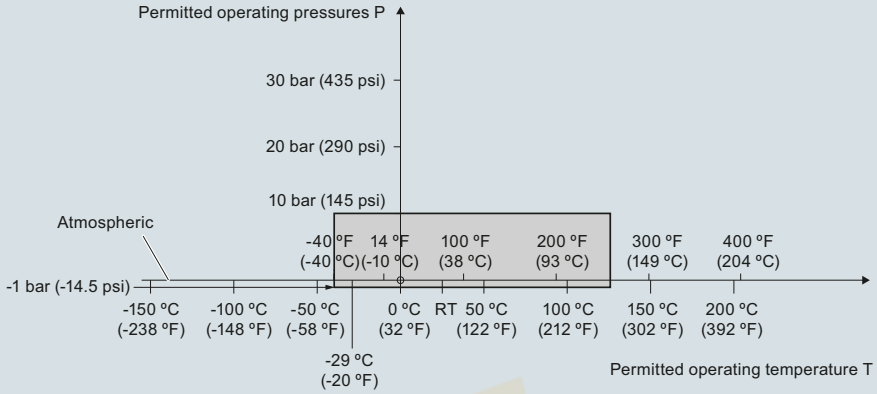


Pointek CLS200 process pressure/temperature derating curves (7ML5633 and 7ML5643)

4

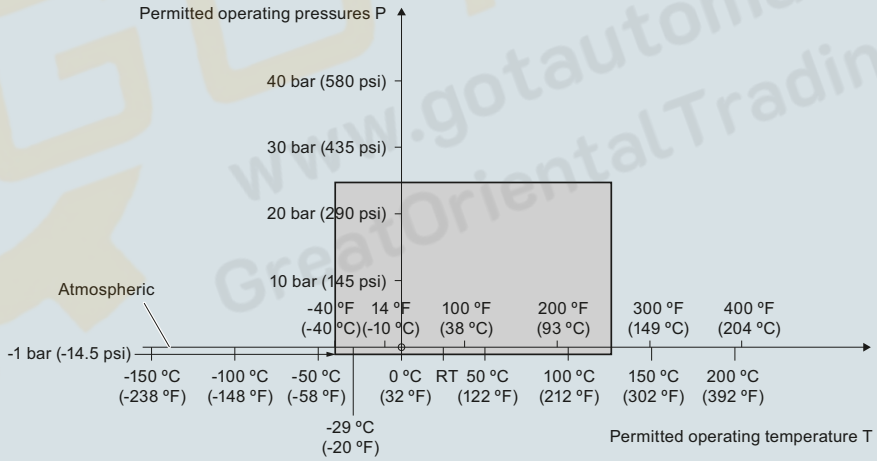
Characteristic curves (continued)

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



Pointek CLS200 process pressure/temperature derating curves (7ML5631 and 7ML5641)

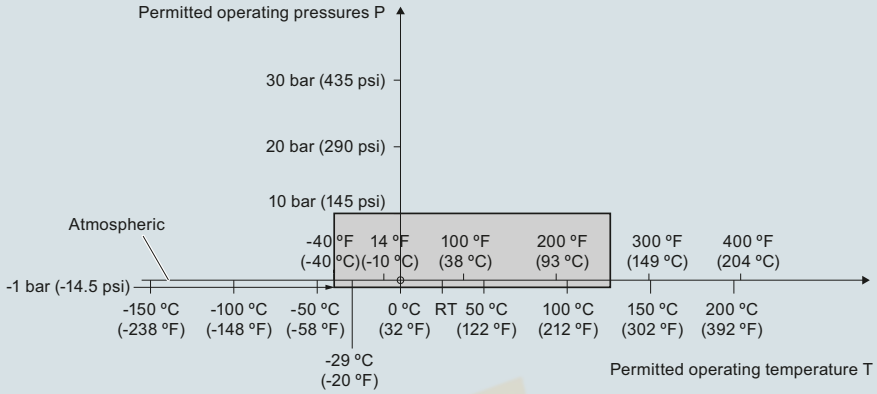
Pressure/temperature curve
CLS200 compact and extended rod
Threaded process connections
(7ML5630 and 7ML5640)



Pointek CLS200 process pressure/temperature derating curves (7ML5630 or 7ML5640)

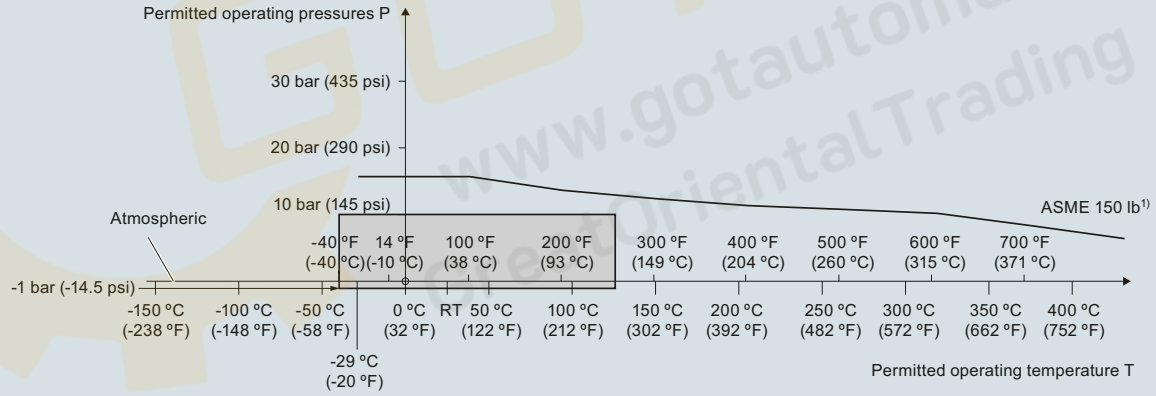
Characteristic curves (continued)

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)

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



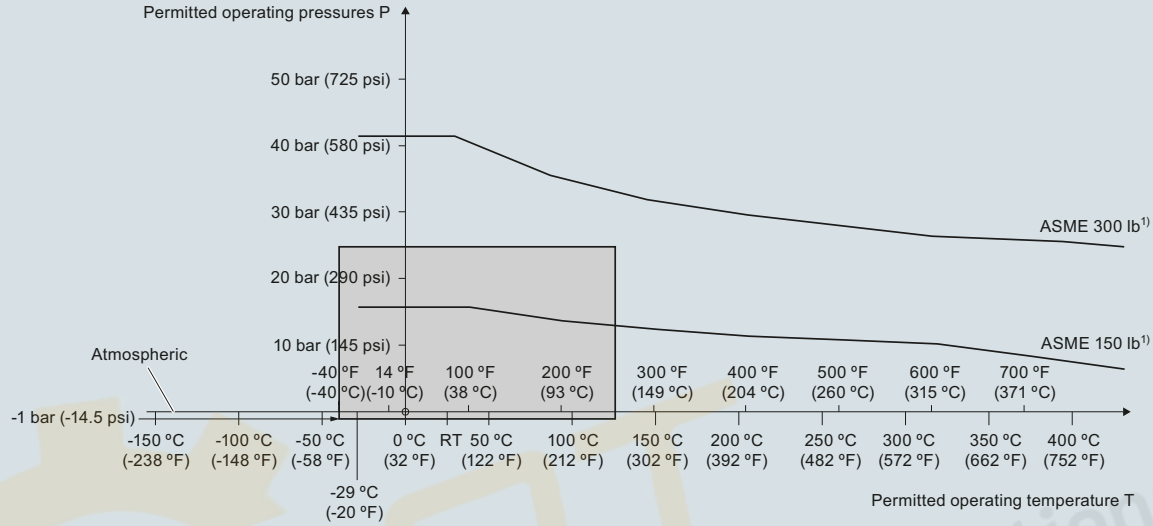
1) The curve denotes the minimum allowable flange class for the shaded area below.

Pointek CLS200 process pressure/temperature derating curves (7ML5631 and 7ML5641)

4

Characteristic curves (continued)

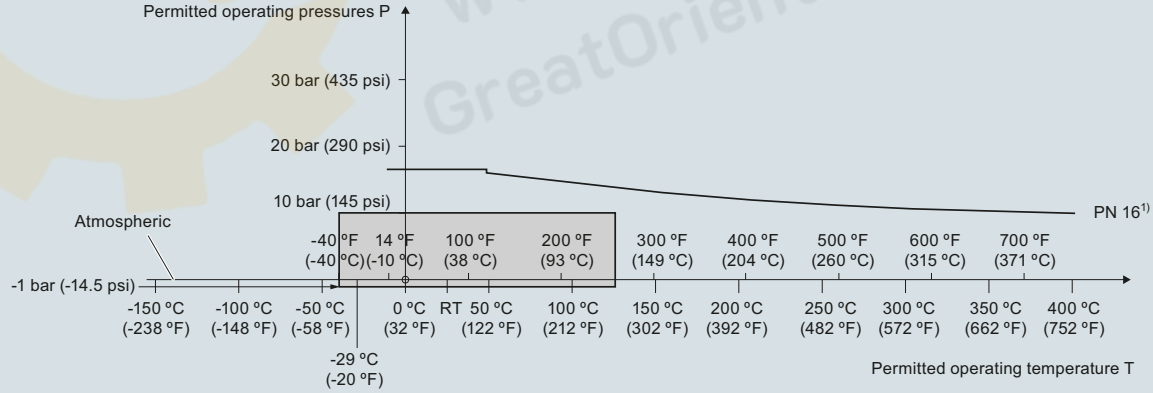
Pressure/temperature curve
CLS200 compact and extended rod
ASME flanged process connections
(7ML5630 and 7ML5640)



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

Pointek CLS200 process pressure/temperature derating curves (7ML5630 and 7ML5640)

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

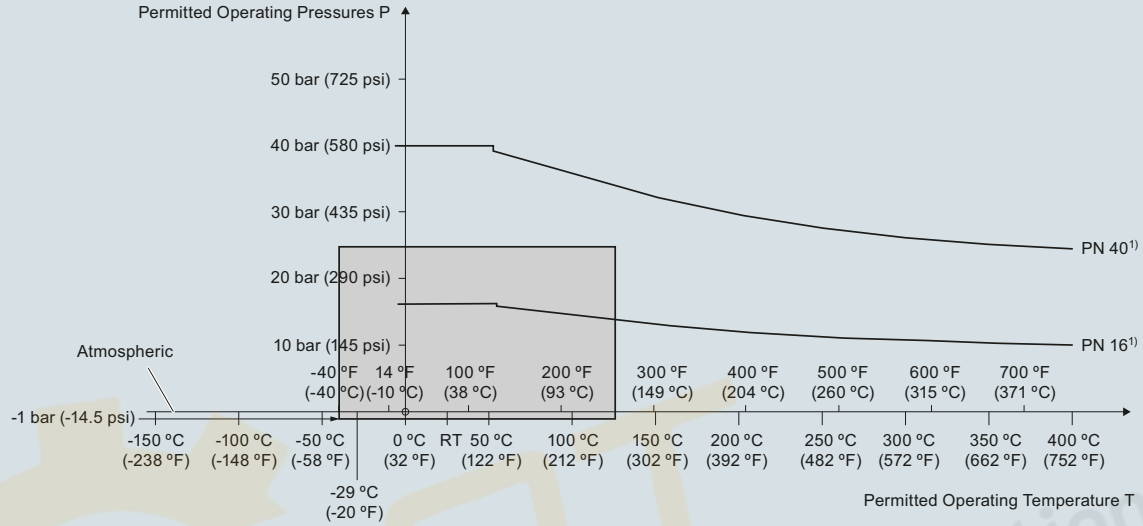


1) The curve denotes the minimum allowable flange class for the shaded area below.

Pointek CLS200 process pressure/temperature derating curves (7ML5631 and 7ML5641)

Characteristic curves (continued)

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



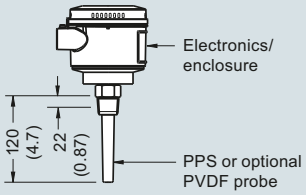
1) The curve denotes the minimum allowable flange class for the shaded area below.

Pointek CLS200 process pressure/temperature derating curves (7ML5630 and 7ML5640)

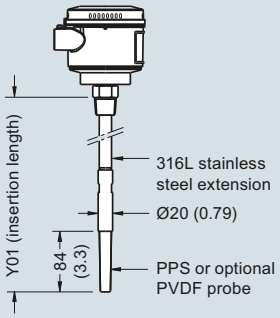
4

Dimensional drawings

Compact version
Threaded
(7ML5630 and 7ML5640)

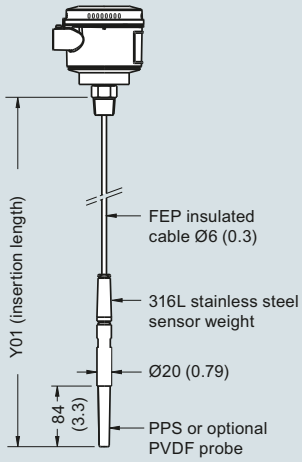


Extended rod version
Threaded
(7ML5630 and 7ML5640)



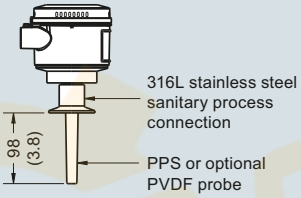
Min. insertion length = 200 (7.87)
Max. insertion length = 5 500 (216)

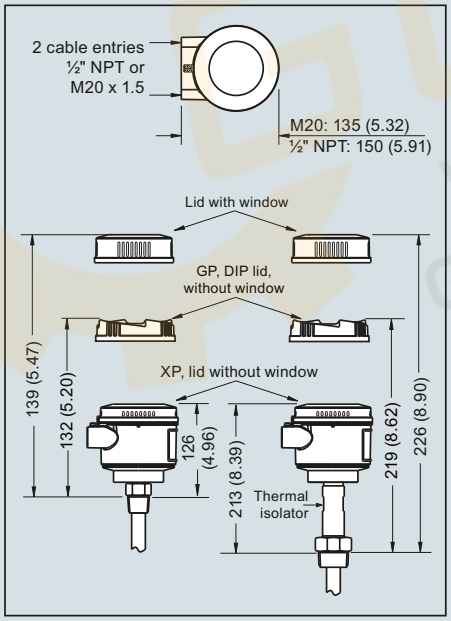
Extended cable version
Threaded
(7ML5631 and 7ML5641)



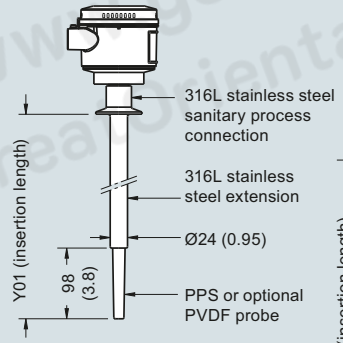
Min. insertion length = 500 (19.69)
Max. insertion length = 30 000 (1 181)
Applicable for liquids and solids applications. Cable can be shortened on site.

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



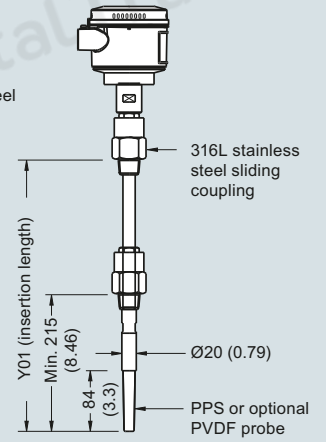


Sanitary extended version
Sanitary fitting
(7ML5632 and 7ML5642)



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

Sliding coupling version
Threaded
(7ML5633 and 7ML5643)

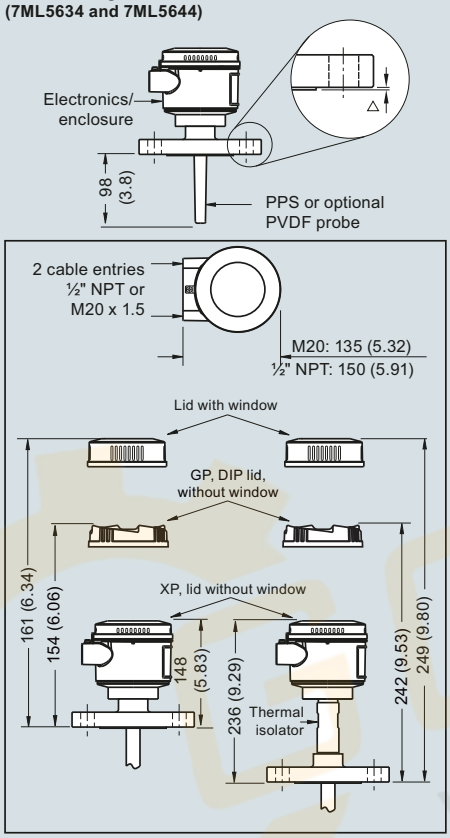


Min. insertion length = 350 (13.82)
Max. insertion length = 5 500 (216)

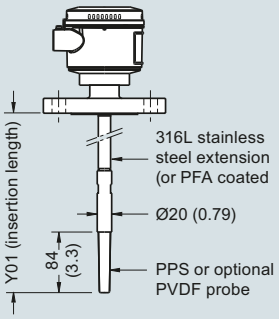
Pointek CLS200 threaded/sanitary process connection, dimensions in mm (inch)

Dimensional drawings (continued)

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

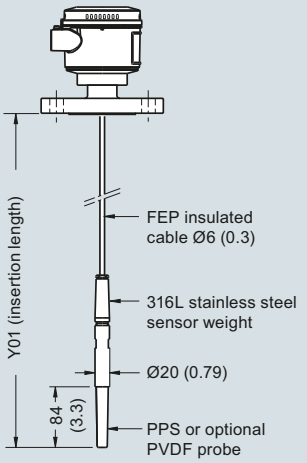


Extended rod version
Welded Flange (7ML5630 and 7ML5640)
Welded Flange, PFA coated
(7ML5634 and 7ML5644)



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)

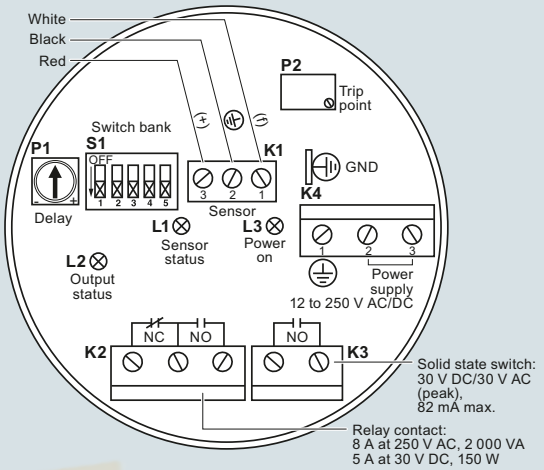
Insertion length does not include any raised face/gasket face dimension (see Flange Facing Table above)

Pointek CLS200 flanged process connections, dimensions in mm (inch)

4

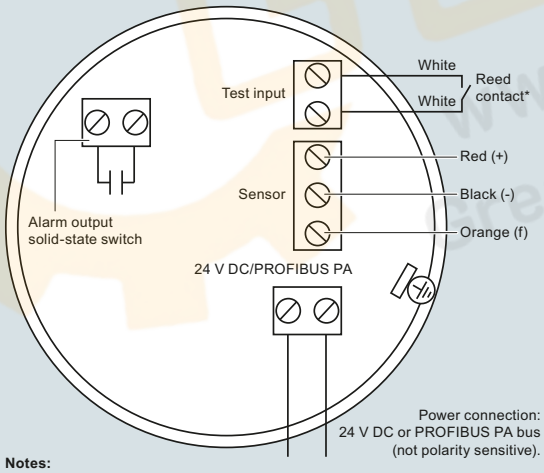
Circuit diagrams

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.

Pointek CLS200 connections