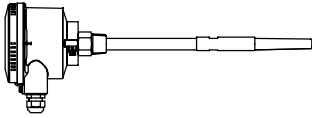


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Options	7
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Subject to change.

All dimensions in mm (inches).

All prices in Euro (€) or USD (\$),
 excluding VAT.

All EURO prices are EXW Betzigau,
 all USD prices are EXW Memphis,
 excluding packaging costs.

Valid: From 01.04.2020 until 31.03.2021, unless otherwise agreed.

By publishing this selection list all other lists become invalid.

We assume no liability for typing errors.

Different variations to those specified are possible.
 Please contact our technical consultants.

Overview

- Level limit detection in liquids, slurries, foam, interfaces and solids
 - Compact unit
 - Wide range of applications
 - No maintenance
 - Full-, demand-, empty detector
 - Extended pipe version or cable version
 - High chemical resistance on probes
 - Capacitive technology
 - Level detection independent of tank wall/ pipe
 - Sensitivity: dielectric constant ≥ 1.5
- Standard electronics with:
 - Universal power supply
 - Solid-state switch and Relay output
 - Digital electronics with:
 - Communication via PROFIBUS PA
 - Integrated Local User Interface
 - Self diagnostics
 - Multiple approvals available
 - 2011/65/EU RoHS conform

Approvals	CE		
	ATEX	Zone 0	Intrinsically Safe
		Zone 0/1	Flameproof
		Zone 2	Type of protection n
		Zone 20/21	Dust Ignition Proof or Intrinsically Safe
	FM/ CSA	General purp.	
		Cl. I Div. 1	Intrinsically Safe
		Cl. I Div. 1	Explosionproof
		Cl. I Div. 2	Non incendive
		Cl. II, III Div. 1	Dust Ignition Proof
	TR-CU	Ordinary Locations, Intrinsically Safe, Flameproof, Dust Ignition Proof	
	INMETRO	Flameproof, Dust Ignition Proof	
	Lloyds	Categories ENV1, ENV2, ENV3 and ENV5	
WHG	Overfill protection		

		Electronic module Standard	Electronic module Digital
Electronics	Supply voltage	12 .. 250 V AC/ DC (0 .. 60 Hz)	12 .. 30 V DC (24 V for IS version)
	Signal output	Relais SPDT Solid-state switch (30 V DC or AC peak, 82 mA)	Profibus PA Solid-state switch (30 V DC or AC peak, 82 mA)
	Signal output delay	Rise time or Fall time 1 .. 60 sec.	Rise time 0 .. 100 sec. Fall time 0 .. 100 sec.
	Failsafe	High or Low	High or Low
	User interface	Potentiometer, switches, 3 LED indicator	LCD local user interface or Profibus PA
	Diagnostics	-	Over and Under Range Electronics temperature Function check Maintenance alarm Internal electronic self check

Housing	Material of housing	Aluminium, powder-coated	
	Ingress protection	Type 4/ NEMA 4/ IP68	
	Material of Temperature extended shaft	1.4404 (SS316L), option	
	Ambient temperature	-40 .. 85°C (-40 .. 185°F) With ATEX approval: -40 .. 80°C (-40 .. 176°F) -40 .. 60°C (-40 .. 140°F)	with Flameproof or Dust Ignition Proof or Type of protection n with Intrinsically safe

Overview

Mechanics and Process	Length of extension "L"	Short extension threaded Short extension flanged/ Triclamp Pipe extension Cable extension	120 .. 5,500 mm (4.72 .. 216.5") 98 .. 5,500 mm (3.86 .. 216.5") 210 .. 5,500 mm (8.27 .. 216.5") 500 .. 30,000 mm (19.69 .. 1,181")
	Diameter of pipe/ cable extension	Pipe extension Cable	ø20 mm (ø0.79") ø6 mm (ø0.3")
	Materials	Process connection Pipe extension Cable insulation Probe (sensor) Wetted seals	1.4404 (SS316L) 1.4404 (SS316L) FEP PPS or PVDF, FDA and 1935/2004/EC conform FKM or FFKM
	Process temperature	Without temp. extended shaft With temp. extended shaft	-40 .. 85°C (-40 .. 185°F) -40 .. 125°C (-40 .. 257°F)
	Process pressure*	Pipe version Cable/ sliding coupling	-1 .. 25 bar g (-14.6 .. 365 psi g) nominal -1 .. 10 bar g (-14.6 .. 150 psi g) nominal *Observe Pressure versus Temperature Curves
	Tensile load (cable version)	max. 1,750 N	

Short extension length



Pipe version extended



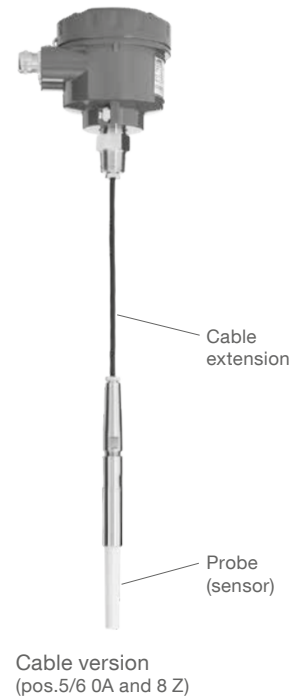
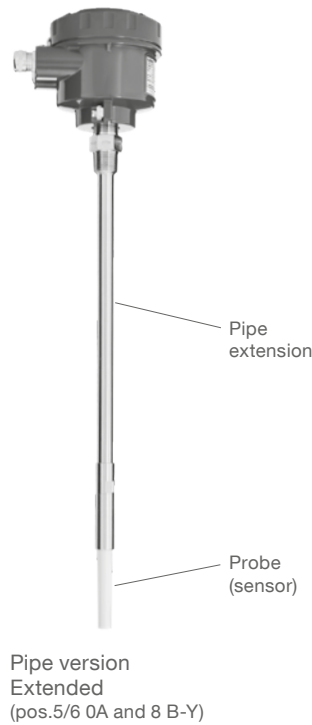
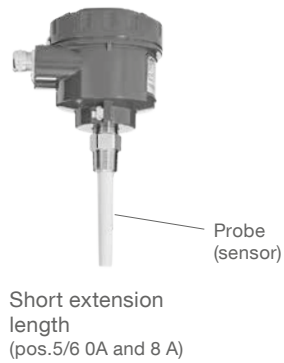
Cable version



Remote version



CN 8100



Dimensions see pages 9 - 11

Cable entries (by default)

Depending on model selected, the following cable entries are supported (options see pos.33 on page 7):

Version:	Cable entries:
Flameproof (pos.2 T,D)	M20 x 1.5 (1x open conduit + 1x Ex-d blind plug)
FM/ CSA (pos.2 M,H,U,P,N)	NPT 1/2" tapered ANSI B1.20.1 (1x open conduit + 1x Ex-d blind plug)
All other versions	M20 x 1.5 (1x screwed cable gland + 1x blind plug)

CN 8100

Basic type

CN 8100

pos.2

Certificate (detailed Ex-markings: see page 12)

	Gas	Dust	Protection method
0	CE ⁽⁴⁾	-	-
Q	CE/ FM/ CSA ^(1, 4)	-	General purpose
G	ATEX ⁽⁴⁾	Zone 2	Type of protection n
T	ATEX ^(2, 4)	Zone 0/1	Flameproof, Dust Ignition Proof
Y	ATEX ^(2, 6)	Zone 0	Intrinsically Safe
W	ATEX ^(2, 4)	-	Dust Ignition Proof
M	FM/ CSA ⁽⁴⁾	-	General purpose
H	FM/ CSA ⁽⁴⁾	Cl. I Div. 2	Non incendeive
U	FM/ CSA ⁽⁴⁾	Cl. I Div. 1	Explosion Proof, Dust Ignition Proof
P	FM/ CSA ⁽⁶⁾	Cl. I Div. 1	Intrinsically Safe
N	FM/ CSA ⁽⁴⁾	-	Dust Ignition Proof
D	INMETRO	Zone 1	Flameproof, Dust Ignition Proof

pos.3

Temperature extended shaft

- 1 without (for process temperature <85°C (185°F))
- 2 with (for process temperature >85°C (185°F))

pos.4

Electronic module

- E Standard: Relay SPDT/ Solid State 12 ... 250 V AC/ DC⁽⁷⁾
- F Digital: Profibus PA/ Solid State 12 ... 30 V DC (24 V intrinsic safe) LCD display⁽⁸⁾

pos.5+6

Process connection

- 0A Thread 3/4" NPT taper, ANSI/ ASME B1.20.1
- 0B Thread 1" NPT taper, ANSI/ ASME B1.20.1
- 0C Thread 1 1/4" NPT taper, ANSI/ ASME B1.20.1
- 0D Thread 1 1/2" NPT taper, ANSI/ ASME B1.20.1
- 1A Thread R 3/4" BSPT, EN 10226/ PT (JIS-T), JIS B 0203
- 1B Thread R 1" BSPT, EN 10226/ PT (JIS-T), JIS B 0203
- 1D Thread R 1 1/2" BSPT, EN 10226/ PT (JIS-T), JIS B 0203
- 3A Thread G 3/4" BSPP, EN ISO 228-1/ PF (JIS-P), JIS B 0202
- 3B Thread G 1" BSPP, EN ISO 228-1/ PF (JIS-P), JIS B 0202
- 3D Thread G 1 1/2" BSPP, EN ISO 228-1/ PF (JIS-P), JIS B 0202
- 5A Flange 1" 150 lbs ASME B16.5, raised face
- 5B Flange 1" 300 lbs ASME B16.5, raised face
- 5C Flange 1" 600 lbs ASME B16.5, raised face
- 5D Flange 1 1/2" 150 lbs ASME B16.5, raised face
- 5E Flange 1 1/2" 300 lbs ASME B16.5, raised face
- 5F Flange 1 1/2" 600 lbs ASME B16.5, raised face
- 5G Flange 2" 150 lbs ASME B16.5, raised face
- 5H Flange 2" 300 lbs ASME B16.5, raised face
- 5J Flange 2" 600 lbs ASME B16.5, raised face
- 5K Flange 3" 150 lbs ASME B16.5, raised face
- 5L Flange 3" 300 lbs ASME B16.5, raised face
- 5M Flange 3" 600 lbs ASME B16.5, raised face
- 5N Flange 4" 150 lbs ASME B16.5, raised face
- 5P Flange 4" 300 lbs ASME B16.5, raised face
- 5Q Flange 4" 600 lbs ASME B16.5, raised face
- 6A Flange DN25, PN16 EN 1092-1 type A flat faced
- 6B Flange DN25, PN40 EN 1092-1 type A flat faced
- 6C Flange DN40, PN16 EN 1092-1 type A flat faced
- 6D Flange DN40, PN40 EN 1092-1 type A flat faced
- 6E Flange DN50, PN16 EN 1092-1 type A flat faced
- 6F Flange DN50, PN40 EN 1092-1 type A flat faced
- 6G Flange DN80, PN16 EN 1092-1 type A flat faced
- 6H Flange DN80, PN40 EN 1092-1 type A flat faced
- 6J Flange DN100, PN16 EN 1092-1 type A flat faced
- 6K Flange DN100, PN40 EN 1092-1 type A flat faced
- 8A Triclamp 1" ISO2852⁽⁹⁾
- 8B Triclamp 1 1/2" ISO2852⁽⁹⁾
- 8C Triclamp 2" ISO2852⁽⁹⁾
- 8D Triclamp 2 1/2" ISO2852⁽⁹⁾
- 8E Triclamp 3" ISO2852⁽⁹⁾

Options

pos.11 x	Guarantee extension to 5 years	•
	Remote version ⁽¹⁾	
pos.12 a	2 m remote cable (both sides wired), including mounting bracket	•
pos.12 b	5 m remote cable (both sides wired), including mounting bracket	•
pos.17 x	FFKM wetted seals ⁽²⁾	•
pos.19 x	Sliding coupling ⁽³⁾	•
pos.23 x	WHG approval ⁽⁴⁾	•
pos.24 x	Functional safety SIL 2 (IEC 61508) ⁽⁵⁾	•
	Overspill, Declaration of Conformity	
pos.25 x	Inspection certificate	•
	Type 3.1 (EN 10204)	
pos.26 x	Manufacturer's Test Certificate	•
	M to DIN 55350, Part 18 and to ISO 9000	
pos.30 x	Stainless steel tag	•
	Measuring point number/ identification (max. 27 characters)	
	Cable entry	
	Selection of the following options only necessary, if a deviation from default is required:	
pos.33 x	M20 x 1.5 2x screwed cable gland ⁽⁶⁾	•
pos.33 e	M20 x 1.5 1x screwed cable gland + 1x blind plug ⁽⁷⁾	•
pos.33 a	NPT ½" tapered ANSI B1.20.1 (1x conduit + 1x blind plug) ⁽⁸⁾	•
	Signal lamp ^(9, 12)	
pos.34 a	LED, mounted in cable entry M20 x 1.5, green	•
pos.34 b	LED, mounted in cable entry M20 x 1.5, red	•
	Plug ^(10, 12)	
pos.35 x	Valve connector (incl. mating plug) 4-pole (incl. PE) max. 230 V	•
pos.35 a	M12 (without mating plug) 4-pole max. 25 V	•
pos.35 b	M12 (without mating plug) 5-pole (incl. PE) max. 60 V	•
pos.35 c	Harting Han 4A (incl. mating plug) 5-pole (incl. PE) max. 230 V	•
pos.36 x	Glass window in lid ⁽¹¹⁾	•

(1) Dimensions see page 11.

(2) Process temperature limited to -20°C (-4°F). For sealing of cable (cable version pos.8 P,Q,Z) and sealing of sliding coupling (pos.19 x) as well PTFE sealings are used.

(3) Available with pipe version with min. length of extension L=350 mm (pos.8 C-Y), and process connection thread (pos.5+6 0A-3D). Dimensions see page 11.

(4) Available with certificate CE (pos.2 0, Q) or ATEX flameproof (pos.2 T). Only with electronic module standard (pos.4 E).

(5) Available with electronic module standard (pos.4 E).

(6) Available for all versions except flameproof/ explosion proof version (pos.2 T,U,D).

(7) Available for FM/ CSA version (pos.2 M,H,P,N) except explosion proof version (pos.2 U).

(8) Available for all versions except FM/ CSA (pos.2 M,H,U,P,N).

(9) Available for CE (pos.2 0) and electronic module standard (pos.4 E). Not in combination with cable entries pos.33 x.

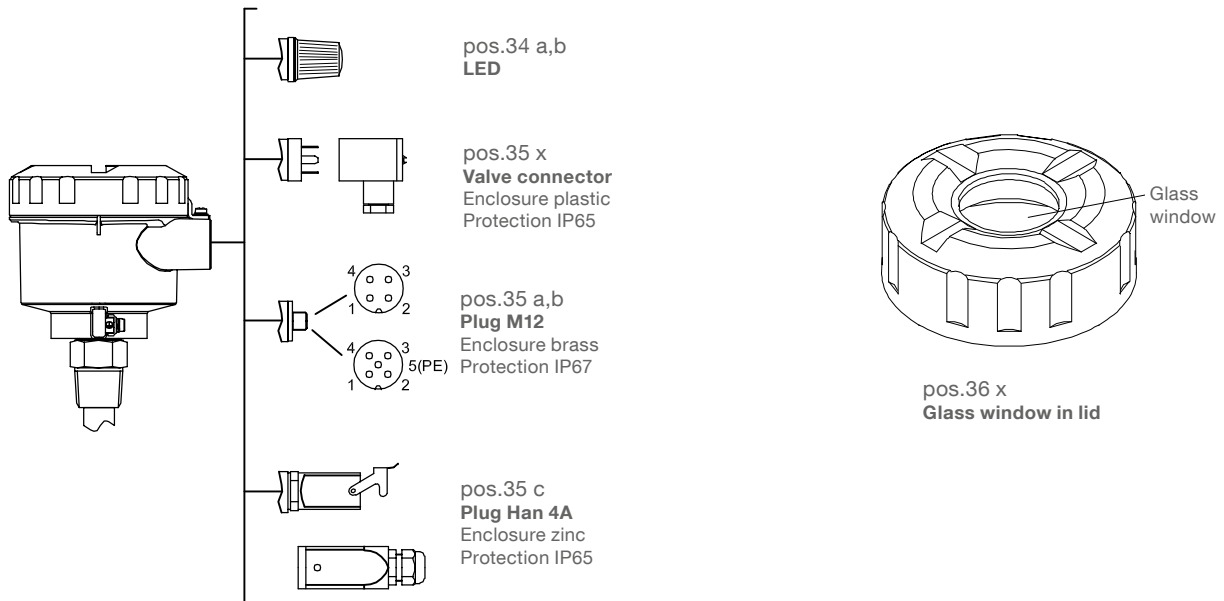
2 LED's (24V, 80-260V) will be delivered. Connection of wires to internal terminals according to customer specification.

(10) Available for CE (pos.2 0). Not in combination with cable entries pos.33 x,e,a. Connection of plug wires to internal terminals according to customer specification.

(11) Available for electronic module digital (pos.4 F).

(12) Not available with certificate Lloyds.

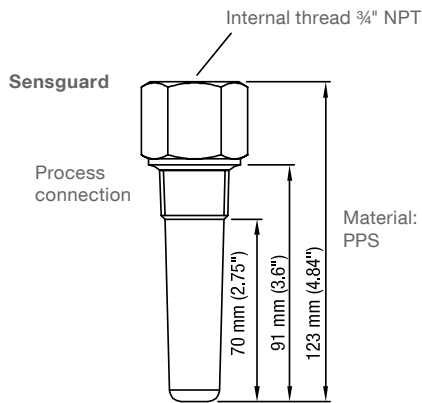
Options/ Accessories



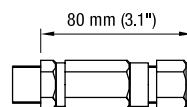
Accessories

Minimum order value for separate orders of spare parts or accessories is 75 €.

- cl440102 Sensguard process connection 3/4" NPT (PPS) ⁽¹⁾ •
- cl440103 Sensguard process connection 1" BSPT (PPS) ⁽¹⁾ •
- em440041 Cable gland M20 x 1.5 Ex-d •



Cable gland M20 x 1.5 Ex-d



For use with version
 ATEX flameproof (pos.2 T).
 Type: Stahl T3CDS 246560

(1) Requires unit with process connection 3/4" NPT (pos.5+6 0A).

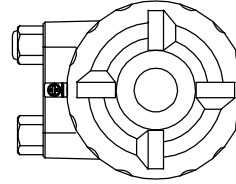
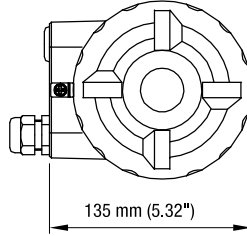
Dimensions

Enclosure

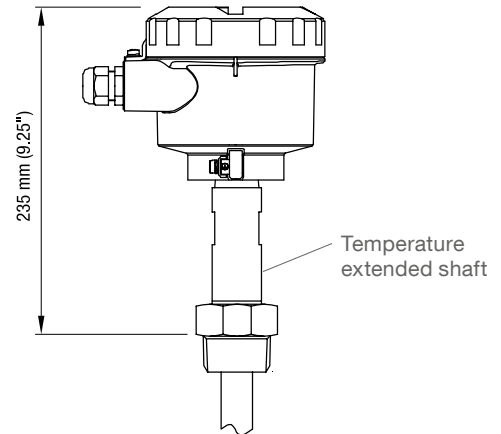
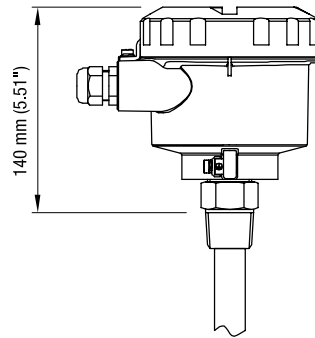
Top view

M20 x 1.5 cable gland

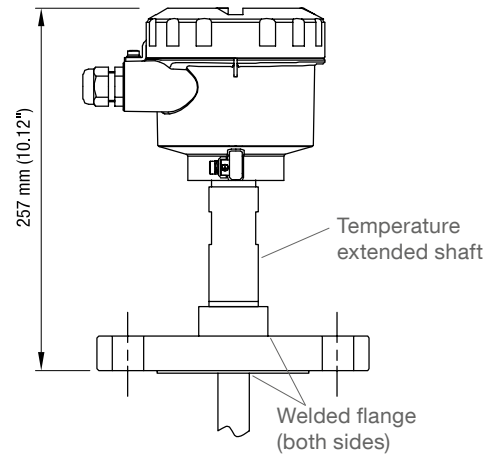
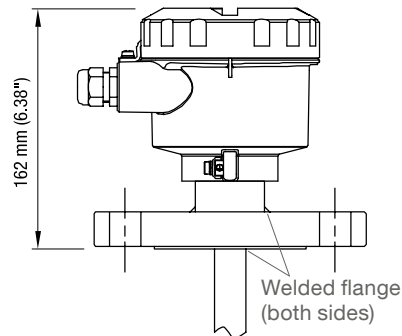
NPT 1/2" conduit



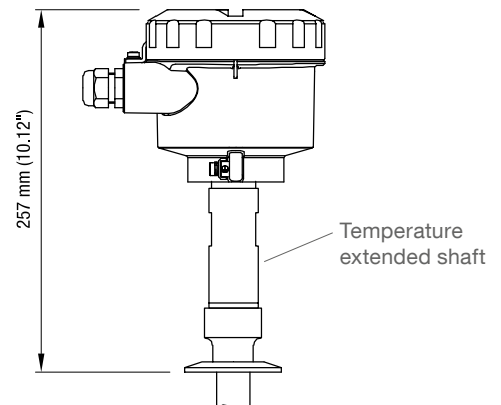
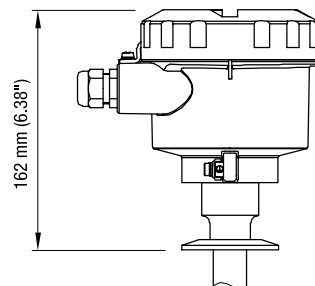
Threaded process connection



Flanged process connection



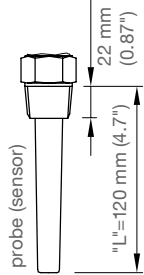
Triclamp process connection



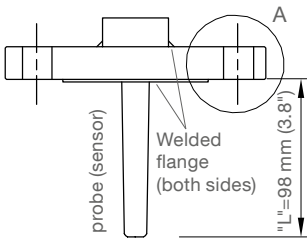
Dimensions

Short extension length Shortest length

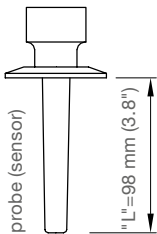
Threaded process connection



Flanged process connection

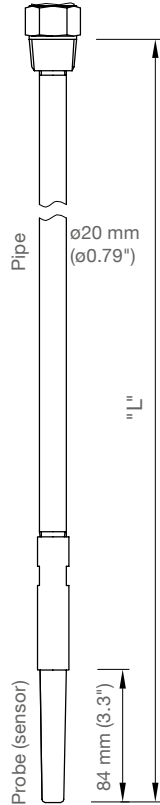


Triclamp process connection

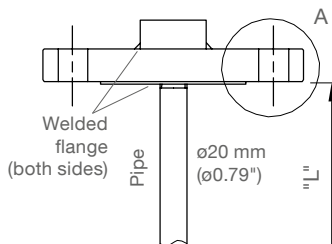


Pipe version Extended

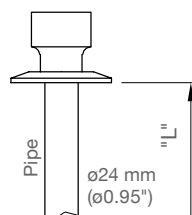
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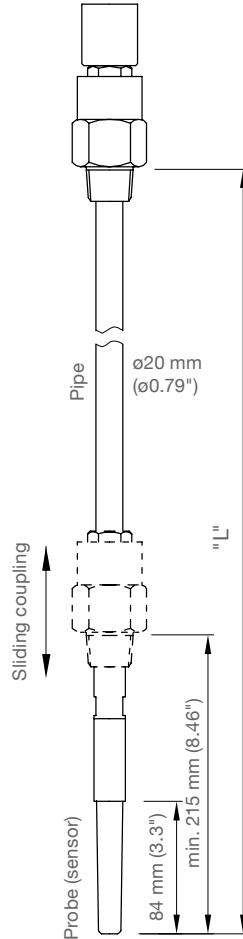
Flanged process connection



Triclamp process connection

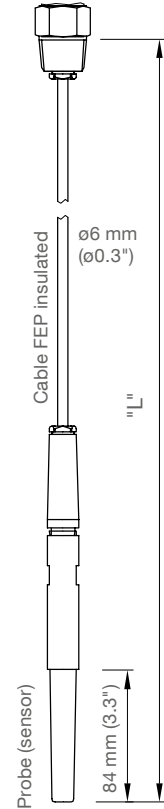


Pipe version Extended, with sliding coupling (pos.19)

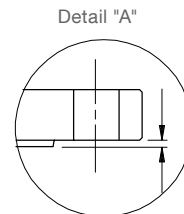
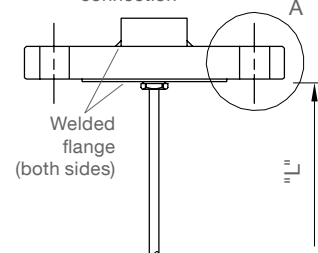


Cable version

Threaded process connection



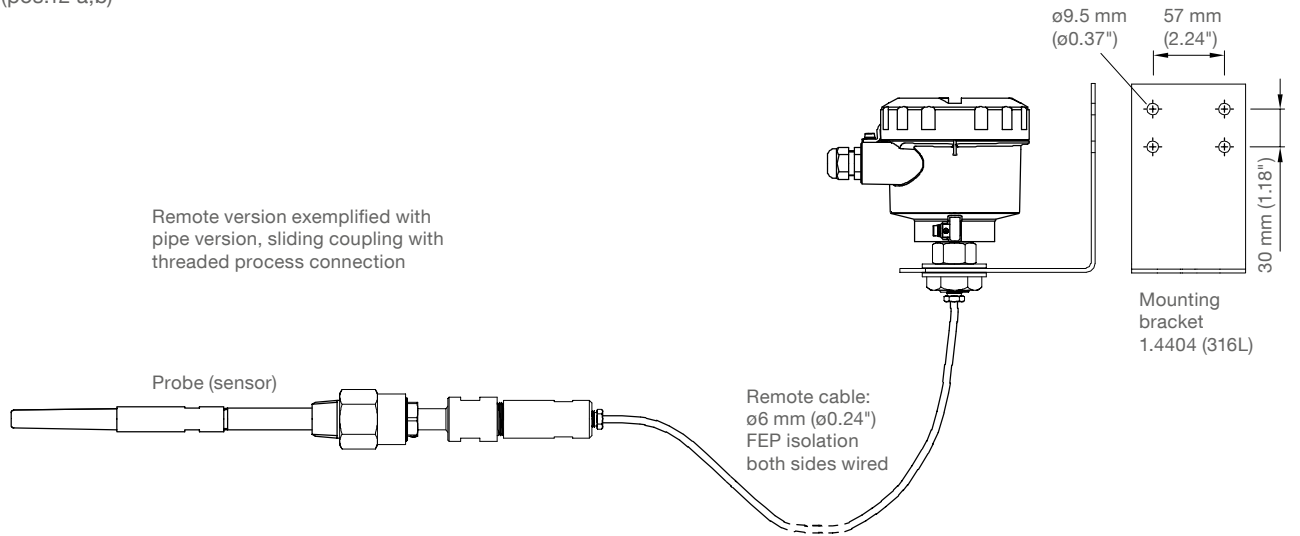
Flanged process connection



"L" does not include any raised face (see page 11)

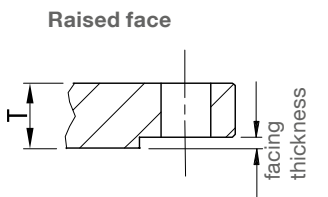
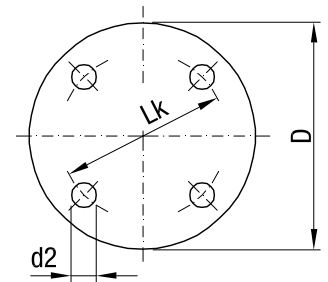
Dimensions

Remote version (pos.12 a,b)



Flanges

	Code	Type	Number of holes	d2 mm (inch)	Lk mm (inch)	D mm (inch)	T thickness mm (inch)
ASME B16.5, raised face	5A	1" 150 lbs	4	15.9 (0.63)	79.3 (3.12)	108.0 (4.25)	14.3 (0.56)
	5B	1" 300 lbs	4	19.1 (0.75)	88.9 (3.5)	123.8 (4.87)	17.5 (0.69)
	5C	1" 600 lbs	4	19.1 (0.75)	88.9 (3.5)	123.8 (4.87)	17.5 (0.69)
	5D	1½" 150 lbs	4	15.9 (0.63)	98.6 (3.88)	127.0 (5.0)	17.5 (0.69)
	5E	1½" 300 lbs	4	22.2 (0.87)	114.3 (4.5)	155.6 (6.13)	20.6 (0.81)
	5F	1½" 600 lbs	4	22.2 (0.87)	114.3 (4.5)	155.6 (6.13)	22.4 (0.88)
	5G	2" 150 lbs	4	19.1 (0.75)	120.7 (4.75)	152.4 (6.01)	19.1 (0.75)
	5H	2" 300 lbs	8	19.1 (0.75)	127.0 (5.0)	165.1 (6.5)	22.2 (0.87)
	5J	2" 600 lbs	8	19.1 (0.75)	127.0 (5.0)	165.1 (6.5)	25.4 (1.0)
	5K	3" 150 lbs	4	19.1 (0.75)	152.4 (6.01)	190.5 (7.5)	23.9 (0.94)
	5L	3" 300 lbs	8	22.2 (0.87)	168.2 (6.62)	209.6 (8.25)	28.6 (1.13)
	5M	3" 600 lbs	8	22.2 (0.87)	168.2 (6.62)	209.6 (8.25)	31.7 (1.25)
	5N	4" 150 lbs	8	19.1 (0.75)	190.5 (7.5)	228.6 (9.0)	23.9 (0.94)
5P	4" 300 lbs	8	22.2 (0.87)	200.0 (7.87)	254.0 (10.0)	31.7 (1.25)	
5Q	4" 600 lbs	8	25.4 (1.0)	215.9 (8.5)	273.1 (10.75)	38.1 (1.5)	
EN 1092-1 type A, flat faced	6A	DN25 PN16	4	14.0 (0.55)	85.0 (3.35)	115.0 (4.53)	18.0 (0.71)
	6B	DN25 PN40	4	14.0 (0.55)	85.0 (3.35)	115.0 (4.53)	18.0 (0.71)
	6C	DN40 PN16	4	18.0 (0.71)	110.0 (4.33)	150.0 (5.91)	18.0 (0.71)
	6D	DN40 PN40	4	18.0 (0.71)	110.0 (4.33)	150.0 (5.91)	18.0 (0.71)
	6E	DN50 PN16	4	18.0 (0.71)	125.0 (4.92)	165.0 (6.5)	18.0 (0.71)
	6F	DN50 PN40	4	18.0 (0.71)	125.0 (4.92)	165.0 (6.5)	20.0 (0.79)
	6G	DN80 PN16	8	18.0 (0.71)	160.0 (6.3)	200.0 (7.87)	20.0 (0.79)
	6H	DN80 PN40	8	18.0 (0.71)	160.0 (6.3)	200.0 (7.87)	24.0 (0.94)
	6J	DN100 PN16	8	18.0 (0.71)	180.0 (7.09)	220.0 (8.66)	20.0 (0.79)
	6K	DN100 PN40	8	22.0 (0.87)	190.0 (7.48)	235.0 (9.25)	24.0 (0.94)



Type	Facing thickness
ASME 150 lbs ASME 300 lbs	2 mm (0.08")
ASME 600 lbs	7 mm (0.28")

Detailed Ex-markings

pos.2	Certificate		Protection method
G	ATEX II 3G	Ex ic nA IIC T Δ Gc	Type of protection n
T	ATEX II 1/2G ATEX II 1/2D	Ex ia/db [ia Ga] IIC T Δ Ga/Gb Ex ia/tb [ia Da] IIIC T Δ Da/Db	Flameproof, Dust Ignition Proof
Y	ATEX II 1G ATEX II 1/2D	Ex ia IIC T Δ Ga Ex ia IIIC T Δ Da/Db	Intrinsically Safe
W	ATEX II 1/2D	Ex ia/tb [ia Da] IIIC T Δ Da/Db	Dust Ignition Proof
H	FM/ CSA	NI Class I, Div.2, Gr. A, B, C, D Class II, Div.2, Gr. F, G Class III T4 or T6	Non incendive
U	FM/ CSA	XP-IS Class I, Div.1, Gr. A, B, C, D DIP-IS Class II, Div.1, Gr. E, F, G DIP-IS Class III T4	Explosion Proof, Dust Ignition Proof
P	FM/ CSA	IS Class I, Div.1, Gr. A, B, C, D IS Class II, Div.1, Gr. E, F, G IS Class III T4	Intrinsically Safe
N	FM/ CSA	DIP-IS Class II, Div.1, Gr. E, F, G DIP-IS Class III T4	Dust Ignition Proof
D	INMETRO	Ex d [ia Ga] IIC T6...T4 Gb Ex tb IIIC T85°C...T100°C Db IP65/IP68	Flameproof, Dust Ignition Proof

Deviation in Ex-markings with Remote version (pos.12 a,b)

pos.2	Certificate electronic housing		Certificate probe (sensor)		Protection method
T	ATEX II 2(1)G ATEX II 2(1)D	Ex db ia [ia Ga] IIC T Δ Gb Ex ia tb [ia Da] IIIC T Δ Db	ATEX II 1G ATEX II 1D ATEX II 1/2D	Ex ia IIC T Δ Ga Ex ia IIIC T Δ Da Ex ia IIIC T Δ Da/Db	Flameproof, Dust Ignition Proof
Y	ATEX II 1G ATEX II 2D	Ex ia IIC T Δ Ga Ex ia IIIC T Δ Db	ATEX II 1G ATEX II 1D ATEX II 1/2D	Ex ia IIC T Δ Ga Ex ia IIIC T Δ Da Ex ia IIIC T Δ Da/Db	Intrinsically Safe
W	ATEX II 2(1)D	Ex ia tb [ia Da] IIIC T Δ Db	ATEX II 1D ATEX II 1/2D	Ex ia IIIC T Δ Da Ex ia IIIC T Δ Da/Db	Dust Ignition Proof
D	INMETRO	Ex d [ia Ga] IIC T6 Gb Ex tb IIIC T85°C...T100°C Db IP65/IP68	INMETRO	Ex ia IIC T6 ... T4 Ga Ex tb IIIC T85°C...T100°C Db IP65/IP68	Flameproof, Dust Ignition Proof

Electrical installation

Standard

Relay SPDT/
 Solid state switch

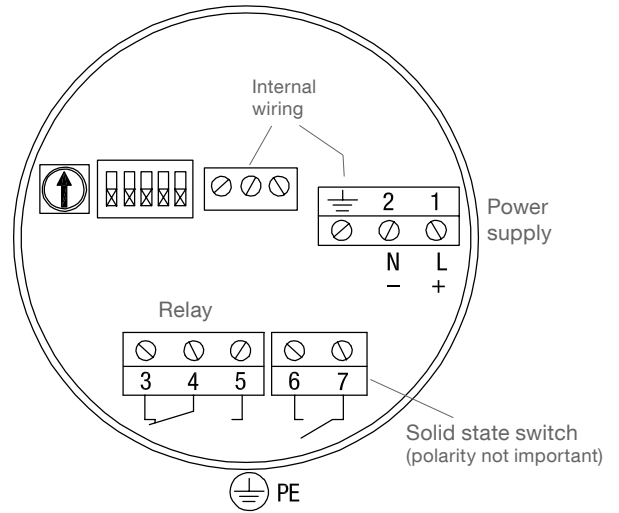
Power supply:

12 .. 250 V AC/ DC (0 .. 60 Hz)
 2 W max.

Signal output:

Relay:
 Floating relay SPDT
 AC max. 250 V, 8 A, 2000 VA, non inductive
 DC max. 30 V, 5 A, 150 W, non inductive

Solid state switch:
 30 V DC or 30 V AC (peak), 82 mA
 Observe protection (see below)



Digital

Profibus PA/
 Solid state switch

Power supply:

12 .. 30 V DC, 12.5 mA

Intrinsically Safe:

12 .. 24 V DC, 12.5 mA

Intrinsically safe barrier required

For ATEX:

$U_i=24\text{ V}$, $I_i=380\text{ mA}$, $P_i=5.32\text{ W}$, $C_i=5\text{ nF}$, $L_i=10\text{ uH}$

For FM/ CSA:

See "Connection drawing" in the Instruction Manual

Signal output:

Solid state switch:
 30 V DC or 30 V AC (peak), 82 mA
 Observe protection (see below)

Intrinsically safe:

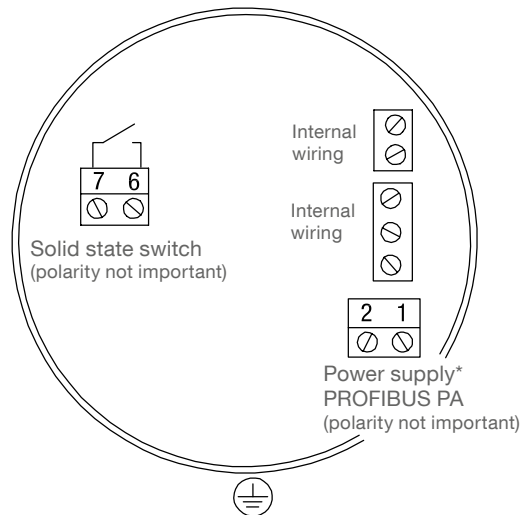
Intrinsically safe barrier required

For ATEX:

$U_i=30\text{ V}$, $I_i=200\text{ mA}$, $P_i=350\text{ mW}$, $C_i=0$, $L_i=0$

For FM/ CSA:

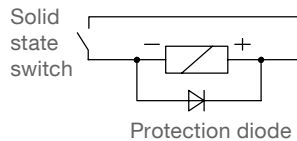
See "Connection drawing" in the Instruction Manual



* With use of Profibus the wiring must be according to Profibus PA standards.
 If Profibus is not used, a shielded cable is recommended to ensure stable measurement.

Protection of Solid State Switch

Observe a protection diode in case of connecting an external relay to the Solid state switch



Spare parts

Minimum order value for separate orders of spare parts or accessories is 75 €.

Fitting to unit/ model code	Spare part Article number
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Electronics

Split electronics is present inside probe and inside housing.
 Please contact manufacturer.

Sensor kit for cable units

Fitting to: Standard electronic	PPS probe	FKM sealing	pos.4 E 8 P,Q,Z 10 A	pl440100	•
Fitting to: Standard electronic	PVDF probe	FKM sealing	pos.4 E 8 P,Q,Z 10 B	pl440110	•
Fitting to: Standard electronic	PPS probe	FFKM sealing	pos.4 E 8 P,Q,Z 10 A 17 x	pl440120	•
Fitting to: Standard electronic	PVDF probe	FFKM sealing	pos.4 E 8 P,Q,Z 10 B 17 x	pl440130	•
Fitting to: Digital electronic	PPS probe	FKM sealing	pos.4 F 8 P,Q,Z 10 A	pl440140	•
Fitting to: Digital electronic	PVDF probe	FKM sealing	pos.4 F 8 P,Q,Z 10 B	pl440150	•
Fitting to: Digital electronic	PPS probe	FFKM sealing	pos.4 F 8 P,Q,Z 10 A 17 x	pl440160	•
Fitting to: Digital electronic	PVDF probe	FFKM sealing	pos.4 F 8 P,Q,Z 10 B 17 x	pl440170	•

Sensor kit for cable units

