

## Overview

- Continuous level measurement in liquids, slurries and solids. Performs viscous materials (conductive or nonconductive), even in challenging environments involving vapour and dust.
- Compact unit
- Wide range of applications
- No maintenance
- Rod and rope versions
- High pressure and temperature
- High chemical resistance on probes
- RF technology with active shield
- Sensitivity: dielectric constant  $\geq 1.5$
- 2-wire 4 - 20 mA electronics
- Integrated Local User Interface
- Self diagnostics
- Multiple approvals available
- 2011/65/EU RoHS conform

Approvals	CE		
	ATEX/ INMETRO	Zone 0/1	Flameproof
		Zone 20/21	Dust Ignition Proof
	FM/ CSA	General purp.	
		Cl. I Div. 1	Explosionproof
		Cl. II, III Div. 1	Dust Ignition Proof
	TR-CU	Ordinary Locations	
		Zone 0/1	Flameproof
		Zone 20/21	Dust Ignition Proof
		KC	Flameproof, Dust Ignition Proof
	Lloyds	Categories ENV1, ENV2, ENV3 and ENV5	

Electronics	Supply voltage	12 .. 30 V DC, 2-wire current loop
	Measurement signal	Current loop 4 - 20 mA or 20 - 4 mA according to NAMUR NE 43
	Measurement range	1.66 .. 3,300 pF
	User interface	7 segment LCD display, displays the actual measurement in pF Pushbuttons and rotary switch
	Settings	Upper and lower measurement range Output delay (damping) Loop current
	Diagnostics	Over- and Under Range Internal electronic self check

Housing	Material	Aluminium, powder-coated
	Ingress protection	Type 4/ NEMA 4/ IP68 <sup>(1)</sup>
	Temperature extended shaft	1.4404 (SS316L), option
	Ambient temperature	-40 .. 85°C (-40 .. 185°F) With Ex-Certificate ATEX, INMETRO, TR-CU, KC: -40 .. 80°C (-40 .. 176°F)

<sup>(1)</sup> For version with plug the type of protection can be lower (see pos.35).

## Overview

Mechanics and Process	Length of extension "L"	Rod Rope	300 .. 5,000 mm (11.81 .. 196.9") 1,000 .. 25,000 mm (39.37 .. 984.3")
	Diameter of rod/ rope	Rod Rope	ø19 mm (ø0.75") ø6 mm (ø0.3")
	Materials	Rod version Rope version Process connection Probe Isolators Wetted seals	Probe and active shield 1.4404 (SS316L), PFA coated Probe (rope) 1.4404 (SS316L), Optional PFA coated (for conductive media) Active shield 1.4404 (SS316L), PFA coated 1.4404 (SS316L) PEEK FKM or FFKM
	Process temperature		Without temperature extended shaft: -40 .. 85°C (-40 .. 185°F) With temperature extended shaft: -40 .. 200°C (-40 .. 392°F)
	Process pressure		-1 .. 35 bar g (-14.6 .. 511 psi g) nominal Observe Pressure versus Temperature Curves
	Tensile load/ torque	Rope Rod	max. 18.5 kN max. 30 Nm (horizontal load)

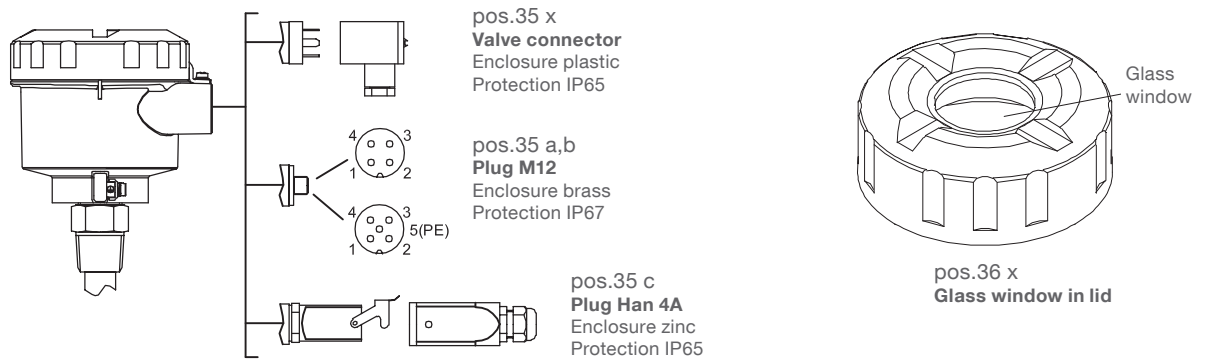


### Cable entries (by default)

Depending on model selected, the following cable entries are supported:

Version:	Cable entries:
Flameproof (pos.2 T,L,5)	M20 x 1.5 (1x open conduit + 1x blind plug)
FM/ CSA (pos.2 M,U,N)	NPT ½" tapered ANSI B1.20.1 (1x open conduit + 1x blind plug)
All other versions	M20 x 1.5 (1x screwed cable gland + 1x blind plug)

## Options



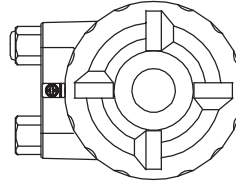
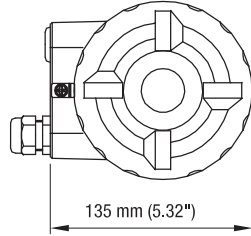
## Dimensions

### Enclosure

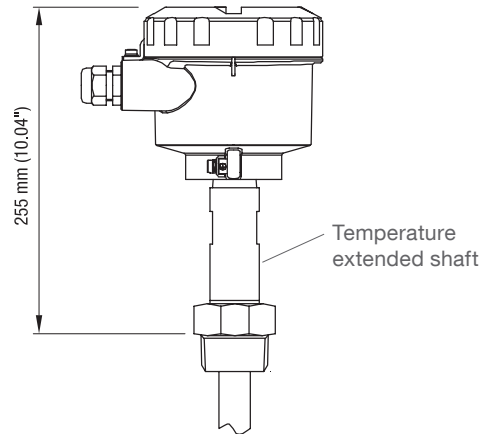
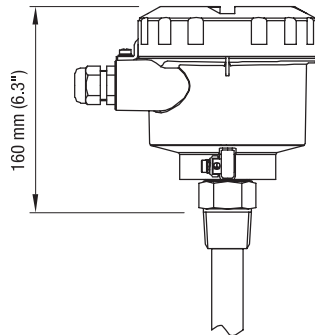
#### Top view

M20 x 1.5 cable gland

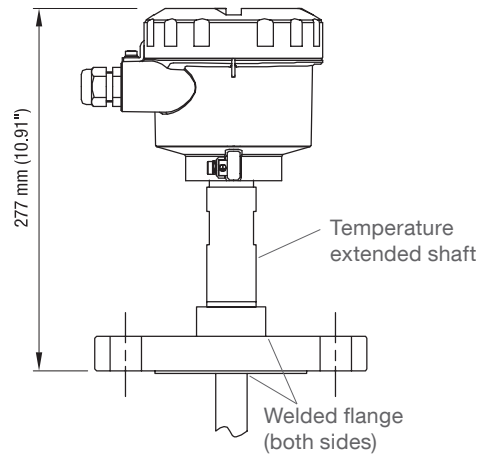
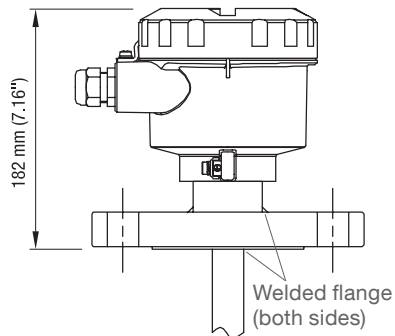
NPT 1/2" conduit



#### Threaded process connection



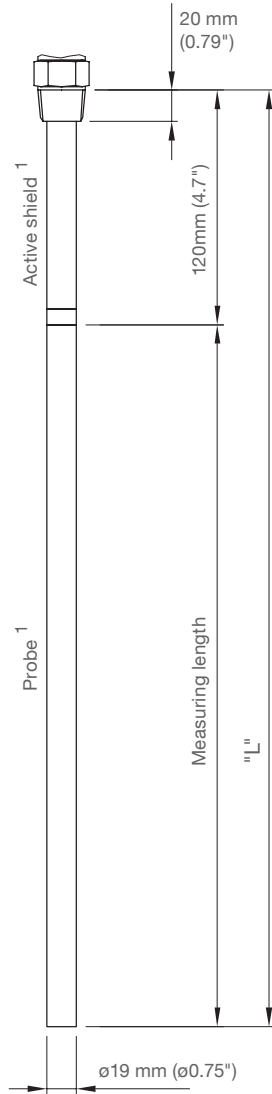
#### Flanged process connection



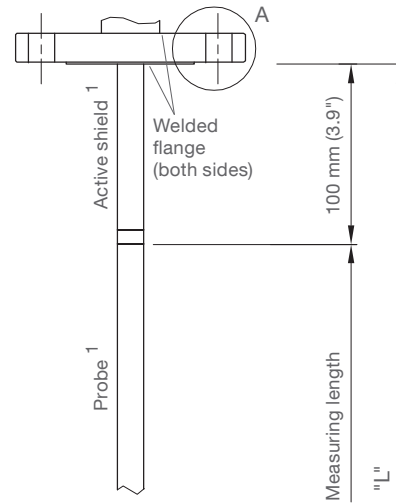
## Dimensions

### Rod version

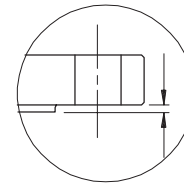
Threaded process connection



Flanged process connection



Detail "A"



"L" does not include any raised face

<sup>1</sup> Active shield and probe is PFA coated

## Dimensions

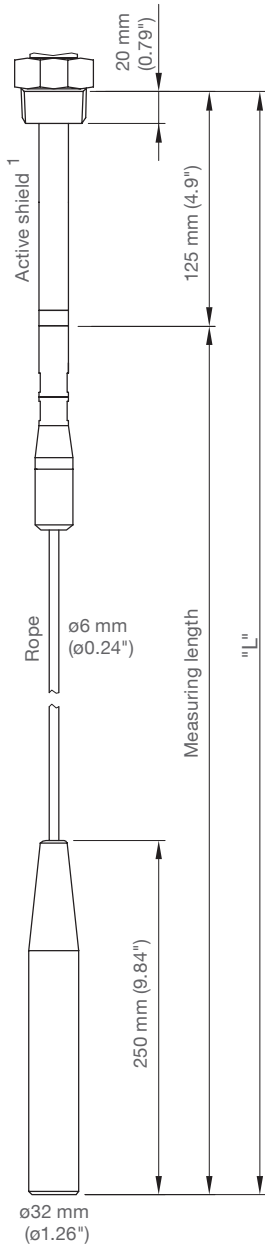
### Rope version

Rope not PFA coated

Applicable for isolating (non conductive) media only

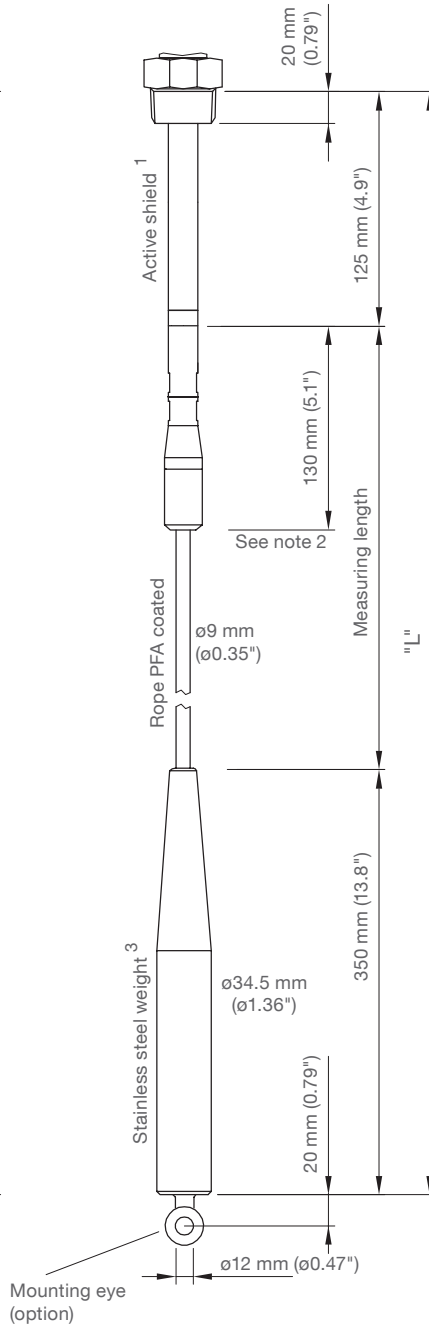
Rope PFA coated

Threaded process connection



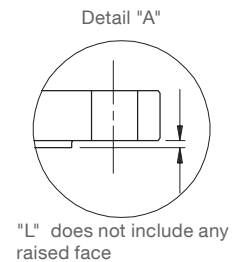
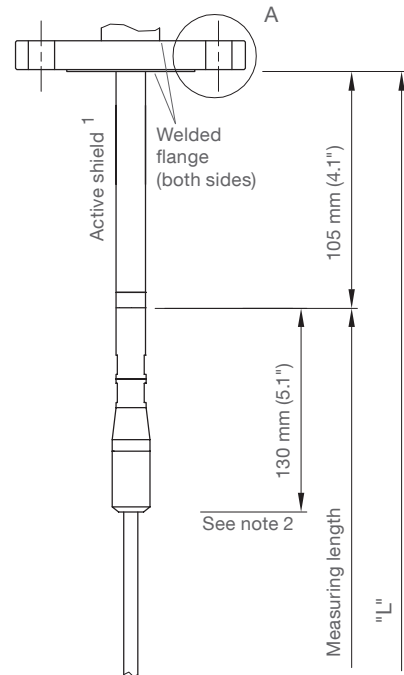
Applicable for isolating (non conductive) media only.

Threaded process connection



Mounting eye (option)

Flanged process connection



<sup>1</sup> Active shield is PFA coated

<sup>2</sup> For version with PFA coated rope:

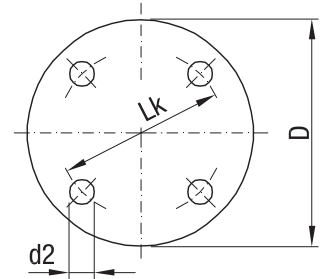
For conductive materials, the measuring length includes the exposed PFA coated rope only. Any fluid contact with the upper rod assembly (level above PFA rope) will result in a short circuit and incorrect readings.

<sup>3</sup> Weight is electrically isolated from rope, but not PFA coated

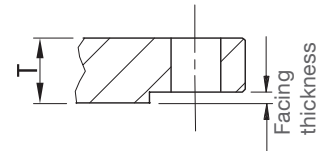
## Dimensions/ Detailed Ex-markings

### 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")



**Raised face**



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

### Detailed Ex-markings

Code	Certificate	Protection method
Pos.2 T	ATEX II 1/2G ATEX II 1/2D	Ex ia/db [ia Ga] IIC T <sub>△</sub> Ga/Gb Ex ia/tb [ia Da] IIIC T <sub>△</sub> Da/Db
Pos.2 W	ATEX II 1/2D	Ex ia/tb [ia Da] IIIC T <sub>△</sub> Da/Db
Pos.2 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
Pos.2 N	FM/ CSA	DIP-IS Class II, Div.1, Gr. E, F, G DIP-IS Class III T4
Pos.2 L	TR-CU	Ga/Gb Ex ia/d IIC T6...T2 X Ex ia/tb IIIC T <sub>200</sub> 80°C...T <sub>200</sub> 205°C Da/Db X
Pos.2 E	TR-CU	Ex ia/tb IIIC T <sub>200</sub> 80°C...T <sub>200</sub> 205°C Da/Db X
Pos.2 5	+Pos.20 a	INMETRO Ex ia/db [ia Ga] IIC T6...T2 Ga/Gb Ex ia/tb [ia Da] IIIC T* Da/Db
Pos.2 2	+Pos.20 a	INMETRO Ex ia/tb [ia Da] IIIC T* Da/Db
Pos.2 5	+Pos.20 b	KC Ex ia/d [ia Ga] IIC T* Ga/Gb Ex ia/tb [ia Da] IIIC T*°C Da/Db
Pos.2 2	+Pos.20 b	KC Ex ia/tb [ia Da] IIIC T*°C Da/Db

## Electrical installation

### Electrical installation

**Power supply/ signal output:**

12 - 30 V DC

2-wire current loop 4 - 20 mA

max. resistance value 550  $\Omega$  @ 24 V DC

