



# LMP 308

## Separable Stainless Steel Probe

## Stainless Steel Sensor

accuracy according to IEC 60770:  
Standard: 0.35 % FSO  
Option: 0.25 % / 0.1 % FSO

Stainless Steel Probe

LMP 308

### **Nominal pressure**

from 0 ... 1 mH<sub>2</sub>O  
up to 0 ... 250 mH<sub>2</sub>O

### **Special characteristics**

- ▶ diameter 35 mm
- ▶ cable and sensor section separable
- ▶ excellent accuracy
- ▶ excellent long term stability

### **Optional versions**

- ▶ IS-version zone 0
- ▶ SIL 2 (Safety Integrity Level)
- ▶ cable protection via corrugated pipe
- ▶ mounting accessories as cable gland and terminal clamp of stainless steel
- ▶ different kinds of cables
- ▶ different kinds of elastomers

The separable stainless steel probe LMP 308 is designed for the continually level measurement of water and thin fluids. In order to facilitate stock-keeping and maintenance the transmitter head is plugged to the cable assembly with a connector and can be changed easily.

### **Preferred areas of use are**

#### Water



ground water level measurement  
depth or level measurement in wells and open waters  
rain spillway basin  
level measurement in container

#### Sewage



water treatment plants  
waste water treatment  
water recycling  
activated return sludge pump station





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Technical Data

<b>Input pressure range</b>													
Nominal pressure gauge [bar]	0.10	0.16	0.25	0.40	0.60	1	1.6	2.5	4	6	10	16	25
Level [mH <sub>2</sub> O]	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250
Overpressure [bar]	0.5	1	1	2	5	5	10	10	20	40	40	80	80
Burst pressure [bar]	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50	50	120	120
<b>Output signal / Supply</b>													
Standard	2-wire: 4 ... 20 mA / V <sub>S</sub> = 8 ... 32 V <sub>DC</sub>												
Option IS-protection	2-wire: 4 ... 20 mA / V <sub>S</sub> = 10 ... 28 V <sub>DC</sub>												
<b>Performance</b>													
Accuracy <sup>1</sup>	standard: nominal pressure < 0.4 bar: ≤ ± 0.5 % FSO nominal pressure ≥ 0.4 bar: ≤ ± 0.35 % FSO option 1: nominal pressure ≥ 0.4 bar: ≤ ± 0.25 % FSO option 2: for all nominal pressures: ≤ ± 0.1 % FSO												
Permissible load	$R_{max} = [(V_S - V_{Smin}) / 0.02 A] \Omega$												
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / k $\Omega$												
Long term stability	≤ ± 0.1 % FSO / year												
Response time	< 10 msec												
<sup>1</sup> accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)													
<b>Thermal effects (Offset and Span)</b>													
Nominal pressure P <sub>N</sub> [bar]	< 0.40						≥ 0.40						
Tolerance band [% FSO]	≤ ± 1						≤ ± 0.75						
in compensated range [°C]	0 ... 70												
<b>Permissible temperatures</b>													
Permissible temperatures	medium: -20 ... 70 °C						storage: -25 ... 70 °C						
<b>Electrical protection <sup>2</sup></b>													
Short-circuit protection	permanent												
Reverse polarity protection	no damage, but also no function												
Electromagnetic compatibility	emission and immunity according to EN 61326												
<sup>2</sup> additional external overvoltage protection unit in terminal box KL 1 or KL 2 with atmospheric pressure reference available on request													
<b>Electrical connection</b>													
Cable with sheath material <sup>3</sup>	PVC (-5 ... 70 °C) grey PUR (-20 ... 70 °C) black FEP (-20 ... 70 °C) black others on request												
<sup>3</sup> cable with integrated air tube for atmospheric pressure reference													
<b>Materials (media wetted)</b>													
Housing	stainless steel 1.4404 (316L)												
Seals	FKM EPDM others on request												
Diaphragm	stainless steel 1.4435 (316L)												
Protection cap	POM												
<b>Explosion protection (only for 4 ... 20 mA / 2-wire)</b>													
Approval DX19-LMP 308	IBExU10ATEX1068X zone 0: II 1 G Ex ia IIC T4 Ga zone 20: II 1 D Ex iaD 20 T 85°C												
Safety technical maximum values	U <sub>i</sub> = 28 V, I <sub>i</sub> = 93 mA, P <sub>i</sub> = 660 mW, C <sub>i</sub> ≈ 0nF, L <sub>i</sub> ≈ 0μH												
Permissible media temperature	in zone 0: -20 ... 60 °C with p <sub>atm</sub> 0.8 bar up to 1.1 bar in zone 1 or higher: -20 ... 70 °C												
Connecting cables (by factory)	cable capacitance: signal line/shield also signal line/signal line: 160 pF/m cable inductance: signal line/shield also signal line/signal line: 1 μH/m												
<b>Miscellaneous</b>													
Option SIL 2 application	according to IEC 61508 / IEC 61511												
Current consumption	signal output current: max. 25 mA												
Weight	approx. 250 g (without cable)												
Ingress protection	IP 68												
CE-conformity	EMC Directive: 2004/108/EC												

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Technical Data

**Wiring diagram**

2-wire-system (current)

connector

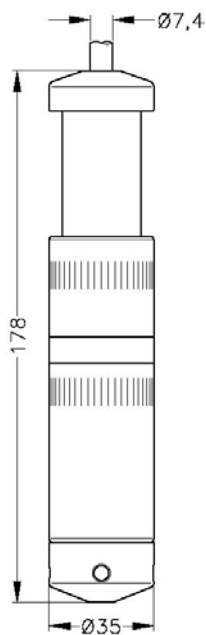
**Pin configuration**

Electrical connection	Binder series 723 <sup>4</sup> (5-pin)	cable colours (DIN 47100)
Supply +	3	wh (white)
Supply -	1	bn (brown)
Shield	5	gn/ye (green / yellow)

<sup>4</sup> in separated version

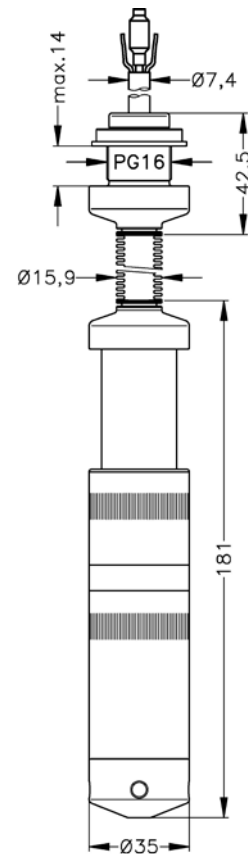
**Dimensions (in mm)**

**standard**



separated version

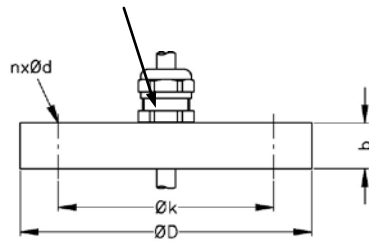
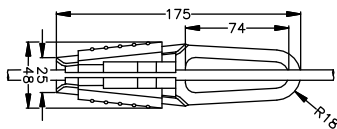
**option**



version with  
corrugated pipe

⇒ Total length of devices with accuracy 0.1 % FSO IEC 60770 increases by 16 mm!  
(standard, Ex-protection and SIL<sup>5</sup>-version)

<sup>5</sup> not in combination with the accuracy 0.1%

Mounting flange with cable gland		
<b>Technical data</b>		
Suitable for	all probes	
Flange material	stainless steel 1.4404 (316L)	
Material of cable gland	standard: brass, nickel plated on request: stainless steel 1.4305 (303); plastic	
Seal insert	material: TPE (ingress protection IP 68)	
Hole pattern	according to DIN 2507	
<b>Version</b>	<b>Size (in mm)</b>	<b>Weight</b>
DN25 / PN40	D = 115, k = 85, b = 18, n = 4, d = 14	1.4 kg
DN50 / PN40	D = 165, k = 125, b = 20, n = 4, d = 18	3.2 kg
DN80 / PN16	D = 200, k = 160, b = 20, n = 8, d = 18	4.8 kg
<b>Ordering type</b>		<b>Ordering code</b>
DN25 / PN40 with cable gland brass, nickel plated		ZMF2540
DN50 / PN40 with cable gland brass, nickel plated		ZMF5040
DN80 / PN16 with cable gland brass, nickel plated		ZMF8016
<p>cable gland M16x1.5 with seal insert (for cable-Ø 4 ... 11 mm)</p> 		
<b>Terminal clamp</b>		
<b>Technical data</b>		
Suitable for	all probes with cable Ø 5.5 ... 10.5 mm	
Material	standard: steel, zinc plated optionally: stainless steel 1.4301 (304)	
Weight	approx. 160 g	
<b>Ordering type</b>		<b>Ordering code</b>
Terminal clamp, steel, zinc plated		Z100528
Terminal clamp, stainless steel 1.4301 (304)		Z100527
		
<b>Display program</b>		
<p><b>CIT 200</b> Process display with LED display</p> <p><b>CIT 250</b> Process display with LED display and contacts</p> <p><b>CIT 300</b> Process display with LED display, contacts and analogue output</p> <p><b>CIT 350</b> Process display with LED display, bargraph, contacts and analogue output</p> <p><b>CIT 400</b> Process display with LED display, contacts, analogue output and Ex-approval</p> <p><b>CIT 600</b> Multichannel process display with graphics-capable LC display</p> <p><b>CIT 650</b> Multichannel process display with graphics-capable LC display and datalogger</p> <p><b>CIT 700</b> Multichannel process display with graphics-capable TFT monitor, touchscreen and contacts</p> <p><b>PA 440</b> Field display with 4-digit LC display</p> <p>For further informations please contact our sales department or visit our homepage: <a href="http://www.bdsensors.com">http://www.bdsensors.com</a></p>		
