

# LMP 308

## Separable Stainless Steel Probe

Stainless Steel Sensor

accuracy according to IEC 60770:  
standard: 0.35 % FSO  
option: 0.25 % FSO / 0.1 % FSO



### Nominal pressure

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

### Output signals

2-wire: 4 ... 20 mA  
others on request

### 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 seal materials

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 / filtrated sewage



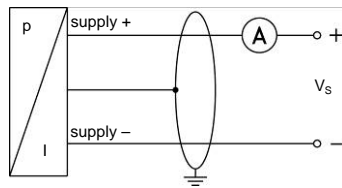
ground water level measurement  
level measurement in wells and open waters  
rain spillway basin  
level measurement in container  
water treatment plants  
water recycling



Input pressure range														
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
Output signal / Supply														
Standard	2-wire: 4 ... 20 mA / V <sub>S</sub> = 8 ... 32 V <sub>DC</sub>							SIL-version: V <sub>S</sub> = 14 ... 28 V <sub>DC</sub>						
Option IS-protection	2-wire: 4 ... 20 mA / V <sub>S</sub> = 10 ... 28 V <sub>DC</sub>							SIL-version: V <sub>S</sub> = 14 ... 28 V <sub>DC</sub>						
Performance														
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 <sub>max</sub> = [(V <sub>S</sub> – V <sub>S min</sub> ) / 0.02 A] Ω													
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ													
Long term stability	≤ ± 0.1 % FSO / year at reference conditions													
Response time	< 10 msec													
<sup>1</sup> accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)														
Thermal effects (Offset and Span)														
Nominal pressure P <sub>N</sub>	[bar]	< 0.40							≥ 0.40					
Tolerance band	[% FSO]	≤ ± 1							≤ ± 0.75					
in compensated range	[°C]	0 ... 70												
Permissible temperatures														
Permissible temperatures	medium: -20 ... 70 °C							storage: -25 ... 70 °C						
Electrical protection <sup>2</sup>														
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														
Electrical connection														
Cable with sheath material <sup>3</sup>	PVC (-5 ... 70 °C) grey PUR (-20 ... 70 °C) black FEP <sup>4</sup> (-20 ... 70 °C) black others on request													
<sup>3</sup> cable with integrated air tube for atmospheric pressure reference														
<sup>4</sup> do not use freely suspended probes with an FEP cable if effects due to highly charging processes are expected														
Materials (media wetted)														
Housing	stainless steel 1.4404 (316L)													
Seals	FKM EPDM others on request													
Diaphragm	stainless steel 1.4435 (316L)													
Protection cap	POM													
Explosion protection														
Approvals DX19-LMP 308	IBExU 10 ATEX 1068 X / IECEx IBE 12.0027X zone 0: II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex ia IIIC T 85°C Da													
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, the supply connections have an inner capacity of max. 27 nF to the housing													
Ambient temperature range	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: 1μH/m													
Miscellaneous														
Option SIL <sup>5</sup> 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: 2014/30/EU													
ATEX Directive	2014/34/EU													
<sup>5</sup> not in combination with the accuracy 0.1%														

## Wiring diagram

2-wire-system (current)



connector



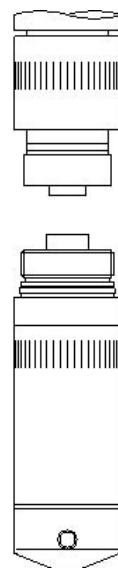
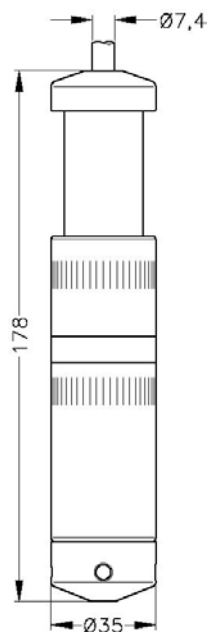
## Pin configuration

Electrical connection	Binder series 723 <sup>6</sup> (5-pin)	cable colours (IEC 60757)
Supply +	3	wh (white)
Supply -	1	bn (brown)
Shield	5	gnye (green-yellow)

<sup>6</sup> in separated version

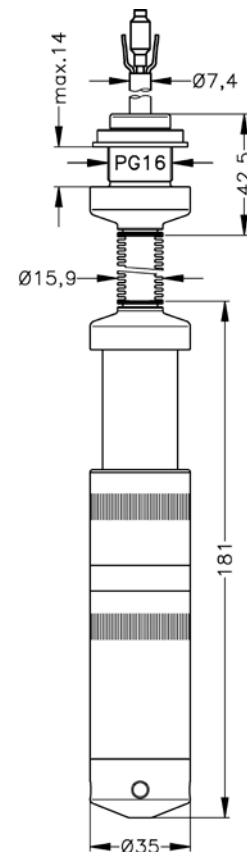
## Dimensions (in mm)

standard



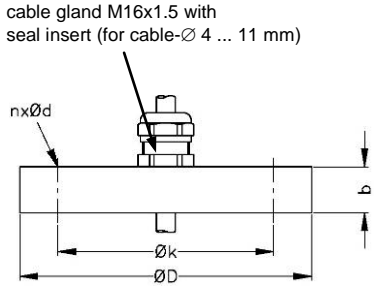
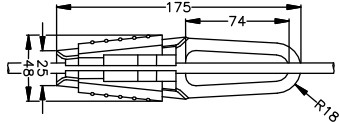

separated version

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-version)

Mounting flange with cable gland		
Technical data		
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	
Version	Size (in mm)	Weight
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
Ordering type		Ordering code
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
Terminal clamp		
Technical data		
Suitable for	all probes with cable $\varnothing$ 5.5 ... 10.5 mm	
Material	standard: steel, zinc plated optionally: stainless steel 1.4301 (304)	
Weight	approx. 160 g	
Ordering type		Ordering code
Terminal clamp, steel, zinc plated		Z100528
Terminal clamp, stainless steel 1.4301 (304)		Z100527
Display program		
<b>CIT 200</b> Process display with LED display  <b>CIT 250</b> Process display with LED display and contacts  <b>CIT 300</b> Process display with LED display, contacts and analogue output  <b>CIT 350</b> Process display with LED display, bargraph, contacts and analogue output  <b>CIT 400</b> Process display with LED display, contacts, analogue output and Ex-approval  <b>CIT 600</b> Multichannel process display with graphics-capable LC display  <b>CIT 650</b> Multichannel process display with graphics-capable LC display and datalogger  <b>CIT 700</b> Multichannel process display with graphics-capable TFT monitor, touchscreen and contacts  <b>PA 440</b> Field display with 4-digit LC display  For further information please contact our sales department or visit our homepage: <a href="http://www.bdsensors.com">http://www.bdsensors.com</a>		
		  

Ordering code LMP 308

LMP 308

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[illegible]<sup>1</sup> cable with integrated air tube for atmospheric pressure reference<sup>2</sup> not in combination with SIL

<sup>3</sup> stainless steel pipe is not part of the supply