

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 mH₂O up to 0 ... 250 mH₂O

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



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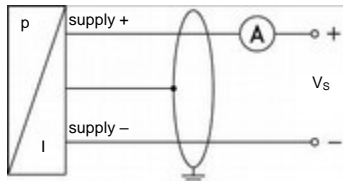
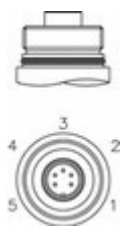
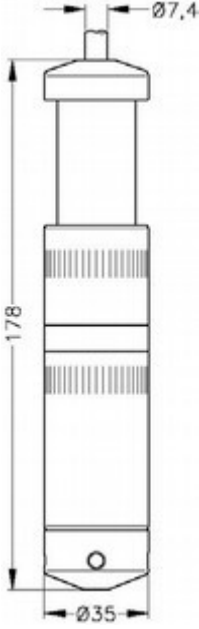

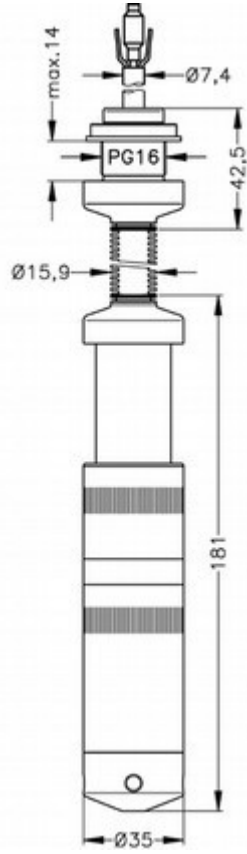
Technical Data

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 ₂ 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 _S = 8 ... 32 V _{DC}						SIL-version: V _S = 14 ... 28 V _{DC}						
Option IS-protection		2-wire: 4 ... 20 mA / V _S = 10 ... 28 V _{DC}						SIL-version: V _S = 14 ... 28 V _{DC}						
Performance														
Accuracy ¹		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 _{S min}) / 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												
¹ accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)														
Thermal effects (Offset and Span)														
Nominal pressure P _N	[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 ²														
Short-circuit protection		permanent												
Reverse polarity protection		no damage, but also no function												
Electromagnetic compatibility		emission and immunity according to EN 61326												
² 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 ³		PVC (-5 ... 70 °C) grey PUR (-20 ... 70 °C) black FEP ⁴ (-20 ... 70 °C) black others on request												
³ cable with integrated air tube for atmospheric pressure reference														
⁴ 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		IBExU 10 ATEX 1068 X / IECEx IBE 12.0027X												
DX19-LMP 308		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 _i = 28 V, I _i = 93 mA, P _i = 660 mW, C _i ≈ 0nF, L _i ≈ 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 _{atm} 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 ⁵ 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												
⁵ not in combination with the accuracy 0.1%														

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Technical Data

Wiring diagram		
<p>2-wire-system (current)</p> 	<p>connector</p>	
Pin configuration		
Electrical connection	Binder series 723 ° (5-pin)	cable colours (IEC 60757)
Supply +	3	wh (white)
Supply -	1	bn (brown)
Shield	5	gnye (green-yellow)
° in separated version		
Dimensions (in mm)		
<p>standard</p> 	<p>option</p>  <p style="text-align: center;">separated version</p>	 <p style="text-align: center;">version with corrugated pipe</p>
<p>Total length of devices with accuracy 0.1 % FSO IEC 60770 increases by 16 mm! (standard, Ex-protection and SIL-version)</p>		

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Accessories

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		
<p>CIT 200 Process display with LED display</p> <p>CIT 250 Process display with LED display and contacts</p> <p>CIT 300 Process display with LED display, contacts and analogue output</p> <p>CIT 350 Process display with LED display, bargraph, contacts and analogue output</p> <p>CIT 400 Process display with LED display, contacts, analogue output and Ex-approval</p> <p>CIT 600 Multichannel process display with graphics-capable LC display</p> <p>CIT 650 Multichannel process display with graphics-capable LC display and datalogger</p> <p>CIT 700 Multichannel process display with graphics-capable TFT monitor, touchscreen and contacts</p> <p>PA 440 Field display with 4-digit LC display</p>		
<p>For further information please contact our sales department or visit our homepage: http://www.bdsensors.com</p>		

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Ordering code LMP 308

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Pressure			
	in bar	4 4 0	
	in mH ₂ O	4 4 1	
Input			
	[mH ₂ O]	[bar]	
	1.0	0.10	1 0 0 0
	1.6	0.16	1 6 0 0
	2.5	0.25	2 5 0 0
	4.0	0.40	4 0 0 0
	6.0	0.60	6 0 0 0
	10	1.0	1 0 0 1
	16	1.6	1 6 0 1
	25	2.5	2 5 0 1
	40	4.0	4 0 0 1
	60	6.0	6 0 0 1
	100	10	1 0 0 2
	160	16	1 6 0 2
	250	25	2 5 0 2
	customer		9 9 9 9
Housing			
	Stainless steel 1.4404 (316L)		1
	customer		9
Diaphragm			
	Stainless steel 1.4435 (316L)		1
	customer		9
Output			
	4 ... 20 mA / 2-wire		1
	Intrinsic safety 4 ... 20 mA / 2-wire		E
	SIL2 4 ... 20 mA / 2-wire		1S
	SIL2 with Intrinsic safety 4 ... 20 mA / 2-wire		ES
	customer		9
Seals			
	FKM		1
	EPDM		3
	customer		9
Electrical connection			
	PVC-cable ¹		1
	PUR-cable ¹		2
	FEP-cable ¹		3
	customer		9
Accuracy			
	standard for P _N ≥ 0.4 bar	0.35 %	3
	standard for P _N < 0.4 bar	0.5 %	5
	option 1 for P _N ≥ 0.4 bar	0.25 %	2
	option 2	0.1 % ²	1
	customer		9
Cable length			
	in m		9 9
Version			
	standard		0 0 0
	prepared for mounting ³ with stainless steel pipe		1 0 6
	cable protection with stainless steel corrugated pipe		1 0 3
	with pipe length in m		9 9 9
	customer		9 9 9

¹ cable with integrated air tube for atmospheric pressure reference
² not in combination with SIL
³ stainless steel pipe is not part of the supply

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