



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



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}												
Option IS-protection	2-wire:	4 ... 20 mA / V _S = 10 ... 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 _{Smin}) / 0.02 A] Ω													
Influence effects	supply:	0.05 % FSO / 10 V												
	load:	0.05 % FSO / kΩ												
Long term stability	≤ ± 0.1 % FSO / year													
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 (-20 ... 70 °C) black others on request													
³ cable with integrated air tube for atmospheric pressure reference														
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 _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													
Permissible media temperature	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 ⁴ 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													
ATEX Directive	94/4/EG													
⁴ not in combination with the accuracy 0.1%														

Wiring diagram

2-wire-system (current)

connector

Pin configuration

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

⁵ in separated version

Dimensions (in mm)

standard

option

separated version

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)

LMP 308

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	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	9	9	9														
	with pipe length in m 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