

# LMP 307

## Stainless Steel Probe

Stainless Steel Sensor

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

3-wire: 0 ... 20 mA / 0 ... 10 V

others on request

### Special characteristics

- ▶ diameter 26.5 mm
- ▶ small thermal effect
- ▶ high accuracy
- ▶ good long term stability

### Optional versions

- ▶ IS-version  
Ex ia = intrinsically safe for gas and dust
- ▶ SIL 2 (Safety Integrity Level)
- ▶ drinking water certificate  
according to DVGW and KTW
- ▶ different kinds of cables  
and elastomers
- ▶ petrol-version  
welded pressure sensor and housing
- ▶ mounting with stainless steel pipe

The stainless steel probe LMP 307 is designed for continuous level measurement in water and clean or lightly polluted fluids.

Basic element is a high quality stainless steel sensor with high requirements for exact measurement with good long term stability.

### Preferred areas of use are

#### Water / filtrated sewage

drinking water systems  
 ground water level measurement  
 rain spillway basins  
 pump and booster stations  
 level measurement in containers  
 water treatment plants  
 water recycling



#### Fuel and oil

fuel storage  
 tank farms



Input pressure range															
Nominal pressure gauge	[bar]	0.1	0.16	0.25	0.4	0.6	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	
Max. ambient pressure (housing): 40 bar															
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-version		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>					
Options 3-wire		3-wire: 0 ... 20 mA / V <sub>S</sub> = 14 ... 30 V <sub>DC</sub>								0 ... 10 V / V <sub>S</sub> = 14 ... 30 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		current 2-wire: R <sub>max</sub> = [(V <sub>S</sub> - V <sub>S min</sub> ) / 0.02 A] Ω								voltage 3-wire: R <sub>min</sub> = 10 kΩ					
		current 3-wire: R <sub>max</sub> = 500 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		2-wire: ≤ 10 msec						3-wire: ≤ 3 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: -10 ... 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 Ø 7.4 mm PUR (-10 ... 70 °C) black Ø 7.4 mm FEP <sup>4</sup> (-10 ... 70 °C) black Ø 7.4 mm TPE-U (-10 ... 70 °C) blue Ø 7.4 mm (without / with drinking water certificate)													
Bending radius		static installation: 10-fold cable diameter dynamic application: 20-fold cable diameter													
<sup>3</sup> shielded cable with integrated ventilation 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 (without / with drinking water certificate)										welded version <sup>5</sup> others on request			
Diaphragm		stainless steel 1.4435 (316L)													
Protection cap		POM-C													
Cable sheath		PVC, PUR, FEP, TPE-U													
<sup>5</sup> not in combination with SIL version and only in combination with FEP cable possible															
Explosion protection (only for 4 ... 20 mA / 2-wire)															
Approvals DX19-LMP 307		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 T135 °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> ≈ 0 nF, L <sub>i</sub> ≈ 0 μH, the supply connections have an inner capacity of max. 27 nF to the housing													
Permissible temperatures for environment		in zone 0: -20 ... 60 °C with p <sub>atm</sub> 0.8 bar up to 1.1 bar in zone 1 or higher: -40/-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													



**Mounting flange with cable gland**

dimensions in mm			
size	DN25 / PN40	DN50 / PN40	DN80 / PN16
b	18	20	20
D	115	165	200
d2	14	18	18
d4	68	102	138
f	2	3	3
k	85	125	160
n	4	4	8

**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		
<b>Ordering type</b>	<b>Ordering code</b>	<b>Weight</b>	
DN25 / PN40 with cable gland brass, nickel plated	ZMF2540	1.4 kg	
DN50 / PN40 with cable gland brass, nickel plated	ZMF5040	3.2 kg	
DN80 / PN16 with cable gland brass, nickel plated	ZMF8016	4.8 kg	

**Terminal clamp**

**Technical data**

Suitable for	all probes with cable Ø 5.5 ... 10.5 mm		
Material of housing	standard: steel, zinc plated      optionally: stainless steel 1.4301 (304)		
Material of clamping jaws and positioning clips	PA (fibre-glass reinforced)		
Dimensions (mm)	174 x 45 x 32		
Hook diameter	20 mm		
<b>Ordering type</b>	<b>Ordering code</b>	<b>Weight</b>	
Terminal clamp, steel, zinc plated	Z100528	approx. 160 g	
Terminal clamp, stainless steel 1.4301 (304)	Z100527		

**Display program**

- CIT 200** Process display with LED display
- CIT 250** Process display with LED display and contacts
- CIT 300** Process display with LED display, contacts and analogue output
- CIT 350** Process display with LED display, bargraph, contacts and analogue output
- CIT 400** Process display with LED display, contacts, analogue output and Ex-approval
- CIT 600** Multichannel process display with graphics-capable LC display
- CIT 650** Multichannel process display with graphics-capable LC display and datalogger
- CIT 700 / CIT 750** Multichannel process display with graphics-capable TFT monitor, touchscreen and contacts
- PA 440** Field display with 4-digit LC display

**For further information please contact our sales department or visit our homepage:**  
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