

LMP 307



Stainless Steel Probe

Stainless Steel Sensor

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

Nominal pressure

from 0 ... 1 mH₂O up to 0 ... 250 mH₂O

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
- ▶ excellent accuracy
- ▶ excellent long term stability

Optional versions

- ▶ IS-protection zone 0
- ▶ SIL 2 (Safety Integrity Level)
- ▶ drinking water certificate according to DVGW and KTW
- ▶ different kinds of cables
- ▶ different kinds of seal materials

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 excellent long term stability.

Preferred areas of use are

Water / filtrated sewage

drinking water system

ground water level measurement



rain spillway basin

pump and booster stations

level measurement in container

water treatment plants

water recycling



Fuel / Oil

fuel storage

tank farm

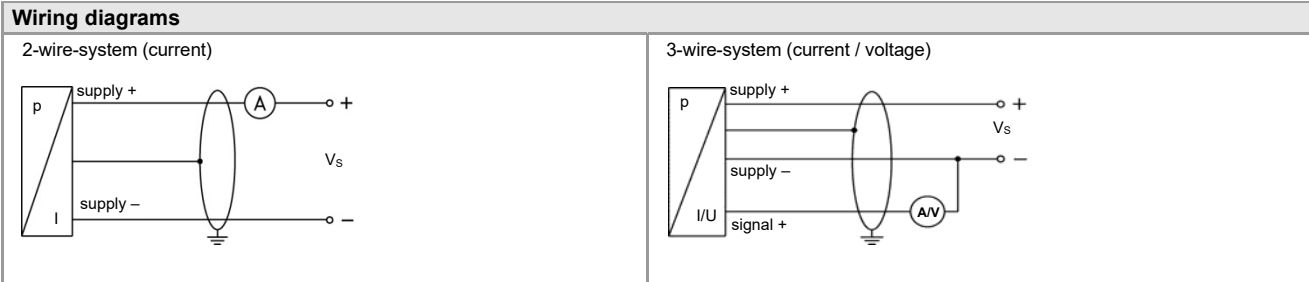


Input pressure range															
Nominal pressure gauge	[bar]	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10	16	25	
Level	[mH ₂ O]	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250	
Overpressure	[bar]	0.5	1	1	2	5	5	10	10	20	40	40	80	80	
Burst pressure ≥	[bar]	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50	50	120	120	
Output signal / Supply															
Standard		2-wire: 4 ... 20 mA / V _S = 8 ... 32 V _{DC}							SIL-version: V _S = 14 ... 28 V _{DC}						
Option Ex-protection		2-wire: 4 ... 20 mA / V _S = 10 ... 28 V _{DC}							SIL-version: V _S = 14 ... 28 V _{DC}						
Options 3-wire		3-wire: 0 ... 20 mA / V _S = 14 ... 30 V _{DC}							0 ... 10 V / V _S = 14 ... 30 V _{DC}						
Performance															
Accuracy		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 _{max} = [(V _S - V _{S min}) / 0.02 A] Ω													
		current 3-wire: R _{max} = 500 Ω													
		voltage 3-wire: R _{min} = 10 kΩ													
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						
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: -10 ... 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 (-10 ... 70 °C) black FEP ⁴ (-10 ... 70 °C) black TPE-U (-10 ... 70 °C) blue (without/with drinking water certificate)													
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 (without/with drinking water certificate)							others on request						
Diaphragm		stainless steel 1.4435 (316L)													
Protection cap		POM-C													
Explosion protection (only for 4 ... 20 mA / 2-wire)															
Approvals		IBExU 10 ATEX 1068 X / IECEx IBE 12.0027X													
DX19-LMP 307		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 ≈ 0 nF, L _i ≈ 0 μH, 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: 1 μH/m						
Miscellaneous															
Option SIL 2 version ⁵		according to IEC 61508 / IEC 61511													
Drinking water certificate ⁶		according to DVGW W 270 and UBA KTW (with order the indication "with drinking water certificate" is necessary)													
Current consumption		signal output current: max. 25 mA							signal output voltage: max. 7 mA						
Weight		approx. 200 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 %, only for 4...20 mA / 2-wire															
⁶ only possible with EPDM seal in combination with TPE-U cable; not possible with IS-protection (explosion protection)															

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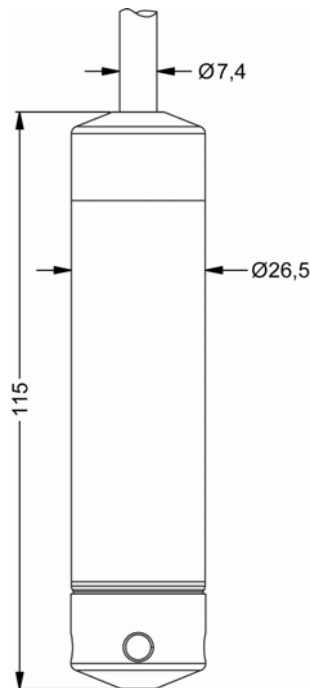
Technical Data




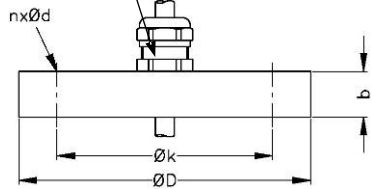
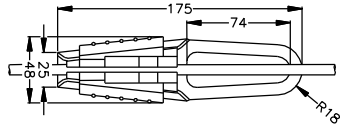
Pin configuration

Electrical connection	cable colours (IEC 60757)
Supply +	wh (white)
Supply -	bn (brown)
Signal + (only 3-wire)	gn (green)
Shield	gnye (green-yellow)

Dimensions (in mm)



⇒ Total length of devices with accuracy 0.1 % FSO IEC 60770 increases by 35 mm!

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)
DN25 / PN40	D = 115, k = 85, b = 18, n = 4, d = 14
DN50 / PN40	D = 165, k = 125, b = 20, n = 4, d = 18
DN80 / PN16	D = 200, k = 160, b = 20, n = 8, d = 18
Weight	
DN25 / PN40	1.4 kg
DN50 / PN40	3.2 kg
DN80 / PN16	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	
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 Multichannel process display with graphics-capable TFT monitor, touchscreen and contacts	
PA 440 Field display with 4-digit LC display	
Mounting flange with cable gland	
<p>cable gland M16x1.5 with seal insert (for cable-\varnothing 4 ... 11 mm)</p> 	
Terminal clamp	
	

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