

MP 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

Special characteristics

- ▶ diameter 27 mm
- ► small thermal effect
- ► excellent accuracy
- ▶ excellent long term stability

Optional versions

- ▶ IS-protection zone 0
- ► SIL 2 (Safety Integrity Level)
- ► cable protection via corrugated pipe
- ▶ different kinds of cables
- ▶ different kinds of elastomers

The stainless steel probe LMP 307 is designed for continuous level measurement in water and clean or waste 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



drinking water system ground water level measurement rain spillway basin pump and booster stations level measurement in container

Sewage



water treatment plants waste water treatment water recycling

Fuel / Oil



fuel storage tank farm





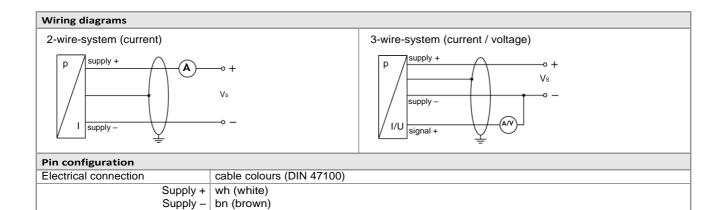


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Input pressure range														
Nominal pressure gauge	e [bar]	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10	16	25
Level	[mH ₂ O]	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250
Overpressure	[bar]	0.5	1	1	2	5	5	10	10	20	40	40	80	80
Burst pressure >	[bar]	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50	50	120	120

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 Ex-protection	2-wire: 4 20 mA / V _s = 10 28 V _{pc}				
Options 3-wire	3-wire: 0 20 mA / $V_s = 14$ 30 V_{DC}				
·	$0 \dots 10 \text{ V}$ / $V_s = 14 \dots 30 \text{ V}_{DC}$				
Performance					
Accuracy	standard: nominal pressure < 0.4 bar: $\leq \pm 0.5 \%$ FSO				
	nominal pressure ≥ 0.4 bar: ≤±0.35 % FSO				
	option 1: nominal pressure ≥ 0,4 bar: ≤±0,25 % FSO				
Dawei asible land	option 2: for all nominal pressures: ≤± 0.1 % FSO				
Permissible load	current 2-wire: $R_{max} = [(V_s - V_s min) / 0.02] \land$				
	current 3-wire: $R_{max} = 500 \land$ voltage 3-wire: $R_{min} = 10 k \land$				
Influence effects	supply: 0.05 % FSO / 10 V				
inidence enects	load: 0.05 % FSO / k^				
Long term stability	≤±0.1 % FSO / year				
,	2-wire: ≤ 10 msec				
Response time	3-wire: ≤ 3 msec				
¹ accuracy according to IEC 60770 – lin	mit point adjustment (non-linearity, hysteresis, repeatability)				
Thermal effects (Offset and Spa	an)				
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				
	ection 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 (-10 70 °C) black				
³ cable with integrated air tube for atn					
Materials (media wetted)	.,, .,,				
Housing	stainless steel 1.4404 (316L)				
Seals	FKM; others on request				
Diaphragm	stainless steel 1.4435 (316L)				
Protection cap	POM				
Explosion protection (only for 4	. 20 mA / 2-wire)				
Approval DX19-LMP 307	IBExU10ATEX1068X				
	zone 0: II 1 G Ex ia IIC T4 Ga				
	zone 20: II 1 D Ex iaD 20T85°C				
Safety technical maximum values	U_i = 28 V, I_i = 93 mA, P_i = 660 mW, $C_i \approx 0$ nF, $L_i \approx 0$ μH				
Permissible media temperature	in zone 0: -10 60 °C with p _{atm} 0.8 bar up to 1.1 bar in zone 1 or higher: -10 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 application	according to IEC 61508 / IEC 61511				
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: 2004/108/EC				
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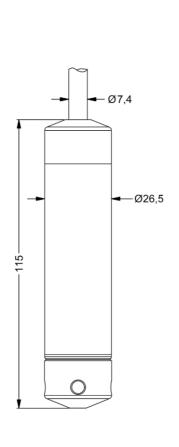


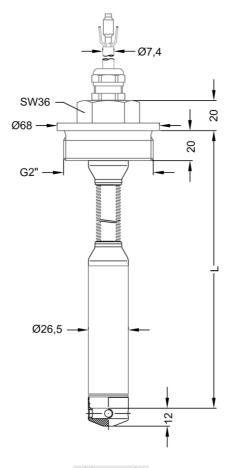
Dimensions (in mm)

standard option

Shield gn/ye (green / yellow)

Signal + (only 3-wire) gn (green)





cable protection with corrugated pipe

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Mounting flange	e with cable gland				
Technical data					
Suitable for	all probes	cable gland M16x1.5 with seal insert (for cable-Ø 4 11 mm)			
Flange material	stainless steel 1.4404 (316L)				
Material of cable gland	standard: brass, nickel plated on request: stainless steel 1.4305 (303	nxØd			
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	Øk		
DN80 / PN16	D = 200, k = 160, b = 20, n = 8, d= 18	4.8 kg	ØD		
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	e gland brass, nickel plated	ZMF8016			

Terminal clamp

Technical data		
Suitable for	all probes with cable Ø 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

 $\label{lem:multichannel} \mbox{Multichannel process display with graphics-capable LC display and datalogger}$

CIT 700

Multichannel process display with graphics-capable TFT monitor, touchscreen and contacts

ΡΔ 440

Field display with 4-digit LC display



Ordering code LMP 307 **LMP 307** Pressure 4 5 0 4 5 1 in bar in mH₂O Input [mH₂O] [bar] 1 0 0 0 1 6 0 0 2 5 0 0 1.0 0.10 1.6 0.16 0.25 2.5 0 0 0 4.0 0.40 6.0 0.60 6 0 0 0 10 1.0 1 0 0 1 16 1.6 1 6 0 1 2 5 0 1 4 0 0 1 25 2.5 40 4.0 6 0 0 1 1 0 0 2 1 6 0 2 60 6.0 100 10 16 250 25 5 0 2 customer 9 9 9 9 consult Housing Stainless steel 1.4404 (316L) 1 9 customer consult Diaphragm Stainless steel 1.4435 (316L) 1 9 customer consult Output 4 ... 20 mA / 2-wire 1 0 ... 20 mA / 3-wire 0 ... 10 V / 3-wire 3 Intrinsic safety 4 ... 20 mA / 2-wire Ε SIL2 4 ... 20 mA / 2-wire 15 SIL2 with Intrinsic safety ES 4 ... 20 mA / 2-wire customer 9 consult Seals FKM 1 9 customer consult Accuracy standard for P_N≥ 0.4 bar 0.35 % 3 standard for $P_N < 0.4$ bar 0.5 % option 1 for $P_N \ge 0.4$ bar 0.25 % 2 option 2 0.1 % consult customer 9 Electrical connection PVC-cable 1 PUR-cable FEP-cable ¹ 3 customer consult Cable length _ in m 0 0 3 0 0 5 standard: 3 m PVC standard: 5 m PVC 0 | 1 | 0 | 0 1 5 0 | 2 | 0 | 9 9 9 standard: 10 m PVC standard: 15 m PVC standard: 20 m special length **PVC** 0 0 3 standard: 3 m PUR 0 0 5 standard: 5 m PUR 0 1 0 0 1 5 standard: 10 m PUR standard: 15 m PUR 0 2 0 9 9 standard: 20 m PUR special length PUR 0 0 5 standard: 5 m FFP standard: 10 m FEP 9 9 9 special length FEP Special version standard cable protection with stainless steel corrugated pipe 1 0 3 9 9 9 consult with pipe length in m

customer

Standard lengths 3 / 5 / 10 / 15 / 20 m are available from stock, special lengths are manufactured order-related, price per meter (see above).

consult

9 9 9

defined in the datasheet. Subject to change without notice.

 $^{^{\}mbox{\scriptsize 1}}\mbox{cable}$ with integrated air tube for atmospheric pressure reference



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