

LMP 307i



Stainless Steel Probe Precision

Stainless Steel Sensor

accuracy according to EN IEC 62828-2:
0,1 % span

Nominal pressure

from 0 ... 4 mH₂O up to 0 ... 200 mH₂O

Output signals

2-wire: 4 ... 20 mA
3-wire: 0 ... 10 V
others on request

Special characteristics

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

Optional versions

- ▶ IS-version Ex ia= intrinsically safe for water and dust
- ▶ cable protection via corrugated pipe
- ▶ drinking water applications according to DVGW a KTW
- ▶ different kinds of cables
- ▶ different kinds of seal materials

Stainless steel precision probe LMP 307i is designed for continuous measurement of water level and clean or slightly contaminated liquids.

The basis is a high-quality stainless steel sensor, which guarantees very accurate measurements with excellent long-term stability.

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



Pohonné hmoty / Oleje

skladování pohonných hmot
skladování ropy



LMP 307i

Precision stainless steel probe

Accessories

Input pressure range ¹							
Nominal pressure gauge	[bar]	0,40	1	2	4	10	20
Level	[mH ₂ O]	4	10	20	40	100	200
Overpressure	[bar]	2	5	10	20	40	80
Burst pressure	[bar]	3	7,5	15	25	50	120
max. ambient pressure (housing)		40 bar					
¹ On customer request we adjust the device within the turn-down-possibility by software on the required pressure range.							
Výstupní signál / Napájení							
Standard		2-wire: 4 ... 20 mA / V _S = 12 ... 36 V _{DC} with RS-232 communication interface					
Option IS-protection		2-wire: 4 ... 20 mA / V _S = 14 ... 28 V _{DC}					
Option 3-wire		3-wire: 0 ... 10 V / V _S = 14 ... 36 V _{DC}					
Option I M1 Ex ia I for doly		2-wire: 4 ... 20 mA					
Performance							
Accuracy		IEC 60770 ² : ≤ ± 0.1 % span					
Performance after turn-down (TD)		no change of accuracy ³					
- TD ≤ 5:1		formula for accuracy calculating (for nominal pressure gauge ≤ 0.40 bar see note 3):					
- TD > 5:1		≤ ± [0.1 + 0.015 x turn-down] % span					
		with turn-down = nominal pressure range / adjusted range					
		e.g. following accuracy can be calculated for turn-down 10:1:					
		≤ ± (0.1 + 0.015 x 10) % span viz. the accuracy is ≤ ± 0.25 % span					
Permissible load		current 2-wire: R _{max} = [(V _S - V _{Smin}) / 0.02 A] Ω					
		voltage 3-wire: R _{min} = 10 kΩ					
Influence effects		supply: 0.05 % span / 10 V		load: 0.05 % span / kΩ			
Long term stability		≤ ± (0.1 x turn-down) % span / year					
Response time		current output 4...20 mA (2-wire)		5ms			
		voltage output 0 ... 10 V		25 ms			
Adjustability		following parameters can be adjusted (interface / software needed ⁴)					
		electronic damping: 0 ... 100 sec					
		offset: 0 ... 90 % span		turn-down of span: max. 10:1			
² accuracy according to EN IEC 62828-2- limit point adjustment (non-linearity, hysteresis, repeatability)							
³ nominal pressure gauges ≤ 0,40 bar are excluded; for these the calculation of accuracy is as follows:							
≤ ± (0.1 + 0.02 x turn-down) % span e.g. turn-down 3:1: ≤ ± (0.1 + 0.02 x 3) % span viz. the accuracy is ≤ ± 0.16 % span							
⁴ software, interface and cable must separate be ordered (software is compatible with Windows® 95, 98, 2000, NT from version 4.0 or higher and XP)							
Thermal effects (Offset and Span)							
Tolerance band	[% span]	≤ ± (0.2 x turn-down)		in compensated range -20 ... 70 °C			
TC	[% span / 10 K]	± (0.2 x turn-down)		in compensated range -20 ... 70 °C			
Permissible temperatures		Medium/ electronics/ environment/ storage: -20 ... 80 °C *					
*If the cable is intended for use in a smaller temperature range, the use of the probe is limited by this range.							
Electrical protection ⁵							
Short-circuit protection		permanent					
Insulation resistance		> 100 MΩ					
Reverse polarity protection		no damage, but also no function					
Electromagnetic compatibility		emission and immunity according to EN 61326					
⁵ 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 ⁶		PVC (-5 ... 70 °C) grey (-25 ... 70 °C in fixed condition)				Ø 7,4 mm	
		PUR (-25 ... 80 °C) black (with drinking water certificate)				Ø 7,4 mm	
		FEP ⁷ (-25 ... 75 °C) black				Ø 7,4 mm	
		TPE-U (-25 ... 125 °C) blue				Ø 7,4 mm	
Bending radius		static installation: 10-fold cable diameter, dynamic application: 20-fold cable diameter					
⁶ shielded cable with integrated air tube for atmospheric pressure reference							
⁷ do not use freely suspended probes with an FEP cable if effects due to highly charging processes are expected							
Materials (media wetted)							
Housing		nerezová ocel 1.4404 (316L)					
Seals		FKM; EPDM (s certifikátem DVGW); jiné po dohodě					
Diaphragm		nerezová ocel 1.4435 (316L)					
Protection cap		POM					
Cable sheath		PVC, PUR, FEP, TPE-U					
Explosion protection (only for 4 ... 20 mA / 2-wire)							
Approvals DX9-LMP 307i		IBExU10ATEX1122 X zone 0: II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex ia IIC T135°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 ... 65 °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							

LMP 307i

Precision stainless steel probe

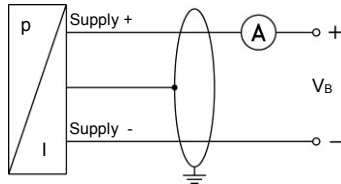
Technical data

Drinking water approval ⁶	According to DVGW W 270 and UBA KTW (With order please indicate if her device must be certified for drinking water.)
Current consumption	signal output current: max. 25 mA
Weight	approx 200 g (without cable)
Ingress protection	IP 68
CE-conformity	EMC Directive: 2014/30/EU

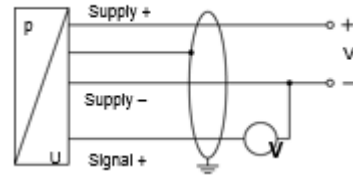
⁶only with EPDM seal in combination with TPE-U cable; not possible in Ex version (intrinsic safety)

Wiring diagram / connector

2-wire system (current)



3-wire-system (voltage)

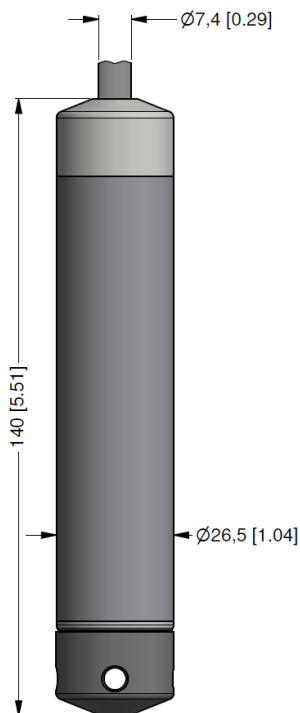


Pin configuration

Electrical connection	cable colours (DIN 47100)
Supply +	wh (white)
Supply -	bn (brown)
signal + (only 3-wire)	gn (green)
shield	gn/ye (green / yellow)

Dimensions (in mm)

standard



option

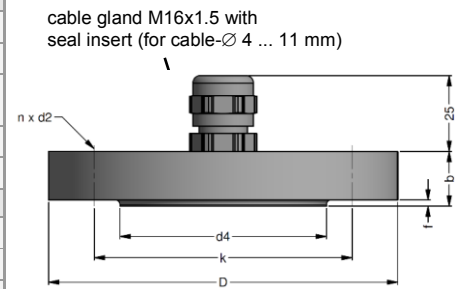


protection cap removable

⇒ For versions with an accuracy of 0.1% span according to IEC 60770, the total length is 35 mm longer!

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		
Vhodné pro	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		1003440
Terminal clamp, stainless steel 1.4301 (304)		1000278



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	
For further information please contact our sales department or visit our homepage: http://www.bdsensors.com	

This data sheet contains product specification, properties are not guaranteed. Subject to change without notice.

- 1 drinking water certification only possible with EPDM seal (code 3) in combination with PUR cable
- 2 shielded cable with integrated ventilation tube for atmospheric pressure reference
- 3 maximum length of PVC cable – 25 m, PUR, FEP, TPE – 40 m



BD SENSORS s.r.o.
Hradištská 817
CZ – 687 08 Buchlovice

Tel.: +420 572 411 011
Fax: +420 572 411 497

www.bdsensors.cz
info@bdsensors.cz

The company BD SENSORS s.r.o. is certified by TÜV SÜD Czech according to the standard ISO 9001.

