

LMP 307i



Stainless Steel Probe

Stainless Steel Sensor

accuracy according to IEC 60770:
standard: 0.1 % FSO

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 26.5 mm
- ▶ small thermal effect
- ▶ excellent accuracy
- ▶ excellent long term stability

Optional versions

- ▶ IS-protection zone 0
- ▶ cable protection via corrugated pipe
- ▶ Drinking water certificate acc. to DVGW and KTW
- ▶ different kinds of cables
- ▶ different kinds of seal materials

The stainless steel probe LMP 307i 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 / 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 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

¹ On customer request we adjust the device within the turn-down-possibility by software on the required pressure range.

Output signal / Supply	
Standard	2-wire: 4 ... 20 mA / V _S = 12 ... 36 V _{DC}
Option Ex-protection	2-wire: 4 ... 20 mA / V _S = 14 ... 28 V _{DC}
Options 3-wire	3-wire: 0 ... 10 V / V _S = 14 ... 36 V _{DC}

Performance	
Accuracy	nominal pressure ≥ 0.1 bar: ≤ ± 0.1 % FSO nominal pressure < 0.1 bar: ≤ ± 0.2 % FSO
Permissible load	R _{max} = [(V _S - V _S min) / 0.02 A] 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	ca. 200 msec

¹ accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)

Thermal effects (Offset and Span)	
Tolerance band	[% FSO] ≤ ± 0.2 in compensated range -20 ... 80 °C
TC	[% FSO / 10K] ≤ ± 0.02 in compensated range -20 ... 80 °C

Permissible temperatures	
Permissible temperatures	medium: -10 ... 70 °C storage: -25 ... 70 °C

Electrical protection ²	
Insulation resistance	> 100 MΩ
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 (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

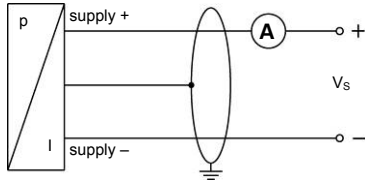
Materials (media wetted)	
Housing	stainless steel 1.4404 (316L)
Seals	FKM EPDM (with drinking water certificate) others on request
Diaphragm	stainless steel 1.4435 (316L)
Protection cap	POM-C

Explosion protection (only for 4 ... 20 mA / 2-wire)	
Approvals DX19-LMP 307i	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 ≈ 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

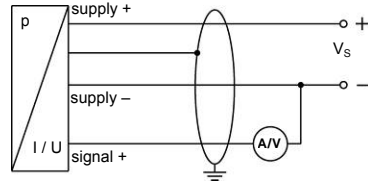
Miscellaneous	
drinking water certificate	According to DVGW W 270 and UBA KTW (With order please indicate if her device must be certificated for drinking water.)
Current consumption	max. 25 mA
Weight	approx. 200 g (without cable)
Ingress protection	IP 68
CE-conformity	EMC Directive: 2014/30/EU
ATEX Directive	2014/34/EU

Wiring diagrams

2-wire-system (current)



3-wire-system (current / voltage)

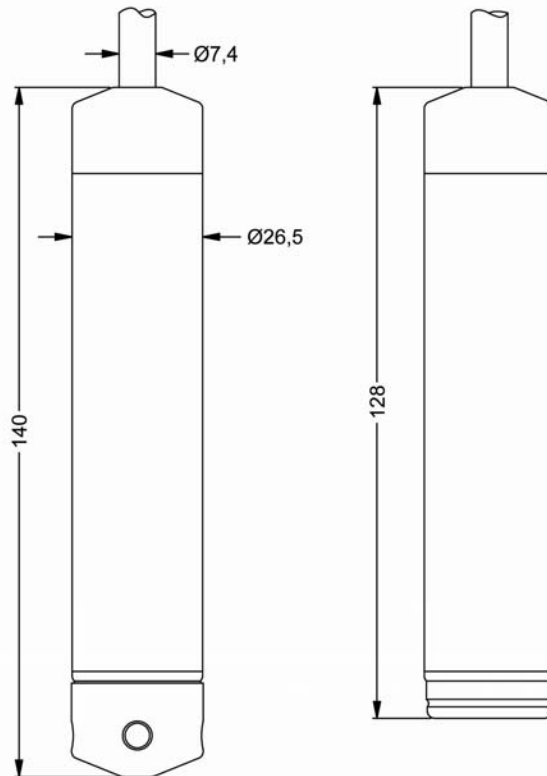


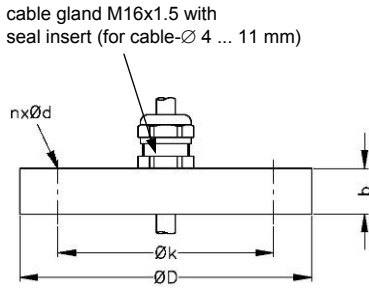
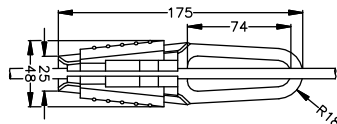

Pin configuration

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)

standard



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	
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	
<p>CIT 200 Process display with LED display</p> <p>CIT 250 Process display with LED display and contacts</p> <p>CIT 300 Process display with LED display, contacts and analogue output</p> <p>CIT 350 Process display with LED display, bargraph, contacts and analogue output</p> <p>CIT 400 Process display with LED display, contacts, analogue output and Ex-approval</p> <p>CIT 600 Multichannel process display with graphics-capable LC display</p> <p>CIT 650 Multichannel process display with graphics-capable LC display and datalogger</p> <p>CIT 700 / CIT 750 Multichannel process display with graphics-capable TFT monitor, touchscreen and contacts</p> <p>PA 440 Field display with 4-digit LC display</p>	
<p>For further information please contact our sales department or visit our homepage: http://www.bdsensors.com</p>	
	
	
	

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Ordering code LMP 307i

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Pressure																				
	in bar	4	5	0																
	in mH ₂ O	4	5	1																
Input		[mH ₂ O]	[bar]																	
	4.0	0.40		4	0	0	0													
	10	1.0		1	0	0	1													
	25	2		2	0	0	1													
	40	4.0		4	0	0	1													
	100	10		1	0	0	2													
	200	20		2	0	0	2													
	customer			9	9	9	9													consult
Housing																				
	Stainless steel 1.4404 (316L)							1												
	customer							9												consult
Diaphragm																				
	Stainless steel 1.4435 (316L)							1												
	customer							9												consult
Output																				
	4 ... 20 mA / 2-wire								1											
	intrinsic safety 4 ... 20 mA / 2 wire								E											
	0 ... 10 V / 3-wire								3											
	customer								9											consult
Seals																				
	FKM								1											
	EPDM ¹								3											
	customer								9											consult
Accuracy																				
	standard for P _N ≥ 0.1 bar	0.1 %							1											
	standard for P _N < 0.1 bar	0.2 %							B											
	customer								9											consult
Electrical connection																				
	PVC-cable ²									1										
	PUR-cable ²									2										
	FEP-cable ²									3										
	TPE-U cable ^{1,2}									4										
	customer									9										consult
Cable length																				
	in m									9	9	9								
Special version																				
	standard												1	1	1					
	cable protection with stainless steel corrugated pipe with pipe length in m													1	0	3		9	9	9
	customer													9	9	9				consult

¹ with drinking water certification according to DVGW / KTW
² cable with integrated air tube for atmospheric pressure reference

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