

LMP 307i



Stainless Steel Probe

Stainless Steel Sensor

accuracy according to IEC 60770: 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-version Ex ia = intrinsically safe for gas and dust
- drinking water certificate according to DVGW and KTW
- different kinds of cables and elastomers

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

Basic element is a high quality stainless steel with high requirements 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



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Stainless Steel Probe

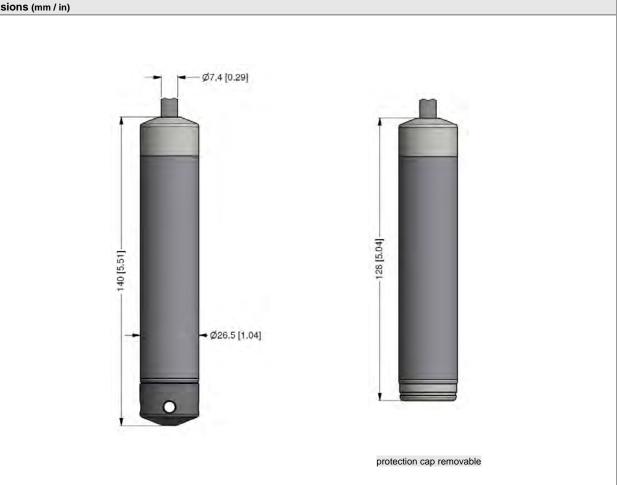
Input pressure range 1							
Nominal pressure gauge	[bar]	0.40	1	2	4	10	20
Level	[mH ₂ O]	4	10	20	40	100	200
Overpressure	[bar]	2	5	10	20	40	80
Burst pressure ≥	[bar]	3	7.5	15	25	50	120
Max. ambient pressure (he	ousing): 40	bar					
1 On customer request we add	iust the devi	ce within the turn-o	down-nossibility by	software on the requ	uired pressure range	<u> </u>	

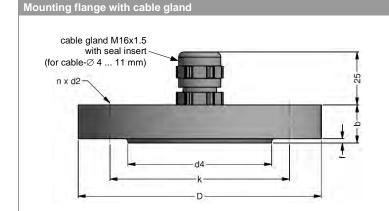
Output signal / Supply	
Standard	2-wire: 4 20 mA / V _S = 12 36 V _{DC}
Option IS-version	2-wire: 4 20 mA / V _S = 14 28 V _{DC}
Options 3-wire	3-wire: 0 10 V / V _S = 14 36 V _{DC}
Performance	· · · · · · · · · · · · · · · · · · ·
Accuracy ²	nominal pressure ≥ 0.1 bar: ≤ ± 0.1 % FSO nominal pressure < 0.1 bar: ≤ ± 0.2 % FSO
Permissible load	current 2-wire: $R_{max} = [(V_S - V_{S min}) / 0.02 \text{ A}] \Omega$ voltage 3-wire: $R_{min} = 10 \text{ k}\Omega$
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
² accuracy according to IEC 60770 – limit	t point adjustment (non-linearity, hysteresis, repeatability)
Thermal effects (offset and span)	
Tolerance band	≤ ± 0.2 % FSO in compensated range -20 80°C
TC	± 0.02 % FSO / 10K in compensated range -20 80°C
Permissible temperatures	
Permissible temperatures	medium: -10 70 °C storage: -25 70 °C
Electrical protection ³	3.01dgc. 20 70 0
Insulation resistance	> 100 MΩ
Reverse polarity protection	no damage, but also no function
Electromagnetic compatibility	emission and immunity according to EN 61326
. ,	on unit in terminal box KL 1 or KL 2 with atmospheric pressure reference available on request
Electrical connection	on anic in terminal box NE 1 of NE 2 with almospherio pressure reference available on request
Cable with sheath material ⁴	PVC (-5 70 °C) grey Ø 7.4 mm PUR (-10 70 °C) black Ø 7.4 mm FEP ⁵ (-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
⁴ shielded cable with integrated ventilation	n tube for atmospheric pressure reference h 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
Cable sheath	PVC, PUR, FEP, TPE-U
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 T135 °C Da
Safety technical maximum values	$U_i=28$ V, $I_i=93$ mA, $P_i=660$ mW, $C_i\approx0$ nF, $L_i\approx0$ μ H, 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 _{atm} 0.8 bar up to 1.1 bar in zone 1 or higher: -40/-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: 1 μH/m

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Miscellaneous	
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
⁶ only possible with EPDM seal in combin	ation with TPE-U cable; not possible with IS-version (explosion protection)
Wiring diagrams	
2-wire-system (current)	3-wire-system (current / voltage)
supply - A	p supply + o + Vs supply - o - o - o -
Pin configuration	
Electrical connection	cable colours (IEC 60757)
Supply + Supply –	WH (white) BN (brown)
Signal + (only 3-wire) Shield	GN (green) GNYE (green-yellow)

Dimensions (mm / in)





	dimensi	ons in mm	
size	DN25 /	DN50 /	DN80 /
0120	PN40	PN40	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 stee	el 1.4305 (303); plastic
Seal insert	material: TPE (ingress protecti	on IP 68)	
Hole pattern	according to DIN 2507		
Ordering tune		Ordering	Waight

Ordering type	Ordering code	Weight
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		

Ordering type		Ordering code	Weight
Terminal clamp, steel, zinc plated		Z100528	approx 160 a
Terminal clamp, stainless steel 1.430)1 (304)	Z100527	approx. 160 g

Display program

CIT 200	Process display with LED display
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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: http://www.bdsensors.de



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LMP 307i	LMP 307i	Ordering c	ode LMP 307	i	
In put		П-П-С]- - -	- - -	
Input	in bar	4 5 0			
10 1.0 1 0 0 1 1 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 1 0 0 0 1 0 0 0 1 0 0 0 0 1 0	Input [mH ₂ O] [bar]				
40 4.0 4 0 0 1 1 0 0 2 2 0 0 2 2 0 0	10 1.0	1 0 0 1 2 0 0 1			
Housing Stainless steel 1.4404 (316L) 1	100 10	4 0 0 1			
Stainless steel 1.4404 (316L)	customer	2 0 0 2 9 9 9 9			consult
Stainless steel 1.4435 (316L) Customer Quitput 4 20 mA / 2-wire intrinsic safety 4 20 mA / 2 wire 0 10 V / 3-wire Customer 9	stainless steel 1.4404 (316L)	1 9			consult
Output 4 20 mA / 2-wire intrinsic safety 4 20 mA / 2 wire 0 10 V / 3-wire 3 customer 1	stainless steel 1.4435 (316L)				
intrinsic safety 4 20 mA / 2 wire 0 10 V / 3-wire 0 10 V / 3-wire customer Seal FKM EPDM EPDM 3 3 DVGW/KTW: EPDM 1 Customer 9 Consult Accuracy standard for p _N ≥ 0.1 bar 0.1 % FSO 1 standard for p _N ≥ 0.1 bar 0.2 % FSO B customer 9 Consult Electrical connection PVC-cable (grey, Ø 7.4 mm) 2 PUR-cable (black, Ø 7.4 mm) 2 FPE-U-cable (black, Ø 7.4 mm) 2 TPE-U-cable (blue, Ø 7.4 mm) 2 TPE-U-cable (blue, Ø 7.4 mm) 1.2 Customer Special version standard	Output				consult
Seal FKM 1 Consult EPDM 3 4	intrinsic safety 4 20 mA / 2 wire		E		
EPDM 1 3T	Seal		9		consult
customer Accuracy standard for p _N ≥ 0.1 bar 0.1 % FSO standard for p _N < 0.1 bar 0.2 % FSO standard for p _N < 0.1 bar 0.2 % FSO standard for p _N < 0.1 bar 0.2 % FSO customer PVC-cable (prey, Ø 7.4 mm) ² PUR-cable (black, Ø 7.4 mm) ² FEP-cable (black, Ø 7.4 mm) ² TPE-U-cable (blue, Ø 7.4 mm) ² TPE-U-cable (blue, Ø 7.4 mm) ¹ TPE-U-cable (blue, Ø 7.4 mm) ¹ TPE-U-cable (blue, Ø 7.4 mm) ¹ Special version standard	EPDM		3		
standard for p _N < 0.1 bar	customer				consult
Electrical connection PVC-cable (grey, Ø 7.4 mm) 2 PUR-cable (black, Ø 7.4 mm) 2 FEP-cable (black, Ø 7.4 mm) 2 TPE-U-cable (blue, Ø 7.4 mm) 2 DVGW/KTW: TPE-U-cable (blue, Ø 7.4 mm) 1.2 customer TPE-U-cable (blue, Ø 7.4 mm) 1.2 consult TOTAL TRANSPORTED TO THE TRANSP	standard for $p_N < 0.1$ bar 0.2% FSO		В		
PUR-cable (black, Ø 7.4 mm) 2 FEP-cable (black, Ø 7.4 mm) 2 TPE-U-cable (blue, Ø 7.4 mm) 12 TPE-U-cable (blue, Ø 7.4 mm) 1,2 Customer Cable length in m Special version Standard customer Standard standard customer Standard standard customer Standard standard customer Standard standard standard customer Standard standard standard customer Standard stan	Electrical connection		9		consult
DVGW/KTW: TPE-U-cable (blue, Ø 7.4 mm) 1,2 customer 9 consult Cable length in m 9 9 9 9 Special version standard customer 1 1 1 1 customer 9 9 9 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PUR-cable (black, Ø 7.4 mm) FEP-cable (black, Ø 7.4 mm)	2 2		2	
customer 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	DVGW/KTW:				
in m 9 9 9 9 1 1 1 Special version standard 1 1 1 1 customer 9 9 9 9 0 consult	customer			9	consult
customer 9 9 9 consult drinking water certification only possible with EPDM seal (code 3T) in combination with TPE-U cable (code F); not possible with IS version (explosion protection)	in m Special version				
				1 1 1 9 9 9	consult
			-U cable (code F); not possible	with IS version (explosion protection)

¹ drinking water certification only possible with EPDM seal (code 3T) in combination with TPE-U cable (code F); not possible with IS version (explosion protection)

² shielded cable with integrated ventilation tube for atmospheric pressure reference