

LMP 307

Stainless Steel Probe

Stainless Steel Sensor

accuracy according to EN IEC 62828-2:
standard: 0.35 % span
option: 0.25 % span



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

Optional versions

- ▶ IS-version
Ex ia= intrinsically safe for gas
and dust
- ▶ SIL 2 (Safety Integrity Level)
- ▶ Drinking water certificate acc. 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 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
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
max. ambient pressure (housing)		40 bar												
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}						
Option Accuracy 0.1 % span	2-wire:	4 ... 20 mA / V _S = 12 ... 36 V _{DC}						3-wire: 0 ... 10 V / V _S = 14 ... 30 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 % span						nominal pressure ≥ 0.4 bar: ≤ ± 0.35 % span						
	option 1:	nominal pressure ≥ 0.4 bar: ≤ ± 0.25 % span												
Permissible load	current 2-wire:	R _{max} = [(V _S - V _S min) / 0.02 A] Ω						voltage 3-wire: R _{min} = 10 kΩ						
	current 3-wire:	R _{max} = 500 Ω												
Influence effects	supply:	0.05 % span / 10 V						load: 0.05 % span / kΩ						
Long term stability	≤ ± 0.1 % span / year at reference condition													
Response time	2-wire:	≤ 10 msec;						3-wire: ≤ 3 msec						
¹ accuracy according to EN IEC 62828-2 – limit point adjustment (non-linearity, hysteresis, repeatability)														
Thermal effects (Offset and Span)														
Nominal pressure P _N	[bar]	< 0.40						≥ 0.40						
Tolerance band	[% span]	≤ ± 1						≤ ± 0.75						
in compensated range	[°C]	0 ... 70												
Permissible temperatures														
Permissible temperatures	Medium/ electronics/ environment/ storage: -20 ... 80 °C *													
<i>*If the cable is intended for use in a smaller temperature range, the use of the probe is limited by this range.</i>														
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													
Integrated overvoltage protection (ground wire) in accordance with CSN EN 61000-4-5 (1 kV) ³														
² additional external overvoltage protection unit in terminal box KL 1 or KL 2 with atmospheric pressure reference available on request														
³ version with the output signal 4 ... 20 mA / 2-wire														
Electrical connection														
Cable with sheath material ⁴	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 ⁵	(-25 ... 75 °C) black				Ø 7,4 mm								
	TPE-U	(-25 ... 125 °C) blue				Ø 7,4 mm								
Cable sheath	static installation: 10-fold cable diameter						dynamic application: 20-fold cable diameter							
⁴ cable with integrated air tube for atmospheric pressure reference														
⁵ 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													
Cable sheath	PVC, PUR, FEP, TPE-U													
Explosion protection (only for 4 ... 20 mA / 2-wire)														
Approvals	IBExU10ATEX1122 X													
DX9-LMP 307	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 ... 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 ⁶ 2 application	according to IEC 61508 / IEC 61511													
drinking water certificate ⁷	According to DVGW W 270 and UBA KTW (With order please indicate if her device must be certificated for drinking water.)													
Current consumption	signal output current: max. 25 mA / signal output voltage: max. 7 mA													
Weight	approx. 200 g (without cable)													
Ingress protection	IP 68													

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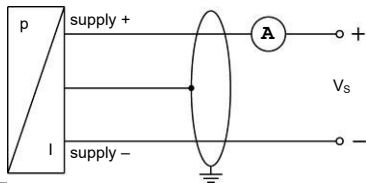
Stainless Steel Probe

Accessories

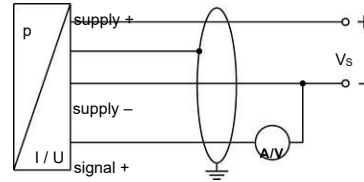
CE-conformity	EMC Directive: 2014/30/EU
ATEX Directive	2014/34/EU
⁶ not in combination with the accuracy 0.1%, only for 4...20mA / 2-wire	
⁷ only possible with EPDM seal in combination with TPE-U cable; not possible with IS-protection (explosion protection)	

Wiring diagrams

2-wire-system (current)



3-wire-system (current / voltage)

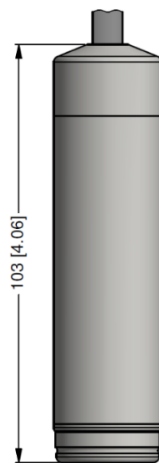
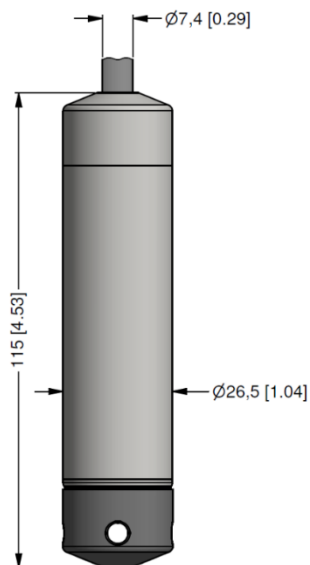


Pin configuration

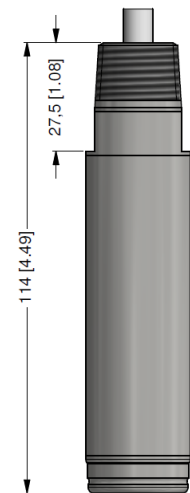
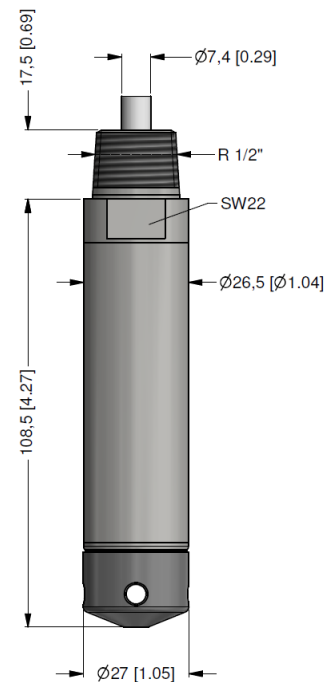
Electrical connection	cable colours (DIN 47100)
Supply +	wh (white)
Supply -	bn (brown)
Signal + (only 3-wire)	gn (green)
Shield	ye/gn (yellow / green)

Dimensions (in mm)

standard

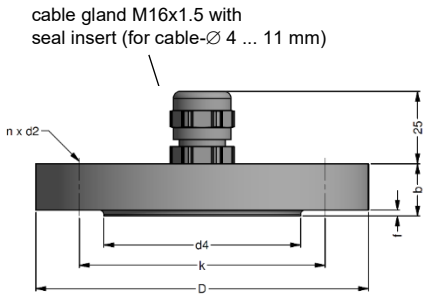




option



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

protection cap removable; cable protection with stainless steel pipe (max length 20 m)

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	5000275
DN50 / PN40 with cable gland brass, nickel plated	5000278
DN80 / PN16 with cable gland brass, nickel plated	5000279
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	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.

Ordering code LMP 307

23.08.2024

LMP 307

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Pressure																				
in bar		4	5	0																
in m H ₂ O		4	5	1																
Input	[mH ₂ O] [bar]																			
	0 ... 1 0 ... 0,1				1	0	0	0												
	0 ... 1,6 0 ... 0,16				1	6	0	0												
	0 ... 2,5 0 ... 0,25				2	5	0	0												
	0 ... 4 0 ... 0,4				4	0	0	0												
	0 ... 6 0 ... 0,6				6	0	0	0												
	0 ... 10 0 ... 1				1	0	0	1												
	0 ... 16 0 ... 1,6				1	6	0	1												
	0 ... 25 0 ... 2,5				2	5	0	1												
	0 ... 40 0 ... 4				4	0	0	1												
	0 ... 60 0 ... 6				6	0	0	1												
	0 ... 100 0 ... 10				1	0	0	2												
	0 ... 160 0 ... 16				1	6	0	2												
	0 ... 250 0 ... 25				2	5	0	2												
Customer					9	9	9	9												
Housing material																				
Stainless steel 1.4404 (316L)								1												
Diaphragm material																				
Stainless steel 1.4435 (316 L)								1												
Output																				
4 ... 20 mA / 2-wire																			1	
0 ... 20 mA / 3-wire																			2	
0 ... 10 V / 3-wire ⁴																			3	
0 ... 5 V / 3-wire ⁴																			4	
Intrinsic safety Ex ia 4 ... 20 mA / 2-wire																			E	
SIL2, 4 ... 20 mA / 2-wire																			1S	
SIL2, Intrinsic safety 4 ... 20 mA / 2-wire																			ES	
Customer																			9	
Seals																				
Viton (FKM)																			1	
EPDM (drinking water) ¹																			3	
Customer																			9	
Accuracy																				
0,5 % (P _N ≤ 0,4 bar)																			5	
0,35 % (P _N > 0,4 bar)																			3	
0,25 % (P _N > 0,4 bar)																			2	
0,5 % including Calibration Certificate (P _N ≤ 0,4 bar)																			T	
0,35 % including Calibration Certificate (P _N > 0,4 bar)																			S	
Customer																			9	
Electrical connection³																				
PVC - cable (grey, Ø 7,4 mm, price for 1 m)																			1	
PUR - cable (black, Ø 7,4 mm, price for 1 m)																			2	
FEP - cable with PTFE sheath (black, Ø 7,4 mm, price for 1 m)																			3	
TPE-U - cable, up to 125 °C (blue, Ø 7.4 mm, price for 1 m)																			4	
Customer																			9	
Cable length																				
in m																			9	9
Special version																				
Standard																			0	0
Cable protected by SS corrugated hose (max 20 m)																			1	0
+ stainless steel hose / 1 m																			3	
Version with temperature sensor PT100																			0	1
Reduced power supply 10 ... 30 VDC (only for output 0 ... 5 V / 3-wire)																			0	2
R 1/2" thread - Prepared for mounting with stainless steel pipe																			5	0
Customer																			9	9

Accessories for submersible transmitter																				
Terminal clamp - zinc plated																				1003440
Terminal clamp - Stainless Steel 1.4301																				1000278



0,- ... without additional charge

On request ... in accordance with the producer

Surcharges for calibration are not subject to any discounts. Subject to change.

This document contains the specification for ordering the product; detailed technical parameters of the product and its possible variants are given in the data sheet

BD SENSORS reserves the right to change sensor specifications without further notice.

1 drinking water certification only possible with EPDM seal (code 3) in combination with PUR cable

2 not in combination with SIL

3 shielded cable with integrated ventilation tube for atmospheric pressure reference

4 maximum length of PVC cable – 25 m, PUR, FEP, TPE – 40 m

