

# LMK 307



## Stainless Steel Probe

Ceramic Sensor

accuracy according to IEC 60770:  
0.5 % span

### Nominal pressure

from 0 ... 4 mH<sub>2</sub>O up to 0 ... 250 mH<sub>2</sub>O

### Output signals

2-wire: 4 ... 20 mA

3-wire: 0 ... 20 mA / 0 ... 10 V

others on request

### Special characteristics

- ▶ diameter 27 mm
- ▶ good linearity
- ▶ good long term stability
- ▶ easy handling

### Optional versions

- ▶ IS-version  
Ex ia = intrinsically safe for gas  
and dust
- ▶ SIL 2 (Safety Integrity Level)  
according to IEC 61508 / IEC 61511
- ▶ different kinds of cables and elastomers
- ▶ customer specific versions  
e. g. special pressure ranges

The level transmitter LMK 307 is designed for continuous level measurement in water or waste water applications. Basic element is a flush mounted ceramic sensor.

Suitable for all fluids which are compatible with media wetted materials. Different cable and elastomer materials can be offered according to the customer-specific operating conditions.

### Preferred areas of use are

#### Water



drinking water system  
ground water monitoring  
storm water systems

#### Sewage



waste water treatment  
water recycling  
dumpsite

#### Fuel / Oil



fuel storage  
tank farm  
biogas plants



Input pressure range											
Nominal pressure gauge	[bar]	0.4	0.6	1	1.6	2.5	4	6	10	16	25
Level	[mH <sub>2</sub> O]	4	6	10	16	25	40	60	100	160	250
Overpressure	[bar]	2	2	2	4	4	10	10	20	40	40
Burst pressure	[bar]	4	4	4	5	5	12	12	25	50	50
max. ambient pressure (housing)		40 bar									

  

Output signal / Supply			
Standard	2-wire:	4 ... 20 mA / V <sub>S</sub> = 8 ... 32 V <sub>DC</sub>	SIL-version: V <sub>S</sub> = 14 ... 28 V <sub>DC</sub>
Option IS-protection	2-wire:	4 ... 20 mA / V <sub>S</sub> = 10 ... 28 V <sub>DC</sub>	SIL-version: V <sub>S</sub> = 14 ... 28 V <sub>DC</sub>
Options 3-wire	3-wire:	0 ... 20 mA / V <sub>S</sub> = 14 ... 30 V <sub>DC</sub> 0 ... 10 V / V <sub>S</sub> = 14 ... 30 V <sub>DC</sub>	

  

Performance	
Accuracy	≤ ± 0.5 % span
Permissible load	current 2-wire: R <sub>max</sub> = [(V <sub>S</sub> - V <sub>S min</sub> ) / 0.02 A] Ω current 3-wire: R <sub>max</sub> = 500 Ω voltage 3-wire: R <sub>min</sub> = 10 k Ω
Influence effects	supply: 0.05 % span / 10 V load: 0.05 % span / kΩ
Response time	≤ 10 msec

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

Thermal effects (Offset and Span)	
Thermal error	≤ ± 0.2 % span / 10 K in compensated range -25 ... 70 °C

  

Permissible temperatures	
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 <sup>2</sup>	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Electromagnetic protection	emission and immunity according to EN 61326

<sup>2</sup> 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 <sup>3</sup>	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 <sup>4</sup> (-25 ... 75 °C) black Ø 7,4 mm
Bending radius	static installation: 10-fold cable diameter dynamic application: 20-fold cable diameter

<sup>3</sup> shielded cable with integrated air tube for atmospheric pressure reference  
<sup>4</sup> 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
Diaphragm	ceramics Al <sub>2</sub> O <sub>3</sub> 96 %
Protection cap	POM-C
Cable sheath	PVC, PUR, FEP, others on request

Explosion protection (only for 4 ... 20 mA / 2-wire)	
Approvals DX9-LMK 307	<b>IBExU10ATEX1122 X</b> zone 0: II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex ia IIIC T135°C Da
Safety technical maximum values	U <sub>i</sub> = 28 V, I <sub>i</sub> = 93 mA, P <sub>i</sub> = 660 mW, C <sub>i</sub> ≈ 0nF, L <sub>i</sub> ≈ 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 <sub>atm</sub> 0.8 bar up to 1.1 bar in zone 1: -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: 1μH/m

Miscellaneous	
Option SIL <sup>5</sup> 2 application	according to IEC 61508 / IEC 61511
Current consumption	signal output current: max. 25 mA signal output voltage: max. 7 mA
Weight	approx. 250 g (without cable)
Ingress protection	IP 68
CE-conformity	EMC Directive: 2014/30/EU
ATEX Directive	2014/34/EU

<sup>5</sup> only for 4...20mA / 2-wire

**Wiring diagrams**

2-wire-system (current)

3-wire-system (current / voltage)

**Pin configuration**

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

**Dimensions (in mm)**

protection cap removable

## Accessories

Terminal clamp	
<b>Technical Data</b>	
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
<b>Ordering type</b>	
<b>Ordering code</b>	
Terminal clamp, steel, zinc plated	1003440
Terminal clamp, stainless steel 1.4301 (304)	1000278

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

## Ordering code LMK 307

1.3.2021

LMK 307

Pressure																			
in bar																			
in H <sub>2</sub> O		3	8	0															
		3	8	1															
Input		[mH <sub>2</sub> O]	[bar]																
		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 (316 L)																			
Customer																			
Diaphragm material																			
Ceramic Al <sub>2</sub> O <sub>3</sub> 96 %																			
Customer																			
Output signal																			
4 ... 20 mA / 2-wire																			
0 ... 20 mA / 3-wire																			
0 ... 10 V / 3-wire <sup>2</sup>																			
Intrinsic safety Ex ia 4 ... 20 mA / 2-wire																			
SIL2, 4 ... 20 mA / 2-wire																			
SIL2, Intrinsic safety 4 ... 20 mA / 2-wire																			
Customer																			
Seals																			
Viton (FKM)																			
EPDM																			
Customer																			
Accuracy																			
0,5 %																			
0,5 % including Calibration Certificate																			
Table of measured values for accuracy 0,5 %																			
Customer																			
Electrical connection																			
PVC - cable (grey, Ø 7,4 mm, price for 1 m) <sup>1</sup>																			
PUR - cable (black, Ø 7,4 mm, price for 1 m) <sup>1</sup>																			
FEP - cable with PTFE sheath (black, Ø 7,4 mm, price for 1 m) <sup>1</sup>																			
Customer																			
Cable length																			
in m																			
Special version																			
Standard																			
Customer																			
Accessories for submersible transmitter																			
Terminal clamp - zinc plated																		1003440	
Terminal clamp - Stainless Steel 1.4301																		1000278	
Mounting screw PG16 - plastic																		5002200	



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



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 shielded cable with integrated ventilation tube for atmospheric pressure reference

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

**Standard lengths 3 / 5 / 10 / 15 / 20 m are available from stock, special lengths are manufactured order-related, price per meter on request**



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