

LMK 307

Stainless Steel Probe

Ceramic Sensor

accuracy according
to IEC 60770: 0.5 % FSO



Nominal pressure

from 0 ... 4 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
- ▶ good linearity
- ▶ good long term stability
- ▶ easy handling

Optional versions

- ▶ IS-protection
- ▶ 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 ₂ 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
Output signal / Supply											
Standard	2-wire:	4 ... 20 mA / V _S = 8 ... 32 V _{DC}					SIL-version: V _S = 14 ... 28 V _{DC}				
Option IS-protection	2-wire:	4 ... 20 mA / V _S = 10 ... 28 V _{DC}					SIL-version: V _S = 14 ... 28 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		≤ ± 0.5 % FSO									
Permissible load		current 2-wire: R _{max} = [(V _S - V _{S min}) / 0.02 A] Ω current 3-wire: R _{max} = 500 Ω voltage 3-wire: R _{min} = 10 k Ω									
Influence effects		supply: 0.05 % FSO / 10 V load: 0.05 % FSO / k Ω									
Response time		≤ 10 msec									
¹ accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)											
Thermal effects (Offset and Span)											
Thermal error		≤ ± 0.2 % FSO / 10 K in compensated range -25 ... 70 °C									
Permissible temperatures											
Permissible temperatures		medium: -10 ... 70 °C storage: -25 ... 70 °C									
Electrical protection ²											
Short-circuit protection		permanent									
Reverse polarity protection		no damage, but also no function									
Electromagnetic protection		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									
³ shielded 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									
Diaphragm		ceramics Al ₂ O ₃ 96 %									
Protection cap		POM									
Explosion protection (only for 4 ... 20 mA / 2-wire)											
Approvals DX19-LMK 307		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 ≈ 0nF, 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: -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 ⁵ 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									
⁵ only for 4...20mA / 2-wire											

Wiring diagrams	
<p>2-wire-system (current)</p>	<p>3-wire-system (current / voltage)</p>
Pin configuration	
Electrical connection	cable colours (IEC 60757)
Supply + Supply - Signal + (only 3-wire)	wh (white) bn (brown) gn (green)
Shield	gnye (green-yellow)
Dimensions (in mm)	

© 2016 BDSSENSORS GmbH – The specifications given in this document represent the state of engineering at the time of publishing. We reserve the right to make modifications to the specifications and materials.

Accessories

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

Ordering code LMK 307

LMK 307



Pressure																	
	in bar	3	8	0													
	in mH ₂ O	3	8	1													
Input	[mH ₂ O]																
	[bar]																
	4.0	0.40			4	0	0	0									
	6.0	0.60			6	0	0	0									
	10	1.0			1	0	0	1									
	16	1.6			1	6	0	1									
	25	2.5			2	5	0	1									
	40	4.0			4	0	0	1									
	60	6.0			6	0	0	1									
	100	10			1	0	0	2									
	160	16			1	6	0	2									
	250	25			2	5	0	2									
	customer				9	9	9	9									consult
Housing																	
	Stainless steel 1.4404 (316L)				1												
	customer				9												consult
Diaphragm																	
	Ceramics Al ₂ O ₃ 96%				2												
	customer				9												consult
Output																	
	4 ... 20 mA / 2-wire							1									
	0 ... 20 mA / 3-wire							2									
	0 ... 10 V / 3-wire							3									
	Intrinsic safety 4 ... 20 mA / 2-wire							E									
	SIL2 4 ... 20 mA / 2-wire							1S									
	SIL2 with Intrinsic safety							ES									
	4 ... 20 mA / 2-wire																
	customer							9									consult
Seals																	
	FKM							1									
	EPDM							3									
	customer							9									consult
Accuracy																	
	0.5 %							5									
	customer							9									consult
Electrical connection																	
	PVC-cable ¹							1									
	PUR-cable ¹							2									
	FEP-cable ¹							3									
	customer							9									consult
Cable length																	
	in m																
	standard: 3 m PVC							0	0	3							
	standard: 5 m PVC							0	0	5							
	standard: 10 m PVC							0	1	0							
	standard: 15 m PVC							0	1	5							
	standard: 20 m PVC							0	2	0							
	special length PVC							9	9	9							
	standard: 3 m PUR							0	0	3							
	standard: 5 m PUR							0	0	5							
	standard: 10 m PUR							0	1	0							
	standard: 15 m PUR							0	1	5							
	standard: 20 m PUR							0	2	0							
	special length PUR							9	9	9							
	standard: 5 m FEP							0	0	5							
	standard: 10 m FEP							0	1	0							
	special length FEP							9	9	9							
Special version																	
	standard													0	0	0	
	customer													9	9	9	consult

¹ cable with integrated air tube for atmospheric pressure reference

Standard lengths 3 / 5 / 10 / 15 / 20 m are available from stock, special lengths are manufactured order-related, price per meter (see above).

