

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
- ▶ excellent 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 systems
ground water monitoring
storm water systems

Sewage



waste water treatment
water recycling
dumpsite

Fuel and 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-version	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 ¹		≤ ± 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 / kΩ				
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 Ø 7.4 mm PUR (-10 ... 70 °C) black Ø 7.4 mm FEP ⁴ (-10 ... 70 °C) black Ø 7.4 mm others on request										
Bending radius		static installation: 10-fold cable diameter dynamic application: 20-fold cable diameter										
³ shielded cable with integrated ventilation 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-C										
Cable sheath		PVC, PUR, FEP										
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										
Permissible temperatures for environment		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 2 version ⁵		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 +	WH (white)
Supply -	BN (brown)
Signal + (only 3-wire)	GN (green)
Shield	GNYE (green-yellow)
Dimensions (mm / in)	
<p style="text-align: right;">protection cap removable</p>	

Accessories

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 g
Terminal clamp, stainless steel 1.4301 (304)	Z100527	

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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	0.4		4	0	0	0														
	6	0.6		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			ES																	
	customer			9																	consult
Seals																					
	FKM			1																	
	EPDM			3																	
	customer			9																	consult
Accuracy																					
	0.5 % FSO			5																	
	customer			9																	consult
Electrical connection																					
	PVC-cable (grey, Ø 7.4 mm) ¹			1																	
	PUR-cable (black, Ø 7.4 mm) ¹			2																	
	FEP-cable (black, Ø 7.4 mm) 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 shielded cable with integrated ventilation tube for atmospheric pressure reference

Standard lengths 3 / 5 / 10 / 15 / 20 m are available from stock, special lengths are manufactured order-related.