

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
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 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 0 ... 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 T135 °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: -40/-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

LMK 307

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Technical Data

Wiring diagrams

2-wire-system (current)

3-wire-system (current / voltage)

Pin configuration

Electrical connection	cable colours (IEC 60757)
Supply +	WH (white)
Supply -	BN (brown)
Signal + (only 3-wire)	GN (green)
Shield	GYNE (green-yellow)

Dimensions (mm / in)

protection cap removable

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	

LMK307_E_080221

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 pressure measurement

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Ordering code LMK 307

LMK 307

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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																						9
customer																						consult
Seals																						
FKM																						1
EPDM																						3
customer																						9
																						consult
Accuracy																						
0.5 % FSO																						5
customer																						9
																						consult
Electrical connection / cable length																						
PVC-cable (grey, Ø 7.4 mm) ¹																						
3 m																						1
5 m																						1
10 m																						1
15 m																						1
special length in m																						1
																						9
																						9
																						9
PUR-cable (black, Ø 7.4 mm) ¹																						
3 m																						2
5 m																						2
10 m																						2
15 m																						2
special length in m																						2
																						9
																						9
																						9
FEP-cable (black, Ø 7.4 mm) ¹																						
5 m																						3
10 m																						3
special length in m																						3
																						9
																						9
																						9
Special version																						
standard																						0
customer																						9
																						0
																						9
																						9
																						consult

¹ shielded cable with integrated ventilation tube for atmospheric pressure reference

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