



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



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Technical Data

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}
Option IS-protection	2-wire: 4 ... 20 mA / V _S = 10 ... 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 / 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 PUR (-10 ... 70 °C) black FEP (-10 ... 70 °C) black

³ shielded cable with integrated air tube for atmospheric pressure reference

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 ⁴ 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: 2004/108/EC
ATEX Directive	94/4/EG

⁴ only for 4...20mA / 2-wire

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Technical Data

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)

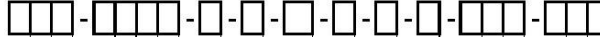
protection cap removable

Accessories

Terminal clamp	
Technical Data	
Suitable for	all probes with cable Ø 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	Z 100528
Terminal clamp, stainless steel 1.4301 (304)	Z 100527

Ordering code 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	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							ES								
		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).