

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}									
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										
Permissible media temperature	in zone 0: -10 ... 60 °C with p _{atm} 0.8 bar up to 1.1 bar in zone 1: -10 ... 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 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										

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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)

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

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

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						ES		
	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

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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).

