



## LMK 307



### Stainless Steel Probe

Ceramic Sensor

accuracy according to IEC 60770:  
0.5 % FSO

#### Nominal pressure

from 0 ... 4 mH<sub>2</sub>O up to 0 ... 250 mH<sub>2</sub>O

#### 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



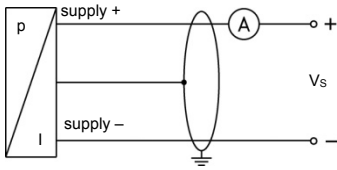
fuel storage  
tank farm  
biogas plants



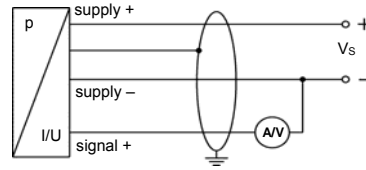
Input pressure range												
Nominal pressure gauge	[bar]	0.4	0.6	1	1.6	2.5	4	6	10	16	25	
Level	[mH <sub>2</sub> O]	4	6	10	16	25	40	60	100	160	250	
Overpressure	[bar]	2	2	2	4	4	10	10	20	40	40	
Burst pressure	[bar]	4	4	4	5	5	12	12	25	50	50	
Output signal / Supply												
Standard	2-wire:	4 ... 20 mA / V <sub>S</sub> = 8 ... 32 V <sub>DC</sub>						SIL-version: V <sub>S</sub> = 14 ... 28 V <sub>DC</sub>				
Option IS-version	2-wire:	4 ... 20 mA / V <sub>S</sub> = 10 ... 28 V <sub>DC</sub>						SIL-version: V <sub>S</sub> = 14 ... 28 V <sub>DC</sub>				
Options 3-wire	3-wire:	0 ... 20 mA / V <sub>S</sub> = 14 ... 30 V <sub>DC</sub>										
		0 ... 10 V / V <sub>S</sub> = 14 ... 30 V <sub>DC</sub>										
Performance												
Accuracy <sup>1</sup>		≤ ± 0.5 % FSO										
Permissible load	current 2-wire:	R <sub>max</sub> = [(V <sub>S</sub> - V <sub>S min</sub> ) / 0.02 A] Ω										
	current 3-wire:	R <sub>max</sub> = 500 Ω										
	voltage 3-wire:	R <sub>min</sub> = 10 k Ω										
Influence effects	supply:	0.05 % FSO / 10 V						load: 0.05 % FSO / kΩ				
Response time		≤ 10 msec										
<sup>1</sup> 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 <sup>2</sup>												
Short-circuit protection		permanent										
Reverse polarity protection		no damage, but also no function										
Electromagnetic protection		emission and immunity according to EN 61326										
<sup>2</sup> 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 <sup>3</sup>	PVC (-5 ... 70 °C)	grey	Ø 7.4 mm									
	PUR (-10 ... 70 °C)	black	Ø 7.4 mm									
	FEP <sup>4</sup> (-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										
<sup>3</sup> shielded cable with integrated ventilation tube for atmospheric pressure reference												
<sup>4</sup> 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 <sub>2</sub> O <sub>3</sub> 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 <sub>i</sub> = 28 V, I <sub>i</sub> = 93 mA, P <sub>i</sub> = 660 mW, C <sub>i</sub> ≈ 0nF, L <sub>i</sub> ≈ 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 <sub>atm</sub> 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 <sup>5</sup>		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										
<sup>5</sup> only for 4 ... 20mA / 2-wire												

## Wiring diagrams

### 2-wire-system (current)



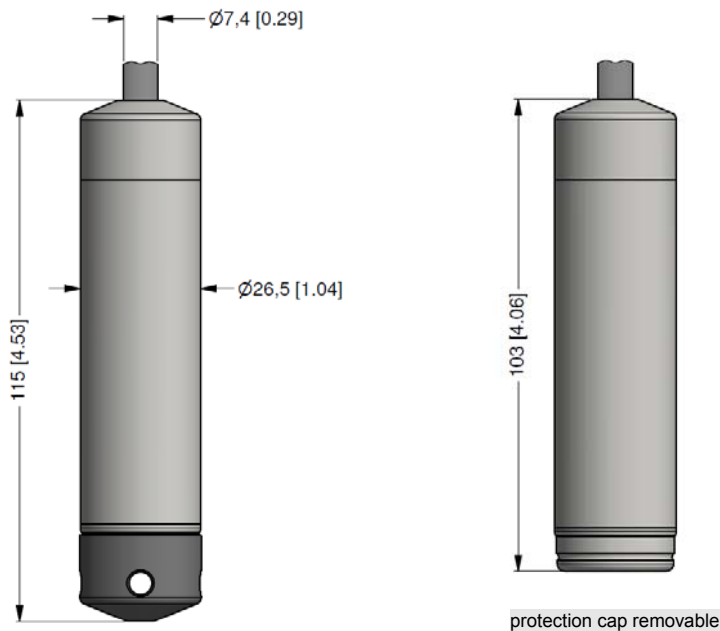
### 3-wire-system (current / voltage)



## Pin configuration

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

## Dimensions (mm / in)



## Accessories

### Terminal clamp



### Technical data

Suitable for	all probes with cable $\varnothing$ 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	
<b>Ordering type</b>	<b>Ordering code</b>	<b>Weight</b>
Terminal clamp, steel, zinc plated	Z100528	approx. 160 g
Terminal clamp, stainless steel 1.4301 (304)	Z100527	

## Ordering code LMK 307

LMK 307

Pressure			
	in bar	3 8 0	
	in mH <sub>2</sub> O	3 8 1	
Input			
	[mH <sub>2</sub> 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 <sub>2</sub> O <sub>3</sub> 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			
	PVC-cable (grey, Ø 7.4 mm)	<sup>1</sup>	1
	PUR-cable (black, Ø 7.4 mm)	<sup>1</sup>	2
	FEP-cable (black, Ø 7.4 mm)	<sup>1</sup>	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
	<b>special length</b>	<b>PVC</b>	<b>9 9 9</b>
	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
	<b>special length</b>	<b>PUR</b>	<b>9 9 9</b>
	standard: 5 m	FEP	0 0 5
	standard: 10 m	FEP	0 1 0
	<b>special length</b>	<b>FEP</b>	<b>9 9 9</b>
Special version			
	standard		0 0 0
	customer		9 9 9
			consult

<sup>1</sup> 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.



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