LMK 307

Stainless Steel Probe

Ceramic Sensor

accuracy according to IEC 60770:
0.5 % FSO

Nominal pressure

from 0 ... 4 mH_2O up to 0 ... 250 mH_2O

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

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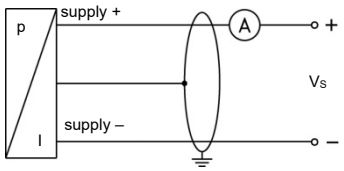
Input pressure range											
Nominal pressure gauge	[bar]	0.4	0.6	1	1.6	2.5	4	6	10	16	25
Level	[mH_2O]	4	6	10	16	25	40	60	100	160	250
Overpressure	[bar]	2	2	2	4	4	10	10	20	40	40
Burst pressure ≥	[bar]	4	4	4	5	5	12	12	25	50	50
Max. ambient pressure (housing): 40 bar											

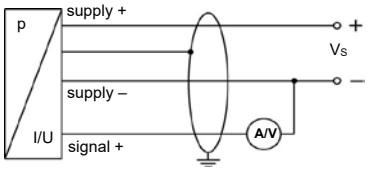
Output signal / Supply		
Standard	2-wire: 4 ... 20 mA / V_S = 8 ... 32 V_{DC}	SIL-version: V_S = 14 … 28 V_{DC}
Option IS-version	2-wire: 4 ... 20 mA / V_S = 10 ... 28 V_{DC}	SIL-version: V_S = 14 … 28 V_{DC}
Options 3-wire	3-wire: 0 ... 20 mA / V_S = 14 ... 30 V_{DC} 0 ... 10 V / V_S = 14 ... 30 V_{DC}	
Performance		
Accuracy [1]	≤ ± 0.5 % FSO	
Permissible load	current 2-wire: $R_{max} = [(V_S - V_{S\ min}) / 0.02\ A]\ \Omega$ 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_2O_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		

Wiring diagrams

2-wire-system (current)



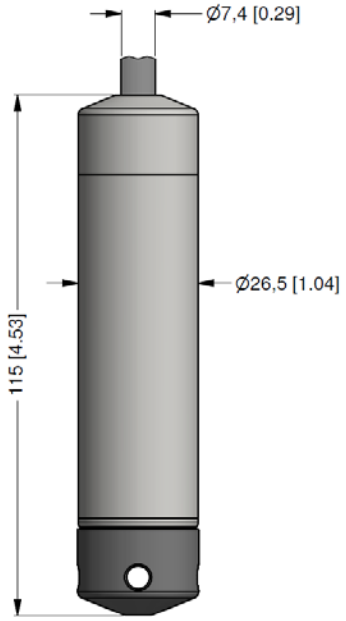
3-wire-system (current / voltage)

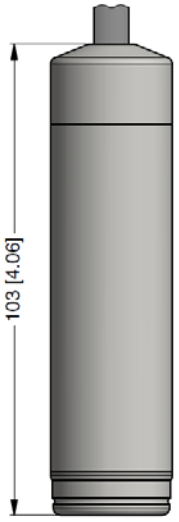


Pin configuration

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

Dimensions (mm / in)





protection cap removable

Accessories

Terminal clamp

Technical data	
Suitable for	all probes with cable ∅ 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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BD|SENSORS pressure measurement

Ordering code LMK 307

LMK 307 ☐☐☐ - ☐☐☐☐ - ☐ - ☐ - ☐ - ☐ - ☐ - ☐ - ☐☐☐ - ☐☐☐

Section / option	[mH₂O]	[bar]	Pressure	Input	Housing	Diaphragm	Output	Seal	Accuracy	Electrical connection	Cable length	Special version	
Pressure													
in bar			380										
in mH_2O			381										
Input	**[mH_2O]**	**[bar]**											
	4	0.4		4000									
	6	0.6		6000									
	10	1.0		1001									
	16	1.6		1601									
	25	2.5		2501									
	40	4.0		4001									
	60	6.0		6001									
	100	10		1002									
	160	16		1602									
	250	25		2502									
customer				9999									consult
Housing													
stainless steel 1.4404 (316L)					1								
customer					9								consult
Diaphragm													
ceramics Al_2O_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 4 … 20 mA / 2-wire							ES						
customer							9						consult
Seal													
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	003		
5 m										1	005		
10 m										1	010		
15 m										1	015		
special length in m										1	999		
PUR-cable (black, Ø 7.4 mm) [1]													
3 m										2	003		
5 m										2	005		
10 m										2	010		
15 m										2	015		
special length in m										2	999		
FEP-cable (black, Ø 7.4 mm) [1]													
5 m										3	005		
10 m										3	010		
special length in m										3	999		
Special version													
standard												000	
customer												999	consult

[1] shielded cable with integrated ventilation tube for atmospheric pressure reference

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