LMK 809

Plastic Probe
For Aggressive Media

High Purity Ceramic Sensor

accuracy according to IEC 60770:
standard: 0.35 % FSO
option: 0.25 % FSO

Nominal pressure

from 0 ... 0.4 mH_2O up to 0 ... 100 mH_2O

Output signals

2-wire: 4 ... 20 mA
3-wire: 0 ... 10 V
others on request

Special characteristics

- diameter 45 mm
- chemical resistance
- high overpressure resistance
- especially for tank level measurement of viscous and aggressive media
- diaphragm 99.9 % Al_2O_3
- housing material PP or PVDF

Optional versions

- different kinds of cable and seal materials
- prepared for mounting with pipe

The plastic submersible probe LMK 809 is designed for continous level measurement in waste water or in most of aggressive media. Basic element is a capacitiv ceramic sensor.

Basic element of the plastic probe is the flush mounted ceramic sensor, which makes cleaning easier when solid parts of the medium deposit on it. Different cable and seal materials are available in order to achieve maximum media compatibility.

Preferred areas of use are

Sewage
waste water treatment
water recycling
dumpsite

Aggressive media
level measurement in most of acids and lyes

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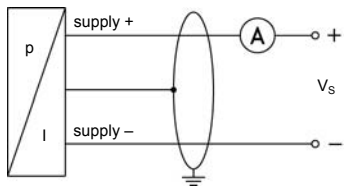
Input pressure range														
Nominal pressure gauge	[bar]	0.04	0.06	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10
Level	[mH_2O]	0.4	0.6	1	1.6	2.5	4	6	10	16	25	40	60	100
Overpressure	[bar]	2	2	4	4	6	6	8	8	15	25	25	35	35

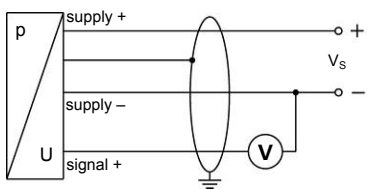
Output signal / Supply		
Standard	2-wire: 4 ... 20 mA / V_S = 9 ... 32 V_{DC}	
Option 3-wire	3-wire: 0 ... 10 V / V_S = 12.5 ... 32 V_{DC}	
Performance		
Accuracy[1]	standard: ≤ ± 0.35 % FSO option: ≤ ± 0.25 % FSO	
Permissible load	$R_{max} = [(V_S - V_{S\,min}) / 0.02\ A]\ \Omega$	
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ	
Long term stability	≤ ± 0.1 % FSO / year at reference conditions	
Turn-on time	700 msec	
Mean response time	< 200 msec	measuring rate: 5/sec
Max. response time	380 msec	
[1] accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)		
Thermal effects (Offset and Span)		
Thermal error	≤ ± 0.1 % FSO / 10 K in compensated range 0 ... 70 °C	
Permissible temperatures		
Permissible temperatures	medium: -25 … 100 °C electronic / environment: -25 … 100 °C storage: -25 … 100 °C	
Electrical protection [2]		
Short-circuit protection	permanent	
Reverse polarity protection	no damage, but also no function	
Electromagnetic compatibility	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]	PUR (-25 … 70 °C) black FEP[4] (-25 … 70 °C) black TPE (-25 … 100 °C) blue	
[3] cable with integrated air 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	standard: PP option: PVDF	
Seals	FKM / EPDM / FFKM	
Diaphragm	ceramics Al_2O_3 99.9 %	
Miscellaneous		
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	
Current consumption	max. 21 mA	
Weight	approx. 320 g (without cable)	
Ingress protection	IP 68	
CE-conformity	EMC Directive: 2014/30/EU	

Wiring diagram

2-wire-system (current)



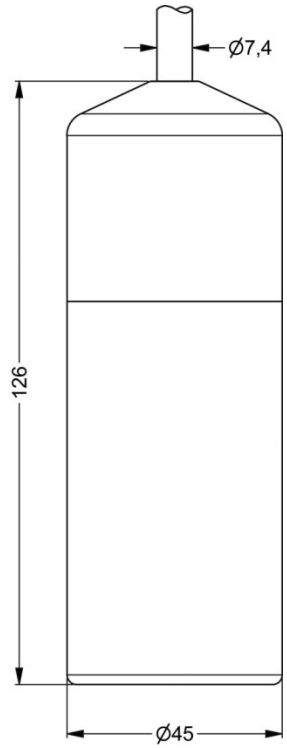
3-wire-system (voltage)



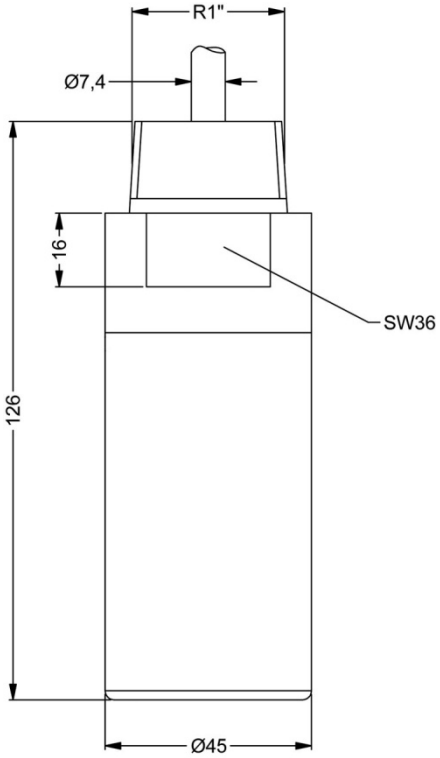
Pin configuration	
Electrical connection	cable colours (IEC 60757)
Supply + Supply – Signal + (only for 3-wire)	wh (white) bn (brown) gn (green)
Shield	gnye (green-yellow)

Dimensions (in mm)

standard

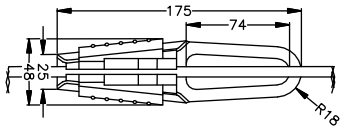


option



prepared for mounting with pipe R1"

Accessories

Terminal clamp		
Technical Data		
Suitable for	all probes with cable ∅ 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

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BD|SENSORS pressure measurement

Ordering code LMK 809

LMK 809 □□□-□□□□-□-□-□-□-□-□-□□□-□□□

Option			Code	
Pressure				
		in bar	3 9 5	
		in mH_2O	3 9 6	
Input	[mH_2O]	[bar]		
	0.40	0.04	0 4 0 0	
	0.60	0.06	0 6 0 0	
	1.0	0.10	1 0 0 0	
	1.6	0.16	1 6 0 0	
	2.5	0.25	2 5 0 0	
	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	
		customer	9 9 9 9	consult
Housing				
		PP	E	
		PVDF	B	
		customer	9	consult
Diaphragm				
		Ceramics Al_2O_3 99.9%	C	
		customer	9	consult
Output				
		4 … 20 mA / 2-wire	1	
		0 … 10 V / 3-wire	3	
		customer	9	consult
Seals				
		FKM	1	
		EPDM	3	
		FFKM	7	
		customer	9	consult
Accuracy				
standard		0.35 %	3	
option		0.25 %	2	
		customer	9	consult
Electrical connection				
		PUR-cable [1]	2	
		FEP-cable [1]	3	
		TPE-cable [1]	4	
		customer	9	consult
Cable length				
		in m	9 9 9	
Special version				
		standard	0 0 0	
		pipe R1"	6 1 0	
		customer	9 9 9	consult

[1] cable with integrated air tube for atmospheric pressure reference

This price list contains product specification; properties are not guaranteed. Detailed information about options are defined in the datasheet. Subject to change without notice.

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