

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 mH₂O up to 0 ... 100 mH₂O

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 % Al₂O₃
- ▶ housing material PP-HT 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 continuous level measurement in waste water or in most of aggressive media. Basic element is a capacitive 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



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 ₂ O]	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	$R_{max} = [(V_S - V_{Smin}) / 0.02 A] \Omega$
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ
Long term stability	≤ ± 0.1 % FSO / year
Turn-on time	700 msec
Mean response time	< 200 msec
Max. response time	380 msec
measuring rate: 5/sec	

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/ electronics/ environment/ storage: -20 ... 80 °C *
<i>*If the cable is intended for use in a smaller temperature range, the use of the probe is limited by this range.</i>	

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	

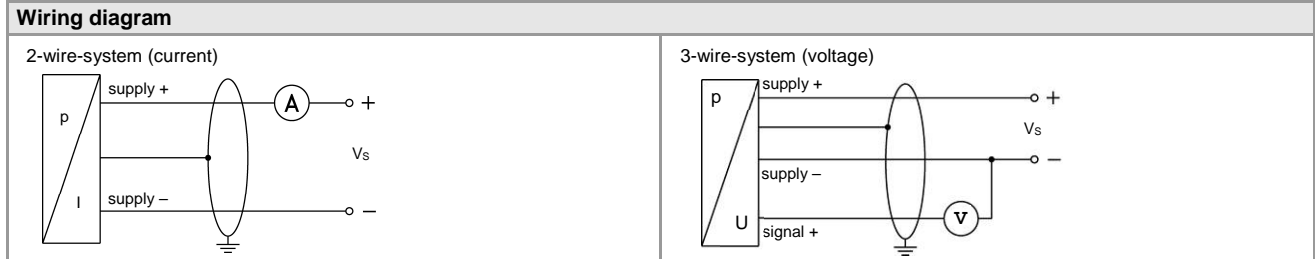
Electrical connection	
Cable with sheath material ³	PUR (-25 ... 80 °C) black Ø 7,4 mm FEP ⁴ (-25 ... 75 °C) black Ø 7,4 mm TPE-U (-25 ... 125 °C) blue (with drinking water certificate) Ø 7,4 mm
Cable capacitance	signal line/shield also signal line/signal line: 160 pF/m
Cable inductance	signal line/shield also signal line/signal line: 1 µH/m
Bending radius	static installation: 10-fold cable diameter dynamic application: 20-fold cable diameter

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-HT option: PVDF
Seals	FKM / EPDM / FFKM
Diaphragm	ceramics Al ₂ O ₃ 99.9 %
Cable sheath	PUR, FEP, TPE-U

Miscellaneous	
Option pipe R1"	prepared for mounting with plastic pipe; available as compact product (standard: pipe with a total length up to 2 m possible; other lengths on request)
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



Pin configuration	
-------------------	--

Electrical connection	cable colours (DIN 47100)
Supply +	wh (white)
Supply -	bn (brown)
Signal + (only for 3-wire)	gn (green)
Shield	gn/ye (green / yellow)

Dimensions (in mm)

standard

option

prepared for mounting with pipe R1"

Accessories

Assembling flange with cable gland

Technical Data			<p>cable gland M16x1.5 with seal insert (for cable-Ø 4 ... 11 mm)</p>
Suitable for	all probes		
Flange material	stainless steel 1.4404 (316L)		
Material of cable gland	standard: brass, zinc plated on request: stainless steel 1.4305 (303); plastic		
Seal insert	material: TPE (ingress protection IP 68)		
Hole pattern	according to DIN 2507		
Version	Size (in mm)	Weight	
DN25 / PN40	D = 115, k = 85, b = 18, n = 4, d = 14	1.4 kg	
DN50 / PN40	D = 165, k = 125, b = 20, n = 4, d = 18	3.2 kg	
DN80 / PN16	D = 200, k = 160, b = 20, n = 8, d = 18	4.8 kg	
Ordering type		Ordering code	
Assembling Flange DN25 / PN40		5000275	
Assembling Flange DN50 / PN40		5000278	
Assembling Flange DN80 / PN16		5000279	

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, of steel, zinc plated		1003440	
Terminal clamp, of stainless steel 1.4301 (304)		1000278	

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

Ordering code LMK 809

3.4.2020

LMK 809

□□□ - □□□□ - □ - □ - □ - □ - □ - □□□□ - □□□□

Pressure																
in bar		3	9	5												
in m H ₂ O		3	9	6												
Input	[mH ₂ O]	[bar]														
	0 ... 0.4	0 ... 0,04	0	4	0	0										
	0 ... 0.6	0 ... 0,06	0	6	0	0										
	0 ... 1	0 ... 0,1	1	0	0	0										
	0 ... 1.6	0 ... 0,16	1	6	0	0										
	0 ... 2.5	0 ... 0,25	2	5	0	0										
	0 ... 4	0 ... 0,4	4	0	0	0										
	0 ... 6	0 ... 0,6	6	0	0	0										
	0 ... 10	0 ... 1	1	0	0	1										
	0 ... 16	0 ... 1,6	1	6	0	1										
	0 ... 25	0 ... 2,5	2	5	0	1										
	0 ... 40	0 ... 4	4	0	0	1										
	0 ... 60	0 ... 6	6	0	0	1										
	0 ... 100	0 ... 10	1	0	0	2										
Customer			9	9	9	9										
Housing material																
PP-HT																
PVDF (accuracy 0,5 %)																
Customer																
Diaphragm material																
Ceramic Al ₂ O ₃ 99,9 %																
Ceramic Al ₂ O ₃ 96 % with PTFE foil (accuracy ≥ 1%)																
Customer																
Output																
4 ... 20 mA / 2-wire																
0 ... 10 V / 3-wire ¹																
Customer																
Seals																
Viton (FKM)																
EPDM																
FFKM																
Customer																
Accuracy																
0,5 % (PVDF housing)																
0,35 % (standart)																
0,25 %																
0,5 % including Calibration Certificate																
0,35 % including Calibration Certificate																
Customer																
Electrical connection																
PUR - cable (black, Ø 7,4 mm, price for 1 m)																
FEP - cable with PTFE sheath (black, Ø 7,4 mm, price for 1 m)																
TPE-U - cable, up to 125°C (blue, Ø 7.4 mm, price for 1 m)																
Customer																
Cable length																
in m																
9																
9																
9																
Special version																
Standard																
R 1" thread - Prepared for mounting with plastic pipe																
Customer																
9																
9																
9																
Accessories for submersible transmitter																
Terminal clamp - zinc plated																
Terminal clamp - Stainless Steel 1.4301																
Mounting screw PG16 - plastic																



BD SENSORS s.r.o.
Hradištská 817
CZ – 687 08 Buchlovice

The company BD SENSORS s.r.o. is certified by TÜV SÜD Czech according to the standard ISO 9001.

Tel.: +420 572 411 011
Fax: +420 572 411 497

www.bdsensors.cz
info@bdsensors.cz



0,- ... without additional charge On request ... in accordance with the producer

1 - maximum length of PVC cable – 25 m, PUR, FEP, TPE – 40 m Surcharges for calibration are not subject to any discounts. Subject to change

This document contains the specification for ordering the product; detailed technical parameters of the product and its possible variants are given in the data sheet.



BD SENSORS s.r.o.
Hradištská 817
CZ – 687 08 Buchlovice

Tel.: +420 572 411 011
Fax: +420 572 411 497

www.bdsensors.cz
info@bdsensors.cz

The company BD SENSORS s.r.o. is certified by TÜV SÜD Czech according to the standard ISO 9001.

