

LMK 809

Plastic Probe For Aggressive Media

High Purity Ceramic Sensor

accuracy according to EN IEC 62828-2:
standard: 0.35 % span
option: 0.25 % span



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
max. ambient pressure (housing)		10 bar												

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 % span option: ≤ ± 0.25 % span
Permissible load	$R_{max} = [(V_S - V_{Smin}) / 0.02 A] \Omega$
Influence effects	supply: 0.05 % span / 10 V load: 0.05 % span / k Ω
Long term stability	≤ ± 0.1 % span / year
Turn-on time	700 msec
Mean response time	< 200 msec
Max. response time	380 msec
	measuring rate: 5/sec

¹ accuracy according to EN IEC 62828-2– limit point adjustment (non-linearity, hysteresis, repeatability)

Thermal effects (Offset and Span)	
Thermal error	≤ ± 0.1 % span / 10 K in compensated range 0 ... 70 °C

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

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

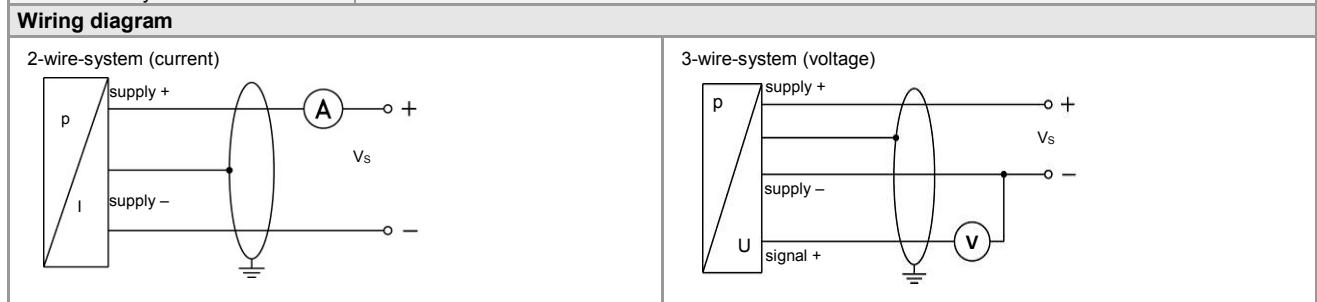
Electrical connection	
Cable with sheath material ³	PUR (-25 ... 80 °C) black (with drinking water certificate) Ø 7,4 mm FEP ⁴ (-25 ... 75 °C) black Ø 7,4 mm TPE-U (-25 ... 125 °C) blue Ø 7,4 mm
Cable capacitance	signal line/shield also signal line/signal line: 160 pF/m
Cable inductance	signal line/shield 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

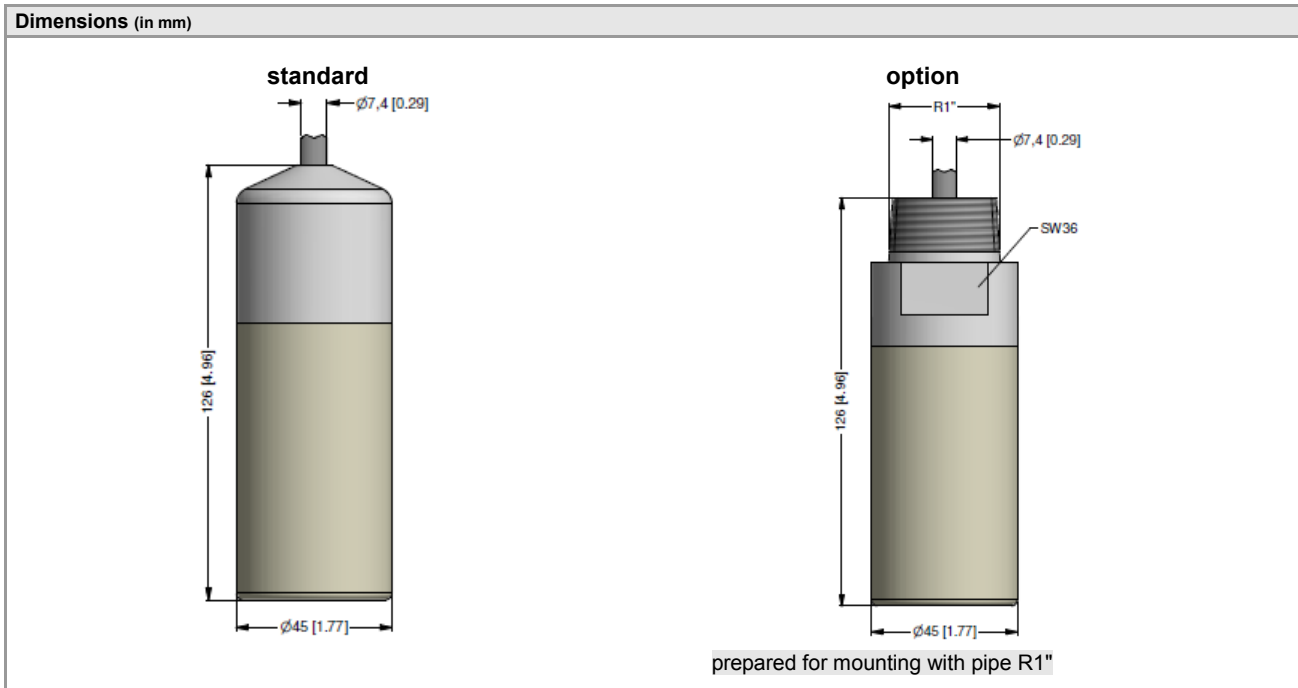
⁴ do not use freely suspended probes with an FEP cable if effects due to highly charging processes are expected

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
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

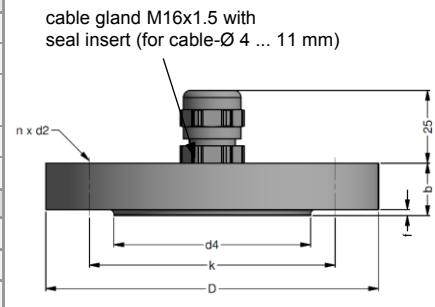


Pin configuration	
Electrical connection	cable colours (DIN 47100)
Supply +	wh (white)
Supply -	bn (brown)
Signal + (only for 3-wire)	gn (green)
Shield	gn/ye (green / yellow)



Accessories

Assembling flange with cable gland		
Technical Data		
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

05.02.2024

LMK 809

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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										R										
PVDF (accuracy 0,5 %)										B										
Customer										9										
Diaphragm material																				
Ceramic Al ₂ O ₃ 99,9 %										C										
Ceramic Al ₂ O ₃ 96 % with PTFE foil (accuracy ≥ 1%)- not possible used for underpressure										3										
Customer										9										
Output																				
4 ... 20 mA / 2-wire																				
0 ... 10 V / 3-wire ³																				
Customer																				
Seals																				
Viton (FKM)																				
EPDM										1										
FFKM										3										
Customer										7										
Customer										9										
Accuracy																				
0,5 % (PVDF housing)																				
0,35 % (standart)										5										
0,25 %										3										
0,5 % including Calibration Certificate										2										
0,35 % including Calibration Certificate										T										
Customer										S										
Customer										9										
Electrical connection																				
PUR - cable (black, Ø 7,4 mm, price for 1 m) ¹																				
FEP - cable with PTFE sheath (black, Ø 7,4 mm, price for 1 m) ¹										2										
TPE-U - cable, up to 125 °C (blue, Ø 7.4 mm, price for 1 m) ¹										3										
Customer										4										
Customer										9										
Cable length																				
in m																				
Customer										9	9	9								
Special version																				
Standard																				
R 1" thread - Prepared for mounting with plastic pipe ²																				
Temperature compensation 0 ... 100 °C										0	0	0								
Customer										6	1	0								
Customer										8	4	8								
Customer										9	9	9								
Accessories for submersible transmitter																				
Terminal clamp - zinc plated																				
Terminal clamp - Stainless Steel 1.4301																				
Mounting screw PG16 - plastic																				
Customer										1003440										
Customer										1000278										
Customer										5002200										

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

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.



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



1 shielded cable with integrated ventilation tube for atmospheric pressure reference

2 pipe is not part of the supply

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



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