

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 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 at reference conditions
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: -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

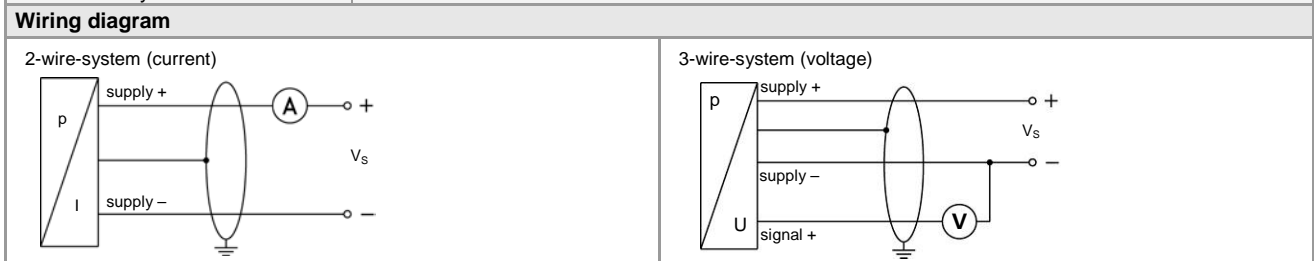
Electrical connection	
Cable with sheath material ³	PUR (-25 ... 70 °C) black FEP ⁴ (-25 ... 70 °C) black TPE (-25 ... 100 °C) blue

³ cable with integrated air tube for atmospheric pressure reference

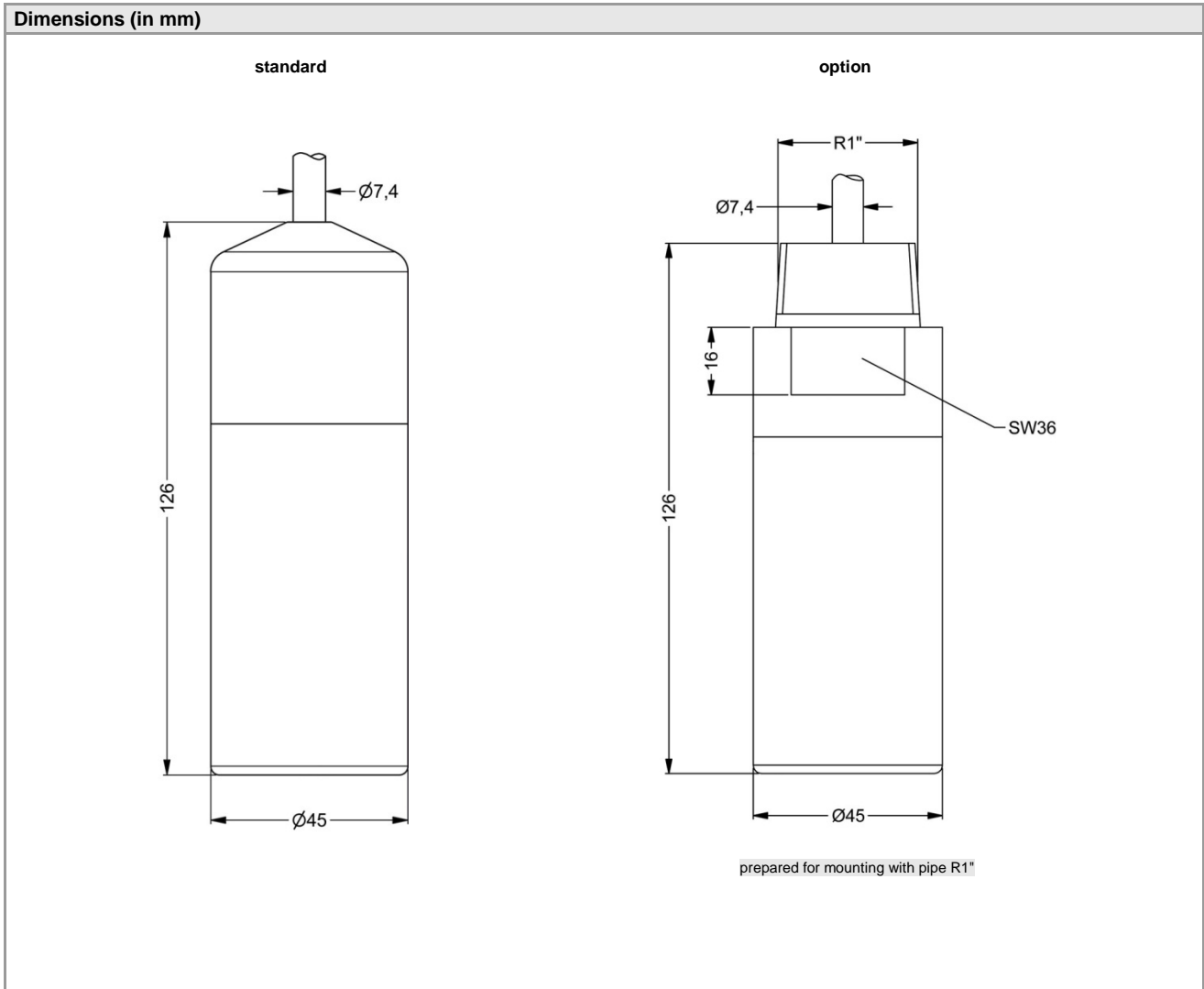
⁴ do not use freely suspended probes with an FEP cable if effects due to highly charging processes are expected

Materials (media wetted)	
Housing	standard: PP option: PVDF
Seals	FKM / EPDM / FFKM
Diaphragm	ceramics Al ₂ O 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: 1 μH/m
Current consumption	max. 21 mA
Weight	approx. 320 g (without cable)
Ingress protection	IP 68
CE-conformity	EMC Directive: 2004/108/EC



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)



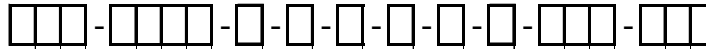
Accessories

Terminal clamp	
Technical Data	
Suitable for	all probes with cable \varnothing 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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Ordering code LMK 809

LMK 809



Pressure																			
	in bar	3	9	5															
	in mH ₂ O	3	9	6															
Input	[mH ₂ O]	[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 ₂ O 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

