

LMK 382

Stainless Steel Probe

Ceramic Sensor

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



Nominal pressure

from 0 ... 40 cmH₂O
up to 0 ... 100 mH₂O

Special characteristics

- ▶ diameter 39.5 mm
- ▶ especially for sewage, viscous and pasty media

Optional versions

- ▶ IS-version zone 0
- ▶ mounting with stainless steel pipe
- ▶ flange version
- ▶ diaphragm 99.9 % Al₂O₃
- ▶ different kinds of cables
- ▶ different kinds of elastomers

The stainless steel probe LMK 382 has been designed for continuous level measurement in waste water, waste and higher viscosity mediums.

Basic element is a robust and high overpressure capable capacitive ceramic sensor e.g. for low levels.

Preferred areas of use are

Sewage



waste water treatment
water recycling

Fuel / Oil



level monitoring in open tanks
with low filling heights
fuel storage
tank farms
biogas plants

Aggressive media



level measurement for most acids
and lyes

Probe

LMK 382



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Stainless Steel Probe

Technical Data

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 IS-protection	2-wire: 4 ... 20 mA / V _S = 14 ... 28 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	$R_{max} = [(V_s - V_{smin}) / 0.02] \Omega$													
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								measuring rate 5/sec					
Max. response time	380 msec													
<i>1 accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)</i>														
Thermal effects (Offset and Span)														
Thermal error	≤ ± 0.1 % FSO / 10 K in compensated range 0 ... 70 °C													
Permissible temperatures														
Permissible temperatures	medium: -25 ... 125 °C electronics / environment: -25 ... 125 °C storage: -25 ... 125 °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													
<i>² additional external overvoltage protection unit in terminal box KL 1 or KL 2 with atmospheric pressure reference available on request</i>														
Electrical connection (only for 4 ... 20 mA / 2-wire)														
Cable with sheath material ³	PVC (-5 ... 70 °C) grey PUR (-25 ... 70 °C) black FEP (-25 ... 70 °C) black TPE (-25 ... 125 °C) blue													
<i>³ shielded cable with integrated air tube for atmospheric pressure reference</i>														
Materials (media wetted)														
Housing	stainless steel 1.4404 (316 L)													
Seals	FKM FFKM EPDM others on request													
Diaphragm	standard: ceramics Al ₂ O ₃ 96 % Option: ceramics Al ₂ O ₃ 99.9 %													
Nose cone	POM													
Explosion protection														
Approval DX14-LMK 382	zone 0 ⁴ : II 1 G EEx ia IIB T4													
Safety technical maximum values	U _i = 28 V, I _i = 93 mA, P _i = 660 mW, C _i = 27 nF, L _i = 5 μH													
Permissible media temperature	in zone 0: -10 ... 60 °C with p _{atm} 0.8 bar up to 1.1 bar zone 1 and higher: -10 ... 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													
<i>⁴ for optional stainless steel pipe following designation is valid: "II 1 G EEx ia IIC T4" (zone 0)</i>														
Miscellaneous														
Current consumption	max. 21 mA													
Weight	approx. 400 g (without cable)													
Ingress protection	IP 68													
CE-conformity	EMC Directive: 2004/108/EC													

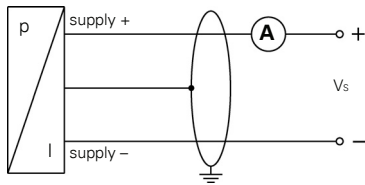
LMK 382

Stainless Steel Probe

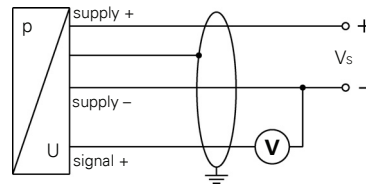
Technical Data

Wiring diagram

2-wire-system (current)



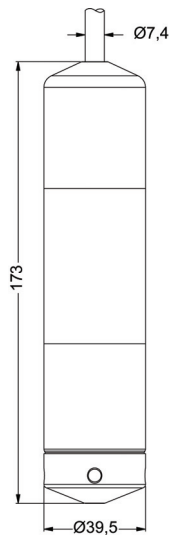
3-wire-system (voltage)



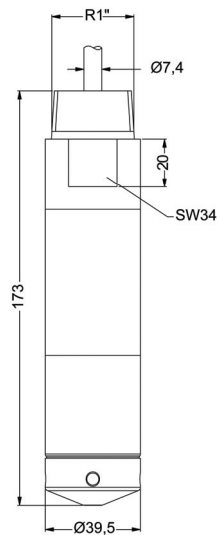
Pin configuration

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

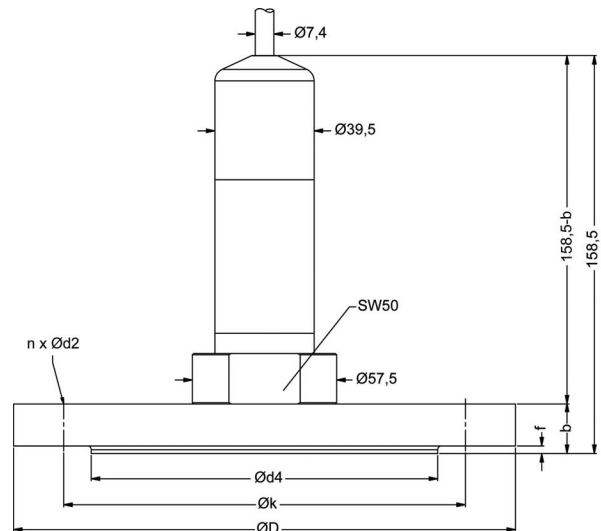
Dimensions (in mm)



LMK 382
standard



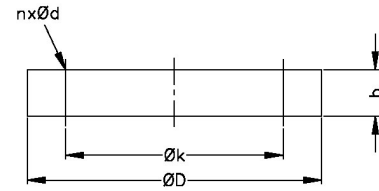
LMK 382 with thread R1"
for stainless steel pipe



LMK 382
flange version

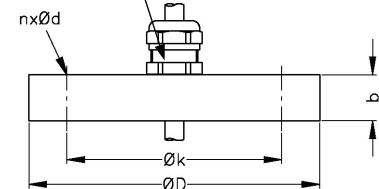
dimensions in mm				
dimen- sions	DN25 / PN40	DN40/ PN40	DN50 / PN40	DN80 / PN16
D	115	150	165	200
K	85	110	125	160
d4	68	88	102	138
b	18	18	20	20
f	2	3	3	3
n	4	4	4	8
d2	14	18	18	18

Transmitter flange for flange version		
Technical data		
Suitable for	LMK 382, LMK 382H, LMK 458, LMK 458H	
Flange material	stainless steel 1.4404 (316L)	
Hole pattern	according to DIN 2507	
Version	Size (in mm)	Weight
DN25 / PN40	D = 115, k = 85, b = 18, n = 4, d = 14	1.2 kg
DN50 / PN40	D = 165, k = 125, b = 20, n = 4, d = 18	2.6 kg
DN80 / PN16	D = 200, k = 160, b = 20, n = 8, d = 18	4.1 kg
Ordering type		Ordering code
Transmitter flange DN25 / PN40		ZFS2540
Transmitter flange DN50 / PN40		ZFS5040
Transmitter flange DN80 / PN16		ZFS8016

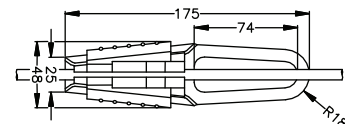


Mounting flange with cable gland		
Technical data		
Suitable for	all probes	
Flange material	stainless steel 1.4404 (316L)	
Material of cable gland	standard: brass, nickel plated on request: stainless steel 1.4305 (303); plastic	
Seal insert	material: TPE (ingress protection IP 68)	
Hole pattern	according 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
DN25 / PN40 with cable gland brass, nickel plated		ZMF2540
DN50 / PN40 with cable gland brass, nickel plated		ZMF5040
DN80 / PN16 with cable gland brass, nickel plated		ZMF8016

cable gland M16x1.5 with seal insert (for cable-Ø 4 ... 11 mm)



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, steel, zinc plated		Z100528
Terminal clamp, stainless steel 1.4301 (304)		Z100527



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