



LMK 358

Separable 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

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

Optional versions

- ▶ IS-protection zone 0
- ▶ cable protection via corrugated pipe
- ▶ diaphragm 99.9 % Al₂O₃
- ▶ different kinds of cable
- ▶ different kinds of elastomers

The separable stainless steel probe LMK 358 has been designed for level measurement in waste water, waste and higher viscosity mediums. Basic element is a capacitive ceramic sensor.

In order to facilitate stock-keeping and maintenance the transmitter head is plugged to the cable assembly with a connector and can be changed easily.

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

LMK 358 Probe



LMK 358

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 _{S min}) / 0.02] Ω														
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														
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 ... 125 °C electronic / environment: -25 ... 125 °C storage: -40 ... 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														
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	PVC	(-5 ... 70 °C)	grey												
	PUR	(-25 ... 70 °C)	black												
	FEP	(-25 ... 70 °C)	black												
	TPE	(-25 ... 125 °C)	blue												
³ shielded cable with integrated air tube for atmospheric pressure reference															
Materials (media wetted)															
Housing	stainless steel 1.4404 (316L)														
Seals	FKM 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 358	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 or 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														
⁴ for optional stainless steel pipe following designation is valid: "II 1 G EEx ia IIC T4" (zone 0)															
Miscellaneous															
Current consumption	max. 21 mA														
Weight	approx. 650 g (without cable)														
Ingress protection	IP 68														
CE-conformity	EMC Directive: 2004/108/EC														

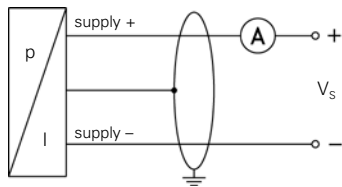
LMK 358

Stainless Steel Probe

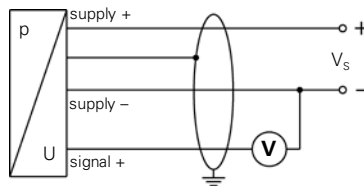
Technical Data

Wiring diagram

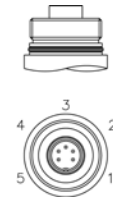
2-wire-system (current)



3-wire-system (voltage)



connector

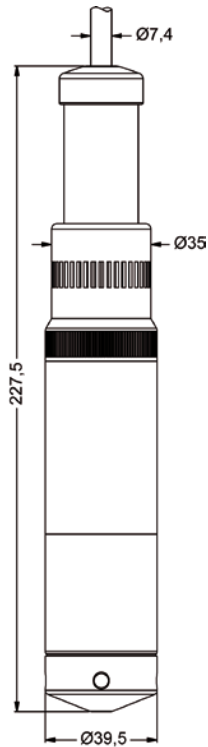


Pin configuration

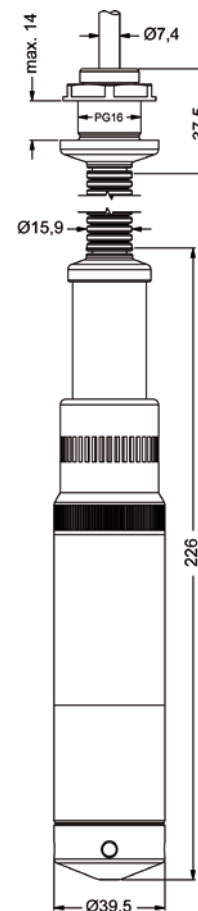
Electrical connection	Binder series 723 ⁵ (5-pin)		cable colours (DIN 47100)
	2 - wire	3 - wire	
Supply +	3	3	wh (white)
Supply -	1	4	bn (brown)
Signal + (only for 3-wire)	-	1	gn (green)
Shield	5	5	gn/ ye (green / yellow)

⁵ in separated version

Dimensions (in mm)



separated version



optionally with
corrugated pipe

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
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
Display program		
<p>CIT 200 Process display with LED display</p> <p>CIT 250 Process display with LED display and contacts</p> <p>CIT 300 Process display with LED display, contacts and analogue output</p> <p>CIT 350 Process display with LED display, bargraph, contacts and analogue output</p> <p>CIT 400 Process display with LED display, contacts, analogue output and Ex-approval</p> <p>CIT 600 Multichannel process display with graphics-capable LC display</p> <p>CIT 650 Multichannel process display with graphics-capable LC display and datalogger</p> <p>CIT 700 Multichannel process display with graphics-capable TFT monitor, touchscreen and contacts</p> <p>PA 440 Field display with 4-digit LC display</p>		
<p>For further informations please contact our sales department or visit our homepage: http://www.bdsensors.com</p>		

