



LMK 858

Detachable Plastic Probe

Ceramic Sensor

accuracy according to IEC 61298-2:
standard: 0.35 % FSO
option: 0.25 % FSO

Nominal pressure

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

Output signals

2-wire: 4 ... 20 mA
others on request

Special characteristics

- ▶ diameter 45 mm
- ▶ diaphragm ceramics Al₂O₃ 99.9 %
- ▶ cable assembly and sensor head detachable
- ▶ chemical resistance
- ▶ housing PP-HT
- ▶ integrated lightning protection and increased overvoltage protection
8 kA gas discharge tube (8/20 µsec);
4 kV surge I-I-I-e according to EN61000-4-5

Optional versions

- ▶ different kinds of cables and elastomers
- ▶ cable protection (on request)

The separable plastic immersion probe LMK 858 was designed for level measurement in aggressive media (acids, alkalis), desalination plants and for use in more viscous media such as sludge. Since the area of application is often outside a building, great emphasis was placed on high surge / lightning protection.

The immersion probe is based on an extremely robust and precise pressure sensor, the membrane of which consists of a high-purity ceramic (99.9% purity), with which even the smallest fill levels can be reliably detected.

Another special feature of the LMK 858 is the separability of the probe head and cable part. This advantage reduces maintenance or service tasks and also simplifies storage.

Preferred areas of use are



Sewage

waste water treatment, dumpsite,
water recycling



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	
2-wire	4 ... 20 mA / V _S = 9 ... 32 V _{DC} others on request
Performance	
Accuracy ¹	standard: $\pm 0.35\%$ FSO option: $\pm 0.25\%$ FSO
Permissible load	$R_{\max} = [(V_S - V_{S \min}) / 0.02 \text{ A}] \Omega$
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ
Long term stability	$\pm 0.1\%$ FSO / year at reference conditions
Turn-on time	700 msec
Mean response time	< 200 msec
Max. response time	380 msec
¹ accuracy according to IEC 61298-2 – limit point adjustment (non-linearity, hysteresis, repeatability)	

Thermal effects (offset and span)	
Tolerance band	$\pm 1\%$ FSO
In compensated range	-20 ... 80 °C

Permissible temperatures	
Permissible temperatures	medium / electronic / environment / storage: 0 ... 60 °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	

Overvoltage / lightning protection	
Series resistance	9.4 Ω for each positive and negative wire
Max. leakage current	8 kA (8/20 μsec)
Overload	4 kV (line-line and line-earth) according to EN 61000-4-5
Max. rated current	30 mA

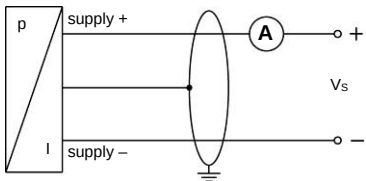
Electrical connection	
Cable with sheath material ³	PVC (-5 ... 70 °C) grey Ø 7.4 mm PUR (-25 ... 70 °C) black Ø 7.4 mm FEP ⁴ (-25 ... 70 °C) black Ø 7.4 mm
Cable capacitance	signal line/shield also signal line/signal line: 160 pF/m
Cable inductance	signal line/shield also signal line/signal line: 1 μH/m
Bending radius	static installation: 10-fold cable diameter, dynamic application: 20-fold cable diameter

³ shielded cable with integrated ventilation 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

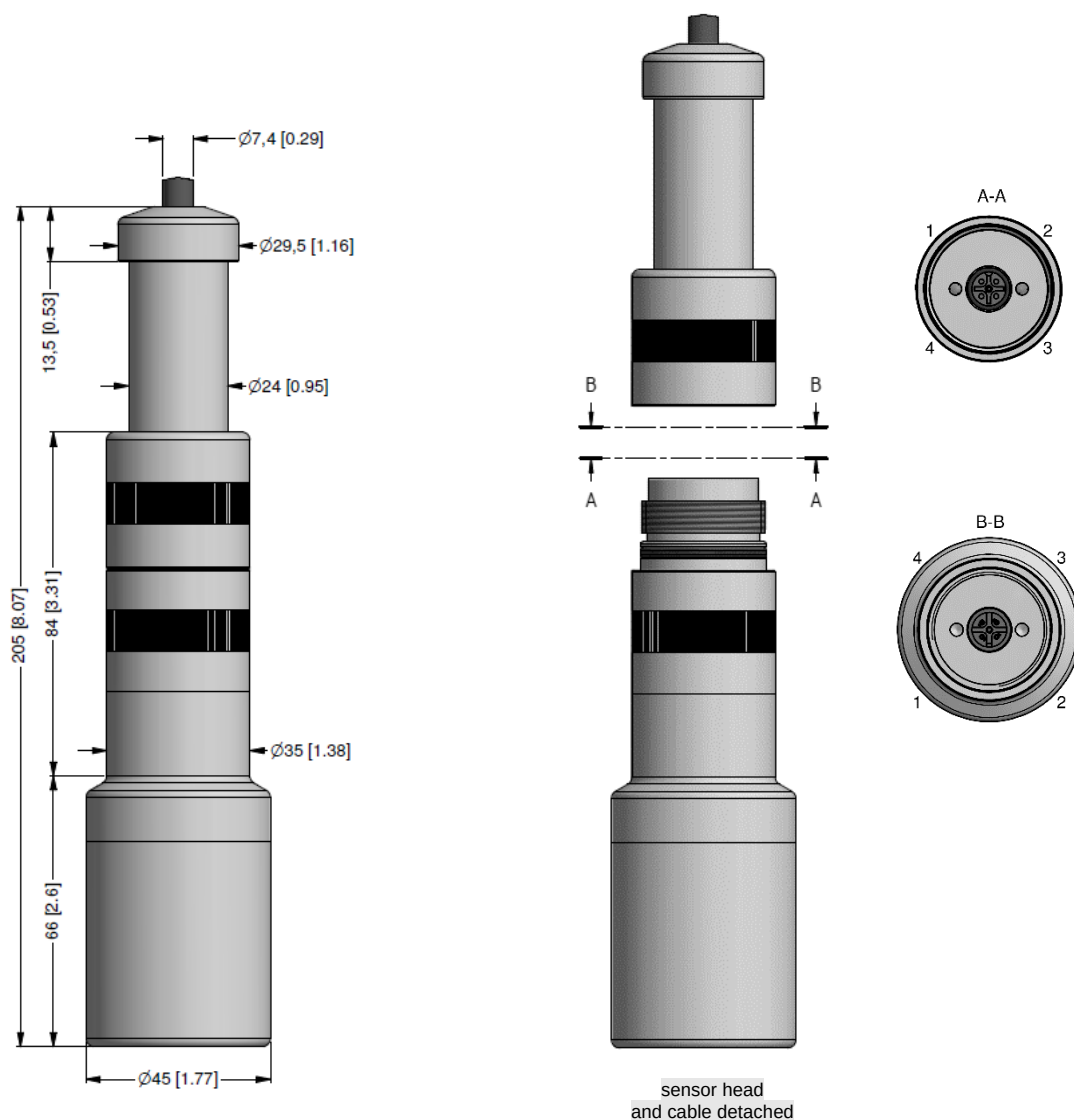
Materials (media wetted)	
Housing	PP-HT
Seals	FKM, EPDM, others on request
Diaphragm	ceramics Al ₂ O ₃ 99.9 %
Cable sheath	PVC, PUR, FEP, others on request

Miscellaneous	
Option cable protection (on request)	prepared for mounting with PP-HT pipe Ø 25 mm; available as compact product (standard: pipe with a total length up to 2 m possible)
Current consumption	max. 25 mA
Weight	approx. 400 g (without cable)
Ingress protection	IP 68
CE-conformity	EMC Directive: 2014/30/EU

Wiring diagram / pin configuration			
	Electrical connection	M12x1 (4-pin) ⁵	cable colours (IEC 60757)
	Supply +	3	WH (white)
	Supply –	4	BN (brown)
	Shield	2	GNYE (green-yellow)

⁵ if detached

Dimensions (mm / in)



Accessories

Terminal clamp



Technical data

Suitable for	all probes with cable Ø 5.5 ... 10.5 mm		
Material of housing	standard: steel, zinc plated	optionally: stainless steel 1.4301 (304)	
Material of clamping jaws and positioning clips	PA (fibre-glass reinforced)		
Dimensions (mm)	174 x 45 x 32		
Hook diameter	20 mm		
Ordering type	Ordering code	Weight	
Terminal clamp, steel, zinc plated	Z100528	approx. 160 g	
Terminal clamp, stainless steel 1.4301 (304)	Z100527		

Ordering code LMK 858

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Pressure									
		in bar	4	1	5				
		in mH ₂ O	4	1	6				
Input									
	[mH ₂ O]	[bar]							
	0.4	0.04		0	4	0	0		
	0.6	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-HT			R					
	customer			9					consult
Diaphragm									
	ceramics Al ₂ O ₃ 99.9 %			C					
	customer			9					consult
Output									
	4 ... 20 mA / 2-wire			1					
	customer			9					consult
Seal									
	FKM			1					
	EPDM			3					
	customer			9					consult
Electrical connection									
	PVC-cable (grey, Ø 7.4 mm) ¹			1					
	PUR-cable (black, Ø 7.4 mm) ¹			2					
	FEP-cable (black, Ø 7.4 mm) ¹			3					
	customer			9					consult
Accuracy									
	standard	0.35 % FSO		3					
	option	0.25 % FSO		2					
	customer			9					consult
Cable length									
	in m			9	9	9			
Special version									
	standard						0	0	0
	prepared for pipe mounting ²						1	0	6
	customer						9	9	9
									consult

¹ shielded cable with integrated ventilation tube for atmospheric pressure reference

² pipe is not part of the supply