

IMPRESS

SENSORS & SYSTEMS

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Pressure - Temperature - Level - Flow - Analytical - Control - Indication - Data logging



LMK 858

Plastic Submersible Transmitter with Ceramic Sensor

- ▶ diameter: 45 mm
- ▶ transmitter head and cable assembly plugged
- ▶ nominal pressure ranges:
0 ... 40 cmWC up to 0 ... 100 mWC
(0 ... 40 mbar up to 0 ... 10 bar)

The level transmitter LMK 858 has been developed for continuous level measurement in most of aggressive media. Usage in more viscous media as for example sludge is possible because of the semi-flush diaphragm.

Basic element is a mechanically robust and highly overloaded capacitive ceramic sensor; the transmitters are among others suited for the measurement of low filling heights with good long term stability. 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.

For seals and cable different materials are available.

Preferred areas of use are:

- ▶ level monitoring in open tanks with low filling heights
- ▶ depth or level measurement in wells and open waters
- ▶ ground water level measurement
- ▶ sewage treatment, water supply
- ▶ chemical and pharmaceutical industries

- ▶ good long term stability
- ▶ accuracy:
0.175% / 0.125% FSO BFSL
(0.35% / 0.25% FSO IEC 60770)
- ▶ cable protection with PVC pipe possible
- ▶ customer specific versions:
 - special pressure ranges
 - other versions on request

Characteristics

CE

LMK 858

Plastic Submersible Transmitter

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LMK 858

Plastic Submersible Transmitter

Technical Data

Input pressure range ¹														
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 [mWC]	0.4	0.6	1	1.6	2.5	4	6	10	16	25	40	60	100	
Permissible overpressure [bar]	2	2	4	4	6	6	8	8	15	25	25	35	35	

Output signal / Supply	
Standard	2-wire: 4 ... 20 mA / $V_s = 9 \dots 36 V_{DC}$
Optional	3-wire: 0 ... 10 V / $V_s = 14 \dots 36 V_{DC}$ (on request)

Performance		
Accuracy	IEC 60770 ²	BFSL
	standard: $\leq \pm 0.35 \% \text{ FSO}$ option: $\leq \pm 0.25 \% \text{ FSO}$	standard: $\leq \pm 0.175 \% \text{ FSO}$ option: $\leq \pm 0.125 \% \text{ FSO}$
Permissible load	current 2-wire: $R_{max} = [(V_s - V_{smin}) / 0.02] \Omega$ voltage 3-wire: $R_{min} = 10 \text{ k}\Omega$	
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / $\text{k}\Omega$	
Long term stability	$\leq \pm 0.1 \% \text{ FSO} / \text{year}$	
Response time	< 200 msec	

Thermal effects	
Tolerance range for offset and span	$\leq \pm 0.1 \% \text{ FSO} / 10 \text{ K}$
in compensated range	0 ... 50 °C

Electrical protection ³	
Reverse polarity protection	no damage, but also no function
Electromagnetic compatibility	emission and immunity according to EN 61326

Permissible temperatures	
Medium	0 ... 50 °C
Storage	-10 ... 50 °C

Electrical connection	
Cable with sheath material ⁴	PVC grey PUR black FEP black
Cable protection	standard: without cable protection optional: prepared for mounting of a PVC pipe with diameter 25 mm

¹ version with Al₂O₃ 99.9% possible for pressure ranges from 0.1 bar up to 1 bar

² accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)

³ additional external overvoltage protection unit in terminal box KL1 and KL2 with atmospheric pressure reference available on request (please ask for data sheet)

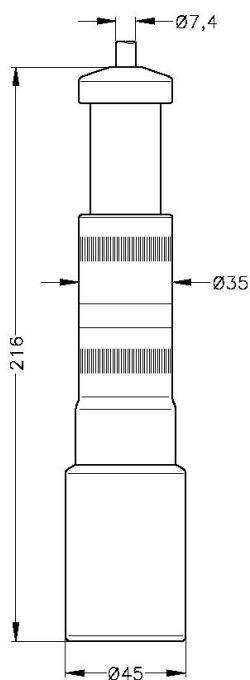
⁴ cable with integrated air tube for atmospheric pressure reference

LMK 858

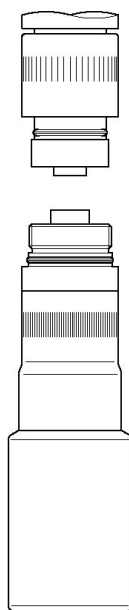
Plastic Submersible Transmitter

Technical Data

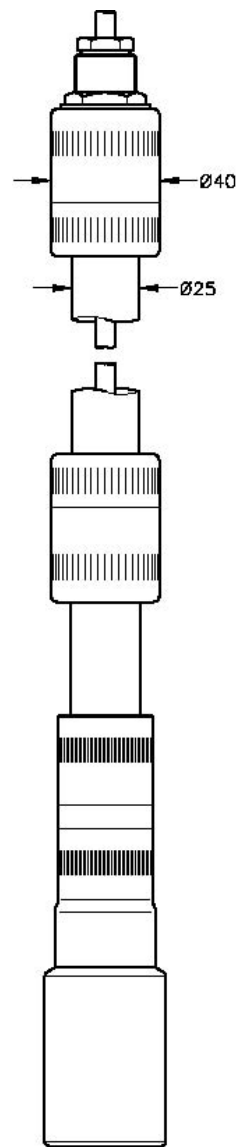
Dimensions



Standard



Transmitter head and
cable assembly separable



Special version for cable protection
PVC pipe

LMK 858

Plastic Submersible Transmitter

Technical Data

Materials	
Housing	PVC grey
Seals	FKM / others on request
Diaphragm	Standard: ceramics Al_2O_3 96 % Option: ceramics Al_2O_3 99.9 % (possible for pressure ranges from 0.1 bar up to 1 bar)
Cable sheath	PVC / PUR / FEP

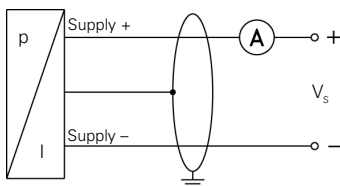
Miscellaneous		
Cable capacitance	signal line/shield: 150 pF/m	signal line/signal line: 100 pF/m
Cable inductance	signal line/shield: 1.0 μ H/m	signal line/signal line: 1.0 μ H/m
Current consumption	signal output current: max. 25 mA signal output voltage: max. 7 mA	
Weight	approx. 400 g (without cable)	
Ingress protection	IP 68	

Mounting accessories (not part of delivery)	
Screw fitting, PVC	
Terminal clamp, stainless steel 1.4301 (304) or steel, zinc plated	

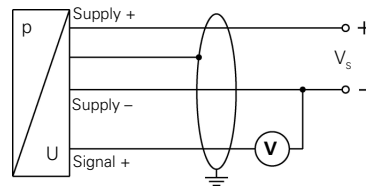
Pin configuration			
Electrical connection		Binder Serie 723 ⁵ (5-pin)	cable colours (DIN 47100)
2-wire-system	Supply +	3	white
	Supply -	1	brown
	Ground	5	yellow / green (shield)
3-wire-system	Supply +	3	white
	Supply -	4	brown
	Signal +	1	green
	Ground	5	yellow / green (shield)

Wiring diagram

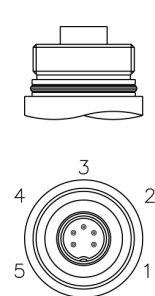
2-wire-system (current)



3-wire-system (voltage)



connector⁵



⁵ in separated version