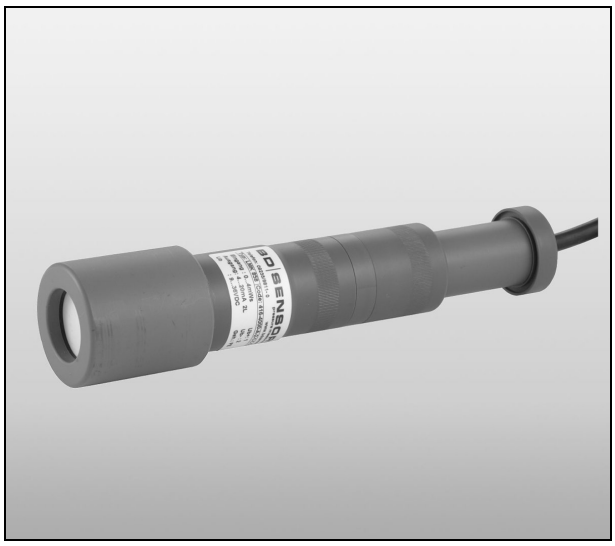
BD SENSORS
pressure measurement



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

Characteristics

- 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

CE

LMK 858
Plastic Submersible Transmitter

TÜV CERT DIN EN ISO 9001

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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 ... 36 V_{DC}
Optional	3-wire: 0 ... 10 V / V_S = 14 ... 36 V_{DC} (on request)

Performance

Accuracy	IEC 60770 [2]	BFSL
	standard: ≤ ± 0.35 % FSO option: ≤ ± 0.25 % FSO	standard: ≤ ± 0.175 % FSO option: ≤ ± 0.125 % FSO
Permissible load	current 2-wire: $R_{max} = [(V_S - V_{S\,min}) / 0.02]$ Ω voltage 3-wire: R_{min} = 10 kΩ	
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ	
Long term stability	≤ ± 0.1 % FSO / year	
Response time	< 200 msec	

Thermal effects

Tolerance range for offset and span	≤ ± 0.1 % FSO / 10 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

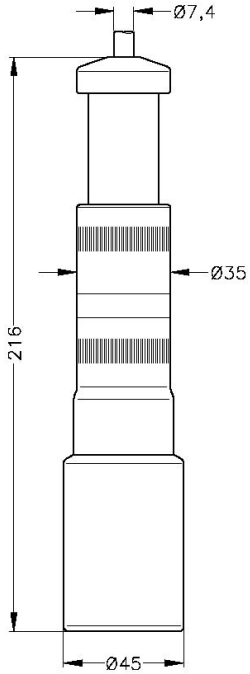
[1] version with Al_2O_3 99.9% possible for pressure ranges from 0.1 bar up to 1 bar

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

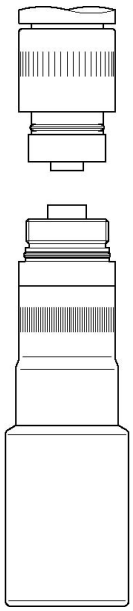
[3] additional external overvoltage protection unit in terminal box KL1 and KL2 with atmospheric pressure reference available on request (please ask for data sheet)

[4] cable with integrated air tube for atmospheric pressure reference

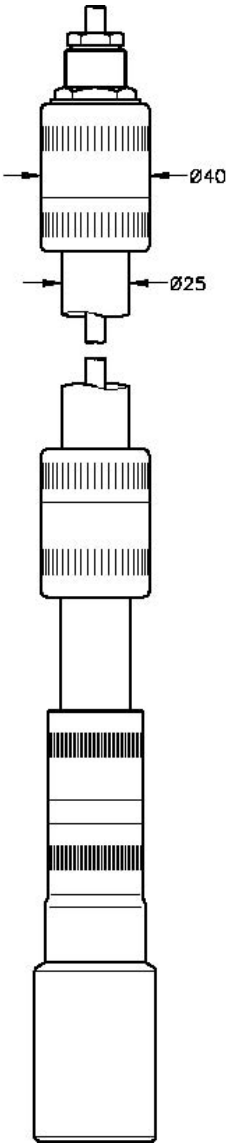
Dimensions



Standard



Transmitter head and cable assembly seperable



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 µH/m	signal line/signal line: 1.0 µH/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

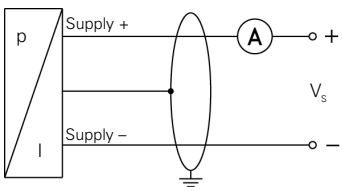
Terminal clamp, stainless steel 1.4301 (304) or steel, zinc plated

Pin configuration

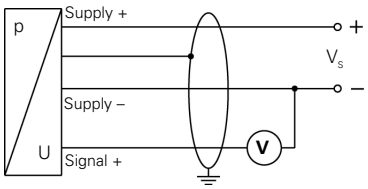
Electrical connection		Binder Serie 723 [5] (5-pin)	cable colours (DIN 47100)
2-wire-system	Supply + Supply –	3 1	white brown
	Ground	5	yellow / green (shield)
3-wire-system	Supply + Supply – Signal +	3 4 1	white brown green
	Ground	5	yellow / green (shield)

Wiring diagram

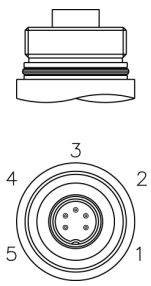
2-wire-system (current)



3-wire-system (voltage)



connector [5]



This data sheet contains product specification, properties are not guaranteed. Subject to change without notice.

[5] in separated version

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Ordering Code LMK 858

LMK 858 ☐☐☐-☐☐☐☐-☐-☐-☐-☐-☐-☐-☐☐☐-☐☐☐

Pressure		Code
	in bar	4 1 5
	in mWC	4 1 6

Input [mWC]	[bar]	Code
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

Housing		Code
	PVC	A
	customer	9

Diaphragm		Code
	Ceramics Al_2O_3 96%	2
	Ceramics Al_2O_3 99,9% [1]	C
	customer	9

Output		Code
	4 ... 20 mA / 2-wire	1
	0 ... 10 V / 3-wire	3
	customer	9

Seals		Code
	FKM	1
	EPDM	3
	customer	9

Electrical connection		Code
	PVC-cable [2]	1
	PUR-cable [2]	2
	FEP-cable [2]	3
	customer	9

Accuracy		Code
standard	0,35 %	3
option	0,25 %	2
	customer	9

Cable length		Code
	in m	9 9 9

Special version		Code
	standard	0 0 0
	prepared for mounting with PVC pipe [3]	1 0 6
	customer	9 9 9

[1] diaphragm Al_2O_3 99,9% possible for pressure ranges from 0.1 bar up to 1 bar
[2] cable with integrated air tube for atmospheric pressure reference
[3] PVC pipe is not part of the supply

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