

# ILMK 858



## Detachable Plastic Probe

Ceramic Sensor

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

### Nominal pressure

from 0 ... 40 cmH<sub>2</sub>O up to 0 ... 100 mH<sub>2</sub>O

### Output signals

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

### Special characteristics

- ▶ diameter 45 mm
- ▶ 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

- ▶ diaphragm 99.9 % Al<sub>2</sub>O<sub>3</sub>
- ▶ different kinds of cables and elastomers
- ▶ cable protection (on request)

The separable plastic immersion probe ILMK 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 ILMK 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 <sub>2</sub> 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 <sub>S</sub> = 9 ... 32 V <sub>DC</sub> <span style="float: right;">others on request</span>
Performance	
Accuracy <sup>1</sup>	standard: ≤ ± 0.35 % FSO <span style="float: right;">option: ≤ ± 0.25 % FSO</span>
Permissible load	R <sub>max</sub> = [(V <sub>S</sub> - V <sub>S min</sub> ) / 0.02 A] Ω
Influence effects	supply: 0.05 % FSO / 10 V <span style="float: right;">load: 0.05 % FSO / kΩ</span>
Long term stability	≤ ± 0.1 % FSO / year at reference conditions
Turn-on time	700 msec
Mean response time	< 200 msec <span style="float: right;">measuring rate 5/sec</span>
Max. response time	380 msec

<sup>1</sup> accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)

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

Permissible temperatures	
Permissible temperatures	medium / electronic / environment / storage: -25 ... 80 °C

Electrical protection <sup>2</sup>	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Electromagnetic compatibility	emission and immunity according to EN 61326

<sup>2</sup> 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 <sup>3</sup>	PVC (-5 ... 70 °C) grey Ø 7.4 mm PUR (-25 ... 70 °C) black Ø 7.4 mm FEP <sup>4</sup> (-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

<sup>3</sup> shielded cable with integrated ventilation tube for atmospheric pressure reference

<sup>4</sup> 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	standard: ceramics Al <sub>2</sub> O <sub>3</sub> 96 % <span style="float: right;">option: ceramics Al<sub>2</sub>O<sub>3</sub> 99.9 %</span>
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

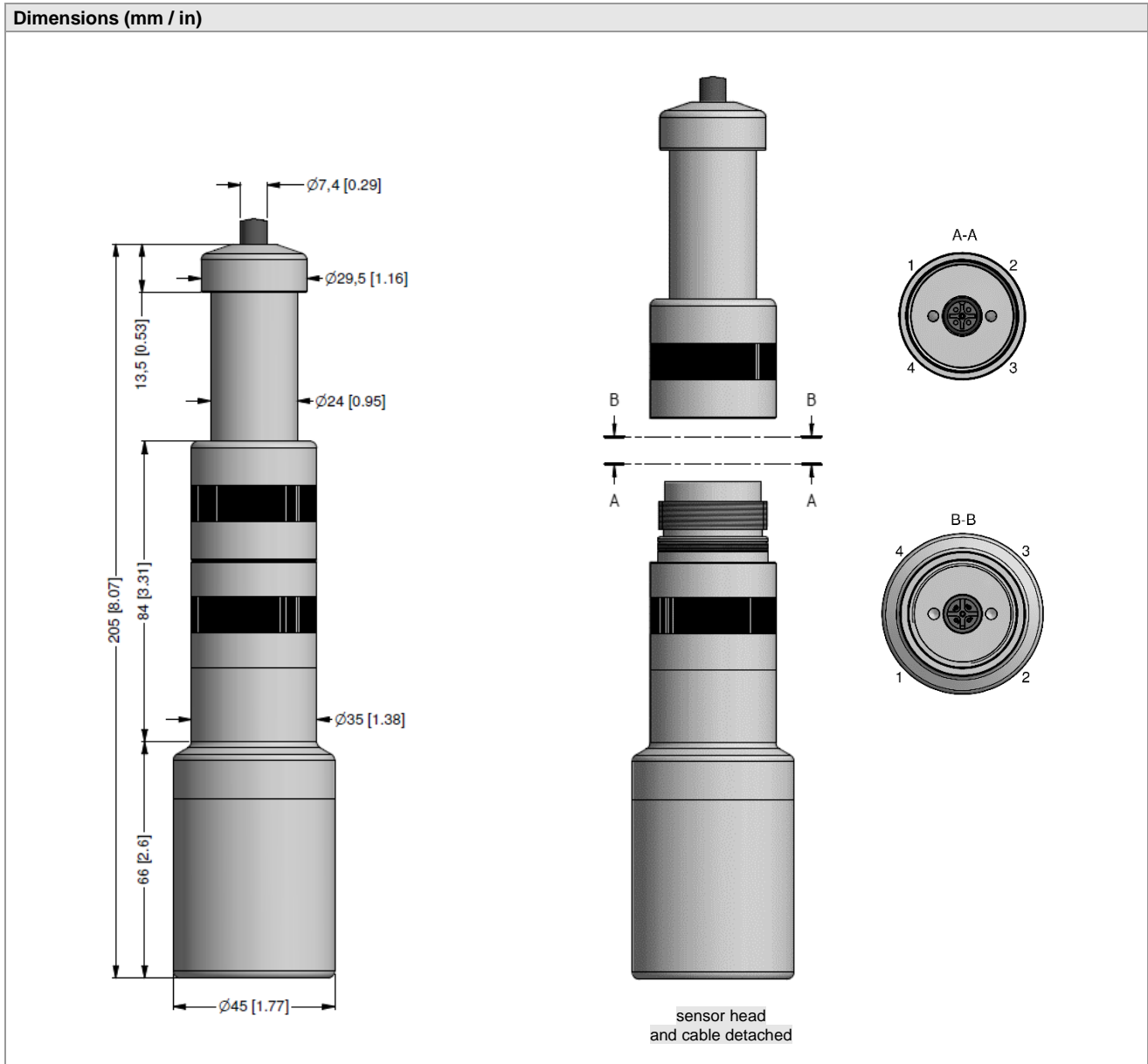
Wiring diagram / pin configuration			
	Electrical connection	M12x1 (4-pin) <sup>5</sup>	cable colours (IEC 60757)
	Supply +	3	WH (white)
	Supply -	4	BN (brown)
	Shield	2	GNYE (green-yellow)

<sup>5</sup> if detached

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Technical Data



## Accessories

### Terminal clamp



#### Technical data

Suitable for	all probes with cable $\varnothing$ 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		
<b>Ordering type</b>	<b>Ordering code</b>	<b>Weight</b>	
Terminal clamp, steel, zinc plated	Z100528	approx. 160 g	
Terminal clamp, stainless steel 1.4301 (304)	Z100527		

