

# LMP 808

## Detachable Plastic Probe

Stainless Steel Sensor

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



### Nominal pressure

from 0 ... 1 mH<sub>2</sub>O up to 0 ... 100 mH<sub>2</sub>O

### Output signals

2-wire: 4 ... 20 mA

3-wire: 0 ... 20 mA / 0 ... 10 V

others on request

### Special characteristics

- ▶ diameter 35 mm
- ▶ cable assembly and probe head detachable
- ▶ excellent linearity
- ▶ small thermal effect

### Optional versions

- ▶ SIL 2 (Safety Integrity Level) according to IEC 61508 / 61511
- ▶ mounting accessories e.g. mounting flange and terminal clamp of stainless steel
- ▶ different kinds of cables and elastomers
- ▶ customer specific versions e. g. special pressure ranges

The detachable plastic probe is designed for level measurement of water, waste water as well as fuels and oils. Basic element is a piezoresistive stainless steel 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

#### Water / filtrated sewage

ground water level measurement



storm water systems

drinking water system

water treatment plants

#### Fuel / Oil

fuel storage



tank farm

biogas plants

process water recycling



Input pressure range												
Nominal pressure gauge	[bar]	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10
Level	[mH <sub>2</sub> O]	1	1.6	2.5	4	6	10	16	25	40	60	100
Overpressure	[bar]	0.5	1	1	2	5	5	10	10	20	40	40
Burst pressure ≥	[bar]	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50	50

Output signal / Supply	
Standard	2-wire: 4 ... 20 mA / V <sub>S</sub> = 8 ... 32 V <sub>DC</sub> SIL-version: V <sub>S</sub> = 14 ... 28 V <sub>DC</sub>
Options 3-wire	3-wire: 0 ... 20 mA / V <sub>S</sub> = 14 ... 30 V <sub>DC</sub> 0 ... 10 V / V <sub>S</sub> = 14 ... 30 V <sub>DC</sub>

Performance	
Accuracy	standard: nominal pressure < 0.4 bar: ≤ ± 0.5 % FSO nominal pressure ≥ 0.4 bar: ≤ ± 0.35 % FSO option 1: nominal pressure ≥ 0.4 bar: ≤ ± 0.25 % FSO
Permissible load	current 2-wire: R <sub>max</sub> = [(V <sub>S</sub> - V <sub>S</sub> min) / 0.02 A] Ω current 3-wire: R <sub>max</sub> = 500 Ω voltage 3-wire: R <sub>min</sub> = 10 kΩ
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ
Long term stability	≤ ± 0.1 % FSO / year
Response time	< 10 msec

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

Thermal effects (Offset and Span)		
Nominal pressure P <sub>N</sub>	[bar]	< 0.40      ≥ 0.40
Tolerance band	[% FSO]	≤ ± 1      ≤ ± 0.75
in compensated range	[°C]	0 ... 50

Permissible temperatures	
Permissible temperatures	Medium/ electronics/ environment/ storage: -20 ... 80 °C *

\*If the cable is intended for use in a smaller temperature range, the use of the probe is limited by this range.

Electrical protection <sup>2</sup>	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Lightning protection	2-wire: integrated      3-wire: without
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

Electrical connection		
Cable with sheath material <sup>3</sup>	PVC (-5 ... 70 °C) grey (-25 ... 70 °C in fixed condition)	Ø 7,4 mm
	PUR (-25 ... 80 °C) black	Ø 7,4 mm
	FEP <sup>4</sup> (-25 ... 75 °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 air 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
Diaphragm	stainless steel 1.4435 (316L)
Cable sheath	PVC, PUR, FEP, others on request
Protection cap	POM-C

Miscellaneous	
Option SIL <sup>5</sup> 2 application	according to IEC 61508 / IEC 61511
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	signal output current: max. 25 mA signal output voltage: max. 7 mA
Weight	approx. 400 g (without cable)
Ingress protection	IP 68
CE-conformity	EMC Directive: 2014/30/EU

<sup>5</sup> only for 4...20mA / 2-wire

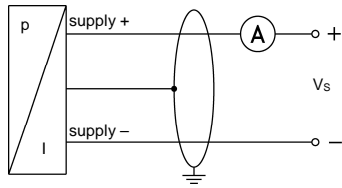
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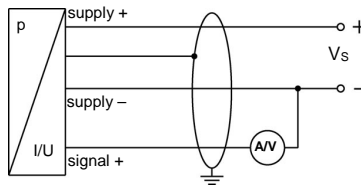
Technical Data

## Wiring diagrams

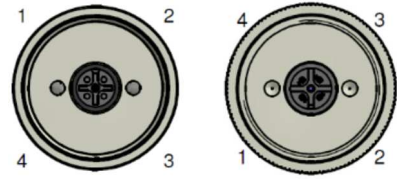
2-wire-system (current)



3-wire-system (current / voltage)



M12x1 (4-pin)



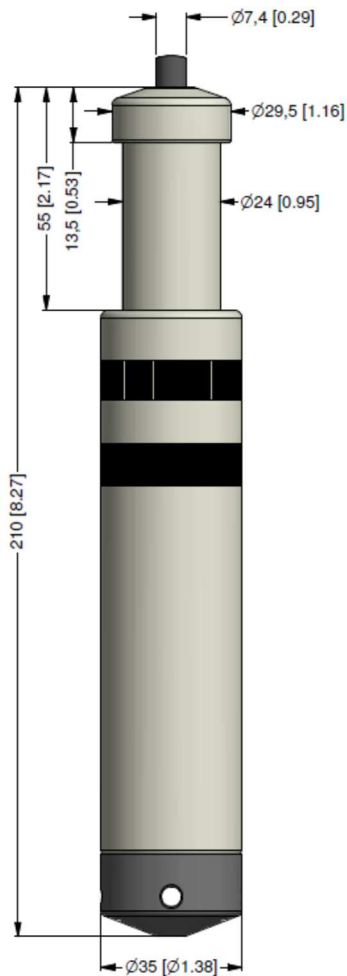
## Pin configuration

Electrical connection	Binder serie 723 <sup>6</sup> (4-pin)	cable colours (DIN 47100)
Supply +	3	wh (white)
Supply -	4	bn (brown)
Signal + (only 3-wire)	1	gn (green)
Shield	2	gn/ye (green / yellow)

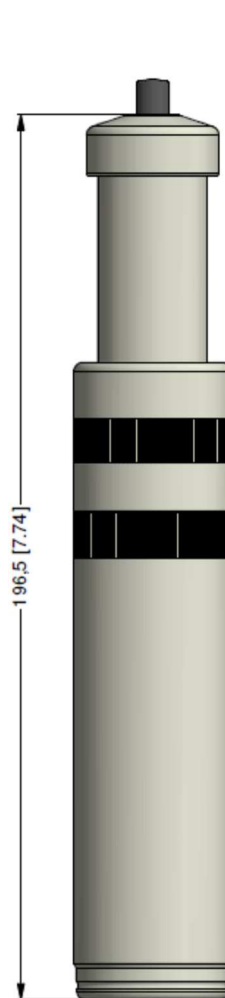
<sup>6</sup> in detached version

## Dimensions (in mm)

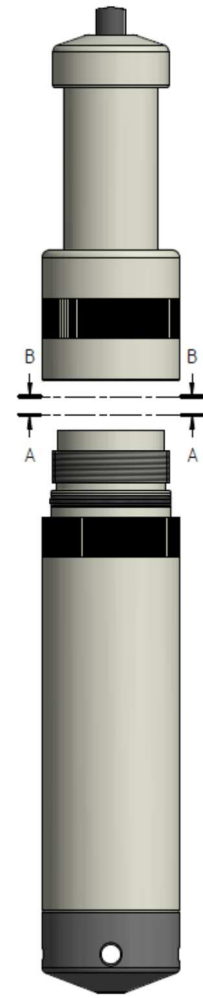
standard



option



protection cap removable

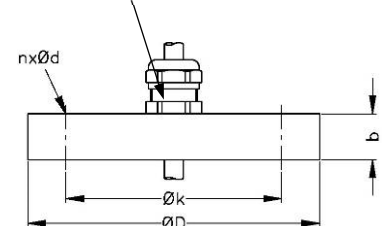
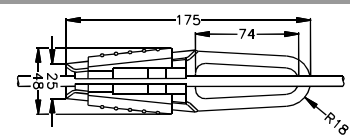



probe head detached and cable assembly

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Accessories

Mounting flange with cable gland		
<b>Technical data</b>		cable gland M16x1.5 with seal insert (for cable- $\varnothing$ 4 ... 11 mm) 
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	
<b>Version</b>	<b>Size (in mm)</b>	<b>Weight</b>
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
<b>Ordering type</b>		<b>Ordering code</b>
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
<b>Cable clamp</b>		
<b>Technical Data</b>		
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	
<b>Ordering type</b>		<b>Ordering code</b>
Terminal clamp, of steel, zinc plated		1003440
Terminal clamp, of stainless steel 1.4301 (304)		1000278
<b>Display program</b>		
<p><b>CIT 200</b> Process display with LED display</p> <p><b>CIT 250</b> Process display with LED display and contacts</p> <p><b>CIT 300</b> Process display with LED display, contacts and analogue output</p> <p><b>CIT 350</b> Process display with LED display, bargraph, contacts and analogue output</p> <p><b>CIT 400</b> Process display with LED display, contacts, analogue output and Ex-approval</p> <p><b>CIT 600</b> Multichannel process display with graphics-capable LC display</p> <p><b>CIT 650</b> Multichannel process display with graphics-capable LC display and datalogger</p> <p><b>CIT 700</b> Multichannel process display with graphics-capable TFT monitor, touchscreen and contacts</p> <p><b>PA 440</b> Field display with 4-digit LC display</p>		
<p>For further information please contact our sales department or visit our homepage: <a href="http://www.bdsensors.com">http://www.bdsensors.com</a></p>		

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

## Ordering code LMP 808

3.4.2020

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Pressure											
in bar	4	1	0								
in m H <sub>2</sub> O	4	1	1								
Input	[mH <sub>2</sub> O]	[bar]									
	0 ... 1	0 ... 0,1	1	0	0	0					
	0 ... 1,6	0 ... 0,16	1	6	0	0					
	0 ... 2,5	0 ... 0,25	2	5	0	0					
	0 ... 4	0 ... 0,4	4	0	0	0					
	0 ... 6	0 ... 0,6	6	0	0	0					
	0 ... 10	0 ... 1	1	0	0	1					
	0 ... 16	0 ... 1,6	1	6	0	1					
	0 ... 25	0 ... 2,5	2	5	0	1					
	0 ... 40	0 ... 4	4	0	0	1					
	0 ... 60	0 ... 6	6	0	0	1					
	0 ... 100	0 ... 10	1	0	0	2					
Customer			9	9	9	9					
Housing material											
PP-HT								R			
Diaphragm material											
Stainless steel 1.4435 (316 L)										1	
Output											
4 ... 20 mA / 2-wire											1
0 ... 20 mA / 3-wire											2
0 ... 10 V / 3-wire <sup>1</sup>											3
0 ... 5 V / 3-wire <sup>1</sup>											4
4 ... 20 mA / 3-wire											7
SIL2, 4 ... 20 mA / 2-wire											1S
Customer											9
Seals											
Viton (FKM)											1
EPDM											3
Customer											9
Electrical connection											
Without cable part											0
PVC - cable (grey, Ø 7,4 mm, price for 1 m)											1
PUR - cable (black, Ø 7,4 mm, price for 1 m)											2
FEP - cable with PTFE sheath (black, Ø 7,4 mm, price for 1 m)											3
Customer											9
Accuracy											
0,5 % (P <sub>N</sub> ≤ 0,4 bar)											5
0,35 % (P <sub>N</sub> > 0,4 bar)											3
0,25 % (P <sub>N</sub> > 0,4 bar)											2
0,5 % including Calibration Certificate (P <sub>N</sub> ≤ 0,4 bar)											T
0,35 % including Calibration Certificate (P <sub>N</sub> > 0,4 bar)											S
Measured values table for accuracy 0,35 %											M
Customer											9
Cable length											
in m											9 9 9
Special version											
Standard											0 0 0
Prepared for mounting with protecting pipe Ø 20 mm											1 0 6
Customer											9 9 9



## Accessories for submersible transmitter

Cabel part + price for cabel in m	5000695
Terminal clamp - zinc plated	1003440
Terminal clamp - stainless steel 1.4301	1000278
Mounting screw PG16 - plastic	5002200

0,...without additional charge On request...in accordance with the producer  
1 - maximum length of PVC cable – 25 m, PUR, FEP, TPE – 40 m  
Surcharges for calibration are not subject to any discounts. Subject to change.  
This document contains the specification for ordering the product;  
detailed technical parameters of the product and its possible variants are given in the data sheet.  
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