

# LMP 808

## Detachable Plastic Probe

Stainless Steel Sensor

accuracy according to IEC 60770:  
standard: 0.35 % span  
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
max. ambient pressure (housing)		20 bar										
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 % span nominal pressure ≥ 0.4 bar: ≤ ± 0.35 % span option 1: nominal pressure ≥ 0.4 bar: ≤ ± 0.25 % span										
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 % span / 10 V load: 0.05 % span / kΩ										
Long term stability		≤ ± 0.1 % span / 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	[% span]	≤ ± 1						≤ ± 0.75				
in compensated range	[°C]	0 ... 50										
Permissible temperatures												
Permissible temperatures		Medium/ electronics/ environment/ storage: -20 ... 80 °C *										
<i>*If the cable is intended for use in a smaller temperature range, the use of the probe is limited by this range.</i>												
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	(with drinking water certificate)	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												

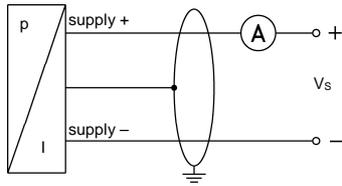
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Detachable Plastic Probe

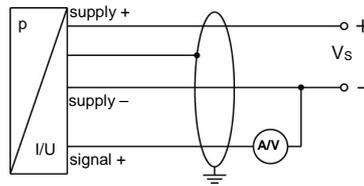
Technical Data

## Wiring diagrams

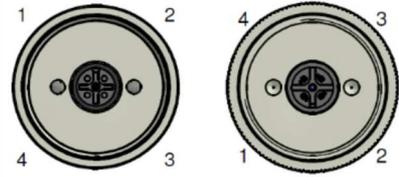
2-wire-system (current)



3-wire-system (current / voltage)



M12x1 (4-pin)



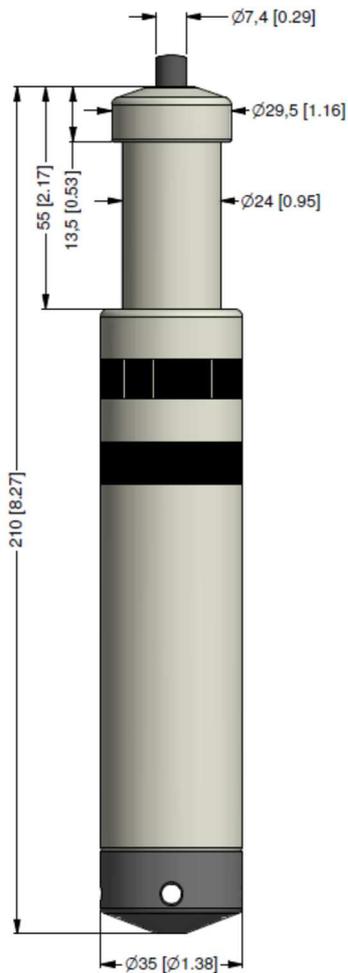
## Pin configuration

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)

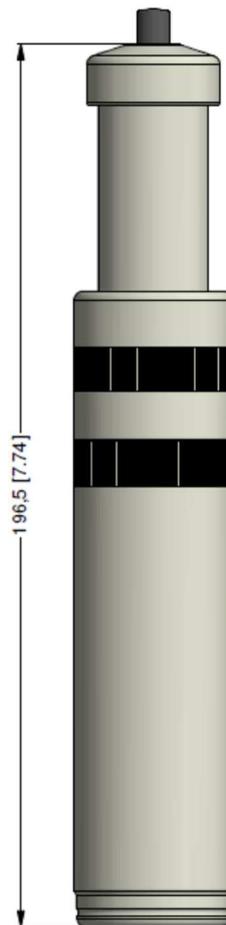
<sup>6</sup> in detached version

## Dimensions (in mm)

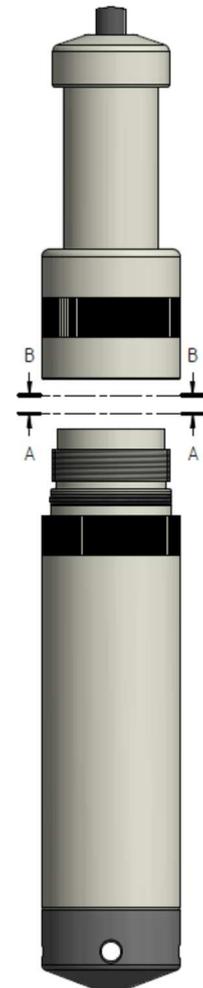
standard



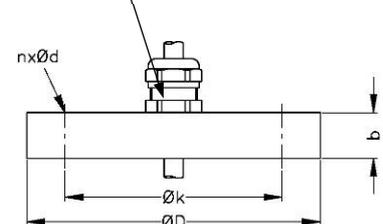
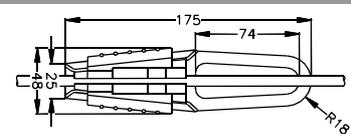
option



protection cap removable



probe head detached and cable assembly

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>		

## Ordering code LMP 808

1.3.2021

LMP 808

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



BD SENSORS s.r.o.  
Hradištská 817  
CZ – 687 08 Buchlovice

Tel.: +420 572 411 011  
Fax: +420 572 411 497

www.bdsensors.cz  
info@bdsensors.cz



The company BD SENSORS s.r.o. is certified by TÜV SÜD Czech according to the standard ISO 9001.

## 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

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.

BD SENSORS reserves the right to change sensor specifications without further notice.

1 cable with integrated ventilation tube for atmospheric pressure reference

2 pipe is not part of the supply

3 maximum length of PVC cable – 25 m, PUR, FEP, TPE – 40 m



BD SENSORS s.r.o.  
Hradištská 817  
CZ – 687 08 Buchlovice

Tel.: +420 572 411 011  
Fax: +420 572 411 497

[www.bdsensors.cz](http://www.bdsensors.cz)  
[info@bdsensors.cz](mailto:info@bdsensors.cz)

The company BD SENSORS s.r.o. is certified by TÜV SÜD Czech according to the standard ISO 9001.

