LMP 808

Separable Plastic Probe

Stainless Steel Sensor

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

Nominal pressure

from 0 ... 1 mH_2O up to 0 ... 100 mH_2O

Output signals

2-wire: 4 ... 20 mA
3-wire: 0 ... 20 mA / 0 ... 10 V
others on request

Special characteristics

- diameter 35 mm
- cable and sensor section separable
- excellent linearity
- small thermal effect

Optional versions

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

The separable 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 assembl 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

BD SENSORS GmbH
BD-Sensors-Straße 1
D - 95199 Thierstein

Tel: +49 (0) 92 35 / 98 11- 0
Fax: +49 (0) 92 35 / 98 11- 11

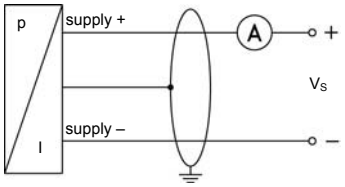
www.bdsensors.com
info@bdsensors.de

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_2O]	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

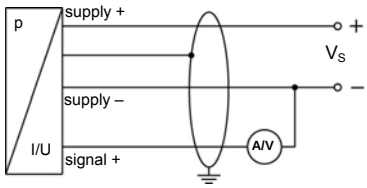
Output signal / Supply		
Standard	2-wire: 4 ... 20 mA / V_S = 8 ... 32 V_{DC}	SIL-version: V_S = 14 … 28 V_{DC}
Options 3-wire	3-wire: 0 ... 20 mA / V_S = 14 ... 30 V_{DC} 0 ... 10 V / V_S = 14 ... 30 V_{DC}	
Performance		
Accuracy	standard: nominal pressure < 0.4 bar: ≤ ± 0.5 % FSO nominal pressure ≥ 0.4 bar: ≤ ± 0.35 % FSO option 1: nominal pressure ≥ 0.4 bar: ≤ ± 0.25 % FSO	
Permissible load	current 2-wire: $R_{max} = [(V_S - V_S\ min) / 0.02\ A]\ \Omega$ current 3-wire: R_{max} = 500 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 at reference conditions	
Response time	< 10 msec	
[1] *accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)*		
Thermal effects (Offset and Span)		
Nominal pressure P_N [bar]	< 0.40	≥ 0.40
Tolerance band [% FSO]	≤ ± 1	≤ ± 0.75
in compensated range [°C]	0 ... 50	
Permissible temperatures		
Permissible temperatures	medium: 0 ... 50 °C storage: -10 ... 50 °C	
Electrical protection [2]		
Short-circuit protection	permanent	
Reverse polarity protection	no damage, but also no function	
Electromagnetic compatibility	emission and immunity according to EN 61326	
[2] *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 [3]	PVC (0 … 50 °C) grey PUR (0 … 50 °C) black FEP[4] (0 … 50 °C) black	
Cable protection	standard: without cable protection optional: prepared for mounting of a PVC pipe with diameter 25 mm	
[3] *cable with integrated air tube for atmospheric pressure reference* [4] *do not use freely suspended probes with an FEP cable if effects due to highly charging processes are expected*		
Materials (media wetted)		
Housing	PVC grey	
Seals	FKM EPDM	
Diaphragm	stainless steel 1.4435 (316L)	
Protection cap	POM	
Miscellaneous		
Option SIL[5] 2 application	according to IEC 61508 / IEC 61511	
Connecting cables (by factory)	cable capacitance: signal line/shield also signal line/signal line: 160 pF/m cable inductance: signal line/shield also signal line/signal line: 1µH/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	
CE-conformity	EMC Directive: 2014/30/EU	
[5] *only for 4...20mA / 2-wire*		

Wiring diagrams

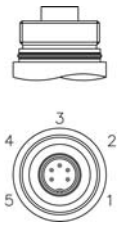
2-wire-system (current)



3-wire-system (current / voltage)



connector



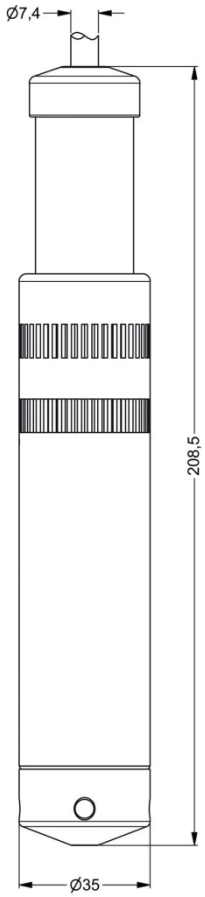
Pin configuration

Electrical connection	Binder serie 723 [6] (5-pin)	cable colours (IEC 60757)
Supply +	3	wh (white)
Supply – (only 2-wire)	1	bn (brown)
Supply – (only 3-wire)	4	bn (brown)
Signal + (only 3-wire)	1	gn (green)
Shield	5	gnye (green-yellow)

[6] *in separated version*

Dimensions (in mm)

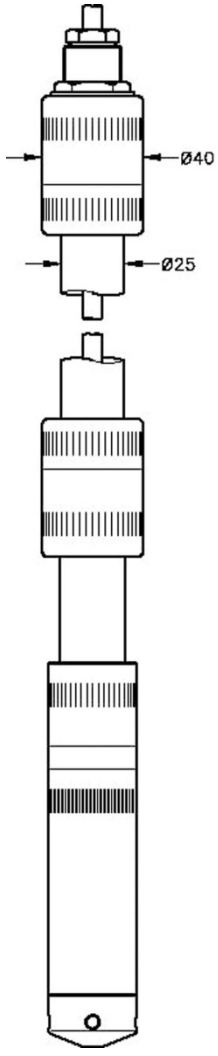
standard



standard version
without cable protection

separate version

option



cable protection with PVC pipe

Tel: +49 (0) 92 35 / 98 11- 0
Fax: +49 (0) 92 35 / 98 11- 11
www.bdsensors.com
info@bdsensors.de
BD|SENSORS pressure measurement

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Ordering code LMP 808

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Pressure

	Code	
in bar	410	
in mH_2O	411	

Input

$[mH_2O]$	[bar]	Code	
1.0	0.10	1000	
1.6	0.16	1600	
2.5	0.25	2500	
4.0	0.40	4000	
6.0	0.60	6000	
10	1.0	1001	
16	1.6	1601	
25	2.5	2501	
40	4.0	4001	
60	6.0	6001	
100	10	1002	
customer		9999	consult

Housing

	Code	
PVC	A	
customer	9	consult

Diaphragm

	Code	
Stainless steel 1.4435 (316L)	1	
customer	9	consult

Output

	Code	
4 … 20 mA / 2-wire	1	
0 … 20 mA / 3-wire	2	
0 … 10 V / 3-wire	3	
SIL2 4 … 20 mA / 2-wire	1S	
customer	9	consult

Seals

	Code	
FKM	1	
EPDM	3	
customer	9	consult

Electrical connection

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

Accuracy

		Code	
standard for $P_N \geq 0.4$ bar	0.35 %	3	
standard for $P_N < 0.4$ bar	0.5 %	5	
option 1 for $P_N \geq 0.4$ bar	0.25 %	2	
customer		9	consult

Cable length

	Code	
in m	999	

Special version

	Code	
standard	000	
prepared for mounting with PVC pipe [2]	106	
customer	999	consult

[1] cable with integrated air tube for atmospheric pressure reference
[2] PVC pipe is not part of the supply

01.06.2013