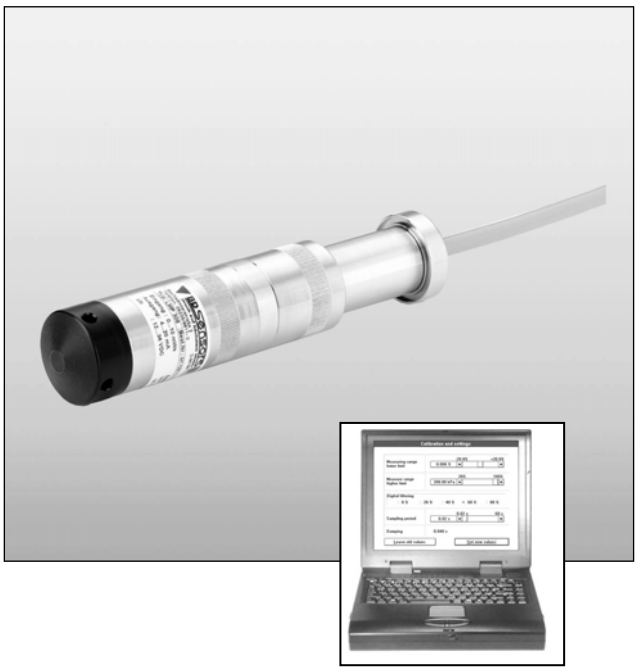
automatyka

BD SENSORS
pressure measurement



LMP 308

Stainless Steel Submersible Transmitter

- piezoresistive stainless steel sensor
- diameter: 35 mm
- transmitter head and cable assembly plugged
- nominal pressure ranges from 0...40 mbar up to 0...25 bar (0...0.4 mWC up to 0...250 mWC)

The submersible transmitter LMP 308 is suited for continuous level measurement of fluids compatible with stainless steel.

Housing material is 1.4571 (316Ti); the sensor diaphragm is made of 1.4435 (316L). Standard sealing material is FKM; other materials are available on request.

In order to facilitate stock-keeping and maintenance the transmitter head is plugged to the cable assembly with a connector. If needed the transmitter can be changed easily, without expensive electrical and mechanical installation work.

Preferred areas of use are:

- environmental engineering: water supply, sewage treatment
- depth or level measurement in wells and open waters
- ground water level measurement
- level monitoring in open tanks

Characteristics

- small thermal effect
- excellent linearity
- good long term stability
- **accuracy:** 0.175 / 0.125 / 0.05 % FSO BFSL (0.35 / 0.25 / 0.1 % FSO IEC 60770)
- **option Ex version zone 0: II 1 G EEx ia IIC T4 (TÜV 03 ATEX 2006 X)**
- option cable protection with corrugated pipe
- customer specific versions: - special pressure ranges

CE Ex

LMP 308
Stainless Steel Level Transmitter

TÜV CERT DIN EN ISO 9001

LMP 308

Stainless Steel Level Transmitter — Technical Data

Input pressure range

LMP 308

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	16	25
Level [mWC]	0.4	0.6	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250
Permissible overpressure [bar]	0.2	0.2	0.5	0.5	1	1	3	3	6	6	20	20	20	60	60

Output signal / Supply

Standard	2-wire: 4 ... 20 mA / V_S = 12 ... 36 V_{DC}	Ex-protection:	V_S = 14 ... 28 V_{DC}

Performance

Accuracy [1]	standard: nominal pressure > 0.4 bar: ≤ ± 0.35 % FSO (BFSL: ≤ ± 0.175 % FSO) nominal pressure ≤ 0.4 bar: ≤ ± 0.5 % FSO (BFSL: ≤ ± 0.25 % FSO) optional: nominal pressure > 0.4 bar: ≤ ± 0.25 % FSO (BFSL: ≤ ± 0.125 % FSO) nominal pressure ≥ 0.16 bar: ≤ ± 0.1 % FSO (BFSL: ≤ ± 0.05 % FSO)
Permissible load	$R_{max} = [(V_S - V_{S\,min}) / 0.02]\ \Omega$
Influence effects	supply: 0.05 % FSO / 10 V / load: 0.05 % FSO / kΩ
Long term stability	≤ ± 0.1 % FSO / year

Thermal errors (Offset and Span)

Nominal pressure P_N	≤ 0.1 bar	≤0.25 bar	≤ 0.4 bar	≤ 1 bar	> 1 bar
Tolerance band	≤ ± 2 % FSO	≤ ± 1.5 % FSO	≤ ± 1 % FSO	≤ ± 1 % FSO	≤ ± 0.75 % FSO
TC, average [% FSO / 10 K]	± 0.3	± 0.2	± 0.14	± 0.1	± 0.07
in compensated range	0 ... 50 °C			0 ... 70 °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
Option Ex protection DX13 - LMP 308	II 1 G EEx ia IIC T4 safety technical maximum values: V_i = 28 V, I_i = 93 mA, P_i = 660 mW

Permissible temperatures

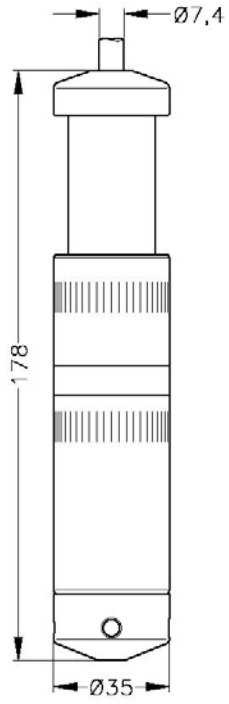
Medium	-20 ... 70 °C
Storage	-25 ... 70 °C

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

[2] additional external overvoltage protection unit in terminal box KI1 and KL2 with atmospheric pressure reference available on request (please ask for data sheet)

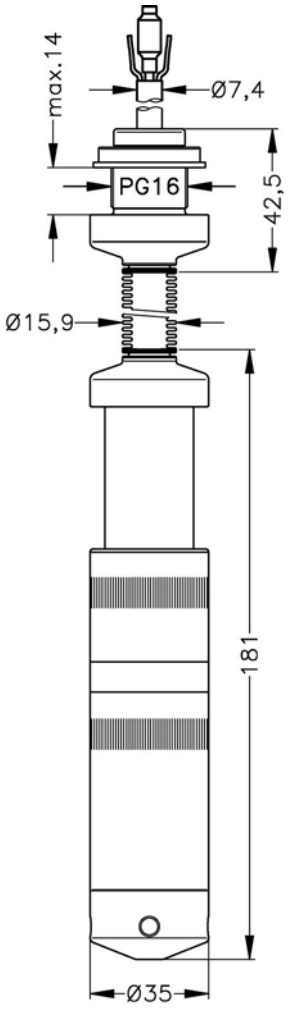
Dimensions

Standard



separability of transmitter head and cable assembly

Option



version with corrugated pipe

➪ Total length of devices with accuracy 0.1 % FSO IEC 60770 increases by 16 mm! (standard and Ex-protection)

Electrical connection	
Cable with sheath material [3]	PVC grey PUR black FEP black others on request

Materials	
Housing	stainless steel 1.4571 (316Ti)
Seals	FKM, EPDM; others on request
Diaphragm	stainless steel 1.4435 (316L)
Cable sheath	PVC / PUR / FEP / others on request

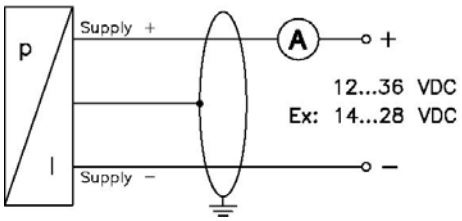
Miscellaneous	
Current consumption	signal output current: max. 25 mA
Ingress protection	IP 68
Weight	approx. 250 g (without cable)

Mounting accessories (not part of delivery)
Screw fitting made of stainless steel 1.4571 (316Ti)
Terminal clamp made of stainless steel 1.4301 (304) or steel, zinc plated

Pin configuration		
Electrical connection		cable colours (DIN 47100)
2-wire-system	Supply +	white
	Supply –	brown
	Ground	yellow / black

Wiring diagram

2-wire-system (current)



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

Ordering code LMP 308

LMP 308 □□□-□□□□-□-□-□-□-□-□-□-□□□-□□□

Pressure			
	in bar	440	
	in mWC	441	
Input	[mWC]	[bar]	
	0,40	0,04	0400
	0,60	0,06	0600
	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
	160	16	1602
	250	25	2502
	customer		XXXX
Pressure port			
	Stainless steal 1.4571 (316Ti)		1
	customer		X
Diaphragm			
	Stainless steel 1.4404 (316L)		1
	customer		X
Output			
	4 ... 20 mA / 2-wire		1
	Intrinsic safety for zone 0 / 4 ... 20 mA / 2-wire		E
	customer		X
Seals			
	FKM		1
	EPDM		3
	customer		X
Electrical Connection			
	PVC-cable [1]		1
	PUR-cable [1]		2
	FEP-cable [1]		3
	customer		X
Accuracy			
standard for $P_N > 0,4$ bar	0,35 %		3
standard for $P_N \leq 0,4$ bar	0,5 %		5
option for $P_N > 0,4$ bar	0,25 %		2
option for $P_N \geq 0,16$ bar	0,1 %		1
	customer		X
Cable length			
	in m		XXX
Version			
	standard		000
	prepared for mounting with stainless steel pipe [2]		106
	cable protection with stainless steel corrugated pipe		103
	customer		XXX

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

[2] stainless steel pipe is not part of the supply

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