

# LMP 308i

## Smart Stainless Steel Submersible Transmitter

- ▶ piezoresistive stainless steel sensor
- ▶ diameter: 35 mm
- ▶ transmitter head and cable assembly plugged
- ▶ nominal pressure ranges from 0 ... 170 mbar up to 0 ... 17 bar (0 ... 1.7 mWC up to 0 ... 170 mWC)

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

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.

The LMP 308i features high accuracy of 0.1 % FSO and a very small thermal error. Basis is a digital electronics with micro-processor and 16-bit A/D converter. Thus it is possible to compensate the sensor specific errors as non-linearity and thermal errors actively resulting in a level transmitter with excellent measuring properties at an unusual competitive price.

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

- ▶ output signal 4 ... 20 mA / 2-wire with **digital interface RS-232 for adjusting of offset, span, and damping**
- ▶ **accuracy** (at nominal range) **0.05 % FSO BFSL (0.1 % FSO IEC 60770)**
- ▶ **thermal error for offset and span in temperature range -20 ... 80 °C: 0.2 % FSO, average TC 0.02 % FSO / 10 K (at nominal range)**
- ▶ good long term stability
- ▶ **option Ex version zone 0: II 1 G EEx ia IIC T4 (TÜV 03 ATEX 2006 X)**
- ▶ option cable protection with corrugated pipe

Characteristics

**LMP 308i**  
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Technical Data

Input pressure range				
Nominal pressure gauge [bar]	0.17	1	7	17
Level [mWC]	1.7	10	70	170
Permissible overpressure [bar]	1	3	20	60

Output signal / Supply	
Standard	2-wire: 4 ... 20 mA / $V_s = 12 \dots 36 V_{DC}$ Ex-protection: $V_s = 14 \dots 28 V_{DC}$ digital interface RS-232 for adjusting the following parameters (interface / software necessary <sup>1</sup> ): offset: 0 ... 80 % FSO      span: 1:10      damping: 0 ... 99.9 s

Performance	
Accuracy <sup>2</sup>	$\leq \pm 0.1\% \text{ FSO}$ (BFSL: $\leq \pm 0.05\% \text{ FSO}$ )
Permissible load	$R_{max} = [(V_s - V_{s min}) / 0.02] \Omega$
Influence effects	supply: 0.05 % FSO / 10 V      /      load: 0.05 % FSO / k $\Omega$
Long term stability	$\leq \pm 0.1\% \text{ FSO} / \text{year}$

Thermal errors (Offset and Span)	
Tolerance band	$\leq \pm (0.2 \times \text{nominal range} / \text{adjusted range}) \% \text{ FSO}$
TC, average [% FSO / 10 K]	$\pm (0.02 \times \text{nominal range} / \text{adjusted range})$
in compensated range	-20 ... 80 °C

Electrical protection <sup>3</sup>	
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 308i	II 1 G EEx ia IIC T4 safety technical maximum values: $V_i = 28 \text{ V}$ , $I_i = 93 \text{ mA}$ , $P_i = 660 \text{ mW}$

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

<sup>1</sup> software, interface, and cable for DMP 331i, DMP 333i and LMP 331i with option RS-232 have to be ordered separately (ordering no.: I-232; software appropriate for Windows<sup>®</sup> 95, 98, 2000, NT Version 4.0 or higher, and XP)

<sup>2</sup> accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability) relating to nominal range available on request: calibration of individual pressure range higher than 100 mbar with accuracy 0.1 %

Windows<sup>®</sup> is a registered trademark of Microsoft Corporation

<sup>3</sup> additional external overvoltage protection unit in terminal box KI1 and KL2 with atmospheric pressure reference available on request (please ask for data sheet)

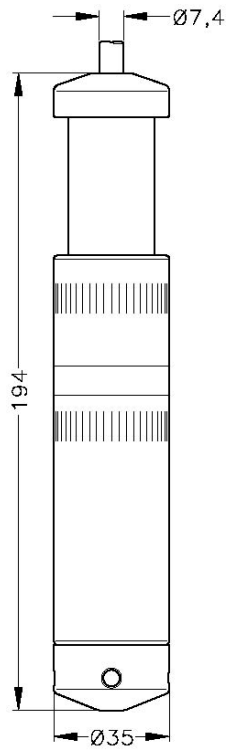
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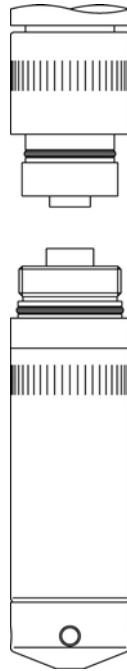
Technical Data

## Dimensions

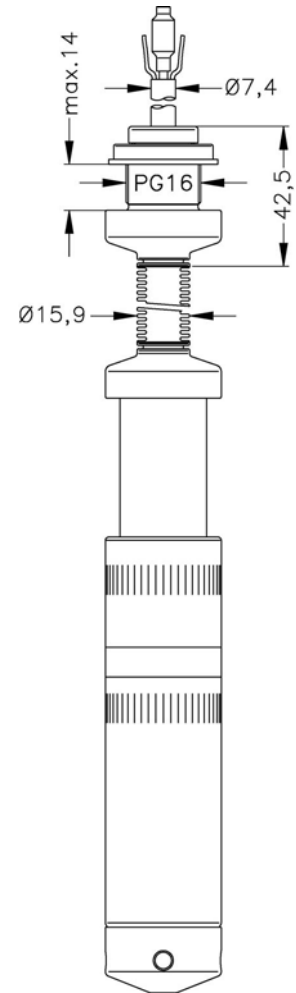
### Standard



separability of transmitter  
head and cable assembly



### Option



version with  
corrugated pipe

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Technical Data

## Electrical connection

Cable with sheath material <sup>4</sup>	PVC grey PUR black FEP black others on request
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## 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)

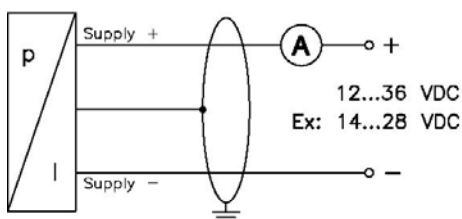
Screw fitting made of stainless steel 1.4571 (316Ti)
Terminal clamp made of stainless steel 1.4301 (304) or steel, zinc plated

## Pin configuration

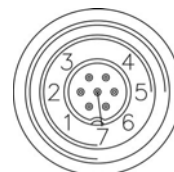
Electrical connection		Binder Series 723 (7-pin)	Kabelfarben (DIN 47100)
2-wire-system	Supply +	3	white
	Supply -	1	brown
	Ground	2	yellow / black
RS-232	RxD	4	-
	TxD	5	-
	CTS	6	-
	GND	7	-

## Wiring diagram

2-wire-system (current)



terminal plug



<sup>4</sup> cable with integrated air tube for atmospheric pressure reference

