

LMP 307

Stainless Steel Submersible Transmitter

- ▶ piezoresistive stainless steel sensor
- ▶ diameter: 27 mm
- ▶ level measurement in water and clean to slightly contaminated media
- ▶ nominal pressure ranges from 0...40 mbar up to 0...25 bar (0...40 cmWC up to 0...250 mWC)

The submersible level transmitter LMP 307 has been designed for continuous fluid level measurement in water and clean to slightly contaminated media.

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.

The high quality stainless steel sensor allows the LMP 307 excellent measuring performance.

With the LMP 307 a submersible level transmitter for a wide range of applications is available to the market.

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

- ▶ small thermal effect
- ▶ excellent linearity
- ▶ excellent 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

Characteristics



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Technical Data

Input pressure range																
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 / $V_s = 12 \dots 36 V_{dc}$	Ex-version: $V_s = 14 \dots 28 V_{dc}$

Performance	
Accuracy ¹	standard: nominal pressure > 0.4 bar: $\leq \pm 0.35 \% \text{ FSO}$ (BFSL: $\leq \pm 0.175 \% \text{ FSO}$) nominal pressure $\leq 0.4 \text{ bar}$: $\leq \pm 0.5 \% \text{ FSO}$ (BFSL: $\leq \pm 0.25 \% \text{ FSO}$) optional: nominal pressure > 0.4 bar: $\leq \pm 0.25 \% \text{ FSO}$ (BFSL: $\leq \pm 0.125 \% \text{ FSO}$) nominal pressure $\geq 0,16 \text{ bar}$: $\leq \pm 0.1 \% \text{ FSO}$ (BFSL: $\leq \pm 0.05 \% \text{ FSO}$)
Permissible load	$R_{max} = [(V_s - V_{smin}) / 0.02] \Omega$
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / k Ω
Long term stability	$\leq \pm 0.1 \% \text{ FSO} / \text{year}$

Thermal errors (Offset and Span)					
Nominal pressure P_N	$\leq 0.1 \text{ bar}$	$\leq 0.25 \text{ bar}$	$\leq 0.4 \text{ bar}$	$\leq 1 \text{ bar}$	$> 1 \text{ bar}$
Tolerance band	$\leq \pm 2 \% \text{ FSO}$	$\leq \pm 1.5 \% \text{ FSO}$	$\leq \pm 1 \% \text{ FSO}$	$\leq \pm 1 \% \text{ FSO}$	$\leq \pm 0.75 \% \text{ FSO}$
TC, average [10 % 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	
Reverse polarity protection	no damage, but also no function
Electromagnetic compatibility	emission and immunity according to EN 61326
Option Ex-protection DX13-LMP 307	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	-10 ... 70 °C
Storage	-25 ... 70 °C

Electrical connection	
Cable with sheath material ³	PVC grey PUR black FEP black

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

² additional external overvoltage protection unit in terminal box KL1 or KL2 with atmospheric pressure reference available on request (please ask for data sheet)

³ cable with integrated air tube for atmospheric pressure reference

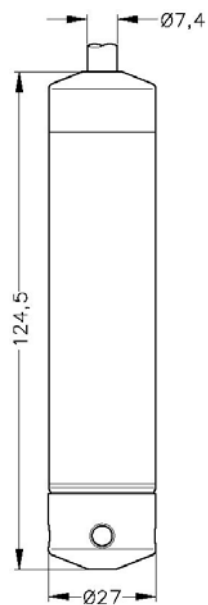
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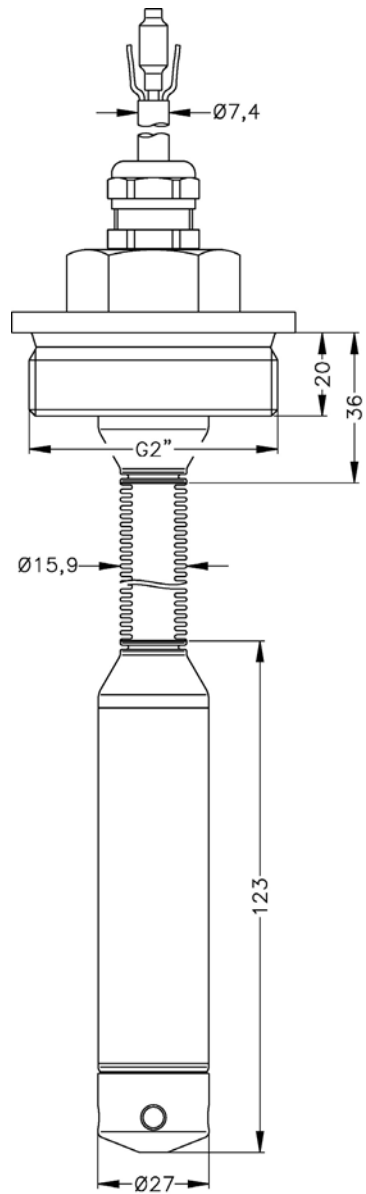
Technical Data

Dimensions

Standard



Option



cable protection
with corrugated pipe

⇒ Total length of devices with accuracy 0.1 % FSO IEC 60770 increases by 35 mm! (standard and Ex-protection)

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Materials

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

Miscellaneous

Current consumption	max. 25 mA
Ingress protection	IP 68
Weight	approx. 200 g (without cable)

Mounting accessories (not included in delivery)

Screw fitting, stainless steel 1.4571 (316Ti)

Mounting flange for transmitter fixing, stainless steel 1.4571 (316Ti):

DN25 / PN40 (Ø115, 18 thick, 4 drill holes Ø14 at Ø85)

DN50 / PN16 (Ø165, 18 thick, 4 drill holes Ø18 at Ø125)

DN80 / PN16 (Ø200, 20 thick, 8 drill holes Ø18 at Ø160)

Terminal clamp, 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)

