



LMP 307T

Level and Temperature Transmitter

Stainless Steel Sensor

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

Nominal pressure / nominal temperature

from 0 ... 1 mH₂O up to 0 ... 250 mH₂O

from 0 ... 30 °C up to 0 ... 70 °C

others on request

Output signals

2-wire: 4 ... 20 mA (pressure)

2-wire: 4 ... 20 mA (temperature)

Special characteristics

- ▶ diameter 26.5 mm
- ▶ separate output signals for pressure and temperature ranges
- ▶ easy handling
- ▶ low maintenance and wiring costs

Optional versions

- ▶ drinking water certificate according to DVGW and KTW
- ▶ different kinds of cables and elastomers
- ▶ customer specific versions

BD|SENSORS has developed the stainless steel submersible probe LMP 307T for continuous level and temperature measurement in water and in clean or lightly polluted fluids. The advantage: simultaneous recording of level and temperature with separate independent signal amplification. The maintenance and wiring costs are considerably reduced.

In addition to classical signal processing of the level, an additional signal circuit independent of the level which converts the temperature signal into a 4 ... 20 mA analogue signal in 2-wire technology is provided.

Typical application areas are, for example, drinking water purification, monitoring of rain spillway basins or river courses and level measurement in containers or tank batteries.

Preferred areas of use are

Water / filtrated sewage



drinking water system
rain spillway basins
water recycling



Fuel and oil
tank farm



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	16	25	
Level	[mH ₂ O]	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250	
Overpressure	[bar]	0.5	1	1	2	5	5	10	10	20	40	40	80	80	
Burst pressure ≥	[bar]	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50	50	120	120	
Max. ambient pressure (housing): 40 bar															
Input temperature range															
Temperature measuring range standard:		0 ... 30 °C				0 ... 50 °C			0 ... 70 °C			others on request ¹			
¹ min. temperature range: 30°C; max. temperature range: 80°C; min. temperature: -10°C; max. temperature: 70 °C															
Output signal / Supply															
2-wire (pressure) ²		4 ... 20 mA / V _S = 10 ... 30 V _{DC}													
2-wire (temperature) ²		4 ... 20 mA / V _S = 10 ... 30 V _{DC}													
² the circuits are galvanically isolated from each other															
Performance															
Accuracy (pressure) ³		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							
Accuracy (temperature) ⁴		≤ ± 1 °C													
Permissible load		R _{max} = [(V _S – V _{S min}) / 0.02 A] Ω													
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 (for output signal 2-wire (pressure))													
³ accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)															
⁴ Pt100 class B; compensation time up to 1 h depending on constant temperature and environmental respectively mass conditions															
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 ... 70													
Permissible temperatures															
Permissible temperatures		medium: -10 ... 70 °C							storage: -25 ... 70 °C						
Electrical protection ⁵															
Short-circuit protection		permanent													
Reverse polarity protection		no damage, but also no function													
Electromagnetic compatibility		emission and immunity according to EN 61326													
⁵ 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 ⁶		PVC	(-5 ... 70 °C)	grey	Ø 7.4 mm										
		PUR	(-10 ... 70 °C)	black	Ø 7.4 mm										
		FEP ⁷	(-10 ... 70 °C)	black	Ø 7.4 mm										
		TPE-U	(-10 ... 70 °C)	blue	Ø 7.4 mm (without/with drinking water certificate)										
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									
⁶ shielded cable with integrated ventilation tube for atmospheric pressure reference															
⁷ do not use freely suspended probes with an FEP cable if effects due to highly charging processes are expected															
Materials (media wetted)															
Housing		stainless steel 1.4404 (316L)													
Seals		FKM EPDM (without/with drinking water certificate)										others on request			
Diaphragm		stainless steel 1.4435 (316L)													
Protection cap		POM-C													
Cable sheath		PVC, PUR, FEP, TPE-U, others on request													
Miscellaneous															
Drinking water certificate ⁸		according to DVGW W 270 and UBA KTW (with order the indication "with drinking water certificate" is necessary)													
Current consumption		max. 25 mA													
Weight		approx. 200 g (without cable)													
Ingress protection		IP 68													
CE-conformity		EMC Directive: 2014/30/EU													
⁸ only possible with EPDM seal in combination with TPE-U cable															

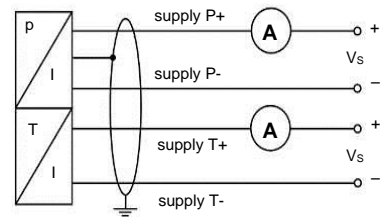
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Technical Data

Wiring diagram

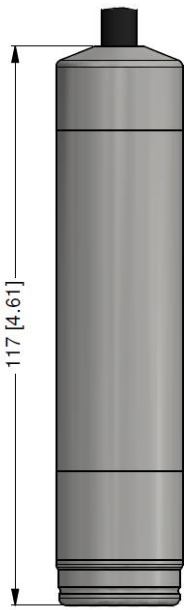
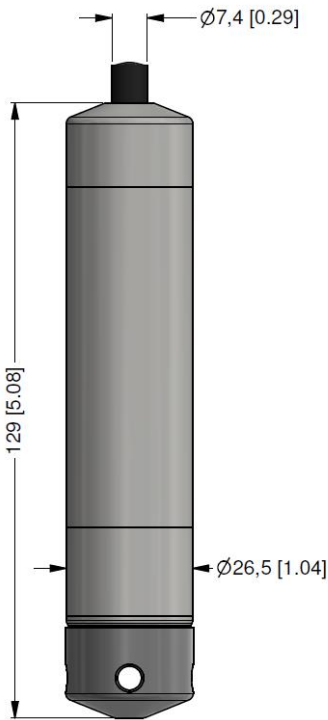
2x2-wire-system (current)



Pin configuration

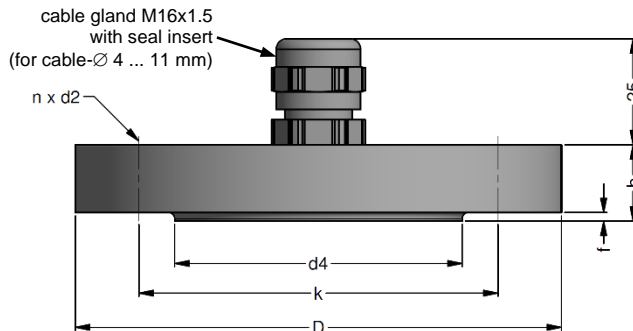
Electrical connection	cable colours (IEC 60757)
Supply P+	WH (white)
Supply P-	BN (brown)
Supply T+	GY (grey)
Supply T-	PK (pink)
Shield	GNYE (green-yellow)

Dimensions (mm / in)



protection cap
removable

Mounting flange with cable gland



dimensions in mm			
size	DN25 / PN40	DN50 / PN40	DN80 / PN16
b	18	20	20
D	115	165	200
d2	14	18	18
d4	68	102	138
f	2	3	3
k	85	125	160
n	4	4	8

Technical data

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		

Ordering type	Ordering code	Weight
DN25 / PN40 with cable gland brass, nickel plated	ZMF2540	1.4 kg
DN50 / PN40 with cable gland brass, nickel plated	ZMF5040	3.2 kg
DN80 / PN16 with cable gland brass, nickel plated	ZMF8016	4.8 kg

Terminal clamp



Technical data

Suitable for	all probes with cable Ø 5.5 ... 10.5 mm		
Material of housing	standard: steel, zinc plated optionally: stainless steel 1.4301 (304)		
Material of clamping jaws and positioning clips	PA (fibre-glass reinforced)		
Dimensions (mm)	174 x 45 x 32		
Hook diameter	20 mm		

Ordering type	Ordering code	Weight
Terminal clamp, steel, zinc plated	Z100528	approx. 160 g
Terminal clamp, stainless steel 1.4301 (304)	Z100527	

Display program

CIT 200	Process display with LED display
CIT 250	Process display with LED display and contacts
CIT 300	Process display with LED display, contacts and analogue output
CIT 350	Process display with LED display, bargraph, contacts and analogue output
CIT 400	Process display with LED display, contacts, analogue output and Ex-approval
CIT 600	Multichannel process display with graphics-capable LC display
CIT 650	Multichannel process display with graphics-capable LC display and datalogger
CIT 700 / CIT 750	Multichannel process display with graphics-capable TFT monitor, touchscreen and contacts
PA 440	Field display with 4-digit LC display

For further information please contact our sales department or visit our homepage: <http://www.bdsensors.de>



Ordering code LMP 307T

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[illegible]

¹ drinking water certification only possible with EPDM seal (code 3T) in combination with TPE-U cable (code F)

² shielded cable with integrated ventilation tube for atmospheric pressure reference

Standard lengths 3 / 5 / 10 / 15 / 20 m are available from stock, special lengths are manufactured order-related.