

LMP 307T

Level and Temperature Transmitter

Stainless Steel Sensor

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



Nominal pressure

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

Output signals

2-wire: 4 ... 20 mA (pressure)
2-wire: 4 ... 20 mA (temperature)
others on request

Special characteristics

- ▶ diameter 27 mm
- ▶ separate output signals for pressure and temperature ranges
- ▶ integrated Pt 100 thermal element
- ▶ small thermal effect
- ▶ high accuracy
- ▶ easy handling

Optional versions

- ▶ different kinds of cables
- ▶ different kinds of seal materials
- ▶ 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 to lightly-soiled liquids.

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 rainwater overflow basins and river courses, in addition to level measurement in containers or tank batteries.

Preferred areas of use are



Water / filtrated sewage
e.g. drinking water system

water recycling



Fuel / Oil
e.g. 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 \geq	[bar]	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50	50	120	120

Input temperature range				
Temperature measuring range	standard	0 ... 30 °C	0 ... 50 °C	-10 ... 50 °C
	others on request ¹			
¹ max. temperature range + 70 °C				

Output signal / Supply	
2-wire (pressure) ²	4 ... 20 mA / V _S = 10 ... 30 V _{DC}
2-Leiter (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:	$\leq \pm 0.5$ % FSO
		nominal pressure ≥ 0.4 bar:	$\leq \pm 0.35$ % FSO
	option 1:	nominal pressure ≥ 0.4 bar:	$\leq \pm 0.25$ % FSO
Accuracy (temperature)	$\leq \pm 1$ °C		
Permissible load	$R_{\max} = [(V_S - V_S \text{ min}) / 0.02 \text{ A}] \Omega$		
Influence effects	supply:	0.05 % FSO / 10 V	
	load:	0.05 % FSO / k Ω	
Long term stability	$\leq \pm 0.1$ % FSO / year		
Response time	< 10 ms (for output signal 2-wire (pressure))		
³ 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]	$\leq \pm 1$	$\leq \pm 0.75$
in compensated range	[°C]	0 ... 70	

Permissible temperatures		
Permissible temperatures	medium:	-10 ... 70 °C
	storage:	-25 ... 70 °C

Electrical protection ⁴	
Short-circuit protection	permanent
Reverse polarity protection	no damage, but also no function
Electromagnetic compatibility	emission and immunity according to EN 61326
⁴ additional external overvoltage protection unit in terminal box KL 1 or KL 2 with atmospheric pressure reference available on request	

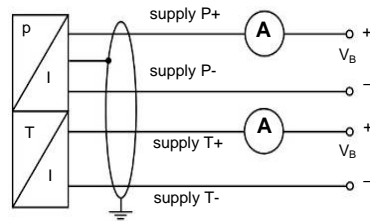
Electrical connection		
Cable with sheath material ⁵	PVC	(-5 ... 70 °C) grey
	PUR	(-10 ... 70 °C) black
	FEP	(-10 ... 70 °C) black
	others on request	
⁵ cable with integrated air tube for atmospheric pressure reference		

Materials (media wetted)	
Housing	stainless steel 1.4404 (316L)
Seals	FKM others on request
Diaphragm	stainless steel 1.4435 (316L)
Protection cap	POM
Cable sheath	PVC, PUR, FEP

Miscellaneous	
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: 1 μ H/m
Current consumption	signal output current: max. 25 mA / signal output voltage: max. 7 mA
Weight	approx. 200 g (without cable)
Ingress protection	IP 68
CE-conformity	EMC Directive: 2004/108/EC

Wiring diagram

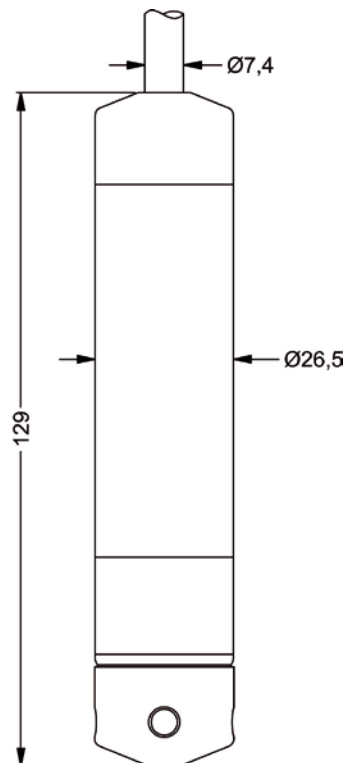
2x2-wire-system (current)



Pin configuration

Electrical connection	cable colours (DIN 47100)
Supply P+	wh (white)
Supply P-	bn (brown)
Supply P+	gy (gray)
Supply P-	pk (pink)
Shield	ye/gn (yellow / green)

Dimensions (in mm)



Mounting flange with cable gland		
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	
Version	Size (in mm)	Weight
DN25 / PN40	D = 115, k = 85, b = 18, n = 4, d = 14	1.4 kg
DN50 / PN40	D = 165, k = 125, b = 20, n = 4, d = 18	3.2 kg
DN80 / PN16	D = 200, k = 160, b = 20, n = 8, d = 18	4.8 kg
Ordering type		Ordering code
DN25 / PN40 with cable gland brass, nickel plated		ZMF2540
DN50 / PN40 with cable gland brass, nickel plated		ZMF5040
DN80 / PN16 with cable gland brass, nickel plated		ZMF8016
Terminal clamp		
Technical data		
Suitable for	all probes with cable Ø 5.5 ... 10.5 mm	
Material	standard: steel, zinc plated optionally: stainless steel 1.4301 (304)	
Weight	approx. 160 g	
Ordering type		Ordering code
Terminal clamp, steel, zinc plated		Z100528
Terminal clamp, stainless steel 1.4301 (304)		Z100527
Display program		
<p>CIT 200 Process display with LED display</p> <p>CIT 250 Process display with LED display and contacts</p> <p>CIT 300 Process display with LED display, contacts and analogue output</p> <p>CIT 350 Process display with LED display, bargraph, contacts and analogue output</p> <p>CIT 400 Process display with LED display, contacts, analogue output and Ex-approval</p> <p>CIT 600 Multichannel process display with graphics-capable LC display</p> <p>CIT 650 Multichannel process display with graphics-capable LC display and datalogger</p> <p>CIT 700 Multichannel process display with graphics-capable TFT monitor, touchscreen and contacts</p> <p>PA 440 Field display with 4-digit LC display</p> <p>For further information please contact our sales department or visit our homepage: http://www.bdsensors.com</p>		

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