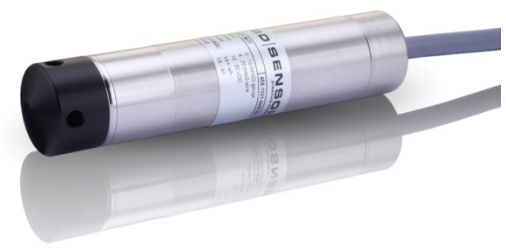
LMP 307T

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 mH_2O up to 0 ... 250 mH_2O

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 acc. to DVGW and KTW
- 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

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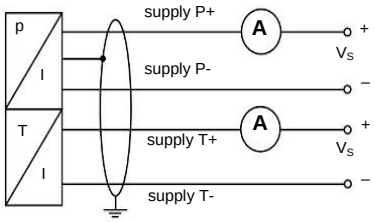
Input pressure range														
Nominal pressure gauge	[bar]	0.1	0.16	0.25	0.4	0.6	1	1.6	2.5	4	6	10	16	25
Level	[mH_2O]	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250
Overpressure	[bar]	0.5	1	1	2	5	5	10	10	20	40	40	80	80
Burst pressure ≥	[bar]	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50	50	120	120

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 ms (for output signal 2-wire (pressure))			
[3] accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability) *[4] Pt 100 class B; compensation time up to 1h 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 PUR (-10 … 70 °C) black FEP[7] (-10 … 70 °C) black TPE-U (-10 … 70 °C) blue (with drinking water certificate) others on request			
[6] cable with integrated air 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 (with drinking water certificate) others on request			
Diaphragm	stainless steel 1.4435 (316L)			
Protection cap	POM-C			
Miscellaneous				
drinking water certificate	According to DVGW W 270 and UBA KTW (With order please indicate if her device must be certificated for drinking water.)			
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: 1µH/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: 2014/30/EU			

Wiring diagram

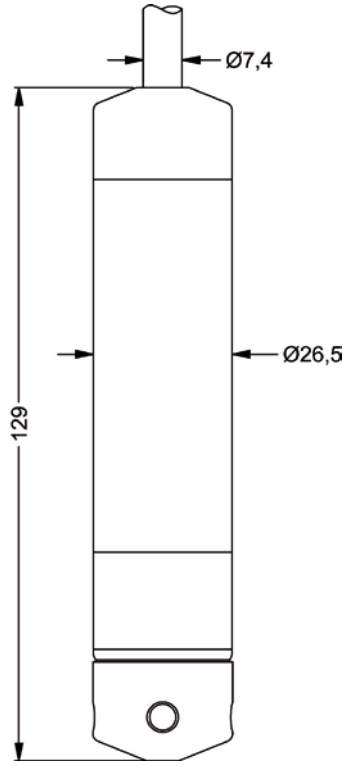
2x2-wire-system (current)



Pin configuration

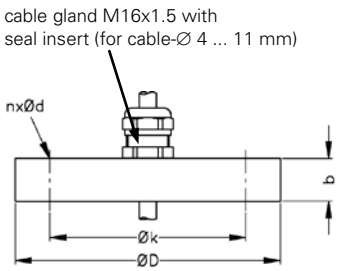
Electrical connection	cable colours (IEC 60757)
Supply P+	wh (white)
Supply P–	bn (brown)
Supply T+	gy (gray)
Supply T–	pk (pink)
Shield	gnye (green-yellow)

Dimensions (in mm)



Mounting flange with cable gland

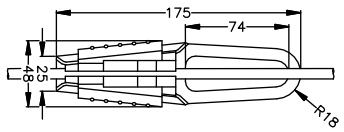
Technical data		
Suitable for	all probes	
Flange material	stainless steel 1.4404 (316L)	
Material of cable gland	standard: brass, nickel plated on request: stainless steel 1.4305 (303); plastic	
Seal insert	material: TPE (ingress protection IP 68)	
Hole pattern	according to DIN 2507	
Version	**Size (in 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 ∅ 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

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
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.com

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BD|SENSORS pressure measurement

Ordering code LMP 307T

LMP 307T ☐☐☐ - ☐☐☐☐ - ☐☐☐☐☐☐ - ☐ - ☐ - ☐ - ☐ - ☐ - ☐ - ☐ - ☐☐☐ - ☐☐☐

Pressure		Code	
	in bar	455	
	in mH_2O	456	

Input [mH_2O]	[bar]	Code	
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		9999	consult

Input temperature	°C	Code	
	0 … 30	000x30	
	0 … 50	000x50	
	0 … 70	000x70	
	customer	999999	consult

Housing	Code	
Stainless steel 1.4404 (316L)	1	
customer	9	consult

Diaphragm	Code	
Stainless steel 1.4435 (316L)	1	
customer	9	consult

Output pressure	Code	
4 … 20 mA / 2-wire	1	

Output temperature	Code	
4 … 20 mA / 2-wire	1	

Seals	Code	
FKM	1	
EPDM [1]	3	
customer	9	consult

Accuracy		Code	
standard for $P_N \geq 0.4$ bar	0.35 %	3	
standard for $P_N < 0.4$ bar	0.5 %	5	
option 1 for $P_N \geq 0.4$ bar	0.25 %	2	
	customer	9	consult

Electrical connection	Code	
PVC cable [2]	1	
PUR cable [2]	2	
FEP cable [2]	3	
TPE-U cable [1, 2]	4	
customer	9	consult

Cable length (in m)		Code
standard: 3 m	PVC	003
standard: 5 m	PVC	005
standard: 10 m	PVC	010
standard: 15 m	PVC	015
standard: 20 m	PVC	020
special length	**PVC**	**999**
standard: 3 m	PUR	003
standard: 5 m	PUR	005
standard: 10 m	PUR	010
standard: 15 m	PUR	015
standard: 20 m	PUR	020
special length	**PUR**	**999**
standard: 5 m	FEP	005
standard: 10 m	FEP	010
special length	**FEP**	**999**
special length	**TPE**	**999**

Special version	Code	
standard	000	
customer	999	consult

[1] with drinking water certification according to DVGW / KTW
[2] cable with integrated air tube for atmospheric pressure reference

Standard lengths 3 / 5 / 10 / 15 / 20 m are available from stock, special lengths are manufactured order-related, price per meter (see above).

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