LMK 307T

Level and Temperature Transmitter

Ceramic Sensor

accuracy according to IEC 60770:
0.5 % FSO

Nominal pressure / nominal temperature

from 0 ... 4 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
- good lang term stability
- easy handling
- low maintenance and wiring costs

Optional versions

- different kinds of cables
- different kinds of seal materials
- customer specific versions

BD|SENSORS has developed the stainless steel submersible probe LMK 307T with flush mounted ceramic sensor for continuous level and temperature measurement in water or waste water applications.

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.

Preferred areas of use are

Water
e.g. drinking water system, RÜBs
ground water monitoring
storm water systems

Sewage
waste water treatment, water recycling,
dumpsite, waste water tanks

Fuel / Oil
fuel storage
tank farm, biogas plants

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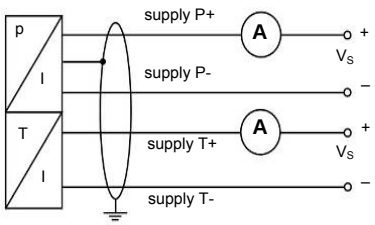
Input pressure range											
Nominal pressure gauge	[bar]	0,4	0,6	1	1,6	2,5	4	6	10	16	25
Level	[mH_2O]	4	6	10	16	25	40	60	100	160	250
Overpressure	[bar]	1	2	2	4	4	10	10	20	40	40
Burst pressure ≥	[bar]	2	4	4	5	5	12	12	25	50	50

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]	≤ ± 0.5 % 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	≤ ± 0.3 % 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)				
Thermal error	≤ ± 0.2 % FSO / 10 K in compensated range -25 … 70 °C			
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 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 others on request			
Diaphragm	ceramics Al_2O_3 96%			
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: 1µH/m			
Current consumption	max. 25 mA			
Weight	approx. 250 g (without cable)			
Ingress protection	IP 68			
CE-conformity	EMC Directive: 2014/30/EU			

Wiring diagram

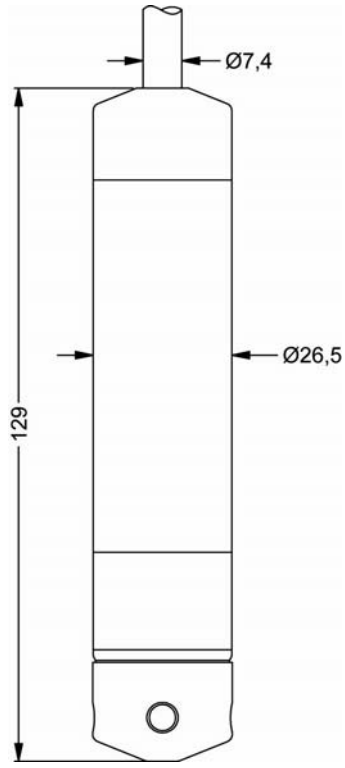
2x2-wire-system (current)



Pin configuration

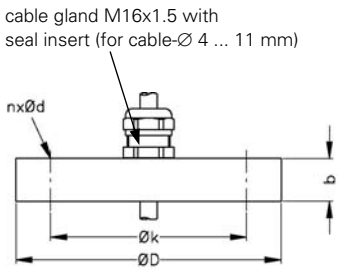
Electrical connection	cable colours (IEC 60757)
Supply P+	wh (white)
Supply P–	bn (brown)
Supply T+	gy (gray)
Supply T–	pk (pink)
Shield	gnye (green-yellow)

Dimensions (in mm)



Mounting flange with cable gland

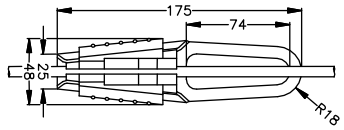
Technical data		
Suitable for	all probes	
Flange material	stainless steel 1.4404 (316L)	
Material of cable gland	standard: brass, nickel plated on request: stainless steel 1.4305 (303); plastic	
Seal insert	material: TPE (ingress protection IP 68)	
Hole pattern	according to DIN 2507	
Version	**Size (in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

BD|SENSORS®
pressure measurement

Ordering code LMK 307T

LMK 307T □□□-□□□□-□□□□□□-□-□-□-□-□-□-□-□-□□□-□□□

Pressure			
	in bar	38A	
	in mH_2O	38B	
Input	**[mH_2O]**	**[bar]**	
	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**	
	0 … 30		000x30
	0 … 50		000x50
	0 … 70		000x70
	customer		999999 consult
Housing			
	Stainless steel 1.4404 (316L)		1
	customer		9 consult
Diaphragm			
	Ceramic Al_2O_3 96 %		2
	customer		9 consult
Output pressure			
	4 … 20 mA / 2-wire		1
Output temperature			
	4 … 20 mA / 2-wire		1
Seals			
	FKM		1
	EPDM		3
	customer		9 consult
Accuracy			
	0.5 %		5
	customer		9 consult
Electrical connection			
	PVC-cable [1]		1
	PUR-cable [1]		2
	FEP-cable [1]		3
	customer		9 consult
Cable length			
	in m		
	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 version			
	standard		000
	customer		999 consult

[1] 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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