

LMP 331

Screw-In Transmitter

Stainless Steel Sensor

accuracy according to IEC 60770:
standard: 0.35 % span
option: 0.25 % / 0.1 % span



Nominal pressure

from 0 ... 100 mbar up to 0 ... 40 bar

Output signals

2-wire: 4 ... 20 mA

3-wire: 0 ... 20 mA / 0 ... 10 V

others on request

Special characteristics

- ▶ pressure port G 3/4" flush
- ▶ excellent accuracy
- ▶ small thermal effect
- ▶ excellent long term stability




Optional versions

- ▶ accuracy 0.1% span IEC 60770
- ▶ IS-version: Ex ia = intrinsically safe for gases and dusts
- ▶ SIL 2 application according to IEC 61508 / IEC 61511
- ▶ different electrical connections
- ▶ customer specific versions
e. g. special pressure ranges

The screw-in transmitter LMP 331 has been designed for continuous level measurement and is characterized by an excellent performance and a robust construction. The modular construction allows the user the highest possible flexibility in the adaption of LMP 331.

Optional features like e.g. an intrinsically safe version or a functionally safe version (SIL 2) increase the advantages when launching and realizing projects for plants and systems.

Preferred areas of use are

-  Plant and Machine Engineering
-  Energy Industry
-  Environmental Engineering
(water – sewage – recycling)



LMP 331

Stainless Steel Screw-In Transmitter



Technical Data

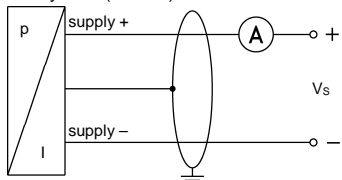
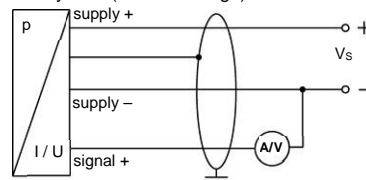
Input pressure range																	
Nominal pressure gauge	[bar]	0.10	0.16	0.25	0.40	0.60	1	1.6	2.5	4	6	10	16	25	40		
Level	[mH ₂ O]	1	1.6	2.5	4	6	10	16	25	40	60	100	160	250	400		
Overpressure	[bar]	0.5	1	1	2	5	5	10	10	20	40	40	80	80	105		
Burst pressure ≥	[bar]	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50	50	120	120	210		
Vacuum resistance		P _N ≥ 1 bar: unlimited vacuum resistance P _N < 1 bar: on request															
Output signal / Supply																	
Standard		2-wire: 4 ... 20 mA / V _S = 8 ... 32 V _{DC}						SIL-version: V _S = 14 ... 28 V _{DC}									
Option IS-version		2-wire: 4 ... 20 mA / V _S = 10 ... 28 V _{DC}						SIL-version: V _S = 14 ... 28 V _{DC}									
Options 3-wire		3-wire: 0 ... 20 mA / V _S = 14 ... 30 V _{DC}						0 ... 10 V / V _S = 14 ... 30 V _{DC}									
Performance																	
Accuracy ¹		standard: nominal pressure < 0.4 bar: ≤ ± 0.5 % span nominal pressure ≥ 0.4 bar: ≤ ± 0.35 % span option 1: nominal pressure ≥ 0.4 bar: ≤ ± 0.25 % span option 2: for all nominal pressures: ≤ ± 0.1 % span															
Permissible load		current 2-wire: R _{max} = [(V _S - V _{S min}) / 0.02 A] Ω current 3-wire: R _{max} = 500 Ω voltage 3-wire: R _{min} = 10 kΩ															
Influence effects		supply: 0.05 % span / 10 V						load: 0.05 % span / kΩ									
Long term stability		≤ ± 0.1 % span / year															
Response time ²		2-Leiter: ≤ 10 msec 3-Leiter: ≤ 3 msec															
¹ accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)																	
² with optional accuracy 0,1 % span the response time is 200 msec																	
Thermal effects (Offset and Span)																	
Nominal pressure P _N	[bar]	≤ 0.40						> 0.40									
Tolerance band	[% span]	≤ ± 1						≤ ± 0.75									
in compensated range	[°C]	0 ... 70						-20 ... 85									
Permissible temperatures																	
Permissible temperatures		medium: -40 ... 125 °C				electronics / environment: -40 ... 85 °C				storage: -40 ... 100 °C							
Electrical protection																	
Short-circuit protection		permanent															
Reverse polarity protection		no damage, but also no function															
Electromagnetic compatibility		emission and immunity according to EN 61326															
Mechanical stability																	
Vibration		10 g RMS (25 ... 2000 Hz)						according to DIN EN 60068-2-6									
Shock		500 g / 1 msec						according to DIN EN 60068-2-27									
Explosion protection (only for 4 ... 20 mA / 2-wire)																	
Approvals DX9-LMP 331		IBExU10ATEX1122 X zone 0: II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex ia IIIC T 135°C Da															
Safety technical maximum values		U _i = 28 V, I _i = 93 mA, P _i = 660 mW, C _i ≈ 0nF, L _i ≈ 0 μH, the supply connections have an inner capacity of max. 27 nF opposite the housing															
Ambient temperature range		in zone 0: -20 ... 60 °C with p _{atm} 0.8 bar bis 1.1 bar in zone 1 or higher: -20 ... 70 °C															
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 μH/m									
Materials																	
Pressure port		stainless steel 1.4404 (316L)															
Housing		stainless steel 1.4404 (316L)															
Option field housing		Stainless steel 1.4301 (304); cable gland M16x 1.5, brass, nickel plated (clamping range 2...8 mm)															
Seals		standard: FKM						option: EPDM, NBR									
Diaphragm		stainless steel 1.4435 (316L)															
Media wetted parts		pressure port, seals, diaphragm															
Miscellaneous																	
Optionally SIL ³ 2 application		according to IEC 61508 / IEC 61511															
Current consumption		signal output current: max. 25 mA						signal output voltage: max. 5 mA									
Weight		approx. 200 g															
Installation position		any ⁴															
Operational life		> 100 x 10 ⁶ cycles															
CE-conformity		EMC Directive: 2014/30/EU															
ATEX Directive		2014/34/EU															
³ only for 4...20mA / 2-wire, not in combination with the accuracy 0.1%																	
⁴ Pressure transmitters are calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviation in the zero point for pressure ranges P _N ≤ 1 bar.																	

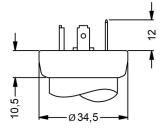
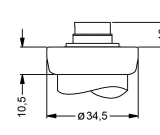
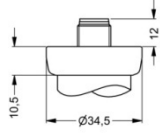
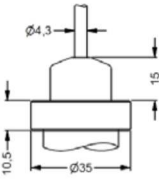
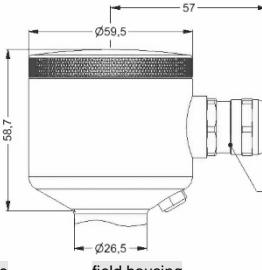
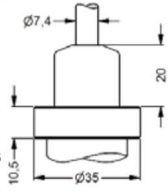
LMP 331

Stainless Steel Screw-In Transmitter

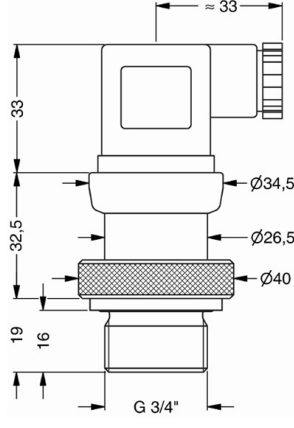
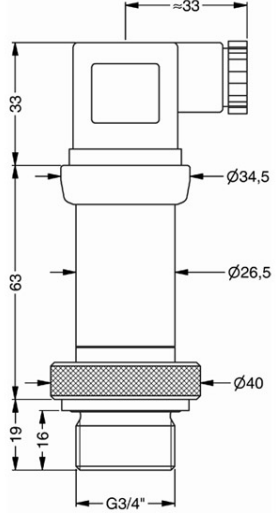
Technical Data

Pin configuration					
Electrical connections	ISO 4400	Binder 723 (5-pin)	M12x1 / metal (4-pin)	field housing	cable colours (DIN 47100)
Supply +	1	3	1	IN +	wh (white)
Supply -	2	4	2	IN -	bn (brown)
Signal + (only for 3-wire)	3	1	3	OUT +	gn (green)
Shield	ground pin 	5	4		ye/gn (yellow/green)

Wiring diagrams	
<p>2-wire-system (current)</p> 	<p>3-wire-system (current/voltage)</p> 

Electrical connections (dimensions in mm)					
<p>standard</p>  <p>ISO 4400 (IP 65)</p>	<p>option</p>  <p>Binder Series 723 5-pin (IP 67)</p>	 <p>M12x1 4-pin (IP 67)</p>	 <p>cable outlet with PVC cable (IP 67)⁵</p>	 <p>field housing (IP 67)</p>	 <p>cable outlet, cable with ventilation tube (IP 68)⁶</p>

⁵ standard: 2 m PVC cable (without ventilation tube, permissible temperature: -5 ... 70 °C)
⁶ different cable types and lengths available, permissible temperature depends on kind of cable

Mechanical connection (dimensions in mm)	
<p>standard for 0.5 % / 0.35 %</p>  <p>G3/4" flush (DIN 3852) with ISO 4400</p>	<p>standard for 0.25 % / 0.1 % SIL- and SIL-Ex-version ⁷</p>  <p>G3/4" flush (DIN 3852) with ISO 4400</p>

⁷ not in combination with the accuracy 0.1%

This data sheet contains product specification. Properties are not guaranteed. Subject to change without notice.

Tel.: +420 572 411 011

www.bdsensors.cz
info@bdsensors.cz

LMP331_EN_05.03.2021

Ordering code LMP 331

1.3.2021

LMP 331

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Pressure																			
in bar		4	3	0															
in m H ₂ O		4	3	1															
Input		[mH ₂ O]	[bar]																
	0 ... 1		0 ... 0,1	1	0	0	0												
	0 ... 1,6		0 ... 0,16	1	6	0	0												
	0 ... 2,5		0 ... 0,25	2	5	0	0												
	0 ... 4		0 ... 0,4	4	0	0	0												
	0 ... 6		0 ... 0,6	6	0	0	0												
	0 ... 10		0 ... 1	1	0	0	1												
	0 ... 16		0 ... 1,6	1	6	0	1												
	0 ... 25		0 ... 2,5	2	5	0	1												
	0 ... 40		0 ... 4	4	0	0	1												
	0 ... 60		0 ... 6	6	0	0	1												
	0 ... 100		0 ... 10	1	0	0	2												
	0 ... 160		0 ... 16	1	6	0	2												
	0 ... 250		0 ... 25	2	5	0	2												
	0 ... 400		0 ... 40	4	0	0	2												
Customer				9	9	9													
Customer - underpressure				X	X	X	X												
Housing material																			
Stainless steel 1.4404 (316 L)				1															
Diaphragm material																			
Stainless steel 1.4435 (316 L)						1													
Output																			
4 ... 20 mA / 2-wire								1											
0 ... 20 mA / 3-wire										2									
0 ... 10 V / 3-wire ³											3								
0 ... 5 V / 3-wire ³												4							
Intrinsic safety Ex ia 4 ... 20 mA / 2-wire													E						
Ex nA "n" 4 ... 20 mA / 2-wire (connector 105)														N					
SIL2, 4 ... 20 mA / 2-wire														1S					
SIL2, Intrinsic safety 4 ... 20 mA / 2-wire															ES				
Customer															9				
Seals																			
Viton (FKM)															1				
EPDM																3			
Customer																	5		
Electrical connection																			
Connector DIN 43650 (ISO 4400) (IP 65)															1	0	0		
Connector ISO 4400 (IP 65) + silicone seals for Ex nA															1	0	5		
Connector Binder Serie 723 5-pin (IP 67)															2	0	0		
Cable gland PG7 / cable length specify (IP 67)															4	0	0		
+ PVC cable / 1 m																			
Connector Buccaneer (IP 68)															5	0	0		
Field housing stainless steel, cable gland M 16 x 1,5 (IP 67)															8	0	0		
Field housing stainless steel, cable gland M 20 x 1,5 (IP 67)															8	8	0		
Connector DIN 43650 (ISO 4400) - potting compound inside (IP 67)															E	0	0		
Connector M12 x 1, 4-pin (IP 67)															M	0	0		
Connector M12 x 1, 4-pin (IP 67) - metal															M	1	0		
Cable outlet, cable with ventilation tube (IP68) ¹															T	R	0		
+ PVC cable / 1 m																			
Customer															9	9	9		
Accuracy																			
0,5 % (P _N ≤ 0,4 bar)																		5	
0,35 % (P _N > 0,4 bar)																		3	
0,1 % (P _N ≥ 0,4 bar) ²																		1	
0,25 % (P _N > 0,4 bar)																		2	
0,5 % including Calibration Certificate (P _N ≤ 0,4 bar)																		T	
0,35 % including Calibration Certificate (P _N > 0,4 bar)																		S	
Measured values table for accuracy 0,35 % (only on customer request)																		M	



BD SENSORS s.r.o.
Hradištská 817
CZ – 687 08 Buchlovice

Tel.: +420 572 411 011
Fax: +420 572 411 497

www.bdsensors.cz
info@bdsensors.cz

The company BD SENSORS s.r.o. is certified by TÜV SÜD Czech according to the standard ISO 9001.



Customer	9			
Special version				
Standard	0	0	0	
Temperature compensation -20...+50 °C	0	0	6	
Customer	9	9	9	

0,-...without additional charge

On request...in accordance with the producer

Surcharges for calibration are not subject to any discounts. Subject to change. □

This document contains the specification for ordering the product;

detailed technical parameters of the product and its possible variants are given in the data sheet.

BD SENSORS reserves the right to change sensor specifications without further notice.

1 code TR0 = PVC cable, cable with ventilation tube available in different types and lengths; cable not included in the price

2 not in combination with SIL

3 maximum length of PVC cable – 25 m, PUR, FEP, TPE – 40 m



BD SENSORS s.r.o.
Hradištská 817
CZ – 687 08 Buchlovice

Tel.: +420 572 411 011
Fax: +420 572 411 497

www.bdsensors.cz
info@bdsensors.cz

The company BD SENSORS s.r.o. is certified by TÜV SÜD Czech according to the standard ISO 9001.

