



LMP 331

Screw-In Transmitter

Stainless Steel Sensor

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

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% FSO 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 robust construction. The 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)



Tel.: +49 (0) 92 35 / 98 11- 0

Fax: +49 (0) 92 35 / 98 11- 11













www.bdsensors.de info@bdsensors.de

Stainless Steel Screw-In Transmitter

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		$p_N \ge 1$ bar: unlimited vacuum resistance $p_N < 1$ bar: on request													

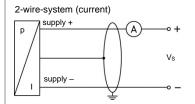
Output signal / Supply												
Output signal / Supply Standard		0:	4 00 ==	۸ /	V 0 20 V	,	CII version: V 44 00 V					
Option IS-version					V _S = 8 32 \	_	SIL-version: V _S = 14 28 V _{DC}					
					V _S = 10 28 \		SIL-version: V _S = 14 28 V _{DC}					
Options 3-wire		3-wire:	U 20 m/	٠ /	V _S = 14 30 \	DC	0 10 V / V _S = 14 30 V _{DC}					
Performance 0.41 - 0.50/ F00												
Accuracy1		standard:			sure < 0.4 bar: sure ≥ 0.4 bar:		≤ ± 0.5 % FSO ≤ ± 0.35 % FSO					
		option 1:			sure ≥ 0.4 bar:		≤ ± 0.35 % FSO ≤ ± 0.25 % FSO					
		option 2:			l pressures:		≤ ± 0.1 % FSO					
Permissible load		current 2-w			$V_{\rm S} - V_{\rm S min}$) / 0.0							
		current 3-wire: $R_{max} = 240 \Omega$										
		voltage 3-wire: $R_{min} = 10 \text{ k}\Omega$										
Influence effects	nfluence effects				supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ							
Long term stability				≤ ± 0.1 % FSO / year at reference conditions								
Response time ²		2-wire: ≤ 10 msec 3-wire: ≤ 3 msec										
accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)												
² with optional accuracy 0,1 % FSO the response time is 200 msec												
Thermal effects (offset) 					0.40					
Nominal pressure p _N	[bar]			0.40			> 0.40					
Tolerance band	[% FSO]			≤ ± 1			≤ ± 0.75					
in compensated range	[°C]		0	70	0		-20 85					
Permissible temperatu												
Permissible temperature	S	medium: -4	0 125 °C	<u> </u>	electronics /	envir	onment: -40 85 °C storage: -40 100 °C					
Electrical protection												
Short-circuit protection		permanent										
Reverse polarity protecti	no damage, but also no function											
Electromagnetic compat	ibility	emission ar	nd immuni	ty ac	cording to EN 6	1326	5					
Mechanical stability												
Vibration	/ibration		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		IBExU 10 ATEX 1068 X / IECEx IBE 12.0027X										
DX19-LMP 331		zone 0: II 1G Ex ia IIC T4 Ga										
Cofoty to abaical as avian		zone 20: II 1D Ex ia IIIC T135 °C Da										
Safety technical maximu	ım values	$U_i = 28 \text{ V}$, $I_i = 93 \text{ mA}$, $P_i = 660 \text{ mW}$, $C_i \approx 0 \text{ nF}$, $L_i \approx 0 \text{ \muH}$,										
Permissible temperature	the supply connections have an inner capacity of max. 27 nF opposite the housing Permissible temperature for me- in zone 0: -20 60 °C with p _{atm} 0.8 bar up to 1.1 bar											
Permissible temperature for me- dium							bal up to 1.1 bal					
Connecting cables	cable capacitance: signal line/shield also signal line / signal line: 160 pF/m											
(by factory)												
Materials												
Pressure port		stainless st	eel 1.4404	(316	6L)							
Housing	stainless steel 1.4404 (316L)											
Option compact field hou	using	stainless st	x1.5, brass, nickel plated (clamping range 2 8 mr									
Seals		standard: FKM										
			PDM				others on request					
Diaphragm		stainless st			-							
Media wetted parts		pressure po	rt, seals,	diaph	nragm							
Miscellaneous	•											
Optionally SIL 2 version	3	according to										
Current consumption		signal outpo		max	. 25 mA		signal output voltage: max. 7 mA					
Weight		approx. 200) g									
Installation position		any 4										
Operational life	100 million load cycles											
CE-conformity	EMC Direct		30/E	U								
ATEX Directive												
³ only for 420mA / 2-wire;	not in combi	nation with the	accuracy 0	.1%								

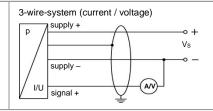
Only for 4...20mA / 2-wire; not in combination with the accuracy 0.1%
 Pressure transmitters are calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviation in the zero point for pressure ranges p_N ≤ 1 bar.

© 2023 BD|SENSORS GmbH - The specifications given in this document represent the state of engineering at the time of publishing. We reserve the right to make modifications to the specifications and materials.

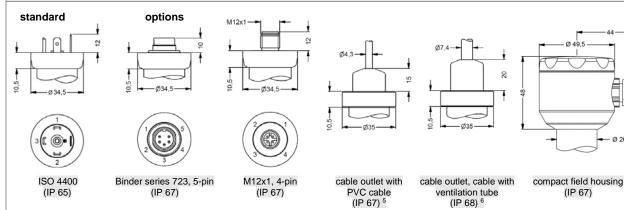
Pin configuration										
Electrical connections	ISO 4400	Binder 723	M12x1 / metal	compact	cable colours					
Electrical connections	130 4400	(5-pin)	(4-pin)	field housing	(IEC 60757)					
Supply +	1	3	1	IN +	WH (white)					
Supply –	2	4	2	IN –	BN (brown)					
Signal + (only for 3-wire)	3	1	3	OUT +	GN (green)					
Shield	ground pin 🌘	5	4	(b)	GNYE (green-yellow)					

Wiring diagrams





Electrical connections (dimensions in mm)



(IP 67)

⁵ standard: 2 m PVC cable (without ventilation tube, permissible temperature: -5 ... 70 °C)

(IP 67)

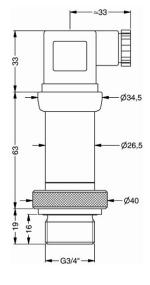
6 different cable types and lengths available, permissible temperature depends on kind of cable

Mechanical connection (dimensions in mm)

standard

33 Ø26,5 Ø40 19 G 3/4" G3/4" flush (DIN 3852) with ISO 4400

SIL- and SIL-Ex-version



G3/4" flush (DIN 3852) with ISO 4400

LMP331_E_120123

+49 (0) 92 35 / 98 11- 0 Tel.: Fax: +49 (0) 92 35 / 98 11- 11



Ordering code LMP 331 LMP 331 Pressure in bar 4 3 0 4 3 1 in mH₂O Input [mH₂O] [bar] 0.10 1 0 0 0 1.0 0.16 6 0 0 1.6 2 5 0 0 4 0 0 0 2.5 0.25 4.0 0.40 4 0 0 0 0 6 0 0 0 1 0 0 1 1 6 0 1 2 5 0 1 4 0 0 0 1 6 0 0 1 0 0 2 1 6 0 2 2 5 0 2 4 0 0 2 9 9 9 6.0 0.60 10 1.0 16 1.6 25 25 40 4.0 60 6.0 100 10 160 16 250 25 40 400 customer consult Pressure port stainless steel 1.4404 (316L) customer consult Diaphragm stainless steel 1.4435 (316L) customer consult Output 4 ... 20 mA / 2-wire 1 0 ... 20 mA / 3-wire 2 0 ... 10 V / 3-wire 3 intrinsic safety 4 ... 20 mA / 2-wire SIL2 4 ... 20 mA / 2-wire Ε 18 SIL2 with intrinsic safety ES 4 ... 20 mA / 2-wire customer 9 consult Seal EPDM 3 customer consult Electrical connection male and female plug ISO 4400 0 0 male plug Binder series 723 (5-pin) 2 0 0 cable outlet with PVC cable (IP67) 1 A 0 cable outlet, Т R 0 cable with ventilation tube (IP68) ² male plug M12x1 (4-pin) / metal compact field housing M 1 0 8 5 0 stainless steel 1.4301 (304) 9 9 9 customer consult standard for $p_N \ge 0.4$ bar: 0.35 % FSO 3 standard for p_N < 0.4 bar: 0.50 % FSO option 1 for $p_N \ge 0.4$ bar: 0.25 % FSO 2 option 2: 0.10 % FSO 3 9 consult customer Special version 0 0 0 9 9 9 standard customer consult

consult consul

modifications to the specifications and materials

the right to make

reserve

the state of engineeringat the time of publishing. We

 $^{^{\}rm 1}$ standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C), others on request

² code TR0 = PVC cable, cable with ventilation tube available in different types and lengths

³ not in combination with SIL