



LMP 331

Screw-In Transmitter

Stainless Steel Sensor

accuracy according to IEC 60770:
Standard: 0.35 % FSO
Option: 0.25 % / 0.1 % FSO

LMP 331
Stainless Steel
Screw-In Transmitter

Nominal pressure

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

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 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)

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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}														
Option IS version	2-wire: 4 ... 20 mA / V _S = 10 ... 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	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 option 2: for all nominal pressures: ≤ ± 0.1 % FSO														
Permissible load	current 2-wire: R _{max} = [(V _S - V _{Smin}) / 0.02] Ω current 3-wire: R _{max} = 500 Ω voltage 3-wire: R _{min} = 10 kΩ														
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ														
Long term stability	≤ ± 0.1 % FSO / 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 % FSO the response time is 200 msec															
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										-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)															
Approval DX19-LMP 331	IBExU10ATEX1068X Zone 0: II 1 G Ex ia IIC T4 Ga Zone 20: II 1 D Ex iaD 20 T 85°C														
Safety technical maximum values	U _i = 28 V, I _i = 93 mA, P _i = 660 mW, C _i ≈ 0 nF, L _i ≈ 0 μH														
Permissible temperature for medium	in zone 0: -20 ... 60 °C with p _{atm} 0.8 bar bis 1.1 bar in zone 1 or higher: -20 ... 70 °C														
Conneting 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)														
Seals (media wetted)	standard: FKM option: EPDM NBR others on request														
Diaphragm	stainless steel 1.4435 (316L)														
Media wetted parts	pressure port, seals, diaphragm														

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Technical Data

Miscellaneous	
Optionally SIL 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 ³
Operational life	> 100 x 10 ⁶ cycles
CE-conformity	EMC Directive: 2004/108/EC

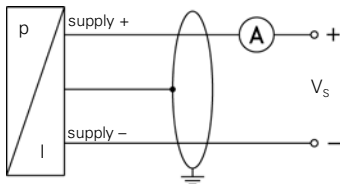
³ Pressure transmitters are calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviation in the zero point for pressure ranges $P_N \leq 1$ bar.

Pin configuration

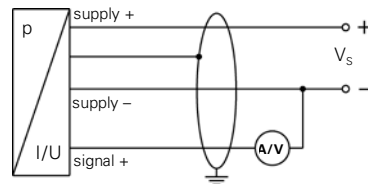
Electrical connections	ISO 4400	Binder 723 (5-pin)	M12x1 / metal (4-pin)	field housing	cable colours (DIN 47100)
Supply +	1	3	1	IN +	wh (white)
Supply -	2	4	2	IN -	bn (brown)
Signal + (only for 3-wire)	3	1	3	OUT +	gn (green)
Shield	ground pin	5	4	⏏	gn/ye (green / yellow)

Wiring diagrams

2-wire-system (current)

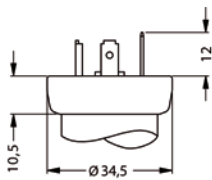


3-wire-system (current/voltage)



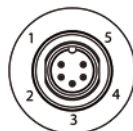
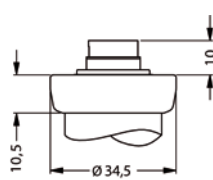
Electrical connections (dimensions in mm)

standard

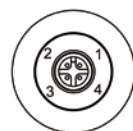
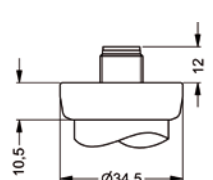


ISO 4400 (IP 65)

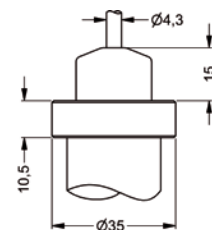
option



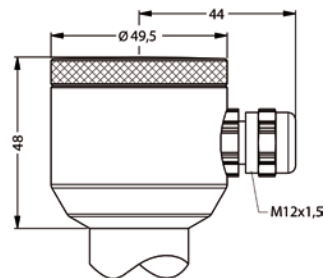
Binder Series 723 5-pin (IP 67)



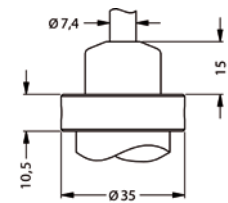
M12x1 4-pin (IP 67)



cable outlet with PVC cable (IP 67) ⁴



compact field housing (IP 67)



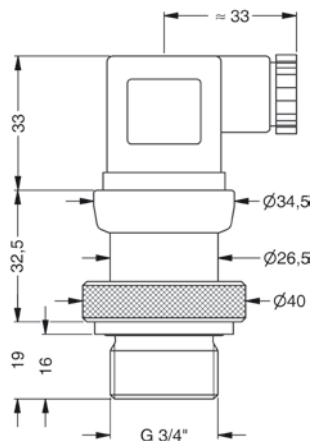
cable outlet, cable with ventilation tube (IP 68) ⁵

⁴ standard: 2 m PVC cable (without ventilation tube, permissible temperature: -5 ... 70 °C)

⁵ different cable types and lengths available, permissible temperature depends on kind of cable

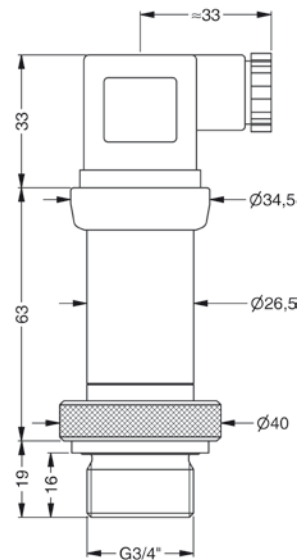
Mechanical connection (dimensions in mm)

standard



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

standard for SIL- and SIL-Ex-version ⁶



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

⁶ not in combination with the accuracy 0.1%

Screw-In Transmitter

LMK 331



Characteristics

- ▶ ceramic sensor
- ▶ accuracy according to IEC 60770: 0.5 % FSO
- ▶ nominal pressure ranges from 0 ... 400 mbar up to 0 ... 60 bar
- ▶ different electrical and mechanical connections
- ▶ option SIL 2 application according to IEC 61508 / IEC 61511



Screw-In Transmitter

LMK 351



Characteristics

- ▶ capacitive ceramic sensor optionally with diaphragm Al₂O₃ 99.9 %
- ▶ accuracy according to IEC 60770: 0.35 % / 0.25 % FSO
- ▶ nominal pressure ranges from 0 ... 40 mbar up to 0 ... 10 bar
- ▶ option IS-version



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