



ILMP 331i

Precision Screw-in Transmitter

Stainless Steel Sensor

accuracy according to IEC 60770:
0.1 % FSO

Nominal pressure

from 0 ... 400 mbar up to 0 ... 40 bar

Output signal

2-wire: 4 ... 20 mA

3-wire: 0 ... 10 V

others on request

Product characteristics

- ▶ thermal error in compensated range
-20 ... 80 °C: 0.2 % FSO
TC 0.02 % FSO / 10K
- ▶ Turn-Down 1:10
- ▶ communication interface for
adjusting offset, span and damping

Optional versions

- ▶ IS-versions
Ex ia = intrinsically safe
for gases and dusts
- ▶ adjustment of nominal pressure
ranges (factory-provided)

The precision screw-in transmitter ILMP 331i demonstrate the further development of our industrial pressure transmitters.

The signal processing of sensor signal is done by digital electronics with 16-bit analogue digital converter. Consequently, it is possible to conduct an active compensation and the transmitters with excellent measurements and exceptionally attractive price to offer on the market.

Preferred areas of use are



Chemical / petrochemical industry



Environmental engineering
(water / sewage / recycling)

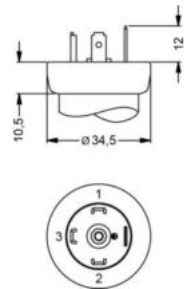


Pressure ranges ¹								
Nominal pressure gauge / absolute	[bar]	0.4	1	2	4	10	20	40
Level gauge	[mH ₂ O]	4	10	20	40	100	200	400
Overpressure	[bar]	2	5	10	20	40	80	105
Burst pressure	[bar]	3	7.5	15	25	50	120	210
¹ On customer request we adjust the device within the turn-down-possibility by software on the required pressure range.								
Output signal / Supply								
Standard	2-wire: 4 ... 20 mA / V _S = 12 ... 36 V _{DC}							
Option IS-version	2-wire: 4 ... 20 mA / V _S = 14 ... 28 V _{DC}							
Options analogue signal	2-wire: 4 ... 20 mA with communication interface ²							
	3-wire: 0 ... 10 V / V _S = 14 ... 36 V _{DC}							
	0 ... 10 V with communication interface ²							
² only possible with electrical connection Binder series 723 (7-pin)								
Performance								
Accuracy performance after turn-down - TD ≤ 1:5 - TD > 1:5	IEC 60770 ³ : ≤ ± 0.1 % FSO no change of accuracy ⁴ for calculation use the following formula (for nominal pressure ranges ≤ 0.40 bar see note 4): ≤ ± [0.1 + 0.015 x turn-down] % FSO with turn-down = nominal pressure range / adjusted range e.g. with a turn-down of 1:10 following accuracy is calculated: ≤ ± (0.1 + 0.015 x 10) % FSO i.e. accuracy is ≤ ± 0.25 % FSO							
Permissible load	current 2-wire: R _{max} = [(V _S – V _S min) / 0.02 A] 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 x turn-down) % FSO / year at reference conditions							
Response time	approx. 5 msec							
Adjustability (with option communication interface RS232)	configuration of following parameters possible (interface / software necessary ⁵): - electronic damping: 0 ... 100 sec - offset: 0 ... 90 % FSO - turn down of span: max. 1:10							
³ accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)								
⁴ except nominal pressure ranges ≤ 0.40 bar; for these calculation of accuracy is as follows: ≤ ± (0.1 + 0.02 x turn-down) % FSO e.g. turn-down of 1:3: ≤ ± (0.1 + 0.02 x 3) % FSO i.e. accuracy is ≤ ± 0.16 % FSO								
⁵ software, interface, and cable have to be ordered separately (software appropriate for Windows® 95, 98, 2000, NT Version 4.0 or higher, and XP)								
Thermal effects (Offset and Span) / Permissible temperatures								
Tolerance band	[% FSO]	≤ ± (0.2 x turn-down)		in compensated range		-20 ... 80 °C		
TC, average	[% FSO / 10 K]	± (0.02 x turn-down)		in compensated range		-20 ... 80 °C		
Permissible temperatures	medium:		-25 ... 125 °C					
	electronics / environment:		-25 ... 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							
Materials								
Pressure port	stainless steel 1.4404 (316 L)							
Housing	stainless steel 1.4404 (316 L)							
Option compact field housing	stainless steel 1.4301 (304); cable gland M12x1.5, brass, nickel plated (clamping range 2 ... 8 mm)							
Seals	FKM others on request							
Diaphragm	stainless steel 1.4435 (316L)							
Media wetted parts	pressure port, seals, diaphragm							
Mechanical stability								
Vibration	10 g RMS (20 ... 2000 Hz)		according to DIN EN 60068-2-6					
Shock	100 g / 11 msec.		according to DIN EN 60068-2-27					

Explosion protection (only for 4 ... 20 mA / 2-wire)							
Approvals DX19-ILMP 331i		IBExU 10 ATEX 1068 X / IECEx IBE 12.0027X zone 0: II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex ia IIIC T135 °C Da					
Safety technical max. values		U _i = 28 V, I _i = 93 mA, P _i = 660 mW, C _i ≈ 0 nF, L _i ≈ 0 μH, the supply connections have an inner capacity of max. 27 nF to the housing					
Permissible temperatures for environment		in zone 0: -20 ... 60 °C with p _{atm} 0.8 bar up to 1.1 bar in zone 1 or higher: -40/-20 ... 65 °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					
Miscellaneous							
Current consumption		signal output current: max. 25 mA signal output voltage: max. 7 mA					
Weight		approx. 200 g					
Installation position		any ⁶					
Operational life		100 million load cycles					
CE-conformity		EMC Directive: 2014/30/EU					
ATEX Directive		2014/34/EU					
⁶ Pressure transmitters are calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviations in the zero point for pressure ranges p _N ≤ 1 bar.							
Wiring diagrams							
<p>2-wire-system (current)</p>				<p>3-wire-system (voltage)</p>			
Pin configuration							
Electrical connections	ISO 4400	Binder 723 (5-pin)	Binder 723 (7-pin)	M12x1/ metal (4-pin)	compact field housing	cable colours (IEC 60757)	
supply +	1	3	3	1	IN +	WH (white)	
supply -	2	4	1	2	IN -	BN (brown)	
signal + (only for 3-wire)	3	1	6	3	OUT +	GN (green)	
shield	ground pin	5	2	4		GNYE (green-yellow)	
Communication interface ⁷							
RxD	-	-	4	-	-	-	
TxD	-	-	5	-	-	-	
GND	-	-	7	-	-	-	
⁷ may not be transmitted directly with the PC (the suitable adapter is available as accessory)							

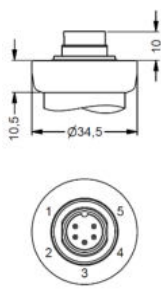
Electrical connections (dimensions in mm)

standard

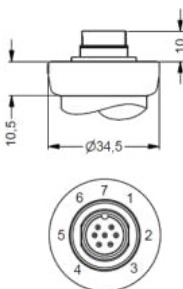


ISO 4400
(IP 65)

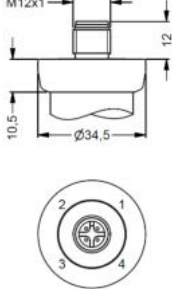
options



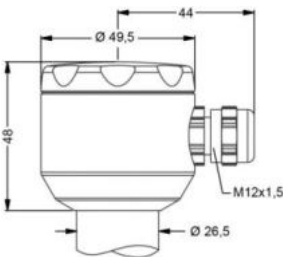
Binder series 723, 5-pin
(IP 67)



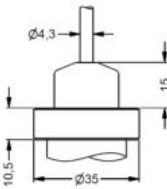
Binder series 723, 7-pin
(IP 67)



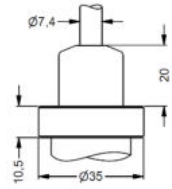
M12x1, 4-pin
(IP 67)



compact field housing
(IP 67)



cable outlet,
with PVC cable (IP 67) ⁸



cable outlet, cable with
ventilation tube (IP 68) ⁹

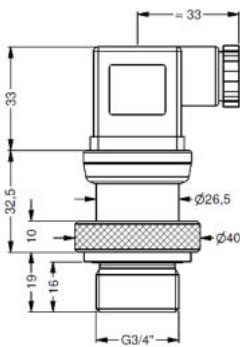
⇒ universal field housing stainless steel 316L with cable gland M20x1.5 (ordering code 880) and other versions on request

⁸ different cable types and lengths available, permissible temperature depends on kind of cable

⁹ standard: 2 m PVC cable (without ventilation tube, permissible temperature: -5 ... 70 °C)

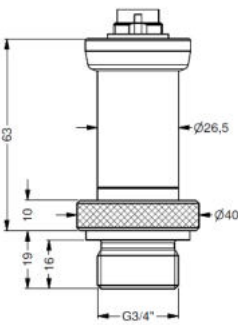
Mechanical connection (dimensions in mm)

standard



G3/4" DIN 3852
with flush sensor

with communication interface RS232



G3/4" DIN 3852
with flush sensor

Ordering code ILMP 331i

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[illegible]

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 Communication interface RS232 only possible with el. connection Binder serie 723 (7-pin)

Software, Interface and cable for IL-MP 331i with option RS-232 have to be order separately

(Ordering code: CIS-G; Software appropriate for Windows® 95, 98, 2000, NT Version 4.0 or newer and XP)