

IMP 334i



Precision-Pressure Transmitter for High Pressure

Thinfilm Sensor

accuracy according to IEC 60770:
0.1 % FSO

Nominal pressure

from 0 ... 600 bar up to 0 ... 2200 bar

Analogue output

2-wire: 4 ... 20 mA
3-wire: 0 ... 10 V
others on request

Special characteristics

- ▶ pressure sensor welded
- ▶ Turn-Down 1:10
- ▶ excellent accuracy
- ▶ extremely robust and excellent long-term stability

Optional versions

- ▶ communication interface for adjusting offset, span and damping
- ▶ pressure port: M20 x 1.5 or 9/16 UNF
- ▶ different kinds of electrical connections

The precision pressure transmitter IMP 334i is a consistent further development of the approved industrial pressure transmitter IMP 334. Basic element is a thinfilm sensor welded with the pressure port.

The integrated digital electronics compensates actively sensor specific deviations like non-linearity and thermal error.

It is therefore possible to offer a high pressure transmitter with excellent metrological qualities.

Preferred areas of use are



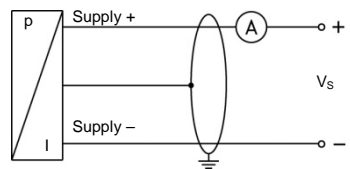
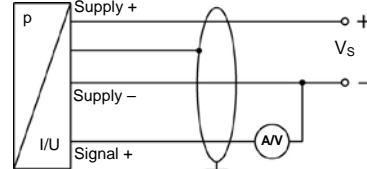
Plant and Machine Engineering

Test stand



Commercial Vehicles and Mobile Hydraulics

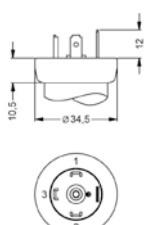
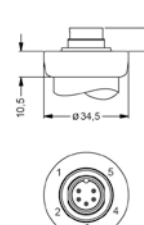
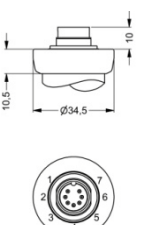
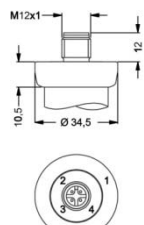
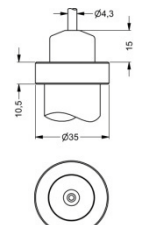
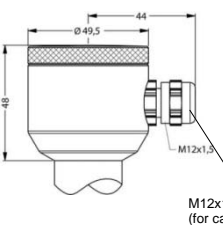


Input pressure range	
Nominal pressure gauge [bar]	600 ¹ 1000 1600 2000 2200
Overpressure [bar]	800 1400 2200 2800 2800
¹ only available with pressure port G1/2" EN 837	
Output signal / Supply	
Standard	2-wire: 4 ... 20 mA / $V_S = 12 \dots 36 V_{DC}$
Options	2-wire: 4 ... 20 mA with communication interface ² 3-wire: 0 ... 10 V / $V_S = 14 \dots 36 V_{DC}$ 0 ... 10 V with communication interface ²
² only possible with el. 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 for calculation use the following formula: ≤ ± (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: $R_{max} = [(V_S - V_{S_{min}}) / 0.02 A] \Omega$ voltage 3-wire: $R_{min} = 10 k\Omega$
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. 10 msec
Adjustability	configuration of following parameters possible (interface / software necessary ⁴): - 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 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	
TC, average [% FSO / 10 K]	< 0,25 % in compensated range - 20 ... 80 °C
Permissible temperatures	medium: - 40 ... 140 °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	EMC-directive: 2004/108/EG emission and immunity according to EN 61326
Mechanical stability	
Vibration	10 g RMS (20 ... 2000 Hz)
Shock	100 g / 11 msec.
Materials	
Pressure port	stainless steel 1.4542 (17-4 PH)
Housing	standard: stainless steel 1.4404 (316L) field housing: stainless steel 1.4404 (316L), cable gland: brass, nickel plated
Seals (media wetted)	none (welded version)
Diaphragm	stainless steel 1.4542 (17-4 PH)
Media wetted parts	pressure port / diaphragm
Miscellaneous	
Current consumption	signal output current: max. 25 mA signal output voltage: max. 7 mA
Weight	approx. 300 g
Installation position	any
CE-conformity	EMC Directive: 2004/108/EC Pressure Equipment Directive: 97/23/EC (module A)
Wiring diagrams	
2-wire-system (current) 	3-wire-system (current / voltage) 

Pin configuration							
Electrical connections		ISO 4400	Binder 723 (5-pin)	Binder 723 (7-pin)	M12x1/ metal (4-pin)	field housing	cable colours (DIN 47100)
Supply +		1	3	3	3	IN +	wh (white)
Supply -		2	4	1	1	IN -	bn (brown)
Signal + (only for 3-wire)		3	1	6	-	OUT +	gn (green)
	shield	ground pin	5	2	4	⏏	ye/gn (yellow/green)
Communication interface ⁵	RxD	-	-	4	-	-	-
	TxD	-	-	5	-	-	-
	GND	-	-	7	-	-	-

⁵ may not be connected directly with the PC (the suitable adapter is available as accessory)

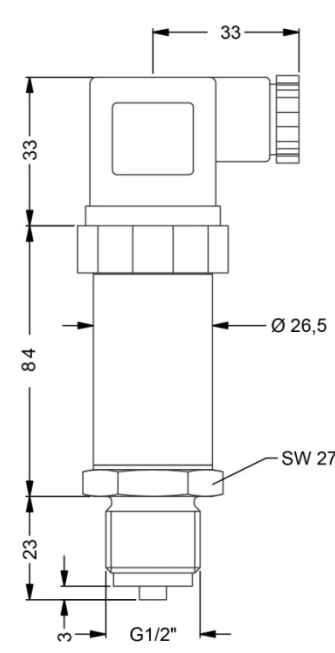
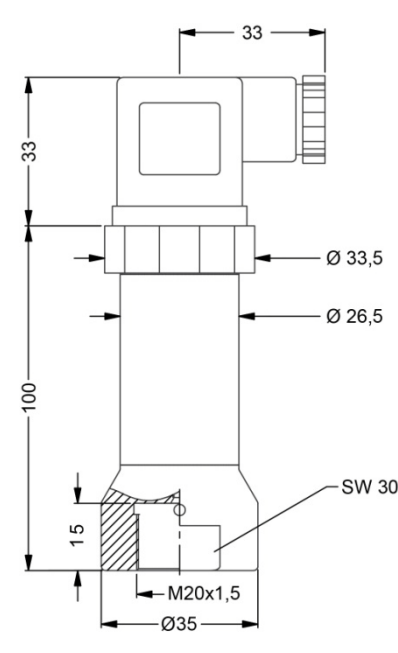
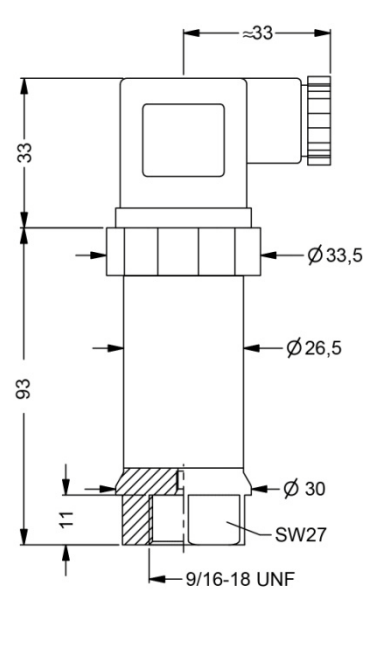
Electrical connections (dimensions in mm)

standard	option				
					
ISO 4400 (IP 65)	Binder Series 723 5-pin (IP 67)	Binder Series 723 7-pin (IP 67)	M12x1 4-pin (IP 67)	cable outlet (IP 67) ⁶	field housing (IP 67)

M12x1.5 (for cable-Ø 2 up to 8 mm)

⁶ standard: 2 m PVC cable (without ventilation tube, permissible temperature: -5 ... 70 °C)

Mechanical connection (dimensions in mm)

Standard ⁷	option ⁷	
		
G1/2" EN 837 ⁸	M20x1,5 internal thread	9/16-18 UNF internal thread

⁷ adjustable version is only possible in combination with Binder Series 723, 7 pin

⁸ According to EN 837, the pressure port and the complement at pressure over 1000 bar must be preferably made of stainless steel with a tensile strength of $R_P > 260 \text{ N/mm}^2$ in accordance with DIN 17440. The maximum allowed pressure is 1600 bar!