IMP 335

Industrial Pressure Transmitter

Welded, Dry
Stainless Steel Sensor

accuracy according to IEC 60770:
0.5 % FSO

Nominal pressure

from 0 ... 16 bar up to 0 ... 600 bar

Output signals

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

Special characteristics

- suitable for oxygen applications
- insensitive to pressure peaks
- high overpressure capability

Optional versions

- IS-version
  Ex ia = intrinsically safe
  for gases and dusts
- customer specific versions

The industrial pressure transmitter IMP 335 is based on a welded stainless steel pressure sensor without fluid.

This characteristic has a special advantage with applications where silicone oil or elastomeric seals cannot be used.

Preferred areas of use are

- Medical technology
- Plant and machine engineering
- Commercial vehicles and mobile hydraulics
- Refrigeration
- O_2 Oxygen application

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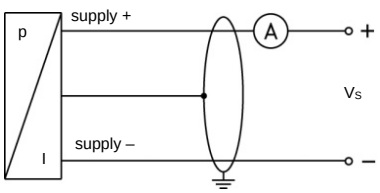
Input pressure range										
Nominal pressure gauge	[bar]	16	25	40	60	100	160	250	400	600
Overpressure	[bar]	32	50	80	120	200	320	500	800	1200
Burst pressure ≥	[bar]	80	125	200	300	500	800	1400	2000	3000
Vacuum resistance		unlimited								

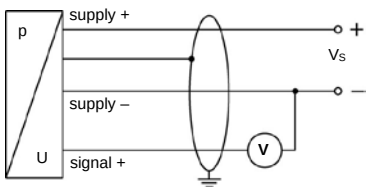
Output signal / Supply		
Standard	2-wire: 4 ... 20 mA / V_S = 8 ... 32 V_{DC}	
Option IS-version	2-wire: 4 ... 20 mA / V_S = 10 ... 28 V_{DC}	
Option 3-wire	3-wire: 0 ... 10 V / V_S = 14 ... 30 V_{DC}	
Performance		
Accuracy [1]	≤ ± 0.5 % FSO	
Permissible load	current 2-wire:	$R_{max} = [(V_S – V_{S\,min}) / 0.02\ A]\ \Omega$
	voltage 3-wire:	$R_{min} = 10\ k\Omega$
Influence effects	supply:	0.05 % FSO / 10 V
	load:	0.05 % FSO / kΩ
Long term stability	≤ ± 0.2 % FSO / year at reference conditions	
Response time	2-wire: ≤ 10 msec 3-wire: ≤ 3 msec	
[1] accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)		
Thermal effects (offset and span)		
Thermal error	± 0.3 % FSO / 10 K	
In compensated range	0 … 70 °C	
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	20 g RMS (25 ... 2000 Hz)	according to DIN EN 60068-2-6
Shock	500 g / 1 msec	according to DIN EN 60068-2-27
Materials		
Pressure port	stainless steel 1.4571 (316 Ti)	
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	none (welded)	
Diaphragm	stainless steel 1.4542 (17-4PH)	
Media wetted parts	pressure port, diaphragm	
Explosion protection (only for 4 … 20 mA / 2-wire)		
Approvals DX19-IMP 335	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 maximum values	U_i = 28 V_{DC}, 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 ... 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
Miscellaneous		
Current consumption	signal output current:	max. 25 mA
	signal output voltage:	max. 7 mA
Weight	approx. 140 g	
Installation position	any	
Operational life	100 million load cycles	
CE-conformity	EMC Directive: 2014/30/EU Pressure Equipment Directive: 2014/68/EU (module A) [2]	
ATEX Directive	2014/34/EU	
[2] This directive is only valid for devices with maximum permissible overpressure > 200 bar.		

Wiring diagrams

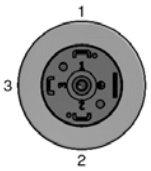
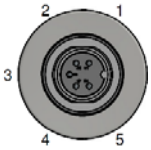
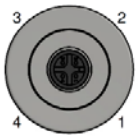
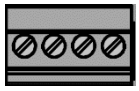
2-wire-system (current)



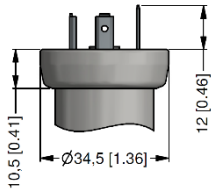
3-wire-system (voltage)



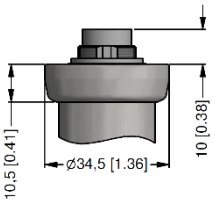
Pin configuration

Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1 / metal (4-pin)	compact field housing	cable colours (IEC 60757)
					
				V_{S+} V_{S-} S+ GND	
Supply +	1	3	1	V_S+	WH (white)
Supply –	2	4	2	V_S-	BN (brown)
Signal + (only for 3-wire)	3	1	3	S+	GN (green)
Shield	ground pin ⏚	5	4	GND	GNYE (green-yellow)

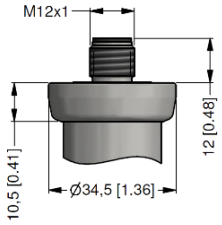
Electrical connections (dimensions mm / in)



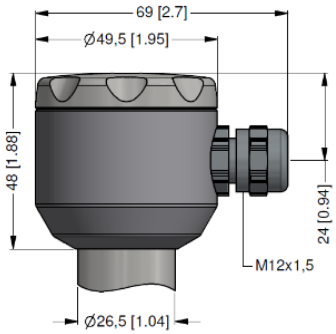
ISO 4400
(IP 65)



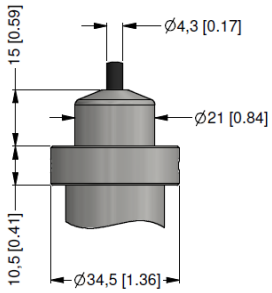
Binder series 723, 5-pin
(IP 67)



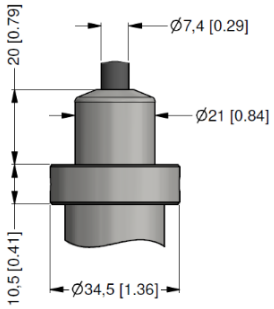
M12x1, 4-pin
(IP 67)



compact field housing
(IP 67)



cable outlet
with PVC-cable (IP 67) [3]

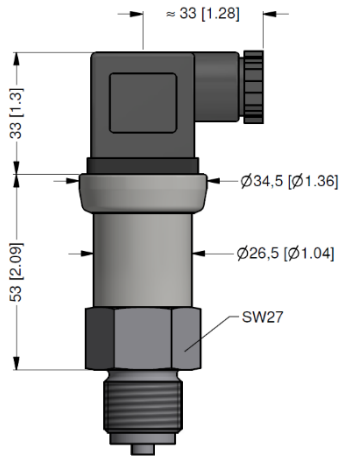


cable outlet, cable with
ventilation tube (IP 68) [4]

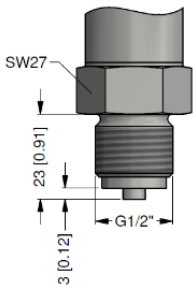
⇨ **universal field housing stainless steel 1.4404 (316 L) with cable gland M20x1.5 (ordering code 880) and other versions on request**

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

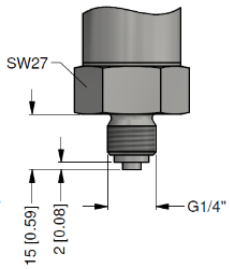
Dimensions (mm / in)



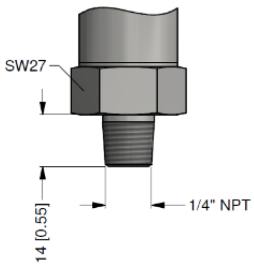
Mechanical connections (dimensions mm / in)



G1/2" EN 837



G1/4" EN 837



1/4" NPT

⇨ **metric threads and other versions on request**

Accessories

Plug-on Display PA 430

Functional range

- ► free scalable display
- ► switch mode, hysteresis,
  parameterizable deceleration of the contacts
- ► display 330 ° rotatable
- ► connector 300 ° rotatable
- ► no external power supply necessary

Product characteristics

- ► plug-on display for pressure transmitter with output signal:
  4 … 20 mA / 2-wire or 0 … 10 V / 3-wire
- ► 4-digit LED display

Optional versions

- ► IS-version
- ► 1 or 2 programmable contacts

Ordering code IMP 335

IMP 335 □□□-□□□□-□-□-□□□-□□□-□-□□□

Pressure																									
gauge	2	1	0																						
Input	**[bar]**																								
16				1	6	0	2																		
25				2	5	0	2																		
40				4	0	0	2																		
60				6	0	0	2																		
100				1	0	0	3																		
160				1	6	0	3																		
250				2	5	0	3																		
400				4	0	0	3																		
600				6	0	0	3																		
customer				9	9	9	9																		consult
Output																									
4 … 20 mA / 2-wire								1																	
0 … 10 V / 3-wire								3																	
intrinsic safety 4 … 20 mA / 2-wire								E																	
customer								9																	consult
Accuracy																									
0.5 % FSO									5																
customer									9																consult
Electrical connection																									
male and female plug ISO 4400										1	0	0													
male plug Binder series 723 (5-pin)										2	0	0													
cable outlet with PVC cable (IP67) [1]										T	A	0													
cable outlet, cable with ventilation tube (IP68) [2]										T	R	0													
male plug M12x1 (4-pin) / metal										M	1	0													
compact field housing stainless steel 1.4301 (304)										8	5	0													
customer										9	9	9													consult
Mechanical connection																									
G1/2" EN 837													2	0	0										
G1/4" EN 837													4	0	0										
1/4" NPT													N	4	0										
customer													9	9	9										consult
Seal																									
without (welded version)																2									
customer																9									consult
Special version																									
standard																	0	0	0						
customer																	9	9	9						consult

[1] standard: 2 m PVC cable without ventilation tube (permissible temperatur: -5 … 70 °C)

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

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