

# IMP 335



## Industrial Pressure Transmitter

Welded, Dry  
Stainless Steel Sensor

accuracy according to IEC 60770:  
0.5 % FSO

### Nominal pressure

from 0 ... 6 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 stainless steel welded pressure sensor without fluid.

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

### Bevorzugte Anwendungsgebiete

-  Medical Technology
-  Plant and Machine Engineering
-  Mobile Hydraulics
-  Refrigeration
-  O<sub>2</sub> Oxygen application



Input pressure range												
Nominal pressure gauge	[bar]	6	10	16	25	40	60	100	160	250	400	600
Overpressure	[bar]	14	35	35	70	140	140	350	350	700	1200	1200
Burst pressure $\geq$	[bar]	35	85	85	175	350	350	850	850	1750	2100	2100
Vacuum resistance		unlimited										

Output signal / Supply	
Standard	2-wire: 4 ... 20 mA / $V_S = 8 \dots 32 V_{DC}$
Option IS-version	2-wire: 4 ... 20 mA / $V_S = 10 \dots 28 V_{DC}$
Option 3-wire	3-wire: 0 ... 10 V / $V_S = 14 \dots 30 V_{DC}$

Performance	
Accuracy <sup>1</sup>	$\leq \pm 0.5 \% \text{ FSO}$
Permissible load	current 2-wire: $R_{\max} = [(V_S - V_{S\min}) / 0.02 \text{ A}] \Omega$ voltage 3-wire: $R_{\min} = 10 \text{ k}\Omega$
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / $\text{k}\Omega$
Long term stability	$\leq \pm 0.2 \% \text{ FSO} / \text{year}$ at reference conditions
Response time	2-wire: $\leq 10 \text{ msec}$ 3-wire: $\leq 3 \text{ msec}$

<sup>1</sup> accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)

Thermal effects (Offset and Span)	
Thermal error	$\pm 0.3 \% \text{ FSO} / 10 \text{ K}$
in compensated range	0 ... 70 °C

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	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 1.4305 (303), cable gland brass, nickel plated others on request
Seals (media wetted)	none (welded)
Diaphragm	stainless steel 1.4542 (17-4PH)
Media wetted parts	pressure port, diaphragm

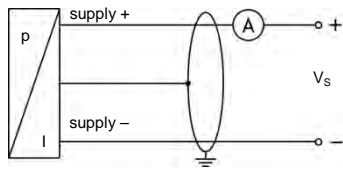
Explosion protection (only for 4 ... 20 mA / 2-wire)	
Approvals DX19-IMP 335	<b>IBExU 10 ATEX 1068 X / IECEx IBE 12.0027X</b> zone 0: II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex ia IIIC T 85°C Da
Safety technical maximum values	$U_i = 28 V_{DC}$ , $I_i = 93 \text{ mA}$ , $P_i = 660 \text{ mW}$ , $C_i \approx 0 \text{ nF}$ , $L_i \approx 0 \mu\text{H}$ , the supply connections have an inner capacity of max. 27 nF to the housing
Ambient temperature range	in zone 0: -20 ... 60 °C bei $p_{\text{atm}}$ 0.8 bar up to 1.1 bar in zone 1: -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 $\mu\text{H}/\text{m}$

Miscellaneous	
Current consumption	signal output current: max. 25 mA signal output voltage: max. 7 mA
Weight	approx. 140 g
Installation position	any
Operational life	$> 100 \times 10^6$ pressure cycles
CE-conformity	EMC Directive: 2004/108/EC Pressure Equipment Directive: 97/23/EC (module A) <sup>2</sup>
ATEX Directive	94/4/EG

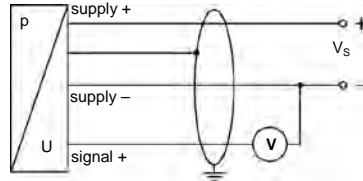
<sup>2</sup> This directive is only valid for devices with maximum permissible overpressure > 200 bar

### Wiring diagrams

2-wire-system (current)



3-wire-system (voltage)

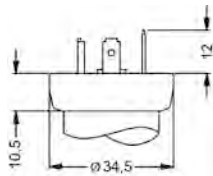


### Pin configuration

Electrical connections	ISO 4400	Binder 723 (5-pin)	M12x1 (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	⊥	ye/gn (yellow / green)

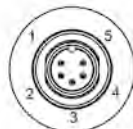
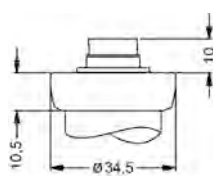
### Electrical connections (dimensions in mm)

#### standard

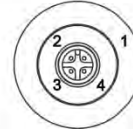
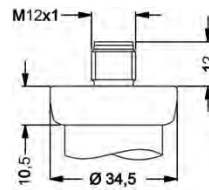


ISO 4400 (IP 65)

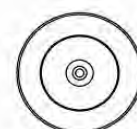
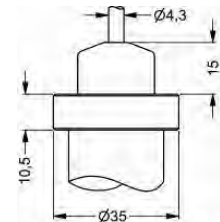
#### option



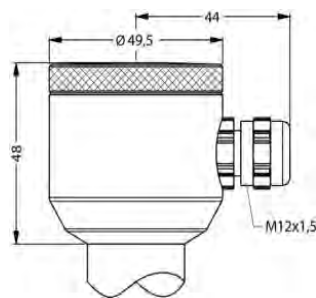
Binder series 723 5-pin (IP 67)



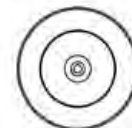
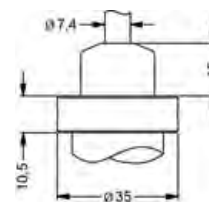
M12x1 4-pin (IP 67)



cable outlet with PVC cable (IP67)<sup>3</sup>



compact field housing (IP 67)



cable outlet, cable with ventilation tube (IP 68)<sup>4</sup>

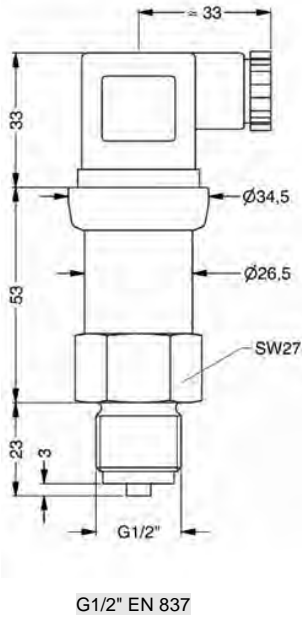
⇒ universal field housing stainless steel 1.4404 (316 L) with cable gland M20x1.5 (ordering code 880) and other versions on request

<sup>3</sup> standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C)

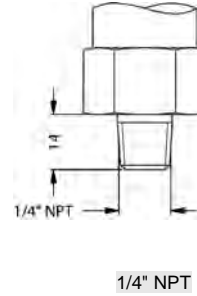
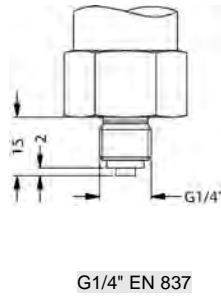
<sup>4</sup> different cable types and lengths available, permissible temperature depends on kind of cable

**Mechanical connections (dimensions in mm)**

**standard**



**option**



⇒ 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

