



## FPDMP331 Industrial Pressure Transmitter for Low Pressure

- stainless Steel Sensor
- accuracy according to IEC 60770:  
standard: 0.35 % FSO  
option: 0.25 / 0.1 % FSO



The pressure transmitter DMP 331 can be used in all industrial areas when the medium is compatible with stainless steel 1.4404 (316 L) or 1.4435 (316 L). Additional are different elastomer seals as well as a helium tested welded version available.

The modular concept of the device allows to combine different stainless steel sensors and electronic modules with a variety of electrical and mechanical versions. Thus a diversity of variations is created, meeting almost all requirements in industrial applications.

### ■ Nominal pressure

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

### ■ Output signals

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

### ■ Special Characteristics

- perfect thermal behaviour
- excellent long term stability
- pressure port G 1/2" flush from 100 mbar on

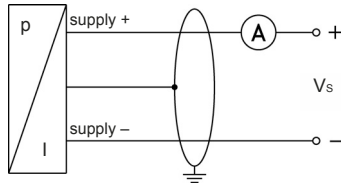
### ■ Optional Versions

- IS-version
- Ex ia = intrinsically safe for gases and dusts
- SIL 2 according to IEC 61508 / IEC 61511
- pressure sensor welded
- customer specific versions

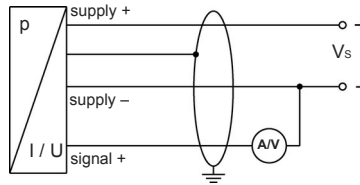
<b>Input pressure range</b>													
Nominal pressure gauge [mbar]	-1000 ... 0	10	16	25	40	60	100	160	250	400	600	1000	
Overpressure [bar]	3	0.2	0.2	0.2	0.5	0.5	1	2	3	3	3	3	
Burst pressure [bar]	5	0.3	0.3	0.3	0.75	0.75	1.5	3	5	5	5	5	
<b>Output signal / Supply</b>													
Standard	2-wire: 4 ... 20 mA / $V_s = 8 \dots 32 V_{DC}$												
Option IS-protection	2-wire: 4 ... 20 mA / $V_s = 10 \dots 28 V_{DC}$												
Options 3-wire	3-wire: 0 ... 20 mA / $V_s = 14 \dots 30 V_{DC}$ 0 ... 10 V / $V_s = 14 \dots 30 V_{DC}$												
<b>Performance</b>													
Accuracy <sup>1</sup>	standard: $\leq \pm 0.35 \% \text{ FSO}$ nominal pressure $\leq 100 \text{ mbar}$ : $\leq \pm 0.50 \% \text{ FSO}$												
Permissible load	current 2-wire: $R_{max} = [(V_s - V_{s \text{ min}}) / 0.02] \Omega$ current 3-wire: $R_{max} = 500 \Omega$ voltage 3-wire: $R_{min} = 10 \text{ k} \Omega$												
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / k $\Omega$												
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 (no n-linearity, hysteresis, repeatability)													
<b>Thermal effects (Offset and Span)</b>													
Nominal pressure $P_N$ [mbar]	-1000 ... 0	$\leq 100$			$\leq 400$			$> 400$					
Tolerance band [% FSO]	$\leq \pm 0.75$	$\leq \pm 1.5$			$\leq \pm 1$			$\leq \pm 0.75$					
in compensated range [°C]	-20 ... 85	0 ... 50			0 ... 70			-20 ... 85					
<b>Permissible temperatures</b>													
Permissible temperatures	medium: -40 ... 125 °C electronics / environment: -40 ... 85 °C storage: -40 ... 100 °C												
<b>Electrical protection</b>													
Short-circuit protection	permanent												
Reverse polarity protection	no damage, but also no function												
Electromagnetic compatibility	emission and immunity according to EN 61326												
<b>Mechanical stability</b>													
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									
<b>Materials</b>													
Pressure port	stainless steel 1.4404 (316L)												
Housing	stainless steel 1.4404 (316L)												
Seals (media wetted)	FKM												
Sensor	stainless steel 1.4404 (316L), silicon, epoxy or RTV, mineral glass												
Media wetted parts	pressure port, seals, sensor												
<b>Explosion protection (only for 4 ... 20 mA / 2-wire)</b>													
Approval DX19-DMP 343	IBExU10ATEX1068X Zone 0: II 1 G Ex ia IIC T4 Ga Zone 20: II 1 D Ex iaD 20 T85 °C												
Safety technical maximum values	$U_i = 28 \text{ V}$ , $I_i = 93 \text{ mA}$ , $P_i = 660 \text{ mW}$ , $C_i \approx 0 \text{ nF}$ , $L_i \approx 0 \mu\text{H}$												
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: -25 ... 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 mH/m												
<b>Miscellaneous</b>													
Option 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. 140 g												
Installation position	any												
CE-conformity	EMC Directive: 2004/108/EC												

## ■ Wiring diagrams

2-wire-system (current)



3-wire-system (current / voltage)

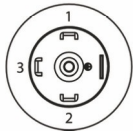
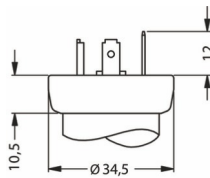


Pin configuration

Electrical connection	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)

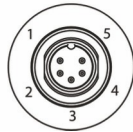
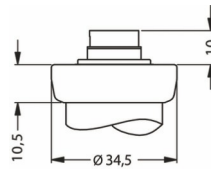
Electrical connections (dimensions in mm)

standard

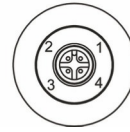
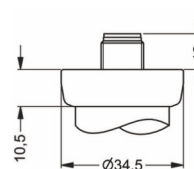


ISO 4400 (IP 65)

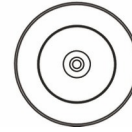
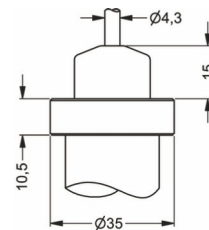
option



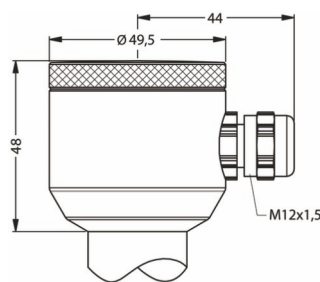
Binder Series 723 5-pin (IP 67)



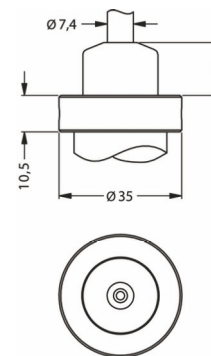
M12x1 4-pin (IP 67)



cable outlet with PVC cable (IP 67)<sup>2</sup>



compact field housing (IP 67)



cable outlet, cable with ventilation tube (IP 68)<sup>3</sup>

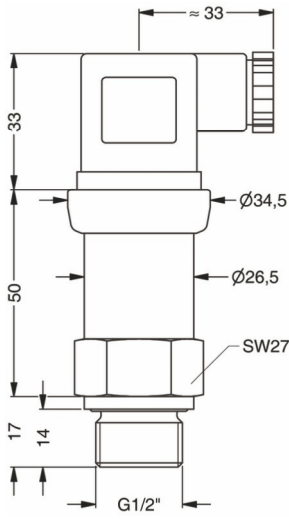
universal field housing stainless steel 1.4404 (316 L) with cable gland M20x1.5 (ordering code 880) and other versions on request

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

<sup>3</sup> different cable types and lengths available, permissible temperature depends on kind of cable

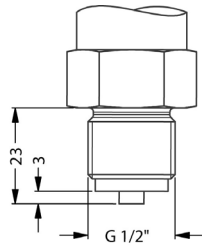
■ Mechanical connection (dimensions in mm)

standard

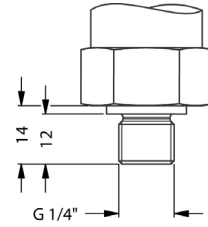


G1/2" DIN 3852  
with ISO 4400

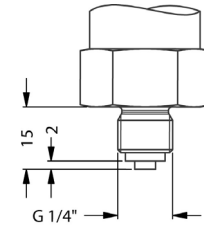
option



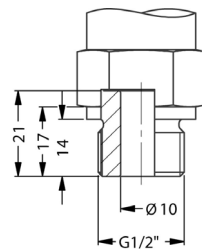
G1/2" EN 837



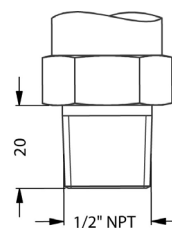
G1/4" DIN 3852



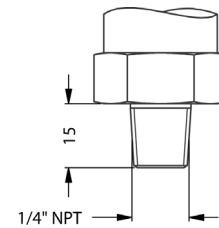
G1/4" EN 837



G1/2" open port



1/2" NPT



1/4" NPT

metric threads and others on request

