

DMP 331P

Industrial Pressure Transmitter

Process Connections With
Flush Welded Stainless Steel
Diaphragm

accuracy according to EN IEC 62828-2:
standard: 0.35 % span
option: 0.25 % span



Nominal pressure

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

Output signals

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

Special characteristics

- ▶ hygienic version
- ▶ CIP / SIP cleaning up to 150 °C
- ▶ vacuum resistant

Optional versions

- ▶ IS-version
Ex ia = intrinsically safe for gases and dust
- ▶ SIL 2
according to IEC 61508 / IEC 61511
- ▶ Diaphragm in
Hastelloy® or Tantalum
- ▶ cooling element for media
temperatures up to 300 °C

The pressure transmitter DMP 331P was designed for use in the food / beverage and pharmaceutical industry. The compact design with hygienic versions makes it possible to achieve an outstanding performance in terms of accuracy, temperature behavior and long term stability.

The modular construction concept allows a combination of various process connections with different filling fluids and a cooling element. Several electrical connections complete the profile of DMP 331P.

Preferred areas of use are



Food and Beverage



Pharmaceutical Industry

Material and test certificates

inspection certificate 3.1
according to DIN EN 10204



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Technical Data

Input pressure range ¹									
Nominal pressure gauge*	[bar]	-1...0	0.10	0.16	0.25	0.40	0.60	1	1.6
Nominal pressure abs.*	[bar]	-	-	-	-	0.40	0.60	1	1.6
Overpressure	[bar]	5	0.5	1	1	2	5	5	10
Burst pressure ≥	[bar]	7.5	1.5	1.5	1.5	3	7.5	7.5	15
Nominal pressure gauge / abs.	[bar]	2.5	4	6	10	16	25	40	
Overpressure	[bar]	10	20	40	40	80	80	105	
Burst pressure ≥	[bar]	15	25	50	50	120	120	210	
Vacuum resistance		P _N > 1 bar: unlimited vacuum resistance P _N ≤ 1 bar: on request							
¹ consider the pressure resistance of fitting and clamps									
[*] for 0 ... 1 bar abs. or -1 ... 0 bar gauge max.temperature 70°C									
Output signal / Supply									
Standard		2-wire: 4 ... 20 mA / V _S = 8 ... 32 V _{DC}				SIL-version: V _S = 14 ... 28 V _{DC}			
Option IS-protection		2-wire: 4 ... 20 mA / V _S = 10 ... 28 V _{DC}				SIL-version: V _S = 14 ... 28 V _{DC}			
Options 3-wire		3-wire: 0 ... 20 mA / V _S = 14 ... 30 V _{DC} 0 ... 10 V / V _S = 14 ... 30 V _{DC}							
Performance									
Accuracy ²		standard: nominal pressure < 0.4 bar : ≤ ± 0.5 % span nominal pressure ≥ 0.4 bar: ≤ ± 0.35 % span option: nominal pressure ≥ 0.4 bar: ≤ ± 0.25 % span							
Permissible load		current 2-wire: R _{max} = [(V _S – V _{S min}) / 0.02 A] Ω current 3-wire: R _{max} = 500 Ω voltage 3-wire: R _{min} = 10 kΩ							
Influence effects		supply: 0.05 % span / 10 V				load: 0.05 % span / kΩ			
Long term stability		≤ ± 0.1 % span / year at reference conditions							
Response time		2-wire: < 10 msec				3-wire: ≤ 3 msec			
² accuracy according to EN IEC 62828-2– limit point adjustment (non-linearity, hysteresis, repeatability)									
Thermal effects (Offset and Span) ³ / Permissible temperatures									
Nominal pressure P _N	[bar]	-1 ... 0			< 0.40			≥ 0.40	
Tolerance band	[% span]	≤ ± 0.75			≤ ± 1,5			≤ ± 0.75	
in compensated range	[°C]	-20 ... 85			0 ... 50			-20 ... 85	
Permissible temperatures ⁴		medium ⁴ : -40 ... 125 °C for filling fluid silicon oil -10 ... 125 °C for filling fluid food grade oil electronics / environment: -40 ... 85 °C storage: -40 ... 100 °C							
Permissible temperature medium for cooling element ⁵		filling fluid silicon oil		overpressure: -40 ... 300 °C			vacuum: -40 ... 150 °C ⁶		
		filling fluid food grade oil		overpressure: -10 ... 250 °C			vacuum: -10 ... 150 °C ⁶		
³ an optional cooling element can influence thermal effects for offset and span depending on installation position and filling conditions.									
⁴ max. temperature of the medium for nominal pressure gauge > 0 bar: 150 °C for 60 minutes with a max. environmental temperature of 50 °C									
⁵ max. temperature depends on the used sealing material, type of seal and installation									
⁶ also for P _{abs} ≤ 1 bar									
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 according to DIN EN 60068-2-6		G 1/2": 20 g RMS (25 ... 2000 Hz)				others: 10 g RMS (25 ... 2000 Hz)			
Shock according to DIN EN 60068-2-27		G 1/2": 500 g / 1 msec				others: 100 g / 1 msec			
Filling fluids									
Standard		silicon oil							
Options		food grade oil, compliant with 21CFR178.3570 (Mobil SHC Cibus 32; Category Code: H1; NSF Registration No.: 141500) others on request							
Materials									
Pressure port		stainless steel 1.4404 (316 L)				others on request			
Housing		stainless steel 1.4404 (316 L)							
Option field housing		stainless steel 1.4301 (304), cable gland M16x1.5 brass, nickel plated (clamping range 2....8 mm)							
Seals (media wetted)		standard: FKM (recommended for medium temperatures ≤ 200 °C) option: FFKM (recommended for medium temperatures < 260 °C) others on request							
Standard		Clamp, dairy pipe, Varivent®: without							
Optional									
Diaphragm		stainless steel 1.4435 (316 L)							
Standard		Hastelloy® C-276 (2.4819)				Tantalum on request			
Optional									
Media wetted parts		pressure port, seal, diaphragm							

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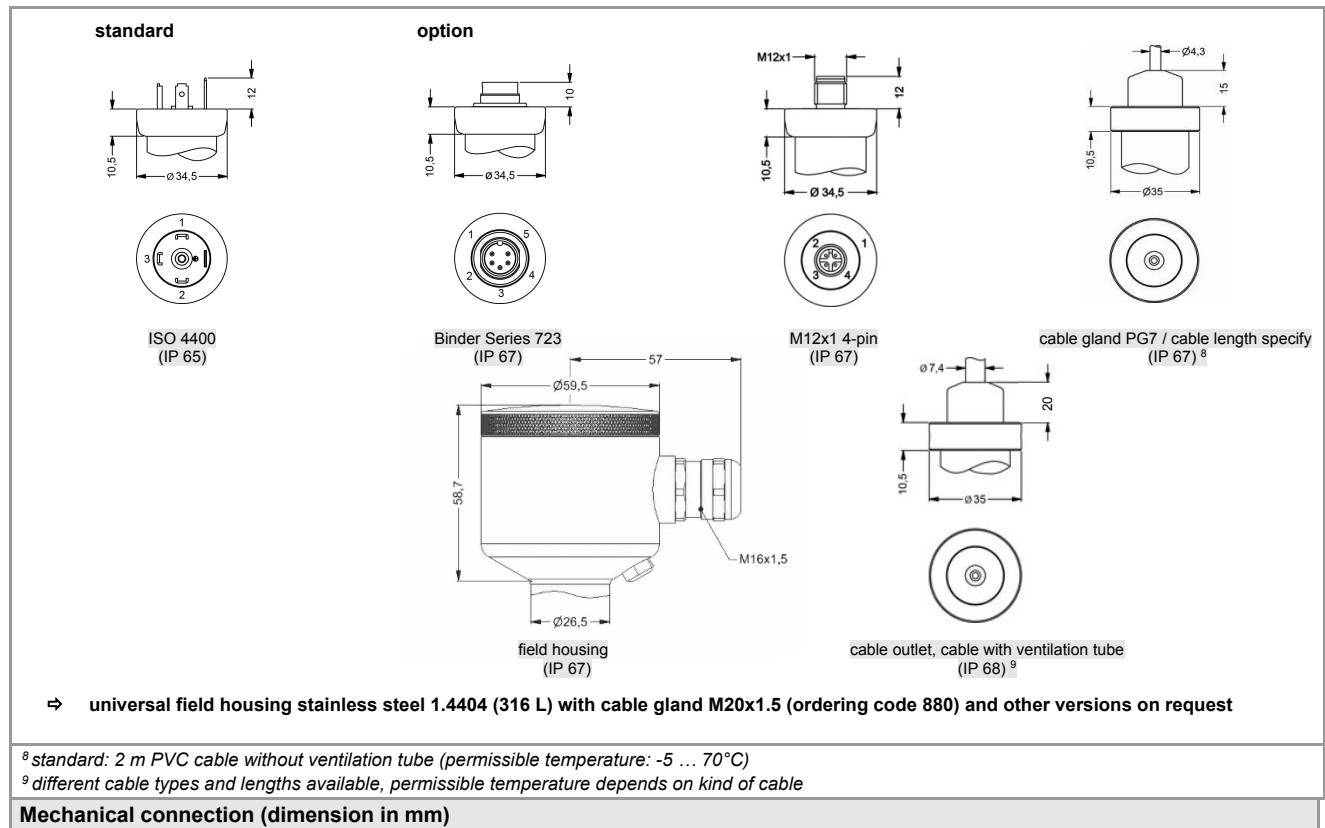
Technical Data

Explosion protection (only for 4 ... 20 mA / 2-wire)					
Approvals DX9-DMP 331P		IBExU10ATEX1122 X zone 0: II 1G Ex ia IIC T4 Ga			

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Technical Data

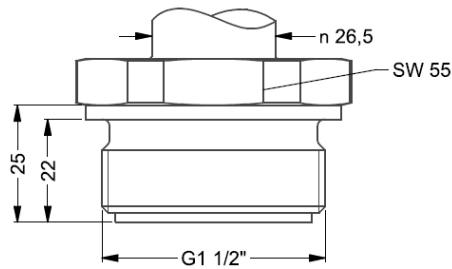


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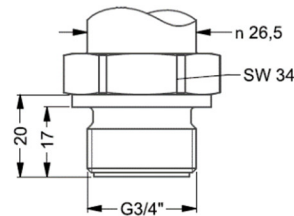
Technical Data

Standard

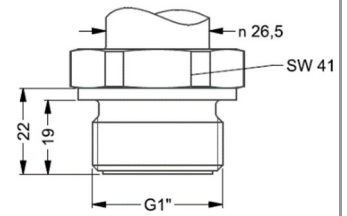


G1/2" flush DIN 3852¹⁰

Option

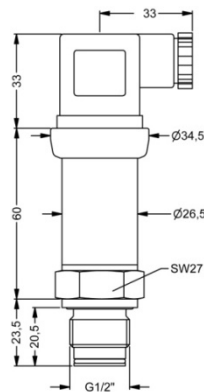


G 3/4" flush DIN 3852
with ISO 4400

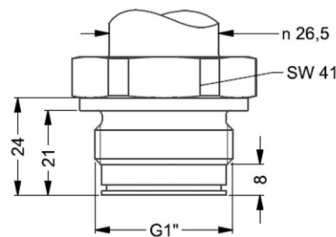


G1" flush DIN 3852
with ISO 4400

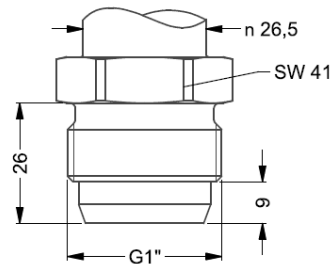
Option



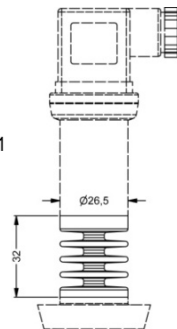
G1/2" flush
with radial o-ring ¹⁰



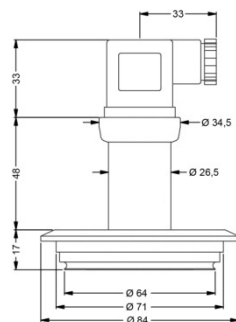
G1" flush
with 2 radial o-ring ($P_N > 0,25$ bar)



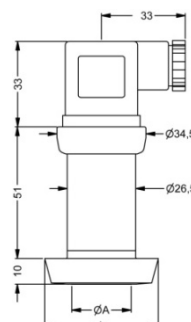
G1" cone
with ISO 4400



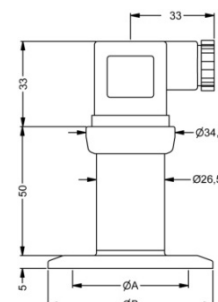
cooling element 300 °C



Varivent¹⁰
 $P_N \leq 10$ bar



dairy pipe (DIN 11851)
with ISO 4400



Clamp (DIN 32676)
with ISO 4400

	dimension in mm		
size	DN 25	DN 40	DN 50
A	23	32	45
B	44	56	68.5
P_N [bar]	$\geq 0,25$ ≤ 40	$\geq 0,25$ ≤ 40	$\geq 0,25$ ≤ 25

	dimension in mm			
size	3/4"	DN 25	DN 32	DN 50
A	14	23	32	45
B	25	50.5	50.5	64
P_N [bar]	≥ 4 ≤ 8	$\geq 0,25$ ≤ 16	≤ 16	≤ 16

* higher pressure ranges on request

⇒ SIL- and SIL-Ex version: total length increases by 26.5 mm! ; ⇒ metric threads and other versions on request

¹⁰ possible only for $P_N \geq 1$ bar; max. temperature depends on the used sealing material, type of seal and installation

This datasheet contains product specification. properties are not guaranteed. Subject to change without notice.

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BD SENSORS
pressure measurement

www.bdsensors.com

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DMP 331P

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The company BD SENSORS s.r.o. is certified by TÜV SÜD Czech according to the standard ISO 9001.

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