BD SENSORS®
pressure measurement

DMP 304

Industrial Pressure Transmitter for Ultra High Pressure

accuracy according to EN IEC 62828-2:
standard: 0.5 % span
option: 0.25 % span

Nominal pressure

from 0 ... 2 000 bar up to 0 ... 6 000 bar

Output signals

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

Special characteristics

- adjustability of offset and span via front sided potentiometers
- pressure port 9/16" UNF
- 80 % calibration signal with MIL / Bendix plug

Optional versions

- IS-version:
  Ex ia = intrinsically safe for gases
- accuracy according to IEC 60770:
  0.25 % span
- pressure port M20x1.5 and M16x1.5

The ultra-high-pressure transmitter type DMP 304 has been especially designed for applications with highest demand on precision and reliability. DMP 304 series is based on a compensated strain gauge, bonded onto a hardened stainless steel diaphragm.

Due to the rugged stainless steel housing usage under extreme conditions and in IS-required areas is no problem.

Preferred areas of use are

- hydraulic circuits
- water jet cutting
- high pressure applications in chemical and petrochemical industry

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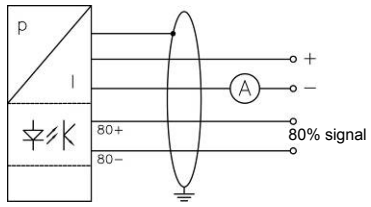
Input pressure range					
Nominal pressure gauge	[bar]	2 000	4 000	5 000	6 000
Overpressure	[bar]	3 000	5 000	6 000	7 000
Burst pressure	[bar]	4 000	8 000	10 000	10 000

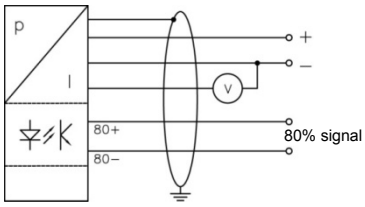
Output signal / Supply	
Standard	2-wire: 4 ... 20 mA / V_S = 10 ... 30 V_{DC}
IS-protection	2-wire: 4 ... 20 mA / V_S = 10 ... 28 V_{DC}
Option 3-wire (on request)	3-wire: 0 ... 10 V / V_S = 14 ... 36 V_{DC}
Performance	
Accuracy[1]	standard: ≤ ± 0.50 % span option: ≤ ± 0.25 % span (on request)
Permissible load	current 2-wire: $R_{max} = [(V_S - V_{S\ min}) / 0.02\ A]\ \Omega$ voltage 3-wire: R_{min} = 10 kΩ
Influence effects	supply 0.05 % span / 10 V load: 0.05 % span / kΩ
Long term stability	≤ ± 0.2 % span / year
Response time	< 2.5 msec
Adjustability	Via a front sided potentiometer is an adjustment of the offset possible within the range of ± 5 % of the nominal pressure range, without an influence of characteristic curve and accuracy.
[1] accuracy according to EN IEC 62828-2– limit point adjustment (non-linearity, hysteresis, repeatability)	
Calibration (only with MIL / Bendix plug)	
Calibration signal accuracy	≤ ± 0.25 % span
Calibration	80 % span calibration (e.g. for 4 ... 20 mA / 2-wire: signal = 0.8*16 mA + 4 mA = 16.8 mA)
Thermal effects (Offset and Span)	
Thermal error	≤ ± 0.2 % span / 10 K in compensated range -20 ... 85 °C
Permissible temperatures	
Permissible temperatures	medium: -40 ... 85 °C electronics / environment: -25 ... 85 °C storage: -40 ... 85 °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	10 g RMS (20 ... 2000 Hz)
Shock	100 g / 11 msec
Materials	
Pressure port / diaphragm	stainless steel 1.4548 (17-4 PH)
Housing	standard: stainless steel 1.4301 (304)
Seals (media wetted)	none (welded version)
Media wetted parts	pressure port, diaphragm
IS-protection (only for 4 ... 20 mA / 2-wire)	
Approval DX17-DMP 304	zone 0: II 1G Ex ia IIC T4
Safety technical maximum values	U_i = 28 V, I_i = 93 mA, P_i = 660 mW
Permissible temperatures for environment	in zone 0: -20 ... 60 °C with p_{atm} 0.8 bar up to 1.1 bar zone 1 and higher: -25 ... 70 °C
Connecting cables (by factory)	cable capacity: signal line/shield as well as signal line/signal line: 160 pF/m cable inductance: signal line/shield as well as signal line/signal line: 1 µH/m
Miscellaneous	
Insulation strength / resistance	standard: insulation strength 100 MΩ @ 35 V IS-version: insulation resistance 100 MΩ @ 35 V_{DC} 100 MΩ @ 500 V_{AC} (relative to housing)
Current consumption	2-wire signal output current: max. 28 mA 3-wire signal output voltage: max. 15 mA
Weight	approx. 260 g
Operational life	10 million load cycles
Installation position	any
CE-conformity	EMC Directive: 2014/30/EU Pressure Equipment Directive: 2014/68/EU (module A)
ATEX Directive	2014/34/EU

Wiring diagrams

2-wire-system (current)



3-wire-system (voltage)



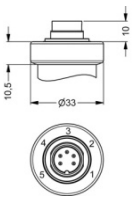
Pin configuration

Electrical connections	Binder 723 (5-pin)	M12x1 (4-pin)	ISO 4400	cable colours (IEC 60757)
Supply +	3	1	1	wh (white)
Supply –	4	2	2	bn (brown)
Signal + (only for 3-wire)	1	3	3	gn (green)
Shield	5	4	pin	gn/ye (green / yellow)

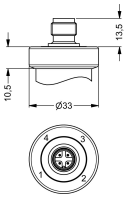
Pin configuration MIL / Bendix plug (optional)

Version	Pin A	Pin B	Pin C	Pin D	Pin E	Pin F
2-wire current signal 4 ... 20 mA	supply +/ signal +	supply -/ signal -	-	-	calibration +	calibration -
3-wire	signal +	supply - / signal - / calibration -	supply +	-	-	calibration +

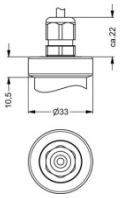
Electrical connections (dimensions in mm)



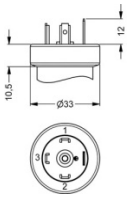
Binder series 723 (IP 67)



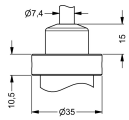
M12x1 4-pin (IP 67)



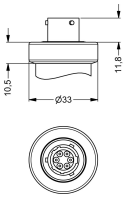
cable gland PG7 / cable length specify (IP 67)[2]



ISO 4400 (IP 65)



cable outlet, cable with ventilation tube (IP68)[3]

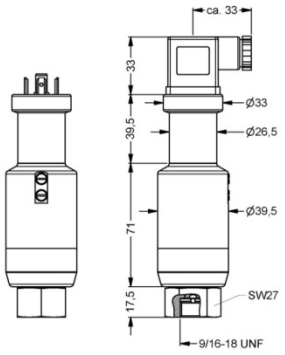


MIL / Bendix plug (type PT 02 A 10-6 P)

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

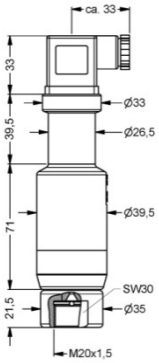
Mechanical connections (dimensions in mm)

Standard

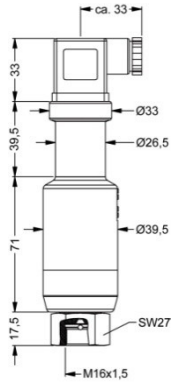


9/16“ UNF internal thread

Option



M20x1,5 internal thread



M16x1,5 internal thread

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Ordering code DMP 304

23.08.2024

DMP 304 □□□ - □□□□ - □ - □ - □□□ - □□□ - □□□

Pressure	
Gauge	2 2 0
Input [bar]	
0 … 2000	2 0 0 4
0 … 4000	4 0 0 4
0 … 5000	5 0 0 4
0 … 6000	6 0 0 4
Customer	9 9 9 9
Output	
4…20 mA / 2-wire	1
0…10 V / 3-wire	3
Intrinsic safety 4…20 mA / 2-wire	E
Customer	9
Accuracy	
0,5 % (standard)	5
Customer	9
Electrical connection	
Connector DIN 43650 (ISO 4400) (IP 65)	1 0 0
Connector Binder 723 5-pin (IP 67)	2 0 0
Cable gland potted / cable length specify (IP 68) [1] + PVC cable / 1 m	T R 0
Connector M12 x 1, 4-pin (IP 67) - metal	M 1 0
Connector MIL-/Bendix (Typ PT 02 A 10-6 P)	B G 0
Customer	9 9 9
Mechanical connection	
9/16-18 UNF internal thread	V 0 0
M 16 x 1,5 internal thread	P 0 0
M 20 x 1,5 internal thread	D 2 8
Customer	9 9 9
Special version	
Adjustable (using trimmers) - ATTENTION must not be used in an EX environment	0 4 1
Customer	9 9 9

0,-…without additional charge
On request (OR)...in accordance with the producer
Surcharges for calibration are not subject to any discounts. Subject to change.
This document contains the specification for ordering the product;
detailed technical parameters of the product and its possible variants are given in the data sheet.
BD SENSORS reserves the right to change sensor specifications without further notice.

1 code TR0 = PVC cable, cable with ventilation tube available in different types and lengths; cable not included in the price