

# 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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Ultra High Pressure Transmitter

Technical Data

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 / $V_S = 10 \dots 30 V_{DC}$			
IS-protection	2-wire:	4 ... 20 mA / $V_S = 10 \dots 28 V_{DC}$			
Option 3-wire (on request)	3-wire:	0 ... 10 V / $V_S = 14 \dots 36 V_{DC}$			
Performance					
Accuracy <sup>1</sup>	standard:	$\leq \pm 0.50 \%$ span			
	option:	$\leq \pm 0.25 \%$ span (on request)			
Permissible load	current 2-wire:	$R_{max} = [(V_S - V_{S \min}) / 0.02 A] \Omega$			
	voltage 3-wire:	$R_{min} = 10 k\Omega$			
Influence effects	supply	0.05 % span / 10 V			
	load:	0.05 % span / $k\Omega$			
Long term stability		$\leq \pm 0.2 \%$ span / year			
Response time		< 2.5 msec			
Adjustability		Via a front sided potentiometer is an adjustment of the offset possible within the range of $\pm 5 \%$ of the nominal pressure range, without an influence of characteristic curve and accuracy.			
<sup>1</sup> accuracy according to EN IEC 62828-2 – limit point adjustment (non-linearity, hysteresis, repeatability)					
Calibration (only with MIL / Bendix plug)					
Calibration signal accuracy		$\leq \pm 0.25 \%$ span			
Calibration		80 % span calibration (e.g. for 4 ... 20 mA / 2-wire: signal = $0.8 \cdot 16 \text{ mA} + 4 \text{ mA} = 16.8 \text{ mA}$ )			
Thermal effects (Offset and Span)					
Thermal error		$\leq \pm 0.2 \%$ 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		$U_i = 28 \text{ V}$ , $I_i = 93 \text{ mA}$ , $P_i = 660 \text{ mW}$			
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 $\mu\text{H}/\text{m}$			
Miscellaneous					
Insulation strength / resistance	standard:	insulation strength 100 M $\Omega$ @ 35 V			
	IS-version:	insulation resistance 100 M $\Omega$ @ 35 V <sub>DC</sub> 100 M $\Omega$ @ 500 V <sub>AC</sub> (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				

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Wiring diagrams						
<b>2-wire-system (current)</b> 			<b>3-wire-system (voltage)</b> 			
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)						
<p>Binder series 723 (IP 67)</p>		<p>M12x1 4-pin (IP 67)</p>		<p>cable gland PG7 / cable length specify (IP 67)<sup>2</sup></p>		
<p>ISO 4400 (IP 65)</p>		<p>cable outlet, cable with ventilation tube (IP68)<sup>3</sup></p>		<p>MIL / Bendix plug (type PT 02 A 10-6 P)</p>		
<sup>2</sup> standard: 2 m PVC-cable without air tube (permissible temperature: -5 ... 70 °C) <sup>3</sup> different cable types and lengths available, permissible temperature depends on kind of cable						
Mechanical connections (dimensions in mm)						
<b>Standard</b> <p>9/16" UNF internal thread</p>		<b>Option</b> <p>M20x1,5 internal thread</p> <p>M16x1,5 internal thread</p>				

This data sheet contains product specification: properties are not guaranteed. Subject to change without notice.

## Ordering code DMP 304

21.7.2022

DMP304

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



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