

# DMP 304

## Industrial Pressure Transmitter for Ultra High Pressure

accuracy according to IEC 60770:  
standard: 0.5 % FSO  
option: 0.25 % FSO



### 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 % FSO
- ▶ 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



# DMP 304

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:	$\leq \pm 0.50 \% \text{ FSO}$			
	option:	$\leq \pm 0.25 \% \text{ FSO (on request)}$			
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 / k $\Omega$			
Long term stability	$\leq \pm 0.2 \% \text{ FSO / year}$				
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 IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)					
Calibration (only with MIL / Bendix plug)					
Calibration signal accuracy	$\leq \pm 0.25 \% \text{ FSO}$				
Calibration	80 % FSO 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	$\leq \pm 0.2 \% \text{ FSO / 10 K}$ 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 $p_{\text{atm}}$ 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				

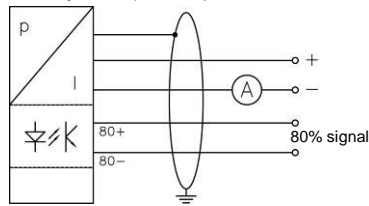
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Ultra High Pressure Transmitter

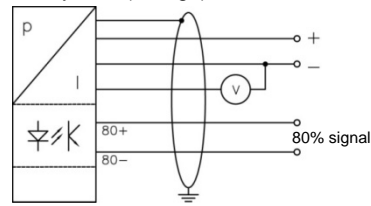
Technical Data

## Wiring diagrams

### 2-wire-system (current)



### 3-wire-system (voltage)



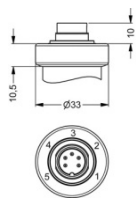
## Pin configuration

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)

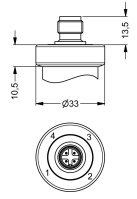
## Pin configuration MIL / Bendix plug (optional)

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 +

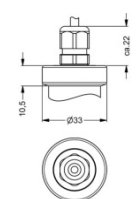
## Electrical connections (dimensions in mm)



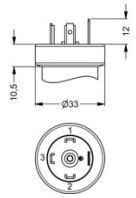
Binder series 723 (IP 67)



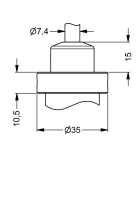
M12x1 4-pin (IP 67)



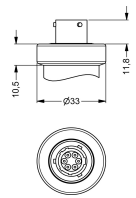
cable outlet with PVC-cable (IP 67)<sup>2</sup>



ISO 4400 (IP 65)



cable outlet (IP 68)<sup>3</sup>



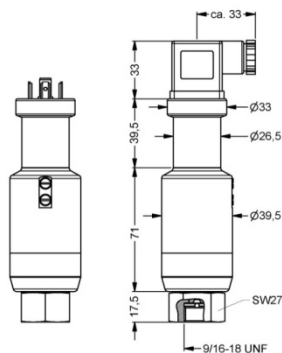
MIL / Bendix plug (type PT 02 A 10-6 P)

<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

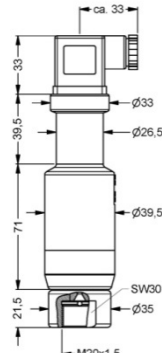
## Mechanical connections (dimensions in mm)

### Standard

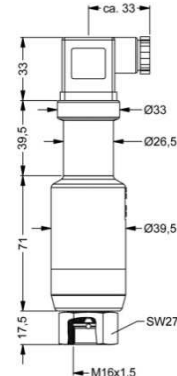


9/16" UNF internal thread

### Option



M20x1,5 internal thread



M16x1,5 internal thread

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