



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 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



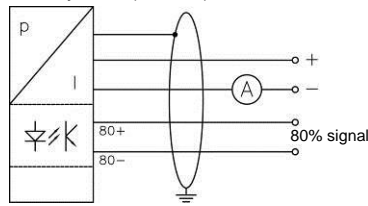
high pressure applications in chemical and petrochemical industry



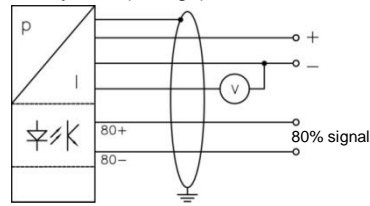
Input pressure range					
Nominal pressure gauge	[bar]	2 000	4 000	5 000	6 000
Overpressure	[bar]	3 000	5 000	6 000	7 000
Burst pressure	[bar]	4 000	8 000	10 000	10 000
Output signal / Supply					
Standard	2-wire:	4 ... 20 mA / $V_S = 10 \dots 30 V_{DC}$			
IS-protection	2-wire:	4 ... 20 mA / $V_S = 10 \dots 28 V_{DC}$			
Option 3-wire (on request)	3-wire:	0 ... 10 V / $V_S = 14 \dots 36 V_{DC}$			
Performance					
Accuracy ¹		standard: $\leq \pm 0.50\%$ FSO option: $\leq \pm 0.25\%$ FSO (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 % FSO / 10 V load: 0.05 % FSO / k Ω			
Long term stability		$\leq \pm 0.2\%$ FSO / year at reference conditions			
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.			
¹ accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)					
Calibration (only with MIL / Bendix plug)					
Calibration signal accuracy		$\leq \pm 0.25\%$ 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		$\leq \pm 0.2\%$ 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_{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 Ω @ 35 V		
		IS-version: insulation resistance	100 M Ω @ 35 V_{DC} 100 M Ω @ 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			
Installation position		any			
CE-conformity		EMC Directive: 2004/108/EC		Pressure Equipment Directive: 97/23/EC (module A)	

Wiring diagrams

2-wire-system (current)



3-wire-system (voltage)



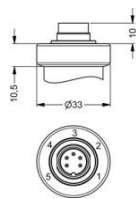
Pin configuration

Electrical connections	Binder 723 (5-pin)	M12x1 (4-pin)	ISO 4400	cable colours (DIN 47100)
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)

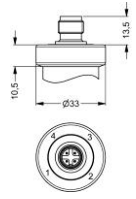
Pin configuration MIL / Bendix plug (optional)

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 +

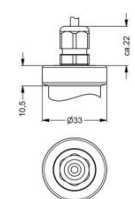
Electrical connections (dimensions in mm)



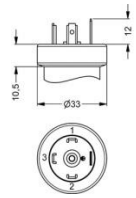
Binder series 723 (IP 67)



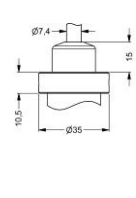
M12x1 4-pin (IP 67)



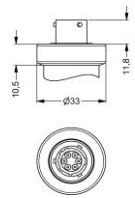
cable outlet with PVC-cable (IP 67)²



ISO 4400 (IP 65)



cable outlet (IP 67)³



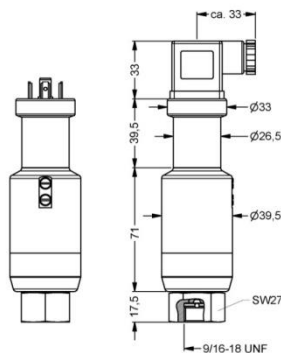
MIL / Bendix plug (Typ PT 02 A 10-6 P)

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

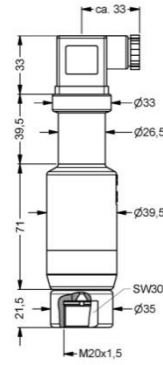
Mechanical connections (dimensions in mm)

Standard

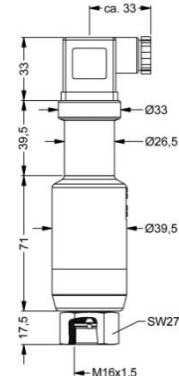


9/16" UNF internal thread

Option



M20x1,5 internal thread



M16x1,5 internal thread



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Messgröße		Pressure													
	relativ		gauge	2	2	0									
Eingang	[bar] Input		[bar]												
	2 000		2 000		2	0	0	4							
	4 000		4 000		4	0	0	4							
	5 000		5 000		5	0	0	4							
	6 000		6 000		6	0	0	4							
	Sondermessbereiche		customer		9	9	9	9							auf Anfrage consult
Ausgang			Output												
	4 ... 20 mA / 2-Leiter		4 ... 20 mA / 2-wire						1						
	Ex-Schutz 4 ... 20 mA / 2-Leiter		Intrinsic safety 4 ... 20 mA / 2-wire						E						
	0 ... 10 V / 3-Leiter		0 ... 10 V / 3-wire						3						auf Anfrage consult
	andere		customer						9						auf Anfrage consult
Genauigkeit			Accuracy												
Standard	0,5 %	standard	0,5 %						5						
Option	0,25 %	option	0,25 %						2						auf Anfrage consult
	andere		customer						9						auf Anfrage consult
Elektrischer Anschluss			Electrical connection												
	Stecker und Kabeldose ISO 4400		Male and female plug ISO 4400						1	0	0				
	Stecker Binder Serie 723 (5-polig)		Male plug Binder series 723 (5-pin)						2	0	0				
	Kabelausgang mit PVC-Kabel		Cable outlet with PVC-cable ¹						T	A	0				
	Kabelausgang		Cable outlet ²						T	R	0				
	Stecker M12x1 (4-polig), Metall		Male plug M12x1 (4-pin), metal						M	1	0				
	MIL-/Bendix (Typ PT 02 A 10-6 P)		MIL-/Bendix (Typ PT 02 A 10-6 P)						B	G	0				auf Anfrage consult
	andere		customer						9	9	9				auf Anfrage consult
Mechanischer Anschluss			Mechanical connection												
	9/16" UNF Innengewinde		9/16" UNF internal thread						V	0	0				
	M16x1,5 Innengewinde		M16x1.5 internal thread						P	0	0				
	M20x1,5 Innengewinde		M20x1.5 internal thread						D	2	8				
	andere		customer						9	9	9				auf Anfrage consult
Sonderausführungen			Special version												
	verstellbar		adjustable									0	4	1	
	andere		customer									9	9	9	auf Anfrage consult

Preise EXW Thierstein, ausschl. Verpackung Prices EXW Thierstein, excluding package

¹ Standard: 2 m PVC-Kabel ohne Belüftungsschlauch (Temperatur standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C), optionally cable with ventilation tube)
² Kabel in verschiedenen Ausführungen und Längen lieferbar (Ten different cable types and lengths deliverable (permissible temperature depends on kind of cable))