



DMP 304

Industrial Pressure Transmitter for Ultra High Pressure

accuracy according to IEC 61298-2:
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

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
- ▶ accuracy according to IEC 61298-2:
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



High pressure 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 ... 30 V _{DC}			
IS-protection	2-wire:	4 ... 20 mA / V _S = 10 ... 28 V _{DC}			
Option 3-wire	3-wire:	0 ... 10 V / V _S = 14 ... 36 V _{DC}			
Performance					
Accuracy ¹	standard: ≤ ± 0.50 % FSO option: ≤ ± 0.25 % FSO (on request)				
Permissible load	current 2-wire: R _{max} = [(V _S – V _{S min}) / 0.02 A] Ω voltage 3-wire: R _{min} = 10 kΩ				
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ				
Long term stability	≤ ± 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 ± 5 % of the nominal pressure range, without an influence of characteristic curve and accuracy.				
¹ accuracy according to IEC 61298-2 – limit point adjustment (non-linearity, hysteresis, repeatability)					
Calibration (only with MIL / Bendix plug)					
Calibration signal accuracy	≤ ± 0.25 % FSO				
Calibration	80 % FSO 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 % 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	20 g RMS / 10 ... 2000 Hz according to DIN EN 60068-2-6				
Shock	500 g / 1 msec half sine according to DIN EN 60068-2-27				
Materials					
Pressure port / diaphragm	stainless steel 1.4548 (17-4 PH)				
Housing	stainless steel 1.4301 (304)				
Seals (media wetted)	none (welded version)				
Media wetted parts	pressure port, diaphragm				
Explosion protection (only for 4 ... 20 mA / 2-wire)					
Approval DX17-DMP 304	IBExU 09 ATEX 1144 X zone 0: II 1G Ex ia IIC T4				
Safety technical maximum values	U _i = 28 V, I _i = 93 mA, P _i = 660 mW, C _i ≈ 0 nF, L _i ≈ 0 μH, the supply connections have an inner capacity of max. 27 nF to the housing				
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				

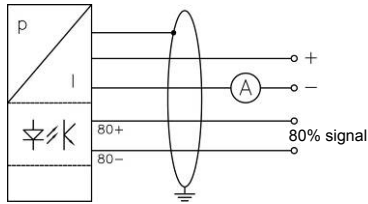
DMP 304

Ultra High Pressure Transmitter

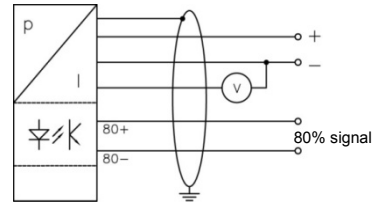
Technical Data

Wiring diagrams

2-wire-system (current)



3-wire-system (voltage)



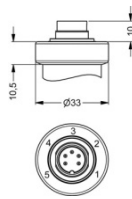
Pin configuration

Electrical connections	Binder 723 (5-pin)	M12x1 (4-pin)	ISO 4400	cable colour (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	gnye (green-yellow)

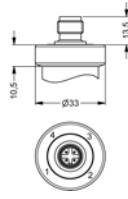
Pin configuration MIL-/ Bendix plug (optional)

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 +

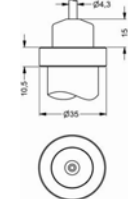
Electrical connections (dimensions in mm)



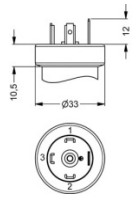
Binder series 723 (IP 67)



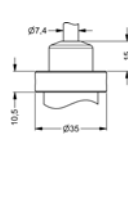
M12x1 4-pin (IP 67)



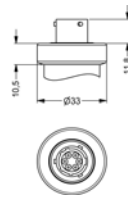
cable outlet
with PVC-cable (IP 67)²



ISO 4400 (IP 65)



cable outlet (IP 68)³



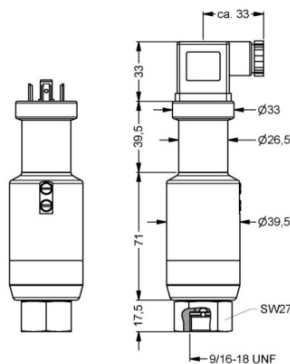
MIL-/ Bendix plug
(type PT 02 A 10-6 P)

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

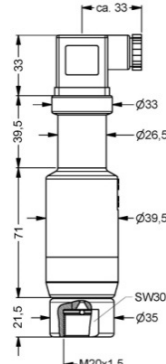
Mechanical connections (dimensions in mm)

Standard

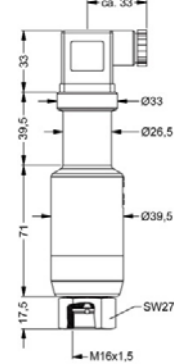


9/16" UNF internal thread

Options



M20x1.5 internal thread



M16x1.5 internal thread

© – The specifications given in this document represent the state of engineering at the time of publishing. We reserve the right to make modifications to the specifications and materials.

Ordering code DMP 304

$$\begin{array}{|c|c|c|} \hline & & \\ \hline \end{array} - \begin{array}{|c|c|c|c|} \hline & & & \\ \hline \end{array} - \begin{array}{|c|} \hline \\ \hline \end{array} - \begin{array}{|c|} \hline \\ \hline \end{array} - \begin{array}{|c|c|c|} \hline & & \\ \hline \end{array} - \begin{array}{|c|c|c|} \hline & & \\ \hline \end{array} - \begin{array}{|c|c|c|} \hline & & \\ \hline \end{array}$$

Pressure																			
	gauge	2	2	0															
Input		[bar]																	
	2 000				2	0	0	4											
	4 000				4	0	0	4											
	5 000				5	0	0	4											
	6 000				6	0	0	4											
	customer				9	9	9	9											consult
Output																			
	4 ... 20 mA / 2-wire									1									
	intrinsic safety 4 ... 20 mA / 2-wire									E									
	0 ... 10 V / 3-wire									3									
	customer									9									consult
Accuracy																			
standard:	0.50 % FSO									5									
option:	0.25 % FSO									2									consult
	customer									9									consult
Electrical connection																			
	male and female plug ISO 4400									1	0	0							
	male plug Binder series 723 (5-pin)									2	0	0							
	cable outlet with PVC cable (IP67) ¹									T	A	0							
	cable outlet,																		
	cable with ventilation tube (IP68) ²									T	R	0							
	male plug M12x1 (4-pin), metal									M	1	0							
	MIL-/Bendix (type PT 02 A 10-6 P)									B	G	0							consult
	customer									9	9	9							consult
Mechanical connection																			
	9/16" UNF internal thread										V	0	0						
	M16x1.5 internal thread										P	0	0						
	M20x1.5 internal thread										D	2	8						
	customer										9	9	9						consult
Special version																			
	adjustable													0	4	1			
	customer													9	9	9			consult

¹ standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C); others on request

² code TR0 = PVC cable, cable with ventilation tube available in different types and lengths