



DMP 333P

Industrial Pressure Transmitter

Pressure Ports with Flush Welded Stainless Steel Diaphragm

accuracy according to IEC 60770:
standard: 0.35 % FSO
option: 0.25% FSO

Nominal pressure

from 0 ... 60 bar up to 0 ... 600 bar

Output signals

2-wire: 4 ... 20 mA
3-wire: 0 ... 10 V
others on request

Special characteristics

- ▶ suited for viscous and pasty media

Optional versions

- ▶ IS-version
Ex ia = intrinsically safe for gases and dusts (in preparation)
- ▶ gold-plated process connection for hydrogen applications
- ▶ cooling element for media temperatures up to 200 °C
- ▶ customer specific versions

The The pressure transmitter DMP 333P is suitable for measuring the pressure of viscous, pasty or gaseous media and for applications that require a front-flush, dead space-free process connection. Especially for hydrogen applications there is the possibility to use the process connection with gold plating. A temperature decoupler can also be provided for medium temperatures of up to 200 °C. A wide range of electrical connection variants are available to enable the DMP 333P to be integrated easily and quickly in the various system configurations.

Preferred areas of use are



Plant and machine engineering



Hydrogen

Preferred used for



Viscous and pasty media



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Technical Data

Input pressure range							
Nominal pressure gauge ¹	[bar]	60	100	-	-	-	-
Nominal pressure absolute	[bar]	60	100	160	250	400	600
Overpressure	[bar]	210	210	600	1000	1000	1000
Burst pressure ≥	[bar]	1000	1000	1000	1250	1250	1800

¹ measurement starts with ambient pressure

Output signal / Supply	
Standard	2-wire: 4 ... 20 mA / V _S = 8 ... 32 V _{DC}
Option IS-protection	2-wire: 4 ... 20 mA / V _S = 10 ... 28 V _{DC} (in preparation)
Options 3-wire	3-wire: 0 ... 10 V / V _S = 14 ... 30 V _{DC}

Performance	
Accuracy ²	standard: ≤ ± 0.35 % FSO option: ≤ ± 0.25 % FSO
Permissible load	current 2-wire: R _{max} = [(U _B - U _{B 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	≤ ± 0.1 % FSO / year at reference conditions
Response time	2-wire: ≤ 10 msec 3-wire: ≤ 3 msec

² accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)

Thermal effects (Offset and Span) ³ / Permissible temperatures	
Tolerance band	≤ ± 0.75 % FSO
In compensated range	-20 ... 80 °C
Permissible temperatures	medium: -40 ... 125 °C electronics / environment: -40 ... 85 °C storage: -40 ... 100 °C
Permissible temperature medium for cooling element 200 °C	overpressure: -40 ... 200 °C vacuum: -40 ... 150 °C

³ an optional cooling element can influence thermal effects for offset and span depending on installation position and filling conditions

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 according to DIN EN 60068-2-6	20 g RMS (25 ... 2000 Hz) with cooling element: 10 g RMS (25 ... 2000 Hz)
Shock according to DIN EN 60068-2-27	500 g / 1 msec with cooling element: 100 g / 1 msec

Filling fluids	
Standard	silicone oil others on request

Materials	
Housing	stainless steel 1.4404 (316 L)
Option compact field housing	stainless steel 1.4301 (304); cable gland M12x1.5, brass, nickel plated (clamping range 2 ... 8 mm)
Pressure port	standard: stainless steel 1.4404 (316 L) option: stainless steel 1.4404 (316 L), golden others on request
Diaphragm	standard: stainless steel 1.4435 (316 L) option: stainless steel 1.4435 (316 L), golden others on request
Seals	standard: FKM (recommended for medium temperatures ≤ 200 °C) option: FFKM (recommended for medium temperatures > 200 °C) others on request
Media wetted parts	pressure port, seal, diaphragm

Explosion protection (only for 4 ... 20 mA / 2-wire) in preparation							
Approvals DX19-DMP 333P	IBExU 10 ATEX xxxx X zone 0: II 1G Ex ia IIC T4 Ga; zone 20: II 1D Ex ia IIIC T 135°C Da						
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 up to bis 1.1 bar in zone 1: -20 ... 70 °C						
Connecting cables (by factory)	cable capacitance: signal line/shield also signal line/signal line: 160 pF/m cable inductance: signal line/shield also signal line/signal line: 1 μH/m						
Miscellaneous							
Current consumption	signal output current: max. 25 mA		signal output voltage: max. 7 mA				
Weight	min. 200 g (depending on process connection)						
Installation position	any (standard calibration in a vertical position with the pressure port connection down)						
Operational life	100 million load cycles						
CE-conformity	EMC Directive: 2014/30/EU						
ATEX Directive	2014/34/EU						
Wiring diagrams							
2-wire-system (current)			3-wire-system (voltage)				
Pin configuration							
Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1 / metal (4-pin)	compact field housing	cable colours (IEC 60757)		
Supply +	1	3	1	IN +	WH (white)		
Supply -	2	4	2	IN -	BN (brown)		
Signal + (only 3-wire)	3	1	3	OUT +	GN (green)		
Shield	ground pin	5	4		GNYE (green-yellow)		
Electrical connections (dimensions mm/in)							
Standard		Optional					
ISO 4400 (IP 65)		Binder series 723, 5-pin (IP 67)		M12x1, 4-pin (IP 67)			
		compact field housing (IP 67)		cable outlet with PVC cable (IP 67) ³		cable outlet, cable with ventilation tube (IP 68) ⁴	
⇒ universal field housing stainless steel 1.4404 (316 L) with cable gland M20x1.5 (ordering code 880) and other versions on request							
³ standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70°C)							
⁴ different cable types and lengths available, permissible temperature depends on kind of cable							

Mechanical connection (dimension mm/in)

standard

G1/2" flush DIN 3852

option

G1/2" flush DIN 3852
with cooling element 200 °C

⇒ metric threads and other versions on request

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