





# **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



# Industrial Pressure Transmitter

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
<sup>1</sup> measurement starts with ambient pressure							

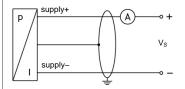
Output signal / Supply					
Standard	2-wire: 4 20 mA / V <sub>S</sub> = 8 32 V <sub>DC</sub>				
Option IS-protection	2-wire: $4 \dots 20 \text{ mA} / V_S = 10 \dots 28 V_{DC}$ (in preparation)				
Options 3-wire	3-wire: 0 10 V / V <sub>S</sub> = 14 30 V <sub>DC</sub>				
Performance					
Accuracy <sup>2</sup>	standard: $\leq \pm 0.35 \% FSO$ option: $\leq \pm 0.25 \% FSO$				
Permissible load	current 2-wire: $R_{max} = [(U_B - U_{B min}) / 0.02 \text{ A}] \Omega$ voltage 3-wire: $R_{min} = 10 \text{ k}\Omega$				
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ				
Long term stability	≤ ± 0.1 % FSO / year at reference conditions				
Response time	2-wire: ≤ 10 msec 3-wire: ≤ 3 msec				
<sup>2</sup> accuracy according to IEC 60770 – lim	it point adjustment (non-linearity, hysteresis, repeatability)				
Thermal effects (Offset and Span					
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				
<sup>3</sup> an optional cooling element can influer	nce 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);				
Pressure port	cable gland M12x1.5, brass, nickel plated (clamping range 2 8 mm) 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				

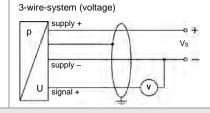
# **Industrial Pressure Transmitter**

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 <sub>i</sub> = 28 V, I <sub>i</sub> = 93 mA, P <sub>i</sub> = 660 mW, C <sub>i</sub> $\approx$ 0 nF, L <sub>i</sub> $\approx$ 0 $\mu$ H, 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 <sub>atm</sub> 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: 1μH/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	prmity EMC Directive: 2014/30/EU				
ATEX Directive	2014/34/EU				
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## Wiring diagrams

2-wire-system (current)

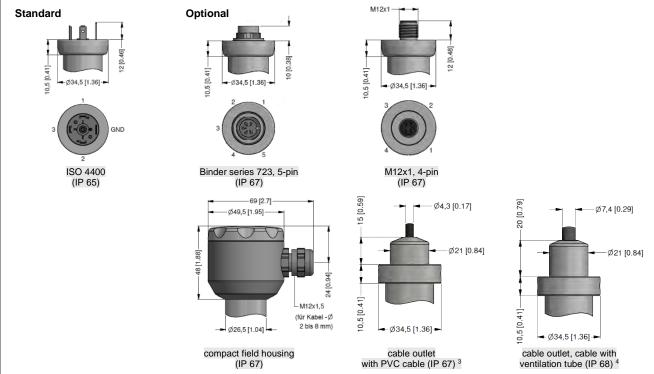




PIN	configuration	

	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	<b>(</b>	GNYE (green-yellow)

# Electrical connections (dimensions mm/in)



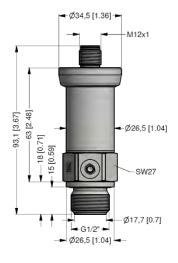
⇒ universal field housing stainless steel 1.4404 (316 L) with cable gland M20x1.5 (ordering code 880) and other versions on request

<sup>&</sup>lt;sup>3</sup>standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70°C)

 $<sup>^{\</sup>rm 4}$  different cable types and lengths available, permissible temperature depends on kind of cable

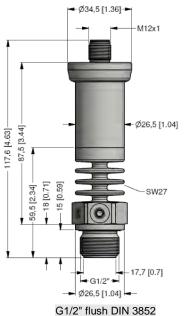
## Mechanical connection (dimension mm/in)

#### standard



G1/2" flush DIN 3852

## option



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

⇒ metric threads and other versions on request

pressure measurement

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#### Ordering code DMP 333P **DMP 333P** Pressure 5 4 C 5 4 D gauge absolute Input [bar] 60 6 0 0 2 100 1 0 0 3 1 6 0 3 2 5 0 3 4 0 0 3 6 0 0 3 9 9 9 9 160 250 400 600 customer consult Output 4 ... 20 mA / 2-wire 1 0 ... 10 V / 3-wire 3 intrinsic safety 4 ... 20 mA / 2-wire Ε in preparation customer consult Accuracy 0.35 % FSO standard: 3 option: 0.25 % FSO 2 customer 9 consult Electrical connection 1 0 0 2 0 0 male and female plug ISO 4400 male plug Binder series 723 (5-pin) T A 0 M 1 0 cable outlet with PVC-cable (IP67) 2 male plug M12x1 (4-pin) / metal М compact field housing 8 5 0 stainless steel1.4301 (304) 9 9 9 customer consult Mechanical connection G1/2" DIN 3852 with Z 0 0 flush diaphragm 9 9 9 customer consult stainless steel 1.4435 (316L) stainless steel 1.4435 (316L), golden G customer 9 consult FKM 1 FFKM <sup>3</sup> customer 9 consult Filling fluid silicone oil 1 customer 9 consult Special version standard 0 0 0 with cooling element up to 200 °C 4 2 0 0 9 9 9 customer consult

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<sup>&</sup>lt;sup>1</sup> measurement starts with ambient pressure

 $<sup>^2</sup>$  standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70  $^{\circ}\text{C}$ ); others on request

 $<sup>^3</sup>$  only for  $p_N \le 100$  bar possible

only for  $p_N \ge 100$  bar possible only for  $p_N \le 160$  bar and mechanical connection G1/2" possible