

# DMP 333

## Industrial Pressure Transmitter for High Pressure

- ▶ piezoresistive stainless steel sensor
- ▶ accuracy:  
0.175 / 0.125 / 0.05 % FSO BFSL  
(0.35 / 0.25 / 0.1 % FSO IEC 60770)
- ▶ nominal pressure ranges  
from 0 ... 60 bar  
up to 0 ... 600 bar

The DMP 333 pressure transmitter is specially designed for use in hydraulic equipment under severe operation conditions. Permissible media are all with stainless steel 1.4571 and 1.4435 compatible media.

Demands of machine and equipment manufacturers for ruggedness and reliability have been optimally fulfilled. These features of the DMP 333, combined with outstanding measuring parameters and excellent offset stability, offers the user an easy-to-use, reliable and rugged pressure transmitter.

For the special demand in high pressure area the customer can choose between different electrical and mechanical connections. Additional it is possible to use the DMP 333 in explosive area (zone 0 / 20).

Typical areas of use are hydraulic systems in:

- ▶ machine tools
- ▶ hydraulic presses
- ▶ injection moulding machines
- ▶ handling equipment and mobile hydraulics
- ▶ elevated platforms
- ▶ test stands

- ▶ small thermal effect
- ▶ excellent linearity
- ▶ good long term stability
- ▶ option Ex-version  
(only for 4 ... 20 mA / 2-wire)  
TÜV 03 ATEX 2006 X
- ▶ customer specific versions:
  - variety of electrical and mechanical connections
  - other versions on request

Characteristics



**DMP 333**  
Industrial Pressure Transmitter

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Technical Data

Input pressure range						
Nominal pressure gauge <sup>1</sup> [bar]	60	100	160	250	400	600
Nominal pressure abs. [bar]	60	100	160	250	400	600
Permissible overpressure [bar]	140	340	340	600	600	1000

Output signal / Supply	
Standard	2-wire: 4 ... 20 mA / $V_s = 12 \dots 36 V_{DC}$ Ex-protection: $V_s = 14 \dots 28 V_{DC}$
Optional	3-wire: 0 ... 20 mA / $V_s = 14 \dots 36 V_{DC}$ 0 ... 10 V / $V_s = 14 \dots 36 V_{DC}$

Performance		
Accuracy	IEC 60770 <sup>2</sup>	BFSL
	standard: $\leq \pm 0.35\%$ FSO	standard: $\leq \pm 0.175\%$ FSO
	option 1: $\leq \pm 0.25\%$ FSO	option 1: $\leq \pm 0.125\%$ FSO
	option 2: $\leq \pm 0.10\%$ FSO	option 2: $\leq \pm 0.050\%$ FSO
Permissible load	current 2-wire: $R_{max} = [(V_s - V_{smin}) / 0.02] \Omega$ current 3-wire: $R_{max} = 500 \Omega$ voltage 3-wire: $R_{min} = 10 k\Omega$	
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / $k\Omega$	
Long term stability	$\leq \pm 0.1\%$ FSO / year	
Response time <sup>3</sup>	< 5 msec	

Thermal errors (Offset and Span)	
Tolerance band	$\leq \pm 0.75\%$ FSO
TC, average	$\pm 0.07\%$ FSO / 10 K
in compensated range	0 ... 70 °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
Option Ex-protection only with 4 ... 20 mA / 2-wire DX13-DMP 333	zone 0 <sup>4</sup> : II 1 G Ex ia IIC T4 zone 20: II 1 D Ex tD A20 IP65 T 85°C safety technical maximum values: $V_i = 28 V$ , $I_i = 93 mA$ , $P_i = 660 mW$ , $C_i \leq 1 nF$ , $L_i \leq 10 \mu H$

Mechanical stability	
Vibration	10 g RMS (20 ... 2000 Hz)
Shock	100 g / 11 msec

Permissible temperatures	
Medium	-25 ... 125 °C
Electronics / environment	-25 ... 85 °C      Ex-protection: application in zone 0: -20 ... 60 °C application in zone 1 or higher: -25 ... 70 °C
Storage	-40 ... 100 °C

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

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

<sup>3</sup> with optional accuracy 0.1 % / 0.25 % FSO the response time is 200 msec

<sup>4</sup> approved for atmospheric pressure from 0.8 bar up to 1.1 bar

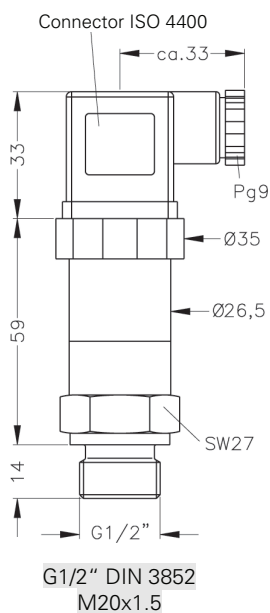
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Industrial Pressure Transmitter

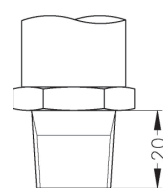
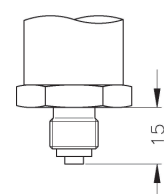
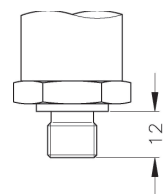
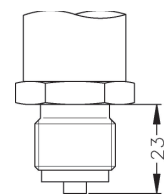
Technical Data

## Mechanical connection (dimensions in mm)

### Standard



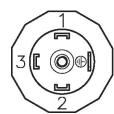
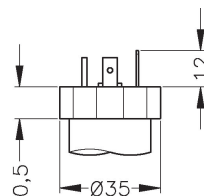
### Optional



- ⇒ Total length of devices with Ex-protection and SIL-version increases by 20 mm!
- ⇒ Total length of devices with accuracy 0.1 % / 0.25 % FSO IEC 60770 increases by 28.5 mm! (standard and Ex-protection)

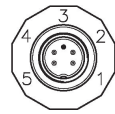
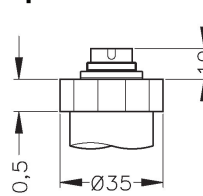
## Electrical connection (dimensions in mm)

### Standard

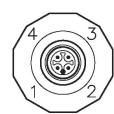
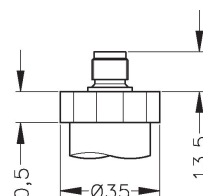


ISO 4400 (IP 65)

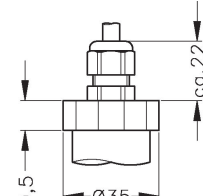
### Optional



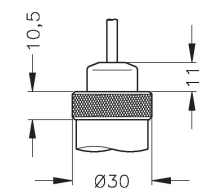
Binder Series 723 (IP 67)



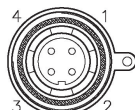
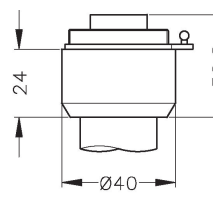
M12x1 4-pin (IP 67)



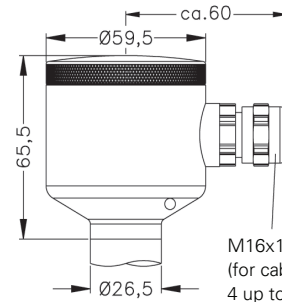
Cable gland (IP 67)<sup>5,6</sup>



Cable outlet (IP 68)<sup>5</sup>



Buccaneer (IP 68)



M16x1,5  
(for cable-Ø  
4 up to 11 mm)

Field housing (IP 67)

<sup>5</sup> different cable types and lengths available

<sup>6</sup> standard: 2m PVC cable without ventilation tube

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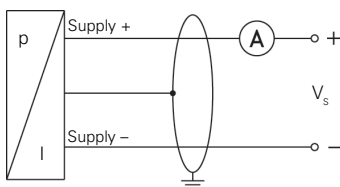
Materials	
Pressure port	stainless steel 1.4571 (316Ti)
Housing	standard: stainless steel 1.4301 (304) field housing: stainless steel 1.4305 (303), cable gland: brass, nickel plated
Seals (media wetted)	NBR; others on request
Diaphragm	stainless steel 1.4435 (316L)
Media wetted parts	pressure port, seals, diaphragm

Miscellaneous	
Optionally SIL 2 application	according to IEC 61508 / IEC 61511
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
Current consumption	signal output current: max. 25 mA signal output voltage: max. 7 mA
Weight	approx. 140 g
Installation position	any
Operational life	> 100 x 10 <sup>6</sup> cycles

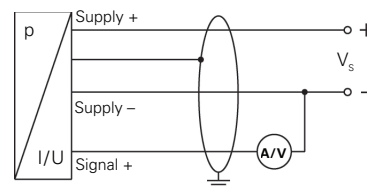
Pin configuration							
Electrical connection		ISO 4400	Binder 723 (5-pin)	M12x1 (4-pin)	Buccaneer (4-pin)	Field housing	cable colours (DIN 47100)
2-wire-system	Supply +	1	3	1	1	IN +	white
	Supply -	2	4	2	2	IN -	brown
	Ground	ground pin	5	4	4	■	yellow / green (shield)
3-wire-system	Supply +	1	3	1	1	IN +	white
	Supply -	2	4	2	2	IN -	brown
	Signal +	3	1	3	3	OUT +	green
	Ground	ground pin	5	4	4	■	yellow / green (shield)

## Wiring diagrams

2-wire-system (current)



3-wire-system (current / voltage)



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

