



# DMP 333

## Industrial Pressure Transmitter For High Pressure

### Stainless Steel Sensor

**accuracy according to IEC 60770:**  
**standard: 0.35 % FSO**  
**option: 0.25 / 0.1 % FSO**

#### Nominal pressure

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

#### Output signals

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

#### Special characteristics

- ▶ excellent long-term stability, also with high dynamic pressure loads
- ▶ insensitive to pressure peaks
- ▶ high overpressure capability

#### Optional versions

- ▶ IS-version  
Ex ia = intrinsically safe for gases and dusts
- ▶ SIL 2 version  
according to IEC 61508 / IEC 61511
- ▶ customer specific versions

The pressure transmitter type DMP 333 has been especially designed for use in hydraulic applications with high static and dynamic pressure. The transmitter is characterized by an excellent long term stability, also under fast changing pressure as well as positive and negative pressure peaks.

The modular concept of the device allows to combine different stainless steel sensors and electronic modules with a variety of electrical and mechanical versions.

Thus a diversity of variations is created, meeting almost all requirements in hydraulic applications.

#### Preferred areas of use are



#### Plant and Machine Engineering

- machine tools
- hydraulic presses
- injection moulding machine
- handling equipment
- elevated platforms
- test benches



#### Mobile Hydraulics

Industrial  
Pressure Transmitter

DMP 333



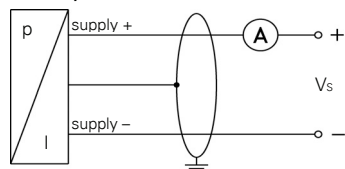
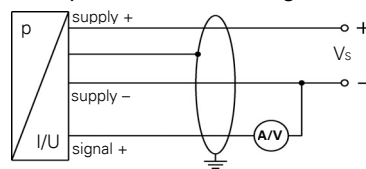
Input pressure range							
Nominal pressure gauge / abs.	[bar]	60	100	160	250	400	600
Overpressure	[bar]	210	600	600	1050	1250	1250
Burst pressure ≥	[bar]	420	1000	1000	1250	1250	1250
Output signal / Supply							
Standard	2-wire:	4 ... 20 mA / V <sub>s</sub> = 8 ... 32 V <sub>DC</sub>					
Option IS-protection	2-wire:	4 ... 20 mA / V <sub>s</sub> = 10 ... 28 V <sub>DC</sub>					
Options 3-wire	3-wire:	0 ... 20 mA / V <sub>s</sub> = 14 ... 30 V <sub>DC</sub> 0 ... 10 V / V <sub>s</sub> = 14 ... 30 V <sub>DC</sub>					
Performance							
Accuracy <sup>1</sup>	standard:	≤ ± 0.35 % FSO					
	option 1:	≤ ± 0.25 % FSO					
	option 2:	≤ ± 0.1 % FSO					
Permissible load	current 2-wire:	R <sub>max</sub> = [(V <sub>s</sub> – V <sub>s</sub> min) / 0.02] Ω					
	current 3-wire:	R <sub>max</sub> = 500 Ω					
	voltage 3-wire:	R <sub>min</sub> = 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					
<sup>1</sup> accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)							
Thermal effects (Offset and Span)							
Tolerance band	≤ ± 0.75 % FSO						
in compensated range	-20 ... 85 °C						
Permissible temperatures							
Permissible temperatures	medium:	-40 ... 125 °C					
	electronics / environment:	-40 ... 85 °C					
	storage:	-40 ... 100 °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 (25 ... 2000 Hz) according to DIN EN 60068-2-6						
Shock	100 g / 11 msec according to DIN EN 60068-2-27						
Materials							
Pressure port	stainless steel 1.4404 (316 L)						
Housing	stainless steel 1.4404 (316 L)						
Option compact field housing	stainless steel 1.4305 (303), cable gland brass, nickel plated					others on request	
Seals (media wetted)	standard:	FKM					
	options:	EPDM (for P <sub>N</sub> ≤ 160 bar)					
		NBR					
		others on request					
Diaphragm	stainless steel 1.4435 (316 L)						
Media wetted parts	pressure port, seals, diaphragm						
Explosion protection (only for 4 ... 20 mA / 2-wire)							
Approval DX19-DMP 333	IBExU 10 ATEX 1068 X zone 0: II 1G Ex ia IIC T4 Ga zone 20: II 1D Ex iaD 20 T85 °C						
Safety technical maximum values	U <sub>i</sub> = 28 V <sub>DC</sub> , I <sub>i</sub> = 93 mA, P <sub>i</sub> = 660 mW, C <sub>i</sub> ≈ 0 nF, L <sub>i</sub> ≈ 0 μH						
Permissible temperatures for environment	in zone 0: -20 ... 60 °C with p <sub>atm</sub> 0.8 bar up to 1.1 bar in zone 1 or higher: -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**

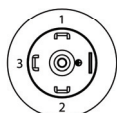
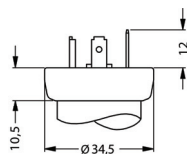
Option SIL 2	according to IEC 61508 / IEC 61511	
Current consumption	signal output current: max. 25 mA	signal output voltage: max. 7 mA
Weight	approx. 140 g	
Installation position	any <sup>3</sup>	
Operational life	> 100 x 10 <sup>6</sup> pressure cycles	
CE-conformity	EMC Directive: 2004/108/EC	Pressure Equipment Directive: 97/23/EC (module A) <sup>4</sup>

<sup>3</sup> Pressure transmitters are calibrated in a vertical position with the pressure connection down.

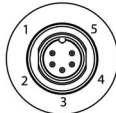
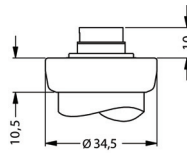
<sup>4</sup> This directive is only valid for devices with maximum permissible overpressure > 200 bar

**Wiring diagrams****2-wire-system (current)****3-wire-system (current / voltage)****Pin configuration**

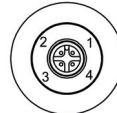
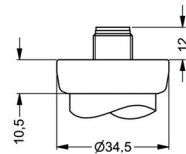
Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1 / Metall (4-pin)	field housing	cable colours (DIN 47100)
Supply +	1	3	1	IN +	wh (white)
Supply -	2	4	2	IN -	bn (brown)
Signal + (for 3-Leiter)	3	1	3	OUT +	gn (green)
Shield	ground pin	5	4	⏏	gn/ye (green / yellow)

**Electrical connections (dimensions in mm)****standard**

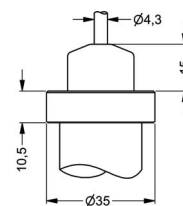
ISO 4400  
(IP 65)

**option**

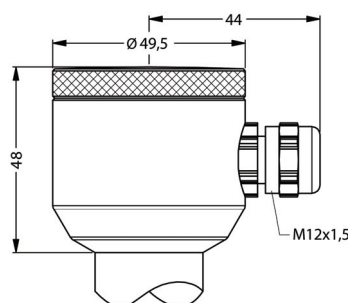
Binder Series 723 5-pin  
(IP 67)



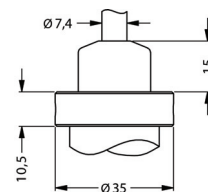
M12x1 4-pin  
(IP 67)



cable outlet with PVC cable  
(IP 67)<sup>5</sup>



compact field housing  
(IP 67)

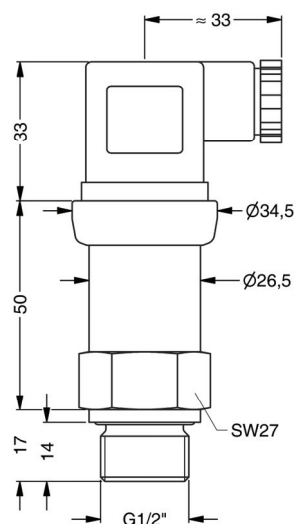
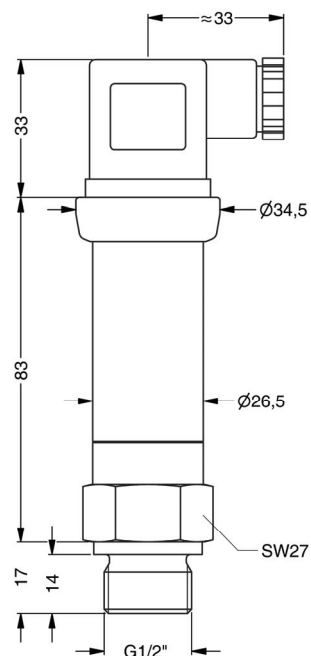
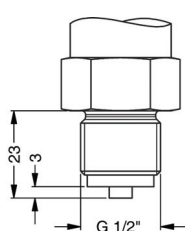


cable outlet,  
cable with ventilation tube  
(IP 68)<sup>6</sup>

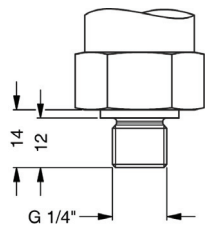
⇒ **universal field housing stainless steel 1.4404 (316 L) with cable gland M20x1.5 (ordering code 880) and other versions on request**

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

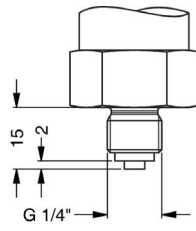
<sup>6</sup> different cable types and lengths available, permissible temperature depends on kind of cable

**Mechanical connections (dimensions in mm)****standard for accuracy 0.35 / 0.25 %**G1/2" DIN 3852  
with ISO 4400**standard for accuracy 0.1 % ;  
SIL- and SIL-IS-version**G1/2" DIN 3852  
with ISO 4400**option**

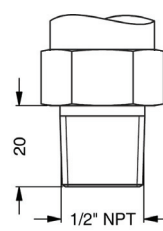
G1/2" EN 837



G1/4" DIN 3852



G1/4" EN 837



1/2" NPT

⇨ **metric threads and other versions on request**

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<sup>4</sup> possible for nominal pressure ranges  $P_N \leq 160$  bar