

# DMP 320

## Precision Pressure Transmitter with Fast Response Time

Stainless Steel Sensor

accuracy according to IEC 60770:  
0.1 % FSO



### Nominal pressure

from 0...100 mbar up to 0...600 bar

### Output signal

3-wire: 0.1 ... 10 V  
4 ... 20 mA

others on request

### Special characteristics

- ▶ extremely fast  
response time  $\leq 0.5$  msec
- ▶ internal sample rate 10 kHz
- ▶ accuracy 0.1 % FSO
- ▶ excellent thermal behaviour
- ▶ outstanding long term stability

### Optional versions

- ▶ customer specific versions

**DMP 320** stands for speed and precision.

With a response time of  $\leq 0.5$  msec and a sampling rate of 10 kHz, the pressure transmitter was designed for applications, in which an extremely fast and exact pressure measuring is required. Pressure curves, peaks and hits can be monitored and evaluated exactly.

The signal processing of the sensor signal is done by newly developed digital electronics, which detect the signal with a sampling rate of 10 kHz. Sensor-specific deviations such as non-linearity, hysteresis and temperature errors are compensated actively.

### Preferred areas of use are



Plant and machine engineering



Energy industry



Input pressure range												
Nominal pressure gauge	[bar]	-1...0	0.10	0.16	0.25	0.40	0.60	1	1.6	2.5	4	6
Nominal pressure abs.	[bar]	-	-	-	-	0.40	0.60	1	1.6	2.5	4	6
Overpressure	[bar]	5	0.5	1	1	2	5	5	10	10	20	40
Burst pressure ≥	[bar]	7.5	1.5	1.5	1.5	3	7.5	7.5	15	15	25	50
Nominal pressure gauge / abs	[bar]	10	16	25	40	60	100	160	250	400	600	
Overpressure	[bar]	40	80	80	105	210	600	600	1000	1000	1000	
Burst pressure ≥	[bar]	50	120	120	210	420	1000	1000	1250	1250	1250	
Vacuum resistance		$p_N \geq 1$ bar: unlimited vacuum resistance $p_N < 1$ bar: on request										
Output signal / Supply												
3-wire voltage		0.1 ... 10 V / $V_S = 14 ... 30 V_{DC}$										
3-wire current		4 ... 20 mA / $V_S = 14 ... 30 V_{DC}$										
Performance												
Accuracy <sup>1</sup>		nominal pressure > 0.25 bar: $\leq \pm 0.10$ % FSO nominal pressure $\leq 0.25$ bar: $\leq \pm 0.25$ % FSO										
Permissible load		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 at reference conditions										
Response time		$\leq 0.5$ msec										
<sup>1</sup> accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)												
Thermal effects (offset and span)												
Tolerance band		$\leq \pm 0.2$ % FSO										
TC, average		$\pm 0.02$ % FSO / 10 K										
in compensated range		-20 ... 80 °C										
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		500 g / 1 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 1.4301 (304) cable gland M12x1.5, brass, nickel plated (clamping range 2 ... 8 mm)										
Seals		standard: FKM options: EPDM others on request										
Diaphragm		stainless steel 1.4435 (316 L)										
Media wetted parts		pressure port, seals, diaphragm										
Miscellaneous												
Current consumption		3-wire voltage: < 30 mA 3-wire current: < 55 mA										
Weight		approx. 200 g										
Installation position		any <sup>2</sup>										
Operational life		100 million load cycles										
CE-conformity		EMC Directive: 2014/30/EU Pressure Equipment Directive: 2014/68/EU (module A) <sup>3</sup>										
<sup>2</sup> Pressure transmitters are calibrated in a vertical position with the pressure connection down. If this position is changed on installation there can be slight deviations in the zero point for pressure ranges $p_N \leq 1$ bar.												
<sup>3</sup> This directive is only valid for devices with maximum permissible overpressure > 200 bar												

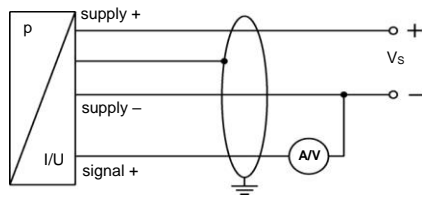
# DMP 320

Precision Pressure Transmitter

Technical Data

## Wiring diagram

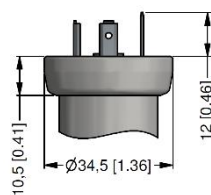
3-wire-system (current / voltage)



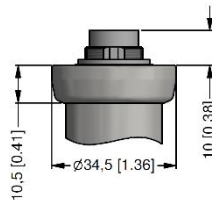
## Pin configuration

Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1 / metal (4-pin)	compact field housing	cable colours (IEC 60757)
Supply +	1	3	1	V <sub>S+</sub>	WH (white)
Supply -	2	4	2	V <sub>S-</sub>	BN (brown)
Signal +	3	1	3	S+	GN (green)
Shield	ground pin	5	4	GND	GNYE (green-yellow)

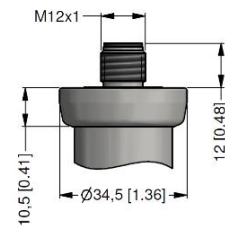
## Electrical connections (dimensions mm / in)



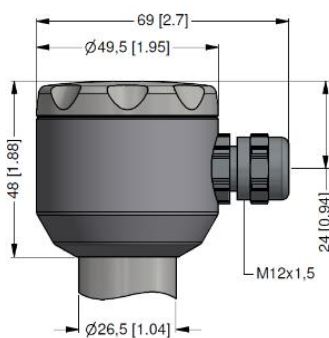
ISO 4400 (IP 65)



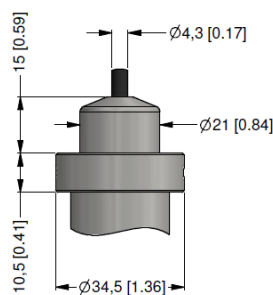
Binder series 723, 5-pin (IP 67)



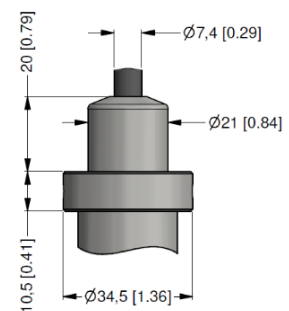
M12x1, 4-pin (IP 67)



compact field housing (IP 67)



cable outlet with PVC-cable (IP 67)<sup>4</sup>



cable outlet, cable with ventilation tube (IP 68)<sup>5</sup>

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

<sup>4</sup> standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C)

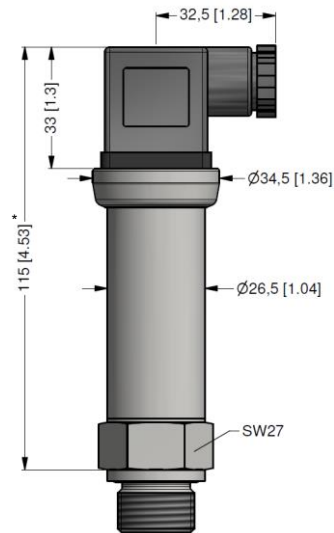
<sup>5</sup> different cable types and lengths available, permissible temperature depends on kind of cable

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Precision Pressure Transmitter

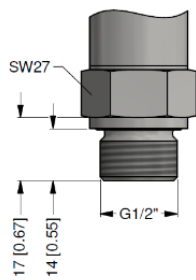
Technical Data

## Dimensions (mm / in)

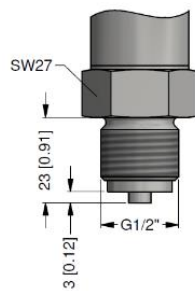


\* for nominal pressure  $p_N > 40$  bar the length of devices increases by 9 mm

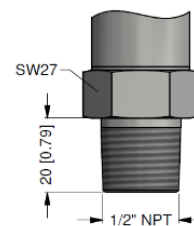
## Mechanical connections (dimensions mm / in)



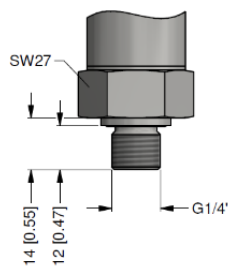
G1/2" DIN 3852



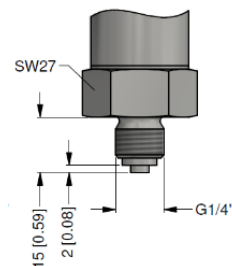
G1/2" EN 837



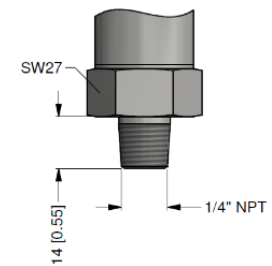
1/2" NPT



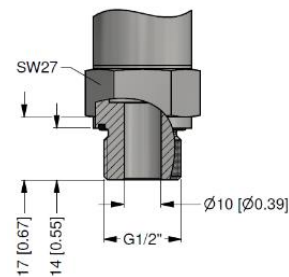
G1/4" DIN 3852



G1/4" EN 837



1/4" NPT



G1/2" open port DIN 3852  
( $p_N \leq 40$  bar)

⇒ metric threads and other versions on request

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