



# 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

### Product characteristics

- ▶ extremely fast response time  $\leq 0.5$  ms
- ▶ 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



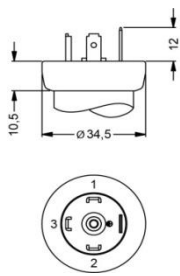
Energy industry



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 $\geq$	[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 $\geq$	[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		0.1 ... 10 V / $V_S = 14 ... 30 V_{DC}$											
3-wire		4 ... 20 mA / $V_S = 14 ... 30 V_{DC}$											
Performance													
Accuracy <sup>1</sup>		$\leq \pm 0.1$ % 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											
Response time		$\leq 0.5$ ms											
<sup>1</sup> accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)													
Thermal effects (Offset and Span) / Permissible temperatures													
Tolerance band	[% FSO]	$\leq \pm 0.2$ in compensated range -20 ... 80 °C											
TC, average	[% FSO / 10 K]	$\pm 0.02$ 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 ms					according to DIN EN 60068-2-27						
Materials													
Pressure Port		stainless steel 1.4404											
Housing		stainless steel 1.4404											
Option compact field housing		stainless steel 1.4305, cable gland M12x1,5, brass, nickel plated								others on request			
Seals (media wetted)		standard: FKM options: EPDM								others on request			
Diaphragm		stainless steel 1.4435											
Media wetted parts		pressure port, seal, 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													
Wiring diagrams				Pin configuration									
3-wire-system (current / voltage)				Electrical connection	ISO 4400	Binder 723 (5-pin)	M12x1/metal (4-pin)	field housing	cable colour (IEC 60757)				
				Supply +	1	3	1	IN +	wh (white)				
				Supply -	2	4	2	IN -	bn (brown)				
				Signal +	3	1	3	OUT +	gn (green)				
				Shield	ground pin	5	4	⊥	gnye (green-yellow)				

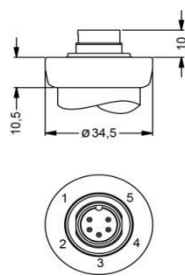
### Electrical connections (dimensions in mm)

#### Standard

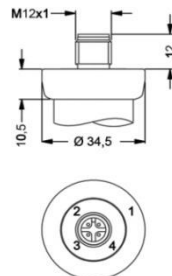


ISO 4400  
(IP65)

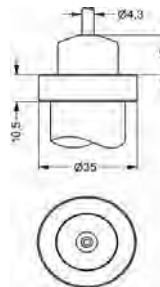
#### Optional



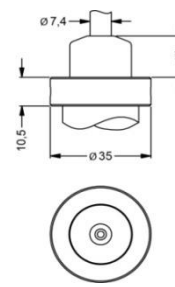
Binder Serie 723  
5-pin  
(IP67)



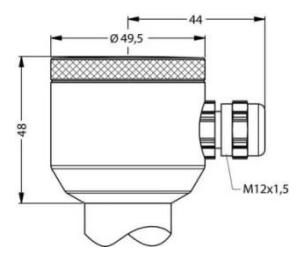
M12x1, 4-pin  
(IP67)



cable outlet with  
PVC cable  
(IP67)<sup>4</sup>



cable outlet, cable  
with ventilation tube  
(IP68)<sup>5</sup>



compact field housing  
(IP 67)

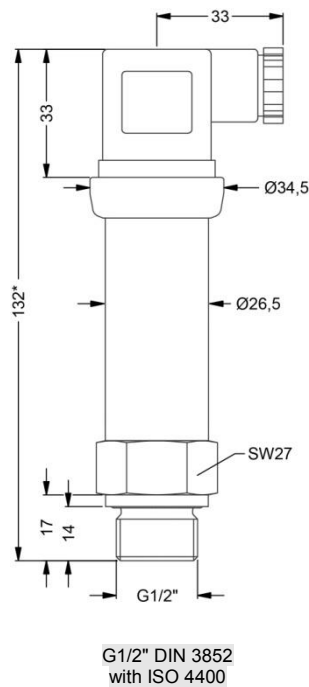
⇒ universal field housing stainless steel 1.4404 with cable gland M20x1,5 (ordering code 880) and other versions on request

<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

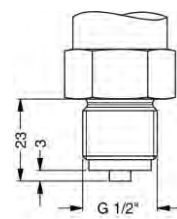
### Mechanical connections (dimensions in mm)

#### Standard

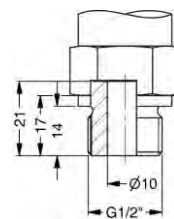


G1/2" DIN 3852  
with ISO 4400

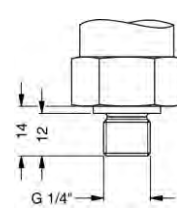
#### Optional



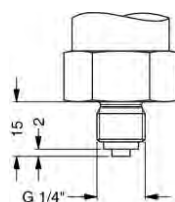
G1/2" EN 837



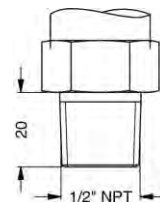
G1/2" DIN 3852 open port,  
 $P_N \leq 40$  bar



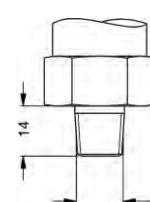
G1/4" DIN 3852



G1/4" EN 837



1/2" NPT



1/4" NPT

⇒ metric threads and other versions on request

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

