BD SENSORS
pressure measurement

DMP 336

Industrial Pressure Transmitter for Technical Gases and H_2 Applications

Welded, Dry
Stainless Steel Sensor

accuracy according to IEC 61298-2:
0.5 % FSO

Nominal pressure

from 0 ... 16 bar up to 0 ... 1000 bar

Output signal

2-wire: 4 ... 20 mA
others on request

Special characteristics

- media wetted parts of special stainless steel
- insensitive to pressure peaks
- high overpressure capability

Optional version

- IS-version zone 0
  Ex ia = intrinsically safe for gases and dusts
- SIL 2-according to IEC 61508 / IEC 61511
- oil and grease free according to ISO 15001 (e.g. for oxygen applications)

The industrial pressure transmitter DMP 336 was especially developed for hydrogen applications and can also be used with other technical gases (e.g. oxygen).

This is achieved by using an alloy based on 316L which prevents hydrogen embrittlement of the media-wetted parts. Level of hydrocarbon and particle contamination are significantly reduced by special treatment during production and cleaning.

An IS- version is optionally available for explosion-protected applications zone 0 / 20.

Preferred areas of use are

- Technical gases
- Hydrogen
- Fuel cell
- Medical technology

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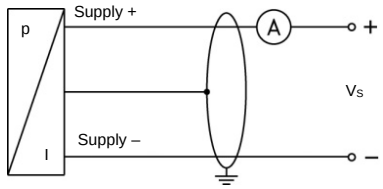
Input pressure range											
Nominal pressure gauge	[bar]	16	25	40	60	100	160	250	400	600	1000
Overpressure	[bar]	50	50	80	120	200	320	500	800	1200	1500
Burst pressure ≥	[bar]	125	125	200	300	500	800	1250	2000	2000	3000 [1]
Vacuum resistance		unlimited									
[1] UL confirmed max. burst pressure 2420 bar											

Output signal / Supply	
Standard	2-wire: 4 ... 20 mA / V_S = 8 … 32 V_{DC}
Option IS-protection	2-wire: 4 … 20 mA / V_S = 10 ... 28 V_{DC}
Performance	
Accuracy [2]	≤ ± 0.5 % FSO
Permissible load	$R_{max} = [(V_S - V_{S\,min}) / 0.02\ A]\ \Omega$
Influence effects	supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ
Long term stability	≤ ± 0.2 % FSO / year at reference conditions
Response time	≤ 10 msec
[2] accuracy according to IEC 61298-2 – limit point adjustment (non-linearity, hysteresis, repeatability)	
Thermal effects (offset and span)	
Thermal error	± 0.2 % FSO / 10 K
in compensated range	-25 … 85 °C
Permissible temperatures	
Permissible temperatures	medium: -40 ... 125 °C electronics / environment: -40 ... 100 °C storage: -40 ... 85 °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	20 g RMS / 10 ... 2000 Hz according to DIN EN 60068-2-6
Shock	500 g / 1 msec half sine according to DIN EN 60068-2-27
Materials	
Housing	stainless steel 316L (1.4404)
Pressure port, sensor, diaphragm	stainless steel 316L (1.4435)
Seals	none (welded)
Media wetted parts	pressure port, sensor, diaphragm
Explosion protection	
Approvals DX19-DMP 336	IBExU 10 ATEX 1068 X / IECEx IBE 12.0027X 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_i = 28 V_{DC}, I_i = 93 mA, P_i = 660 mW, C_i ≈ 0 nF, L_i ≈ 0 µH, the supply connections have an inner capacity of max. 27 nF
Permissible temperatures for environment	in zone 0: -20 ... 60 °C with p_{atm} 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 SIL2 version	according to IEC 61508 / IEC 61511
Current consumption	max. 25 mA
Weight	approx. 140 g
Installation position	any
Operational life	p_N ≤ 600 bar: 100 million load cycles p_N > 600 bar: 10 million load cycles
CE-conformity	EMC Directive: 2014/30/EU Pressure Equipment Directive: 2014/68/EU (module A) [3]
ATEX Directive	2014/34/EU
[3] This directive is only valid for devices with maximum permissible overpressure > 200 bar.	
Purity regarding residual particles / greases for oxygen applications	
Oil and grease free version	residual particles: no particles > 100 µm (based on 10 dm²) residual greases: residual grease content < 0.2 mg/dm²

Wiring diagram

2-wire-system (current)

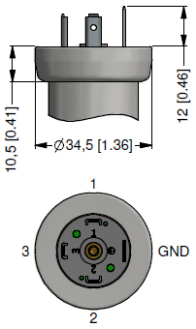


Pin configuration

Electrical connections	ISO 4400	M12x1 / metal (4-pin)	cable colours (IEC 60757)
supply +	1	1	WH (white)
supply –	2	2	BN (brown)
Shield	ground pin (GND)	4	GNYE (green-yellow)

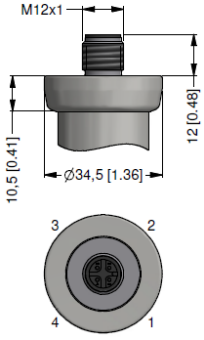
Electrical connections (dimensions mm / in)

standard

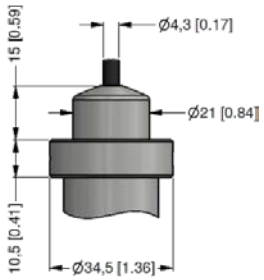


ISO 4400 (IP 65)

option



M12x1 4-pin (IP 67)

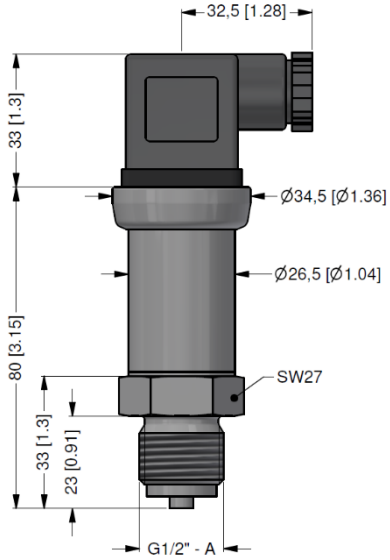


cable outlet with PVC cable (IP 67) [4]

[4] *standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C)*

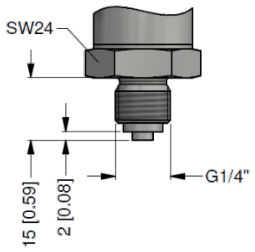
Mechanical connections (dimensions mm / in)

standard

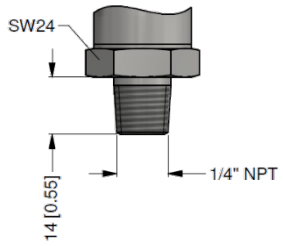


G1/2" EN 837

option



G1/4" EN 837
p_N ≤ 600 bar



1/4" NPT

⇨ **metric threads and different types on demand**

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Ordering code DMP 336

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		Code	
Pressure			
	gauge	215	
Input	**[bar]**		
	16	1602	
	25	2502	
	40	4002	
	60	6002	
	100	1003	
	160	1603	
	250	2503	
	400	4003	
	600	6003	
	1000	1004	
	customer	9999	consult
Output			
	4 … 20 mA / 2-wire	1	
	intrinsic safety 4 … 20 mA / 2-wire	E	
	SIL2: 4 … 20 mA / 2-wire	1S	
	SIL2: intrinsic safety 4 … 20 mA / 2-wire	ES	
	customer	9	consult
Accuracy			
	0.5 % FSO	5	
	customer	9	consult
Electrical connection			
	male and female plug ISO 4400	100	
	male plug M12x1 (4-pin) / metal	M10	
	cable outlet with PVC cable (IP67) [1]	TA0	
	customer	999	consult
Mechanical connection			
	G1/2" EN 837	200	
$p_N \leq 600$ bar	G1/4" EN 837	400	
	1/4" NPT	N40	
	customer	999	consult
Seal			
	without (welded version)	2	
	customer	9	consult
Special version			
	standard	000	
	oil-and grease free -oxygen	007	
	customer	999	consult

[1] standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C); others on request

12.03.2025

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