



# DMP 336

## Industrial Pressure Transmitter for Technical Gases and H<sub>2</sub> Applications

Welded, Dry  
Stainless Steel Sensor

accuracy according to IEC 60770:  
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
- ▶ oil and grease free according to ISO 15001 (e.g. for oxygen applications)

### Optional version





- ▶ IS-version zone 0  
Ex ia = intrinsically safe for gases and dusts
- ▶ SIL 2-according to IEC 61508 / IEC 61511

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



# DMP 336

Industrial Pressure Transmitter

Technical Data

| 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 $\geq$                                  | [bar] | 125       | 125 | 200 | 300 | 500 | 800 | 1250 | 2000 | 2000 | 3000 <sup>1</sup> |
| Vacuum resistance                                      |       | unlimited |     |     |     |     |     |      |      |      |                   |
| <sup>1</sup> UL confirmed max. burst pressure 2420 bar |       |           |     |     |     |     |     |      |      |      |                   |

| Output signal / Supply |  |
|------------------------|--|
| Standard               | 2-wire: 4 ... 20 mA / $V_S = 8 \dots 32 V_{DC}$  |
| Option IS-protection   | 2-wire: 4 ... 20 mA / $V_S = 10 \dots 28 V_{DC}$ |

| Performance           |  |
|-----------------------|--|
| Accuracy <sup>2</sup> | $\leq \pm 0.5\%$ FSO                                       |
| Permissible load      | $R_{max} = [(V_S - V_{Smin}) / 0.02 A] \Omega$             |
| Influence effects     | supply: 0.05 % FSO / 10 V<br>load: 0.05 % FSO / k $\Omega$ |
| Long term stability   | $\leq \pm 0.2\%$ FSO / year at reference conditions        |
| Response time         | $\leq 10$ msec   |

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

| Thermal effects (offset and span) |                        |
|-----------------------------------|------------------------|
| Thermal error                     | $\pm 0.2\%$ FSO / 10 K |
| in compensated range              | -25 ... 85 °C          |

| Permissible temperatures |   |
|--------------------------|---|
| Permissible temperatures | medium: -40 ... 125 °C<br>electronics / environment: -40 ... 100 °C<br>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 (25 ... 2000 Hz) according to DIN EN 60068-2-6 |
| Shock                | 500 g / 1 msec 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<br>zone 0: II 1G Ex ia IIC T4 Ga<br>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, $C_i \approx 0$ nF, $L_i \approx 0$ $\mu$ H, 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<br>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<br>cable inductance: signal line/shield also signal line/signal line: 1 $\mu$ H/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      | $p_N \leq 600$ bar: 100 million load cycles $p_N > 600$ bar: 10 million load cycles           |
| CE-conformity         | EMC Directive: 2014/30/EU<br>Pressure Equipment Directive: 2014/68/EU (module A) <sup>3</sup> |
| ATEX Directive        | 2014/34/EU  |

<sup>3</sup> This directive is only valid for devices with maximum permissible overpressure > 200 bar.

| Purity regarding residual particles / greases |   |
|---|---|
| Oil and grease free version                   | residual particles: no particles > 100 $\mu$ m (based on 10 dm <sup>2</sup> )<br>residual greases: residual grease content < 0.2 mg/dm <sup>2</sup> |

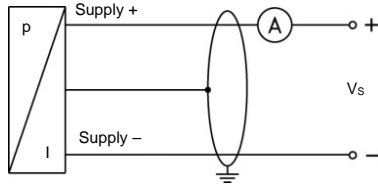
# DMP 336

Industrial Pressure Transmitter

Technical Data

## Wiring diagram

2-wire-system (current)

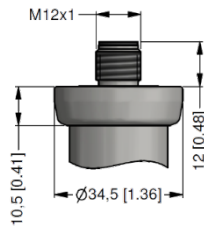


## Pin configuration

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

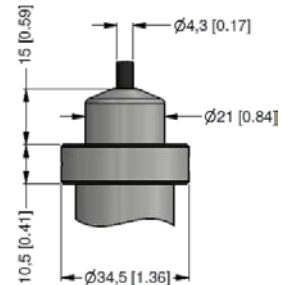
## Electrical connections (dimensions mm / in)

standard



M12x1 4-pin (IP 67)

option

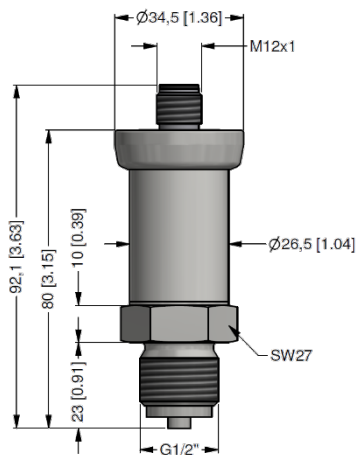


cable outlet with PVC cable (IP 67) <sup>4</sup>

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

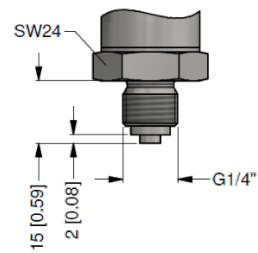
## Mechanical connections (dimensions mm / in)

standard

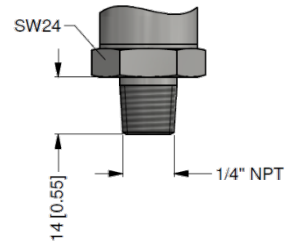


G1/2" EN 837

options



G1/4" EN 837  
p<sub>N</sub> ≤ 600 bar



1/4" NPT

⇒ metric threads and different types on demand

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## Ordering code DMP 336

DMP 336



|   |   |   |   |   |   |   |  |  |       |         |
|---|---|---|---|---|---|---|--|--|-------|---------|
| <b>Pressure</b>                                 |   |   |   |   |   |   |  |  |       |         |
| gauge   | 2 | 1 | 5 |   |   |   |  |  |       |         |
| <b>Input</b>                                    |   |   |   |   |   |   |  |  |       |         |
| [bar]   |   |   |   |   |   |   |  |  |       |         |
| 16  |   |   | 1 | 6 | 0 | 2 |  |  |       |         |
| 25  |   |   | 2 | 5 | 0 | 2 |  |  |       |         |
| 40  |   |   | 4 | 0 | 0 | 2 |  |  |       |         |
| 60  |   |   | 6 | 0 | 0 | 2 |  |  |       |         |
| 100   |   |   | 1 | 0 | 0 | 3 |  |  |       |         |
| 160   |   |   | 1 | 6 | 0 | 3 |  |  |       |         |
| 250   |   |   | 2 | 5 | 0 | 3 |  |  |       |         |
| 400   |   |   | 4 | 0 | 0 | 3 |  |  |       |         |
| 600   |   |   | 6 | 0 | 0 | 3 |  |  |       |         |
| 1000  |   |   | 1 | 0 | 0 | 4 |  |  |       |         |
| customer  |   |   | 9 | 9 | 9 | 9 |  |  |       | consult |
| <b>Output</b>                                   |   |   |   |   |   |   |  |  |       |         |
| 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 |
| <b>Accuracy</b>                                 |   |   |   |   |   |   |  |  |       |         |
| 0.5 % FSO                                       |   |   |   |   |   |   |  |  | 5     |         |
| customer  |   |   |   |   |   |   |  |  | 9     | consult |
| <b>Electrical connection</b>                    |   |   |   |   |   |   |  |  |       |         |
| male plug M12x1 (4-pin) / metal                 |   |   |   |   |   |   |  |  | M 1 0 |         |
| cable outlet with PVC cable (IP67) <sup>1</sup> |   |   |   |   |   |   |  |  | T A 0 |         |
| customer  |   |   |   |   |   |   |  |  | 9 9 9 | consult |
| <b>Mechanical connection</b>                    |   |   |   |   |   |   |  |  |       |         |
| G1/2" EN 837                                    |   |   |   |   |   |   |  |  | 2 0 0 |         |
| p <sub>N</sub> ≤ 600 bar                        |   |   |   |   |   |   |  |  | 4 0 0 |         |
| G1/4" EN 837                                    |   |   |   |   |   |   |  |  | N 4 0 |         |
| 1/4" NPT  |   |   |   |   |   |   |  |  | 9 9 9 | consult |
| customer  |   |   |   |   |   |   |  |  |       |         |
| <b>Seal</b>                                     |   |   |   |   |   |   |  |  |       |         |
| without (welded version)                        |   |   |   |   |   |   |  |  | 2     |         |
| customer  |   |   |   |   |   |   |  |  | 9     | consult |
| <b>Special version</b>                          |   |   |   |   |   |   |  |  |       |         |
| oil-and grease free -oxygen                     |   |   |   |   |   |   |  |  | 0 0 7 |         |
| customer  |   |   |   |   |   |   |  |  | 9 9 9 | consult |

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