# DMP 334

## Industrial Pressure Transmitter for High Pressure

Thinfilm Sensor

accuracy according to IEC 60770:
0.35 % FSO

**Nominal pressure**

from 0 ... 600 bar up tp 0 ... 2200 bar

**Analogue output**

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

**Special characteristics**

- extremly robust and excellent long-term stability
- pressure sensor welded

**Optional versions**

- IS-version
  Ex ia = intrinsically safe for gases and dusts
- pressure port: M20 x 1.5 or 9/16 UNF
- adjustability of span and offset
- different kinds of electrical connections

The industrial pressure transmitter DMP 334 has been especially designed for use in hydraulic systems up to 2200 bar.The base element of DMP 334 is a thinfilm sensor, that is welded with the pressure port and meets high demands of and reliability.

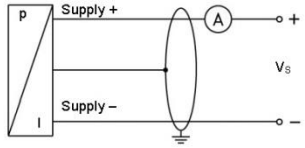
All of characteristics and the excellent mesurement data of DMP 334 as well as distinguished offset stability offer a pressure transmitter with easy handling, reliability and robustness for hydraulic user. The DMP 334 is deliverable with standard HP connections.

**Preferred areas of use are**

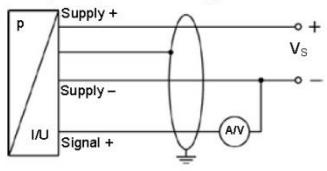
- Plant and Machine Engineering
- Commercial Vehicles and Mobile Hydraulics

| **Input pressure range** | | | | | | |
|---|---|---|---|---|---|---|
| Nominal pressure gauge | [bar] | 600 [1] | 1000 | 1600 | 2000 | 2200 |
| Overpressure | [bar] | 800 | 1400 | 2200 | 2800 | 2800 |
| Burst pressure ≥ | [bar] | | | | | |
| [1] *only available with pressure port G1/2" EN 837* | | | | | | |
| **Output signal / Supply** | | | | | | |
| Standard | 2-wire: 4 ... 20 mA / $V_S$ = 12 ... 36 $V_{DC}$ | | | | | |
| Option IS-protection | 2-wire: 4 ... 20 mA / $V_S$ = 14 ... 28 $V_{DC}$ | | | | | |
| Option 3-wire | 3-wire: 0 ...10 V / $V_S$ = 14 ... 36 $V_{DC}$ | | | | | |
| **Performance** | | | | | | |
| Accuracy | ≤ ± 0.35 % FSO IEC 60770 [2] | | | | | |
| Permissible load | current 2-wire: $R_{max}$ = [($V_S$ – $V_S$ min) / 0.02 A] Ω<br>voltage 3-wire: $R_{min}$ = 10 kΩ | | | | | |
| 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 | < 5 msec | | | | | |
| Adjustability | Adjustment of offset is possible within the range of ± 5 % of the nominal pressure range, without an influence of characteristic curve and accuracy. | | | | | |
| [2] *accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability)* | | | | | | |
| **Thermal effects (Offset and Span) / Permissible temperatures** | | | | | | |
| Thermal error | ≤ ± 0.25 % FSO / 10 K | in compensated range -20 ... 85 °C | | | | |
| Permissible temperatures | medium: -40 ... 140 °C | electronics / environment: -25 ... 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 (20 ... 2000 Hz) | | | | | |
| Shock | 100 g / 11 msec. | | | | | |
| **Materials** | | | | | | |
| Pressure port | stainless steel 1.4542 (17-4 PH) | | | | | |
| Housing | standard: stainless steel 1.4404 (316L)<br>field housing: stainless steel 1.4404 (316L), cable gland: brass, nickel plated | | | | | |
| Seals (media wetted) | none (welded version) | | | | | |
| Diaphragm | stainless steel 1.4542 (17-4 PH) | | | | | |
| Media wetted parts | pressure port / diaphragm | | | | | |
| **Explosion protection (only for 4 ... 20 mA / 2-wire)** | | | | | | |
| Approval DX13-DMP 334 | TÜV 03 ATEX 2006 X<br>zone 0: II 1G Ex ia IIC T4<br>zone 20: II 1D Ex tD A20 IP6X T 85°C | | | | | |
| Safety technical maximum values | $U_i$ = 28 V, $I_i$ = 93 mA, $P_i$ = 660 mW, $C_i$ ≤ 1nF, $L_i$ ≤ 10 µH | | | | | |
| 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: -25 ... 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: 1µH/m | | | | | |
| **Miscellaneous** | | | | | | |
| Current consumption | signal output current: max. 25 mA<br>signal output voltage: max. 7 mA | | | | | |
| Weight | approx. 200 g | | | | | |
| Installation position | any | | | | | |
| CE-conformity | EMC Directive: 2004/108/EC | | | Pressure Equipment Directive: 97/23/EC (module A) | | |
| **Wiring diagrams** | | | | | | |

2-wire-system (current)



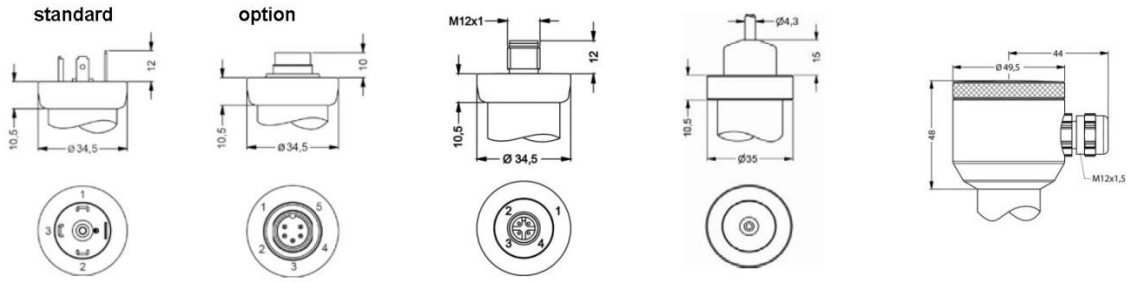

3-wire-system (current / voltage)



**Pin configuration**

| Electrical connection | ISO 4400 | Binder 723 (5-pin) | M12x1 (4-pin) | Field housing | Cable colours (DIN 47100) |
|---|---|---|---|---|---|
| Supply +<br>Supply –<br>Signal + (only for 3-wire) | 1<br>2<br>3 | 3<br>4<br>1 | 1<br>2<br>3 | IN +<br>IN -<br>OUT+ | wh (white<br>bn (brown)<br>gn (green) |
| Shield | ground pin | 5 | 4 | ⏚ | ye/gn (yellow / green) |

**Electrical connections (dimensions in mm)**

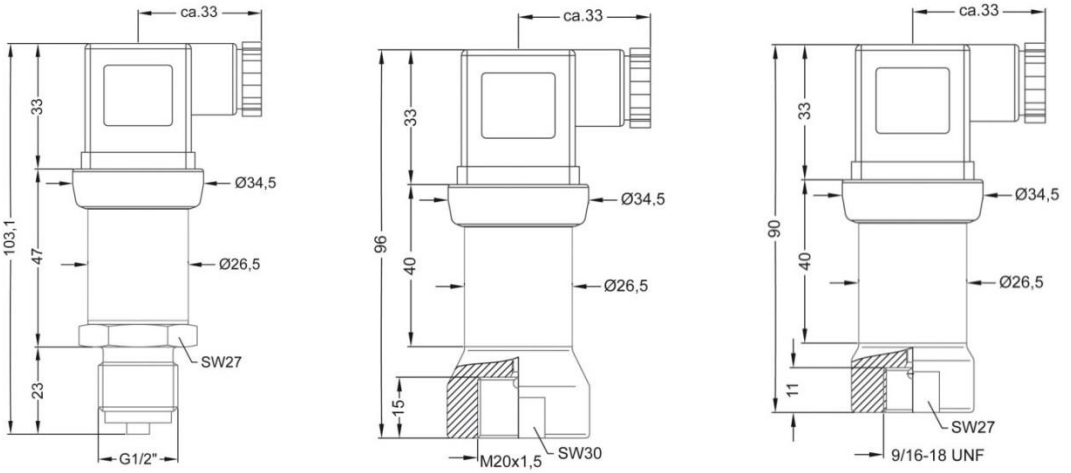



ISO 4400 (IP 65) | Binder series 723 (IP 67) | M12x1 4-pin (IP 67) | cable outlet (IP 67) [3] with PVC cable | compact field housing(IP 67)

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

**Mechanical connection (dimensions in mm)**

standard [4] | option [4]




G1/2" EN 837 [5] | M20x1.5 internal thread | 9/16-18 UNF internal thread

⇨ IS-version: total length increases by 25 mm!

[4] *adjustable version is not possible in combination with IS-version, compact field housing and cable outlet*
[5] *According to EN 837, the pressure port and the complement at pressure over 1000 bar must be preferably made of stainless steel with a tensile strength of $R_p$ > 260 N/mm² in accordance with DIN 17440. The maximum allowed pressure is 1600 bar!*

# Ordering code DMP 334

DMP 334 □□□-□□□□-□-□-□□□-□□□-□-□□□

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Pressure** | | | | | | | | | | | | | | | | | | | |
| | gauge | 1 | 4 | 0 | | | | | | | | | | | | | | | |
| **Input** | [bar] | | | | | | | | | | | | | | | | | | |
| | 600 [1] | | | | 6 | 0 | 0 | 3 | | | | | | | | | | | |
| | 1000 | | | | 1 | 0 | 0 | 4 | | | | | | | | | | | |
| | 1600 | | | | 1 | 6 | 0 | 4 | | | | | | | | | | | |
| | 2000 | | | | 2 | 0 | 0 | 4 | | | | | | | | | | | |
| | 2200 | | | | 2 | 2 | 0 | 4 | | | | | | | | | | | |
| | customer | | | | 9 | 9 | 9 | 9 | | | | | | | | | | | consult |
| **Output** | | | | | | | | | | | | | | | | | | | |
| | 4 ... 20 mA / 2-wire | | | | | | | | 1 | | | | | | | | | | |
| | 0 ... 10 V / 3-wire | | | | | | | | 3 | | | | | | | | | | |
| | Intrinsic safety 4 ... 20 mA / 2-wire | | | | | | | | E | | | | | | | | | | |
| | customer | | | | | | | | 9 | | | | | | | | | | consult |
| **Accuracy** | | | | | | | | | | | | | | | | | | | |
| | 0.35 % | | | | | | | | | 3 | | | | | | | | | |
| | customer | | | | | | | | | 9 | | | | | | | | | consult |
| **Electrical connection** | | | | | | | | | | | | | | | | | | | |
| | Male and female plug ISO 4400 | | | | | | | | | | 1 | 0 | 0 | | | | | | |
| | Male plug Binder series 723 (5-pin) | | | | | | | | | | 2 | 0 | 0 | | | | | | |
| | Cable outlet with PVC cable [2, 3] | | | | | | | | | | T | A | 0 | | | | | | |
| | Male plug M12x1 (4-pin) / metal | | | | | | | | | | M | 1 | 0 | | | | | | |
| | Comapct field housing stainless steel 1.4404 (316L) | | | | | | | | | | 8 | 5 | 0 | | | | | | |
| | customer | | | | | | | | | | 9 | 9 | 9 | | | | | | consult |
| **Mechanical connection** | | | | | | | | | | | | | | | | | | | |
| | G1/2" EN 837 [4] | | | | | | | | | | | | | 2 | 0 | 0 | | | |
| | M20x1.5 internal thread | | | | | | | | | | | | | D | 2 | 8 | | | |
| | 9/16 UNF internal thread | | | | | | | | | | | | | V | 0 | 0 | | | |
| | customer | | | | | | | | | | | | | 9 | 9 | 9 | | | consult |
| **Seals** | | | | | | | | | | | | | | | | | | | |
| | without (welded version) | | | | | | | | | | | | | | | | 2 | | |
| | customer | | | | | | | | | | | | | | | | 9 | | consult |
| **Special version** | | | | | | | | | | | | | | | | | | | |
| | standard (adjustable) [5] | | | | | | | | | | | | | | | | | 0 | 4 | 1 |
| | IS version, cable outlet, field housing | | | | | | | | | | | | | | | | | 0 | 0 | 0 |
| | customer | | | | | | | | | | | | | | | | | 9 | 9 | 9 | consult |

[1] only available with pressure port G1/2" EN 837

[2] different cable types and lengths deliverable

[3] standard: 2 m PVC cable without ventilation tube (permissible temperature: -5 ... 70 °C), optionally cable with ventilation tube

[4] According to EN 837, the pressure port and the complement, at pressure over 1000 bar must be preferably made of stainless steel with a tensile strength of $R_p$ > 260 N/mm² in accordance with DIN 17440. The maximum allowed pressure is 1600 bar!

[5] not possible in combination with IS-version, compact field housing and cable outlet with PVC cable