



DMP 334i

Precision-Pressure Transmitter for High Pressure

Thinfilmm Sensor

accuracy according to IEC 60770:
0.1 % FSO

Nominal pressure

from 0 ... 600 bar up to 0 ... 2200 bar

Analogue output

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

Special characteristics

- ▶ welded pressure sensor
- ▶ turn-down 1:10
- ▶ excellent accuracy
- ▶ robust and long-term stable

Optional versions

- ▶ communication interface for adjusting offset, span and damping
- ▶ pressure port M20x1.5 or 9/16 UNF
- ▶ different kinds of electrical connections

The precision pressure transmitter DMP 334i is a consistent further development of the approved industrial pressure transmitter DMP 334. Basic element is a thinfilmm sensor which is welded with the pressure port.

The integrated digital electronics compensates actively sensor specific deviations like non-linearity and thermal error.

It is therefore possible to offer a high pressure transmitter with excellent metrological qualities.

Preferred areas of use are



Plant and machine engineering
Test benches



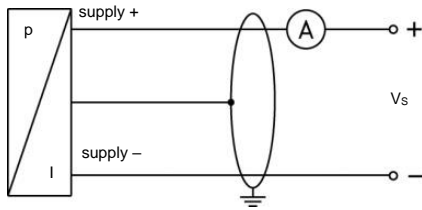
Commercial vehicles and
mobile hydraulics



| Input pressure range | | | | | | |
|--|---|------------------|------|--------------------------------|------|------|
| Nominal pressure gauge | [bar] | 600 ¹ | 1000 | 1600 | 2000 | 2200 |
| Overpressure | [bar] | 800 | 1400 | 2200 | 2800 | 2800 |
| 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 | 2-wire: 4 ... 20 mA with communication interface ² | | | | | |
| ² only possible with electrical connection Binder series 723 (7-pin) | | | | | | |
| Performance | | | | | | |
| Accuracy performance after turn-down - TD ≤ 1:5 - TD > 1:5 | IEC 60770 ³ : ≤ ± 0.1 % FSO no change of accuracy for calculation use the following formula: ≤ ± (0.1 + 0.015 x turn down) % FSO with turn-down = nominal pressure range / adjusted range e.g. with a turn-down of 1:10 following accuracy is calculated: ≤ ± (0.1 + 0.015 x 10) % FSO i.e. accuracy is ≤ ± 0.25 % FSO | | | | | |
| Permissible load | R _{max} = [(V _S – V _{S min}) / 0.02 A] Ω | | | | | |
| Influence effects | supply: 0.05 % FSO / 10 V load: 0.05 % FSO / kΩ | | | | | |
| Long term stability | ≤ ± (0.1 x turn-down) % FSO / year at reference conditions | | | | | |
| Response time | approx. 10 msec | | | | | |
| Adjustability (option) ⁴ | configuration of following parameters possible (interface / software necessary): - electronic damping: 0 ... 100 sec - offset: 0 ... 90 % FSO - turn down of span: max. 1:10 | | | | | |
| ³ accuracy according to IEC 60770 – limit point adjustment (non-linearity, hysteresis, repeatability) | | | | | | |
| ⁴ adjustable version is only possible in combination with Binder Series 723, 7-pin; software, interface and cable have to be ordered separately (software appropriate for Windows® 95, 98, 2000, NT Version 4.0 or higher, and XP) | | | | | | |
| Thermal effects (offset and span) | | | | | | |
| TC, average | < 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) | | | according to DIN EN 60068-2-6 | | |
| Shock | 100 g / 11 msec. | | | according to DIN EN 60068-2-27 | | |
| Materials | | | | | | |
| Pressure port | stainless steel 1.4542 (17-4 PH) | | | | | |
| Housing | stainless steel 1.4404 (316L) | | | | | |
| Option compact field housing | stainless steel 1.4301 (304) cable gland M12x1.5, brass, nickel plated (clamping range 2 ... 8 mm) | | | | | |
| Seals | none (welded) | | | | | |
| Diaphragm | stainless steel 1.4542 (17-4 PH) | | | | | |
| Media wetted parts | pressure port, diaphragm | | | | | |
| Miscellaneous | | | | | | |
| Current consumption | max. 25 mA | | | | | |
| Weight | approx. 300 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) | | | | | |

Wiring diagram

2-wire-system (current)

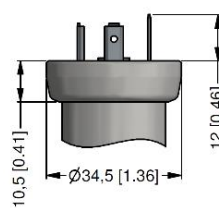


Pin configuration

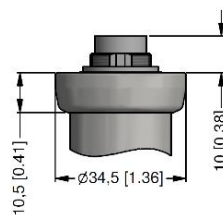
| Electrical connections | ISO 4400 | Binder 723 (5-pin) | Binder 723/423 (7-pin) | M12x1 / metal (4-pin) | compact field housing | cable colour (IEC 60757) |
|--------------------------------------|------------|--------------------|------------------------|-----------------------|-----------------------|--------------------------|
| | | | | | | |
| Supply + | 1 | 3 | 3 | 1 | V _{s+} | WH (white) |
| Supply - | 2 | 4 | 1 | 2 | V _{s-} | BN (brown) |
| Shield | ground pin | 5 | 2 | 4 | GND | GNYE (green-yellow) |
| Communication interface ⁵ | | | | | | |
| RxD | - | - | 4 | - | - | - |
| TxD | - | - | 5 | - | - | - |
| GND | - | - | 7 | - | - | - |

⁵ may not be connected directly with the PC (the suitable adapter is available as accessory)

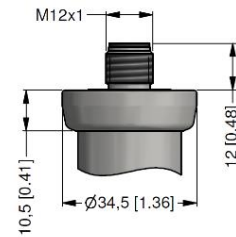
Electrical connections (dimensions mm / in)



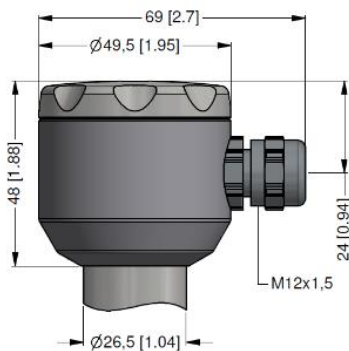
ISO 4400
(IP 65)



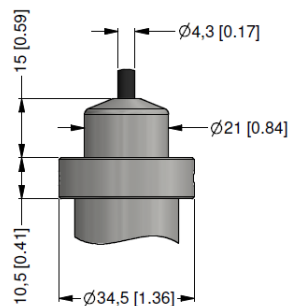
Binder series 723
(IP 67)



M12x1, 4-pin
(IP 67)



compact field housing
(IP 67)

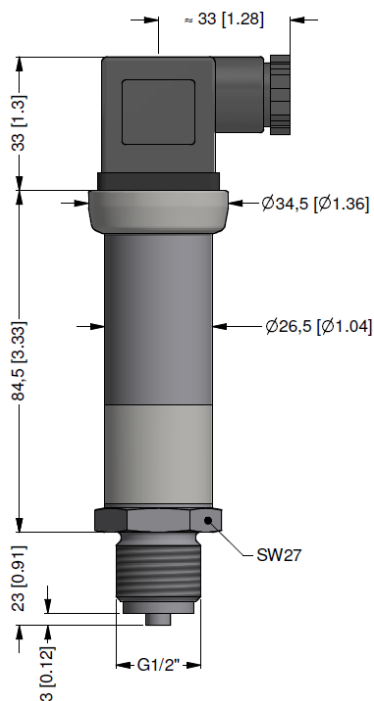


cable outlet with
PVC cable (IP 67) ⁶

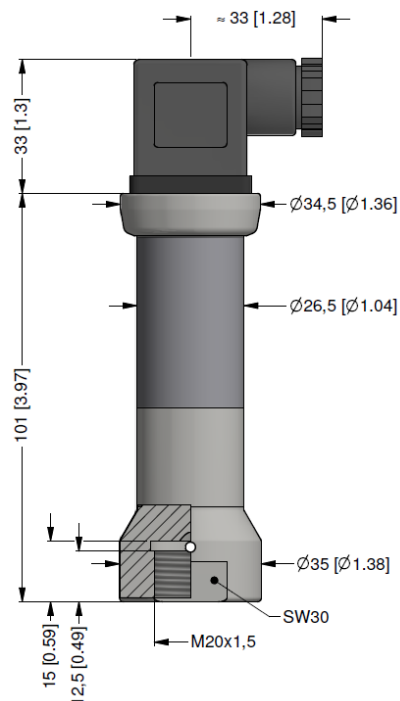
⇒ universal field housing in stainless steel 1.4404 (316 L) with cable gland M20x1.5 (ordering code 880) and other versions on request

⁶ standard: 2 m PVC cable, without ventilation tube (permissible temperature: -5 ... 70 °C); others on request

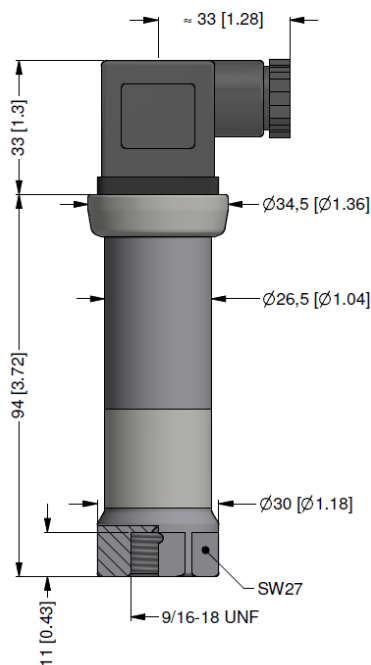
Mechanical connection (dimensions mm / in)



G1/2" EN 837 ⁷



M20x1.5 internal thread



9/16-18 UNF internal thread

⁷ 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 $R_p > 260 \text{ N/mm}^2$ in accordance with DIN 17440. The maximum allowed pressure is 1600 bar!

Ordering code DMP 334i

DMP 334i

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|---|--|--|--|--|---|--|---|--|---|--|--|--|---|--|--|--|---|--|---|--|--|--|
| | | | - | | | | | - | | - | | - | | | | - | | | | - | | - | | | |
|--|--|--|---|--|--|--|--|---|--|---|--|---|--|--|--|---|--|--|--|---|--|---|--|--|--|

| | | | | | | | | | | | | | | | | | | | | |
|-----------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|---------|
| 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 | | | | | | | | | | | |
| | customer | | | | | | | | 9 | | | | | | | | | | | consult |
| Accuracy | | | | | | | | | | | | | | | | | | | | |
| | 0.1 % FSO | | | | | | | | | 1 | | | | | | | | | | |
| | customer | | | | | | | | | 9 | | | | | | | | | | consult |
| Electrical connection | | | | | | | | | | | | | | | | | | | | |
| | male and female plug ISO 4400 | | | | | | | | | 1 | 0 | 0 | | | | | | | | |
| | male plug Binder series 723 (5-pin) | | | | | | | | | 2 | 0 | 0 | | | | | | | | |
| | male plug Binder series 723 (7-pin) | | | | | | | | | A | 0 | 0 | | | | | | | | |
| | and female plug Binder series 423 (7-pin) | | | | | | | | | A | 0 | 0 | | | | | | | | |
| | cable outlet with PVC cable (IP67) ² | | | | | | | | | T | A | 0 | | | | | | | | |
| | male plug M12x1 (4-pin) / metal | | | | | | | | | M | 1 | 0 | | | | | | | | |
| | compact field housing | | | | | | | | | | | | | | | | | | | |
| | stainless steel 1.4301 (304) | | | | | | | | | 8 | 5 | 0 | | | | | | | | |
| | customer | | | | | | | | | 9 | 9 | 9 | | | | | | | | consult |
| Mechanical connection | | | | | | | | | | | | | | | | | | | | |
| | G1/2" EN 837 ³ | | | | | | | | | | | | 2 | 0 | 0 | | | | | |
| | M20x1.5 internal thread | | | | | | | | | | | | D | 2 | 8 | | | | | |
| | 9/16 UNF internal thread | | | | | | | | | | | | V | 0 | 0 | | | | | |
| | customer | | | | | | | | | | | | 9 | 9 | 9 | | | | | consult |
| Seal | | | | | | | | | | | | | | | | | | | | |
| | without (welded version) | | | | | | | | | | | | | | 2 | | | | | |
| | customer | | | | | | | | | | | | | | 9 | | | | | consult |
| Special version | | | | | | | | | | | | | | | | | | | | |
| | standard | | | | | | | | | | | | | | | 1 | 1 | 1 | | |
| | RS232 interface ⁴ | | | | | | | | | | | | | | | 1 | 2 | 1 | | |
| | customer | | | | | | | | | | | | | | | 9 | 9 | 9 | | consult |

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

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

³ 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 $R_p > 260 \text{ N/mm}^2$ in accordance with DIN 17440. The maximum allowed pressure is 1600 bar!

⁴ RS232 interface only possible with electrical connection Binder serie 723/423 (7-pin)

software, interface and cable for DMP 334i with option RS232C have to be order separately

(ordering code: CIS Set 510; software appropriate for Windows® 95, 98, 2000, NT version 4.0 or newer and XP)

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