



Pressure transmitter

Huba Control

In Proud Partnership with Huba Control

PAQUIN
SENSORS

For technical support, sales, & distribution
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Relative pressure transmitter Type 525



The pressure transmitter type 525 has a compact and robust design and a very high measurement accuracy.

The pressure transmitter with its large variety of pressure and electrical connections has also pressure ranges from 50 mbar full scale upwards.

The compact 525 pressure transmitter is based upon the well proven ceramic technology developed by Huba Control over 20 years ago.

Pressure range
0 ... 0.05 – 0.6 bar

- + Very high measurement accuracy
- + Excellent thermal characteristics
- + Pressure ranges from 50 mbar full scale available
- + Compact and rugged construction
- + Large selection of connections available

Technical overview

Pressure range

Relative 0 ... 0.05 – 0.6 bar

Operating conditions

| | | |
|---------------------------------------|---------|---------------------|
| Medium | | Liquids and gases |
| Temperature | Medium | FPM -15 ... +85 °C |
| | | EPDM -25 ... +85 °C |
| | | NBR -20 ... +85 °C |
| | Ambient | -25 ... +85 °C |
| | Storage | -40 ... +85 °C |
| Tolerable overload / rupture pressure | | 2 bar |
| Tolerable negative pressure | | -0.3 bar |

Materials

| | |
|----------------------------------|---|
| Plug accommodation | Polyarylamide 50% GF UL 94 V-0 |
| Materials in contact with medium | pressure connection Stainless steel 1.4404 / AISI 316L |
| | measuring element Ceramics Al ₂ O ₃ (99.6%) |
| | sealing material FPM, EPDM, NBR |

Electrical overview

| | | | | |
|------------------------------|--------------------|--|---|---------------------|
| 2 wire | Output | Power supply | Load | Current consumption |
| | 4 ... 20 mA | 10 ... 30 VDC | $< \frac{\text{supply voltage} - 10 \text{ V}}{0.02 \text{ A}}$ [Ohm] | < 23 mA |
| 3 wire | 0 ... 5 V | 7 ... 33 VDC | >10 kOhm / < 100 nF | < 5 mA |
| | 0 ... 10 V | 12 ... 33 VDC | >10 kOhm / < 100 nF | < 5 mA |
| | ration. 10 ... 90% | 5 VDC ± 10% | >10 kOhm / < 100 nF | < 5 mA |
| Polarity reversal protection | | Short circuit proof and protected against polarity reversal. Each connection is protected against crossover up to max. supply voltage. | | |
| Insulation voltage | | 500 VDC | | |

Dynamic response

| | |
|---------------|----------|
| Start-up time | < 200 ms |
| Response time | < 150 ms |
| Load cycle | < 100 Hz |

Electrical connection

| Electrical connection | Protection standard | Protection class |
|---|---------------------|------------------|
| Connector DIN EN 175301-803-A | IP 65 | III |
| Connector DIN EN 175301-803-C (Industrial standard 9.4 mm) | IP 65 | III |
| Connector M12x1 | IP 67 | III |
| Swift connector without or with cable 1.5 / 2 / 3 / 5 m (PVC spez.) | IP 67 | III |


Pressure connection

| | | |
|----------------|-----------|--|
| Inside thread | G ¼ | with Profile seal ring in FPM |
| | ¼ -18 NPT | |
| | R ¼ | acc. EN 10226 |
| Outside thread | G ⅝ | sealed at front |
| | G ⅞ | sealed at back ISO 1179-2 (DIN 3852-E) with Profile seal ring in FPM |
| | G 1 | sealed at front |
| | G 1¼ | sealed at back ISO 1179-2 (DIN 3852-E) with Profile seal ring in FPM |
| | G 1½ | sealed at front |
| | G 2 | sealed at back ISO 1179-2 (DIN 3852-E) with Profile seal ring in FPM, with hole Ø11 mm |

Installation arrangement

Unrestricted (Note the position error!)

Tests / Admissions

| | |
|--|---|
| Electromagnetic compatibility | CE conformity acc. EN 61326-2-3 |
| Shock acc. IEC 68-2-27 | 50 g, 6 ms half sine wave, all 6 directions, free fall from 1 m on concrete (6x) |
| Vibration acc. IEC 68-2-6 | 20 g, 15 ... 2000 Hz, 15 ... 25 Hz with amplitude ± 15 mm, 1 Octave/min. all 3 directions, 50 constant load |
| UL | ANSI/UL 61010-1 acc. E325110 |
| EAC | |
| Protection against explosion  | Ex II ½ G Ex ia IIC T4 Ga/Gb |
| (4 ... 20 mA) acc. ATEX and IECEx | Ex II ½ D Ex ia IIIC T120°C Da/Db |

Weight

~ 120 g

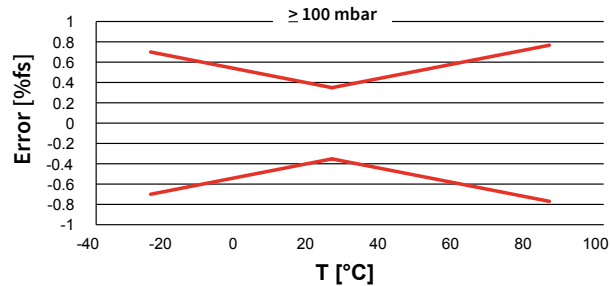
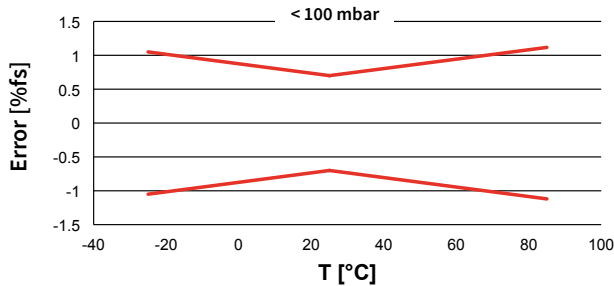
Packaging (Please state on order)

| | |
|--|------------------------|
| Single packaging in cardboard | accessories integrated |
| Multiple packaging in cardboard (25 pcs) | |

Accuracy

| Parameter | Unit | |
|--|----------|----------------------|
| Characteristic line ¹⁾ (at 25 °C) | % fs | ± 0.35 ²⁾ |
| Resolution | % fs | < 0.1 |
| Long term stability acc. IEC EN 60770-1 | % fs | ± 0.25 |
| Thermal characteristics ³⁾ | % fs/10K | ± 0.07 |
| Location error horizontal mounting | mbar | + 0.1 |
| Location error vertical mounting, pressure connection upward | mbar | + 0.2 |

Test conditions: 45% rH, power supply 24 VDC
Balance position: Vertical, pressure connection down



| Order code selection table in bar | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | |
|---|--|--|---|---|---|---|---|---|-----|---|----|----|---|
| | | 525. | X | X | X | X | X | X | X | X | X | X | |
| Pressure range ⁴⁾ | 0 ... 0.05 bar | 9 | 2 | 1 | | | | | | | | | |
| | 0 ... 0.10 bar | 9 | 2 | 2 | | | | | | | | | |
| | 0 ... 0.16 bar | 9 | 2 | 3 | | | | | | | | | |
| | 0 ... 0.20 bar | 9 | 2 | 4 | | | | | | | | | |
| | 0 ... 0.25 bar | 9 | 2 | 5 | | | | | | | | | |
| | 0 ... 0.30 bar | 9 | 2 | 6 | | | | | | | | | |
| | 0 ... 0.40 bar | 9 | 2 | 7 | | | | | | | | | |
| | 0 ... 0.60 bar | 9 | 2 | 8 | | | | | | | | | |
| Sealing material | FPM Fluoro elastomer | | | | 0 | 0 | | | | | | | |
| | EPDM Ethylene propylene | | | | 1 | 0 | | | | | | | |
| | NBR Butadiene Acrylonitrile | | | | 2 | 0 | | | | | | | |
| Output / power supply | 0 ... 5 V 7 ... 33 VDC | | | | | | | 1 | | | | | |
| | 0 ... 10 V 12 ... 33 VDC | | | | | | | 2 | | | | | |
| | 4 ... 20 mA 10 ... 30 VDC | | | | | | | 3 | | | | | |
| | 10 ... 30 VDC | | | | | | | 4 | | | | | |
| | ration. 10 ... 90% 5VDC ±10% | | | | | | | 7 | | | | | |
| Electical connection | Connector ⁵⁾ | DIN EN 175301-803-A | | | | | | | 1 | | | | |
| | | DIN EN 175301-803-C (industrial standard 9.4 mm) | | | | | | | 2 | | | | |
| | | M12x1 2w: IN=1 / OUT=3 3w: IN=1 / OUT=4 / GND=3 | | | | | | | 3 | | | | |
| | | M12x1 3w: IN=1 / OUT=3 / GND=4 | | | | | | | 1,2 | M | | | |
| | | M12x1 2w: IN=1 / OUT=2 3w: IN=1 / OUT=2 / GND=3 | | | | | | | | P | | | |
| | Swift connector | without cable (PG9) | | | | | | | | 0 | | | |
| | | with cable 1.5 m | | | | | | | | L | | | |
| | | with cable 2.0 m | | | | | | | | N | | | |
| | | with cable 3.0 m | | | | | | | | Q | | | |
| | | with cable 5.0 m | | | | | | | | R | | | |
| Pressure connection ⁴⁾ | Inside thread | G ¼ with O-Ring seal FPM | | | | | | | | 1 | 1 | 1 | |
| | | ¼ -18 NPT | | | | | | | | 3 | 1 | 1 | |
| | | R ¼ acc. to EN 10226 | | | | | | | | | 7 | 1 | 1 |
| | Outside thread | G ½ sealed at front | | | | | | | | | M | 1 | 1 |
| | | G ½ sealed at back ISO 1179-2 (DIN 3852-E) with Profile seal ring in FPM | | | | | | | | | H | 1 | 1 |
| | | G ¼ sealed at front | | | | | | | | | J | 1 | 1 |
| | | G ¼ sealed at back ISO 1179-2 (DIN 3852-E) with Profile seal ring in FPM | | | | | | | | | 4 | 1 | 1 |
| | | G ½ sealed at front | | | | | | | | | 9 | 1 | 1 |
| | | G ½ sealed at back ISO 1179-2 (DIN 3852-E) with Profile seal ring in FPM | | | | | | | | | 8 | 1 | 1 |
| G ½ sealed at back ISO 1179-2 (DIN 3852-E) with Profile seal ring in FPM with hole Ø 11mm | | | | | | | | | S | 1 | 1 | | |
| Pressure range variation (optional) | Indicate W and state range on order (e. g. W0... + 0.5bar/OUT0.5...4.5V) | | | | | | | | | | | W | |

¹⁾ incl. zero point, full scale, linearity, hysteresis and repeatability

²⁾ fs <100 mbar ±0.7% fs

³⁾ Zero point and span for range -25...+85 °C, possible deviation of difference between Tmedia/Tambient

⁴⁾ Other pressure ranges on request

⁵⁾ Delivery without female connector

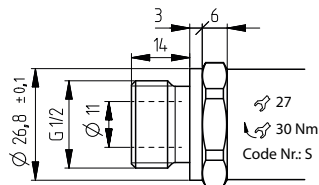
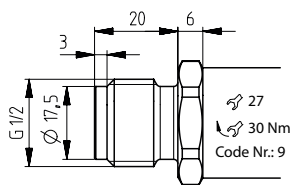
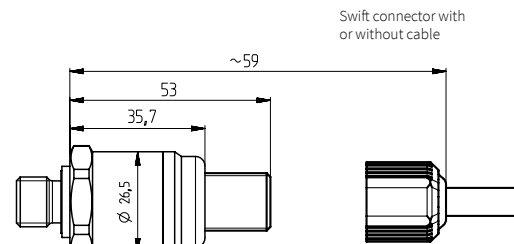
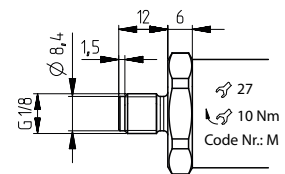
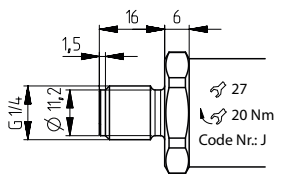
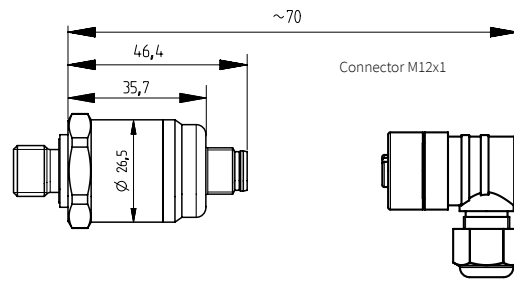
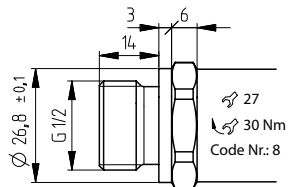
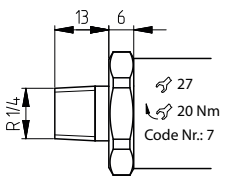
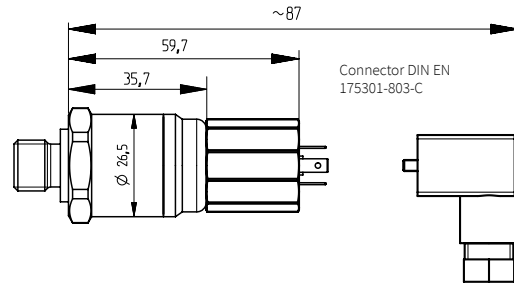
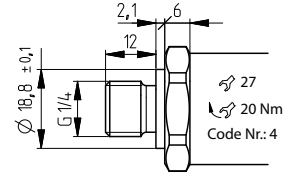
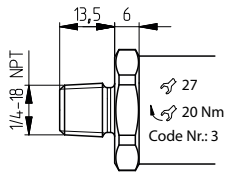
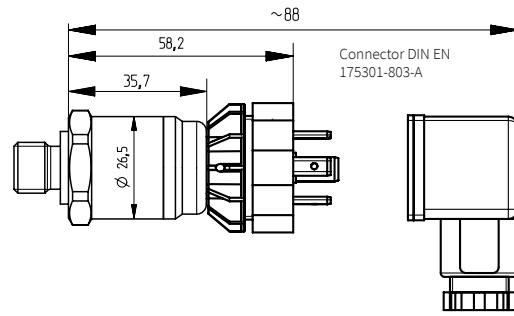
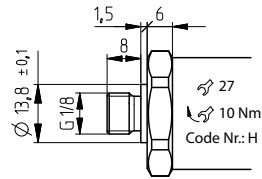
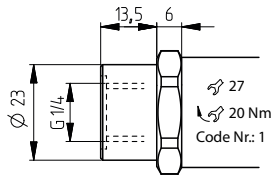
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | |
|--|--|---|------|---|---|---|---|-----|---|---|---|----|----|--|
| Order code selection in psi | | | 525. | X | X | X | X | X | X | X | X | X | X | |
| Pressure range ¹⁾ | 0 ... 1 psi | | 9 | B | 1 | | | | | | | | | |
| | 0 ... 2 psi | | 9 | B | 2 | | | | | | | | | |
| | 0 ... 3 psi | | 9 | B | 4 | | | | | | | | | |
| | 0 ... 5 psi | | 9 | B | 6 | | | | | | | | | |
| | 0 ... 10 psi | | 9 | B | 8 | | | | | | | | | |
| Sealing material | FPM | Fluoro elastomer | | | | 0 | 0 | | | | | | | |
| | EPDM | Ethylene propylene | | | | 1 | 0 | | | | | | | |
| | NBR | Butadiene Acrylonitrile | | | | 2 | 0 | | | | | | | |
| Output / power supply | 0 ... 5 V | 7 ... 33 VDC | | | | | | 1 | | | | | | |
| | 0 ... 10 V | 12 ... 33 VDC | | | | | | 2 | | | | | | |
| | 4 ... 20 mA | 10 ... 30 VDC | | | | | | 3 | | | | | | |
| | | 10 ... 30 VDC | | | | | | 4 | | | | | | |
| | ratiom. 10 ... 90% | 5VDC ±10% | | | | | | 7 | | | | | | |
| Electrical connection | Connector ²⁾ | DIN EN 175301-803-A | | | | | | | 1 | | | | | |
| | | DIN EN 175301-803-C (industrial standard 9.4 mm) | | | | | | | 2 | | | | | |
| | | M12x1 <small>2w: IN=1 / OUT=3 3w: IN=1 / OUT=4 / GND=3</small> | | | | | | | 3 | | | | | |
| | | M12x1 <small>3w: IN=1 / OUT=3 / GND=4</small> | | | | | | 1,2 | M | | | | | |
| | Swift connector | M12x1 <small>2w: IN=1 / OUT=2 3w: IN=1 / OUT=2 / GND=3</small> | | | | | | | P | | | | | |
| | | without cable | | | | | | | 0 | | | | | |
| | | with cable 1.5 m | | | | | | | L | | | | | |
| | | with cable 2.0 m | | | | | | | N | | | | | |
| | | with cable 3.0 m | | | | | | | Q | | | | | |
| | | with cable 5.0 m | | | | | | | R | | | | | |
| Pressure connection ¹⁾ | Inside thread | G ¼ with O-Ring seal FPM | | | | | | | | 1 | 1 | 1 | | |
| | | ¼ -18 NPT | | | | | | | | 3 | 1 | 1 | | |
| | Outside thread | R ¼ acc. to EN 10226 | | | | | | | | | 7 | 1 | 1 | |
| | | G ½ sealed at front | | | | | | | | | M | 1 | 1 | |
| | | G ½ sealed at back ISO 1179-2 (DIN 3852-E) with Profile seal ring in FPM | | | | | | | | | H | 1 | 1 | |
| | | G ¼ sealed at front | | | | | | | | | J | 1 | 1 | |
| | | G ¼ sealed at back ISO 1179-2 (DIN 3852-E) with Profile seal ring in FPM | | | | | | | | | 4 | 1 | 1 | |
| | | G ½ sealed at front | | | | | | | | | 9 | 1 | 1 | |
| | | G ½ sealed at back ISO 1179-2 (DIN 3852-E) with Profile seal ring in FPM | | | | | | | | | 8 | 1 | 1 | |
| | | G ½ sealed at back ISO 1179-2 (DIN 3852-E) with Profile seal ring in FPM with hole Ø 11mm | | | | | | | | | S | 1 | 1 | |
| Pressure range variation (optional) | Indicate W and state range on order (e.g.: W0... + 0.5bar/OUT0.5...4.5V) | | | | | | | | | | | | | |
| | | | | | | | | | | | | | W | |

| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | |
|--|--|---|------------------|---|---|---|---|---|-----|---|---|----|----|--|
| Order code selection in MPa | | | 525. | X | X | X | X | X | X | X | X | X | X | |
| Pressure range ¹⁾ | 0 ... 0.005 MPa | | 9 | G | 1 | | | | | | | | | |
| | 0 ... 0.010 MPa | | 9 | G | 2 | | | | | | | | | |
| | 0 ... 0.016 MPa | | 9 | G | 3 | | | | | | | | | |
| | 0 ... 0.020 MPa | | 9 | G | 4 | | | | | | | | | |
| | 0 ... 0.025 MPa | | 9 | G | 5 | | | | | | | | | |
| | 0 ... 0.030 MPa | | 9 | G | 6 | | | | | | | | | |
| | 0 ... 0.040 MPa | | 9 | G | 7 | | | | | | | | | |
| | 0 ... 0.060 MPa | | 9 | G | 8 | | | | | | | | | |
| | Sealing material | FPM | Fluoro elastomer | | | | 0 | 0 | | | | | | |
| EPDM | | Ethylene propylene | | | | 1 | 0 | | | | | | | |
| NBR | | Butadiene Acrylonitrile | | | | 2 | 0 | | | | | | | |
| Output / power supply | 0 ... 5 V | 7 ... 33 VDC | | | | | | 1 | | | | | | |
| | 0 ... 10 V | 12 ... 33 VDC | | | | | | 2 | | | | | | |
| | 4 ... 20 mA | 10 ... 30 VDC | | | | | | 3 | | | | | | |
| | | 10 ... 30 VDC | | | | | | 4 | | | | | | |
| | ratiom. 10 ... 90% | 5VDC ±10% | | | | | | 7 | | | | | | |
| Electrical connection | Connector ²⁾ | DIN EN 175301-803-A | | | | | | | | 1 | | | | |
| | | DIN EN 175301-803-C (industrial standard 9.4 mm) | | | | | | | | 2 | | | | |
| | | M12x1 <small>2w: IN=1 / OUT=3 3w: IN=1 / OUT=4 / GND=3</small> | | | | | | | | 3 | | | | |
| | | M12x1 <small>3w: IN=1 / OUT=3 / GND=4</small> | | | | | | | 1,2 | M | | | | |
| | Swift connector | M12x1 <small>2w: IN=1 / OUT=2 3w: IN=1 / OUT=2 / GND=3</small> | | | | | | | | P | | | | |
| | | without cable (PG9) | | | | | | | | 0 | | | | |
| | | with cable 1.5 m | | | | | | | | L | | | | |
| | | with cable 2.0 m | | | | | | | | N | | | | |
| | | with cable 3.0 m | | | | | | | | Q | | | | |
| | | with cable 5.0 m | | | | | | | | R | | | | |
| Pressure connection ¹⁾ | Inside thread | G ¼ with O-Ring seal FPM | | | | | | | | 1 | 1 | 1 | | |
| | | ¼ -18 NPT | | | | | | | | 3 | 1 | 1 | | |
| | Outside thread | R ¼ acc. to EN 10226 | | | | | | | | | 7 | 1 | 1 | |
| | | G ½ sealed at front | | | | | | | | | M | 1 | 1 | |
| | | G ½ sealed at back ISO 1179-2 (DIN 3852-E) with Profile seal ring in FPM | | | | | | | | | H | 1 | 1 | |
| | | G ¼ sealed at front | | | | | | | | | J | 1 | 1 | |
| | | G ¼ sealed at back ISO 1179-2 (DIN 3852-E) with Profile seal ring in FPM | | | | | | | | | 4 | 1 | 1 | |
| | | G ½ sealed at front | | | | | | | | | 9 | 1 | 1 | |
| | | G ½ sealed at back ISO 1179-2 (DIN 3852-E) with Profile seal ring in FPM | | | | | | | | | 8 | 1 | 1 | |
| | | G ½ sealed at back ISO 1179-2 (DIN 3852-E) with Profile seal ring in FPM with hole Ø 11mm | | | | | | | | | S | 1 | 1 | |
| Pressure range variation (optional) | Indicate W and state range on order (e.p.: W0... + 0.5bar/OUT0.5...4.5V) | | | | | | | | | | | | | |
| | | | | | | | | | | | | | W | |

| Accessories <i>(supplied loose)</i> | Order number |
|--|--------------|
| Female connector DIN EN 175301-803-A with seal | 103510 |
| Connector DIN EN 175301-803-C with seal | 104244 |
| Corner-wire box for connector M12x1 | 106975 |
| Calibration certificate | 104551 |

¹⁾ Other pressure ranges on request

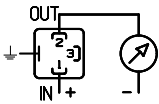
²⁾ Delivery without female connector



Electrical connections

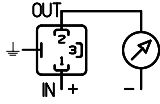
2 wire

Connector DIN EN
175301-803-A



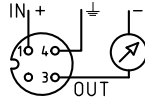
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Connector DIN EN
175301-803-C



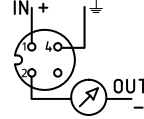
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Connector M12x1



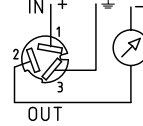
1 (IN) 3 (OUT) ⚡

Connector M12x1



1 (IN) 2 (OUT) 4 (⚡)

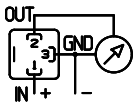
Swift connector



1 (IN) 2 (OUT) 3 (⚡)

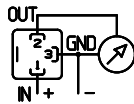
3 wire

Connector DIN EN
175301-803-A



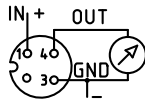
1 (IN) 2 (OUT) 3 (GND)

Connector DIN EN
175301-803-C



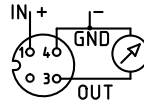
1 (IN) 2 (OUT) 3 (GND)

Connector M12x1



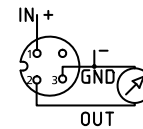
1 (IN) 4 (OUT) 3 (GND)

Connector M12x1



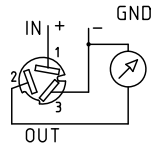
1 (IN) 3 (OUT) 4 (GND)

Connector M12x1



1 (IN) 2 (OUT) 3 (GND)

Swift connector



1 (IN) 2 (OUT) 3 (GND)

Grounding for Ex devices

The pressure transmitter must be connected to the equipotential bonding system of the plant via the metal housing (process connection) or the ground conductor of the plug/cable. The grounding connection is conductively connected to the transmitter housing.

Products without ex protection do not need any electrical grounding (no influence on function).

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