# Robust pressure transmitters

## Technical details

| | 0675 | 0680 | 0690 |
|---|---|---|---|
| Output signal: | 0.5 - 4.5 V ratiometric | 0 - 10 V (3-wire) | 4 - 20 mA (2-wire) |
| Supply voltage $U_{V+}$: | 5 VDC ±10 % max. 6,5 VDC | 12 - 32 VDC | 10 - 32 VDC |
| Permissible load / apparent ohmic resistance: | ≥ 4.7 kΩ | ≥ 4.7 kΩ | ≤ ($U_{V+}$ – 10 V) / 20 mA |
| Idle power consumption: | approx. 5 mA | | < 4 mA |

| | 0675 / 0680 / 0690 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Standard pressure ranges $p_{nom}$: | -1 – 0 bar (vacuum) (-14.5-0 psi) | -1 -1 bar (compound) (-14.5 to 14.5) | 0 – 1 bar (0-14.5 psi) | 0 – 4 bar (0-58 psi) | 0 – 6 bar (0-87 psi) | 0 – 10 bar (0-145 psi) | 0 – 16 bar (0-232 psi) | 0 – 40 bar (0-580 psi) | 0 – 100 bar (0-1,450 psi) |
| Overpressure protection $p_u$: [1] | 3 bar (43 psi) | 3 bar (43 psi) | 3 bar (43 psi) | 8 bar (116 psi) | 12 bar (174 psi) | 20 bar (290 psi) | 32 bar (464 psi) | 80 bar (1,160 psi) | 200 bar (2,900 psi) |
| Burst pressure[1] | 10 bar (145 psi) | 10 bar (145 psi) | 10 bar (145 psi) | 20 bar (290 psi) | 30 bar (435 psi) | 35 bar (500 psi) | 40 bar (580 psi) | 100 bar (1,450 psi) | 250 bar (3,650 psi) |
| Mechanical life expectancy: | 10,000,000 pulsations at rise rates to 14,500 psi /s (1,000 bar/s) at $p_{nom}$ | | | | | | | | |
| Permitted pressure change rate: | ≤ 14,500 psi/s (≤ 1,000 bar/s) | | | | | | | | |
| Accuracy: | ±0.5 % full scale (FS) at room temperature, ±0.25 % BFSL | | | | | | | | |
| Long term stability: | < ±0.2 % of full scale (FS) per year | | | | | | | | |
| Repeatability[2]: | ±0.1 % FS | | | | | | | | |
| Temperature error[2]: | ±0.02 % of full scale (FS) / °C; -1 … 1 bar ±0.03 % of full scale (FS) / °C | | | | | | | | |
| Compensated temperature range: | 14 °F …158 °F (-10 °C ... +70 °C) | | | | | | | | |
| Temperature range ambient: | -40 °F … 212 °F (-40 °C … +100 °C) | | | | | | | | |
| Temperature range media: | with NBR seal: -22 °F … +212 °F (-30 °C … +100 °C) | | | | | | | | |
| | with EPDM seal: -22 °F … +257 °F (-30 °C … +125 °C) | | | | | | | | |
| | with FKM seal: -4 °F … +257 °F (-20 °C … +125 °C) | | | | | | | | |
| Wetted parts material – Housing: | Stainless steel 1.4404 (AISI 316L) | | | | | | | | |
| Wetted parts material – Measuring cell: | Stainless steel 1.4404 (AISI 316L) | | | | | | | | |
| Wetted parts material – Seal material: | NBR, EPDM or FKM | | | | | | | | |
| Standard sensor oil: | Fluorine oil [3] | | | | | | | | |
| Insulation resistance:: | > 100 MΩ (35 VDC) | | | | | | | | |
| Response time 10 - 90 %: | ≤ 2 ms | | | | | | | | |
| Vibration resistance: | 20 g at 4 – 2000 Hz sine wave; DIN EN 60068-2-6 | | | | | | | | |
| Shock resistance: | half sine wave 500 m/s² ; 11ms; DIN EN 60068-2-27 | | | | | | | | |
| Protection class | Refer to the electrical connections | | | | | | | | |
| Electromagnetic compatibility: | EMC 2014/30/EU, EN 61000-6-2:2005, EN 61000-6-3:2007 | | | | | | | | |
| Max. length of connection cable: | 30 m | | | | | | | | |
| Protection against reverse polarity, short-circuit and overvoltage: | Built-in | | | | | | | | |
| Weight: | approx. 80 g (DIN EN 175301 approx. 110 g, cable output approx. 135 g) | | | | | | | | |

[1] Static pressure. Dynamic value is 30 to 50% lower. Values refer to the hydraulic/pneumatic part of the pressure transmitter.
[2] Within the compensated temperature range.
[3] not suitable for food applications

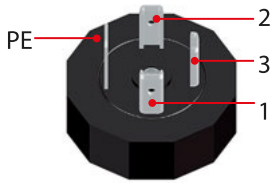
# T.3

hex 22
stainless steel
1.4404 / AISI 316L

# 0675 / 0680 / 0690

Electrical connectors and threads


## DIN EN 175301 - 803 - A




| Pin | 0675 / 0680 | 0690 |
|---|---|---|
| 1 | $U_{V+}$ | $U_{V+}$ |
| 2 | Gnd | $I_{out}$ |
| 3 | $U_{out}$ | nc |
| PE | ⏚ | ⏚ |

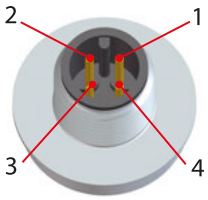
IP65

**x** ~ 60 mm without coupler socket
**x** ~ 76 mm with coupler socket

**d** ~ Ø 30 mm

**Connection code:** 013

## M12 – DIN EN 61076 - 2 -101 A




| Pin | 0675 / 0680 | 0690 |
|---|---|---|
| 1 | $U_{V+}$ | $U_{V+}$ |
| 2 | $U_{out}$ | nc |
| 3 | Gnd | $I_{out}$ |
| 4 | nc | nc |

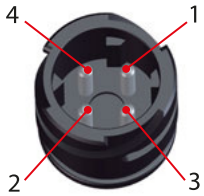
IP67

**x** ~ 54 mm

**d** ~ Ø 22 mm

**Connection code:** 002

## ISO 15170 - A1 - 4.1




| Pin | 0675 / 0680 | 0690 |
|---|---|---|
| 1 | $U_{V+}$ | $U_{V+}$ |
| 2 | Gnd | nc |
| 3 | $U_{out}$ | $I_{out}$ |
| 4 | nc | nc |

IP67

**x** ~ 65 mm

**d** ~ Ø 27 mm

**Connection code:** 004

## Cable connection

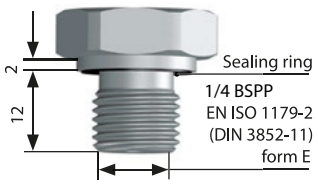

| Pin | 0675 / 0680 | 0690 |
|---|---|---|
| 1 | $U_{V+}$ | $U_{V+}$ |
| 2 | $U_{out}$ | nc |
| 3 | Gnd | $I_{out}$ |
| | | |

IP67

**x** ~ 44 mm (+ 20 mm bend relief)
Cable length ~ 2 m

**d** ~ Ø 22 mm

**Connection code:** 011




**Thread code:** 41

RoHSIII 2020-209 compliant

# 0675 / 0680 / 0690

Article matrix for pressure transmitters



| | Type | Pressure range | Pressure connection | Seal material | Electrical connection |
|---|---|---|---|---|---|
| | ↓ | ↓ | ↓ | ↓ | ↓ |
| 0.5 - 4.5 V ratiometric | 0675 | | | | |
| 0 - 10 V, 3-wire | 0680 | | | | |
| 4 - 20 mA, 2-wire | 0690 | | | | |

| Pressure range | Max. Overpressure [1] | |
|---|---|---|
| -1 – 0 bar (Vacuum, approx. -29.6 inHg) | 3 bar | 000 |
| -1 – 1 bar (Compound pressure range)[2] | 3 bar | V01 |
| 0 - 1 bar (approx. 14.5 PSI) | 3 bar | 100 |
| 0 - 4 bar (approx. 58 PSI) | 8 bar | 400 |
| 0 - 6 bar (approx. 87 PSI) | 12 bar | 600 |
| 0 - 10 bar (approx. 145 PSI) | 20 bar | 101 |
| 0 - 16 bar (approx. 232 PSI) | 32 bar | 161 |
| 0 - 40 bar (approx. 580 PSI) | 80 bar | 401 |
| 0 - 100 bar (approx. 1,450 PSI) | 200 bar | 102 |

Pressure connection

| | |
|---|---|
| 1/4 BSPP – DIN EN ISO 1179-2 (DIN 3852-11), form E | 41 |

Seal material – Application areas

| | | | |
|---|---|---|---|
| NBR | Hydraulic/machine oil, air, nitrogen, water, etc. | -22 °F … +212 °F<br>-30 °C … +100 °C | 1 |
| EPDM[3] | Brake fluid, water, acetylene, hydrogen, etc. | -22 °F … +257 °F<br>-30 °C … +125 °C | 2 |
| FKM | Hydraulic fluids (HFA, HFB, HFD), petrol/gasoline, etc. | -4 °F … +257 °F<br>-20 °C … +125 °C | 3 |

Electrical connection

| | |
|---|---|
| DIN EN 175301-803-A (DIN 43650-A); socket device included | 013 |
| M12x1 – DIN EN 61076-2-101 A | 002 |
| Bayonet ISO 15170-A1-4.1 (DIN 72585-A1-4.1) | 004 |
| Cable connection (length of cable 2 m standard) | 011 |

| | | | | | |
|---|---|---|---|---|---|
| | ↓ | ↓ | ↓ | ↓ | ↓ |
| Article number | 06XX | XXX | 41 | X | XXX |

[1] Static pressure, dynamic pressure 30 to 50% lower. Values refer to the hydraulic or pneumatic part of the pressure transmitter.
[2] Other compound pressure ranges on request.
[3] For oxygen applications, the EPDM diaphragm can only be used up to 10 bar and a media temperature of max. +60°C.

RoHSIII 2020-209 compliant

# T.3

hex 22
stainless steel
1.4404 / AISI 316L

# Robust pressure transmitters

Stainless steel housing 1.4404 / AISI 316L, hex 22

- Pressure transmitters especially for low pressures, including vacuum applications
- Long life time even under high pressure change rates
- Housing and wetted parts are made of stainless steel 1.4404 providing excellent media compatibility when used in seawater, chemical and process technology applications
- The highly-sensitive piezo-resistive sensor in the measuring cell filled with oil guarantees high level of accuracy, repeatability and long-term stability
- The availability of different sealing materials enables deployment in a broad temperature range and with a diverse array of media