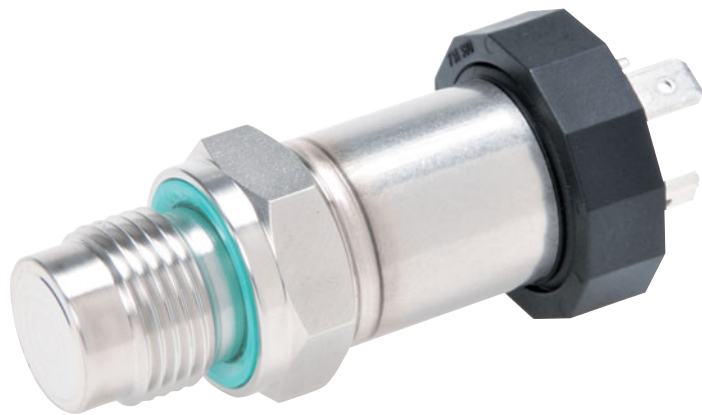


Relative and absolute pressure transmitter type 680

Pressure range

0 ... 0.1 – 1000 bar



The pressure transmitters of type 680 with piezoresistive measuring elements have compensated, calibrated and amplified sensor signals which are available as standard voltage or current outputs.

The transmitter housing is available with various pressure and electrical connections.

Manufactured from stainless steel, its welded construction provides a watertight seal. With its sophisticated building block system, individual designs to meet specific applications are possible.

- Effective overload protection due to chemically etched chip diaphragm and specially designed glass gland
- Fast and affordable customer specific solutions due to building block system, even for small quantities
- Compact construction with SMD technology enhances operational reliability in the presence of shock and vibration
- Welded construction provides 100% sealing against media

Technical overview

Pressure type ¹⁾

| | |
|-----------------------|-------------------|
| Relative and absolute | 0 ... 25 bar |
| Overpressure | > 25 ... 1000 bar |

Overload

| | |
|---------------------------------------|---------------------------------|
| At Pressure ranges 0.1 ... 2 bar | 3x pressure range, min. 3 bar |
| At Pressure ranges > 2 ... 600 bar | 3x pressure range, max. 850 bar |
| At Pressure ranges > 600 ... 1000 bar | 1500 bar |

Rupture pressure

| | |
|---------------------------------------|------------|
| At Pressure ranges 0.1 ... 2 bar | > 200 bar |
| At Pressure ranges > 2 ... 600 bar | > 850 bar |
| At Pressure ranges > 600 ... 1000 bar | > 1500 bar |

Medium

| | |
|--------------------|-------------------|
| Permissible medium | liquids and gases |
|--------------------|-------------------|

Material

| | |
|--------------------------------------|--|
| Pressure connection, diaphragm, case | stainless steel 1.4435 (316L) (Titanium or Hastelloy C on request) |
| Sealing material | FPM (other on request) |

Temperature ²⁾

| | |
|---------------------|-----------------|
| Medium temperature | -40 ... +150 °C |
| Ambient temperature | -40 ... +125 °C |
| Storage temperature | -40 ... +125 °C |

Output and power supply ³⁾⁴⁾

| | output | power supply | permissible load ⁵⁾ |
|-------------|-------------------------|--------------------------------|--|
| 3-wire | 0 ... 5 V 0 ... 10 V | 12 ... 30 VDC 12 ... 30 VDC | > 10 kOhm > 10 kOhm |
| 2-wire | 4 ... 20 mA | 9 ... 33 VDC | $\frac{\text{supply voltage} - 9V}{0.02 A}$ [Ohm] max. |
| 2-wire (Ex) | 4 ... 20 mA | 9 ... 28 VDC | $\frac{\text{supply voltage} - 9V}{0.02 A}$ [Ohm] max. |

Ex-Version

| | gas | dust |
|---|-------------------------------|--------------------------------------|
| Ex-Admission (Depending on execution, see valid ATEX certificate) | II 1G Ex ia IIB/IIC T3 ... T6 | II 1D Ex iaD 20 IP6x T145 ... T70 °C |
| Standards | EN 60079-0 / EN 60079-11 | EN 61241-0 / EN 61241-11 |

Temperature class Ex-Version

| | T6 | T4 | T3 |
|------------------------|----------------|-----------------|-----------------|
| Ambient temperature Ta | -40 ... +50 °C | -40 ... +85 °C | -40 ... +125 °C |
| Medium temperature | -40 ... +50 °C | -40 ... +110 °C | -40 ... +150 °C |

Electrical connection

| | |
|-------------------------|---|
| Cable | PUR, PE or Teflon in variable lengths ⁶⁾ |
| Connector ⁷⁾ | DIN EN 175301-803-A / Lumberg RSF 4 / RSF 50 / Binder 723 |

Pressure connection

| | |
|----------------|------------------------|
| Inside thread | G ¼ ¹⁾ |
| Outside thread | G ¼, G ½ ¹⁾ |

Tests / Admissions

| | norm | character | level |
|-------------------------|--|--|--|
| Mechanical load | EN 60068-2-6 EN 60068-2-27 | vibration shock | 10 g (4 ... 2000 Hz, oscillation ± 10 mmp) 100 g (pulse duration 6 ms) |
| Interference emit | EN 55022 EN 61000-4-2 EN 61000-4-3 | emitted interference, class B discharge static electricity electromagnetic radiation | < 30 dBµV/m (0.03 ... 1 GHz) 8 kV contact-, 15 kV air discharge 10 V/m, 0.08 ... 2.7 GHz, 80% AM 1 kHz, 3s |
| Interference resistance | EN 61000-4-4 EN 61000-4-5 EN 61000-4-6 | fast transients (burst) impulse voltage (surge) grid-bound electromagnetic blockage | 4 kV Line-Line 0.5 kV/42 Ohm, Line-Earth 1 kV/42 Ohm 10 V, 0.15 ... 80 MHz, 80% AM 1 kHz, 3s |

Packaging

| | |
|------------------|---------------------------------|
| Single packaging | carton padded cellular material |
|------------------|---------------------------------|

Weight

| | |
|---------------------|---------|
| Cable version (2 m) | ~ 250 g |
| Connector version | ~ 150 g |

Accuracy

| | total error band ^(*) [±%fs] per pressure ranges [bar] | | | | |
|--|--|-------------|-------------|---------------|----------------|
| | 0.1 ... 0.5 | > 0.5 ... 2 | > 2 ... 100 | > 100 ... 600 | > 600 ... 1000 |
| Characteristic line deviation [±%FS] 0.25 or 0.1 (typ./ max.) 0 ... +70 °C | 1.0 / 1.5 | 0.7 / 1.0 | 0.7 / 1.0 | 0.7 / 1.0 | 0.7 / 1.0 |
| (typ./ max.) -25 ... +100 °C | 2.0 / 2.5 | 1.0 / 1.5 | 1.0 / 1.5 | 1.0 / 1.5 | 1.0 / 1.5 |
| Characteristic line deviation [±%FS] 0.05 (typ. / max.) 0 ... +70 °C | - | 0.3 / 0.5 | 0.3 / 0.5 | - | - |
| (typ. / max.) -25 ... +100 °C | - | 0.75 / 1.0 | 0.75 / 1.0 | - | - |

^(*) total error band incl. characteristic line deviation, temperature error zero point and operating range, hysteresis and repeatability at max. signal range.



深圳市昊森科技有限公司 Closense Technology Shenzhen Co., Ltd.

Tel:0755-33552992 Fax:0755-33001065 E-mail:closense@163.com http://www.closense.com

¹⁾ See order code selection table. Other on request

²⁾ Compensated temperature range see order code selection table

³⁾ Short circuit proof with polarity reversal protection

⁴⁾ Influence from the supply voltage types < 0.05% fs

⁵⁾ Influence permissible load < 0.05% fs

⁶⁾ Standard length 2 m

⁷⁾ Delivery without female connector

| Order code selection table | | 680. X X X X X X X X X X | | | | | | | | | |
|--|---|--|---|---|---|--|-----|---|---|---------|---|
| Pressure type | Relative | 8 | | | | | | | | | |
| | Absolute | 7 | | | | | | | | | |
| | Overpressure | 6 | | | | | | | | | |
| Pressure range ¹⁾ | 0 ... 100 mbar | | 0 | 0 | | | | | | | |
| | 0 ... 160 mbar | | 0 | 1 | | | | | | | |
| | 0 ... 250 mbar | | 0 | 2 | | | | | | | |
| | 0 ... 400 mbar | | 0 | 3 | | | | | | | |
| | 0 ... 600 mbar | | 0 | 4 | | | | | | | |
| | 0 ... 1 bar | | 0 | 5 | | | | | | | |
| | 0 ... 1.6 bar | | 0 | 6 | | | | | | | |
| | 0 ... 2.5 bar | | 0 | 7 | | | | | | | |
| | 0 ... 4 bar | | 0 | 8 | | | | | | | |
| | 0 ... 6 bar | | 0 | 9 | | | | | | | |
| | 0 ... 10 bar | | 1 | 0 | | | | | | | |
| | 0 ... 16 bar | | 1 | 1 | | | | | | | |
| | 0 ... 25 bar | | 1 | 2 | | | | | | | |
| | 0 ... 40 bar | | 6 | 1 | 3 | | | | | | |
| | 0 ... 60 bar | | 6 | 1 | 4 | | | | | | |
| | 0 ... 100 bar | | 6 | 1 | 5 | | | | | | |
| | 0 ... 160 bar | | 6 | 1 | 6 | | | | | | |
| | 0 ... 250 bar | | 6 | 1 | 7 | | | | | | |
| | 0 ... 400 bar | | 6 | 1 | 8 | | | | | | |
| 0 ... 600 bar | | 6 | 1 | 9 | | | | | | | |
| 0 ... 1000 bar | | 6 | 2 | 0 | | | | | | | |
| Output / power supply | 0 ... 5 V 12 ... 30 VDC | | | | | | | 0 | | | |
| | 0 ... 10 V 12 ... 30 VDC | | | | | | | 1 | | | |
| | 4 ... 20 mA 9 ... 33 VDC | | | | | | | 3 | | | |
| | 4 ... 20 mA 9 ... 28 VDC intrinsically safe version ^{2) 3)} | | | | | | | 4 | | | |
| Characteristic line deviation | ≤ ± 0.25% fs | | | | | | | | 1 | | |
| | ≤ ± 0.10% fs (≤ 600 bar fs) | | | | | | | | 2 | | |
| | ≤ ± 0.05% fs (≥ 0.5 bar ... ≤ 100 bar fs) | | | | | | 3,4 | 3 | | 0,1,2,3 | |
| Temperature range | 0 ... + 70 °C compensated, medium temperature permissible: -40 ... +125 °C | | | | | | | | | 0 | |
| | - 25 ... + 100 °C compensated, medium temperature permissible: -40 ... +125 °C | | | | | | | | | 1 | |
| | - 25 ... + 100 °C compensated, medium temperature permissible: -40 ... +150 °C | | | | | | | | | 2 | |
| | - 40 ... + 125 °C compensated, medium temperature permissible: -40 ... +125 °C | | | | | | | | | 3 | |
| | Ex T6 (Ta: -40 ... +50 °C) 0 ... +70 °C compensated (medium temperature permissible: - 40 ... + 50 °C) | | | | | | | 4 | | 4 | |
| | Ex T4 (Ta: -40 ... +85 °C) -25 ... +100 °C compensated (medium temperature permissible: - 40 ... + 110 °C) | | | | | | | 4 | | 5 | |
| Ex T3 (Ta: -40 ... +125 °C) -25 ... +100 °C compensated (medium temperature permissible: - 40 ... + 150 °C) | | | | | | | 4 | | 6 | | |
| Electrical connection | Connector | Fig. 1 Binder 723 5 pin IP 67 | | | | | | | | 0 | |
| | | Fig. 2 DIN EN 175301-803-A | | | | | | | | 1 | |
| | | Fig. 3 Lumberg 4 pin RSF 4 IP 20 | | | | | | | | 2 | |
| | | Fig. 4 Lumberg 5 pin RSF 50 IP 68 | | | | | 6,7 | | | 3 | |
| | Cable ⁴⁾ | Fig. 5 PUR IP 67 | | | | | | | | 4 | |
| | | Fig. 6 PUR with kink guard IP 67 | | | | | | | | 5 | |
| Fig. 5 Teflon IP 67 | | | | | | | | 9 | | | |
| Pressure connection | Inside thread | Fig. 10 G ¼ | | | | | | | | 0 | 0 |
| | | Fig. 11 G ¼ | | | | | | | | 0 | 1 |
| | | Fig. 12 G ¼ manometer DIN 16288 | | | | | | | | 0 | 2 |
| | Outside thread | Fig. 13 G ½ | | | | | | | | 0 | 3 |
| | | Fig. 14 G ½ diaphragm at front | | | | | | | | 0 | 4 |
| | | Fig. 15 G ½ diaphragm flush with front | | | | | | | | 0 | 5 |
| Fig. 16 G ½ manometer DIN 16288 | | | | | | | | 0 | 6 | | |
| Version | | | | | | | | | | | N |



深圳市昊森科技有限公司 Closense Technology Shenzhen Co., Ltd.

Tel:0755-33552992 Fax:0755-33001065 E-mail:closense@163.com http://www.closense.com

¹⁾ Other pressure ranges on request

²⁾ II 1G Ex ia IIB/IIC T3...T6 / II 1D Ex iaD 20 IP6x T145...T70°C (Depending on execution, see valid ATEX certificate)

³⁾ Indicate correct medium

⁴⁾ Length of cable 2 m (other lengths on request)

Fig. 10

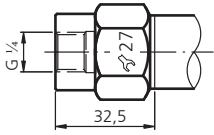


Fig. 11

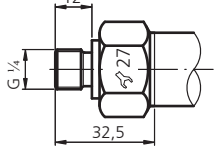
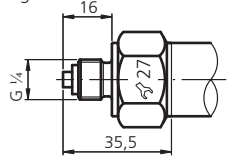


Fig. 12



Version for medium temperature up to +125 °C

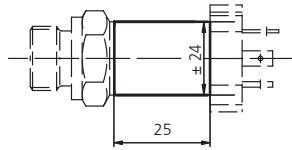
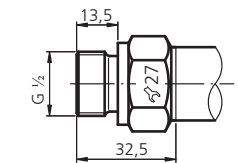


Fig. 13



Version for medium temperature > +125 ... max. +150 °C

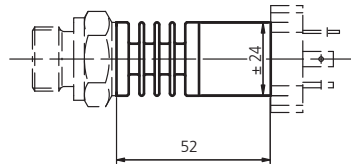


Fig. 14

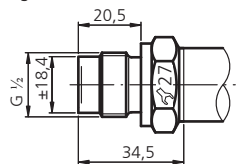


Fig. 15

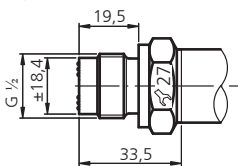


Fig. 16

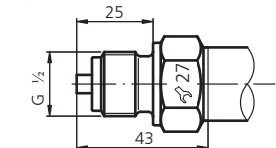


Fig. 1

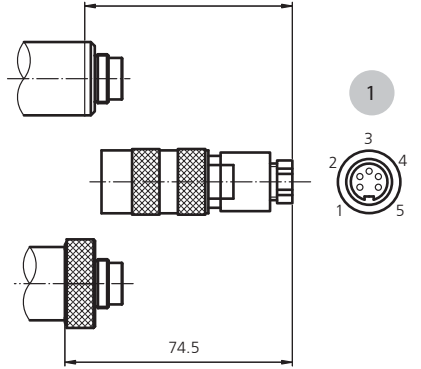


Fig. 2

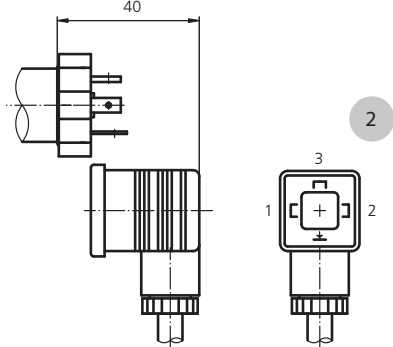


Fig. 3

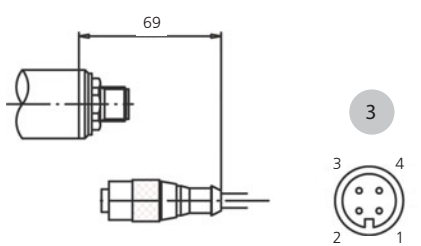


Fig. 4

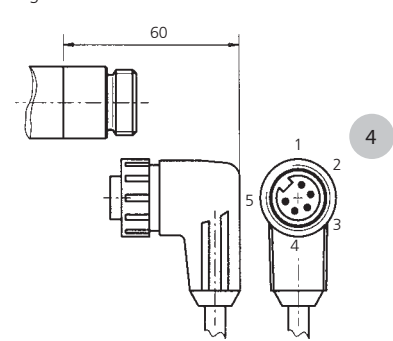


Fig. 5

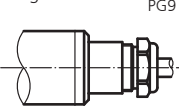
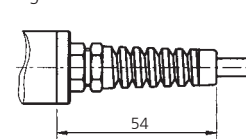


Fig. 6



- 1
- 2
- 3
- 4
- 5

| Pin / Colour | 2-wire | 3-wire |
|--------------|--------|--------|
| 1 | OUT | OUT |
| 3 | IN | IN |
| 4 | | GND |
| 1 | IN | IN |
| 2 | OUT | OUT |
| 3 | | GND |
| 1 | OUT | GND |
| 3 | IN | OUT |
| 4 | | IN |
| 1 | OUT | OUT |
| 3 | IN | IN |
| 4 | | GND |
| white | IN | IN |
| yellow | OUT | GND |
| brown | | OUT |