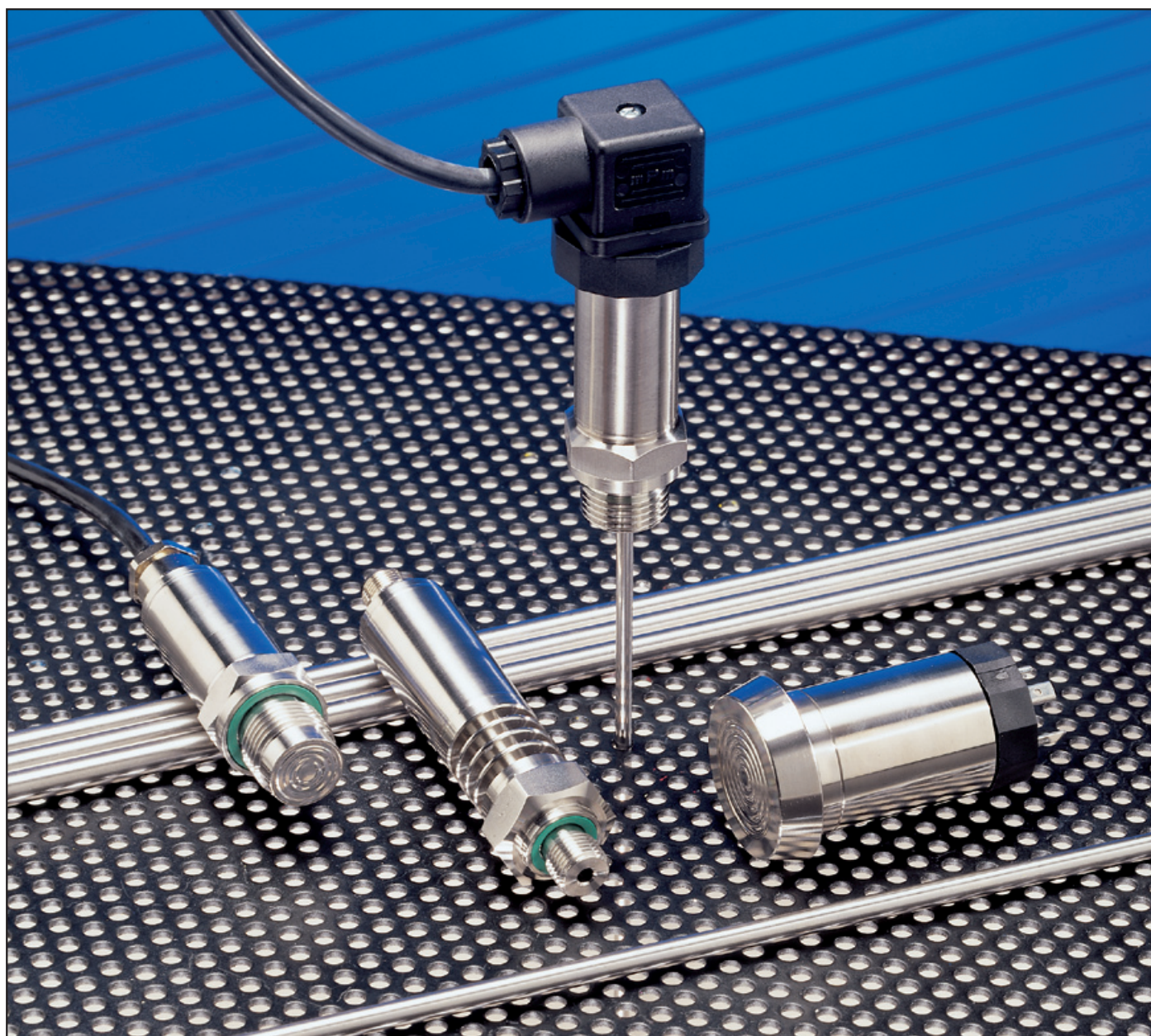


680

Analogue pressure transmitter

–1 to 1000 bar



EDITION 11/2008

HUBA-REGISTERED TRADE MARK



Technical overview

The pressure transmitters of type 680 with piezo-resistive 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.

The distinct advantages

- 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

Pressure ranges

Relative pressure
(differential measurements
to ambient pressure) -1 ... +25 bar

Absolute pressure
(absolute measurement;
reference point vacuum) 0 ... +25 bar

Overpressure
(absolute measurement;
reference point ambient
pressure on manufacture) > 25 ... 1000 bar

DIN categories see order code selection table.
Other pressure ranges available.

Overload

3 x Measuring range, min. 3 bar, maximum rupture pressure

Rupture pressure

> 200 bar (0.1 ... 25 bar)
> 850 bar (> 25 ... 600 bar)
1500 bar (> 600 ... 1000 bar)

Characteristic line deviation

Acc. initial point setting DIN 16086, inclusive hysteresis and repeatability
≤ 0.5% fs
≤ +/- 0.25% fs
≤ +/- 0.10% fs on request

Material

Stainless steel 1.4435 (316L)
Titanium or Hastelloy C on request

Temperature influences

Compensated temperature range:
0 ... 70 °C, -25 ... +85 °C

Temperature error

Zero point (0 ... 70 °C)
0 ... < 0.5 bar ≤ +/- 0.06 % fs/°C

0.5 ... < 2 bar ≤ +/- 0.03 % fs/°C
2 ... < 600 bar ≤ +/- 0.015 % fs/°C

Zero point (-25 ... +85 °C)
0 ... < 0.5 bar ≤ +/- 0.08 % fs/°C
0.5 ... < 2 bar ≤ +/- 0.04 % fs/°C
2 ... < 600 bar ≤ +/- 0.02 % fs/°C

Operating range (0 ... 70 °C)
≤ +/- 0.015% fs/°C

Operating range (-25 ... +85 °C)
≤ +/- 0.02% fs/°C

Storage - 40 ... + 125 °C

Dynamic response

Suitable for static and dynamic measurements.
Response time: < 1 ms / 10 ... 90% FS

Outputs and power supply

0 – 5 V	15 – 30 VDC	3-wire
0 – 10 V	15 – 30 VDC	3-wire
0 – 20 mA	9 – 33 VDC	3-wire
4 – 20 mA	9 – 33 VDC	2-wire

Short circuit-proof, with polarity reversal protection. Other signal outputs on request.

Adjustable versions

Potentiometer for adjustment of all pressure ranges (only with DIN EN 175301-803 connector and round binder connector 723, can be screwed up)

Load

0 – 20 mA $\frac{\text{supply voltage} - 6 \text{ V}}{0.02 \text{ A}}$ [Ohm]

max. 1 kOhm

4 – 20 mA max. $\frac{\text{supply voltage} - 9 \text{ V}}{0.02 \text{ A}}$ [Ohm]

Intrinsically safe version

Intrinsic safety II 1G EEx ia IIC T3 ... T6

Output 4 – 20 mA
Power supply 10 – 30 VDC

Load max. $\frac{\text{Speisespannung} - 10 \text{ V}}{0.02 \text{ A}}$ [Ohm]

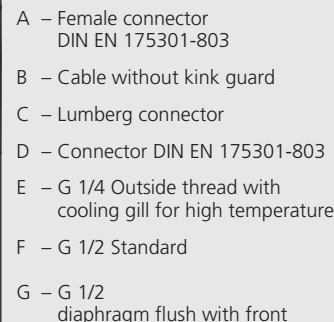
Current consumption

0 – 5 V	2.5 mA
0 – 10 V	2.5 mA
0 – 20 mA	26 mA fs (max. 30 mA)
4 – 20 mA	20 mA fs (max. 31 mA)

Electrical connections / Protection class

See order code selection table.
Other connections on request.

Test voltage 500 VDC



680. X X X X X X X X X

3 Indicate correct medium
4 Length of cable 2 m (other length on request)

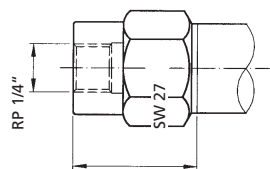


Fig. 10

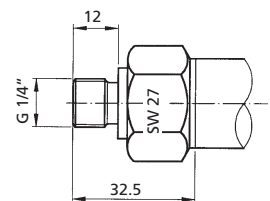


Fig. 11

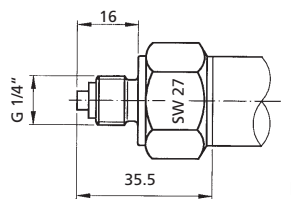


Fig. 12

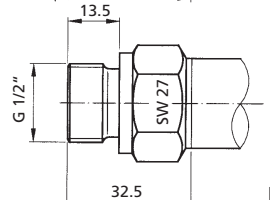


Fig. 13

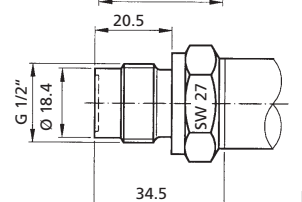


Fig. 14

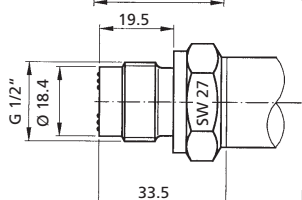


Fig. 15

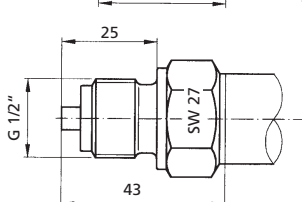
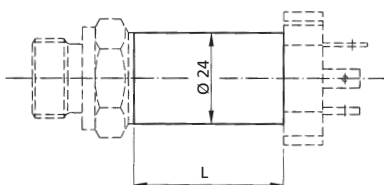


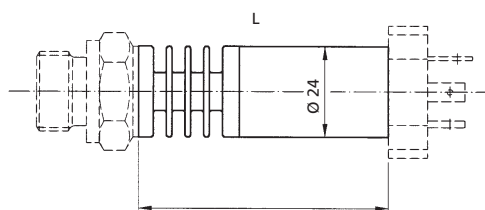
Fig. 16

Version for medium temperature up to 100°C



L = 40mm for connector DIN EN 175301-803
L = 45mm for all other versions
L = 94mm for overload protection
L = 55mm for Ex-protection

Version for medium temperature > 100°C ... 150 °C max



L = 67mm for connector DIN EN 175301-803
L = 72mm for all other versions
L = 121mm for overload protection
L = 82mm for Ex-protection

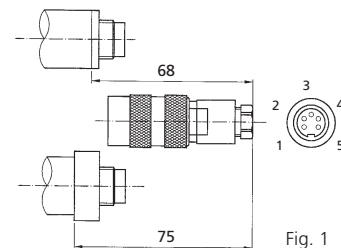


Fig. 1

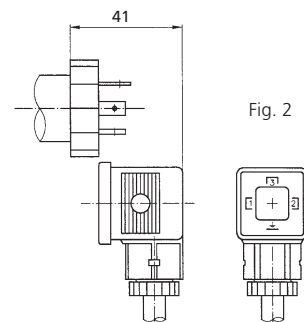


Fig. 2

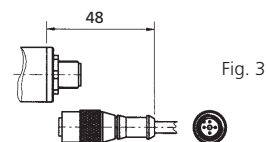


Fig. 3

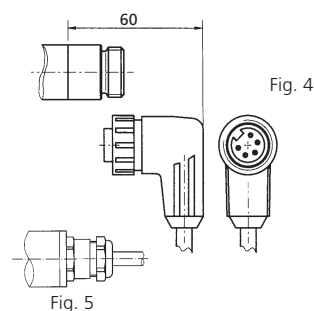


Fig. 4

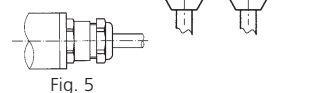


Fig. 5

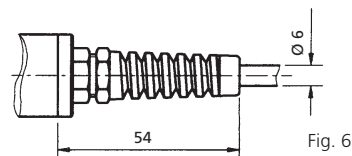


Fig. 6

Electromagnetic compatibility:

CE conformity to EC directive 89/336 EEC (EMC) by application of harmonized standards EN 61000-6-2 and EN 61000-6-3

Interference emit	Test standard	Effect
Basic specification	EN 61000-6-3	
Interference emission, class B	EN 55022	no effect
Interference stability	Test standard	Effect
Basic specification	EN 61000-6-2	
Electrostatic discharge	EN 61000-4-2	8 kV air, 4 kV contact
Radiated electromagnetic radiation field	EN 61000-4-3	10 V/m, 80 ... 1000 MHz, 80% AM 1 kHz
Radiated electromagnetic radiation field (GSM)	EN 61000-4-3	10 V/m, 950 MHz, 200 Hz on/off
Fast transients (burst)	EN 61000-4-4	2 kV
Conducted electromagnetic interference	EN 61000-4-6	10 V, 0.15 ... 80 MHz, 80% AM 1 kHz
Surge	EN 61000-4-5	10 kA (8/20 μs)

Only versions with option over voltage protection option (lightning strike)

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