

Type S-10 General Purpose Pressure Transmitter

Standard Features

- Signal output: 4-20 mA 2-wire
- Supply voltage: 10-30 VDC
- Process connection: 1/2 NPT male
- Electrical connection: DIN EN 175301-803 (DIN 43 650) with plug connector



| Gauge Ranges | | |
|--------------|---------|--|
| Description | | |
| Range | Part # | |
| 0-50 inWC | 8367656 | |
| 0-100 inWC | 8341481 | |
| 0-5 psi | 8415072 | |
| 0-10 psi | 8642885 | |
| 0-15 psi | 8643628 | |
| 0-25 psi | 8341995 | |
| 0-30 psi | 8643636 | |
| 0-50 psi | 8348868 | |
| 0-60 psi | 8643644 | |
| 0-100 psi | 8643652 | |
| 0-160 psi | 8341155 | |
| 0-200 psi | 8644918 | |
| 0-250 psi | 8341163 | |
| 0-300 psi | 8341732 | |
| 0-400 psi | 8341953 | |
| 0-500 psi | 8341740 | |
| 0-600 psi | 8347128 | |
| 0-750 psi | 4294930 | |
| 0-1,000 psi | 8610007 | |
| 0-1,500 psi | 8341219 | |
| 0-2,000 psi | 8353098 | |
| 0-3,000 psi | 8342275 | |
| 0-5,000 psi | 8340638 | |
| 0-8,000 psi | 8341864 | |
| 0-10,000 psi | 8347242 | |
| 0-15,000 psi | 8359143 | |

| Vacuum & Compound Ranges | | |
|--------------------------|---------|--|
| Description | | |
| Range | Part # | |
| 30"-0 HgVac | 8642850 | |
| 30"-0-30 psi | 8415080 | |
| 30"-0-60 psi | 8415099 | |
| 30"-0-100 psi | 8648646 | |
| 30"-0-160 psi | 9796881 | |
| 30"-0-200 psi | 8985538 | |

| Absolute Pressure Ranges | | |
|--------------------------|---------|--|
| Description | | |
| Range | Part # | |
| 0-15 psia | 8587582 | |
| 0-25 psia | 8358503 | |
| 0-50 psia | 8347854 | |
| 0-100 psia | 9734538 | |
| 0-250 psia | 9734589 | |
| 0-500 psia | 9767164 | |

NOTE: Standard items and TRONIC 36 part numbers are shown in bold print. (Subject to prior sale)

General Purpose Pressure Transmitters

Model S-10, S-11

Datasheet S-10, S-11

Applications

- Hydraulics and pneumatics
- Test equipment
- Pump and compressor control
- Liquid level measurement

Special Features

- Standard ranges available from stock
- 4-20 mA 2-wire output signal, others available
- Highly resistant to pressure spikes and vibration
- Stainless steel case and wetted parts
- Can be assembled to diaphragm seals for special applications

Description

WIKA S-10 and S-11 pressure transmitters are precision engineered to fit most industrial pressure measurement applications. The compact, rugged design makes these instruments suitable for applications including hydraulics and pneumatics, vacuum, test equipment, liquid level measurement, press control, compressor control, pump protection and numerous other processing and control operations. A wide range of electrical connection and process connection options are available to meet almost any requirement.

Rugged construction

The S-10 features an all-welded stainless steel measuring cell for improved media compatibility. There are no internal soft sealing materials that may react with the media or deteriorate over time. The compact case is also made of stainless steel and is available with environmental protection ratings up to NEMA 6P / IP 68.



Left: S-10 with NPT process connection
Center: S-11 with flush diaphragm process connection
Right: S-11 with flush diaphragm process connection and integral cooling element

The S-11 transmitter features a flush diaphragm process connection. The S-11 is specifically designed for the measurement of viscous fluids or media containing solids that may clog a NPT process connection. Flush diaphragm pressure transmitters are available in pressure ranges from 50 InWC to 8,000 psi. For high temperature media, an integral cooling element is available on the S-11. This option increases the maximum media temperature to 300°F.

Each instrument undergoes extensive quality control testing and calibration to achieve an accuracy of $\leq 0.25\%$ full scale. The printed circuit boards use state-of-the-art surface mount technology and are potted in silicone gel for protection against mechanical shock, vibration and moisture. Each is individually temperature compensated to assure accuracy and long-term stability even when exposed to severe ambient temperature variations.

Specifications

Type S-10 / S-11

| | | | | | | | | | |
|--------------------------|-----------|-----------|-----------|------------|------------|------------|------------|-------------------------|-------------------------|
| Pressure range | 50 InWC | 5 psi | 10 psi | 25 psi | 30 psi | 60 psi | 100 psi | 160 psi | 200 psi |
| Maximum pressure* | 14 psi | 29 psi | 58 psi | 145 psi | 145 psi | 240 psi | 500 psi | 1,160 psi | 1,160 psi |
| Burst pressure** | 29 psi | 35 psi | 69 psi | 170 psi | 170 psi | 290 psi | 600 psi | 1,390 psi | 1,390 psi |
| Pressure range | 300 psi | 500 psi | 1,000 psi | 2,000 psi | 3,000 psi | 5,000 psi | 8,000 psi | 10,000 psi ¹ | 15,000 psi ¹ |
| Maximum pressure* | 1,160 psi | 1,160 psi | 1,740 psi | 4,600 psi | 7,200 psi | 11,600 psi | 17,400 psi | 17,400 psi | 21,750 psi |
| Burst pressure** | 1,390 psi | 5,800 psi | 7,970 psi | 14,500 psi | 17,400 psi | 24,650 psi | 34,800 psi | 34,800 psi | 43,500 psi |

(vacuum, gauge pressure, compound ranges, and absolute pressure references are available)

¹) Ranges only available with Model S-10

²) For Model S-11 the burst pressure is limited to 21,000psi unless the pressure seal is accomplished by using the sealing ring underneath the hex.

*Pressure applied up to the maximum rating will cause no permanent change in specifications but may lead to zero and span shifts

**Exceeding the burst pressure may result in destruction of the transmitter and possible loss of media

| | | |
|---|--|---|
| Materials | | |
| ■ Wetted parts | | (other materials see WIKA diaphragm seal program) |
| ➢ Model S-10 | | Stainless steel |
| ➢ Model S-11 | | Stainless steel |
| | | O-ring: NBR ³⁾ {Viton® or EPDM} |
| ■ Case | | Stainless steel |
| Internal transmission fluid ⁴⁾ | | Synthetic oil {Halocarbon® oil for oxygen applications} ⁵⁾ {Listed by FDA for food applications}} |

³⁾ O-ring made of Viton or EPDM for Model S-11 with integral cooling element.

⁴⁾ Not available with Model S-10 in pressure ranges >300 psi.

⁵⁾ Media temperature for oxygen version: -4 ... +140 °F (-20...+60°C). Oxygen version is not available in vacuum and absolute pressure ranges or with S-11 > 500 psi

| | | |
|---|------------------------|---|
| Power supply U _B ⁶⁾ | U _B in DC V | 10 < U _B ≤ 30 (14 ... 30 with signal output 0 ... 10 V) |
| Signal output and maximum load R _A | R _A in Ohm | 4 ... 20 mA, 2-wire R _A ≤ (U _B - 10 V) / 0.02 A 0 ... 20 mA, 3-wire R _A ≤ (U _B - 3 V) / 0.02 A {0 ... 5 V, 3-wire} R _A > 5000 {0 ... 10 V, 3-wire} R _A > 10,000 {other signal outputs available} |
| Adjustability zero/span | % | ± 10 using potentiometers inside the instrument |
| Response time (10 ... 90 %) | ms | ≤ 1 (≤ 10 ms at media temperatures below -22°F (-30°C) for ranges < 300 psi or with flush diaphragm process connection) |
| Isolation voltage | DC V | 500 |

⁶⁾ NEC Class 02 power supply (low voltage and low current max. 100 VA even under fault conditions)

| | | |
|------------------------|-----------|--|
| Accuracy ⁷⁾ | % of span | ≤ 0.25 {0.125} ⁸⁾ (BFSL) |
| | % of span | ≤ 0.5 {0.25} ⁸⁾ (limit point calibration) |

⁷⁾ Including linearity, hysteresis and repeatability.

Limit point calibration performed in vertical mounting position with pressure connection facing down.

⁸⁾ Improved accuracy is available for pressure ranges ≥ 100 InWC

| | | |
|----------------------------|-------------------------|---|
| Non-repeatability | % of span | ≤ 0.05 |
| 1-year stability | % of span | ≤ 0.2 (at reference conditions) |
| Permissible temperature of | ■ Medium ⁹⁾ | -22 ... +212 °F {-40 ... +257 °F} -30 ... +100 °C {-40 ... +125 °C} |
| | ■ Ambient ⁹⁾ | S-11 with cooling element: -4 ... +302 °F S-11 with cooling element: -20 ... +150 °C |
| | ■ Storage ⁹⁾ | -4 ... +176 °F -20 ... +80 °C |
| | | S-11 with cooling element: -4 ... +176 °F S-11 with cooling element: -20 ... +80 °C |
| | | -40 ... +212 °F -40 ... +100 °C |
| | | S-11 with cooling element: -4 ... +212 °F S-11 with cooling element: -20 ... +100 °C |

⁹⁾ Also complies with EN 50178, Tab. 7, Type C, Class 4KH Operation, 1K4 Storage, 1K3 Transport

| | | |
|--|-----------|--|
| Compensated temperature range | | 32 ... +176 °F 0 ... +80 °C |
| Temperature coefficients (TC) within compensated temp range: | | |
| ■ Mean TC of zero | % of span | ≤ 0.2 / 10 K (< 0.4 for pressure range ≤ 100 InWC) |
| ■ Mean TC of range | % of span | ≤ 0.2 / 10 K |

| | | |
|--------------------------------|--|---|
| CE - conformity | | |
| ■ Pressure equipment directive | | 97/23/EC |
| ■ EMC directive | | 2004/108/EEC, EN 61 326 Emission Group (Group 1, Class B) and Immunity) industrial locations |

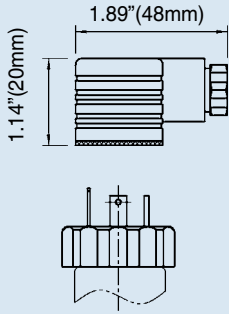
| | | |
|----------------------|----|---|
| Shock resistance | g | 1000 according to IEC 60068-2-27 (mechanical shock) |
| Vibration resistance | g | 20 according to IEC 60068-2-6 (vibration under resonance) |
| Wiring protection | | Protected against reverse polarity, overvoltage and short circuit |
| Weight | lb | Approx. 0.4 |

{ } Items in curved brackets { } are optional extras for additional price.

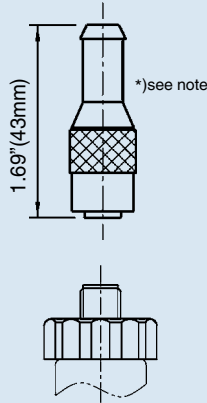
Dimensions in inches(mm)

Electrical connections

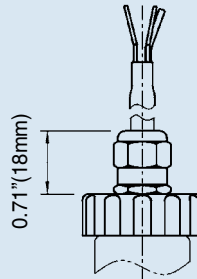
L-connector, DIN EN 175301-803, Form A (DIN 43 650) for conductor cross section up to max. 1.5 mm², conductor outer diameter 0.3" (6-8 mm), NEMA 5 / IP 65
Order code: A4



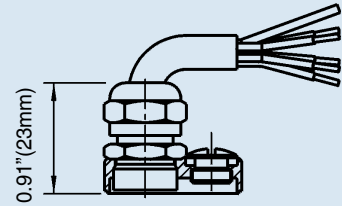
Circular connector M 12x1, 5 pin, NEMA 4 / IP 67
Order code: M5



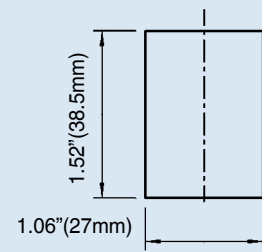
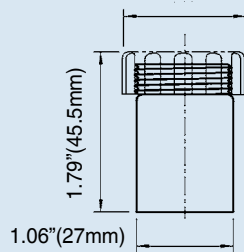
Cable with free ends conductor cross section up to max. 0.5 mm² / AWG 20 with end splices, conductor outer diameter 6.8 mm, NEMA 4 / IP 67
Order code: DL



Cable with free ends, adjustable zero and span conductor cross section up to max. 0.5 mm² / AWG 20 with end splices, conductor outer diameter 6.8 mm, NEMA 6 P / IP 68
Order code: XM

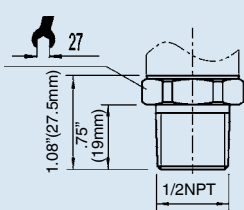


Case

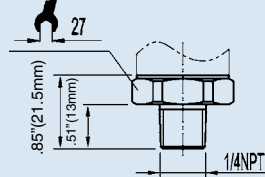


S-10 pressure connections (others available)

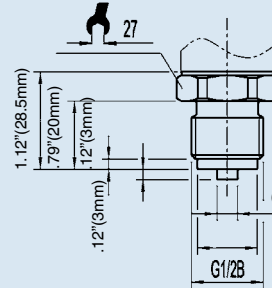
1/2 NPT male
Order code: ND



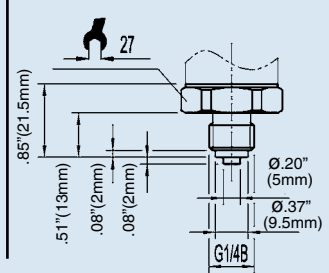
1/4 NPT male
Order code: NB



G1/2B male
Order code: GD

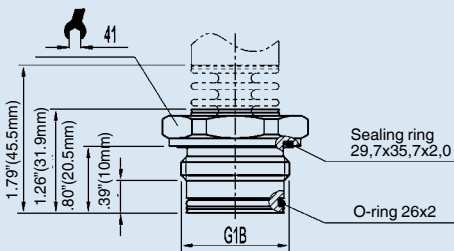


G1/4B male
Order code: GB

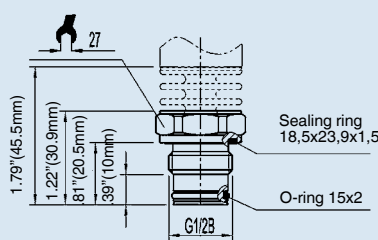


S-11 flush diaphragm pressure connections

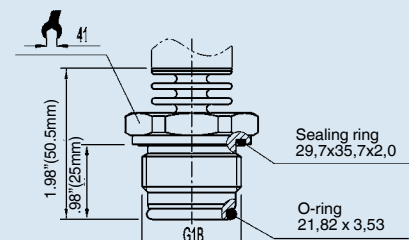
G 1 B
with or without cooling element
50 InWC to 25 psi
Order code: 85



G 1/2 B
with or without cooling element
30 psi to 8000 psi
Order code: 86



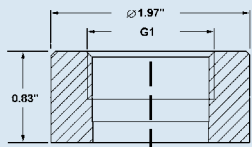
G1B according to EHEDG **
with cooling element, up to 302°F (150°C)
100 InWC to 250 psi
Order code: 84



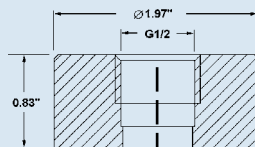
*) Mating connector not included

** European Hygienic Equipment Design Group

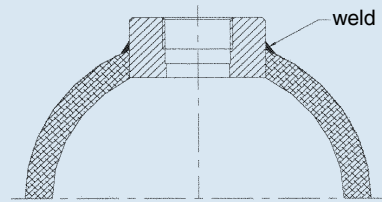
Matching P-1 weld insert adapters for S-11 pressure transmitters



P-1 G1 weld insert adapter
Part # 1206974
for pressure ranges ≤ 30 psi



P-1 G1/2 weld insert adapter
Part # 1097008
for pressure ranges ≥ 50 psi



Cross section view of P-1
adapter installed in pipe.

Wiring

