PE 81.32

Pressure Transmitters

For Precision Measurement

Standard series • Model P-10
Flush Diaphragm Series • Model P-11

TRONIC LINE

- **Pressure ranges from 0 ... 250 mbar to 0 ... 1,000 bar**
- **Linearity ≤ 0.1 % (optionally 0.05 %) of span**
- **No additional temperature error in the range 0 ... 50 °C**
- **Digital data processing**
- **Wetted parts and case of stainless steel**
- **Wiring with flying lead or plug**
- **Current or voltage signal output**
- **Optional keys for easy zero point adjustment**
- **Optional communication software for display, zero point adjustment and data logging for pressure and temperature**

General features
Pressure transmitters with an accuracy of 0.1 % (or 0.05 %) are mainly used for testing, calibration and service applications as well as in the process technology and in laboratories.

The digital data processing of the precision pressure transmitter P-1X ensures outstanding values regarding linearity and repeatability. System-related temperature errors occurring usually in pressure measuring instruments are compensated by the temperature sensor integrated in the process connection and the digital data processing via microprocessor. This leads to a total temperature error of 0.1 % in the range of 0 ... 50 °C.

Due to the use of sensor elements with a very high long-term stability a recalibration of the zero output is not necessary during normal operation. However, a recalibration may become necessary after a longer time of operation of the transmitter. For this task, the pressure transmitter P-1X can be equipped with optional keys for easy zero point adjustment.

Another option is the newly developed communication software Easy Com. Easy Com allows not only the display of pressure and temperature but also the storage of the measuring data for pressure and temperature (data logger function) as well as an easy calibration of zero and span.

The model P-11, flush diaphragm series, is especially designed for measuring media that is highly viscous, crystallizing or contains particulates. Pressure transmitters with flush diaphragm are available for the pressure ranges of 0 ... 250 mbar to 0 ... 600 bar.

Supplementary data sheet:

- Digital Display **Model A-RC-1**
  (see data sheet PE 82.09)
- Pressure Transmitters for precisions measurement with digital output RS-232 **Model D-10 / D-11**
  (see data sheet PE 81.33)

Specifications		Model P-10 and Model P-11
Pressure ranges Over pressure safety Burst pressure Pressure reference	bar bar bar	0,25 0,4 0,6 1 1,6 2,5 4 6 10 16 | 25 40 60 100 160 250 400 600 1000 1,6 1,6 2,4 4 6,4 10 16 24 35 64 | 50 80 120 200 320 500 800 1200 1500 2 2 6 10 10 16 20 35 35 80 | 250 400 550 800 1000 1200 1700 2400 3000 relative pressure {absolute pressure: 0 ... 0.25 bar abs to 0 ... 16 bar abs} {special pressure range 800 ... 1200 mbar abs} | relative pressure
Pressure connection • Typ P-10 • Typ P-11 •		G ½ B in compliance with DIN 16 288 (G ¼ B, ½ NPT) { other connections on request} G1 B flush diaphragm with o-ring (ranges: 0 ... 0,25 up to 0 ... 1,6 bar) G ½ B flush diaphragm with o-ring (ranges: 0 ... 2,5 up to 0 ... 600 bar) { weld-on socket for flush diaphragm units with connection G ½ B, G 1 B}
Materials • wetted parts • o-ring • case internal transmission fluid		 stainless steel 1.4571, 2.4711 (> 25 bar) (other materials see WIKA chemical seal program) Only for flush diaphragm models: NBR {EPDM, Viton} stainless steel 1.4571 Synthetical oil (only for pressure ranges up to 0 ... 16 bar or flush diaphragm units) {halocarbon oil for oxygen applications [1], listed by FDA for food industry}
Power supply U_B Signal output and maximum load R_A Adjustability • Zero point • Span Measuring rate	DC V % % Hz	$14 < U_B \leq 30$ (10 ... 30 with signal output 4 ... 20 mA, 2-wire) 0 ... 20 mA, 3-wire $R_A \leq (U_B - 14\ V) / 0{,}02\ A$ with R_A in Ohm and U_B in Volt 4 ... 20 mA, 2-wire $R_A \leq (U_B - 10\ V) / 0{,}02\ A$ with R_A in Ohm and U_B in Volt 4 ... 20 mA, 3-wire $R_A \leq (U_B - 14\ V) / 0{,}02\ A$ with R_A in Ohm and U_B in Volt {0 ... 5 V, 3-wire} $R_A > 5$ kOhm {0 ... 10 V, 3-wire} $R_A > 10$ kOhm -5 ... +20 {adjustment via setting keys or software Easy Com} -40 ... +5 {adjustment via software Easy Com} 100
Accuracy * (including linearity, hysteresis and repeatability) Hysteresis Repeatability 1-year stability Permissible temperature of • medium • ambient • storage Compensated temp. range Temperature coefficients in compensated temp range: • mean TC of zero • mean TC of range	% of span % of span % of span % of span °C °C °C °C % of span /10K % of span /10K	≤ 0,10 in the range 0 ... 50 °C { ≤ 0,05 bei 20 °C} ≤ 0,04 ≤ 0,03 ≤ 0,1 (under reference conditions) -20 ... +80 | - 4 ... +176 °F -20 ... +80 | - 4 ... +176 °F -40 ... +85 (-20 ... +85 with keys) | -40 ... +185 °F (-4 ... +185 °F with keys) -20... +80 | + 4 ... +176 °F < 0,1 (the temperature related deviations in the range 0 ... 50 °C (32 ... 122 °F) are already covered by the accuracy above) ≤ 0,1
α - conformity		Interference emission see EN 50 081-1 and EN 50 081-2, Interference immunity see EN 50 082-2; declaration of conformity on request
Shock resistance Vibration resistance	g g	< 100 according to IEC 770 < 5 according to IEC 770
Electrical connection Wiring protection Ingress protection acc to. EN 60 529/IEC529		flying lead, cable length 1.5 m {8-pin plug, M 14 x1.5} {MIL-plug, 6-pin} {cable with 9-pin SUB-D plug for internal service interface, communication software Easy Com included} protected against polarity crossing (max. 10 min), overvoltage and short circuiting IP 67 {IP 65 with plugs}
Weight Dimensions	kg	ca. 0.3 see drawings

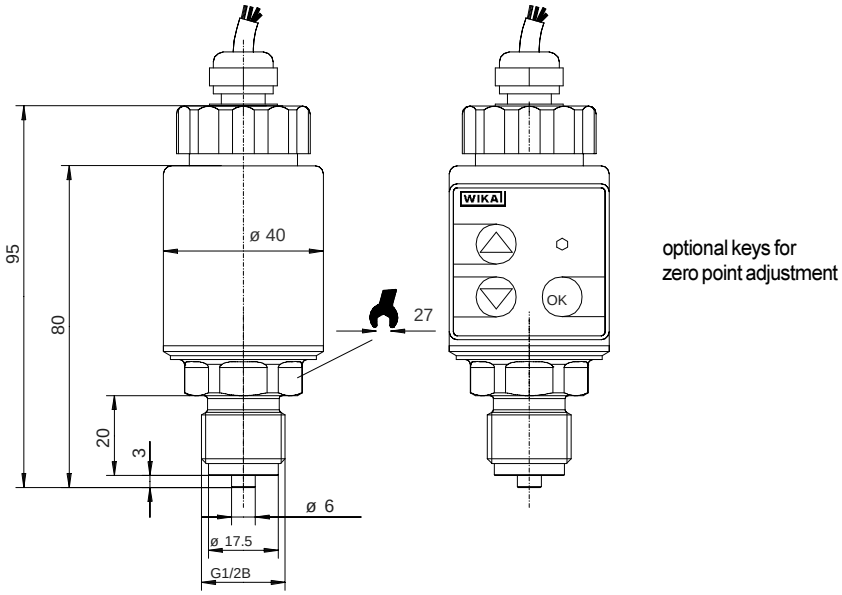
Items in curved brackets { } are optional extras for additional price.

* calibrated in vertical mounting with the pressure connection facing down

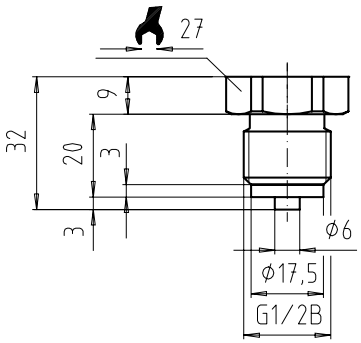
1) The oxygen version must not be operated under medium temperatures higher than 60 °C (140 °F)
The oxygen version cannot be manufactured for negative pressure ranges and for absolute pressure ranges < 1 bar abs.

Dimensions in mm

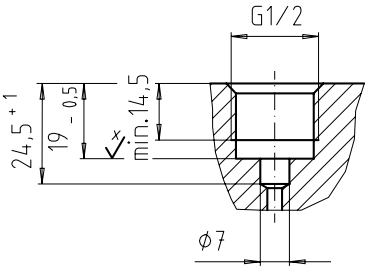
Case



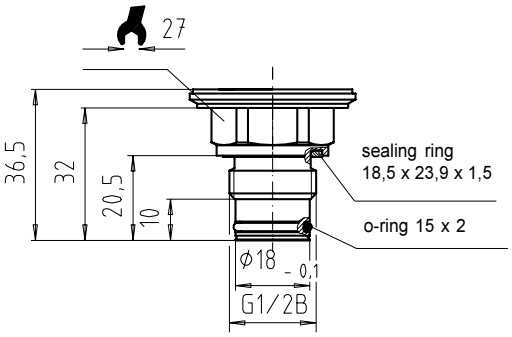
Pressure connection **G 1/2 B**



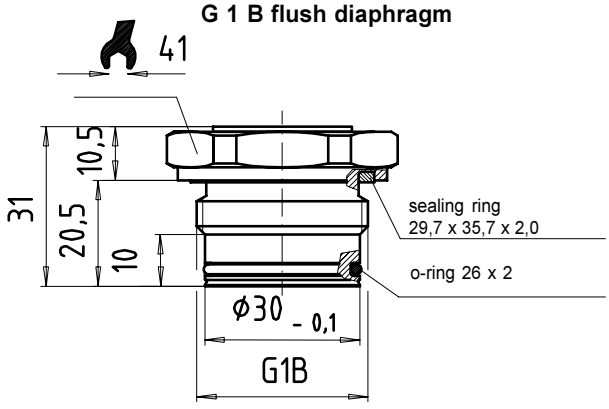
Sockets for pressure connections



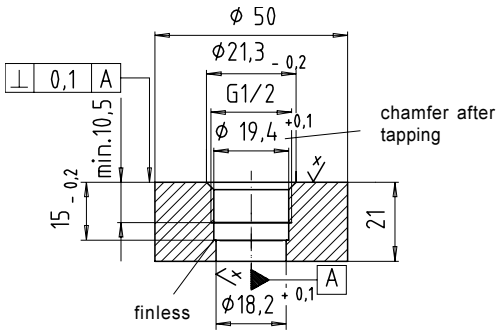
Pressure connections **G 1/2 B flush diaphragm**

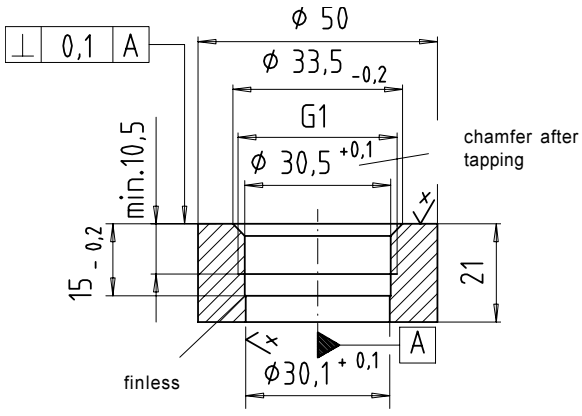


G 1 B flush diaphragm



Weld-on adaptors resp. sockets for flush diaphragm pressure connection

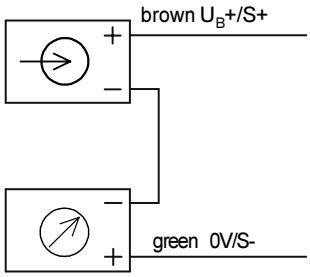




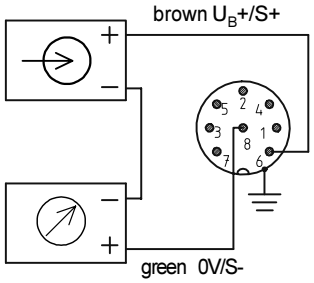
Wiring details

2-wire

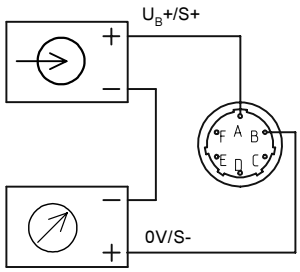
Flying leads



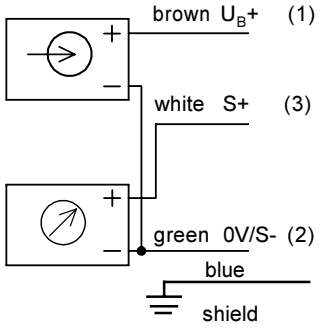
8-pin plug

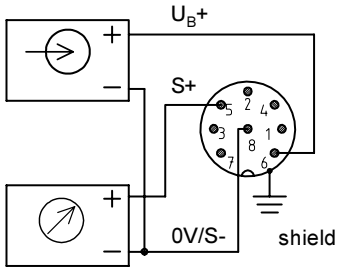


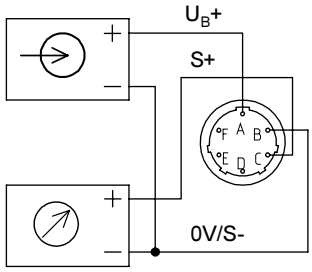
MIL-plug, 6-pin



3-wire







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