



High Precision Digital Pressure Transmitters

Type P-10 NPT Thread

Type P-11 Flush Diaphragm

Tronic

(Replacement for previous Models: 891.10.501, 891.20.501, 891.10.521, 891.20.521 with analog output)

- Microprocessor-based for accuracy and performance
- Linearity available to $\leq 0.05\%$ (.025% B.F.S.L) of span
- Repeatability $\leq 0.03\%$ of span
- No additional temperature error between 32° and 122°F
- 4-20 mA 2 or 3-wire or voltage output
- Optional keypad for zero point adjustment
- EasyCom communications software available for calibration and data logging



The P-10 NPT and P-11 non-clogging flush diaphragm high precision digital pressure transmitters are designed for testing, calibration, and service applications where extremely accurate, repeatable measurements are required. Each transmitter undergoes extensive testing and calibration to achieve a terminal based linearity of 0.1% full scale (0.05% B.F.S.L). Increased terminal-based linearity to 0.05% (0.025% B.F.S.L) is available as an option.

Digital temperature compensation is controlled by a temperature sensor built in to the process connection. This ensures that there are no additional temperature errors between 32° and 122° F (0° to 50° C).

For additional flexibility, the transmitter is available with an external keypad that allows adjustment of the zero point from -5 to +20% of span. The optional EasyCom™ software also provides for this adjustment, and in addition allows for a -40% to +5% span adjustment. The EasyCom software also provides for the display and data logging of media pressure.

The P-11 precision flush diaphragm transmitter is designed for use with media that is highly viscous, crystallizes, or contains particulates. The P-11 is available in pressure ranges from 100 INWC to 8000 PSI.



P-10 shown with optional keypad

STANDARD RANGES

RANGE	MAXIMUM*	BURST**	RANGE	MAXIMUM*	BURST**
30"-0 HgVac	30 PSI	30 PSI	0-300 PSI	1100 PSI	1100 PSI
0-100 INWC	30 PSI	30 PSI	0-500 PSI	1100 PSI	5800 PSI
0-5 PSI	30 PSI	30 PSI	0-600 PSI	1100 PSI	5800 PSI
0-10 PSI	60 PSI	60 PSI	0-1000 PSI	1750 PSI	8000 PSI
0-15 PSI	70 PSI	70 PSI	0-1500 PSI	2900 PSI	11,600 PSI
0-25 PSI	145 PSI	145 PSI	0-2000 PSI	4600 PSI	14,500 PSI
0-30 PSI	145 PSI	145 PSI	0-3000 PSI	4600 PSI	14,500 PSI
0-50 PSI	250 PSI	250 PSI	0-5000 PSI	11,600 PSI	25,000 PSI
0-60 PSI	250 PSI	250 PSI	0-6000 PSI	11,600 PSI	25,000 PSI
0-100 PSI	500 PSI	500 PSI	0-8000 PSI	17,400 PSI	35,000 PSI
0-160 PSI	500 PSI	500 PSI	0-10,000 PSI ¹	17,400 PSI	35,000 PSI
0-200 PSI	500 PSI	500 PSI	0-15,000 PSI ¹	21,750 PSI	43,500 PSI

Notes:

* Pressure applied up to the maximum rating will cause no permanent change in specifications

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

¹Type P-11 flush diaphragm connection available up to 8000 PSI.

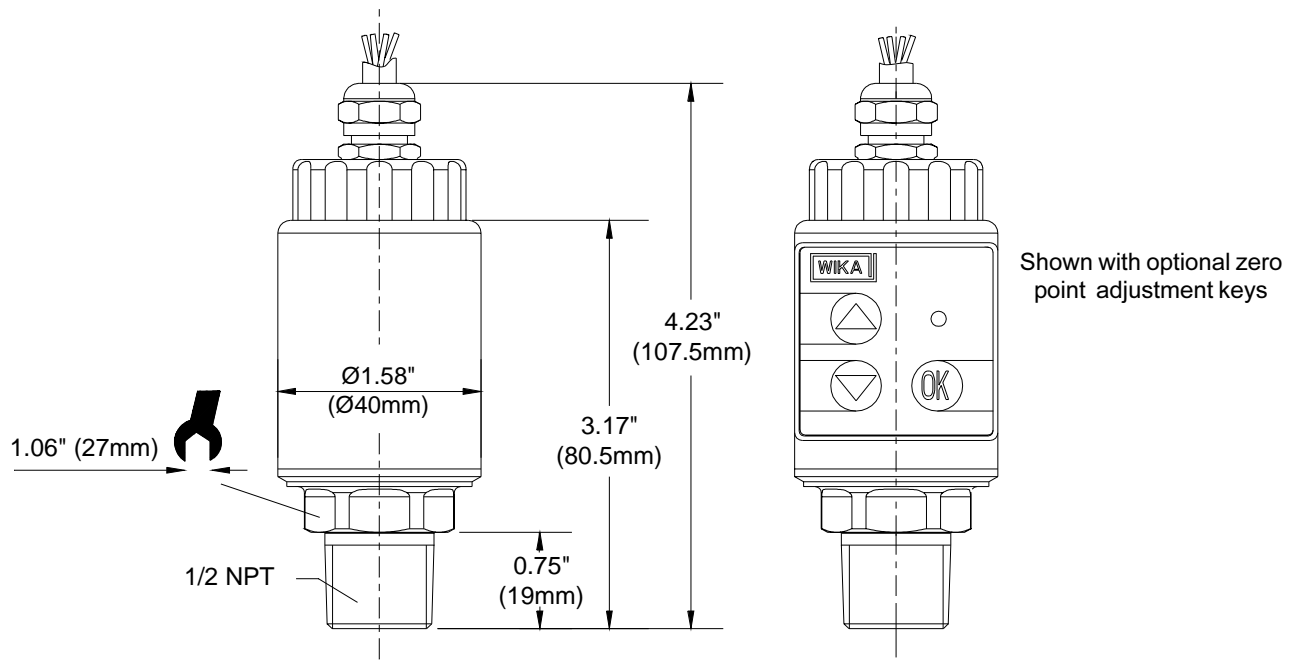
Specifications		Type P-10 and P-11
Sensing principle Pressure ranges Pressure reference	PSI	piezoresistive up to 300 PSI, thin film \geq 400 PSI standard ranges as listed {custom ranges available} relative pressure {absolute reference available to 300 PSIA}
Pressure connection Type P-10 Type P-11 Material: -wetted parts Type P-10 above 300 PSI Type P-11 -case -internal transmitting liquid		1/2" NPT male; (1/4"NPT male, G1/2B, G1/4B) {other connections available} for ranges 100 INWC to 15 PSI: G1B flush diaphragm for ranges 25 PSI to 8000 PSI: G1/2B flush diaphragm 1.4571 stainless steel (316 ss) 1.4571 stainless steel (316 ss) and Elgiloy 2.4711 1.4571 stainless steel (316 ss) {Hastelloy C-4}, Buna-N O-ring {Viton} 1.4571 stainless steel (316 ss) synthetic oil for piezoresistive sensors to 300 PSI, {halocarbon oil for oxygen service} ¹ , no liquid fill used for Type P-10 thin film sensors above 300 PSI
Supply voltage U _B Output and load limitations: Output signal and maximum load Response time zero and span adjustment zero point span	DC Volts Hz % %	14 - 30 (10 - 30 with 4-20mA 2-wire output signal) 0-20 mA 3-wire system R _A [Ohm] \leq (U _B [V]-14V) / 0.02 A 4-20 mA 2-wire system R _A [Ohm] \leq (U _B [V]-10V) / 0.02 A 4-20 mA 3-wire system R _A [Ohm] \leq (U _B [V]-14V) / 0.02 A {0-5 V 3-wire system} R _A > 5 kOhm {0-10 V 3-wire system} R _A > 10 kOhm 100 -5 to +20 {adjustable using external keypad or EasyCom software} -40 to +5 {adjustable using EasyCom software}
Accuracy (linearity, including hysteresis and repeatability) Repeatability Hysteresis 1 year stability Temperature Media Ambient Storage Compensated range Temperature error (reference 70°F) on zero point on span	% of span % of span % of span	\leq 0.10 terminal based (0.05% B.F.S.L.) between 32° and 122°F (0° to 50° C) { \leq 0.05 terminal based (0.025% B.F.S.L.) between 32° and 68° F(0° to 20° C)} (Calibrated in vertical mounting position with process connection down) \leq 0.03 \leq 0.04 \leq 0.1 (under reference conditions) -4°F to +176°F (-20°C to +80°C) -4°F to +176°F (-20°C to +80°C) -40°F to +185°F (-40°C to +85°C) (with keypad -4°F to +185°F (-20°C to 85°C) -4°F to +176°F (-20°C to +80°C) \leq 0.1 per 18°F (10°C) change Note: the temperature error between 32° and \leq 0.1 per 18°F (10°C) change 122°F (0° to 50°C) is already included in the accuracy listed above
CE conformity		Interference emission per EN 50 081-1 (March 1993) and EN50 081-2 (March 94), Interference immunity per EN 50 082-2 (March 1995)
Shock resistance Vibration resistance	g g	< 100 per IEC 770 for mechanical shock < 5 per IEC 770 for vibration under resonance conditions
Electrical connection Weight Dimensions Electrical protection Environmental protection	 lb	5 foot cable with free ends (NEMA 4 / IP 67) {6 pin MIL plug} and internal service interface connector {optional EasyCom software kit includes a 5 foot cable with 9 pin SUB-D serial port connector and connector for the service interface inside the transmitter} approximately 0.65 (0.3 Kg) see drawings protected against reverse polarity (maximum 10 minutes), short circuit, and overvoltage IP 67 (NEMA 4) with 5 foot flying lead, IP65 (NEMA 5) with plugs

Notes: Items in curved brackets { } are available as special order options

¹ The oxygen version must not be operated with media temperatures higher than 140°F (60°C)

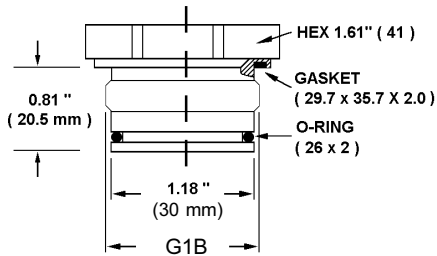
The oxygen version is not available in vacuum or compound ranges, or in absolute ranges < 15 PSIA

Dimensions

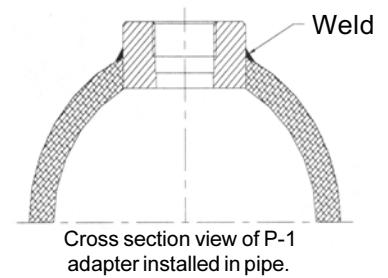
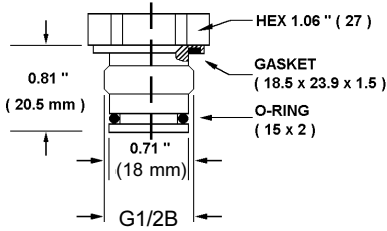


P-11 flush process connections

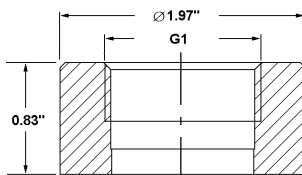
for ranges < 25 PSI



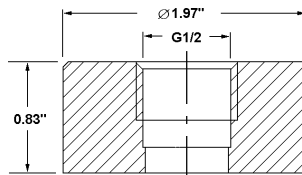
for ranges
25 PSI to 8000 PSI



Matching P-1 weld insert adapters



P-1 G1 weld insert adapter
Part # 1206974

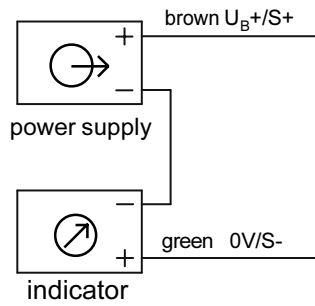


P-1 G1/2 weld insert adapter
Part # 1097008

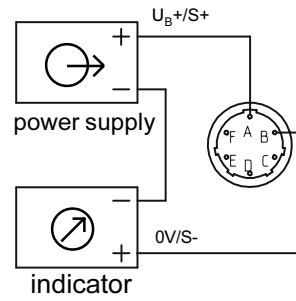
Wiring

Flying leads

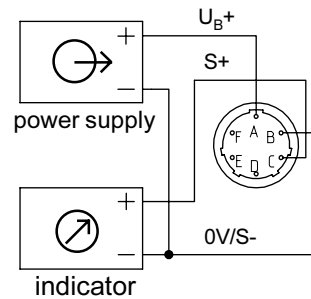
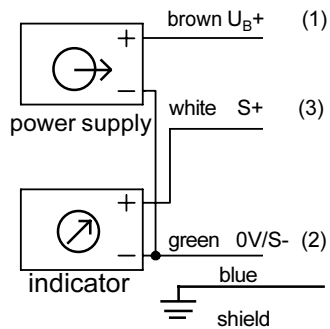
2-wire system



MIL-plug, 6-pin



3-wire system



EasyCom Software

The optional windows based EasyCom software allows for pressure value display, zero and span adjustment, and data logging of pressure values. The cable with 9 pin SUB-D plug connects to the computer serial port. The cable is attached to the internal service interface of the pressure transmitter.

For a permanent connection for digital monitoring and data logging using the EasyCom software, see the Precision pressure transmitter Type D-10 and D-11 with RS-232 digital output.

Ordering Information:

State computer part number (if available) / type number / range / output / process connection / electrical connection / other required options.

Specifications given in this data sheet represent the state of engineering at the time of printing. Modifications may take place and the specified materials may change without prior notice.



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