



INTERFACE SERIES

Installation & Operation Instructions
PXP0/1/5/7.3

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GENERAL INFORMATION

The PXP*.3 is an electric to pneumatic transducer which converts an analog electrical input signal to a proportional pneumatic output. The PXP*.3 will automatically modulate its control valve(s) to regulate the branch line pressure to the selected set point as determined by the input signal. The PXP*.3 offers four selectable input ranges which convert to a 0 to 15 psig modulating output (See EPC product for 0 to 20 psig outputs). A 0-5 VDC feedback signal indicating the resultant branch line pressure is also provided. This signal varies linearly with branch pressure (0 volts= 0 psig, 5 volts = 15 psig). The PXP0.3 is a single valve version that does not bleed or exhaust air. Its operation depends on the pneumatic circuit where it is installed to consume between 14 and 73 scfm. The PXP1.3, 5.3, and 7.3 are constant bleed controllers with branch exhaust response time determined by the bleed orifice size and pressure differentials (see ordering grid on the next page). If power fails, the PXP1.3, 5.3, or 7.3 will continue to bleed through the bleed orifice until branch pressure is zero psig.

MOUNTING INSTRUCTIONS

Circuit board may be mounted in any position. If circuit board slides out of snap track, a non-conductive "stop" may be required. Use only fingers to remove board from snap track. Slide out of snap track or push against side of snap track and lift that side of the circuit board to remove. **Do not flex board or use tools.**

WIRING INSTRUCTIONS

PRECAUTIONS

- **Remove power before wiring. Never connect or disconnect wiring with power applied.**
- **When using a shielded cable, ground the shield only at the controller end. Grounding both ends can cause a ground loop.**

FIGURE 1: DIMENSIONS

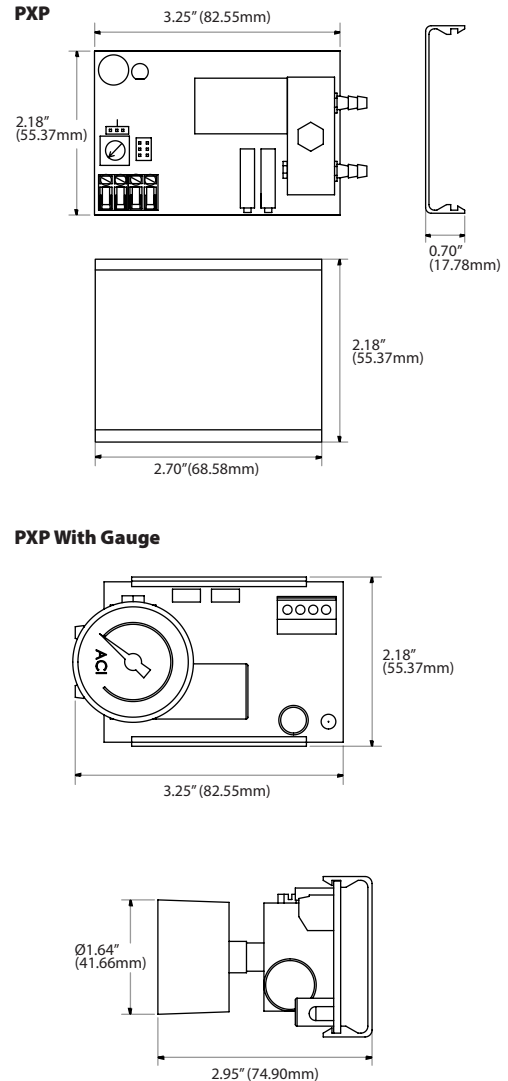


FIGURE 2: WIRING

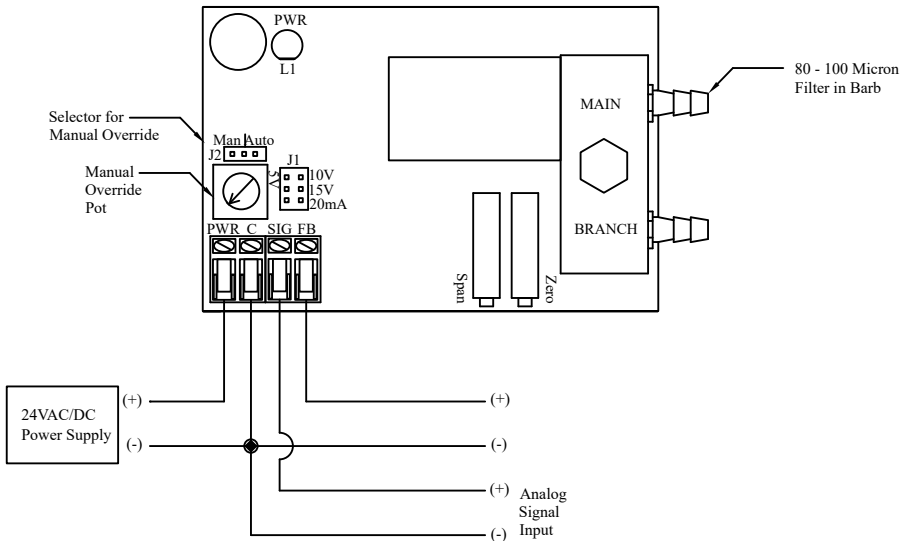
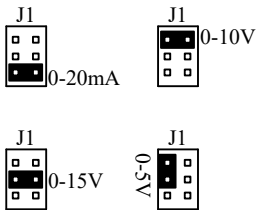


FIGURE 3: SHUNT SWITCHES
INPUT SIGNAL SELECTOR



J1 SHUNT POSITIONS

WIRING INSTRUCTIONS *(Continued)*

- It is recommended you use an isolated UL-listed class 2 transformer when powering the unit with 24 VAC. Failure to wire the devices with the correct polarity when sharing transformers may result in damage to any device powered by the shared transformer.
- If the 24 VDC or 24VAC power is shared with devices that have coils such as relays, solenoids, or other inductors, each coil must have an MOV, DC/AC Transorb, Transient Voltage Suppressor (ACI Part: 142583), or diode placed across the coil or inductor. The cathode, or banded side of the DC Transorb or

diode, connects to the positive side of the power supply. Without these snubbers, coils produce very large voltage spikes when de-energizing that can cause malfunction or destruction of electronic circuits.

- All wiring must comply with all local and National Electric Codes.

The gauge port will accept a miniature 1/8"-27 FNPT back-ported pressure gauge to allow direct reading of branch line pressure. The gauge should be sealed by Teflon sealing tape, and should be tightened just snug, using a backup wrench to hold the manifold. ADJUSTMENT OF INSTALLED GAUGES. If installation requires adjustment of the gauge for proper reading of the face, turn the gauge no more than 1/2 turn in either direction. O-rings in the bottom of the gauge port will allow this without leakage.

Warranty does not include malfunction due to clogged valve. Main air port is filtered with the supplied 80 - 100 micron integral-in-barb filter. Periodically check the filter for contamination and flow reduction, and clean with a brush or replace if needed (Part # PN004).

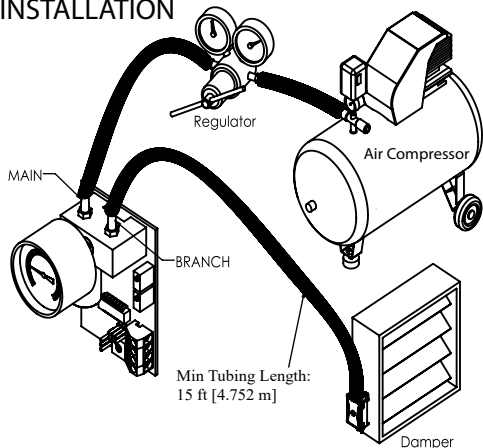
The surface between the manifold and pressure transducer is a pressure seal. Minimize stress between the circuit board and the manifold by holding the manifold in one hand while installing pneumatic tubing onto the fittings, and use care when removing tubing to avoid damaging fittings or moving manifold.



The bleed orifice can be unscrewed with a 1/4" hex nut driver for cleaning or inspection. Do not lose the sealing gasket or insert anything into the precision bleed orifice. Clean by swabbing with a degreaser and blowing clean air through the orifice from the opposite direction. The color of the hex nut indicates the size of the orifice: brass=0.007"; silver=0.010"; copper=0.005".

This unit requires at least two cubic inches (minimum) of branch air line capacity to operate without oscillation. Do not operate without main air supplied.

FIGURE 4: PNEUMATIC TUBING INSTALLATION



CHECKOUT

Select one of the four input/output signal combinations by moving the jumper shunt (see Figure 3 (p. 2)).

Verify the MAN/AUTO jumper shunts are in the AUTO position (jumper over center pin and AUTO pin). In AUTO, the manual override pot is inactive and the analog input signal is supplying the set-point. When in the MAN position, the manual override pot in supplying the set point and the analog input signal is locked out. Supply power and the LED power indicator will light, but only measurement will verify proper voltage. Apply minimum and maximum input signals and measure response. Response between the minimum and maximum values will be linear, therefore software algorithms are easy to derive.

The feedback signal range on all selections is 0 to 5 VDC and is proportional to the output pressure range of 0 – 15 psig. The output and feedback signal will continue to vary proportionally if the input signal is increased beyond its upper limit (if there is enough main air available). However, do not exceed the listed maximum input signal voltage by more than 25%. The PXP1/5/7.3 are constant bleed controllers and utilize a precision bleed orifice to maintain a measured flow of air across the valve. The PXP0.3 does not have a bleed orifice and depends on a continual pneumatic system branch bleed of 14 to 73 scim. Use the PXP0.3 when the downstream system includes pneumatic components that continually exhaust air. For proper operation, combined exhaust air flow (PXP orifice loss and branch system loss) must be between 14 and 73 scim.

The branch exhaust response time is determined by the combined exhaust air flow as well as pressure differentials. If power to the PXP1/5/7.3 is lost, it will continue to bleed through the orifice until branch pressure is zero psig.

To use the manual override, place the AUTO/MAN jumper shunt in the MAN position. The potentiometer is now operable, and using a small bladed screwdriver, you may increase or decrease the pneumatic output.

WARRANTY

The PXP Series is covered by ACI's Two (2) Year Limited Warranty, which is located in the front of ACI'S SENSORS & TRANSMITTERS CATALOG or can be found on ACI's website: www.workaci.com.

W.E.E.E. DIRECTIVE

At the end of their useful life the packaging and product should be disposed of via a suitable recycling centre. Do not dispose of with household waste. Do not burn.

PRODUCT SPECIFICATIONS

NON-SPECIFIC INFORMATION	
Supply Voltage:	24 VAC (+/-10%), 50 or 60Hz, 24 VDC (+10%/- 5%)
Supply Current:	300 mAAC, 200mADC Maximum
Input Signal Source (@ Impedance):	0-5 VDC @ 10,000 Ω 0-10 VDC @ 10,000Ω 0-15 VDC @ 10,000Ω 0-20 mA @ 250Ω
Feedback Signal Output Range:	0-5 VDC = Output Span
Output Pressure Range:	Field Calibration Possible: 0 to 15 psig (0-103.421 kPa) maximum
Air Supply Pressure:	Maximum: 25 psig (172.369 kPa) Minimum: 18 psig (124.106 kPa)
Air Consumption:	PXP0.3/G: No air consumption PXP1.3: 2300 SCIM (37.69 Liters), 73 SCIM (1.196 Liters) PXP1.3G: 2300 SCIM (37.69 Liters), 73 SCIM (1.196 Liters) PXP5.3: 2300 SCIM (37.69 Liters), 14 SCIM (0.229 Liters) PXP5.3G: 2300 SCIM (37.69 Liters), 14 SCIM (0.229 Liters) PXP7.3: 2300 SCIM (37.69 Liters), 41 SCIM (0.671 Liters) PXP7.3G: 2300 SCIM (37.69 Liters), 41 SCIM (0.671 Liters)
Output Pressure Accuracy:	1% full scale @ room temperature 2% full scale across operating temperature range
Manual / Auto Override:	MAN function = output can be varied AUTO function = output is controlled from input signal
Air Flow:	Supply valves @ 20 psig (138 kPa) main/15 psig (103 kPa) out, 2300 SCIM (37.69 Liters) Branch Line requires 2 in ³ or 33.78 cm ³ (min.). Branch line min. of 15 feet of 1/4" O.D poly tubing
Filtering:	Furnished with integral-in-barb 80-100 micron filter (Part # PN004) except for PXP2LG which is furnished with external 5 micron in-line filter (PN021)
Connections:	90° Pluggable Screw Terminal Blocks
Wire Size:	16 (1.31 mm ²) to 26 AWG (0.129 mm ²)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Connections Pneumatic Tubing Size-Type:	1/4" O.D. nominal (1/8" I.D.) polyethylene
Pneumatic Fitting:	Removeable brass barbed fittings for Main and Branch in machined aluminum manifold Plugged 1/8-27-FNPT gauge port Gauge installed at additional cost
Gauge Pressure Range (Gauge Models):	0-30 psig (0-200 kPa)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)

