



# INTERFACE SERIES

Installation & Operation Instructions  
PXP2.3, PXP2.3FS, PXP2.3LG

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## GENERAL INFORMATION

The PXP2.3 is an electric to pneumatic transducer which converts an analog electrical input signal to a proportional pneumatic output. The PXP2.3 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 PXP2.3 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 PXP2.3 incorporates two valves and does not use air at set point. It's branch exhaust flow and response time are not limited by an internal restrictor and are similar to its load rate. If power fails to the PXP2.3, branch line pressure remains constant if the branch line does not leak air. The PXP2.3FS is equipped with a N.O. branch exhaust valve which allows exhaust of branch air on power failure. A manual override (jumper selectable), which controls the output pressure, is provided for setup and troubleshooting.

## MOUNTING INSTRUCTIONS

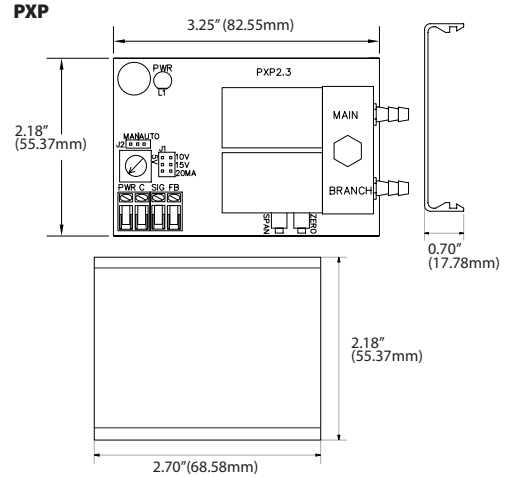
Circuit board may be mounted in any position. If circuit board slides out of snap track, a non-conductive "stop" may be required. Use only fingers to remove board from snap track. Slide out of snap track or push against side of snap track and lift that side of the circuit board to remove. **Do not flex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

## WIRING INSTRUCTIONS

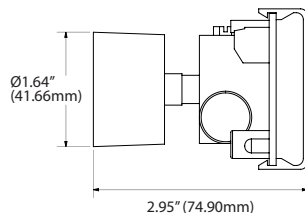
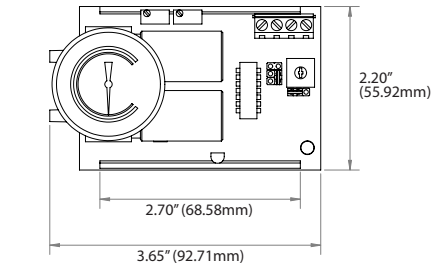
### PRECAUTIONS

- **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.**
- **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**

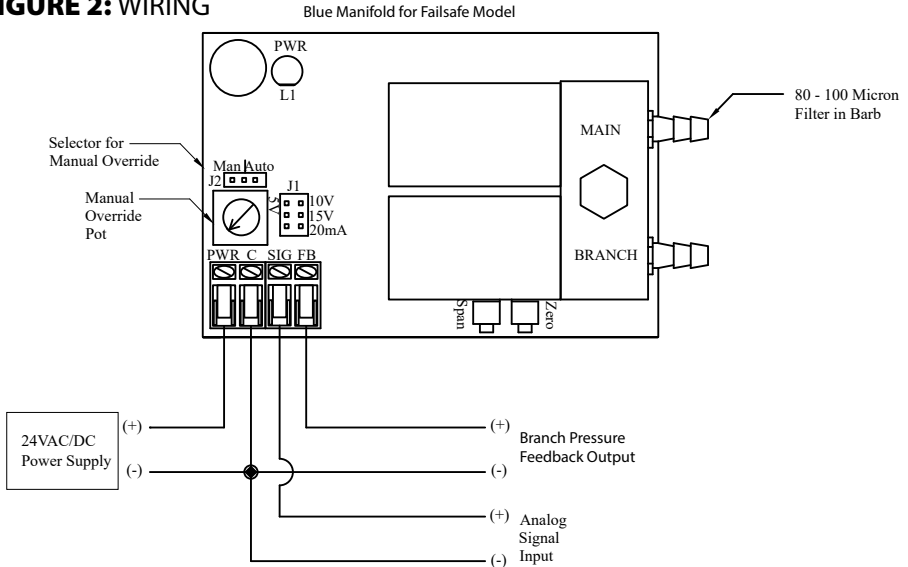
### FIGURE 1: DIMENSIONS



### PXP With Gauge



**FIGURE 2: WIRING**



**WIRING INSTRUCTIONS**

*(CONTINUED)*

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.

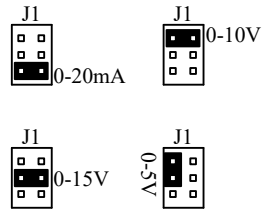
The gauge port will accept a miniature 1/8"-27 FNPT back-ported pressure gauge to allow direct reading of branch line pressure. The gauge should be sealed by Teflon sealing tape, and should be tightened just snug, using a backup wrench to hold the manifold. ADJUSTMENT OF INSTALLED GAUGES. If installation 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 (except for the PXP2.3LG model). Periodically check the filter for contamination and flow reduction. 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. 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 3: SHUNT SWITCHES**

INPUT SIGNAL SELECTOR



J1 SHUNT POSITIONS

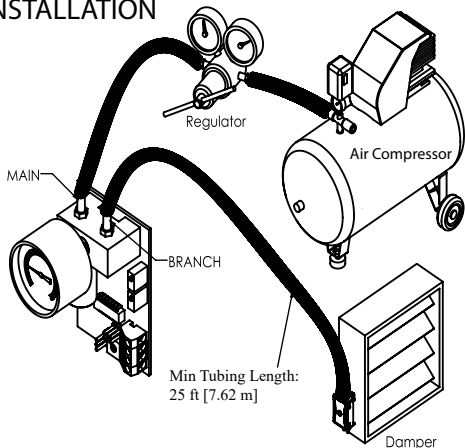


## CHECKOUT

Select one of the four input signal combinations by moving the jumper shunt as shown in "Input Signal Selector".

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 is supplying the set point and the analog input signal is locked out. Use a small bladed screwdriver to increase or decrease the pneumatic output.

## FIGURE 4: PNEUMATIC TUBING INSTALLATION



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 PXP2.3 incorporates two valves and is not a constant bleed controller. Its branch exhaust flow and response time is not limited by any internal restrictor and is similar to its load rate. The PXP2.3 is ideal for long branch line runs, multiple actuators, and outside air dampers because of its 2300 SCIM (37.69 Liters) capacity.

**Note:** If power to the PXP2.3 is lost, it will maintain branch line pressure (assuming no branch line leaks). If power to the PXP2.3FS (Fail-Safe) is lost, the branch line control valve will open and branch line pressure will go to 0 psig.

## 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](http://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	
<b>Supply Voltage:</b>	24 VAC (+/-10%), 50 or 60Hz, 24 VDC (+10%/- 5%)
<b>Supply Current:</b>	300 mAAC, 200mADC Maximum   400mAAC, 200mADC on fail safe models
<b>Input Signal Source (@ Impedance):</b>	0-5 VDC @ 10,000 Ω   0-10 VDC @ 10,000Ω   0-15 VDC @ 10,000Ω   0-20 mA @ 250Ω
<b>Feedback Signal Output Range:</b>	0-5 VDC = Output Span
<b>Output Pressure Range:</b>	Field Calibration Possible: 0 to 15 psig (0-103.421 kPa) maximum
<b>Air Supply Pressure:</b>	<b>Maximum:</b> 25 psig (172.369 kPa)   <b>Minimum:</b> 18 psig (124.106 kPa)
<b>Air Consumption:</b>	<b>PXP2.3/G:</b> 2300 SCIM (37.69 Liters)  <b>PXP2.3GFS:</b> 2300 SCIM (37.69 Liters)  <b>PXP2.3LG:</b> 2300 SCIM (37.69 Liters)
<b>Output Pressure Accuracy:</b>	1% full scale @ room temperature   2% full scale across operating temperature range
<b>Manual / Auto Override:</b>	MAN function = output can be varied   AUTO function = output is controlled from input signal
<b>Air Flow:</b>	Supply valves @ 20 psig (138 kPa) main/15 psig (103 kPa) out, 2300 SCIM (37.69 Liters) Branch Line requires 2 in <sup>3</sup> or 33.78 cm <sup>3</sup> (min.). Branch line min. of 25 feet of 1/4" O.D poly tubing
<b>Filtering:</b>	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)
<b>Connections:</b>	90° Pluggable Screw Terminal Blocks
<b>Wire Size:</b>	16 (1.31 mm <sup>2</sup> ) to 26 AWG (0.129 mm <sup>2</sup> )
<b>Terminal Block Torque Rating:</b>	0.5 Nm (Minimum); 0.6 Nm (Maximum)
<b>Connections   Pneumatic Tubing Size-Type:</b>	1/4" O.D. nominal (1/8" I.D.) polyethylene
<b>Pneumatic Fitting:</b>	Removeable brass barbed fittings for Main and Branch in machined aluminum manifold Plugged 1/8-27-FNPT gauge port   Gauge installed at additional cost
<b>Gauge Pressure Range (Gauge Models):</b>	0-30 psig (0-200 kPa)
<b>Operating Temperature Range:</b>	35 to 120°F (1.7 to 48.9°C)
<b>Operating Humidity Range:</b>	10 to 95% non-condensing
<b>Storage Temperature:</b>	-20 to 150°F (-28.9 to 65.5°C)

