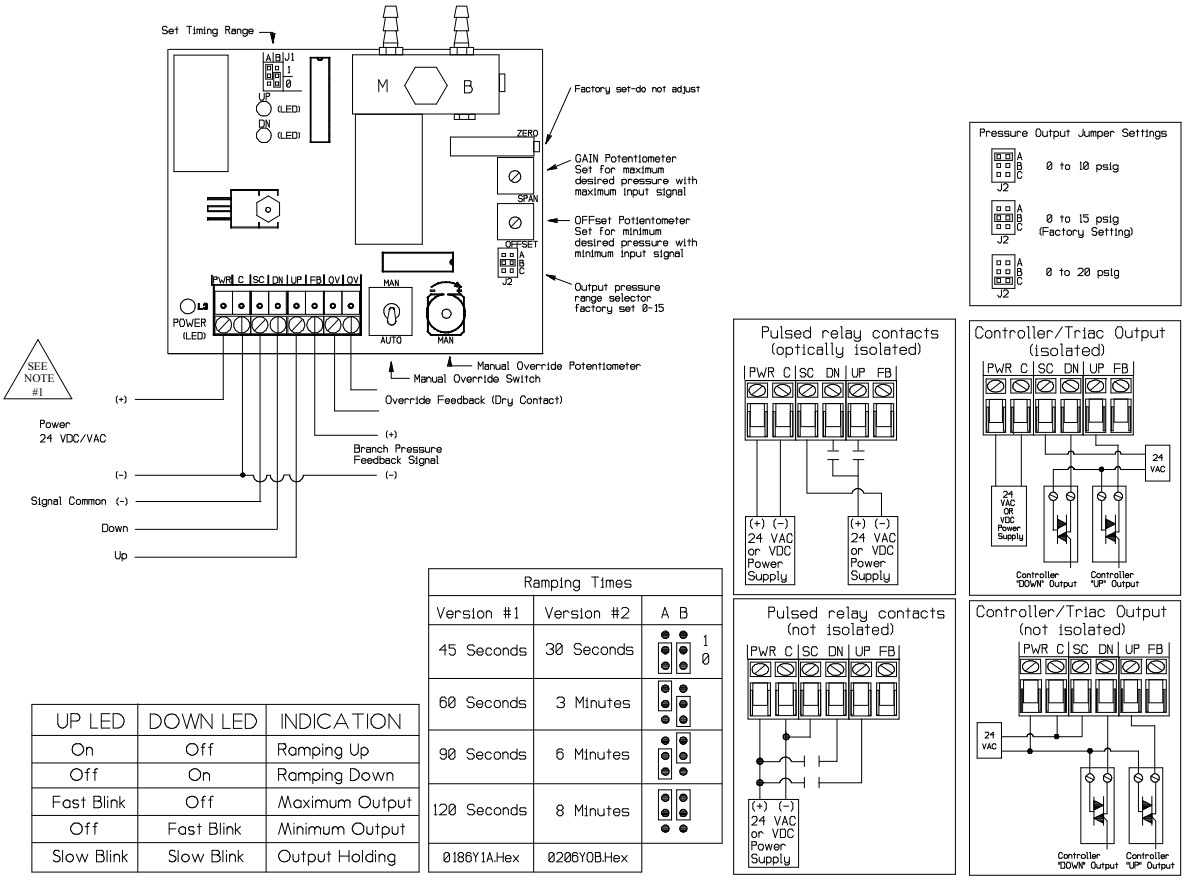
ACI
Automation Components, Inc.

Installation and Operation Instructions

A/EFP: Floating Point to Modulated Pneumatic Output



Ramping Times		
Version #1	Version #2	A B
45 Seconds	30 Seconds	1 0
60 Seconds	3 Minutes	
90 Seconds	6 Minutes	
120 Seconds	8 Minutes	
0186Y1A.Hex	0206Y0B.Hex	

UP LED	DOWN LED	INDICATION
On	Off	Ramping Up
Off	On	Ramping Down
Fast Blink	Off	Maximum Output
Off	Fast Blink	Minimum Output
Slow Blink	Slow Blink	Output Holding

READ THESE INSTRUCTIONS BEFORE YOU BEGIN INSTALLATION.

SEE NOTE #1

Ground yourself to discharge static electricity before touching any electronic equipment, as some components are static sensitive. The interface can be mounted in any position. If circuit board slides out of snap track, a nonconductive “stop” may be required. Use only fingers to remove board from snap track. Slide out of snap track or push up against side of snap track and lift that side of the circuit board to remove. Do not flex board. Use no tools.

POWER CONNECTIONS - THIS PRODUCT ACCEPTS 24 VOLTS AC OR DC POWER

Be sure to follow all local and electrical codes. Refer to wiring diagram for connection information.

1) It is highly suggested that the 24 VAC neutral of all transformers be earth grounded at the transformer. Analog input, digital input, and analog output circuits should not be earth grounded at two points. Any field device connected to this transformer must use the same common. If you are not sure of other field device configuration, use separate transformers.
2) If 24 volt AC power is shared with devices that have coils such as relays, solenoids, or other inductors, each coil must have an MOV, AC Transorb, or other spike snubbing device across each of the shared coils. Without these snubbers, coils produce very large voltage spikes when de-energizing that can cause malfunction or destruction of electronic circuits.
3) If 24 volt DC power is shared with devices that have coils such as relays, solenoids, or triac wiring other inductors, each coil must have an MOV, DC Transorb, or a diode placed across the coil or inductor. The cathode or banded side of the diode (or DC Transorb) connects to the positive side of the power supply. **Do not power without main air supply provided.**
4) You should measure the actual voltage output of the secondary. If the output is not fully loaded you may read a higher voltage than the circuit board can handle.

The gauge port will accept a miniature 1/8" FNPT back-ported pressure gauge to allow direct reading of branch line

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pressure. The gauge should be sealed with teflon sealing tape. A backup wrench should be used 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 8 0-100 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: do NOT stress the circuit board or allow the manifold to move. Hold the manifold in one hand while installing pneumatic tubing onto the barbed 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 (approx. 15 feet of 1/4" O.D. polyethylene tubing) to operate without oscillation. Main air must be minimum of 2 psig above highest desired branch output pressure.

FIELD CALIBRATION

The default jumper setting from the factory for the EFP is B (15 psi) for the output range and A0, B0 for the input timing range . There are four (4) input timing ranges available per version and three (3) selectable output pressure ranges. Note: The ZERO potentiometer is factory calibrated. Do not adjust.

1. Setting the input timing range: With power removed, place jumpers in the configuration that most closely matches the timing range from the controller.
2. Setting the output pressure range: Apply power. Choose a pressure range on the EFP that matches or is just above maximum range of device being controlled. Example: 8-13 psi choose B (15 psi setting).
3. Setting the maximum pressure: With all pneumatic and power connections made, place the Manual override switch in the "MAN" position. Turn the override pot full clockwise. Adjust the "SPAN" pot until the desired maximum output is achieved.
4. Setting the offset: Confirm the green "DN" LED is blinking only, this indicates the output is at minimum. Place the Manual override switch in the "AUTO" position. Turn the "OFFSET" pot until the desired minimum pressure is achieved.
5. Calibration can also be made by sending the appropriate timing pulse and adjusting the "OFFSET" and "SPAN" pots to the desired pressure output.

LED indications:

POWER LED: LED lit indicates power is received by the board.

UP and DOWN LED's: Solid lit LED indicates the EFP is receiving an Up or Down command. Single blinking LED indicates that the EFP is at the minimum or maximum of the timing range selected. Both LED's blinking indicates the EFP is at set-point.

Connect the normally open (NO) terminals of two separate relays, triac outputs, or the normally open terminals of a tri-state relay to the "DN" and "UP" inputs. Connect the common terminal of the relay(s) to terminal SC (signal common) on the EFP. A signal to both up and down inputs for 3 seconds will cause branch line pressure to drop to 0 psi (see wiring diagrams on page 1)

The EFP is a constant bleed interface and utilizes a precision bleed orifice to maintain a measured flow of air across the valve. The branch exhaust response time is determined by the combined exhaust air flow as well as pressure differentials. If power to the EFP is lost, it will continue to bleed through the orifice until branch pressure is 0 psig.

Manual override: Move the AUTO/MAN toggle switch to the MAN position. Turn the shaft on the MAN pot to vary the pneumatic output. Return AUTO/MAN switch to AUTO position when finished.

Override Terminals (OV): When manual override switch is in manual position, contact between terminals is closed. When manual override switch is in auto position, contact between terminals is open.

Power Supply:
Supply Voltage: 24 VAC (+/-10%) or 24 VDC (+/10%/-5%) measured at EFP terminals
Supply Current: 180 mA max. (4.3 VA)

Digital Input: 9-24 VAC/VDC signal trigger level@750 ohms nominal impedance

Feedback Signal Output: Factory calibrated 0-5 VDC = 0-15 psig

Air Supply: 28 psig maximum, 22 psig minimum
0-20 psig output pressure range
Air flow @ 20 psig main/15 psig out, Supply valve: 750 scim.
Exhaust rate: EFP2 and EFP2FS - 750 scim.
Exhaust rate: EFP - 14 scim.

Accuracy: 2% full scale at room temperature.
3% full scale across operating temperature range.

Rates of Change (Version 1)
45 seconds
60 seconds
90 seconds
120 seconds

Rates of Change (Version 2)
30 seconds
3 minutes
6 minutes
8 minutes

Other rates of change can be ordered.

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