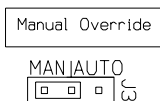


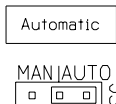


## Floating Point to Pneumatic (Closed Loop) w/ Nitinol Valves

Jumper J3 positions for:



Manual Potentiometer "Enable"  
Clockwise for maximum output  
Counter-clockwise for minimum output

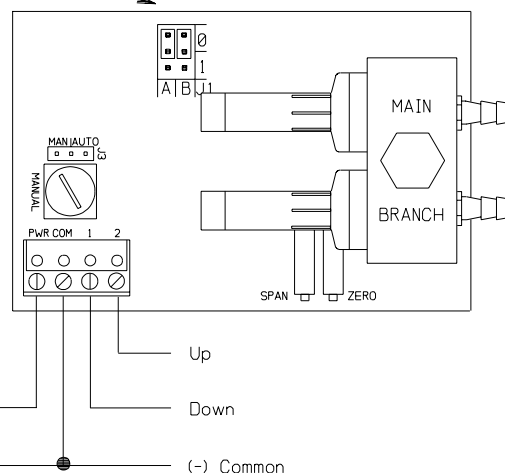


Signal at terminal 1 or 2 controls output pressure

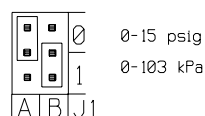
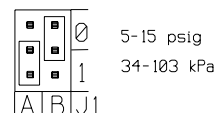
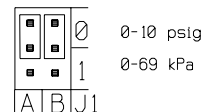


Note:  
Plug-in terminal strip should be mounted with screw heads on top

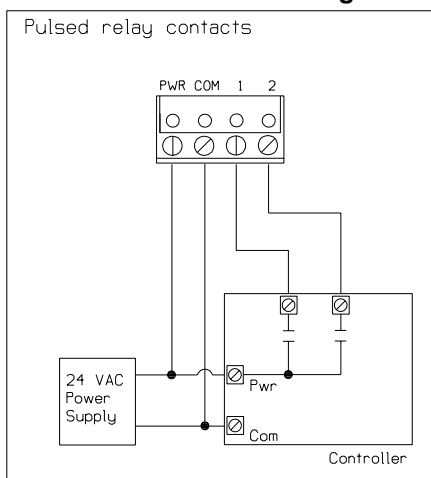
Jumpers determine output pressure range



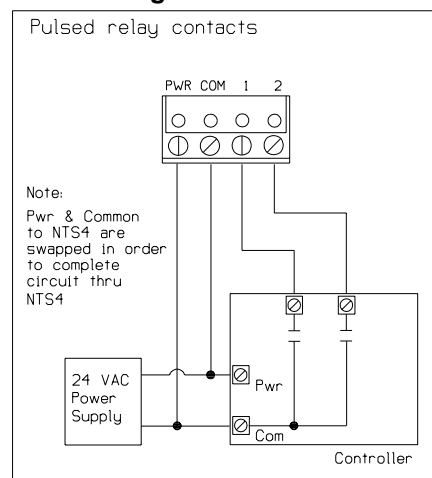
Jumper J1 Positions for Pressure Output Ranges



### Switching Hot



### Switching Common



## INSTALLATION

### READ THESE INSTRUCTIONS BEFORE YOU BEGIN INSTALLATION.

Ground yourself before touching board. Some components are static sensitive.

### MOUNTING:

Circuit board may 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 against side of snap track and lift that side of the circuit board to remove. Do not flex board or use 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) If required by BAS or controller specification, the 24 VAC neutral can 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 for isolation.
- 2) If the 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 the 24 volt DC power is shared with devices that have coils such as relays, solenoids, or other inductors, each coil must have an MOV, DC Transorb, 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.
- 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 pressure. The gauge should be sealed by teflon sealing tape, and should be tightened just snug. A backup wrench should be used to hold the manifold.

**Position 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 brush or replace if needed.

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 no minimum branch air line capacity to operate without valve oscillation, but main air must be minimum of 2 psig (13.8 kPa) above highest desired branch output pressure.

Zero and span pots are factory calibrated. Field calibration voids warranty.

## CHECKOUT

The NTS4 output is factory calibrated in all *jumper selectable* pressure output ranges. Three output ranges can be selected to accommodate the range of the actuator by placement of the jumpers on J1 jumper block. Note: Do not make any adjustments to zero or gain potentiometers (factory calibrated).

Verify the MAN/AUTO jumper shunt is 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.

1. Make sure the "1" (down) and "2" (up) signal inputs are disconnected. This will eliminate interruption by unexpected control signals.
2. Setting the output pressure range. Output pressure range selection is made by jumper selection on jumper block J1. Refer to the chart next to the wiring diagram. Set jumper positions for range required. Note: Be sure the MAIN air pressure is greater than the desired maximum branch output pressure.

Jumper position A1/B1 (not shown on page 1) will produce only the maximum calibrated output (15 psig standard) and will not modulate in this position. This jumper position is used for testing purposes only.

Connect the normally open (NO) terminals of the down relay to the "1" terminal and the the normally open (NO) terminals of the up relay to the "2" terminal. Connect the common terminal of the relay(s) to the terminal marked PWR on the NTS4. A signal to both up and down inputs for 3 seconds will cause branch line pressure to drop to 0 psi.

Connect power leads to the PWR (+) and COM (-) terminals on the NTS4, and power up.

### Power Supply:

Supply Voltage: 24 VAC or VDC (+/- 10%) measured at NTS4 terminals  
Supply Current: 40 mA DC and 110 mA AC

### Digital Input:

24 VAC (+/- 10%) signal trigger level

### Air Supply:

18-25 psig (123.8-172 kPa) supply pressure  
0-15 psig (0-103 kPa) maximum output pressure range  
Air Flow @ 20 psig (138 kPa) main/15 psig (103 kPa) Out, 750 scim

### Selectable Output Pressure Ranges:

0 to 15 psig (0-103 kPa)  
0 to 10 psig (0-69 kPa)  
5 to 15 psig (34.5-103 kPa)

### Rate of Change:

90 seconds