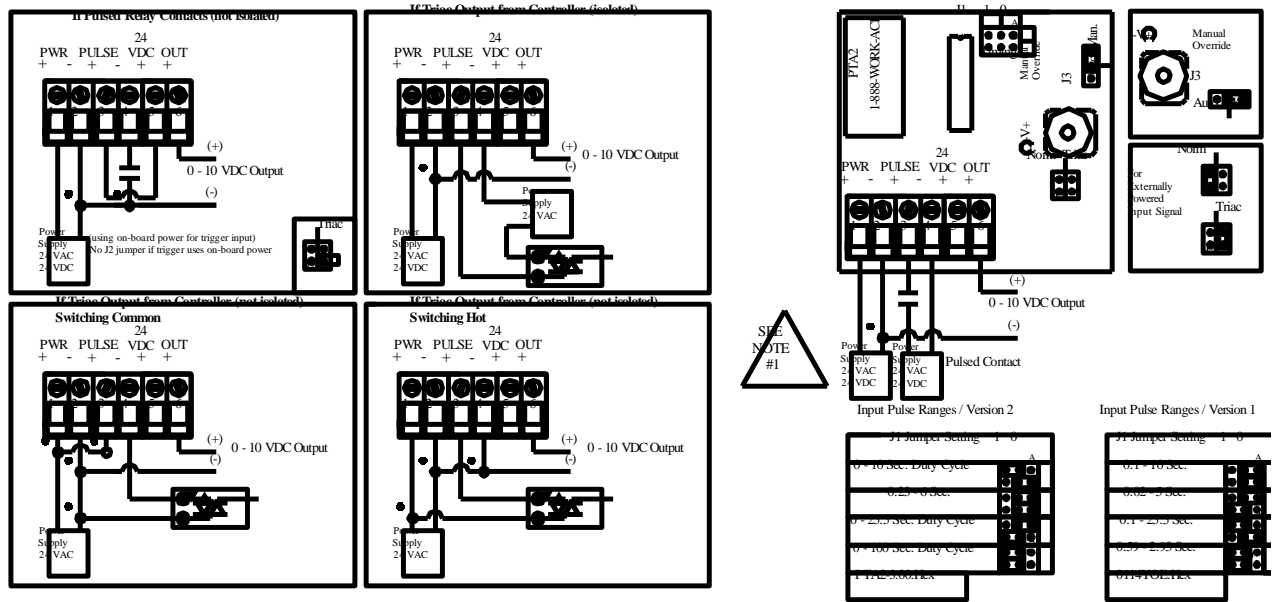




## Installation and Operation Instructions PTA2

### Pulse Width Modulated Input to Analog 0-10 VDC Output



SEE NOTE #1

## 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 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. Use no tools.

#### POWER CONNECTIONS: – THIS PRODUCT ACCEPTS 24 VDC OR 24 VAC POWER.

Be sure to follow all local electrical codes. Refer to wiring diagram for connection information. Make all connections with the power off.

- 1.) **24 VDC** – with power off, connect 24VDC power supply to terminals PWR (+) and PWR (-) on the board.  
**24 VAC** – with power off, connect one transformer secondary leg to the PWR (+) on the board. Connect the other transformer secondary leg to PWR (-). Check the wiring configuration of any other loads that may be connected to this transformer. 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 transformer for isolation.
- 2.) **If the 24 volt DC or AC power is shared** with other devices that have coils such as relays, solenoids, or other inductors, each coil must have a diode or DC Tranzorb (if DC) a MOV, AC Tranzorb (if AC), 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.) 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.

NOTE  
#1

## SETUP

Input pulse timing range is selected by placement of jumpers on J1. Jumpers are factory set to 0.59 – 2.93 seconds. Refer to diagram above for timing ranges and positions.

Set jumper J2 for normal or triac input if using external power for signal. No jumper if using on board power. Set J3 for MAN in order to checkout connections by using manual override potentiometer. Reset J3 to AUTO for normal operation.

Explanation of Version #2, (0-10), (0-100) or (0-25.5) Second Duty Cycle mode: PTA2 accepts a continuous pulse signal command string, sampled in a 10, 100, or 25.5 second window. No pulse within a 10,100, or 25.5 second window produces minimum 0% output (0 volts). Ten second or continuous pulse produces a 100% output (10 volts).

## TROUBLE SHOOTING AND TESTING

- 1.) Apply 24 VAC/VDC to “PWR” terminal and measure voltage to confirm proper voltage.
- 2.) Check the input timing jumpers. Reset power if changes are made.
- 3.) Testing the output. Connect power. Place MAN/AUTO jumper to Manual.  
**0 – 10 VDC Out:** With meter only connected to the OUT (+) and POWER (-), turn the manual potentiometer full left and then full right. The output should vary from 0 to 100%.  
If no change is seen, contact ACI tech support.  
If yes, connect load/device and meter to OUT (+) and POWER (-) terminals. Turn override pot and measure voltage.  
Do the readings match the no load test?  
If no, check load impedance mismatch or a possible ground loop problem and/or call ACI tech support.  
If yes, voltage output is functioning properly.  
**DO NOT** connect the output to OUT(+) and 24 VDC (+). This will damage the unit within seconds.
- 4.) **Testing the Input.**  
To manually test the input apply 24 VAC/VDC to the POWER terminals. Connect your meter to the OUT (+) and POWER (-) terminals. Set the meter for voltage. Place MAN/AUTO jumper to AUTO. Connect a jumper wire to the POWER (+) only. Connect another jumper wire to PULSE (-) and POWER (-). You are now ready to simulate a timed pulse signal. For testing purposes, select 0.1 to 10 second range. Be sure to reset power to allow the PTA2 to recognize new settings. Take the free end of the jumper wire from POWER (+) and connect by holding wire to the pulse (+) terminal (be careful not to short it to POWER (-)). Count to 5 seconds (or the time = to 50% of timing range) and remove. Verify the pulse LED indication. Read the output. Has the output changed? The output should be close to 50% of set output. If no, change the TRC/NRM to the opposite setting and repeat test. Has the output changed? A voltage meter can be connected to the PULSE (+) and (-) terminals to verify voltage is present. If voltage is present and the output hasn't changed, contact ACI technical support. If the output has changed, unit is functioning properly.  
Remove all test wiring after completion of testing.

EU Commission Directive 2002/95/EC (RoHS) Compliant

<b>Power Supply Voltage:</b> 24 VAC or 24 VDC $\pm$ 10%, 50/60 Hz	<b>Timing Ranges:</b>
<b>Supply Current:</b> 135mA	<b>Version 1:</b> 0.02 – 5 seconds,
<b>Power Consumption:</b> 3.24 watts	0.1 – 10 seconds,
<b>Input:</b>	0.1 – 25.5 seconds,
Relay, contact closure,	0.59 – 2.93 seconds.
Transistor or triac: 12 – 24 VAC/VDC signal trigger level or dry contact to common	<b>Version 2:</b> 0 – 10 seconds Duty Cycle Pulse
Signal Trigger level: Normal Mode: 5 to 26.4 VDC or 5 to 26.4 VAC	(a continuous pulse signal command string sampled in a 10 sec. window)
Triac Mode: 9 to 26.4 VAC	0 – 25.5 second Duty Cycle Pulse (a continuous pulse signal command string sampled in a 25.5 sec. window)
Rectified Power Output: 21 to 37 VDC	0 – 100 second Duty Cycle Pulse (a continuous pulse signal command string sampled in a 100 sec. window)
Impedance: VAC – 900 Ohms nominal	0.023 – 6 seconds
VDC – 1500 Ohms nominal	
<b>Output:</b> Voltage: 0 – 10 VDC	
Impedance: 400 Ohms minimum	
Rectified Power Output: 21 to 37 VDC (For input trigger only)	