



# INTERFACE SERIES

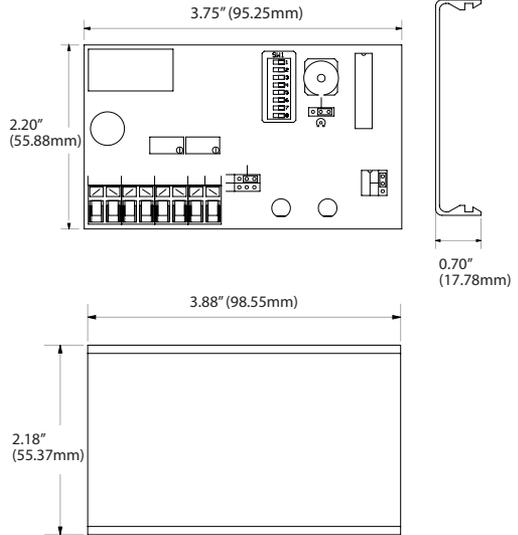
Installation & Operation Instructions  
PTA

Phone: 1-888-967-5224  
Website: workaci.com

## GENERAL INFORMATION

The PTA converts a single pulse-width modulated input to an analog (voltage or current) output. A timed contact or solid state closure is converted to a linear analog output signal with 255 steps of resolution. The last output signal is held until the PTA receives the end of the next pulsed input signal. The PTA's output will not wrap around if an excessively long input pulse is received. Ten preset analog output signal spans are DIP switch selectable. In addition, the span and offset potentiometer offer maximum user adjustment of the output signal. The input signal is optically isolated and can accept either positive or negative polarity. If the voltage output is limited to 18 Volts on the high end of the output span, the DC supply limit can be 24 VDC -10% and the PTA will still maintain the output accuracy. If the maximum load is 700 ohms, the DC supply can be 24 VDC-10% and the PTA will still maintain the output accuracy.

FIGURE 1: DIMENSIONS



## 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.**

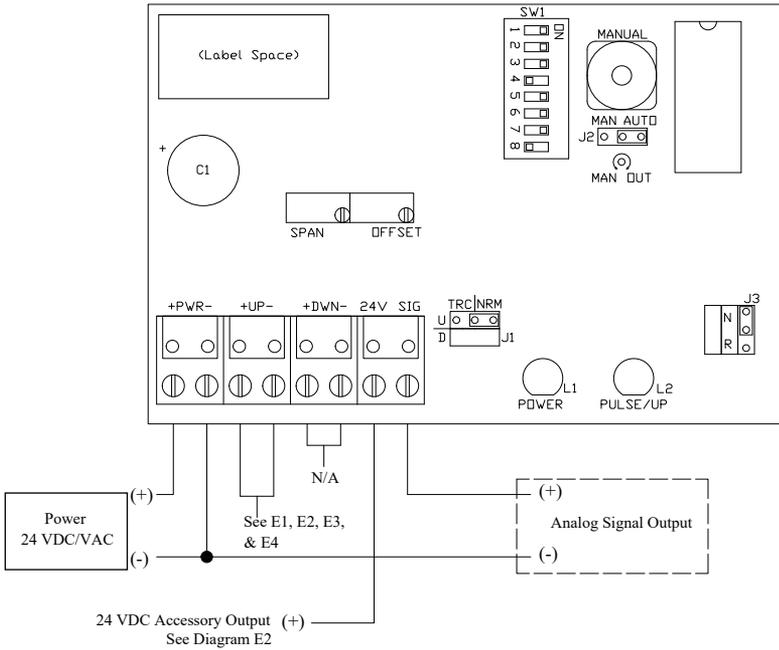
## WIRING INSTRUCTIONS

### PRECAUTIONS

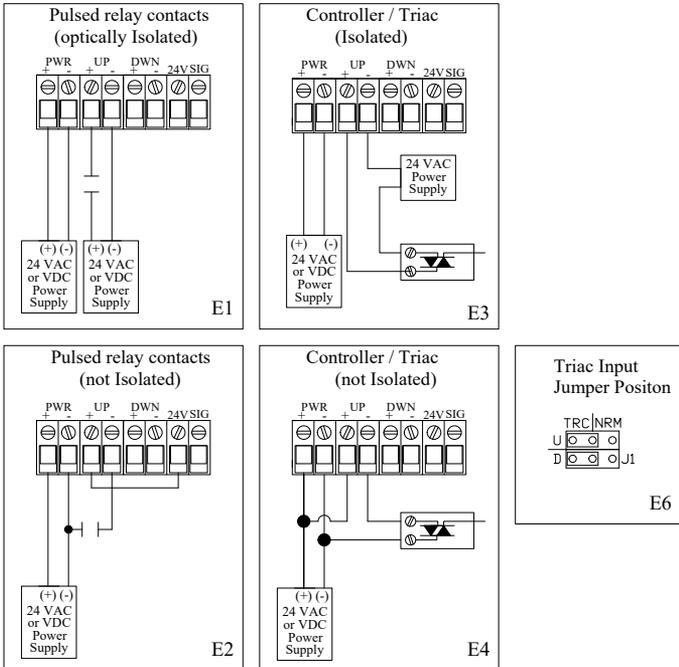
- **Remove power before wiring. Never connect or disconnect wiring with power applied.**
- **When using a shielded cable, ground the shield only at the controller end. Grounding both ends can cause a ground loop.**
- **It is recommended you use an isolated UL-listed class 2 transformer when powering the unit with 24 VAC. Failure to wire the devices with the correct polarity when 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.**



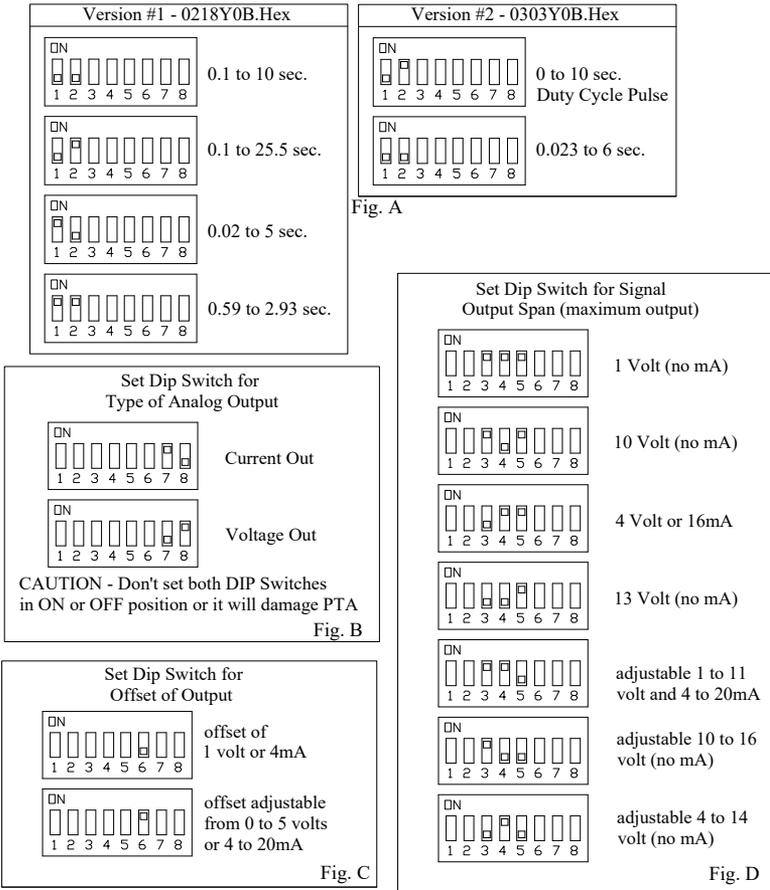
**FIGURE 2: WIRING**



**Connection Detail - Inputs to PTA**



## FIGURE 3: SWITCH SETTINGS



## CALIBRATION AND CHECKOUT

### SIGNAL INPUTS

See Figures E1, E2, E3, or E4 for wiring detail. The PTA is jumper selectable (jumper J1) for NORM setting for pulse input at 5 – 26.4 VDC/VAC (See Fig. E2), relay or SSR, or TRIAC setting for triac (9 – 26.4 VAC/VDC) input (See Fig. E6).

**Version #1** offers 4 jumper selectable pulse width modulated signal ranges.

**Version #2** accepts:

- 1.) The Solidyne PWM signal or
- 2.) A continuous pulse signal command string, sampled in a 10 second window (No pulse within a 10 second window = minimum percent output, a ten second pulse or continuous pulse = 100% output).

### DIP SWITCH SELECTION (WITH POWER OFF):

- 1.) Select the input pulse range by setting the DIP switch as shown in Figure A.
- 2.) Select current or voltage output using the two switches as shown in Figure B. NEVER have both

switches on or off at the same time when powered, or chip failure may occur.

3.) Select offset by setting the switch as shown in Figure C. If you chose adjustable offset, adjust the "OFFSET" trim pot, when powered, to the desired offset or starting point (covered below).

4.) Select the desired span and set the three switches as shown in Figure D. If you chose an adjustable span, you can adjust the "SPAN" trim pot, when powered, to the desired signal span (covered below). Turning the "SPAN" potentiometer counterclockwise will increase span.

#### **JUMPER SHUNT POSITIONS (WITH POWER OFF):**

- 1.) J1 See SIGNAL INPUTS above and chart on page 1.
- 2.) J2 See MANUAL OVERRIDE below.
- 3.) J3 jumper shunt selects a normal (N) or reverse acting (R) output.

After all selections have been made, activate the power source. The "POWER" LED should light. The "PULSE" LED will light when the PTA is receiving an input signal.

#### **SETTING ADJUSTABLE "OFFSET" POTENTIOMETER:**

If you desire to set your own minimum and maximum output (not use any of the preset selections) then set the Offset DIP switches (Figure C) for adjustable.

- 1.) Place Man/Auto jumper in the Manual position. Power up the PTA.
- 2.) Turn Offset Potentiometer Counterclockwise to Decrease or Clockwise to Increase.
- 3.) Turn the override potentiometer counterclockwise until it stops (it is a  $\frac{3}{4}$  turn pot).
- 4.) Adjust the Offset trimmer potentiometer to the minimum output level desired, measured between terminals PWR (-) and SIG, as read on meter. Power down the PTA.

#### **SETTING ADJUSTABLE "SPAN" POTENTIOMETER:**

The Span DIP switches (Figure D) should be set for the span desired.

- 1.) Man/Auto jumper should be in the Manual position. Power up the PTA (power-up required after any DIP switch change).
- 2.) Turn the SPAN potentiometer counterclockwise to increase, clockwise to decrease.
- 3.) Turn the override potentiometer clockwise until it stops.
- 4.) Adjust SPAN potentiometer until the desired maximum output signal is read on the meter between terminals PWR (-) and SIG.

The input signal will NOT cause "wrap around" or start over if the upper range limit is exceeded. Example: With the 0.02 to 5 second range selected, a pulse longer than 5 seconds will be ignored. The minimum output signal will be equal to the offset. The maximum output signal will be equal to the offset plus the span.

#### **Examples:**

If Span is set at 4 VDC and the Offset is set at 0 VDC, Minimum Output will be 0 VDC, Maximum Output will be 4 VDC.

If Span is set at 16 mA and the Offset is set at 4 mA, Minimum Output will be 4 mA, Maximum Output will be 20 mA.

Whenever power is first applied or restored after power interruption, the PTA automatically resets to the minimum output signal as defined by the DIP switch settings, or adjusted values. MANUAL OVERRIDE – The manual override potentiometer overrides the output of the processor when J2 jumper shunt is in MANUAL position. Always return jumper shunt J2 to AUTO when finished with adjustments.

# PRODUCT SPECIFICATIONS

NON-SPECIFIC INFORMATION	
<b>Supply Voltage:</b>	24 VDC (24-35 VDC) or 24 VAC (21.6-26.4 VAC), 50/60 Hz.
<b>Supply Current:</b>	240 mA maximum using Voltage Output Terminal 125 mA maximum if not using Voltage Output Terminal
<b>Input Pulse Source:</b>	Relay Contact Closure, Transistor or Triac
<b>Input Pulse Trigger Level:</b>	Normal Mode = 5 to 26.4 VAC/DC   Triac Mode = 9 to 26.4VAC
<b>Input Pulse Timing:</b>	<b>PTA:</b> 0.02 to 5.0s, 0.1 to 10.0s, 0.59 to 2.93s, 0.1 to 25.5s <b>PTA Version 2:</b> 0 to 10s Duty Cycle Pulse (10 second window) 0.023 to 6.0s <b>PTA-PPM:</b> 60 Pulses/Min., 100 Pulses/Min., 1500 Pulses/Min., 3000 Pulses/Min. <b>PTA-PRO TEMP:</b> 5 to 55 ms
<b>Output Voltage Signal Selectable Range:</b>	0-1 VDC   0-4 VDC   0-10 VDC   0-13 VDC   1-2 VDC   1-5 VDC   1-11 VDC   1-14 VDC
<b>Output Voltage Signal Adjustable Range:</b>	0-20 VDC (with adjustable offset)
<b>Output Voltage Load Impedance:</b>	3300Ω minimum at 20 VDC +/- 10%   400Ω minimum at 10 VDC +/- 10%
<b>Output Current Signal Selectable Range:</b>	0-16 mA, 4-20 mA
<b>Output Current Signal Adjustable Range:</b>	0-20 mA (with adjustable offset)
<b>Output Current Load Impedance:</b>	0 to 750Ω maximum
<b>Output Resolution:</b>	256 steps of resolution
<b>Accuracy (60 Hz):</b>	+/- 2% of span for adjustable ranges, 5% for preset
<b>Accuracy (50 Hz):</b>	+/- 3% of span for adjustable ranges, 5% for preset
<b>Regulated Power Output:</b>	24 VDC, 48 mA maximum
<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>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)

## WARRANTY

The PTA 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.



## NOTES

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