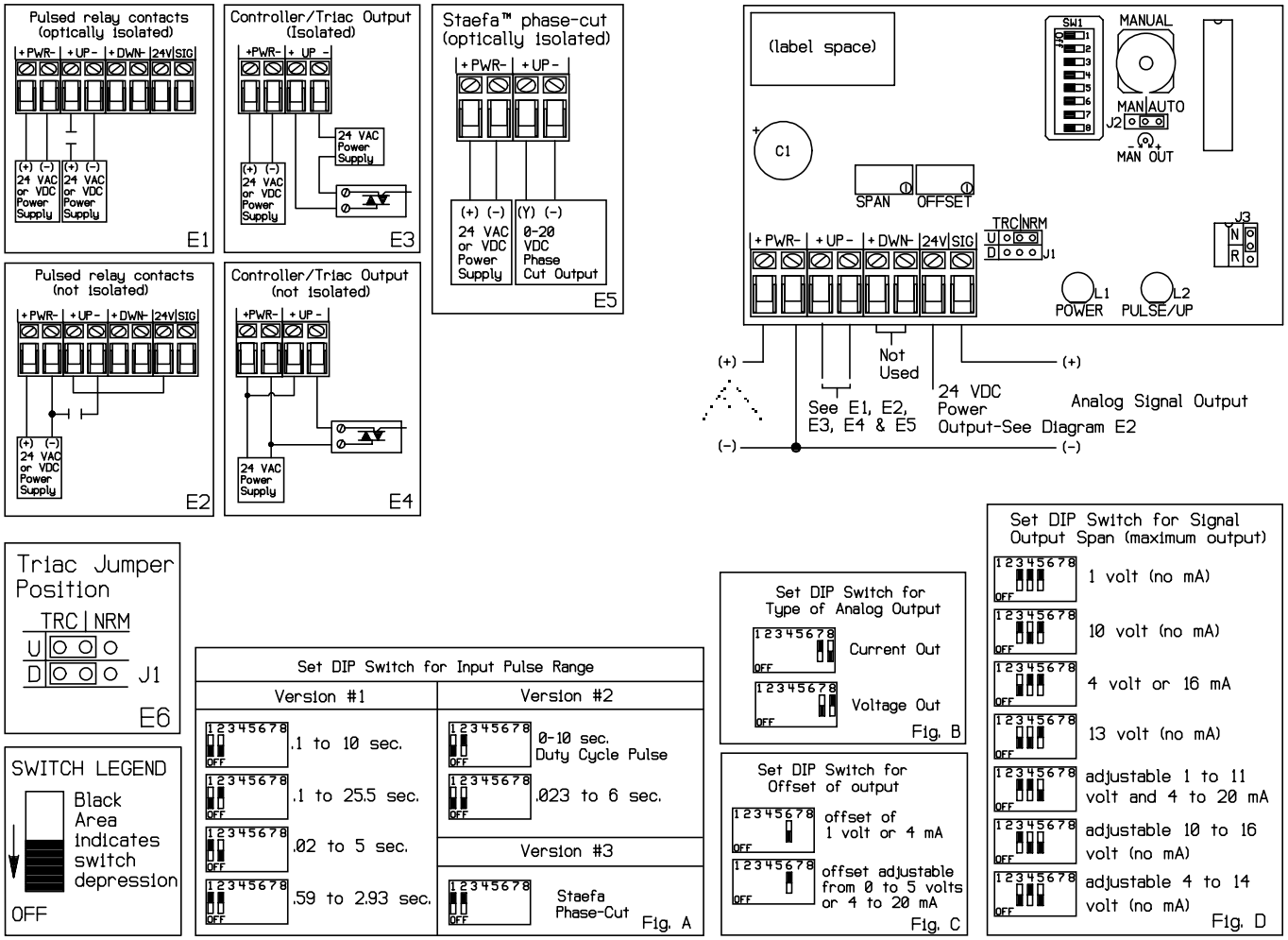
PTA

Pulse Width Modulated Input
to Analog Current or Voltage Output



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. Don't flex board. Use no tools.

POWER CONNECTIONS:

1) **24 VDC - with power off, connect 24 volt DC 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, along with signal output common (-). Connect the other transformer secondary leg to PWR (+). Check the wiring configuration of any other loads that may be connected to this transformer. Any field device connected to this transformer must use the same common. If you are not sure of other field device configurations, use separate transformers.
2) **If the 24 volt AC (or DC) power is shared with devices that have coils such as relays, solenoids, or other inductors, each coil must have an MOV, Transorb, (a diode if DC), 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) **The secondary voltage should be isolated from earth ground, chassis ground, and neutral leg of the primary winding. Grounding should be to the system common only. If you do not follow these procedures improper**

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operation can result.

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.**

CALIBRATION AND CHECKOUT

SIGNAL INPUTS: See Figs. E1, E2, E3, E4 or E5 for wiring detail. The PTA is jumper selectable (jumper J1) for NORM setting for DC pulse input at 5-24 VDC (see Fig. E2), relay or SSR, or TRIAC setting for triac (5-25 VAC) 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).

Version #3 is the Staefa™ 0-20V Phase Cut 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 Fig. 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 "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. The output will be direct acting if the jumper is removed from the board.

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" AND "SPAN" POTENTIOMETERS:

If you do not wish to use any of the preset selections and desire to set your own minimum and maximum output, make potentiometer adjustments to the PTA while powered. The Offset DIP switches (Figure C) should be set for adjustable, and the Span DIP switches (Figure D) should be set for the span desired.

Give the PTA the shortest input pulse it will be receiving and **adjust the OFFSET** trimmer potentiometer to the minimum output level desired, measured between terminals PWR (-) and SIG. OFFSET: Clockwise to increase, or counterclockwise to decrease. Give the PTA the longest input pulse it will be receiving and now **adjust the SPAN** trimmer potentiometer to the desired maximum output signal, measured between terminals PWR (-) and SIG. SPAN: Counterclockwise to increase, clockwise to decrease. The input signal will NOT cause "wrap around" or start over if the upper range limit is exceeded. Example: With the .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 to override the output of the processor is located to the right of the DIP switch. Move J2 jumper shunt to MANual. Clockwise rotation of this single turn potentiometer increases the analog output signal. **Return jumper shunt J2 to AUTO when finished.**

Power Supply:	24 to 35 VDC, 22 to 28 VAC	Output Load Impedance:	Voltage - 1000 ohms to infinity (min)
Supply Current:	45 mA maximum		Current - 0 to 750 ohms (max)
Trigger Level:	5-24 Volts		

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