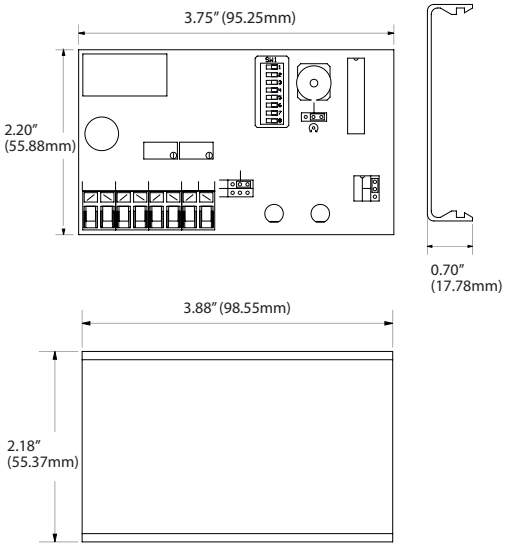
GENERAL INFORMATION

The PTA-PPM converts a Water Flow Meter Pulse 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-PPM receives the end of the next pulsed input signal. The PTA-PPM'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-PPM will still maintain the output accuracy. If the maximum load is 700 ohms, the DC supply can be 24 VDC-10% and the PTA-PPM 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.**

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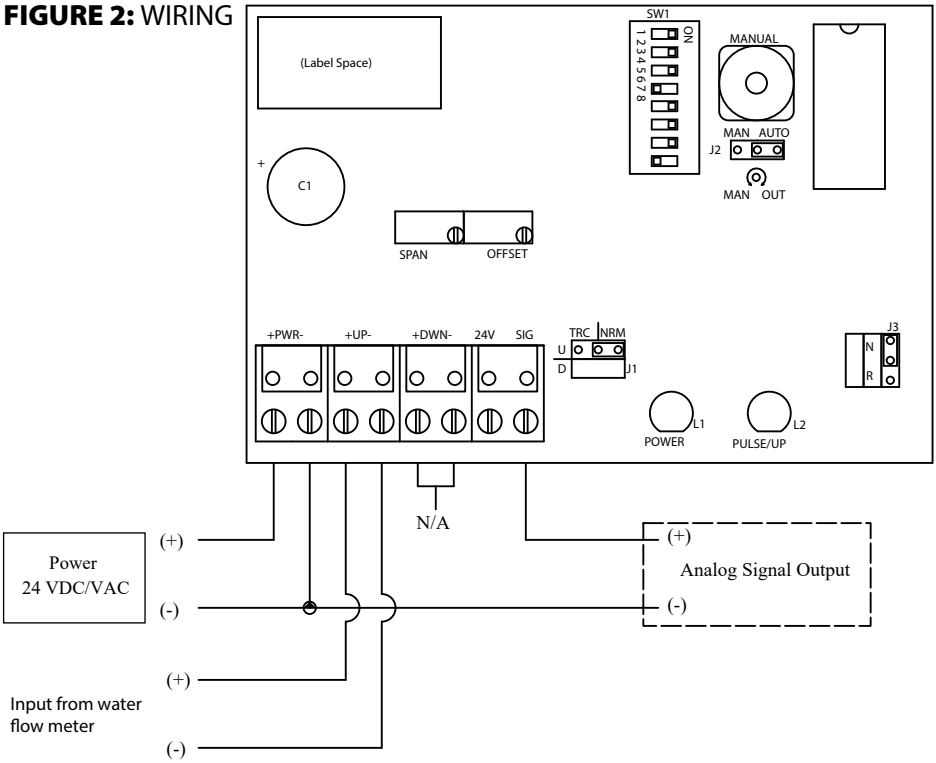
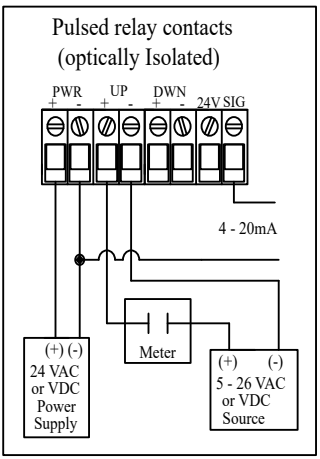
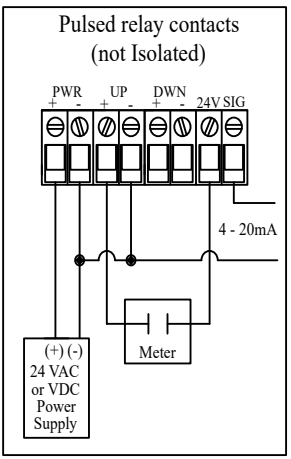
FIGURE 2: WIRING







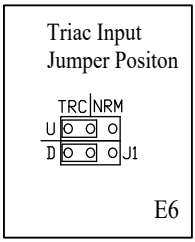


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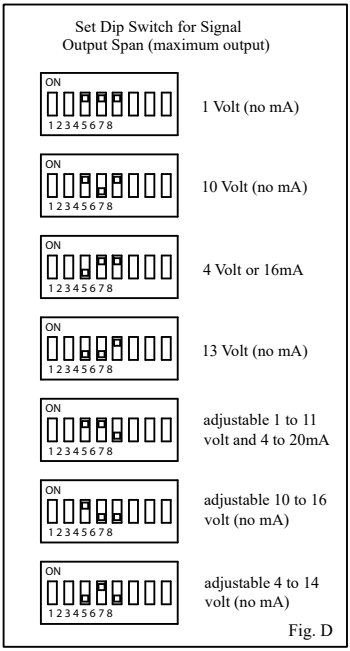
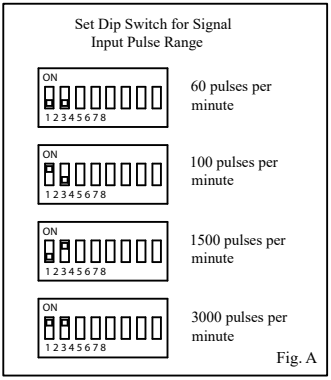
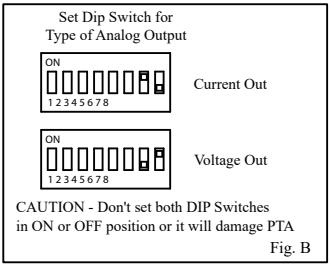
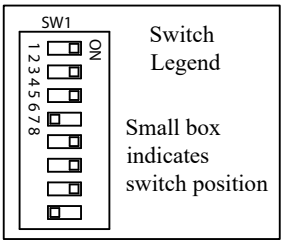
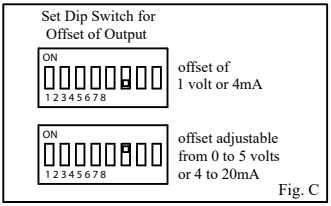
FIGURE 3: SWITCH SETTINGS











CALIBRATION AND CHECKOUT

DIP SWITCH SETTINGS (WITH POWER OFF)

DIP switch settings for pulse per minute ranges (**Figure 3**).

DIP switch settings for output – see **Figure 3**.

TABLE 1: SWITCH RANGE

Range	Switch 1	Switch 2
3000 Pulses Per Minute	On	On
1500 Pulses Per Minute	Off	On
100 Pulses Per Minute	On	Off
60 Pulses Per Minute	Off	Off

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JUMPER SHUNT SETTINGS (WITH POWER OFF)

1. J1 Set for normal (jumper on center pin and pin under NRM) or triac input (jumper on center pin and pin under TRC)
2. J2 Set for AUTO. See instructions for MANUAL OVERRIDE below.
3. J3 jumper shunt selects a normal (N) or reverse acting (R) output (NOTE: The output will be direct acting if the jumper is totally 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.

MAKE POTENTIOMETER ADJUSTMENTS TO THE PTA WHILE POWERED

1. Turn the OFFSET pot counter-clockwise (decrease) until the output is 0.
2. Make sure the DIP switches are set, and give the PTA a known pulse per minute input.
3. Turn the "SPAN" pot counter-clockwise (increase) to the desired value in volts or milliamps and measure between analog output terminals PWR (-) and SIG (+).

The input signal will NOT cause "wrap around" or start over if the upper range limit is exceeded.

The PTA automatically resets to the minimum output signal (or the maximum output if set reverse acting), as defined by adjusted values, when:

1. Power is first applied,
2. Power is restored after power interruption,
3. No pulse is received after 60 seconds,
4. A constant pulse is received for a period greater than 60 seconds.

NOTE: When signals are faster than the set ranges, the output will equal the maximum value (minimum if reverse acting jumper is set), and if the signals are slower than set range, the output will equal the minimum value (maximum if reverse acting jumper is set).

MANUAL OVERRIDE

Move J2 jumper shunt to MANUAL. Clockwise rotation of this single turn manual potentiometer increases the analog output signal. Return jumper shunt J2 to AUTO when finished.

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PRODUCT SPECIFICATIONS

NON-SPECIFIC INFORMATION	
Supply Voltage:	24 VDC (24-35 VDC) or 24 VAC (21.6-26.4 VAC), 50/60 Hz.
Supply Current:	240 mA maximum using Voltage Output Terminal 125 mA maximum if not using Voltage Output Terminal
Input Pulse Source:	Relay Contact Closure, Transistor or Triac
Input Pulse Trigger Level:	Normal Mode = 5 to 26.4 VAC/DC | Triac Mode = 9 to 26.4VAC
Input Pulse Timing:	**PTA-PPM:** 60 Pulses/Min., 100 Pulses/Min., 1500 Pulses/Min., 3000 Pulses/Min.
Output Voltage Signal Selectable Range:	0-1 VDC | 0-4 VDC | 0-10 VDC | 0-13 VDC | 1-2 VDC | 1-5 VDC | 1-11 VDC | 1-14 VDC
Output Voltage Signal Adjustable Range:	0-20 VDC (with adjustable offset)
Output Voltage Load Impedance:	3300Ω minimum at 20 VDC +/- 10% | 400Ω minimum at 10 VDC +/- 10%
Output Current Signal Selectable Range:	0-16 mA, 4-20 mA
Output Current Signal Adjustable Range:	0-20 mA (with adjustable offset)
Output Current Load Impedance:	0 to 750Ω maximum
Output Resolution:	256 steps of resolution
Accuracy (60 Hz):	+/- 2% of span for adjustable ranges, 5% for preset
Accuracy (50 Hz):	+/- 3% of span for adjustable ranges, 5% for preset
Regulated Power Output:	24 VDC, 48 mA maximum
Connections:	90° Pluggable Screw Terminal Blocks
Wire Size:	16 (1.31 mm²) to 26 AWG (0.129 mm²)
Terminal Block Torque Rating:	0.5 Nm (Minimum); 0.6 Nm (Maximum)
Operating Temperature Range:	35 to 120°F (1.7 to 48.9°C)
Operating Humidity Range:	10 to 95% non-condensing
Storage Temperature:	-20 to 150°F (-28.9 to 65.5°C)

WARRANTY

The PTA -PPM 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.

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.

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