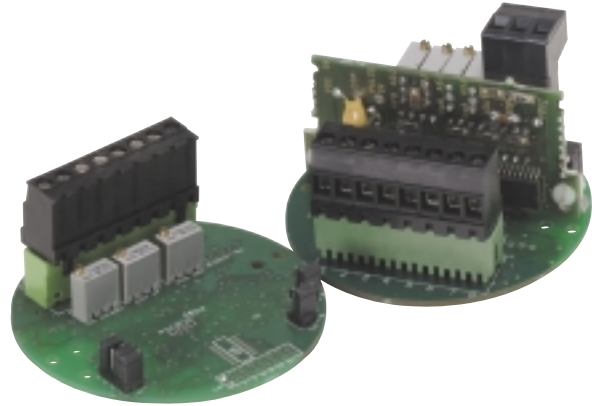


## SIGNAL CONDITIONERS & CONVERTERS PA1001A Series

---



### INTRODUCTION

The PA1001A series preamplifiers/signal conditioners and converters are suitable for use with either magnetic or RF type pickup coils and allow convenient interfacing with the process measuring devices and digital electronics.

When used with Magnetic type pickups they accept low level signals and produces a pulse output, while providing rejection of unwanted noise and false signals.

A RF type pickup reduces the pickup drag associated with conventional magnetic pickups, resulting in a significant increase in the usable range. The PA1001A series excite a RF type pickup with a 20KHz signal. Motion of ferrous material is sensed and the motion modulates the coil field and subsequent conditioning provides a pulse output signal.

The output signal of the PA1001A series have a square pulse wave form, each pulse representative of an actuator (rotor blade, gear tooth, turbine blade, etc.) passing by the sensing area of the pickup.

Four output signal options are available: TTL/CMOS compatible, open collector, 0 to 10VDC square wave, and a square wave that is tied to the input power.

The unit is powered by a user supplied 8 to 30 VDC filtered power supply. An onboard regulator provides the required regulation and noise rejection.

Optional features include factory installed pulse scaling and field installable plug in modules for Analog output. Pulse scaling provides the users with scaling options of  $\div 2$ ,  $\div 4$ ,  $\div 8$ ,  $\div 16$ ,  $\div 32$ ,  $\div 64$ , or  $\div 128$ , which is useful when a remote device has a maximum count speed that is less than the pulse-generating device. Analog output provides a current and voltage outputs proportional to RPM, flow rate etc.

Specifications:

**Input Power:**

- Voltage: 8-30 Vdc
- Current draw: 125mA @ 24Vdc (all options equipped)
- Reverse polarity protected

**RF Pickup Input:**

- Modulation carrier frequency: 20KHz
- Input frequency: 2 Hz to 5KHz, adjustable trigger level
- Carrier adjustment: to allow precise tuning of carrier signal to physical environment (e.g. air gap, wall thickness)
- Maximum air gap: 0.160"
- Preferred coil inductance: 1.0 milliHenry +/- 10%
- Maximum distance from pickup to preamp: 100 feet

**Magnetic Pickup Input:**

- Input protected, RF and band pass filtered
- Input frequency: 0 to 10KHz, adjustable trigger level
- Trigger sensitivity: 4 millivolts RMS (minimum)
- NOTE: at 4 mV frequency range 10 Hz to 3KHz
- Input impedance: 40K Ohms (nominal)
- Maximum input signal: 600 Volts RMS
- Maximum distance from pickup to preamp: 100 feet

**Pulse Outputs:**

- Open collector Vmos transistor
  - Maximum OFF state voltage 30 Vdc
  - Maximum ON current 0.40 amp
- TTL/CMOS fanout of 5 TTL/CMOS loads
- 0 to 10 Vdc square wave
- Square wave tied to input voltage (all output options are user selectable)

**Pulse Scaling :**

- divisions of 2, 4, 8, 16, 32, 64, or 128 (user selectable - optional feature)

**Analog Output Module:**

Current Output

- Accuracy +/- 0.05% of full-scale +/-200 PPM/°C.
- Available range 4 to 20 mA.
- Output suitable for driving, floating or grounded loads.
- Maximum loop impedance 500 ohms.
- Response time 0.3 seconds for 10 to 90 %.

Voltage Output

- Accuracy +/- 0.05% of full-scale +/-200 PPM/°C.
- Available range 0 to 5Vdc or 0 to 10Vdc, user selectable.
- Impedance less than 10 ohms.
- Response time 0.3 seconds for 10 to 90 %

**Temperature Range:**

- Operating: -40 TO 85°C (-40° to 185°F)
- Storage: -40° to 302°F (-40 TO 150°C)

**Enclosures:**

- Unit is intended for mounting in a conduit box and comes with 2" and 2.50" center mounting holes. Enclosure is not required but recommended to protect from moisture dirt, etc.
- Optional explosion proof box available upon request

**Approvals:**

CE compliant to EMC Directive 89/336/EEC for use in residential, commercial, light industrial and heavy industrial environments.

WIRING PREAMPLIFIER  
For RF Pick-up

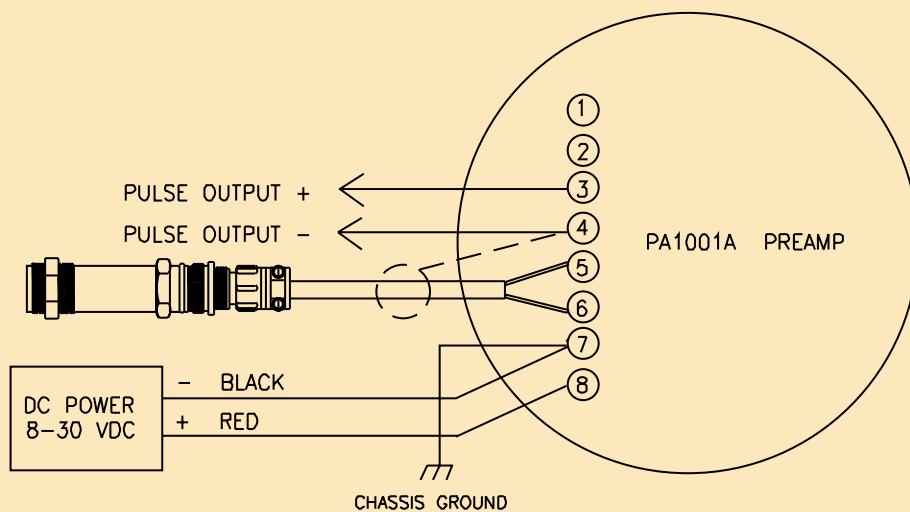


Figure 1

WIRING PREAMPLIFIER  
For Magnetic Pick-up

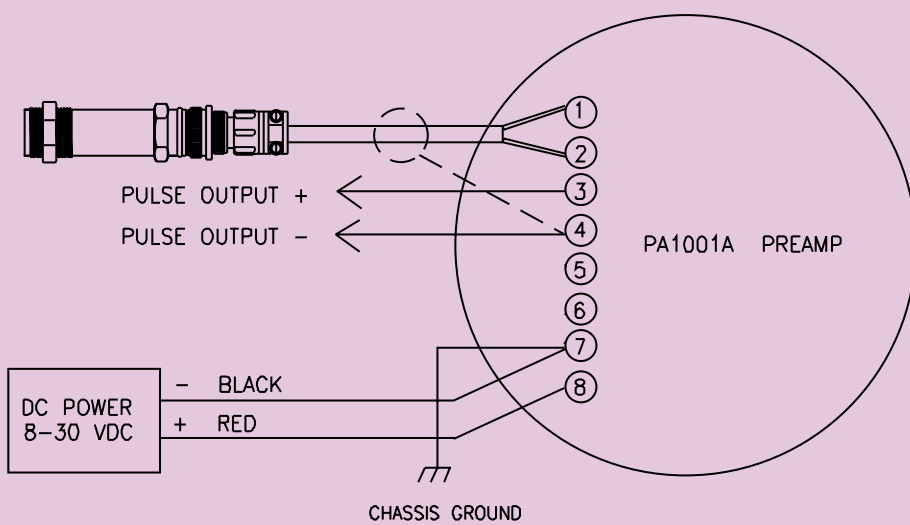


Figure 2

## WIRING FOR PREAMPLIFIER WITH CONVERTERS

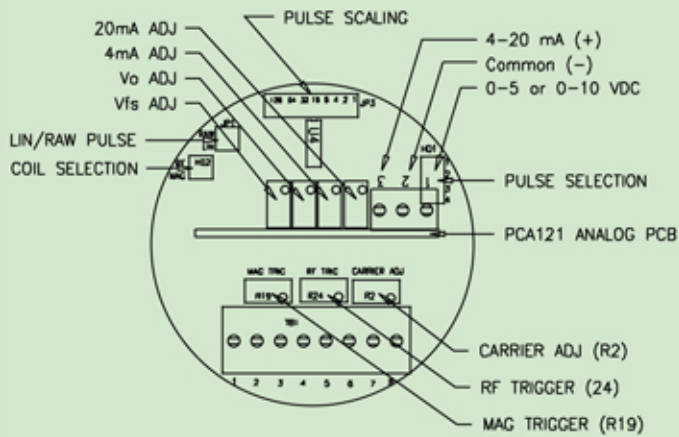


Figure 3

### Ordering Information

