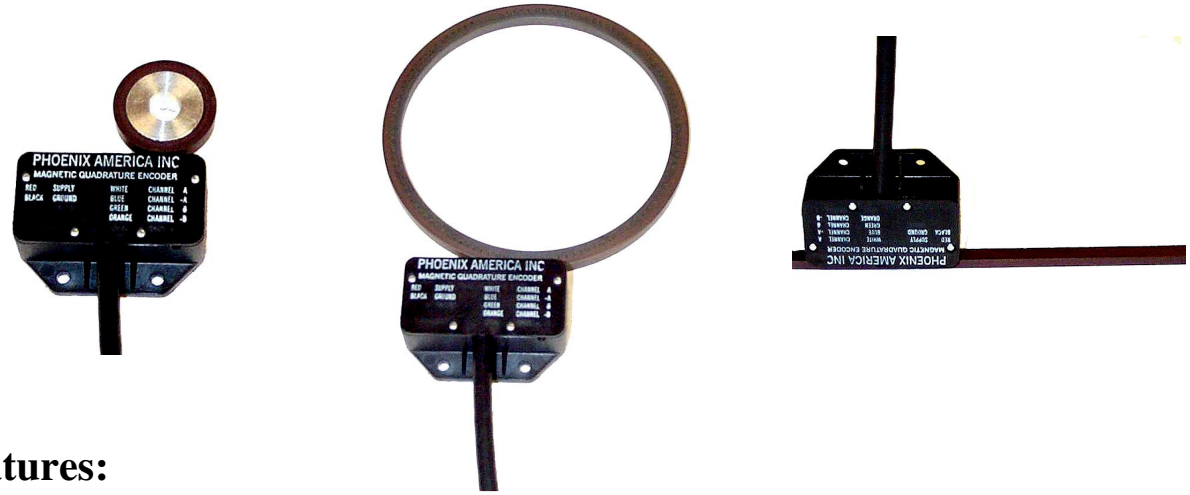
PHOENIX AMERICA INC.
4717CLUBVIEW DRIVE
FORT WAYNE, IN 46804

P9500
HIGH RESOLUTION INCREMENTAL ENCODER



Features:

- Two Channel Quadrature Output
- Up to 1024 PPR @ 10K RPM
- Higher pulse counts available
- Operates in dirty environments
- Wide range of standard magnet targets
- Rotary or linear measuring system
- Operation from –25°C to 85°C
- No Moving Parts

Tachometer/Encoder Description:

The P9500 Series encoder is by design, a rugged cost-effective industrial grade product that uses magnetic technology to address the weakness of the more frangible optical encoder counterpart. Intended for high-resolution applications, it functions as an incremental angular position encoder when used with a multi-pole permanent magnet target wheel. Direction of rotation can be obtained from the two output channels that are 90° electrically out of phase. The final PPR count can be selected by the combination of internal programing of the sensor and magnetic pole count of the permanent magnet target. In linear applications, this sensor can also provide linear position information when used with a multi-pole permanent magnet strip instead of a magnet target wheel.

Like other PAI Sensors, the magnetic / non-contact technology used in this sensor series provides superior reliability in harsh industrial environments that contain dust, smoke, or lubricants. Greases, oils, steam / chemical wash-downs, machining chips, cutting fluids and most common industrial solvents have no effect on performance. No special considerations are required for flexible couplings, dynamic seals or bearing limitations since this sensor does not require these additional components and their associated cost additions. A thermo-plastic housing, fabricated to your specifications, can be made using engineering grade polymers to be resistant to chemical and thermal exposure

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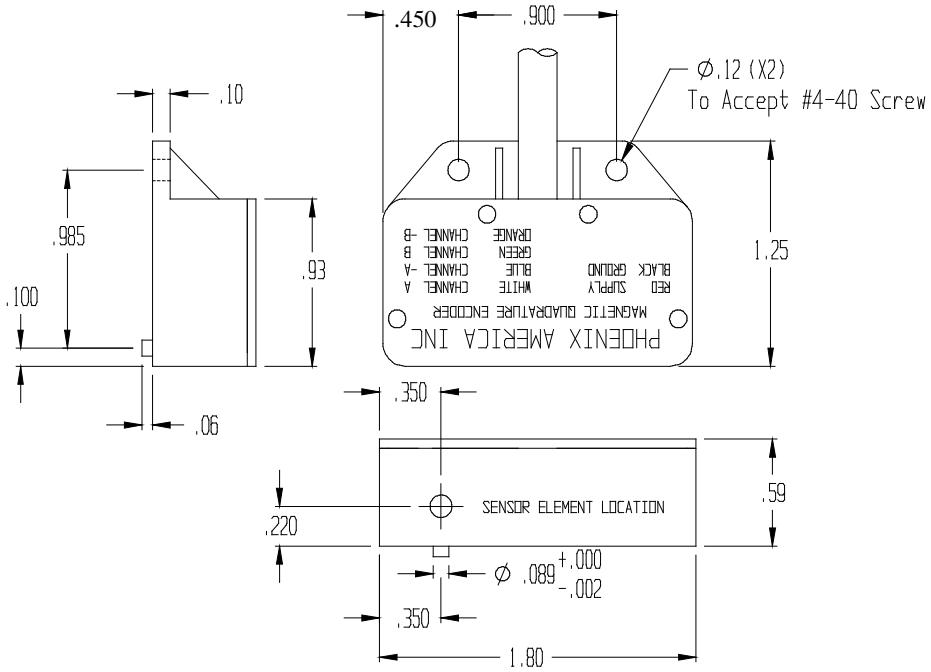
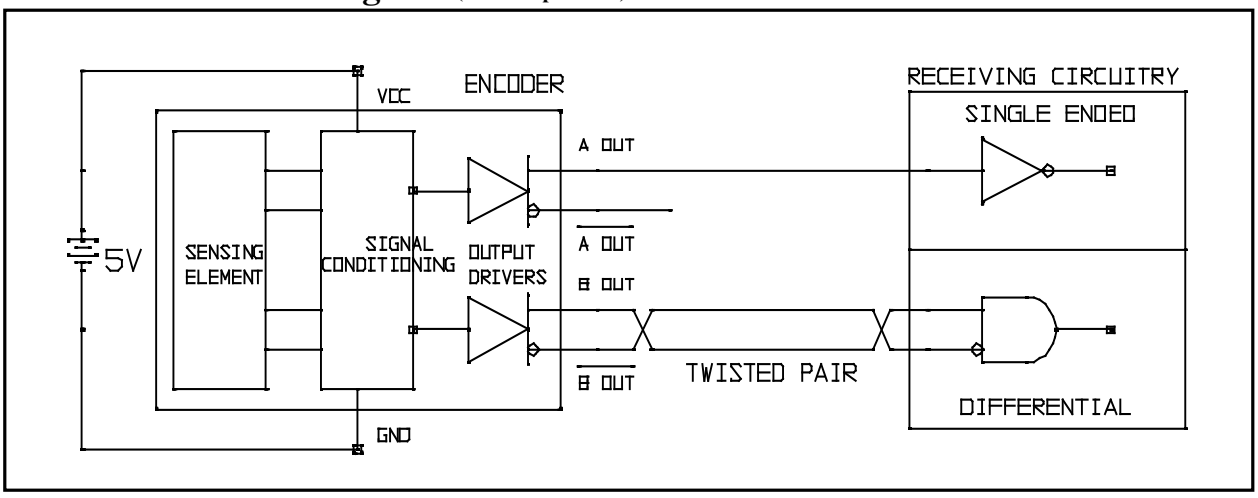
Tachometer/Encoder Description continued….

Central to this encoder/tachometer design are multi-pole permanent magnet target wheels or magnet strips. Their field pattern activates the P9500's custom magnetic sensing element. An Integral signal processing ASIC that produces an "A" and "B" channel output. Each channel is a square wave that is 90 electrical degrees out of phase to each other. PAI's Series P16, P32 or P58 target wheels are specifically designed to operate this device over the specified temperature range. Mounting options include press-fit hubs and setscrew hubs. The I.D.'s of these wheels can easily be machined to accommodate special shaft sizes. While the standard pole patterns listed in the catalog serve most applications, a larger number of other pole patterns are tooled and available for specialized applications. Feel free to consult the factory directly for applications assistance.



Functional Block Diagram (5VDC Operation)



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Specifications

Supply Voltage, Minimum	4.5 Volts
Supply Voltage Maximum	5.5 Volts
Supply Current	65 ma. Typ. (No Load)
Outputs	2 channel, quadrature
Output Type	Differential Pair
Wiring:	Red Vcc
	Black Ground
	White A
	Blue -A (NOT)
	Green B
	Orange -B (NOT)

Additional Operation Notes

The output drivers of the encoder employ a totem pole structure and both sink and source current. Pull-up resistors are not required. They may be connected as a single ended output as shown above with Channel A or configured as a differential pair as shown with Channel B. Either the true or complement output may be used for single ended outputs. In that case, the unused line will be left unconnected. The outputs are TTL compatible. The two output channels are in quadrature, i.e. 90 electrical degrees out of phase.

Options such as different supply voltage, wire colors, etc. are available upon request, Please contact the factory directly for application assistance.