



PHOENIX AMERICA INC.

4717 CLUBVIEW DRIVE
FORT WAYNE, IN 46804

P9700

HIGH RESOLUTION INCREMENTAL ENCODER



Features:

- Two Channel Quadrature Output
- Up to 10,000 PPR @ 10K RPM
- Higher pulse counts available
- Operates in dirty environments
- Impact Resistant
- Low Profile Package
- Operation from -25°C to 85°C
- No Bearings & No Seals

Tachometer/Encoder Description:

The P9700 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 programming of the sensor and magnetic pole count of the 2" diameter permanent magnet target.

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

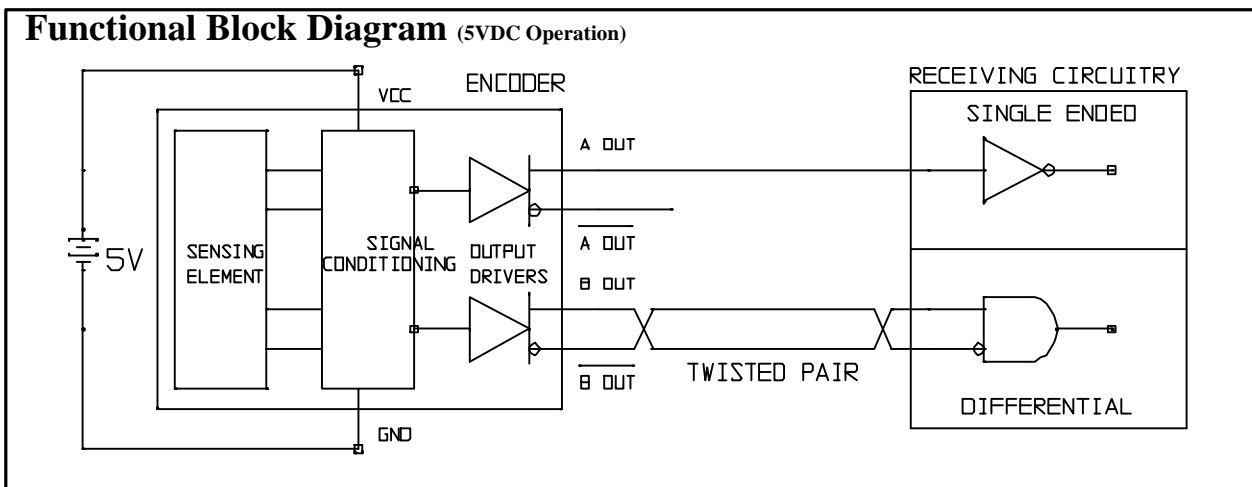
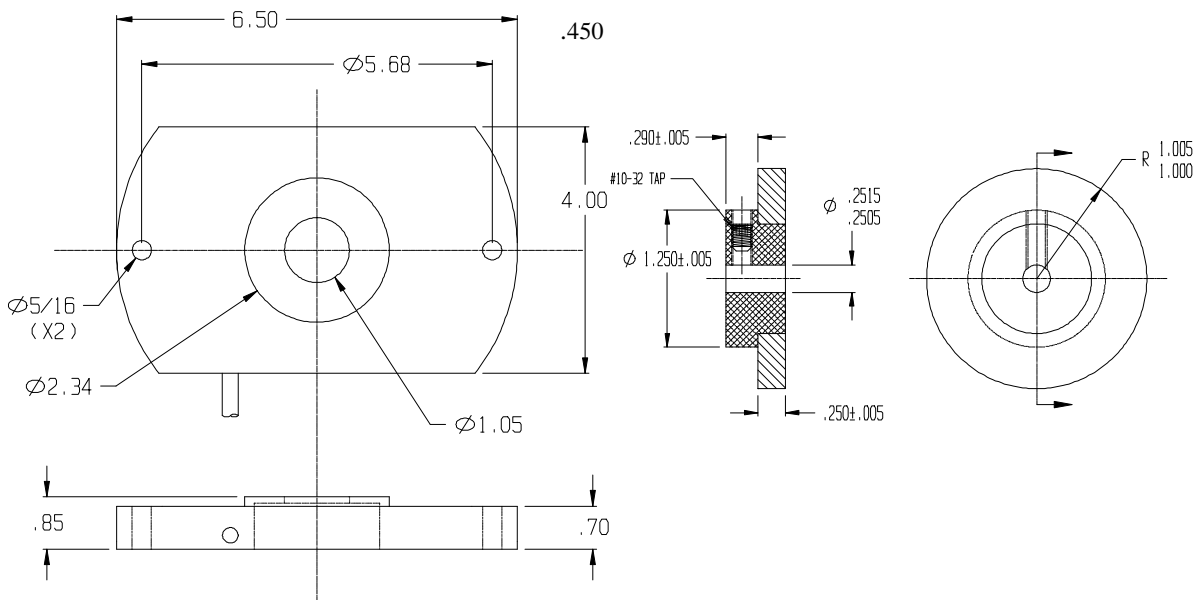


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Tachometer/Encoder Description continued....

Central to this encoder/tachometer design is the 2 inch diameter multi-pole permanent magnet target wheel. Its field pattern activates the P9700'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. This magnet target wheel (PAI's Series P32) is 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.



Specifications



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Characteristic	Typical Specification
Enclosure rating	IP65 minimum (flexible)
Code	Incremental
Output	Differential Line Driver
Format/Channels	2 Channel Quadrature, Complementary outputs
Resolution	Up to 10,000 cycles/revolution/channel
Marker pulse	Optional
Temperature rating	-40 to +85 deg C (for higher temperatures contact factory)
Voltage (I/O)	See comments Below
Frequency response	100 kHz
Electrical protection	Overvoltage, reverse voltage, output short circuit Optional
Bore size	Bore Size is Flexible
Mating connector	Many available upon request
Termination	Pigtail (standard); Various Connector Available

Output Options

1. Multiple input & output requirements available upon request
2. Output is 'ratiometric'; Typical 6.5V- 24V range.
3. 5V input and a 5V output configuration also available

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.