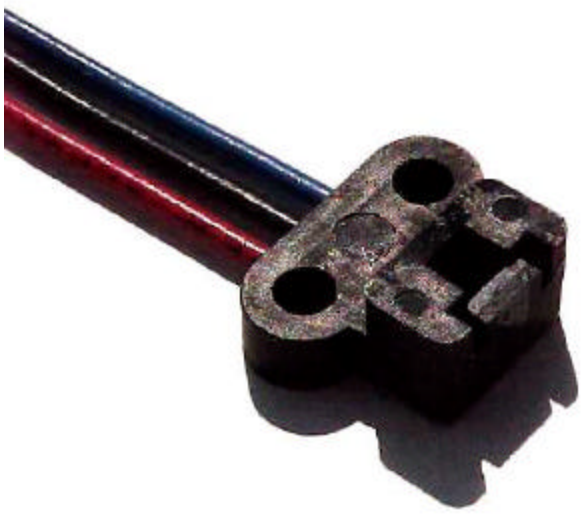
PHOENIX AMERICA INC.
4717 CLUBVIEW DRIVE
FORT WAYNE, IN 46804

P1900

LOW COST - SPEED / COMMUTATION SENSOR

Features:

- Over-molded Design for Low Cost
- Rugged Thermoplastic Housing
- Extremely Small Size Footprint
- Use with all Magnet Target Rotors
- Digital Output Signal
- 4.5-24 VDC Operation Range
- Current Sinking Output
- 20ma Continuous Operation
- Reverse Polarity Protection
- 0 to 100 kHz Operation
- Temperature Compensated
- Operation from –40°C to 125°C



Tachometer/Encoder Description:

The P1900 Series sensor is a very cost-effective device to accurately determine average or instantaneous speed in industrial applications. In addition to reading the speed of a device, the P1900 can be used as an incremental encoder for determining position for applications that include motor commutation, motor shaft position, machine table position, etc. Being a non-contact device, the tachometer/encoder is very well suited to industrial environments. With the sensing technology over-molded in a rugged, thermoplastic housing, this sensor provides a low cost device with a small footprint solution for demanding application. Standard electrical protection includes reverse polarity, transient suppression and output short circuit.

Central to the tachometer/encoder is a digital solid state Hall Effect switch that senses the change in magnetic field of a multi-pole permanent magnet target wheel. We offer integrally manufactured, permanent magnet target wheels that are specifically designed to deliver optimum performance with the tachometer/encoder. The P16 series permanent magnet target wheels feature many mounting options, such as press fit hubs and set-screw hubs, and can accommodate a large number of shaft sizes. Wide ranges of pole counts are available, offering a large selection of resolution or pulses per revolution.

PART NUMBER	SENSOR DESCRIPTION
P1900	22 AWG leads, 36" long

(Contact the factory for other options)

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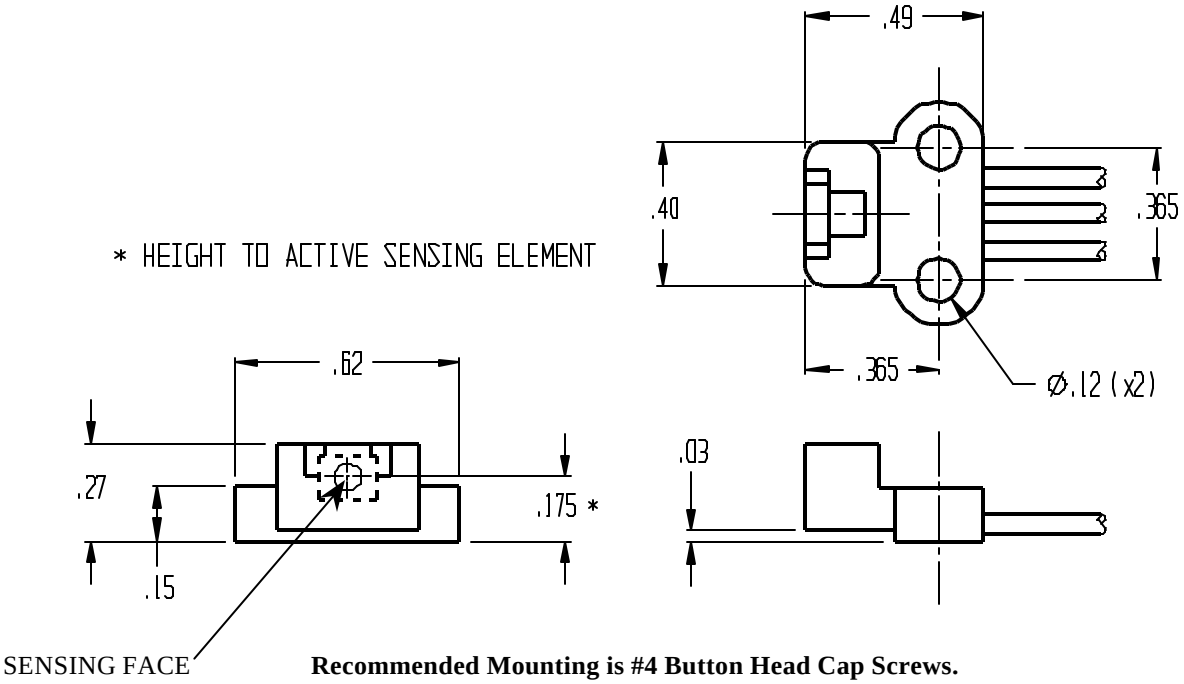
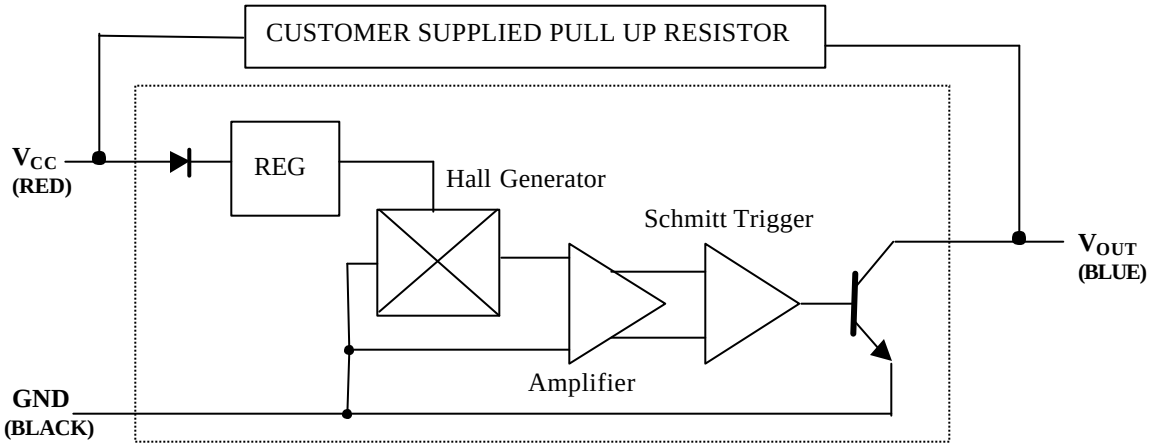
DIMENSIONAL LAYOUT



Recommended Mounting is #4 Button Head Cap Screws.

Functional Block Diagram



NOTE: A pull-up resistor is required on the open collector output to establish a quiescent voltage level. The pull-up resistor also provides faster rise times and improves noise immunity. Contact the factory for application assistance.

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Electrical Characteristics: (T = -40 to 125 °C)

Characteristics	Symbol	Test Condition	Limits			
			Min.	Typ.	Max.	Units
Supply Voltage	V_{CC}	Operating	4.5		24	VDC
Supply Current	I_S	V_{CC}=4.5V; Output Open		4.7	8.0	mA
Output Current	I_{OUT}	V_{CC}=4.5V; Output Open			20	mA
Output Saturation Voltage	$V_{OUT(SAT)}$	B>B_{OP};I_{OUT}=20ma		150	400	mV
Output Leakage Current	I_{OFF}	B>B_{OP};V_{OUT}=24V			10.0	uA
Rise/Fall Time	T_R/T_R	R_L=1.2K; CL<33pf			2.0	uA

Magnetic Characteristics: (V_{CC} = 4.5 to 24 VDC @ -40 to 125°C)

Characteristics	Symbol	Limits			
		Min.	Typ.	Max.	Units
Operating Point	B_{OP}	-	32	95	Gauss
Release Point	B_{RP}	-95	-20	-	Gauss
Hysteresis	B_{HYS}	30	52	-	Gauss
Maximum Field Exposure	B_{MAX}	n.a.	n.a.	n.a.	Gauss
Active Element Depth	D_P		0.02		Inch