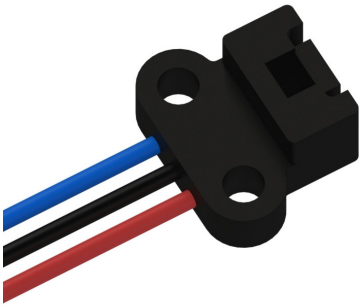
Features and Benefits

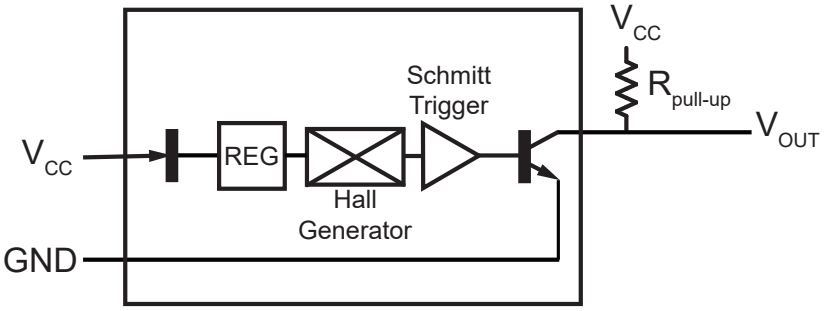
- Magnet actuated for a variety of proximity sensing applications
- Non-contact, solid state device
- Reads speeds 0 to 100 kHz
- Digital output signal
- 4.5 to 24 VDC operation range
- Current sinking output
- 20ma continuous operation
- Reverse polarity protection
- Temperature compensated
- Operates from -40°C to 125°C
- Rugged thermoplastic housing



Sensor

Wire color order varies with part configuration

Electrical Circuit



Output channels require customer supplied pull-up resistors unless internal pull-up option is selected. See Table 1.1 for recommended resistor values.

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.

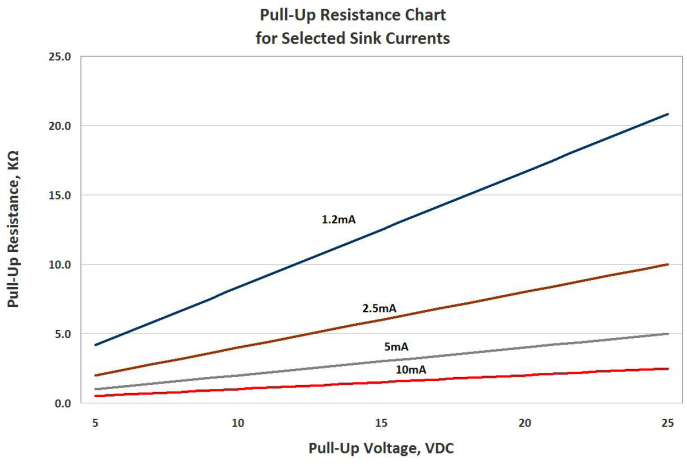


Table 1.1

Recommended Pull-Up Resistor Values			
	Supply Voltage		
Current, I_{sink}	5	12	24
1.2 mA	4.3K	10.0K	20.0K
2.5 mA	2.0K	4.7K	10.0K
5 mA	1.0K	2.4K	4.7K
10 mA	510Ω	1.2K	2.4K

I_{sink} is application dependent. It is recommended to use the lowest possible sink current when selecting a pull-up resistor.

Theoretical Pull-Up Resistor Calculation: $R_{pullup} = \frac{V_{supply}}{I_{sink}}$

Resistance values based on closest standard 5% resistor values

Absolute Maximum I_{sink} = 20mA

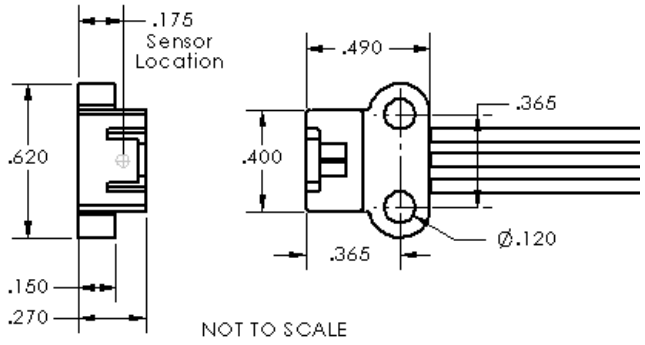
4.7 K pull-up is available as a standard option. If an alternative pull-up value is preferred, contact sales@phoenixamerica.com.

Phoenix America, INC
4717 Clubview Drive
Fort Wayne, IN 46804

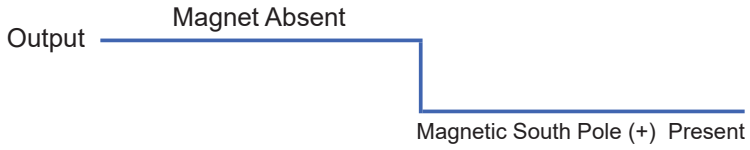
Tel: (888)-801-1422
Local: (260)-432-9664
Fax: (260)-432-9967

www.phoenixamerica.com
sales@phoenixamerica.com

Physical Outline



Output



Magnetic Characteristics *(VCC = 4.5 to 24 VDC @ 25°C)*

Table 2.1

Characteristic	Symbol	Limits			
		Min.	Typ.	Max.	Units
Operating Point	B_{OP}	140	150	160	Gauss
Release Point	B_{RP}	40	50	110	Gauss
Hysteresis	B_{HYS}	30	52	-	Gauss
Maximum Field Exposure	B_{MAX}	-	-	-	Gauss
Active Element Depth	D_P			0.02	Inch

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

Table 2.2

Characteristic	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}	$B < B_{RP}$; V_{OUT} = 24V		4.7	10.0	µA
Rise/Fall Time	t_r / t_f	R_L = 1.2k; C_L < 33pF			2	µs

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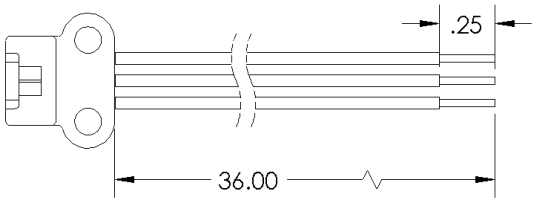
Wiring

FLYING LEADS



- 22 AWG
- PVC Insulation

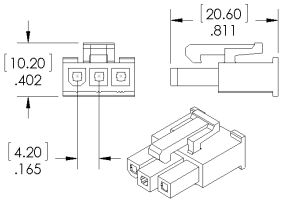
Table 3.1

Standard Wiring Color Code	
	Flying Leads
Vcc	Red
Gnd	Black
Output	Blue

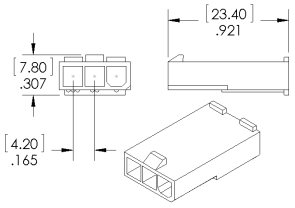
No Cable Available

Connector Options

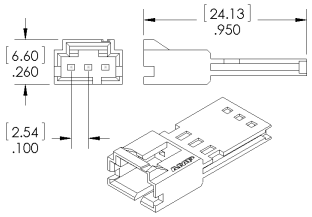
Molex Mini-Fit Jr. (Male)



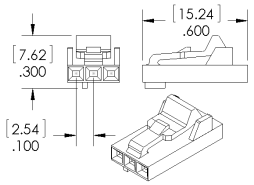
Molex Mini-Fit Jr. (Female)



TE AmpModu MTE (Male)



TE AmpModu MTE (Female)



Need a different connector? Contact sales@phoenixamerica.com.

Part Number Description

P7 – C – F – B – X

Series	Output Type	Wiring	Length (Meters)	Connector
P7	**C** *Open Collector (default)* **P** *Open Collector with Internal Pull-Up (4.7K)*	**F** *Flying Leads (default)*	**A** .5 *(19.685")* **B** 0.914 *(36") (default)* **C** 1 *(39.370")* **D** 2 *(78.740")*	**X** *None (default)* **A1** *TE AmpModu MTE (Male)* **A2** *TE AmpModu MTE (Female)* **M1** *Molex Mini-Fit Jr. (Male)* **M2** *Molex Mini-Fit Jr. (Female)*

Example: P7-C-F-B-X

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