



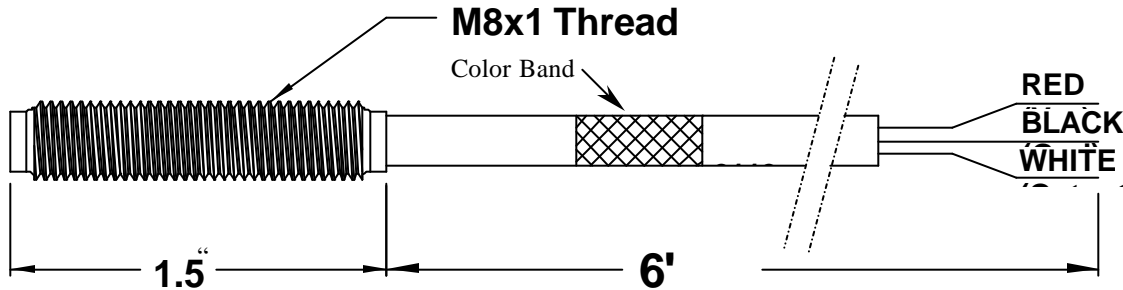
**PHOENIX AMERICA INC.**

4717 CLUBVIEW DRIVE  
FORT WAYNE, IN 46804



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# P3950 AND P3960 SERIES PROXIMITY SWITCH, MAGNET ACTUATED



## FEATURES:

- Solid State Switch
- Both N.O. and N.C. Versions
- Small Size
- High Sensitivity
- Open Collector Output
- Operates North and South Poles
- No Rotational Alignment Needed
- Operation from  $-20^{\circ}\text{C}$  to  $85^{\circ}\text{C}$
- 6.5-24 VDC Operation
- Rugged Aluminum housing

## SENSOR DESCRIPTION:

This family of sensors offers non-contact, solid state, magnetically activated sensing for a variety of proximity and speed applications. Both North and South polarities activate these sensors. The activation levels, besides being very low, are also held within a tight range. This provides optimum repeatability for production applications. With the additional advantage of low hysteresis, this family of devices will operate effectively even in large air gap applications. The threaded Aluminum housing allows for service in rugged environments where space is at a premium. Integral cable with 24 AWG wire leads add reliability and flexibility to the electrical connection. Optional connectors and lead lengths are available upon request.

Part Number	Output Type	Band Color	Min./Max. Operate Point (Gauss)	Min./Max. Hysteresis Point (Gauss)
P3951	N.O.	Yellow	15/25	5/14
P3952	N.O.	Yellow	21/34	5/20
P3953	N.O.	Yellow	30/50	5/25
P3954	N.O.	Yellow	60/100	5/25
P3961	N.C.	Green	15/25	5/14
P3962	N.C.	Green	21/34	5/20
P3963	N.C.	Green	30/50	5/25
P3964	N.C.	Green	60/100	5/25



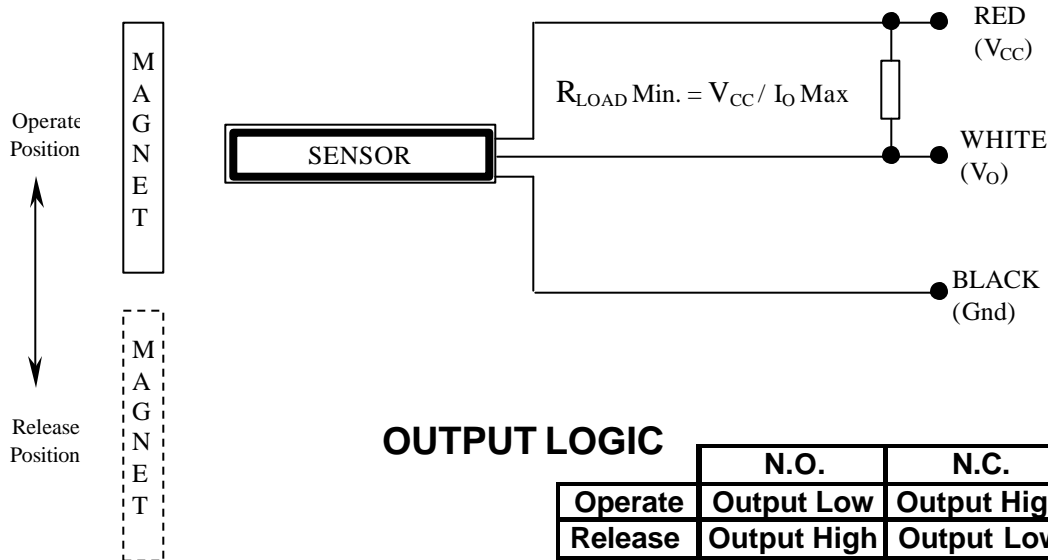
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## APPLICATION OPERATION AND WIRING



## Specifications

T = 20°C

Characteristics	Symbol	Test Condition	Limits		
			Min.	Max.	Units
Supply Voltage	$V_{CC}$		6.5	24	VDC
Supply Current	$I_{CC}$	@ 24VDC		12	ma
Output Voltage	$V_o$			24	VDC
Output Current	$I_o$			20	ma
Saturation Voltage	$V_{sat}$	@ 20ma		400	mv
Output Leakage Current	$I_{off}$	@ 24VDC		250	ua

### SENSOR OPERATION:

This device operates effectively in either a head-on or a slide-by mode of operation with a permanent magnet target. The output of this CMOS based sensor changes state according to the logic table above. The sensor will operate with either a South or North magnetic polarity of sufficient strength. When the field is reduced to the release point, the sensor's output will change to the opposite state. The release point is equal to the operate point minus the hysteresis of the device.

This device requires an external pull-up resistor connected to the output. The output and power leads can be connected to separate supplies as long as the grounds are common. The sensor incorporates protection against transients and power supply reversal. Standard precautions for handling CMOS devices should be employed.