

Solutions Seeking Problems.

MAGNASPHERE® 

## N-Series



The original Magnasphere switch design. Robust all metal construction is highly resistant to magnetic tamper and defeat, and permanent contact welding from power surges. Can also be used as a close tolerance ferrous metal proximity sensor (no magnet actuator required).

### CONTACT CHARACTERISTICS

Contact Form: A (Normally Open-N.O.)  
Contact Material: Gold/Gold  
Initial Contact Resistance (Typical):  
< 150 Milli Ohms  
Contact Capacitance: < 1 pf  
Contact Ratings: 30 VDC @ 250 ma  
Contact Bounce\* (Typical): < 10  
milliseconds\*. Recommended trial  
de-bounce - 15 milliseconds (min.)  
closed contact condition for logic state  
changes - or 30 Hz low pass filter buffer  
Minimum Breakdown Voltage (Typical):  
300 VDC  
Insulation Resistance (Typical):  
> 5 Mega Ohms

### OPERATION CHARACTERISTICS

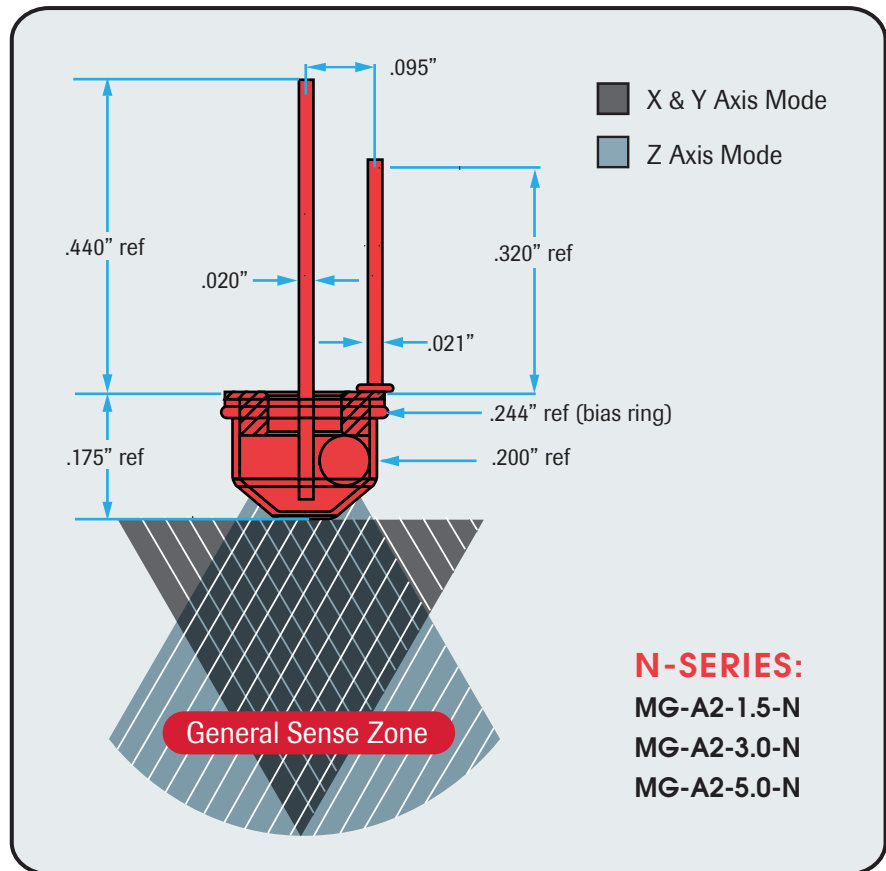
Operate/Release Values:  
See Switching Characteristics Table  
Actuation Magnet Orientation:  
Either Pole  
Maximum Operating Frequency: 20 Hz  
Mounting Position: Any Plane  
Operating Temperature: -40°C to +150°C  
Shock (Switch Damage): > 100 G's  
Vibration: 10-15 G's (80-450 Hz)  
(Higher Values Available)

### GENERAL CHARACTERISTICS & INFORMATION

Construction: Non-Ferrous Metal Housing,  
Compression Seal Hermetically Sealed,  
Protective Gas Atmosphere, Precious  
Metal Plated Spherical Magnet Contact.

Soldering Guidelines: 600° F (315° C)  
Temperature iron for 5 sec. (max.). Do  
not solder within 1/8" (3 mm) of glass  
seal. Lead pins precious metal plated  
for enhanced solderability.

Termination Polarity Guidelines: Polarity  
selection is non-critical, though some



life gain may be realized by center pin  
as cathode on logic loads, but center  
pin as anode on larger loads.

Lead Wire Cutting / Bending Guidelines:  
Cut length has no effect on magnetic  
OP/REL values. Shearing action type  
cutters are recommended, but end nippers  
and side cutters are NOT recommended.  
Metal style seals are extraordinarily  
rugged, but the bending of unsupported  
lead wire pins adjacent to the glass seal  
is not recommended (i.e. when bending

use the support of some type of parallel  
jaws spaced away from the glass seal to  
grip the lead wire pins while bending  
the pins' free ends, so no bending  
strains are imposed on the glass seal.

Other Comments: Ferromagnetic materi-  
als and strong Electromagnetic devices  
proximate to the switch or its actuator  
magnet may adversely affect expected  
OP/REL switching values. Experimenta-  
tion is recommended to investigate  
areas of concern.



The Most Advanced and Effective Magnetic Sensor

		SWITCHING CHARACTERISTICS		AIR GAP DISTANCE			
		POSITION	TYPICAL	MIN	MAX		
The Most Advanced and Effective Magnetic Sensor	MG-A2-1.5-N		(a) Leads Horz. <b>"CLOSED"</b> (b) Leads Horz. <b>"OPEN"</b>	.818" 1.313"	.521" .795"	1.115" 1.431"	NEO 35 MAGNET TARGET 0.5" L x .375" T
	MG-A2-3.0-N		(a) Leads Horz. <b>"CLOSED"</b> (b) Leads Horz. <b>"OPEN"</b>	.652" .897"	.463" .518"	.841" 1.276"	
	MG-A2-5.0-N		(a) Leads Horz. <b>"CLOSED"</b> (b) Leads Horz. <b>"OPEN"</b>	.569" .643"	.320" .460"	.818" .826"	
	MG-A2-1.5-N		(a) Leads Horz. <b>"CLOSED"</b> (b) Leads Horz. <b>"OPEN"</b>	.053" .089"	.035" .059"	.071" .119"	FERROUS METAL TARGET EG. C1010 Low Carbon 1.0" L x 1.0" W x .0625" T
	MG-A2-3.0-N		(a) Leads Horz. <b>"CLOSED"</b> (b) Leads Horz. <b>"OPEN"</b>	.034" .061"	.022" .037"	.046" .085"	
	MG-A2-5.0-N		(a) Leads Horz. <b>"CLOSED"</b> (b) Leads Horz. <b>"OPEN"</b>	.030" .048"	.021" .036"	.041" .060"	

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**Switching characteristics** the target moves closer (a), this normally open switch will CLOSE at the air gap distance (d), and OPEN when the target moves away (b).

### ABOUT MAGNASPHERE

MAGNASPHERE® Corp. is a privately held company founded in 2002, with the purpose of providing superior performing magnetic switch and sensor technology to the industrial/commercial OEM and security markets. MAGNASPHERE's patented, award-winning technology establishes new standards for magnetic switch performance while providing an affordable and more effective alternative to other magnetic switch technologies.

Learn more: Visit us at [www.MAGNASPHERE.com](http://www.MAGNASPHERE.com).



### PATENTED DESIGN

MAGNASPHERE® products are covered by one or more of the following U.S. and international patents:

- #5332992
- #5530428
- #5673021
- #5880659
- #5977873
- #6087936
- #6506987
- #6603378
- #6803845
- #7023308
- (Patents Pending)

**MAGNASPHERE® NOTICE OF LIMITED LICENSE AND RIGHTS:** (Security Applications)  
The purchase of MAGNASPHERE® switches provides the purchaser and the purchaser's customers with a limited right and license to make, use, offer for sale, and sell security devices, each making use of a single MAGNASPHERE® switch; however, this limited right and license does not extend to and specifically excludes security devices making use of two or more MAGNASPHERE® switches that cooperatively monitor a single area or location.

### INDUSTRY AWARDS

- Best of Show Award:  
ISC Expo
- Gold Award  
Sensor Technology:  
Sensors Expo
- Best Intrusion  
Detection:  
ISC Expo