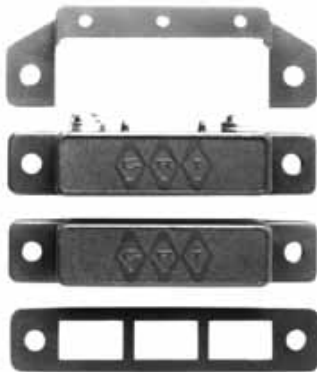


## Magnasphere Technology Switch Sets



**MS20RS-12**

- Higher Level of Security
- Spherical Magnetism
- Resistant to Magnetic Tamper and Defeat
- Hermetically Sealed
- Built-in E.O.L. Resistors and Diodes
- Custom Lead Lengths Upon Request
- Lifetime Warranty
- Standard Gap 3/8"
- [www.magnaspherecorp.com](http://www.magnaspherecorp.com)

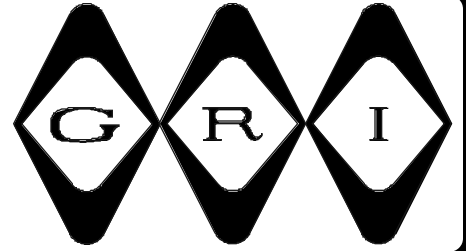


**MS29A**



**MS4702**

# MAGNASPHERE



## Miniature 3/8" Recessed Switch Set with Magnasphere Technology MS20RS-12/MS20RS-T

- ◆ Higher Level of Security
  - ◆ Spherical Magnetism
- ◆ Resistant to Magnetic Tamper and Defeat
  - ◆ Hermetically Sealed
- ◆ Longer Leads, Zip Cord or Jacketed Cable Upon Request
  - ◆ Built-in E.O.L. Resistors and Diodes Upon Request
  - ◆ Switches and Magnets Available Separately
  - ◆ Colors: White, Brown, Gray
    - ◆ Lifetime Warranty
    - ◆ Standard Gap 3/8"



MS20RS-12



MS20RS-T

GEORGE RISK INDUSTRIES, INC.  
G.R.I. PLAZA  
KIMBALL, NE 69145



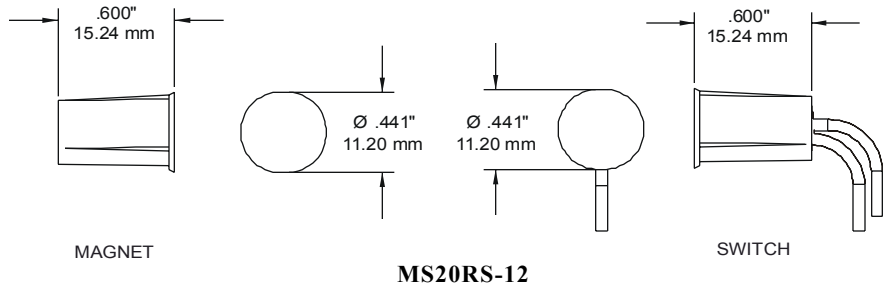
MADE IN U.S.A.

TOLL-FREE 1-800-445-5218  
TOLL-FREE 1-800-523-1227  
(308) 235-4645  
FAX (308) 235-3561  
E-MAIL: [grisales@megavision.com](mailto:grisales@megavision.com)  
WEB SITE: [www.grisk.com](http://www.grisk.com)



**INSTALLATION APPLICATIONS:**

The G.R.I. recessed "shortie" switch set is designed for applications where a 3/8" press to fit set is needed, but space limitations will not allow for a full length set to be installed. Just 5/8" long, the installer is able to protect openings with the MS20RS-12 that otherwise would have to be secured with more visible surface mount configurations.



**CONSTRUCTION:**

Magnasphere's ® patented technology utilizes the principal of *Spherical Magnetism*. The heart of the switch is a magnetic sphere, or ball contact. This sphere is housed in a durable metal housing. Completing the switch is a seal that contains the contacting electrode, insulated from the magnetic perimeter by a time proven ceramic to metal bond.

The case or seal provides the second contact point required to complete the electrical circuit.

The seal/electrode cap is welded to the housing in an inert atmosphere providing a hermetically sealed contact.

**OPERATION:**

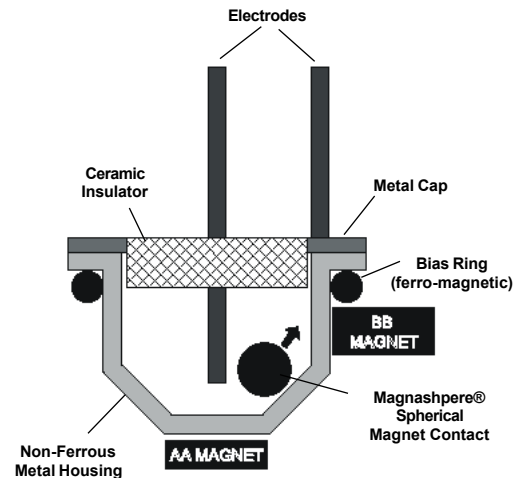
In the normally open position, the magnetic sphere is attracted to the ferromagnetic portion of the seal cap, away from the electrode. Because of this attraction the switch may be positioned in any orientation and will remain open.

When an actuator magnet approaches the switch from the end of the switch opposite the electrode, the magnetic ball is attracted to this field, and "snaps" to the bottom of the case, making contact with the electrode and case, closing the switch.

Unlike a reed switch that responds to a magnet within a global activation zone, the Magnasphere® switch responds to a magnet only within a restricted zone. A magnet outside the zone pulls the ball off the center electrode to open the switch.

**PRINCIPLES OF SPHERICAL MAGNETISM:**

Finite element analysis shows magnetic flux paths of the Magnasphere® magnetic ball contact. The spherical shape is not polarity sensitive and will be attracted to either pole of the actuating magnet.



**Note: web site:**  
[www.magnaspherecorp.com](http://www.magnaspherecorp.com)  
 To download video on How it Works.

**GRI products meet or exceed these minimum general specifications:**

PART NUMBER	LOOP TYPE	ELECTRICAL CONFIG.	FORM	MAXIMUM INITIAL CONTACT RESISTANCE	MAXIMUM CONTACT RATING	MAXIMUM SWITCHING VOLTAGE	MAXIMUM SWITCHING CURRENT
MS20RS-12	Closed	N/O	A	.400	5 Watts	250 AC/DC	.180*
MS20RS-T	Closed	N/O	A	.400	5 Watts	250 AC/DC	.180*

\*Higher Maximum Switching Current ratings available.

**CONTACT YOUR G.R.I. DISTRIBUTOR OR CALL:**

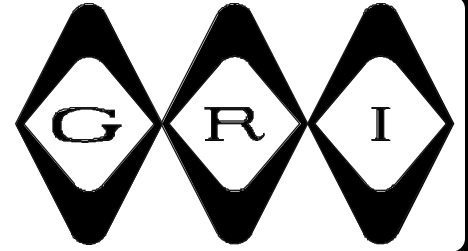
GEORGE RISK INDUSTRIES, INC.  
 G.R.I. PLAZA  
 KIMBALL, NE 69145



MADE IN U.S.A.

TOLL-FREE 1-800-445-5218  
 TOLL-FREE 1-800-523-1227  
 (308) 235-4645  
 FAX (308) 235-3561  
 E-MAIL: [grisales@megavision.com](mailto:grisales@megavision.com)  
 WEB SITE: [www.grisk.com](http://www.grisk.com)

# MAGNASPHERE



## 3/8" Recessed Switch Set with Magnasphere Technology MS2020-12/MS2020-T

- ◆ Higher Level of Security
  - ◆ Spherical Magnetism
- ◆ Resistant to Magnetic Tamper and Defeat
  - ◆ Hermetically Sealed
- ◆ Longer Leads, Zip Cord or Jacketed Cable Upon Request
  - ◆ Built-in E.O.L. Resistors and Diodes Upon Request
  - ◆ Switches and Magnets Available Separately
    - ◆ Colors: White, Brown, Gray, Almond
    - ◆ Lifetime Warranty
    - ◆ Standard Gap 3/8"



MS2020-12



MS2020-T

GEORGE RISK INDUSTRIES, INC.  
G.R.I. PLAZA  
KIMBALL, NE 69145



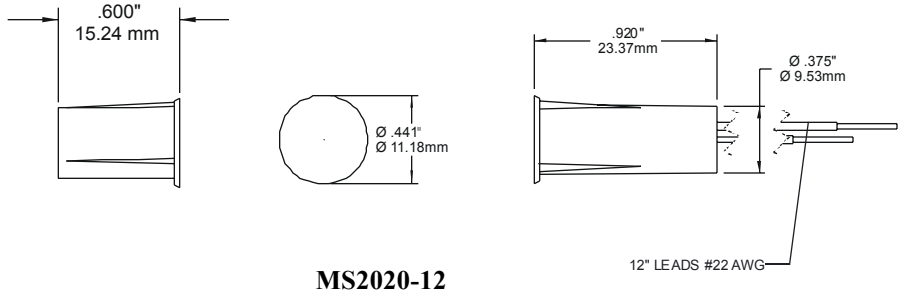
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**INSTALLATION APPLICATIONS:**

G.R.I.'s 3/8" recessed press-to-fit contacts can be installed in many different positions to accommodate a variety of applications. The switch and magnet can be mounted end-to-end within an imaginary arc around the switch, or parallel to the switch. The switch and magnet should never form a "T" configuration when installed.



**CONSTRUCTION:**

Magnasphere's® patented technology utilizes the principal of *Spherical Magnetism*. The heart of the switch is a magnetic sphere, or ball contact. This sphere is housed in a durable metal housing. Completing the switch is a seal that contains the contacting electrode, insulated from the magnetic perimeter by a time proven ceramic to metal bond.

The case or seal provides the second contact point required to complete the electrical circuit.

The seal/electrode cap is welded to the housing in an inert atmosphere providing a hermetically sealed contact.

**OPERATION:**

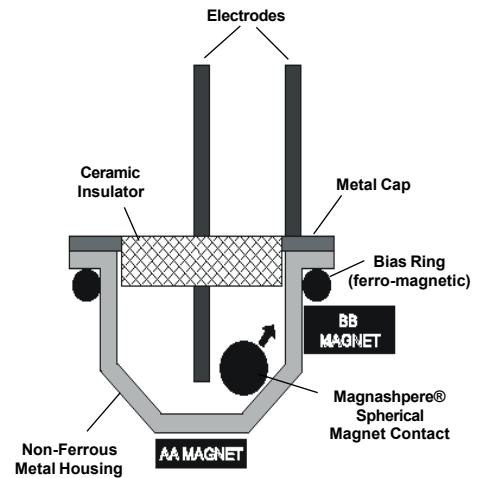
In the normally open position, the magnetic sphere is attracted to the ferromagnetic portion of the seal cap, away from the electrode. Because of this attraction the switch may be positioned in any orientation and will remain open.

When an actuator magnet approaches the switch from the end of the switch opposite the electrode, the magnetic ball is attracted to this field, and "snaps" to the bottom of the case, making contact with the electrode and case, closing the switch.

Unlike a reed switch that responds to a magnet within a global activation zone, the Magnasphere® switch responds to a magnet only within a restricted zone. A magnet outside the zone pulls the ball off the center electrode to open the switch.

**PRINCIPLES OF SPHERICAL MAGNETISM:**

Finite element analysis shows magnetic flux paths of the Magnasphere® magnetic ball contact. The spherical shape is not polarity sensitive and will be attracted to either pole of the actuating magnet.



**Note: web site:**  
[www.magnaspherecorp.com](http://www.magnaspherecorp.com)  
 To download video on How it Works.

**GRI products meet or exceed these minimum general specifications:**

PART NUMBER	LOOP TYPE	ELECTRICAL CONFIG.	FORM	MAXIMUM INITIAL CONTACT RESISTANCE	MAXIMUM CONTACT RATING	MAXIMUM SWITCHING VOLTAGE	MAXIMUM SWITCHING CURRENT
MS2020-12	Closed	N/O	A	.400	5 Watts	250 AC/DC	.180*
MS2020-T	Closed	N/O	A	.400	5 Watts	250 AC/DC	.180*

\*Higher Maximum Switching Current ratings available.

**CONTACT YOUR G.R.I. DISTRIBUTOR OR CALL:**

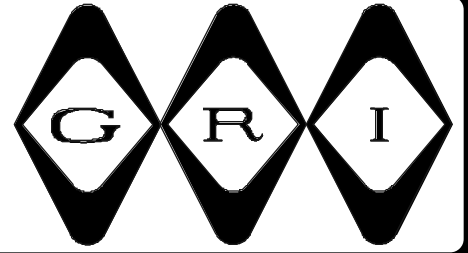
GEORGE RISK INDUSTRIES, INC.  
 G.R.I. PLAZA  
 KIMBALL, NE 69145



MADE IN U.S.A.

TOLL-FREE 1-800-445-5218  
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 E-MAIL: [grisales@megavision.com](mailto:grisales@megavision.com)  
 WEB SITE: [www.grisk.com](http://www.grisk.com)

# MAGNASPHERE



## Recessed 3/8" Flanged Switch Set with Magnasphere Technology MS20F/MS20-OF Series

- ◆ Higher Level of Security
  - ◆ Spherical Magnetism
- ◆ Resistant to Magnetic Tamper and Defeat
  - ◆ Hermetically Sealed
- ◆ Round or Oval Screw Down Flange
- ◆ Built-In E.O.L. Resistors and Diodes Upon Request
  - ◆ Switches and Magnets Available Separately
  - ◆ Colors: White, Brown, Gray, Black
    - ◆ Lifetime Warranty
    - ◆ Standard Gap 3/8"



MS20F-12



MS20-OF-12

GEORGERISK INDUSTRIES, INC.  
GRI PLAZA  
KIMBALL, NE 69145



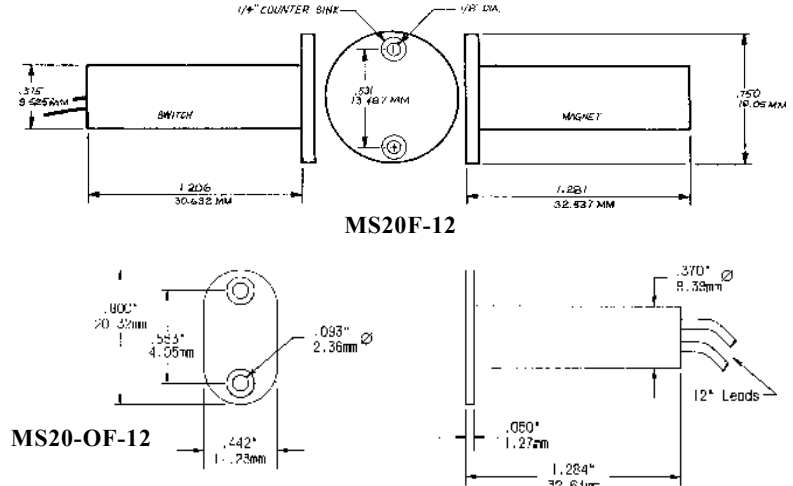
MADE IN U.S.A.

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WEB SITE: [www.grisk.com](http://www.grisk.com)

# GRI MAGNASPHERE

## INSTALLATION APPLICATIONS:

The MS20F and MS20-OF series are a flush mount design that enable the installer to combine the security of a screw mount flanged switch with the concealment of a press fit switch. They have been used in hollow aluminum frames where inadequate material depth will not reliably retain a press fit switch and in holes that have been drilled or have somehow become slightly oversized. Mounting hardware is provided.



## CONSTRUCTION:

Magnasphere's® patented technology utilizes the principal of *Spherical Magnetism*. The heart of the switch is a magnetic sphere, or ball contact. This sphere is housed in a durable metal housing. Completing the switch is a seal that contains the contacting electrode, insulated from the magnetic perimeter by a time proven ceramic to metal bond.

The case or seal provides the second contact point required to complete the electrical circuit.

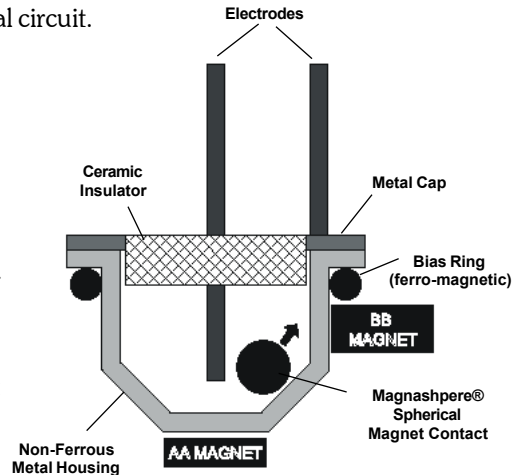
The seal/electrode cap is welded to the housing in an inert atmosphere providing a hermetically sealed contact.

## OPERATION:

In the normally open position, the magnetic sphere is attracted to the ferromagnetic portion of the seal cap, away from the electrode. Because of this attraction the switch may be positioned in any orientation and will remain open.

When an actuator magnet approaches the switch from the end of the switch opposite the electrode, the magnetic ball is attracted to this field, and "snaps" to the bottom of the case, making contact with the electrode and case, closing the switch.

Unlike a reed switch that responds to a magnet within a global activation zone, the Magnasphere® switch responds to a magnet only within a restricted zone. A magnet outside the zone pulls the ball off the center electrode to open the switch.



## PRINCIPLES OF SPHERICAL MAGNETISM:

Finite element analysis shows magnetic flux paths of the Magnasphere® magnetic ball contact. The spherical shape is not polarity sensitive and will be attracted to either pole of the actuating magnet.

**Note: web site:**  
[www.magnaspherecorp.com](http://www.magnaspherecorp.com)  
**To download video on How it Works.**

## GRI products meet or exceed these minimum general specifications:

PART NUMBER	LOOP TYPE	ELECTRICAL CONFIG.	FORM	MAXIMUM INITIAL CONTACT RESISTANCE	MAXIMUM CONTACT RATING	MAXIMUM SWITCHING VOLTAGE	MAXIMUM SWITCHING CURRENT
MS20F-12	Closed	N/O	A	.400	5 Watts	250 AC/DC	.180*
MS20-OF-12	Closed	N/O	A	.400	5 Watts	250 AC/DC	.180*

\*Higher Maximum Switching Current ratings available.

## CONTACT YOUR G.R.I. DISTRIBUTOR OR CALL:

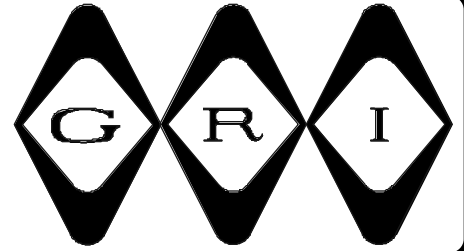
GEORGE RISK INDUSTRIES, INC.  
 GRI PLAZA  
 KIMBALL, NE 69145



MADE IN U.S.A.

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 E-MAIL: [grisales@megavision.com](mailto:grisales@megavision.com)  
 WEB SITE: [www.grisk.com](http://www.grisk.com)

# MAGNASPHERE



## Recessed 1/2" Switch Set with Magnasphere Technology MS150-12/MS150-T

- ◆ Higher Level of Security
  - ◆ Spherical Magnetism
  - ◆ Resistant to Magnetic Tamper and Defeat
  - ◆ Hermetically Sealed
- ◆ Designed For Hollow Core Doors and Windows
  - ◆ Hole Size Allows For Extra Wire, etc.
- ◆ Installs Firmly In Wood, Vinyl and Aluminum
  - ◆ Press Or Snap Fit
- ◆ Built-in E.O.L. Resistors and Diodes Upon Request
  - ◆ Colors: White, Brown
  - ◆ Lifetime Warranty
  - ◆ Standard Gap 3/8"



MS150-12



MS150-T

GEORGE RISK INDUSTRIES, INC.  
G.R.I. PLAZA  
KIMBALL, NE 69145



MADE IN U.S.A.

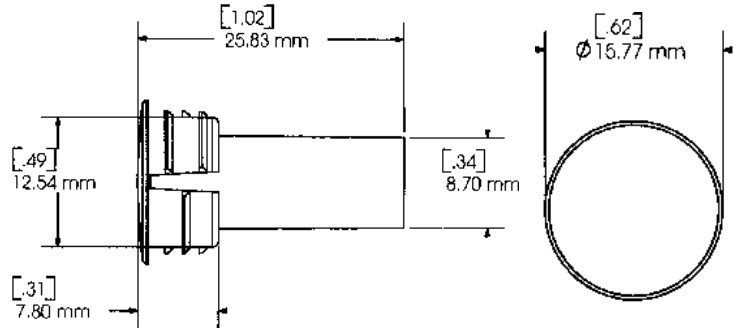
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E-MAIL: [grisales@megavision.com](mailto:grisales@megavision.com)  
WEB SITE: [www.grisk.com](http://www.grisk.com)





**INSTALLATION APPLICATIONS:**

Larger than 3/8" but smaller than 3/4", G.R.I. introduces their innovative switch design, the 1/2" diameter, flush mount, MS150-12. This is in response to requests from our customers for a switch that would give them additional "working room" for extra wire, E.O.L. resistors, etc., yet would install in the popular hollow core windows. The G.R.I. MS150-12 is a 1/2" diameter contact, manufactured from a special polyvinyl material with a unique collar design that will "press-fit" into wooden or vinyl clad windows with a "snap-in" fit for hollow core vinyl or aluminum windows. The G.R.I. MS150-12 is paired with a matching 1/2" magnet case to offer the installer up to a 1/2" gap. The MS150 switch can also be paired with any of the wide selection of G.R.I. magnets to help resolve difficult installation applications, such as our MF-875. Patent Pending.



**MS150-12**

**CONSTRUCTION:**

Magnasphere's ® patented technology utilizes the principal of *Spherical Magnetism*. The heart of the switch is a magnetic sphere, or ball contact. This sphere is housed in a durable metal housing. Completing the switch is a seal that contains the contacting electrode, insulated from the magnetic perimeter by a time proven ceramic to metal bond.

The case or seal provides the second contact point required to complete the electrical circuit.

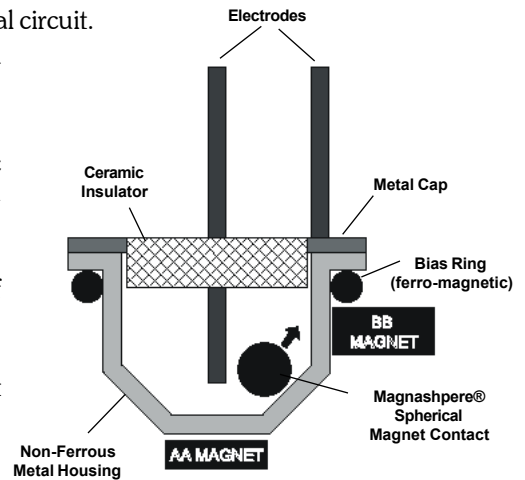
The seal/electrode cap is welded to the housing in an inert atmosphere providing a hermetically sealed contact.

**OPERATION:**

In the normally open position, the magnetic sphere is attracted to the ferromagnetic portion of the seal cap, away from the electrode. Because of this attraction the switch may be positioned in any orientation and will remain open.

When an actuator magnet approaches the switch from the end of the switch opposite the electrode, the magnetic ball is attracted to this field, and "snaps" to the bottom of the case, making contact with the electrode and case, closing the switch.

Unlike a reed switch that responds to a magnet within a global activation zone, the Magnasphere® switch responds to a magnet only within a restricted zone. A magnet outside the zone pulls the ball off the center electrode to open the switch.



**Note: web site:**  
[www.magnaspherecorp.com](http://www.magnaspherecorp.com)  
**To download video on How it Works.**

**GRI products meet or exceed these minimum general specifications:**

PART NUMBER	LOOP TYPE	ELECTRICAL CONFIG.	FORM	MAXIMUM INITIAL CONTACT RESISTANCE	MAXIMUM CONTACT RATING	MAXIMUM SWITCHING VOLTAGE	MAXIMUM SWITCHING CURRENT
MS150-12	Closed	N/O	A	.400	5 Watts	250 AC/DC	.180*
MS150-T	Closed	N/O	A	.400	5 Watts	250 AC/DC	.180*

\*Higher Maximum Switching Current ratings available.

**CONTACT YOUR G.R.I. DISTRIBUTOR OR CALL:**

GEORGE RISK INDUSTRIES, INC.  
 GRI PLAZA  
 KIMBALL, NE 69145

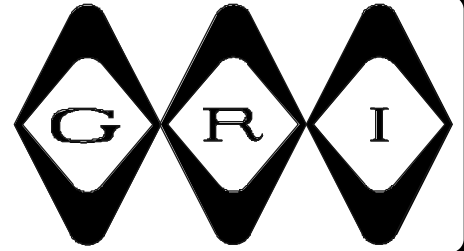


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 WEB SITE: [www.grisk.com](http://www.grisk.com)

# MAGNASPHERE



## Recessed 3/4" Steel Door Switch Set with Magnasphere Technology MS180-12/MS184-12/MS8080-T

- ◆ Higher Level of Security
  - ◆ Spherical Magnetism
- ◆ Resistant to Magnetic Tamper and Defeat
  - ◆ Hermetically Sealed
- ◆ Built-In E.O.L. Resistors and Diodes
- ◆ Switches and Magnets Available Separately
  - ◆ Colors: White, Brown, Gray, Black
  - ◆ Custom Lead Lengths Upon Request
    - ◆ Lifetime Warranty
    - ◆ Standard Gap 3/8"



MS180-12



MS8080-T

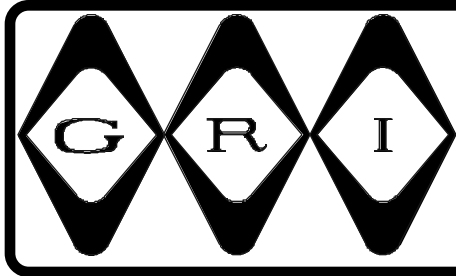
GEORGE RISK INDUSTRIES, INC.  
GRI PLAZA  
KIMBALL, NE 69145



MADE IN U.S.A.

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E-MAIL: [grisales@megavision.com](mailto:grisales@megavision.com)  
WEB SITE: [www.grisk.com](http://www.grisk.com)



# MAGNASPHERE

## INSTALLATION APPLICATIONS:

The G.R.I. MS180-12 is the industry standard 3/4" diameter recessed steel door switch set with 12" leads. MS184-12 is 1" diameter recessed steel door switch set with 12" leads.

## CONSTRUCTION:

Magnasphere's® patented technology utilizes the principal of *Spherical Magnetism*. The heart of the switch is a magnetic sphere, or ball contact. This sphere is housed in a durable metal housing. Completing the switch is a seal that contains the contacting electrode, insulated from the magnetic perimeter by a time proven ceramic to metal bond.

The case or seal provides the second contact point required to complete the electrical circuit. The seal/electrode cap is welded to the housing in an inert atmosphere providing a hermetically sealed contact.

## OPERATION:

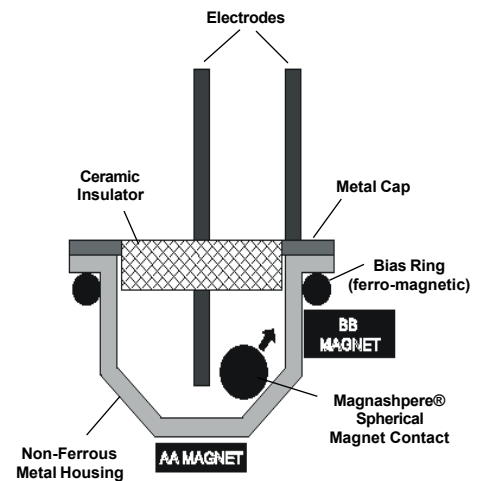
In the normally open position, the magnetic sphere is attracted to the ferromagnetic portion of the seal cap, away from the electrode. Because of this attraction the switch may be positioned in any orientation and will remain open.

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Unlike a reed switch that responds to a magnet within a global activation zone, the Magnasphere® switch responds to a magnet only within a restricted zone. A magnet outside the zone pulls the ball off the center electrode to open the switch.

## PRINCIPLES OF SPHERICAL MAGNETISM:

Finite element analysis shows magnetic flux paths of the Magnasphere® magnetic ball contact. The spherical shape is not polarity sensitive and will be attracted to either pole of the actuating magnet.



**Note: web site:**  
[www.magnaspherecorp.com](http://www.magnaspherecorp.com)  
 To download video on How it Works.

## GRI products meet or exceed these minimum general specifications:

PART NUMBER	LOOP TYPE	ELECTRICAL CONFIG.	FORM	MAXIMUM INITIAL CONTACT RESISTANCE	MAXIMUM CONTACT RATING	MAXIMUM SWITCHING VOLTAGE	MAXIMUM SWITCHING CURRENT
MS180-12	Closed	N/O	A	.400	5 Watts	250 AC/DC	.180*
MS8080-T	Closed	N/O	A	.400	5 Watts	250 AC/DC	.180*

\*Higher Maximum Switching Current ratings available.

## CONTACT YOUR G.R.I. DISTRIBUTOR OR CALL:

GEORGE RISK INDUSTRIES, INC.  
 G.R.I. PLAZA  
 KIMBALL, NE 69145

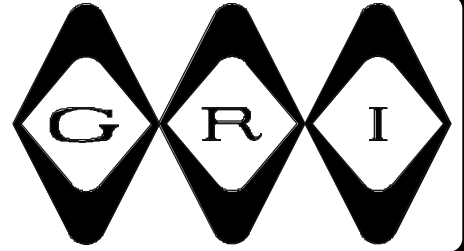


MADE IN U.S.A.

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# MAGNASPHERE

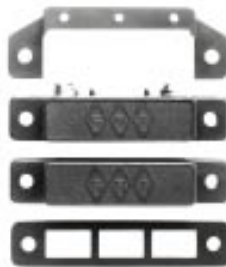


## Surface Mount Switch Set with Magnasphere Technology MS28/MS29 and MS29P

- ◆ Higher Level of Security
  - ◆ Spherical Magnetism
- ◆ Resistant to Magnetic Tamper and Defeat
  - ◆ Hermetically Sealed
  - ◆ Screw Down Flanges
- ◆ Concealed Terminals on MS28
- ◆ Built-in E.O.L. Resistors and Diodes
- ◆ Switches and Magnets Available Separately
  - ◆ Colors: White, Brown, Gray
  - ◆ Private Labeling Upon Request
  - ◆ Lifetime Warranty
  - ◆ Standard Gap 3/8"



MS28A



MS29A



MS29PA

GEORGE RISK INDUSTRIES, INC.  
GRI PLAZA  
KIMBALL, NE 69145



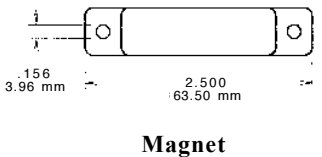
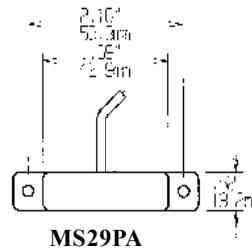
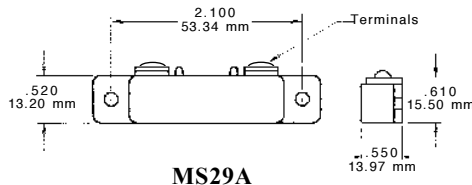
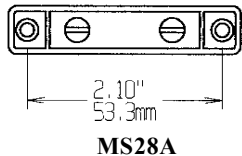
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WEB SITE: [www.grisk.com](http://www.grisk.com)



**INSTALLATION APPLICATIONS:**

This series offers a standard gap of 1/2" inch and can be installed on a steel surface with a minimum gap penalty. The "P" style is a pre-wired switch with 2 feet of conductor cable. A broad range of mounting brackets are also available. (See spec sheet in accessory section of the G.R.I. full line catalog.)



**CONSTRUCTION:**

Magnasphere's® patented technology utilizes the principal of *Spherical Magnetism*. The heart of the switch is a magnetic sphere, or ball contact. This sphere is housed in a durable metal housing. Completing the switch is a seal that contains the contacting electrode, insulated from the magnetic perimeter by a time proven ceramic to metal bond.

The case or seal provides the second contact point required to complete the electrical circuit.

The seal/electrode cap is welded to the housing in an inert atmosphere providing a hermetically sealed contact.

**OPERATION:**

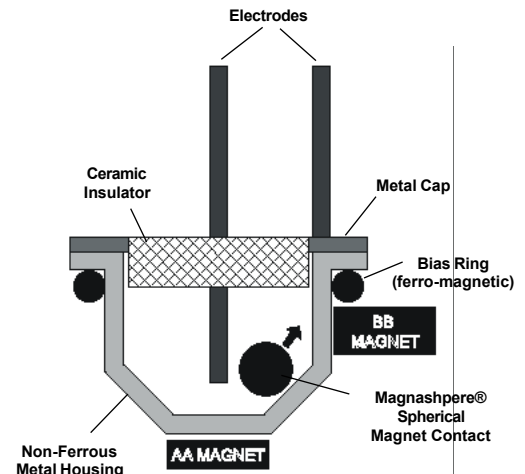
In the normally open position, the magnetic sphere is attracted to the ferromagnetic portion of the seal cap, away from the electrode. Because of this attraction the switch may be positioned in any orientation and will remain open.

When an actuator magnet approaches the switch from the end of the switch opposite the electrode, the magnetic ball is attracted to this field, and "snaps" to the bottom of the case, making contact with the electrode and case, closing the switch.

Unlike a reed switch that responds to a magnet within a global activation zone, the Magnasphere® switch responds to a magnet only within a restricted zone. A magnet outside the zone pulls the ball off the center electrode to open the switch.

**PRINCIPLES OF SPHERICAL MAGNETISM:**

Finite element analysis shows magnetic flux paths of the Magnasphere® magnetic ball contact. The spherical shape is not polarity sensitive and will be attracted to either pole of the actuating magnet.



**Note: web site:**  
[www.magnaspherecorp.com](http://www.magnaspherecorp.com)  
 To download video on How it Works.

**GRI products meet or exceed these minimum general specifications:**

PART NUMBER	LOOP TYPE	ELECTRICAL CONFIG.	FORM	MAXIMUM INITIAL CONTACT RESISTANCE	MAXIMUM CONTACT RATING	MAXIMUM SWITCHING VOLTAGE	MAXIMUM SWITCHING CURRENT
MS28A	Closed	N/O	A	.400	5 Watts	250 AC/DC	.180*
MS29A	Closed	N/O	A	.400	5 Watts	250 AC/DC	.180*
MS29PA	Closed	N/O	A	.400	5 Watts	250 AC/DC	.180*

\*Higher Maximum Switching Current ratings available.

**CONTACT YOUR G.R.I. DISTRIBUTOR OR CALL:**

GEORGE RISK INDUSTRIES, INC.  
 G.R.I. PLAZA  
 KIMBALL, NE 69145

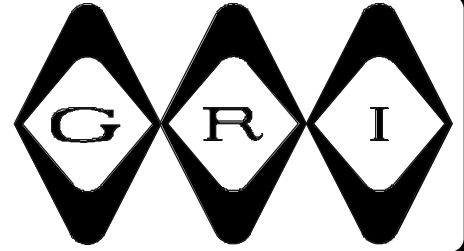


MADE IN U.S.A.

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 (308) 235-4645  
 FAX (308) 235-3561

E-MAIL: [grisales@megavision.com](mailto:grisales@megavision.com)  
 WEB SITE: [www.grisk.com](http://www.grisk.com)

# MAGNASPHERE



## Aluminum Industrial Switch Set with High Security Magnasphere Technology MS4400 Series

- ◆ Higher Level of Security
  - ◆ Spherical Magnetism
- ◆ Resistant to Magnetic Tamper and Defeat
  - ◆ Hermetically Sealed
- ◆ 36" 2-Conductor Vinyl Jacketed Cable (MS4400)
  - ◆ 36" Armored Cable (MS4400-A)
  - ◆ Mounting Hardware Included
- ◆ A Variety of Optional Mounting Brackets Available
- ◆ Built-In E.O.L. Resistors and Diodes Upon Request
  - ◆ Lifetime Warranty
  - ◆ Standard Gap Up to 3/8"



MS4400-A

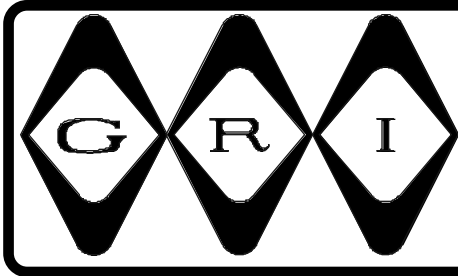
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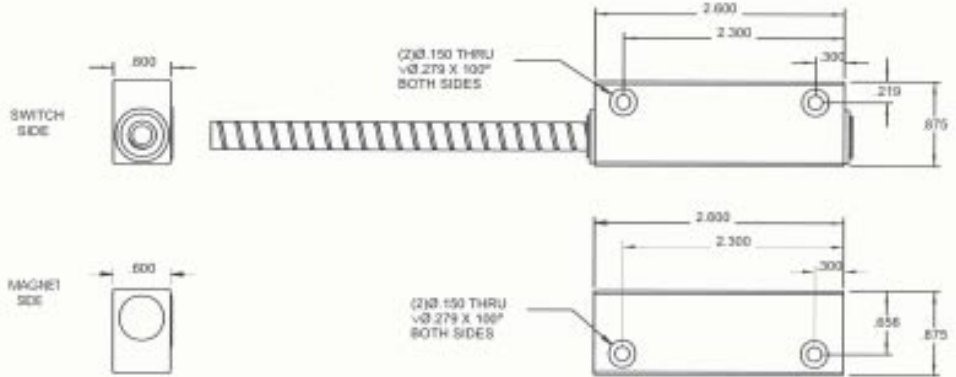
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WEB SITE: [www.grisk.com](http://www.grisk.com)



# MAGNASPHERE

## INSTALLATION APPLICATIONS:

G.R.I.'s MS4400 Switch Series is a heavy duty, weather resistant high security industrial grade contact. As with all high security contacts the gap is significantly reduced. We recommend this switch for solid fitting doors, vaults and safes; and spacer #5226 if mounted on steel; and that the switch and magnet be metered for maximum gap. Please call factory for further installation instructions.



MS4400-A

## CONSTRUCTION:

MagnaspHERE's® patented technology utilizes the principal of *Spherical Magnetism*. The heart of the switch is a magnetic sphere, or ball contact. This sphere is housed in a durable metal housing. Completing the switch is a seal that contains the contacting electrode, insulated from the magnetic perimeter by a time proven ceramic to metal bond.

The case or seal provides the second contact point required to complete the electrical circuit.

The seal/electrode cap is welded to the housing in an inert atmosphere providing a hermetically sealed contact.

## OPERATION:

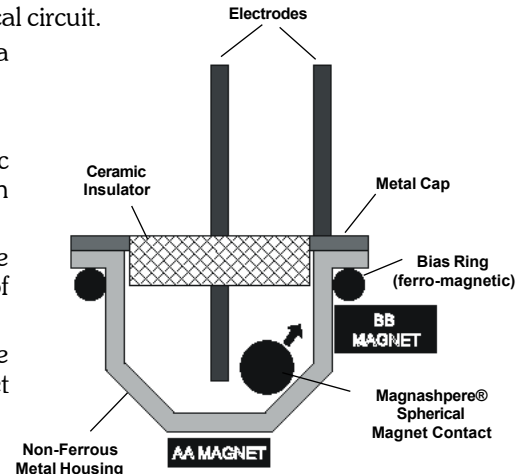
In the normally open position, the magnetic sphere is attracted to the ferromagnetic portion of the seal cap, away from the electrode. Because of this attraction the switch may be positioned in any orientation and will remain open.

When an actuator magnet approaches the switch from the end of the switch opposite the electrode, the magnetic ball is attracted to this field, and "snaps" to the bottom of the case, making contact with the electrode and case, closing the switch.

Unlike a reed switch that responds to a magnet within a global activation zone, the MagnaspHERE® switch responds to a magnet only within a restricted zone. A magnet outside the zone pulls the ball off the center electrode to open the switch.

## PRINCIPLES OF SPHERICAL MAGNETISM:

Finite element analysis shows magnetic flux paths of the MagnaspHERE® magnetic ball contact. The spherical shape is not polarity sensitive and will be attracted to either pole of the actuating magnet.



**Note: web site:**  
[www.magnaspHEREcorp.com](http://www.magnaspHEREcorp.com)  
 To download video on How it Works.

## GRI products meet or exceed these minimum general specifications:

PART NUMBER	LOOP TYPE	ELECTRICAL CONFIG.	FORM	MAXIMUM INITIAL CONTACT RESISTANCE	MAXIMUM CONTACT RATING	MAXIMUM SWITCHING VOLTAGE	MAXIMUM SWITCHING CURRENT
MS4400	Closed	N/O	A	.400	5 Watts	250 AC/DC	.180*
MS4400-A	Closed	N/O	A	.400	5 Watts	250 AC/DC	.180*

\*Higher Maximum Switching Current ratings available.

## CONTACT YOUR G.R.I. DISTRIBUTOR OR CALL:

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 KIMBALL, NE 69145

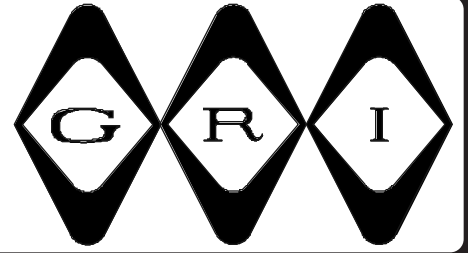


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# MAGNASPHERE



## Special Purpose Pull Apart Switch Set MS4702/MS4702-A

- ◆ Higher Level of Security
  - ◆ Spherical Magnetism
- ◆ Resistant to Magnetic Tamper and Defeat
  - ◆ Hermetically Sealed
- ◆ Heavy Duty For Improved Durability
- ◆ Great for Marinas - Truck Docks - Any Portable Merchandise
  - ◆ 3 Foot Jacketed or Armored Cable
  - ◆ Custom Lead Lengths Upon Request
- ◆ Armored Disconnect Cable Available - See Specialty Section
  - ◆ Gray Only
  - ◆ Lifetime Warranty



MS4702/MS4702A

GEORGERISK INDUSTRIES, INC.  
GRI PLAZA  
KIMBALL, NE 69145



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WEB SITE: [www.grisk.com](http://www.grisk.com)





# MAGNASPHERE

## INSTALLATION APPLICATIONS:

The GRI MS4702-A has three parts: the switch probe, the switch receptacle and the magnet. The MS4702-A is designed for use when standard surface mount security switches won't work due to swinging gates, free moving objects, vehicle protection, worn gates/doors or expanding metal curtains. Now you can protect products and property that is kept outdoors such as recreation vehicles, golf carts, lawn mowers, ladders, truck tractor trailer, motor boats, ATV's or a host of rental equipment. To use the Pull Apart, attach the probe receptacle to a solid surface and anchor it well. Position the receptacle and switch probe so that the probe can pull out of the receptacle easily. Don't connect it at a right angle or upside down. This will delay and/or alter the switch's ability to react to tampering and theft. Connect the appropriate zone from the alarm panel to the switch probe. Thread the armored cable through the item to be protected and insert the probe into the receptacle.

## CONSTRUCTION:

Magnasphere's® patented technology utilizes the principal of *Spherical Magnetism*. The heart of the switch is a magnetic sphere, or ball contact. This sphere is housed in a durable metal housing. Completing the switch is a seal that contains the contacting electrode, insulated from the magnetic perimeter by a time proven ceramic to metal bond.

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## OPERATION:

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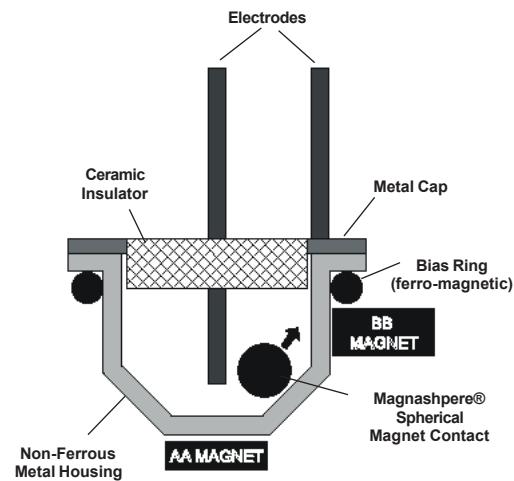
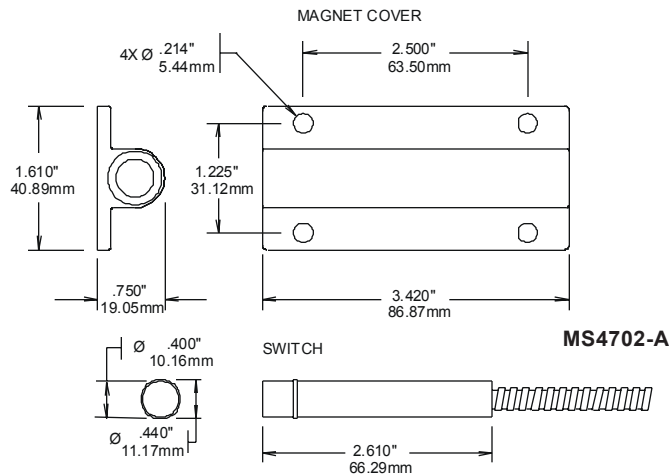
## PRINCIPLES OF SPHERICAL MAGNETISM:

Finite element analysis shows magnetic flux paths of the Magnasphere® magnetic ball contact. The spherical shape is not polarity sensitive and will be attracted to either pole of the actuating magnet.

## Minimum General Specifications:

PART NUMBER	LOOP TYPE	ELECTRICAL CONFIG.	FORM	MAXIMUM INITIAL CONTACT RESISTANCE	MAXIMUM CONTACT RATING	MAXIMUM SWITCHING VOLTAGE	MAXIMUM SWITCHING CURRENT
	Closed	N/O	A	.400	5 Watts	250 AC/DC	.180*

\*Higher Maximum Switching Current ratings available.



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