Biased High Security Switch Sets Overview

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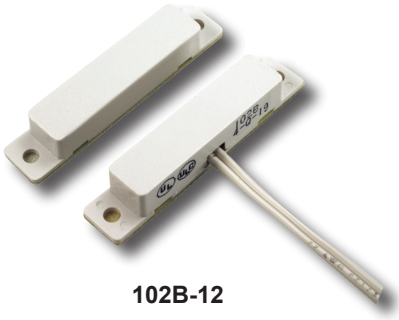
- ♦ Biased high security in a variety of switch case styles
- ♦ 12” leads #22AWG
- ♦ Jacketed or armored cable on industrial switches
- ♦ Longer leads, zip cord or jacketed cable upon request
- ♦ Mounting hardware included
- ♦ Built-in E.O.L. Resisters and Diodes upon request
- ♦ Colors: white, brown or gray
- ♦ Lifetime Warranty
- ♦ Other configurations available - call factory

B4040-12



102B-12

B29-C

Standard operation of a reed switch deals with the magnetic attraction of two paddles when introduced to a magnetic field.

“Biased for high security” begins as a single pole double throw reed switch that is biased into an opposite condition. We begin with one open leg and one closed leg, but in the biasing operation we reverse the open to closed and the closed to open using just enough magnetic field strength to hold them in the opposite positions. We have now created what we refer to as a double tripping switch that can be actuated only inside a specific window of operation. If you bring an actuation magnet towards the switch, notice that at some point dependent on the size of the actuation magnet towards the switch, at some point the switch will release. So the biasing operation has created a maximum distance and a minimum distance of actuation - a “window”. At approximately the center of this window, should a compromising magnet be added, the effect would be similar to moving the actuation magnet to the inside limit of the window and the switch would release creating an alarm.

Continued on back

WARRANTY: Lifetime warranty against workmanship, material and factory defects.

GEORGE RISK INDUSTRIES, INC.
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Proudly Made in U.S.A.

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4400AB

B200-36

B250-36

As to polarity sensitivity, placement of the biasing magnet inside the switch case is by orientation of the north and south pole in line with the longitudinal axis of the actual reed switch. The magnet must be of sufficient strength to overcome and hold the spring tension separating the reed contacts to maintain closure. Arming the field of the actuation magnet negates, or some experts say, opposes that of the biasing magnet, and the contacts are forced apart. In effect, we have applied both a pulling and pushing force to the contact surfaces and established a delicate balance. In doing so, the switch becomes additionally sensitive to compromise which would require the correct north and south approach plus the correct distance adjustment of the compromising magnet (most likely of a different size) to match field strengths. The increased level of security is highly dependent on the polarity and the polarity sensitivity build into this application.

To get a clearer picture, mount your switch to a fixed position. Slowly move the magnet toward the switch and mark the outside actuation point (the make). Now, continue moving toward the switch and mark the inside release point (the break) to establish the window mentioned earlier. Hold the actuation magnet at a point between these two lines. Have an assistant attempt to compromise with an additional magnet. This magnet would likely be a different size and strength than the actuation magnet. Full compromise will require positioning of the additional magnet without interruption of the initial make and then removal of the original actuation magnet again, without interruption to the initial make.

Positioning and relationship of the switch to the actuation magnet are critical. The closer the actuation magnet is to the inside release point of the actuation window, the more difficult the compromise will be.

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