

Magnet Style

Non-Contact Safety Interlock Switches



- Accommodating to misalignment
- Sealed components resist water and dirt
- Coded magnets minimize the risk of intentional defeat
- Three housing styles available for flat or 30 mm barrel mounting
- For safety applications, switch must be used with Gate Monitoring Module, Safety Controller or comparable control system

SI-MAG Magnet Style Safety Switches

| Description | Contacts | Sensor Cable | Switching Distance | | Models | |
|-------------|--------------|--------------|--------------------|----------|---------|--------------|
| | | | Min. ON | Max. OFF | | |
| | Sensor | 1 NO & 1 NC | 3 m | — | — | SI-MAG1SM |
| | Sensor | 1 NO & 1 NC | 3 m | — | — | SI-MAG1SMCO† |
| | Coded Magnet | — | — | 0-3 mm | 3-14 mm | SI-MAG1MM |
| | Coded Magnet | — | — | 0-3 mm | 3-14 mm | SI-MAG1MM90* |
| | Coded Magnet | — | — | 2-8 mm | 8-16 mm | SI-MAG1MMHF |
| | Sensor | 1 NO & 1 NC | 3 m | — | — | SI-MAG2SM |
| | Coded Magnet | 1 NO & 1 NC | — | 0-4 mm | 4-8 mm | SI-MAG2MM |
| | Sensor | 1 NO & 1 NC | 3 m | — | — | SI-MAG3SM |
| | Coded Magnet | — | — | 0-3 mm | 3-7 mm | SI-MAG3MM |

NC = Normally Closed Output, NO = Normally Open Output

Connection options:

For 9 m cable, add suffix W/30 to the 3 m model number (example, SI-MAG1SM W/30).

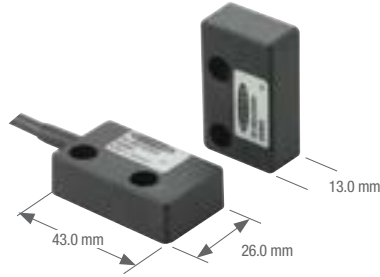
* Difference is in Direction of Approach. See page 646 for more information.

† Cable opposite

NOTE: The sensor and its magnet must be mounted at a minimum distance of 15 mm from any magnetized or ferrous material (example, steel) for proper operation. SFA-IMB1 or SFA-IMB2 can be used as spacers (see page 646). Depending on the installation, multiple brackets may be required.



SI-MAG1SM.. and SI-MAG1MM.. Models



SI-MAG2SM and SI-MAG2MM Models



SI-MAG3SM and SI-MAG3MM Models

SI-MAG Safety Switches Specifications

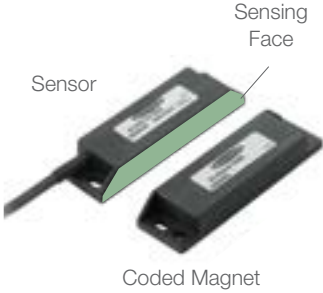
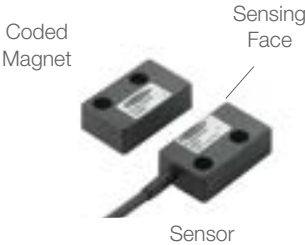

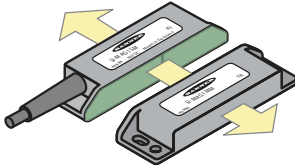
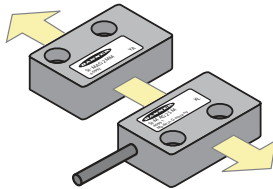
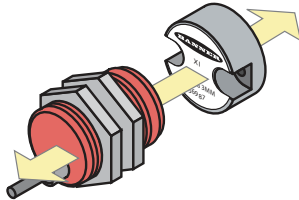
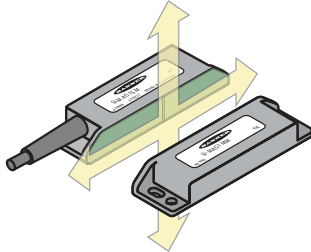
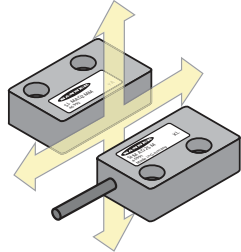
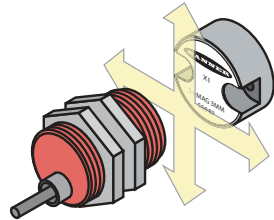
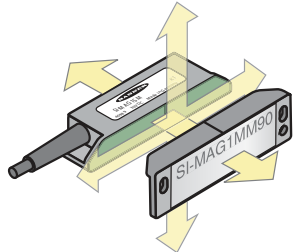
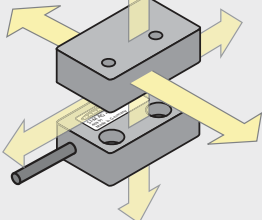
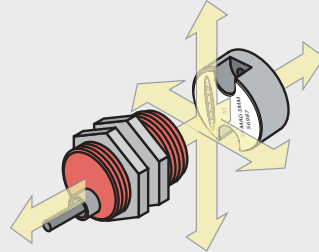
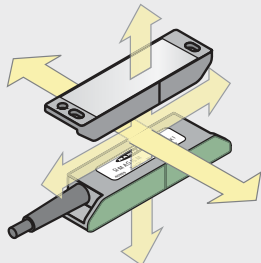
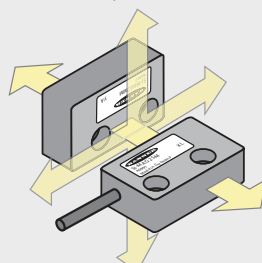
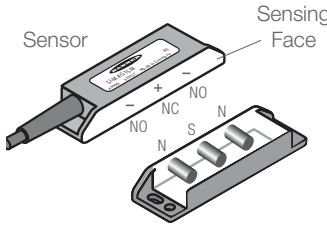
| | |
|---------------------------|---|
| Switching Elements | Three pole-stable reed switches |
| Repeat Switching Accuracy | ± 0.1 mm |
| Construction | Epoxy-encapsulated circuit in polyamide housing |
| Environmental Rating | NEMA 4X; IP67 |
| Switching Capacity | 30 V dc max. @ 0.25 W |
| Operating Temperature | -5 to +70 °C |
| Connections | Integral PVC-jacketed 3 m 4-wire cable. Cable O.D. is 5 mm. Wires are 24 AWG. (0.25 mm) |

NOTE: See page 646 for direction of approach information.

Monitoring Control Module (required for a complete system)

| Image | Description | Models | Product Information |
|---|--|--|---------------------|
|  | <ul style="list-style-type: none"> The gate module monitors up to 20 Banner coded magnets for contact failure or wiring fault Two-channel operation monitors redundant switches on a single guard; one-channel operation monitors single switches on two guards Two redundant output switching channels connect to control-reliable power interrupt circuits and are rated for up to 250 V ac at up to 6 A The reset input can be used for external device monitoring (EDM) The gate monitoring module uses 24 V ac/dc at less than 150 mA | GM-FA-10J | Page 698 |
|  | <ul style="list-style-type: none"> Control system monitors a variety of input devices such as e-stop buttons, rope pulls, enabling devices, protective safety stops, interlocked guards or gates, optical sensors, two-hand controls and safety mats Intuitive programming environment for easy implementation Configure inputs, outputs and functionality of the controller for more usability Base controller allows eight of the 26 inputs to be configured as outputs for efficient terminal utilization Ethernet models available providing up to 64 virtual status outputs, fault diagnostic codes and messages | SC26-2, XS26-2 SC26-2D, XS26-2D SC26-2E, XS26-2E SC26-2DE, XS26-2DE | Page 584 |
|  | <ul style="list-style-type: none"> One controller provides configurable monitoring of multiple safety devices 22 input terminals can monitor both contact-based and PNP solid-state input devices Three pairs of independent solid-state safety outputs can be used with selectable one- or two-channel external device monitoring Ten configurable non-safety status outputs track inputs, outputs, lockout, I/O status and other functions All SC22-3 modules use 24 V dc 10/100 Base TX Ethernet communication option using EtherNet/IP and Modbus TCP protocols (SC22-3E models) | SC22-3-S... SC22-3-C... SC22-3E-S... SC22-3E-C... | Page 592 |

Magnet-Style Interlocks: Direction of Approach for Sensor/Magnet Pairs

| Model SI-MAG1 | Model SI-MAG2 | Model SI-MAG3 |
|---|--|---|
|  <p>Sensing Face</p> <p>Sensor</p> <p>Coded Magnet</p> |  <p>Coded Magnet</p> <p>Sensing Face</p> <p>Sensor</p> |  <p>Coded Magnet</p> <p>Sensor</p> <p>Sensing Face</p> |
| <p>Correct</p> <p>Movement is perpendicular to the sensing face.</p>  | <p>Correct</p> <p>Movement is perpendicular to the sensing face.</p>  | <p>Correct</p> <p>Movement is perpendicular to the sensing face.</p>  |
| <p>Correct</p> <p>Movement is parallel to the sensing face.</p>  | <p>Correct</p> <p>Movement is parallel to the sensing face.</p>  | <p>Correct</p> <p>Movement is parallel to the sensing face.</p>  |
| <p>Correct</p> <p>90° approach of sensor and magnet is approved only for model SI-MAG1MM90.</p>  | <p>Incorrect</p> <p>Label to label approach of sensor and magnet is not possible.</p>  | <p>Incorrect</p> <p>Magnet orientation relative to magnet sensor cable is incorrect.</p>  |
| <p>Incorrect</p> <p>Label to label approach of sensor and magnet is not possible.</p>  | <p>Incorrect</p> <p>90° approach of sensor and magnet is not possible.</p>  | <p>Detail of Interiors</p>  <p>Sensing Face</p> <p>Sensor</p> <p>Coded Magnet</p> |

NOTE: With SI-MAG1C Controller, approach speed for all magnet-style switches must be greater than 0.2 ms.
 With GM-FA-10J Controller, approach speed must be greater than 0.1 ms.