



Interlock Switches

Safety interlock switches respond when a guard opens. Interlock switches feature “positive opening” contacts for high reliability and withstand attempts to override the switch and defeat the system.

Series	Description	Style	Protection Rating	Housing Material
	Magnetic style page 794	Non-contact	IP67	Plastic
	Hinge style page 798	Load bearing and rotating	IP67	Plastic & Metal
	Two piece key actuator style page 806	Flat pack and limit switch	IP65	Plastic & Metal
	Locking style page 811	Spring or solenoid locking	IP67	Plastic & Metal






Magnet Style Non-Contact Safety Interlock Switches

Magnet Style Safety Interlock Switches are 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 systems

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

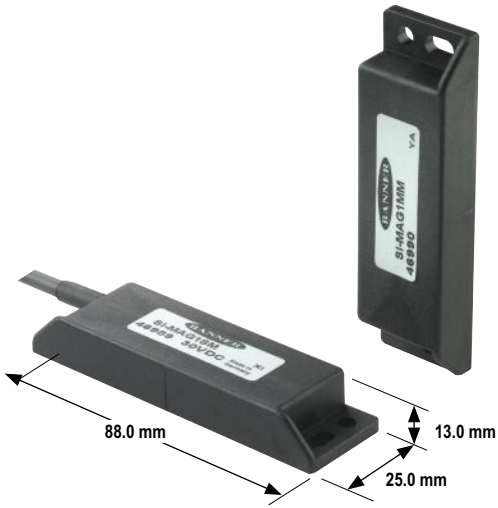
Connection options:

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

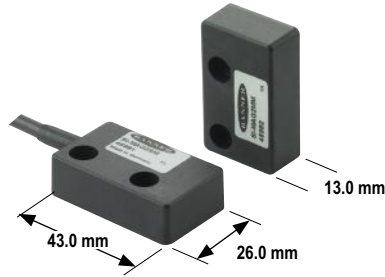
* Difference is in direction of Approach. See page 764 for more information.

† 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 764). 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

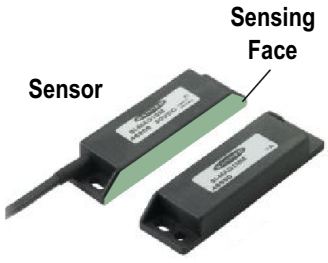
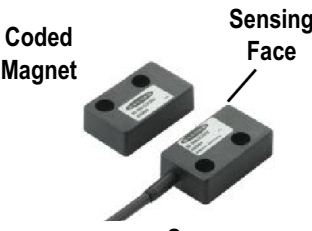
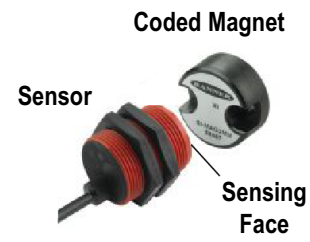
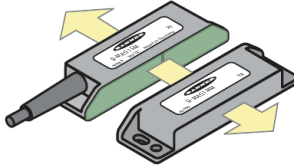
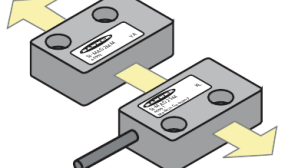
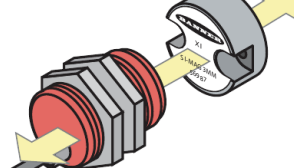
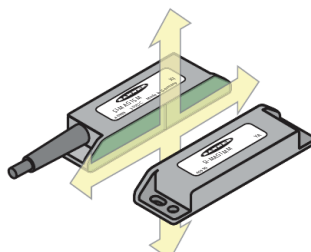
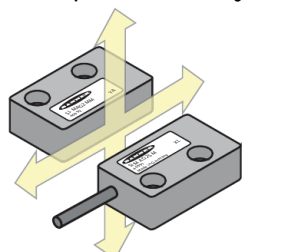
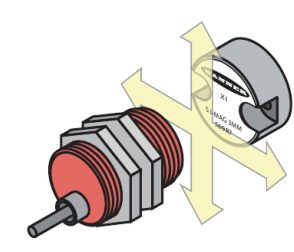
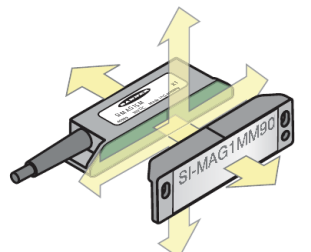
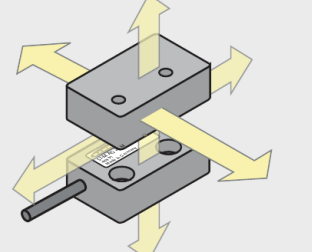
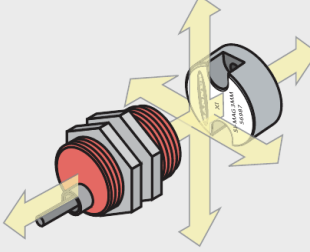
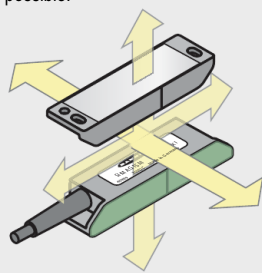
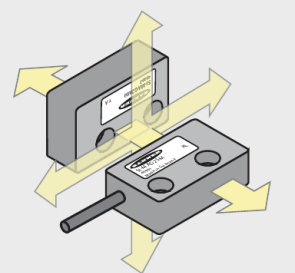
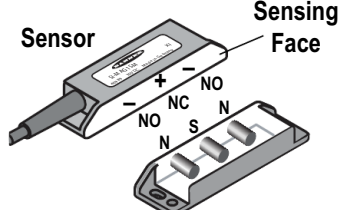
Switching Elements	Three pole-stable reed switches
Repeat Switching Accuracy	± 0.1 mm
Construction	Epoxy-encapsulated circuit in polyamide housing
Environmental Rating	NEMA 4X; IP67
Switching Capacity	30 V dc max. @ 0.25 W
Operating Temperature	-5° to +70° C
Connections	Integral PVC-jacketed 3 m 4-wire cable. Cable O.D. is 5 mm. Wires are 24 AWG. (0.25 mm ²)

NOTE: See page 797 for direction of approach information.

Monitoring Control Module (required for a complete system)

	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 250V 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 746
	<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 714
	<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 3 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 722

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.


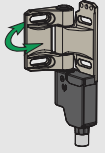

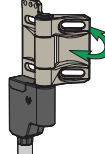

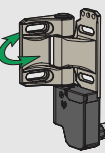

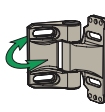



SI-HG63 Hinge Style Switches


SI-HG63 Hinge Style Switches are load bearing and operate to a full 270° range of motion with safety switching point.

- Safety switching point is adjustable and repositionable
- Housing is constructed of corrosion-resistant stainless steel or zinc die-cast
- Design meets positive opening requirements for safety interlocks (IEC 60947-5-1)
- Right-hinge QD, left-hinge QD, and right-angle QD hinge models available
- High degree of tamper-resistances

SI-HG63 Hinge Style Switches, 63 mm

Actuator Type	Contact(s)	Construction	Models
 In-line QD Integral load bearing	 2 NC & 1 NO	Stainless Steel	SI-HG63FQDR
		Zinc Die-Cast	SI-HGZ63FQDR
 In-line QD Integral load bearing	 2 NC & 1 NO	Stainless Steel	SI-HG63FQDL
		Zinc Die-Cast	SI-HGZ63FQDL
 Right-angle QD Integral load bearing	 2 NC & 1 NO	Stainless Steel	SI-HG63FQDRR
		Zinc Die-Cast	SI-HGZ63FQDRR
 Blank hinge	 —	Stainless Steel	SI-HG63A
		Zinc Die-Cast	SI-HGZ63A

 Hinge 270° NC = Normally closed contact, NO = Normally open contact







 **Connection options:** A model with a QD requires a mating cordset. (see page 799).


For contact/switching diagrams see page 824.

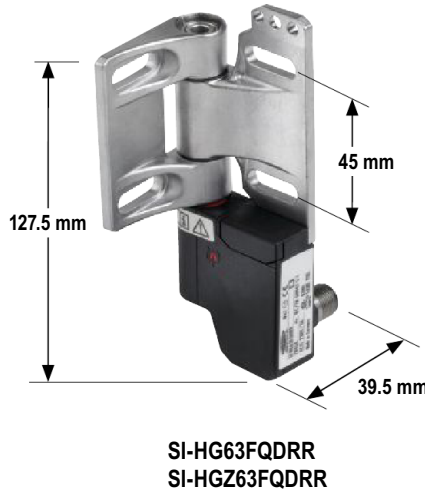
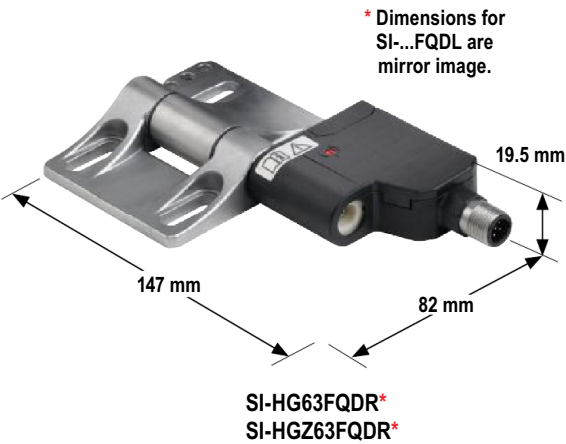
Cordsets

Micro QD to Flying Leads



See page 920

Length	Threaded 6-Pin	
	Straight	Right-Angle
1.83 m	 MQEAC-606	 MQEAC-606RA
4.57 m	 MQEAC-615	 MQEAC-615RA
9.14 m	 MQEAC-630	 MQEAC-630RA

 Additional cordset information available. See page 902



SI-HG63 Hinge Style Switches Specifications

Contact Rating	3 A @ 230V ac max., 1.0 A @ 24V dc max. 2.5 kV max. transient tolerance
European Rating	U _i = 250 V, U _e = 230 V ac, 24 V dc, I _{the} = 4 A Utilization categories: AC-15: U _e /I _e 230 V / 3A; DC-13: U _e /I _e 24 V / 1A (IEC/EN 90497-5-1)
Switching Frequency	Max. 300 operations/h (5 operations per minute)
Switching Angle	NC contact: ±3° NO contact: ±9° Tolerance for all angles: 1.5°
Mechanical Life	1 million operations (Excessive loading (force) and/or vibration, as well as improper installation, can reduce the service life)
Short Circuit Protection	4 amp Slow Blow. Recommended external fusing or overload protection.
Operating Range	0° to 270°
Wire Connections	6-pin Micro-style quick-disconnect fitting (M12 Dual-Key-Way). Cordsets are ordered separately. See page 920.
Construction	SI-HG63.. Hinge: Cast Stainless (X22CrNi 17), Switch: PBT SI-HGZ63.. Hinge: Zinc Die Cast (Nickel Finish), Switch: PBT
Environmental Rating	IEC IP67 acc. IEC/EN60529
Operating Conditions	Temperature: -25° to +70° C (connecting cable permanently mounted; no freezing over/no condensation)
Weight	SI-HG63.. ≈ 0.45 kg, SI-HG63A ≈ 0.27 kg SI-HGZ63.. ≈ 0.5 kg, SI-GHZ63A ≈ 0.22 kg
Application Note	To avoid excessive radial stress in applications containing large doors, the hinge switch should be mounted either in pairs of two, or in conjunction with a blank hinge (see page 797).
Certifications	 
Contact configuration and Switching Diagram	SD001 (p. 824)









SI-HG80

Hinge Style Switches

SI-HG80 Hinge Style Switches are load bearing and operate to a full 180° range of motion.


- Housing is constructed of corrosion-resistant zinc die-cast
- One-piece switch eliminates need for alignment, engagement and risk of breakage of a separate actuator
- Design meets positive opening requirements for safety interlocks (IEC 60947-5-1)
- High degree of tamper-resistances

SI-HG80 Hinge Style Switches, 80 mm

Actuator Type	Contact(s)	Connection	Models
 In-line QD Integral load bearing 	SPDT (Form C)	4-pin Micro QD	SI-HG80DQD
 Right-angle QD Integral load bearing 	SPDT (Form C)	4-pin Micro QD	SI-HG80DQDR
 Blank hinge 	—	—	SI-HG80A

 Hinge 180°

SPDT = Single-Pole, Double-Throw Contacts







 **Connection options:** A model with a QD requires a mating cordset. (see page 801).


For contact/switching diagrams see page 824.

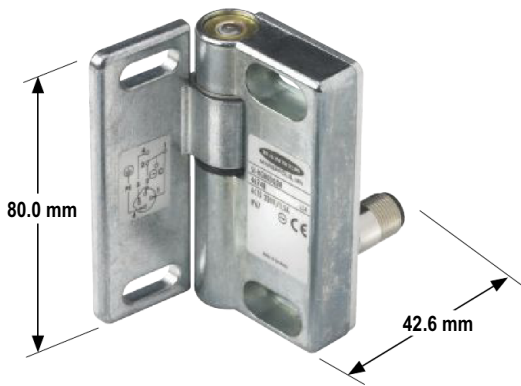
Cordsets

Micro QD to Flying Leads

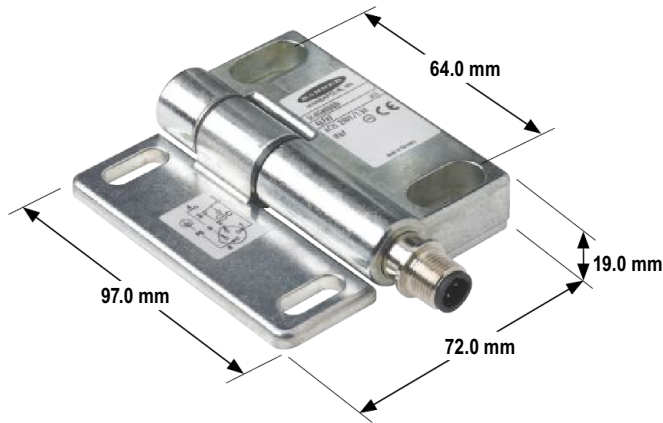
See page 920

Length	Threaded 4-Pin	
	Straight	Right-Angle
1.83 m	 MQEAC-406	 MQEAC-406RA
4.57 m	 MQEAC-415	 MQEAC-415RA
9.14 m	 MQEAC-430	 MQEAC-430RA

 Additional cordset information available. See page 902




SI-HG80DQDR



SI-HG80DQD

SI-HG80 Hinge Style Switches Specifications

Contact Rating	3 A @ 250 V ac max., 0.5 A @ 60 V dc max. 2.5 kV max. transient tolerance NEMA A300 P300
European Rating	Utilization categories: AC15 and DC13 (IEC 90497-5-1) $U_i = 250$ V ac, $I_{th} = 3$ A
Minimum Switching Speed	20 operations per minute
Mechanical Life	1 million operations
Short Circuit Protection	6 amp Slow Blow, 10 amp Fast Blow. Recommended external fusing or overload protection.
Force Exerted by Guard per Switch	Axial: 750 N max. Radial: 1000 N max.
Operating Range	0° to 180°
Wire Connections	4-pin Micro-style quick-disconnect (QD) fitting. Cordsets are ordered separately. See page 920.
Construction	Zinc Die-cast (GD-Zn)
Environmental Rating	NEMA 4; IP67
Operating Conditions	Temperature: -25° to +70° C
Weight	0.40 kg
Application Notes	To avoid excessive radial stress in applications containing large doors, the hinge switch should be mounted either in pairs of two, or in conjunction with a blank hinge.
Certifications	
Contact Configuration and Switching Diagrams	SD002 (p. 824)


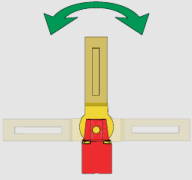

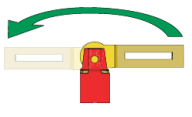

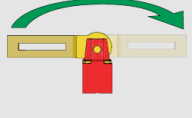


SI-LS32H Hinge Style Switches

SI-LS31H Hinge Style Switches have a built-in hinged lever actuator that mounts to a hinged door or flap to detect it is being opened.

- Actuator head rotates in 90° increments
- Built-in hinge lever attaches to doors or flaps, which open 90° in one direction
- Housing is constructed of glass reinforced thermoplastic with plated steel actuator
- One-piece switch eliminates need for alignment, engagement and risk of breakage of a separate actuator
- Design meets positive opening requirements for safety interlocks (IEC 60947-5-1)

SI-LS31H Hinge Lever Style Switches, 31 mm

Actuator Type		Contact(s)	Models*
 Vertical Hinged Lever ± 90°		1 NC & 1 NO	SI-LS31HGD
		2 NC	SI-LS31HGE
 Right-Hand Hinged Lever 180°		1 NC & 1 NO	SI-LS31HGRD
		2 NC	SI-LS31HGRE
 Left-Hand Hinged Lever 180°		1 NC & 1 NO	SI-LS31HGLD
		2 NC	SI-LS31HGLE



Hinge 90°



One-Directional 180°



One-Directional 180°

NC = Normally Closed Contact, NO = Normally Open Contact

* Contact factory for integral quick-disconnect (QD) and pigtail QD options.


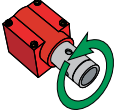



SI-LS31R Hinge Style Switches

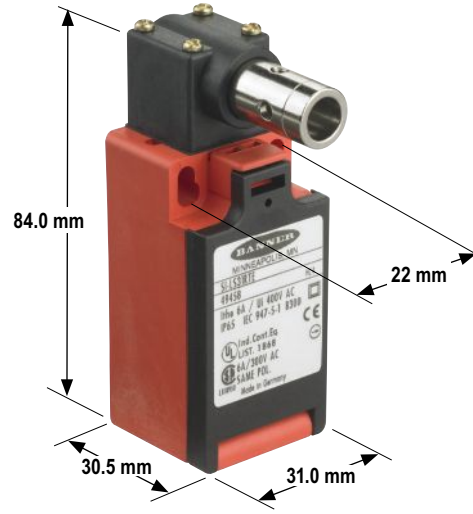
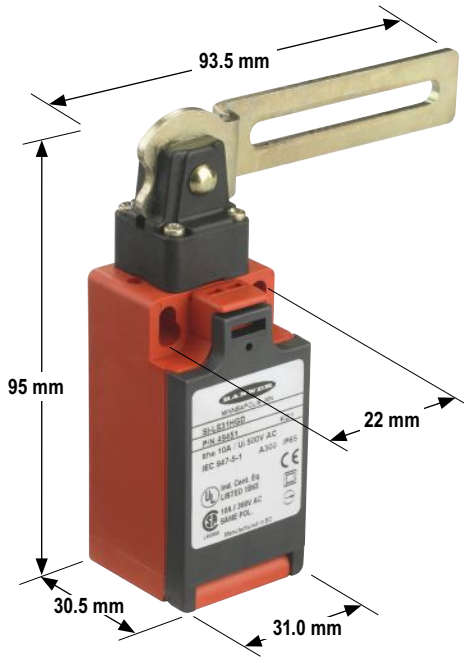
SI-LS31R Hinge Style Switches are a rotary hinge style where the actuator connects directly to door hinge.

- Actuator head rotates in 90° increments
- Rotating actuator connects directly to door hinge
- Housing is constructed of glass reinforced thermoplastic with plated steel actuator
- One-piece switch eliminates need for alignment, engagement and risk of breakage of a separate actuator
- Design meets positive opening requirements for safety interlocks (IEC 60947-5-1)

SI-LS31R Rotary Hinge Style Switches, 31 mm

Actuator Type	Contact(s)	Models*
 Rotary Shaft	1 NC & 1 NO	SI-LS31RTD
	2 NC	SI-LS31RTE
 360° Rotary	NC = Normally Closed Contact, NO = Normally Open Contact	

* Contact factory for integral quick-disconnect (QD) and pigtail QD options.



SI-LS31 Hinge Style Switches Specifications

Contact Rating	10A @ 24 V ac, 10A @ 110 V ac, 6A @ 230 V ac, 6A @ 24 V dc	2.5 kV max. transient tolerance	NEMA A300 P300															
European Rating	<p>Utilization categories: AC15 and DC13</p> <p>$U_i = 500V$ ac</p> <p>$I_{th} = 10A$</p>	<table border="1"> <thead> <tr> <th colspan="3">40-60 Hz</th> </tr> <tr> <th>U_i V</th> <th>$I_{c/AC-15}$ A</th> <th>$I_{c/DC-13}$ A</th> </tr> </thead> <tbody> <tr> <td>24</td> <td>10</td> <td>6</td> </tr> <tr> <td>110</td> <td>10</td> <td>1</td> </tr> <tr> <td>230</td> <td>6</td> <td>.4</td> </tr> </tbody> </table>	40-60 Hz			U_i V	$I_{c/AC-15}$ A	$I_{c/DC-13}$ A	24	10	6	110	10	1	230	6	.4	
40-60 Hz																		
U_i V	$I_{c/AC-15}$ A	$I_{c/DC-13}$ A																
24	10	6																
110	10	1																
230	6	.4																
Contact Material	Silver-nickel alloy																	
Maximum Switching Speed	50 operations per minute																	
Mechanical Life	1 million operations																	
Required Actuation Force	SI-LS31R models: 10 N cm SI-LS31H models: 15 N cm																	
Short Circuit Protection	6 amp Slow Blow, 10 amp Fast Blow. Recommended external fusing or overload protection.																	
Wire Connections	Screw terminals with pressure plates accept the following wire sizes – Stranded and solid: 20 AWG (0.5 mm ²) to 16 AWG (1.5 mm ²) for one wire Stranded: 20 AWG (0.5 mm ²) to 18 AWG (1.0 mm ²) for two wires																	
Cable Entry	M20 x 1.5 threaded entrance	Adapter supplied to convert from M20 x 1.5 to 1/2" - 14 NPT threaded entrance																
Construction	Glass fiber-reinforced thermoplastic UL94-VO rating; plated steel actuator																	
Environmental Rating	IP65																	
Operating Conditions	Temperature: -30° to +80° C																	
Weight	0.09 Kg																	
Certifications																		
Contact Configuration and Switching Diagrams	SI-LS31R models: SD009 and SD010 (p. 825) SI-LS31H models: SD003, SD004, SD005, SD006, SD007 and SD008 (p. 824)																	



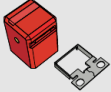
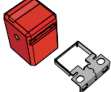
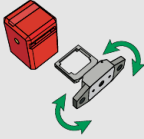
SI-LS100

Non-Locking Plastic Safety Interlock Switches

Mechanically coded actuators minimize intentional tampering or defeat.

- 100 mm plastic style switch
- Rotating head requires no tools
- Limit switch style
- Actuator engagement from four side or four top positions

SI-LS100 Plastic Style Switches (kits), 100 mm

Actuator Type	Interlock	Contact(s)	Kit Model*
SI-QS-SSA-2 Straight Rigid In-Line 	SI-LS100F	2 NC & 1 NO	SI-LS100SF
SI-QS-SSA-3 Rigid In-Line 	SI-LS100F	2 NC & 1 NO	SI-LS100SRAF
 SI-QS-SSU Flexible In-Line	SI-LS100F	2 NC & 1 NO	SI-LS100MRFF



Multi-Directional

NC = Normally Closed Contact,

NO = Normally Open Contact

* A kit contains an interlock and actuator. Individual interlocks (without actuator) are for replacement purposes only.
Contact factory for integral quick-disconnect (QD) and pigtail QD options.

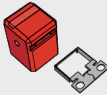
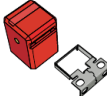

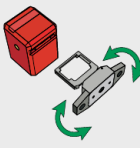
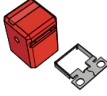
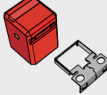

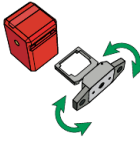



SI-LS83 Non-Locking Plastic Safety Interlock Switches

Mechanically coded actuators minimize intentional tampering or defeat.

- 83 mm plastic style switch
- Rotating head requires no tools
- Limit switch style
- Actuator engagement from four side or four top positions

SI-LS83 Plastic Style Switches (kits), 83 mm

Actuator Type	Interlock	Kit Model*
SI-QS-SSA-2 Straight Rigid In-Line 	SI-LS83D	1 NC & 1 NO SI-LS83SD
SI-QS-SSA-3 Rigid In-Line 	SI-LS83D	1 NC & 1 NO SI-LS83SRAD
 SI-QS-SSU Flexible In-Line 	SI-LS83D	1 NC & 1 NO SI-LS83MRFD
SI-QS-SSA-2 Straight Rigid In-Line 	SI-LS83E	2 NC SI-LS83SE
SI-QS-SSA-3 Rigid In-Line 	SI-LS83E	2 NC SI-LS83SRAE
 SI-QS-SSU Flexible In-Line 	SI-LS83E	2 NC SI-LS83MRFE

 Multi-Directional
 NC = Normally Closed Contact, NO = Normally Open Contact

* A kit contains an interlock and actuator. Individual interlocks (without actuator) are for replacement purposes only. Contact factory for integral quick-disconnect (QD) and pigtail QD options.



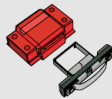

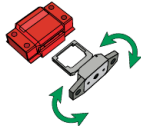
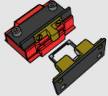
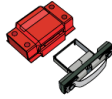

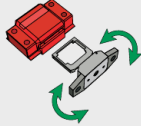
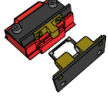
SI-QS90

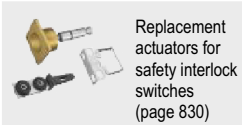
Non-Locking Plastic Safety Interlock Switches

Mechanically coded actuators minimize intentional tampering or defeat.

- 90 mm flat-pack style switch
- Rotating head requires no tools
- Rotating head allows actuator engagement from front or back or either of two top positions

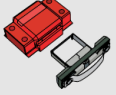

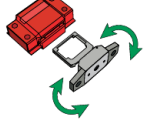
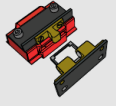
SI-QS90 Flat-Pack Style Switches(kits), 90 mm


Actuator Type	Interlock	Contact(s)	Kit Model*
SI-QS-SSA-4 Rigid In-Line 	SI-QS90D	1 NC & 1 NO	SI-QS90MD
 SI-QS-SSU Flexible In-Line 	SI-QS90D	1 NC & 1 NO	SI-QS90MFD
SI-QS-SSA Rigid In-Line & SI-QS-100 High-force Accessory 	SI-QS90D	1 NC & 1 NO	SI-QS90MD-100 (High-Force)
SI-QS-SSA-4 Rigid In-Line 	SI-QS90E	2 NC	SI-QS90ME
 SI-QS-SSU Flexible In-Line 	SI-QS90E	2 NC	SI-QS90MFE
SI-QS-SSA Rigid In-Line & SI-QS-100 High-force Accessory 	SI-QS90E	2 NC	SI-QS90ME-100 (High-Force)



Replacement actuators for safety interlock switches (page 830)

SI-QS90 Flat-Pack Style Switches(kits), 90 mm

Actuator Type	Interlock	Contact(s)	Kit Model*
<p>SI-QS-SSA-4 Rigid In-Line</p> 	SI-QS90F	2 NC & 1 NO	SI-QS90MF
 <p>SI-QS-SSU Flexible In-Line</p> 	SI-QS90F	2 NC & 1 NO	SI-QS90MFF
<p>SI-QS-SSA Rigid In-Line & SI-QS-100 High-force Accessory</p> 	SI-QS90F	2 NC & 1 NO	SI-QS90MF-100 (High-Force)

 Multi-Directional NC = Normally Closed Contact, NO = Normally Open Contact

* A kit contains an interlock and actuator. Individual interlocks (without actuator) are for replacement purposes only.
Contact factory for integral quick-disconnect (QD) and pigtail QD options.

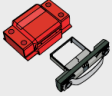

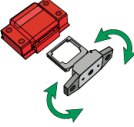
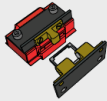


SI-QS75 Non-Locking Plastic Safety Interlock Switches

Mechanically coded actuators minimize intentional tampering or defeat.

- 75 mm flat-pack style switch
- Rotating head requires no tools
- Flat pack and limit switch styles
- Rotating head allows actuator engagement from front or back or either of two top positions

SI-QS75 Flat-Pack Style Switches (kits), 75 mm

Actuator Type	Interlock	Contact(s)	Kit Model*
SI-QS-SSA-4 Rigid In-Line 	SI-QS75C	1 NC	SI-QS75MC
 SI-QS-SSU Flexible In-Line 	SI-QS75C	1 NC	SI-QS75MFC
SI-QS-SSA Rigid In-Line & SI-QS-100 High-force Accessory 	SI-QS75C	1 NC	SI-QS75MC-100 (High-Force)



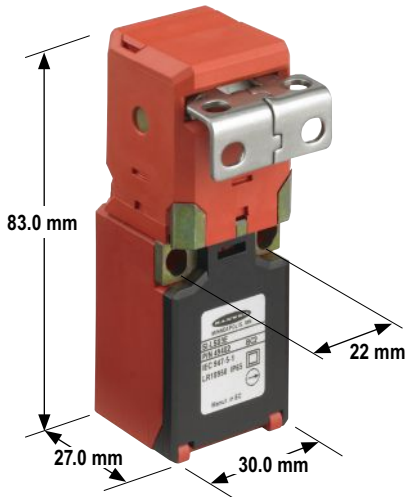
Multi-Directional

NC = Normally Closed Contact,

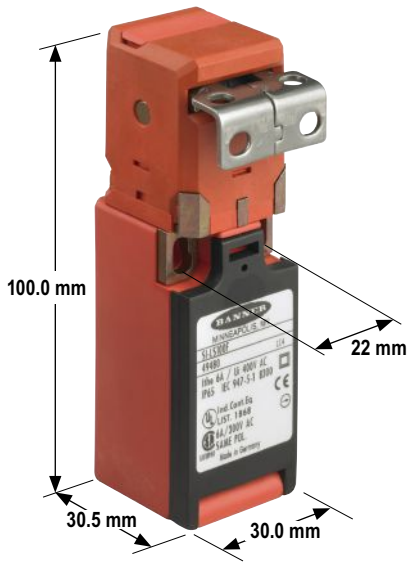
NO = Normally Open Contact

* A kit contains an interlock and actuator. Individual interlocks (without actuator) are for replacement purposes only.
Contact factory for integral quick-disconnect (QD) and pigtail QD options.

SI-LS83 and SI-LS100
Plastic Style Switches



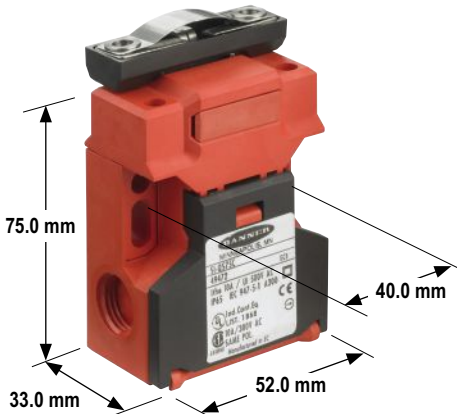
SI-LS83 Models



SI-LS100 Models

(both models shown with right-angle rigid in-line actuator)

SI-QS75 and SI-QS90
Flat-Pack Style Switches






SI-QS75 Models






SI-QS90 Models

(both models shown with rigid in-line actuator)

SI-LS83 and SI-LS100 Plastic Style Switches Specifications

Contact Rating	10A @ 24 V ac, 10A @ 110 V ac, 6A @ 230 V ac, 6A @ 24 V dc 2.5 kV max. transient tolerance NEMA A300 P300																
European Rating	Utilization categories: AC15 and DC13 (IEC 60947-5-1) Switches with 1 & 2 contact pairs: $U_i = 500V$ ac, $I_{th} = 10A$ Switches with 3 contact pairs: $U_i = 400V$ ac, $I_{th} = 5A$	<table border="1"> <thead> <tr> <th colspan="3">40-60 Hz</th> </tr> <tr> <th>U_i V</th> <th>$I_{th}/AC-15$ A</th> <th>$I_{th}/DC-13$ A</th> </tr> </thead> <tbody> <tr> <td>24</td> <td>10</td> <td>6</td> </tr> <tr> <td>110</td> <td>10</td> <td>1</td> </tr> <tr> <td>230</td> <td>6</td> <td>.4</td> </tr> </tbody> </table>	40-60 Hz			U_i V	$I_{th}/AC-15$ A	$I_{th}/DC-13$ A	24	10	6	110	10	1	230	6	.4
40-60 Hz																	
U_i V	$I_{th}/AC-15$ A	$I_{th}/DC-13$ A															
24	10	6															
110	10	1															
230	6	.4															
Contact Material	Silver-nickel alloy																
Maximum Switching Speed	30 operations per minute																
Maximum Actuator Speed	1 m/second																
Mechanical Life	1 million operations																
Minimum Actuator Engagement Radius	In-line actuators: 150 mm Flexible actuators: 50 mm in all directions																
Actuation Extraction Force	12 N																
Short Circuit Protection	6 amp Slow Blow, 10 amp Fast Blow. Recommended external fusing or overload protection.																
Wire Connections	Stranded and solid: 20 AWG (0.5 mm ²) to 18 AWG (1.0 mm ²) for one wire Stranded: 20 AWG (0.5 mm ²) to 18 AWG (1.0 mm ²) for two wires																
Cable Entry	M20 x 1.5 for SI-LS100 and M16 x 1.5 for SI-LS83 threaded entrance. Adapter supplied to convert to 1/2"- 14 NPT threaded entrance.																
Construction	Glass fiber-reinforced thermoplastic UL94-VO rating																
Environmental Rating	IP65 Note: Addition of a No. 3 x 1/4" screw (max) to the wiring access door increases sealing to IP67; NEMA 4X																
Operating Conditions	Temperature: -30° to +80° C																
Weight	SI-LS83 models: 0.12 kg SI-LS100 models: 0.13 kg																
Certifications	  																
Contact Configuration and Switching Diagrams	SI-LS100 models: SD011 (p. 825) SI-LS83 models: SD012 and SD013 (p. 825)																

SI-QS75 and SI-QS90 Flat-Pack Style Switches Specifications

Contact Rating	10A @ 24V ac, 10A @ 110V ac, 6A @ 230V ac, 6A @ 24V dc 2.5 kV max. transient tolerance NEMA A300 P300																
European Rating	Utilization categories: AC15 and DC13 (IEC 60947-5-1) Switches with 1 & 2 contact pairs: $U_i = 500V$ ac, $I_{th} = 10A$ Switches with 3 contact pairs: $U_i = 400V$ ac, $I_{th} = 5A$	<table border="1"> <thead> <tr> <th colspan="3">40-60 Hz</th> </tr> <tr> <th>U_i V</th> <th>I_{th}/AC-15 A</th> <th>I_{th}/DC-13 A</th> </tr> </thead> <tbody> <tr> <td>24</td> <td>10</td> <td>6</td> </tr> <tr> <td>110</td> <td>10</td> <td>1</td> </tr> <tr> <td>230</td> <td>6</td> <td>.4</td> </tr> </tbody> </table>	40-60 Hz			U_i V	I_{th} /AC-15 A	I_{th} /DC-13 A	24	10	6	110	10	1	230	6	.4
40-60 Hz																	
U_i V	I_{th} /AC-15 A	I_{th} /DC-13 A															
24	10	6															
110	10	1															
230	6	.4															
Contact Material	Silver-nickel alloy																
Maximum Switching Speed	30 operations per minute																
Maximum Actuator Speed	1 m/second																
Mechanical Life	1 million operations																
Minimum Actuator Engagement Radius	In-line actuators: 150 mm Flexible actuators: 50 mm in all directions																
Actuation Extraction Force	High-Force models: adjustable from 50-100 N All others: 10 N																
Short Circuit Protection	6 amp Slow Blow, 10 amp Fast Blow. Recommended external fusing or overload protection.																
Wire Connections	Screw terminals with pressure plates accept the following wire sizes – For switches with one or two contacts: Stranded and solid: 20 AWG (0.5 mm ²) to 16 AWG (1.5 mm ²) for one wire Stranded: 20 AWG (0.5 mm ²) to 18 AWG (1.0 mm ²) for two wires For switches with three contacts: Stranded and solid: 20 AWG (0.5 mm ²) to 18 AWG (1.0 mm ²) for one wire Stranded: 20 AWG (0.5 mm ²) to 18 AWG (1.0 mm ²) for two wires																
Cable Entry	M20 x 1.5 for SI-QS90 and M16 x 1.5 for SI-QS75 threaded entrance. Adapter supplied to convert to 1/2" - 14 NPT threaded entrance.																
Construction	Glass fiber-reinforced thermoplastic UL94-VO rating																
Environmental Rating	IP65 Note: Addition of a No. 3 x 1/4" screw (max) to the wiring access door increases sealing to IEC IP67; NEMA 4X																
Operating Conditions	Temperature: -30° to +80° C																
Weight	SI-QS75 models: 0.11 kg SI-QS90 models: 0.13 kg																
Application Notes	Models with one and two contacts have three cable entry locations (bottom and two sides); models with three contacts have two cable entry locations (two sides). All entry locations are sealed with knockouts. To remove knockouts, thread the supplied M16 x 1.5 or M20 x 1.5 to 1/2" - 14 NPT conduit adapter or optional M16 x 1.5 or M20 x 1.5 cable gland into one of the threaded entry locations. The knockout will break open just before the adapter or cable gland bottoms out.																
Certifications	  																
Contact Configuration and Switching Diagrams	SI-QS75 models: SD014 (p. 826) SI-QS90 models: SD015, SD016 and SD017 (p. 826)																



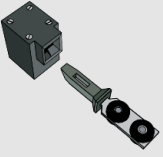
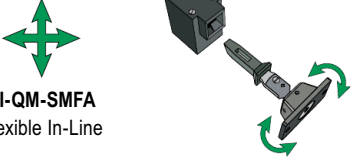
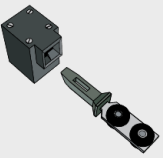
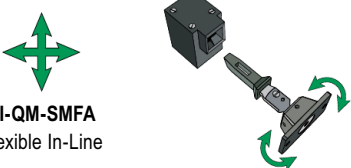
SI-LM40MKH

Non-Locking Metal Safety Interlock Switches

Mechanically coded actuators minimize intentional tampering or defeat.

- Rigid or flexible in-line actuators
- Actuator head rotates to four possible positions in 90° increments
- Rugged metal housing
- Design meets positive opening requirements for safety interlocks (IEC 60947-5-1)

SI-LM40MKH Limit Switch Style (kits), 40 mm

Actuator Type	Interlock	Contact(s)	Kit Model*
 <p>SI-QM-SSA Straight Rigid In-Line</p>	SI-LM40KHD	1 NO & 1 NC	SI-LM40MKHD
 <p>SI-QM-SMFA Flexible In-Line</p>	SI-LM40KHD	1 NO & 1 NC	SI-LM40MKHFD
 <p>SI-QM-SSA Straight Rigid In-Line</p>	SI-LM40KHE	2 NC	SI-LM40MKHE
 <p>SI-QM-SMFA Flexible In-Line</p>	SI-LM40KHE	2 NC	SI-LM40MKHFE



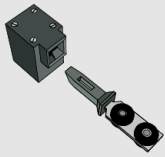

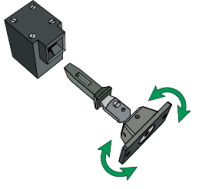
Multi-Directional

NC = Normally Closed Contact,

NO = Normally Open Contact

* A kit contains an interlock and actuator. Individual interlocks (without actuator) are for replacement purposes only. Contact factory for integral quick-disconnect (QD) and pigtail QD options.

SI-LM40MKH Limit Switch Style (kits), 40 mm (cont'd)

Actuator Type		Interlock	Contact(s)	Kit Model*
<p>SI-QM-SSA Straight Rigid In-Line</p> 		SI-LM40KHF	2 NC & 1 NO	SI-LM40MKHF
<p> SI-QM-SMFA Flexible In-Line</p> 		SI-LM40KHF	2 NC & 1 NO	SI-LM40MKHFF



Multi-Directional

NC = Normally Closed Contact,

NO = Normally Open Contact

* A kit contains an interlock and actuator. Individual interlocks (without actuator) are for replacement purposes only. Contact factory for integral quick-disconnect (QD) and pigtail QD options.

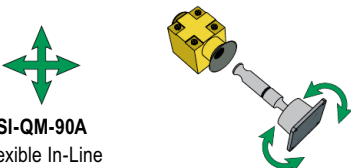


SI-LM40MKV Non-Locking Metal Safety Interlock Switches

Mechanically coded actuators minimize intentional tampering or defeat.

- In-line Spring-loaded actuator; flexes in all directions
- Actuator head rotates to four possible positions in 90° increments
- Rugged metal housing
- Design meets positive opening requirements for safety interlocks (IEC 60947-5-1)

SI-LM40MKV Limit Switch Style (kits), 40 mm

Actuator Type	Interlock	Contact(s)	Kit Model*
 <p>SI-QM-90A Flexible In-Line</p>	SI-LM40KVD	1 NO & 1 NC	SI-LM40MKVD
	SI-LM40KVE	2 NC	SI-LM40MKVE

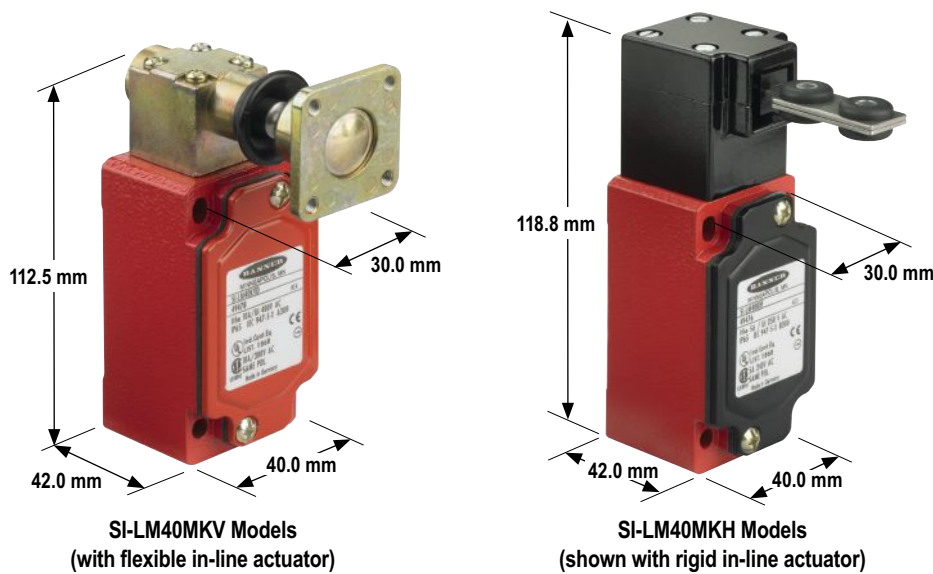


Multi-Directional

NC = Normally Closed Contact,

NO = Normally Open Contact

* A kit contains an interlock and actuator. Individual interlocks (without actuator) are for replacement purposes only. Contact factory for integral quick-disconnect (QD) and pigtail QD options.



SI-LM40 Limit Style Switches Specifications

Contact Rating	10A @ 24 V ac, 10A @ 110 V ac, 6A @ 230 V ac, 6A @ 24 V dc 2.5 kV max. transient tolerance NEMA A300 P300																
European Rating	Utilization categories: AC15 and DC13 $U_i = 500V$ ac, $I_m = 10A$	<table border="1"> <thead> <tr> <th colspan="3">40-60 Hz</th> </tr> <tr> <th>U_i V</th> <th>I_n/AC-15 A</th> <th>I_n/DC-13 A</th> </tr> </thead> <tbody> <tr> <td>24</td> <td>10</td> <td>6</td> </tr> <tr> <td>110</td> <td>10</td> <td>1</td> </tr> <tr> <td>230</td> <td>6</td> <td>4</td> </tr> </tbody> </table>	40-60 Hz			U_i V	I_n /AC-15 A	I_n /DC-13 A	24	10	6	110	10	1	230	6	4
40-60 Hz																	
U_i V	I_n /AC-15 A	I_n /DC-13 A															
24	10	6															
110	10	1															
230	6	4															
Contact Material	Silver-nickel alloy																
Maximum Switching Speed	SI-LM40MKH models: 50 operations per minute SI-LM40MKV models: 10 operations per minute																
Maximum Actuator Speed	SI-LM40MKH models: 1.5 m/second SI-LM40MKV models: 0.5 m/second																
Mechanical Life	SI-LM40MKH models: 1 million operations SI-LM40MKV models: 25,000 operations																
Minimum Actuator Engagement Radius	Rigid actuator: 400 mm Flexible actuator: 150 mm																
Actuation Extraction Force	SI-LM40MKH models: 10 N SI-LM40MKV models: 20 N																
Short Circuit Protection	6 amp Slow Blow, 10 amp Fast Blow. Recommended external fusing or overload protection.																
Wire Connections	Screw terminals with pressure plates accept the following wire sizes – Stranded and solid: 20 AWG (0.5 mm ²) to 16 AWG (1.5 mm ²) for one wire Stranded: 20 AWG (0.5 mm ²) to 18 AWG (1.0 mm ²) for two wires																
Cable Entry	M20 x 1.5 threaded entrance Adapter supplied to convert M20 x 1.5 to 1/2" - 14 NPT threaded entrance																
Construction	Aluminum alloy die cast																
Environmental Rating	IP65																
Operating Conditions	Temperature: -30° to +80° C																
Weight	SI-LM40MKH models: 0.34 kg SI-LM40MKV models: 0.31 kg																
Certifications																	
Contact Configuration and Switching Diagrams	SI-LM40MKH..D models: SD018 (p. 826) SI-LM40MKH..E models: SD019 (p. 827)	SI-LM40MKH..F models: SD020 (p. 827) SI-LM40MKV.. models: SD021 and SD022 (p. 827)															



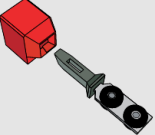

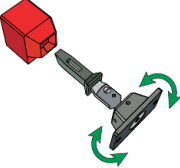
SI-LS42

Plastic Locking Style Safety Interlock Switches

Two locking mechanisms available including spring lock with energized solenoid release and energized solenoid lock with spring release.

- Actuator head can be rotated in 90° increments to eight possible actuator positions: four vertical and four horizontal
- Design meets positive opening requirements for safety interlocks (IEC 60947-5-1)
- AC and DC voltage available

SI-LS42 Safety Switches, 42 mm - Spring Lock and Solenoid Unlock

Actuator Type	Interlock	Contact(s)	Solenoid Voltage	Kit Model *
SI-QM-SSA Straight Rigid In-Line 	SI-LS42DSG	Actuator Contacts: 1 NC & 1 NO	24 V ac/dc	SI-LS42DMSG
	SI-LS42WSG	Solenoid Monitor Contacts: 1 NC & 1 NO	110 V ac/ 230 V ac	SI-LS42WMSG
 SI-QM-SMFA Flexible In-Line 	SI-LS42DSG	Actuator Contacts: 1 NC & 1 NO	24 V ac/dc	SI-LS42DMSGF
	SI-LS42WSG	Solenoid Monitor Contacts: 1 NC & 1 NO	110 V ac/ 230 V ac	SI-LS42WMSGF



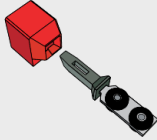

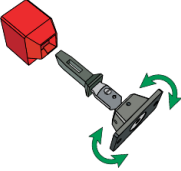
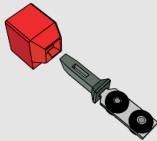

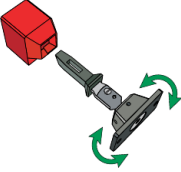
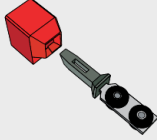

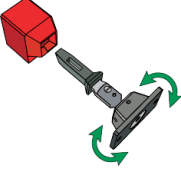
Multi-Directional


NC = Normally Closed Contact,

NO = Normally Open Contact

* A kit contains an interlock and actuator. Individual interlocks (without actuator) are for replacement purposes only. Contact factory for integral quick-disconnect (QD) and pigtail QD options.

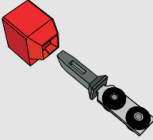

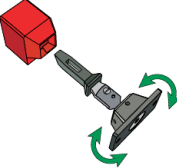
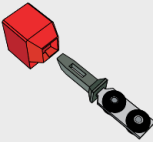

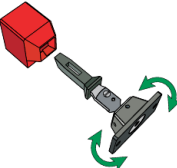
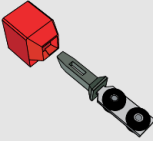

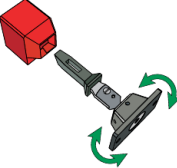
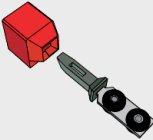

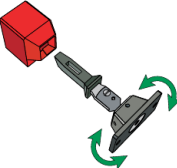
SI-LS42 Safety Switches, 42 mm - Spring Lock and Solenoid Unlock (cont'd)

Actuator Type		Interlock	Contact(s)	Solenoid Voltage	Kit Model *
SI-QM-SSA Straight Rigid In-Line 		SI-LS42DSH	Actuator Contacts: 2 NC	24 V ac/dc	SI-LS42DMSH
		SI-LS42WSH	Solenoid Monitor Contacts: 1 NC & 1 NO	110 V ac/ 230 V ac	SI-LS42WMSH
 SI-QM-SMFA Flexible In-Line 		SI-LS42DSH	Actuator Contacts: 2 NC	24 V ac/dc	SI-LS42DMSHF
		SI-LS42WSH	Solenoid Monitor Contacts: 1 NC & 1 NO	110 V ac/ 230 V ac	SI-LS42WMSHF
SI-QM-SSA Straight Rigid In-Line 		SI-LS42DSI	Actuator Contacts: 2 NC & 1 NO	24 V ac/dc	SI-LS42DMSI
		SI-LS42WSI	Solenoid Monitor Contact: 1 NC	110 V ac/ 230 V ac	SI-LS42WMSI
 SI-QM-SMFA Flexible In-Line 		SI-LS42DSI	Actuator Contacts: 2 NC	24 V ac/dc	SI-LS42DMSIF
		SI-LS42WSI	Solenoid Monitor Contacts: 1 NC & 1 NO	110 V ac/ 230 V ac	SI-LS42WMSIF
SI-QM-SSA Straight Rigid In-Line 		SI-LS42DSJ	Actuator Contacts: 3 NC	24 V ac/dc	SI-LS42DMSJ
			Solenoid Monitor Contact: 1 NC		
 SI-QM-SMFA Flexible In-Line 		SI-LS42DSJ	Actuator Contacts: 3 NC	24 V ac/dc	SI-LS42DMSJF
			Solenoid Monitor Contact: 1 NC		

 Multi-Directional NC = Normally Closed Contact, NO = Normally Open Contact

* A kit contains an interlock and actuator. Individual interlocks (without actuator) are for replacement purposes only. Contact factory for integral quick-disconnect (QD) and pigtail QD options.

SI-LS42 Safety Switches, 42 mm - Solenoid Lock and Spring Unlock (cont'd)

Actuator Type	Interlock	Contact(s)	Solenoid Voltage	Kit Model *
SI-QM-SSA Straight Rigid In-Line 	SI-LS42DMG	Actuator Contacts: 1 NC & 1 NO	24 V ac/dc	SI-LS42DMMG
	SI-LS42WVG	Solenoid Monitor Contacts: 1 NC & 1 NO	110 V ac/ 230 V ac	SI-LS42WMMG
 SI-QM-SMFA Flexible In-Line 	SI-LS42DMG	Actuator Contacts: 1 NC & 1 NO	24 V ac/dc	SI-LS42DMMGF
	SI-LS42WVG	Solenoid Monitor Contacts: 1 NC & 1 NO	110 V ac/ 230 V ac	SI-LS42WMMGF
SI-QM-SSA Straight Rigid In-Line 	SI-LS42DMH	Actuator Contacts: 2 NC	24 V ac/dc	SI-LS42DMMH
	SI-LS42WMH	Solenoid Monitor Contacts: 1 NC & 1 NO	110 V ac/ 230 V ac	SI-LS42WMMH
 SI-QM-SMFA Flexible In-Line 	SI-LS42DMH	Actuator Contacts: 2 NC	24 V ac/dc	SI-LS42DMMHF
	SI-LS42WMH	Solenoid Monitor Contacts: 1 NC & 1 NO	110 V ac/ 230 V ac	SI-LS42WMMHF
SI-QM-SSA Straight Rigid In-Line 	SI-LS42DMI	Actuator Contacts: 2 NC & 1 NO	24 V ac/dc	SI-LS42DMMI
	SI-LS42WMI	Solenoid Monitor Contact: 1 NC	110 V ac/ 230 V ac	SI-LS42WMMI
 SI-QM-SMFA Flexible In-Line 	SI-LS42DMI	Actuator Contacts: 2 NC & 1 NO	24 V ac/dc	SI-LS42DMMIF
	SI-LS42WMI	Solenoid Monitor Contact: 1 NC	110 V ac/ 230 V ac	SI-LS42WMMIF
SI-QM-SSA Straight Rigid In-Line 	SI-LS42DMJ	Actuator Contacts: 3 NC	24 V ac/dc	SI-LS42DMMJ
		Solenoid Monitor Contact: 1 NC		
 SI-QM-SMFA Flexible In-Line 	SI-LS42DMJ	Actuator Contacts: 3 NC	24 V ac/dc	SI-LS42DMMJF
		Solenoid Monitor Contact: 1 NC		



Multi-Directional

NC = Normally Closed Contact,

NO = Normally Open Contact

* A kit contains an interlock and actuator. Individual interlocks (without actuator) are for replacement purposes only.
Contact factory for integral quick-disconnect (QD) and pigtail QD options.

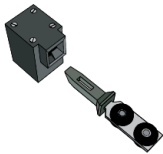


SI-QM100 Metal Locking Style Safety Interlock Switches

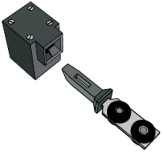
Two locking mechanisms available including spring lock with energized solenoid release and energized solenoid lock with spring release.

- Actuator head can be rotated in 90° increments to four possible actuator positions
- Design meets positive opening requirements for safety interlocks (IEC 60947-5-1)
- AC and DC voltage available

SI-QM100 Safety Switches, 100 mm - Spring Lock and Solenoid Unlock

Actuator Type	Interlock	Contact(s)	Solenoid Voltage	Kit Model*
SI-QM-SSA Straight Rigid In-Line 	SI-QM100DSG	Switching Contacts: 1 NC & 1 NO	24 V dc	SI-QM100DMSG
	SI-QM100ASG	Solenoid Monitor Contacts: 1 NC & 1 NO	120 V ac	SI-QM100AMSG
	SI-QM100DSH	Switching Contacts: 2 NC Solenoid Monitor Contacts: 1 NC & 1 NO	24 V dc	SI-QM100DMSH

SI-QM100 Safety Switches, 100 mm - Solenoid Lock and Spring Unlock

Actuator Type	Interlock	Contact(s)	Solenoid Voltage	Kit Model*
SI-QM-SSA Straight Rigid In-Line 	SI-QM100DMG	Switching Contacts: 1 NC & 1 NO	24 V dc	SI-QM100DMMG
	SI-QM100AMG	Solenoid Monitor Contacts: 1 NC & 1 NO	120 V ac	SI-QM100AMMG

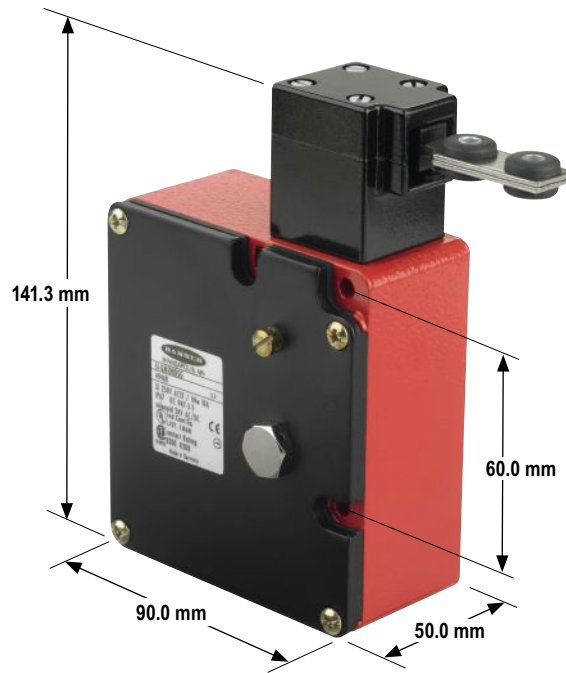


Multi-Directional



NC = Normally Closed Contact,

NO = Normally Open Contact

* A kit contains an interlock and actuator. Individual interlocks (without actuator) are for replacement purposes only. Contact factory for integral quick-disconnect (QD) and pigtail QD options.

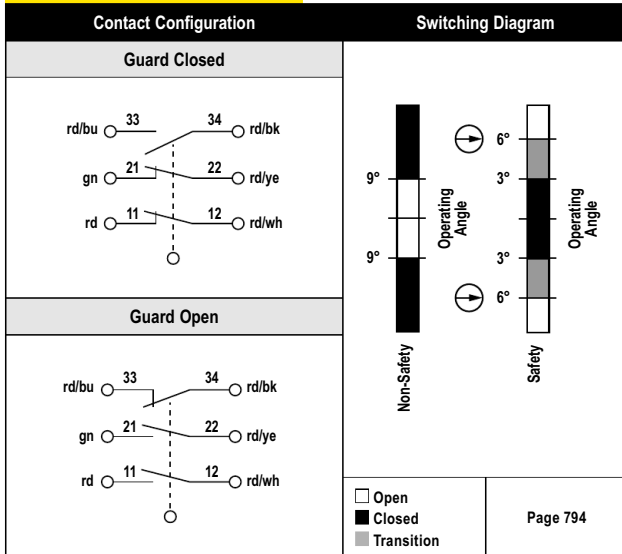


Locking Style Switches Specifications

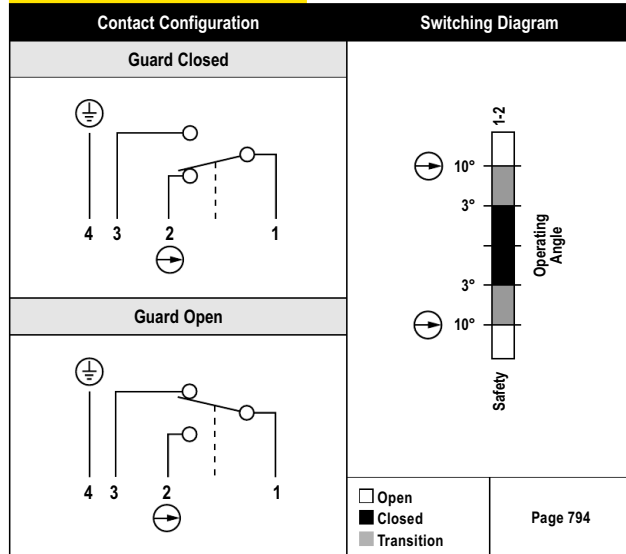
Contact Rating	4A @ 250 V ac max. 2.5 kV max. transient tolerance NEMA A300 P300																
European Rating	Utilization categories: AC15 and DC13 (IEC 60947-5-1) Switches with 1 & 2 contact pairs: $U_i = 250V$ ac SI-LS42 models: $I_{th} = 2.5$ A SI-QM100 models: $I_{th} = 10$ A	<table border="1"> <thead> <tr> <th colspan="3">40-60 Hz</th> </tr> <tr> <th>U_p V</th> <th>I_{AC-15} A</th> <th>I_{DC-13} A</th> </tr> </thead> <tbody> <tr> <td>24</td> <td>4</td> <td>3</td> </tr> <tr> <td>110</td> <td>4</td> <td>0.7</td> </tr> <tr> <td>230</td> <td>4</td> <td>0.3</td> </tr> </tbody> </table>	40-60 Hz			U_p V	I_{AC-15} A	I_{DC-13} A	24	4	3	110	4	0.7	230	4	0.3
40-60 Hz																	
U_p V	I_{AC-15} A	I_{DC-13} A															
24	4	3															
110	4	0.7															
230	4	0.3															
Contact Material	Silver-nickel alloy																
Solenoid Power Consumption	SI-LS42 models: 1.1 VA / Inrush 12 VA (0.2 sec) SI-QM100 models: 5.2 W																
Maximum Actuator Speed	1.5 m/second																
Mechanical Life	1 million operations																
Minimum Actuator Engagement Radius	Rigid actuator: 400 mm Flexible actuator: 150 mm																
Actuation Extraction Force	SI-LS42 models: 2000 N when locked SI-QM100 models: 1000 N when locked																
Short Circuit Protection	6 amp Slow Blow, 10 amp Fast Blow. Recommended external fusing or overload protection.																
Wire Connections	SI-LS42 models: 10 cage clamp elements 1.5 mm stranded max. / 16 AWG SI-QM100 models: Screw terminals with pressure plates accept the following wire sizes – 16 AWG (1.5 mm ²) max. solid; 14 AWG (2.5 mm ²) max. stranded, 18 AWG (1 mm ²) when using all 11 terminals																
Cable Entry	M20 x 1.5 threaded entrance Adapter supplied to convert M20 x 1.5 to 1/2" - 14 NPT threaded entrance																
Construction	SI-LS42 models: Glass fiber-reinforced polyamide thermoplastic housing; UL 94-V0 rating SI-QM100 models: Aluminum die cast																
Environmental Rating	IP67																
Operating Conditions	Temperature: SI-LS42 models: -30° to +70° C SI-QM100 models: -30° to +60° C																
Weight	SI-LS42 models: 0.3 kg SI-QM100 models: 0.81 kg																
Application Notes	When rotating the actuator head, the actuator MUST BE FULLY ENGAGED. When using a model with solenoid locking, the lock mechanism will disengage upon solenoid power failure.																
Certifications	 																
Contact Configuration and Switching Diagrams	SI-LS42 models: SD023, SD024, SD025 & SD026 (p. 827) SI-QM100 models: SD027 and SD028 (p. 828)																

Contact/Switching Diagrams

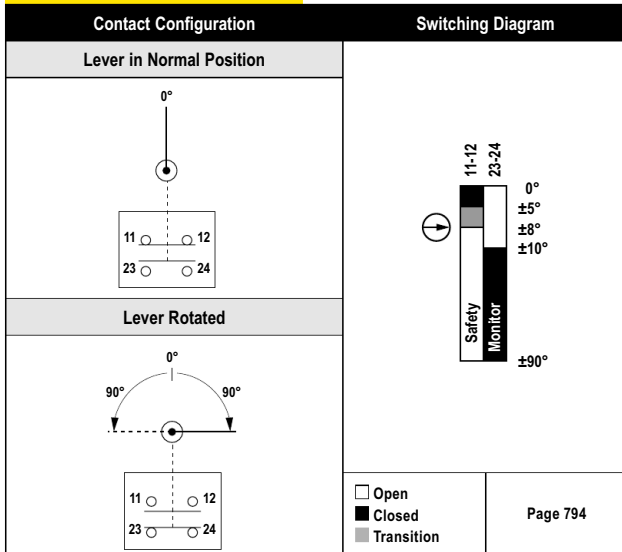
SD001 - SI-HG63 Series



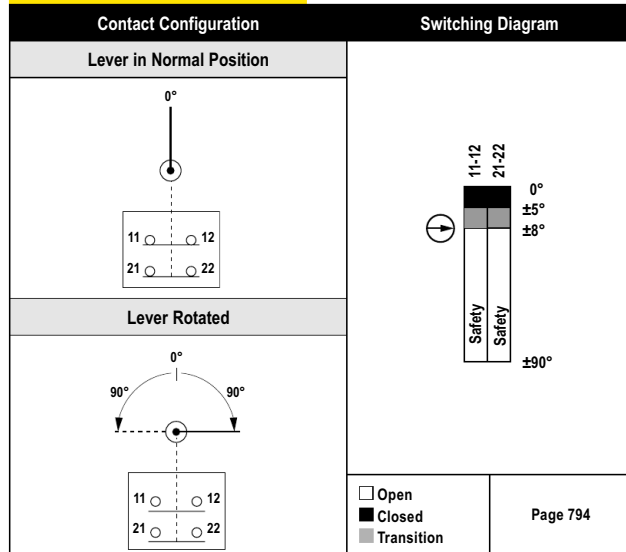
SD002 - SI-HG80 Series



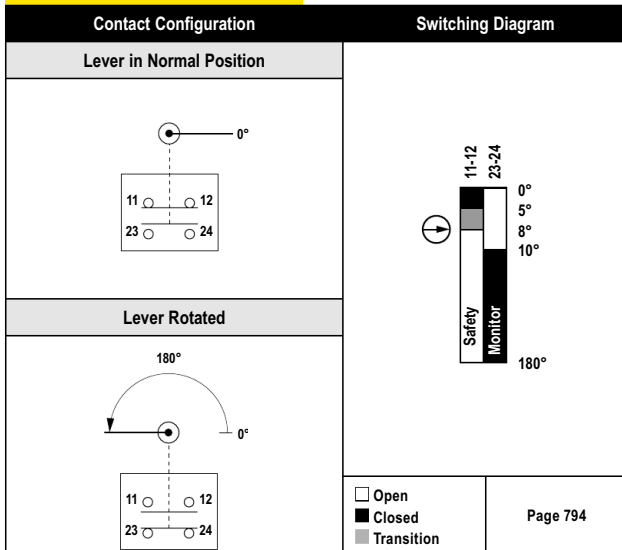
SD003 - SI-LS31HGD Series



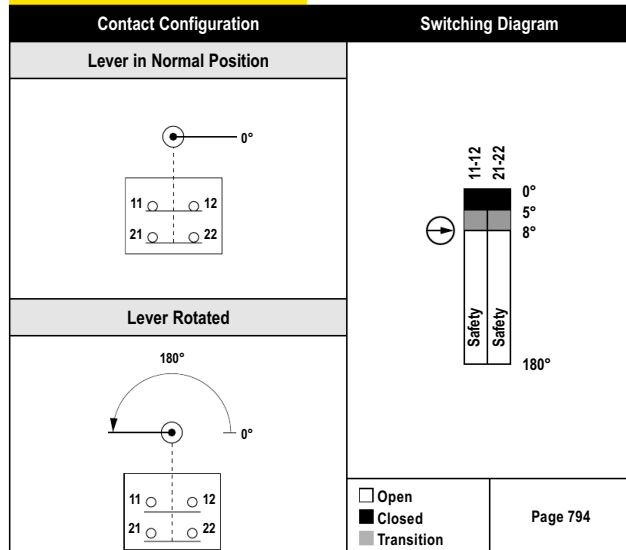
SD004 - SI-LS31HGE Series



SD005 - SI-LS31HGRD Series

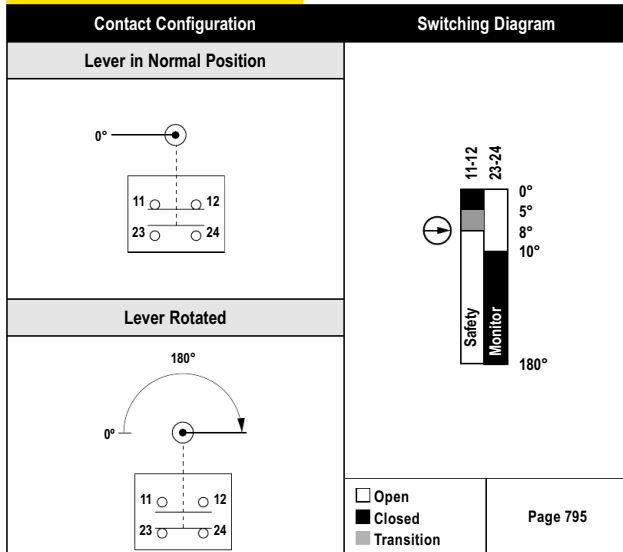


SD006 - SI-LS31HGRE Series

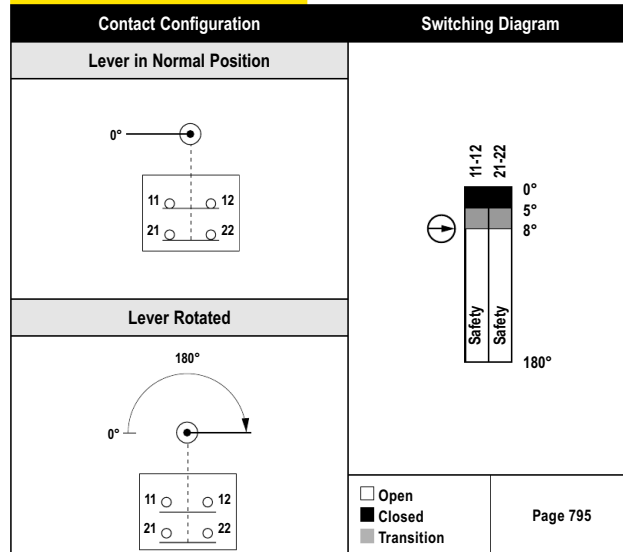


Contact/Switching Diagrams

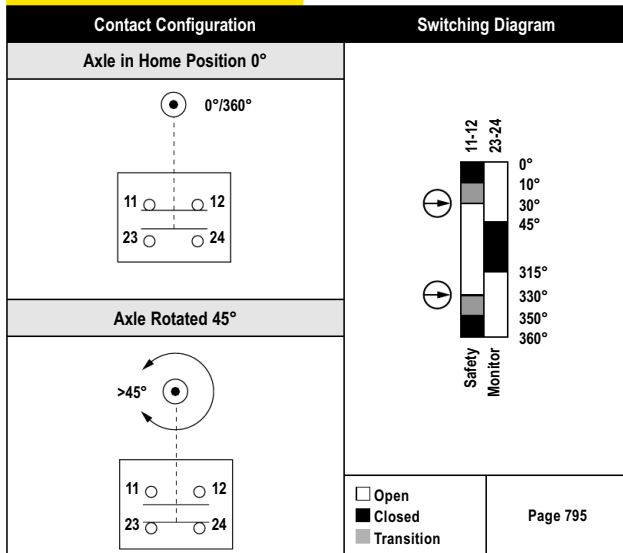
SD007 - SI-LS31HGLD Series



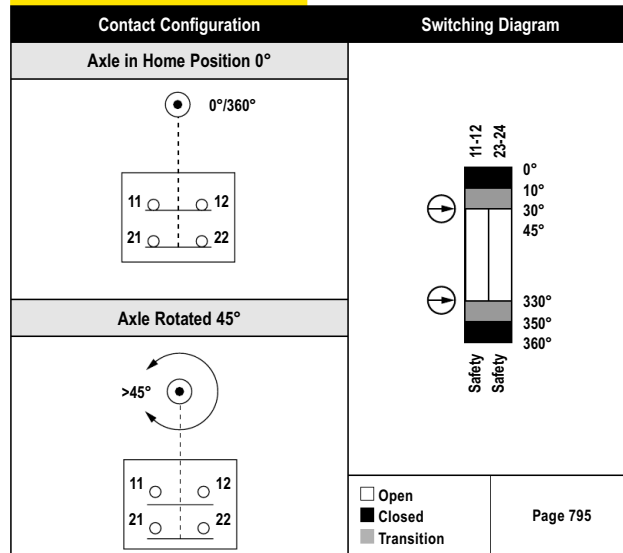
SD008 - SI-LS31HGLE Series



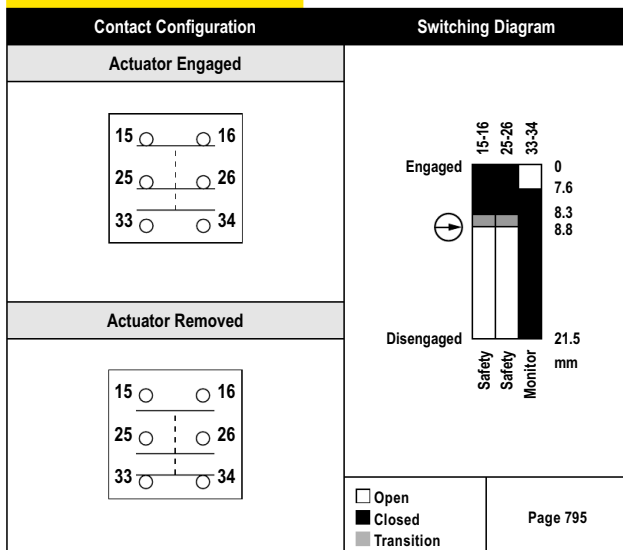
SD009 - SI-LS31RTD Series



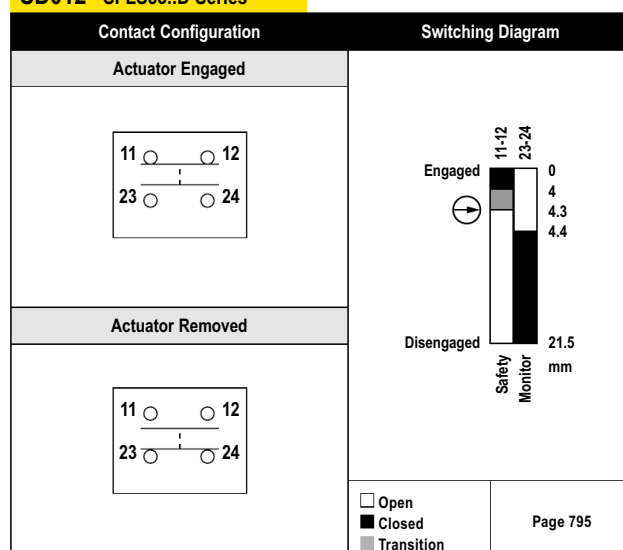
SD010 - SI-LS31RTE Series



SD011 - SI-LS100 Series

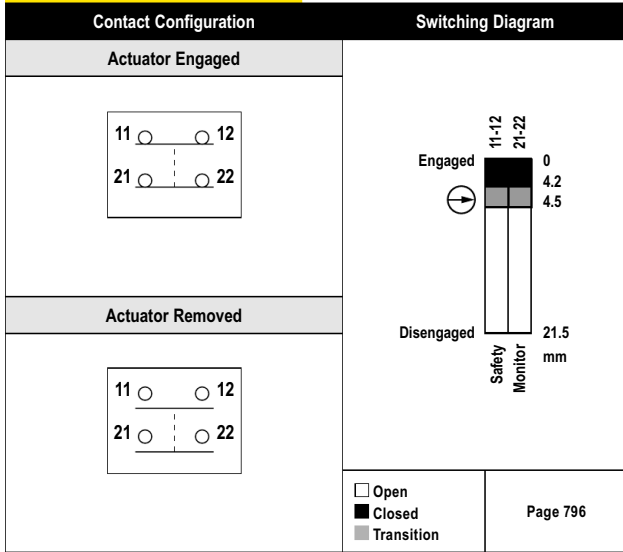


SD012 - SI-LS83..D Series

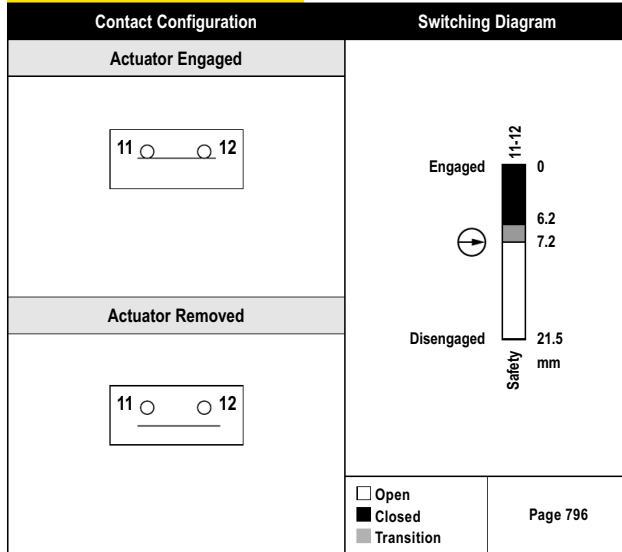


Contact/Switching Diagrams

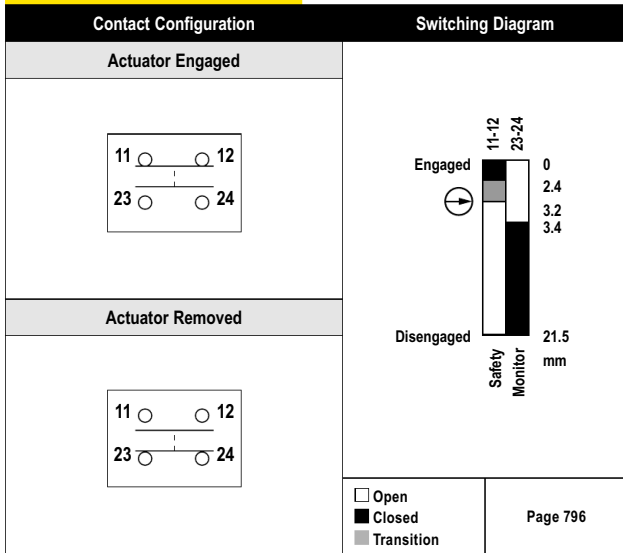
SD013 - SI-LS83..E Series



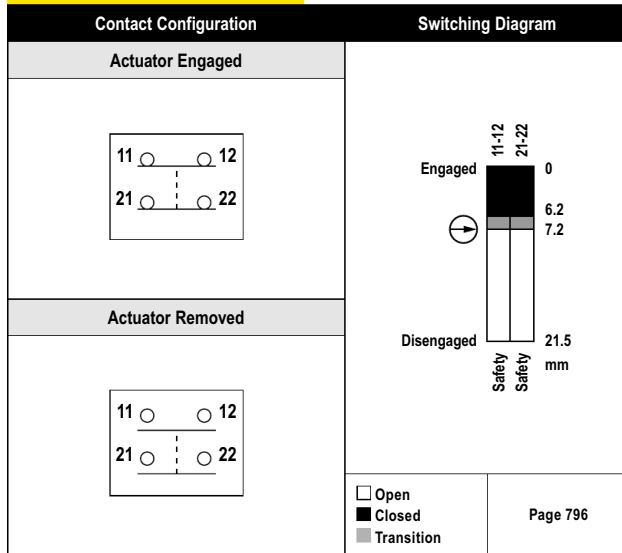
SD014 - SI-QS75 Series



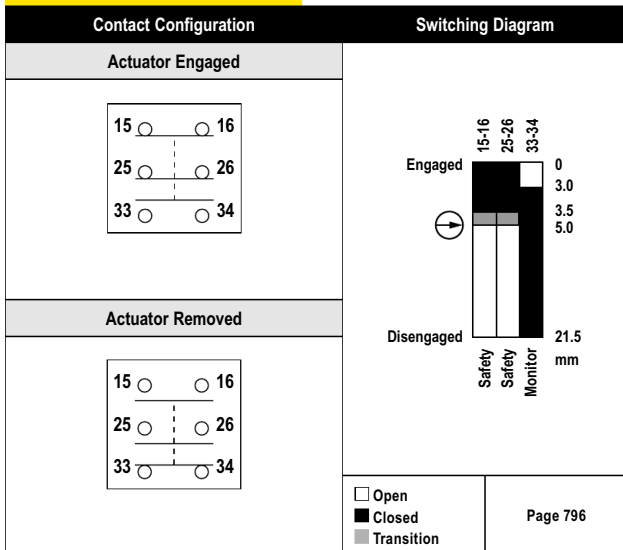
SD015 - SI-QS90MD Series



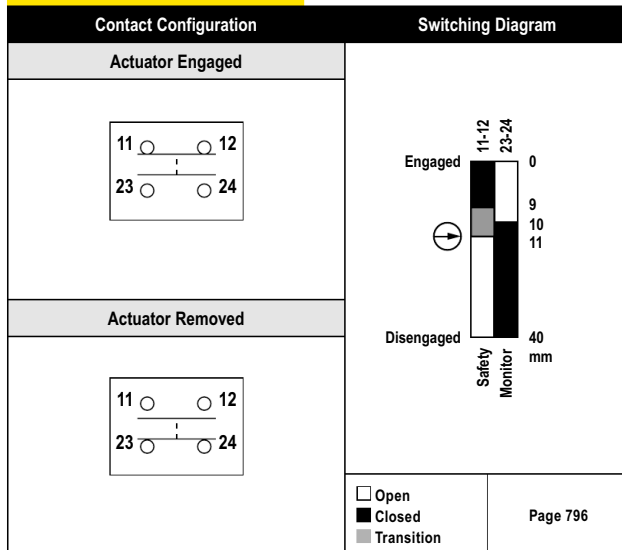
SD016 - SI-QS90ME Series



SD017 - SI-QS90MF Series

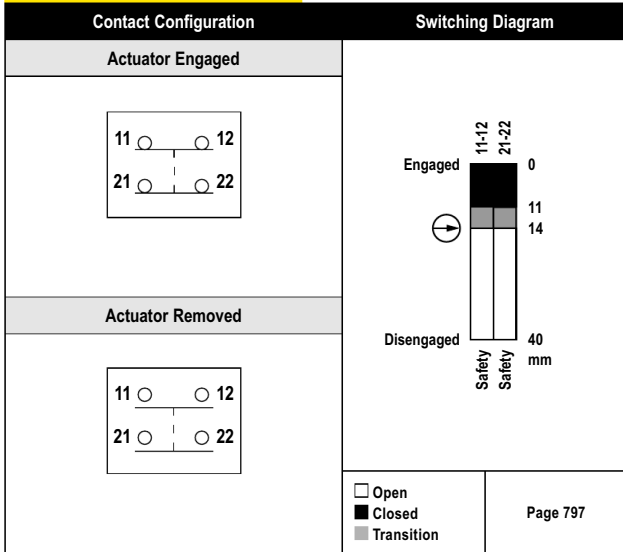


SD018 - SI-LM40MKHD Series

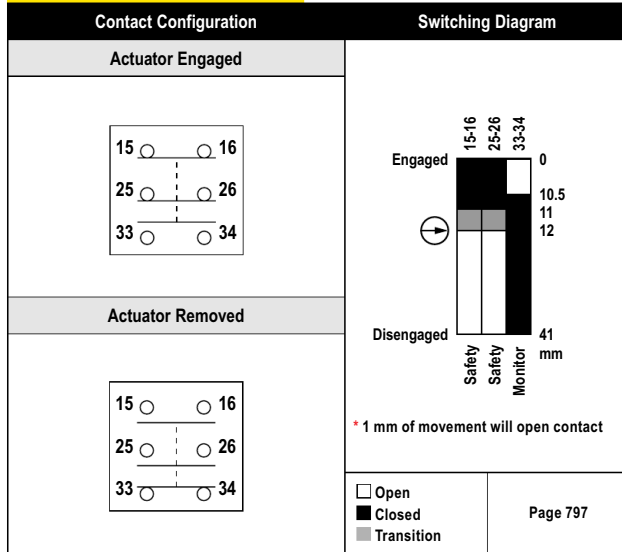


Contact/Switching Diagrams

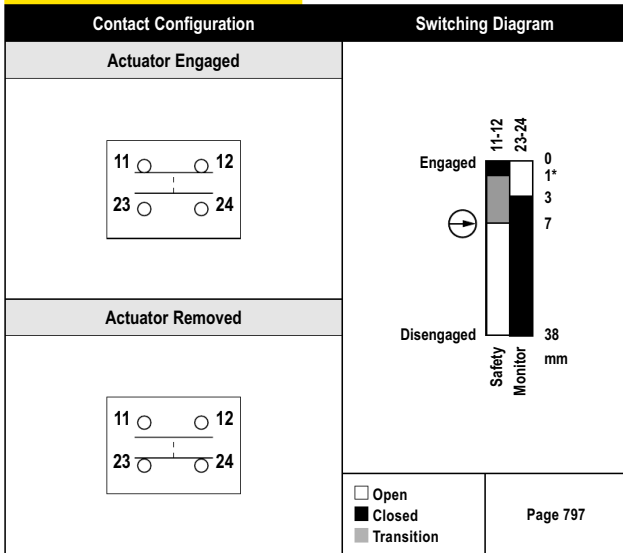
SD019 - SI-LM40MKHE Series



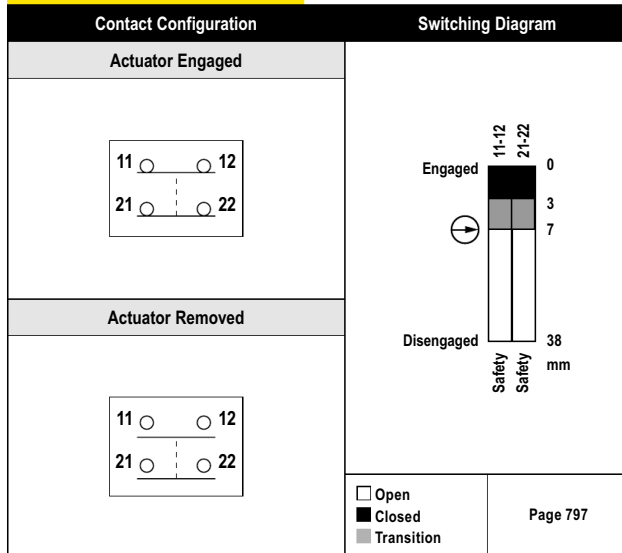
SD020 - SI-LM40MKHF Series



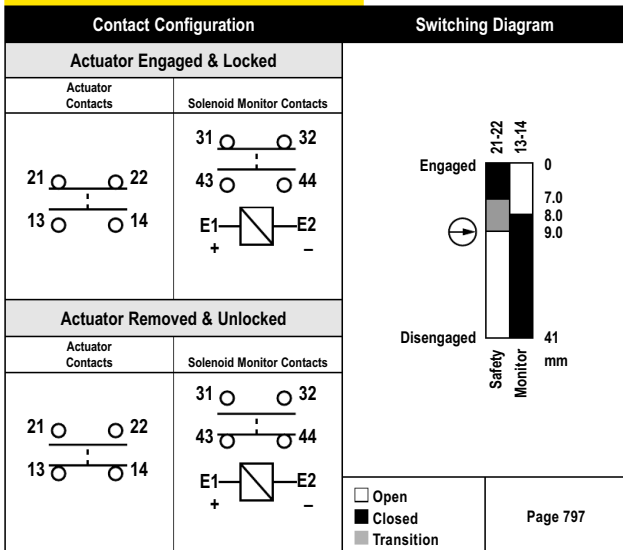
SD021 - SI-LM40MKVD Series



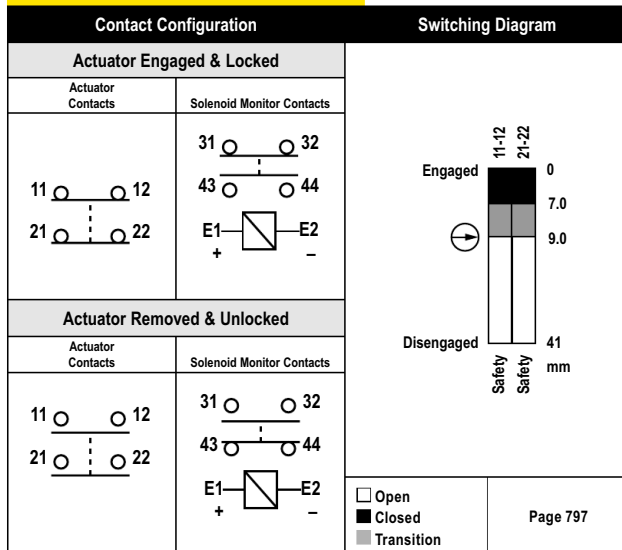
SD022 - SI-LM40MKVE Series



SD023 - SI-LS42..MSG/MMG Series

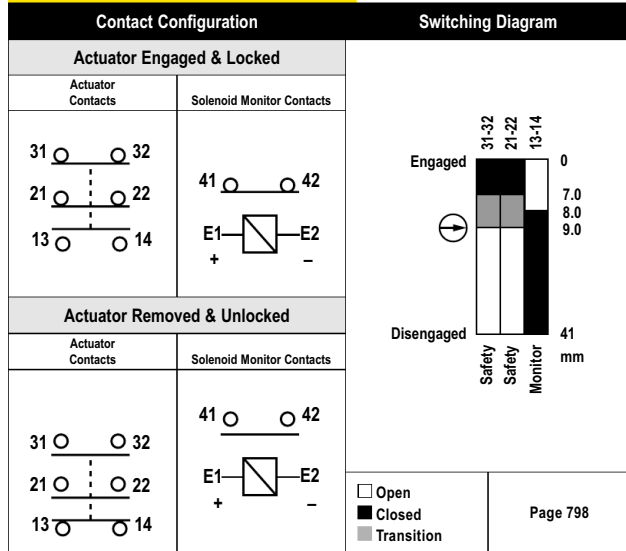


SD024 - SI-LS42..MSH/MMH Series

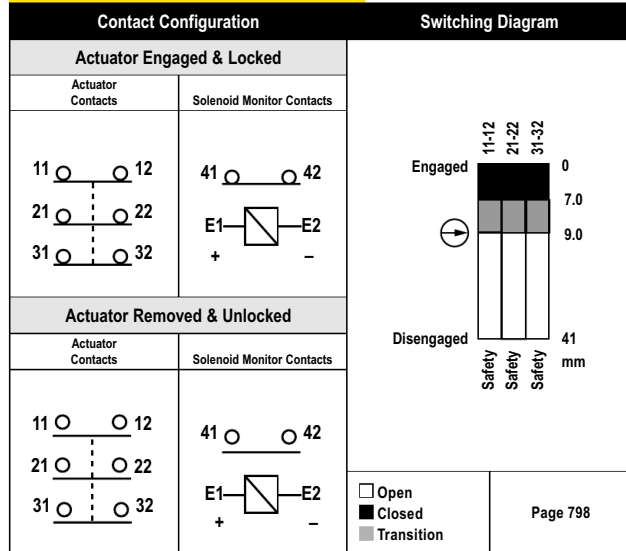


Contact/Switching Diagrams

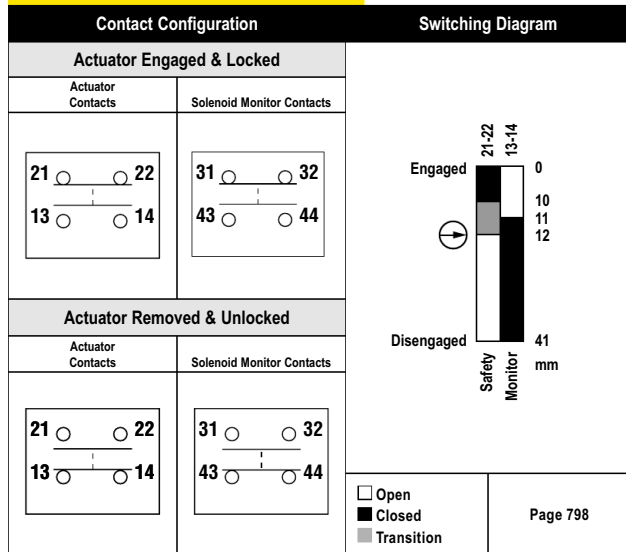
SD025 - SI-LS42..MSI/MMI Series



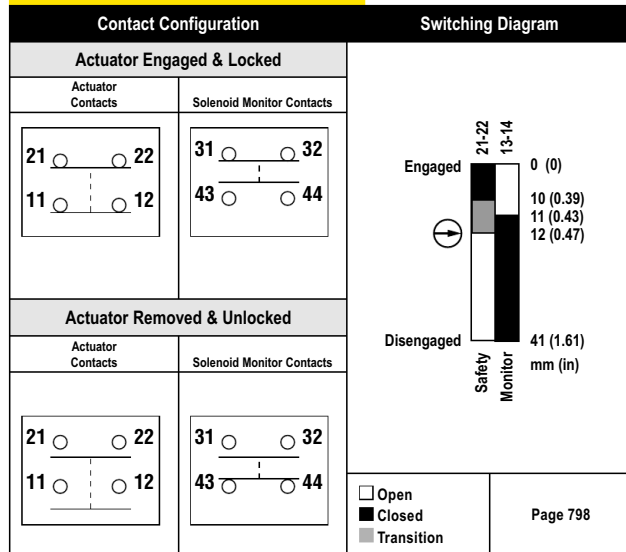
SD026 - SI-LS42..MSJ/MMJ Series



SD027 - SI-QM100..MSG/MMG Series



SD028 - SI-QM100..DMSH Series

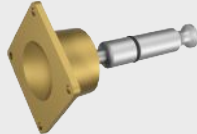






Safety Interlock Switches Replacement Parts



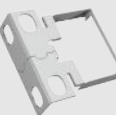


Used In	Description	Model*
SI-LM40MKH..D kits	Individual Interlock (without actuator)	SI-LM40KHD
SI-LM40MKH..E kits		SI-LM40KHE
SI-LM40MKH..F kits		SI-LM40KHF
SI-LM40MKVD kit		SI-LM40KVD
SI-LM40MKVE kit		SI-LM40KVE
SI-LS42MSG.. kits		SI-LS42DSG
SI-LS42WMSG.. kits		SI-LS42WSG
SI-LS42DMSG.. kits		SI-LS42DSH
SI-LS42WMSG.. kits		SI-LS42WSH
SI-LS42DMSI.. kits		SI-LS42DSI
SI-LS42WMSI.. kits		SI-LS42WSI
SI-LS42DMSJ.. kits		SI-LS42DSJ
SI-LS42DMMG.. kits		SI-LS42DMG
SI-LS42WMMG.. kits		SI-LS42WMG
SI-LS42DMMH.. kits		SI-LS42DMH
SI-LS42WMMH.. kits		SI-LS42WMH
SI-LS42DMMI.. kits		SI-LS42DMI
SI-LS42WMMI.. kits		SI-LS42WMI
SI-LS42DMMJ.. kits		SI-LS42DMJ
SI-LS100..F kits		SI-LS100F
SI-LS83..D kits		SI-LS83D
SI-LS83..E kits		SI-LS83E
SI-QM100MSG kit		SI-QM100DSG
SI-QM100AMSG kit		SI-QM100ASG
SI-QM100DMMG kit		SI-QM100DMG
SI-QM100AMMG kit		SI-QM100AMG
SI-QS75..C kits		SI-QS75C
SI-QS90..D kits		SI-QS90D
SI-QS90..E kits		SI-QS90E
SI-QS90..F kits		SI-QS90F

* Kits with one safety interlock switch and an actuator are available (see pp. 806-821).

Replacement Actuator Parts for Safety Interlock Switches

	Description	Used With	Model
	<p>Flexible in-line, trumpet-style, metal actuator used for doors or covers where alignment is difficult to maintain. Flexes in all directions. Minimum engagement radius for hinged closures is 150 mm.</p>	<ul style="list-style-type: none"> • SI-LM40MKV 	<p>SI-QM-90A</p>
	<p>Rigid in-line metal actuator used for doors or covers. Slide-bolt design for use in heavy-duty applications where alignment is difficult to maintain.</p>	<ul style="list-style-type: none"> • SI-LM40MKH • SI-LS42 • SI-QM100 	<p>SI-QM-SB</p>
	<p>Flexible in-line metal actuator used for doors or covers where alignment is difficult to maintain. Flexes in all directions. Minimum engagement radius for hinged closures is 150 mm.</p>	<ul style="list-style-type: none"> • SI-LM40MKH • SI-LS42 • SI-QM100 	<p>SI-QM-SMFA</p>
	<p>Rigid in-line metal actuator used for doors or covers with accurate alignment, such as sliding doors. Minimum engagement radius for hinged closures is 400 mm.</p>	<ul style="list-style-type: none"> • SI-LM40MKH • SI-LS42 • SI-QM100 	<p>SI-QM-SSA</p>
	<p>High-extraction-force adapter for particularly heavy or large doors. Adjustable from 50 to 100 Newtons (force). Used only for switches with in-line actuator SI-QS-SSA.</p>	<ul style="list-style-type: none"> • SI-QS75 • SI-QS90 	<p>SI-QS-100</p>

Replacement Actuator Parts for Safety Interlock Switches (cont'd)

	Description	Used With	Model
	Rigid in-line metal (die-cast steel) actuator for doors or covers with a radius of 150 mm or greater.	<ul style="list-style-type: none"> • SI-QS75 (high-force) • SI-QS90 (high-force) 	SI-QS-SSA
	Rigid in-line metal (stamped stainless steel) actuator used for doors or covers with accurate alignment, such as sliding doors. Minimum engagement radius for hinged closures is 150 mm.	<ul style="list-style-type: none"> • SI-LS83 • SI-LS100 	SI-QS-SSA-2
	Rigid in-line metal (stamped stainless steel) actuator used for doors or covers with accurate alignment, such as sliding doors. Right-angle mounting flange. Minimum engagement radius for hinged closures is 150 mm.	<ul style="list-style-type: none"> • SI-LS83 • SI-LS100 	SI-QS-SSA-3
	Rigid in-line metal (stamped stainless steel) actuator for doors or covers with a radius of 150 mm or greater.	<ul style="list-style-type: none"> • SI-QS75 • SI-QS90 	SI-QS-SSA-4
	Flexible in-line metal (die-cast steel) actuator for hinged doors with a radius of 50 mm or greater. Flexes in all directions. Minimum engagement radius for hinged closures is 150 mm.	<ul style="list-style-type: none"> • SI-LS83 • SI-LS100 • SI-QS75 • SI-QS90 	SI-QS-SSU
Replacement terminal cover		<ul style="list-style-type: none"> • SI-LS42 	SI-LS42-COVER
Tamper Proof Screw (One way)		<ul style="list-style-type: none"> • SI-LS42 	SI-LS42-SCREW OW