Sprite™

Description

The Sprite is a hinge-actuated safety interlock switch in a compact housing—only 75 x 25 x 29 mm (2.95 x 0.98 x 1.14 in.)—making it the smallest interlock currently available. The Sprite has been designed for smaller machines such as printing machines, copiers and domestic machinery, which until now, have been able to use standard safety interlocks due to space restrictions. Despite its small size, the Sprite includes the necessary safety-related functions, such as forced-guided contacts and a tamper-resistant mechanism allowing machinery to be safeguarded in compliance with the machinery directive.

The shaft of the Sprite is connected to the existing hinge pin and the degree of operation can be adjusted to suit the application via the adjustable cam in the switch head.

IMPORTANT: After adjustment, the cam must be secured in position with the supplied cam locking pin to ensure optimal performance.

Features

- Ideal for small, light-weight guards
- The smallest hinge interlock switch available, 75 x 25 mm case
- Degree of operation can customized with adjustable cam
- Contacts, 2 N.C. or 1 N.C. & 1 N.O.
- Four possible shaft positions, easy to install

Specifications

Safety Ratings					
Standards		EN954-1, ISO13849-1, IEC/EN60204-1, NFPA79, EN1088, ISO14119, IEC/EN60947-5-1, ANSI B11.19, AS4024.1			
Safety Classification		Cat. 1 device per EN 954-1 May be suitable for use in Cat 3 or Cat 4 systems depending on the architecture and application characteristics			
Functional Safety Data ⋆ **Note**: For up-to-date information, visit *http://www.ab.com/Safety/*		B10d: > 2 x 10^6 operations at min. load PFH_D: < 3 x10^{-7} MTTFd: > 385 years May be suitable for use in performance levels PIe or PId systems (according to ISO 13849-1:2006) and for use in SIL2 or SIL3 systems (according to IEC 62061) depending on the architecture and application characteristics			
Certifications		CE Marked for all applicable directives, cULus NRTL/C and TÜV			
Outputs					
Safety Contacts ‡		2 N.C. direct-opening action		1 N.C. direct-opening action	
Auxiliary Contacts		–		1 N.O.	
Shaft Rotation for Contact Operation		Maximum 11°; Minimum 3° (adjustable)			
Thermal Current I_{th}		10 A			
Rated Insulation Voltage		(Ui) 500V			
Switching Current @ Voltage, Min.		3 mA @ 18V DC			
Utilization Category					
A600/AC-15	(Ue)	600V	500V	240V	120V
	(Ie)	1.2 A	1.4 A	3 A	6 A
DC-13	(Ue)	24V			
	(Ie)	2 A			
Operating Characteristics					
Break Contact Force, Min.		8 cNm (torque on shaft)			
Actuation Speed, Max.		160 mm (6.29 in.)/s			
Actuation Frequency, Max.		1 cycle/s			
Mechanical Life		1,000,000 operations			
Environmental					
Enclosure Type Rating		IP67			
Operating Temperature [C (F)]		-20...+80° (-4...176°)			
Physical Characteristics					
Housing Material		UL Approved glass-filled PBT			
Shaft Material		Stainless Steel			
Weight [g (lb)]		80 (0.176)			
Color		Red			

⋆ Usable for ISO 13849-1:2006 and IEC 62061. Data is based on the B10d value given and:
- Usage rate of 1op/10 mins., 24 hrs/day, 360 days/year, representing
51840 operations per year
- Mission time/Proof test interval of 38 years
‡ The safety contacts are described as normally closed (N.C.) i.e., with the guard closed, actuator in place (where relevant) and the machine able to be started.

Product Selection

Contact			Shaft Type	Actuator Shaft Dimensions—mm (in)	Cat. No.			
					M16 Conduit		Connector♣	
Safety	Auxiliary	Action			M16	1/2 inch NPT Adaptor	4-Pin Micro (M12)	Connect to ArmorBlock Guard I/O 5-Pin Micro (M12)
2 N.C.	–	–	Solid	80 x ∅10 (3.14 x 0.39)	440H-S34019	440H-S34023	440H-S34027	–
				60 x ∅8 (2.36 x 0.31)	440H-S34020	440H-S34024	440H-S34028	–
				50 x ∅10(1.96 x 0.39)	440H-S34010	440H-S34017	440H-S34014	440H-S2NNPPS
			Pre-Bored	30 x ∅16 (1.18 x 0.63) bore ∅9.5 (0.37)	440H-S34033	440H-S34034	440H-S34035	440H-S2NNHPS
1 N.C.	1 N.O.	BBM	Solid	80 x ∅10 (3.14 x 0.39)	440H-S34021	440H-S34025	440H-S34029	–
				60 x ∅8 (2.36 x 0.31)	440H-S34022	440H-S34026	440H-S34030	–
				50 x ∅10(1.96 x 0.39)	440H-S34012	440H-S34018	440H-S34015	–
			Pre-Bored	30 x ∅16 (1.18 x 0.63) bore ∅9.5 (0.37)	440H-S34036	–	–	–

♣ For connector ratings, see Safety Switches and Connectors.

Recommended Logic Interfaces

Description	Safety Outputs	Auxiliary Outputs	Terminals	Reset Type	Power Supply	Cat. Page No.	Cat. No.
Single-Function Safety Relays							
MSR127RP	3 N.O.	1 N.C.	Removable (Screw)	Monitored Manual	24V AC/DC	MSR127RP/TP	440R-N23135
MSR127TP	3 N.O.	1 N.C.	Removable (Screw)	Auto./Manual	24V AC/DC	MSR127RP/TP	440R-N23132
MSR9T	2 N.O.	1 N.C.	Fixed	Auto./Manual	24V AC/DC	MSR9T	440R-F23027
MSR30RT	2 N.O. Solid State	1 N.O. Solid State	Removable	Auto./Manual or Monitored Manual	24V DC	MSR30RT/RTP	440R-N23198
MSR33RT	2 N.O. Solid State	1 N.O.	Removable	Auto. or Monitored Manual	24V DC SELV	MSR33RT/RTP	440R-F23200
Modular Safety Relays							
MSR210P Base 2 N.C. only	2 N.O.	1 N.C. and 2 PNP Solid State	Removable	Auto./Manual or Monitored Manual	24V DC from the base unit	MSR210P	440R-H23176
MSR220P Input Module	–	–	Removable	–	24V DC	MSR220P	440R-H23178
MSR310P Base	MSR300 Series Output Modules	3 PNP Solid State	Removable	Auto./Manual Monitored Manual	24V DC	MSR310P	440R-W23219
MSR320P Input Module	–	2 PNP Solid State	Removable	–	24V DC from the base unit	MSR320P	440R-W23218

Note: For additional Safety Relays connectivity, see Safety Relays.
For additional Safety I/O and Safety PLC connectivity, see Programmable Safety Solutions.
For application and wiring diagrams, see Safety Applications and Wiring Diagrams.

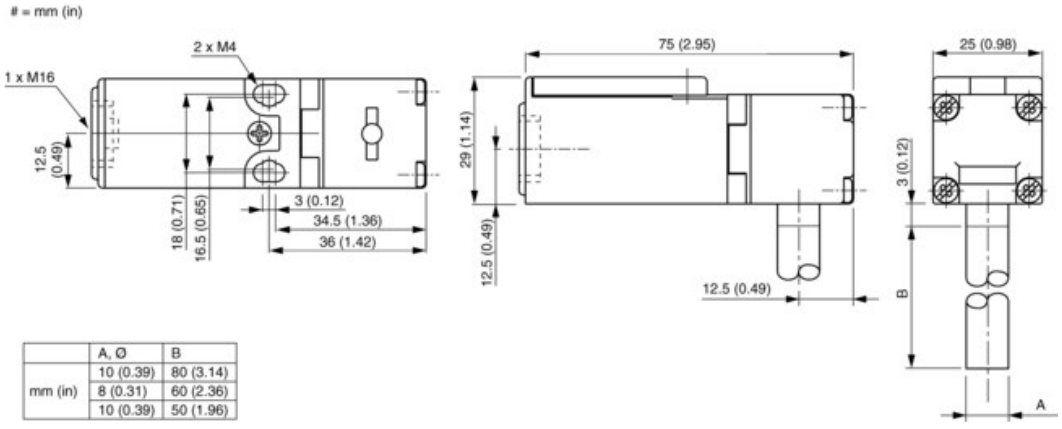
Connection Systems

Description	4-Pin Micro (M12)		5-Pin Micro (M12) for ArmorBlock Guard I/O
	2 N.C.	1 N.C. & 1 N.O.	2 N.C.
Cordset	889D-F4AC-⋆	889D-F4AC-⋆	–
Patchcord	889D-F4ACDM-‡	889D-F4ACDM-‡	889D-F5ACDM-⋆
Distribution Box	889D-4§ LT-DM4	898D-F4§ KT-DM4	–
Shorting Plug	889D-41LU-DM	898D-41KU-DM	–
T-Port	889D-43LY-D4	898D-43KY-D4	–

⋆ Replace symbol with 2 (2 m), 5 (5 m), or 10 (10 m) for standard cable lengths.
‡ Replace symbol with 1 (1 m), 2 (2 m), 3 (3 m), 5 (5 m), or 10 (10 m) for standard cable lengths.
§ Replace symbol with 4 or 8 for number of ports.
Note: For additional information, see the Safety Connection System section (Safety Connection Systems) of this catalog.

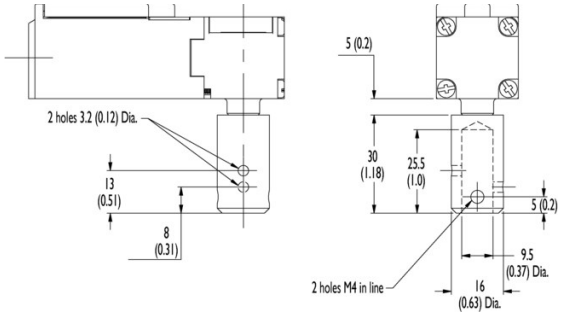
Approximate Dimensions

Dimensions are shown in mm (in.). Dimensions are not intended to be used for installation purposes.



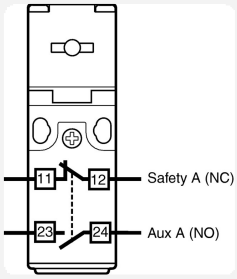
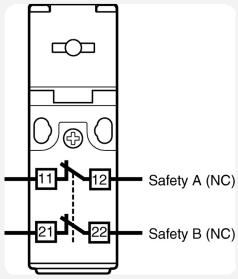
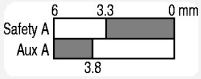
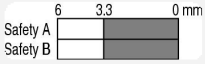
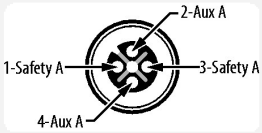
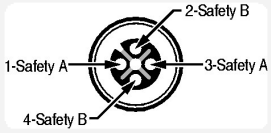
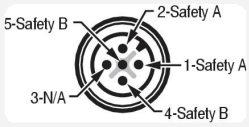
	A, Ø	B
mm (in)	10 (0.39)	80 (3.14)
	8 (0.31)	60 (2.36)
	10 (0.39)	50 (1.96)

Hollow Shaft



***Note**: 2D, 3D and electrical drawings are available on www.ab.com.*

Typical Wiring Diagrams

Description		1 N.C. & 1 N.O.	2 N.C.
Contact Configuration			
Contact Action ❑Open ■ Closed			
4-Pin Micro (M12)			
5-Pin Micro (M12) For ArmorBlock Guard I/O		–	
Cordset 889D-F4AC-⋆	Brown	Safety A	Safety A
	Blue		
	White	Aux A	Safety B
	Black		

⋆ Replace symbol with 2 (2 m), 5 (5 m) or 10 (10 m) for standard cable lengths.