

## Interlock Switches

# Non contact Switches

## Sipha Sensors



### Description

With the increasing speed and complexity of applications a simple magnetic switch may be insufficient to meet the increased risks, therefore Sipha's design incorporates several magnetically sensitive elements which must be triggered in a particular sequence to operate correctly. The Sipha sensor, designed to operate with its own actuator, helps prevent defeatability by a simple magnet.

The Sipha with its moulded-in brackets and diminutive size, is extremely versatile and simple to install. The Sipha Sensor must be connected to the Sipha control unit giving a monitored circuit. For high-risk applications the control unit is used with a single sensor to give a high-integrity system. For other applications, multiple sensors (including mechanical switches) can be connected to one Sipha control unit. Sipha has facilities for connecting a manual reset button and for monitoring external devices such as contactors.

Four types of sensors and actuators are available incorporating different operating distances and physical sizes.





### Features

- Non contact actuation
- Magnetic coded sensing
- Four housing styles
- Must be operated with its own safety control unit

### Specifications

Standards	EN954-1, ISO13849-1, IEC/EN60204-1, NFPA79, EN1088, ISO14119, IEC60947-5-1, IEC/EN60947-5-3, ANSI B11.19, AS4024.1															
Category	Rating dependent on control unit and application.															
Approvals	CE marked for all applicable directives, cULus and TÜV															
Maximum Safety Sensing Distance	<table border="0"> <tr> <td></td> <td>Make</td> <td>Break</td> </tr> <tr> <td>Style S1</td> <td>5mm (0.20in)</td> <td>11mm (0.43in)</td> </tr> <tr> <td>Style S2</td> <td>9mm (0.35in)</td> <td>12mm (0.47in)</td> </tr> <tr> <td>Style S3</td> <td>5mm (0.20in)</td> <td>12mm (0.47in)</td> </tr> <tr> <td>Style S4</td> <td>10mm (0.39in)</td> <td>13mm (0.51in)</td> </tr> </table>		Make	Break	Style S1	5mm (0.20in)	11mm (0.43in)	Style S2	9mm (0.35in)	12mm (0.47in)	Style S3	5mm (0.20in)	12mm (0.47in)	Style S4	10mm (0.39in)	13mm (0.51in)
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Auxiliary Contact Switching Capability	300VDC, 250VAC, 0.5A including inrush. 15VA/10W suitable for AC/DC circuits															
Operating Temperature	<table border="0"> <tr> <td>S1, S2, S3</td> <td>-10°C to +55°C (+14° to +131°F)</td> </tr> <tr> <td>S4 (GD2)</td> <td>-25°C to +125°C (-13° to +257°F)</td> </tr> </table>	S1, S2, S3	-10°C to +55°C (+14° to +131°F)	S4 (GD2)	-25°C to +125°C (-13° to +257°F)											
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Enclosure Protection	<table border="0"> <tr> <td>S1, S2, S31</td> <td>IP67 (NEMA 6P)</td> </tr> <tr> <td>S4 (GD2)</td> <td>IP67 (NEMA 6P)</td> </tr> </table>	S1, S2, S31	IP67 (NEMA 6P)	S4 (GD2)	IP67 (NEMA 6P)											
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Cable	<table border="0"> <tr> <td>S1</td> <td>0.54 mm<sup>2</sup> (20AWG) 4 wire PVC Jacket OD – 4mm (0.16in)</td> </tr> <tr> <td>S2</td> <td>0.54 mm<sup>2</sup> (20AWG) 4 wire PVC Jacket OD – 4mm (0.16in)</td> </tr> </table>	S1	0.54 mm <sup>2</sup> (20AWG) 4 wire PVC Jacket OD – 4mm (0.16in)	S2	0.54 mm <sup>2</sup> (20AWG) 4 wire PVC Jacket OD – 4mm (0.16in)											
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Case Material	<table border="0"> <tr> <td>S1, S2</td> <td>Moulded ABS</td> </tr> <tr> <td>S30 (Actuator)</td> <td>Polyester</td> </tr> <tr> <td>S31 (Sensor)</td> <td>Nylon (Trogamid)</td> </tr> <tr> <td>S4 (GD2)</td> <td>Stainless Steel</td> </tr> </table>	S1, S2	Moulded ABS	S30 (Actuator)	Polyester	S31 (Sensor)	Nylon (Trogamid)	S4 (GD2)	Stainless Steel							
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Mounting	Any Position															
Weight (not including cable)	<table border="0"> <tr> <td>S1</td> <td>Sensor Actuator</td> </tr> <tr> <td>S2</td> <td>18g (0.04lbs) 15g (0.03lbs)</td> </tr> <tr> <td>S3</td> <td>20g (0.04lbs) 30g (0.07lbs)</td> </tr> <tr> <td>S4</td> <td>18g (0.04lbs) 6g (0.01lbs) 150g (0.33lbs) 170g (0.37lbs)</td> </tr> </table>	S1	Sensor Actuator	S2	18g (0.04lbs) 15g (0.03lbs)	S3	20g (0.04lbs) 30g (0.07lbs)	S4	18g (0.04lbs) 6g (0.01lbs) 150g (0.33lbs) 170g (0.37lbs)							
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Shock	30g, 11ms half-sine															
Vibration	1mm, 10 to 55Hz															

**Product Selection**

Housing Style	Housing	Safety Contacts	Auxiliary Contacts	Type	Connection	Catalogue Number
 S1	ABS Plastic	1 N.C. & 1 N.O.	None	S11	3m Cable	440N-S32014
					10m Cable	440N-S32016
			1 N.C.	S12	3m Cable	440N-S32022
					10m Cable	440N-S32032
			1 N.O.	S13	3m Cable	440N-S32037
					10m Cable	440N-S32036
 S2	ABS Plastic	1 N.C. & 1 N.O.	None	S21	3m Cable	440N-S32015
					10m Cable	440N-S32017
			1 N.C.	S22	3m Cable	440N-S32023
					10m Cable	440N-S32033
			1 N.O.	S23	3m Cable	440N-S32038
					10m Cable	440N-S32039
 S3	Polyester (Actuator)  Nylon [Trogamid] (Sensor)	1 N.C. & 1 N.O.	None	S31	4 Pin Micro QD	440N-S32024
			1 N.C.	S42	8 Pin Micro QD	440N-S32047
 S4	Stainless Steel	1 N.C. & 1 N.O.	1 N.O.	S43		8 Pin Micro QD
			Mating cable, 4-pin straight 2m. See page 15-10 for details and additional lengths.			
Mating cable, 4-pin straight 5m. See page 15-10 for details and additional lengths.					889D-F4AC-5	
Mating cable, 4-pin straight 10m. See page 15-10 for details and additional lengths.					889D-F4AC-10	
Mating cable, 8-pin/7-wire straight 2m. See page 15-10 for details and additional lengths.					889D-F8AC-2	
Mating cable, 8-pin/7-wire straight 5m. See page 15-10 for details and additional lengths.					889D-F8AC-5	
Mating cable, 8-pin/7-wire straight 10m. See page 15-10 for details and additional lengths.					889D-F8AC-10	

**Note:** Contacts are described with the guard door closed, that is, actuator in place. Switch is shipped complete with actuator.

**Accessories**

Description	Page Number	Catalogue Number
Actuator S10	—	440N-A32019
Actuator S20		440N-A32020
Actuator S30		440N-A32025
Actuator S40 (GD2)		440N-A32041

Interlock Switches

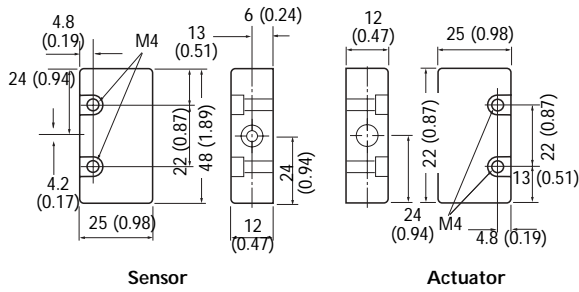
**Non contact Switches**

**Sipha Sensors**

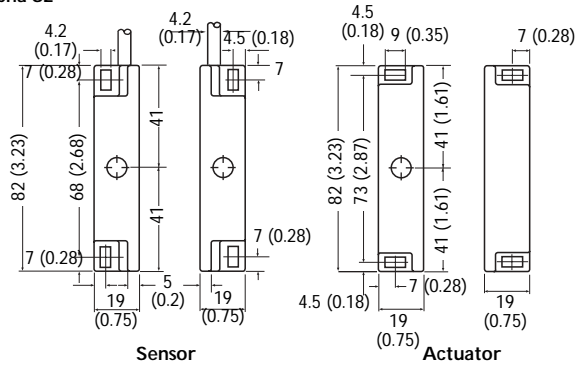
**Approximate Dimensions—mm (inches)**

*Dimensions are not intended to be used for installation purposes.*

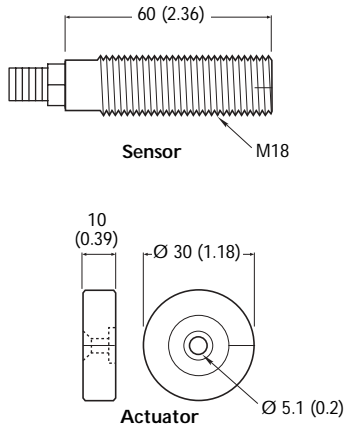
Sipha S1



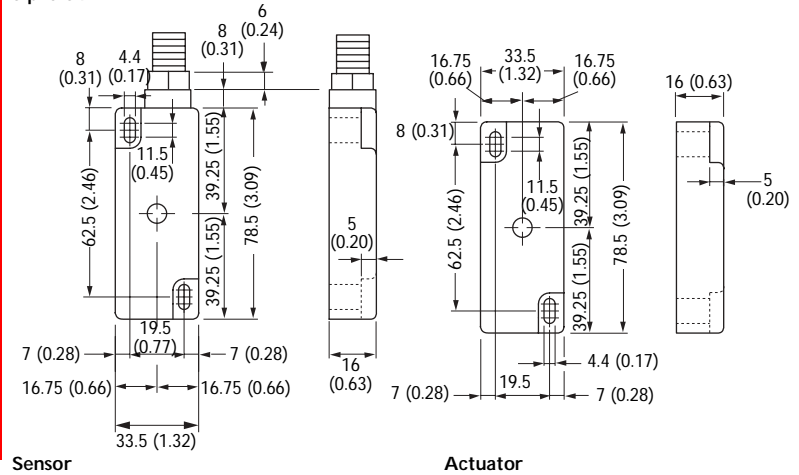
Sipha S2



Sipha S3

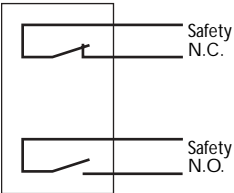


Sipha S4

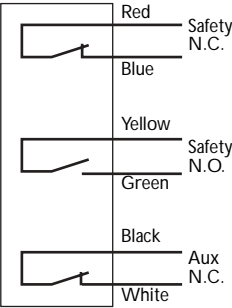


**Typical Wiring Diagrams**

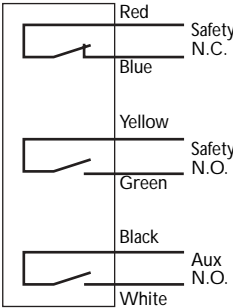
S11, S21



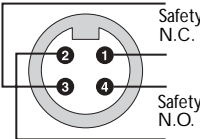
S12, S22



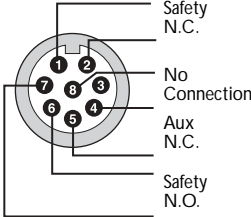
S13, S23



S31



S42



S43

