

Rotacam™

Description

The Rotacam is heavy-duty, hinge-actuated safety-interlock switch. It can be used as, or connected to, the existing hinge pin for direct operation of the switch. Machine power is isolated when the guard has been opened just 5°. For applications requiring a larger degree of operation, the internal cam can be adjusted from 5...11°.



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

The Rotacam is available with two N.C. safety contacts and one N.O. auxiliary contact. The switch 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 die-cast housing is sealed to IP66 and features one M20 conduit entry (1/2 inch NPT and connector style also available). Two different shaft lengths of 30 mm and 85 mm can also be specified.

EX and Pneumatic styles of Rotacam are also available; see [Pneumatic Switches](#) for more information.

Features

- Can be used as a hinge pin on light- and medium-weight guard doors
- Isolates power within 5° of door movement
- Degree of operation can be customized with adjustable cam
- Robust die-cast case, ideal for heavy-duty applications
- Contacts, 2 N.C. & 1 N.O.

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 EN954-1 Dual channel interlocks suitable for Cat. 3 or 4 systems				
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 Pl _e or Pl _d 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, SUVA, and TÜV				
Outputs					
Safety Contacts ‡	2 N.C. direct opening action				
Auxiliary Contacts	1 N.O.				
Shaft Rotation for Contact Operation	11° maximum; 5° minimum, (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.	12 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	IP66				
Operating Temperature [C (F)]	-20...+80° (-4...176°)				
Physical Characteristics					
Housing Material	Heavy-duty die-cast alloy				
Shaft Material	Stainless Steel				
Weight [g (lb)]	420 (0.926)				
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

Safety Contacts	Auxiliary Contacts	Contact Action	Shaft Dimensions	Operating Shaft Type	Cat. No.		
					M20 Conduit		Connector♣
					M20	1/2 inch NPT Adaptor	8-Pin Micro (M12)
2 N.C.	1 N.O.	BBM	L = 30 (1.18) D = 16 (0.63)	Pre-Bored	440H-R03074	440H-R03078	440H-R03111
			L = 85 (3.35) D = 12.7 (0.5)	Solid	440H-R03079	440H-R03088	440H-R03112

♣ 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
MSR126T	2 N.O.	None	Fixed	Auto./Manual	24V AC/DC	MSR126R/T	440R-N23117
MSR30RT	2 N.O. Solid State	1 N.O. Solid State	Removable	Auto./Manual or Monitored Manual	24V DC	MSR30RT/RTP	440R-N23198
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.

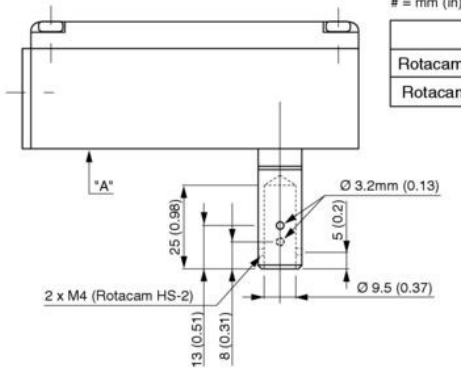
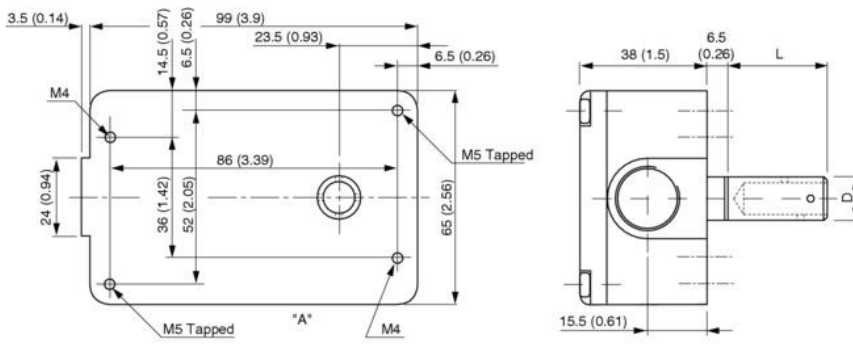
Connection Systems

Description	8-Pin Micro (M12)
	2 N.C. & 1 N.O.
Cordset	889D-F8AB-*
Patchcord	889D-F8ABDM-‡
Distribution Box	—
Shorting Plug	—
T-Port	—

* 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.
Note: For additional information, see Safety Connection Systems.

Approximate Dimensions

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



= mm (in)

	L	D
Rotacam HS-2	30mm (1.18)	16mm (0.63)
Rotacam P85	85mm (3.35)	12.7mm (0.5)

Note: Holes only on pre-bored models.
Note: 2D, 3D and electrical drawings are available on www.ab.com.

Typical Wiring Diagrams

Description		2 N.C. & 1 N.O.
Contact Configuration		
Contact Action		
8-Pin Micro (M12) Pin 2 Not Connected		
8-Pin Cordset 889D-F8AB-*	White Blue	Safety A
	Grey Pink	Safety B
	Green Yellow	Aux A
	Red	Ground
	Brown	Not Connected

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