Magnetically Coded Non-contact Interlock Switches

The magnetically coded non-contact interlock switches have the following features:

- Non-contact actuation
- Magnetically coded sensing
- High tolerance to misalignment
- Designed for use with specified controllers

Specifications

Attribute	Magnetically Coded Non-contact Interlock Switches
Safety Ratings	
Standards	ISO 14119, IEC 60947-5-3, ISO 13849-1, IEC 62061
Safety classification	Type 4 Interlocking Device with low coding per ISO 14119
Functional safety data	See Rockwell Automation Functional Safety Data Sheet, publication SAFETY-SR001
Certifications	cULus Listed, TÜV Certified, UKCA Marked for all applicable regulations, CE Marked for all applicable EU directives rok.auto/certifications
Outputs (Guard Door Closed, Actuator in Place)	
Safety outputs	• MC1: 2 N.C. REEDS • MC2: 2 N.C. solid-state relays
Auxiliary outputs	• MC1: — • MC2: 1 x PNP, 0.2 A max; Status: OFF (0V DC)
Operating Characteristics	
Operating distance, make [mm (in.)]	• MC1: 8 (0.3) • MC2: 10 (0.39)
Operating distance, break [mm (in.)]	• MC1: 15 (0.59) • MC2: 25 (0.98)
Repeat accuracy	10% of sensing range
Output current, max	200 mA
Switching current at voltage	• MC1: 24V DC at 200 mA, max • MC2: 24V DC at 200 mA +10%/-15%, max
Operating voltage/power supply	• MC1: — • MC2: 24V DC, +10%/-15%/50 mA max/Class 2 SELV
Frequency of operating cycle	1 Hz
Environmental	
Enclosure type rating	MC1: IP67 (NEMA 6P) MC2: IP69K
Operating temperature [°C (°F)]	-10...+55 (14...131)
Relative humidity	5...95%
Shock	IEC 68-2, 27, 30 g, 11 ms
Vibration	IEC 68-2-6, 10...55 Hz
Radio frequency	IEC 61000-4-3, IEC 61000-4-6
Physical Characteristics	
Material	MC1 • Housing: Molded ABS • Actuator: Molded ABS MC1 • Housing: Ultradur • Actuator: Ultradur
Color	Red

Product Selection

Type	Operating Voltage/ Input Current	Safety Outputs	Auxiliary Outputs	Status Indicator	Connection	Cat. No.
MC1	–	2 N.C. REEDS	–	No	4-pin Micro (M12)	440N-Z2NRS1C
					3 m (9.8 ft) cable	440N-Z2NRS1A
					10 m (32.8 ft) cable	440N-Z2NRS1B
MC2	24V DC, +10%/ 15%/50 mA, max	2 N.C. solid-state relays	1 x PNP, 0.2 A max; Status: OFF (0V DC)	Yes	8-pin Micro (M12)	440N-Z21W1PH
					3 m (9.8 ft) cable	440N-Z21W1PA
					10 m (32.8 ft) cable	440N-Z21W1PB

Table 34 - Connection Systems

Description	Cat. No.	
	Connection to Distribution Box 4-pin Micro (M12) 2 N.C.	8-pin Micro (M12) 2 N.C. and 1 N.O.
Cordset	889D-F4AC-x (1)	889D-F8AB-x (1)
Patchcord	889D-F4ACDM-y (2)	889D-F8ABDM-y (2)
Distribution box	898D-4zLT-DM4 (3)	–
Shorting plug	898D-41LU-DM	–
T-port	898D-43LY-D4	–

(1) Replace *x* with 2 (2 m [6.6 ft]), 5 (5 m [16.4 ft]), or 10 (10 m [32.8 ft]) for standard cable lengths.
(2) Replace *y* with 1 (1 m [3.3 ft]), 2 (2 m [6.6 ft]), 3 (3 m [9.8 ft]), 5 (5 m [16.4 ft]), or 10 (10 m [32.8 ft]) for standard cable lengths.
(3) Replace *z* with 4 or 8 for number of ports.

Accessories

Description	Cat. No.
MC1 spare actuator	440N-A17233
MC2 spare actuator	440N-A32114

Approximate Dimensions

Figure 32 - MC1 [mm (in.)]

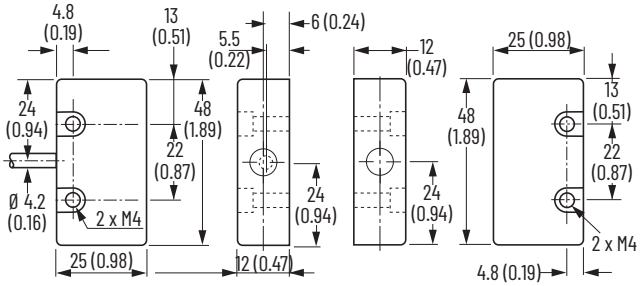
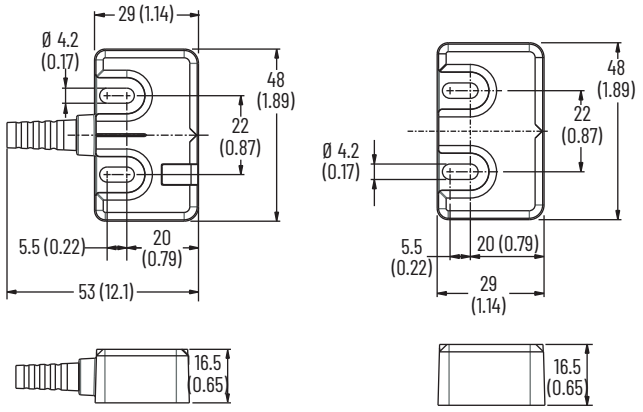
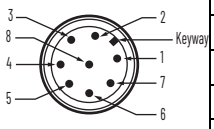


Figure 33 - MC2 [mm (in.)]



Typical Wiring Diagrams

Description		MC1 — 2 N.C.	MC2 — 2 N.C. and 1 N.O.
4-pin Micro (M12) 	1 and 3	Safety A	—
	2 and 4	Safety B	
8-pin Micro (M12) 	1	—	Aux A
	2		Power+
	3		—
	4		Safety B+
	5		Safety A
	6		Safety B
	7		Ground
	8		Safety A+
Cordset 889D-F4AC-*x* or cable version (1)	Brown	Safety A	—
	Blue		
	White	Safety B	—
	Black		
8-pin Cordset 889D-F8AB-*x* or cable version (1)	Gray	—	Safety A
	Red		
	Pink		Safety B
	Yellow		
	White		Aux
	Brown		24V DC +
	Blue		Ground
	Green		—

(1) *x* = 2 (2 m [6.6 ft]), 5 (5 m [16.4 ft]) or 10 (10 m [32.8 ft]) for standard cable lengths.