

MT-GD2

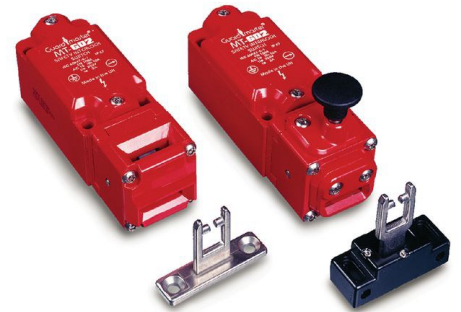
Description

The MT-GD2 family is a robust, tongue-operated (or key-operated) safety-interlock switch designed to fit at the leading edge of sliding, hinged or lift-off guards. With its dual entry slots and rotatable head, the MT-GD2 can offer eight different options for actuator entry.

The MT-GD2 features a compact housing of only 117 x 40 x 43 mm (4.60 x 1.57 x 1.69 in.) with DIN 50041 standard fixing centres and includes forced guided contacts and a tamper-resistant mechanism.

The MT-GD2 is available with a variety of contact configurations enabling it to be used as part of a system for higher-risk applications. Operation of the switch is achieved by the insertion of the specially-profiled stainless-steel actuator which should be permanently fixed to the leading edge of the guard door. An optional flexible actuator allows the MT-GD2 to operate on smaller-radii doors (≥ 60 mm) and a flat actuator gives additional mounting options, for example, on a chain.

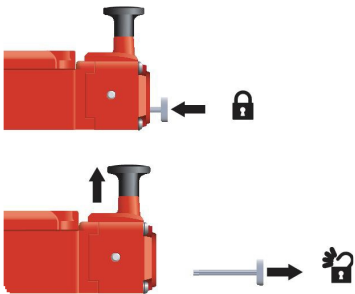
A style incorporating a latch release mechanism allows manual retention of the actuator in the switch until the release mechanism is manually activated.



Features

- Strong and versatile, can be used in most applications
- Eight possible actuator entry points, easy to install
- Variety of contact configurations
- Snap acting MT-GD2 gives a min. break contact force of 40 N
- Optional latch release styles
- Industry standard fixing centers to DIN/EN50041

MT-GD2 Latch Release Style



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 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 Dual channel interlock may be suitable for performance levels Pl _e or Pl _d (according to ISO 13849-1:2006) and for use in SIL2 or SIL3 systems (according to IEC 62061) depending on application characteristics					
Certifications	CE Marked for all applicable directives, cULus, TÜV, and CCC					
Outputs						
Safety Contacts ‡	Standard: 3 N.C. or 2 N.C. direct opening action Snap acting: 2 N.C. direct opening forced disconnection					
Auxiliary Contacts	Standard: 1 N.O. or 2 N.O. Snap Acting: 2 N.O.					
Thermal Current I _{th}	10 A					
Rated Insulation Voltage	(U _i) 500V					
Switching Current @ Voltage, Min.	3 mA @ 18V DC					
Utilization Category						
A600/AC-15	(U _e)	600V	500V	240V	120V	
	(I _e)	1.2 A	1.4 A	3 A	6 A	
Standard—DC-13	(U _e)	24V				
	(I _e)	2 A				
Snap-Acting—A300/AC-15	(U _e)	240V	120V			
	(I _e)	3 A	6 A			
Snap-Acting—DC-13	(U _e)	24V				
	(I _e)	2 A				
Operating Characteristics						
Break Contact Force, Min.	BBM & MBB: 12 N (2.7 lbf) BBM & Extended Flat Actuator: 32 N (7.2 lbf) Snap acting: 40 N (9.0 lbf)					
Actuation Speed, Max.	160 mm (6.29 in.)/s					
Actuation Frequency, Max.	2 cycles/s					
Mechanical Life	1,000,000 operations					
Environmental						
Enclosure Type Rating	IP67					
Operating Temperature [C (F)]	-20...+80° (-4...+176°)					
Physical Characteristics						
Housing Material	Painted zinc					
Actuator Material	Stainless Steel					
Weight [g (lb)]	520 (1.15)					
Color	Yellow or Red					

* Usable for ISO 13849-1:2006 and IEC 62061. Data other than B10d is based on:

- 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

Red Body Switches

Type	Contact			Actuator Type	Cat. No.							
					Conduit		Connector♣					
	Safety	Auxiliary	Action		M20	1/2 inch NPT	12-Pin M23	8-Pin Micro (M12)‡	Connect to ArmorBlock Guard I/O 5-Pin Micro (M12)★			
MT-GD2	3 N.C.	1 N.O.	BBM	—	440K-MT55002	440K-MT55085	440K-MT55094	—	—			
				GD2 standard	440K-MT55074	440K-MT55022	440K-MT55095	—	—			
				Fully flexible	440K-MT55075	440K-MT55029	440K-MT55096	—	—			
			MBB	—	440K-MT55004	440K-MT55088	440K-MT55100	—	—			
				2 N.C.	2 N.O.	BBM	—	440K-MT55005	440K-MT55086	440K-MT55097	440K-M21BNDH	—
							GD2 standard	440K-MT55076	440K-MT55026	440K-MT55098	—	—
	Fully flexible	440K-MT55077	440K-MT55087				440K-MT55099	—	—			
	MBB	—	440K-MT55006	440K-MT55089	440K-MT55101	—	—					
		Snap Acting	—	—	440K-M22ANDT	440K-M22ANDL	440K-M21ANDH	440K-M2NNNDS				
			Extended flat	440K-M22AEDM	440K-M22AEDT	—	—	—				
	GD2 standard		440K-M22ASDM	440K-M22ASDT	—	—	—					
	Fully-flexible	440K-M22ABDM	440K-M22ABDT	—	—	—						

♣ For connector ratings see Safety Switches and Connectors.

★ With a 5-pin micro (M12) connector, not all contacts are connected. See Typical Wiring Diagrams for wiring details.

‡ With an 8-pin micro (M12) connector, not all contacts are connected. See Typical Wiring Diagrams for wiring details.

Yellow Body Switches

Type	Contact			Actuator Type	Cat. No.		
					Conduit	Connector♣	
	Safety	Auxiliary	Action		1/2 inch NPT	12-Pin M23	5-Pin Micro (M12)★
MT-GD2	2 N.C.	2 N.O.	Snap Acting	—	440K-M22ANYT	—	—
				Extended flat	440K-M22AEYT	440K-M22AEYL	440K-M2NAEYS
—	2 N.C.	2 N.O.	MBB	—	440K-M22MNYT-N5	—	440K-M2NNNYS-N5

♣ For connector ratings see Safety Switches and Connectors.

★ With a 5-pin micro (M12) connector, not all contacts are connected. See Typical Wiring Diagrams for wiring details.

‡ With an 8-pin micro (M12) connector, not all contacts are connected. See Typical Wiring Diagrams for wiring details.

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	4-Pin Micro (M12)	5-Pin Micro (M12)	8-Pin Micro (M12)	12-Pin M23
Cordset	889D-F4AC-*	—	889D-F8AB-*	889M-F12X9AE-*
Patchcord	889D-F4ACDM-‡	889D-F5ACDM-*	889D-F8ABDM-‡	—
Distribution Box	898D-P4§ LT-DM4	—	—	—
Shorting Plug	898D-41LU-DM	—	—	—
T-Port	898D-43LY-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 Safety Connection Systems.

Accessories

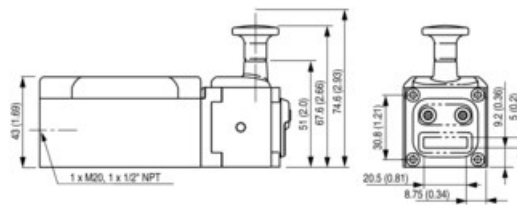
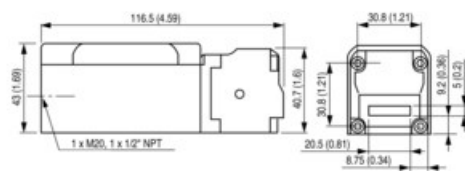
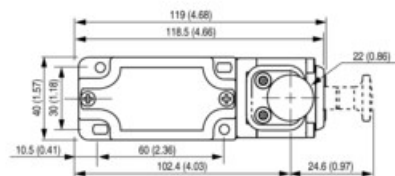
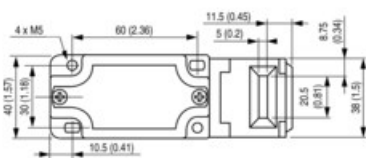
Description		Dimensions	Cat. No.
	GD2 standard actuator	Actuators*	440G-A27011
	GD2 flat actuator		440K-A11112
	Fully flexible actuator		440G-A27143
	Sliding bolt actuator	Door Handles	440G-A27163
	Extended flat actuator	Actuators*	440K-A17116
	Dust Cover	—	440K-A17180

Approximate Dimensions

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

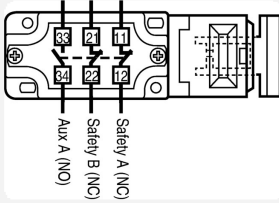
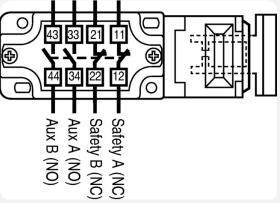
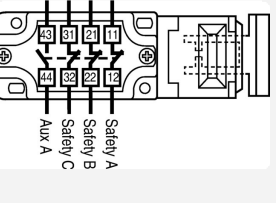
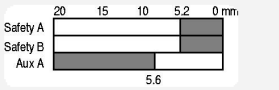
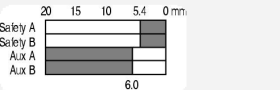
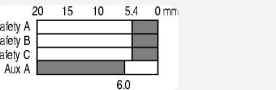
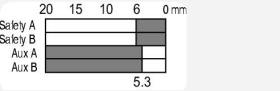

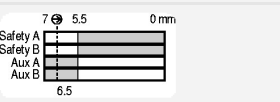

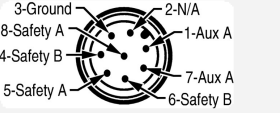
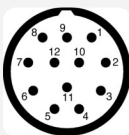
MT-GD2 Latch Release

MT-GD2



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

Typical Wiring Diagrams

Description		2 N.C. & 1 N.O.	2 N.C. & 2 N.O.	3 N.C. & 1 N.O.
Contact Configuration				
Contact Action				
□ Open ■ Closed		BBM	BBM	BBM
		—		
		—	MBB	MBB
		—		—
5-Pin Micro (M12) for Connection to ArmorBlock Guard I/O		—		—
8-Pin Micro (M12)		—		—
12-Pin Cordset	1 and 3	Safety A	Safety A	Safety A
	4 and 6	Safety B	Safety B	Safety B
	7 and 8	NC	Aux A	Safety C
	9 and 10	Aux A	Aux B	Aux A
	Pins 2, 5 and 11 are not connected.		12	Ground
8-Pin Cordset 889D-F8AB-*	Grey Red	—	Safety A	—
	Yellow Pink	—	Safety B	—
	White Blue	—	Aux A	—
	Green	—	Ground	—
	Brown	—	Not Used	—
12-Pin Cordset 889M-F12X9AE-*	Brown Blue	Safety A	Safety A	Safety A
	White Green	Safety B	Safety B	Safety B
	Yellow Grey	Not Used	Aux A	Safety C
	Pink Red	Aux A	Aux B	Aux A
	Green/Yellow	Ground	Ground	Ground

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