

# MT-GD2

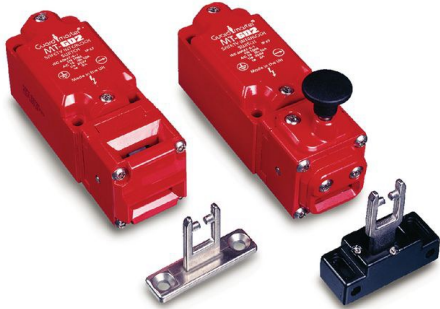
## Description

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 ( $\geq 60$  mm) and a flat actuator gives additional mounting options, for example, on a chain.

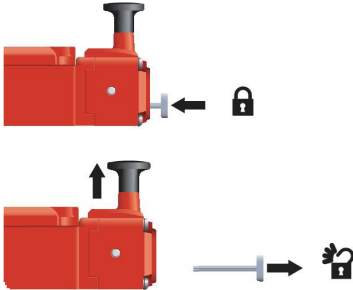
A style incorporating a latch release mechanism allows manual retention of the actuator in the switch until the release mechanism is manually activated.



## 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 <a href="http://www.ab.com/Safety/">http://www.ab.com/Safety/</a>	B10d: > 2 x 10 <sup>6</sup> operations at min. load PFH <sub>D</sub> : > 3 x10 <sup>-7</sup> MTTFd: > 385 years Dual channel interlock may be suitable for performance levels Pl <sub>e</sub> or Pl <sub>d</sub> (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 <sub>th</sub>	10 A					
Rated Insulation Voltage	(U <sub>i</sub> ) 500V					
Switching Current @ Voltage, Min.	3 mA @ 18V DC					
Utilization Category						
A600/AC-15	(U <sub>e</sub> )	600V	500V	240V	120V	
	(I <sub>e</sub> )	1.2 A	1.4 A	3 A	6 A	
Standard—DC-13	(U <sub>e</sub> )	24V				
	(I <sub>e</sub> )	2 A				
Snap-Acting—A300/AC-15	(U <sub>e</sub> )	240V	120V			
	(I <sub>e</sub> )	3 A	6 A			
Snap-Acting—DC-13	(U <sub>e</sub> )	24V				
	(I <sub>e</sub> )	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	—	—	—						
MT-GD2 Latch Release		3 N.C.	1 N.O.	BBM	—	440K-MT55039	440K-MT55062	440K-MT55042	—	—		
					GD2 standard	440K-MT55078	440K-MT55041	440K-MT55070	—	—		
	Fully flexible				440K-MT55079	440K-MT55045	440K-MT55103	—	—			
	MBB			—	440K-MT55082	440K-MT55091	440K-MT55106	—	—			
				2 N.C.	2 N.O.	BBM	—	440K-MT55063	440K-MT55065	440K-MT55066	440K-M21BNDH-N5	440K-M2NNNDS-N5
							GD2 standard	440K-MT55080	440K-MT55050	440K-MT55104	—	—
Fully flexible	440K-MT55081	440K-MT55051	440K-MT55052				—	—				
MBB	—	440K-MT55083	440K-MT55092	440K-MT55105	440K-M21MNDH-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.

### 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.
<b>Single-Function Safety Relays</b>							
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
<b>Modular Safety Relays</b>							
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

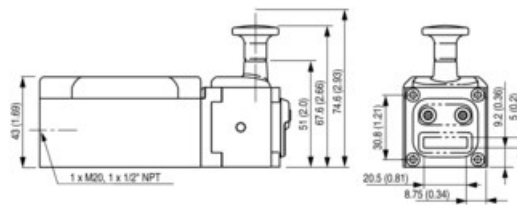
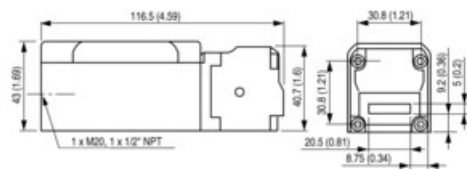
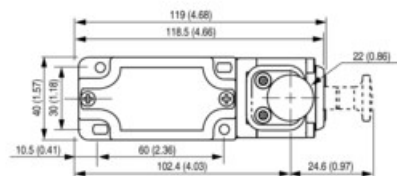
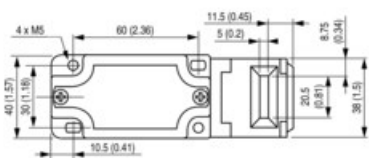
Description		Dimensions	Cat. No.
	GD2 standard actuator	Actuators*	440G-A27011
	GD2 flat actuator		440K-A11112
	Fully flexible actuator		440G-A27143
	Sliding bolt actuator	Door Handles	440G-A27163
	Extended flat actuator	Actuators*	440K-A17116
	Dust Cover	—	440K-A17180

### Approximate Dimensions

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

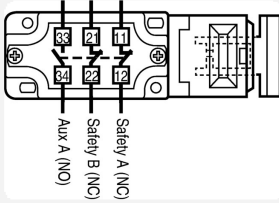
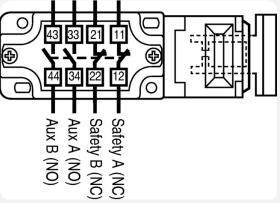
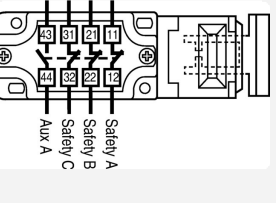
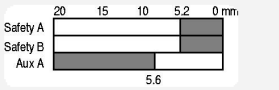
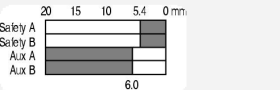
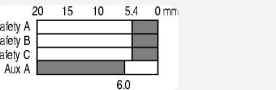
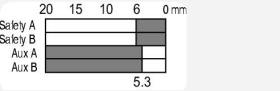

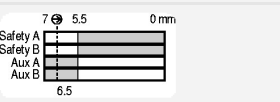

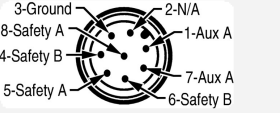
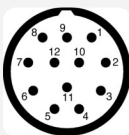
#### MT-GD2 Latch Release

##### MT-GD2



Note: 2D, 3D and electrical drawings are available on [www.ab.com](http://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.