

# IDEM Non-Contact RFID Locking Safety Switches

## MGL Series – Die Cast Metal Housing



- Heavy duty or medium duty holding force models available
- Master coded or uniquely coded actuation
- RFID provides a high degree of anti-tamper, virtually impossible to override
- Flexible actuator for a high degree of misalignment tolerance.
- Able to connect to most popular safety relays to achieve up to PLe and Cat.4 for ISO3849-1
- Ability to connect up to 20 switches and E-stops
- in series
- Choice of 8-wire cable or M12 quick connect (purchase cables separately for the M12 QC)
- Remanence magnetization acts as a light magnetic latch after unlocking.
- (2) N.C. (door closed - lock energized) Safety outputs, overload protected
- (1) N.O. Auxiliary output for indication of door open
- Includes both switch and actuator



IDEM Non-Contact RFID Locking Switch Sets - Die Cast Metal									
Part Number	Price	Body Material	Weight (lb)	Holding Force	Operating Voltage	Operating Current	Coding	Connection Type	Dimensions
<b>Heavy Duty Holding Force</b>									
<a href="#">MGL-1M-U-464001</a>		Die cast metal	4.68	1500N (337.2 lbf)	24VDC ± 10%	Nominal ≈ 50mA	Uniquely Coded	5-meter (16.48 ft.) cable	Figure 3
<a href="#">MGL-1M-U-464003</a>		Die cast metal	4.17				8-pin M12 quick-disconnect	Figure 3	
<a href="#">MGL-1M-M-464004</a>			4.68			Locked ≈ 500mA	Master Coded	5-meter (16.48 ft.) cable	Figure 3
<a href="#">MGL-1M-M-464006</a>			4.17				8-pin M12 quick-disconnect		
<b>Medium Duty Holding Force</b>									
<a href="#">MGL-2M-U-465001</a>		Die cast metal	3.06	1000N (224.8 lbf)	24VDC ± 10%	Nominal ≈ 50mA	Uniquely Coded	5-meter (16.48 ft.) cable	Figure 4
<a href="#">MGL-2M-U-465003</a>			2.54				8-pin M12 quick-disconnect		
<a href="#">MGL-2M-M-465004</a>			3.06			Master Coded	5-meter (16.48 ft.) cable		
<a href="#">MGL-2M-M-465005</a>			3.65				10-meter (32.8 ft.) cable		
<a href="#">MGL-2M-M-465006</a>			2.54			8-pin M12 quick-disconnect			

IDEM Non-Contact RFID Locking Switches Replacement Actuators - Die Cast Metal						
Part Number	Price	Body Material	Weight (lbs)	Holding Force	Coding	Dimensions
<a href="#">MGL-1M-M-464102*</a>		Die cast metal	1.54	1500N (337.2 lbf) - Heavy Duty	Master Coded	Figure 3
<a href="#">MGL-2M-M-465102*</a>			0.99	1000N (224.8 lbf) - Medium Duty		Figure 4

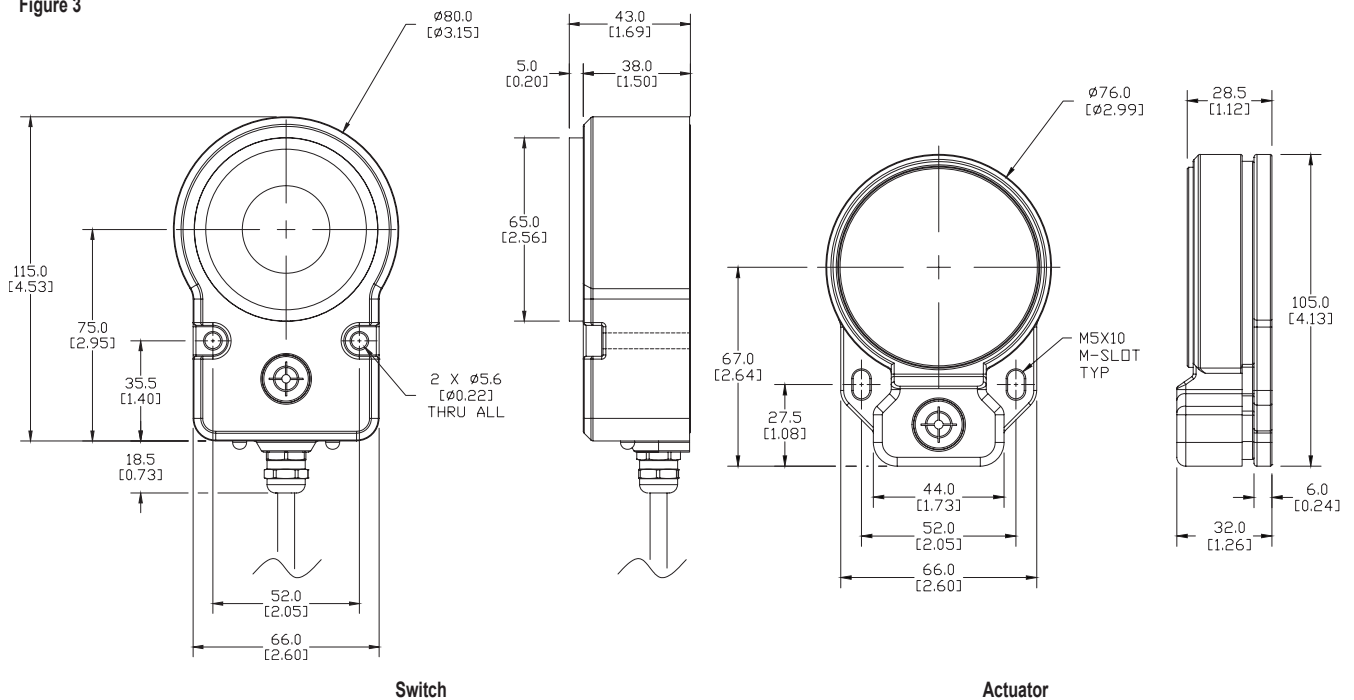
\* For use with Die Cast Metal Master Coded models only

# IDEM Non-Contact RFID Locking Safety Switches

## Dimensions

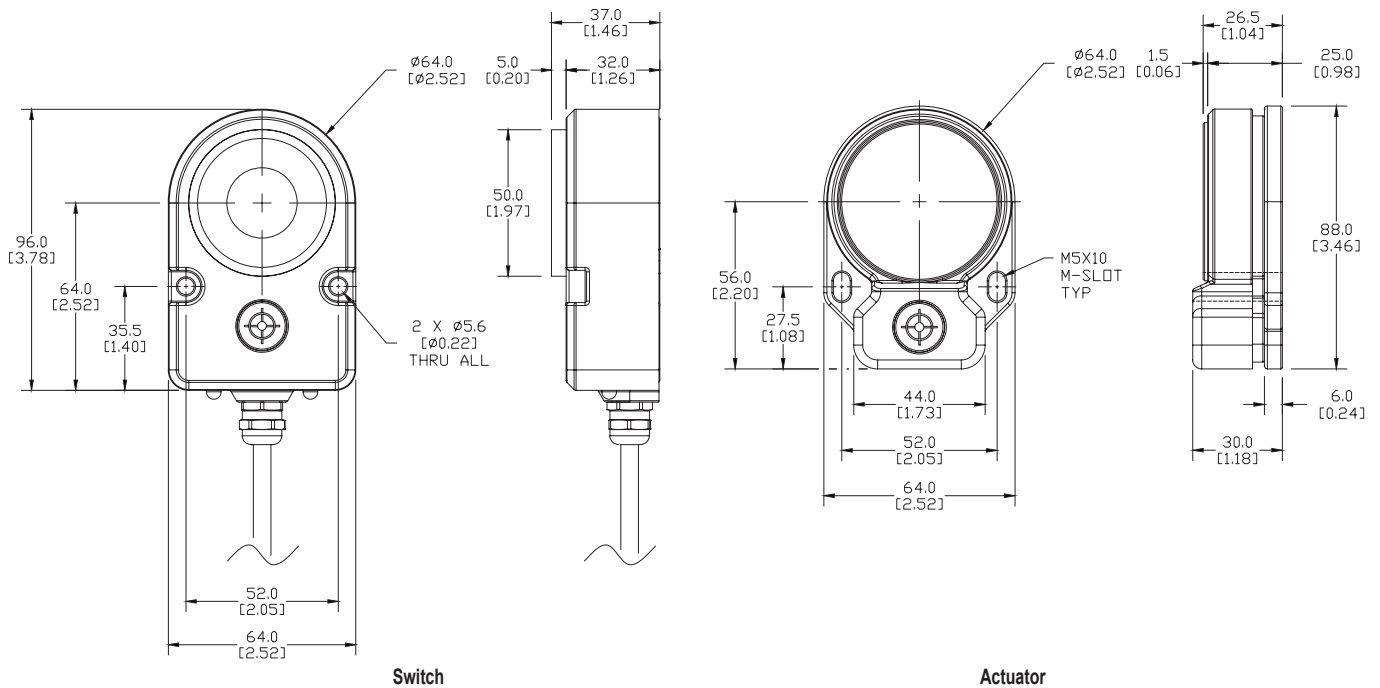
mm [in]

Figure 3



MGL-1M

Figure 4



MGL-2M

# IDEM Non-Contact RFID Locking Safety Switches Specifications

IDEM Non-Contact RFID Locking Switches Specifications			
	MGL-1SS / MGL-2SS	MGL-1M / MGL-2M	MGL-1P / MGL-2P
<b>Body Material</b>	316 Stainless Steel	Die Cast Metal	High Specification Polyester Plastic
<b>Safety Classification and Reliability Data</b>			
<b>Minimum Switched Current</b>	1mA @ 10VDC		
<b>Dielectric Withstand</b>	250VAC		
<b>Insulation Resistance</b>	100 Mohms		
<b>Switching Distance</b>	Sao (Sensing Assured Operating) – 1mm close Sar (Sensing Assured Release) – 10mm open		
<b>Tolerance to Misalignment</b>	5mm in any direction from 5mm setting gap		
<b>Switching Frequency</b>	1.0 Hz maximum		
<b>Approach speed</b>	200 mm/s to 1000 mm/s		
<b>Temperature Range</b>	-25°C to 40°C (-13°F to 104°F)		
<b>Enclosure Protection</b>	IP69K	IP67	
<b>Cable Type</b>	PVC, 8-wire, 6mm OD		
<b>Mounting Screws</b>	2 x M5 – Tightening torque 1Nm (0.74 lb-ft)		
<b>Mounting Position</b>	Any		
<b>Characteristic Data According to IEC62061 (used as a sub system)</b>			
<b>Safety Integrity Level</b>	SIL3		
<b>PFH (1/h)</b>	4.77E-10 Corresponds to 4.8% of SIL3		
<b>PFD</b>	4.18E-05 Corresponds to 4.2% of SIL3		
<b>Proof Test Interval T1</b>	20 years		
<b>Characteristic Data according to EN ISO13849-1*</b>			
<b>Performance Level</b>	e If both channels are used in combination with a SIL3/PLe control device		
<b>Category</b>	Cat4		
<b>MTTFd</b>	1100 years		
<b>Diagnostic Coverage DC</b>	99% (high)		
<b>Number of operating days per year</b>	dop = 365d		
<b>Number of operating hours per day</b>	hop = 24h		
<b>B10d</b>	Not mechanical parts implemented		

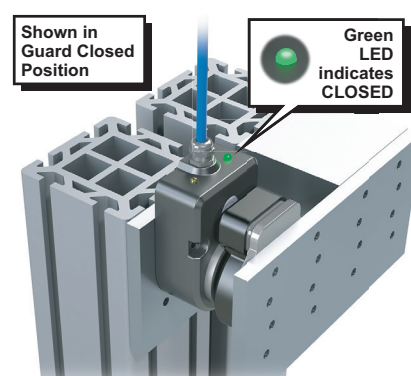
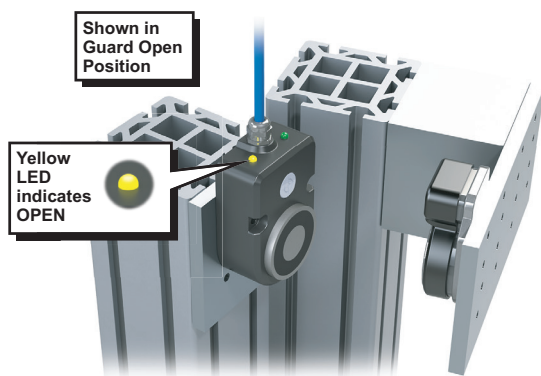
\*Note: When the product is used differently from these assumptions (different load, operating frequency, etc.) the values must be adjusted accordingly.

# IDEM Non-Contact RFID Locking Safety Switches

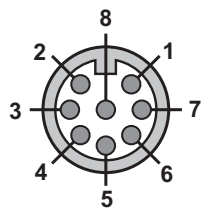
The MGL series RFID locking switches use two LEDs to indicate all the possible switch states.

The LEDs are in a clearly visible location on either side of the cable exit point.

IDEM Non-Contact RFID Locking Switches LED Operation and Switch Status Indication			
Switch Status	Guard	Green LED	Yellow LED
<b>Locked</b>	Closed	Steady	Off
<b>Solenoid Power OFF (Unlocked)</b>	Closed	Flashing	Off
<b>Guard Open</b>	Open	Off	Steady
<b>Door Forced Open</b>	Open	Off	Flashing
<b>Wrong Actuator Code</b>	Closed	Flashing	Flashing



## Connection Colors



Pin View from Switch



IDEM Non-Contact RFID Locking Switches Wiring Diagram			
Quick Connect (QC) M12 8-way male plug	Conductor Colors	Function	Power Rating
8	Orange	Lock Applied (24VDC $\pm$ 10%)	500mA Max.
5	Brown	Auxiliary Signal	+24VDC
4	Yellow	Safety Output 2	200mA Max.
6	Green	Safety Output 2	
1	White	Safety Output 1	200mA Max.
7	Black	Safety Output 1	
3	Blue	0VDC	50mA Max.
2	Red	+ 24VDC $\pm$ 10%	

Note: For M12 Quick Connect switches, color code may vary depending on the cable used. Please verify before installation.

# Safety Products



*Warning: Safety products sold by AutomationDirect are Safety components only. The purchaser/installer is solely responsible for the application of these components and ensuring all necessary steps have been taken to assure each application and use meets all performance and applicable safety requirements and/or local, national and/or international safety codes as required by the application. AutomationDirect cannot certify that our products, used solely or in conjunction with other AutomationDirect or other vendors' products, will assure safety for any application. Any person using or applying any products sold by AutomationDirect is responsible for learning the safety requirements for their individual application and applying them, and therefore assumes all risks, and accepts full and complete responsibility, for the selection and suitability of the product for their respective application.*

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