

IDEM Non-Contact RFID Locking Safety Switches

MGL Series – Plastic 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 - Plastic | | | | | | | | | |
|---|----------|--------------------------------------|--------------|-------------------|-------------------|----------------------------------|----------------|----------------------------|------------|
| Part Number | Price | Body Material** | Weight (lbs) | Holding Force | Operating Voltage | Operating Current | Coding | Connection Type | Dimensions |
| Heavy Duty Holding Force | | | | | | | | | |
| MGL-1P-U-463001 | \$396.00 | High Specification Polyester Plastic | 4.35 | 1500N (337.2 lbf) | 24VDC ± 10% | Nominal ≈ 50mA Locked ≈ 500mA | Uniquely Coded | 5-meter (16.48 ft.) cable | Figure 5 |
| MGL-1P-U-463002 | retired* | | | | | | | 8-pin M12 quick-disconnect | |
| MGL-1P-U-463003 | \$416.00 | | 3.84 | | | | | 5-meter (16.48 ft.) cable | |
| MGL-1P-M-463004 | \$396.00 | | 4.35 | | | | | 8-pin M12 quick-disconnect | |
| MGL-1P-M-463006 | \$416.00 | | 3.84 | | | | | | |
| | | | | | | | | | |
| Medium Duty Holding Force | | | | | | | | | |
| MGL-2P-U-461001 | \$322.00 | High Specification Polyester Plastic | 2.78 | 1000N (224.8 lbf) | 24VDC ± 10% | Nominal ≈ 50mA Locked ≈ 500mA | Uniquely Coded | 5-meter (16.48 ft.) cable | Figure 6 |
| MGL-2P-U-461002 | \$325.00 | | 3.36 | | | | | 10-meter (32.8 ft.) cable | |
| MGL-2P-U-461003 | \$338.00 | | 2.25 | | | | | 8-pin M12 quick-disconnect | |
| MGL-2P-M-461004 | \$218.00 | | 2.78 | | | | | 5-meter (16.48 ft.) cable | |
| MGL-2P-M-461005 | \$325.00 | | 3.36 | | | | | 10-meter (32.8 ft.) cable | |
| MGL-2P-M-461006 | \$338.00 | | 2.25 | | | | | 8-pin M12 quick-disconnect | |

* Consider **MGL-1P-U-463003** for a replacement.

| IDEM Non-Contact RFID Locking Switches Replacement Actuators - Plastic | | | | | | |
|--|---------|--------------------------------------|--------------|---------------------------------|--------------|------------|
| Part Number | Price | Body Material** | Weight (lbs) | Holding Force | Coding | Dimensions |
| MGL-1P-M-463102* | \$71.00 | High Specification Polyester Plastic | 1.54 | 1500N (337.2 lbf) - Heavy Duty | Master Coded | Figure 5 |
| MGL-2P-M-461102* | \$58.00 | | 0.66 | 1000N (224.8 lbf) - Medium Duty | | Figure 6 |

* For use with Plastic Master Coded models only

**Body Material: A polyester base material considered High Specification in terms of ambient temperature and resistant to many modern chemicals and cleaning solutions used in industrial applications.

IDEM Non-Contact RFID Locking Safety Switches

Dimensions mm[in]

Figure 5

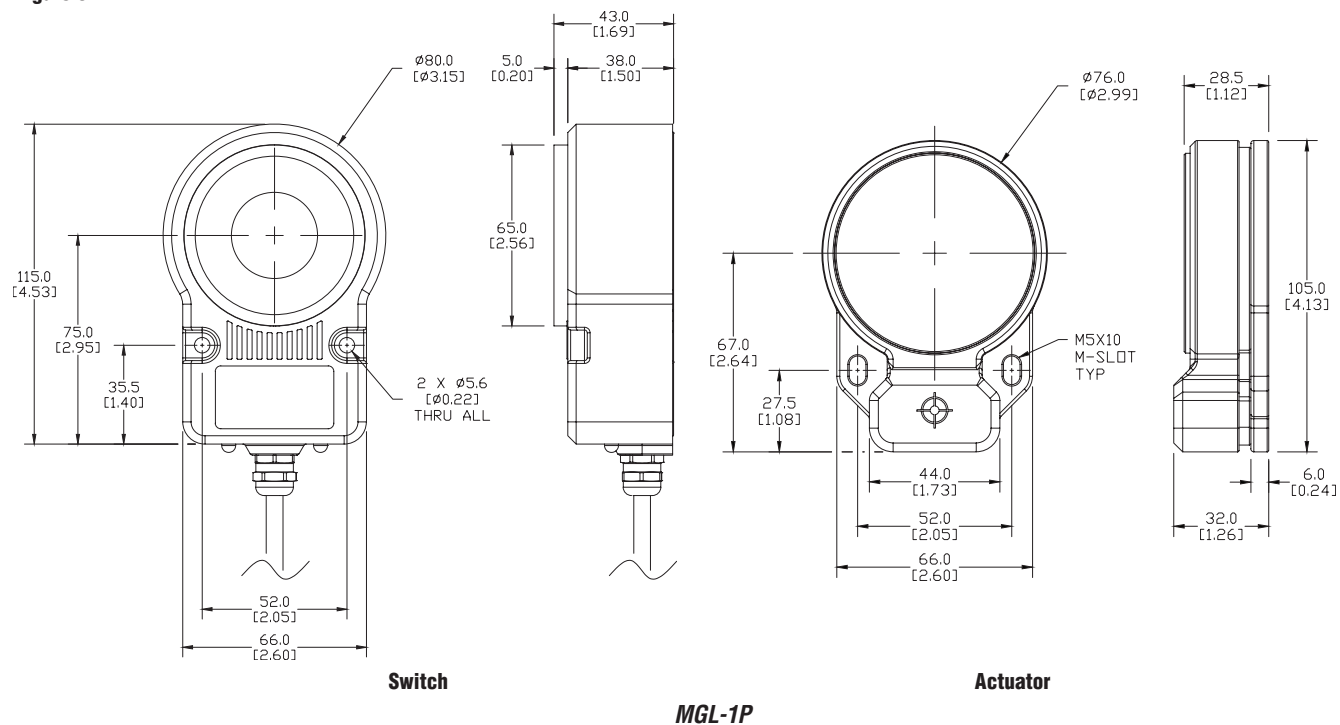
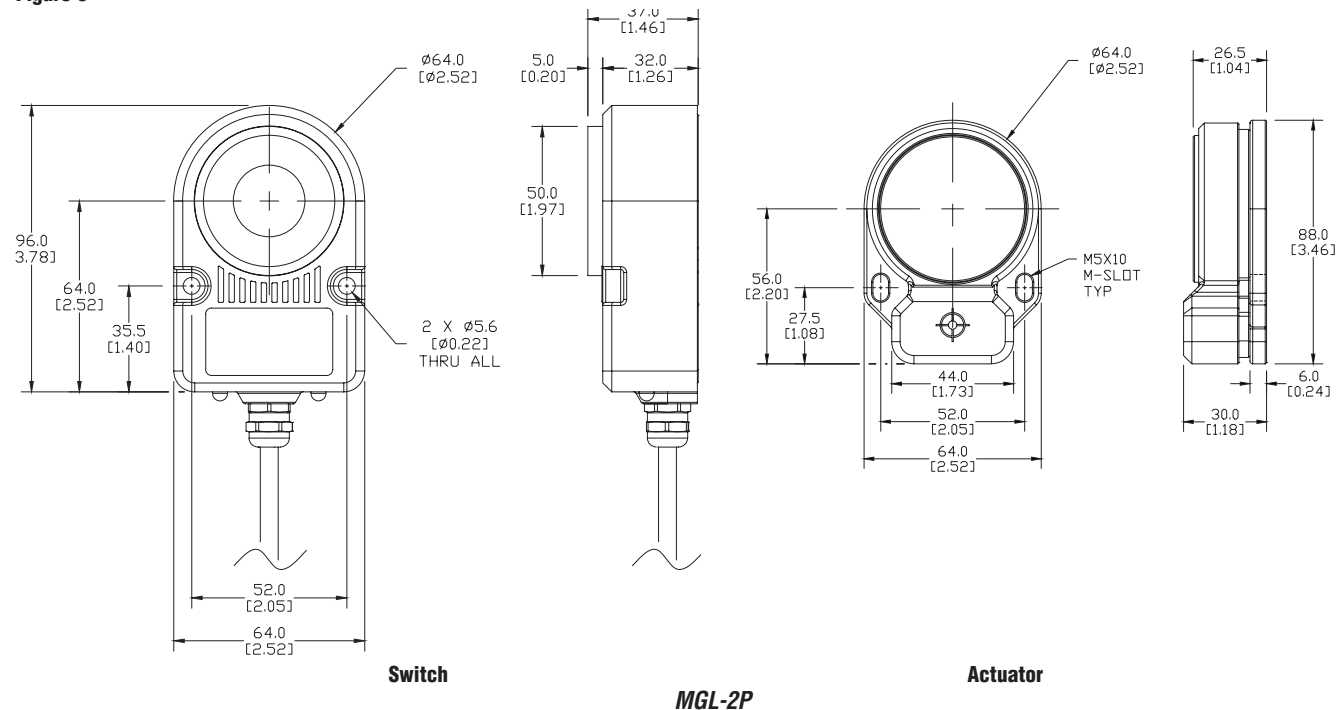


Figure 6



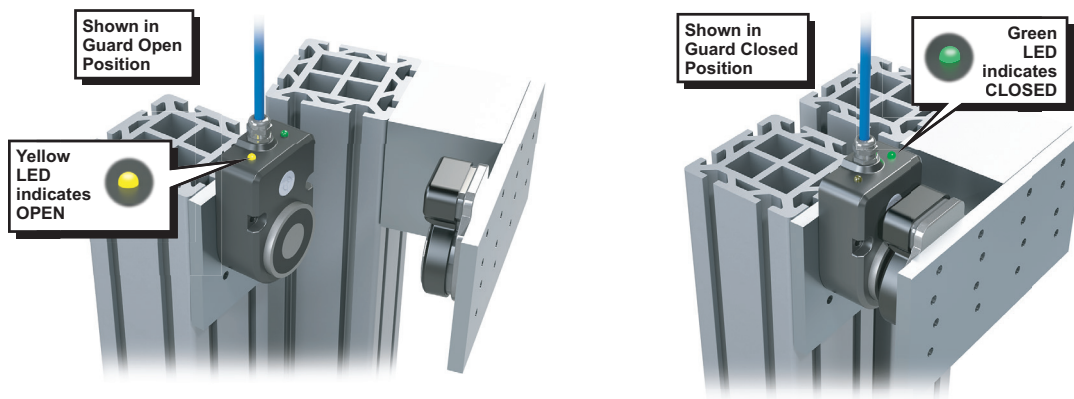
IDEM Non-Contact RFID Locking Safety Switches Specifications

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

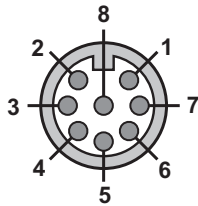
IDEM Non-Contact RFID Locking Safety Switches

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.

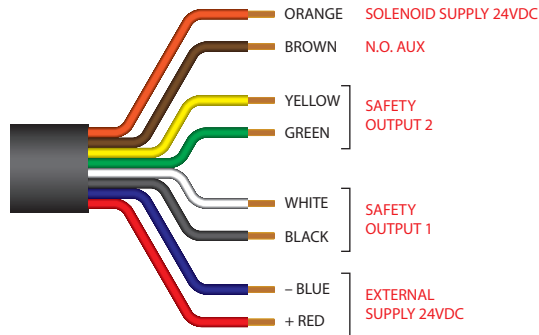
| IDEM Non-Contact RFID Locking Switches LED Operation and Switch Status Indication | | | |
|---|--------|-----------|------------|
| Switch Status | Guard | Green LED | Yellow LED |
| Locked | Closed | Steady | Off |
| Solenoid Power OFF (Unlocked) | Closed | Flashing | Off |
| Guard Open | Open | Off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