

Non-Contact RFID Locking Switch: MGL-Series

SPECIAL FEATURES:

Heavy Duty or Medium holding force versions.

Available in Stainless Steel 316 (with Stainless Magnet), robust Plastic or Die-Cast Metal.

RFID Master Coded or Unique Coding.

High Specification
Polyester

Die-Cast
Metal

Stainless Steel 316
with Stainless Steel
Magnet

IP69K



DESCRIPTION:

The MGL range of Non-Contact RFID Coded switches has been designed to ensure a high level of functional safety while delivering reliable magnetic door interlocking.

To accommodate various application needs, the switches offer flexibility in holding force, available in two sizes: Heavy Duty and Medium Duty. The Heavy Duty option provides a maximum holding force (F1Max) of 1100N for the Stainless Steel version and 1500N for the Plastic and Die-Cast versions. The Medium Duty option offers 600N (F1Max) for Stainless Steel and 1000N (F1Max) for Plastic and Die-Cast versions.

These switches use a combination of magnetic and RFID technologies for coding, requiring both methods to be satisfied for safe operation.

The MGL range is compatible with most standard safety relays, enabling it to achieve up to PLe/Category 4 safety level according to ISO13849-1.

Available in robust housings made from Stainless Steel 316, high-specification Plastic, or Die-Cast Metal, the MGL switch is suitable for use in a wide range of environments, including those requiring high-pressure cleaning after exposure to contaminants. The Stainless Steel 316 version is particularly suited for CIP (Clean-in-Place) and SIP (Sterilize-in-Place) processes, thanks to its Stainless Steel magnet and IP69K rating.

RFID CODING OPTIONS:

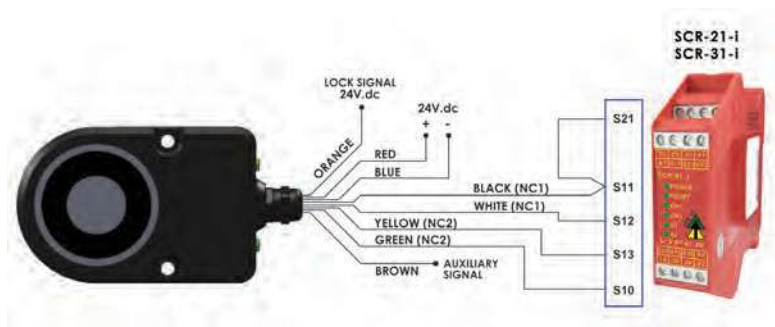
The RFID coding is offered in two types and can be either coded by series or uniquely coded.

Type 1: Master Code - by series (any actuator will operate any switch) this is used when unique door activation is not required, but the benefit of RFID makes it virtually impossible to be overridden or by-passed by simple means.

Type 2: 32,000,000 Unique Codes - the switch is factory set and used when unique activation is required in areas where there are many interlocked doors and security of individual areas is required.

The MGL combines magnetic sensing and RFID technology to provide non contact operation and high anti-tamper coding. In addition an electromagnet is used to lock machine guards.

CONNECTION EXAMPLE:



FUNCTIONAL SPECIFICATIONS:

Heavy Duty: 1100N S/Steel, 1500N Plastic and Die Cast
Medium Duty: 600N S/Steel, 1000N Plastic and Die Cast
(All values quoted are F1Max.)

2NC Safety Outputs overload protected

1NO Auxiliary Output for indication of door open

No moving parts - high switch life and provides resistance to Shock and Vibration.

Offered in: Stainless Steel 316 (with Stainless Steel Magnet), High Specification and robust Polyester housings, or Die Cast Metal.

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FEATURES:

- Heavy Duty or Medium Duty holding forces available (comprising 6 models - 2 Stainless Steel, 2 High Specification Plastic and 2 Die-Cast Metal).
- RFID provides a high degree of anti-tamper - virtually impossible to override.
- Uniquely coded RFID or Series Coded RFID available - depending upon user's risk assessment for application.
- The actuator (plastic or stainless steel) has been designed to be flexible and therefore has a degree of tolerance to misalignment.
- Able to connect to most popular safety relays to achieve up to PLe and Cat.4 for ISO3849-1.
- Connect up to 20 switches in series.
- Ability to connect other switches and E-Stops in series.
- Stainless Steel 316 model available for food processing applications (IP69K rating).
- Unique triggering of solenoid latching mechanism to maintain close control of actuator position.
- Choices of 8-core cable or M12 quick connect (QC).
- Remanence magnetization holding technique acts as a light magnetic latch after unlocking.



LED OPERATION & SWITCH STATUS INDICATION:

The MGL switch uses 2 LEDs to indicate all the different possible switch states.
The LEDs are in a clearly visible location at either side of the cable exit point.

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



SPECIFICATIONS:

- Standards:** ISO14119 EN60947-5-3 EN60204-1 ISO13849-1 EN62061 UL 60947-5-1
- Safety Classification and Reliability Data:**
- Minimum switched current: 10V.dc 1mA
 - Dielectric Withstand: 250V.ac
 - Insulation Resistance: 100 Mohms
 - Switching Distance: Sao 1mm Close Sar 10mm Open
 - Switching frequency: 1.0 Hz maximum
 - Approach speed: 200mm/m to 1000mm/s
 - Body material: MGL-*P = Plastic MGL-*M = Die-Cast Metal MGL-*SS = Stainless Steel 316
 - Temperature Range: -25C to +40C
 - Enclosure Protection: IP67
 - Cable Type: PVC 6 or 8 core 6mm OD
 - Mounting Bolts: 2 x M5 Tightening torque 1.0 Nm
 - 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
 - Proof Test Interval T1 20a

- Characteristic Data according to EN ISO13849-1:**
- Performance Level e If both channels are used in combination with a SIL3/PLc control device
 - Category Cat4
 - MTTFd 1100a
 - 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

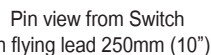
When the product is used deviant from these assumptions (different load, operating frequency, etc.) the values have to be adjusted accordingly.

8-CORE 2M, 5M, 10M CABLE	CONDUCTOR COLOURS	FUNCTION
ORANGE	Blue	0Vdc
BROWN	Red	24Vdc
YELLOW	Orange	Lock Applied (24Vdc)
GREEN	Black	Safety Output 1
WHITE	White	Safety Output 1
BLACK	Yellow	Safety Output 2
BLUE	Green	Safety Output 2
RED	Brown	Auxiliary Signal



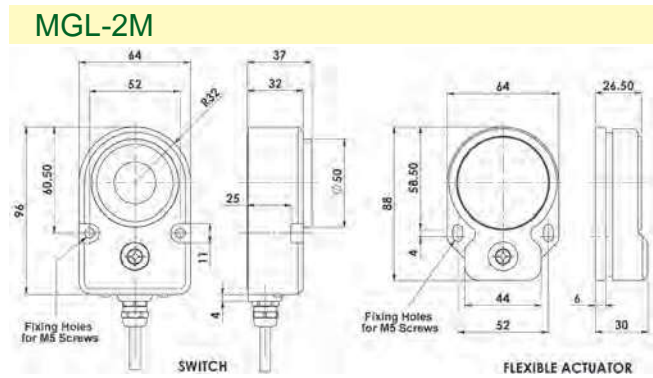
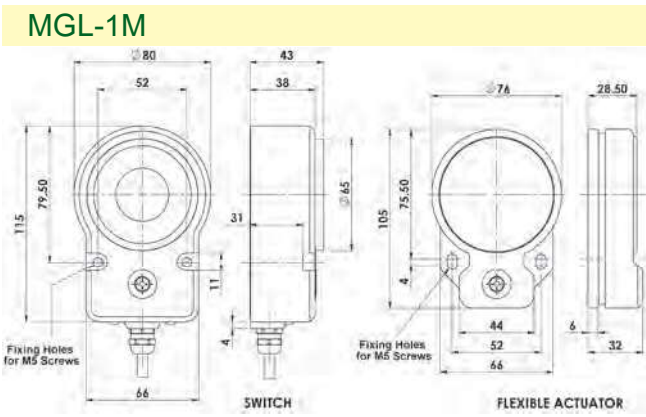
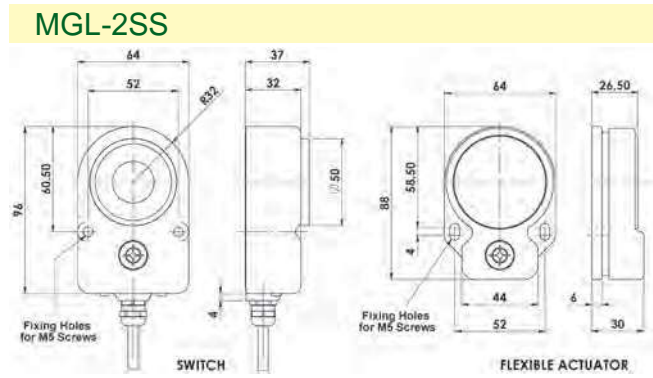
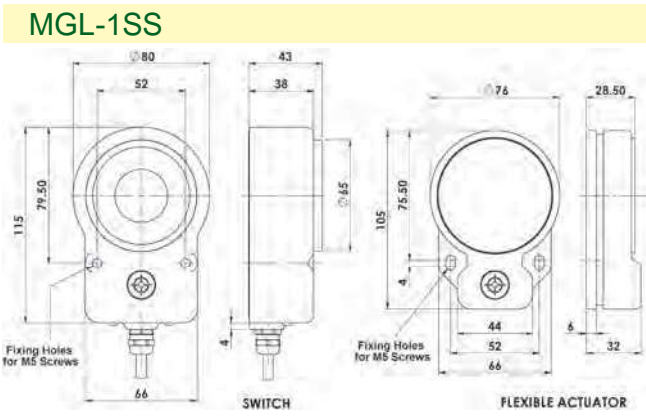
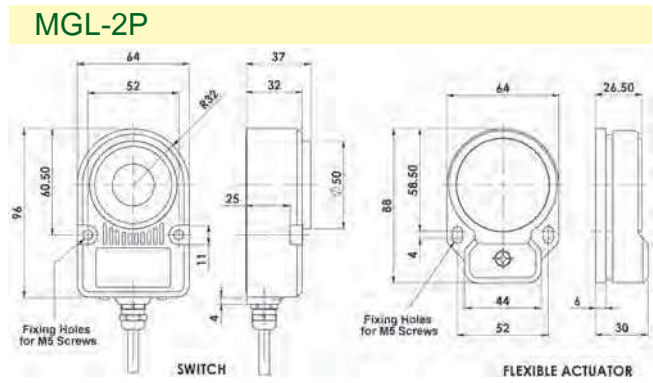
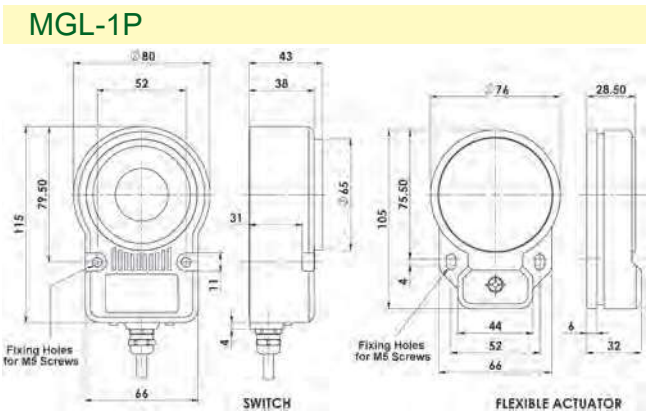
FEMALE QC LEADS	LENGTH	SALES NUMBER
M12 8 Way	5m (15ft)	140101
M12 8 Way	10m (30ft)	140102

Quick Connect (QC) M12 8 Way Male	Switch Circuit
3	0Vdc
2	24Vdc
8	Lock Applied (24Vdc)
7	Safety Output 1
1	Safety Output 1
4	Safety Output 2
6	Safety Output 2
5	Auxiliary Signal



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DIMENSIONS:



HOLDING FORCES:

STAINLESS STEEL VERSIONS:



DIE-CAST METAL VERSIONS:



PLASTIC VERSIONS:



