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Non Contact Magnetic Safety Switches from IDEM

Magnetic Series (with integral LED) Operating Instructions

LPR
(Plastic)

LMR
(Stainless Steel)

Application:

IDEM Magnetic Non Contact switches are designed to interlock hinge, sliding or removal guard doors. They are specifically advantageous when:

a) poor guard alignment exists
b) high hygiene requirements exist e.g. food industry hose down
c) a long mechanical life is required (no moving or touching parts).

When used in combination with approved Dual Channel Safety Modules, the switches can be used to provide up to PLe/Category 4 to ISO13849-1.

Operation:

All IDEM Magnetic Non Contact Safety Switches are designed to conform to IEN60947-5-3 and be used as directed by EN1088, EN 292 and EN 60204-1. They have a magnetic sensing system which provides a wide (>10mm) sensing distance and provides a high tolerance to misalignment after sensing. They can operate in extreme environments of temperature and moisture.

Installation:

Installation of all IDEM Non Contact Switches must be in accordance with a risk assessment for the individual application.

The use of a Safety Relay is recommended for monitoring IDEM Magnetic switches. These relays monitor 2 redundant circuits as per ISO13849-1 for up to Category 4 protection. IDEM Magnetic switches are designed to operate with most Dual Channel Safety Modules to satisfy EN60947-5-3 PDF-S. The maximum switching current and external fusing should be observed for each type of switch.

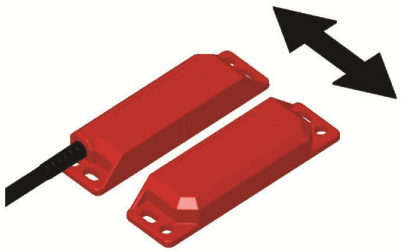
M4 mounting bolts must be used to fix the switches. Tightening torque for mounting bolts to ensure reliable fixing is 1.5 Nm. Always mount on to Non Ferrous materials. The recommended setting gap is 5mm. The Safety switch must not be used as a mechanical stop or be adjusted by striking with a hammer. The actuator must not be allowed to strike the switch. Do not mount adjacent switches or actuators closer than 30mm.

Typical misalignment tolerance after setting is 5mm.

After installation always check each switch function by opening and closing each guard individually in turn and ensuring that the LED's on the Safety Modules are illuminated when the switch is closed and are extinguished when the switch is open. Check that the machine stops and cannot be re-started when each switch is open.

If the LED is used, this is for indication only.
If RED it will be illuminated when the guard is open.
If GREEN it will be illuminated when the guard is closed. (Note: It does not represent the NC contacts).

Actuator Operating Direction:



Maintenance:

Monthly: Check alignment of actuator and look for signs of mechanical damage to the switch casing. Check wiring for signs of damage.

Every 6 months: Check each switch function by opening and closing each guard individually in turn and the LED's on the Safety Modules are illuminated when the switch is closed and are extinguished when the switch is open. Check that the machine stops and cannot be re-started when each switch is open.

Never repair any switch, actuator or integral cables. Replace any switch which displays signs of mechanical damage to casing or cables.

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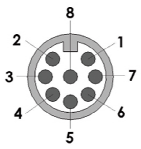
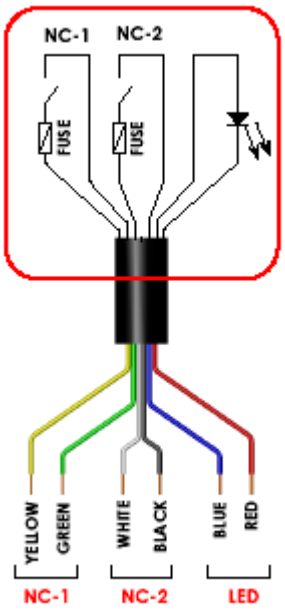
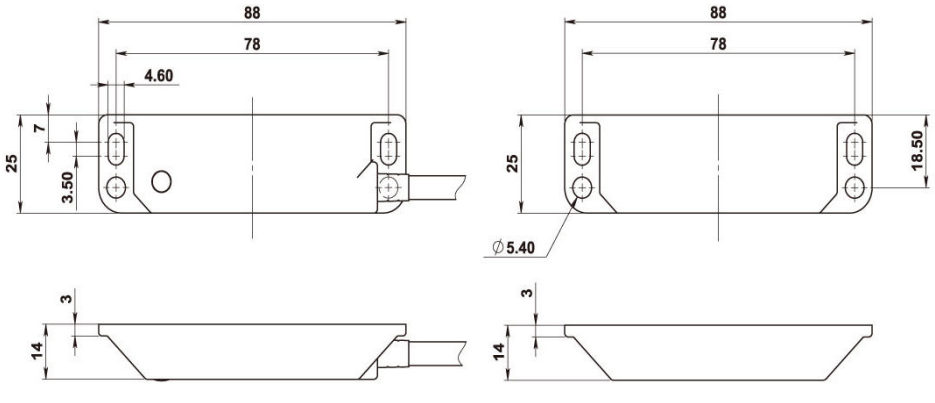


Quick Connect (QC) M12 8 Way Male Plug Pin view from Switch	Standard Lead Colour	Circuit (Actuator Present)
4	Yellow	NC 2
6	Green	NC 2
7	Black	NC 1
1	White	NC 1
2	Red	Supply +24Vdc
3	Blue	Supply 0Vdc

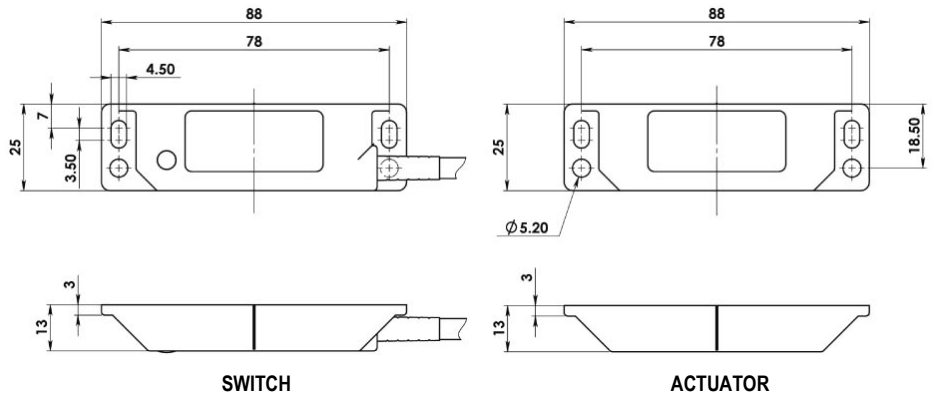
Note: The LED does not indicate the status of the NC Safety Contacts, but indicated that the actuator is aligned to give optimum performance.



Safety Channels NC1 and NC2:	Voltage free: 250Vac 1.0A Max.
Fuses (NC Circuits):	Fuse externally 0.8(F)
Contact release time:	<2ms
Initial Contact resistance:	<500 milliohm
Minimum switched current:	10Vdc 1mA
Dielectric withstand:	250Vac
Insulation resistance:	100 Mohms
Recommended setting gap:	5mm
LED supply voltage	24Vdc +/-10%
NC switching distance:	Sao 10mm Close
(Target to target):	Sar 22mm Open
LED (Green):	Typical: 8mm ON 15mm OFF
LED (Red):	Typical: 8mm OFF 15mm OFF
Tolerance to misalignment:	5mm in any direction from 5mm setting gap
Switching frequency:	1.0Hz maximum
Approach speed:	200mm/m to 1000mm/s
Temperature range:	–25/80C LPR –25/105C LMR
Enclosure protection:	IP67 LPR IP69K LMR
Shock resistance:	IEC 68-2-27 11ms 30g
Vibration resistance:	IEC 68-2-6 10-55Hz 1mm
Mechanical life expectancy:	10,000,000 switchings
Electrical life expectancy:	1,000,000 switchings De-rating Safety Factor 2 Tested to 2,000,000 cycles at 24V 0.2A
Cable type:	PVC 6 core 6mm OD Max
Mounting bolts:	2xM4 Tightening torque 1.0Nm



LMR



LPR

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