



Explosion Proof Non Contact Safety Switches

Types: WM1-EX WM2-EX CM1-EX CM2-EX CM3-EX LM-EX RM-EX

Installation Sheet Explosion Proof Non Contact Interlock Switches



APPLICATION:

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

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

OPERATION:

All IDEM Explosion Proof Non Contact EX Safety Switches are designed to conform to EN60079-0 and IEC60079-18. They have a magnetic sensing system which provides a wide sensing distance and provides a high tolerance to misalignment after sensing. They can be fitted behind stainless steel fittings and can operate in extreme environments of temperature and moisture.

SPECIFIC CONDITIONS OF USE:

- The supply must include a fuse capable of interrupting a 1500A short circuit current.
- When rated at 2A the switches are suitable for use in an ambient temperature range of -20°C to +60°C.
- When rated at 1A or lower the switches are suitable for use in an ambient temperature range of -20°C to +80°C.

Installation of all IDEM Non Contact EX Safety 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 ISO 13849-1 for up to Cat4/PLe protection. IDEM Magnetic switches are designed to operate with most Dual Channel Safety Modules to satisfy IEC 947-5-3 PDF-S. Depending upon the risk assessment for the application, the switches may be connected to other devices e.g. contactors or control software. The maximum switching current and external fusing should be observed for each type of switch (see table). Always fit in a position to avoid mechanical impacts.

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.

Whether a Safety Relay is used or some other control device, always check that the machine stops and cannot be re-started when each switch is open.

Actuator operating directions:



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 displaying signs of mechanical damage to the casing or cables.

Certification Standards:

IEC 60079-0 (EN60079-0)
IEC 60079-18 (EN60079-18)

Certificate Numbers:

EC Type Certificate Number: Baseefa11ATEX0234X
IEC Certificate Number: IECEx BAS11.0115X

Classification:

WM1-EX (Zones 0,20,1,21,2,22)



II 1G Ex ma IIC T6 Ga
I 1D Ex ma IIIC T80 Da

CM1-EX CM2-EX CM3-EX LM-EX RM-EX (Zones 1,21,2,22)



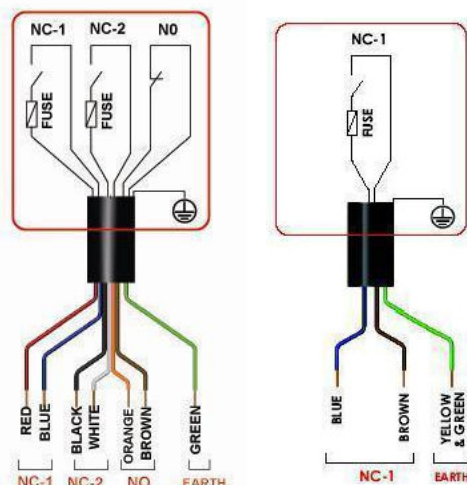
II 2G Ex mb IIC T6 Gb
II 2D Ex mb IIIC T80 Db

Safety Channels NC

WM1-EX	250V.ac/dc	0.6 A Max. (Internally fused)
WM2-EX	250V.ac/dc	2.0 A Max. (Internally fused)
CM1-EX	250V.ac/dc	2.0 A Max. (Internally fused)
CM2-EX (1NC versions)	250V.ac/dc	1.0 A Max. (Internally fused)
CM2-EX	250V.ac/dc	0.6 A Max. (Internally fused)
CM3-EX	250V.ac/dc	0.6 A Max. (Internally fused)
LM-EX	250V.ac/dc	0.6 A Max. (Internally fused)
RM-EX	250V.ac/dc	0.6 A Max. (Internally fused)

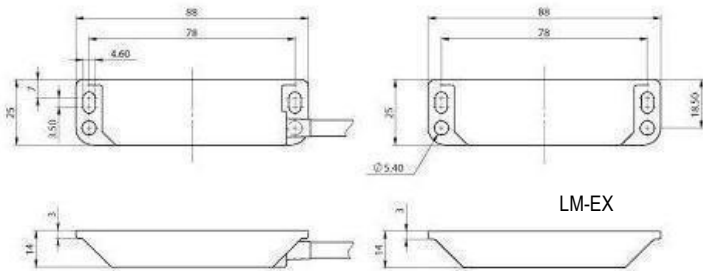
Auxiliary Channel NO

250V.ac/dc 0.2 A Max.

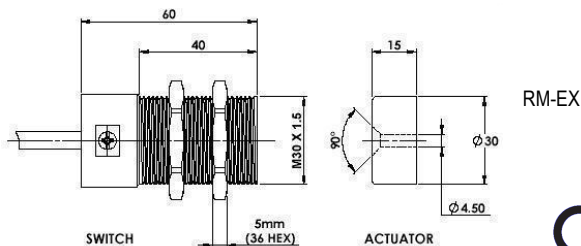
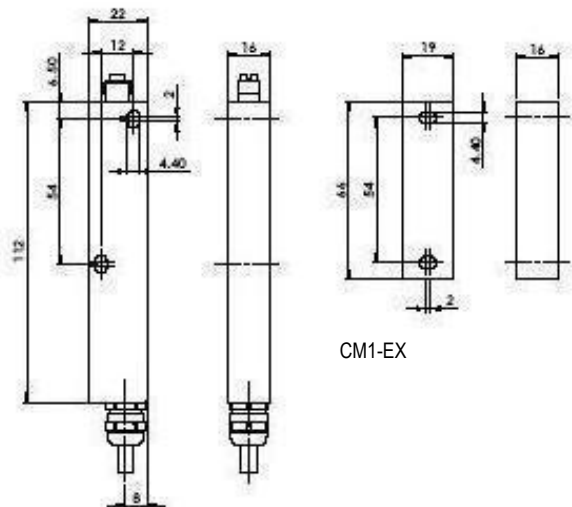
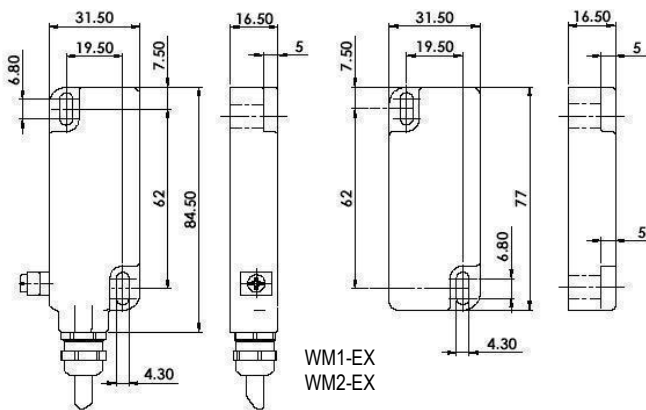
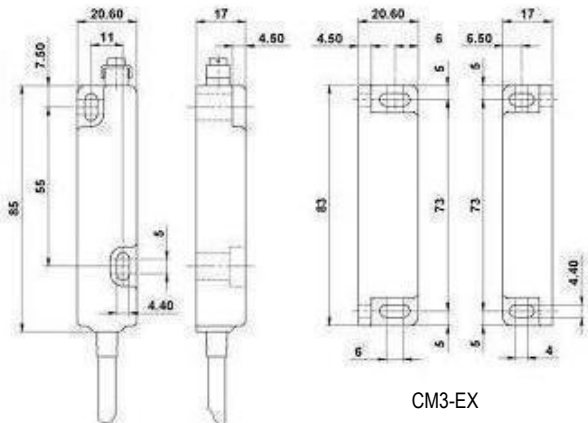
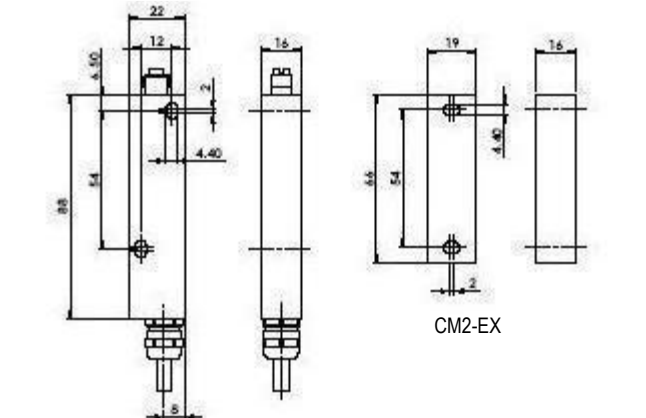


For all IDEM switches the NC circuits are closed when the guard is closed and the actuator present.

Explosion Proof Non Contact Safety Switches



Recommended setting gap	5mm
Switching Distance	Sao 10mm Close
(Target to target)	Sar 22mm Open
Tolerance to misalignment	5mm in any direction from 5mm setting gap
Switching frequency	1.0 Hz maximum
Body Material	Stainless Steel 316
Temperature Range	See warnings
Enclosure Protection	IP67 (Fully Encapsulated)
Shock Resistance	IEC 68-2-27 11ms 30g
Vibration Resistance	IEC 68-2-6 10-55 Hz 1mm
Mechanical Life Expectancy	10,000,000 switchings
Electrical Life Expectancy	Tested to 1,000,000 cycles at 24V. 0.2A
Cable Type	PVC 7 core or 3 core 6mm O.D. Max.
Mounting Bolts	M4 Tightening torque 1.5 Nm



CE EC Declaration of Conformity

Manufacturer:

IDEM SAFETY SWITCHES Ltd., 2 Ormside Close, Hindley Industrial Estate, Hindley Green, Wigan, UK. email: info@idemsafety.com

The following products conform to the Essential Health and Safety Requirements of the European Machinery Directive (98/37/EC and 2006/42/EC), the requirements of the Low Voltage Directive (2006/95/EC), the requirements of the Directive for Equipment intended for use in potentially explosive atmospheres (94/9/EC) and the relevant requirements of the stated standards:

Devices: Explosion Proof Non Contact Interlock Switches

Types WM1-EX

II 1G Ex ma IIC T6 Ga II 1D Ex ma IIIC T80 Da

WM2-EX CM1-EX CM2-EX CM3-EX RM-EX LM-EX II 2G Ex mb IIC T6 Gb II 2D Ex mb IIIC T80 Db

ATEX Harmonised Standards: EN60079-0:2012/A11:2013

EN60079-18:2009

EC Type Certificate Number: Baseefa11ATEX0234X Date: 30/11/2011 Certified Body : Baseefa Ltd, Buxton, Derbyshire, UK SK17 9RZ (Notified Body Number 1180).

Materials used in the manufacture of these products are RoHS compliant in accordance with Directive (02/95/EC).

M. Mohtasham

M. Mohtasham Managing Director 1st June 2012 Dwg. 910563-EX Iss.5