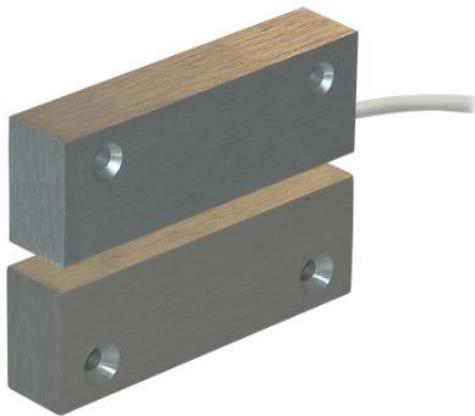
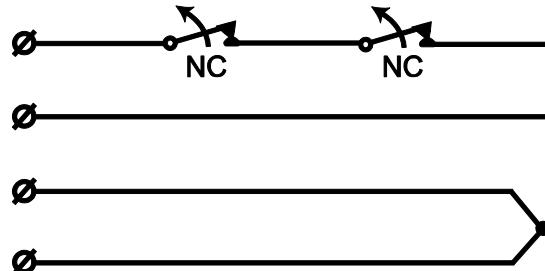


**Instruction Manual**
**MCX 270**

**CIRCUIT DIAGRAM**  
(MAGNET WITHIN WORKING DISTANCE)

**FATUM 3401.7703 FUSE BOX (SOLD SEPARATELY)**

**DESCRIPTION**

MCX 270 is a heavy duty high security magnetic contact used in both alarm and security access control systems for protection of garage doors, industrial gates etc. against unauthorized opening and external magnetic field. It is specially designed for use in explosive atmospheres and should in this type of installations be installed with the Fatum 3401.7703 fuse box in series with contact, between contact and end equipment.

**MOUNTING INSTRUCTIONS**

- Contact and magnet should be installed in parallel, corresponding to each other. Offset will reduce the working distances.
- The closer the contact/magnet is installed to the ferromagnetic surface, the lower the working distances. Use the included mounting plate.
- Magnetic contact should be installed in accordance with the installation drawings.

**NOTE!** When MCX 270 is installed in explosive environments fuse box Fatum 3401.7703 (or equivalent) must be used. Max fuse is fast-acting 290mA and the fuse box must be placed outside explosive environment zones in series with the contact. In case of MCX 270 -R / -2R other fuse values are required, please see chapter regarding resistors below.

The fuse shall comply with IEC 60127 or ANSI/UL 248 series. The short-circuit breaking capacity of the fuse shall be minimum 1500 A with rated voltage equal to or higher than the rated voltage of the equipment.

## TECHNICAL DATA

Working environment	Wood/non-ferromagnetic	Steel (with mounting plate)
Make distance	typ.. 39 mm	typ.. 26 mm
Break distance	typ. 46 mm	typ.. 30 mm
Sabotage distance	max. 14 mm	max.. 9 mm
Contact type	form A, SPST	
Switching voltage max.	48 V DC/AC	
Switching current max.	500 mA DC/peak AC	
Contact rating max.	10 W	
Cable	Ø 5.8 mm, 4x0,5 mm <sup>2</sup> (Ø 5.1 mm, 2x0,5 mm <sup>2</sup> with resistors)	
Environmental class (EN50130-5:2011)	IIIA	
Operating temperature range	-40°C to +70°C (Fatum 3401.7703 -20°C to +90°C)	
Operating humidity	max. 95% RH	
Housing protection	IP67, IK04	
Housing material	Zamak 3, nickel plated	
Total weight (including two mounting plates)	1180 g	
Dimensions, Contact part	100 x 20 x 31 mm (weight 375 g)	
Dimensions, Magnet part	100 x 20 x 31 mm (weight 400 g)	
Security grade (EN50131-2-6:2008)	3	
Approvals	VdS, class C, EN 50131-2-6 Grade 3 Pending	
	TÜV, II 1 G Ex ma IIC T6 Ga (TÜV CY 24 ATEX 0207256 X)	

## OPERATING PRINCIPLE

MCX 270 magnetic contact has two parts: the contact part with alarm and sabotage reed switches and the magnet part. In its neutral position the alarm reed switch remains closed under the force of the magnetic field. Opening the monitored object increases the distance between the reed switch and the magnet. This reduces the influence of the magnetic field on the reed switch until it opens and activates an alarm.

MCX 270 has an extra sabotage reed switch to protect the contact from sabotage with an external magnet. When an external magnet is applied to the contact, the sabotage reed switch opens and activates an alarm. The sabotage switch can be also opened by the corresponding (friendly) magnet. The distance between the contact and the corresponding magnet, at which the sabotage reed switch opens is called sabotage distance.

**Magnetic contacts should not be installed in the vicinity of strong magnetic fields.**

## INSTALLATION

Depending on the application, contact and magnet should be installed in one of the possible configurations. Installation drawings show the correct positioning of the contact parts. Contact and magnet should be installed in parallel, with reed element and magnet corresponding to each other. Offset will reduce the working distances and may result in faulty operation or lower security. The contact should be mounted on the stationary part of the monitored object (ex. door frame) and the magnet on the movable part (ex. door leaf).

For sites where it is impossible to mount the contact directly, use the included mounting plate. This can be used to mount the contact parts away from a ferromagnetic surface or to solve problems with aligning the contact with the magnet. Contact and/or magnet should be screwed to the mounting plate, which can be either glued or screwed onto the surface.

**For the most adequate distance for mounting, magnetic part should be placed close to the contact part to get Sabotage distance, then move away magnetic part to get minimum Make distance.**

Only non-ferromagnetic screws may be used for mounting the contact.

After the installation, use an ohmmeter to check the electrical connections and test the operation of the magnetic contact.

**Warning: installation of contact directly on ferromagnetic material is not recommended.**

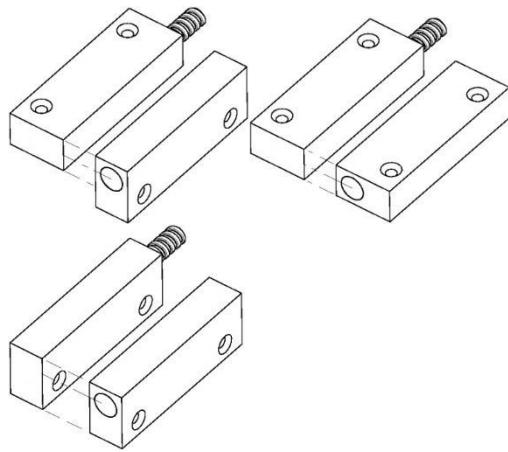
### Note!

If the magnetic contact is mounted on an insulating surface, or directly on a metallic surface that is not grounded, the external surface of the magnetic contact must be grounded or connected to an equipotential bonding system.

## INSTALLATION DRAWINGS

MCX 270 configurations:

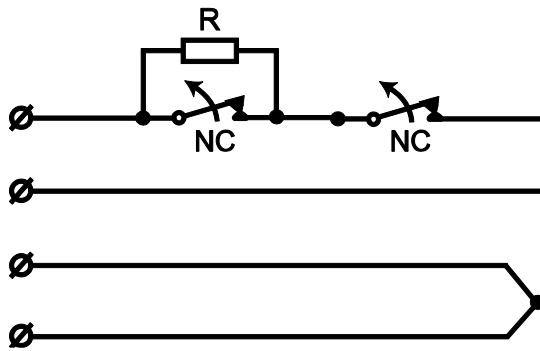
**NOTE!** Be extra careful to make sure that the long side at the plug in the magnet part is closest to the long side at the connector part cable as shown in the pictures below.



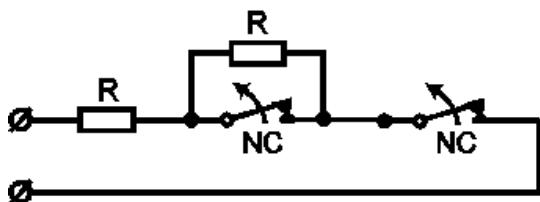
## RESISTORS (OPTIONAL)

MCX 270 is available in two additional options with resistors of the chosen value: MCX 270-R with one resistor parallel to the alarm switch and MCX 270-2R with two resistors in 2 EOL configuration (see schematics below).

### MCX 270-R:



### MCX 270-2R:



## FUSE/VOLTAGE OPERATING CONDITIONS

The table shows the maximum value of supply voltage and largest permitted fuse for each resistance value.

This applies to the versions MCX 270-R and MCX 270-2R which have built-in resistances. If you choose to use MCX 270 without built-in resistances, you can mount the resistances in the Fatum 3401.7703 fuse box, which is located outside the explosive zone. Then maximum fuse 290 mA (fast) and maximum voltage 48V apply (max 10W total).

	<b>R (Ω)</b>	<b>Fuse (mA)</b>	<b>U<sub>max</sub> (V)</b>
<b>MCX270-R</b>	1000	18.5	18.5
<b>MCX270-R</b>	2200	12.5	27.5
<b>MCX270-R</b>	4700	8.5	40.5
<b>MCX270-R</b>	5600	8	44
<b>MCX270-R</b>	6800	7	48
<b>MCX270-R</b>	10000	6	48
<b>MCX270-R</b>	16200	4.5	48
<b>MCX270-2R</b>	1000	13	13
<b>MCX270-2R</b>	2200	9	19.5
<b>MCX270-2R</b>	4700	6	28.5
<b>MCX270-2R</b>	5600	5.5	31
<b>MCX270-2R</b>	6800	5	34.5
<b>MCX270-2R</b>	10000	4	41.5
<b>MCX270-2R</b>	16200	3.3	48

In all cases, whether for magnetic contact with built-in resistances or without, the fuse shall comply with IEC 60127 or ANSI/UL 248 series. The short-circuit breaking capacity of the fuse shall be minimum 1500 A with rated voltage equal to or higher than the rated voltage of the equipment.

## IMPORTANT NOTICE:

### Special conditions for safe use

- The equipment shall be protected by a suitable external fuse as indicated in this manual.
- The device has a permanently connected cable. The free end of the cable has to be connected in an enclosure made in one or more of types of protection listed in EN 60079-0 and compatible with the classification of the hazardous zone, or it has to be connected outside of the hazardous area.