



EXM Ex-m Magnet

Electrical, explosion-proof magnets for safety applications

24 VDC supply voltage, 650 N, 1300 N and 2000 N retention force

EC type-approved in acc. with ATEX directive 2014/34/EU for zone 1, 2, 21, 22, IECEx and DNV-GL

Description

EXM... electrical, explosion-proof magnets for fire doors, fire dampers or safety doors and locks.

When the supply voltage is cut off, the magnet loses its retention force and the safety operation is working when using appropriate mechanisms like springs, weights, cranks or similar safety placements provided by the customer. The magnets are certified for use in hazardous areas zone 1, 2 (gas, mist, vapour) and zone 21, 22 (dust).

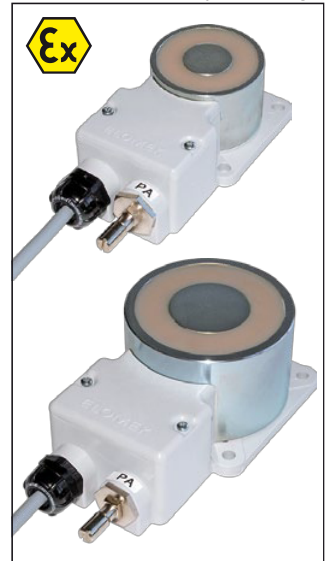
Magnetic holder are maintenance free. An inspection is recommended every 6 months.



Attention

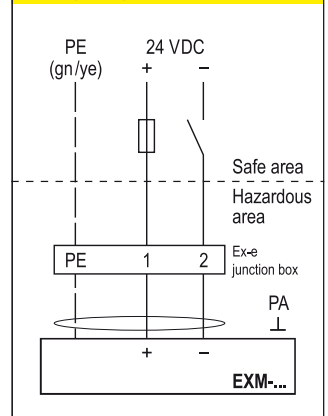
- For installation, commissioning, use and maintenance all national and international standards, rules and regulations for hazardous Ex-areas must be complied.
- Every single magnet has to be connected with an external normal-lag fuse according to its rated current (max. $3 \times I_{\text{nominal}}$ nach IEC 60127-2/1).
- We recommend stabilised power supply units. The max. AC-ripple must not exceed 20 %.
- The cable of the magnet must be installed in a fixed position and protected against mechanical and thermal damage.
- The temperature class T6 refers to the magnet.
- The force of the magnet can deviate depending on different types of material, dimension and surface of the anchor.
- A possibly occurring remedy can be avoided by glueing a thin, non-magnetic foil.

Subject to change!



Technical data	EXM-...	...-650	...-1300	...-2000
Supply voltage	24 VDC \pm 10 % (21,6...26,4 VDC)			
Ripple	max. 20 %			
Current		45 mA	65 mA	160 mA
Power consumption		~ 1 W	~ 1,5 W	~ 3,7 W
Retention force	Attention: The magnet power is reduced by increasing AC-ripple (0...max. 20 %).	650 N	1300 N	2000 N
Electrical connection	~ 1 m cable PVC non-halogen and silicone free, wire cross section ~ 1 mm ² , outer equipotential bonding 4 mm ² finely stranded conductor, 6 mm ² single-wire Connections in hazardous areas require an Ex-e terminal box!			
Housing material	Steel, plastic (Polycarbonate)			
Dimensions (L x W x H)	(incl. connectors)	~ 138 x 66 x 43 mm	~ 164 x 86 x 58 mm	~ 164 x 86 x 58 mm
Weight		~ 650 g	~ 1950 g	~ 1950 g
Ambient temperature	-20...+55 °C, storage temperature -20...+80 °C			
Scope of delivery	Electromagnetic holder without anchor plate and mounting material			

Wiring diagram



Dimensions

	ca. dimension [mm]	EXM-650, GH-6	EXM-1300, ...-2000, GH-13/20
A		104	130
B		66	86
C		52	70
D		55	64
E		34	34
F		43	58
G		Ø 54	Ø 81
H		38	43
I		60	80
K		44	60
L		Ø 56	Ø 86
M		51	62
N		Ø 6.3	Ø 8.0



Important information for installation and operation

1. General information

All national and international standards, rules and regulations for hazardous Ex-areas must be complied with. In the EU, directive 1999/92/EC is generally applicable as well as other national provisions and regulations. Outside the EU, the corresponding national rules and regulations are applicable.

Installation, operation and servicing of the equipment may only be carried out by especially trained personnel, who are experienced with the dangers and have also read and understood the instructions. For electrical installations inspection and maintenance, EN/IEC 60079-17 can be used.

The assembly may be carried out only by skilled electrical personnel in accordance with IEC/EN 60079-14 and such skilled personnel, who comply with the guidelines prevalent in the respective country. It is mandatory that only especially trained personnel should use this equipment. Customers may not open or alter structurally the magnet (loss of explosion protection and loss of guarantee claims).

Proper transportation, storage, installation (within the specified environmental conditions) and maintenance, are absolutely necessary for precise and safe usage.

Should the equipment show damage that leaves the assumption that safe use is not possible the equipment must not remain in operation and must be decommissioned.

If explosion-proof equipment is operated in aggressive surroundings (e. g. in the chemical industry, offshore, onshore) it should be cleared that casing or parts of such are suitable for the work environment. Each piece of equipment may only be used for the respective purpose. Using the equipment for not specified purposes may affect the guaranteed function. In case of ambiguities or for information that hasn't been provided please contact your dealer or our centre.

2. Mounting

During mounting please be aware that the anchor plate GH-... and the magnet EXM-... must be in alignment.

Improper installation will lead to breakdowns and a reduction of the retention force. It is crucial to protect this equipment from impacts and vibrations that are stronger than the nominal force of the magnets (even for a short time).

3. Electrical Connection

Electrical installation and commissioning of explosion-proof equipment must be performed according to the respective country's rules and regulations for installation of electrical

equipment in explosive areas. National differences are possible as well.

Electrical cables must be installed in a fixed position and protected against mechanical and thermal damage. Connect potential earth. Electrical connections inside the Ex area are only allowed to be done by means of an explosion-proof junction box. During this procedure you must take into account that the cable glands must be tightened completely by the contractor.

The terminal box must not be opened when the voltage is on!

The magnet's electrical connections must always be made with the current switched off.

The connection must be executed according to the wiring diagram.

The operating voltage of the magnet is 24 VDC \pm 10 % and must not be exceeded by the available supply voltage provided by the customer. The Schischek Company does not accept damaged magnets as a warranty claim caused by excess voltage.

4. Commissioning

Before commissioning the junction box's cover must be closed and the fixing screws tightened. The magnet should show no sign of mechanical damage (Ex protection).

Before you switch on the equipment you have to ensure that the impressed voltage is 24 VDC \pm 10 %.

The commissioning starts with the inspection of the installation (magnet and anchor plate are aligned) and the wiring, followed by a function control.

Furthermore, all Ex relevant components in the hazardous area between the magnet and the switch gear, should be examined to ensure that no damage has been done and the installation is correct.

5. Decommissioning

Before switching off, consider the effects on the system as well as on the following devices. Disconnect the main connection before starting mechanical dismantling. The terminal box must be free of voltage.

6. Maintenance

The magnet must not be opened by the operator. Please exchange damaged magnets or terminal boxes for new ones immediately or have them overhauled by Schischek GmbH.

Problem handling / Operational disorder

Problem	Possible cause	Course of action
01 Magnet does not provide enough retention force	• Mains failure	• Check mains, establish mains again
	• Incorrect mains voltage	• Magnet must be repaired by the manufacturer
	• Magnet connected incorrectly	• Check connection. If correctly connected magnet still does not function, it has to be repaired by the manufacturer
	• Magnet and anchor plate are not in alignment	• Check mounting of both parts
	• Wrong dimension of magnet (force insufficient)	• Choose stronger magnet
02 Magnet function is occasionally interrupted	• Loose contact in the feed lines	• Check and secure connections
	• Loose contact inside the magnet	• Magnet must be repaired by the manufacturer
	• Increase of temperature	• Ensure max. ambient temperature not to be exceeded
03 Magnet delayed release	• Remanence	• Glue remanence foil between magnet and holder

Approbations

ATEX directive	2014/34/EU
EC type-approved	EPS 14 ATEX 1 713 X
IECEx certified	IECEx EPS 14.0052X
Approval for gas	II 2 G Ex mb IIC T6 Gb
Approval for dust	II 2 D Ex tb IIIC T80°C Db IP65
CE identification	CE № 0158
EMC directive	2014/30/EU
Low voltage directive	2014/35/EU
Enclosure protection	IP65 nach EN 60529
DNV GL type-approved	TAF0000042, F-AMC

Special solutions and accessories

...-05	Magnet with 5 m cable (PVC, non-halogen and silicon free)
...-15	Magnet with 15 m cable (PVC, non-halogen and silicon free)
GH-6	Anchor plate for EXM-650
GH-13/20	Anchor plate for EXM-1300 and EXM-2000
ExBox-3P	Ex-e terminal boxes for zone 1, 2, 21, 22
EXC-K4/S...	Ex-e terminal boxes with integral fuse
EXC-T1	Ex-e push button for manual release
N1 power supply	Input 100...230 VAC, 0.29–0.18 A, 50/60 Hz / 120...230 VDC, 0.14–0.07 A Output 24 VDC, max. 0.6 A