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INTERNATIONAL STANDARD

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**Alarm systems – Intrusion and hold-up systems –
Part 2-6: Intrusion detectors – Opening contacts (magnetic)**

**Systèmes d'alarme – Systèmes d'alarme contre l'intrusion et les hold-up –
Partie 2-6: Détecteurs d'intrusion – Détecteurs d'ouverture à contacts
(magnétiques)**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ALARM SYSTEMS –
INTRUSION AND HOLD-UP SYSTEMS –**
**Part 2-6: Intrusion detectors –
Opening contacts (magnetic)**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 62642-2-6 has been prepared by IEC technical committee 79: Alarm and electronic security systems.

This standard is based on EN 50131-2-6 (2008).

The text of this standard is based on the following documents:

FDIS	Report on voting
79/325/FDIS	79/331/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 62642 series can be found, under the general title *Alarm systems – Intrusion and hold-up systems*, on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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INTRODUCTION

This part 2-6 of the IEC 62642 series of standards gives requirements for intrusion detectors with opening contacts (magnetic) used in intrusion and hold-up alarm systems. The other parts of this series of standards are as follows:

- Part 1 System requirements
- Part 2-2 Intrusion detectors – Passive infrared detectors
- Part 2-3 Intrusion detectors – Microwave detectors
- Part 2-4 Intrusion detectors – Combined passive infrared / Microwave detectors
- Part 2-5 Intrusion detectors – Combined passive infrared / Ultrasonic detectors
- Part 2-6 Intrusion detectors – Opening contacts (magnetic)
- Part 2-71 Intrusion detectors – Glass break detectors – Acoustic
- Part 2-72 Intrusion detectors – Glass break detectors – Passive
- Part 2-73 Intrusion detectors – Glass break detectors – Active
- Part 3 Control and indicating equipment
- Part 4 Warning devices
- Part 5-3 Requirements for interconnections equipment using radio frequency techniques
- Part 6 Power supplies
- Part 7 Application guidelines
- Part 8 Security fog devices/systems

This International Standard is for opening contacts (magnetic) used as part of intrusion and hold-up alarm systems (I&HAS) installed in buildings. It includes four security grades and four environmental classes.

The purpose of an opening contact (magnetic) is to detect a displacement of a door or window from the defined closed position. The opening contact comprises two separate parts, the active connection between which is at least one magnetic field. Separating the two parts disturbs the connection and produces an intruder signal or message.

The number and scope of these signals or messages will be more comprehensive for systems that are specified at the higher grades.

This International Standard is only concerned with the requirements and tests for opening contacts (magnetic). Other types of detectors are covered by other documents identified IEC 62642-2 series.

ALARM SYSTEMS – INTRUSION AND HOLD-UP SYSTEMS –

Part 2-6: Intrusion detectors – Opening contacts (magnetic)

1 Scope

This part of the IEC 62642 provides for security grades 1 to 4, (see IEC 62642-1) specific or non-specific wired or wirefree opening contacts (magnetic), and includes the requirements for four environmental classes covering applications in internal and outdoor locations as specified in IEC 62599-1.

A detector fulfils all the requirements of the specified grade.

Functions additional to the mandatory functions specified in this International Standard may be included in the detector, providing they do not influence the correct operation of the mandatory functions.

The two separate parts of the opening contact (magnetic) are referred to in the body of this International Standard as the detector.

This International Standard does not apply to system interconnections.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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IEC 60068-1:1988, *Environmental testing – Part 1: General and guidance*

IEC 60068-2-52, *Environmental testing – Part 2-52: Tests – Test Kb: Salt mist, cyclic (sodium chloride solution)*

IEC 61000-6-3, *Electromagnetic compatibility (EMC) – Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments*

IEC 62599-1, *Alarm systems – Part 1: Environmental test methods*

IEC 62599-2, *Alarm systems – Part 2: Electromagnetic compatibility – Immunity requirements for components of fire and security alarm systems*

IEC 62642-1, *Alarm systems – Intrusion and hold-up systems – Part 1: System requirements*

EN 10130:1991, *Cold rolled low carbon steel flat products for cold forming – Technical delivery conditions*
Amendment 1 (1998)

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in the IEC 62642-1, as well as the following apply.

3.1.1

prohibited area

mounting arrangement, as stated by the manufacturer, of the two components of the detector in which the detector no longer meets the requirements of this International Standard

3.1.2

incorrect operation

physical condition that causes an inappropriate signal or message from a detector

3.1.3

wirefree detector

detector connected to the control and indicating equipment by non-physical means such as radio frequency signals

3.1.4

approach distance

make distance

separation distance between the two components of a detector that are being brought together at which an intrusion signal or message is reversed

3.1.5

removal distance

break distance

separation distance between the two components of a detector that are being moved apart at which an intrusion signal or message is generated

3.1.6

opening contact (magnetic)

detector in usually two separate parts. The active connection between the two parts is at least one magnetic field. Separating the two parts disturbs the connection and produces an intrusion signal or message

3.1.7

corresponding magnet

activating part of the detector, comprising of one or more components, to generate at least one magnetic field

3.1.8

switch component

reacting part of the detector, comprising one or more components to detect the magnetic field(s) of the corresponding magnet and generate an appropriate signal or message

3.1.9

surface mount contact

opening contact (magnetic), where both parts (switch component and corresponding magnet) are mounted on the surface of two parts of the monitored object (fixed and moving part)

3.1.10

flush mount contact

opening contact (magnetic), where both parts (switch component and corresponding magnet) are mounted within two parts of the monitored object (fixed and moving part)

3.1.11**sealed contact**

type of detector construction, whereby there is no direct access to the internal components or connections e.g. a “potted” unit usually supplied with integral connecting cable

3.1.12**reverse signal**

signal or message generated by a detector to indicate that there is no longer an intrusion event e.g. change of state or cancellation of an intrusion signal or message

3.1.13**intrusion event**

abnormal condition indicating the presence of a hazard

3.1.14**low supply voltage**

supply voltage level below which the operation of the detector can no longer be guaranteed

3.1.15**interference test magnets**

magnets used for verifying the behaviour of the detector in the presence of an external magnetic field at least one of which is identical to the corresponding magnet supplied with the detector

3.1.16**external magnetic field**

deliberately induced magnetic field generated by a source other than the corresponding magnet e.g. sabotage magnet

3.1.17**immunity**

characteristic of a detector such that only a limited reduction in its detection performance is permitted in the presence of one of the interference test magnets

3.2 Abbreviations

For the purposes of this document, the abbreviations given in the IEC 62642-1, as well as the following apply.

EMC electromagnetic compatibility

BTD basic test of detection capability

4 Functional requirements**4.1 Events**

The detector shall respond to events in accordance with Table 1 and as defined in this Clause 4.