



SLOVENSKI STANDARD

SIST IEC 60839-2-6:1995

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Alarm systems - Part 2: Requirements for intruder alarm systems - Section Six: Passive infra red detectors for use in buildings

Alarm systems. Part 2: Requirements for intruder alarm systems. Section Six: Passive infra-red detectors for use in buildings

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Systèmes d'alarme. Deuxième partie: Prescriptions pour les systèmes d'alarme anti-intrusion. Section six: Détecteurs infrarouges passifs utilisés dans les bâtiments

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Systemes d'alarme

**Partie 2:
Prescriptions pour les systemes d'alarme
anti-intrusion**

**Section 6 – Détecteurs infrarouges passifs
utilisés dans les bâtiments**

Alarm systems
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**Part 2:
Requirements for intruder alarm systems
Section 6 – Passive infra-red detectors
for use in buildings**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ALARM SYSTEMS

Part 2: Requirements for intruder alarm systems

Section Six - Passive infra-red detectors for
use in buildings

FOREWORD

- 1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.
- 3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

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This standard has been prepared by IEC Technical Committee No. 79: Alarm systems.

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

Six Months' Rule	Report on Voting
79(C0)24	79(C0)31

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

ALARM SYSTEMS

Part 2: Requirements for intruder alarm systems

Section Six - Passive infra-red detectors for use in buildings

1 Scope

This International Standard gives the specific requirements and test procedures for passive infra-red detectors for use in intruder alarm systems installed in buildings. This standard is an addition to the general requirements for detectors for use in intruder alarm systems as specified in IEC 839-2-2; it shall also be used in conjunction with the standard for general requirements of alarm systems, IEC 839-1-1. The detector may include more than one sensor, but all sensors shall be in the same housing.

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The object of this standard is to specify those requirements for passive infra-red detectors which will ensure that they will perform satisfactorily and minimize false alarms. [SIST IEC 60839-2-6:1995](https://standards.iteh.ai/catalog/standards/sist/3f740bac-a80d-45a8-824f-aeac0b8d6b34/sist-iec-60839-2-6-1995)

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2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

- 809 (1985): Lamps for road vehicles. Dimensional, electrical and luminous requirements.
- 839-1-1 (1988): Alarm systems, Part 1: General requirements. Section One - General.
- 839-2-2 (1987): Part 2: Requirements for intruder alarm systems. Section Two - Requirements for detectors - General.

3 Definitions

For the purpose of this International Standard, the following definitions apply in addition to those given in the general requirements.

3.1 *Passive infra-red detector*

A detector which generates an alarm condition in response to a change in the received level of infra-red radiation caused by persons moving in the area of detection coverage.

3.2 *Sensitive sectors*

Those sectors in the optical pattern of the detector which detect infra-red radiation.

3.3 *Area of detection coverage*

The area within which a reference target moving at a constant distance from the detector will cause an alarm condition.

3.4 *Reference target*

A device with infra-red emission characteristics similar to those of an average person. For the purpose of this standard, this shall take the form shown in figure 1.

3.5 *Detection ranges*

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The detection ranges for given directions are the radial distance from the detector to the outer boundary of the area of detection coverage.

3.6 *Secondary reference target*

A device with infra-red emission characteristics similar to those of a small animal, such as a rodent. For the purpose of this standard, this shall take the form of a cylinder 30 mm in diameter and 150 mm in length.

4 General considerations

The detector shall consist of one or more sensors and a processor. Where additional sensors may be optionally added, the tests required in Clause 6 shall be carried out without these additional sensors. The detectors may have means incorporated to vary the direction of the sensitive sectors. These means shall be within the equipment container. Detectors may also incorporate means to permit the measurement of the extent of the sensitive sectors, but if these means prevent the detector from meeting the requirements of this standard, an indication shall be given whenever they are in use.

5 Requirements

5.1.1 *Signal processing*

The detector shall be capable of detecting the lateral movement of the reference target with respect to the detector within the area of detection coverage at speeds varying from 0,3 m/s to 3 m/s and shall cause an alarm condition within 3 m of unidirectional movement by the reference target, at a constant distance from the detector.

5.1.2 *Restoration following an alarm condition*

Following an alarm condition and the cessation of the movement which caused it, the detector shall return to its normal non-alarm condition within 10 s.

5.1.3 *Resistance to small targets*

The sensitivity of the detector shall be such that an alarm condition shall not be generated when a secondary reference target is moved on the floor when the detector is mounted at the fixing height recommended by the manufacturer.

5.1.4 *Resistance to background temperature changes*

Variations in the background temperature throughout the range +25 °C to +40 °C, at a rate of 1 °C/min, shall not cause an alarm condition.

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5.1.5 *Resistance to vehicle headlights* (standards.iteh.ai)

The detector shall not generate an alarm condition as a result of being illuminated by the equivalent of a vehicle headlight shining through glass when tested in accordance with 6.2.5.

5.1.6 *Resistance to turbulent air*

Turbulent air above or below the ambient temperature around the detector shall not cause an alarm condition when the detector is tested in accordance with 6.2.6.

5.1.7 *Tamper protection*

Tamper protection shall be fitted and shall generate an alarm condition when the container is opened sufficiently to give access to any controls or mechanical fixing adjustments.

5.1.8 *Cable protection*

Where a sensor is in a separate housing to the processor, the connecting cable shall be considered to be part of the detector. It shall be electrically monitored in such a way that, if the disconnection or short-circuit of any conductor(s) prevents alarm information or a tamper alarm being received by the processor, the processor itself shall generate an alarm condition within 10 s.

5.2 *Environmental*

No additional requirements.

5.3 *Safety*

No additional requirements.

5.4 *Reliability*

No additional requirements.

5.5 *Interface*

No additional requirements.

5.6 *Construction*

No additional requirements.

5.7 *Walk-test indicator*

If a walk-test indicator is fitted, it shall be possible to restrict its indication without opening the detector.

5.8 *Manufacturer's specifications*

In addition to the information in the general requirements, the manufacturer shall provide the following for each detector:

- a) the geometry of sensitive sectors by diagram;
- b) area of detection coverage (this may be incorporated in the same diagram as a)), at each switched sensitivity and pulse-count setting, where these facilities are provided. If sensitivity is continuously variable, the area of coverage shall be given for maximum and minimum sensitivities;
- c) fixing height or range of fixing heights;
- d) optimum optics setting.

5.9 *Options*

No additional requirements.

6. *Test procedures*

6.1 *Test conditions*

Experience has shown that it is difficult to achieve repeatable and reproducible test results using a human target. The following test method, using a simulated target, is therefore proposed as an alternative. The method has not yet been practically demonstrated and may therefore be subject to modification in the future.

For the purpose of functional tests, the detector shall be mounted at the height recommended by the manufacturer and in accordance with the manufacturer's instructions. The optics shall be set to optimum performance as indicated by the manufacturer.