

English version

**Alarm systems -  
Intrusion and hold-up systems -  
Part 2-7-3: Intrusion detectors -  
Glass break detectors (active)**

Systèmes d'alarme -  
Systèmes d'alarme contre l'intrusion  
et les hold-up -  
Partie 2-7-3: Détecteurs d'intrusion -  
Détecteurs bris de glace (actifs)

Alarmanlagen -  
Einbruch- und Überfallmeldeanlagen -  
Teil 2-7-3: Einbruchmelder -  
Glasbruchmelder (Aktiv)

This Technical Specification was approved by CENELEC on 2009-03-06.

CENELEC members are required to announce the existence of this TS in the same way as for an EN and to make the TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

**CENELEC**

European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Central Secretariat: avenue Marnix 17, B - 1000 Brussels**

## Foreword

This Technical Specification was prepared by the Technical Committee CENELEC TC 79, Alarm systems.

The text of the draft was circulated for voting in accordance with the CEN/CENELEC Internal Regulations, Part 2, Subclause 11.3.3.3 and was approved by CENELEC as CLC/TS 50131-2-7-3 on 2009-03-06.

The following date was fixed:

- latest date by which the existence of the CLC/TS has to be announced at national level (doa) 2009-09-06

EN 50131 will consist of the following parts, under the general title “*Alarm systems – Intrusion and hold-up systems*”:

- Part 1 System requirements
- Part 2-2 Intrusion detectors - Passive infrared detectors
- Part 2-3 Requirements for microwave detectors
- Part 2-4 Requirements for combined passive infrared and microwave detectors
- Part 2-5 Requirements for combined passive infrared and ultrasonic detectors
- Part 2-6 Opening contacts (magnetic)
- Part 2-7-1 Intrusion detectors - Glass break detectors (acoustic)
- Part 2-7-2 Intrusion detectors - Glass break detectors (passive)
- Part 2-7-3 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 device/system

This Technical Specification provides for security grades 1 to 4 (see EN 50131-1) glass break detectors (active) installed in buildings and uses environmental classes I to IV (see EN 50130-5).

The purpose of a detector is to detect changes to the integrity of a glass barrier (for example in doors, windows or enclosures) that the transmitting and receiving unit(s) are directly mounted on, which allows intrusion to the monitored area and to provide the necessary range of signals or messages to be used by the rest of the intruder alarm system.

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

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

This Technical Specification is only concerned with the requirements and tests for the detector. Other types of detectors are covered by other documents identified as EN 50131-2-X / CLC/TS 50131-2-X.

## Contents

<b>1</b>	<b>Scope</b>	<b>5</b>
<b>2</b>	<b>Normative references</b>	<b>5</b>
<b>3</b>	<b>Terms, definitions and abbreviations</b>	<b>6</b>
3.1	Terms and definitions	6
3.2	Abbreviations	6
<b>4</b>	<b>Functional requirements</b>	<b>7</b>
4.1	Event processing	7
4.2	Operational requirements	8
4.3	Detection	9
4.4	Immunity to false alarm sources	10
4.5	Tamper security	10
4.6	Electrical requirements	12
4.7	Environmental classification and conditions	12
<b>5</b>	<b>Marking, identification and documentation</b>	<b>13</b>
5.1	Marking and/or identification	13
5.2	Documentation	13
<b>6</b>	<b>Testing</b>	<b>13</b>
6.1	General test conditions	13
6.2	Basic detection test	14
6.3	Performance tests	14
6.4	Switch-on delay, time interval between signals and indication of detection	16
6.5	Fault condition signals or messages: self tests	16
6.6	Tests of immunity to false alarm sources	17
6.7	Tamper security	20
6.8	Electrical tests	21
6.9	Environmental classification and conditions	23
6.10	Marking, identification and documentation	24
<b>Annex A</b>	<b>(normative) Catalogue of standard glass types</b>	<b>25</b>
<b>Annex B</b>	<b>(normative) List of small tools suitable for testing immunity of casing to attack</b>	<b>26</b>
<b>Annex C</b>	<b>(normative) Dimensions &amp; requirements of a standard test magnet</b>	<b>27</b>
C.1	Normative references	27
C.2	Requirements	27
<b>Annex D</b>	<b>(normative) Immunity test: Small objects hit sensitivity</b>	<b>30</b>
<b>Annex E</b>	<b>(normative) Immunity test: Soft objects hit sensitivity</b>	<b>31</b>
<b>Annex F</b>	<b>(normative) Immunity test: Hard objects hit sensitivity</b>	<b>32</b>
<b>Annex G</b>	<b>(normative) Immunity test: Static pressure sensitivity</b>	<b>33</b>
<b>Annex H</b>	<b>(normative) Immunity test: Dynamic pressure sensitivity</b>	<b>34</b>
<b>Annex I</b>	<b>(normative) General testing matrix</b>	<b>35</b>
<b>Annex J</b>	<b>(normative) Performance test setup</b>	<b>37</b>
J.1	Performance test setup	37
J.2	Alternative performance test setup	38
<b>Annex K</b>	<b>(normative) Performance sensitivity test</b>	<b>40</b>

**Figures**

Figure C.1 – Test magnet – Magnet type 1 .....	28
Figure C.2 – Test magnet – Magnet type 2 .....	29
Figure D.1 – Immunity test: Small objects hit sensitivity .....	30
Figure E.1 – Immunity test: Soft objects hit sensitivity .....	31
Figure F.1 – Immunity test: Hard objects hit sensitivity .....	32
Figure G.1 – Immunity test: Static pressure sensitivity .....	33
Figure H.1 – Immunity test: Dynamic pressure sensitivity .....	34
Figure J.1 – Performance test setup .....	37
Figure J.2 – Potential test setup .....	39
Figure K.1 – Combined sensor element – Surface mounted glass break detectors test setup .....	40
Figure K.2 – Sender and receiver pair – Surface mounted glass break detectors test setup .....	40

**Tables**

Table 1 – Events to be processed by grade .....	7
Table 2 – Generation of indication signals or messages .....	8
Table 3 – Performance test requirements .....	9
Table 4 – Tamper security requirements .....	11
Table 5 – Electrical requirements .....	12
Table 6 – Operational tests .....	23
Table 7 – Endurance tests .....	23
Table A.1 – Standard glass types .....	25
Table H.1 – General testing matrix .....	35
Table J.1 .....	38
Table J.2 .....	38

This document is a preview generated by EVS

## 1 Scope

This Technical Specification is for active surface mounted glass break detectors installed in buildings and provides for security grades 1 to 4 (see EN 50131-1), specific or non-specific wired or wire-free detectors and uses environmental classes I to IV (see EN 50130-5). This Technical Specification does not include requirements for active surface mounted glass break detectors intended for use outdoors.

A detector shall fulfil all the requirements of the specified grade.

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

This Technical Specification 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.

EN 50130-4	Alarm systems – Part 4: Electromagnetic compatibility – Product family standard: Immunity requirements for components of fire, intruder and social alarm systems
EN 50130-5	Alarm systems – Part 5: Environmental test methods
EN 50131-1	Alarm systems – Intrusion and hold-up systems – Part 1: System requirements
EN 50131-6	Alarm systems – Intrusion and hold-up systems – Part 6: Power supplies
EN 60068-1:1994	Environmental testing – Part 1: General and guidance (IEC 60068-1:1988 + A1:1992 + Corrigendum Oct. 1988)
EN 60068-2-52:1996	Environmental testing -- Part 2: Tests - Test Kb: Salt mist, cyclic (sodium chloride solution) (IEC 60068-2-52:1996)
EN 60529	Degrees of protection provided by enclosures (IP code) (IEC 60529)
EN ISO 527-1	Plastics – Determination of tensile properties – Part 1: General principles (ISO 527-1)
EN ISO 527-2	Plastics – Determination of tensile properties – Part 2: Test conditions for moulding and extrusion plastics (ISO 527-2)
EN ISO 1183 series	Plastics – Methods for determining the density of non-cellular plastics (ISO 1183 series)
EN ISO 2039-2	Plastics – Determination of hardness – Part 2: Rockwell hardness (ISO 2039-2)