SLOVENSKI STANDARD
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SIST EN 50130-4:1997
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Alarmni sistemi - 4. del: Elektromagnetna združljivost - Standard za varnost proizvodov - Zahteve za odpornost sestavnih komponent požarnih, vlomnih in socialnih alarmnih sistemov

Alarm systems -- Part 4: Electromagnetic compatibility - Product family standard - Immunity requirements for components of fire, intruder and social alarm systems

Alarmanlagen -- Teil 4: Elektromagnetische Verträglichkeit - Produktfamiliennorm - Anforderungen an die Störfestigkeit von Anlageteilen für Brand- und Einbruchmeldeanlage sowie Personen-Hilferufanlagen

Systèmes d'alarme -- Partie 4: Compatibilité électromagnétique - Norme famille de produit - Prescriptions relatives à l'immunité des composants de systèmes de détection d'incendie, d'intrusion et d'alarme sociale

Ta slovenski standard je istoveten z: **EN 50130-4:2011**

ICS:

13.320	Alarmni in opozorilni sistemi	Alarm and warning systems
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EUROPEAN STANDARD

NORME EUROPÉENNE

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EN 50130-4

June 2011

ICS 13.320; 29.020

Supersedes EN 50130-4:1995 + A1:1998 + A2:2003 + corr. Mar.2003

English version

Alarm systems - Part 4: Electromagnetic compatibility - Product family standard: Immunity requirements for components of fire, intruder, hold up, CCTV, access control and social alarm systems

Systèmes d'alarme - Partie 4: Compatibilité électromagnétique - Norme de famille de produits: Exigences relatives à l'immunité des composants des systèmes d'alarme de détection d'incendie, contre l'intrusion, contre les hold-up, CCTV, de contrôle d'accès et d'alarme sociale

Alarmanlagen - Teil 4: Elektromagnetische Verträglichkeit - Produktfamiliennorm: Anforderungen an die Störfestigkeit von Anlageteilen für Brandmeldeanlagen, Einbruch- und Überfallmeldeanlagen, Video-Überwachungsanlagen, Zutrittskontrollanlagen sowie Personen-Hilferufanlagen

This European Standard was approved by CENELEC on 2011-06-13. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, 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

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Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 79, Alarm systems, in cooperation with CEN Technical Committee TC 72, Fire detection and fire alarm systems.

The text of the draft was submitted to the formal vote and was approved by CENELEC as EN 50130-4 on 2011-06-13.

This document supersedes EN 50130-4:1995 + A1:1998 + A2:2003 + corrigendum March 2003.

The main changes with respect to EN 50130-4:1995 are listed below:

1) referenced based standards were updated to the latest versions;

2) significant changes were made to the test methods and/or requirements for Clauses 8, 9, 10, 11 and to a lesser degree Clause 13;

3) the title was corrected to match the scope of the document.

This revision was prepared to bring the procedures up to date with current technical developments, taking account of changes in the basic standards and the experience gained in the use of the standard.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2012-06-13

- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2014-06-13

This European Standard is part of the EN 50130 series of standards. This series is intended to give the requirements applicable to alarm systems in general (e.g. the EMC immunity requirements, in this case). The following associated series of European standards are intended to give the other requirements (e.g. performance requirements), which are applicable to the specific types of alarm systems:

- EN 50131 Alarm systems – Intrusion and hold-up systems;
- EN 50132 Alarm systems – CCTV surveillance systems for use in security applications;
- EN 50133 Alarm systems – Access control systems for use in security applications;
- EN 50134 Alarm systems – Social alarm systems;
- EN 50136 Alarm systems – Alarm transmission systems and equipment;
- CLC/TS 50398 Alarm systems – Combined and integrated alarm systems – General requirements;
- EN 54 Fire detection and fire alarm systems.

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive 2004/108/EC. See Annex ZZ.

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1 Scope

This EMC product-family standard, for immunity requirements, applies to the components of the following alarm systems, intended for use in and around buildings in residential, commercial, light industrial and industrial environments:

- access control systems, for security applications;
- alarm transmission systems [1];
- CCTV systems, for security applications;
- fire detection and fire alarm systems;
- hold-up alarm systems;
- intruder alarm systems;
- social alarm systems;

The tests and severities to be used are the same for indoor and outdoor applications of fixed, movable and portable equipment.

The levels do not cover extreme cases, which may occur in any location, but with an extremely low probability of occurrence, or in special locations close to powerful emitters (e.g. radar transmitters).

Equipment within the scope of this standard should be designed in order to operate satisfactorily in the environmental electromagnetic conditions of residential, commercial, light industrial and industrial environments. This implies particularly that it should be able to operate correctly within the conditions fixed by the electromagnetic compatibility levels for the various disturbances on the low voltage public supply system as defined by EN 61000-2-2. The immunity tests in this standard only concern the most critical disturbance phenomena.

For equipment using radio signalling, mains signalling or with connections to the public telephone system, additional requirements, from other standards specific to these signalling media, might apply.

This standard does not specify basic safety requirements, such as protection against electrical shocks, unsafe operation, insulation coordination and related dielectric tests.

This standard does not cover EMC emission requirements. These are covered by other appropriate standards.

[1] Apart from equipment which is part of a public communication network.

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 60068-1:1994	Environmental testing – Part 1: General and guidance (IEC 60068-1:1988 + Corr. Oct. 1988 + A1:1992)
EN 61000-4-2:2009	Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test (IEC 61000-4-2:2008)
EN 61000-4-3:2006 + A1:2008 + A2:2010	Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test (IEC 61000-4-3:2006 + A1:2007 + A2:2010)
EN 61000-4-4:2004 + A1:2010	Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test (IEC 61000-4-4:2004 + A1:2010)
EN 61000-4-5:2006	Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test (IEC 61000-4-5:2005)
EN 61000-4-6:2009	Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields (IEC 61000-4-6:2008)
EN 61000-4-11:2004	Electromagnetic compatibility (EMC) – Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests (IEC 61000-4-11:2004)
EN 61000-4-20:2010	Electromagnetic compatibility (EMC) – Part 4-20: Testing and measurement techniques – Emission and immunity testing in transverse electromagnetic (TEM) waveguides (IEC 61000-4-20:2010)
ETSI EN 301 489 (series)	Electromagnetic compatibility and radio spectrum matters (ERM); Electromagnetic compatibility (EMC) standard for radio equipment and services

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1.1
European product performance standard
European Standard (EN) that specifies the product performance requirements, which may include EMC requirements but is not limited to EMC requirements

EXAMPLES EN 54 series for fire alarm systems, EN 50131 series for intruder alarm systems.

3.1.2
basic EMC standards
standards giving the description of, and test and measurement methods for an EMC phenomenon, along with details of the test apparatus and test set-up, which may give guidance on the choice of severity but do not give the prescribed limits or criteria for compliance

3.1.3
intruder alarm system
alarm system to detect and indicate the presence, entry or attempted entry of an intruder into supervised premises

3.1.4
fire detection and fire alarm system
alarm system to detect the presence of fire in supervised premises and to raise the appropriate alarm

3.1.5
hold-up alarm system
alarm system providing the means fro a user to deliberately generate a hold-up alarm condition

3.1.6
social alarm system
alarm system, providing facilities to summon assistance, for use by persons, who can be considered to be living at risk

3.1.7
response time
amount of time required for the system to react to a stimulus such as an alarm or fault

3.1.8
indication
annunciation of a condition in the alarm system by visual or audible means such as but not restricted to a LED or a buzzer

3.1.9
CCTV system
system consisting of camera equipment, storage, monitoring and associated equipment for transmission and controlling purposes which might be necessary for the surveillance of a defined secure area

3.1.10
access control system
system comprising all the constructional and organizational measures as well as those pertaining to the apparatus which are required for controlling access

3.1.11
alarm transmission system
Alarm Transmission Equipment and networks used to transfer information concerned with the state of one or more alarm systems at a supervised premises to one or more annunciation equipment of one or more alarm receiving centres

3.2 Abbreviations

For the purposes of this document, the following abbreviations apply.

EUT Equipment Under Test

EMC Electromagnetic Compatibility

CW Continuous Wave, Carrier Wave

PCB Printed Circuit Board

4 Application of the tests

The tests shall be carried out as single tests, as described in the later clauses, and the equipment shall meet the criteria for compliance for each test. If a number of tests are made on a single specimen of the equipment, the sequence of testing is optional, and it is permissible to substitute the intermediate functional tests with a reduced version of the functional test and to conduct a full functional test at the end of the sequence. However, it should be noted that, in this case, in the event of a failure, it may not be possible to identify which test exposure caused the failure.

Where appropriate basic EMC standards exist, these are referred to in the relevant clauses. The content of these basic EMC standards (i.e. the description of the test procedure, test apparatus and test set-up) are not repeated here in full, however modifications or additional information needed for the particular application of the tests are given in this standard.

It may be determined, from consideration of the electrical characteristics and usage of particular equipment, that some of the tests are inappropriate and therefore unnecessary. In such a case it is required that the decision not to conduct the test be recorded in the report, along with the justification for this decision.

5 Conditions during testing

5.1 Configuration

If the EUT is part of a system, or can be connected to other equipment, then the EUT shall be tested while connected in at least the minimum configuration necessary for verifying its performance.

If the EUT has a large number of inputs/outputs, then a sufficient number shall be selected to simulate actual operating conditions and to ensure that all the different types of inputs/outputs are covered. The connections to inputs and outputs, which may be separated into different cables in a real installation, shall be separated into different cables for the tests (e.g. detector loops).

Any external cables that are part of or attached to the EUT and or ancillary equipment shall be documented in the test report. The minimum information provided shall be the cable type, length, termination and to which port they are attached.

During conditioning, the EUT shall be monitored to detect any change in its status, including any change in outputs, which could be interpreted by associated equipment as a change in status.

5.2 Environmental conditions

Unless otherwise indicated in the basic standard or test procedure, the tests shall be carried out within the rated supply voltage for the EUT and the following standard atmospheric conditions for measurements and tests, as specified in EN 60068-1:1994, 5.3.1:

– temperature : 15 °C to 35 °C;

– relative humidity : 25 % to 75 %;

– air pressure : 86 kPa to 106 kPa.

5.3 Operating conditions

Where a relevant European product performance standard (EN) exists, which defines suitable operating condition(s) during environmental or EMC tests (e.g. EN 54 series for fire alarm systems, EN 50131 series for intruder alarm systems), the operating condition(s) of the EUT, during the test conditions, shall be as defined in that standard.

Where no relevant European product performance standard (EN) exists, the operating condition(s) of the EUT, during the test conditioning, shall include at least that corresponding to the main functional mode (appropriate to the test being undertaken) of the system, which it forms part of. (e.g. corresponding to the "set" mode, for an intruder alarm system during a radiated immunity test).

The configuration and mode(s) of operation during the tests shall be precisely noted in the test report.

6 Functional test

The variety and the diversity of the equipment within the scope of this standard makes it difficult to define a precise functional test for evaluation of the EUT performance:

– where a relevant European product performance standard (EN) exists, which defines suitable operating condition(s) during environmental or EMC tests (e.g. EN 54 series for fire alarm systems, EN 50131 series for intruder alarm systems), the operating condition(s) of the EUT, during the test conditions, shall be as defined in that standard;

– where no relevant European product performance standard (EN) exists, the functional test shall be at least a test or measurement of the main function(s) of the equipment. The acceptance criteria for this functional test shall be that there is no change in the functioning of the equipment and no significant change in any measurement (e.g. sensitivity of a detector), which shall also remain within specification.

7 Mains supply voltage variations

7.1 Object of the test

To demonstrate the ability of the equipment to function correctly over the anticipated range of mains supply voltage conditions.

7.2 Principle

The test consists of exposing the specimen to each of the maximum and minimum power supply conditions, for a sufficient time to obtain temperature stability, and to perform the functional test.

7.3 Test procedure

7.3.1 General

No reference can be made to an internationally accepted standard at present.

7.3.2 Initial examination

Before the conditioning, subject the specimen to the functional test (see Clause 6).

7.3.3 State of specimen during conditioning

Connect the specimen to suitable power supply, monitoring and loading equipment (see 5.1). The specimen shall be in its operating condition (see 5.3).

7.3.4 Conditioning

Subject the specimen to each of the power supply conditions, indicated in Table 1, until temperature stability is reached.