



**SLOVENSKI STANDARD**  
**SIST EN 50130-4:1997/A2:2003**  
**01-september-2003**

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

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 - Produktfamilienorm:  
Anforderungen an die Störfestigkeit von Anlageteilen für Brand- und  
Einbruchmeldeanlagen 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 50130-4:1995/A2:2003**

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**ICS:**

13.320	Alarmni in opozorilni sistemi	Alarm and warning systems
33.100.20	Imunost	Immunity

**SIST EN 50130-4:1997/A2:2003** en

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EUROPEAN STANDARD

**EN 50130-4/A2**

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2003

ICS 13.320; 29.020

English version

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

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

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

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This amendment A2 modifies the European Standard EN 50130-4:1995; it was approved by CENELEC on 2002-09-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

# CENELEC

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

**Central Secretariat: rue de Stassart 35, B - 1050 Brussels**

## Foreword

This amendment to the European Standard was prepared by the Technical Committee CENELEC TC 79, Alarm systems.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as amendment A2 to EN 50103-4:1995 on 2002-09-01.

This amendment A2 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 amendment has to be implemented  
at national level by publication of an identical  
national standard or by endorsement (dop) 2003-09-01
- latest date by which the national standards conflicting  
with the amendment have to be withdrawn (dow) 2007-09-01

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## 1 Scope

**Delete** final sentence in paragraph 5:

For the requirements applicable to radio links, reference should be made to the applicable ETSI standard, in accordance with the agreement between ETSI and CENELEC.

## 2 Normative references

**Replace** the normative references with the following:

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies (including amendments).

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>IEC Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-1 + corr. October + A1	1988 1988 1992	Environmental testing - Part 1: General and guidance	EN 60068-1	1994
IEC 61000-2-2	1990	Electromagnetic compatibility (EMC) - Part 2-2: Environment - Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems	-	-
IEC 61000-4-2	1995	Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	1995
IEC 61000-4-3 (mod)	1995	Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	1996
IEC 61000-4-4	1995	Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test	EN 61000-4-4	1995
IEC 61000-4-5	1995	Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5	1995
IEC 61000-4-6	1996	Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio- frequency fields	EN 61000-4-6	1996
IEC 61000-4-11	1994	Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11	1994

<u>ETSI Publication</u>	<u>Year</u>	<u>Title</u>
ETSI EN 301 489 (Series)		Electromagnetic compatibility and radio spectrum matters (ERM); Electromagnetic compatibility (EMC) standard for radio equipment and services
ETSI EN 300 339		Electromagnetic compatibility and radio spectrum matters (ERM); General Electromagnetic compatibility (EMC) for radio communications equipment

## 5.1 Configuration

**Add** at the end of paragraph 2:

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).

## 5.2 Environmental conditions

**Replace** in paragraph 1: "IEC 68-1" with "EN 60068-1".

## 6 Functional test

**Replace** the second indent with:

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- Where a relevant European product performance standard (EN) exists, which defines a suitable functional test for assessing the performance of the EUT before and after environmental or EMC tests (e.g. EN 54 series for fire alarm systems, EN 50131 series for intruder alarm systems), the functional test to be applied and its acceptance criteria shall be as defined in that standard;

### 8.3.1 General

**Replace** "IEC 1000-4-11:1994" with "EN 61000-4-11".

### 8.3.4 Conditioning

**Replace** Table 2 with:

**Table 2**

Voltage reduction	%	30	60	100
Duration of reduction (No. of periods) (i.e. cycles of the voltage wave)		0,5; 1; 5 & 10	0,5; 1; 5 & 10	0,5; 1 & 5
Number of reductions at each duration		3	3	3
Interval between reductions	s	≥ 10	≥ 10	≥ 10

### 9.3.1 General

**Replace** in paragraph 1: "IEC 1000-4-2:1995" with "EN 61000-4-2".

**Replace** all of paragraph 2 with the following:

Contact discharges shall be applied to conductive surfaces and the coupling plane(s) and air discharges shall be applied to insulating surfaces. Ten direct discharges shall be applied, at each test voltage, to each preselected point, on any part of the specimen, which is normally accessible when in the installed condition or is accessible to the normal operator. Ten indirect discharges shall be applied via the appropriate coupling plane(s).

Unless stated otherwise in a product related standard, surfaces only accessible during infrequent service by the end user or a service engineer (e.g. battery terminals) may be excluded, providing there is an appropriate ESD hazard symbol or warning associated with these surfaces and appropriate ESD mitigation procedures are given in the operating instructions.

### 9.3.4 Conditioning

**Delete** "IEC 1000-4-2, Level 3".

## 10.2 Principle

**Replace** "1 GHz" with "2 GHz".

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### 10.3.1 General

**Replace** in paragraph 1: "IEC 1000-4-3:1995" with "EN 61000-4-3".

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**Replace** in paragraph 2: "1 000 MHz" with "2 GHz".

### 10.3.4 Conditioning

**Replace** in Table 4: "80 to 1 000" with "80 to 2 000".

## 10.4 Criteria for compliance

**Replace** in paragraph 3 the sentence: "For components with radio links....communications may not be possible" with:

For components with radio links, it is accepted that communications via the radio link may not be possible during the conditioning within the transmitter and receiver exclusion bands defined in the relevant part of ETSI EN 301 489 for that type of radio link equipment.

**Add** the following note after paragraph 3:

NOTE If no part of ETSI EN 301 489 is applicable to the type of radio link equipment then the definition of the exclusion bands should be taken from ETSI EN 300 339.

### 11.3.1 General

**Replace** in paragraph 1: "ENV 50141:1993" with "EN 61000-4-6".

**Add** the following new paragraph at the end of 11.3.1:

No test is required for ports intended for supply/signal lines, other than AC mains supply lines, where the manufacturer's specification indicates that it is not permitted to connect cables > 3 m long.

### 11.3.3 State of specimen during conditioning

**Add** the following new paragraph at the end of 11.3.3:

During the test, at least one of each type of input/output shall be terminated via a CDN or appropriate terminating impedance. If the equipment may be fitted with more than one input/output of the same type then, when the test signal is being injected into one of these input/outputs, at least one other of the same type shall be terminated with a CDN or appropriate terminating impedance. Where there is insufficient space for all of the CDNs to be within 300 mm of the EUT, then some of the CDNs, not being injected, may be placed more than 300 mm from the EUT, but shall be as close as possible.

**Add** the following note after the above paragraph:

NOTE The non-excited RF input ports to the CDNs should be terminated by 50  $\Omega$  loads.

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### 11.3.4 Conditioning

**Delete** "(ENV 50141 Level 3)".

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### 11.4 Criteria for compliance

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**Add** the following new paragraph after paragraph 2:

For components with radio links, it is accepted that communications via the radio link may not be possible during the conditioning within the transmitter and receiver exclusion bands defined in the relevant part of ETSI EN 301 489 for that type of radio link equipment.

NOTE If no part of ETSI EN 301 489 is applicable to the type of radio link equipment then the definition of the exclusion bands should be taken from EN 300 339.

### 12.3.1 General

**Replace** in paragraph 1: "IEC 1000-4-4:1995" with "EN 61000-4-4".

### 12.3.4 Conditioning

**Delete** "(IEC 1000-4-4 Level 3)".



Replace Table 6 with the following:

**Table 6**

Test voltages <sup>1)</sup> : AC mains supply lines <sup>2)</sup>	(kV)	2
Other supply / signal lines <sup>3) 4)</sup>	(kV)	1
Polarity		+ & -
Number of applications for each polarity		1
Duration per application	(min)	1 <sup>+0,2</sup> <sub>-0</sub>
<p><sup>1)</sup> The test voltages specified are the open-circuit voltages.</p> <p><sup>2)</sup> Applied by the direct injection method.</p> <p><sup>3)</sup> No test is required where the manufacturer's specification indicates that it is not permitted to connect cables &gt; 3 m long.</p> <p><sup>4)</sup> Applied by the capacitive clamp injection method.</p>		

### 13.3.1 General

Replace in paragraph 1: "IEC 1000-4-5:1995" with "EN 61000-4-5".

Replace paragraph 4 with the following:

Extra low voltage and signal lines shall be subjected to transients injected by line-to-ground coupling mode only, via a 40  $\Omega$  series resistor. If the equipment has a large number of identical inputs/outputs (e.g. detector loops), then representative samples of each type of input/output may be selected for testing. The length of the signal lines between the EUT and the coupling/decoupling network(s) shall be  $\leq 2$  m. However, if it is specified in the manufacturer's data that certain signal lines shall only be connected with screened cables, then in these cases, the transients shall be applied directly (i.e. without the 40  $\Omega$  series resistor) to the screen of a 20 m length of screened cable as shown in Figure 3. Current compensated chokes may be used to decouple signal lines carrying high frequency signals, to reduce the problems of attenuation. At least 5 pulses of each polarity shall be applied at each of the voltage levels shown for the appropriate severity. The pulses may be applied at a maximum rate of 1 per 5 s, however, it is necessary to ensure that any failures are not due to applying the pulses too frequently and that if this is not clear, then the failed devices should be replaced and the test repeated with pulses applied at a rate of less than 1/min.