

Alarm systems —

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

The European Standard EN 50130-4:1995, with the incorporation of amendments A1:1998 and A2:2003, has the status of a British Standard

ICS 13.220.20; 13.310; 13.320; 33.100.20

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee GW/1, Electronic security systems to Subcommittee GW/1/1, Alarm components, upon which the following bodies were represented:

- Association of Security Consultants
- British Gas plc
- British Security Industry Association
- Department of the Environment [Security Facilities Executive (SSG)]
- European Association of Security Equipment Manufacturers
- Loss Prevention Council
- National Approval Council for Security Systems
- Post Office
- Security Systems and Alarms Inspection Board

This British Standard, having been prepared under the direction of the Consumer Products and Services Sector Board, was published under the authority of the Standards Board and comes into effect on 15 August 1996

© BSI 16 July 2003

The following BSI references relate to the work on this standard:
Committee reference GW/1/1
Draft for comment 94/507461 DC

ISBN 0 580 25766 5

Amendments issued since publication

Amd. No.	Date	Comments
10102	September 1998	See national foreword
14441	16 July 2003	See national foreword and incorporation of Corrigendum March 2003

Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
Text of EN 50130-4	2

National foreword

This British Standard has been prepared by Subcommittee GW/1/1, Alarm components, and is the English language version of EN 50130, *Alarm systems — Part 4: Electromagnetic compatibility — Product family standard: Immunity requirements for components of fire, intruder and social alarm systems*, including amendments A1:1998 and A2:2003 and Corrigendum March 2003, published by the European Committee for Electrotechnical Standardization (CENELEC).

The start and finish of text introduced or altered by amendment is indicated in the text by tags **A1** **A1**. Tags indicating changes to CENELEC text carry the number of the CENELEC amendment. For example, text altered by CENELEC amendment A1 is indicated by **A1** **A1**.

Corrigendum March 2003 made changes to **5.3** and Clause **6**.

This standard is the British Standard implementation of part of the EN 50130 series of standards. This series of standards is intended to give the requirements applicable to alarm systems in general (e.g. the EMC immunity requirements, in this case).

The draft of this standard was submitted to the CENELEC Unique Acceptance Procedure in October 1994 and was approved by CENELEC as EN 50130-4 on 1995-07-04.

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) 1996-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn. (dow) 2001-01-01

During the transitional period starting 1996-01-01 and ending 2001-01-01, manufacturers shall either refer to the generic standards EN 50082-1 or EN 50082-2, or refer to the product family standard EN 50130-4 excluding conflicting national standards, for showing conformity to immunity requirements of apparatus used in alarm systems in the framework of the EMC directive 89/336/EEC.

After 2001-01-01, EN 50130-4 will be the only standard which can be used.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the *BSI Catalogue* under the section entitled “International Standards Correspondence Index”, or by using the “Search” facility of the *BSI Electronic Catalogue* or of British Standards Online.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 18, an inside back cover and a back cover.

The BSI copyright notice displayed in this document indicates when the document was last issued.

Descriptors: warning systems, fire detection systems, fire intruder, electromagnetic compatibility, radio disturbances, tests, electrostatic discharge tests, testing conditions, acceptability

English version

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

(includes amendments A1:1998 and A2:2003)

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
(inclut les amendements A1:1998 et A2:2003)

Alarmanlagen —
Teil 4: Elektromagnetische Verträglichkeit —
Produktfamilienorm: Anforderungen an die
Störfestigkeit von Anlageteilen für Brand- und
Einbruchmeldeanlagen sowie
Personen-Hilferufanlagen
(enthält Änderungen A1:1998 und A2:2003)

This amendment A1 modifies the European Standard EN 50130-4:1995; it was approved by CENELEC on 1998-04-01 and amendment A2 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 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, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, 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 European Standard was prepared by the CENELEC Technical Committee TC 79, Alarm systems, in cooperation with CEN Technical Committee TC 72, Fire detection and fire alarm systems.

This standard is part of the EN 50130 series of standards. This series of standards 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 alarm systems.*

EN 50132, *Alarm systems — CCTV surveillance systems.*

EN 50133, *Alarm systems — Access control systems.*

EN 50134, *Alarm systems — Social alarm systems.*

EN 50135, *Alarm systems — Hold-up alarm systems.*

EN 50136, *Alarm systems — Alarm transmission systems.*

EN 50137, *Alarm systems — Combined or integrated alarm systems.*

EN 54, *Fire detection and fire alarm systems.*

The draft of this standard was submitted to the CENELEC Unique Acceptance Procedure in October 1994 and was approved by CENELEC as EN 50130-4 on 1995-07-04.

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) 1996-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2001-01-01

During the transitional period starting on 1996-01-01 and ending on 2001-01-01, manufacturers shall either refer to the generic standards EN 50082-1 or EN 50082-2, or refer to the product family standard EN 50130-4 excluding conflicting national standards, for showing conformity to immunity requirements of apparatus used in alarm systems in the framework of the EMC Directive 89/336/EEC.

After 2001-01-01, EN 50130-4 will be the only standard which can be used.

Foreword to amendment A1

This amendment was prepared by 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 A1 to EN 50130-4:1995 on 1998-04-01.

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) 1999-03-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2001-01-01

Foreword to amendment A2

This amendment to the European Standard was prepared by 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

Contents

1	Scope	4
2	Normative references	4
3	Definitions and abbreviations	5
4	Application of the tests	6
5	Conditions during testing	6
6	Functional test	7
7	Mains supply voltage variations	7
8	Mains supply voltage dips and short interruptions	8
9	Electrostatic discharge	9
10	Radiated electromagnetic fields	10
11	Conducted disturbances induced by electromagnetic fields	13
12	Fast transient bursts	15
13	Slow high energy voltage surge	16

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:

- intruder alarm systems;
- hold-up alarm systems;
- fire detection and fire alarm systems;
- social alarm systems;
- CCTV systems, for security applications;
- access control systems, for security applications;
- A1 alarm transmission systems.¹⁾ A1

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 ENV 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.

A2 Text deleted A2

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.

2 Normative references

A2 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.

IEC Publication	Year	Title	EN/HD	Year
A2 IEC 60068-1 + corr. October + A1	1988 1988 1992	<i>Environmental testing — Part 1: General and guidance.</i>	EN 60068-1	1994
IEC 61000-2-2	1990	<i>Electromagnetic compatibility (EMC) — Part 2-2: Environment — Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems.</i>	EN 61000-2-2	2002

A2

A1

¹⁾ Apart from equipment which is part of the public switched telephone network. A1