

Electromagnetic compatibility (EMC) —

Part 4-11: Testing and measurement techniques —

Voltage dips, short interruptions and voltage variations immunity tests

The European Standard EN 61000-4-11:1994 with the incorporation of amendment A1:2001 has the status of a British Standard

UDC 621.37.001.365

Cooperating organizations

The European Committee for Electrotechnical Standardization (CENELEC), under whose supervision this European Standard was prepared, comprises the national committees of the following countries:

Austria	Italy
Belgium	Luxembourg
Denmark	Netherlands
Finland	Norway
France	Portugal
Germany	Spain
Greece	Sweden
Iceland	Switzerland
Ireland	United Kingdom

This British Standard, having been prepared under the direction of the Electrotechnical Sector Board, was published under the authority of the Standards Board and comes into effect on 15 November 1994

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Amendments issued since publication

Amd. No.	Date	Comments
13191	27 May 2002	Indicated by a sideline and see national foreword

The following BSI references relate to the work on this standard:
Committee reference GEL/110
Draft for comment 91/29431 DC

ISBN 0 580 23538 6

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National foreword

This British Standard has been prepared under the direction of the Electrotechnical Sector Board and is the English language version of EN 61000-4-11:1994 *Electromagnetic compatibility (EMC) — Part 4-11: Testing and measurement techniques — Voltage dips, short interruptions and voltage variations immunity tests*, including amendment A1:2001, published by the European Committee for Electrotechnical Standardization (CENELEC). It is identical with IEC 61000-4-11 Edition 1.1:2001, which comprises edition 1:1994 consolidated by the incorporation of amendment 1:2000, published by the International Electrotechnical Commission (IEC).

IEC 61000 has been designated a Basic EMC Publication for use in the preparation of dedicated product, product family and generic EMC standards.

IEC 61000 will be published in separate Parts in accordance with the following structure.

- Part 1. *General*
General considerations (introduction, fundamental principles)
Definitions, terminology
- Part 2. *Environment*
Description of the environment
Classification of the environment
Compatibility levels
- Part 3. *Limits*
Emission limits
Immunity limits (in so far as they do not fall under the responsibility of the product committees)
- Part 4. *Testing and measurement techniques*
Measurement techniques
Testing techniques
- Part 5. *Installation and mitigation guidelines*
Installation guidelines
Mitigation methods and devices
- Part 9. *Miscellaneous*

Each Part will be subdivided into Sections each of which may be published as either a standard or a Technical Report.

Cross-references

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

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 21 and a back cover.

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

Sidelining in this document indicates the most recent changes by amendment.

UDC 621.37.001.365

Descriptors: Electromagnetic compatibility, measurements, electric power networks, low voltage, electric equipment, electronic equipment, tests, voltage, electric power supply, variation

English version

Electromagnetic compatibility (EMC) — Part 4-11: Testing and measurement techniques — Voltage dips, short interruptions and voltage variations immunity tests

(includes amendment A1:2001)
(IEC 61000-4-11:1994+A1:2000)

Compatibilité électromagnétique (CEM) —
Partie 4-11: Techniques d'essai et de mesure —
Essais d'immunité relatifs aux creux de tension,
coupures brèves et variations de tension
(inclut l'amendement A1:2001)
(CEI 61000-4-11:1994+A1:2000)

Elektromagnetische Verträglichkeit (EMV) —
Teil 4-11: Prüf- und Meßverfahren —
Prüfung der Störfestigkeit gegen
Spannungseinbrüche,
Kurzzeitunterbrechungen und
Spannungsschwankungen
(enthält Änderung A1:2001)
(IEC 61000-4-11:1994+A1:2000)

This European Standard was approved by CENELEC on 1993-12-08. Amendment A1:2001 was approved by CENELEC on 2000-12-01. 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

The text of document 77B(CO)17, as prepared by Subcommittee 77B: High-frequency phenomena, of IEC Technical Committee 77: Electromagnetic compatibility, was submitted to the IEC-CENELEC parallel vote in May 1993.

The reference document was approved by CENELEC as EN 61000-4-11 on 8 December 1993.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1995-06-01
- latest date of withdrawal of conflicting national standards (dow) 1995-06-01

For products which have complied with the relevant national standard before 1995-06-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2000-06-01.

Annexes designated “normative” are part of the body of the standard. Annexes designated “informative” are given only for information. In this standard, Annex A and Annex ZA are normative and Annex B and Annex C are informative.

Foreword to amendment A1

The text of documents 77B/291+293/FDIS, future amendment 1 to IEC 61000-4-11:1994, prepared by SC 77B, High-frequency phenomena, of IEC TC 77, Electromagnetic compatibility, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A1 to EN 61000-4-11:1994 on 2000-12-01.

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) 2001-09-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2003-12-01

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INTRODUCTION

This section of part 4 belongs to the IEC 61000 series, *Electromagnetic compatibility (EMC)*, according to the following structure:

Part 1: General

- General considerations (introduction, fundamental principles)
- Definitions, terminology

Part 2: Environment

- Description of the environment
- Classification of the environment
- Compatibility levels

Part 3: Limits

- Emission limits
- Immunity limits (in so far as they do not fall under the responsibility of the product committees)

Part 4: Testing and measurement techniques

- Measurement techniques
- Testing techniques

Part 5: Installation and mitigation guidelines

- Installation guidelines
- Mitigation methods and devices

Part 9: Miscellaneous

Each part is further subdivided into sections which are to be published either as international standards or as technical reports.

These standards and reports will be published in chronological order and numbered accordingly.

This part is an international standard which gives immunity requirements and test procedures related to voltage dips, short interruptions and voltage variations.

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests

1 Scope

This section of IEC 61000-4 defines the immunity test methods and range of preferred test levels for electrical and electronic equipment connected to low-voltage power supply networks for voltage dips, short interruptions, and voltage variations.

The standard applies to electrical and electronic equipment having a rated input current not exceeding 16 A per phase.

It does not apply to electrical and electronic equipment for connection to d.c. networks or 400 Hz a.c. networks. Tests for these networks will be covered by future IEC standards.

The object of this standard is to establish a common reference for evaluating the immunity of electrical and electronic equipment when subjected to voltage dips, short interruptions, and voltage variations.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this section of IEC 61000-4. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this section of IEC 61000-4 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEV 60050(161):1990, *International Electrotechnical Vocabulary (IEV) – Chapter 161: Electromagnetic compatibility*

IEC 60068-1:1988, *Environmental testing – Part 1: General and guidance*

IEC 61000-2-1:1990, *Electromagnetic compatibility (EMC) – Part 2: Environment – Section 1: Description of the environment – Electromagnetic environment for low-frequency conducted disturbances and signalling in public power supply systems*

IEC 61000-2-2:1990, *Electromagnetic compatibility (EMC) – Part 2: Environment – Section 2: Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems*

IEC 61000-4-1:1992, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 1: Overview of immunity tests – Basic EMC publication*