

Electromagnetic compatibility (EMC) —

**Part 4-14: Testing and measurement
techniques — Voltage fluctuation
immunity test for equipment with
input current not exceeding 16 A
per phase**

ICS 33.100.20

National foreword

This British Standard is the UK implementation of EN 61000-4-14:1999+A2:2009. It is identical to IEC 61000-4-14:1999, incorporating amendments 1:2001 and 2:2009. It supersedes BS EN 61000-4-14:1999 which will be withdrawn on 1 July 2012.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to IEC text carry the number of the IEC amendment. For example, text altered by IEC amendment 1 is indicated by **A1** **A1**.

The UK participation in its preparation was entrusted by Technical Committee GEL/210, EMC-Policy committee, to subcommittee GEL/210/12, EMC basic, generic and low frequency phenomena standardization.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

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 cannot confer immunity from legal obligations.

This British Standard, having been prepared under the direction of the Electrotechnical Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 June 1999

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English version

Electromagnetic compatibility (EMC) —
Part 4-14: Testing and measurement techniques —
Voltage fluctuation immunity test
for equipment with input current not
exceeding 16 A per phase

(IEC 61000-4-14:1999)

Compatibilité électromagnétique (CEM)
Partie 4-14: Techniques d'essai et de mesure —
Essai d'immunité aux fluctuations de tension
(CEI 61000-4-14:1999)

Elektromagnetische Verträglichkeit (EMV)
Teil 4-14: Prüf- und Meßverfahren —
Prüfung der Störfestigkeit gegen
Spannungsschwankungen
(IEC 61000-4-14:1999)

This European Standard was approved by CENELEC on 1999-04-01.
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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, 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 77A/263/FDIS, future edition 1 of IEC 61000-4-14, prepared by SC 77A, Low-frequency phenomena, of IEC TC 77, Electromagnetic compatibility, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61000-4-14 on 1999-04-01.

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) 2000-10-01
- latest date by which national standards conflicting with the EN have to be withdrawn (dow) 2002-04-01

Annexes designated “normative” are part of the body of the standard.

Annexes designated “informative” are given for information only.

In this standard, Annex ZA is normative and Annexes A and B are informative.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61000-4-14:1999 was approved by CENELEC as a European Standard without any modification.

In the official version, Bibliography, following notes have to be added for the standards indicated:

IEC 61000-2-2 NOTE: Harmonized as ENV 61000-2-2:1993 (modified).

IEC 61000-4-1 NOTE: Harmonized as ENV 61000-4-1:1994 (not modified).

IEC 61000-4-11 NOTE: Harmonized as ENV 61000-4-11:1994 (not modified).

Foreword to amendment A1

The text of amendment 1:2001 to the International Standard IEC 61000-4-14:1999, prepared by SC 77B, High frequency phenomena, of IEC TC 77, Electromagnetic compatibility, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as amendment A1 to EN 61000-4-14:1999 on 2004-05-01.

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) 2005-05-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2007-05-01

Endorsement notice

The text of the amendment A1:2001 to the International Standard IEC 61000-4-14:1999 was approved by CENELEC as an amendment to the European Standard without any modification.

Foreword to amendment A2

The text of document 77A/669/CDV, future amendment 2 to IEC 61000-4-14:1999, prepared by SC 77A, Low frequency phenomena, of IEC TC 77, Electromagnetic compatibility, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A2 to EN 61000-4-14:1999 on 2009-07-01.

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) 2010-04-01
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2012-07-01

Endorsement notice

The text of amendment 2:2009 to the International Standard IEC 61000-4-14:1999 was approved by CENELEC as an amendment to the European Standard without any modification.

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INTRODUCTION

IEC 61000 is published in separate parts 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 (insofar as these limits 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 6: Generic standards

Part 9: Miscellaneous

Each part is further subdivided into several parts, published either as International Standards, or as technical reports, some of which have already been published as sections. Others will be published with the part number followed by a dash and a second number identifying the subdivision (example 61000-6-1).

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 4-14: Testing and measurement techniques – Voltage fluctuation immunity test for equipment with input current not exceeding 16 A per phase

1 Scope

This part of IEC 61000 is a basic electromagnetic compatibility (EMC) publication. It considers immunity tests for electrical and/or electronic equipment in their electromagnetic environment. Only conducted phenomena are considered, including immunity tests for equipment connected to public and industrial power supply networks.

This part aims to establish a reference for evaluating the immunity of electric and electronic equipment when subjected to positive and negative low amplitude voltage fluctuations.

The voltage fluctuations considered by this standard do not include flicker, which is a physiological phenomenon due to lighting luminance fluctuations.

This standard applies to electrical and/or electronic equipment that have a rated input current up to 16 A per phase. It does not apply to electrical and/or electronic equipment connected to d.c. or a.c. 400 Hz distribution networks. Tests concerning these networks will be covered by other IEC standards.

The immunity test levels required for a specific electromagnetic environment, together with the performance criteria, are indicated in the product, product family or generic standards as applicable. However, most product groups do not have a history of being susceptible to voltage fluctuations. Consequently, testing for these phenomena is often not required.

2 Normative references

- ^[A2] 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. ^[A2]
- ^[A2] IEC 60050(161) ^[A2], *International Electrotechnical Vocabulary (IEV) – Chapter 161: Electromagnetic compatibility*
- ^[A2] IEC 60068-1 ^[A2], *Environmental testing – Part 1: General and guidance*
- ^[A2] IEC 61000-2-4 ^[A2], *Electromagnetic compatibility (EMC) – Part 2: Environment – Section 4: Compatibility levels in industrial plants for low-frequency conducted disturbances*