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**Electromagnetic compatibility (EMC) - Part 2: Environment - Section 4:  
Compatibility levels in industrial plants for low-frequency conducted disturbances  
(IEC 1000-2-4:1994 + Corrigendum 1994)**

Electromagnetic compatibility (EMC) -- Part 2-4: Environment - Compatibility levels in industrial plants for low-frequency conducted disturbances

Elektromagnetische Verträglichkeit -- Teil 2-4: Umgebungsbedingungen -  
Verträglichkeitspegel für niederfrequente leitungsgeführte Störgrößen in Industrieanlagen  
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Compatibilité électromagnétique (CEM) -- Partie 2-4: Environnement - Niveaux de  
compatibilité dans les installations industrielles pour les perturbations conduites à basse  
fréquence  
(standards.iteh.ai)  
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**Ta slovenski standard je istoveten z: EN 61000-2-4:1994**

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**ICS:**

33.100.01	Elektromagnetna združljivost na splošno	Electromagnetic compatibility in general
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**SIST EN 61000-2-4:1997****en**

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EUROPEAN STANDARD

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NORME EUROPÉENNE

EUROPÄISCHE NORM

December 1994

ICS 29.020

Descriptors: Electric power supply, electric power networks, low voltage, network disturbances, electromagnetic compatibility, industrial electrical installations, classification



English version

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PREVZET PO METODI RAZGLASITVE

-03- 1997

## Electromagnetic compatibility (EMC) Part 2: Environment

### Section 4: Compatibility levels in industrial plants for low-frequency conducted disturbances (IEC 1000-2-4:1994 + corrigendum 1994)

Compatibilité électromagnétique (EMC)

Partie 2: Environnement

Section 4: Niveaux de compatibilité  
dans les installations industrielles pour  
les perturbations conduites à basse  
fréquence

(CEI 1000-2-4:1994 +  
corrigendum 1994)

Elektromagnetische Verträglichkeit

Teil 2: Umgebungsbedingungen

Hauptabschnitt 4: Verträglichkeitspegel  
für niederfrequente leitungsgeführte  
Störgrößen in Industrieanlagen

(IEC 1000-2-4:1994 +  
Corrigendum 1994)

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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)16A, future edition 1 of IEC 1000-2-4, 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 EN 61000-2-4 on 1994-07-05.

NOTE: Finland and Switzerland have no obligation to implement this European 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) 1995-07-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 1995-07-01

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 annex A informative.  
Annex ZA has been added by CENELEC.

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Endorsement notice  
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The text of the International Standard IEC 1000-2-4:1994 and its corrigendum August 1994 was approved by CENELEC as a European Standard without any modification.

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## ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD  
WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

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.

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

IEC Publication	Date	Title	EN/HD	Date
50(161)	1990	International Electrotechnical Vocabulary (IEV) - Chapter 161: Electromagnetic compatibility	-	-
1000-2-2 (mod)	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	ENV 61000-2-2	1993

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**Compatibilité électromagnétique (CEM) –**

**Partie 2:**

**Environnement –**

**Section 4: Niveaux de compatibilité dans les installations industrielles pour les perturbations conduites à basse fréquence**

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**Electromagnetic compatibility (EMC) –**

**Part 2:**

**Environment –**

**Section 4: Compatibility levels in industrial plants for low-frequency conducted disturbances**

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Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

CODE PRIX  
PRICE CODE

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Pour prix, voir catalogue en vigueur  
For price, see current catalogue

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## ELECTROMAGNETIC COMPATIBILITY (EMC) –

## Part 2 : Environment –

Section 4 : Compatibility levels in industrial plants for  
low-frequency conducted disturbances

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

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International Standard IEC 1000-2-4 has been prepared by sub-committee 77B: High-frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

The text of this standard is based on the following documents:

DIS	Report on voting
77B(C0)16A	77B(C0)18A

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

Annex A is for information only.

## INTRODUCTION

IEC 1000 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 (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

[SIST EN 61000-2-4:1997  
https://standards.iteh.ai/catalog/standards/sist/890f8426-0f45-42d1-8fd9-5d644b6e4590/sist-en-61000-2-4-1997](https://standards.iteh.ai/catalog/standards/sist/890f8426-0f45-42d1-8fd9-5d644b6e4590/sist-en-61000-2-4-1997)

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.

Detailed information on the various types of disturbances that can be expected on public power supply systems can be found in IEC 1000-2-1.

## ELECTROMAGNETIC COMPATIBILITY (EMC) –

### Part 2: Environment –

#### Section 4: Compatibility levels in industrial plants for low-frequency conducted disturbances

##### 1 Scope

This section of IEC 1000-2 gives the requirements for the compatibility levels for industrial and non-public networks. These levels are relevant to disturbances that may occur in the electrical power supply in normal operating conditions.

This standard applies to low-voltage and medium-voltage a.c. power supply at 50 Hz/60 Hz. Networks for ships, aircraft, off-shore platforms and railways are out of the scope of this standard.

This standard deals with the parameters of voltage deviations (amplitude, frequency, phase-balance and wave-shape) from the ideal sinusoidal voltage that may be expected at the in-plant point of coupling (IPC) within industrial plants or other non-public networks.

The compatibility levels are given for different electromagnetic environment classes. The disturbances here considered are relevant to the power supply only and the classes are determined by the characteristics of the supply network. This standard is in practice a classification of the a.c. supplies associated with industrial and non-public networks.

NOTE - Compatibility levels at the point of common coupling (PCC) are specified in the standards applicable to public networks or may be specified by supply authorities.

##### 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this section of IEC 1000-2. 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 1000-2 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.

IEC 50(161): 1990, *International Electrotechnical Vocabulary (IEV) – Chapter 161: Electromagnetic compatibility.*

IEC 1000-2-2: 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.*

##### 3 Definitions

For the purpose of this section of IEC 1000-2, the following definitions apply, as well as the definitions of IEC 50(161).