SLOVENSKI STANDARD
SIST EN 61000-2-4:2003

01-december-2003

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SIST EN 61000-2-4:1997

Electromagnetic compatibility (EMC) - Part 2-4: Environment - Compatibility levels in industrial plants for low-frequency conducted disturbances (IEC 61000-2-4:2002)

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

Elektromagnetische Verträglichkeit (EMV) -- Teil 2-4: Umgebungsbedingungen - Verträglichkeitspegel für niederfrequente leitungsgeführte Störgrößen in Industrieanlagen

Compatibilité électromagnétique (CEM) -- Partie 2-4: Environnement - Niveaux de compatibilité dans les installations industrielles pour les perturbations conduites à basse fréquence

Ta slovenski standard je istoveten z: **EN 61000-2-4:2002**

ICS:

33.100.01	Elektromagnetna združljivost na splošno	Electromagnetic compatibility in general

SIST EN 61000-2-4:2003 **en**

EUROPEAN STANDARD **EN 61000-2-4**

NORME EUROPÉENNE

EUROPÄISCHE NORM September 2002

ICS 33.100.10; 33.100.20 Supersedes EN 61000-2-4:1994

English version

Electromagnetic compatibility (EMC)
Part 2-4: Environment -
Compatibility levels in industrial plants
for low-frequency conducted disturbances
(IEC 61000-2-4:2002)

Compatibilité électromagnétique (CEM)
Partie 2-4: Environnement -
Niveaux de compatibilité
dans les installations industrielles
pour les perturbations conduites
à basse fréquence
(CEI 61000-2-4:2002)

Elektromagnetische Verträglichkeit (EMV)
Teil 2-4: Umgebungsbedingungen -
Verträglichkeitspegel für niederfrequente
leitungsgeführte Störgrößen
in Industrieanlagen
(IEC 61000-2-4:2002)

This European Standard 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, 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

Ref. No. EN 61000-2-4:2002 E

Foreword

The text of document 77A/378/FDIS, future edition 2 of IEC 61000-2-4, 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 61000-2-4 on 2002-09-01.

This European Standard supersedes EN 61000-2-4:1994.

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) 2003-06-01

– latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2005-09-01

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, B and C are informative.
Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61000-2-4:2002 was approved by CENELEC as a European Standard without any modification.

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

IEC 60038	NOTE	Harmonized as HD 472 S1:1989 (modified).
IEC 61000-4-7	NOTE	Harmonized as EN 61000-4-7:1993 (not modified).
IEC 61000-4-15	NOTE	Harmonized as EN 61000-4-15:1998 (not modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding 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 (including amendments).

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

Publication	Year	Title	EN/HD	Year
IEC 60050-101	- [1)]	International Electrotechnical Vocabulary (IEV) Part 101: Mathematics	-	-
IEC 60050-161	- [1)]	Chapter 161: Electromagnetic compatibility	-	-
IEC 60050-551	- [1)]	Part 551: Power electronics	-	-
IEC 61000-2-2	- [1)]	Electromagnetic compatibility (EMC) Part 2-2: Environment - Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems	EN 61000-2-2	2002 [2)]
IEC 61000-2-12	- [3)]	Part 2-12 : Environment - Compatibility levels for low-frequency conducted disturbances and signalling in public medium-voltage power supply systems	-	-

[1)] Undated reference.

[2)] Valid edition at date of issue.

[3)] At draft stage.

NORME INTERNATIONALE

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Deuxième édition
Second edition
2002-06

PUBLICATION FONDAMENTALE EN CEM
BASIC EMC PUBLICATION

Compatibilité électromagnétique (CEM) –

Partie 2-4:
Environnement – Niveaux de compatibilité dans les installations industrielles pour les perturbations conduites à basse fréquence

Electromagnetic compatibility (EMC) –

Part 2-4:
Environment – Compatibility levels in industrial plants for low-frequency conducted disturbances

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International Electrotechnical Commission
Международная Электротехническая Комиссия

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 2-4: Environment – 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 co-operation 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 express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, 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.
5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61000-2-4 has been prepared by subcommittee 77A: Low frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

This standard forms part 2-4 of IEC 61000. It has the status of a basic EMC publication in accordance with IEC Guide 107.

This second edition cancels and replaces the first edition, published in 1994, and constitutes a technical revision.

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

FDIS	Report on voting
77A/378/FDIS	77A/383/RVD

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

Annexes A, B and C are for information only.

The committee has decided that the contents of this publication will remain unchanged until 2010. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

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 (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 6: Generic standards

Part 9: Miscellaneous

Each part is further subdivided into several parts, published either as International Standards, technical specifications or 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: 61000-3-11).

Detailed information on the various types of disturbances that can be expected on public power supply systems can be found in IEC 61000-2-1 and IEC 61000-2-12.

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 2-4: Environment – Compatibility levels in industrial plants for low-frequency conducted disturbances

1 Scope

This part of IEC 61000 is concerned with conducted disturbances in the frequency range from 0 kHz to 9 kHz. It gives numerical compatibility levels for industrial and non-public power distribution systems at nominal voltages up to 35 kV and a nominal frequency of 50 Hz or 60 Hz.

Power supply systems on ships, aircraft, offshore platforms and railways are not included.

The compatibility levels specified in this standard apply at the in-plant point of coupling. At the power input terminals of equipment receiving its supply from the above systems, the severity levels of the disturbances can, for the most part, be taken to be the same as the levels at the in-plant point of coupling. In some situations this is not so, particularly in the case of a long feeder dedicated to the supply of a particular load, or in the case of a disturbance generated or amplified within the installation of which the equipment forms a part.

Compatibility levels are specified for electromagnetic disturbances of the types which can be expected at any in-plant point of coupling (IPC) within industrial plants or other non-public networks, for guidance in

a) limits to be set for disturbance emission into industrial power supply systems (including the planning levels defined in 3.1.5);

NOTE 1 A very wide range of conditions is possible in the electromagnetic environments of industrial and other non-public networks. These are approximated in this standard by the three classes described in Clause 4. However, it is the responsibility of the operator of such a network to take account of the particular electromagnetic and economic conditions, including equipment characteristics, in setting the above-mentioned limits.

b) the choice of immunity levels for the equipment within these systems.

The disturbance phenomena considered are:

– voltage deviations;
– voltage dips and short interruptions;
– voltage unbalance;
– power-frequency variations;
– harmonics up to order 50;
– interharmonics up to the 50th harmonic;
– voltage components at higher frequencies (above 50th harmonic);
– d.c. component;
– transient overvoltages.