

**SLOVENSKI STANDARD  
SIST EN 61000-2-12:2003**

**01-december-2003**

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**Electromagnetic compatibility (EMC) -- Part 2-12: Environment - Compatibility levels for low-frequency conducted disturbances and signalling in public medium-voltage power supply systems (IEC 61000-2-12:2003)**

Electromagnetic compatibility (EMC) -- Part 2-12 : Environment - Compatibility levels for low-frequency conducted disturbances and signalling in public medium-voltage power supply systems

Elektromagnetische Verträglichkeit -- Teil 2-12: Umgebungsbedingungen - Verträglichkeitspegel für niederfrequente leitungsgeführte Störgrößen und Signalübertragung in öffentlichen Mittelspannungsnetzen

[SIST EN 61000-2-12:2003](https://standards.iteh.ai/catalog/standards/sist/c1210dba-13ed-442c-9239-221010000000/sist-en-61000-2-12-2003)

Compatibilité électromagnétique (CEM) -- Partie 2-12: Environnement - Niveaux de compatibilité pour les perturbations conduites à basse fréquence et la transmission des signaux sur les réseaux publics d'alimentation moyenne tension

**Ta slovenski standard je istoveten z: EN 61000-2-12:2003**

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**ICS:**

33.100.01	Elektromagnetna združljivost na splošno	Electromagnetic compatibility in general
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EUROPEAN STANDARD

**EN 61000-2-12**

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2003

ICS 33.100.01

English version

**Electromagnetic compatibility (EMC)  
Part 2-12 : Environment –  
Compatibility levels for low-frequency conducted disturbances and  
signalling in public medium-voltage power supply systems  
(IEC 61000-2-12:2003)**

Compatibilité électromagnétique (CEM)  
Partie 2-12: Environnement –  
Niveaux de compatibilité pour  
les perturbations conduites à basse  
fréquence et la transmission des signaux  
sur les réseaux publics d'alimentation  
moyenne tension  
(CEI 61000-2-12:2003)

Elektromagnetische Verträglichkeit  
Teil 2-12: Umgebungsbedingungen -  
Verträglichkeitspegel für niederfrequente  
leitungsgeführte Störgrößen und  
Signalübertragung in öffentlichen  
Mittelspannungsnetzen  
(IEC 61000-2-12:2003)

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SIST EN 61000-2-12:2003

This European Standard was approved by CENELEC on 2003-06-01. 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**

## Foreword

The text of document 77A/404/FDIS, future edition 1 of IEC 61000-2-12, 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 61000-2-12 on 2003-06-01.

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) 2004-03-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2006-06-01

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.

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## Endorsement notice

The text of the International Standard IEC 61000-2-12:2003 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 60868	NOTE	Harmonized as HD 498 S1:1987 (not modified).
IEC 60868-0	NOTE	Harmonized as EN 60868-0:1993 (not modified).
IEC 61000-3-2	NOTE	Harmonized as EN 61000-3-2:2000 (modified).
IEC 61000-3-3	NOTE	Harmonized as EN 61000-3-3:1995 (not modified).

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## 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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60071	Series	Insulation co-ordination	EN 60071	Series
IEC 60071-1	- 1)	Insulation co-ordination Part 1: Definitions, principles and rules	EN 60071-1	1995 2)
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 61000-2-4	- 1)	Part 2-4: Environment - Compatibility levels in industrial plants for low- frequency conducted disturbances	EN 61000-2-4	2002 2)
IEC 61000-4-7	- 1)	Part 4-7: Testing and measurement techniques - General guide on harmonics and interharmonics measurements and instrumentation, for power supply systems and equipment connected thereto	EN 61000-4-7	2002 2)

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1) Undated reference.

2) Valid edition at date of issue.

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**Compatibilité électromagnétique (CEM) –**

**Partie 2-12:**

**Environnement – Niveaux de compatibilité  
pour les perturbations conduites à basse  
fréquence et la transmission des signaux  
sur les réseaux publics d'alimentation  
moyenne tension**

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**Electromagnetic compatibility (EMC) –**

**Part 2-12:**

**Environment – Compatibility levels for  
low-frequency conducted disturbances and  
signalling in public medium-voltage power  
supply systems**

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International Electrotechnical Commission, 3, rue de Varembe, PO Box 131, CH-1211 Geneva 20, Switzerland  
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
Международная Электротехническая Комиссия

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTROMAGNETIC COMPATIBILITY (EMC) –****Part 2-12: Environment –  
Compatibility levels for low-frequency conducted disturbances and  
signalling in public medium-voltage power supply systems**

## 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.
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- 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 61000-2-12 has been prepared by subcommittee 77A: Low frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

It has the status of a basic EMC publication in accordance with IEC Guide 107.

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

FDIS	Report on voting
77A/404/FDIS	77A/413/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 2.

The committee has decided that the contents of this publication will remain unchanged until 2005. At this date, the publication will be

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

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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 (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 or as 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: 61000-6-1).

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.

## ELECTROMAGNETIC COMPATIBILITY (EMC) –

### Part 2-12: Environment – Compatibility levels for low-frequency conducted disturbances and signalling in public medium-voltage power supply systems

#### 1 Scope and object

This part of IEC 61000 is concerned with conducted disturbances in the frequency range from 0 kHz to 9 kHz, with an extension up to 148,5 kHz specifically for mains signalling systems. It gives compatibility levels for public medium voltage a.c. distribution systems having a nominal voltage between 1 kV and 35 kV and a nominal frequency of 50 Hz or 60 Hz (see IEC 60038).

Compatibility levels are specified for electromagnetic disturbances of the types which can be expected in public medium voltage power supply systems, for guidance in:

- a) the limits to be set for disturbance emission into public power supply systems (including the planning levels defined in 3.1.5);
- b) the immunity limits to be set by product committees and others for the equipment exposed to the conducted disturbances present in public power supply systems.

The disturbance phenomena considered are:

- voltage fluctuations and flicker;
- harmonics up to and including order 50;
- inter-harmonics up to the 50<sup>th</sup> harmonic;
- voltage distortions at higher frequencies (above 50<sup>th</sup> harmonic);
- voltage dips and short supply interruptions;
- voltage unbalance;
- transient overvoltages;
- power frequency variation;
- d.c. components;
- mains signalling.

Most of these phenomena are described in IEC 61000-2-1. In cases where it is not yet possible to establish compatibility levels, some information is provided.

The medium-voltage systems covered by this standard are public distribution systems supplying either:

- a) private installations in which equipment is connected directly or through transformers, or
- b) substations feeding public low-voltage distribution systems.