

**SLOVENSKI STANDARD  
SIST EN 61000-3-12:2012****01-februar-2012****Nadomešča:****SIST EN 61000-3-12:2005**

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**Elektromagnetna združljivost (EMC) – 3-12. del: Mejne vrednosti – Mejne vrednosti za harmonske tokove, ki jih povzroča oprema, priključena na nizkonapetostne napajalne sisteme z naznačenim tokom, večjim od 16 A in enakim ali manjšim od 75 A na fazo (IEC 61000-3-12:2011)**

Electromagnetic compatibility (EMC) - Part 3-12: Limits - Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16 A and ≤ 75 A per phase

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Elektromagnetische Verträglichkeit (EMV) - Teil 3-12: Grenzwerte für Oberschwingungsströme, verursacht von Geräten und Einrichtungen mit einem Eingangsstrom > 16 A und ≤ 75 A je Leiter, die zum Anschluss an öffentliche Niederspannungsnetze vorgesehen sind

Compatibilité électromagnétique (CEM) - Partie 3-12: Limites - Limites pour les courants harmoniques produits par les appareils connectés aux réseaux publics basse tension ayant un courant appelé > 16 A et ≤ 75 A par phase

**Ta slovenski standard je istoveten z: EN 61000-3-12:2011**

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**ICS:**

33.100.01	Elektromagnetna združljivost na splošno	Electromagnetic compatibility in general
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**SIST EN 61000-3-12:2012****en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 61000-3-12**

December 2011

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Supersedes EN 61000-3-12:2005

English version

**Electromagnetic compatibility (EMC) -  
Part 3-12: Limits -  
Limits for harmonic currents produced by equipment connected to public  
low-voltage systems with input current > 16 A and ≤ 75 A per phase  
(IEC 61000-3-12:2011)**

Compatibilité électromagnétique (CEM) -  
Partie 3-12: Limites -  
Limites pour les courants harmoniques  
produits par les appareils connectés aux  
réseaux publics basse tension ayant un  
courant appelé > 16 A et ≤ 75 A par phase  
(CEI 61000-3-12:2011)

Elektromagnetische Verträglichkeit (EMV)  
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(IEC 61000-3-12:2011)

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

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European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

**Management Centre: Avenue Marnix 17, B - 1000 Brussels**

## Foreword

The text of document 77A/740/FDIS, future edition 2 of IEC 61000-3-12, prepared by SC 77A, "Low frequency phenomena", of IEC TC 77, "Electromagnetic compatibility" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61000-3-12:2011.

The following dates are 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) 2012-06-16
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2014-06-16

This European Standard supersedes EN 61000-3-12:2005.

The significant technical changes with respect to EN 61000-3-12:2005 are listed below:

- the reference fundamental current  $I_1$  is replaced by the reference current  $I_{ref}$  for the calculation of emission limits;
- a new table of current emission limits (Table 5) is added;
- a new annex (Annex A) is added to define test conditions for some types of equipment;
- former Annexes B (Approximate interpolation formulas) and D (Information on the PWHF factor) are deleted.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directives EMC (2004/108/EC) and RTTED (1999/5/EC).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

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## Endorsement notice

The text of the International Standard IEC 61000-3-12:2011 was approved by CENELEC as a European Standard without any modification.

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## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

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 60038	-	IEC standard voltages	EN 60038	-
IEC 60050-161 + A1 + A2	1990 1997 1998	International Electrotechnical Vocabulary (IEV) - Chapter 161: Electromagnetic compatibility	-	-
IEC 61000-2-2	-	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	-
IEC 61000-2-4	-	Electromagnetic compatibility (EMC) - Part 2-4: Environment - Compatibility levels in industrial plants for low-frequency conducted disturbances	EN 61000-2-4	-
IEC 61000-3-2	-	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current $\leq 16$ A per phase)	EN 61000-3-2	-
IEC 61000-4-7	-	Electromagnetic compatibility (EMC) - 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	-

**Annex ZZ**  
(informative)

**Coverage of Essential Requirements of EU Directives**

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers protection requirements of Annex I, Article 1(a) of the EU Directive 2004/108/EC, and essential requirements of Article 3.1(b) (emission only) of the EU Directive 1999/5/EC.

Compliance with this standard provides presumption of conformity with the specified essential requirements of the Directives concerned.

NOTE Other requirements and other EU Directives may be applicable to the products falling within the scope of this standard.

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IEC 61000-3-12

Edition 2.0 2011-05

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Electromagnetic compatibility (EMC) –  
Part 3-12: Limits – Limits for harmonic currents produced by equipment  
connected to public low-voltage systems with input current >16 A and ≤75 A per  
phase**

[SIST EN 61000-3-12:2012](https://standards.iteh.ai/catalog/standards/sist/851b1f8b-30b8-44ae-a75e-1677f1e970e9/iec-61000-3-12-2012)

[https://standards.iteh.ai/catalog/standards/sist/851b1f8b-30b8-44ae-a75e-](https://standards.iteh.ai/catalog/standards/sist/851b1f8b-30b8-44ae-a75e-1677f1e970e9/iec-61000-3-12-2012)

**Compatibilité électromagnétique (CEM) –  
Partie 3-12: Limites – Limites pour les courants harmoniques produits par les  
appareils connectés aux réseaux publics basse tension ayant un courant  
appelé >16 A et ≤75 A par phase**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**ELECTROMAGNETIC COMPATIBILITY (EMC) –**

**Part 3-12: Limits –  
Limits for harmonic currents produced  
by equipment connected to public low-voltage systems  
with input current >16 A and ≤75 A per phase**

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). 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. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61000-3-12 has been prepared by subcommittee 77A: Low frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

This second edition cancels and replaces the first edition published in 2004 and constitutes a technical revision.

The significant technical changes with respect to the previous edition are listed below:

- the reference fundamental current  $I_1$  is replaced by the reference current  $I_{ref}$  for the calculation of emission limits;
- a new table of current emission limits (Table 5) is added;
- a new annex (Annex A) is added to define test conditions for some types of equipment;

- former Annexes B (Approximate interpolation formulas) and D (Information on the *PWHD* factor) are deleted.

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

FDIS	Report on voting
77A/740/FDIS	77A/747/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.

A list of all parts of the IEC 61000 series, published under the general title *Electromagnetic compatibility (EMC)*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. 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: IEC 61000-6-1).

This International Standard is a Product Family Standard.

## ELECTROMAGNETIC COMPATIBILITY (EMC) –

### Part 3-12: Limits – Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current $>16$ A and $\leq 75$ A per phase

#### 1 Scope

This part of IEC 61000 deals with the limitation of harmonic currents injected into the public supply system. The limits given in this International Standard are applicable to electrical and electronic equipment with a rated input current exceeding 16 A and up to and including 75 A per phase, intended to be connected to public low-voltage a.c. distribution systems of the following types:

- nominal voltage up to 240 V, single-phase, two or three wires;
- nominal voltage up to 690 V, three-phase, three or four wires;
- nominal frequency 50 Hz or 60 Hz.

Other distribution systems are excluded. The limits given in this edition apply to equipment when connected to 230/400 V, 50 Hz systems. See also Clause 5.

NOTE 1 The limits for the other systems will be added in a future edition of this standard.

NOTE 2 Equipment with a rated input current exceeding 75 A per phase should be considered in the harmonic current requirements for installations. See IEC/TR 61000-3-6 and future IEC/TR 61000-3-14.

This standard applies to equipment intended to be connected to low-voltage systems interfacing with the public supply at the low-voltage level. It does not apply to equipment intended to be connected only to private low-voltage systems interfacing with the public supply only at the medium- or high-voltage level.

NOTE 3 The scope of this standard is limited to equipment connected to public low voltage systems because emissions from equipment installed in private low voltage systems can be controlled in aggregate at the MV point of common coupling using procedures defined in IEC/TR 61000-3-6 and/or by means of contractual agreements between the distribution network operator and the customer. It is expected that operators of private systems will manage the EMC environment in a manner that ensures compliance with the provisions given in IEC/TR 61000-3-6 and/or the contractual agreements.

NOTE 4 If the equipment is intended to be connected only to private systems, the manufacturer should make this very clear in the product documentation.

NOTE 5 Professional equipment with input current  $\leq 16$  A per phase and that does not comply with the requirements and limits of standard IEC 61000-3-2 may be permitted to be connected to certain types of low voltage supplies, in the same way as equipment with input current  $>16$  A per phase and that does not comply with the requirements and limits of the present standard (see Annex C).

NOTE 6 The limits in this standard are not applicable to stand-alone harmonic filters.

This standard defines:

- a) requirements and emission limits for equipment;
- b) methods for type tests and simulations.

Tests according to this International Standard are type tests of complete pieces of equipment.

Conformity with this standard can also be determined by validated simulations.