

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



**Electromagnetic compatibility (EMC) –  
Part 3-2: Limits – Limits for harmonic current emissions (equipment input  
current  $\leq 16$  A per phase)**

**Compatibilité électromagnétique (CEM) –  
Partie 3-2: Limites – Limites pour les émissions de courant  
harmonique (courant appelé par les appareils  $\leq 16$  A par phase)**



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# INTERNATIONAL ELECTROTECHNICAL COMMISSION

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## **ELECTROMAGNETIC COMPATIBILITY (EMC) –**

### **Part 3-2: Limits – Limits for harmonic current emissions (equipment input current $\leq 16$ A per phase)**

#### FOREWORD

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International Standard IEC 61000-3-2 has been prepared by sub-committee 77A: Low-frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

This fourth edition cancels and replaces the third edition published in 2005, Amendment 1: 2008, Amendment 2:2009 and Corrigendum of August 2009.

This edition includes the following significant technical changes with respect to the previous edition:

- a) a clarification of the repeatability and reproducibility of measurements;
- b) a more accurate specification of the general test conditions for information technology equipment;
- c) the addition of optional test conditions for information technology equipment with external power supplies or battery chargers;

- d) the addition of a simplified test method for equipment that undergoes minor changes or updates;
- e) an update of the test conditions for washing machines;
- f) a clarification of the requirements for Class C equipment with active input power  $\leq 25$  W;
- g) an update of the test conditions for audio amplifiers;
- h) a clarification of the test conditions for lamps;
- i) an update of the test conditions for vacuum cleaners;
- j) the addition of test conditions for high pressure cleaners;
- k) an update of the test conditions for arc welding equipment;
- l) the reclassification of refrigerators and freezers with variable-speed drives into Class D;
- m) the addition of test conditions for refrigerators and freezers.

The text of this standard is based on the third edition, Amendment 1, Amendment 2, the Corrigendum of August 2009 and the following documents:

FDIS	Report on voting
77A/846/FDIS	77A/853/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 in 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,
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- 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 levels

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 sections which are to be published either as international standards, technical specifications, or as technical reports.

These standards and reports will be published in chronological order and numbered accordingly (for example, 61000-6-1).

This part is an international standard which gives emission limits for harmonic currents from equipment having an input current up to and including 16 A per phase.

This part is a Product Family Standard.

## **ELECTROMAGNETIC COMPATIBILITY (EMC) –**

### **Part 3-2: Limits – Limits for harmonic current emissions (equipment input current $\leq 16$ A per phase)**

#### **1 Scope**

This part of IEC 61000 deals with the limitation of harmonic currents injected into the public supply system.

It specifies limits of harmonic components of the input current which may be produced by equipment tested under specified conditions.

Harmonic components are measured according to Annexes A and B.

This part of IEC 61000 is applicable to electrical and electronic equipment having an input current up to and including 16 A per phase, and intended to be connected to public low-voltage distribution systems.

Arc welding equipment which is not professional equipment, with input current up to and including 16 A per phase, is included in this standard.

Arc welding equipment intended for professional use, as specified in IEC 60974-1, is excluded from this standard and may be subject to installation restrictions as indicated in IEC/TR 61000-3-4 or IEC 61000-3-12.

The tests according to this standard are type tests. Test conditions for particular equipment are given in Annex C.

For systems with nominal voltages less than 220 V (line-to-neutral), the limits have not yet been considered.

NOTE The words apparatus, appliance, device and equipment are used throughout this standard. They have the same meaning for the purpose of this standard.

#### **2 Normative references**

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050-131, *International Electrotechnical Vocabulary (IEV) – Part 131: Electric and magnetic circuits*

IEC 60050-161, *International Electrotechnical Vocabulary (IEV) – Part 161: Electro-magnetic compatibility*

IEC 60107-1, *Methods of measurement on receivers for television broadcast transmissions – Part 1: General considerations – Measurements at radio and video frequencies*

IEC 60155, *Glow-starters for fluorescent lamps*