Irish Standard
I.S. EN 61000-4-8:2010

Electromagnetic compatibility (EMC) -- Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test (IEC 61000-4-8:2009 (EQV))

I.S. EN 61000-4-8:2010

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EUROPEAN STANDARD

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EN 61000-4-8

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Supersedes EN 61000-4-8:1993 + A1:2001

English version

Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test

(IEC 61000-4-8:2009)

Compatibilité électromagnétique (CEM) - Partie 4-8: Techniques d'essai et de mesure - Essai d'immunité au champ magnétique à la fréquence du réseau (CEI 61000-4-8:2009)

Elektromagnetische Verträglichkeit (EMV) - Teil 4-8: Prüf- und Meßverfahren - Prüfung der Störfestigkeit gegen Magnetfelder mit energietechnischen Frequenzen (IEC 61000-4-8:2009)

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CENELEC

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

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Ref. No. EN 61000-4-8:2010 E

Foreword

The text of document 77A/694/FDIS, future edition 2 of IEC 61000-4-8, 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 61000-4-8 on 2010-02-01.

This European Standard supersedes EN 61000-4-8:1993 + A1:2001.

EN 61000-4-8:2010 includes the following significant technical changes with respect to EN 61000-4-8:1993: the scope is extended in order to cover 60 Hz. Characteristics, performance and verification of the test generator and related inductive coils are revised. Modifications are also introduced in the test set-up (GRP) and test procedure.

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)	2010-11-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2013-02-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 61000-4-8:2009 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 60068-1	NOTE	Harmonized as EN 60068-1.
IEC 61000-2-4	NOTE	Harmonized as EN 61000-2-4.

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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.

Publication	Year	Title	EN/HD	Year
IEC 60050-161	-	International Electrotechnical Vocabulary (IEV) - Chapter 161: Electromagnetic compatibility	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test

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 61000-4-8 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 1993 and its Amendment 1 (2000). It forms a technical revision.

This edition includes the following significant technical changes with respect to the previous edition: the scope is extended in order to cover 60 Hz. Characteristics, performance and verification of the test generator and related inductive coils are revised. Modifications are also introduced in the test set-up (GRP) and test procedure.

It forms Part 4-8 of the IEC 61000 series of standards. 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/694/FDIS	77A/706/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, under the general title *Electromagnetic compatibility*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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.

INTRODUCTION

This standard is part of the IEC 61000 series of standards, 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

Each part is further subdivided into several parts, published either as international standards, 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 part is an international standard which gives immunity requirements and test procedures related to "power frequency magnetic field".

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test

1 Scope

This part of IEC 61000 relates to the immunity requirements of equipment, only under operational conditions, to magnetic disturbances at power frequencies 50 Hz and 60 Hz related to:

– residential and commercial locations;

– industrial installations and power plants;

– medium voltage and high voltage sub-stations.

The applicability of this standard to equipment installed in different locations is determined by the presence of the phenomenon, as specified in Clause 4. This standard does not consider disturbances due to capacitive or inductive coupling in cables or other parts of the field installation.

Other IEC standards dealing with conducted disturbances cover these aspects.

The object of this standard is to establish a common and reproducible basis for evaluating the performance of electrical and electronic equipment for household, commercial and industrial applications when subjected to magnetic fields at power frequency *(continuous and short duration field).*

The standard defines:

– recommended test levels;

– test equipment;

– test set-up;

– test procedure.

2 Normative references

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.

IEC 60050(161), *International Electrotechnical Vocabulary (IEV) – Chapter 161: Electromagnetic compatibility*

3 Terms and definitions

For the purposes of this document the following terms and definitions apply to the restricted field of magnetic disturbances as well as the terms and definitions from IEC 60050(161) [IEV].

3.1
current distortion factor
ratio of the root-mean square value of the harmonics content of an alternating current to the root-mean square value of the fundamental current