
Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments (IEC 61000-6-2:1999, modified)

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EUROPEAN STANDARD

EN 61000-6-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2001

ICS 33.100.20

Supersedes EN 61000-6-2:1999

English version

**Electromagnetic compatibility (EMC)
Part 6-2: Generic standards -
Immunity for industrial environments
(IEC 61000-6-2:1999, modified)**

Compatibilité électromagnétique (CEM)
Partie 6-2: Normes génériques -
Immunité pour les environnements
industriels
(CEI 61000-6-2:1999, modifiée)

Elektromagnetische Verträglichkeit (EMV)
Teil 6-2: Fachgrundnormen -
Störfestigkeit - Industriebereich
(IEC 61000-6-2:1999, modifiziert)

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This European Standard was approved by CENELEC on 2001-07-03. 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, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, 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 the International Standard IEC 61000-6-2:1999, prepared by IEC TC 77, Electromagnetic compatibility, together with the common modifications prepared by the Technical Committee CENELEC TC 210, Electromagnetic compatibility (EMC), was submitted to the formal vote and was approved by CENELEC as EN 61000-6-2 on 2001-07-03.

This European Standard supersedes EN 61000-6-2:1999.

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) 2002-04-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2004-07-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annex ZA is normative.
Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 61000-6-2:1999 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

2 Normative references

Replace the text of clause 2 by:

NOTE Normative references to international publications are listed in annex ZA (normative).

Make the normative references **undated**.

Table 1 Immunity – Enclosure ports

Delete note 4 and the corresponding reference to note 4 in row 1.2, sixth column.

Table 2 Immunity – Signal ports

Delete note 5 and the corresponding reference to note 5 in row 2.1, sixth column.

Renumber note 6 as note 5.

Renumber the reference to note 6 as note 5 in row 2.3, sixth column.

Table 3 Immunity – Input and output d.c. power ports

Delete note 4 and the corresponding reference to note 4 in row 3.1, sixth column.

Table 4 Immunity – Input and output a.c. power ports

Delete note 5 and the corresponding reference to note 5 in row 4.1, sixth column.

Table 5 Immunity – Functional earth ports

Delete note 3 and the corresponding reference to note 3 in row 5.1, sixth column.

Renumber note 4 as note 3.

Renumber the reference to note 4 as note 3 in row 5.2, sixth column.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter.

When there is an undated reference to a generic, product or product-family standard which has been listed in the OJEC, then either the latest edition or (if the date of cessation of presumption of conformity associated with the latest edition has not expired) the superseded edition may be applied. After the date of cessation of presumption of conformity, the latest edition shall be applied.

When there is an undated reference to a basic standard, then either the latest edition or (if the date of withdrawal of conflicting standards associated with the latest edition has not expired) the superseded edition may be applied. After the date of withdrawal, the latest edition shall be applied.

<u>Publication</u>	<u>Title</u>	<u>EN/HD</u>
IEC 60050-161	International Electrotechnical Vocabulary (IEV) - Chapter 161: Electromagnetic compatibility	-
IEC 61000-4-2	Electromagnetic compatibility (EMC) Part 4-2: Testing and measurement techniques Electrostatic discharge immunity test	EN 61000-4-2
IEC 61000-4-3	Electromagnetic compatibility (EMC) Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3
IEC 61000-4-4	Electromagnetic compatibility (EMC) Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test	EN 61000-4-4
IEC 61000-4-5	Electromagnetic compatibility (EMC) Part 4-5: Testing and measurement techniques - Surge immunity test	EN 61000-4-5
IEC 61000-4-6	Electromagnetic compatibility (EMC) Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio- frequency fields	EN 61000-4-6
IEC 61000-4-8	Electromagnetic compatibility (EMC) Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test	EN 61000-4-8
IEC 61000-4-11	Electromagnetic compatibility (EMC) Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests	EN 61000-4-11
CISPR 11	Industrial, scientific and medical (ISM) radio-frequency equipment – Radio disturbance characteristics – Limits and methods of measurement	EN 55011
CISPR 22	Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement	EN 55022

NORME
INTERNATIONALE
INTERNATIONAL
STANDARD

CEI
IEC

61000-6-2

Première édition
First edition
1999-01

Compatibilité électromagnétique (CEM) –

**Partie 6-2:
Normes génériques –
Immunité pour les environnements industriels**

Electromagnetic compatibility (EMC) –

**Part 6-2:
Generic standards –
Immunity for industrial environments**

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 6-2: Generic standards –
Immunity for industrial environments

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 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 61000-6-2 has been prepared by IEC technical committee 77: Electromagnetic compatibility.

It takes into account the draft European Standard prEN 50082-2 (August 1996), drawn up by CENELEC technical committee 210: EMC.

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

FDIS	Report on voting
77/208/FDIS	77/211/RVD

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

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 (insofar as these limits 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 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).

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ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 6-2: Generic standards – Immunity for industrial environments

1 Scope and object

This part of IEC 61000 for EMC immunity requirements applies to electrical and electronic apparatus intended for use in industrial environments, as described below, for which no dedicated product or product-family immunity standard exists.

Immunity requirements in the frequency range 0 Hz to 400 GHz are covered. No tests need to be performed at frequencies where no requirements are specified.

Where a relevant dedicated product or product-family EMC immunity standard exists, it will take precedence over all aspects of this generic standard.

The environments encompassed by this standard are industrial, both indoor and outdoor. Apparatus covered by this standard is intended to be connected to a power network supplied from a high or medium voltage transformer dedicated to the supply of an installation feeding manufacturing or similar plant, and intended to operate in or in proximity to industrial locations, as described below.

Apparatus intended to be used in industrial locations are characterized by the existence of one or more of the following:

- a power network exists powered by a high or medium voltage power transformer dedicated for the supply of an installation feeding manufacturing or similar plant;
- industrial, scientific and medical (ISM)¹⁾ apparatus;
- heavy inductive or capacitive loads are frequently switched;
- currents and associated magnetic fields are high.

The object of this standard is to define immunity test requirements for apparatus defined in the scope in relation to continuous and transient, conducted and radiated disturbances, including electrostatic discharges.

The immunity requirements have been selected to ensure an adequate level of immunity for apparatus at industrial locations. The levels do not, however, cover extreme cases, which may occur at any location, but with an extremely low probability of occurrence. Not all disturbance phenomena have been included for testing purposes in this standard, but only those considered as relevant for the equipment covered by this standard.

Test requirements are specified for each port considered.

NOTE 1 – Safety considerations are not covered by this standard.

NOTE 2 – In special cases, situations will arise where the level of disturbances may exceed the levels specified in this standard e.g. where an apparatus is installed in proximity to ISM equipment as defined in CISPR 11 or where

1) As defined in CISPR 11, ISM class A.