SLOVENSKI STANDARD
SIST EN IEC 61000-2-4:2024

01-november-2024

Elektromagnetna združljivost (EMC) - 2-4. del: Okolje - Ravni združljivosti za nizkofrekvenčne prevajane motnje v elektroenergetskih omrežjih industrijskih objektov

Electromagnetic compatibility (EMC) - Part 2-4: Environment - Compatibility levels in power distribution systems in industrial locations for low-frequency conducted disturbances

Elektromagnetische Verträglichkeit (EMV) - Teil 2-4: Umgebungsbedingungen - Verträglichkeitspegel für niederfrequente leitungsgeführte Störgrößen in Industrieanlagen

Compatibilité électromagnétique (CEM) - Partie 2-4: Environnement - Niveaux de compatibilité dans les installations industrielles pour les perturbations conduites à basse fréquence

Ta slovenski standard je istoveten z: **EN IEC 61000-2-4:2024**

ICS:

33.100.01	Elektromagnetna združljivost na splošno	Electromagnetic compatibility in general

SIST EN IEC 61000-2-4:2024 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 61000-2-4

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English Version

Electromagnetic compatibility (EMC) - Part 2-4: Environment - Compatibility levels in power distribution systems in industrial locations for low-frequency conducted disturbances (IEC 61000-2-4:2024)

Compatibilité électromagnétique (CEM) - Partie 2-4: Environnement - Niveaux de compatibilité dans les réseaux de distribution d'électricité sur des sites industriels pour les perturbations conduites à basse fréquence (IEC 61000-2-4:2024)

Elektromagnetische Verträglichkeit (EMV) - Teil 2-4: Umgebungsbedingungen - Verträglichkeitspegel für niederfrequente leitungsgeführte Störgrößen in Industrieanlagen (IEC 61000-2-4:2024)

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 77A/1215/FDIS, future edition 3 of IEC 61000-2-4, prepared by SC 77A "EMC - Low frequency phenomena" of IEC/TC 77 "Electromagnetic compatibility" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61000-2-4:2024.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2025-05-29
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2027-08-29

This document supersedes EN 61000-2-4:2002 and all of its amendments and corrigenda (if any).

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

This document has been prepared under a standardization request addressed to CENELEC by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 61000-2-4:2024 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 standard indicated:

IEC 60038:2009	NOTE	Approved as EN 60038:2011
IEC 61000-1-2	NOTE	Approved as EN 61000-1-2
IEC 61000-4-15:2010	NOTE	Approved as EN 61000-4-15:2011 (not modified)
IEC 61511-1:2016	NOTE	Approved as EN 61511-1:2017 (not modified)

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cencenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 61000-2-2	2002	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
+ A1	2017		+ A1	2017
+ A2	2018		+ A2	2019
IEC 61000-2-12	-	Electromagnetic compatibility (EMC) - Part 2-12: Environment - Compatibility levels for low-frequency conducted disturbances and signalling in public medium-voltage power supply systems	EN 61000-2-12	-
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	-
CISPR 16-1-1	-	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-1: Radio disturbance and immunity measuring apparatus - Measuring apparatus	EN IEC 55016-1-1	-
CISPR 16-2-1	-	Specification for radio disturbance and immunity measuring apparatus and methods - Part 2-1: Methods of measurement of disturbances and immunity - Conducted disturbance measurements	EN 55016-2-1	-

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INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Electromagnetic compatibility (EMC) – Part 2-4: Environment – Compatibility levels in power distribution systems in industrial locations for low-frequency conducted disturbances

Compatibilité électromagnétique (CEM) – Partie 2-4: Environnement – Niveaux de compatibilité dans les réseaux de distribution d'électricité sur des sites industriels pour les perturbations conduites à basse fréquence

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 2-4: Environment – Compatibility levels in power distribution systems in industrial locations for low-frequency conducted disturbances

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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IEC 61000-2-4 has been prepared by subcommittee 77A: EMC – Low frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility. It is an International Standard.

This third edition cancels and replaces the second edition published in 2002. This edition constitutes a technical revision.

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

a) introduction of new classes 2a, 2b and 2L (former class 2);

b) modification of existing compatibility levels for class 3;

c) addition of compatibility levels in the frequency range 2 kHz to 150 kHz;

d) addition of compatibility levels using a new quantity: partial weighted harmonic distortion (PWHD).

The text of this International Standard is based on the following documents:

Draft	Report on voting
77A/1215/FDIS	77A/1221/RVD

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

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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 document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

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, 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 61000-3-11).

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 and IEC 61000-2-12.

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 2-4: Environment – Compatibility levels in power distribution systems in industrial locations for low-frequency conducted disturbances

1 Scope

This part of IEC 61000 is related to conducted disturbances in the frequency range from 0 kHz to 150 kHz. It gives compatibility levels in differential mode (L-L and L-N) for industrial locations, with a nominal voltage up to 35 kV and a nominal frequency of 50 Hz or 60 Hz.

NOTE 1 Industrial locations are defined in 3.1.8.

Power distribution systems on ships, aircraft, offshore platforms and railways are not included.

NOTE 2 See also Annex E. The compatibility levels specified in this document apply at the in-plant point of coupling (IPC). The level of the low-frequency disturbances at the terminals of equipment receiving its supply from the IPC is generally assumed to be similar to the disturbance level at the IPC itself. However, in some situations this is not the case, particularly when a long feeder is dedicated to the supply of a particular load, or when a disturbance is generated or amplified within the installation of which the equipment forms a part.

Compatibility levels are specified for the types of low-frequency electromagnetic disturbances expected at any in-plant point of coupling (IPC) within industrial locations, for guidance in the definition of:

a) limits for disturbance emissions in industrial power distribution systems (including the planning levels defined in 3.1.5);

NOTE 3 A very wide range of conditions is possible in the electromagnetic environments of industrial networks. These are approximated in this document by the three classes described in Clause 4. However, it is the responsibility of the operator of such a network to take account of the particular electromagnetic and economic conditions, including equipment characteristics, in setting the above-mentioned limits.

b) immunity levels for the equipment within these systems.

The disturbance phenomena considered are:

- voltage deviations;
- voltage dips and short interruptions;
- voltage imbalance;
- power-frequency variations;
- harmonics up to order 40;
- interharmonics up to the 40th harmonic;
- voltage components above the 40th harmonic up to 150 kHz;
- DC component;
- transient overvoltages.

The compatibility levels are given for different classes of environment determined by the characteristics of the supply network and loads.

NOTE 4 Compatibility levels at the point of common coupling (PCC) on public networks are specified in IEC 61000-2-2 for low-voltage networks and IEC 61000-2-12 for medium-voltage networks. IEC TR 61000-3-6 and IEC TR 61000-3-7 describe the approach of power distribution system operators to the limitation of emissions from installations and large loads.