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Electromagnetic compatibility (EMC) – Part 2-2: Environment – Compatibility levels for lowfrequency conducted disturbances and signalling in public low-voltage power supply systems

Compatibilité électromagnétique (CEM) – Partie 2-2: Environnement – Niveaux de compatibilité pour les perturbations conduites à basse fréquence et la transmission des signaux sur les réseaux publics d'alimentation basse tension

IEC 61000-2-2:2002-03+AMD1:2017-06+AMD2:2018-05 CSV(en-fr)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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This Consolidated version of IEC 61000-2-2 bears the edition number 2.2. It consists of the second edition (2002-03) [documents 77A/367/FDIS and 77A/376/RVD], its amendment 1 (2017-06) [documents 77A/958/FDIS and 77A/962/RVD] and its amendment 2 (2018-05) [documents 77A/980/CDV and 77A/992/RVC]. The technical content is identical to the base edition and its amendments.

This Final version does not show where the technical content is modified by amendments 1 and 2. A separate Redline version with all changes highlighted is available in this publication.

International Standard IEC 61000-2-2 has been prepared by subcommittee 77A: Low frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility. It has the status of a basic EMC publication in accordance with IEC guide 107.

This second edition constitutes a technical revision.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

Annexes A and B are for information only.

The committee has decided that the contents of the base publication and its amendments 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- withdrawn,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.

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

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 completed by a second number identifying the subdivision (example: 61000-6-1).

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.

INTRODUCTION to Amendment 1

This amendment is related to compatibility levels in the frequency range from 2 kHz to 150 kHz. It contains:

– compatibility levels for signals from mains communicating systems up to 150 kHz;

– compatibility levels for non-intentional emissions between 2 kHz and 30 kHz.

A second amendment is expected soon, containing:

– compatibility levels for non-intentional emissions between 30 kHz and 150 kHz.

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 2-2 : Environment – Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems

1 Scope and object

This part of IEC 61000 is concerned with conducted electromagnetic phenomena (disturbances and signals from mains communicating systems) in the frequency range from 0 kHz to 150 kHz. It gives compatibility levels for public low voltage a.c. distribution systems having a nominal voltage up to 420 V, single-phase, or 690 V, three-phase, and a nominal frequency of 50 Hz or 60 Hz.

The compatibility levels specified in this document apply at the point of common coupling. At the power input terminals of equipment receiving its supply from the above systems the levels of the conducted electromagnetic disturbances can, for the most part, be taken to be the same as the levels at the point of common coupling. In some situations this is not so, particularly in the case of a long line dedicated to the supply of a particular installation, or in the case of an electromagnetic phenomenon generated or amplified within the installation of which the equipment forms a part.

Compatibility levels are specified for conducted electromagnetic phenomena of the types which can be expected in public low voltage power supply systems, for guidance in the definition of:

– the limits to be set for conducted emissions into public power supply systems (including the planning levels defined in 3.1.5).
– the immunity limits to be set by product committees and others for the equipment exposed to the conducted electromagnetic phenomena present in public power supply systems.

NOTE 1 More information on compatibility levels and other main basic EMC concepts is given in IEC TR 61000-1-1.

NOTE 2 The measurement methods of disturbance levels are outside the scope of this document.

The electromagnetic phenomena considered are:

– voltage fluctuations and flicker;
– harmonics up to and including order 40;
– interharmonics up to the 40^{th} harmonic;
– voltage distortion in differential mode at higher frequencies (above the 40^{th} harmonic up to 150 kHz);
– voltage dips and short supply interruptions;
– voltage unbalance;
– transient overvoltages;
– power frequency variation;
– d.c. components;
– signals from mains communicating systems (MCS).

Most of these phenomena are described in IEC TR 61000-2-1. In cases where it is not yet possible to establish compatibility levels, some information is provided in Annex B.