IEC 61000-3-11

Edition 2.0 2017-04

REDLINE VERSION

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Electromagnetic compatibility (EMC) – Part 3-11: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems – Equipment with rated current ≤75 A and subject to conditional connection

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 3-11: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems – Equipment with rated current ≤75 A and subject to conditional connection

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International Standard IEC 61000-3-11 has been prepared by sub-committee 77A: EMC – Low-frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

This second edition cancels and replaces the first edition published in 2000. This edition constitutes a technical revision.

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

a) addition of a new Annex A which explains the limitations and effectiveness of IEC 61000-3-11 regarding the connection of multiple items of similar equipment at the same location in the supply network.

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

CDV	Report on voting
77A/929/CDV	77A/947/RVC

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

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

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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 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 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 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: 61000-3-11).

~~The scope of this part overlaps with that of IEC 61000-3-3 in that it is also applicable to equipment with a rated input current ≤16 A. However, it should be noted that equipment having a rated input current ≤16 A should first be tested for conformity with IEC 61000-3-3 before applying the evaluation techniques and measurement procedures specified in this part of IEC 61000.~~

~~Equipment which meets the requirements of IEC 61000-3-3 is not subject to conditional connection and therefore it is not subject to this part of IEC 61000.~~

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 3-11: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems – Equipment with rated current ≤75 A and subject to conditional connection

1 Scope ~~and object~~

This part of IEC 61000 is concerned with the emission of voltage changes, voltage fluctuations and flicker produced by equipment and impressed on the public low-voltage supply system.

It specifies the limits of voltage changes produced by equipment tested under specified conditions.

This document is primarily applicable to electrical and electronic equipment having a rated input current from 16 A up to and including 75 A, which is intended to be connected to public low-voltage distribution systems having nominal system voltages of between 220 V and 250 V, line-to-neutral at 50 Hz, and which is subject to conditional connection.

This document is also applicable to equipment within the scope of IEC 61000-3-3 that does not meet the limits when tested or evaluated with reference impedance Z_{ref} and is therefore subject to conditional connection. Equipment which meets the requirements of IEC 61000-3-3 is excluded from this part of IEC 61000.

Equipment tests made in accordance with this document are type tests.

NOTE 1 The flicker limits specified in this document, being the same as those in IEC 61000-3-3, are based on the subjective severity of the flicker imposed on the light from 230 V/60 W coiled-coil filament lamps when subjected to fluctuations of the supply voltage. For systems with nominal voltages less than 220 V, line-to-neutral and/or frequency of 60 Hz, the limits and reference circuit values are under consideration.

NOTE 2 The limits in this document relate to the voltage changes experienced by consumers connected at the interface between the public supply low-voltage network and the equipment user's installation. Therefore, it cannot be guaranteed that the users of equipment compliant with this standard will not experience supply disturbance within their own installation due to the operation of this equipment alone, as the impedance at the point of connection of the equipment to the supply within the installation ~~may~~ can have an impedance greater than the ~~test~~ maximum permissible impedance as determined by the procedures in this document.

2 Normative references

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.

IEC 60050-161, *International Electrotechnical Vocabulary (IEV) – Chapter 161: Electromagnetic compatibility* (available at www.electropedia.org)

IEC TR 60725, *Consideration of reference impedances and public supply network impedances for use in determining the disturbance characteristics of ~~household appliances and similar~~ electrical equipment having a rated current ≤75 A per phase*

IEC 61000-3-3:2013, *Electromagnetic compatibility (EMC) – Part 3-3: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection*

IEC 61000-3-11

Edition 2.0 2017-04

INTERNATIONAL STANDARD

NORME INTERNATIONALE

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Electromagnetic compatibility (EMC) – Part 3-11: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems – Equipment with rated current ≤75 A and subject to conditional connection

Compatibilité électromagnétique (CEM) – Partie 3-11: Limites – Limitation des variations de tension, des fluctuations de tension et du papillotement dans les réseaux publics d'alimentation basse tension – Équipements ayant un courant assigné ≤75 A et soumis à un raccordement conditionnel



IEC 61000-3-11:2017-04(en-fr)

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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COMPATIBILITÉ ÉLECTROMAGNÉTIQUE (CEM) –

Partie 3-11: Limites – Limitation des variations de tension, des fluctuations de tension et du papillotement dans les réseaux publics d'alimentation basse tension – Équipements ayant un courant assigné ≤75 A et soumis à un raccordement conditionnel

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Cette deuxième édition annule et remplace la première édition parue en 2000. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

a) ajout d'une nouvelle Annexe A qui explicite les limites et l'efficacité de l'IEC 61000-3-11 concernant le raccordement de plusieurs équipements analogues au même emplacement dans le réseau d'alimentation.

Le texte de cette Norme internationale est issu des documents suivants:

CDV	Rapport de vote
77A/929/CDV	77A/947/RVC

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cette norme.

Ce document a été rédigé selon les Directives ISO/IEC, Partie 2.

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INTRODUCTION

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Partie 1: Généralités

Considérations générales (introduction, principes fondamentaux)

Définitions, terminologie

Partie 2: Environnement

Description de l'environnement

Classification de l'environnement

Niveaux de compatibilité

Partie 3: Limites

Limites d'émission

Limites d'immunité (dans la mesure où elles ne relèvent pas des comités de produits)

Partie 4: Techniques d'essais et de mesure

Techniques de mesure

Techniques d'essais

Partie 5: Guides d'installation et d'atténuation

Guides d'installation

Méthodes et dispositifs d'atténuation

Partie 9: Divers

Chaque partie est à son tour subdivisée en plusieurs parties, publiées soit comme Normes internationales, soit comme rapports techniques, dont certaines ont déjà été publiées en tant que sections. D'autres seront publiées sous le numéro de la partie, suivi d'un tiret et complété d'un second chiffre identifiant la subdivision (exemple: 61000-3-11).

COMPATIBILITÉ ÉLECTROMAGNÉTIQUE (CEM) –

Partie 3-11: Limites – Limitation des variations de tension, des fluctuations de tension et du papillotement dans les réseaux publics d'alimentation basse tension – Équipements ayant un courant assigné ≤75 A et soumis à un raccordement conditionnel

1 Domaine d'application

La présente partie de l'IEC 61000 traite des variations de tension, des fluctuations de tension et du papillotement (ou flicker) émis par des équipements et véhiculés par le réseau public d'alimentation basse tension.

Elle spécifie les limites des variations de tension produites par des équipements soumis à l'essai dans des conditions déterminées.

Le présent document s'applique en premier lieu aux équipements électriques et électroniques absorbant un courant assigné compris entre 16 A et 75 A inclus, destinés à être raccordés à des réseaux publics de distribution à basse tension présentant une tension nominale phase-neutre comprise entre 220 V et 250 V à 50 Hz, et soumis à un raccordement conditionnel.

Le présent document concerne également les équipements relevant du domaine d'application de l'IEC 61000-3-3 et qui ne respectent pas les limites d'émission lorsqu'ils sont soumis à l'essai ou évalués au moyen de l'impédance de référence Z_{ref} et sont donc soumis à un raccordement conditionnel. Les équipements qui satisfont aux exigences de l'IEC 61000-3-3 sont exclus de la présente partie de l'IEC 61000.

Les essais d'équipements réalisés conformément au présent document sont des essais de type.

NOTE 1 Les limites de papillotement indiquées dans le présent document, identiques à celles de l'IEC 61000-3-3, sont fondées sur la sévérité subjective du papillotement provenant de la lumière émise par des lampes à filament bispiralé de 230 V/60 W soumises à des fluctuations de la tension d'alimentation. Pour les réseaux dont la tension nominale phase-neutre est inférieure à 220 V et/ou la fréquence est de 60 Hz, les limites et les valeurs de référence du circuit sont à l'étude.

NOTE 2 Les limites mentionnées dans le présent document concernent les variations de tension rencontrées par les consommateurs connectés au point de raccordement entre le réseau public d'alimentation basse tension et l'installation de l'utilisateur. Il ne peut par conséquent pas être garanti que les utilisateurs d'équipements conformes à la présente norme ne rencontreront pas de perturbation au sein de leur propre installation causée par le fonctionnement de ces équipements seuls, sachant que l'impédance au point de raccordement de l'équipement au sein de l'installation peut être supérieure à l'impédance maximale admissible déterminée par les procédures décrites dans le présent document.

2 Références normatives

Les documents suivants cités dans le texte constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60050-161, *Vocabulaire Électrotechnique International (VEI) – Chapitre 161: Compatibilité électromagnétique* (disponible sous www.electropedia.org)

IEC TR 60725, *Étude des impédances de référence et des impédances des réseaux publics d'alimentation aux fins de la détermination des caractéristiques de perturbation des équipements électriques utilisant un courant nominal ≤75 A par phase*

IEC 61000-3-3:2013, *Compatibilité électromagnétique (CEM) – Partie 3-3: Limites – Limitation des variations de tension, des fluctuations de tension et du papillotement dans les réseaux*

publics d'alimentation basse tension, pour les matériels ayant un courant assigné ≤ 16 A par phase et non soumis à un raccordement conditionnel