

**Elektromagnetiline ühilduvus. Osa 3-3: Piirväärtused.  
Pingemuutude, pingekõikumiste ja pingeväreluse  
piiramine avalikes madalpingelistes  
elektrivarustussüsteemides tingimusteta ühendatavate  
seadmete puhul nimivooluga kuni 16 A faasi kohta**

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  $\leq 16$  A per phase and not subject to  
conditional connection

**EESTI STANDARDI EESSÕNA****NATIONAL FOREWORD**

|                                                                                                                                                    |                                                                                                                                                                                                                                         |
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| <p>Käesolev Eesti standard EVS-EN 61000-3-3:2008 sisaldab Euroopa standardi EN 61000-3-3:2008 ingliskeelset teksti.</p>                            | <p>This Estonian standard EVS-EN 61000-3-3:2008 consists of the English text of the European standard EN 61000-3-3:2008.</p>                                                                                                            |
| <p>Standard on kinnitatud Eesti Standardikeskuse 24.11.2008 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.</p>                 | <p>This standard is ratified with the order of Estonian Centre for Standardisation dated 24.11.2008 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.</p> |
| <p>Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 30.09.2008.</p> | <p>Date of Availability of the European standard text 30.09.2008.</p>                                                                                                                                                                   |
| <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>                                                                                   | <p>The standard is available from Estonian standardisation organisation.</p>                                                                                                                                                            |

ICS 33.100.10

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English version

**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  $\leq 16$  A  
per phase and not subject to conditional connection  
(IEC 61000-3-3:2008)**

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  $\leq 16$  A par phase et non soumis  
à un raccordement conditionnel  
(CEI 61000-3-3:2008)

Elektromagnetische Verträglichkeit (EMV) -  
Teil 3-3: Grenzwerte -  
Begrenzung von Spannungsänderungen,  
Spannungsschwankungen und Flicker  
in öffentlichen Niederspannungs-  
Versorgungsnetzen für Geräte  
mit einem Bemessungsstrom  $\leq 16$  A  
je Leiter, die keiner  
Sonderanschlussbedingung unterliegen  
(IEC 61000-3-3:2008)

This European Standard was approved by CENELEC on 2008-09-01. 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, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the 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 document 77A/644/FDIS, future edition 2 of IEC 61000-3-3, 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 61000-3-3 on 2008-09-01.

This European Standard supersedes EN 1000-3-3:1995 + corrigendum July 1997 + A1:2001 + IS1:2005 + A2:2005.

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) 2009-06-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2011-09-01

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directives 2004/108/EC and 1999/5/EC. See Annex ZZ.

Annexes ZA and ZZ have been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 61000-3-3:2008 was approved by CENELEC as a European Standard without any modification.

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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.

| <u>Publication</u> | <u>Year</u>     | <u>Title</u>                                                                                                                                                                                                                                    | <u>EN/HD</u>  | <u>Year</u>        |
|--------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|
| IEC 60050-161      | 1990            | International Electrotechnical Vocabulary (IEV) - Chapter 161: Electromagnetic compatibility                                                                                                                                                    | -             | -                  |
| IEC/TR 60725       | - <sup>1)</sup> | Consideration of reference impedances and public supply network impedances for use in determining disturbance characteristics of electrical equipment having a rated current $\leq 75$ A per phase                                              | -             | -                  |
| IEC 60974-1        | - <sup>1)</sup> | Arc welding equipment - Part 1: Welding power sources                                                                                                                                                                                           | EN 60974-1    | 2005 <sup>2)</sup> |
| IEC 61000-3-2      | 2005            | Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current $\leq 16$ A per phase)                                                                                                  | EN 61000-3-2  | 2006               |
| IEC 61000-3-11     | - <sup>1)</sup> | 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 $\leq 75$ A and subject to conditional connection | EN 61000-3-11 | 2000 <sup>2)</sup> |
| IEC 61000-4-15     | - <sup>1)</sup> | Electromagnetic compatibility (EMC) - Part 4-15: Testing and measurement techniques - Flickermeter - Functional and design specifications                                                                                                       | EN 61000-4-15 | 1998 <sup>2)</sup> |

<sup>1)</sup> Undated reference.

<sup>2)</sup> Valid edition at date of issue.

**Annex ZZ**  
(informative)

**Coverage of Essential Requirements of EC Directives**

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers the essential requirements as given in Annex I Article 1(a) of the EC Directive 2004/108/EC and the essential requirements of Article 3.1(b) (emission only) of the EC Directive 1999/5/EC.

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directives concerned.

WARNING: Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.

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## CONTENTS

|                                                                                                                                |    |
|--------------------------------------------------------------------------------------------------------------------------------|----|
| FOREWORD.....                                                                                                                  | 3  |
| INTRODUCTION.....                                                                                                              | 5  |
| 1 Scope.....                                                                                                                   | 6  |
| 2 Normative references .....                                                                                                   | 6  |
| 3 Definitions.....                                                                                                             | 7  |
| 4 Assessment of voltage changes, voltage fluctuations and flicker .....                                                        | 8  |
| 4.1 Assessment of a relative voltage change, " $d$ " .....                                                                     | 8  |
| 4.2 Assessment of the short-term flicker value, $P_{st}$ .....                                                                 | 9  |
| 4.2.1 Flickermeter .....                                                                                                       | 9  |
| 4.2.2 Simulation method.....                                                                                                   | 9  |
| 4.2.3 Analytical method .....                                                                                                  | 9  |
| 4.2.4 Use of $P_{st} = 1$ curve.....                                                                                           | 10 |
| 4.3 Assessment of long-term flicker value, $P_{lt}$ .....                                                                      | 10 |
| 5 Limits .....                                                                                                                 | 10 |
| 6 Test conditions .....                                                                                                        | 11 |
| 6.1 General.....                                                                                                               | 11 |
| 6.2 Measurement accuracy .....                                                                                                 | 12 |
| 6.3 Test supply voltage .....                                                                                                  | 12 |
| 6.4 Reference impedance.....                                                                                                   | 12 |
| 6.5 Observation period.....                                                                                                    | 12 |
| 6.6 General test conditions.....                                                                                               | 13 |
| Annex A (normative) Application of limits and type test conditions<br>for specific equipment.....                              | 18 |
| Annex B (normative) Test conditions and procedures for measuring $d_{max}$ voltage<br>changes caused by manual switching ..... | 25 |
| Figure 1 – Reference network for single-phase and three-phase supplies derived<br>from a three-phase, four-wire supply.....    | 14 |
| Figure 2 – Histogram evaluation of $U(t)$ .....                                                                                | 15 |
| Figure 3 – Relative voltage change characteristic .....                                                                        | 15 |
| Figure 4 – Curve for $P_{st}=1$ for rectangular equidistant voltage changes .....                                              | 16 |
| Figure 5 – Shape factors $F$ for double-step and ramp-voltage characteristics.....                                             | 16 |
| Figure 6 – Shape factors $F$ for rectangular and triangular voltage characteristics.....                                       | 17 |
| Figure 7 – Shape factor $F$ for motor-start voltage characteristics<br>having various front times .....                        | 17 |
| Table 1 – Assessment method .....                                                                                              | 9  |
| Table A.1 – Electrode parameters .....                                                                                         | 23 |
| Table A.2 – Frequency factor $R$ related to repetition rate " $r$ " .....                                                      | 24 |

## 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 sections which are to be published either as International Standards or as Technical Reports.

These standards and reports will be published in chronological order and numbered accordingly.

This part is a Product Family Standard.

The limits in this standard 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. Consequently, if the actual impedance of the supply at the supply terminals of equipment connected within the equipment user's installation exceeds the test impedance, it is possible that supply disturbance exceeding the limits may occur.

## 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 $\leq 16$ A per phase and not subject to conditional connection

#### 1 Scope

This part of IEC 61000 is concerned with the limitation of voltage fluctuations and flicker impressed on the public low-voltage system.

It specifies limits of voltage changes which may be produced by an equipment tested under specified conditions and gives guidance on methods of assessment.

This part of IEC 61000 is applicable to electrical and electronic equipment having an input current equal to or less than 16 A per phase, intended to be connected to public low-voltage distribution systems of between 220 V and 250 V line to neutral at 50 Hz, and not subject to conditional connection.

Equipment which does not comply with the limits of this part of IEC 61000 when tested with the reference impedance  $Z_{ref}$  of 6.4, and which therefore cannot be declared compliant with this part, may be retested or evaluated to show conformity with IEC 61000-3-11. Part 3-11 is applicable to equipment with rated input current  $\leq 75$  A per phase and subject to conditional connection.

The tests according to this part are type tests. Particular test conditions are given in annex A and the test circuit is shown in Figure 1.

NOTE The limits in this part of IEC 61000 are based mainly on the subjective severity of flicker imposed on the light from 230 V/60 W coiled-coil filament lamps by fluctuations of the supply voltage. For systems with nominal voltage less than 220 V line to neutral and/or frequency of 60 Hz, the limits and reference circuit values are under consideration.

#### 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):1990, *International Electrotechnical Vocabulary (IEV) – Chapter 161: Electromagnetic compatibility*

IEC/TR 60725, *Consideration of reference impedances and public supply impedances for use in determining disturbance characteristics of electrical equipment having a rated current  $\leq 75$  A per phase*

IEC 60974-1, *Arc welding equipment – Part 1: Welding power sources*

IEC 61000-3-2:2005, *Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current  $\leq 16$  A per phase)*

IEC 61000-3-11, *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  $\leq 75$  A and subject to conditional connection*

IEC 61000-4-15, *Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 15: Flickermeter – Functional and design specifications*

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