AS/NZS 61000.3.3:2006

Australian/New Zealand Standard™

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 61000-3-3, Ed. 1.2(2005) MOD)

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-034, Power Quality. It was approved on behalf of the Council of Standards Australia on 27 June 2006 and on behalf of the Council of Standards New Zealand on 23 June 2006.
This Standard was published on 25 August 2006.

The following are represented on Committee EL-034:

Australian Chamber of Commerce and Industry
Australian Electrical and Electronic Manufacturers Association
Australian Energy Market Commission
Australian Information Industry Association
Bureau of Steel Manufacturers of Australia
Consumers Federation of Australia
Electrical Regulatory Authorities Council
Electricity Engineers Association (New Zealand)
Energy Networks Association
Engineers Australia
Ministry of Economic Development (New Zealand)
National Measurement Institute
New Zealand Coordinating Committee on Power & Telecommunication Systems
Telstra Corporation
University of Canterbury New Zealand
University of Wollongong

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.standards.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

Alternatively, both organizations publish an annual printed Catalogue with full details of all current Standards. For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR 06160.

Australian/New Zealand Standard™

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 61000-3-3, Ed. 1.2(2005) MOD)

Originated in Australia as AS 2279.3—1985.
Jointly revised and redesignated as AS/NZS 61000.3.3:1998.
Previous edition AS/NZS 61000.3.3:2003.
Third edition 2006.

Jointly published by Standards Australia, GPO Box 476, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 7676 0

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-034, Power Quality, to supersede AS/NZS 61000.3.3:2003.

The objective of this Standard is to provide manufacturers and suppliers of electricity, and users of electrical equipment intended for connection to an electrical network, with limits for voltage fluctuations and flicker produced by that equipment and the methods for ascertaining compliance to them in order to maintain electromagnetic compatibility within the electrical network.

This Standard is an adoption with national modifications and has been reproduced from IEC 61000-3-3, Ed. 1.2 (2005), *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*, and has been varied as indicated to take account of Australian/New Zealand conditions.

Variations to IEC 61000-3-3, Ed. 1.2 (2005) are indicated at the appropriate places throughout this standard. Strikethrough (~~example~~) identifies IEC text, tables and figures which, for the purposes of this Australian/New Zealand Standard, are deleted. Where text, tables or figures are added, each is set in its proper place and identified by shading (example). Added figures are not themselves shaded, but are identified by a shaded border.

As this Standard is reproduced from an International Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text ‘IEC 61000-3-3’ should read ‘AS/NZS 61000.3.3’.

(c) A full point should be substituted for a comma when referring to a decimal marker.

The terms ‘normative’ and ‘informative’ are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

CONTENTS

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.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard

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 61000-3-3, Ed. 1.2(2005) MOD)

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 ≤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.

References to international standards that are struck through in this clause are replaced by references to Australian or Australian/New Zealand Standards that are listed immediately thereafter and identified by shading. Any Australian or Australian/New Zealand Standard that is identical to the International Standard it replaces is identified as such.

IEC 60050(161):1990, *International Electrotechnical Vocabulary (IEV) – Chapter 161: Electromagnetic compatibility*

~~IEC 60335-2-11:1993, *Safety of household and similar electrical appliances – Part 2: Particular requirements for tumbler dryers*~~

AS/NZS 60335.2.11, *Household and similar electrical appliances—Safety—Particular requirements—Particular requirements for tumble dryers*