AS/NZS 61000.3.4:2007
IEC 61000-3-4, Ed.1.0 (1998)
Reconfirmed 2018

Australian/New Zealand Standard™

Electromagnetic compatibility (EMC)

Part 3.4: Limits—Limitation of emission of harmonic currents in low-voltage power supply systems for equipment with rated current greater than 75 A

STANDARDS Australia

STANDARDS NEW ZEALAND PAEREWA AOTEAROA

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 29 June 2007 and on behalf of the Council of Standards New Zealand on 22 June 2007.
This Standard was published on 12 September 2007.

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 Standards may also be withdrawn.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 07030.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

RECONFIRMATION

OF
AS/NZS 61000.3.4:2007
Electromagnetic compatibility (EMC)
Part 3.4: Limits–Limitation of emission of harmonic currents in low-voltage power supply systems for equipment with rated current greater than 75 A

RECONFIRMATION NOTICE

Technical Committee EL-034 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 21 December 2017.

Approved for reconfirmation in New Zealand on behalf of the New Zealand Standards Approval Board on 26 June 2018.

The following are represented on Technical Committee EL-034:

Australian Chamber of Commerce and Industry
Australian Industry Group
Australian Information Industry Association
Bureau of Steel Manufacturers of Australia
Consumer Electronics Suppliers Association
Consumers Federation of Australia
Electrical Regulatory Authorities Council
Electricity Engineers Association (New Zealand)
Energy Networks Australia
Engineers Australia
Lighting Council Australia
National Measurement Institute
New Zealand Coordinating Committee on Power & Telecommunication Systems
University of Canterbury New Zealand
University of Wollongong

NOTES

Australian/New Zealand Standard™

Electromagnetic compatibility (EMC)

Part 3.4: Limits—Limitation of emission of harmonic currents in low-voltage power supply systems for equipment with rated current greater than 75 A

First published as AS/NZS 61000.3.4:2007.

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

ISBN 0 7337 8352 X

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-034, Power Quality.

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 of emission of harmonic currents in low-voltage power supply systems for equipment with rated current greater than 75 A and the methods for ascertaining compliance to them in order to maintain electromagnetic compatibility within the electrical network.

This Standard is identical with, and has been reproduced from IEC 61000-3-4, Ed.1.0 (1998), *Electromagnetic compatibility (EMC) – Part 3-4: Limits—Limitation of emission of harmonic currents in low-voltage power supply systems for equipment with rated current greater than 16 A*.

This Standard was originally intended for equipment with a current rating greater than 16 A per phase. Since then a new Standard has been developed for equipment with input current greater than 16 A per phase and less than or equal to 75 A per phase, AS/NZS 61000.3.12. Thus Stages 1 and 2 in this Standard are no longer applied as the Standard is now restricted to equipment with a current rating greater than 75 A per phase. It is expected that reference to Stages 1 and 2 will be removed in the next edition.

An informative note has been added in Clause 5.

Limits to harmonic emission from equipment are covered by three Standards depending on the equipment current rating and they are—

(a) AS/NZS 61000.3.2, for equipment with rated current less than or equal to 16 A per phase;

(b) AS/NZS 61000.3.12, for equipment with rated current greater than 16 A per phase and less than or equal to 75 A per phase; and

(c) AS/NZS 61000.3.4, for equipment with rated current greater than 75 A per phase.

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

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

(ii) In the source text ‘IEC 61000-3-4’ should read ‘AS/NZS 61000.3.4’.

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

CONTENTS

INTRODUCTION

This technical report is part of the IEC 61000 series, 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 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: 61000-6-1).

This part is a technical report type 2 which gives emission limits for harmonic currents from equipment having an input current exceeding 75 A per phase.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard

Electromagnetic compatibility (EMC)
Part 3.4: Limits—Limitation of emission of harmonic currents in low-voltage power supply systems for equipment with rated current greater than 75 A

1 Scope

This part of IEC 61000 deals with the emission of disturbances due to harmonics.

The recommendations of this technical report are applicable to electrical and electronic equipment with a rated input current exceeding 75 A per phase and intended to be connected to public low-voltage a.c. distribution systems of the following types:

– nominal voltage up to 240 V, single-phase, two or three wires;

– nominal voltage up to 600 V, three-phase, three or four wires;

– nominal frequency 50 Hz or 60 Hz.

Other distribution systems are excluded.

Tests according to this report are type tests of complete pieces of equipment, for example a speed variable fan, and not of components, for example a converter.

Connection of this equipment to the supply generally requires special agreement between the supply authority and the consumer. This consent will depend upon several factors including the expected levels of disturbance caused by the equipment and the actual situation at the connection point to the power supply system.

These recommendations specify the information required to enable a supply authority to assess equipment regarding harmonic disturbance and to decide whether or not the equipment is acceptable for connection with regard to the harmonic distortion aspect.

NOTE 1 – For these types of equipment only general recommendations on assessment of disturbances can be given. There is no guarantee that the connection of equipment complying with these recommendations will be allowed in all cases, as the consent to connect equipment to the supply depends on the level of disturbance caused by the equipment and the load conditions in the network.

NOTE 2 – These recommendations can also be applied to equipment with a lower rated input current but requiring special consent of the supply authority (see IEC 61000-3-2).

NOTE 3 – These recommendations are not applicable to active filters.

Guidance is given on:

a) required short-circuit power for harmonics emitting equipment tested or simulated under specified conditions;

b) methods for type tests or simulations.