AS/NZS IEC 61000.3.12:2013
IEC 61000-3-12, Ed. 2.0 (2011)

AS/NZS IEC 61000.3.12:2013

Australian/New Zealand Standard™

Electromagnetic compatibility (EMC)

Part 3.12: Limits—Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current >16 A and ≤75 A per phase

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 13 June 2013 and on behalf of the Council of Standards New Zealand on 16 May 2013.
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The following are represented on Committee EL-034:

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Consumer Electronics Suppliers Association
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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 AS/NZS IEC 61000.3.12.

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PREFACE

This Standard was prepared by the Standards Australia Committee EL-034, Power Quality, to supersede AS/NZS 61000.3.12:2006, *Electromagnetic compatibility (EMC),* Part 3.12: *Limits—Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current >16 A and ≤75 A per phase*.

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 disturbances and harmonics 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 identical with, and has been reproduced from IEC 61000-3-12, Ed. 2.0 (2011), *Electromagnetic compatibility (EMC),* Part 3-12: *Limits—Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current >16 A and ≤ 75 A per phase*.

IEC has prepared an Interpretation Sheet regarding the application of IEC 61000-3-12, Ed. 2.0 (2011). The IEC Interpretation Sheet has been included in this Standard (AS/NZS IEC 61000.3.12).

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

(a) The International Standard number appears only on the cover.

(b) In the source text ‘this part of IEC 61000’ should read ‘this Australian/New Zealand Standard’.

(c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian/New Zealand Standard*	
IEC		AS	
60038	IEC standard voltages	60038	Standard voltages
		AS/NZS	
61000	Electromagnetic compatibility (EMC)	61000	Electromagnetic compatibility (EMC)
61000-2-2	Part 2-2: Environment—Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems	61000.2.2	Part 2.2: Environment—Compatibility levels for low-frequency conducted disturbances and signalling in public low-voltage power supply systems
61000-2-4	Part 2-4: Environment—Compatibility levels in industrial plants for low-frequency conducted disturbances	61000.2.4	Part 2.4: Environment—Compatibility levels in industrial plants for low-frequency conducted disturbances
61000-3-2	Part 3-2: Limits—Limits for harmonic current emissions (equipment input current ≤16 A per phase)	61000.3.2	Part 3.2: Limits—Limits for harmonic current emissions (equipment input current ≤16 A per phase)
61000-4-7	Part 4-7: Testing and measurement techniques—General guide on harmonics and interharmonics measurements and instrumentation, for power supply systems and equipment connected thereto	61000.4.7	Part 4.7: Testing and measurement techniques—General guide on harmonics and interharmonics measurements and instrumentation, for power supply systems and equipment connected thereto

Only international references that have been adopted as Australian or Australian/New Zealand Standards have been listed.

The terms ‘normative’ and ‘informative’ have been used in this Standard 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

FOREWORD

The significant technical changes with respect to the previous edition are listed below:

– the reference fundamental current I_1 is replaced by the reference current I_{ref} for the calculation of emission limits;

– a new table of current emission limits (Table 5) is added;

– a new annex (Annex A) is added to define test conditions for some types of equipment;

– former Annexes B (Approximate interpolation formulas) and D (Information on the $PWHD$ factor) are deleted.

AUSTRALIAN/NEW ZEALAND STANDARD

Electromagnetic compatibility (EMC)

Part 3.12: Limits—Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current >16 A and ≤75 A per phase

1 Scope

This part of IEC 61000 deals with the limitation of harmonic currents injected into the public supply system. The limits given in this International Standard are applicable to electrical and electronic equipment with a rated input current exceeding 16 A and up to and including 75 A per phase, 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 690 V, three-phase, three or four wires;
- nominal frequency 50 Hz or 60 Hz.

Other distribution systems are excluded. The limits given in this edition apply to equipment when connected to 230/400 V, 50 Hz systems. See also Clause 5.

NOTE 1 The limits for the other systems will be added in a future edition of this standard.

NOTE 2 Equipment with a rated input current exceeding 75 A per phase should be considered in the harmonic current requirements for installations. See IEC/TR 61000-3-6 and future IEC/TR 61000-3-14.

This standard applies to equipment intended to be connected to low-voltage systems interfacing with the public supply at the low-voltage level. It does not apply to equipment intended to be connected only to private low-voltage systems interfacing with the public supply only at the medium- or high-voltage level.

NOTE 3 The scope of this standard is limited to equipment connected to public low voltage systems because emissions from equipment installed in private low voltage systems can be controlled in aggregate at the MV point of common coupling using procedures defined in IEC/TR 61000-3-6 and/or by means of contractual agreements between the distribution network operator and the customer. It is expected that operators of private systems will manage the EMC environment in a manner that ensures compliance with the provisions given in IEC/TR 61000-3-6 and/or the contractual agreements.

NOTE 4 If the equipment is intended to be connected only to private systems, the manufacturer should make this very clear in the product documentation.

NOTE 5 Professional equipment with input current ≤16 A per phase and that does not comply with the requirements and limits of standard IEC 61000-3-2 may be permitted to be connected to certain types of low voltage supplies, in the same way as equipment with input current >16 A per phase and that does not comply with the requirements and limits of the present standard (see Annex C).

NOTE 6 The limits in this standard are not applicable to stand-alone harmonic filters.

This standard defines:

a) requirements and emission limits for equipment;
b) methods for type tests and simulations.

Tests according to this International Standard are type tests of complete pieces of equipment.

Conformity with this standard can also be determined by validated simulations.