AS/NZS 61000.4.27:2012
IEC 61000-4-27, Ed.1.1 (2009)

AS/NZS 61000.4.27:2012

Australian/New Zealand Standard™

Electromagnetic compatibility (EMC)

Part 4.27: Testing and measurement techniques—Unbalance, immunity test for equipment with input current not exceeding 16 A per phase

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 30 May 2012 and on behalf of the Council of Standards New Zealand on 8 June 2012.
This Standard was published on 28 June 2012.

The following are represented on 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 Association
Engineers Australia
Lighting Council of Australia
Ministry of Economic Development, New Zealand
National Measurement Institute
New Zealand Coordinating Committee on Power & Telecommunication Systems
New Zealand Electric Fence Energiser Manufacturers Standards WG
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 Standards may also be withdrawn.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.saiglobal.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

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 AS/NZS 61000.4.27.

Australian/New Zealand Standard™

Electromagnetic compatibility (EMC)

Part 4.27: Testing and measurement techniques—Unbalance, immunity test for equipment with input current not exceeding 16 A per phase

Originally as AS/NZS 61000.4.27:2006.
Second edition 2012.

Jointly published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001 and by Standards New Zealand, Private Bag 2439, Wellington 6140

ISBN 978 1 74342 187 1

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-034, Power Quality, to supersede AS/NZS 61000.4.27:2006, *Electromagnetic compatibility (EMC),* Part 4.27: *Testing and measurement techniques—Unbalance, immunity test.*

The objective of this Standard is to establish a common reference for evaluating the immunity of electrical and electronic equipment when subjected to unbalanced power supply voltage.

This Standard is identical with, and has been reproduced from IEC 61000-4-27, Ed.1.1 (2009) *Electromagnetic compatibility (EMC)*—Part 4-27: *Testing and measurement techniques—Unbalance, immunity test for equipment with input current not exceeding 16 A per phase*.

IEC 61000-4-27, Ed.1.1 (2009) consists of the IEC 61000-4-27 Ed.1.0 (2000) and its Amendment 1 (2009). A vertical line in the margin of the document shows where the base publication has been modified by Amendment 1.

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

(a) Its number appears on the cover and title page while the International Standard number appears only on the cover.

(b) In the source text 'this part of IEC 61000' should read 'this part of AS/NZS 61000'.

(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/NZS	
61000	Electromagnetic compatibility (EMC)	61000	Electromagnetic compatibility (EMC)
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

The other international normative reference has not been adopted as an Australian or Australian/New Zealand Standard.

The term 'informative' has been used in this Standard to define the application of the annex to which it applies. An 'informative' annex is only for information and guidance.

CONTENTS

AUSTRALIAN/NEW ZEALAND STANDARD

Electromagnetic compatibility (EMC)

Part 4.27:
Testing and measurement techniques—Unbalance, immunity test for equipment with input current not exceeding 16 A per phase

1 Scope and object

This part of IEC 61000 is a basic EMC (electromagnetic compatibility) publication. It considers immunity tests for electric and/or electronic equipment (apparatus and system) in its electromagnetic environment. Only conducted phenomena are considered, including immunity tests for equipment connected to public and industrial networks.

The object of this standard is to establish a reference for evaluating the immunity of electrical and electronic equipment when subjected to unbalanced power supply voltages.

This standard applies to 50 Hz/60 Hz three-phase powered electrical and/or electronic equipment with rated line current up to 16 A per phase.

This standard does not apply to equipment with three-phase plus neutral connection if that equipment operates as a group of single-phase loads connected between phase and neutral.

This standard does not apply to electrical and/or electronic equipment connected to a.c. 400 Hz distribution networks.

This standard does not include tests for the zero-sequence unbalance factor.

The immunity test levels required for a specific electromagnetic environment together with performance criteria are indicated in the product, product family or generic standards as applicable. This immunity test should be included in product, product family or generic standards when equipment is likely to show reduced performance or function when exposed to a supply voltage with voltage unbalance.

The verification of the reliability of electrical components (capacitors, motors, etc.) and long-term effects (greater than a few minutes) is not considered in this standard.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61000. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 61000 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

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

IEC 61000-2-4, *Electromagnetic compatibility (EMC) – Part 2: Environment – Section 4: Compatibility levels in industrial plants for low-frequency conducted disturbances*