

Australian/New Zealand Standard™

Low-voltage switchgear and controlgear

Part 1: General rules

AS/NZS 3947.1:2001

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-006, Industrial Switchgear and Controlgear. It was approved on behalf of the Council of Standards Australia on 18 June 2001 and on behalf of the Council of Standards New Zealand on 1 August 2001. It was published on 25 September 2001.

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Australian/New Zealand Standard™

Low-voltage switchgear and controlgear

Part 1: General rules

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-006, Industrial Switchgear and Controlgear to supersede AS/NZS 3947.1:1998.

The objective of this Standard is to state those general rules and requirements which are common to low-voltage equipment.

This Standard is Part 1 of a series which, when complete, will consist of the following:

AS/(NZS) 3947	Low-voltage switchgear and controlgear
AS/NZS 3947.1	Part 1: General rules (this Standard)
AS 3947.2	Part 2: Circuit-breakers
AS/NZS 3947.3	Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units
AS/NZS 3947.3 Suppl	Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units, Supplement 1: Fuse-switch-disconnectors and switch-disconnectors for use with low-voltage aerial bundled cables
AS/NZS 3947.4.1	Part 4.1: Contactors and motor-starters—Electromechanical contactors and motor-starters
AS/NZS 3947.4.2	Part 4.2: Contactors and motor-starters—A.C. semiconductor motor controllers and starters
AS/NZS 3947.4.3	Part 4.3: Contactors and motor-starters—A.C. semiconductor controllers and contactors for non-motor loads
AS/NZS 3947.5.1	Part 5.1: Control circuit devices and switching elements—Electromechanical control circuit devices
AS/NZS 3947.5.2	Part 5.2: Control circuit devices and switching elements—Proximity switches
AS/NZS 3947.5.3	Part 5.3: Control circuit devices and switching elements—Requirements for proximity devices with defined behaviour under fault conditions
AS/NZS 3947.5.4	Part 5.4: Control circuit devices and switching elements—Methods of assessing the performance of low-energy contacts—Special tests
AS/NZS 3947.5.5	Part 5.5: Control circuit devices and switching elements—Electrical emergency stop devices with mechanical latching function
AS/NZS 3947.5.6	Part 5.6: Control circuit devices and switching elements—D.C. interface for proximity sensors and switching amplifiers (NAMUR)
AS/NZS 3947.6.1	Part 6.1: Multiple function equipment—Automatic transfer switching equipment
AS/NZS 3947.6.2	Part 6.2: Multiple function equipment—Control and protective switching devices (or equipment) (CPS)
AS/NZS 3947.7.1	Part 7.1: Ancillary equipment—Terminal blocks for copper conductors
AS 3947.7.2	Part 7.2: Ancillary equipment—Protective conductor terminal blocks for copper conductors
AS/NZS 3947.7.3	Part 7.3: Ancillary equipment—Safety requirements for terminal blocks for the reception of cartridge fuse-links

This Standard is identical with and has been reproduced from IEC 60947-1 consolidated Edition 5.1:2001 which incorporates Amendment 1:2000 into IEC 60947-1:1999, *Low-voltage switchgear and controlgear—Part 1: General rules*.

This Standard applies, when required by the relevant product standard, to switchgear and controlgear intended to be connected to circuits, the rated voltage of which does not exceed 1000 V a.c. or 1500 V d.c.

This Standard differs from AS/NZS 3947.1:1998 in the following areas:

- (a) Requirements for equipment suitable for isolation.
- (b) Requirements for equipment with protective separation.
- (c) Dependent and independent power operation.
- (d) Environmental aspects.

A reference to an International Standard identified in the Normative References Clause by strikethrough (~~example~~) is replaced by a reference to the Australian or Australian/New Zealand Standard(s) listed immediately thereafter and identified by shading (**example**). Where the struck-through referenced document and the referenced Australian or Australian/New Zealand Standard are identical, this is indicated in parenthesis after the title of the latter.

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 'this standard' should read 'this Australian/New Zealand Standard'.
- (iii) A full point should be substituted for a comma when referring to a decimal marker.

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.

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NOTES

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Australian/New Zealand Standard**Low-voltage switchgear and controlgear****Part 1: General rules**

Any IEC table, figure or passage of text that is struck-through is not part of this Standard. Any Australian/New Zealand table, figure or passage of text that is added (and identified by shading) is part of this Standard.

1 General

The purpose of this standard is to harmonize as far as practicable all rules and requirements of a general nature applicable to low-voltage switchgear and controlgear in order to obtain uniformity of requirements and tests throughout the corresponding range of equipment and to avoid the need for testing to different standards.

All those parts of the various equipment standards which can be considered as general have, therefore, been gathered in this standard together with specific subjects of wide interest and application, e.g. temperature-rise, dielectric properties, etc.

For each type of low-voltage switchgear and controlgear, only two main documents are necessary to determine all requirements and tests:

- 1) this basic standard, referred to as "Part 1" in the specific standards covering the various types of low-voltage switchgear and controlgear;
- 2) the relevant equipment standard hereinafter referred to as the "relevant product standard" or "product standard".

For a general rule to apply to a specific product standard, it shall be explicitly referred to by the latter, by quoting the relevant clause or subclause number of this standard followed by "Part 1" e.g. "7.2.3 of Part 1".

A specific product standard may not require, and hence may omit, a general rule (as being not applicable), or it may add to it (if deemed inadequate in the particular case), but it may not deviate from it, unless there is a substantial technical justification.

NOTE The product standards due to be part of the series of IEC standards covering low-voltage switchgear and controlgear are:

60947-2:Part 2:	Circuit-breakers
60947-3:Part 3:	Switches, disconnectors, switch-disconnectors and fuse combination units
60947-4:Part 4:	Contactors and motor-starters
60947-5:Part 5:	Control-circuit devices and switching elements
60947-6:Part 6:	Multiple function equipment
60947-7:Part 7:	Ancillary equipment

1.1 Scope and object

This standard applies, when required by the relevant product standard, to switchgear and controlgear hereinafter referred to as "equipment" and intended to be connected to circuits, the rated voltage of which does not exceed 1 000 V a.c. or 1 500 V d.c.