

Australian Standard™

Low-voltage switchgear and controlgear

Part 1: General rules

This Australian Standard was prepared by Committee EL-006, Industrial Switchgear and Controlgear. It was approved on behalf of the Council of Standards Australia on 22 July 2004.
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The following are represented on Committee EL-006:

Australasian Railway Association
Australian Chamber of Commerce and Industry
Australian Electrical and Electronic Manufacturers Association
Bureau of Steel Manufacturers of Australia
Electricity Supply Association of Australia
Engineers Australia
National Electrical and Communications Association
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Part 1: General rules

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PREFACE

This Standard was prepared by the Standards Australia Committee EL-006, Industrial Switchgear and Controlgear to supersede AS/NZS 3947.1:2001.

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

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

AS 60947	Low-voltage switchgear and controlgear
AS 60947.1*	Part 1: General rules (this Standard)
AS 60947.2*	Part 2: Circuit-breakers
AS 60947.3	Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units
AS 60947.3 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 60947.4.1*	Part 4.1: Contactors and motor-starters—Electromechanical contactors and motor-starters
AS 60947.4.2*	Part 4.2: Contactors and motor-starters—A.C. semiconductor motor controllers and starters
AS 60947.4.3	Part 4.3: Contactors and motor-starters—A.C. semiconductor controllers and contactors for non-motor loads
AS 60947.5.1*	Part 5.1: Control circuit devices and switching elements—Electromechanical control circuit devices
AS 60947.5.2*	Part 5.2: Control circuit devices and switching elements—Proximity switches
AS 60947.5.3	Part 5.3: Control circuit devices and switching elements—Requirements for proximity devices with defined behaviour under fault conditions
AS 60947.5.4*	Part 5.4: Control circuit devices and switching elements—Methods of assessing the performance of low-energy contacts—Special tests
AS 60947.5.5	Part 5.5: Control circuit devices and switching elements—Electrical emergency stop devices with mechanical latching function
AS 60947.5.6	Part 5.6: Control circuit devices and switching elements—D.C. interface for proximity sensors and switching amplifiers (NAMUR)
AS 60947.5.7*	Part 5.7: Control circuit devices and switching elements—Requirements for proximity devices with analogue output
AS 60947.6.1	Part 6.1: Multiple function equipment—Automatic transfer switching equipment
AS 60947.6.2*	Part 6.2: Multiple function equipment—Control and protective switching devices (or equipment) (CPS)
AS 60947.7.1*	Part 7.1: Ancillary equipment—Terminal blocks for copper conductors
AS 60947.7.2*	Part 7.2: Ancillary equipment—Protective conductor terminal blocks for copper conductors

AS 60947.7.3*	Part 7.3:	Ancillary equipment—Safety requirements for terminal blocks for the reception of cartridge fuse-links
AS 60947.8*	Part 8:	Control units for built-in thermal protection for rotating machines

It is the intention of the Committee to align the numbering of this series of Standards with that of the corresponding IEC 60947 series of Standards.

Standards from the list above that are marked with an asterisk (*) are, at the time of publication of this document, available as a part of the AS 60947 series of Standards.

This Standard is identical with, and has been reproduced from IEC 60947-1:2004, *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 3947.1:2001 in the following areas:

- (a) It has been renumbered to align fully with IEC numbering.
- (b) The normative references list and cross-referencing to this list throughout this Standard have been updated.
- (c) Definitions for short-circuit, nominal value, limiting value and rated value have been updated.
- (d) EMC declaration for Environment A is now required in manufacturer's documentation.
- (e) Manufacturers are required to indicate how the suitability of materials against abnormal heat and fire is verified.
- (f) Compliance of mechanical strength and current-carrying capacity of current-carrying parts is now verified by inspection and testing according to the relevant product standard.
- (g) Additional constructional requirements for equipment suitable for isolation are included.
- (h) Additional requirements are included for simultaneous operation of all poles including an appropriately rated neutral pole.
- (i) Power frequency tests for dielectric withstand after humidity treatment have been deleted (Previously under consideration).
- (j) EMC requirements and tests have been revised.
- (k) Material type and minimum thickness or diameter have been added for the metallic screen used for making and breaking capacity and short-circuit tests in free air.
- (l) Type and routine tests for dielectric properties have been expanded.
- (m) A dust test for first characteristic numerals 5 and 6 has been added to Annex C.
- (n) Table H2 from AS/NZS 3947.1:2001 for correlation between the nominal voltage of the supply system and the rated impulse voltage of equipment protected by surge arresters not covered by IEC 60099-1 has been deleted.
- (o) Annex P has been added for terminal lugs connected to copper conductors.

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