

Australian Standard<sup>®</sup>

**High-voltage switchgear and  
controlgear**

**Part 1: Common specifications**



This Australian Standard® was prepared by Committee EL-007, Power Switchgear. It was approved on behalf of the Council of Standards Australia on 10 August 2012. This Standard was published on 27 August 2012.

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The following are represented on Committee EL-007:

- Australian British Chamber of Commerce
  - Australian Industry Group
  - Energy Australia
  - Energy Networks Association
  - Engineers Australia
  - University of New South Wales
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Australian Standard<sup>®</sup>

## High-voltage switchgear and controlgear

### Part 1: Common specifications

Originated as AS 2650—1983.  
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## PREFACE

This Standard was prepared by the Standards Australia Committee EL-007, Power Switchgear to supersede AS 2650—2005, *Common specifications for high-voltage switchgear and controlgear standards (IEC 60694, Ed.2.2 (2002) MOD)*.

The objective of this Standard is to state those specifications common to high-voltage switchgear and controlgear within the scope of the Standard.

This Standard applies to all high-voltage switchgear and control gear except as otherwise specified in the relevant high-voltage switchgear and controlgear standards for the particular type of switchgear and controlgear.

This Standard is identical with, and has been reproduced from, IEC 62271-1, Ed.1.1 (2011), *High-voltage switchgear and controlgear—Part 1: Common specifications*. This is a consolidated edition that consists of the first edition (2007) and its amendment 1 (2011). Amended text is indicated by marginal bars.

### Common numbering of Standards falling under the responsibility of EL-007

In accordance with the decision taken by EL-007, a common numbering system will be established in order to align the numbering of Australian Standards falling under the responsibility of EL-007 with the IEC Standards. All high-voltage switchgear and controlgear Standards will, at their next revision (or as equivalent Standards become available in IEC), become parts of the AS 62271 (*High-voltage switchgear and controlgear*) series. The table below gives the relationship between AS 62271 numbering and original Standard numbers. Standards current at the time of publication of this Standard are marked with an asterisk (\*).

AS 62271 series part number	High-voltage switchgear and controlgear	Previous AS number
100*	High-voltage alternating-current circuit-breakers	AS 2006
102*	Alternating current disconnectors and earthing switches	AS 1306
103	Switches for rated voltages above 1 kV and less than 52 kV	*AS/NZS 60265.1
104	Switches for rated voltages of 52 kV and above	*AS 60265.2
105	Alternating current switch-fuse combinations	*AS 2024
106	Alternating current contractors and contractor-based motor-starters	*AS 60470
110*	Inductive load switching	AS 4372
200*	AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV	AS 2264
201*	AC insulation-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV	AS 2264
202*	High-voltage/low-voltage prefabricated substations	AS 61330
203*	Gas-insulated metal-enclosed switchgear for rated voltages above 52 kV	AS 2263
301*	Dimensional standardization of terminals	AS 2395
303	Use and handling of sulphur hexafluoride (SF <sub>6</sub> ) in high-voltage switchgear and controlgear	*AS 2791
304	Additional requirements for enclosed switchgear and controlgear from 1 kV to 72.5 kV to be used in severe climactic conditions	*AS 4243
308*	Guide for asymmetrical short-circuit breaking test duty T100a	—

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 62271’ should read ‘this part of AS 62271’.
- (c) A full point substitutes for a comma when referring to a decimal marker.

Only normative references in the source document that have been adopted as Australia or Australia/New Zealand have been listed as follows:

<i>Reference to International Standard</i>		<i>Australian or Australian/New Zealand Standard</i>	
IEC		AS	
60038	IEC Standard voltages	60038	Standard voltages
60068	Environmental testing	60068	Environmental testing
60068-2	Part 2: Tests (all parts)	60068.2	Part 2: Tests (all parts)
60269	Low voltage fuses	60269	Low voltage fuses
60269-2	Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application)	60269.2	Part 2: Supplementary requirements for fuses for use by authorized persons (fuses for industrial application)
60270	High-voltage test techniques—Partial discharge measurements	60270	High-voltage test techniques—Partial discharge measurements
60417	Graphical symbols for use on equipment	60417	Graphical symbols for use on equipment
60947	Low-voltage switchgear and controlgear	60947	Low-voltage switchgear and controlgear
60947-2	Part 2: Circuit-breakers	60947.2	Part 2: Circuit breakers
60947-4-1	Part 4-1: contactors and motor-starters—Electromechanical contactors and motor-starters	60947.4.1	Part 4.1: Contactors and motor-starters—Electromechanical contactors and motor-starters
60947-4-2	Part 4-2: Contactors and motor-starters—AC semiconductor motor controllers and starters	60947.4.2	Part 4.2: Contactors and motor-starters—AC semiconductor motor controllers and starters
60947-5-1	Part 5-1: Control circuit devices and switching elements—Electromechanical control circuit devices	60947.5.1	Part 5.1: Control circuit devices and switching elements—Electromechanical control circuit devices
60947-7-1	Part 7-1: Ancillary equipment—Terminal blocks for copper conductors	60947.7.1	Part 7.1: Ancillary equipment—Terminal blocks for copper conductors
60947-7-2	Part 7-2: Ancillary equipment—Protective conductor terminal blocks for copper conductors	60947.7.2	Part 7.2: Ancillary equipment—Protective conductor terminal blocks for copper conductor
		AS/NZS	
60227	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V	60227	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V
60227-5	Part 5: Flexible cables (cords)	60227.5	Part 5: Flexible cables (cords)
61000	Electromagnetic compatibility (EMC)	61000	Electromagnetic compatibility (EMC)
61000-4-1	Part 4-1: Testing and measurement techniques—Overview of IEC 61000-4 series	61000.4.1	Part 4.1: Testing and measurement techniques—Overview of IEC 61000-4 series
61000-4-4	Part 4-4: Testing and measurement techniques—Electrical fast transient/burst immunity test	61000.4.4	Part 4.4: Testing and measurement techniques—Electrical fast transient/burst immunity test

IEC		AS/NZS	
61000-4-11	Part 4-11: Testing and measurement techniques—Voltage dips, short interruptions and voltage variations immunity tests	61000.4.11	Part 4.11: Testing and measurement techniques—Voltage dips, short interruptions and voltage variations immunity tests
61000-6-2	Part 6-2: Generic standards—Immunity for industrial environments	61000.6.2	Part 6.2: General standards—Immunity for industrial environments
CISPR		AS/NZS CISPR	
11	Industrial, scientific and medical equipment—Radio-frequency disturbance characteristics—Limits and methods of measurement	11	Industrial, scientific and medical equipment—Radio-frequency disturbance characteristics—Limits and methods of measurement
16	Specification for radio disturbance and immunity measuring apparatus and methods	16	Specification for radio disturbance and immunity measuring apparatus and methods
16-1	Part 1: Radio disturbance and immunity measuring apparatus (all parts)	16.1	Part 1: Radio disturbance and immunity measuring apparatus (all parts)

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## AUSTRALIAN STANDARD

**High-voltage switchgear and controlgear****Part 1:  
Common specifications****1 General****1.1 Scope**

This part of IEC 62271 applies to a.c. switchgear and controlgear designed for indoor and outdoor installation and for operation at service frequencies up to and including 60 Hz on systems having voltages above 1 000 V.

This standard applies to all high-voltage switchgear and controlgear except as otherwise specified in the relevant IEC standards for the particular type of switchgear and controlgear.

NOTE For the use of this standard, high voltage (see IEC 601-01-27) is the rated voltage above 1 000 V. However, the term medium voltage (see IEC 601-01-28) is commonly used for distribution systems with voltages above 1 kV and generally applied up to and including 52 kV.

**1.2 Normative references**

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60034-1, *Rotating electrical machines – Part 1: Rating and performance*

IEC 60038:1983, *IEC standard voltages*

IEC 60050-131, *International Electrotechnical Vocabulary (IEV) – Part 131: Circuit theory*

IEC 60050-151, *International Electrotechnical Vocabulary (IEV) – Part 151: Electrical and magnetic devices*

IEC 60050-191, *International Electrotechnical Vocabulary (IEV) – Chapter 191: Dependability and quality of service*

IEC 60050-351, *International Electrotechnical Vocabulary (IEV) – Part 351: Control technology*

IEC 60050-441, *International Electrotechnical Vocabulary (IEV) – Chapter 441: Switchgear, controlgear and fuses*

IEC 60050-446, *International Electrotechnical Vocabulary (IEV) – Chapter 446: Electrical relays*

IEC 60050-551, *International Electrotechnical Vocabulary (IEV) – Power electronics*

IEC 60050-581, *International Electrotechnical Vocabulary (IEV) – Chapter 581: Electro-mechanical components for electronic equipment*

IEC 60050-601, *International Electrotechnical Vocabulary (IEV) – Chapter 601: Generation, transmission and distribution of electricity – General*

IEC 60050-604, *International Electrotechnical Vocabulary (IEV) – Chapter 604: Generation, transmission and distribution of electricity – Operation*