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AS 60034.22—2010

Australian Standard®

Rotating electrical machines

Part 22: AC generators for reciprocating internal combustion (RIC) engine driven generating sets

This Australian Standard® was prepared by Committee EL-009, Rotating Electrical Machinery. It was approved on behalf of the Council of Standards Australia on 7 April 2010. This Standard was published on 4 May 2010.

The following are represented on Committee EL-009:

- Airconditioning & Refrigeration Equipment Manufacturers Association of Australia
- Australian Industry Group
- Bureau of Steel Manufacturers of Australia
- Department of the Environment, Water, Heritage and the Arts (Federal)
- Electrical Apparatus Service Association
- Energy Efficiency & Conservation Authority of New Zealand
- Engineers Australia
- Independent Chairperson
- Ministry of Economic Development (New Zealand)
- Registered Master Builders

This Standard was issued in draft form for comment as DR 08205.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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Part 22: AC generators for reciprocating internal combustion (RIC) engine driven generating sets

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PREFACE

This Standard was prepared by the Standards Australia Committee EL-009, Rotating Electrical Machinery.

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee EL-009. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to specify characteristics for generators under the control of voltage regulators when used with IC engine driven generating set.

This Standard is identical with, and has been reproduced from IEC 60034-22, (Ed. 2.0):2010, *Rotating electrical machines – Part 22: AC generators for reciprocating internal combustion (RIC) engine driven generating sets*.

The following Standards have been issued in the AS 60034, *Rotating electrical machines* series, in Australia:

AS	
1359	Rotating electrical machines—General requirements
1359.102.2	Part 102.2: Methods for determining losses and efficiency—Calorimetric methods
60034	Rotating electrical machines
60034.1	Part 1: Rating and performance
60034.5	Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code)—Classification
60034.7	Part 7: Classification of types of construction, mounting arrangements and terminal box position (IM code)
60034.8	Part 8: Terminal markings and direction of rotation
60034.9	Part 9: Noise limits
60034.11	Part 11: Thermal protection
60034.12	Part 12: Starting performance of single-speed three-phase cage induction motors
60034.22	Part 22: AC generators for reciprocating internal combustion (RIC) engine driven generating sets (this Standard)
60034.26	Part 26: Effects of unbalanced voltages on the performance of three-phase cage induction motors

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

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text ‘IEC 60034-22’ should read ‘AS 60034.22’.

(c) A full point should be substituted for a comma when referring to a decimal marker.

The terms ‘normative’ and ‘informative’ are used 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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1 Scope

This part of IEC 60034 establishes the principal characteristics of a.c. generators under the control of their voltage regulators when used for reciprocating internal combustion (RIC) engine driven generating set applications and supplements the requirements given in IEC 60034-1. It covers the use of such generators for land and marine use, but excludes generating sets used on aircraft or used to propel land vehicles and locomotives.

NOTE 1 For some specific applications (e.g. essential hospital supplies, high-rise buildings, etc.) supplementary requirements may be necessary. The provisions of this standard should be regarded as a basis for such requirements.

NOTE 2 Attention is drawn to the need to take note of additional regulations or requirements imposed by various regulatory bodies. Such regulations or requirements may form the subject of agreement between the customer and the manufacturer when conditions of use of the end product invoke such requirements.

NOTE 3 Examples of regulatory authorities:

- classification societies, for generating sets used on ships and offshore installations;
- government agencies;
- inspection agencies, local utilities, etc.

Annex A discusses the behaviour of generators covered by this standard when subjected to sudden load changes.

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 60034-1:2004, *Rotating electrical machines – Part 1: Rating and performance*

IEC 60085, *Electrical insulation – Thermal evaluation and designation*

CISPR 11, *Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurement*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply:

NOTE 1 In this standard, suffix “N” is used for “rated” in accordance with IEC 60027-1 and IEC 60027-4 whereas in ISO 8528, suffix “r” is so used.

NOTE 2 Voltage terms relate to a generator running at constant (rated) speed under the control of the normal excitation and voltage control system.