Australian Standard®

Rotating electrical machines

Part 7: Classification of types of construction, mounting arrangements and terminal box position (IM Code)

This Australian Standard® was prepared by Committee EL-009, Rotating Electrical Machinery. It was approved on behalf of the Council of Standards Australia on 11 June 2009. This Standard was published on 15 July 2009.

The following are represented on Committee EL-009:

- Airconditioning and Refrigeration Equipment Manufacturers Association of Australia
- Australian Chamber of Commerce and Industry
- Australian Electrical and Electronic Manufacturers Association
- Australian Greenhouse Office, Department of the Environment and Water Resources
- Australian Industry Group
- Bureau of Steel Manufacturers of Australia
- Department of Defence (Australia)
- Electrical Apparatus Service Association
- Energy Efficiency and Conservation Authority of New Zealand
- Engineers Australia
- Ministry of Economic Development (New Zealand)
- Registered Master Builders

This Standard was issued in draft form for comment as DR 08208.

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.

Keeping Standards up-to-date

Australian Standards® are living documents that 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Standards may also be withdrawn.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 that may have been published since the Standard was published.

Detailed information about Australian Standards, drafts, amendments and new projects can be found by visiting www.standards.org.au

Standards Australia welcomes suggestions for improvements, and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.org.au, or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.

Australian Standard®

Rotating electrical machines

Part 7: Classification of types of construction, mounting arrangements and terminal box position (IM Code)

Originated as AS 1359.22—1994.
Revised and redesignated AS 1359.10.7—1996.
Revised and redesignated AS 60034.7—2009.

Published by Standards Australia GPO Box 476, Sydney, NSW 2001, Australia

ISBN 0 7337 9189 1

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-009, Rotating Electrical Machinery to supersede AS 1359.107—1996, *Rotating electrical machines—General requirements—Classification of types of construction and mounting arrangements (IM Code)* on publication.

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 requirements for classification of types of construction, mounting arrangements and terminal box position.

This Standard is identical with, and has been reproduced from IEC 60034-7, Ed. 2.1 (2001), *Rotating electrical machines – Part 7: Classification of types of construction, mounting arrangements and terminal box position (IM Code)*.

This Standard is Part 7 of a Series dealing with rotating electrical machinery. Additional parts will be added from time to time. This Series when complete will consist of the following parts:

AS	
1359.102.2	Rotating electrical machines—Methods for determining losses and efficiency of rotating electrical machinery from tests—Measurement of losses by the calorimetric method
60034	Rotating electrical machines
60034.1	Part 1: Rating and performance
60034.2.1	Part 2.1: Methods for determining losses and efficiency from tests (excluding machines for traction vehicles)
60034.3	Part 3: Specific requirements for synchronous generators driven by steam turbines or combustion gas turbines
60034.4	Part 4: Methods for determining synchronous machine quantities from tests
60034.5	Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code)—Classification
60034.6	Part 6: Method of cooling (IC code)
60034.7	Part 7: Classification of types of construction, mounting arrangements and terminal box position (IM code) (this Standard)
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
60034.14	Part 14: Mechanical vibration of certain machines with shaft heights 56 mm and higher—Measurement, evaluation and limits of vibration severity
60034.15	Part 15: Impulse voltage withstand levels of rotating a.c. machines with form-wound stator coils
60034.16	Part 16: Excitation systems for synchronous machines (all parts)
60034.17	Part 17: Cage induction motors when fed from converters—Application guide
60034.18	Part 18: Functional evaluation of insulation systems (all parts)
60034.19	Part 19: Specific test methods for d.c. machines on conventional and rectifier-fed supplies
60034.20.1	Part 20.1: Control motors—Stepping motors
60034.22	Part 22: AC generators for reciprocating internal combustion (RIC) engine driven generating sets
60034.23	Part 23: Specification for the refurbishing of rotating electrical machines

AS	
60034.25	Part 25: Guidance for the design and performance of a.c. motors specifically designed for converter supply
60034.26	Part 26: Effects of unbalanced voltages on the performance of three-phase cage induction motors
60034.27	Part 27: Off-line partial discharge measurements on the stator winding insulation of rotating electrical machines
60034.28	Part 28: Test methods for determining quantities of equivalent circuit diagrams for the three-phase low voltage cage induction motors
60034.29	Part 29: Equivalent loading and superposition techniques—Indirect testing to determine temperature rise.

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 60034-7’ should read ‘AS 60034.7’.

(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.

CONTENTS

STANDARDS AUSTRALIA

Australian Standard

Rotating electrical machines
Part 7: Classification of types of construction, mounting arrangements and terminal box position (IM Code)

Section 1: Scope and definitions

1.1 Scope

This part of IEC 60034 specifies the IM Code, a classification of types of construction, mounting arrangements and the terminal box position of rotating electrical machines.

Two systems of classification are provided as follows:

– Code I (see section 2): An alpha-numeric designation applicable to machines with end-shield bearing(s) and only one shaft extension.

– Code II (see section 3): An all-numeric designation applicable to a wider range of types of machines including types covered by Code I.

The type of machine not covered by Code II should be fully described in words.

The relationship between Code I and Code II is given in annex A.

1.2 Definitions

For the purposes of this part of IEC 60034, the following definitions apply:

1.2.1
type of construction
the arrangement of machine components with regard to fixings, bearing arrangement and shaft extension

(IEV 60411-13-34)[1)]

1.2.2
mounting arrangement
the orientation on site of the machine as the whole with regard to shaft alignment and position of fixings

(IEV 60411-13-35)

1.2.3
shaft extension
a portion of a shaft extending beyond an extreme bearing

(IEV 60411-13-07)

NOTE The bearing may be on the machine itself or be part of an assembly comprising a machine and (an) additional bearing(s).

1) IEC 60050(411): 1973, *International Electrotechnical Vocabulary (IEV) – Chapter 411: Rotating machinery.*

