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Australian Standard®
1359.10—1985

ROTATING ELECTRICAL MACHINES—GENERAL REQUIREMENTS
Part 10—DESIGNATIONS AND DIMENSIONS

Specifies the International (IEC 72) system of designations for machine parts (frames, mounting flanges, and shafts) and of the machines themselves, whether foot-mounted, flange-mounted, or both. Standardized dimensions are specified for machines with shaft heights from 56 mm to 400 mm, flanges from 55 mm to 1080 mm PCD, shafts of 7 mm to 150 mm diameter, and slide-rail mountings for machines with shaft heights from 80 mm to 315 mm. Appropriate flanges are specified for particular frame sizes.

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This Australian standard was prepared by Committee EL/9, Rotating Electrical Machinery. It was approved on behalf of the Council of the Standards Association of Australia on 20 February 1985 and published on 7 June 1985.

PREFACE

This standard was prepared by the Association's Committee on Rotating Electrical Machinery.

In the preparation of this standard, reference was made to the following standards and acknowledgement is made of the assistance received therefrom:

IEC 72 (1971 including Amdt No 1 Aug 1977)
Dimensions and Output Ratings for Rotating Electrical Machines—Frame Numbers 56 to 400 and Flange Numbers FF55 to FF1080 and FT55 to FT1080

BS 4999 General Requirements for Rotating Electrical Machines
BS 4999: Part 10—Standard Dimensions

Extensive reference was also made to the following Australian standard:

AS 1360 Rotating Electrical Machines of Particular Types or for Particular Applications
1360.10 Dimensions and Outputs of Standard Single-speed Three-phase General Purpose Motors

This standard adopts the IEC system of designating machines and mounting flanges (as detailed in IEC 72), and advises that certain aspects of the system currently specified in AS 1360.10 should be phased out and will be withdrawn by 31 December 1988 (see Clause 10.2 and Appendix A).

With respect to the tolerance grades for the mounting spigots of flange-mounted machines, IEC 72 specifies grades j6 and js6, whereas this standard specifies grade h8. This is in accordance with long-standing practice—see AS 1360.10 and BS 4999: Part 10. In other respects, this standard agrees technically with IEC 72.

The standard differs from BS 4999: Part 10 by including shaft extensions 7, 16, and 18, and by specifying only single tapped holes therein (see Table 10.5).

The main title of this standard has been rearranged slightly; this change will be progressively introduced to all standards in the AS 1359 series.

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STANDARDS ASSOCIATION OF AUSTRALIA
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AMENDMENT No 1
to
AS 1359.10—1985
ROTATING ELECTRICAL MACHINES—
GENERAL REQUIREMENTS
Part 10—DESIGNATIONS AND DIMENSIONS

REVISED TEXT

The 1985 edition of AS 1359.10 is amended as follows; the amendments should be inserted in the appropriate places.

SUMMARY: The following sections of the standard are covered by this amendment: Clauses 10.7.2, 10.8.2.

Published on 2 March 1987.

AMDT No 1 MAR. 1987

Page 6. Clause 10.7.2.

Delete the second paragraph (before the Note) and *insert* the following:

Unless otherwise agreed, the terminal box shall have provision for cable entry from any one of four directions at right angles, one of which directions shall be parallel to the shaft axis.

AMDT MAR. 1987

Page 6. Clause 10.8.2.

Delete the second paragraph (before the Note) and *insert* the following:

Unless otherwise agreed, the terminal box shall have provision for cable entry from any one of four directions at right angles, one of which directions shall be parallel to the shaft axis.

CONTENTS

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard for ROTATING ELECTRICAL MACHINES— GENERAL REQUIREMENTS

PART 10—DESIGNATIONS AND DIMENSIONS

10.1 SCOPE. This standard specifies a system of designations and values for important dimensions of machines and slide rails.

It does not specify any relationship between shaft designation and frame designation because of other factors involved, e.g. power output, speed, and duty cycle. For the allocation of flange designation to frame designation, see Clause 10.9.

10.2 APPLICATION. This standard shall be read in conjunction with AS 1359.2.

Two systems of designation are specified herein:

(a) The IEC system (see Clauses 10.4 and 10.5); and

(b) The system currently specified in AS 1360.10 (see Appendix A).

It is intended that the latter system be withdrawn on 31 December 1988. During the transition period, either system may be used, but preference should be given to the IEC system.

10.3 REFERENCED DOCUMENTS. A list with titles of the standards referred to in this standard is given in the Annex.

10.4 DESIGNATION OF FRAMES, FLANGES, AND SHAFTS.

NOTES:

1. An interim alternative system of machine/frame designation (intended for withdrawal on 31 December 1988) is described in Appendix A.
2. Designations are commonly referred to as 'Numbers' even though a letter or letters may be involved.

10.4.1 Frame designation (Frame number). The frame of a foot-mounted machine shall be designated by—

(a) a number indicating the shaft height (dimension *H*, see AS 1359.2), in millimetres;

(b) where appropriate, a space and the letter S, M, or L (for small, medium, or large), indicating the relative magnitude of the frame length (dimension *B*, see AS 1359.2).

Examples: 80 designates a machine of 80 mm shaft height.
180 M designates a machine of 180 mm shaft height and of medium frame length.

NOTES:

1. The frame designations 56, 63, 71 and 80 do not need a final letter because there is only one length of frame specified (see Table 10.1).
2. This system of frame designation is also applied to pad-mounted and rod-mounted machines (see Clause 10.10 herein).

10.4.2 Flange designation (Flange number). The mounting flange of a machine shall be designated by—

(a) a pair of letters, either—

(i) FF—indicating free (clearance) mounting holes; or

(ii) FT—indicating tapped mounting holes; and

(b) a number indicating the pitch circle diameter (dimension *M*, see AS 1359.2) of the holes, in millimetres.

Example: FF265 designates a flange with free (clearance) mounting holes with a pitch circle diameter of 265 mm.

10.4.3 Shaft designation (Shaft number). The driving shaft extension of a machine shall be designated by its diameter (dimension *D*, see AS 1359.2), in millimetres.

10.5 DESIGNATION OF MACHINES.

10.5.1 Foot-mounted machine. A foot-mounted machine shall be designated as follows:

(a) *Where the frame designation ends with a letter—*

(i) the frame designation;

(ii) a space; and

(iii) the shaft designation.

Example: 112 M 28 designates a machine with a 112 M frame and a shaft extension diameter of 28 mm.

(b) *Where the frame designation does not end with a letter—*

(i) the frame designation;

(ii) a dash; and

(iii) the shaft designation.

Example: 80—19 designates a machine with an 80 frame and a shaft extension diameter of 19 mm.

10.5.2 Flange-mounted machine. A flange-mounted machine shall be designated by—

(a) the shaft designation;

(b) a space; and

(c) the flange designation.

Example: 28 FF215 designates a machine with a shaft extension diameter of 28 mm and an FF215 flange.

10.5.3 Foot-mounted machine with flange. A foot-mounted machine with a mounting flange at the driving end shall be designated by—

(a) the frame designation;

(b) a space;

(c) the shaft designation;

(d) a space; and

(e) the flange designation.

Example: 112 M 28 FF215 designates a machine with a 112 M frame, a shaft extension diameter of 28 mm, and an FF215 flange.

10.6 DESIGNATION OF SLIDE RAILS. Slide rails shall be designated by—

(a) the letter M (for metric);