

Australian Standard[®]

**Rotating electrical machines—
General requirements**

**Part 10: Designations and
dimensions**

This Australian Standard was prepared by Committee EL/9, Rotating Electrical Machinery. It was approved on behalf of the Council of Standards Australia on 14 April 1989 and published on 13 October 1989.

The following interests are represented on Committee EL/9:

Australian British Chamber of Commerce

Australian Electrical and Electronic Manufacturers Association

Bureau of Steel Manufacturers of Australia

Confederation of Australian Industry

Department of Defence

Electricity Supply Association of Australia

Institution of Engineers, Australia

Review of Australian Standards. To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

Australian Standard®

**Rotating electrical machines—
General requirements**

**Part 10: Designations and
dimensions**

First published in part as AS C332.1—1963
(endorsement of BS 2960.1—1958 without
amendment).
AS C332.2 first published 1963 (endorsement of
BS 2960.2—1960 without amendment).
AS 1017 first published 1970.
AS C332.1—1963, AS C332.2—1963 and
AS 1017—1970
revised, amalgamated and redesignated
AS 1360.10—1975.
Part of AS 1360.10—1975 revised and redesignated
AS 1359.10—1985
Second edition 1989.

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 5749 4

PREFACE

This Standard was prepared by the Standards Australia Committee on Rotating Electrical Machinery to supersede the 1985 edition.

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 Part 141:1987 Specification for standard dimensions*

This edition specifies the IEC 72 system of designating machines and mounting flanges, the alternative system in the 1985 edition having been phased-out.

In the first edition, each clause number was prefixed by the Part number (10). That system has now been dropped.

With respect to the tolerance grades for the mounting spigots of flange-mounted machines, whereas IEC 72 specifies grades j6 and js6, this Standard specifies grade h8. This is in accordance with long-standing practice. In other respects, this Standard agrees technically with IEC 72.

The Standard differs from BS 4999: Part 141 by including shaft extensions 7, 16, and 18, and by specifying only single tapped holes in shaft extensions (see Table 5).

© Copyright — STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

CONTENTS

	<i>Page</i>
1 SCOPE	4
2 APPLICATION	4
3 REFERENCED DOCUMENTS	4
4 DESIGNATION OF FRAMES, FLANGES, AND SHAFTS	4
5 DESIGNATION OF MACHINES	4
6 DESIGNATION OF SLIDE RAILS	4
7 FOOT-MOUNTED MACHINES	5
8 FLANGE-MOUNTED, FACE-FLANGE-MOUNTED AND SKIRT-MOUNTED MACHINES	5
9 FOOT-MOUNTED MACHINES WITH FLANGES	5
10 PAD-MOUNTED AND ROD-MOUNTED MACHINES	5
11 SHAFT EXTENSIONS	5
12 SLIDE RAILS	12
APPENDIX A. LIST OF REFERENCED DOCUMENTS	13

STANDARD AUSTRALIA

Australian Standard
Rotating electrical machines—General requirements

Part 10: Designations and dimensions

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 9.

2 APPLICATION. This Standard shall be read in conjunction with AS 1359.2.

3 REFERENCED DOCUMENTS. The documents referred to in this Standard are listed in Appendix A.

4 DESIGNATION OF FRAMES, FLANGES, AND SHAFTS.

NOTE: Designations are commonly referred to as 'Numbers' even though a letter or letters may be involved.

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; and
- (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 1).
2. This system of frame designation is also applied to pad-mounted and rod-mounted machines (see Clause 10 herein).

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.

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.

5 DESIGNATION OF MACHINES.

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.

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.

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.

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

- (a) the letter M (for metric);
- (b) a two-digit number being an abbreviation of the smallest intended frame size; and
- (c) a two-digit number being an abbreviation of the largest intended frame size.