

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

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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.

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).

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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 P , 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, 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 space; 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.