



SLOVENSKI STANDARD
oSIST prEN IEC 60034-7:2020
01-marec-2020

Električni rotacijski stroji - 7. del: Razvrstitev vrst konstrukcije, montaže in položaja priključne omare (koda IM)

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

iTeh STANDARD PREVIEW

Machines électriques tournantes - Partie 7: Classification des formes de construction et les dispositions de montage (Code IM)

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ICS:

29.160.01 Rotacijski stroji na splošno Rotating machinery in general

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2/1976/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

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IEC TC 2 : ROTATING MACHINERY	
SECRETARIAT: United Kingdom	SECRETARY: Mr Charles Whitlock
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: <input type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input type="checkbox"/> SAFETY	
<input checked="" type="checkbox"/> SUBMITTED FOR CENELEC PARALLEL VOTING <input type="checkbox"/> NOT SUBMITTED FOR CENELEC PARALLEL VOTING Attention IEC-CENELEC parallel voting The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.	

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TITLE:

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

PROPOSED STABILITY DATE: 2022

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ROTATING ELECTRICAL MACHINES –

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

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 60034-7: **Classification of types of construction, mounting arrangements and terminal box position (IM Code)**, has been prepared by IEC technical committee 2: Rotating machinery.

This third edition cancels and replaces edition 2.1 published in 2000. It constitutes a technical revision. The main technical changes with regard to the previous edition are as follows:

Clause	Change
5.4	Note on twin motors added
5.5	Reference to Clause 4.3 instead of duplication of text
5.7	New clause on marking of shaft inclination or declination

This publication will remain unchanged until 20xx. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

1 **ROTATING ELECTRICAL MACHINES –**

2
3 **Part 7: Classification of types of construction, mounting arrangements**
4 **and terminal box position (IM Code)**
5
6
7

8 **Section 1: Scope**

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

11 Two systems of classification are provided as follows:

- 12 – Code I (see section 2): An alpha-numeric designation applicable to machines with end-
13 shield bearing(s) and only one shaft extension.
14 – Code II (see section 3): An all-numeric designation applicable to a wider range of types
15 of machines including types covered by Code I.

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

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

18 **Section 2: Normative references**

19 **Section 3: Definitions**

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

21 **3.1 type of construction**

22 the arrangement of machine components with regard to fixings, bearing arrangement and
23 shaft extension

24 (IEV 60411-13-34)¹⁾

25 **3.2 mounting arrangement**

26 the orientation on site of the machine as the whole with regard to shaft alignment and position
27 of fixings

28 (IEV 60411-13-35)

29 **3.3 shaft extension**

30 a portion of a shaft extending beyond an extreme bearing

31 (IEV 60411-13-07)

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

34

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

35 **3.4 drive-end of a machine (D-end)**

36 that end of the machine which accommodates the shaft end
37 (IEV 60411-13-36)

38 NOTE This is normally the driving end of a motor or the driven end of a generator.

39 Where for some machines the above definition is inadequate, the D-end is defined as follows:

- 40 a) Machine with two shaft extensions of different diameter: the end with the larger shaft
41 diameter;
- 42 b) Machine with a cylindrical shaft extension and a conical shaft extension of the same
43 diameter: the end with cylindrical shaft extension;
- 44 c) Machine with other arrangements: according to IEC 60034-8 if applicable; otherwise by
45 agreement.

46 NOTE The outer diameter of a forged-on flange is taken to be the diameter of the shaft extension.

47 **3.5 non-drive end of the machine (N-end)**

48 that end of the machine opposite to the drive end
49 (IEV 60411-13-37).

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51 **Section 4: Code I (alpha-numeric designation)**

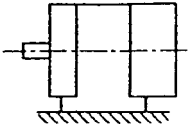
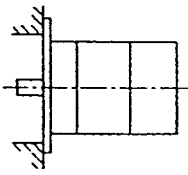
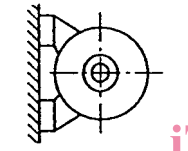
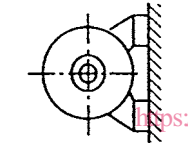
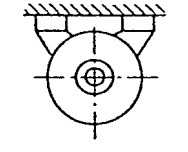
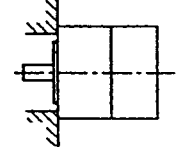
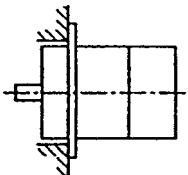
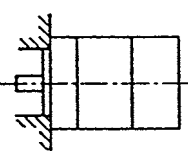
52 **4.1 Designation of machines with horizontal shafts**

53 In Code I, a machine with a horizontal shaft is designated by the code letters IM (International
54 Mounting), followed by a space, the letter B, one or two numerals as shown in Table 1 and an
55 optional letter as shown in **clause 4.3**.

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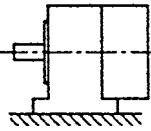
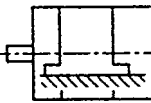
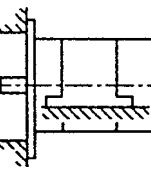
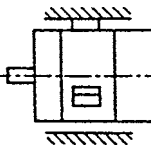
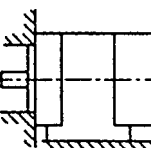
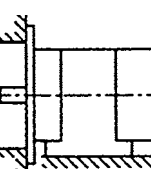
Table 1 – Designations for machines with horizontal shafts (IM B...)

Designation	Sketch	Type of construction				Mounting arrangement (Horizontal shaft)
		Number of end-shields bearings	Feet	Flange	Other details	
IM B3		2	With feet	-	-	Mounted by feet, feet down
IM B5		2	-	With flange	Endshield flange at D-end with access to back	Mounted on D-end side of flange
IM B6		2	With feet	-	-	Mounted by feet, feet left (viewed from D-end)
IM B7		2	With feet	-	-	Mounted by feet, feet right (viewed from D-end)
IM B8		2	With feet	-	-	Mounted by feet, feet up
IM B9		1	-	-	No endshield or bearing at D-end	Mounted on end face of frame at D-end
IM B10		2	-	With flange	Special flange at D-end	Mounted on D-end side of flange
IM B14		2	-	With flange	Endshield spigot. No access to back Flange at D-end	Mounted on D-end side of flange

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Table 1 (continued)

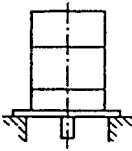
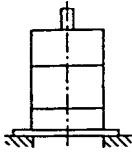
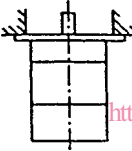
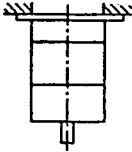
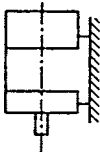
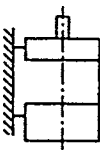
Designation	Sketch	Type of construction				Mounting arrangement (Horizontal shaft)
		Number of endshields bearings	Feet	Flange	Other details	
IM B15		1	With feet	–	No endshield or bearing at D-end. Additional mounting provisions on D-end of frame	Mounted by feet, feet down, with additional mounting on end face of frame
IM B20		2	With raised feet	–	–	Mounted by feet, feet down
IM B25		2	With raised feet	With flange	Endshield flange at D-end with access to back	Mounted by feet, feet down, with additional mounting on flange
IM B30		2	–	–	3 or 4 pads on endshield(s) or frame	Pad mounted
IM B34		2	With feet	With flange	Endshield spigot No access to back Flange at D-end	Mounted by feet, feet down, with additional mounting on D-end side of flange
IM B35		2	With feet	With flange	Endshield flange at D-end with access to back	Mounted by feet, feet down, with additional mounting on D-end side of flange

60

61 **4.2 Designation of machines with vertical shafts**

62 In Code I, a machine with a vertical shaft is designated by the code letters IM (International
 63 mounting), followed by a space, the letter V, one or two numerals as shown in Table 2 and an
 64 optional letter as shown in **Clause 4.3**.

65 **Table 2 – Designations for machines with vertical shafts (IM V...)**

Designation	Sketch	Type of construction				Mounting arrangement (Vertical shaft)
		Number of endshields bearings	Feet	Flange	Other details	
IM V1		2	–	With flange	Endshield flange at D-end with access to back	Mounted on D-end side of flange, D-end down
IM V2		2	–	With flange	Endshield flange at N-end with access to back	Mounted on N-end side of flange, D-end up
IM V3		2	–	With flange	Endshield flange at D-end with access to back	Mounted on D-end side of flange, D-end up
IM V4		2	–	With flange	Endshield flange at N-end with access to back	Mounted on N-end side of flange, D-end down
IM V5		2	With feet	–	–	Mounted by feet, D-end down
IM V6		2	With feet	–	–	Mounted by feet, D-end up