Rotating electrical machines - Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) – Classification

EVS EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 60034-5:2020 sisaldab Euroopa standardi EN IEC 60034-5:2020 ja selle paranduse AC:2024 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 60034-5:2020 consists of the English text of the European standard EN IEC 60034-5:2020 and its corrigendum AC:2024.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas. Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 19.06.2020.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation. Date of Availability of the European standard is 19.06.2020.
Parandusega AC lisatud või muudetud teksti algus ja lõpp on tekstis tähistatud sümbolitega ▌AC〉 〈AC▐. Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The start and finish of text introduced or altered by corrigendum AC is indicated in the text by tags ▌AC〉 〈AC▐. The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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English Version

Rotating electrical machines - Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) - Classification (IEC 60034-5:2020)

Machines électriques tournantes - Partie 5: Degrés de protection procurés par la conception intégrale des machines électriques tournantes (code IP) - Classification (IEC 60034-5:2020)

Drehende elektrische Maschinen - Teil 5: Schutzarten aufgrund der Gesamtkonstruktion von drehenden elektrischen Maschinen (IP-Code) - Einteilung (IEC 60034-5:2020)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

The text of document 2/1960/CDV, future edition 5 of IEC 60034-5, prepared by IEC/TC 2 "Rotating machinery" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60034-5:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-03-03
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-06-03

This document supersedes EN 60034-5:2001 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 60034-5:2020 was approved by CENELEC as a European Standard without any modification.

IEC 60034-5

Edition 5.0 2020-04

INTERNATIONAL STANDARD

Rotating electrical machines –
Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) – Classification

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67 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

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INTERNATIONAL STANDARD

Rotating electrical machines – Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) – Classification

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ROTATING ELECTRICAL MACHINES –

Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) – Classification

FOREWORD

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International Standard IEC 60034-5 has been prepared by IEC technical committee 2: Rotating machinery.

This bilingual version (2020-07) corresponds to the monolingual English version, published in 2020-04.

This fifth edition cancels and replaces the fourth edition, published in 2000, and its Amendment 1:2006. This edition constitutes a technical revision.

The main technical changes with respect to the previous edition are:

- the inclusion of an additional second numeral 9 including its test method,
- an additional note for clarification in Table 3,
- a clarification on the term open drain hole,
- a clarification on the ingress of dust in Table 4,
- pressure values given now in Pa only,

- a clarification in the scope on the applicability of this standard for (Ex) motors,
- a new Clause 3 with definitions,

The text of this International Standard is based on the following documents:

CDV	Report on voting
2/1960/CDV	2/1972A/RVC

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

The French version of this standard has not been voted upon.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 60034 series, published under the general title *Rotating electrical machines*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

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

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

The contents of the corrigendum 1 (2024-01) have been included in this copy.

ROTATING ELECTRICAL MACHINES –

Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) – Classification

1 Scope

This part of IEC 60034 applies to the classification of degrees of protection provided by enclosures for rotating electrical machines. It defines the requirements for protective enclosures that are in all other respects suitable for their intended use and which, from the point of view of materials and workmanship, ensure that the properties dealt with in this document are maintained under normal conditions of use.

This document does not specify degrees of protection against mechanical damage of the machine, or conditions such as moisture (produced for example by condensation), corrosive dust and vapour, fungus or vermin.

This document is also applicable to explosion proof machines, but it does not specifiy the types of protection for use in a potentially explosive (dust, gas) environment. Those are defined in the IEC 60079 series of standards.

In certain applications (such as agricultural or domestic appliances), more extensive precautions against accidental or deliberate contact may be specified.

This document gives definitions for standard degrees of protection provided by enclosures applicable to rotating electrical machines as regards the:

a) protection of persons against contacts with or approach to live parts and against contact with moving parts (other than smooth rotating shafts and the like) inside the enclosure and protection of the machine against ingress of solid foreign objects;

b) protection of machines against the harmful effects due to ingress of water;

c) protection of machines against the harmful effects due to ingress of dust.

It gives designations for these protective degrees and tests to be performed to check that the machines meet the requirements of this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60034-6, *Rotating electrical machines – Part 6: Methods of cooling (IC code)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp