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Roterande elektriska maskiner – Del 5: Kapslingsklasser för elektriska maskiner (IP-beteckning)

Rotating electrical machines –

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

Som svensk standard gäller europastandarden EN IEC 60034-5:2020. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 60034-5:2020.

Nationellt förord

Europastandarden EN IEC 60034-5:2020

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 60034-5, Fifth edition, 2020 - Rotating electrical machines - Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) - Classification**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 60034-5, utgåva 2, 2001 och SS-EN 60034-5/A1, utgåva 1, 2007, gäller ej fr o m 2023-06-03.

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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)

This European Standard was approved by CENELEC on 2020-06-03. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.



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

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.

Annex ZA

(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60034-6	-	Rotating electrical machines - Part 6: Methods of cooling (IC Code)	EN 60034-6	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ROTATING ELECTRICAL MACHINES –

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

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of 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, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as “IEC Publication(s)”). 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. 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 60034-5 has been prepared by IEC technical committee 2: Rotating machinery.

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.

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.

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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 specify 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)*