IEC 60034-5

Edition 5.0 2020-04

INTERNATIONAL STANDARD

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



IEC 60034-5:2020-04(en)

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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 29.160.01

ISBN 978-2-8322-8025-6

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CONTENTS

FOREWORD 4
1 Scope 6
2 Normative references 6
3 Terms and definitions 6
4 Designation 7
4.1 General 7
4.2 Single characteristic numeral 7
4.3 Supplementary letters 7
4.4 Example of designation 7
5 Degrees of protection – First characteristic numeral 7
5.1 Indication of degree of protection 7
5.2 Compliance to indicated degree of protection 8
5.3 External fans 8
5.4 Drain holes 8
6 Degrees of protection – Second characteristic numeral 9
6.1 Indication of the degree of protection 9
6.2 Compliance with lower degrees of protection 10
7 Marking 10
8 General requirements for tests 11
8.1 General 11
8.2 Adequate clearance 11
8.2.1 General 11
8.2.2 Low-voltage machines (rated voltages not exceeding 1 000 V a.c. and 1 500 V d.c.) 11
8.2.3 High-voltage machines (rated voltages exceeding 1 000 V a.c. and 1 500 V d.c.) 11
9 Tests for first characteristic numeral 11
10 Tests for second characteristic numeral 15
10.1 Test conditions 15
10.2 Acceptance conditions 23
10.2.1 General 23
10.2.2 Ingress of water 24
10.2.3 Withstand voltage test 24
11 Requirements and tests for open weather-protected machines 24

Figure 1 – Standard test finger 14
Figure 2 – Equipment to prove protection against dust 15
Figure 3 – Equipment to prove protection against dripping water 18
Figure 4 – Equipment to prove protection against spraying and splashing water (shown with spraying holes in the case of second characteristic numeral 3) 19
Figure 5 – Hand-held equipment to prove protection against spraying and splashing water 20
Figure 6 – Standard nozzle for hose test 20
Figure 7 – Geometry of fan jet nozzle 21
Figure 8 – Measurement of the impact force 22

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Figure 9 – Test set-up for determining the protection against high-pressure/steam-jet cleaning – degree of protection against ingress of water IP X9 for small enclosures 23

Table 1 – Test requirements for guards.....8
Table 2 – Degrees of protection indicated by the first characteristic numeral 9
Table 3 – Degrees of protection indicated by the second characteristic numeral 10
Table 4 – Test and acceptance conditions for first characteristic numeral 12
Table 5 – Test conditions for second characteristic numeral 16

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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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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