MADALPINGELISED SULAVKAITSMED. OSA 1: ÜLDNÕUDED

Low-voltage fuses - Part 1: General requirements

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 60269-1:2025 sisaldab Euroopa standardi EN IEC 60269-1:2025 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 60269-1:2025 consists of the English text of the European standard EN IEC 60269-1:2025.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 04.04.2025.	Date of Availability of the European standard is 04.04.2025.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	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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EUROPEAN STANDARD

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English Version

Low-voltage fuses - Part 1: General requirements (IEC 60269-1:2024)

Fusibles basse tension - Partie 1: Exigences générales (IEC 60269-1:2024)

Niederspannungssicherungen - Teil 1: Allgemeine Anforderungen (IEC 60269-1:2024)

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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 32B/748/FDIS, future edition 5 of IEC 60269-1, prepared by SC 32B "Low-voltage fuses" of IEC/TC 32 "Fuses" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60269-1:2025.

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) 2026-04-30
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2028-04-30

This document supersedes EN 60269-1:2007 and all of its amendments and corrigenda (if any).

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Endorsement notice

The text of the International Standard IEC 60269-1:2024 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standard indicated:

IEC 60038:2009	NOTE	Approved as EN 60038:2011
IEC 60127-2	NOTE	Approved as EN 60127-2
IEC 60228:2023	NOTE	Approved as EN IEC 60228:2024 (not modified)
IEC 60269-4	NOTE	Approved as EN 60269-4
IEC 60269-6	NOTE	Approved as EN 60269-6
IEC 60269-7	NOTE	Approved as EN IEC 60269-7
IEC 60695-2-10	NOTE	Approved as EN IEC 60695-2-10
IEC 60947-3	NOTE	Approved as EN IEC 60947-3

IEC 60269-1

Edition 5.0 2024-08

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Low-voltage fuses – Part 1: General requirements

Fusibles basse tension – Partie 1: Exigences générales

IEC 60269-1:2024-08(en-fr)

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Low-voltage fuses – Part 1: General requirements

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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LOW-VOLTAGE FUSES –

Part 1: General requirements

FOREWORD

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IEC 60269-1 has been prepared by subcommittee 32B: Low-voltage fuses, of IEC technical committee 32: Fuses. It is an International Standard.

This fifth edition cancels and replaces the fourth edition published in 2006, Amendment 1:2009 and Amendment 2:2014. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) New numbering, editorial corrections and normative references updated;
b) Term "discrimination" replaced by "selectivity" and "utilization category" by "utilization class";
c) Term "fuses for authorized and unskilled persons" updated;
d) Replacement of fuse-link added;

e) Standard values for AC and DC voltages updated;

f) Rated currents 425A, 355A, and 1 600A added;

g) Marking: requirements and tests separated to the relevant subclauses;

h) Requirements for temperature rise limited to terminal temperature rise only;

i) Graphic symbol for fuse-base updated,

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

Draft	Report on voting
32B/748/FDIS	32B/756/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

IEC 60269 consists of the following parts, under the general title *Low-voltage fuses*:

Part 1: General requirements

Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) – Examples of standardized systems of fuses A to I

Part 3: Supplementary requirements for fuses for use by unskilled persons (fuses mainly for household or similar application) – Examples of standardized systems of fuses A to F

Part 4: Supplementary requirements for fuse-links for the protection of semiconductor devices

Part 5: Guidance for the application of low-voltage fuses

Part 6: Supplementary requirements for fuse-links for the protection of solar photovoltaic energy systems

Part 7: Battery Fuses

For reasons of convenience, when a part of this publication has come from other publications, a remark to this effect has been inserted in the text.

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

- reconfirmed,
- withdrawn, or
- revised.

LOW-VOLTAGE FUSES –

Part 1: General requirements

1 Scope

This part of IEC 60269 is applicable to fuses incorporating enclosed current-limiting fuse-links with rated breaking capacities of not less than 6 kA, intended for protecting power-frequency AC circuits of nominal voltages not exceeding 1 000 V or DC circuits of nominal voltages not exceeding 1 500 V.

Subsequent parts of this standard, referred to herein, cover supplementary requirements for such fuses intended for specific conditions of use or applications.

Fuse-links intended to be included in fuse-switch combinations according to IEC 60947-3 should also comply with the following requirements.

As far as not stated in subsequent parts for fuse-links, details of performance (see 3.2.4) on DC circuits should be stated in the manufacturer's literature.

NOTE 1 Modifications of, and supplements to, this document required for certain types of fuses for particular applications – for example, certain fuses for rolling stock, or fuses for high-frequency circuits – will be covered, if necessary, by separate standards.

NOTE 2 This document does not apply to miniature fuses, these being covered by IEC 60127.

The object of this standard series is to establish the characteristics of fuses or parts of fuses (fuse-base, fuse-carrier, fuse-link) in such a way that they can be replaced by other fuses or parts of fuses having the same characteristics provided that they are interchangeable as far as their dimensions are concerned. For this purpose, this standard series refers in particular to

– the following characteristics of fuses:
  - rated values;
  - insulation;
  - temperature rise in normal service;
  - power dissipation and acceptable power dissipation;
  - time/current characteristics;
  - breaking capacity;
  - cut-off current characteristics and their I^2t characteristics.
– type test for verification of the characteristics of fuses;
– the marking of fuses.

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 60269-2, *Low-voltage fuses – Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) – Examples of standardized systems of fuses A to K*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 60584-1:2013, *Thermocouples – Part 1: EMF specifications and tolerances*

IEC 60617, *Graphical symbols for diagrams*

IEC 60664-1:2002, *Insulation coordination for equipment within low-voltage supply systems – Part 1: Principles, requirements and tests*

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

NOTE For general definitions concerning fuses, see also IEC 60050-441.

3.1 Fuses and their component parts

3.1.1
fuse
device that by the fusing of one or more of its specially designed and proportioned components opens the circuit in which it is inserted by breaking the current when this exceeds a given value for a sufficient time. The fuse comprises all the parts that form the complete device

[SOURCE: IEC 60050-441:1984, 441-18-01]

3.1.2
fuse-holder
combination of the fuse-base with its fuse-carrier

Note 1 to entry: Where, in this document, the term "fuse-holder" is used, it covers fuse-bases and/or fuse-carriers, if no clearer distinction is necessary.

[SOURCE: IEC 60050-441:1984, 441-18-14]

3.1.2.1
fuse-base (fuse-mount)
fixed part of a fuse provided with contacts and terminals

Note 1 to entry: Where applicable, covers are considered as part of the fuse-base.

[SOURCE: IEC 60050-441:1984, 441-18-02]

3.1.2.2
fuse-carrier
movable part of a fuse designed to carry a fuse-link

[SOURCE: IEC 60050-441:1984, 441-18-13]