

Miniature fuses - Part 9: Miniature fuse-links for special applications with partial-range breaking capacity

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN IEC 60127-9:2025 sisaldab Euroopa standardi EN IEC 60127-9:2025 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 03.10.2025.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN IEC 60127-9:2025 consists of the English text of the European standard EN IEC 60127-9:2025.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 03.10.2025.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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English Version

Miniature fuses - Part 9: Miniature fuse-links for special applications with partial-range breaking capacity (IEC 60127-9:2025)

Coupe-circuits miniatures - Partie 9: Éléments de remplacement miniatures pour applications spéciales à pouvoir de coupure partiel (IEC 60127-9:2025)

Geräteschutzsicherungen - Teil 9: G-Sicherungseinsätze für besondere Anwendungen mit Teilbereichsausschaltvermögen (IEC 60127-9:2025)

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European Committee for Electrotechnical Standardization
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Europäisches Komitee für Elektrotechnische Normung

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

European foreword

The text of document 32C/667/FDIS, future edition 1 of IEC 60127-9, prepared by SC 32C "Miniature fuses" of IEC/TC 32 "Fuses" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 60127-9:2025.

The following dates are fixed:

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- latest date by which the national standards conflicting with the (dow) 2028-10-31 document have to be withdrawn

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This document is read in conjunction with EN IEC 60127-1:2024.

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Endorsement notice

The text of the International Standard IEC 60127-9:2025 was approved by CENELEC as a European Standard without any modification.

INTERNATIONAL STANDARD

**Miniature fuses -
Part 9: Miniature fuse-links for special applications with partial-range breaking
capacity**



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IEC Secretariat
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

Miniature fuses - Part 9: Miniature fuse-links for special applications with partial-range breaking capacity

FOREWORD

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IEC 60127-9 has been prepared by subcommittee 32C: Miniature Fuses, of IEC technical committee 32: Fuses. It is an International Standard.

This International Standard is to be used in conjunction with IEC 60127-1:2023.

This part of IEC 60127 is to be read in conjunction with Part 1. It supplements or modifies the corresponding clauses of Part 1. Where the text indicates an "addition" to or a "replacement" of the relevant provision of Part 1, these changes are made to the relevant text of Part 1. When a particular subclause of Part 1 is not mentioned in this part, that subclause applies as far as is reasonable.

Additional specific provisions to those in Part 1, given as individual clauses or subclauses, are numbered starting from 101.

NOTE The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;
- unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;
- additional annexes are lettered AA, BB, etc.

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

Draft	Report on voting
32C/667/FDIS	32C/670/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.

A list of all parts in the IEC 60127 series, published under the general title *Miniature fuses*, 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 webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

INTRODUCTION

According to the wish expressed by the users of miniature fuses, all standards, recommendations and other documents relating to miniature fuses have the same publication number in order to facilitate reference to fuses in other specifications, for example, equipment specifications.

Furthermore, a single publication number and subdivision into parts would facilitate the establishment of new standards, because clauses containing general requirements need not be repeated.

The IEC 60127 series, under the general heading *Miniature fuses*, is thus subdivided as follows:

IEC 60127-1, *Miniature fuses - Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links*

IEC 60127-2, *Miniature fuses - Part 2: Cartridge fuse-links*

IEC 60127-3, *Miniature fuses - Part 3: Sub-miniature fuse-links*

IEC 60127-4, *Miniature fuses - Part 4: Universal modular fuse-links (UMF) - Through-hole and surface mount types*

IEC 60127-5, *Miniature fuses - Part 5: Guidelines for quality assessment of miniature fuse-links*

IEC 60127-6, *Miniature fuses - Part 6: Fuse-holders for miniature fuse-links*

IEC 60127-7, *Miniature fuses - Part 7: Miniature fuse-links for special applications*

IEC 60127-8, *Miniature fuses - Part 8: Fuse resistors with particular overcurrent protection*

IEC 60127-9, *Miniature fuses - Part 9: Miniature fuse-links for special applications with partial-range breaking capacity*

1 Scope

This part of IEC 60127 covers requirements for miniature fuse-links for special applications-with partial-range breaking capacity.

This document is applicable to fuse-links with a rated voltage not exceeding 1 000 V, a rated current not exceeding 150 A and a rated breaking capacity not exceeding 50 kA.

Miniature fuse-links with partial-range breaking capacity are used only to operate under short circuit conditions. They cannot be applied under overload conditions.

The design engineer needs to ensure no overload conditions can be seen by the fuse approved under this document.

This document does not apply to fuses completely covered by IEC 60127-7 or the subsequent parts of IEC 60269-1.

It does not apply to miniature fuse-links for appliances intended to be used under special conditions, such as in corrosive or explosive atmospheres.

This part of IEC 60127 applies in addition to the requirements of IEC 60127-1.

Miniature fuse-links for special applications with partial-range breaking capacity are not intended to be replaced by the end-user of an electrical / electronic appliance.

The object of this document is to establish uniform test methods for miniature fuse-links for special applications with partial-range breaking capacity, so as to allow verification of the values (for example melting time and breaking capacity values) specified by the manufacturer.

WARNING – If this fuse is used without additional protection in the forbidden overload partial current range it will catch fire, explode and will not interrupt the current. As a user of this product, you must ensure this scenario can be excluded in all cases.

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 60068-2-21:2021, *Environmental testing - Part 2-21: Tests - Test U: Robustness of terminations and integral mounting devices*

IEC 60127-1:2023, *Miniature fuses - Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links*

IEC 60127-6:2023, *Miniature fuses - Part 6: Fuse-holders for miniature fuse-links*

IEC 60664-1:2020, *Insulation coordination for equipment within low-voltage systems - Part 1: Principles, requirements and tests*

IEC 60695-2-12:2021, *Fire hazard testing - Part 2-12: Glowing/hot-wire based test methods - Glow-wire flammability index (GWFI) test method for materials*
IEC 60695-2-12:2010/AMD1:2014

IEC 60695-2-13:2021, *Fire hazard testing - Part 2-13: Glowing/hot-wire based test methods - Glow-wire ignition temperature (GWIT) test method for materials*
IEC 60695-2-13:2010/AMD1:2014

IEC 60695-4:2021, *Fire hazard testing - Part 4: Terminology concerning fire tests for electrotechnical products*

IEC 61249-2-7:2002, *Materials for printed boards and other interconnecting structures - Part 2-7: Reinforced base materials clad and unclad - Epoxide woven E-glass laminated sheet of defined flammability (vertical burning test), copper-clad*

ISO 3:1973, *Preferred numbers - Series of preferred numbers*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in Clause 3 of IEC 60127-1:2023, except 3.5, and the following apply.

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

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

3.1

miniature fuse-link for special applications with partial-range breaking capacity

enclosed fuse-link which is not covered in IEC 60127-2, IEC 60127-3, IEC 60127-4 or IEC 60127-7 and of rated breaking capacity not exceeding 50 kA, with a width and height or diameter not exceeding 12 mm and a length not exceeding 50 mm

Note 1 to entry: Special precautions may be necessary to ensure that the fuse-links will be replaced by a fuse-link with the same technical parameters.

Note 2 to entry: For fuse-links having a metallic cap at each end, any member of terminals or terminations other than the metallic cap such as wire terminations, pins and bolt-in contacts may not be included in the total length of 50 mm and the width and height or diameter not exceeding 12 mm.

3.2

t_1 to t_6

limit values for time/current characteristic

3.3

I_{70}

test current for testing at elevated temperature of 70 °C

Note 1 to entry: Preferred values are 0,8 I_N or 1,0 I_N or 1,1 I_N .

3.4

I_{test} (A)

test current for endurance testing according to method A

Note 1 to entry: Preferred values are 1,0 I_N or 1,05 I_N or 1,2 I_N .

3.5

I_{test} (B)

test current for endurance testing according to method B

Note 1 to entry: Preferred values are 0,8 I_N or 1,0 I_N .