

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE

**Low-voltage fuses –  
Part 4: Supplementary requirements for fuse-links for the protection of  
semiconductor devices**

**Fusibles basse tension –  
Partie 4: Exigences supplémentaires concernant les éléments de remplacement  
utilisés pour la protection des dispositifs à semi-conducteurs**



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## NORME INTERNATIONALE

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### Low-voltage fuses –

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

### Fusibles basse tension –

**Partie 4: Exigences supplémentaires concernant les éléments de remplacement utilisés pour la protection des dispositifs à semiconducteurs**

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ICS 29.120.50

ISBN 978-2-8322-8933-4

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## CONTENTS

|  |    |
|--|----|
| FOREWORD.....  | 4  |
| 1 Scope.....   | 6  |
| 2 Normative references.....  | 6  |
| 3 Terms and definitions.....   | 7  |
| 4 Conditions for operation in service.....   | 8  |
| 5 Classification.....  | 9  |
| 6 Characteristics of fuses.....  | 9  |
| 7 Markings.....  | 13 |
| 8 Standard conditions for construction.....  | 14 |
| 9 Tests.....   | 14 |
| Annex AA (informative) Guidance for the coordination of fuse-links with semiconductor devices.....   | 26 |
| Annex BB (normative) Survey on information to be supplied by the manufacturer in his literature (catalogue) or on request for a fuse designed for the protection of semiconductor devices..... | 27 |
| Annex CC (normative) Examples of standardized fuse-links for the protection of semiconductor devices.....  | 28 |
| Bibliography.....  | 45 |
| Figure 101 – Example of a conventional test arrangement for bolted fuse-links.....   | 24 |
| Figure 102 – Example of a conventional test arrangement for blade contact fuse-links.....  | 25 |
| Figure CC.1 – Single body fuse-links.....  | 29 |
| Figure CC.2 – Double body fuse-links.....  | 30 |
| Figure CC.3 – Twin body fuse-links.....  | 31 |
| Figure CC.4 – Striker fuse-links.....  | 31 |
| Figure CC.5 – Fuse-links with bolted connections, type B, body sizes 000 and 00.....   | 33 |
| Figure CC.6 – Fuse-links with bolted connections, type B, body sizes 0, 1, 2 and 3.....  | 34 |
| Figure CC.7 – Bolted fuse-links, type C.....   | 36 |
| Figure CC.8 – Flush end fuse-links, type A.....  | 38 |
| Figure CC.9 – Flush end fuse-links, type B.....  | 40 |
| Figure CC.10 – Fuse-links with cylindrical contact caps, type A.....   | 41 |
| Figure CC.11 – Fuse-links with cylindrical contact caps, type B.....   | 43 |
| Figure CC.12 – Fuse-links with cylindrical contact caps with striker, type B (additional dimensions for all sizes except 10 × 38).....   | 44 |
| Table 101 – Conventional time and current for "gR" and "gS" fuse-links.....  | 11 |
| Table 102 – List of complete tests.....  | 15 |
| Table 103 – Survey of tests on fuse-links of the smallest rated current of a homogeneous series.....   | 16 |
| Table 107 – Cross-sectional area of copper conductors for high current ratings tests.....  | 17 |
| Table 104 – Values for breaking-capacity tests on AC fuses.....  | 20 |
| Table 105 – Values for breaking-capacity tests on DC fuses.....  | 21 |
| Table 106 – Values for breaking-capacity tests on VSI fuse-links.....  | 21 |

Table CC.1 – Typical rated voltages and preferred maximum rated currents .....42

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

## LOW-VOLTAGE FUSES –

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

## FOREWORD

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IEC 60269-4 has been prepared by subcommittee 32B: Low-voltage fuses, of IEC technical committee 32: Fuses. It is an International Standard.

This sixth edition cancels and replaces the fifth edition published in 2009, Amendment 1:2012 and Amendment 2:2016. This edition constitutes a technical revision.

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

- a) the introduction of voltage source inverter fuse-links, including test requirements.
- b) coverage of the tests on operating characteristics for AC by the breaking capacity tests.
- c) the updating of examples of standardised fuse-links for the protection of semiconductor devices.

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

| Draft        | Report on voting |
|--------------|------------------|
| 32B/746/FDIS | 32B/753/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](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://www.iec.ch/publications).

This part is to be used in conjunction with IEC 60269-1:2024, *Low-voltage fuses – Part 1: General requirements*.

This Part 4 supplements or modifies the corresponding clauses or subclauses of Part 1.

Where no change is necessary, this Part 4 indicates that the relevant clause or subclause applies.

Tables and figures which are additional to those in Part 1 are numbered starting from 101.

Additional annexes are lettered AA, BB, etc.

A list of all parts of the IEC 60269 series, under the general title: *Low-voltage 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](http://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 4: Supplementary requirements for fuse-links for the protection of semiconductor devices

#### 1 Scope

IEC 60269-1 applies with the following supplementary requirements.

Fuse-links for the protection of semiconductor devices shall comply with all requirements of IEC 60269-1, if not otherwise indicated hereinafter, and shall also comply with the supplementary requirements laid down below.

These supplementary requirements apply to fuse-links for application in equipment containing semiconductor devices for circuits of nominal voltages up to 1 000 V AC or 1 500 V DC. For some fuse-links higher rated voltages can be used.

NOTE Such fuse-links are commonly referred to as "semiconductor fuse-links".

The object of these supplementary requirements is to establish the characteristics of semiconductor fuse-links in such a way that they can be replaced by other fuse-links having the same characteristics, provided that their dimensions are identical. For this purpose, this standard refers in particular to

- a) the following characteristics of fuses:
  - 1) their rated values
  - 2) their temperature rises in normal service
  - 3) their power dissipation
  - 4) their time-current characteristics
  - 5) their breaking capacity
  - 6) their cut-off current characteristics and their  $I^2t$  characteristics
  - 7) their arc voltage characteristics
- b) type tests for verification of the characteristics of fuses
- c) the markings on fuses
- d) availability and presentation of technical data (see Annex BB).

#### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitute 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 60269-1:2024, *Low-voltage fuses – Part 1: General requirements*

IEC 60269-2:2013, *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 60269-2:2013/AMD1:2016

IEC 60269-2:2013/AMD2:2024