# INTERNATIONAL STANDARD

# IEC 60269-2-1

Fourth edition
2004-06

## Low-voltage fuses –

## Part 2-1: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) – Sections I to VI: Examples of types of standardized fuses



*This **English-language** version is derived from the original **bilingual** publication by leaving out all French-language pages. Missing page numbers correspond to the French-language pages.*

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International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch

Commission Electrotechnique Internationale
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

# LOW-VOLTAGE FUSES –

# Part 2-1: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) – Sections I to VI: Examples of types of standardized fuses

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International Standard IEC 60269-2-1 has been prepared by subcommittee 32B: Low-voltage fuses, of IEC technical committee 32: Fuses.

This fourth edition of IEC 60269-2-1 cancels and replaces the third edition published in 1998, amendment 1 (1999), and amendment 2 (2002). This edition constitutes a minor revision.

The document 32B/445/FDIS, circulated to the National Committees as amendment 3, led to the publication of the new edition.

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

- addition of a new section IB "Fuse-rails"
- addition of a new section IC "Fuse-bases for busbar mounting"
- section III rewritten to make it independent of section I
- addition of a new section VI "Fuse-links with wedge tightening contacts"

The text of this standard is based on the third edition, its amendment 1, amendment 2 and on the following document:

| FDIS | Report on voting |
|---|---|
| 32B/445/FDIS | 32B/449/RVD |

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

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

# LOW-VOLTAGE FUSES –

## Part 2-1: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) – Sections I to VI: Examples of types of standardized fuses

EXPLANATORY NOTE

In view of the fact that this standard should be read together with IEC 60269-1 and IEC 60269-2, the numbering of its clauses and subclauses are made to correspond to these publications. Regarding the tables, their numbering also corresponds to that of IEC 60269-1; however, when additional tables appear they are referred to by capital letters, for example, Table A, Table B, etc.

## 1 General

Fuses for use by authorized persons according to the following sections shall also comply with all subclauses of

IEC 60269-1, *Low-voltage fuses – Part 1: General requirements*

IEC 60269-2, *Low-voltage fuses – Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial applications)*

This standard is divided into sections, each dealing with a specific example of standardized fuses for use by authorized persons:

Section I: Fuses with fuse-links with blade contacts (NH fuse system)

Section IA: Fuses with striker fuse-links with blade contacts (NH fuse system)

Section IB: Fuse-rails (NH fuse system)

Section IC: Fuse-bases for busbar mounting (NH fuse system)

Section II: Fuses with fuse-links for bolted connections (BS bolted fuse system)

Section III: Fuses with fuse-links having cylindrical contact caps (NF cylindrical fuse system)

Section IV: Fuses with fuse-links with offset blade contacts (BS clip-in fuse-system)

Section V: Fuses with fuse-links having "gD" and "gN" characteristic (Class J and class L time delay and non time delay fuse types)

Section VI: gU fuse-links with wedge tightening contacts

## 2 Normative references

The following referenced documents are indispensable for the application 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 60060-1:*High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 60112, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*

IEC 60269-1, *Low-voltage fuses – Part 1: General requirements*

IEC 60269-2, *Low-voltage fuses – Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial applications)*

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

IEC 60999 (all parts),*Connecting devices – Electrical copper conductors – Safety requirements for screw-type and screwless-type clamping units*

ISO 6988, *Metallic and other non organic coatings – Sulfur dioxide test with general condensation of moisture*

# Section I – Fuses with fuse-links with blade contacts (NH fuse system)

## 1.1 Scope

The following additional requirements apply to fuses with fuse-links having blade contacts intended to be replaced by means of a device, for example, replacement handle (see Figure 3(I)), which complies with the dimensions specified in Figures 1(I*) and 2(I*). Such fuses have rated currents up to and including 1 250 A and rated voltages up to and including AC 690 V or DC 440 V.

## 2 Definitions

Add to the definitions of IEC 60269-1:

**2.1.12**
**linked fuse-carrier**

fuse-carrier which is mechanically linked to the fuse-base and gives a defined insertion and withdrawal movement to the fuse-link

NOTE See also IEC 60947.

**2.1.13**
**gripping-lugs**
parts of a fuse-link which are engaged with the replacement handle or fuse-carrier. Gripping-lugs may be made of metal or insulating material. Metal gripping-lugs may be live or not live under service conditions

**2.1.13.1**
**live gripping-lugs**
metal gripping-lugs electrically connected to the blade contacts of the fuse-link. Metal gripping-lugs without electrical contact to the blade contacts are also deemed to be live in case of inadequate creepage distances and clearances according to this standard

**2.1.13.2**
**isolated gripping-lugs**
not-live gripping-lugs made of insulating material or metal. If they are made of metal, the required creepage distances and clearances according to the relevant overvoltage category should be met between the gripping-lugs and the blade contacts as well as between the gripping-lugs and the fuse-base contacts

## 5.2 Rated voltage

For a.c., the standard values of rated voltage are 400 V, 500 V and 690 V. For d.c., the rated voltages are 250 V and 440 V. The standard values of d.c. rated voltage are not related to the standard values of a.c. rated voltage. For example the following standard combinations are possible: AC 500 V – DC 250 V, AC 500 V – DC 440 V, AC 500 V, etc.

The rated voltage of fuse-bases according to Figure 2(I) is 690 V.

* Refers to section I.