
Low-voltage fuses - Part 4: Supplementary requirements for fuse-links for the protection of semiconductor devices - Amendment A2 (IEC 60269-4:1986/A1:2002 + Corrigendum 2003)

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[SIST EN 60269-4:1998/A2:2004
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ICS 29.120.50

Referenčna številka
SIST EN 60269-4:1998/A2:2004(en)

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EUROPEAN STANDARD

EN 60269-4/A2

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2003

ICS 29.120.50

English version

Low-voltage fuses
Part 4: Supplementary requirements for fuse-links
for the protection of semiconductor devices
(IEC 60269-4:1986/A2:2002 + corrigendum 2003)

Fusibles basse tension
Partie 4: Prescriptions supplémentaires
concernant les éléments
de remplacement utilisés pour la protection
des dispositifs à semi-conducteurs
(CEI 60269-4:1986/A2:2002 +
corrigendum 2003)

Niederspannungssicherungen
Teil 4: Zusätzliche Anforderungen
an Sicherungseinsätze zum Schutz
von Halbleiter-Bauelementen
(IEC 60269-4:1986/A2:2002 +
Corrigendum 2003)

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[SIST EN 60269-4:1998/A2:2004](https://standards.iteh.ai/catalog/standards/sist/2fc38b17-d09e-4e23-909d-41876e3c4b11/iec-60269-4-1986-a2-2004)

<https://standards.iteh.ai/catalog/standards/sist/2fc38b17-d09e-4e23-909d-41876e3c4b11/iec-60269-4-1986-a2-2004>
This amendment A2 modifies the European Standard EN 60269-4:1996; it was approved by CENELEC on 2003-02-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This amendment exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 32B/412/FDIS, future amendment 2 to IEC 60269-4:1986, prepared by SC 32B, Low-voltage fuses, of IEC TC 32, Fuses, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as amendment A2 to EN 60269-4:1996 on 2003-02-01.

The following dates were fixed:

- latest date by which the amendment has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2003-11-01
- latest date by which the national standards conflicting
with the amendment have to be withdrawn (dow) 2006-02-01

Endorsement notice

The text of amendment 2:2002 to the International Standard IEC 60269-4:1986 and its corrigendum March 2003 was approved by CENELEC as an amendment to the European Standard without any modification.

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**NORME
INTERNATIONALE
INTERNATIONAL
STANDARD**

**CEI
IEC
60269-4**

1986

**AMENDEMENT 2
AMENDMENT 2
2002-10**

Amendement 2

Fusibles basse tension –

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

Amendment 2

Low-voltage fuses –

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

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FOREWORD

This amendment has been prepared by subcommittee 32B: Low-voltage fuses, of IEC technical committee 32: Fuses.

The text of this amendment is based on the following documents:

FDIS	Report on voting
32B/412/FDIS	32B/418/RVD

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

The committee has decided that the contents of the base publication and its amendments will remain unchanged until 2004-12. At this date, the publication will be

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

Page 9

EXPLANATORY NOTE

Replace the existing explanatory note by the following:

In view of the fact that this standard should be read together with IEC 60269-1: *Low-voltage fuses - Part 1: General requirements*, the numbering of its clauses, subclauses and tables is made to correspond to the latter.

Change reference IEC 269-1 to IEC 60269-1 throughout this standard.

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Page 11

2.2.14 Semiconductor device SIST EN 60269-4:1998/A2:2004
<https://standards.iteh.ai/catalog/standards/sist/2fc38b17-d09e-4e23-909d-6d9a8eaed70/sist-en-60269-4-1998-a2-2004>

Replace the existing subclause by the following and delete the footnote at the bottom of the page.

2.2.14 Semiconductor device (according to IEC 60050(521))

A device whose essential characteristics are due to the flow of charge carriers within a semiconductor.

Add, after 2.2.15, the following new subclause:

2.2.16 Signalling device

A device forming part of the fuse and signalling the fuse operation to a remote place. A signalling device consists of a striker and an auxiliary switch. Electronic devices may also be used.

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3.6.3 Time constant (τ)

Replace "table XII" by "table XIIB".

Page 15

5.2 Rated voltage

Replace the existing subclause by the following:

For rated a.c. voltages up to 690 V and d.c. voltages up to 750 V, IEC 60269-1 applies; for higher voltages, the values shall be selected from the R5 series or, where not possible, from the R10 series of ISO 3.

Page 17

5.6.2 Conventional times and currents

Replace the existing text by the following:

5.6.2.1 Conventional times and currents for "aR" fuse-links

Not applicable.

5.6.2.2 Conventional times and currents for "gR" and "gS" fuse-links

The conventional times and currents are given in table II.

SIST EN 60269-4:1998/A2:2004
<https://standards.iteh.ai/catalog/standards/sist/2fc38b17-d09e-4e23-909d-6d9a8eaedb70/sist-cn-60269-4-1998-a2-2004>

Table II – Conventional times and currents for “gR” and “gS” fuse-links

Rated current A	Conventional time h	Conventional current			
		Type “gR”		Type “gS”	
		I_{nf}	I_f	I_{nf}	I_f
$I_n \leq 63$	1				
$63 < I_n \leq 160$	2	$1,1 I_n$	$1,6 I_n$	$1,25 I_n$	$1,6 I_n$
$160 < I_n \leq 400$	3				
$400 < I_n$	4				

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5.7.1 Breaking range and utilization category

Replace the existing text by the following:

The first letter shall indicate the breaking range:

- “a” fuse-links (partial range breaking capacity, see 7.4);
- “g” fuse-links (full range breaking capacity).

The second letter “R” and “S” shall indicate the utilization category for fuse-links complying with this standard for the protection of semiconductor devices.

The type “R” is faster acting than type “S” and gives lower I^2t values.

The type “S” has lower power dissipation and gives enhanced utilization of cables compared to type “R”.

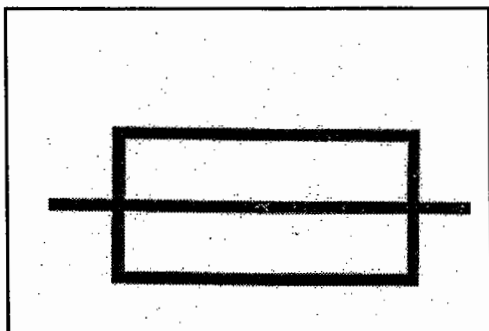
Page 21

6.2 Markings on fuse-links

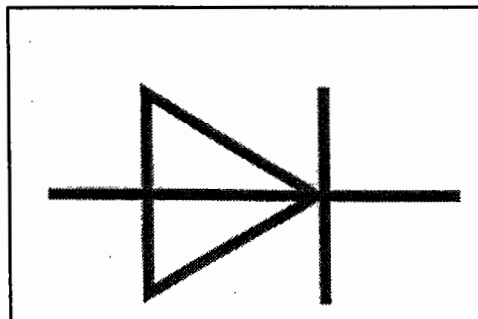
Replace the existing text by the following:

Subclause 6.2 of IEC 60269-1 applies with the following additions:

- manufacturer's identification reference and/or symbols enabling all the characteristics listed in 5.1.2 of IEC 60269-1 to be found;
- utilization category, “aR” or “gR” or “gS”;
- a combination of symbols of a fuse (5016) and rectifier (5186) as shown below:



Symbol 5016 in IEC 60417-2



Symbol 5186 in IEC 60417-2

7.4 Operation

Replace the existing text by the following:

The fuse-link shall be so designed and proportioned as to carry continuously any value of current up to its rated current (see 8.4.3.4).

“aR” fuse-links shall operate and break the circuit for any current value not exceeding the rated breaking capacity and not less than a current sufficient to melt the fuse element(s) in a time not exceeding 30 s.

NOTE By agreement between manufacturer and user, shorter times may be chosen for special applications.

For “gR” and “gS” fuse-links within the conventional time:

- its fuse-element does not melt, when it carries any current not exceeding the conventional non-fusing current (I_{nf});
- it operates when it carries any current equal to or exceeding the conventional fusing current (I_f).

Page 23

8.1.4 Arrangement of the fuse-link

Replace the existing text by the following and delete the footnote at the bottom of the page.

The fuse-link shall be mounted open in surroundings free from draughts and, unless otherwise specified, in a vertical position (see 8.3.1). Examples of test arrangements are given in figures 2a and 2b. Test arrangements for other kinds of fuse-links are given in IEC 60269-2-1: *Supplementary requirements for fuses for use by authorised persons (fuses mainly for industrial application)* and IEC 60269-3-1: *Supplementary requirements for fuses for use by unskilled persons (fuses mainly for household and similar applications)*.