SLOVENSKI STANDARD
SIST EN 60269-4:2010/A2:2017

01-maj-2017

Nizkonapetostne varovalke - 4. del: Dodatne zahteve za taljive vložke za zaščito polprevodniških naprav - Dopolnilo A2 (IEC 60269-4:2009/A2:2016)

Low-voltage fuses - Part 4: Supplementary requirements for fuse-links for the protection of semiconductor devices (IEC 60269-4:2009/A2:2016)

Niederspannungssicherungen - Teil 4: Zusätzliche Anforderungen an Sicherungseinsätze zum Schutz von Halbleiter-Bauelementen (IEC 60269-4:2009/A2:2016)

Fusibles basse tension - Partie 4: Exigences supplémentaires concernant les éléments de remplacement utilisés pour la protection des dispositifs à semiconducteurs (IEC 60269-4:2009/A2:2016)

Ta slovenski standard je istoveten z: EN 60269-4:2009/A2:2016

ICS:

29.120.50	Varovalke in druga nadtokovna zaščita	Fuses and other overcurrent protection devices

SIST EN 60269-4:2010/A2:2017 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60269-4:2009/A2

December 2016

ICS 29.120.50

English Version

Low-voltage fuses - Part 4: Supplementary requirements for fuse-links for the protection of semiconductor devices (IEC 60269-4:2009/A2:2016)

Fusibles basse tension - Partie 4: Exigences supplémentaires concernant les éléments de remplacement utilisés pour la protection des dispositifs à semiconducteurs (IEC 60269-4:2009/A2:2016)

Niederspannungssicherungen - Teil 4: Zusätzliche Anforderungen an Sicherungseinsätze zum Schutz von Halbleiter-Bauelementen (IEC 60269-4:2009/A2:2016)

This amendment A2 modifies the European Standard EN 60269-4:2009; it was approved by CENELEC on 2016-09-16. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 60269-4:2009/A2:2016 E

European foreword

The text of document 32B/651/FDIS, future IEC 60269-4:2009/A2, 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 60269-4:2009/A2:2016.

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)	2017-06-16
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2019-09-16

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

This standard covers the Principle Elements of the Safety Objectives for Electrical Equipment Designed for Use within Certain Voltage Limits (LVD2 - 2014/35/EU).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

Endorsement notice

The text of the International Standard IEC 60269-4:2009/A2:2016 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Add the following new references :

Publication	Year	Title	EN/HD	Year
IEC/TR 60269-5	-	Low-voltage fuses -- Part 5: Guidance for the application of low-voltage fuses	CLC/TR 60269-5	-

Replace the first two referenes with the following new references:

Publication	Year	Title	EN/HD	Year
IEC 60269-1	-	Low-voltage fuses -- Part 1: General requirements	EN 60269-1	-
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	HD 60269-2	-

Annex ZZ
(informative)

Relationship between this European standard and the safety objectives of Directive 2014/35/EU [2014 OJ L96] aimed to be covered

This European Standard has been prepared under a Commission's standardization request relating to harmonized standards in the field of the Low Voltage Directive, M/511, to provide one voluntary means of conforming to safety objectives of Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits [2014 OJ L96].

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZZ.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding safety objectives of that Directive, and associated EFTA regulations.

Table ZZ.1 – Correspondence between this European standard and Annex I of Directive 2014/35/EU [2014 OJ L96]

Safety objectives of Directive 2014/35/EU	Clause(s) / sub-clause(s) of this EN	Remarks / Notes
Safety Objectives of Annex I paragraph 1, 2 and 3	Based on a Risk Assessment according to CENELEC GUIDE 32 all requirements are covered by complying all clauses.	Details are compiled in IEC SC 32B document 32B/653/INF

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the product(s) falling within the scope of this standard.

IEC 60269-4

Edition 5.0 2016-08

INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 2
AMENDEMENT 2

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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FOREWORD

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

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

FDIS	Report on voting
32B/651/FDIS	32B/663/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 this amendment and the base publication will remain unchanged until the stability date indicated on the IEC website 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.

1.1 Scope and object

Insert, after existing Note 3, the following new Note 4:

NOTE 4 These fuse-links are intended for use on systems employing the standardized voltages and tolerances of IEC 60038. Tests carried out on fuse-links in accordance with previous editions of this standard shall remain valid until such time as complimentary equipment has evolved to the standardized voltages and tolerances of IEC 60038.

Replace

d) availability and presentation of technical data (see Annex B).

with the following new text:

d) availability and presentation of technical data (see Annex BB).

1.2 Normative references

Replace the first two references with the following new references:

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 application) – Examples of standardized systems of fuses A to K*

Add, after IEC 60269-3:

IEC TR 60269-5, *Low-voltage fuses – Part 5: Guidance for the application of low-voltage fuses*

IEC 60269-6, *Low-voltage fuses – Part 6: Supplementary requirements for fuse-links for the protection of solar photovoltaic energy systems*

Add, after IEC 60417:

IEC 60664-1:2000, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

2.2.105
voltage source inverter fuse-link
VSI fuse-link

Replace the second sentence of NOTE 2 with the following new text:

This short circuit condition leads to a very high rate of rise of current equivalent to a very low value of time constant, typically 3 ms or less.

3.6.3 Time constant (τ)

Add, after Note 2, the following new NOTE 3:

NOTE 3 Instead of time constant di/dt can be used in case of short circuit condition

di/dt = E/L.

E= voltage value of the DC power source

L = total inductance of the capacitor discharge circuit.

5.1.2 Fuse-links

Replace the order of the letters:

j)

k)

l)

by the following:

i)

j)

k)

Table 101 – Conventional times and currents for “gR” and “gS” fuse-links

In the third column, replace "1,13 I_n" *by* "1,1 I_n".

Replace, in the NOTE a:

In Annex C, some examples .....

by the following new text:

In Annex CC, some examples .....

5.7.2 Rated breaking capacity

Add, before the NOTE:

For VSI the rated breaking capacity is based on type tests performed in a circuit containing very low inductance and resistance with d.c. or capacitor discharged applied voltage.

7.4 Operation

Delete, in the 1st sentence of Subclause 7.4, "(see 8.4.3.4)".

Replace, at the beginning of the first indent, "its fuse-element"

by

"it"

8.3.3 Measurement of power dissipation of the fuse-link

Replace the first sentence of 8.3.3 with the following new text:

In addition to 8.3.3 of IEC 60269-1, the following applies: the power dissipation test shall be made successively at least at 50 % and at 100 % of rated current. This test may be performed with either ac or dc.

Add, after Subclause 8.3.3, the following new subclause and table:

8.3.4 Test method

The cross-sectional area of copper conductors for high current ratings tests corresponding to Subclauses 8.3 and 8.4 is defined in Table 107.

Table 107 – Cross-sectional area of copper conductors for high current ratings tests

Rated current *(IN)* A	Cross-sectional area (mm × mm)
1 600	2 × 100 × 5
2 000	3 × 100 × 5
2 500	4 × 100 × 5
3 150	3 × 100 × 10
≥ 4 000	IN *x* mm^2 / A[a]
[a] For currents ≥ 4 000 A the cross sectional area is defined with a current density = 1 A/mm^2.	

8.3.5 Acceptability of test results

Delete the second paragraph of Subclause 8.3.5.

8.4.3.2 Verification of rated current (see AA.3.3)

Delete the third paragraph of Subclause 8.4.3.2.

8.4.3.4 Overload

Delete the third paragraph of Subclause 8.4.3.4.