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Low-voltage fuses - Part2-1: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) - Sections I to V: Examples of types of standardized fuses for use by authorized persons

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

Niederspannungssicherungen (NH-System) -- Teil 2-1: Zusätzliche Anforderungen an Sicherungen zum Gebrauch durch Elektrofachkräfte bzw. elektrotechnisch unterwiesene Personen (Sicherungen überwiegend für den industriellen Gebrauch) -- Hauptabschnitte I bis V: Beispiele von genormten Sicherungstypen zum Gebrauch durch Elektrofachkräfte bzw. elektrotechnisch unterwiesene Personen

Fusibles basse tension -- Partie 2-1: Règles supplémentaires pour les fusibles destinés à être utilisés par des personnes habilitées (fusibles pour usages essentiellement industriels) -- Sections I à V: Exemples de fusibles normalisés destinés à être utilisés par des personnes habilitées

Ta slovenski standard je istoveten z: HD 630.2.1 S3:1998

ICS:

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| 29.120.50 | Xæ[çæ\ ^Á\ Ái\ * æ { ^âç \ [ç} æÁ æz ææ | Fuses and other overcurrent protection devices |
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HARMONISIERUNGSDOKUMENT

HD 630.2.1 S3

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Supersedes HD 630.2.1 S2:1997

Descriptors: Low-voltage fuses, fuse-links with blades, fuse-links with bolted connections, fuse-links having cylindrical contact caps, industrial application, supplementary requirements, marking, testing

English version

Low-voltage fuses
Part 2-1: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application)
Sections I to V: Examples of types of standardized fuses for use by authorized persons
(IEC 60269-2-1:1996, modified)

Fusibles basse tension

Partie 2-1: Règles supplémentaires pour les fusibles destinés à être utilisés par des personnes habilitées (fusibles pour usages essentiellement industriels)

Sections I à V: Exemples de fusibles normalisés destinés à être utilisés par des personnes habilitées

(CEI 60269-2-1:1996, modifiée)

Niederspannungssicherungen (NH-System)

Teil 2-1: Zusätzliche Anforderungen an Sicherungen zum Gebrauch durch

Elektrofachkräfte bzw. elektrotechnisch unterwiesene Personen (Sicherungen

überwiegend für den industriellen Gebrauch)

Hauptabschnitte I bis V: Beispiele von

genannten Sicherungstypen zum Gebrauch

durch Elektrofachkräfte bzw. elektrotechnisch unterwiesene Personen

(IEC 60269-2-1:1996, modifiziert)

This Harmonization Document was approved by CENELEC on 1998-10-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for implementation of this Harmonization Document on a national level.

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

This Harmonization Document exists in three official versions (English, French, German).

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, 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 the International Standard IEC 60269-2-1:1996, prepared by SC 32B, Low-voltage fuses, of IEC TC 32, Fuses, together with common modifications prepared by the CENELEC BTTF 56-2, Low-voltage fuses, was submitted to the formal vote and was approved by CENELEC as HD 630.2.1 S3 on 1998-10-01.

This Harmonization Document supersedes HD 630.2.1 S2:1997.

The following dates were fixed:

- latest date by which the existence of the HD
has to be announced at national level (doa) 1999-02-01
- latest date by which the HD has to be implemented
at national level by publication of a harmonized
national standard or by endorsement (dop) 1999-08-01
- latest date by which the national standards conflicting
with the HD have to be withdrawn (dow) 1999-08-01

This Harmonization Document is to be read in conjunction with EN 60269-1:1989 and EN 60269-2:1995.

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Endorsement notice

The text of the International Standard IEC 60269-2-1:1996 was approved by CENELEC as a Harmonization Document with agreed common modifications as given below.

COMMON MODIFICATIONS**1 General**

Replace the note by:

The following fuse systems are standardized systems in respect to their safety aspects. The National Committees shall select at least one complete section of this standard for their standards.

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Fusibles basse tension –

Partie 2-1:

Règles supplémentaires pour les fusibles destinés à être utilisés par des personnes habilitées (fusibles pour usages essentiellement industriels) –

Sections I à V: Exemples de fusibles normalisés destinés à être utilisés par des personnes habilitées

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Low-voltage fuses –

Part 2-1:

Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application) –

Sections I to V: Examples of types of standardized fuses for use by authorized persons

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CONTENTS

| | Page |
|--|------|
| FOREWORD | 11 |
| EXPLANATORY NOTE | 13 |
| Clause | |
| 1 General | 13 |
| SECTION I – FUSES WITH FUSE-LINKS WITH BLADE CONTACTS | |
| 1.1 Scope | 15 |
| 5.2 Rated voltage | 15 |
| 5.3.1 Rated current of the fuse-link | 15 |
| 5.3.2 Rated current of the fuse-holder | 15 |
| 5.5 Rated power dissipation of a fuse-link and rated power acceptance of a fuse-holder | 15 |
| 5.6 Limits of time-current characteristics | 15 |
| 5.6.1 Time-current characteristics, time-current zones and overload curves | 15 |
| 5.6.2 Conventional times and currents | 17 |
| 5.6.3 Gates | 17 |
| 6 Marking | 17 |
| 6.1 Markings of fuse-holders | 17 |
| 6.2 Markings of fuse-links | 19 |
| 7.1 Mechanical design | 19 |
| 7.1.2 Connections including terminals | 19 |
| 7.1.3 Fuse-contacts | 21 |
| 7.1.7 Construction of a fuse-link | 21 |
| 7.7 I^2t characteristics | 21 |
| 7.8 Overcurrent discrimination of "gG" fuse-links | 23 |
| 7.9 Protection against electric shock | 23 |
| 8.1.6 Testing of fuse-holders | 23 |
| 8.3 Verification of temperature rise and power dissipation | 25 |
| 8.3.1 Arrangement of the fuse | 25 |
| 8.3.4.1 Temperature rise of the fuse-holder | 25 |
| 8.3.4.2 Power dissipation of a fuse-link | 25 |
| 8.4.3.5 Conventional cable overload protection (for "gG" fuse-links only) | 25 |
| 8.5.5.1 Verification of the peak withstand current of a fuse-base | 25 |
| 8.7.4 Verification of overcurrent discrimination | 27 |
| 8.9 Verification of resistance to heat | 29 |
| 8.9.1 Fuse-base | 29 |
| 8.9.2 Fuse-links with gripping lugs of moulded material or of metal fixed in moulded material | 31 |
| 8.10 Verification of non-deterioration of contacts and direct terminal clamps | 33 |
| 8.10.1 Arrangement of the fuse | 33 |
| 8.10.2 Test method | 35 |
| 8.10.3 Acceptability of test results | 37 |
| 8.11 Mechanical and miscellaneous tests | 41 |
| Figures | 44 |
| Annex A – Special test for cable overload protection | 59 |

SECTION II: FUSES WITH FUSE-LINKS FOR BOLTED CONNECTIONS

| Clause | | Page |
|---------|---|------|
| 1.1 | Scope | 61 |
| 5.3.1 | Rated current of the fuse-link | 61 |
| 5.3.2 | Rated current of the fuse-holder | 61 |
| 5.5 | Rated power dissipation of a fuse-link and rated power acceptance of a fuse-holder | 61 |
| 5.6 | Limits of time-current characteristics | 61 |
| 5.6.1 | Time-current characteristics, time-current zones and overload curves | 61 |
| 5.6.2 | Conventional times and currents | 61 |
| 5.6.3 | Gates | 63 |
| 5.7.2 | Rated breaking capacity | 63 |
| 7.1 | Mechanical design | 63 |
| 7.1.2 | Connections including terminals | 63 |
| 7.9 | Protection against electric shock | 63 |
| 8.3 | Verification of temperature rise and power dissipation | 63 |
| 8.3.1 | Arrangement of the fuse | 63 |
| 8.3.3 | Measurement of the power dissipation of the fuse-link | 63 |
| 8.4 | Verification of operation | 63 |
| 8.4.1 | Arrangement of the fuse | 63 |
| 8.5 | Verification of breaking capacity | 65 |
| 8.5.1 | Arrangement of the fuse | 65 |
| 8.5.8 | Acceptability of test results | 65 |
| 8.10 | Verification of non-deterioration of contacts | 65 |
| 8.10.1 | Arrangement of the fuse | 65 |
| 8.10.2 | Test method | 65 |
| 8.10.3 | Acceptability of test results | 65 |
| Figures | | 66 |

SECTION III: FUSES WITH FUSE-LINKS HAVING CYLINDRICAL CONTACT CAPS

| | | |
|-------|---|----|
| 1.1 | Scope | 77 |
| 5.2 | Rated voltage | 77 |
| 5.3.1 | Rated current of the fuse-link | 77 |
| 5.3.2 | Rated current of the fuse-holder | 77 |
| 5.5 | Rated power dissipation of a fuse-link and rated power acceptance of a fuse-holder | 79 |
| 5.6 | See section I, subclause 5.6 | 79 |

| Clause | Page |
|--|------|
| 6 See section I, clause 6 | 79 |
| 7.1 Mechanical design | 79 |
| 7.1.2 Connections including terminals | 79 |
| 7.7 See section I, subclause 7.7 | 81 |
| 7.8 See section I, subclause 7.8 | 81 |
| 7.9 See section I, subclause 7.9 | 81 |
| 8.1.6 See section I, subclause 8.1.6 | 81 |
| 8.3.1 Arrangement of the fuse | 81 |
| 8.3.4.1 Temperature-rise of the fuse-holder | 83 |
| 8.3.4.2 See section I, subclause 8.3.4.2 | 83 |
| 8.7.4 See section I, subclause 8.7.4 | 83 |
| 8.10 Verification of non-deterioration of contacts | 83 |
| 8.10.1 Arrangement of the fuse | 83 |
| 8.10.2 Test method | 83 |
| 8.10.3 Acceptability of test results | 83 |
| Figures | 84 |

SECTION IV – FUSES WITH FUSE-LINKS WITH OFFSET BLADE CONTACTS

| | |
|---|----|
| 1.1 Scope | 89 |
| 5.2 Rated voltage | 89 |
| 5.3.1 Rated current of the fuse-link | 89 |
| 5.3.2 Rated current of the fuse-holder | 89 |
| 5.5 Rated power dissipation of a fuse-link and rated power acceptance of a fuse-holder | 89 |
| 5.6.1 Time-current characteristics, time-current zones | 89 |
| 5.6.2 Conventional times and currents | 91 |
| 5.6.3 Gates | 91 |
| 5.7.2 Rated breaking capacity | 91 |
| 7.1 Mechanical design | 91 |
| 7.1.2 Connections including terminals | 93 |
| 7.7 I^2t characteristics | 93 |
| 7.9 Protection against electric shock | 93 |
| 8.3.3 Measurement of the power dissipation of the fuse-link | 93 |
| 8.3.4.1 Temperature rise of the fuse-holder | 93 |
| 8.4.1 Arrangement of the fuse | 95 |
| 8.5.1 Arrangement of the fuse | 95 |
| 8.7.4 Verification of overcurrent discrimination | 95 |
| 8.10 Verification of non-deterioration of contacts | 95 |
| 8.10.1 Arrangement of the fuse | 95 |
| 8.10.2 Test method | 95 |
| 8.10.3 Acceptability of test results | 95 |
| Figures | 96 |

SECTION V – FUSES WITH FUSE-LINKS HAVING "gD" AND
"gN" CHARACTERISTICS

| Clause | | Page |
|---------|---|------|
| 1.1 | Scope | 103 |
| 5.2 | Rated voltage | 103 |
| 5.3.1 | Rated current of the fuse-link | 103 |
| 5.3.2 | Rated current of the fuse-holder | 103 |
| 5.5 | Rated power dissipation of a fuse-link and rated power acceptance of a fuse-holder | 103 |
| 5.6 | Limits of the time-current characteristics | 103 |
| 5.6.1 | Time-current characteristics, time-current zones | 103 |
| 5.6.2 | Conventional times and currents | 105 |
| 5.6.3 | Gates | 105 |
| 5.7.2 | Rated breaking capacity | 105 |
| 7.1 | Mechanical design | 105 |
| 7.6 | Cut-off current characteristics | 105 |
| 7.7 | I^2t characteristics | 107 |
| 7.9 | Protection against electric shock | 109 |
| 8.3 | Verification of temperature rise and power dissipation | 109 |
| 8.3.1 | Arrangement of the fuse | 109 |
| 8.3.4.1 | Temperature rise of the fuse-holder | 109 |
| 8.3.4.2 | Power dissipation of a fuse-link | 109 |
| 8.4 | Verification of operation | 111 |
| 8.4.1 | Arrangement of the fuse | 111 |
| 8.6 | Verification of cut-off current characteristics | 111 |
| 8.7 | Verification of I^2t characteristics and overcurrent discrimination | 113 |
| 8.10 | Verification of non-deterioration of contacts | 113 |
| 8.10.1 | Arrangement of the fuse | 113 |
| 8.10.2 | Test method | 115 |
| 8.10.3 | Acceptability of test results | 115 |
| 8.11.2 | Miscellaneous tests | 115 |
| Figures | | 116 |

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 V: Examples of types of standardized fuses
for use by authorized persons**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters, express as nearly as possible an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
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- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 269-2-1 has been prepared by subcommittee 32B: Low-voltage fuses, of IEC technical committee 32: Fuses.

This second edition cancels and replaces the first edition published in 1987, amendment 1 (1993) and amendment 2 (1994). This second edition constitutes a technical revision.

The text of this standard is based on the first edition, amendment 1, amendment 2 and the following documents:

| FDIS | Report on voting |
|--------------|------------------|
| 32B/241/FDIS | 32B/255/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.

LOW-VOLTAGE FUSES -

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

Explanatory note

In view of the fact that this standard should be read together with IEC 269-1 and 269-2, 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 269-1; 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 269-1: *Low-voltage fuses - Part 1: General requirements, and*

IEC 269-2: *Low-voltage fuses - Part 2: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial applications).*

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

Section I: Fuses with fuse-links with blade contacts.

Section II: Fuses with fuse-links for bolted connections.

Section III: Fuses with fuse-links having cylindrical contact caps.

Section IV: Fuses with fuse-links with offset blade contacts.

Section V: Fuses with fuse-links having "gD" and "gN" characteristics.

NOTE - The following fuse systems are standardized systems in respect to their safety aspects. The National Committees may select from the examples of standardized fuses one or more systems for their own standards.

Section I – Fuses with fuse-links with blade contacts

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, 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 690 V a.c. or 440 V d.c.

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: a.c. 500 V – d.c. 250 V, a.c. 500 V – d.c. 440 V, a.c. 500 V, etc.

5.3.1 Rated current of the fuse-link

For each size the maximum rated currents are given in figure 1(I). These values depend upon the utilization categories and rated voltages.

5.3.2 Rated current of the fuse-holder

The rated current for the different sizes of the fuse-bases is given in figure 2(I).

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5.5 Rated power dissipation of a fuse-link and rated power acceptance of a fuse-holder

The maximum values of rated power dissipation for the different sizes of fuse-links are specified in figure 1(I). The values apply to the maximum rated currents of the fuse-links. The values of rated power acceptance of fuse-bases are given in figure 2(I).

5.6 Limits of time-current characteristics

5.6.1 Time-current characteristics, time-current zones and overload curves

The tolerance on time-current characteristics given by the manufacturer shall not deviate by more than $\pm 10\%$ in terms of current. The time-current zones given in figure 4(I), including manufacturing tolerances shall be met by all pre-arcing and total times measured at the test voltage according to 8.7.4.

* Refers to section I.

5.6.2 Conventional times and currents

The conventional times and currents, in addition to the values of IEC 269-1, are given in table II.

Table II – Conventional time and current for "gG" fuse-links with rated current lower than 16 A

| Rated current I_n A | Conventional time h | Conventional current | |
|--------------------------|------------------------|----------------------|-----------|
| | | I_{nf} | I_t |
| $I_n \leq 4$ | 1 | $1,5 I_n$ | $2,1 I_n$ |
| $4 < I_n < 16$ | 1 | $1,5 I_n$ | $1,9 I_n$ |

5.6.3 Gates

For "gG" fuse-links the gates given in table III apply, in addition to the gates of IEC 269-1.

Table III – Gates for specified pre-arcing and operating times of "gG" fuse-links with rated current lower than 16 A

| I_n A | I_{min} (10 s) A | I_{max} (5 s) A | I_{min} (0,1 s) A | I_{max} (0,1 s) A |
|------------|-----------------------|----------------------|------------------------|------------------------|
| 2 | 3,7 | 9,2 | 6,0 | 23,0 |
| 4 | 7,8 | 18,5 | 14,0 | 47,0 |
| 6 | 11,0 | 28,0 | 26,0 | 72,0 |
| 8 | 16,0 | 35,2 | 41,6 | 92,0 |
| 10 | 22,0 | 46,5 | 58,0 | 110,0 |
| 12 | 24,0 | 55,2 | 69,6 | 140,4 |

6 Marking

Fuse-links and fuse-holders which meet the requirements and tests of section I of this standard may be marked with 269-2-1.

6.1 Markings of fuse-holders

The marking of the rated current and the rated voltage shall be discernible from the front when a fuse-link has not been fitted.