



SLOVENSKI STANDARD
SIST EN 60127-4:1998
01-april-1998

Miniature fuses - Part 4: Universal Modular Fuse-links (UMF) (IEC 60127-4:1996)

Miniature fuses -- Part 4: Universal Modular Fuse-links (UMF)

Geräteschutzsicherungen -- Teil 4: Welteinheitliche Modular-Sicherungseinsätze (UMF)

Coupe-circuit miniatures -- Partie 4: Eléments de remplacement modulaires universels (UMF)

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Ta slovenski standard je istoveten z: EN 60127-4:1996

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ICS:

29.120.50	Xæ[çæ ^ Å Ái ~ * æ { ^ âç \ [ç} æ Å æ ææ	Fuses and other overcurrent protection devices
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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60127-4

October 1996

ICS 29.120.50

Descriptors: Universal modular fuse-links (UMF), definitions, additional requirements, standard ratings, marking, test equipment, dimensions and construction, standard sheets

English version

Miniature fuses
Part 4: Universal Modular Fuse-links (UMF)
(IEC 127-4:1996)

Coupe-circuit miniatures
Partie 4: Eléments de remplacement
modulaires universels (UMF)
(CEI 127-4:1996)

Geräteschutzsicherungen
Teil 4: Welteinheitliche
Modular-Sicherungseinsätze (UMF)
(IEC 127-4:1996)

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This European Standard was approved by CENELEC on 1996-10-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard 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 European Standard 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, 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 document 32C/155/FDIS, future edition 2 of IEC 127-4, prepared by SC 32C, Miniature fuses, of IEC TC 32, Fuses, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60127-4 on 1996-10-01.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 1997-07-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 1997-07-01

For products which have complied with the relevant national standard before 1997-07-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 2002-07-01.

Annexes designated "normative" are part of the body of the standard.
In this standard, annex ZA is normative.
Annex ZA has been added by CENELEC.

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Endorsement notice
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The text of the International Standard IEC 127-4:1996 was approved by CENELEC as a European Standard without any modification.

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Annex ZA (normative)

**Normative references to international publications
with their corresponding European publications**

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 68-2-20	1979	Basic environmental testing procedures Part 2: Tests - Test T: Soldering	HD 323.2.20 S3 ¹⁾	1988
IEC 68-2-21	1983	Part 2: Tests - Test U: Robustness of terminations and integral mounting devices	HD 323.2.21 S3 ²⁾	1988
IEC 68-2-58	1989	Part 2: Tests - Test Td: Solderability, resistance to dissolution of metallization and to soldering heat of Surface Mounting Devices (SMD)	HD 323.2.58 S1	1991
IEC 115-1	1982	Fixed resistors for use in electronic equipment Part 1: Generic specification	-	-
A2	1987		-	-
A3	1989		-	-
A4	1993		-	-
IEC 115-8	1989	Part 8: Sectional specification: Fixed chip resistors	-	-
IEC 127-1	1988	Miniature fuses Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links	EN 60127-1 ³⁾	1991
IEC 194	1988	Terms and definitions for printed circuits	HD 142 S3	1991

1) HD 323.2.20 S3 includes A2:1987 to IEC 68-2-20.

2) HD 323.2.21 S3 includes A1:1985 to IEC 68-2-21.

3) EN 60127-1 includes the corrigendum March 1990 to IEC 127-1.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 249-2-5	1987	Base materials for printed circuits Part 2: Specifications Specification No. 5: Epoxide woven glass fabric copper-clad laminated sheet of defined flammability (vertical burning test)	EN 60249-2-5 ⁴⁾ + corr. March	1994 1994
IEC 326-3	1991	Printed boards Part 3: Design and use of printed boards	-	-
IEC 664-1 (mod)	1992	Insulation coordination for equipment within low-voltage systems Part 1: Principles, requirements and tests	HD 625.1 S1	1996
ISO 3	1973	Preferred numbers - Series of preferred numbers	-	-

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4) EN 60249-2-5 includes A2:1992 to IEC 249-2-5.

**NORME
INTERNATIONALE
INTERNATIONAL
STANDARD**

**CEI
IEC**

127-4

Deuxième édition
Second edition
1996-08

Coupe-circuit miniatures –

Partie 4:

**Éléments de remplacement modulaires universels
(UMF)**

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Miniature fuses – (www.iteh.ai)

Part 4: SIST EN 60127-4:1998

Universal Modular Fuse-links (UMF)

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International Electrotechnical Commission
Международная Электротехническая Комиссия

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Standard sheet 2 – Surface mount fuse-links

INTERNATIONAL ELECTROTECHNICAL COMMISSION

MINIATURE FUSES -

Part 4: Universal Modular Fuse-links (UMF)

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.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 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 127-4 has been prepared by sub-committee 32C: Miniature fuses, of IEC technical committee 32: Fuses.

This second edition cancels and replaces the first edition, which was issued as a Technical Trend Document (TTD) in 1989. It constitutes therefore a technical revision and now has the status of an International Standard.

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

FDIS	Report on voting
32C/155/FDIS	32C/166/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.

INTRODUCTION

The trend towards miniaturization of electronic equipment has caused users to require fuse-links of small dimensions, and of appropriate design for application to printed circuit boards or other substrate systems, possibly by automatic means. These fuse-links should be designed to incorporate a degree of non-interchangeability.

Rated voltages of 32 V, 63 V, 125 V, and 250 V are specified together with the following characteristics: very quick acting (FF), quick acting (F), time-lag (T) and long time-lag (TT).

Because of the increasing importance of limitation of transient overvoltages in new technology, recommendations are included for limits to the overvoltages produced by these fuses under specified test conditions related to typical circuit configurations.

The option is given to specify the breaking capacity with alternating current or direct current; it is considered that fuses that meet the d.c. requirement will meet the a.c. requirement; however, testing is required to validate this. Fuses may be dual rated, in which case the manufacturer's literature should be referred to.

The users of miniature fuses express the wish that all standards, recommendations and other documents relating to miniature fuses should have the same publication number in order to facilitate reference to fuses in other specifications, for example, equipment specifications.

Furthermore, a single publication number and subdivision into parts would facilitate the establishment of new standards, because clauses and subclauses containing general requirements need not be repeated.

The new IEC 127 series is thus subdivided as follows:

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IEC 127: Miniature fuses (general title)

IEC 127-1, Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links

IEC 127-2, Part 2: Cartridge fuse-links

IEC 127-3, Part 3: Sub-miniature fuse-links

IEC 127-4, Part 4: Universal Modular Fuse-links (UMF)

IEC 127-5, Part 5: Guidelines for quality assessment of miniature fuse-links

IEC 127-6, Part 6: Fuse-holders for miniature fuse-links

IEC 127-7: (Free for further documents)

IEC 127-8: (Free for further documents)

IEC 127-9, Part 9: Test-holders and test-circuits

IEC 127-10, Part 10: User guide

The fourth part of this standard covers additional requirements, test equipment and standard sheets for UMFs.

It should be read in conjunction with other parts of the IEC 127 series.

MINIATURE FUSES –

Part 4: Universal Modular Fuse-links (UMF)

SECTION 1: ADDITIONAL REQUIREMENTS AND TEST EQUIPMENT

1 Scope and object

1.1 This part of IEC 127 relates to Universal Modular Fuse-links (UMF) for printed circuits and other substrate systems, used for the protection of electric appliances, electronic equipment, and component parts thereof, normally intended to be used indoors.

It does not apply to fuse-links for appliances intended to be used under special conditions, such as in a corrosive or explosive atmosphere.

These fuses are normally intended to be mounted or replaced only by appropriately skilled persons using specialized equipment.

Fuse-links for use in fuse-holders are under consideration.

This standard applies in addition to the requirements of IEC 127-1.

1.2 The objects of this part of IEC 127 are as given in IEC 127-1, with the additional requirement of a degree of non-interchangeability.

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2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 127. At the time of publication, the editions indicated were valid. All normative documents are subject to revision and parties to agreements based on this part of IEC 127 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 68-2-20: 1979, *Environmental testing – Part 2: Tests – Test T: Soldering*

IEC 68-2-21: 1983, *Environmental testing – Part 2: Tests – Test U: Robustness of terminations and integral mounting devices*

IEC 68-2-58: 1989, *Environmental testing – Part 2: Tests – Test Td: Solderability, resistance to dissolution of metallization and to soldering heat of Surface Mounting Devices (SMD)*

IEC 115-1: 1982, *Fixed resistors for use in electronic equipment – Part 1: Generic specification*

Amendment 2 (1987)

Amendment 3 (1989)

Amendment 4 (1993)

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IEC 115-8: 1989, *Fixed resistors for use in electronic equipment – Part 8: Sectional specification: Fixed chip resistors*

IEC 127-1: 1988, *Miniature fuses – Part 1: Definitions for miniature fuses and general requirements for miniature fuse-links*

IEC 194: 1988, *Terms and definitions for printed circuits*

IEC 249-2-5: 1987, *Base materials for printed circuits – Part 2: Specifications – Specification No. 5: Epoxide woven glass fabric copper-clad laminated sheet, of defined flammability (vertical burning test)*

IEC 326-3: 1991, *Printed boards – Part 3: Design and use of printed boards*

IEC 664-1: 1992, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

ISO 3: 1973, *Preferred numbers – Series of preferred numbers*

3 Definitions

The definitions given in clause 3 of IEC 127-1 apply for the purpose of this part of IEC 127, with the addition of the following:

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3.7.1 **through-hole fuse-link:** A through-hole fuse-link is a UMF designed for soldering directly into a printed wiring board, with insertion of its leads in suitably designed holes.

3.7.2 **surface mount fuse-link:** A surface mount fuse-link is a UMF designed for direct conductive attachment by solder or other means on to the surface of a substrate, without insertion of its leads in suitably designed holes or sockets.

3.28 **land:** Portion of a conductive pattern usually but not exclusively used for the connection and/or attachment of components (see IEC 194).

NOTE – Further definitions which may be useful in the application of surface mount fuse-links may be found in IEC 115-1 and IEC 115-8.

4 General requirements (see IEC 127-1)

5 Standard ratings

5.1 Rated voltage

See standard sheets.