



SLOVENSKI STANDARD
oSIST prEN IEC 60127-6:2021
01-julij-2021

Miniaturne varovalke - 6. del: Ohišja varovalk za miniaturne taljive vložke

Miniature fuses - Part 6: Fuse-holders for miniature fuse-links

Geräteschutzsicherungen - Teil 6: G-Sicherungshalter für G-Sicherungseinsätze

Coupe-circuit miniatures - Partie 6: Ensembles porteurs pour cartouches de coupe-circuits miniatures

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Ta slovenski standard je istoveten z: prEN IEC 60127-6:2021

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ICS:

29.120.50	Varovalke in druga nadtokovna zaščita	Fuses and other overcurrent protection devices
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32C/596/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

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DATE OF CIRCULATION: 2021-04-30	CLOSING DATE FOR VOTING: 2021-07-23
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IEC SC 32C : MINIATURE FUSES	
SECRETARIAT: China	SECRETARY: Mr Jianqiang Zou
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: <input type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input checked="" type="checkbox"/> SAFETY	
<input checked="" type="checkbox"/> SUBMITTED FOR CENELEC PARALLEL VOTING	<input type="checkbox"/> NOT SUBMITTED FOR CENELEC PARALLEL VOTING
<p>Attention IEC-CENELEC parallel voting</p> <p>The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting.</p> <p>The CENELEC members are invited to vote through the CENELEC online voting system.</p>	

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TITLE:

Miniature fuses - Part 6: Fuse-holders for miniature fuse-links

PROPOSED STABILITY DATE: 2024

NOTE FROM TC/SC OFFICERS:

Please note that the modifications in this CDV compared to the 32C_565_CD are highlighted by colors, for easier reading

- Red for modified contents.
- Green for new added contents.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MINIATURE FUSES –

Part 6: Fuse-holders for miniature fuse-links

FOREWORD

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International Standard IEC 60127-6 has been prepared by subcommittee 32C: Miniature fuses, of IEC technical committee 32: Fuses.

This third edition cancels and replaces the second edition published in 2014.

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

a) ...;

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

FDIS	Report on voting
32C/XX/FDIS	32C/XX/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.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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

- 54 • reconfirmed,
- 55 • withdrawn,
- 56 • replaced by a revised edition, or
- 57 • amended.

58

59 The National Committees are requested to note that for this publication the stability date
60 is

61 THIS TEXT IS INCLUDED FOR THE INFORMATION OF THE NATIONAL COMMITTEES AND WILL BE DELETED
62 AT THE PUBLICATION STAGE.

63

64

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65

INTRODUCTION

66 According to the wish expressed by the users of miniature fuses, all standards,
67 recommendations and other documents relating to miniature fuses should have the same
68 publication number in order to facilitate reference to fuses in other specifications, for example,
69 equipment specifications.

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

73 The new IEC 60127 series is thus subdivided as follows:

74 IEC 60127, *Miniature fuses* (general title)

75 IEC 60127-1, *Part 1: Definitions for miniature fuses and general requirements for miniature*
76 *fuse-links*

77 IEC 60127-2, *Part 2: Cartridge fuse-links*

78 IEC 60127-3, *Part 3: Sub-miniature fuse-links.*

79 IEC 60127-4, *Part 4: Universal modular fuse-links (UMF) – Through-hole and surface mount*
80 *types*

81 IEC 60127-5, *Part 5: Guidelines for quality assessment of miniature fuse-links*

82 IEC 60127-6, *Part 6: Fuse-holders for miniature fuse-links*

83 IEC 60127-7, *Part 7: Miniature fuse-links for special applications*

84 IEC 60127-8 *Part 8: Fuse resistors with particular overcurrent protection*

85 IEC 60127-9 (free for further documents)

86 IEC 60127-10, *Part 10: User guide for miniature fuses*

87 This part of IEC 60127 covers requirements, test equipment and test methods for fuse-holders.
88 It is a self-standing document, which refers back to Part 1 with regard to certain definitions and
89 the atmospheric conditions for test. It also makes reference to other parts of IEC 60127 with
90 regard to dimensions and maximum power losses of fuse-links.

91

92
93
94
95
96**MINIATURE FUSES –****Part 6: Fuse-holders for miniature fuse-links****1 Scope**

98 This part of IEC 60127 is applicable to fuse-holders for miniature cartridge fuse-links according
99 to IEC 60127-2, sub-miniature fuse-links according to IEC 60127-3, **universal modular fuse-**
100 **links to IEC 60127-4 and miniature fuse-links for special applications to IEC 60127-7** for the
101 protection of electric appliances, electronic equipment and component parts thereof, normally
102 intended for use indoors.

103
104

Requirements for IEC 60127-4 and IEC 60127-7 are under consideration.

105 It does not apply to fuse holders for fuses completely covered by the subsequent parts of IEC
106 60269-1.

107 Examples of fuse-holder types with different features are given in Table 1.

108 **Table 1 – Features of unexposed or exposed fuse-holders**

1	<i>Types of mounting</i>
1.1	Panel and base mounting
1.2	Printed circuit board mounting
2	<i>Methods of fastening</i>
2.1	Methods of fastening on panel:
2.1.1	Fixing nut fastening (threaded nut)
2.1.2	Snap-in fastening:
2.1.2.1	Fuse-base with an integral spring system
2.1.2.2	Fuse-base with a separate spring-nut (a nut fabricated, e.g. from thin spring steel having an impression designed to accommodate the mating part)
2.2	Methods of fastening on printed circuit (PC) board:
2.2.1	Solder fastening
2.2.2	Plug-in fastening
3	<i>Methods of insertion of the fuse-carrier into the fuse base</i>
3.1	Screw insertion
3.2	Bayonet insertion
3.3	Plug-in insertion
4	<i>Types of terminals</i>
4.1	Screw terminals
4.2	Solder terminals
4.3	Quick connect terminals
4.4	Other solderless terminals: – crimp terminals – wire wrap terminals
5	<i>Protection against electric shock</i>
5.1	Fuse-holder without integral protection against electric shock
5.2	Fuse-holder with integral protection against electric shock
5.3	Fuse-holder with enhanced integral protection against electric shock
NOTE This list is not intended to be comprehensive and fuse-holders which are not listed are not necessarily excluded from the scope.	

109

110 This standard applies to fuse-holders with:

- 111 – a maximum rated current of **25 A** and
- 112 – a maximum rated voltage of 1 500 V d.c. or 1 000 V a.c.; and
- 113 – for use up to 2 000 m above sea-level, unless otherwise specified.

114 The object of this standard is to establish uniform requirements for safety and the assessment
115 of electrical, mechanical, thermal and climatic properties of fuse-holders and the compatibility
116 between fuse-holders and fuse-links.

117 **2 Normative references**

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

122 IEC 60050 (all parts), *International Electrotechnical Vocabulary*

123

124 IEC 60068-1:2013, *Environmental testing - Part 1: General and guidance*

125

126 IEC 60068-2-1:2007, *Environmental testing - Part 2-1: Tests - Test A: Cold*

127

128 IEC 60068-2-2:2007, *Environmental testing - Part 2-2: Tests - Test B: Dry heat*

129

130 IEC 60068-2-6:2007, *Environmental testing - Part 2-6: Tests - Test Fc: Vibration (sinusoidal)*

131

132 IEC 60068-2-20:2008, *Environmental testing - Part 2-20: Tests - Test T: Test methods for*
133 *solderability and resistance to soldering heat of devices with leads*

134

135 IEC 60068-2-21:2006, *Environmental testing - Part 2-21: Tests - Test U: Robustness of*
136 *terminations and integral mounting devices*

137

138 IEC 60068-2-27:2008, *Environmental testing - Part 2-27: Tests - Test Ea and guidance: Shock*

139

140 IEC 60068-2-45:1980, *Basic environmental testing procedures - Part 2-45: Tests - Test XA*
141 *and guidance: Immersion in cleaning solvents*

142 IEC 60068-2-45:1980/AMD1:1993

143

144 IEC 60068-2-47:2005, *Environmental testing - Part 2-47: Test - Mounting of specimens for*
145 *vibration, impact and similar dynamic tests*

146

147 IEC 60068-2-75:2014, *Environmental testing - Part 2-75: Tests - Test Eh: Hammer tests*

148

149 IEC 60068-2-78:2012, *Environmental testing - Part 2-78: Tests - Test Cab: Damp heat, steady*
150 *State*

151

152 IEC 60112:2003, *Method for the determination of the proof and the comparative tracking*
153 *indices of solid insulating materials*

154 IEC 60112:2003/AMD1:2009

155

156 IEC 60127-1:2006, *Miniature fuses - Part 1: Definitions for miniature fuses and general*
157 *requirements for miniature fuse-links*

158 IEC 60127-1:2006/AMD1:2011

159 **IEC 60127-1:2006/AMD2:2015**

160 **IEC 60127-2:2014, Miniature fuses - Part 2: Cartridge fuse-links**

161 **IEC 60127-2:2014/AMD1:2020**

162

163 **IEC 60127-3:2015, Miniature fuses - Part 3: Sub-miniature fuse-links**

164 **IEC 60127-3:2015/AMD1:2020**

165

- 166 IEC 60216-1:2013, *Electrical insulating materials - Thermal endurance properties - Part 1:*
 167 *Ageing procedures and evaluation of test results*
 168
- 169 IEC 60529:1989, *Degrees of protection provided by enclosures (IP Code)*
 170 IEC 60529:1989/AMD1:1999
 171 IEC 60529:1989/AMD2:2013
 172
- 173 IEC 60664-1:2020, *Insulation coordination for equipment within low-voltage systems - Part 1:*
 174 *Principles, requirements and tests*
 175
- 176 IEC 60695-4:2012, *Fire hazard testing - Part 4: Terminology concerning fire tests for electrotechnical*
 177 *products*
 178
- 179 IEC 60695-11-5:2016, *Fire hazard testing - Part 11-5: Test flames - Needle-flame test method*
 180 *- Apparatus, confirmatory test arrangement and guidance*
 181
- 182 IEC 60695-2-12:2010, *Fire hazard testing - Part 2-12: Glowing/hot-wire based test methods -*
 183 *Glow-wire flammability index (GWFI) test method for materials*
 184 IEC 60695-2-12:2010/AMD1:2014
 185
- 186 IEC 60695-2-13:2010, *Fire hazard testing - Part 2-13: Glowing/hot-wire based test methods -*
 187 *Glow-wire ignition temperature (GWIT) test method for materials*
 188 IEC 60695-2-13:2010/AMD1:2014
 189
- 190 IEC 60999-2:2003, *Connecting devices - Electrical copper conductors - Safety requirements for screw-*
 191 *type and screwless-type clamping units - Part 2: Particular requirements for clamping units for*
 192 *conductors above 35 mm² up to 300 mm² (included)*
 193
- 194 IEC 61140:2016, *Protection against electric shock - Common aspects for installation and*
 195 *equipment*
 196
- 197 IEC 61210:2010, *Connecting devices - Flat quick-connect terminations for electrical copper*
 198 *conductors - Safety requirements*
 199
- 200 IEC/TR 60260:1968, *Test enclosures of non-injection type for constant relative humidity*
- 201 *Note 1 to entry: IEC/TR 60260:1968 is referenced in Clause 11.1.2, however, this Technical Report has been*
 202 *withdrawn in 2000.*
- 203 ISO 3:1973, *Preferred numbers – Series of preferred numbers*
- 204

205 3 Terms and Definitions

206 For the definitions of general terms used in this standard, reference should be made to
207 IEC 60050-441, IEC 60050-581 and IEC 60664-1.

208 For definitions of terms relating to fuse-links, reference is made to IEC 60127-1:2006.

209 For the purposes of this document, the following terms and definitions apply.

210 3.1

211 Fuse-holder

212 combination of a fuse-base with its fuse-carrier

213 Note 1 to entry: In some fuse-holder constructions where the fuse-base and the fuse-carrier are not separate parts
214 the fuse-holder may consist of only the fuse-base and no fuse-carrier.

215 3.1.1

216 fuse-base

217 see 3.10 of IEC 60127-1:2006

218 3.1.2

219 fuse-carrier

220 see 3.12 of IEC 60127-1:2006

221 3.1.3

222 unexposed fuse-holder

223 fuse-holder with enclosed contacts

224 3.1.4

225 exposed fuse-holder

226 fuse-holder with exposed contacts (e.g. clips)

227 3.2

228 rating

229 general term employed to designate the characteristic values that together define the working
230 conditions upon which the tests are based and for which the fuse-holder is designed

231 Examples of rated values usually stated for fuse-holders:

232 – voltage (U_N);

233 – current (I_N);

234 – power acceptance.

235 3.3

236 rated power acceptance

237 value of power acceptance of a fuse-holder assigned by the manufacturer

238 Note 1 to entry: This value is the maximum power dissipation produced by the inserted dummy fuse-link during testing,
239 at the rated current tolerated by the fuse-holder without exceeding the specified temperatures.

240 Note 2 to entry: The rated power acceptance is referred to an ambient temperature of 23 °C.

241 3.4

242 rated current

243 value of current of a fuse-holder assigned by the manufacturer and to which the rated power
244 acceptance is referred

245 3.5

246 rated voltage

247 value of voltage of a fuse-holder assigned by the manufacturer and to which operation and
248 performance characteristics are referred

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- 249 **3.6**
 250 **insulation coordination**
 251 mutual correlation of insulation characteristics of electrical equipment taking into account the
 252 expected micro-environment and other influencing stresses
- 253 [SOURCE: IEC 60664-1:2007, 3.1]
- 254 **3.7**
 255 **impulse withstand voltage**
 256 highest peak value of impulse voltage of prescribed form and polarity which does not cause
 257 breakdown of insulation under specified conditions
- 258 [SOURCE: IEC 60664-1:2007, 3.8.1]
- 259 **3.8**
 260 **overvoltage category**
 261 numeral defining a transient overvoltage condition
- 262 specified categories, see C.1
- 263 [SOURCE: IEC 60664-1:2007, 3.10, modified by addition of “specified categories”]
- 264 **3.9**
 265 **pollution**
 266 any addition of foreign matter, solid, liquid, or gaseous that can result in a reduction of electric
 267 strength or surface resistivity of the insulation
- 268 [SOURCE: IEC 60664-1:2007, 3.11]
- 269 **3.10**
 270 **pollution degree**
 271 numeral characterizing the expected pollution of the micro-environment
- 272 specified degrees, see C.2
- 273 [SOURCE: IEC 60664-1:2007, 3.13, modified by addition of “specified degrees”]
- 274 **3.11**
 275 **micro-environment**
 276 immediate environment of the insulation which particularly influences the dimensioning of the
 277 creepage distances
- 278 [SOURCE: IEC 60664-1:2007, 3.12.2]
- 279 **3.12**
 280 **clearance**
 281 shortest distance in air between two conductive parts
- 282 [SOURCE: IEC 60664-1:2007, 3.2]
- 283 **3.13**
 284 **creepage distance**
 285 shortest distance along the surface of a solid insulating material between two conductive parts
- 286 [SOURCE: IEC 60050-151:2001, 151-15-50]
- 287 **3.14**
 288 **solid insulation**
 289 solid insulating material interposed between two conductive parts
- 290 [SOURCE: IEC 60664-1:2007, 3.4]

- 291 **3.15**
292 **comparative tracking index**
293 **CTI**
294 numerical value of the maximum voltage in volts which a material can withstand without tracking
295 and without a persistent flame occurring under specified test conditions
- 296 Note 1 to entry: the test for comparative tracking index in accordance with IEC 60112 is designed to compare the
297 performance of various insulating materials under test conditions, namely drops of an aqueous contaminant falling
298 on a horizontal surface leading to electrolytic conduction material groups and their CTI values, see C.3.
- 299 [SOURCE: IEC 60050-212:2010, 212-11-59, modified by addition of Note to entry]
- 300 **3.16**
301 **live part**
302 conductor or conductive part intended to be energized in normal operation, including a neutral
303 conductor, but by convention, not a PEN conductor or PEM conductor or PEL conductor
- 304 [SOURCE: IEC 60050-826:2004, 826-12-08]
- 305 **3.17**
306 **fuse-holder electric shock protection categories**
307 a designation characterizing the level of the protection against electric shock of a fuse-holder
- 308 **3.18**
309 **maximum ambient air temperature**
310 the highest air temperature, **in the immediate vicinity**, that a fuse-holder can endure at a power
311 acceptance assigned by the manufacturer of the fuse-holder without exceeding the maximum
312 allowable temperatures on the accessible and inaccessible surfaces of the fuse-holder
- 313 **3.19**
314 **relative temperature Index**
315 based on IEC 60216-1, the temperature index of a test material obtained from the time which
316 corresponds to the known temperature index of a reference material when both materials are
317 subjected to the same ageing and diagnostic procedures in comparative test
- 318 **3.20**
319 **insulation**
320 that part of an electrotechnical product which separates the conducting parts at different
321 electrical potentials
- 322 Note 1 to entry: For detailed information, see IEC 61140 and IEC 60664-1.
- 323 [SOURCE: IEC 60050-212:2010, 212-01-05]
- 324 **3.20.1**
325 **functional insulation**
326 insulation between conductive parts which is necessary only for the proper functioning of the
327 equipment
- 328 [SOURCE: IEC 60664-1:2007, 3.17.1]
- 329 **3.20.2**
330 **basic insulation**
331 insulation of hazardous-live-parts which provides basic protection
- 332 Note 1 to entry: The concept does not apply to insulation used exclusively for functional purposes.
- 333 [SOURCE: IEC 60050-826:2004, 826-12-14]
- 334 **3.20.3**
335 **supplementary insulation**
336 independent insulation applied in addition to basic insulation for fault protection
- 337 [SOURCE: IEC 60050-826:2004, 826-12-15]