

INTERNATIONAL STANDARD

NORME INTERNATIONALE

AMENDMENT 1
AMENDEMENT 1

Miniature fuses – iTeh **STANDARD PREVIEW**
Part 2: Cartridge fuse-links
(standards.iteh.ai)

Coupe-circuit miniatures – IEC 60127-2:2014/AMD1:2020
Partie 2: Cartouches
<https://standards.iteh.ai/catalog/standards/sist/4852da3a-3b66-40ab-8c91-5c703cd85f1b/iec-60127-2-2014-amd1-2020>



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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

COMMISSION
ELECTROTECHNIQUE
INTERNATIONALE

ICS 29.120.50

ISBN 978-2-8322-8800-9

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FOREWORD

This amendment has been prepared by subcommittee 32C: Miniature fuses, of IEC technical committee 32: Fuses.

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

FDIS	Report on voting
32C/587/FDIS	32C/591/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

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**Figure 1 – Test fuse-base for 5 mm × 20 mm and 6,3 mm × 32 mm fuse-links –
Rated currents up to and including 6,3 A (see 7.3)**

Replace the existing title of Figure 1 with the following new title:

**Figure 1 – Test fuse-base for 5 mm × 20 mm and 6,3 mm × 32 mm fuse-links –
Rated currents up to and including 6,3 A**

**Figure 2 – Test fuse-base for 5 mm × 20 mm and 6,3 mm × 32 mm fuse-links –
Rated currents exceeding 6,3 A (see 7.3)**

Replace the existing title of Figure 2 with the following new title:

**Figure 2 – Test fuse-base for 5 mm × 20 mm and 6,3 mm × 32 mm fuse-links –
Rated currents exceeding 6,3 A**

Figure 3 – Test fuse-base for breaking capacity tests (see 7.3)

Replace the existing title of Figure 3 with the following new title:

Figure 3 – Test fuse-base for breaking capacity tests

Figure 5 – Alignment gauge (see 8.4)

Replace the existing title of Figure 5 with the following new title:

Figure 5 – Alignment gauge

Replace the existing explanatory text below Figure 5 with the following new Note:

NOTE The dimensions of the gauge and the corresponding tolerances are specified in the Standard sheets.

Figure 6 – Typical test circuit for breaking-capacity tests for high-breaking capacity fuse-links (see 9.3)

Replace the existing title of Figure 6 with the following new title:

Figure 6 – Typical test circuit for breaking-capacity tests for high-breaking capacity fuse-links

Replace the existing content of L in the Key for Figure 6 with the following new content:

L Air-cored inductance: 0,30 mH \pm 3 % for fuse-links with 250 V rated voltage
0,60 mH \pm 3 % for fuse-links with 500 V rated voltage

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Figure 7 – Typical test circuit for breaking-capacity tests for low- and enhanced-breaking capacity fuse-links (see 9.3)

Replace the existing title of Figure 7 with the following new title:

Figure 7 – Typical test circuit for breaking-capacity tests for low- and enhanced-breaking capacity fuse-links

Replace the existing content of L in the Key for Figure 7 with the following new content:

L Air-cored inductance: 0,30 mH \pm 3 % for fuse-links with 250 V rated voltage
0,60 mH \pm 3 % for fuse-links with 500 V rated voltage

10 Standard sheets

Standard sheet 1

Replace existing footnote a to the table on page 1 of Standard sheet 1 with the following new footnote:

^a Intermediate values shall be chosen from the R 20 or R 40 series according to ISO 3.

Standard sheet 2

Replace the existing table on page 1 of Standard sheet 2 with the following new table:

Rated current ^a	Rated voltage V	Maximum voltage drop mV	Maximum sustained power dissipation W ^b
32 mA	250	10 000	1,6
40 mA		8 000	
50 mA		7 000	
63 mA		5 000	
80 mA		4 000	
100 mA		3 500	
125 mA		2 000	
160 mA		2 000	
200 mA		1 700	
250 mA		1 400	
315 mA		1 300	
400 mA		1 200	
500 mA		1 000	
630 mA		650	
800 mA		240	
1 A		200	
1,25 A		200	
1,6 A		190	
2 A		170	
2,5 A		170	
3,15 A	2,5	150	
4 A		130	
5 A		130	
6,3 A		130	
8 A	4	130	
10 A		130	

^a Intermediate values shall be chosen from the R 20 or R 40 series according to ISO 3.

^b Measured after 1 h (for ratings above 6,3 A after 30 min) at 1,5 I_N .

Delete the existing second paragraph of Breaking capacity on page 2 of Standard sheet 2.

Standard sheet 3

Replace the existing table on page 1 of Standard sheet 3 with the following new table:

Rated current ^a	Rated voltage V	Maximum voltage drop mV	Maximum sustained power dissipation W ^b
32 mA	250	5 000	1,6
40 mA		4 000	
50 mA		3 500	
63 mA		3 000	
80 mA		3 000	
100 mA		2 500	
125 mA		2 000	
160 mA		1 900	
200 mA		1 500	
250 mA		1 300	
315 mA		1 100	
400 mA		1 000	
500 mA		900	
630 mA		300	
800 mA		250	
1 A		150	
1,25 A		150	
1,6 A		150	
2 A		150	
2,5 A		120	4
3,15 A	100		
4 A	100		
5 A	100		
6,3 A	100		
8 A	100		
10 A	100		

^a Intermediate values shall be chosen from the R 20 or R 40 series according to ISO 3.

^b Measured after 1 h (for ratings above 6,3 A after 30 min) at 1,5 I_N .

Delete the existing second paragraph of Breaking capacity on page 2 of Standard sheet 3.

Standard sheet 4

Replace the existing table on page 1 of Standard sheet 4 with the following new table:

Rated current	Rated voltage V	Maximum voltage drop mV	Maximum sustained power dissipation W [*]
50 mA	250	10 000	1,6
63 mA		8 000	
80 mA		7 000	
100 mA		6 000	
125 mA		5 500	
160 mA		5 000	
200 mA		4 000	
250 mA		3 500	
315 mA		3 000	
400 mA		2 500	
500 mA		2 000	
630 mA		1 800	
800 mA		1 500	
1 A		500	
1,25 A		150	
1,6 A	400		
2 A	300		
2,5 A	250		
3,15 A	150	250	4
4 A	150	250	
5 A	60	200	
6,3 A	60	200	
8 A	60	200	
10 A	60	200	

* Measured after 1 h at 1,15 I_N.

Standard sheet 5

Replace existing footnote a to the table on page 1 of Standard sheet 5 with the following new footnote:

^a Intermediate values shall be chosen from the R 20 or R 40 series according to ISO 3.

Standard sheet 6

Replace existing footnote a to the table on page 1 of Standard sheet 6 with the following new footnote:

^a Intermediate values shall be chosen from the R 20 or R 40 series according to ISO 3.

Annex A

A.3.3 Test bases for tests

Replace the existing second paragraph of A.3.3 with the following new paragraph:

The test board shall be made of epoxide woven glass fabric copper-clad laminated sheet as defined in IEC 60249-2-7.

Add the following new Annex B:

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Annex B (normative)

Cartridge fuse-links with DC ratings

B.1 General

This annex supplements the requirements of this document and is to be applied to already tested and approved 5 mm × 20 mm or 6,3 mm × 32 mm fuse-links which are available without or with wire terminations.

This annex relates to requirements applicable to cartridge fuse-links used for the protection of electric appliances, electronic equipment and component parts thereof, normally intended to be used indoors.

The object of this annex is to define additional test methods for cartridge fuse-links with optional DC ratings.

B.2 General notes on tests

In addition to the requirements of Clause 7 of IEC 60127-1:2006, the following criteria shall be observed.

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B.2.1 Type tests

Replacement of 7.2.1:

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15 additional samples chosen at random are required

The schedule for testing cartridge fuse-links with DC ratings shall be according to Table B.1.

The requirements of 7.2.3 of IEC 60127-1:2006 are not applicable.

No failure is allowed in any of the additional tests specified in this annex.

Table B.1 – Testing schedule

Sub-clause	Description	Fuse-link number				
		DC1 DC2 DC3	DC4 DC5 DC6	DC7 DC8 DC9	DC10 DC11 DC12	DC13 DC14 DC15
B.4.1	Rated breaking capacity	X				
B.4.1	5 times the rated current 5 I_N		X			
B.4.1	10 times the rated current 10 I_N			X		
B.4.1	50 times the rated current 50 I_N				X	
B.4.1	250 times the rated current 250 I_N					X
B.4.1	Insulation resistance	X	X	X	X	X
NOTE Applicable only when the defined rated breaking capacity is not exceeded.						

B.2.2 Test bases for tests

Cartridge fuse-links shall be tested in a test fuse-base as shown in Figure 3.

Cartridge fuse-links with wire terminations shall be tested in a test board as shown in Figure A.1. The test board shall then be mounted on the test base of Figure A.2.

B.3 Marking

Clause 6 of IEC 60127-1:2006 applies except as follows.

6.3

Addition after first paragraph:

Furthermore the DC rated breaking capacity in amperes (A) or in kilo amperes (kA) as well as the DC rated voltage (VDC) shall be marked on the package label.

B.4 Electrical requirements

B.4.1 Breaking capacity

Replacement of 9.3.1:

Fuse-links shall operate satisfactorily without endangering the surroundings when breaking prospective currents between the conventional non-fusing current and rated breaking capacity.

The recovery voltage shall be between 1,02 and 1,05 times the rated voltage of the fuse-links (the upper tolerance may be exceeded with the manufacturer's consent) and shall be maintained for 30 s after the fuse has operated.

Typical test circuits for DC are given in Figure B.1.

For tests at lower prospective currents ($5 I_N$, $10 I_N$, $50 I_N$, $250 I_N$), the inductance of the circuit shall remain constant and the current shall be adjusted by changing the resistance only.

In principle, the DC rated voltage, rated breaking capacity and associated time constant, respectively, shall be specified by the manufacturer.

The values given in Table B.2 are reference values only.

Unless otherwise stated by the manufacturer, the time constant of the test circuit shall be chosen from Table B.2.

Table B.2 – Time constant

Test current	Time constant
up to 100 A	<1 ms
above 100 A up to 500 A	1 ms to 1,7 ms
above 500 A up to 1 500 A	2 ms to 2,5 ms