



Test Report issued under the responsibility of:



TEST REPORT
IEC 60269-1
Low-voltage fuses
Part 1: General requirements

Report Reference No. : 289624-TL3-1
Date of issue..... : 2021-10-22
Total number of pages : 54

Applicant's name..... : ETI Elektroelement d.o.o.
Address : Obrezija 5; 1411 IZLAKE; Slovenia

Test specification:

Standard : IEC 60269-1:2006 (Fourth edition)+ A1:2009
Test procedure : CB Scheme
Non-standard test method : N/A

Test Report Form No. : IEC60269_1B
Test Report Form(s) Originator ... : EZU
Master TRF : Dated 2010-08

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Test item description : Fuse-link, D-system
Trade Mark : 
Manufacturer : ETI Elektroelement d.o.o.; Obrezija 5; 1411 IZLAKE; Slovenia
Model/Type reference : 2312401-01; 2312402-01; 2312403-01; 2312404-01; 2312409-01;
2312405-01; 2312406-01; 2312407-01
Ratings : DII; AC 500V / DC 500V; 2A – 25A; AC 50kA / DC 8kA; gG


Testing procedure and testing location:		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	IPH Institut "Prüffeld für elektrische Hochleistungstechnik" GmbH
Testing location/ address..... :		Landsberger Allee 378A, 12681 Berlin, Germany
<input type="checkbox"/>	Associated CB Laboratory:	
Testing location/ address..... :		
Tested by (name + signature)..... :		Melchert (authorization of test report) Testing Engineer
Approved by (name + signature).. :		Wegener Technical Certification Officer
<input type="checkbox"/>	Testing procedure: TMP	
Testing location/ address..... :		
Tested by (name + signature)..... :		
Approved by (name + signature).. :		
<input checked="" type="checkbox"/>	Testing procedure: WMT	TDAP ID: 40054071
Testing location/ address..... :		ETI Elektroelement d.o.o. Obrezija 5, 1411 Izlake, Slowenien
Tested by (name + signature)..... :		Pesan
Witnessed by (name + signature). :		Melchert
Approved by (name + signature).. :		Wegener
<input type="checkbox"/>	Testing procedure: SMT	
Testing location/ address..... :		
Tested by (name + signature)..... :		
Approved by (name + signature).. :		
Supervised by (name + signature):		
<input type="checkbox"/>	Testing procedure: RMT	
Testing location/ address..... :		
Tested by (name + signature)..... :		
Approved by (name + signature).. :		
Supervised by (name + signature):		

List of Attachments (including a total number of pages in each attachment):	
Appendix 1: Values of Resistance	page 43-45 (3 pages)
Appendix 2: Oscillograms I1	page 46-51 (6 pages)
Appendix 3: Photo documentation	page 52-43 (2 page)
Appendix 4: Test Equipment used in CTF Stage 2	page 54 (1 page)
Summary of testing:	
Tests performed (name of test and test clause):	Testing location:
6 Markings 8.1.4 Arrangement of the fuses and dimensions 8.1.5.1 Resistance 8.3 Verification of temperature rise and power dissipation 8.4.3.1 Verification of conventional non-fusing and fusing current 8.4.3.2 Verification of rated current of "g" fuse-links 8.4.3.3.2 Verification of gates 8.4.3.4 Overload 8.4.3.5* Conventional cable overload protection 8.4.3.6 Operation of indicating devices 8.5 Verification of breaking capacity 8.6 Verification of the cut-off-current characteristics 8.7 Verification of I^2t characteristics and overcurrent selectivity 8.11.1.3 Mechanical strength of the fuse-link 8.11.2.4 Resistance to storage at elevated temperature	IPH Institut "Prüffeld für elektrische Hochleistungstechnik" GmbH Landsberger Allee 378A, 12681 Berlin, Germany * ETI Elektroelement d.o.o. Obrezija 5, 1411 Izlake, Slowenien
Summary of compliance with National Differences	
List of countries addressed:	
<input checked="" type="checkbox"/> The product fulfils the requirements of:	
IEC 60269-1:2006 IEC 60269-1:2006/AMD1:2009 IEC 60269-1:2006/AMD2:2014 IEC 60269-3:2010 IEC 60269-3:2010/AMD1:2013 IEC 60269-3:2010/AMD2:2019 DIN EN 60269-1 (VDE 0636-1):2015-05; EN 60269-1:2007 + A1:2009 + A2:2014 DIN VDE 0636-3 (VDE 0636-3):2013-12; HD 60269-3:2010 + A1:2013	


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ETI
gG 
2A
500V **ERC**

IEC 60269-3

2312401- 01

ETI
gG 
4A
500V **ERC**

IEC 60269-3

2312402- 01

ETI
gG 
6A
500V **ERC**

IEC 60269-3

2312403- 01

ETI
gG 
16A
500V **ERC**

IEC 60269-3

2312405- 01

ETI
gG 
20A
500V **ERC**

IEC 60269-3

2312406- 01

ETI
gG 
25A
500V **ERC**

IEC 60269-3


2312407- 01

ETI
gG 
10A
500V **ERC**

IEC 60269-3

2312404- 01

ETI
gG 
13A
500V **ERC**

IEC 60269-3

2312409- 01



Test Report issued under the responsibility of:



TEST REPORT
IEC 60269-3
Low-voltage fuses
Part 3: Supplementary requirements for fuses for use by unskilled persons (fuses mainly for household and similar applications) - Examples of standardized systems of fuses A to F

Report Number..... : 289624-TL3-2

Date of issue : 2021-10-22

Total number of pages..... : 28

Name of Testing Laboratory preparing the Report..... : **IPH Institut "Prüffeld für elektrische Hochleistungstechnik" GmbH**
Landsberger Allee 378A, 12681 Berlin, Germany

Applicant's name : ETI Elektroelement d.o.o.

Address : Obrezija 5; 1411 IZLAKE; Slovenia

Test specification:

Standard..... : IEC 60269-3:2010, AMD1:2013 to be used in conjunction with IEC 60269-1:2006, AMD1:2009

Test procedure..... : CB Scheme

Non-standard test Method : N/A

TRF template used..... : IECEE OD-2020-F1:2020, Ed.1.3

Test Report Form No. : IEC60269_3D

Test Report Form(s) Originator : CQC

Master TRF..... : 2020-11-09

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Test item description	Fuse-link, D-system
Trade Mark(s)	
Manufacturer	ETI Elektroelement d.o.o.; Obrezija 5; 1411 IZLAKE; Slovenia
Model/Type reference	2312401-01; 2312402-01; 2312403-01; 2312404-01; 2312409-01; 2312405-01; 2312406-01; 2312407-01
Ratings	DII; AC 500V / DC 500V; 2A – 25A; AC 50kA / DC 8kA; gG

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	IPH Institut "Prüffeld für elektrische Hochleistungstechnik" GmbH
Testing location/ address.....:		Landsberger Allee 378A, 12681 Berlin, Germany
<input type="checkbox"/>	Associated CB Testing Laboratory:	
Testing location/ address.....:		
Tested by (name, function, signature)		Melchert (Authorization of test report) Testing engineer 
Approved by (name, function, signature) ...		Wegener Technical Certification Officer 
<input type="checkbox"/>	Testing procedure: CTF Stage 1:	
Testing location/ address.....:		
Tested by (name, function, signature)		(Authorization of test report) Testing engineer
Approved by (name, function, signature) ..:		Technical Certification Officer
<input checked="" type="checkbox"/>	Testing procedure: CTF Stage 2:	TDAP ID: 40054071
Testing location/ address.....:		ETI Elektroelement d.o.o. Obrezija 5, 1411 Izlake, Slowenien
Tested by (name + signature).....:		Pesan Testing engineer 
Witnessed by (name, function, signature) ..:		Melchert Witnessed (authorization of test report) 
Approved by (name, function, signature) ...:		Wegener Technical Certification Officer 
<input type="checkbox"/>	Testing procedure: CTF Stage 3:	
<input type="checkbox"/>	Testing procedure: CTF Stage 4:	
Testing location/ address.....:		
Tested by (name, function, signature)		
Witnessed by (name, function, signature) ..:		
Approved by (name, function, signature) ...:		
Supervised by (name, function, signature) :		

List of Attachments (including a total number of pages in each attachment):	
Appendix 1: Values of Resistance	page 25-27 (3 pages)
Appendix 2: Test Equipment used in CTF Stage 2	page 28 (1 page)
Summary of testing:	
Tests performed (name of test and test clause):	Testing location:
6 Markings 8.1.4 Arrangement of the fuses and dimensions 8.1.5.1 Resistance 8.3 Verification of temperature rise and power dissipation 8.4.3.1 Verification of conventional non-fusing and fusing current 8.4.3.2 Verification of rated current of "g" fuse-links 8.4.3.3.2 Verification of gates 8.4.3.4 Overload 8.4.3.5* Conventional cable overload protection 8.4.3.6 Operation of indicating devices 8.5 Verification of breaking capacity 8.6 Verification of the cut-off-current characteristics 8.7 Verification of I ² t characteristics and overcurrent selectivity 8.11.1.3 Mechanical strength of the fuse-link 8.11.2.4 Resistance to storage at elevated temperature	IPH Institut "Prüffeld für elektrische Hochleistungstechnik" GmbH Landsberger Allee 378A, 12681 Berlin, Germany * ETI Elektroelement d.o.o. Obrezija 5, 1411 Izlake, Slowenien
Summary of compliance with National Differences (List of countries addressed):	
<input checked="" type="checkbox"/> The product fulfils the requirements of: IEC 60269-1:2006 IEC 60269-1:2006/AMD1:2009 IEC 60269-1:2006/AMD2:2014 IEC 60269-3:2010 IEC 60269-3:2010/AMD1:2013 IEC 60269-3:2010/AMD2:2019 DIN EN 60269-1 (VDE 0636-1):2015-05; EN 60269-1:2007 + A1:2009 + A2:2014 DIN VDE 0636-3 (VDE 0636-3):2013-12; HD 60269-3:2010 + A1:2013	

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:

Procedure number, issue date and title:

Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.



Statement not required by the standard used for type testing

(Note: When IEC or ISO standard requires a statement concerning the uncertainty of the measurement systems used for tests, this should be reported above. The informative text in parenthesis should be delete in both cases after selecting the applicable option)



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500V **ERC**

IEC 60269-3
 
2312402- 01



ETI
gG 
6A
500V **ERC**

IEC 60269-3
 
2312403- 01



ETI
gG 
16A
500V **ERC**

IEC 60269-3
 
2312405- 01

ETI
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20A
500V **ERC**

IEC 60269-3
 
2312406- 01


ETI
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25A
500V **ERC**

IEC 60269-3
 
2312407- 01

ETI
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10A
500V **ERC**

IEC 60269-3
 
2312404- 01

ETI
gG 
13A
500V **ERC**

IEC 60269-3
 
2312409- 01





OD ECS 040-1
January 2019

Responsible CB




TEST REPORT SUMMARY

Report Number..... : 289624-TL3-3
Date of issue..... : 2021-10-22
Tested by (name, function, signature): Melchert
 (Authorization of test report)
 Testing engineer 
Witnessed by (name, function, signature):
Approved by (name, function, signature): Wegener
 Technical Certification Officer 
Supervised by (name, function, signature):

Testing Laboratory..... : **IPH Institut**
“Prüffeld für elektrische Hochleistungstechnik“ GmbH
Address : Landsberger Allee 378A, 12681 Berlin, Germany
Testing procedure : ENEC CCA NTR
 ENEC based on IECCEB CBTC with number:
Customer Testing Procedure..... : TMP/CTF Stage 1 WMT/CTF Stage 2 SMT/CTF Stage 3

Applicant : ETI Elektroelement d.o.o.
Address : Obrezija 5; 1411 IZLAKE; Slovenia

Manufacturer : ETI Elektroelement d.o.o.; Obrezija 5; 1411 IZLAKE; Slovenia

Product..... : **Fuse-link**
Model/Type reference : 231401-01; 231402-01; 231403-01; 231404-01; 231409-01;
 231405-01; 231406-01; 231407-01
Trademark..... : 
Ratings : DII; AC 500 V / DC 500 V; 2 – 25 A; AC 50 kA / DC 8 kA; gG

Certification Scheme : ENEC CCA Other: _____
Standard(s)..... : EN 60269-1:2007 + A1:2009 + A2:2014 used in conjunction with
 HD 60269-3:2010 + A1:2013
 The text of the a.m. European Standard was approved by CENELEC is equivalent with
 the corresponding IEC Publication.
 The text of the a.m. European Standard was approved by CENELEC with agreed common
 modifications and is not equivalent with the corresponding IEC Publication. An EU Deviation
 Addendum has to be issued.

This EN test report consists of the following parts:

IEC Test Report Number..... : IEC TRF No. 60269_1B: 289624-TL3-1
 IEC TRF No. 60269_3D: 289624-TL3-2
 EU Deviation Addendum..... :

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