


Produkte  
Products

<b>Prüfbericht - Nr.:15053909 001</b>		Seite 1 von 22	
Test Report No.:		Page 1 of 22	
<b>Auftraggeber:</b> Client:	<b>Zhejiang Galaxy Fuse Co., Ltd.</b> Liushi Changchun Industrial Zone, Wenzhou, Zhejiang 325604, P.R. China		
<b>Gegenstand der Prüfung:</b> Test item:	Low-voltage Fuses		
<b>Bezeichnung:</b> Identification:	YRPV-160	<b>Serien-Nr.:</b> Serial No.:	Engineering sample
<b>Wareneingangs-Nr.:</b> Receipt No.:	153196846	<b>Eingangsdatum:</b> Date of receipt:	08.06.2012
<b>Zustand des Prüfgegenstandes bei Anlieferung:</b> Condition of test item at delivery:	Apparently Good		
<b>Prüfört:</b> Testing location:	<b>Zhejiang Fang Yuan Electric Equipment Test Co., Ltd.</b> No. 400 Guangqiong Road, Jiaxing City, Zhejiang Province, P.R. China		
<b>Prüfgrundlage:</b> Test specification:	EN 60269-6:2011 in conjunction with EN 60269-1:2007+A1:2009		
<b>Prüfergebnis:</b> Test Result:	Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n). The test item passed the test specification(s).		
<b>Prüflaboratorium:</b> Testing Laboratory:	TÜV Rheinland (Shanghai) Co., Ltd.		
<b>geprüft/ tested by:</b>	<b>kontrolliert/ reviewed by:</b>		
30.08.2012 Datum Date	Kenny Shi/PM Name/Stellung Name/Position	 Unterschrift Signature	04.09.2012 Datum Date
			Jie Zhang/TC Name/Stellung Name/Position
			 Unterschrift Signature
<b>Sonstiges/ Other Aspects:</b>			
Corrigendum Dec. 2010 to IEC60269-6:2010 was checked, TRF No. IEC60269_6A is adopted since no additional tests are needed. Attachment 1: Test Equipment List (1 page).			
<b>Abkürzungen:</b>	P(ass) = entspricht Prüfgrundlage F(ail) = entspricht nicht Prüfgrundlage N/A = nicht anwendbar N/T = nicht getestet	<b>Abbreviations:</b>	P(ass) = passed F(ail) = failed N/A = not applicable N/T = not tested
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. This test report relates to the a. m. test item. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.			



<p><b>TEST REPORT</b>  <b>IEC 60269-6</b>  <b>Low-voltage fuses –</b>  <b>Part 6: Supplementary requirements for fuse-links for the protection</b>  <b>of solar photovoltaic energy systems</b></p>	
Report Number.....	15053909 001
Date of issue.....	See cover sheet
Total number of pages .....	See cover sheet
Applicant's name .....	Zhejiang Galaxy Fuse Co., Ltd.
Address .....	Liushi Changchun Industrial Zone, Wenzhou, Zhejiang 325604, P.R. China
<b>Test specification:</b>	
Standard .....	IEC 60269-6: 2010 (First Edition) for use in conjunction with IEC 60269-1:2006 (Fourth edition) +A1:2009
Test procedure .....	CB-Scheme TUV approval
Non-standard test method.....	N/A
Test Report Form No. ....	IEC60269_6A
Test Report Form(s) Originator....	VDE
Master TRF .....	2012-01
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Test item description .....	Low-voltage Fuses
Trade Mark .....	See page 4
Manufacturer .....	Zhejiang Galaxy Fuse Co., Ltd.
Model/Type reference .....	YRPV-160
Ratings .....	DC 1000V; 40,50,63,80,100,125 and 160A; BC:20kA

<b>Testing procedure and testing location:</b>	
<input type="checkbox"/> <b>CB-Testing-Laboratory:</b>	
<b>Testing location/ address .....</b>	
<input type="checkbox"/> <b>Associated CB-Laboratory:</b>	
<b>Testing location/ address .....</b>	
<b>Tested by (name + signature) .....</b>	
<b>Approved by (name + signature) .....</b>	
<input type="checkbox"/> <b>Testing procedure: TMP</b>	
<b>Testing location/ address .....</b>	
<b>Tested by (name + signature) .....</b>	
<b>Approved by (name + signature) .....</b>	
<input type="checkbox"/> <b>Testing procedure: WMT</b>	
<b>Testing location/ address .....</b>	
<b>Tested by (name + signature) .....</b>	
<b>Witnessed by (name + signature) .....</b>	
<b>Approved by (name + signature) .....</b>	
<input type="checkbox"/> <b>Testing procedure: SMT</b>	
<b>Testing location/ address .....</b>	
<b>Tested by (name + signature) .....</b>	
<b>Approved by (name + signature) .....</b>	
<b>Supervised by (name + signature) .....</b>	
<input type="checkbox"/> <b>Testing procedure: RMT</b>	
<b>Testing location/ address .....</b>	
<b>Tested by (name + signature) .....</b>	
<b>Approved by (name + signature) .....</b>	
<b>Supervised by (name + signature) .....</b>	

**List of Attachments (including a total number of pages in each attachment):**

None

**Summary of testing:****Tests performed (name of test and test clause):**

Test items listed in table 102 and table 103.

**Testing location:**

Zhejiang Fang Yuan Electric Equipment Test Co., Ltd.  
No. 400 Guangqiong Road, Jiaxing City,  
Zhejiang Province, P.R. China

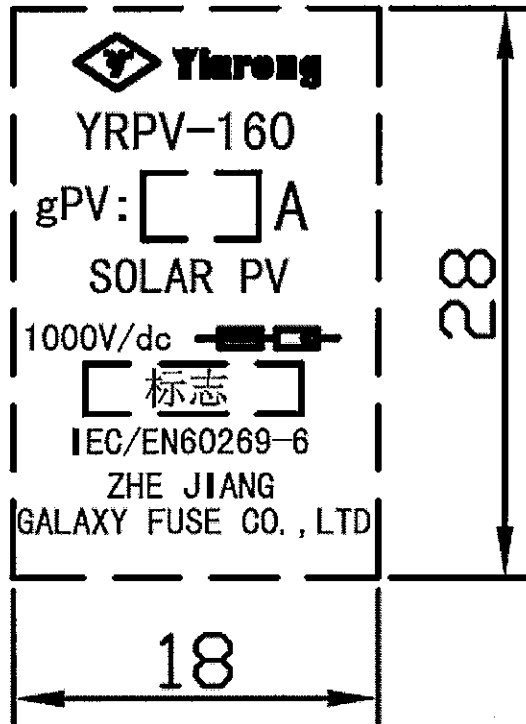
**Summary of compliance with National Differences:**

The text of the International Standard IEC 60269-1:2006+ amendment 1:2009 was approved by CENELEC as a European Standard without any modification.

The text of the International Standard IEC 60269-6:2010 + corrigendum December 2010 was approved by CENELEC as a European Standard without any modification.

The product fulfils the requirements of EN60269-6:2011.

Copy of marking plate:



Test item particulars.....	Low-voltage fuses
Classification of installation and use.....	For PV system
Type designation .....	YRPV-160
Rated Voltage .....	DC 1000V
Rated Current.....	40 to 160A
Rated breaking capacity .....	20kA
Fuse system .....	NH0
<b>Possible test case verdicts:</b>	
- test case does not apply to the test object .....	N/A
- test object does meet the requirement.....	P (Pass)
- test object does not meet the requirement.....	F (Fail)
<b>Testing .....</b>	
Date of receipt of test item .....	03.05.2012
Date (s) of performance of tests .....	03.05.2012-13.05.2012
<b>General remarks:</b>	
The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report.  Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.	
<b>Manufacturer's Declaration per sub-clause 6.2.5 of IEC 60269-2:</b>	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided ..... :	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable	
<b>When differences exist; they shall be identified in the General product information section.</b>	
Name and address of factory (ies).....	Zhejiang Galaxy Fuse Co., Ltd. Liushi Changchun Industrial Zone, Wenzhou, Zhejiang 325604, P.R. China
<b>General product information:</b>	
YRPV-160 has the same dimensions as fuse-links according to IEC 60269-2: systems of fuses A, NH0.	

IEC 60269-6			
Clause	Requirement + Test	Result - Remark	Verdict
5	<b>CHARACTERISTICS OF FUSES</b>		
5.1	The characteristics of a fuse-link are stated by the following terms		-
5.1.2	a) Rated voltage	DC 1000V	P
	b) Rated current	40,50,63,80,100,125 and 160A	P
	c) Rated power dissipation	No more than 25W	P
	d) Time current characteristics		P
	e) Breaking range		P
	f) Rated breaking capacity	20kA	P
	g) Dimensions or size	NH0	P
	h) Utilization Category	gPV	P
5.2	Rated voltage as specified .....	1000V	P
5.5	Power dissipation is indicated by the manufacturer as a function of current for the range contained between 70% to 100% of the rated current.	16W at 0,7I <sub>n</sub> ; 25W at I <sub>n</sub>	P
5.6.1.1	Mean time-current characteristics in accordance with the conditions specified in 8.3.1, provided by the manufacturer		P
5.6.2.2	Conventional times and currents (see Table 101).....		P
5.7.1	Breaking range and utilization category.....	gPV	P
5.7.2	Rated breaking capacity (minimum value: 10kA) .....	20kA	P
6	<b>Markings</b>		
6.2	Utilization category "gPV"		P
7	<b>Standard conditions for construction</b>		
7.5	A fuse-link is capable of breaking, at rated d.c. voltage, any circuit having a prospective current between the conventional fusing current and the rated breaking capacity with time constant not greater than the values specified in Table 104.		P
8	<b>Tests</b>		
8.1.4	Arrangement of the fuse and dimensions		-
	The fuse-link is mounted		-
	-open in surroundings free from draughts		P
	-in a vertical position (unless otherwise specified)		P

IEC 60269-6			
Clause	Requirement + Test	Result - Remark	Verdict
8.1.5	Testing of fuse-links		-
	Fuse-links tested according to Table 102		P
	and Table 103		P
8.1.5.1	Complete tests		-
	The values of resistance recorded in test report part 1		P
8.1.5.2	Type test exemptions for fuse-links of a homogeneous series		-
	Fuse-links having intermediate values of rated current of a homogeneous series are exempted from type tests if		-
	-the fuse-link of the largest rated current is tested according to Table 102		P
	-the fuse link of the smallest rated current is tested according to Table 103		P
	Rated currents, tested according Table 102.....:	160A	P
	Rated currents, tested according Table 103.....:	40A	P
	Rated currents, exempted from type tests.....:	__A	N/A
8.3	Verification of temperature rise limits and power dissipation		-
8.3.1	Arrangement of the fuse-link		-
	Fuse-link is mounted vertically in the conventional test arrangement		P
	For special fuse-links for which this test arrangement is not applicable, special tests are performed according to the manufacture's instruction		N/A
	Pertinent data is recorded in Appendix 1		N/A
8.3.3	Measurement of power dissipation of the fuse-link		-
	The power dissipation test is made successively at 70% and at 100% of rated current		P
	Test Results for 100 % of rated current are recorded in test report part 1		P
	Test results for 70 % of rated current:		-
	Test performed at an ambient air temperature of (20±5) °C		P
	Ambient air temperature during the test (°C) .....	24°C	P
	The test made with a.c. at the current equal to 70% of the rated current of the fuse-link .....	112A	P
	The points of measuring .....	Contact	P



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Clause	Requirement + Test	Result - Remark	Verdict
	Measured value of power dissipation in limits..... :	0,7In:measurement (max.7,69W) ≤ limit (16W) In: measurement (max.12,7W) ≤ limit (25W)	P
8.3.5	Acceptability of test results		-
	Temperature rise of the fuse-link does not exceed the values in table 5 of IEC 60269-1 .....	measurement (max.60,2K) ≤ value in Table 5 (70K)	P
	Power dissipation of the fuse-link does not exceed the values specified by the manufacturer		P
8.4	Verification of operation		-
8.4.1	Arrangement of the fuse-link		-
	Test arrangement as specified in 8.1.4 and 8.3.1		P
8.4.3	Test method and acceptability of test results		-
8.4.3.1	Verification of conventional non-fusing and fusing current		-
	Before the test: Fuse-link(s) subjected to temperature cycling as described in 8.11.2.4		P
	Test performed at voltage .....	75mV	P
	a) The fuse-link is subjected to its conventional non-fusing current ( $I_{nf}$ ) (Table 101) .....	181A for $I_n=160A$ ; 45,2A for $I_n=40A$	P
	The fuse-link does not operate within the conventional time (Table 101) .....	2h for $I_n=160A$ ; 1h for $I_n=40A$	P
	b) The same fuse-link, after cooled down to ambient temperature, is subjected to its conventional fusing current ( $I_f$ ) (Table 101) .....	232A for $I_n=160A$ ; 58A for $I_n=40A$	P
	The fuse-link operates within (the conventional time in Table 101) .....	48min16s for $I_n=160A$ ; 46min57s for $I_n=40A$	P
	The fuse-link operates without external effects or damage		P
8.4.3.2	Verification of rated current		-
	Three samples undergo 3000 repetitions of current cycling (Figure 101)		P
	(15 +0; -15)% * $I_n$ .....	23,7A	P
	(40 +0; -5)% * $I_n$ .....	62,3A	P
	(75 +0; -5)% * $I_n$ .....	115A	P
	(100 +0; -5)% * $I_n$ .....	157A	P
	After 3000 repetitions, none of the samples exhibits		-
	-cracking of the fuse body		P

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Clause	Requirement + Test	Result - Remark		Verdict
	-crazing of the fuse body			P
	The resistance of the fuse-link at room temperature does not change by more than 10%			P
	Room temperature .....	22°C		P
	Resistance at room temperature before the current cycling .....	1) 0,23mΩ 2) 0,24mΩ 3) 0,23mΩ		P
	Resistance at room temperature after the current cycling .....	1) 0,24mΩ 2) 0,24mΩ 3) 0,25mΩ		P
8.4.3.6	Operation of indication devices and strikers, if any			-
	Operation of indication devices is verified in combination with 8.5.5			N/A
	For operation of strikers an additional test sample is tested			N/A
	at a current equal to I <sub>5</sub> (Tab 104).....	__A		N/A
	at a recovery voltage of 50V (-0% / +10%) .....	__V		N/A
	Striker operates during all tests			N/A
8.5	Verification of the breaking capacity			-
8.5.1	Arrangement of the fuse			-
	Test arrangement as specified in 8.1.4 and 8.3.1			P
	Fuse-link is mounted and connected the same way as in services			P
8.5.5	Test method			-
8.5.5.1	Table 104, test No. 1			-
	Before the test: Fuse-link(s) subjected to temperature cycling as described in 8.11.2.4			P
	Test performed on three samples			P
	Rated current of the fuse-links .....	160A	40A	P
	Rated breaking capacity of the fuse-links , at voltage:	20kA at 1000V		P
	Prospective current I <sub>1</sub> equal to rated breaking capacity within a tolerance of +10%, -0% .....	20kA		P
	Time constant (1 ms - 3 ms) .....	2,65ms		P
	Arcing commences at current .....	1) 4,91kA 2) 4,85kA 3) 5,03kA	1) 1,92kA 2) 1,93kA 3) 1,75kA	P

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Clause	Requirement + Test	Result - Remark		Verdict
	Cut-off current .....	1) 5,23kA 2) 5,22kA 3) 5,36kA	1) 2,23kA 2) 2,18kA 3) 2,26kA	P
	Value of recovery voltage within tolerances (100 + 5; -0)% of the rated voltage .....	1) 1040V 2) 1040V 3) 1040V		P
8.5.5.2	After the operation of the fuse link the recovery voltage is maintained for a time of			-
	≥30s for fuse-links not containing organic materials in their body or filler			P
	≥5min in all other cases			N/A
8.5.8	Acceptability of No. 1 test results			-
	- no ignition of the fuse link, excluding any paper labels or the like used as indicating devices			P
	- no mechanical damage to the test arrangement			P
	- no mechanical damage to the fuse-link, excluding thermal cracking which leaves the fuse-link in one piece			P
	- no burning or melting of end caps			P
	- no significant movement of end caps			P
8.5.5.1	Table 104, test No. 2			-
	Before the test: Fuse-link(s) subjected to temperature cycling as described in 8.11.2.4			P
	Test No. 2 is not performed. During test No. 1 the requirements of test No. 2 are met			N/A
	Test performed on three samples			P
	Rated current of the fuse-links .....	160A		P
	Test is made under conditions which approximate those giving maximum arc energy. Prospective current $I_2$ .....	8,11kA		P
	Time constant (1 ms - 3 ms) .....	2,31ms		P
	Arcing commences at current .....	1) 4,16A 2) 5,37A 3) 4,36A		P
	Value of recovery voltage within tolerances (100 + 5; -0)% of the rated voltage .....	1) 1040V 2) 1040V 3) 1040V		P
8.5.5.2	After the operation of the fuse link the recovery voltage is maintained for a time of			-

IEC 60269-6			
Clause	Requirement + Test	Result - Remark	Verdict
	≥30s for fuse-links not containing organic materials in their body or filler		P
	≥5min in all other cases		N/A
8.5.8	Acceptability of No. 2 test results		-
	- no ignition of the fuse link, excluding any paper labels or the like used as indicating devices		P
	- no mechanical damage to the test arrangement		P
	- no mechanical damage to the fuse-link, excluding thermal cracking which leaves the fuse-link in one piece		P
	- no burning or melting of end caps		P
	- no significant movement of end caps		P
8.5.5.1	Table 104, No. 5		-
	Before the test: Fuse-link(s) subjected to temperature cycling as described in 8.11.2.4		P
	Test performed on one sample		P
	Rated current of the fuse-link ..... : 160A	160A	P
	Prospective current $I_s$ equal to $2,0 I_n$ within a tolerance of +20%, -0% ..... : 330A	330A	P
	Inductance ≥ 100 μH		P
	Operating time ..... : 2,52s	2,52s	
	Value of recovery voltage within tolerances (100 + 5; -0)% of the rated voltage ..... : 1040V	1040V	P
8.5.5.2	After the operation of the fuse link the recovery voltage is maintained for a time of		-
	≥30s for fuse-links not containing organic materials in their body or filler		P
	≥5min in all other cases		N/A
8.5.8	Acceptability of No. 5 test results		-
	- no ignition of the fuse link, excluding any paper labels or the like used as indicating devices		P
	- no mechanical damage to the test arrangement		P
	- no mechanical damage to the fuse-link, excluding thermal cracking which leaves the fuse-link in one piece		P
	- no burning or melting of end caps		P
	- no significant movement of end caps		P

IEC 60269-6				
Clause	Requirement + Test	Result - Remark		Verdict
8.11.2.4	Verification of freedom from unacceptable levels of thermally induced drift			-
	Rated current(s) of tested fuse-link(s)..... :	160A and 40A		P
	The fuse-link(s) subjected to 50 temperature cycles, each cycle consisting of			P
	15 min with fuse-link body maintained at $(-40 \pm 5)^{\circ}\text{C}$ .....	-40°C		P
	followed by 15 min with fuse-link body maintained at $(90 \pm 5)^{\circ}\text{C}$ ..... :	90°C		P
	After 50 temperature cycles the fuse-link(s) returned to room temperature $(25 \pm 5)^{\circ}\text{C}$ .....	20°C		P
	For a minimum of 3 h	3h		P
	At the conclusion of the temperature cycling, the fuse-links having the largest rated current are subjected to the tests described in	For 160A		-
	8.4.3.1: $I_{ni}$ , $I_f$			P
	8.5: No.1; No.2; No.3			P
	At the conclusion of the temperature cycling, the fuse-links having the smallest rated current are subjected to the tests described in	For 40A		-
	8.4.3.1: $I_{ni}$ , $I_f$			P
	8.5: No.1			P
8.11.2.5	Verification of functionality at temperature extremes			-
	a) Verification of ability to carry rated current at temperature extreme			-
	Rated current(s) of tested fuse-link(s)..... :	160A	40A	P
	The fuse-link(s) subjected to a temperature of $(50 \pm 5)^{\circ}\text{C}$ ..... :	51°C		P
	for a period of 3 h or until temperature stabilizes.... :	3h		P
	The fuse-link(s) subjected to the rated current ( $I_n$ ) . :	160A	40A	P
	The fuse-link(s) did not operate (within the conventional time in Table 101) .....	2h	1h	P
	b) Conventional fusing current ( $I_f$ ) at temperature extreme			-
	Rated current(s) of tested fuse-link(s)..... :	160A	40A	P
	The fuse-link(s) subjected to a temperature of $(50 \pm 5)^{\circ}\text{C}$ ..... :	50°C		P
	for a period of 3 h or until temperature stabilizes.... :	3h		P
	The fuse-link(s) subjected to the conventional fusing current ( $I_f$ )..... :	232A	58A	P

IEC 60269-6				
Clause	Requirement + Test	Result - Remark		Verdict
	The fuse-link(s) operate(s) within the conventional time (Table 101) .....	38min50s	33min16s	P
	without external effects or damage			P

IEC 60269-6			
Clause	Requirement + Test	Result - Remark	Verdict

Annex AA	Examples of standardized fuse-links for the protection of solar photovoltaic energy systems		
AA.1	General		-
	Fuse-link(s) having the standardised dimension of the following examples		-
	System of fuse-links with cylindrical contact caps, type A – French		N/A
	System of cylindrical fuse-links with blade contacts, type B - North American		N/A
	System of fuse-links with blade contacts, type C – DIN		N/A
	System of cylindrical fuse-links with long blade contacts, type D – DIN		N/A
	Fuse-links having the same dimension as fuse-links according to IEC 60269-2		-
	-System A	Size 0	P
	-System F		N/A
	-System H		N/A
	The power dissipation of the fuse-link does not exceed the acceptable power dissipation of the associated fuse bases or fuse-holders		P
	De-rating values are given by the manufacturer		N/A
AA.2	Fuse-links with cylindrical contact caps, type A		-
	The dimensions of the fuse-links given in Figure AA.1		-
	Size .....		N/A
	Dimension marking a (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $b_{max}$ . (prescribed, measured) ..	__mm prescribed __mm measured	N/A
	Dimension marking c (prescribed, measured).....	__mm prescribed __mm measured	N/A
	Dimension marking $d_{min}$ (prescribed, measured)....	__mm prescribed __mm measured	N/A
	Dimension marking r (prescribed, measured) .....	__mm prescribed __mm measured	N/A

IEC 60269-6			
Clause	Requirement + Test	Result - Remark	Verdict
	Additional dimensions for fuse-links with striker given in Figure AA.2, sizes 14x51; 20x127; 22x127 only		-
	Dimension marking $S_0$ (prescribed, measured)..... :	__mm prescribed __mm measured	N/A
	Dimension marking $S_1$ (prescribed, measured)..... :	__mm prescribed __mm measured	N/A
	Diameter in which the striker shall stay $\varnothing 8$ ..... :	__mm measured	N/A
	$\varnothing 3$ to 6 .....	__mm measured	N/A
AA.3	North American cylindrical fuse-links with blade contacts, type B (specific for PV application)		-
	The dimensions of the fuse-links given in Figure AA.3		-
	Current rating $I_n$ ..... :	__A	N/A
	Dimension marking A (prescribed, measured)..... :	__mm prescribed __mm measured	N/A
	Dimension marking B (prescribed, measured)..... :	__mm prescribed __mm measured	N/A
	One blade is not more than 1,6 mm longer than the other blade..... :	__mm	N/A
	Dimension marking C (prescribed, measured)..... :	__mm prescribed __mm measured	N/A
	Dimension marking D (prescribed, measured)..... :	__mm prescribed __mm measured	N/A
	Dimension marking E (prescribed, measured)..... :	__mm prescribed __mm measured	N/A
	Dimension marking F (prescribed, measured)..... :	__mm prescribed __mm measured	N/A
	Dimension marking G (prescribed, measured)..... :	__mm prescribed __mm measured	N/A
AA.4	Fuse-links with blade contacts, type C, C referring IEC 60269-2 "Fuse system A (NH fuse system)		-
	The dimensions of the fuse-links given in Figure AA.4		-
	Size .....		P
	Dimension marking $a_1$ (prescribed, measured)..... :	125 <sup>+2,5</sup> <sub>-2,5</sub> mm prescribed 126,0mm measured	P
	Dimension marking $a_2$ (prescribed, measured)..... :	68 <sub>-8</sub> mm prescribed 66,0mm measured	P



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Clause	Requirement + Test	Result - Remark	Verdict
	Dimension marking $a_3$ (prescribed, measured) ..... :	$62^{+3}_{-1,5}$ mm prescribed 60,6mm measured	P
	Dimension marking $a_4$ (prescribed, measured) ..... :	$68^{+1,5}_{-3}$ mm prescribed 66,0mm measured	P
	Dimension marking $b_{1min}$ (prescribed, measured) .. :	$15_{-0}$ mm prescribed 15,0mm measured	P
	Dimension marking $b_{2min}$ (prescribed, measured) .. :	$4,5_{-0}$ mm prescribed 4,8mm measured	P
	Dimension marking $b_{3max}$ (prescribed, measured).. :	$5^{+0}$ mm prescribed 4,8mm measured	P
	Dimension marking $b_{4min}$ (prescribed, measured) .. :	$12_{-0}$ mm prescribed 13,0mm measured	P
	Dimension marking $c_1$ (prescribed, measured) ..... :	$35^{+0,8}_{-0,8}$ mm prescribed 35,0mm measured	P
	Dimension marking $c_2$ (prescribed, measured) ..... :	$11_{-2}$ mm prescribed 10,0mm measured	P
	Dimension marking $d$ (prescribed, measured) ..... :	$2^{+1,5}_{-0,5}$ mm prescribed 2,5mm measured	P
	Dimension marking $e_{1max}$ (prescribed, measured).. :	$48^{+0}$ mm prescribed 48,0mm measured	P
	Dimension marking $e_{2max}$ (prescribed, measured).. :	$40^{+0}$ mm prescribed 38,0mm measured	P
	Dimension marking $e_3$ (prescribed, measured) ..... :	$20^{+5}_{-5}$ mm prescribed 21,0mm measured	P
	Dimension marking $e_4$ (prescribed, measured) ..... :	$6^{+0,2}_{-0,2}$ mm prescribed 6,0mm measured	P
	Dimension marking $f_{max}$ (prescribed, measured) .... :	$15^{+0}$ mm prescribed 14,8mm measured	P
	Dimension marking $z_{max}$ (prescribed, measured) ... :	$3^{+0}$ mm prescribed 2,8mm measured	P
AA.5	Fuse-links with long blade contacts, type D (specific for PV application)		-

IEC 60269-6			
Clause	Requirement + Test	Result - Remark	Verdict
	The dimensions of the fuse-links given in Figure AA.5		-
	Size .....		N/A
	Dimension marking $a_1$ (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $a_2$ (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $a_3$ (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $a_4$ (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $b_{1min}$ (prescribed, measured) ..	__mm prescribed __mm measured	N/A
	Dimension marking $b_{2min}$ (prescribed, measured) ..	__mm prescribed __mm measured	N/A
	Dimension marking $b_{3max}$ (prescribed, measured) ..	__mm prescribed __mm measured	N/A
	Dimension marking $b_{4min}$ (prescribed, measured) ..	__mm prescribed __mm measured	N/A
	Dimension marking $c_1$ (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $c_2$ (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $d$ (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $e_{1max}$ (prescribed, measured) ..	__mm prescribed __mm measured	N/A
	Dimension marking $e_{2max}$ (prescribed, measured) ..	__mm prescribed __mm measured	N/A
	Dimension marking $e_3$ (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $e_4$ (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $f_{max}$ (prescribed, measured) ....	__mm prescribed __mm measured	N/A
	Dimension marking $z_{max}$ (prescribed, measured) ...	__mm prescribed __mm measured	N/A
IEC 60269-2	Fuse-links having the same dimension as fuse-links according to IEC 60269-2		-
	System A		-

IEC 60269-6			
Clause	Requirement + Test	Result - Remark	Verdict
	The dimensions of the fuse-links given in Figure 101 in IEC 60269-2	See AA.4	-
	Size .....		N/A
	Dimension marking $a_1$ (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $a_2$ (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $a_3$ (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $a_4$ (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $b_{1min}$ (prescribed, measured) ..	__mm prescribed __mm measured	N/A
	Dimension marking $b_{2min}$ (prescribed, measured) ..	__mm prescribed __mm measured	N/A
	Dimension marking $b_{3max}$ (prescribed, measured) ..	__mm prescribed __mm measured	N/A
	Dimension marking $b_{4min}$ (prescribed, measured) ..	__mm prescribed __mm measured	N/A
	Dimension marking $c_1$ (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $c_2$ (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $d$ (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $e_{1max}$ (prescribed, measured) ..	__mm prescribed __mm measured	N/A
	Dimension marking $e_{2max}$ (prescribed, measured) ..	__mm prescribed __mm measured	N/A
	Dimension marking $e_3$ (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $e_4$ (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking $f_{max}$ (prescribed, measured) ....	__mm prescribed __mm measured	N/A
	Dimension marking $z_{max}$ (prescribed, measured) ...	__mm prescribed __mm measured	N/A
	System F		-
	The dimensions of the fuse-links given in Figure 601 in IEC 60269-2		-

IEC 60269-6			
Clause	Requirement + Test	Result - Remark	Verdict
	Size .....		N/A
	Dimension marking a (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking b <sub>max.</sub> (prescribed, measured) ..	__mm prescribed __mm measured	N/A
	Dimension marking c (prescribed, measured).....	__mm prescribed __mm measured	N/A
	Dimension marking d <sub>min</sub> (prescribed, measured)....	__mm prescribed __mm measured	N/A
	Dimension marking r (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Additional dimensions for fuse-links with striker given in Figure 602 in IEC 60269-2, size 14x51; 22x58 only		-
	Dimension marking S <sub>0</sub> (prescribed, measured).....	__mm prescribed __mm measured	N/A
	Dimension marking S <sub>1</sub> (prescribed, measured).....	__mm prescribed __mm measured	N/A
	Ø 8 .....	__mm measured	N/A
	Ø 3 to 6 .....	__mm measured	N/A
	System H, Class J fuse-links		-
	The dimensions of the fuse-links given in Figure 801 in IEC 60269-2	Drawing A/B	-
	Dimension marking a (prescribed, measured) ...:	__mm prescribed __mm measured	N/A
	Dimension marking b (prescribed, measured) ...:	__mm prescribed __mm measured	N/A
	Dimension marking c (prescribed, measured)....:	__mm prescribed __mm measured	N/A
	Dimension marking d (prescribed, measured) ...:	__mm prescribed __mm measured	N/A
	Dimension marking e min (prescribed, measured) .....	__mm prescribed __mm measured	N/A
	Dimension marking f (prescribed, measured) ...:	__mm prescribed __mm measured	N/A
	Dimension marking g prescribed (mm); measured (mm) .....	__mm prescribed __mm measured	N/A
	Dimension marking h (prescribed, measured) ...:	__mm prescribed __mm measured	N/A
	System H, Class L fuse-links		-

IEC 60269-6			
Clause	Requirement + Test	Result - Remark	Verdict
	The dimensions of the fuse-links given in Figure 802 in IEC 60269-2	Drawing C/D/E/F/G	-
	Dimension marking a (prescribed, measured) ...:	__mm prescribed __mm measured	N/A
	Dimension marking $b_{max}$ (prescribed, measured) .....:	__mm prescribed __mm measured	N/A
	Dimension marking c (prescribed, measured)....:	__mm prescribed __mm measured	N/A
	Dimension marking d (prescribed, measured) ...:	__mm prescribed __mm measured	N/A
	System H, Class T fuse-links		-
	The dimensions of the fuse-links given in Figure 805 in IEC 60269-2	Drawing A/B/C/D	-
	Dimension marking a (prescribed, measured) ...:	__mm prescribed __mm measured	N/A
	Dimension marking b (prescribed, measured) ...:	__mm prescribed __mm measured	N/A
	Dimension marking c (prescribed, measured)....:	__mm prescribed __mm measured	N/A
	Dimension marking d (prescribed, measured) ...:	__mm prescribed __mm measured	N/A
	Dimension marking $e_{min}$ (prescribed, measured):	__mm prescribed __mm measured	N/A
	Dimension marking f (prescribed, measured) ...:	__mm prescribed __mm measured	N/A
	Dimension marking g (prescribed, measured) ...:	__mm prescribed __mm measured	N/A
	Dimension marking h (prescribed, measured) ...:	__mm prescribed __mm measured	N/A
	Dimension marking $i_{min}$ (prescribed, measured) :	__mm prescribed __mm measured	N/A

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Appendix 1	Special tests performed according to the manufacturer's instructions (see 8.3.1)
Not applicable.	

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**Remark:****Not applicable**

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**List of Main Test Equipment**

Serial No.	Name	Type	Serial No. of equipment	Date for next exam
1	Vernier caliper	0~125mm	8005CB89B	2013-3-2
2	Digital microhm device	ZY9987	8347CB08B	2013-3-22
3	Temperature and humidity recorder	ZDR-F20	8421CB09A	2013-3-25
4	DC300A time-delay test system	CYS-DC300A	8493CA11A	2013-2-28
5	Quick temperature-change test chamber	WGDF405	8305DA07A	2012-6-7*
6	Data collection device	34970A	8428CA09A	2013-2-7
7	Dual display digital multimeter	GDM-8245	8427CB09A	2013-3-22
8	Torque screwdriver	GNQ-6	8086DB05B	2013-3-10
9	Data collection system	SYNERGY	8451CA10A	2013-2-28
10	Temperature and humidity recorder	ZDR-F20	8337CB08A	2012-7-12*
11	High-low temperature humidity chamber	WGD/SJ205	8306DA07A	2012-6-7*
12	Electronic stopwatch	DHC9J-J	8430DB09B	2013-5-2
13	Electronic stopwatch	ST4610-2	8088CB07B	2012-7-4*
14	DC Synthetic test system	CYS/SS-DC500/1000A	8495CA11A	2013-2-28
15	Data collection system	CS-2108	8308CA07A	2012-5-8*
16	Temperature and humidity recorder	ZDR-F20	8421CB09A	2013-3-25
17	Megohmmeter	ZC25B-3	8012CB93B	2013-2-14
18	Torque	900QL	8010DB92A	2012-9-1

30.08.2012

\*: Valid duty type tests  
