DNV·GL

KEMA TYPE TEST CERTIFICATE OF COMPLETE TYPE TEST

Object	High-voltage expulsion fuse-cutout		**5167-19**
Type	HV2-15/200	**Serial No.**	

Rated voltage	15 kV	Rated current	100 A
Rated frequency	50 Hz	Rated breaking capacity	10 kA

Manufacturer	Zhejiang Haivo Electrical Co., Ltd., Chongshi Industrial Zone, Panshi, Beibaixiang, Yueqing, Zhejiang, P. R. China *)
Client	Zhejiang Haivo Electrical Co., Ltd., Chongshi Industrial Zone, Panshi, Beibaixiang, Yueqing, Zhejiang, P. R. China
Tested by	KEMA Laboratories Prague, Zkušebnictví, a.s., Podnikatelská 547, Prague 9, the Czech Republic
Date of tests	12 February to 02 May 2019

The object, constructed in accordance with the description, drawings and photographs incorporated in this Certificate, has been subjected to the series of proving tests in accordance with

IEC 60282-2:2008

This Certificate has been issued by DNV GL following exclusively the STL Guides.

The results are shown in the record of proving tests and the oscillograms attached hereto. The values obtained and the general performance are considered to comply with the above standard(s) and to justify the ratings assigned by the manufacturer as listed on page 5.

Digitally signed by Poleacova Larisa
Date: 2026.02.16 21:51:27 EET
Reason: MoldSign Signature
Location: Moldova
MOLDOVA EUROPEANĂ

This Certificate applies only to the object tested. The responsibility for conformity of any object having the same type references as that tested rests with the Manufacturer.
*) as declared by the manufacturer

Zkušebnictví, a.s.

Robert Jech
Operational Manager

KEMA Laboratories

Prague, 21 June 2019

INFORMATION SHEET

1 KEMA Type Test Certificate

A KEMA Type Test Certificate contains a record of a series of (type) tests carried out in accordance with a recognized standard. The object tested has fulfilled the requirements of this standard and the relevant ratings assigned by the manufacturer are endorsed by DNV GL. In addition, the object's technical drawings have been verified and the condition of the object after the tests is assessed and recorded. The Certificate contains the essential drawings and a description of the object tested. A KEMA Type Test Certificate signifies that the object meets all the requirements of the named subclauses of the standard. It can be identified by gold-embossed lettering on the cover and a gold seal on its front sheet.
The Certificate is applicable to the object tested only. DNV GL is responsible for the validity and the contents of the Certificate. The responsibility for conformity of any object having the same type references as the one tested rests with the manufacturer.
Detailed rules on types of certification are given in DNV GL's Certification procedure applicable to KEMA Laboratories.

2 KEMA Report of Performance

A KEMA Report of Performance is issued when an object has successfully completed and passed a subset (but not all) of test programmes in accordance with a recognized standard. In addition, the object's technical drawings have been verified and the condition of the object after the tests is assessed and recorded. The report is applicable to the object tested only. A KEMA Report of Performance signifies that the object meets the requirements of the named subclauses of the standard. It can be identified by silver-embossed lettering on the cover and a silver seal on its front sheet.
The sentence on the front sheet of a KEMA Report of Performance will state that the tests have been carried out in accordance with …. The object has complied with the relevant requirements.

3 KEMA Test Report

A KEMA Test Report is issued in all other cases. Reasons for issuing a KEMA Test Report could be:

- Tests were performed according to the client's instructions.
- Tests were performed only partially according to the standard.
- No technical drawings were submitted for verification and/or no assessment of the condition of the object after the tests was performed.
- The object failed one or more of the performed tests.

The KEMA Test Report can be identified by the grey-embossed lettering on the cover and grey seal on its front sheet.
In case the number of tests, the test procedure and the test parameters are based on a recognized standard and related to the ratings assigned by the manufacturer, the following sentence will appear on the front sheet. The tests have been carried out in accordance with the client's instructions. Test procedure and test parameters were based on If the object does not pass the tests such behaviour will be mentioned on the front sheet. Verification of the drawings (if submitted) and assessment of the condition after the tests is only done on client's request.
When the tests, test procedure and/or test parameters are not in accordance with a recognized standard, the front sheet will state the tests have been carried out in accordance with client's instructions.

4 Official and uncontrolled test documents

The official test documents of DNV GL are issued in bound form. Uncontrolled copies may be provided as a digital file for convenience of reproduction by the client. The copyright has to be respected at all times.

5 Accreditation of KEMA Laboratories

The KEMA Laboratories of DNV GL are accredited in accordance with ISO/IEC 17025 by the respective national accreditation bodies. KEMA Laboratories Arnhem, the Netherlands, is accredited by RvA under nos. L020, L218, K006 and K009. KEMA Laboratories Chalfont, United States, is accredited by A2LA under no. 0553.01. KEMA Laboratories Prague, the Czech Republic, is accredited by CAI as testing laboratory no. 1035.

1 IDENTIFICATION OF THE OBJECT TESTED

1.1 Ratings/characteristics of the object tested

Fuse-cutout		
Voltage	15 kV	
Year of the manufacture	2018	
Number of poles	1	
Frequency	50 Hz	
Current	100 A	X
Temperature-rise limits:		
	35 K	X
	50 K	X
	65 K	X
	75 K	X
Breaking capacity (I_1)	10 kA	1)
Lightning impulse withstand voltage:		
• To earth	110 kV	X
• Across the isolating distance	121 kV	X
Power frequency withstand voltage (dry):		
• To earth	50 kV	X
• Across the isolating distance	55 kV	X
Power frequency withstand voltage (wet):		
• To earth	45 kV	X
Series	II	
Class	A	
Fuse-carrier		
Manufacturer	Zhejiang Haivo Electrical Co., Ltd., Yueqing, Zhejiang, P. R. China	
Current	200 A	X
Fuse-links		
Manufacturer	Zhejiang Haivo Electrical Co., Ltd., Yueqing, Zhejiang, P. R. China	
Speed designation	K	
Current	100 A	
Resistance	1,8 mΩ	
Insulator		
Manufacturer	Hunan Liling Guolian Porcelain Insulator & Electrical Co.,Ltd., Liling, Hunan, P. R. China	

X = This rating has been proved by the tests of this Certificate.

1) = This rating has been proved by the tests of Certificate 5044-19.

1.2 Description of the object tested

A high-voltage expulsion fuse-cutout with fuse-link for outdoor use.

1.3 List of drawings

The manufacturer has guaranteed that the test object submitted for tests has been manufactured in accordance with the following drawings and/or documents. KEMA Laboratories Prague has verified that these drawings and/or documents adequately represent the test object. The manufacturer is responsible for the correctness of these drawings and/or documents and the technical data presented.

The following drawings and/or documents have been included in this Certificate:

Drawing no./document no.	Revision
0HF.027.0007	-

The following drawings and/or documents are only listed for reference and are kept in KEMA Laboratories Prague's files:

Drawing no./document no.	Revision
5HF.027.0015	-
5HF.015.0005	-
8HF.015.0040	-
5HF.036.0016	-
8HF.015.0003	-
8HF.036.0003	-
8HF.0036.0040	-
8HF.036.0007	-
8HF.015.0005	-
8HF.015.0004	-
8HF.036.0026	-
8HF.036.0025	-
8HF.015.0007	-
8HF.036.0022	-
8HF.036.0002	-
8HF.015.0050	-
8HF.015.0051	-
8HV.015.0050	-

2 GENERAL INFORMATION

2.1 The tests were witnessed by

Name	Company
Limin Cai (12, 15, 18, 19 February 2019)	Zhejiang Haivo Electrical Co., Ltd. Yueqing, Zhejiang, P. R. China

2.2 The tests were carried out by

Name	Company
Riccardo Fares (12, 13, 15, 18 ,19 February and 02 May 2019)	KEMA Laboratories Prague, Zkušebnictví, a.s., Prague, the Czech Republic
Tomáš Adámek (12, 13 February 2019)	
Richard Abrahamčík (02 May 2019)	

2.3 Reference to other reports

Certificate No	Tests performed
5044-19	Breaking tests of expulsion fuse-cutout 15kV, 100 A with homogeneous series of the fuse links 6 to 100 A

2.4 Accuracy of measurement

The guaranteed uncertainty in the figures mentioned, taking into account the total measuring system, is less than 5%, unless mentioned otherwise.
The reported expanded uncertainties of measurements are stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a probability of approximately 95 %. Determination is based on ENV 13005 (GUM).

3 LEGEND

Explanation of the letter symbols and abbreviations on the graphs and measured data sheets

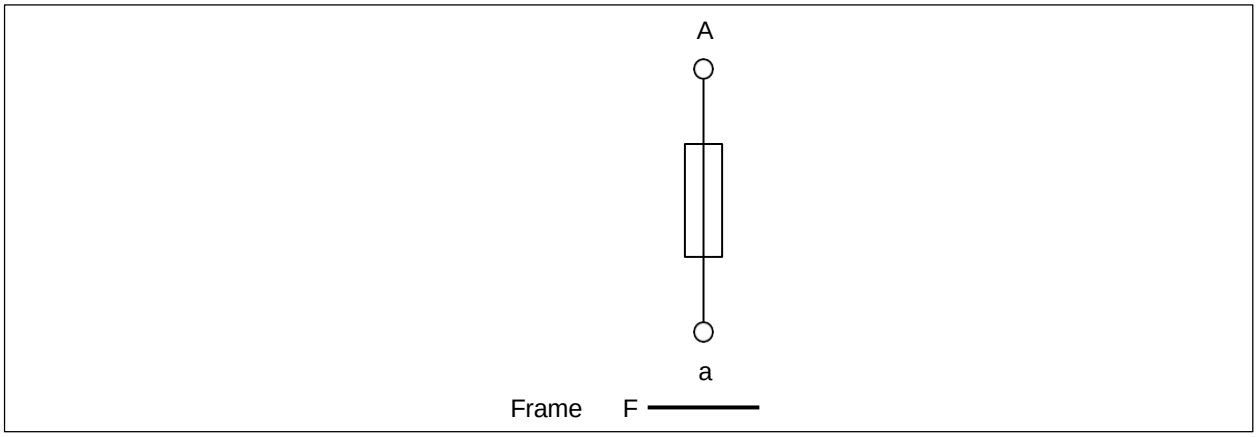
θ1 – θ15	Recorded temperatures (TC1–TC15)
θ_{amb}	Average value of the ambient air temperatures (TC16 – TC18)
I	Recorded current

4 DIELECTRIC TESTS

Standard and date

Standard IEC 60282-2, subclause 8.4
Test date 12 and 13 February 2019

4.1 Test conditions



Condition	Fuse-carrier	Voltage applied to	Earth connected to	Isolated
01	Closed	A, a	F	-
02	Open	A	a, F	-
03	Open	a	A, F	-
04	Open	A	a	F
05	Open	a	A	F

4.2 Lightning impulse voltage dry tests

Standard and date

Standard IEC 60282-2, subclause 8.4.4
Test date 12 February 2019

Atmospheric conditions

Ambient temperature	20,5 °C	Ambient relative humidity	26 %
Ambient absolute pressure	994 hPa		

Characteristic test data and atmospheric correction factors

Specified test voltage to earth				110 kV
Air density correction factor	k_1	0,980	Minimum discharge path	19 cm
Humidity correction factor	k_2	1		
Atmospheric correction factor	$K_t = k_1 \cdot k_2$	0,980		
Corrected test voltage to earth (test conditions 01 to 03)				108 kV

Specified test voltage across the isolating distance				121 kV
Air density correction factor	k_1	0,980	Minimum discharge path	28 cm
Humidity correction factor	k_2	1		
Atmospheric correction factor	$K_t = k_1 \cdot k_2$	0,980		
Corrected test voltage across the isolating distance (test conditions 04 to 05)				119 kV

Condition	Polarity	Applied voltage (kV)	Number of impulses	Observations
01	+	108	15	No disruptive discharge.
	–	108	15	No disruptive discharge.
02	+	108	15	No disruptive discharge.
	–	108	15	No disruptive discharge.
03	+	108	15	No disruptive discharge.
	–	108	15	No disruptive discharge.
04	+	119	15	No disruptive discharge.
	–	119	15	No disruptive discharge.
05	+	119	15	No disruptive discharge.
	–	119	15	No disruptive discharge.

The waveshape was within the specified limits.

Requirements

The number of disruptive discharges on self-restoring insulation shall not exceed 2 for each sequence of 15 impulses. No disruptive discharge on non-self-restoring insulation shall occur.

The object fulfilled the requirements of the tests.

4.3 Power-frequency voltage dry tests

Standard and date

Standard IEC 60282-2, subclause 8.4.5
Test date 13 February 2019

Atmospheric conditions

Ambient temperature	21,9 °C	Ambient relative humidity	28 %
Ambient absolute pressure	1003 hPa		

Characteristic test data and atmospheric correction factors

Specified test voltage to earth				50 kV
Air density correction factor	k_1	0,988	Minimum discharge path	19 cm
Humidity correction factor	k_2	1		
Atmospheric correction factor	$K_t = k_1 \cdot k_2$	0,988		
Corrected test voltage to earth (test conditions 01 to 03)				49 kV

Specified test voltage across the isolating distance				55 kV
Air density correction factor	k_1	0,994	Minimum discharge path	28 cm
Humidity correction factor	k_2	1		
Atmospheric correction factor	$K_t = k_1 \cdot k_2$	0,994		
Corrected test voltage across the isolating distance (test conditions 04 to 05)				55 kV

Condition	Applied voltage (kV)	Frequency (Hz)	Duration (s)	Observations
01	49	50	60	No disruptive discharge.
02	49	50	60	No disruptive discharge.
03	49	50	60	No disruptive discharge.
04	55	50	60	No disruptive discharge.
05	55	50	60	No disruptive discharge.

Requirements

No disruptive discharge shall occur.

The object fulfilled the requirements of the tests.

4.4 Power-frequency voltage wet tests

Standard and date

Standard	IEC 60282-2, subclause 8.4.6
Test date	13 February 2019

Atmospheric conditions

Ambient temperature	18,9 °C	Ambient relative humidity	53 %
Ambient absolute pressure	1003 hPa		

Characteristic test data and atmospheric correction factors

Specified test voltage to earth				45 kV
Air density correction factor	k_1	0,997	Minimum discharge path	19 cm
Humidity correction factor	k_2	1		
Atmospheric correction factor	$K_t = k_1 \cdot k_2$	0,997		
Corrected test voltage to earth (test conditions 01 to 03)				45 kV

Precipitation rate (vertical component)	1,7 mm/min
Precipitation rate (horizontal component)	1,6 mm/min
Temperature of water	16,3 °C
Conductivity of water	104 µS/cm

Condition	Applied voltage (kV)	Frequency (Hz)	Duration (s)	Observations
01	45	50	10	No disruptive discharge.
02	45	50	10	No disruptive discharge.
03	45	50	10	No disruptive discharge.

Requirements

No disruptive discharge shall occur.

The object fulfilled the requirements of the tests.

5 TEMPERATURE RISE TESTS (100 A)

Standard and date

Standard	IEC 60282-2, subclause 8.5
Test date(s)	15 February 2019

5.1 Test conditions

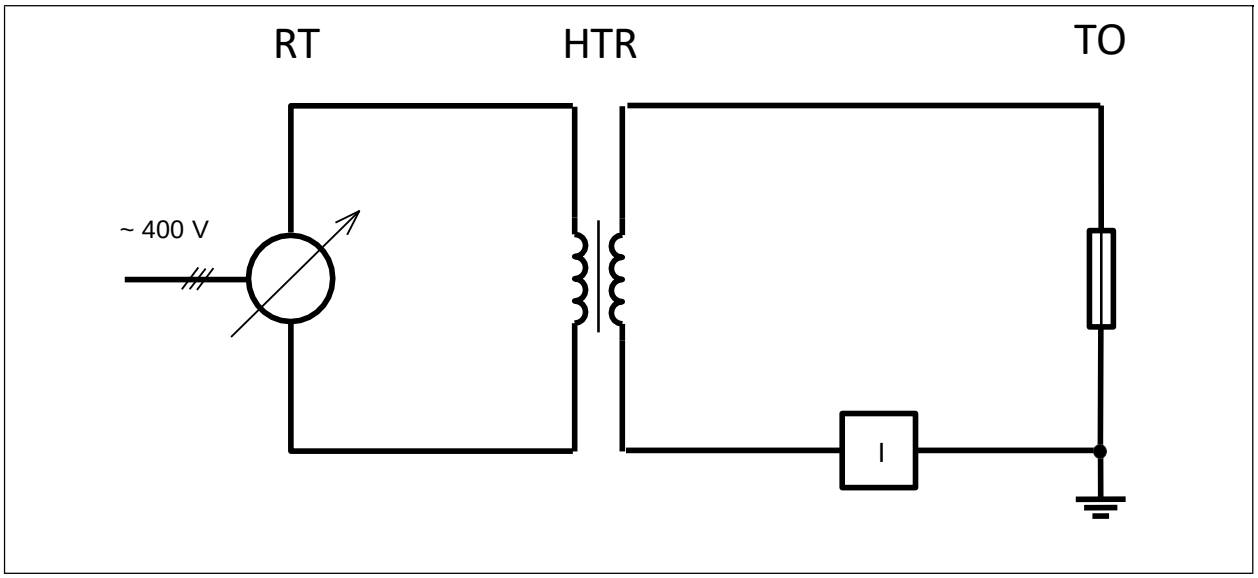
Relative humidity	:	28 – 27 %
Atmospheric pressure	:	1003 – 1002 hPa

The temperature-rise test was carried out with the AC test current of 100 A in a single-phase test circuit. The fuse-carrier was equipped with a 78 mm copper rod connected to a fuse-link of the largest current rating (100 A), same rating of the fuse-carrier. The fuse base was placed in a vertical position. The fuse-base was connected to the test circuit by means of one bare Cu conductor with a cross-section of 120 mm^2 and ca 1,0 m in length on each terminal.

The temperature-rise test was finished when the thermal equilibrium was reached, i.e. when the temperatures-rise vary no more than ± 1 K during 60 minutes.

The temperature-rise tests were carried out in a closed room; the ambient air temperature was measured by means of three thermocouples placed in small bottles containing about 1 l of oil.

5.2 Test circuit S01



RT	= Regulating Transformer	TO	= Test Object
HTR	= High-current Transformer	I	= Current Measurement

Supply		
Power	VA	107
Frequency	Hz	50
Phase(s)		1
Voltage (no load)	V	1,07
Current	A	100
Neutral		not earthed

Load	
Joint points	earthed

Remarks: Current - average value during past 1 hour of the test.

5.3 Thermocouple positions

5.3.1 Description

TC no.	Location description	Item
TC1	Brass silver- coated upper terminal, bolted connection to the temporary Cu bare test conductor	Terminal
TC2	Cu silver-coated bolted connection next to upper terminal	Connection
TC3	Cu silver-coated bar near the upper contact, nether part	Contact
TC4	Cu silver-coated bar near the upper contact, upper part	Contact
TC5	Brass silver- coated cap of the fuse carrier	Contact
TC6	Bare brass part in contact with the insulation material of the fuse carrier - upper part	Insulation
TC7	Bare brass part in contact with the insulation material of the fuse carrier - nether part	Insulation
TC8	Bare brass part of the nether terminal in contact with the fuse carrier, right side from the front view	Contact
TC9	Bare brass part of the nether terminal in contact with the fuse carrier, left side from the front view	Contact
TC10	Stainless steel part in the nether terminal in contact with the fuse-link tail	Metal part
TC11	Bare brass bolted connection in the nether terminal - fuse-link connection	Connection
TC12	Cu silver-coated bar in the nether terminal in contact with the fuse carrier, right side from the rear view	Contact
TC13	Cu silver-coated bar in the nether terminal in contact with the fuse carrier, left side from the rear view	Contact
TC14	Bare brass bolted connection in the nether terminal close to the insulation material	Connection
TC15	Brass silver- coated nether terminal, bolted connection to Cu bare test conductor	Terminal

5.4 Test results

Ambient air temperature

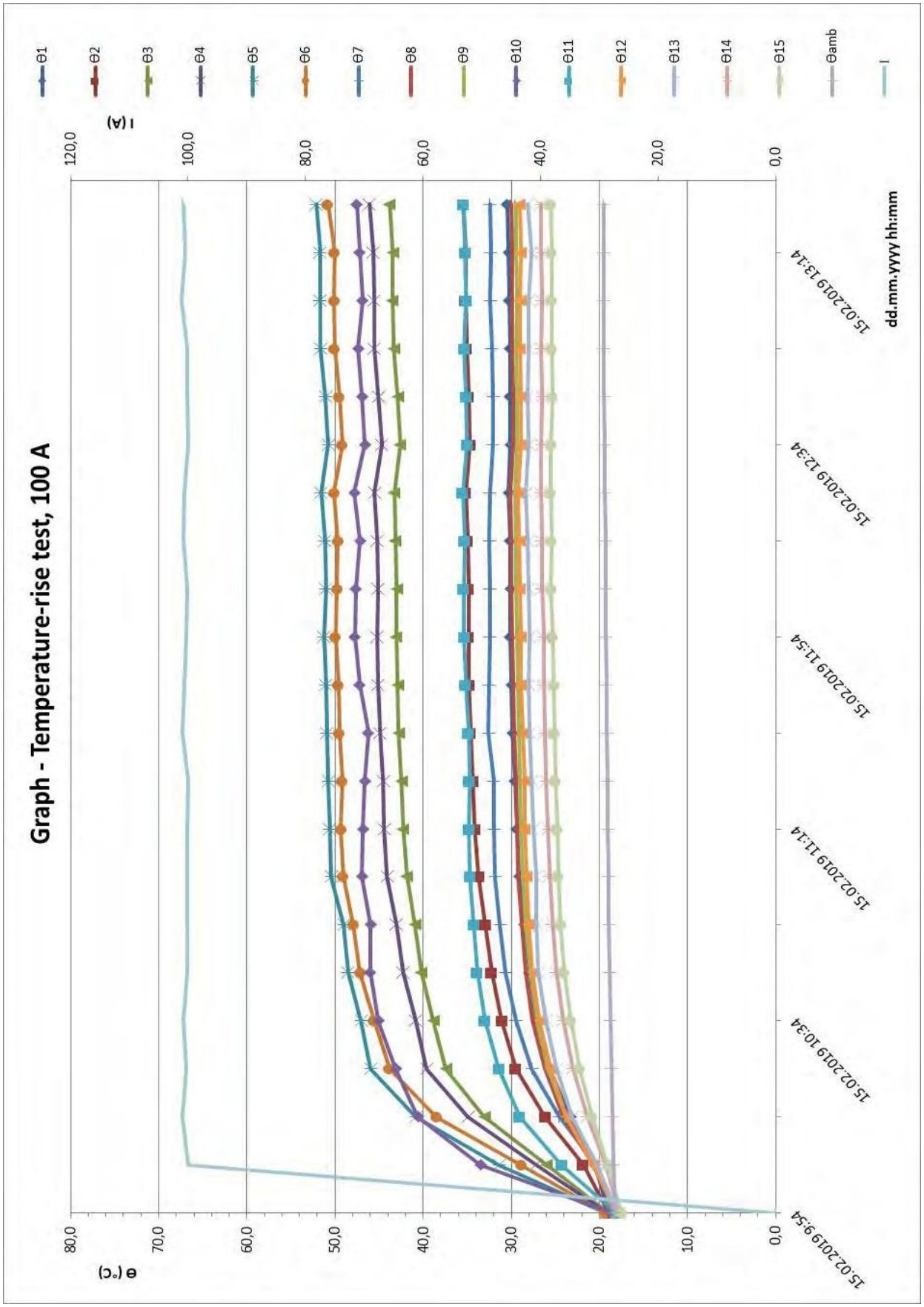
TC no.	Recorded value (°C)	Average value θ_{amb} (°C)
TC16	19,6	19,5
TC17	19,5	
TC18	19,5	

Thermocouple readings

TC no.	Item	Measured/recorded values		Acceptance criteria	
		Recorded temperature at thermal equilibrium θ (°C)	Final temperature-rise $\theta - \theta_{amb}$ (K)	Maximum allowable temperature (°C)	Maximum allowable temperature-rise (K)
TC1	Terminal	30,4	11	105	65
TC2	Connection	35,4	16	115	75
TC3	Contact	43,8	24	105	65
TC4	Contact	46,1	27	105	65
TC5	Contact	52,1	33	105	65
TC6	Insulation	50,8	31	90	50
TC7	Insulation	32,5	13	90	50
TC8	Contact	30,0	11	105	65
TC9	Contact	29,5	10	105	65
TC10	Metal part	47,6	28	75	35
TC11	Connection	35,4	16	90	50
TC12	Contact	29,1	10	105	65
TC13	Contact	28,2	9	105	65
TC14	Connection	26,6	7	115	75
TC15	Terminal	25,5	6	105	65

The object fulfilled the requirements of the test.

5.4.1 Graphs


Graph - Temperature-rise test, 100 A
ϑ1
ϑ2
ϑ3
ϑ4
ϑ5
ϑ6
ϑ7
ϑ8
ϑ9
ϑ10
ϑ11
ϑ12
ϑ13
ϑ14
ϑ15
ϑamb
I
I (A)
120,0
100,0
80,0
60,0
40,0
20,0
0,0
ϑ (°C)
80,0
70,0
60,0
50,0
40,0
30,0
20,0
10,0
0,0
15.02.2019 9:54
15.02.2019 10:34
15.02.2019 11:14
15.02.2019 11:54
15.02.2019 12:34
15.02.2019 13:14
dd.mm.yyyy hh:mm

5.4.2 Measured data sheets

Time	TC1	TC2	TC3	TC4	TC5	TC6	TC7	TC8
15.02.2019 9:54	18,9	18,9	19,0	19,1	19,3	19,4	18,3	18,2
15.02.2019 10:04	20,5	21,8	26,0	27,2	31,4	28,9	20,4	20,7
15.02.2019 10:14	23,3	26,1	33,0	34,9	40,8	38,5	24,6	24,1
15.02.2019 10:24	25,6	29,5	37,4	39,6	46,0	43,8	27,7	26,2
15.02.2019 10:34	27,1	31,1	38,8	40,9	47,1	45,6	29,5	27,6
15.02.2019 10:44	27,9	32,2	40,2	42,3	48,5	47,2	30,6	28,4
15.02.2019 10:54	28,5	32,9	40,9	43,1	49,0	47,9	31,3	28,8
15.02.2019 11:04	29,1	33,7	41,9	44,1	50,4	49,1	31,9	29,2
15.02.2019 11:14	29,4	34,1	42,3	44,4	50,6	49,4	32,0	29,4
15.02.2019 11:24	29,6	34,4	42,4	44,5	50,8	49,2	32,0	29,5
15.02.2019 11:34	29,9	34,6	42,8	44,9	50,9	49,5	32,6	29,6
15.02.2019 11:44	30,0	34,8	42,9	45,1	51,0	49,6	32,5	29,8
15.02.2019 11:54	30,1	34,9	43,0	45,2	51,3	50,0	32,4	29,9
15.02.2019 12:04	30,1	34,8	43,0	45,1	51,1	49,8	32,4	30,0
15.02.2019 12:14	30,1	35,0	43,1	45,2	51,2	49,7	32,5	30,0
15.02.2019 12:24	30,3	35,2	43,3	45,5	51,6	50,1	32,4	30,1
15.02.2019 12:34	30,1	34,7	42,6	44,7	50,8	49,2	32,1	29,8
15.02.2019 12:44	30,1	34,8	42,9	45,1	51,1	49,5	32,1	29,8
15.02.2019 12:54	30,1	35,1	43,3	45,6	51,6	50,1	32,2	29,9
15.02.2019 13:04	30,2	35,2	43,5	45,6	51,7	50,1	32,4	29,9
15.02.2019 13:14	30,3	35,2	43,5	45,7	51,7	50,1	32,3	29,9
15.02.2019 13:24	30,4	35,4	43,8	46,1	52,1	50,8	32,5	30,0

Time	201 (C)	202 (C)	203 (C)	204 (C)	205 (C)	206 (C)	207 (C)	208 (C)

Time	TC9	TC10	TC11	TC12	TC13	TC14	TC15	TC16
15.02.2019 9:54	18,1	18,6	18,1	18,0	18,0	17,8	17,5	18,2
15.02.2019 10:04	20,6	33,5	24,3	20,7	20,2	19,3	19,0	18,4
15.02.2019 10:14	23,8	40,6	29,0	23,7	23,1	21,4	20,9	18,5
15.02.2019 10:24	25,8	43,1	31,4	25,5	24,8	23,0	22,3	18,7
15.02.2019 10:34	27,1	45,1	33,0	26,8	26,1	24,1	23,3	18,8
15.02.2019 10:44	27,9	46,0	33,8	27,6	26,9	24,9	24,0	18,8
15.02.2019 10:54	28,4	45,9	34,3	28,0	27,1	25,3	24,4	19,0
15.02.2019 11:04	28,7	46,9	34,7	28,3	27,2	25,6	24,7	19,0
15.02.2019 11:14	28,9	46,8	34,8	28,5	27,5	25,8	24,8	19,1
15.02.2019 11:24	29,0	46,6	34,7	28,4	27,7	26,0	25,0	19,1
15.02.2019 11:34	29,1	46,2	34,8	28,7	28,0	26,2	25,1	19,2
15.02.2019 11:44	29,2	47,2	35,2	28,9	28,0	26,3	25,2	19,3
15.02.2019 11:54	29,3	47,7	35,4	28,9	27,9	26,3	25,3	19,3
15.02.2019 12:04	29,4	47,7	35,4	29,0	28,1	26,5	25,5	19,4
15.02.2019 12:14	29,5	47,2	35,3	29,1	28,1	26,5	25,5	19,4
15.02.2019 12:24	29,5	47,8	35,5	29,2	28,3	26,6	25,5	19,4
15.02.2019 12:34	29,4	46,6	35,0	28,9	28,0	26,6	25,5	19,5
15.02.2019 12:44	29,3	46,9	35,1	28,9	28,2	26,5	25,3	19,6
15.02.2019 12:54	29,4	47,3	35,3	29,0	28,0	26,6	25,4	19,6
15.02.2019 13:04	29,4	46,9	35,1	29,0	28,0	26,5	25,4	19,6
15.02.2019 13:14	29,5	47,2	35,2	28,9	27,7	26,6	25,5	19,6
15.02.2019 13:24	29,5	47,6	35,4	29,1	28,2	26,6	25,5	19,6

Time	209 (C)	210 (C)	211 (C)	212 (C)	213 (C)	214 (C)	215 (C)	216 (C)

Time	TC17	TC18	I
15.02.2019 9:54	18,1	18,3	0,0
15.02.2019 10:04	18,3	18,5	99,9
15.02.2019 10:14	18,5	18,6	101,0
15.02.2019 10:24	18,6	18,7	100,3
15.02.2019 10:34	18,7	18,8	100,9
15.02.2019 10:44	18,8	18,8	100,2
15.02.2019 10:54	18,9	18,9	100,1
15.02.2019 11:04	18,9	19,0	100,1
15.02.2019 11:14	19,0	19,0	100,2
15.02.2019 11:24	19,0	19,1	100,0
15.02.2019 11:34	19,1	19,1	101,1
15.02.2019 11:44	19,2	19,2	100,7
15.02.2019 11:54	19,2	19,2	100,4
15.02.2019 12:04	19,3	19,3	100,2
15.02.2019 12:14	19,3	19,3	100,8
15.02.2019 12:24	19,3	19,3	100,6
15.02.2019 12:34	19,4	19,4	100,0
15.02.2019 12:44	19,5	19,5	100,2
15.02.2019 12:54	19,5	19,5	100,2
15.02.2019 13:04	19,5	19,5	101,1
15.02.2019 13:14	19,5	19,5	100,5
15.02.2019 13:24	19,5	19,5	100,8

Time	217 (C)	218 (C)	219 (AAC)

6 VERIFICATION OF TIME-CURRENT CHARACTERISTICS (100 A)

Standard and date

Standard	IEC 60282-2, subclause 8.7
Test date(s)	2 May 2019

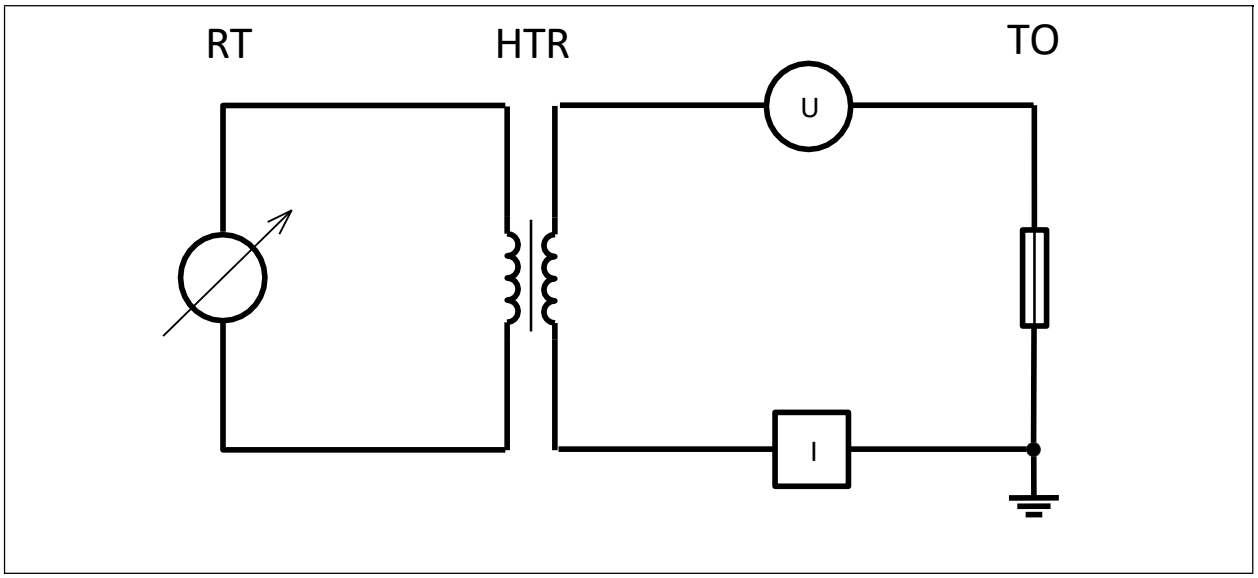
6.1 Test conditions

Relative humidity	:	28 %
Atmospheric pressure	:	1003 hPa
Ambient air temperature	:	22 °C

The test was performed in a single-phase test circuit. The fuse base was placed in a vertical position. The fuse-base was connected to the test circuit by means of one bare Cu conductor with a cross-section of 120 mm^2 and ca 1,0 m in length on each terminal.

The test was carried out in a closed room.

6.2 Test circuit S02



RT	= Regulating Transformer	TO	= Test Object	I	= Current Measurement
HTR	= High-current Transformer			U	= Voltage Measurement to earth

Supply		
Power	kVA	227
Frequency	Hz	50
Phase(s)		1
Voltage (no load)	V	63
Current	A	3600
Neutral		not earthed

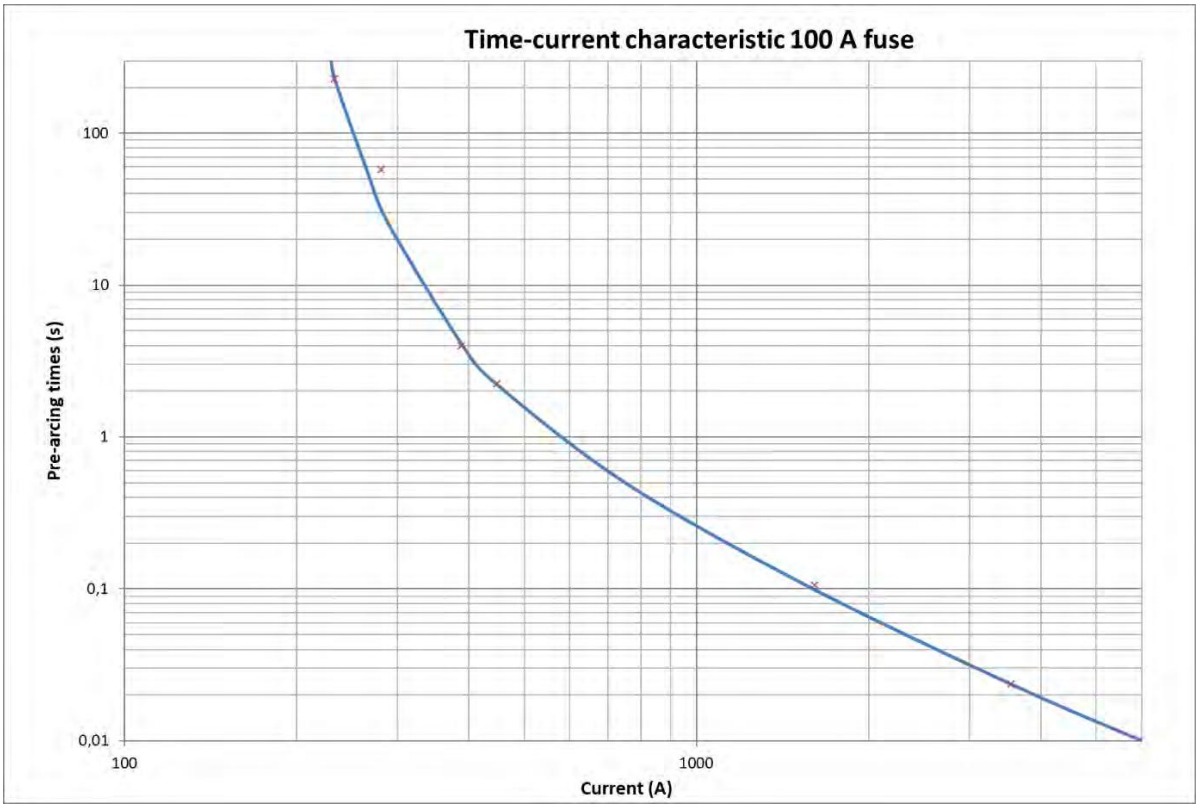
Load	
Joint points	earthed

Remarks: -

6.3 Test results and graphs

Current (A)	Pre-arcing time (s)
233	228
281	57,8
388	4,00
448	2,26
1611	0,106
3544	0,0236

6.3.1 Graphs



7 MECHANICAL TEST OF FUSE-BASES AND FUSE CARRIERS

Standard and date

Standard IEC 60282-2, subclause 8.8.1
Test date(s) 18 February 2019

7.1 Test results

Test sample no. 1

Components tested	Number of operating cycles	Observations
Fuse-bases and fuse-carriers with 200 A fuse-link	200	-

Test sample no. 2

Components tested	Number of operating cycles	Observations
Fuse-bases and fuse-carriers with 200 A fuse-link	200	-

Test sample no. 3

Components tested	Number of operating cycles	Observations
Fuse-bases and fuse-carriers with 200 A fuse-link	200	-

Requirements

All fuses shall be in operable condition, with no cracks in the insulator(s), or loose hardware.

The object fulfilled the requirements of the test.

8 MECHANICAL TESTS OF FUSE-LINKS

Standard and date

Standard IEC 60282-2, subclause 8.8.2
Test date(s) 19 February 2019

8.1 Static test results

Components tested	Applied force (N)	Duration (mins)	Observations
One fuse-link	60	30	-

Requirements

No damage such as rupture, loosening, slipping of connections or elongation of components.

The object fulfilled the requirements of the test.

8.2 Dynamic test results

Components tested	Number of operating cycles	Observations
One fuse-link	20	-

Requirements

No damage such as rupture, loosening, slipping of connections or elongation of components.

The object fulfilled the requirements of the test.