

# Test Report

Sample Name: 15kV HEAT SHRINKABLE INDOOR  
TERMINATION ACCESSORIES

Model: MZDNK-3-15-E(3×300)

Test Type: Type Test

Issue Date: January 26<sup>th</sup>, 2026

Prepared by: \_\_\_\_\_

Checked by: \_\_\_\_\_

Seal: Approved by: \_\_\_\_\_

Authorized Signatory

The Test Center of Jiangsu Jiameng Electrical Equipment Co., Ltd.

Add: Building 9, No.5, Zhongli Road, Binhai Industrial Zone, Qidong, Jiangsu Province

TEL: 0086-0513-83900000 FAX: 0086-0513-83601898 Web: <http://www.melec.com.cn/>

Form no.: TC-R-711-02

Version: E Edition:5

## Declaration

1. There are seven types of test reports issued by Test Center:

Type test of finished products:

All items of type test shall be completed according to the test procedures specified in the product inspection standards, which is usually carried out in the trial production of new products and retesting after the design, material or process changed;

Type test of incoming material/products:

All items of type test shall be completed according to the test procedures specified in the incoming inspection standards, which is usually carried out when new materials, new formulations or new suppliers are selected;

Sampling test of incoming material/products:

All items of sampling test shall be completed according to the test procedures specified in the incoming inspection standards;

Sampling test of products in process:

All items of sampling test shall be completed according to the test procedures specified in the product inspection standards, usually in the product manufacturing process;

Sampling test of finished products:

All items of sampling test shall be completed according to the test procedures specified in the product inspection standards, usually after mass production of products;

Factory test:

All items of factory test shall be completed according to the test procedures specified in the product inspection standards;

Performance test:

All tests except the above.

2. Test center does not carry out sampling.

3. The validity of the test center report is responsible for tested samples and the consigner is responsible for the authenticity of the sample information provided. Compliance with any sample with the same name as the test object is the responsibility of the consigner.

4. The report is invalid without signatures from the relative persons who prepare, check and approve or without the seal of the test center. The report is invalid with any alteration.

5. Without the written consent from the test center, the report cannot be copied partially.

6. If there is any objection to this report, it should be submitted to the test center within 15 days from the date of receiving the report.

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<b>1. Consigning party</b>	Consigning party	EN Dept. Development Section 3	Address	No.5,Zhongli Road, Binhai Industria Zone, Qidong, Jiangsu Province
	Tel.	68216	E-mail	gl_zhu@melec.com.cn
<b>2.Sample information</b>	Name	15kV HEAT SHRINKABLE INDOOR TERMINATION ACCESSORIES	Model	MZDNK-3-15-E(3×300)
	Quantity	4 sets	Sample No.	EN2511006-01~EN2511006-04 (Sample preparation)
	State	Finished product	Drawing	/
	Sample delivery methods	Sent by consigning party	Date of reception	November 5 <sup>th</sup> , 2025
	Manufactured by	Jiangsu Jiameng Electrical Equipment Co., Ltd.		
	Sample description	516 customer accessories, which are configured as steel tape armored copper tape screen cables.		
	Special requirements	<ol style="list-style-type: none"> <li>Aluminum cable: YJLV22 8.7/15kV 3×300</li> <li>Thermal short-circuit test (screen): 3.9kA,1s</li> <li>Thermal short-circuit test (conductor): 28kA,1.5s</li> <li>Dynamic short-circuit test: 100kA,10ms</li> </ol>		
<b>3. Test standard &amp; Test items</b>	Method standard	IEC 61442:2023 Test methods for accessories for power cables with rated voltages from 6 kV (Um = 7,2 kV) up to 30 kV (Um = 36 kV) IEC 60502-4:2023 Power cables with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1,2 kV) up to 30 kV (Um = 36 kV) –Part 4: Test requirements on accessories for cables with rated voltages from 6 kV (Um = 7,2 kV) up to 30 kV (Um = 36 kV) Table 9 Test sequences and requirements for terminations		
	Judging basis	IEC 60502-4:2023 Power cables with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1,2 kV) up to 30 kV (Um = 36 kV) –Part 4: Test requirements on accessories for cables with rated voltages from 6 kV (Um = 7,2 kV) up to 30 kV (Um = 36 kV)		
<b>4.Conclusion</b>	Test results of the tested items are qualified.			
<b>Note</b>	<ol style="list-style-type: none"> <li>Deviation Description: none.</li> <li>Thermal short-circuit test (screen), Thermal short-circuit test (conductor), and Dynamic short-circuit test were subcontracted to Zhejiang Fangyuan Testing Group Co., LTD. The test results were recorded based on the test report numbered "No.25K133J30007" provided by Zhejiang Fangyuan Testing Group Co., LTD</li> <li>Test witnessed by: Mr. Sakhawat Ali ( ) Mr. Salman Zafar(Executive Director,)</li> </ol>			

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**5. Test instruments**

No.	Instruments Names	Instruments Types	Instruments No.	The Validity of Instrument Calibration
1	AC voltage test system	KZT-120	TC-ACY-01	09.09.2026
2	AC voltage test system	KZT-100	TC-ACY-02	09.09.2026
3	DPD-2003 DIGITAL PARTIAL DISCHARGE DETECTOR	KZT-100	TC-DPD-01	09.09.2026
4	Cable circulation heating test system	KZT-150	TC-DJR-01	09.09.2026
5	Intelligent measurement and control system for impulse voltage generator	KZT-400	TC-CJD-01	09.09.2026
6	Impulse pulse signal measurement analysis system	KZT-400	TC-CJD-02	09.09.2026
7	Damp salt spray laboratory	CY-33m <sup>3</sup>	TC-SYX-01	09.09.2026
8	AC voltage test system	KZT-250	TC-ACY-03	09.09.2026
9	Conductivity meter	DDSJ-308F	TC-DDL-02	09.09.2026
10	High insulation resistance measuring instrument	ZC-90E	TC-DZY-05	24.03.2026

**6. Auxiliary test tools or materials**

No.	Name	Type	Note
1	Industrial salt	/	In accordance with GB/T 5462-2015

Configuration list: Annex 1, cable information: Annex 3.

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## 7. Sample preparation, installation, treatment, etc.

7.1 Circuit 1 consists of 15kV HEAT SHRINKABLE OUTDOOR TERMINATION ACCESSORIES [MZDWK-3-15-E (3×300)] numbered EN2511005-01, 15kV HEAT SHRINKABLE INDOOR TERMINATION ACCESSORIES [MZDNK-3-15-E (3×300)] numbered EN2511006-01 and 15kV HEAT SHRINKABLE JOINT ACCESSORIES [MZJK-3-15-E (3×300)] numbered EN2511004-01. The length of the circuit was 9.6 meters.

7.2 Circuit 2 consists of the 15kV HEAT SHRINKABLE OUTDOOR TERMINATION ACCESSORIES [MZDWK-3-15-E (3×300)] numbered EN2511005-02, 15kV HEAT SHRINKABLE INDOOR TERMINATION ACCESSORIES [MZDNK-3-15-E (3×300)] numbered EN2511006-02 and 15kV HEAT SHRINKABLE JOINT ACCESSORIES [MZJK-3-15-E (3×300)] numbered EN2511004-02. The length of the circuit was 9.6 meters.

7.3 Circuit 4 consists of the 15kV HEAT SHRINKABLE OUTDOOR TERMINATION ACCESSORIES [MZDWK-3-15-E (3×300)] numbered EN2511005-03, 15kV HEAT SHRINKABLE INDOOR TERMINATION ACCESSORIES [MZDNK-3-15-E (3×300)] numbered EN2511006-03 and 15kV HEAT SHRINKABLE JOINT ACCESSORIES [MZJK-3-15-E (3×300)] numbered EN2511004-03. The length of the circuit was 9.6 meters.

7.4 Circuit 5 consists of the 15kV HEAT SHRINKABLE OUTDOOR TERMINATION ACCESSORIES [MZDWK-3-15-E (3×300)] numbered EN2511005-04 and 15kV HEAT SHRINKABLE INDOOR TERMINATION ACCESSORIES [MZDNK-3-15-E (3×300)] numbered EN2511006-04, the length was 5 meters.

7.5 The JMD-630 electric tool with DL34 compression mold (opposite side size: 28.14mm, width: 17.14mm) was adopted for crimping in turn according to the crimping order of samples.

Installation instructions: Annex 2.

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**8. Test results****8.1 IEC 60502-4:2023 Table 9: test sequence-1.1****8.1.1AC voltage tests (dry)**

Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN251100 6-02	IEC 61442: 2023	IEC 60502-4: 2023 After the sample is applied with 39kV AC voltage for 5min, no breakdown or flashover shall occur.	After the yellow phase was applied with 39.2kV AC voltage for 5min, no flashover or breakdown occurred. After the green phase was applied with 39.4kV AC voltage for 5min, no flashover or breakdown occurred. After the red phase was applied with 39.3kV AC voltage for 5min, no flashover or breakdown occurred.	Qualified	Circuit 2
EN251100 6-03	5		After the yellow phase was applied with 39.3kV AC voltage for 5min, no flashover or breakdown occurred. After the green phase was applied with 39.3kV AC voltage for 5min, no flashover or breakdown occurred. After the red phase was applied with 39.4kV AC voltage for 5min, no flashover or breakdown occurred.	Qualified	Circuit 4

Fang

Test site: High Voltage Lab Test environment: 19.5°C/49.0%RH Tester : Chenming Test date: Nov.16<sup>th</sup>,2025**The Test Center of Jiangsu Jiameng Electrical Equipment Co., Ltd.**

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**8.1.2 Partial discharge at ambient**

Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN2511006-02	IEC 61442: 2023 8	IEC 60502-4: 2023 AC15kV voltage, partial discharge≤10pC	Yellow phase: AC15.3kV partial discharge 5.55pC, background 0.67pC Green phase: AC15.2kV partial discharge 5.39pC, background 0.69pC Red phase: AC15.3kV partial discharge 5.60pC, background 0.65pC	Qualified	Circuit2
EN2511006-03			Yellow phase: AC15.3kV partial discharge 5.97pC, background 0.70pC Green phase: AC15.3kV partial discharge 5.31pC, background 0.69pC Red phase: AC15.3kV partial discharge 5.60pC, background 0.66pC		

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Test site: High Voltage Lab Test environment: 19.5°C/49.0%RH Tester: Chenming Test date: Nov.16<sup>th</sup>,2025**The Test Center of Jiangsu Jiameng Electrical Equipment Co., Ltd.**

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**8.1.3 Impulse voltage tests at  $\theta t$** 

Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN2511006-02	IEC 61442:2023 7	IEC 60502-4:2023 After heating the cable to 95°C to 100°C and keeping for 2 hours, AC 95kV voltage, each polarity impulse 10 times, no breakdown or flashover shall occur.	After the cable was heated to 95 °C to 100 °C and kept for 2 hours. Yellow phase: After 10 impulses of positive and negative polarities respectively, no flashover or breakdown occurred. Green phase: After 10 impulses of positive and negative polarities respectively, no flashover or breakdown occurred. Red phase: After 10 impulses of positive and negative polarities respectively, no flashover or breakdown occurred.	Qualified	Circuit 2 Data and waveforms are shown in Table 1.
EN2511006-03			After the cable was heated to 95 °C to 100 °C and kept for 2 hours. Yellow phase: After 10 impulses of positive and negative polarities respectively, no flashover or breakdown occurred. Green phase: After 10 impulses of positive and negative polarities respectively, no flashover or breakdown occurred. Red phase: After 10 impulses of positive and negative polarities respectively, no flashover or breakdown occurred.	Qualified	Circuit 4 Data and waveforms are shown in Table 1.

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 Test site: High Voltage Lab    Test environment: 19.0°C/48.8%RH    Tester : Chenming    Test date: Nov.18<sup>th</sup>,2025
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**8.1.4 Heating cycles in air**

Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN2511006-02	IEC 61442:2023 10.2	IEC 60502-4: 2023 Circulate 60 times at AC22kV, with each cycle lasting at least 8 hours. During this period, maintain a stable temperature of 95°C to 100°C for at least 2 hours. Then naturally cool down to an ambient temperature within 10K for at least 3 hours. Requirements: Cycle 60 times under the conditions of temperature from 95°C to 100°C and AC 22kV, no breakdown or flashover shall occur.	The test was completed for 60 cycles under the conditions of temperature from 95°C to 100°C and AC 22kV voltage. No breakdown or flashover occurred.	Qualified	Circuit 2 Cycle temperature data are shown in Table 2
EN2511006-03			The test was completed for 60 cycles under the conditions of temperature from 95°C to 100°C and AC 22kV voltage. No breakdown or flashover occurred.	Qualified	Circuit 4 Cycle temperature data are shown in Table 2

Test site: High Voltage Lab Test environment: 19.0°C/48.8%RH Tester: Chenming Test date: Dec.12<sup>th</sup>,2025

Fang Nov.18<sup>th</sup>,2025~

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**8.1.5 Partial discharge at  $\theta t$  and ambient**

**8.1.5.1 Partial discharge at  $\theta t$**

Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN2511006-02	IEC 61442: 2023 8	IEC 60502-4: 2023 After heating the cable to 95°C to 100°C and keeping for 2 hours, AC 15kV, partial discharge $\leq 10\text{pC}$ .	After the cable was heated to 95 °C to 100 °C and kept for 2 hours. Yellow phase: AC15.1kV partial discharge 4.70pC, background 0.70pC Green phase: AC15.2kV partial discharge 4.23pC, background 0.75pC Red phase: AC15.2kV partial discharge 4.96pC, background 0.79pC	Qualified	Circuit 2
EN2511006-03			After the cable was heated to 95 °C to 100 °C and kept for 2 hours. Yellow phase: AC15.1kV partial discharge 4.82pC, background 0.74pC Green phase: AC15.2kV partial discharge 4.25pC, background 0.77pC Red phase: AC15.3kV partial discharge 4.73pC, background 0.75pC	Qualified	Circuit 4

Fang

Test site: High Voltage Lab Test environment: 15.8°C/49.7%RH Tester : Chenming Test date: Dec.17<sup>th</sup>,2025

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**8.1.5.2 Partial discharge at ambient**

Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN2511006-02	IEC 61442: 2023 8	IEC 60502-4: 2023 AC15kV, partial discharge $\leq$ 10pC	Yellow phase: AC15.1kV partial discharge 4.88pC, background 0.71pC Green phase: AC15.2kV partial discharge 5.50pC, background 0.74pC Red phase: AC15.1kV partial discharge 5.45pC, background 0.77pC	Qualified	Circuit2
EN2511006-03			Yellow phase: AC15.2kV partial discharge 5.54pC, background 0.75pC Green phase: AC15.1kV partial discharge 5.25pC, background 0.72pC Red phase: AC15.2kV partial discharge 5.30pC, background 0.74pC		

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Test site: High Voltage Lab Test environment: 15.8°C/49.7%RH Tester: Chenming Test date: Dec.17<sup>th</sup>,2025**The Test Center of Jiangsu Jiameng Electrical Equipment Co., Ltd.**

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**8.1.6 Impulse voltage tests at ambient**

Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN2511006-02	IEC 61442:2023 7	IEC 60502-4:2023 At AC 95kV, each polarity impulse 10 times, no breakdown or flashover shall occur.	Yellow phase: After 10 impulses of positive and negative polarities respectively, no flashover or breakdown occurred. Green phase: After 10 impulses of positive and negative polarities respectively, no flashover or breakdown occurred. Red phase: After 10 impulses of positive and negative polarities respectively, no flashover or breakdown occurred.	Qualified	Circuit 2 Data and waveforms are shown in Table 3.
EN2511006-03			Yellow phase: After 10 impulses of positive and negative polarities respectively, no flashover or breakdown occurred. Green phase: After 10 impulses of positive and negative polarities respectively, no flashover or breakdown occurred. Red phase: After 10 impulses of positive and negative polarities respectively, no flashover or breakdown occurred.	Qualified	Circuit 4 Data and waveforms are shown in Table 3.

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Test site: High Voltage Lab Test environment: 15.2°C/48.9%RH Tester : Chenming Test date: Dec.18<sup>th</sup>,2025**The Test Center of Jiangsu Jiameng Electrical Equipment Co., Ltd.**

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**8.1.7 AC voltage tests (dry)**

Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN2511006-02	IEC 61442: 2023 5	IEC 60502-4: 2023 After the sample is applied with 39kV AC voltage for 5min.No breakdown or flashover shall occur	After the yellow phase was applied with 39.16kV AC voltage for 5min, no flashover or breakdown occurred. After the green phase was applied with 39.20kV AC voltage for 5min, no flashover or breakdown occurred. After the red phase was applied with 39.25kV AC voltage for 5min, no flashover or breakdown occurred.	Qualified	Circuit2
EN2511006-03			After the yellow phase was applied with 39.15kV AC voltage for 5min, no flashover or breakdown occurred. After the green phase was applied with 39.12kV AC voltage for 5min, no flashover or breakdown occurred. After the red phase was applied with 39.20kV AC voltage for 5min, no flashover or breakdown occurred.		

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Test site: High Voltage Lab Test environment: 15.2°C/48.9%RH Tester: Chenming Test date: Dec.18<sup>th</sup>,2025**The Test Center of Jiangsu Jiameng Electrical Equipment Co., Ltd.**

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**8.1.8 Partial discharge at ambient**

Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN2511006-02	IEC 61442: 2023 8	IEC 60502-4; 2023 AC 15kV, partial discharge≤10pC	Yellow phase: AC15.1kV partial discharge 3.86pC, background 0.93pC Green phase: AC15.2kV partial discharge 4.54pC, background 0.91pC Red phase: AC15.1kV partial discharge 4.62pC, background 0.90pC	Qualified	Circuit2
EN2511006-03			Yellow phase: AC15.2kV partial discharge 4.52pC, background 0.95pC Green phase: AC15.1kV partial discharge 4.38pC, background 0.89pC Red phase: AC15.2kV partial discharge 4.75pC, background 0.87pC		

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Test site: High Voltage Lab Test environment: 15.2°C/48.9%RH Tester: Chenming Test date: Dec.18<sup>th</sup>,2025**The Test Center of Jiangsu Jiameng Electrical Equipment Co., Ltd.**

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**8.1.9 Examination**

Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN2511006-02	IEC 60502-4:2023 Annex C	<p>IEC 60502-4:2023 Table 9 No.15</p> <p>The examination, which is done by visual inspection, shall be on components of the accessory and on the layers of the cables. The examination procedure should include the identification of any cracks, splits, corrosion, and leakage of insulation material, evidence of over-heating or thermo-mechanical effects.</p> <p>The following items shall be examined:</p> <ol style="list-style-type: none"> <li>1. Presence of water or moisture beyond the sealing barriers (Wrapping with waterproof sealant, waterproof composite tape part).</li> <li>2. Presence of corrosion on any metallic parts of accessory and cable indication of possible electrical degradation in primary insulation</li> <li>3. Indication of possible mechanical degradation (dielectric parts, water tightness areas, indication of possible thermal degradation)</li> <li>4. Leakage of insulating material (Obvious shrinkage of cable components, Move between accessory components)</li> </ol>	<p>Layer-by-layer disassembly and inspection yielded the following results:</p> <ol style="list-style-type: none"> <li>1. Terminal heat-shrinkable sealing tube: No cracks, no water or moisture ingress, no corrosion, no thermal degradation.</li> <li>2. Terminal waterproof sealing tape: No cracks, no water or moisture ingress, no corrosion, no thermal degradation.</li> <li>3. Terminals: No corrosion.</li> <li>4. Heat-shrinkable insulating tube: No cracks, no water or moisture ingress, no corrosion, no thermal degradation.</li> <li>5. Heat-shrinkable stress control tube: No cracks, no water or moisture ingress, no corrosion, no thermal degradation.</li> <li>6. Finger sleeve: No cracks, no water or moisture ingress, no corrosion, no thermal degradation.</li> </ol>	Qualified	Circuit 2, Details can be seen in testing samples.

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Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN2511006-03	IEC 60502-4:2023 Annex C	<p>IEC 60502-4:2023 Table 9 No.15</p> <p>The examination, which is done by visual inspection, shall be on components of the accessory and on the layers of the cables. The examination procedure should include the identification of any cracks, splits, corrosion, and leakage of insulation material, evidence of over-heating or thermo-mechanical effects. The following items shall be examined:</p> <ol style="list-style-type: none"> <li>1. Presence of water or moisture beyond the sealing barriers (Wrapping with waterproof sealant, waterproof composite tape part).</li> <li>2. Presence of corrosion on any metallic parts of accessory and cable indication of possible electrical degradation in primary insulation</li> <li>3. Indication of possible mechanical degradation (dielectric parts, water tightness areas, indication of possible thermal degradation)</li> <li>4. Leakage of insulating material (Obvious shrinkage of cable components, Move between accessory components)</li> </ol>	<p>Layer-by-layer disassembly and inspection yielded the following results:</p> <ol style="list-style-type: none"> <li>1. Terminal heat-shrinkable sealing tube: No cracks, no water or moisture ingress, no corrosion, no thermal degradation.</li> <li>2. Terminal waterproof sealing tape: No cracks, no water or moisture ingress, no corrosion, no thermal degradation.</li> <li>3. Terminals: No corrosion.</li> <li>4. Heat-shrinkable insulating tube: No cracks, no water or moisture ingress, no corrosion, no thermal degradation.</li> <li>5. Heat-shrinkable stress control tube: No cracks, no water or moisture ingress, no corrosion, no thermal degradation.</li> <li>6. Finger sleeve: No cracks, no water or moisture ingress, no corrosion, no thermal degradation.</li> </ol>	Qualified	Circuit 4, Details can be seen in testing samples.

Sample

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Test site: preparation room Test environment: 20.7°C/49.2%RH Tester : Chenming Test date: Dec.19<sup>th</sup>,2025

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**IEC 60502-4:2023 Table 9: test sequence-1.2, 1.3**

**8.2.1 AC voltage tests (dry)**

Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN2511006-01	IEC 61442: 2023 5	IEC 60502-4: 2023 After the sample is applied with 39kV AC voltage for 5min.No breakdown or flashover shall occur	After the yellow phase was applied with 39.1kV AC voltage for 5min, no flashover or breakdown occurred. After the green phase was applied with 39.3kV AC voltage for 5min, no flashover or breakdown occurred. After the red phase was applied with 39.2kV AC voltage for 5min, no flashover or breakdown occurred.	Qualified	Circuit1

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Test site: High Voltage Lab Test environment: 19.8°C/49.2%RH Tester : Chenming Test date: Nov.15<sup>th</sup>,2025

**8.2.2 Thermal short-circuit test (screen)**

Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN2511006-01	IEC 61442: 2023 11	IEC 60502-4: 2023 Test current: 3.9kA for 1s, no visible damage.	First time: Test current:3.96kA Duration time:1.06s Second time: Test current:3.98kA Duration time:1.05s	Qualified	Circuit 1 1. Before the short-circuit test, the test sample was heated to the specified value and maintained it for at least 2 hours. 2. Between the two short-circuit tests, cooled the temperature of the cable screen layer to no more than 10°C lower than the temperature before the first short-circuit test.

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**8.2.3 Thermal short-circuit test (conductor)**

Samples no.	Method standard	Judging basis	Test results		Judgment	Note
EN251100 6-01	IEC 61442: 2023 12	IEC 60502-4: 2023 Test current: 28kA for 1.5s, no visible damage.	Phase A First time: Test current:28.5kA Duration time:1.55s Second time: Test current:28.1kA Duration time:1.54s	There were two short circuits, and no damage was seen on the sample.	Qualified	Circuit 1
			Phase B First time: Test current:28.6kA Duration time:1.55s Second time: Test current:28.3kA Duration time:1.54s	There were two short circuits, and no damage was seen on the sample.	Qualified	Circuit 1
			Phase C First time: Test current:28.2kA Duration time:1.55s Second time: Test current:28.1kA Duration time:1.54s	There were two short circuits, and no damage was seen on the sample.	Qualified	Circuit 1

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**8.2.4 Dynamic short-circuit test**

Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN251100 6-01	IEC 61442: 2023 13	IEC 60502-4: 2023 Test current: 100kA, duration time: ≥100ms, no visible damage.	Phase A First time: Test current:102.0kA Duration time:58.1ms Phase B First time: Test current:75.9kA Duration time:58.1ms Phase C First time: Test current:86.5kA Duration time:58.1ms	No damage was seen on the sample.  Qualified	Circuit 1

**8.2.5 Impulse voltage tests at ambient**

Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN2511006- 01	IEC 61442:2023 7	IEC 60502-4: 2023 At AC95kV, each polarity impulse 10 times, no breakdown or flashover shall occur.	Yellow phase: After 10 impulses of positive and negative polarities respectively, no flashover or breakdown occurred. Green phase: After 10 impulses of positive and negative polarities respectively, no flashover or breakdown occurred. Red phase: After 10 impulses of positive and negative polarities respectively, no flashover or breakdown occurred.	Qualified	Circuit 1 Data and waveforms are shown in Table 4.

Fang

 Test site: High Voltage Lab Test environment: 18.9°C/48.5%RH Tester : Chenming Test date: Nov.19<sup>th</sup>,2025
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**8.2.6 AC voltage tests (dry)**

Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN2511006-01	IEC 61442: 2023 5	IEC 60502-4: 2023 After the sample is applied with 39kV AC voltage for 5min.No breakdown or flashover shall occur	After the yellow phase was applied with 39.3kV AC voltage for 5min, no flashover or breakdown occurred. After the green phase was applied with 39.2kV AC voltage for 5min, no flashover or breakdown occurred. After the red phase was applied with 39.4kV AC voltage for 5min, no flashover or breakdown occurred.	Qualified	Circuit1

Fang

Test site: High Voltage Lab Test environment: 18.9°C/48.5%RH Tester : Chenming Test date: Nov.19<sup>th</sup>,2025

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**8.2.7 Examination**

Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN2511006-01	IEC 60502-4:2023 Annex C	<p>IEC 60502-4:2023 Table 9 No.15 The examination, which is done by visual inspection, shall be on components of the accessory and on the layers of the cables. The examination procedure should include the identification of any cracks, splits, corrosion, and leakage of insulation material, evidence of over-heating or thermo-mechanical effects. The following items shall be examined:</p> <ol style="list-style-type: none"> <li>1. Presence of water or moisture beyond the sealing barriers (Wrapping with waterproof sealant, waterproof composite tape part).</li> <li>2. Presence of corrosion on any metallic parts of accessory and cable indication of possible electrical degradation in primary insulation</li> <li>3. Indication of possible mechanical degradation (dielectric parts, water tightness areas, indication of possible thermal degradation)</li> <li>4. Leakage of insulating material (Obvious shrinkage of cable components, Move between accessory components)</li> </ol>	<p>Layer-by-layer disassembly and inspection yielded the following results:</p> <ol style="list-style-type: none"> <li>1. Terminal heat-shrinkable sealing tube: No cracks, no water or moisture ingress, no corrosion, no thermal degradation.</li> <li>2. Terminal waterproof sealing tape: No cracks, no water or moisture ingress, no corrosion, no thermal degradation.</li> <li>3. Terminals: No corrosion.</li> <li>4. Heat-shrinkable insulating tube: No cracks, no water or moisture ingress, no corrosion, no thermal degradation.</li> <li>5. Heat-shrinkable stress control tube: No cracks, no water or moisture ingress, no corrosion, no thermal degradation.</li> <li>6. Finger sleeve: No cracks, no water or moisture ingress, no corrosion, no thermal degradation.</li> </ol>	Qualified	Circuit 1, Details can be seen in testing samples.

Sample

Fang

 Test site: preparation room    Test environment: 20.7°C/49.2%RH    Tester: Chenming    Test date: Dec.19<sup>th</sup>,2025
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**8.3 IEC 60502-4:2023 Table 9: test sequence-1.5****8.3.1 Salt fog****8.3.1.1 Salt fog conditions**

Test conditions		Results
Spray rate	(0.4±0.1) L/(h·m³)	0.4L/(h·m³)
Fog water conductivity	(70±10) mS/m	(68.3~72.3) mS/m
Leakage current	≤ (1.0±0.1) A	<0.1A

**8.3.1.2 Salt fog results**

Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN251100 6-04	IEC 61442: 2023 14	IEC 60502: 2023 AC11kV voltage for 1000h, no breakdown or flashover shall occur.	After the yellow phase was applied with 11.4kV AC voltage for 1000h, no flashover or breakdown occurred. No trace of electrical erosion. After the green phase was applied with 11.2kV AC voltage for 1000h, no flashover or breakdown occurred. No trace of electrical erosion. After the yellow phase was applied with 11.2kV AC voltage for 1000h, no flashover or breakdown occurred. No trace of electrical erosion.	Qualified	Circuit 5

Nov.16<sup>th</sup>,2025 19:00

High

Test

Test site: Environmental Lab Test environment: 21.2°C/63.4%RH Tester : Gu Jianjie date: Nov.29<sup>th</sup>,2025 07:00**The Test Center of Jiangsu Jiameng Electrical Equipment Co., Ltd.**

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**8.3.2 Examination**

Samples no.	Method standard	Judging basis	Test results	Judgment	Note
EN2511006-01	IEC 60502-4:2023 Annex C	IEC 60502-4:2023 Table 9 No.15 The examination, which is done by visual inspection, shall be on components of the accessory and on the layers of the cables. The examination procedure should include the identification of any cracks, splits, corrosion, and leakage of insulation material, evidence of over-heating or thermo-mechanical effects. The following items shall be examined: 1. Presence of water or moisture beyond the sealing barriers (Wrapping with waterproof sealant, waterproof composite tape part). 2. Presence of corrosion on any metallic parts of accessory and cable indication of possible electrical degradation in primary insulation 3. Indication of possible mechanical degradation (dielectric parts, water tightness areas, indication of possible thermal degradation) 4. Leakage of insulating material (Obvious shrinkage of cable components, Move between accessory components)	Layer-by-layer disassembly and inspection yielded the following results: 1. Terminal heat-shrinkable sealing tube: No cracks, no water or moisture ingress, no corrosion, no thermal degradation. 2. Terminal waterproof sealing tape: No cracks, no water or moisture ingress, no corrosion, no thermal degradation. 3. Terminals: No corrosion. 4. Heat-shrinkable insulating tube: No cracks, no water or moisture ingress, no corrosion, no thermal degradation. 5. Heat-shrinkable stress control tube: No cracks, no water or moisture ingress, no corrosion, no thermal degradation. 6. Finger sleeve: No cracks, no water or moisture ingress, no corrosion, no thermal degradation.	Qualified	Circuit 1, Details can be seen in testing samples.

Sample

Fang

 Test site: preparation room    Test environment: 20.7°C/49.2%RH    Tester: Chenming    Test date: Jan.11<sup>th</sup>,2026
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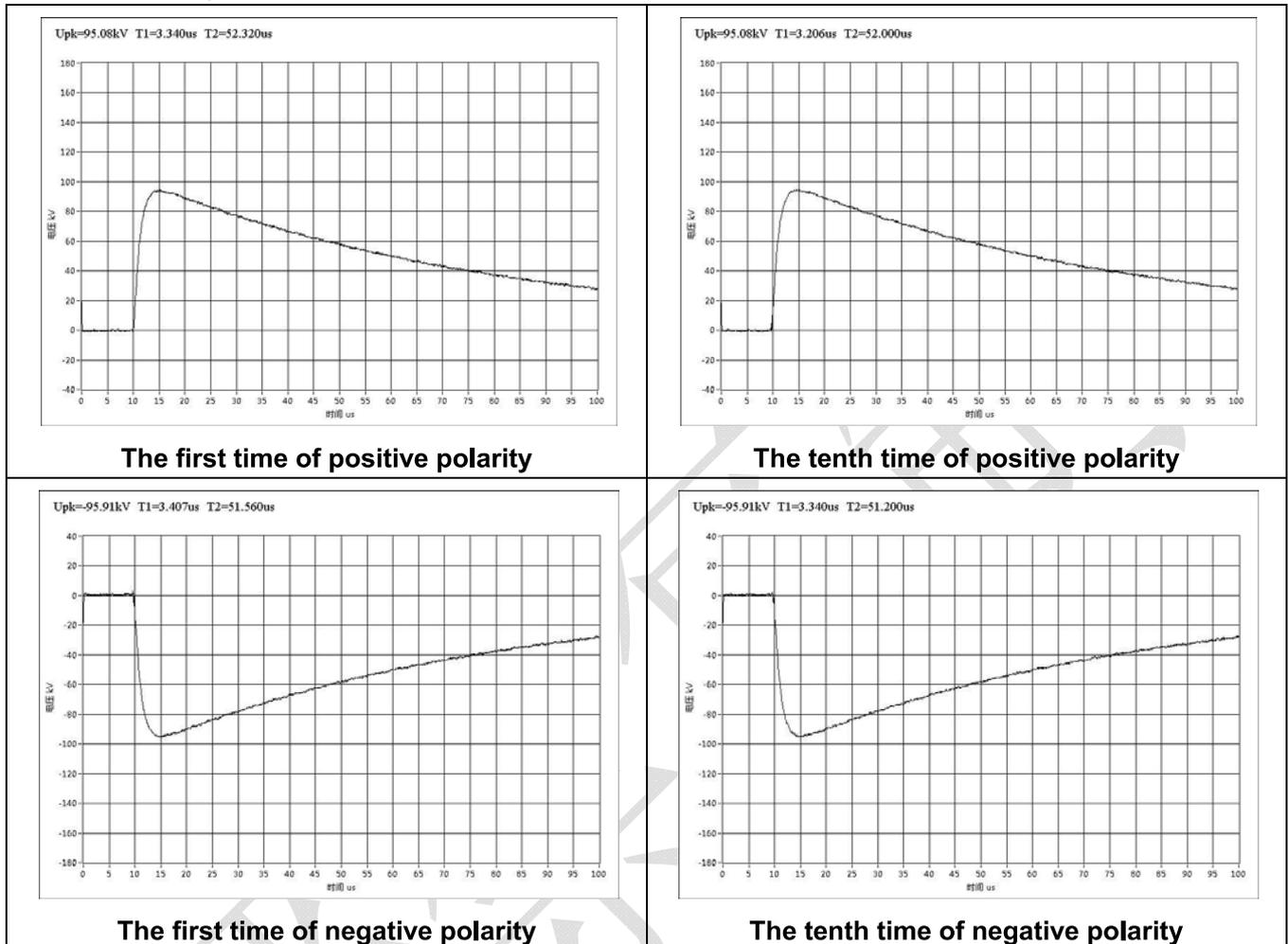
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**Table 1: Impulse voltage tests at 0t  
EN2511006-02 yellow phase**



Impulse voltage value (kV):

Positive polarity impulse	1	2	3	4	5	6	7	8	9	10
	95.08	95.08	95.91	95.91	95.08	95.91	95.08	95.91	95.08	95.08
Negative polarity impulse	1	2	3	4	5	6	7	8	9	10
	-95.91	-95.91	-96.74	-95.91	-95.91	-95.91	-95.91	-95.91	-95.08	-95.91

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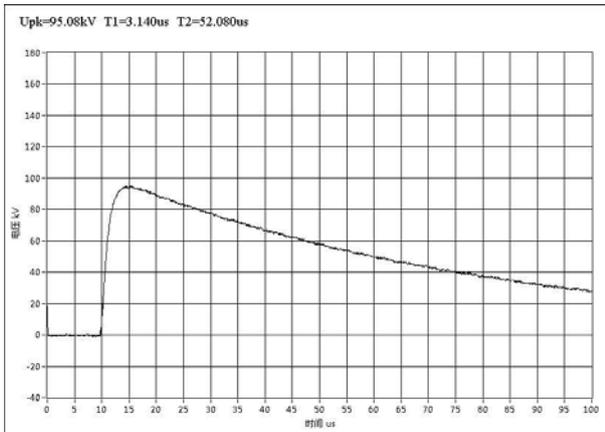
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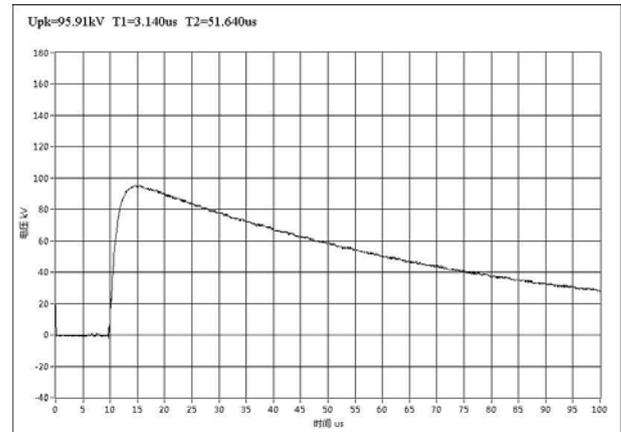
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Version: E Edition:5

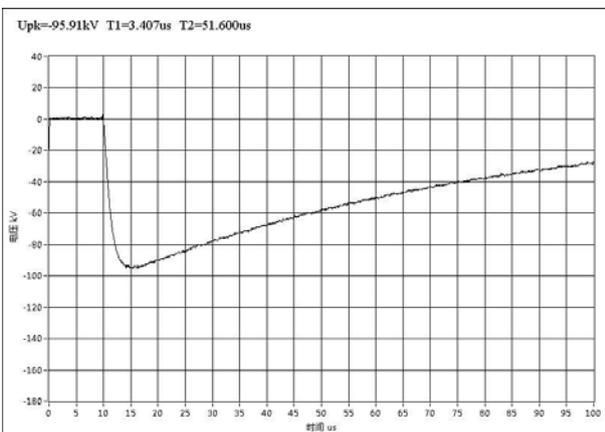
EN2511006-02 green phase



The first time of positive polarity



The tenth time of positive polarity



The first time of negative polarity



The tenth time of negative polarity

Impulse voltage value (kV):

Positive polarity impulse	1	2	3	4	5	6	7	8	9	10
	95.08	95.91	95.08	95.08	95.08	95.91	95.91	95.08	95.91	95.91
Negative polarity impulse	1	2	3	4	5	6	7	8	9	10
	-95.91	-95.91	-95.91	-95.91	-95.91	-95.91	-95.91	-95.91	-95.08	-95.08

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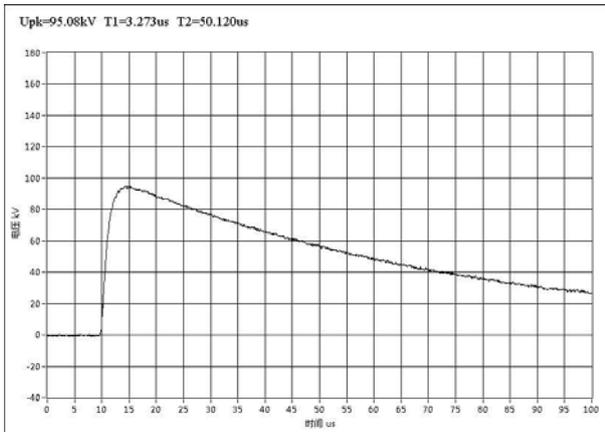
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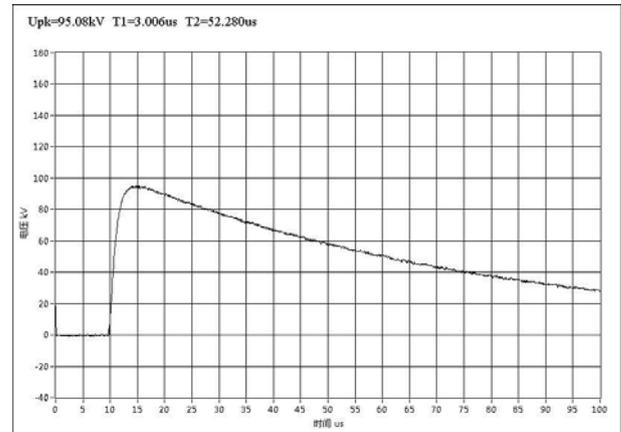
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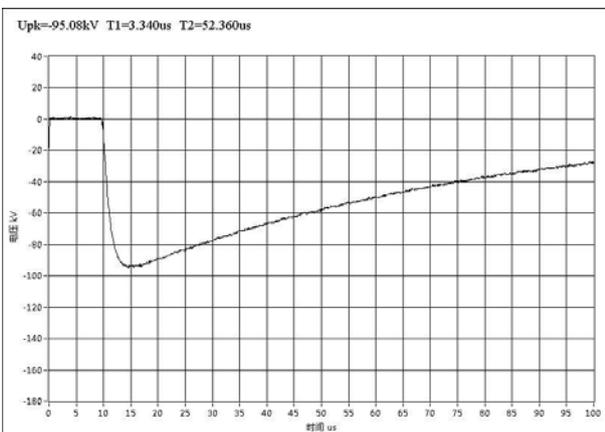
EN2511006-02 red phase



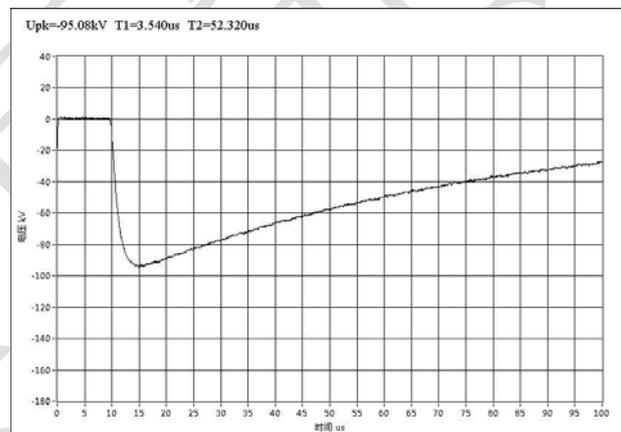
The first time of positive polarity



The tenth time of positive polarity



The first time of negative polarity



The tenth time of negative polarity

Impulse voltage value (kV):

Positive polarity impulse	1	2	3	4	5	6	7	8	9	10
	95.08	95.91	95.91	95.91	95.08	95.91	95.08	95.08	95.91	95.08
Negative polarity impulse	1	2	3	4	5	6	7	8	9	10
	-95.08	-95.91	-95.08	-95.08	-95.08	-95.08	-95.08	-95.91	-95.08	-95.08

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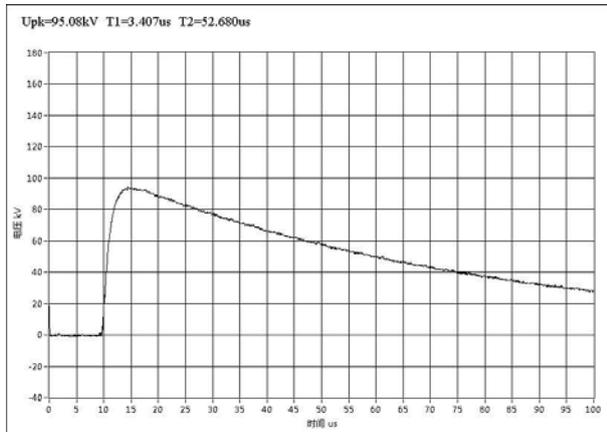
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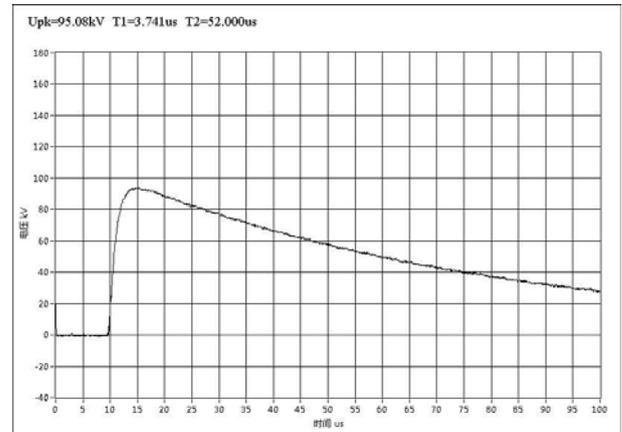
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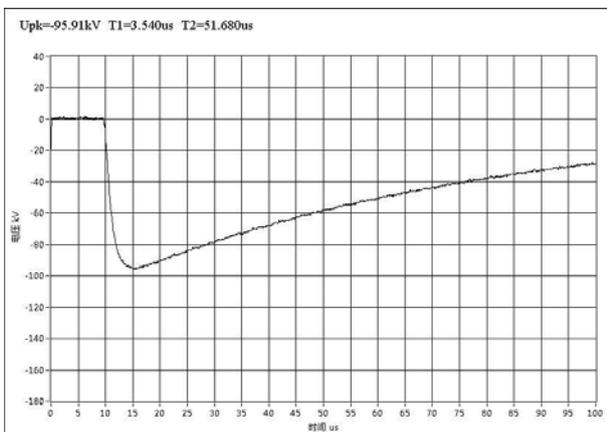
EN2511006-03 yellow phase



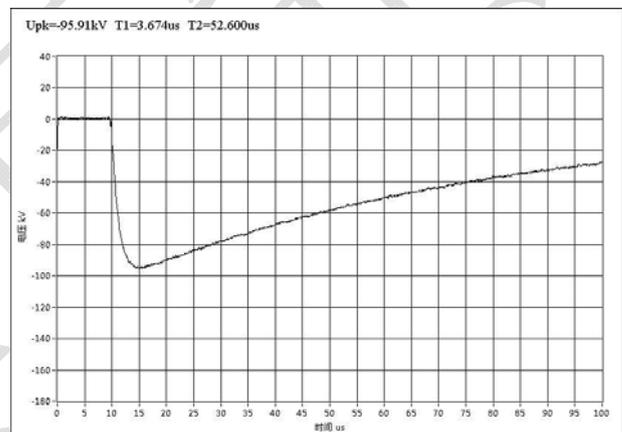
The first time of positive polarity



The tenth time of positive polarity



The first time of negative polarity



The tenth time of negative polarity

Impulse voltage value (kV):

Positive polarity impulse	1	2	3	4	5	6	7	8	9	10
	95.08	95.91	95.08	95.08	95.08	95.91	95.08	95.08	95.91	95.08
Negative polarity impulse	1	2	3	4	5	6	7	8	9	10
	-95.91	-95.91	-95.91	-95.91	-96.74	-95.08	-95.91	-95.91	-95.08	-95.91

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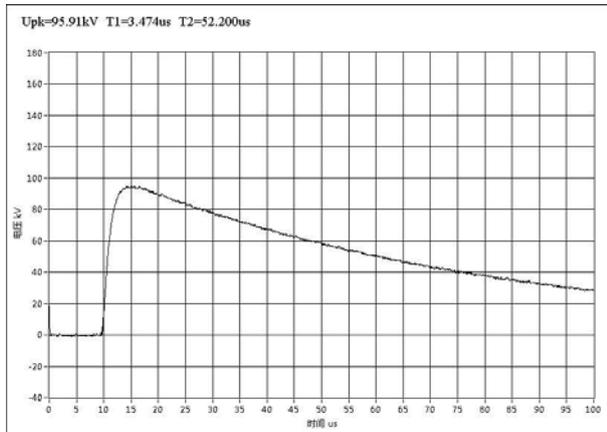
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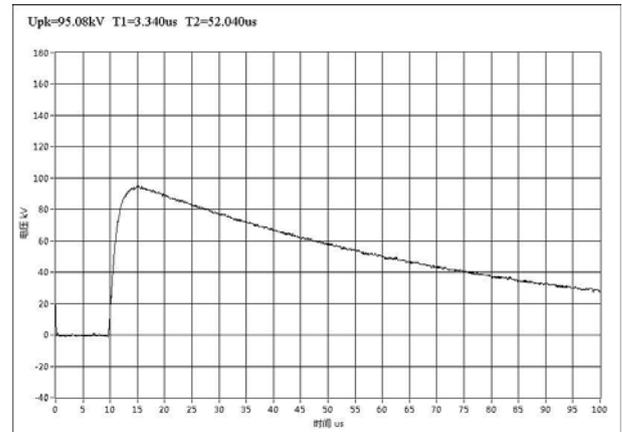
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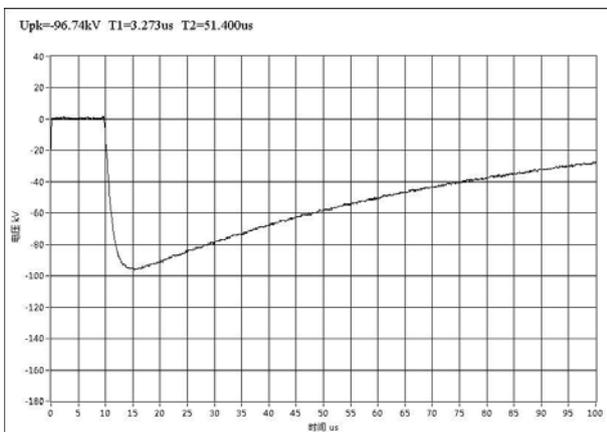
EN2511006-03 green phase



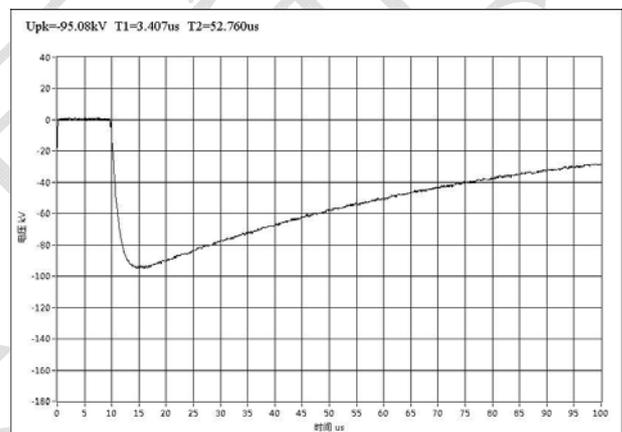
The first time of positive polarity



The tenth time of positive polarity



The first time of negative polarity



The tenth time of negative polarity

Impulse voltage value (kV):

Positive polarity impulse	1	2	3	4	5	6	7	8	9	10
	95.91	95.08	95.08	95.08	95.91	95.91	95.91	95.08	95.08	95.08
Negative polarity impulse	1	2	3	4	5	6	7	8	9	10
	-96.74	-95.08	-95.91	-95.08	-95.91	-95.91	-95.91	-96.74	-95.08	-95.08

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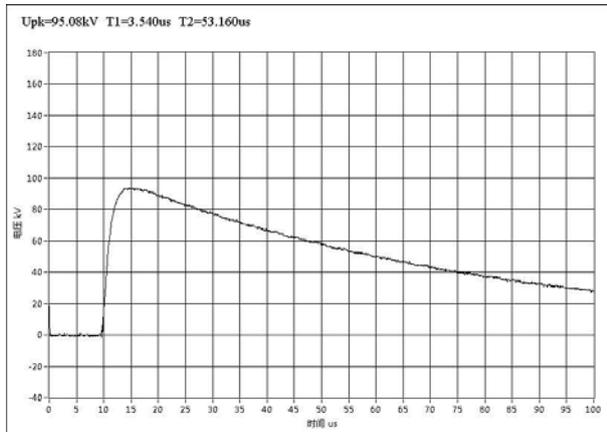
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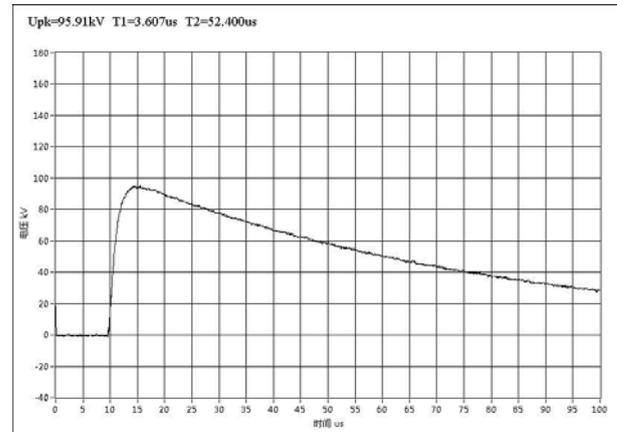
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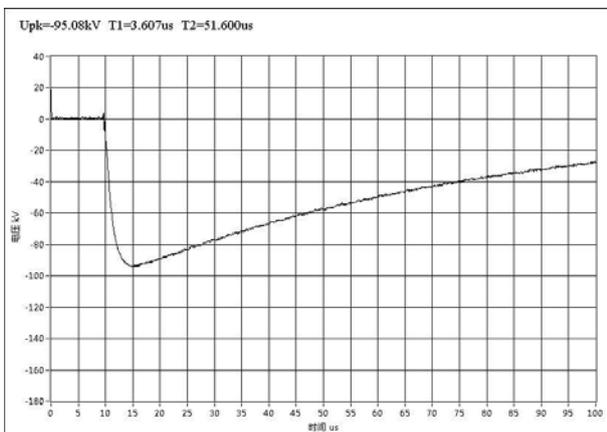
EN2511006-03 red phase



The first time of positive polarity



The tenth time of positive polarity



The first time of negative polarity



The tenth time of negative polarity

Impulse voltage value (kV):

Positive polarity impulse	1	2	3	4	5	6	7	8	9	10
	95.08	95.91	95.08	95.08	95.91	95.08	95.08	95.91	95.08	95.91
Negative polarity impulse	1	2	3	4	5	6	7	8	9	10
	-95.08	-95.08	-95.08	-95.91	-95.08	-95.08	-95.91	-95.91	-95.91	-95.08

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**Table 2: Heating cycles in air**

<b>Cycle</b>	<b>Cable temperature °C</b>	<b>Ambient temperature °C</b>	<b>Cycle</b>	<b>Cable temperature °C</b>	<b>Ambient temperature °C</b>	<b>Cycle</b>	<b>Cable temperature °C</b>	<b>Ambient temperature °C</b>
1	96.7	19.5	21	96.6	21.0	41	96.3	17.8
2	96.5	18.3	22	96.9	21.2	42	96.8	18.5
3	96.7	18.9	23	97.4	20.3	43	96.3	17.7
4	96.8	19.2	24	96.8	20.5	44	97.5	18.1
5	97.0	18.0	25	97.3	21.0	45	97.0	18.5
6	96.9	18.9	26	97.3	20.3	46	96.8	18.5
7	96.8	19.6	27	97.1	20.1	47	96.9	19.0
8	97.3	19.0	28	97.3	20.3	48	97.6	19.5
9	96.8	19.7	29	96.6	19.0	49	97.3	19.1
10	96.6	20.1	30	97.3	19.6	50	97.2	19.5
11	97.1	19.5	31	96.9	20.5	51	96.8	19.7
12	97.1	20.2	32	96.8	20.1	52	96.7	19.1
13	97.6	20.5	33	96.7	20.3	53	96.7	19.6
14	97.5	20.1	34	96.9	19.5	54	96.7	20.1
15	96.6	20.6	35	97.3	18.9	55	97.3	19.9
16	97.2	21.3	36	97.7	18.5	56	96.4	20.3
17	97.6	21.4	37	96.2	17.4	57	97.3	20.4
18	97.3	21.7	38	96.4	18.1	58	96.8	20.1
19	97.0	22.1	39	96.9	18.3	59	97.4	20.2
20	97.3	21.3	40	96.7	17.4	60	97.4	20.1

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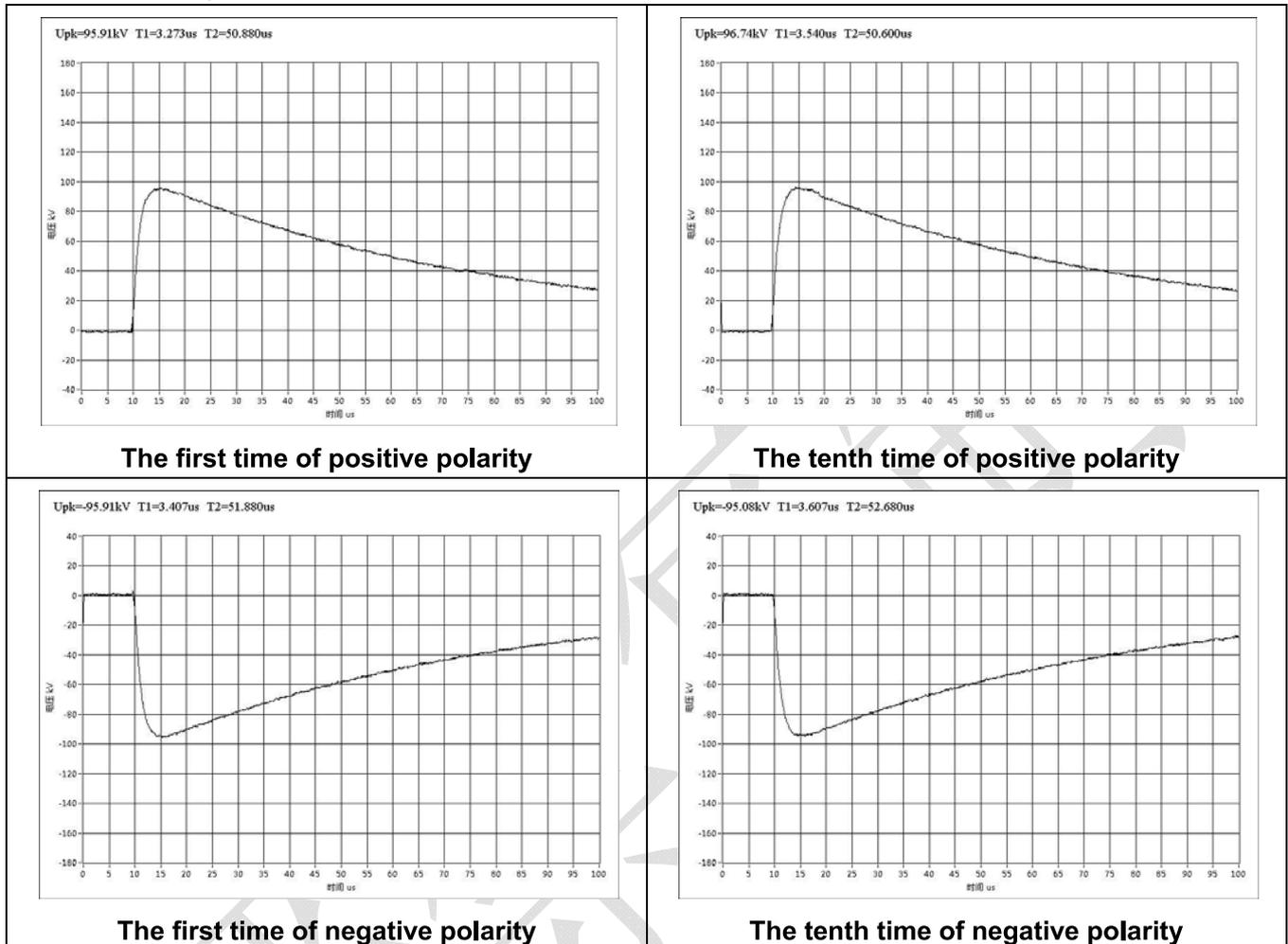
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**Table 3: Impulse voltage tests at ambient  
EN2511006-02 yellow phase**



Impulse voltage value (kV):

Positive polarity impulse	1	2	3	4	5	6	7	8	9	10
	95.91	96.74	95.08	96.74	95.91	95.08	95.91	95.91	96.74	96.74
Negative polarity impulse	1	2	3	4	5	6	7	8	9	10
	-95.91	-95.91	-95.91	-95.91	-95.91	-95.91	-95.91	-95.08	-95.91	-95.08

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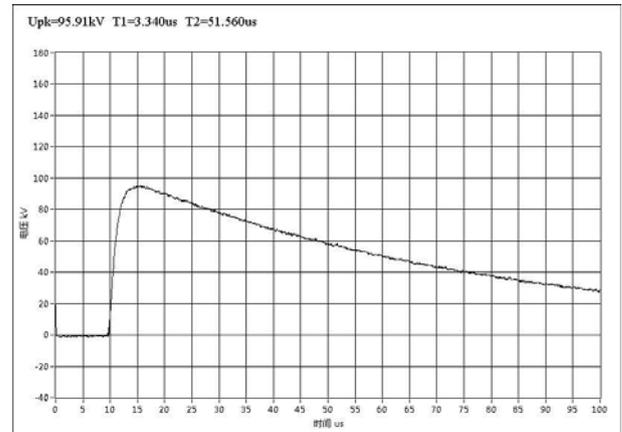
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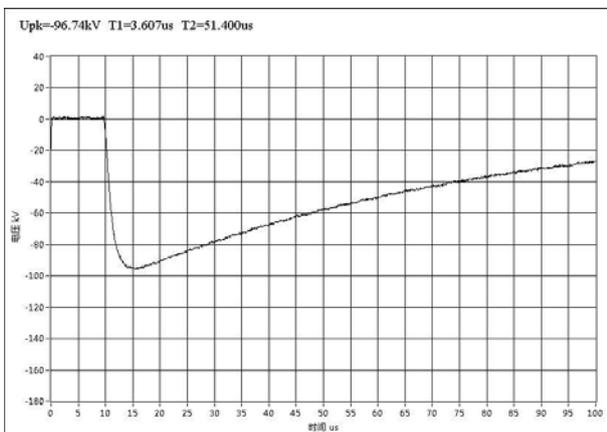
EN2511006-02 green phase



The first time of positive polarity



The tenth time of positive polarity



The first time of negative polarity



The tenth time of negative polarity

Impulse voltage value (kV):

Positive polarity impulse	1	2	3	4	5	6	7	8	9	10
	95.91	95.08	96.74	96.74	96.74	95.08	95.08	95.91	95.91	95.91
Negative polarity impulse	1	2	3	4	5	6	7	8	9	10
	-96.74	-96.74	-95.91	-95.91	-95.91	-95.91	-95.91	-95.91	-95.91	-95.08

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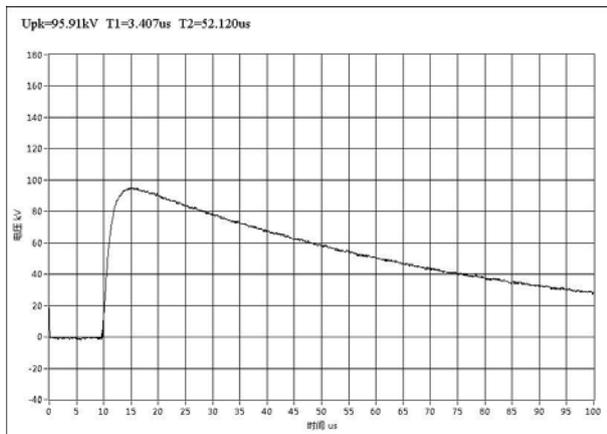
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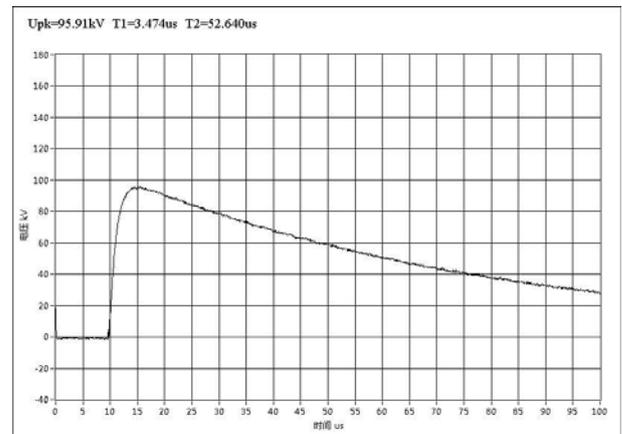
Form no.: TC-R-711-02

Version: E Edition:5

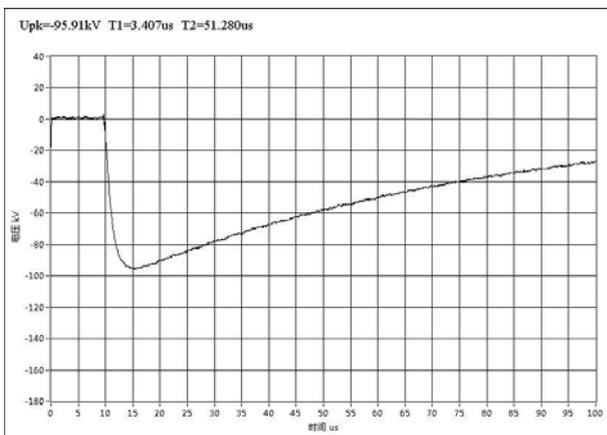
EN2511006-02 red phase



The first time of positive polarity



The tenth time of positive polarity



The first time of negative polarity



The tenth time of negative polarity

Impulse voltage value (kV):

Positive polarity impulse	1	2	3	4	5	6	7	8	9	10
	95.91	95.91	95.91	96.74	95.91	95.08	95.08	95.08	95.08	95.91
Negative polarity impulse	1	2	3	4	5	6	7	8	9	10
	-95.91	-95.91	-95.91	-96.74	-96.74	-96.74	-96.74	-96.74	-95.91	-95.08

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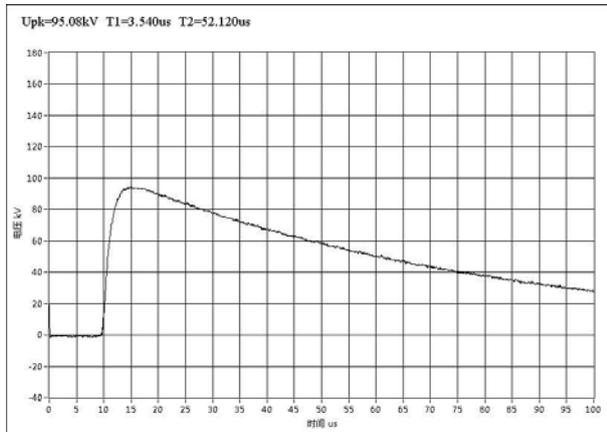
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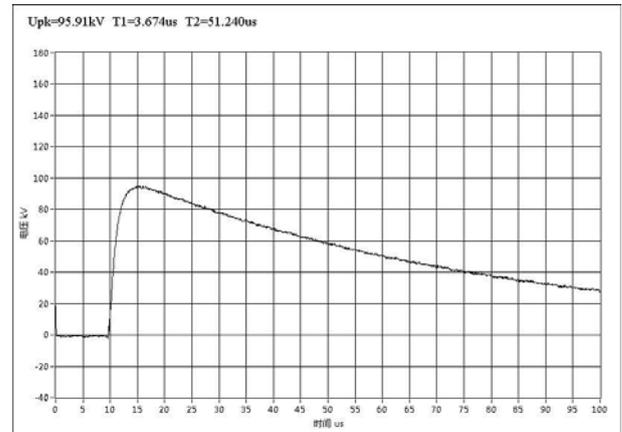
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Version: E Edition:5

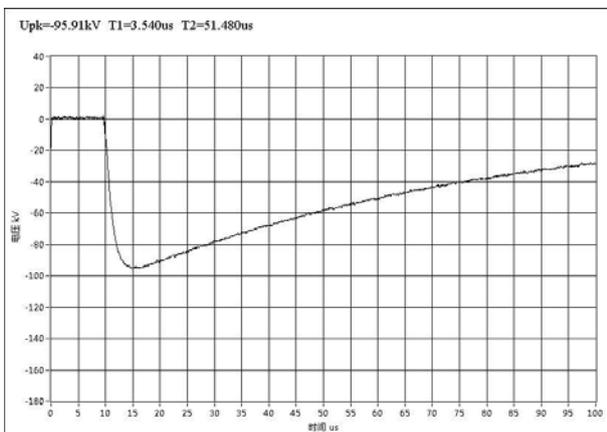
EN2511006-03 yellow phase



The first time of positive polarity



The tenth time of positive polarity



The first time of negative polarity



The tenth time of negative polarity

Impulse voltage value (kV):

Positive polarity impulse	1	2	3	4	5	6	7	8	9	10
	95.08	95.08	95.08	95.08	95.08	95.08	95.08	95.91	95.91	95.91
Negative polarity impulse	1	2	3	4	5	6	7	8	9	10
	-95.91	-95.08	-95.91	-95.91	-95.91	-95.91	-95.91	-95.08	-95.91	-95.91

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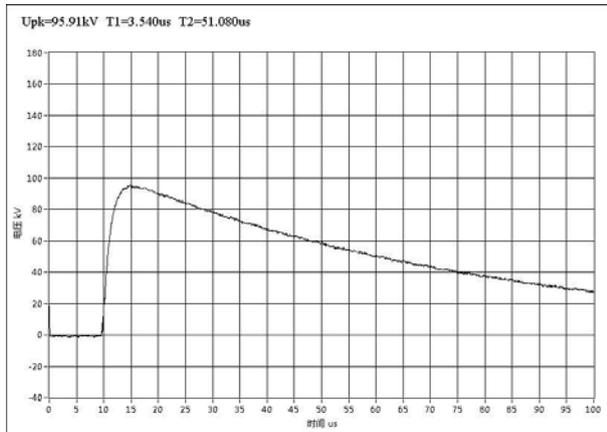
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TEL: 0086-0513-83900000 FAX: 0086-0513-83601898 Web: <http://www.melec.com.cn/>

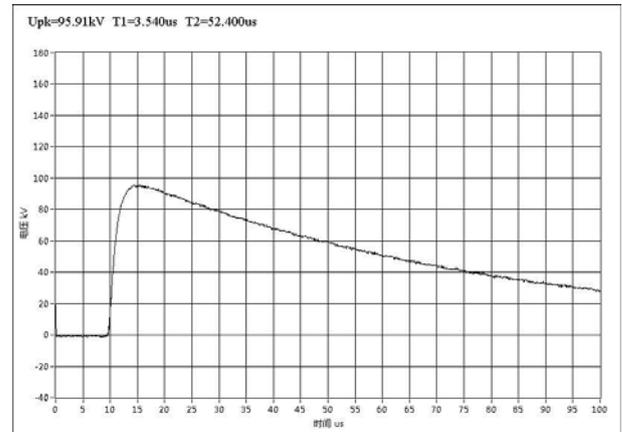
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Version: E Edition:5

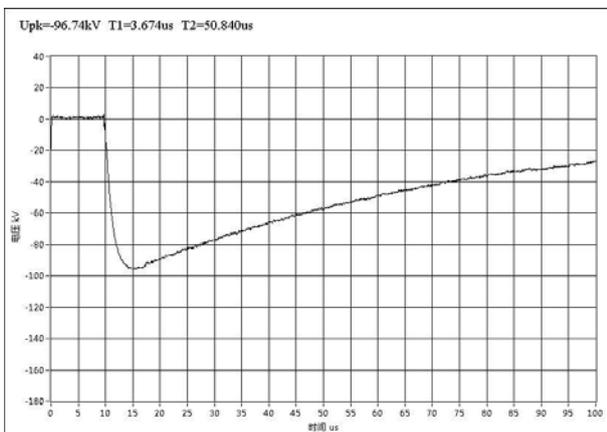
EN2511006-03 green phase



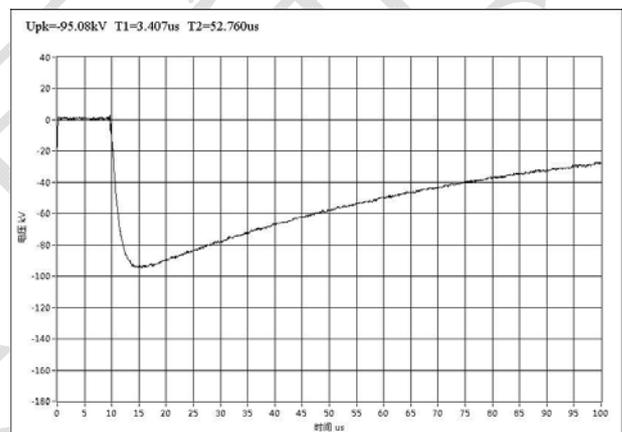
The first time of positive polarity



The tenth time of positive polarity



The first time of negative polarity



The tenth time of negative polarity

Impulse voltage value (kV):

Positive polarity impulse	1	2	3	4	5	6	7	8	9	10
	95.91	96.74	95.08	95.08	96.74	95.08	95.91	95.08	95.91	95.91
Negative polarity impulse	1	2	3	4	5	6	7	8	9	10
	-96.74	-95.91	-96.74	-95.91	-96.74	-95.08	-95.08	-95.91	-95.91	-95.08

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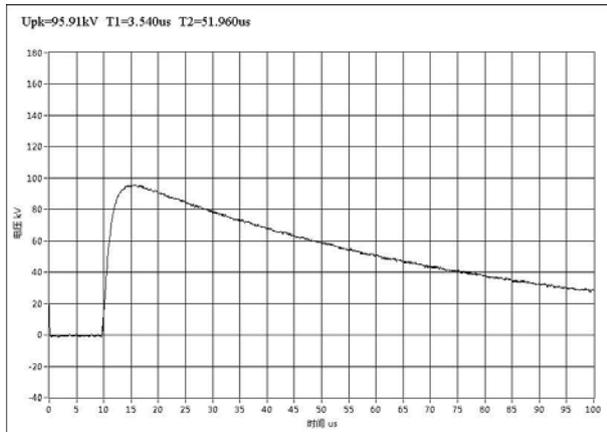
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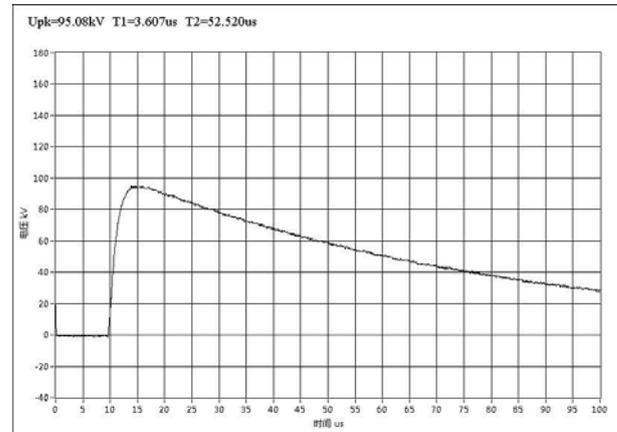
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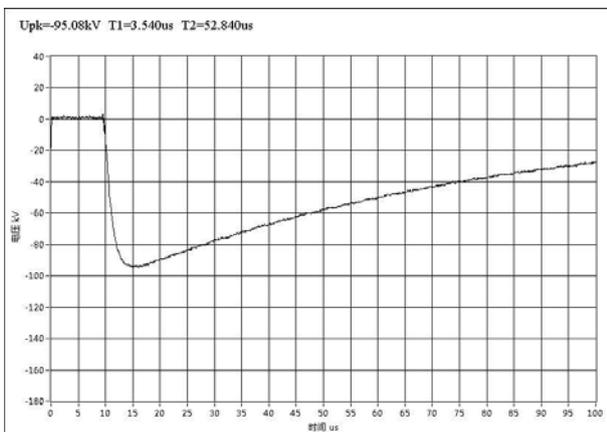
EN2511006-03 red phase



The first time of positive polarity



The tenth time of positive polarity



The first time of negative polarity



The tenth time of negative polarity

Impulse voltage value (kV):

Positive polarity impulse	1	2	3	4	5	6	7	8	9	10
	95.91	95.91	95.91	95.08	95.08	95.91	95.08	95.91	95.08	95.08
Negative polarity impulse	1	2	3	4	5	6	7	8	9	10
	-95.08	-95.08	-95.08	-95.08	-95.91	-95.91	-95.91	-95.91	-95.91	-95.08

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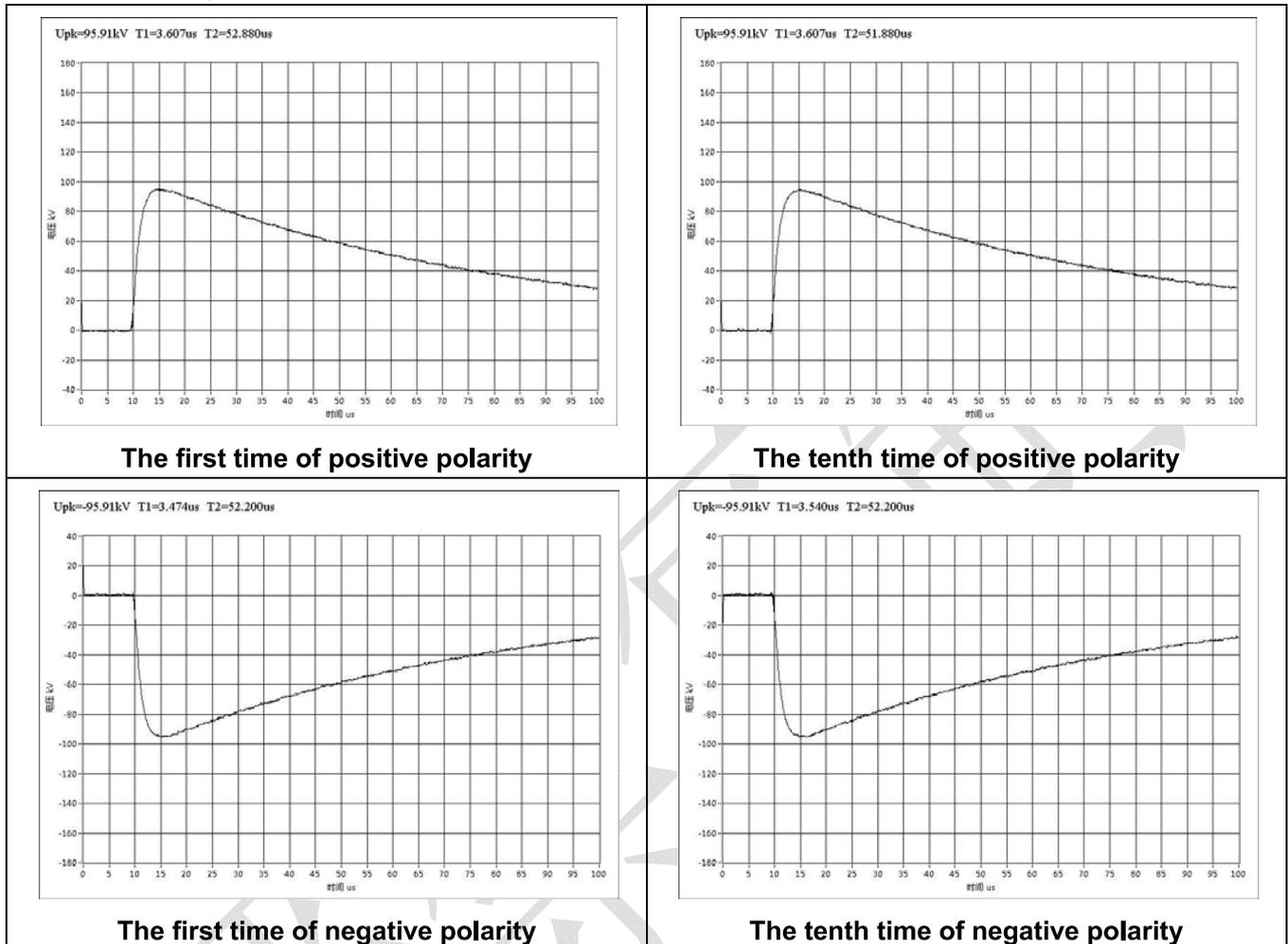
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**Table 4: Impulse voltage tests at ambient---after dynamic short-circuit test  
EN2511006-01 yellow phase**



Impulse voltage value (kV):

Positive polarity impulse	1	2	3	4	5	6	7	8	9	10
	95.91	95.91	96.74	96.74	96.74	95.91	95.08	95.91	95.08	95.91
Negative polarity impulse	1	2	3	4	5	6	7	8	9	10
	-95.91	-95.91	-95.91	-95.91	-95.91	-95.08	-95.91	-95.91	-95.91	-95.91

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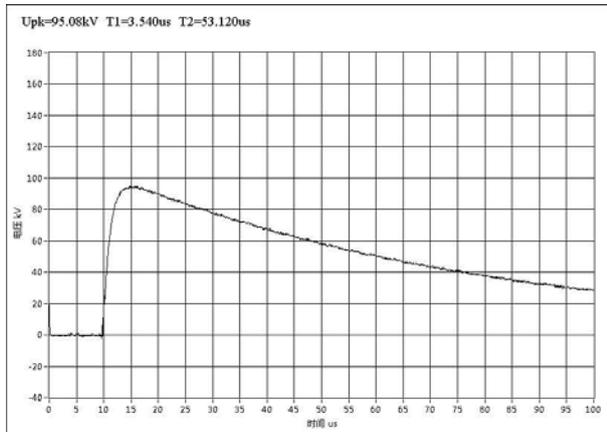
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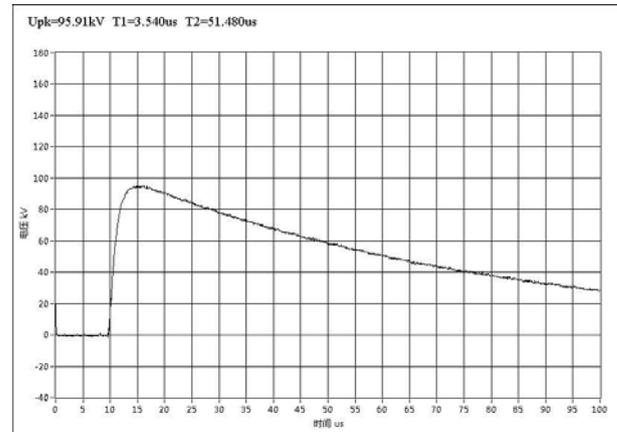
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Version: E Edition:5

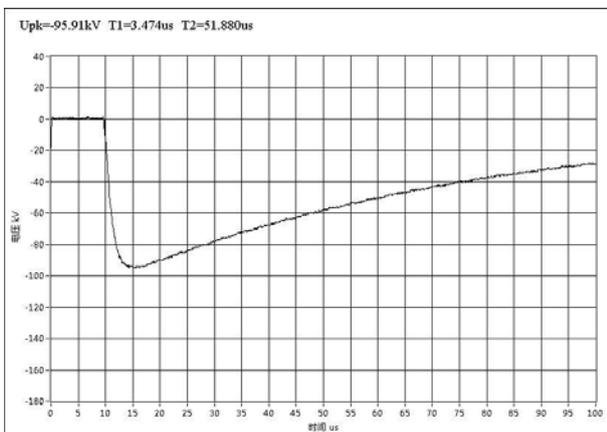
EN2511006-01 green phase



The first time of positive polarity



The tenth time of positive polarity



The first time of negative polarity



The tenth time of negative polarity

Impulse voltage value (kV):

Positive polarity impulse	1	2	3	4	5	6	7	8	9	10
	95.08	95.91	95.91	96.74	96.74	95.91	95.91	95.91	95.91	95.91
Negative polarity impulse	1	2	3	4	5	6	7	8	9	10
	-95.91	-95.91	-96.74	-95.91	-95.08	-95.91	-96.74	-95.91	-95.91	-95.08

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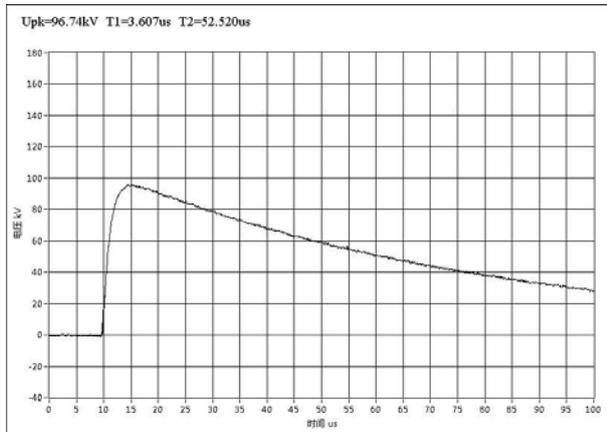
Add: Building 9, No.5, Zhongli Road, Binhai Industrial Zone, Qidong, Jiangsu Province

TEL: 0086-0513-83900000 FAX: 0086-0513-83601898 Web: <http://www.melec.com.cn/>

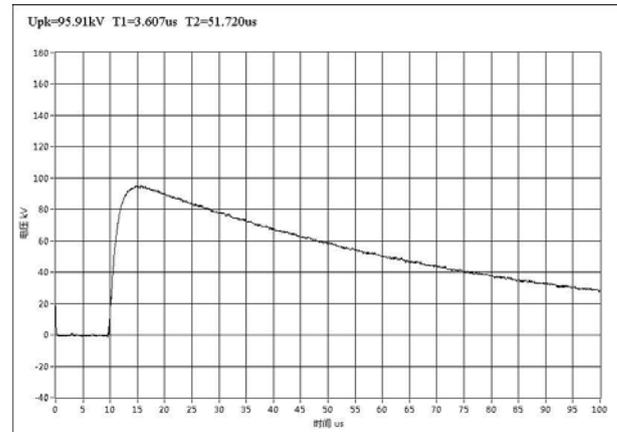
Form no.: TC-R-711-02

Version: E Edition:5

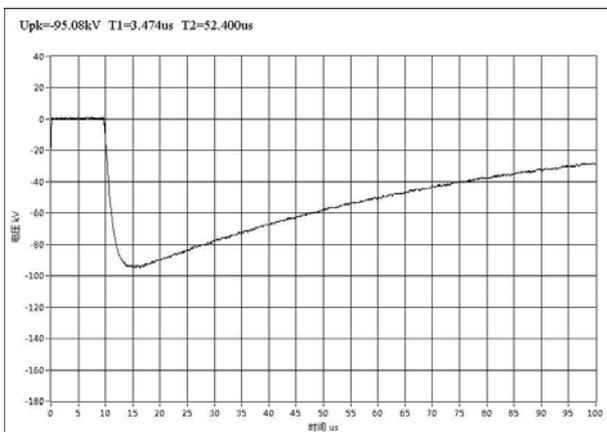
EN2511006-01 red phase



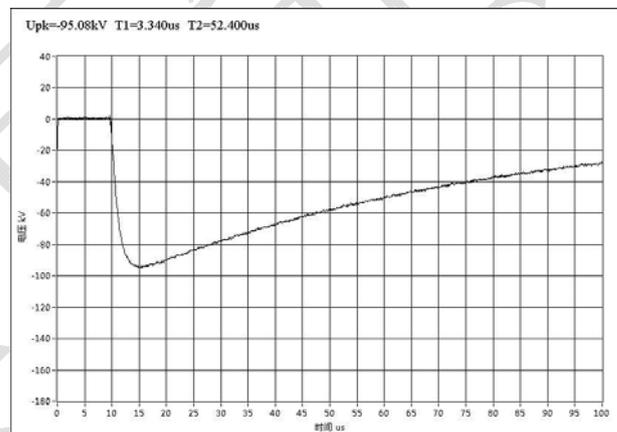
The first time of positive polarity



The tenth time of positive polarity



The first time of negative polarity



The tenth time of negative polarity

Impulse voltage value (kV):

Positive polarity impulse	1	2	3	4	5	6	7	8	9	10
	96.74	95.91	95.08	96.74	95.91	96.74	95.08	95.08	95.91	95.91
Negative polarity impulse	1	2	3	4	5	6	7	8	9	10
	-95.08	-95.91	-95.08	-95.91	-95.91	-95.08	-95.91	-95.91	-95.91	-95.08

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**9. Test samples and photos**

<p>Before the test</p>	
<p>During the test</p>	<p style="text-align: center;">IEC 60502-4:2023 Table 9: test sequence-1.1</p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="349 808 855 1189">  <p style="text-align: center;">1.1 AC voltage tests (dry)</p> </div> <div data-bbox="871 808 1382 1189">  <p style="text-align: center;">1.2 Partial discharge at ambient</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div data-bbox="349 1263 855 1644">  <p style="text-align: center;">1.3 Impulse voltage tests at 0t</p> </div> <div data-bbox="871 1263 1382 1644">  <p style="text-align: center;">1.4 Heating cycle in air</p> </div> </div>

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During  
the  
test

1.5.1 Partial discharge at 0t



1.6 Partial discharge at ambient



1.6 Impulse voltage tests at ambient



1.7 AC voltage tests (dry)



1.8 Partial discharge at ambient

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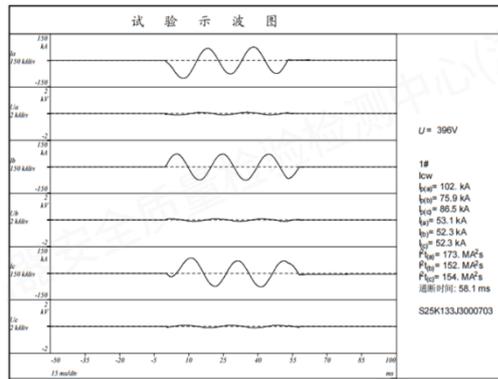
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During the test



2.4 Dynamic short-circuit test



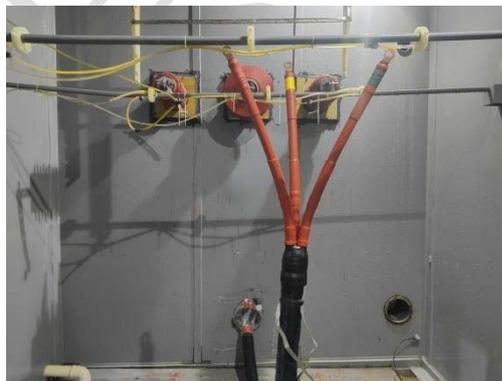
2.5 Impulse voltage tests at ambient



2.6 AC voltage tests (dry)

IEC 60502-4:2023 Table 9: test sequence-1.5

During the test



3.1 Salt fog

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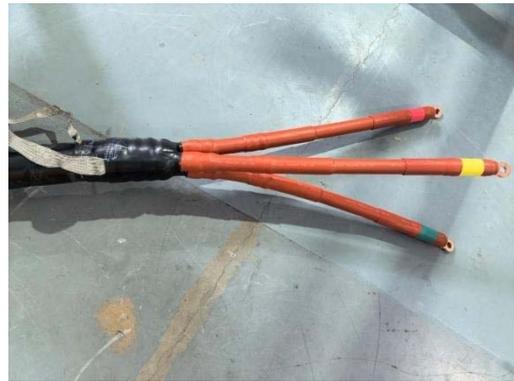
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After  
the  
test

EN2511006-01 sample after test



EN2511006-02 sample after test



EN2511006-03 sample after test



EN2511006-04 sample after test

Exami  
nation

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Exami  
nation

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10. Annex 1

Heat Shrink Package List

Product 15KV HEAT SHRINKABLE INDOOR TERMINATION ACCESSORIES

Model MZDNK-3-15-300

No.	Description	Model&Size	Length(m)	Quantity	Note
1	HEAT SHRINKABLE INSULATION BREAKOUT	ZMIB3-125/57-55/20/BK/516	/	1 ✓	
2	HEAT SHRINKABLE STRESS CONTROL TUBING	ZMSCT-45/16/BK/0.18M/M	1.90 0.18	3 ✓	0.19 m
3	HEAT SHRINKABLE TRACK-RESISTANT TUBING	ZMWNTA-50/15/RD/0.65M/516	0.65	3 ✓	0.66 m
4	HEAT SHRINKABLE SEALING TUBING	ZMWNT-50/15/RD/0.2M/516	0.2	3 ✓	0.21 m
5	HEAT SHRINKABLE PROTECTION TUBING	ZMRA2-140/42/BK/0.2M/M	0.2	1 ✓	0.21
6	WATERPROOF SEALING MASTIC	WMMFJ-2X26X330RD	/	10 ✓	
7	STRESS CONTROL MASTIC	WMYLJ-1.2X25X100YL	/	3 ✓	
8	SILICON GREASE	WMSJ-B42A	/	1 ✓	
9	BIMETAL LUG	ZCAL-300A-16/S/M	/	3 ✓	
10	TINNED COPPER BINDING-WIRE	ZMTZX-D1.4X1000/L	1.0	1 ✓	
11	COPPER BRAID, with lug	ZMDX-35X1000	1.0	1 ✓	
12	CABLE LUG	ZMJGB60-12/L	/	1 ✓	
13	COPPER BRAID	ZMDX-10X800	0.8	1 ✓	
14	CABLE LUG	ZMJGB16-10/L	/	1 ✓	
15	CONSTANT FORCE SPRING	WMTH-D24X0.3X15X7	/	3 ✓	
16	STEEL ARMOUR RING	DMKZH-60-92	/	1 ✓	
17	HOSE CLAMP	WMHG-78-101	/	2 ✓	
18	MEDICAL ADHESIVE TAPE	WMYJJD	/	1 ✓	
19	PVC TAPE	WMPJD-20X2000BK	2	1 ✓	
20	SEMI-CONDUCTIVE TAPE	WMBDD-25X800	0.6	1 ✓	
21	CLEANING KIT	WMQJB	/	3 ✓	
22	PHASE TUBING	ZM1-50/25/RD/0.05M/Z	0.05	1 ✓	
23	PHASE TUBING	ZM1-50/25/YE/0.05M/Z	0.05	1 ✓	
24	PHASE TUBING	ZM1-50/25/GN/0.05M/Z	0.05	1 ✓	
25	EMERY CLOTH	WMSZ-P180X20X500	/	1 ✓	
26	EMERY CLOTH	WMSZ-P400X15X500	/	1 ✓	
27	INSTALLATION INSTRUCTIONS	/	/	1 ✓	
28	PACKAGE LIST	/	/	1 ✓	

*Handwritten signature and date: 13/11/25*

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## MELEC

### Installation Instruction For 15KV Terminations

#### Step 1

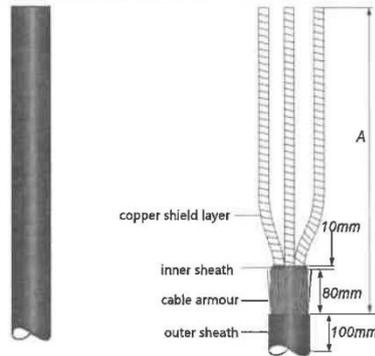
##### Preparation

1. Check if the content of kits is same with the packing list.
2. Check if the installation tools are ready.

#### Step 2

##### Strip cable sheath and steel armor

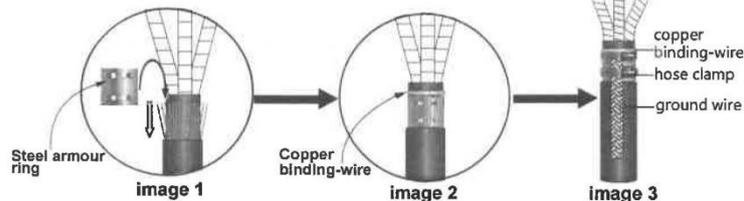
1. Straighten the cable.
2. Align the cable.
3. Measure the dimensions according to the right picture. Peel the outer sheath, armor layer and inner sheath.  
The strip length A:  
OUTDOOR=950mm ; INDOOR=800mm
4. Remove cable filler and lapped tape.
5. Use PVC tape to fix copper shield layer at the top of each core.
6. Fix the end of steel armor by copper binding wire.
7. Polish and clean outer sheath by sand paper till 100 mm from the edge of cable.
8. Use cleaner to clean the steel armor and outer sheath.



#### Step 3

##### Install copper braid (smaller one) for cable armour

1. According to the enlarged image 1, place steel armour ring under the cable steel wire armour. (If the cable armour is steel tape, please ignore this step)
2. Fix the end of cable armour by a copper binding wire as image 2 shows.
3. Fix the copper braid with hose clamps on cable steel wire armour as image 3 shows.



1

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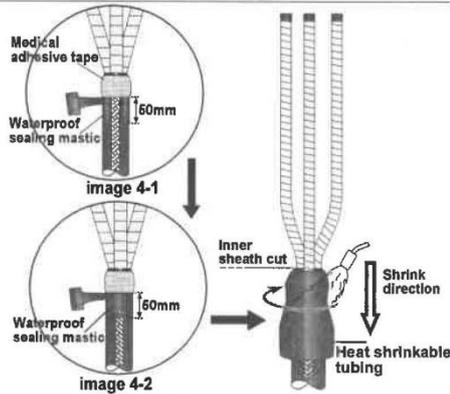
## MELEC

### Installation Instruction For 15KV Terminations

#### Step 4

##### Cable waterproofing treatment

1. Stretch the medical adhesive tape (white), and wrap it around the whole steel wire armour 2-3 layers. On hose clamp 3 layers is necessary.
2. Stretch the waterproof sealing mastic (red) to double length of its original length and then wrap it around the outer sheath with a small overlap (under copper braid). Shown as image 4-1.
3. Stretch the waterproof sealing mastic (red) to double length of its original length and then wrap it around the outer sheath with a small overlap (on the copper braid). Shown as image 4-2.
4. Place heat shrinkable tubing (black) over the cable core and position it level with the inner sheath cut. Shrink the tubing starting at the top and working downward.



#### Step 5

##### Install copper braid (larger one) for copper shield Cable waterproofing treatment

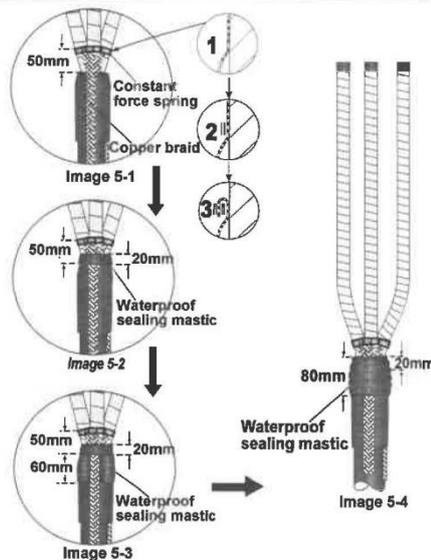
1. Divide one end of the copper braid (larger one) into three equal parts. Then attach the copper braid to the copper shield by constant force spring. Shown as image 5-1.

Note:  
The copper braid for copper shield should be as far away from the copper braid for armored ground as possible and must not be crossed.

2. Stretch the waterproof sealing mastic (red) to double length of its original length and then wrap it around the copper shield with a small overlap. Shown as image 5-2.

3. Stretch the waterproof sealing mastic (red) to double length of its original length and then wrap it around the heat shrinkable tubing with a small overlap. (under copper braid). Shown as image 5-3.

4. Stretch the waterproof sealing mastic (red) to double length of its original length and then wrap it around the heat shrinkable tubing with a small overlap. (on the copper braid). Shown as image 5-4.



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### Installation Instruction For 15KV Terminations

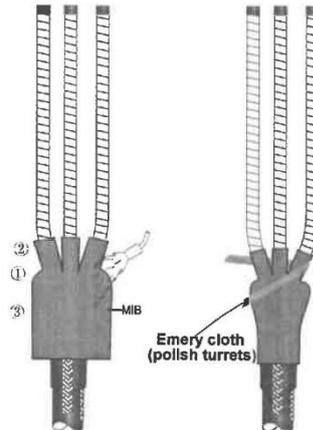
#### Step 4

##### Install heat shrinkable insulation breakout MIB

1. Pull the breakout as far down the crutch as possible. Shrink the breakout into place starting at the centre. Work first towards the up end and then shrink the lower onto the outer sheath.

The movement of the flame should be ①-②-③.

2. Polish the turrets of breakout by emery cloth. Then clean the turrets by cleaning kit.

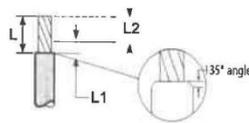


#### Step 5

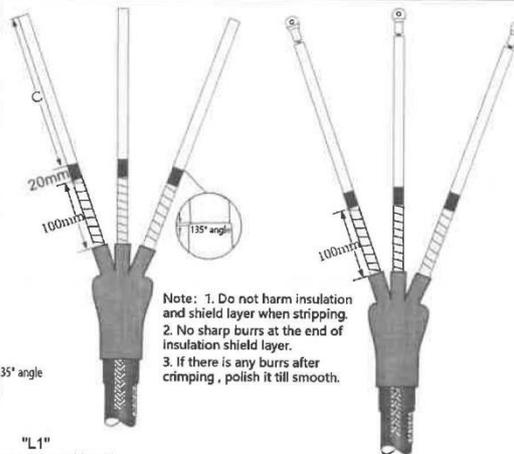
##### Strip copper shield and insulation shield layer

1. Measure and strip the cable, strip length  $\geq 250\text{mm}$  for indoor,  $\geq 500\text{mm}$  for outdoor.
2. Wrap and fix the copper shield for 1 round by PVC tape.
3. Polish insulation shield layer with 400# sandpaper until there is a  $135^\circ$  angle.
4. Measure and strip the insulation.
5. Cut the edge of insulation layer until there is a  $135^\circ$  angle according to the below picture.
6. Install cable lug.

Cross section area	"L1"
$\leq 185\text{mm}^2$	5mm
$> 185\text{mm}^2$	10mm



Length of insulation stripped = length of lug + reserved length



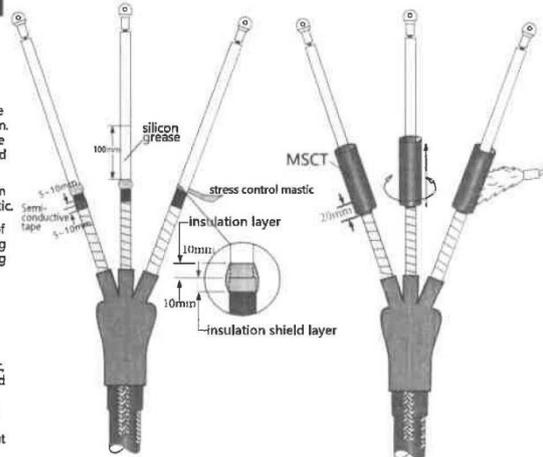
## MELEC

### Installation Instruction For 15KV Terminations

#### Step 6

**Wrap stress control mastic MYLJ**  
**Wrap semi-conductive tape MBD**  
**Shrink heat shrinkable stress control tubing MSCT**

1. According to the right picture, stretch the stress control mastic MYLJ to width 5-10 mm. Then, wrap the insulation and shielding. The wrapping length for both insulation and shielding should be 10 mm for each.
2. Apply insulation silicon grease MGZ evenly on the length 100mm from stress control mastic.
3. Place a marking at 20mm from the edge of copper shielding. Put stress control tubing MSCT to the marking. Evenly shrink the tubing along the direction of the arrow.



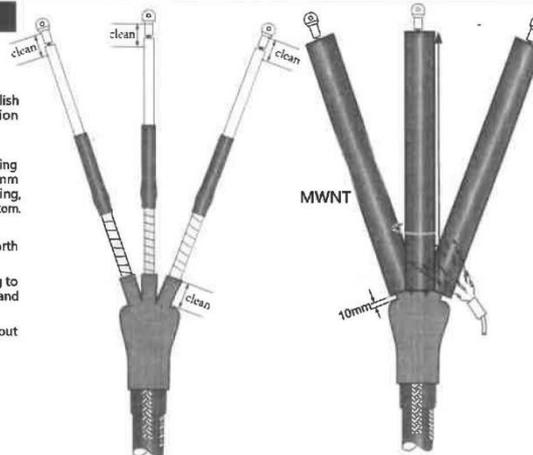
- Note:**
1. When wrapping stress control mastic, the gap between the insulation and the shield should be fully filled.
  2. Grease the cable completely and evenly, without any miss.
  3. Please refer to step 4 for instruction about shrinking.

#### Step 7

**Shrink heat shrinkable track-resistant tubing MWNT**

1. According to the right picture, first polish the finger tip of heat shrinkable insulation breakout.
2. Clean finger and end of lug.
3. Place heat shrinkable track-resistant tubing according to the right picture, leave 10mm length on breakout fingers before shrinking, then rotate the fire and shrink from the bottom.

- Note:**
1. Heat the whole part back and forth for 1 min after full shrinkage.
  2. Carefully check the tube after shrinking to avoid unsmooth surface, cold-wall effect and incomplete shrinkage.
  3. Please refer to step 4 for instruction about shrinking.



## MELEC

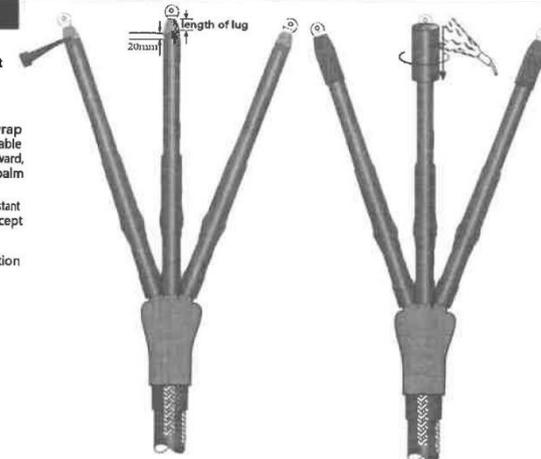
### Installation Instruction For 15KV Terminations

#### Step 8

**Wrap sealing mastic MMFJ**  
**Shrink heat shrinkable track-resistant tubing MWNT**

1. According to the right picture, wrap sealing mastic MMFJ, overlap heat shrinkable track-resistant tubing MWNT 20mm downward, fully wrap the cable lug part except the palm of lug.
2. Place and shrink the heat shrinkable track-resistant tubing MWNT to cover the cable lug (except the palm of lug).

Note: Please refer to step 4 for instruction about shrinking.



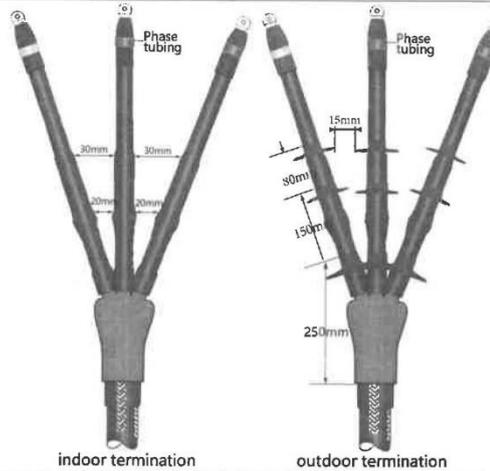
#### Step 9

**Shrink heat shrinkable skirt MCES**

1. Install phase tubing (coloured). The color should match the cable core.
2. Position and shrink the heat shrinkable skirt MCES to each core according to the right picture.
3. Leave it until fully cool down, installation finished.

Note:

1. For indoor termination, phase/phase and phase/ground distance  $\geq 20\text{mm}$ , Air gap  $\geq 30\text{mm}$ .
2. For outdoor termination, distance between skirts  $\geq 15\text{mm}$ .
3. During installation, the minimum bend radius is equal to outer diameter of each core multiple 15.



**Annex 3****Cable information:**

Structure	Number of cores	3 cores
	Screen structure	Metal strip
Conductor	Material	Aluminum
	Category	Strand
	Whether it is compressed	Compression
	Shape	Round conductor
	Measured cross-sectional area	307.8mm <sup>2</sup>
	Outer diameter/size	20.40mm
Insulation layer	Material	XLPE
	Insulation thickness	4.90mm (plus conductor screen layer)
	Outer diameter	30.20 mm
	Insulation screen thickness	0.60mm
	Whether it is stripped	Stripped (insulated screen layer)
	Metal screen material	copper
Armor		Steel band armor
Inner sheath	Material	PVC
	Outer diameter/thickness	75.79mm / 3.28mm
Outer sheath	Material	PVC
	Outer diameter/thickness	85.17 mm / 4.58 mm
Cable marking		YJLV22 8.7/15kV 3×300mm <sup>2</sup> Far East Cable

~~~~~ End ~~~~~

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