

POLIPAR	Test Report	FUSE CUT-OUT
Contents		
Number	Contents	Pages
1	Cover	
2	Contents	1
3	General	2
4	Photos of the samples	3
5	Test conclusion	4
6	Lightning impulse voltage tests	5
7	Power-frequency voltage dry tests	6
8	Power-frequency voltage wet tests	7
9	Temperature-rise test	8
10	Diagram of measuring points of temperature-rise	9
11	Mechanical test	10
12	Operating time-current characteristics test	11~12
13	Pre-arcing time-current characteristics test	13~14
14	Breaking test	15~20
15	Assembly	22
16	Schematic diagram of power-frequency withstand voltage test	23
17	Schematic diagram of lightning impulse withstand voltage test	24
18	Schematic diagram of breaking test	25~26
19	Oscillogram of lightning impulse withstand voltage test	27
20	Oscillogram of operating time-current characteristics test	28~33
21	The prospective oscillogram of breaking test	34~38
22	TRV of breaking test	39~42
23	Oscillogram of breaking test	43~60
24	Mechanical test	61
25	Thermal cycle and torque tests	62
26	Torque tests	63
27	Radio interference voltage (r.i.v.) tests	64
28	Dimensional and Galvanising Test	65
29	Measurement of Resistance of fuse-links is for resistance test	66
	Blank below	

POLIPAR		Test Report		FUSE CUT-OUT	
General					
Test category		Type test			
Type and name of the samples		Fuse cutouts			
Manufacturer		Erkan Elektromekanik A.Ş (Polipar Brand Owner)			
Address		1203. Street No: 38/L-5/D Ostim Organized Industrial Area, Ankara/Türkiye, Postcode: 06374			
Manufacturing date		2021-12			
Main technical parameters of the samples	Rated voltage (kV)		24		
	Rated current (A)		100		
	Rated frequency (Hz)		50		
	Rated current of the fuse-base (A)		300		
	Rated current of the equipped fuse-link (A)		6、 100		
	Rated breaking current (kA)		5		
	Power-frequency withstand voltage dry test (phase to earth) (kV)		50		
	Power-frequency withstand voltage dry test (distance) (kV)		60		
	Power-frequency withstand voltage wet test (phase to earth) (kV)		50		
	Power-frequency withstand voltage wet test (distance) (kV)		60		
	Lightning impulse withstand voltage dry test (phase to earth) (kV) Peak		125		
	Lightning impulse withstand voltage dry test (distance) (kV) Peak		145		
	Description		24kV Porcelain Fuse Cutout		
Test period: From June. 3, 2022 to June. 15, 2022					

POLIPAR		Test Report		FUSE CUT-OUT	
Test conclusion					
Manufacturer	Erkan Elektromekanik A.Ş (Polipar Brand Owner)				
Type of the samples	FUSE CUT-OUT				
Name of the samples	Fuse cutouts				
Manufacturer	Erkan Elektromekanik A.Ş (Polipar Brand Owner)				
Test items and results	Power-frequency voltage dry tests [phase to earth: 50kV 1min; fracture: 60kV 1min]				PASS
	Power-frequency voltage wet tests [phase to earth:50kV 1min]				PASS
	Lightning impulse voltage dry tests [phase to earth: 125kVPeak;fracture: 145kVPeak]				PASS
	Temperature-rise test[100A]				PASS
	Breaking tests1[24kV, 8kA, 6A and 100A 3 times each]				PASS
	Breaking tests2[24kV, 4.8~6.4kA, 6A and 100A 3 times each]				PASS
	Breaking tests3[24kV, 1.6~2.4kA, 6A and 100A 1 time each]				PASS
	Breaking tests4[24kV, 400~500A, 6A 2 times each]				PASS
	Breaking tests5[24kV, 16.2~19.8A, 6A 2 times each]				PASS
	Pre-arcing time-current characteristics test				PASS
	Operating time-current characteristics test				PASS
	Mechanical tests: Mechanical testing of fuse bases and fuse-carrying parts [500times"CO"]				PASS
	Thermal Cycle test				PASS
	Torque test				PASS
	Dimensional and Galvanising test				PASS
	Radio interference voltage (r.i.v.) tests				PASS
	Measurement of Resistance of fuse-links				PASS
Test standards	IEEEStdC 37.41 IEEE Standard Design Tests for High-Voltage(>1000V)Fuses and Accessories				
	IEEE Std C 37.42 IEEE Standard Specifications for High-Voltage(>1000V)Fuses and Accessories				
Test conclusion	The tests have been carried out from 6/3-6/15/2022. the test items meet the relevant clauses of above test standards and technical specifications, and the samples have passed the tests.				
Compiled by:	Proofread by:	Checked by:	Approved by:		
Date:	Date:	Date:	Date:		

POLIPAR		Test Report				FUSE CUT-OUT		
Dielectric test (lightning impulse withstand voltage dry test)								
Test date: June.3, 2022								
Status of samples or test parts	Voltage applied to	Earth connected to	Positive polarity			Negative polarity		
			Voltage (kV)	Applied times	Puncture times	Voltage (kV)	Applied times	Puncture times
Fuse distance in closed condition	Aa	F	129.9	15	0	129.9	15	0
Fuse distance in open condition	A	a	154.9	15	0	154.9	15	0
	a	A	154.9	15	0	154.9	15	0
Status of the sample before the test: new. Note: A——one side terminal of tested parts; a——the other side terminal of tested parts; F——metal parts and install base of the sample The data in the table has been corrected into the standard atmospheric condition.								
Atmospheric conditions of test zone	P=101.6kPa; Environmental temperature t=26°C; Relative humidity: 65% Atmospheric correction factor Kt=0.9993 Altitude correction factor Ka= /							

POLIPAR	Test Report		FUSE CUT-OUT		
Dielectric test (power-frequency withstand voltage dry test)					
Test date: June.3, 2022					
Status of samples or test parts	Voltage applied to	Earth connected to	1min power-frequency withstand voltage (dry condition)		
			Voltage (kV)	Applied times	Puncture times
Fuse distance in closed condition	Aa	F	59.6	1	0
Fuse distance in open condition	A	a	69.6	1	0
	a	A	69.6	1	0
Status of the sample before the test: new. Note: A——one side terminal of tested parts; a——the other side terminal of tested parts; F——metal parts and install base of the sample The data in the table has been corrected into the standard atmospheric condition.					
Atmospheric conditions of test zone	P=101.6kPa; Environmental temperature t=26°C; Relative humidity: 65% Atmospheric correction factor Kt=0.9948 Altitude correction factor Ka= /				

POLIPAR	Test Report	FUSE CUT-OUT			
Dielectric test (power-frequency withstand voltage wet test)					
Test date: June 5, 2022					
Average rate of sprinkling	Horizontal component: 1.4mm/min Vertical component: 1.3mm/min	Conductive rate: 107μs/cm		Water temperature: 13.1°C	
Status of samples or test parts	Voltage applied to	Earth connected to	1min power-frequency withstand voltage (wet condition)		
			Voltage (kV)	Applied times	Puncture times
Fuse distance in closed condition	Aa	F	51.5	1	0
Fuse distance in open condition	A	a	61.7	1	0
	a	A	61.7	1	0
Status of the sample before the test: no maintainance. Note: A——one side terminal of tested parts; a——the other side terminal of tested parts; F——metal parts and install base of the sample The data in the table has been corrected into the standard atmospheric condition.					
Atmospheric conditions of test zone	P=102.5kPa; Environmental temperature t=26.; Relative humidity: 65% Atmospheric correction factor Kt=1.0209 Altitude correction factor Ka= /				

POLIPAR	Test Report	FUSE CUT-OUT
---------	-------------	--------------

Temperature-rise test

Test date: June.6, 2022

Test current (A)	100	Test pole: single pole	Current frequency: 50Hz
Contact pressure (N)	A: /	B: /	C: /
Connect busbar	Copper bar Dimension: 160 mm ² Length: the head and tail end are 1.0m respectively		

Measuring data of temperature-rise (K)

Number or name of measuring parts	Temperature-rise (ambient temperature 20°C)	Permitted temperature-rise value (K)	Remark
1	46	/	Reference point
2	49	65	
3	60	75	
4	52	65	
5	54	65	
6	67	/	
7	55	65	
8	51	65	
9	48	/	Reference point

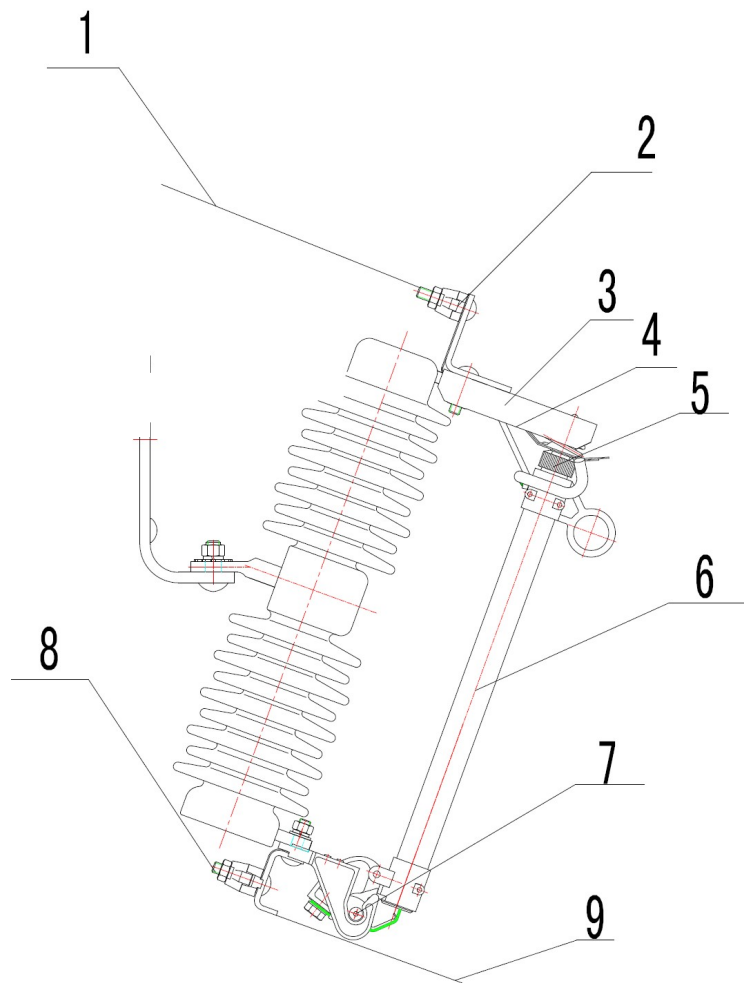
Note: for the numbers of measuring parts and the measuring parts of thermocouple, see sketch map.

POLIPAR

Test Report

FUSE CUT-OUT

Diagram of measuring points of temperature-rise

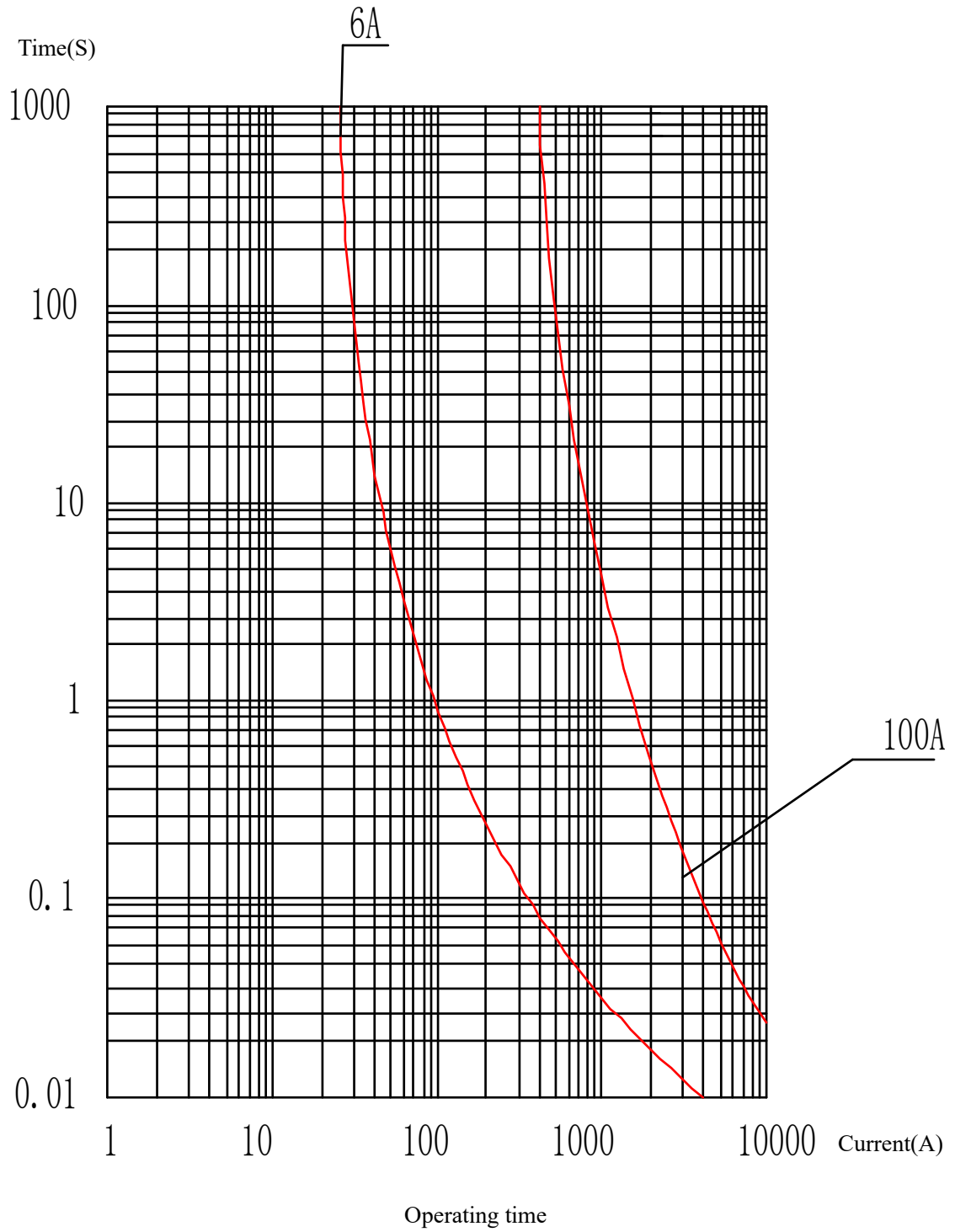


POLIPAR	Test Report	FUSE CUT-OUT
Mechanical test		
Test date: June. 06, 2022		
<p>1. Mechanical strength of fuse-base and fuse-carrier</p> <p style="padding-left: 40px;">200 times of closing and 200 times of opening are made respectively on three fuses</p> <p style="padding-left: 40px;">At the conclusion of the operations, the fuses shall be in an operable condition with no failure in the insulators and mechanical performance.</p>		
Test date: June 06, 2022		
<p>2. Mechanical strength of fuse-links</p> <p>a) Static test:</p> <p style="padding-left: 40px;">The specified axial tensile forces of 60 N are applied on one fuse-link gradually, with no precipitous action. No any damage is observed on the fuse-link after 30min. (such as rupture, loosening, slipping of connections, or elongation of components)</p> <p>b) Dynamic test:</p> <p style="padding-left: 40px;">The fuse-links are installed on the fuse according to normal service condition and 20 times of closing and 20 times of opening are made respectively.</p> <p style="padding-left: 40px;">After the operations, no any damage is observed on the fuse by visual inspection. (such as rupture, elongation of components, loosening or slipping of connections)</p>		
<p>Note: The test Passed.</p>		

POLIPAR		Test Report			FUSE CUT-OUT	
Operating time-current characteristics test						
Test date: June 6, 2022						
Ambient temperature: 15.9°C						
Connect lead length	Length: 1.2m					
Test current (A)	Rated current of the fuse (A)	Measured melting time (ms)	Test times	Connect lead dimension (mm ²)	Oscillogram No	
207.6	100	9030	1	160	001	
260.3	100	3220	1	160	002	
1559	100	120.9	1	160	003	
12.3	6	2890	1	160	004	
13.8	6	1320	1	160	005	
73.0	6	128.6	1	160	006	
<p>Status of the sample before the test: no maintainance.</p> <p>Note: the test is carried out at 36kV.</p>						

Operating time-current characteristics curves

No: /



POLIPAR	Test Report	FUSE CUT-OUT
---------	-------------	--------------

Pre-arcing time-current characteristics test

Test date: June.5, 2022

Ambient temperature: 15.8°C

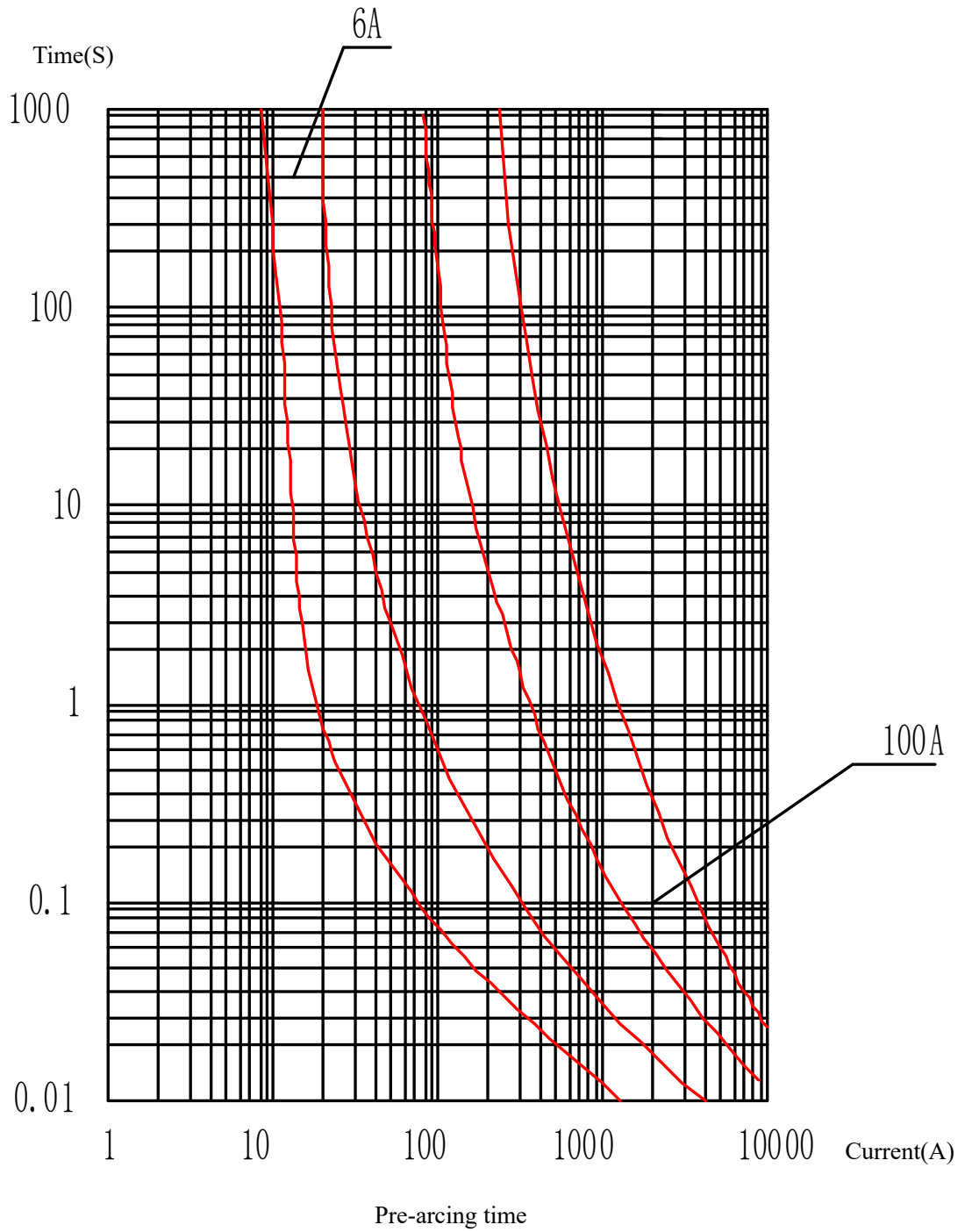
Connect lead length	Length: 2.0m			
Test current (A)	Rated current of the fuse (A)	Measured melting time (s)	Test times	Connect lead dimension (mm ²)
202	100	9.0	1	160
259	100	3.1	1	160
1542	100	0.12	1	160
12.4	6	2.7	1	160
13.8	6	1.3	1	160
73.3	6	0.11	1	160

Status of the sample before the test: no maintainance.

Note:

Pre-arcing time-current characteristics curves

No: /



POLIPAR	Test Report	FUSE CUT-OUT
----------------	--------------------	---------------------

Breaking test

Test contents, methods, circuit, conditions and prospective values

Test items	Test operating sequence or test parts	Test times	Test phases	Test methods	Test circuit	Test line voltage (kV)	Breaking current I _K (kA)	Peak withstand current (kA)	Short-time withstand current (kA)	Short-circuit duration (s)	Closing angle after voltage exceed zero (°)	Power factor	Source impedance/total impedance of the circuits (%)	Power-frequency recovery voltage (kV)	TRV	
															U _c (kV)	t ₃ (μs)
Test duty 1	O	3 times of 100A and 6A respectively		Direct test	/-3	24	5				*	<0.15		36	66.2	281
Test duty 2	O	3 times of 100A and 6A respectively		Direct test	/-3	24	3~4				*	<0.15		36	66.2	281
Test duty 3	O	1 time of 100A and 6A respectively		Direct test	/-3	24	1.0~1.5				85~105	<0.15		36	66.2	281
Test duty 4	O	6A 2 times		Direct test	/-3	24	0.4~0.5				Random	0.20~0.30		36	81.5	40
Test duty 5	O	6A 2 times		Direct test	/-4	24	0.0162~0.0198				Random	0.60~0.80		36	/	/

*: the closing phase angles of three times test on duty 1 and duty 2:-5°~15°(the first time), 85°~105°(the second time),130°~150°(the third time).

POLIPAR		Test Report							FUSE CUT-OUT			
Breaking test duty 1												
Test date: June. 10, 2022 Source side cosφ: <0.15 Prospective TRV: U _c (kV)=66.2 t ₃ (μs)=281												
Test duty	Oscillogram No	Test voltage (kV)	(prospective) Breaking current (kA)	Rated current of the fuse (A)	Cut-off current (kA)	Duration (ms)	Power-frequency recovery voltage (kV)	Power factor of circuit	Closing angle after voltage exceed zero (°)	TRV		Status of the sample
										U _c (kV)	t ₃ (μs)	
Metallic short-circuit	/-Y001	24.4	5.1									Checking circuit
Circuit adjustment	/-TRV001									66.8	281	
1	/-T001	24.4	(5.1)	6	10.0	15.9	36.1	0.04	1			OK
1	/-T002	24.4	(5.1)	100	11.1	15.5	36.1	0.04	13			OK
1	/-T003	24.4	(5.1)	6	6.0	9.1	36.1	0.04	91			OK
1	/-T004	24.4	(5.1)	100	6.8	10.3	36.1	0.04	82			OK
1	/-T005	24.4	(5.1)	6	1.0	3.7	36.1	0.04	146			OK
1	/-T006	24.4	(5.1)	100	10.7	17.5	36.1	0.04	146			OK
Status of the sample before the test: /												

POLIPAR	Test Report	FUSE CUT-OUT
----------------	--------------------	---------------------

Breaking test duty 2

Test date: June. 10, 2022

Source side cosφ: <0.15

Prospective TRV: $U_c(kV)=66.2$

$t_3(\mu s)=281$

Test duty	Oscillogram No	Test voltage (kV)	(prospective) Breaking current (kA)	Rated current of the fuse (A)	Cut-off current (kA)	Duration (ms)	Power-frequency recovery voltage (kV)	Power factor of circuit	Closing angle after voltage exceed zero (°)	TRV		Status of the sample
										U_c (kV)	t_3 (μs)	
Metallic short-circuit	/-Y002	24.4	3.5									Checking circuit
Circuit adjustment	/-TRV002									66.9	281	
2	/-T007	24.4	(3.5)	6	6.4	15.5	36.1	0.04	2			OK
2	/-T008	24.4	(3.5)	100	7.2	15.4	36.1	0.04	11			OK
2	/-T009	24.4	(3.5)	6	3.9	9.2	36.1	0.04	87			OK
2	/-T010	24.4	(3.5)	100	5.7	18.7	36.1	0.04	104			OK
2	/-T011	24.4	(3.5)	6	1.8	5.4	36.1	0.04	132			OK
2	/-T012	24.4	(3.5)	100	6.7	17.8	36.1	0.04	142			OK

Status of the sample before the test: /

POLIPAR	Test Report	FUSE CUT-OUT
----------------	--------------------	---------------------

Breaking test duty 3

Test date: June. 10, 2022

Source side $\cos\phi$: <0.15

Prospective TRV: $U_c(kV)=66.2$ $t_3(\mu s)=281$

Test duty	Oscillogram No	Test voltage (kV)	(prospective) Breaking current (kA)	Rated current of the fuse (A)	Cut-off current (kA)	Duration (ms)	Power-frequency recovery voltage (kV)	Power factor of circuit	Closing angle after voltage exceed zero (°)	TRV		Status of the sample
										U_c (kV)	t_3 (μs)	
Metallic short-circuit	/-Y003	24.4	1.2									Checking circuit
Circuit adjustment	/-TRV003									67.1	281	
3	/-T013	24.4	(1.2)	6	1.4	9.0	36.1	0.04	86			OK
3	/-T014	24.4	(1.2)	100	1.8	20.1	36.1	0.04	88			OK

Status of the sample before the test: /

POLIPAR	Test Report	FUSE CUT-OUT
----------------	--------------------	---------------------

Breaking test duty 4

Test date: June. 10, 2022

Source side cosφ: 0.2~0.3

Prospective TRV: $U_c(kV)=81.5$

$t_3(\mu s)=40$

Test duty	Oscillogram No	Test voltage (kV)	(prospective) Breaking current (kA)	Rated current of the fuse (A)	Cut-off current (kA)	Duration (ms)	Power-frequency recovery voltage (kV)	Power factor of circuit	Closing angle after voltage exceed zero (°)	TRV		Status of the sample
										U_c (kV)	t_3 (μs)	
Metallic short-circuit	/-Y004	24.4	0.4									Checking circuit
Circuit adjustment	/-TRV004									82	41	
3	/-T015	24.4	(0.4)	6	0.6	8.7	36.1	0.25				OK
3	/-T016	24.4	(0.4)	6	0.7	18.4	36.1	0.25				OK

Status of the sample before the test: /

POLIPAR	Test Report	FUSE CUT-OUT
----------------	--------------------	---------------------

Breaking test duty 5

Test date: June. 10, 2022

Source side cosφ: 0.60~0.80

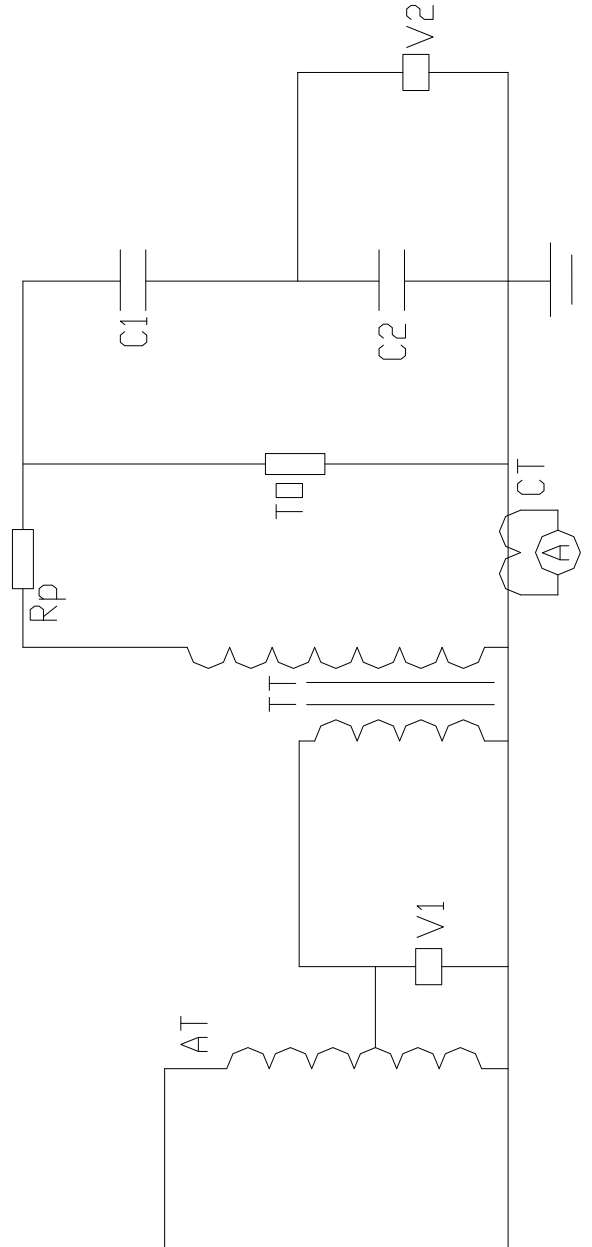
Prospective TRV: $U_c(kV)= /$ $t_3(\mu s)= /$

Test duty	Oscillogram No	Test voltage (kV)	(prospective) Breaking current (kA)	Rated current of the fuse (A)	Cut-off current (kA)	Duration (ms)	Power-frequency recovery voltage (kV)	Power factor of circuit	Closing angle after voltage exceed zero (°)	TRV		Status of the sample
										U_c (kV)	t_3 (μs)	
Metallic short-circuit	/-Y005	24.4	18									Checking circuit
5	/-T017	24.4	18	6		1028	36.1		0.7			OK
5	/-T018	24.4	18	6		1050	36.1		0.7			OK

Status of the sample before the test: /

Schematic diagram of power-frequency withstand voltage test

No: /-1



In the diagram:

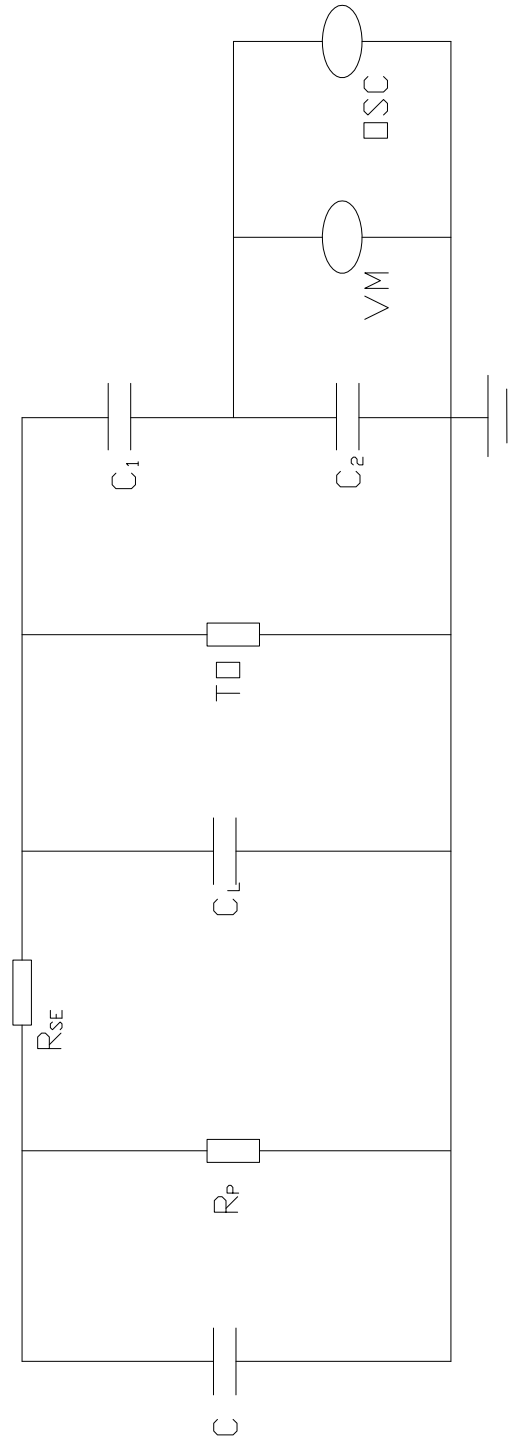
AT: Booster CT: Current transform TT: Power-frequency test transform RP: Protected resistance

TO: Test object V1: Voltmeter A: Ammeter C1: HV arm capacitance of voltage divider

C2: LV arm capacitance of voltage divider V2: Peak voltmeter

Schematic diagram of lightning impulse withstand voltage test

No: /-2

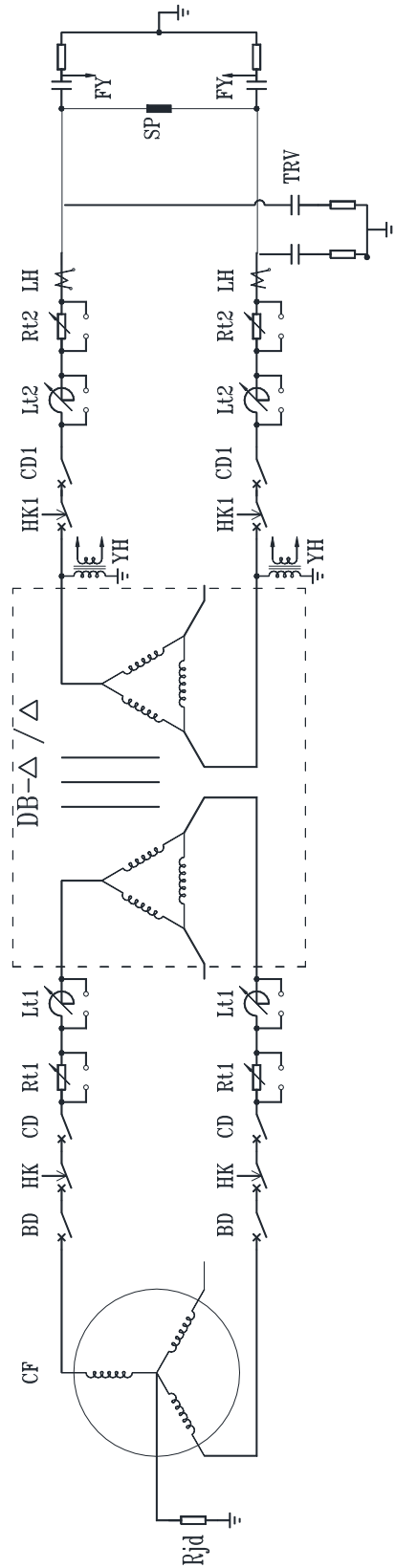


In the diagram:

- C: Main capacitance of the impulse emitter RP: Parallel connected resistance of emitter(resistance on end of wave)
- R_{se}: Arallel connected resistance of emitter (resistance before wave) Cl: Load capacitance of emitter
- C₁: HV arm capacitance of potentiometer C₂: LV arm capacitance of potentiometer
- TO: Test object VM: Peak value of voltage meter OSC: Oscillograph

Schematic diagram of breaking test
(test duty 1~4)

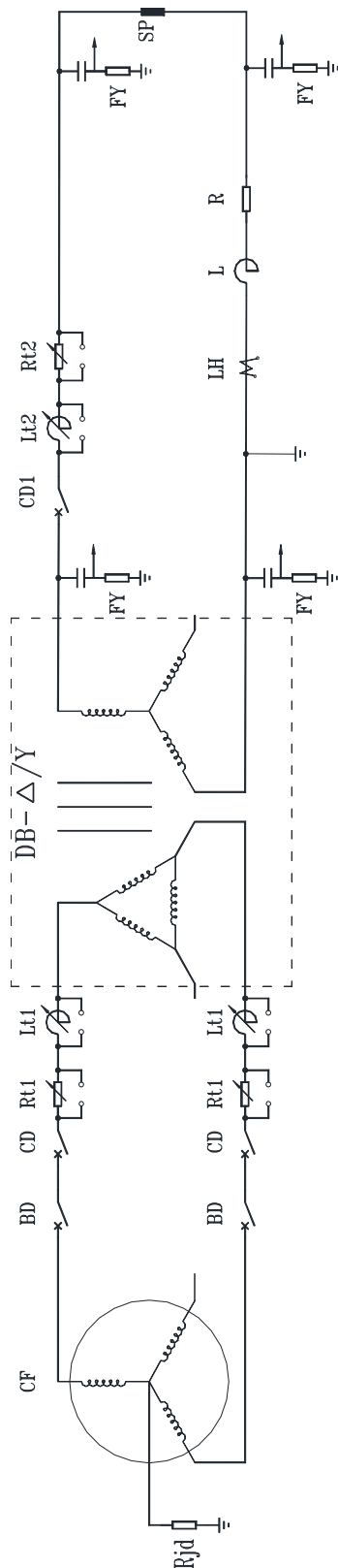
No: /-3



- CF----短路发电机 (short-circuit generator)
- CD----操作断路器 (operation circuit-breaker)
- DB----短路变压器 (booster short-circuit transformer)
- FY----分压器 (divider)
- Rjd----接地电阻 (earthing resistor)
- CD1----操作断路器 (operation circuit-breaker)
- BD----保护断路器 (master circuit-breaker)
- Rt1----功率因数调节电阻 (power factor resistor)
- YH----电压互感器 (voltage transformer)
- Rt2----功率因数调节电阻 (power factor resistor)
- SP----试样 (test object)
- HK1----合闸开关 (making switch)
- BD----保护断路器 (master circuit-breaker)
- Rt1----功率因数调节电阻 (power factor resistor)
- YH----电压互感器 (voltage transformer)
- Rt2----功率因数调节电阻 (power factor resistor)
- SP----试样 (test object)
- HK1----合闸开关 (making switch)
- HK----合闸开关 (making switch)
- Lt1----调节电抗器 (adjustable reactor)
- LH----电流互感器 (current transformer)
- Lt2----调节电抗器 (adjustable reactor)
- TRV----暂态恢复电压 (transient recovery voltage)

Schematic diagram of breaking test
(test duty 5)

No: /-4

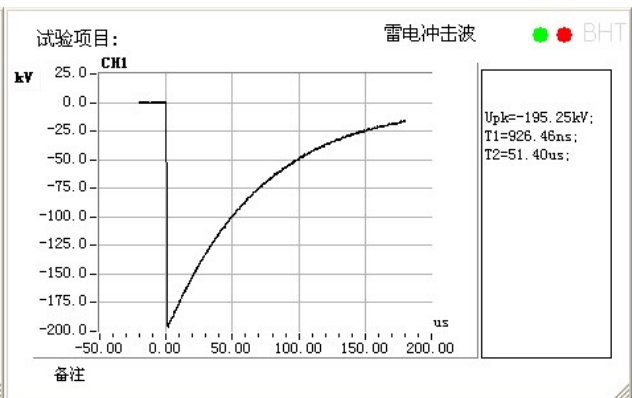
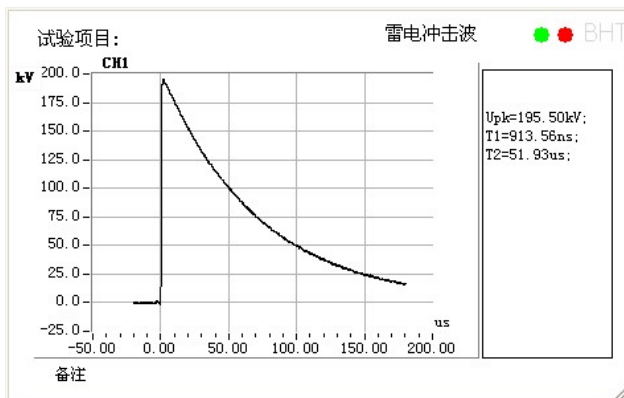
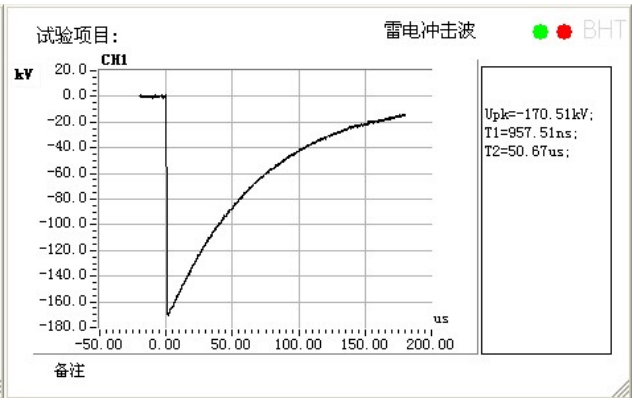
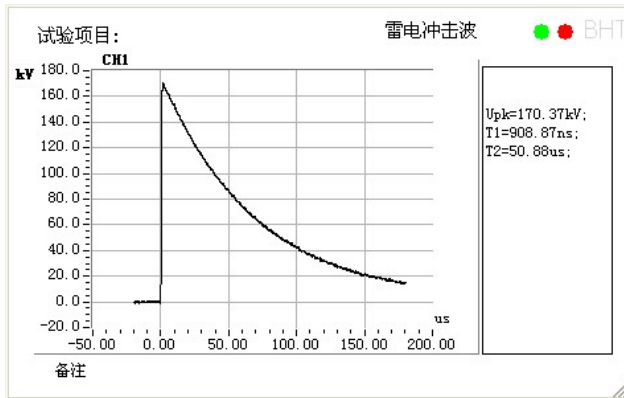


- CF---- 短路发电机 (short-circuit generator)
- Rt1---- 功率因数电阻 (power factor resistor)
- FY---- 分压器 (divider)
- Rt2---- 功率因数电阻 (power factor resistor)
- BD---- 保护断路器 (master circuit-breaker)
- Lt1---- 调谐电抗器 (adjustable reactor)
- CD1---- 操作断路器 (operation circuit-breaker)
- SP---- 样品 (test object)
- CD---- 操作断路器 (operation circuit-breaker)
- DB---- 短路变压器 (short-circuit transformer)
- Lt2---- 调谐电抗器 (adjustable reactor)
- LH---- 电流线圈 (current coil)

Oscillogram of lightning impulse withstand voltage test

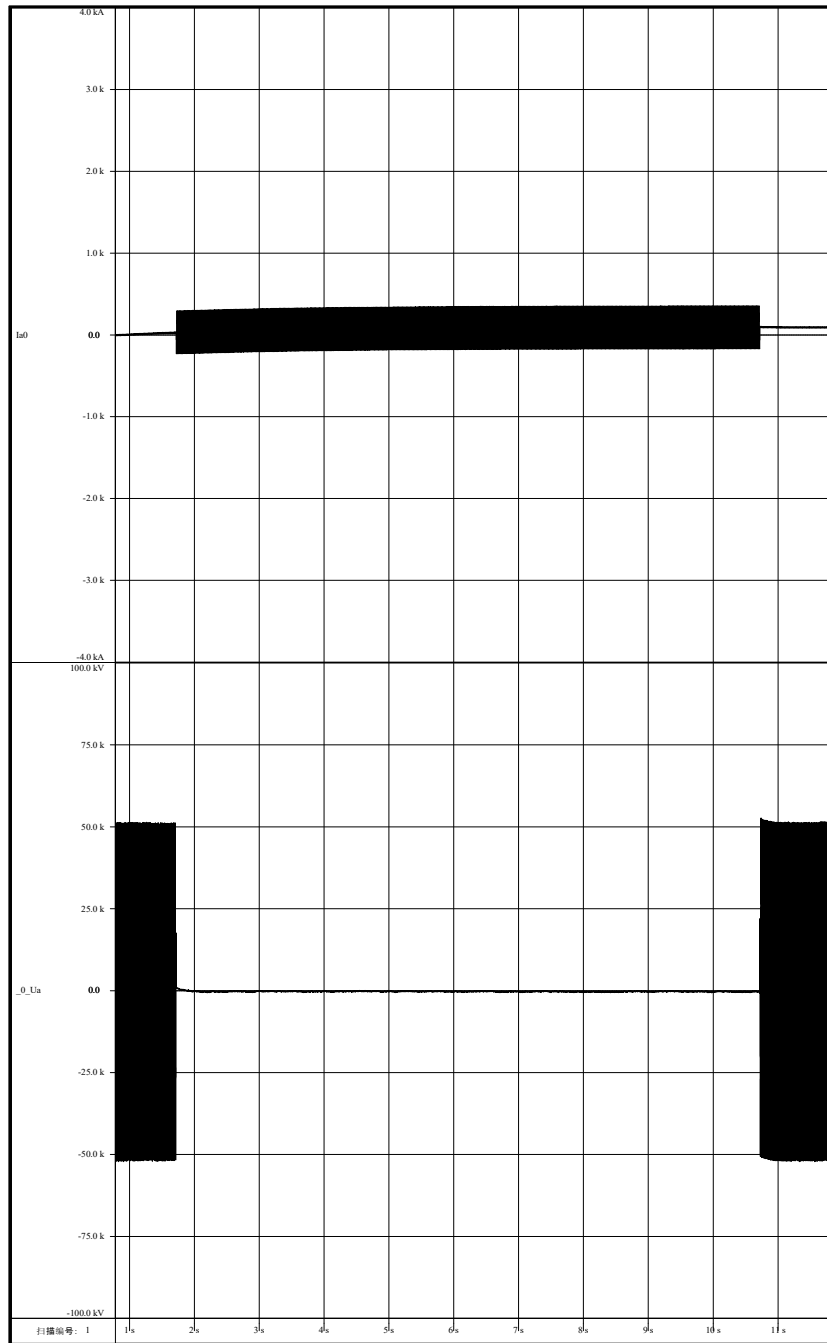
No: /

/



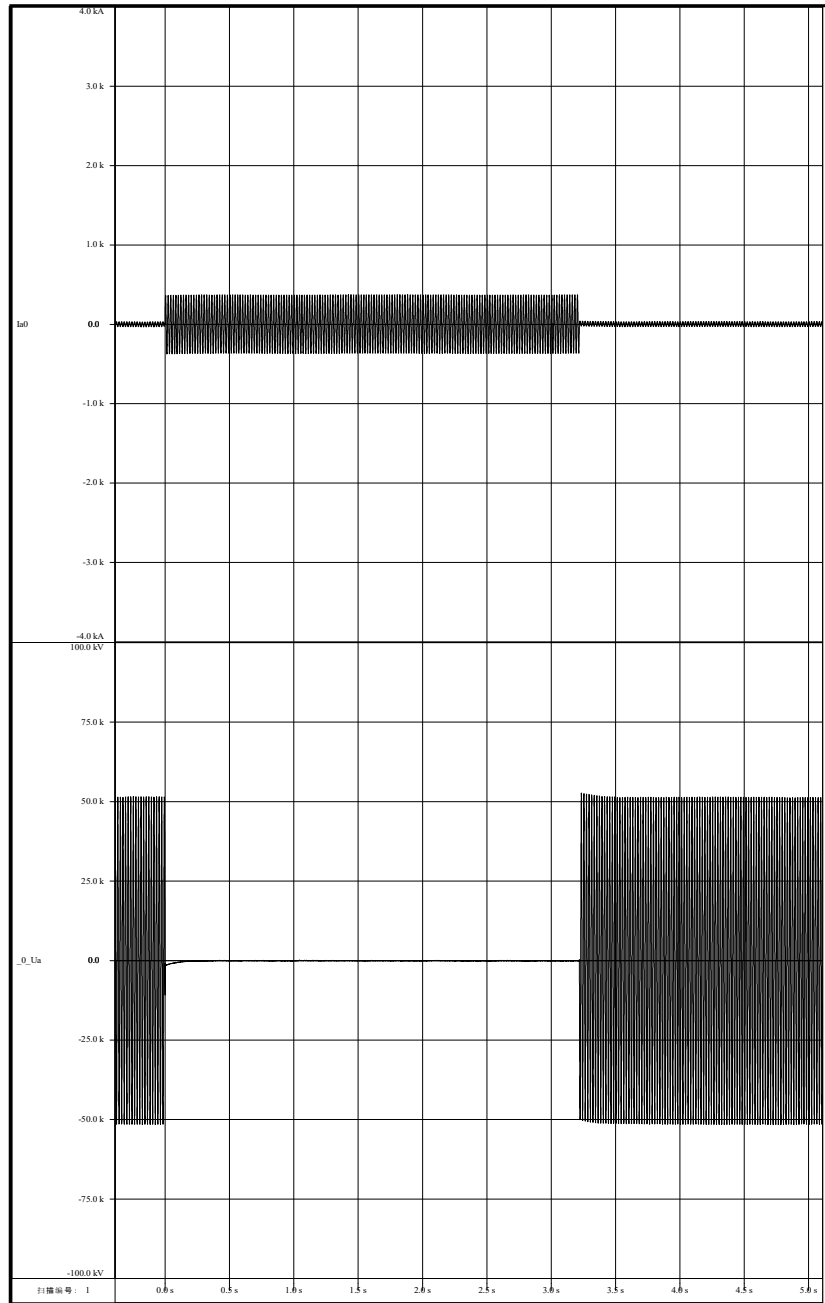
Oscillogram of operating time-current characteristics test

No: /-001



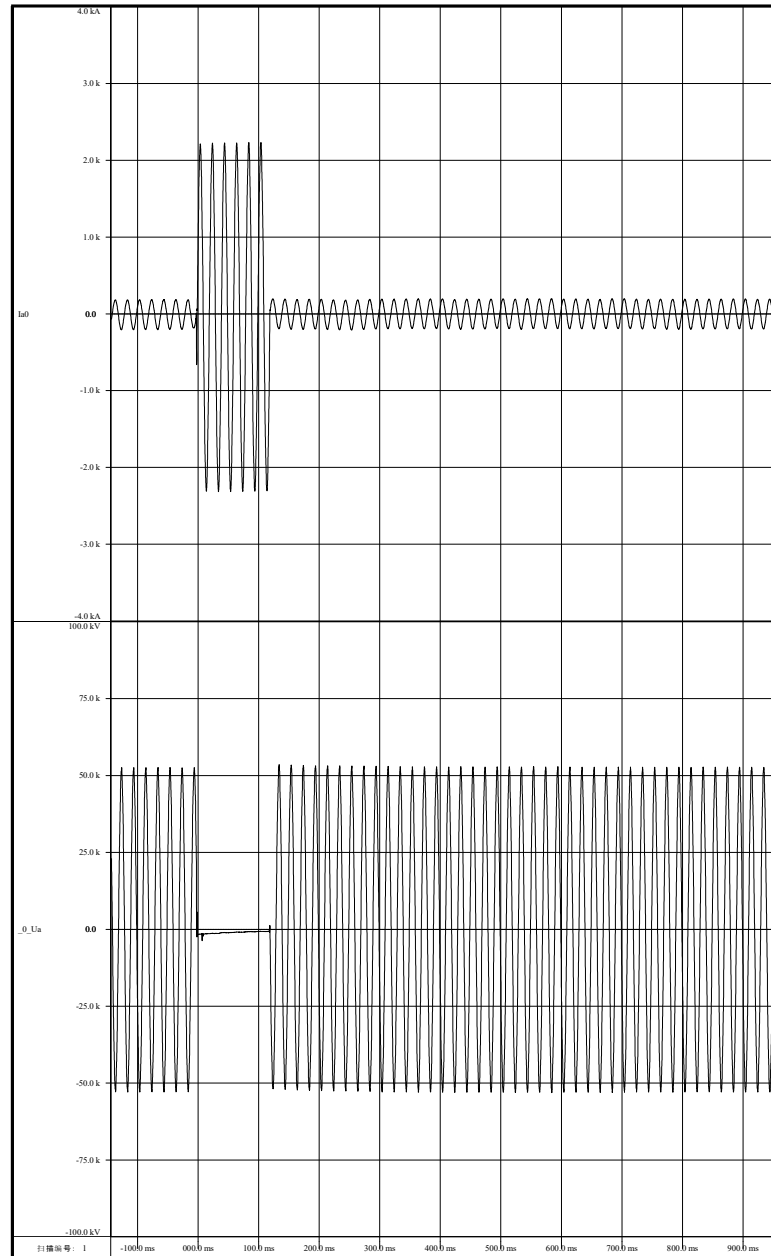
Oscillogram of operating time-current characteristics test

No: /-002



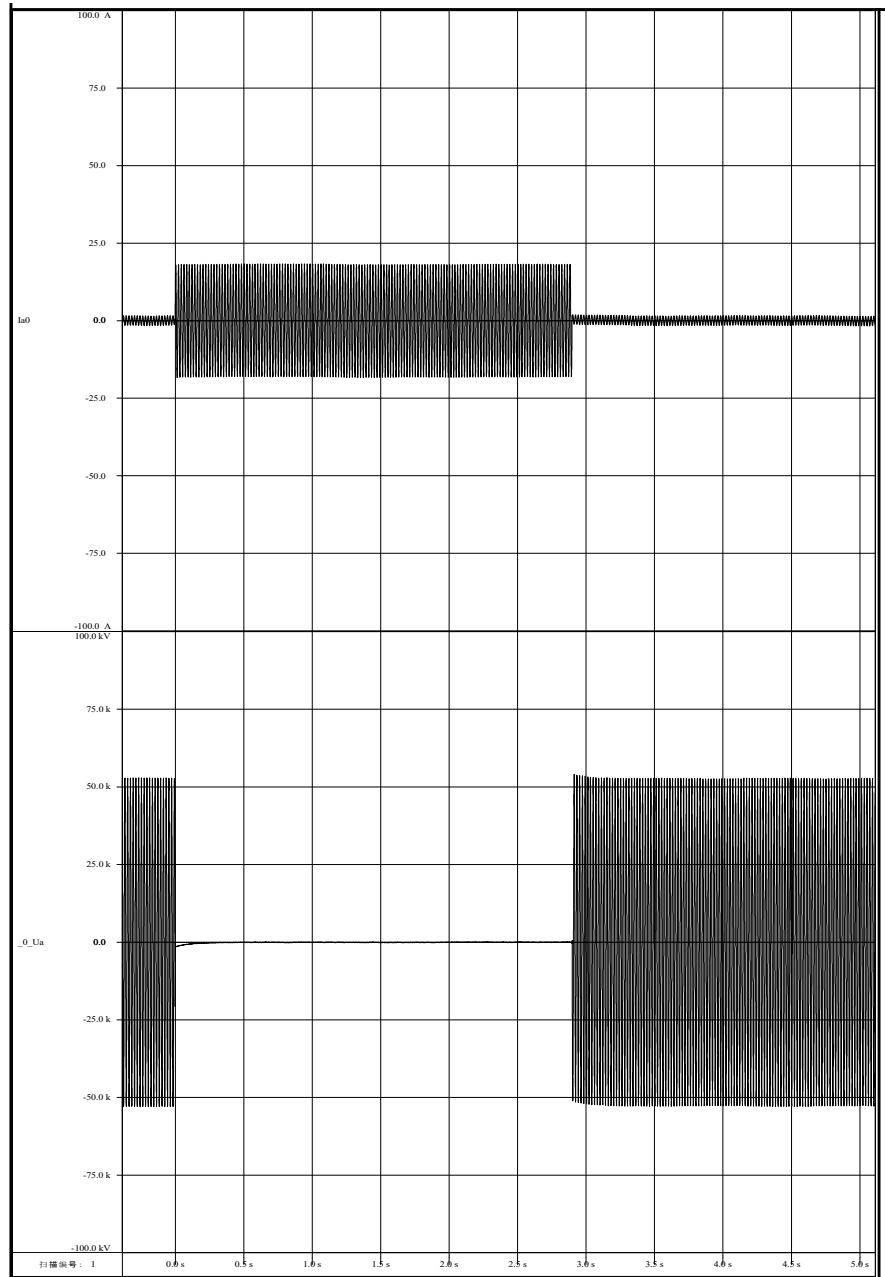
Oscillogram of operating time-current characteristics test

No: /-003



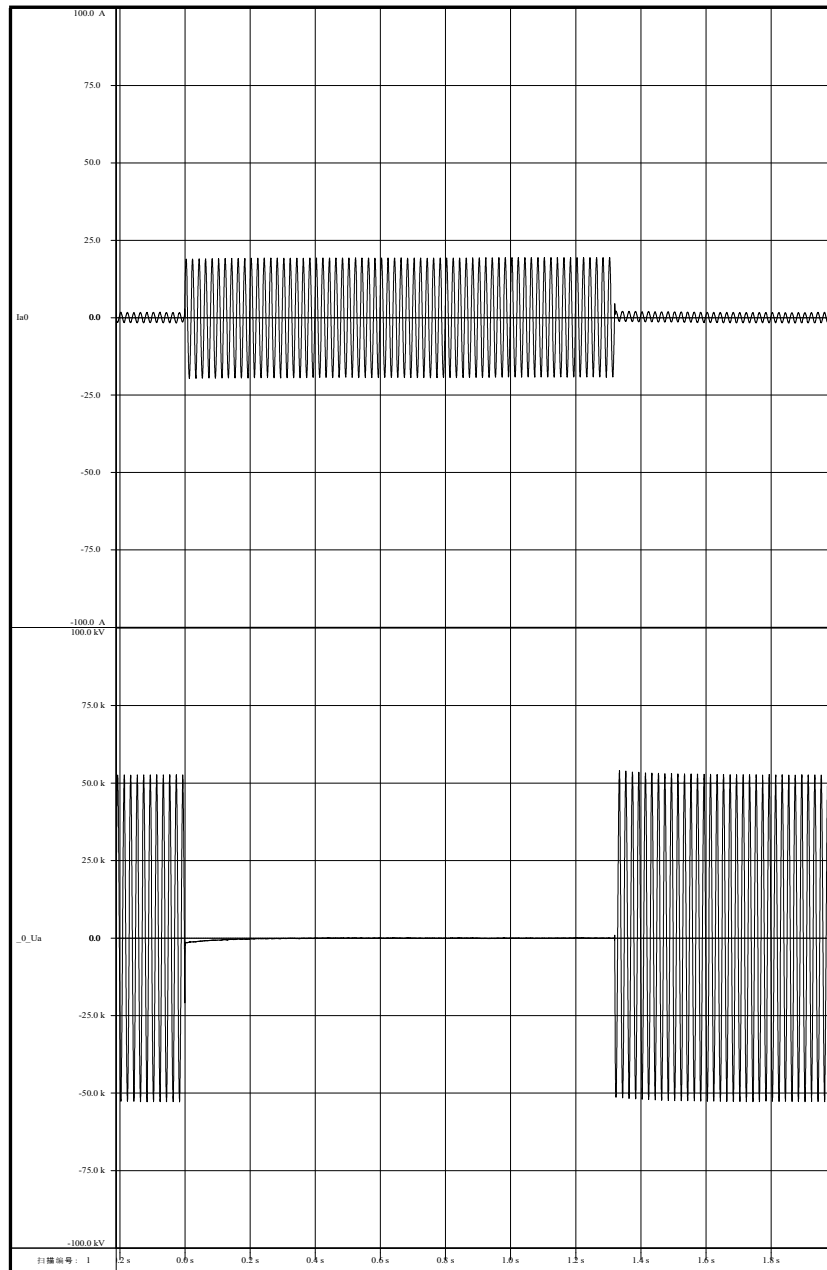
Oscillogram of operating time-current characteristics test

No: /-004



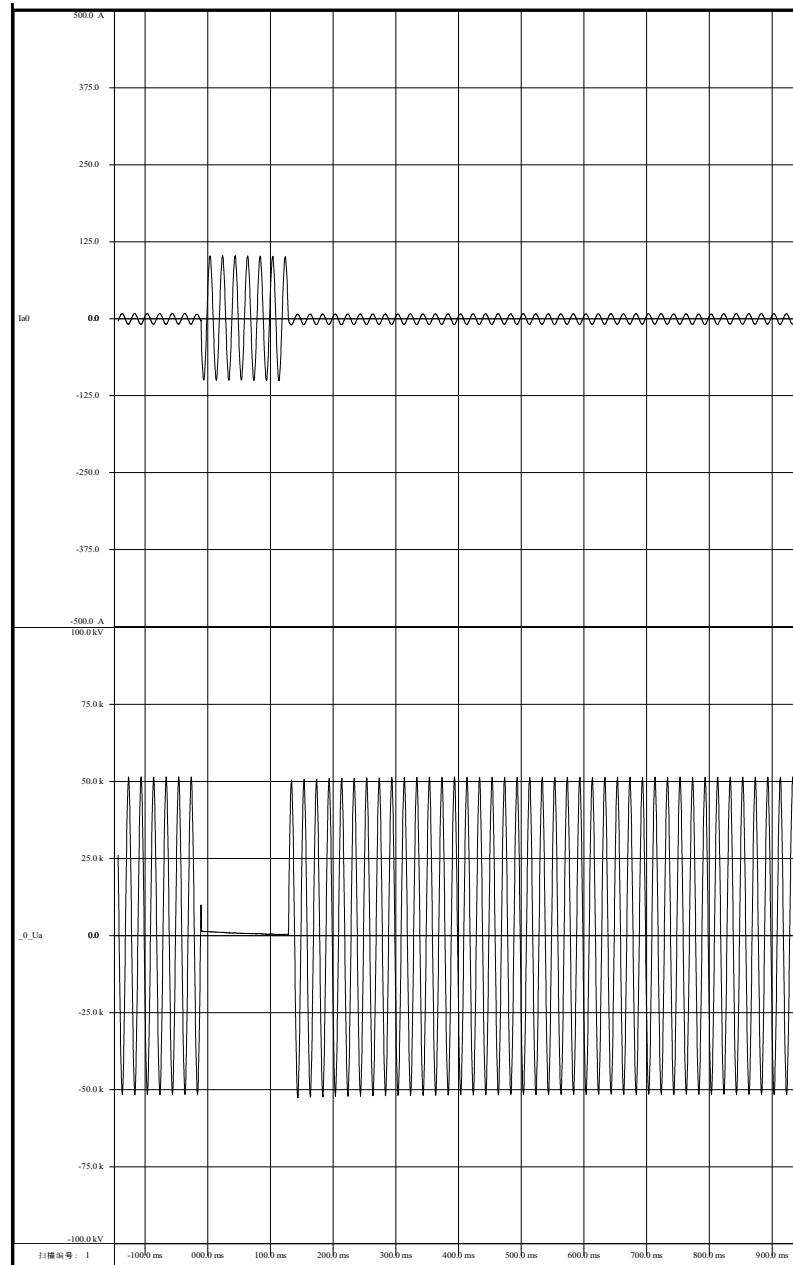
Oscillogram of operating time-current characteristics test

No: /-005



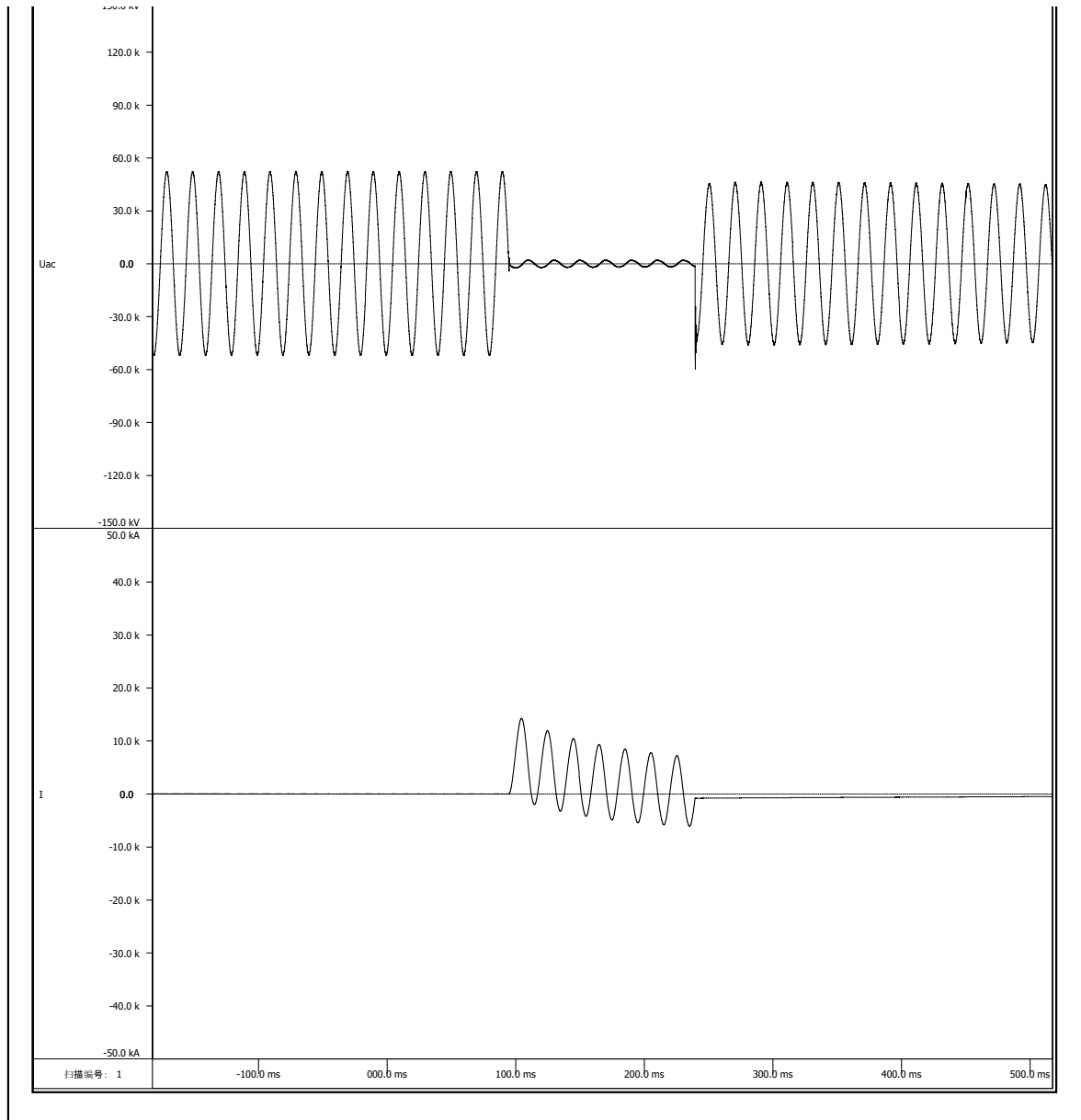
Oscillogram of operating time-current characteristics test

No: /-006



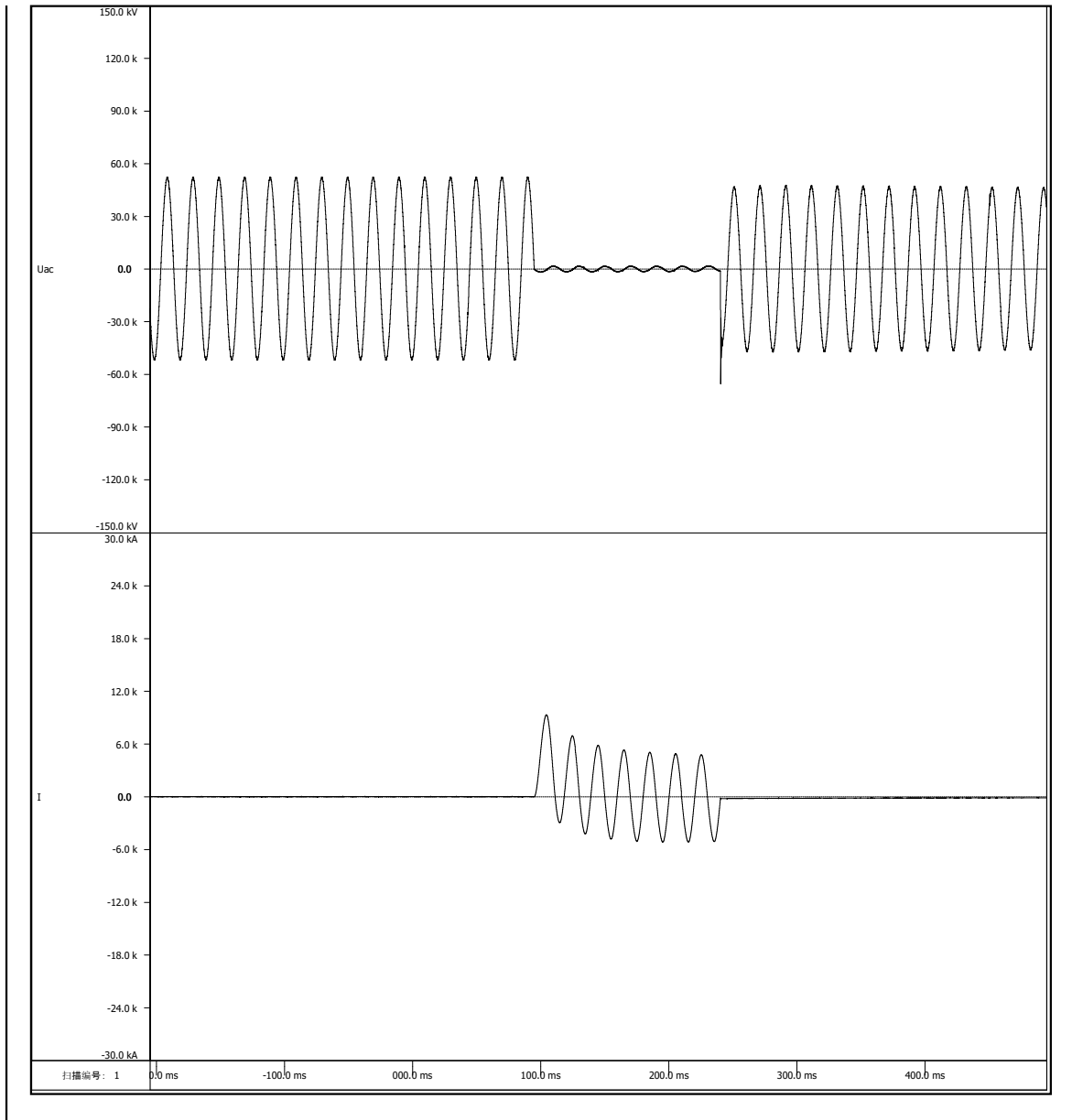
The prospective oscillogram of breaking test duty 1

No: /-Y001



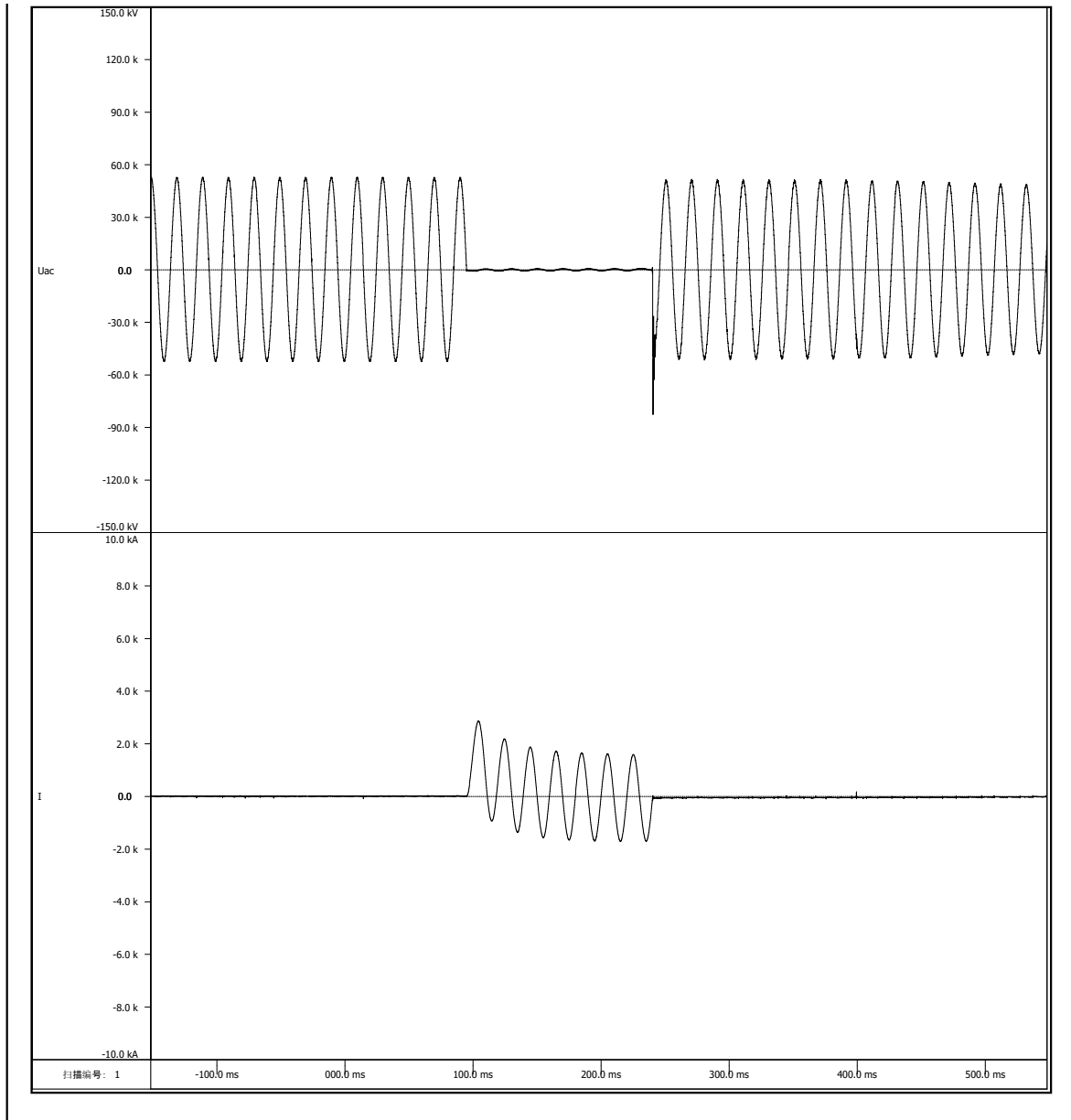
The prospective oscillogram of breaking test duty 2

No: /-Y002



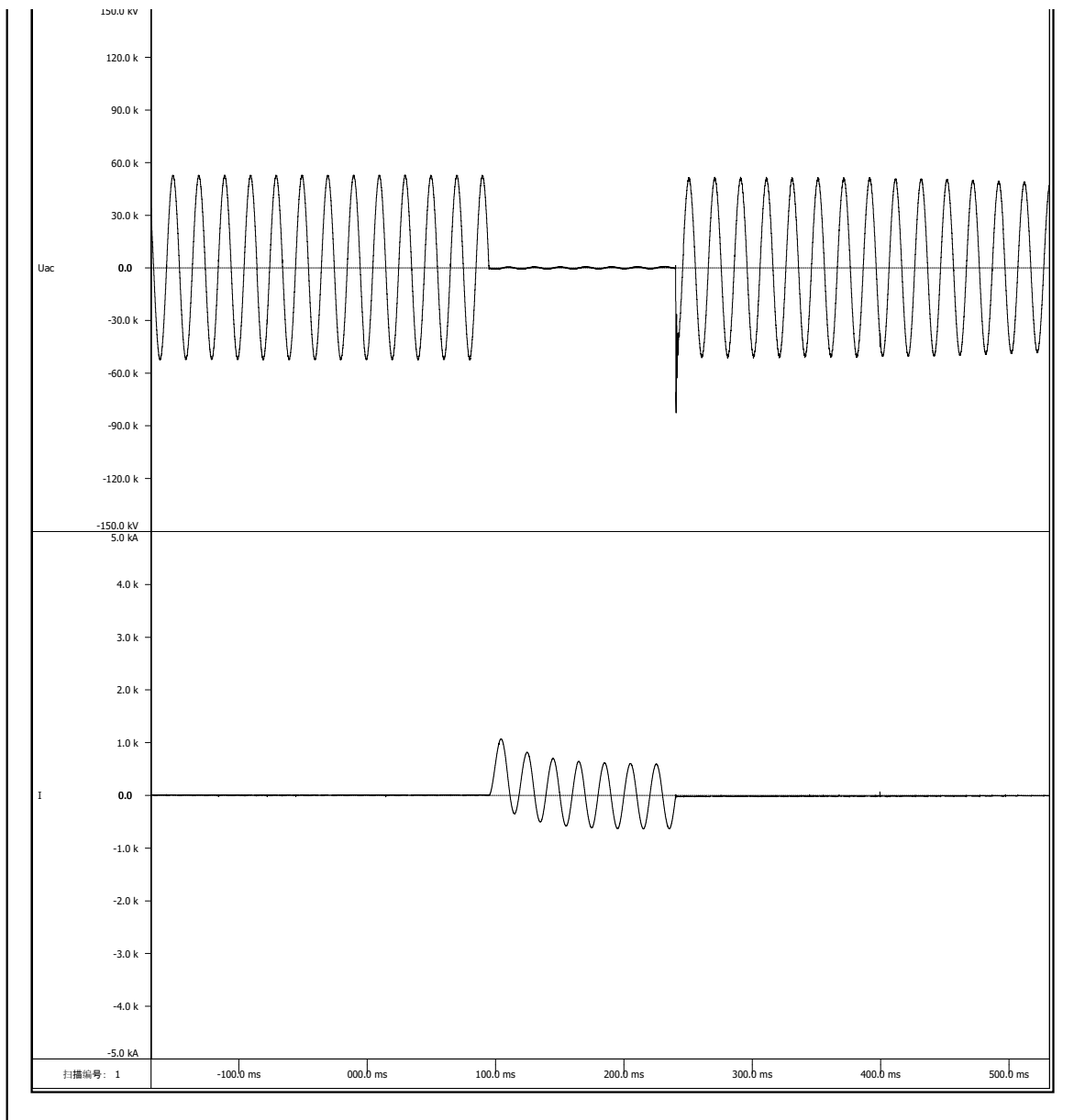
The prospective oscillogram of breaking
test duty 3

No: /-Y003



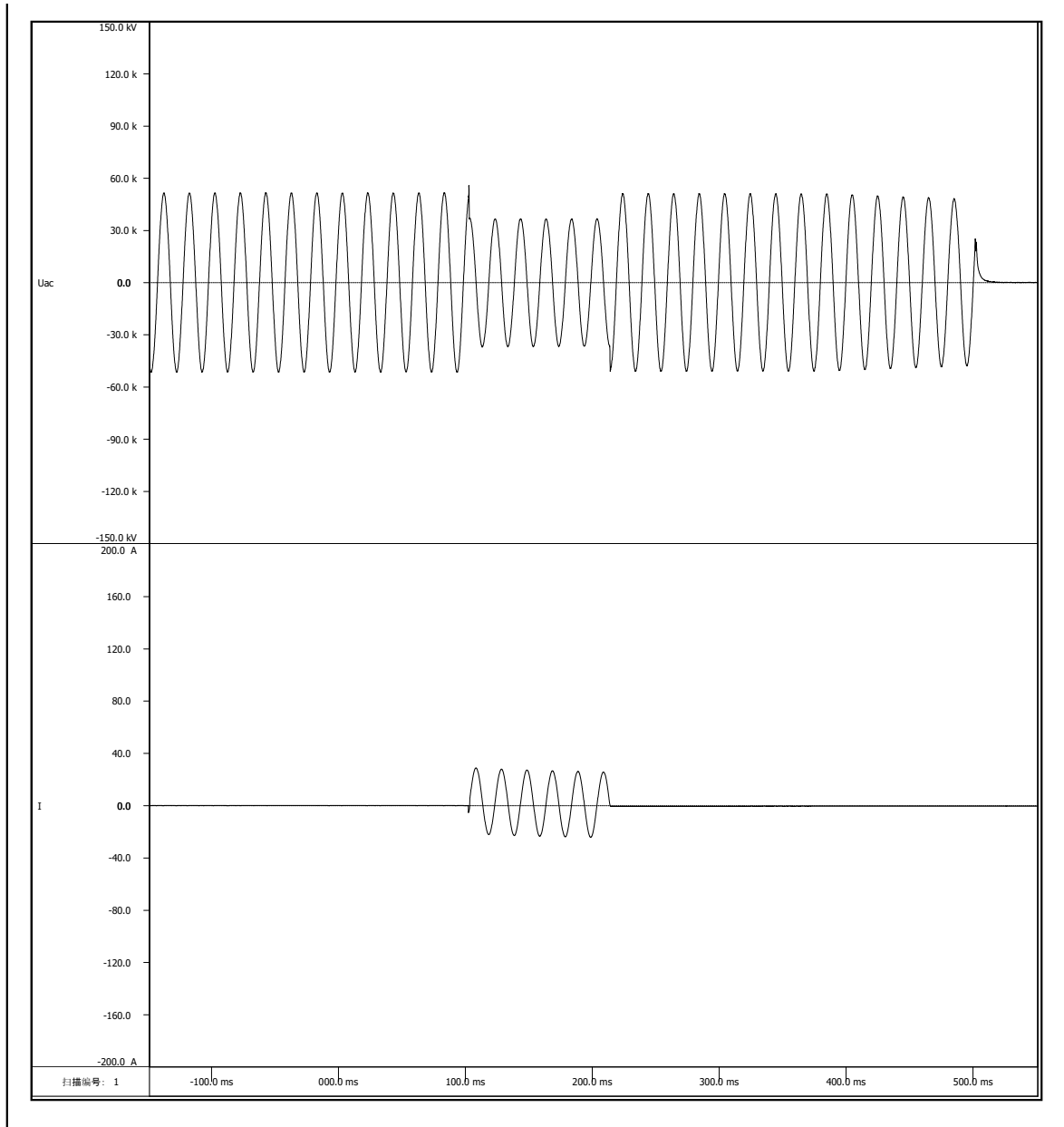
The prospective oscillogram of breaking test duty 4

No: /-Y004



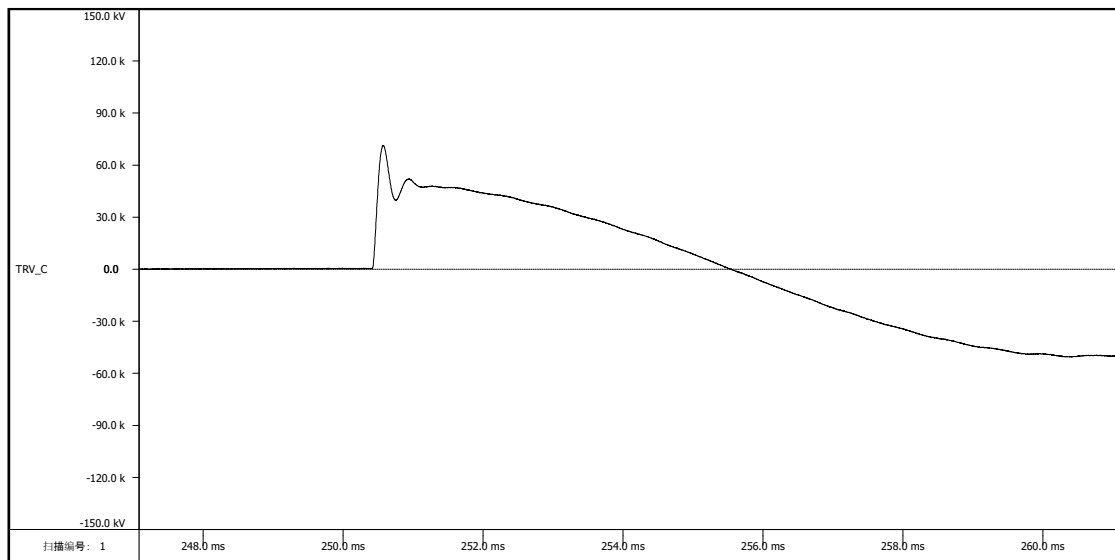
The prospective oscillogram of breaking
test duty 5

No: /-Y005



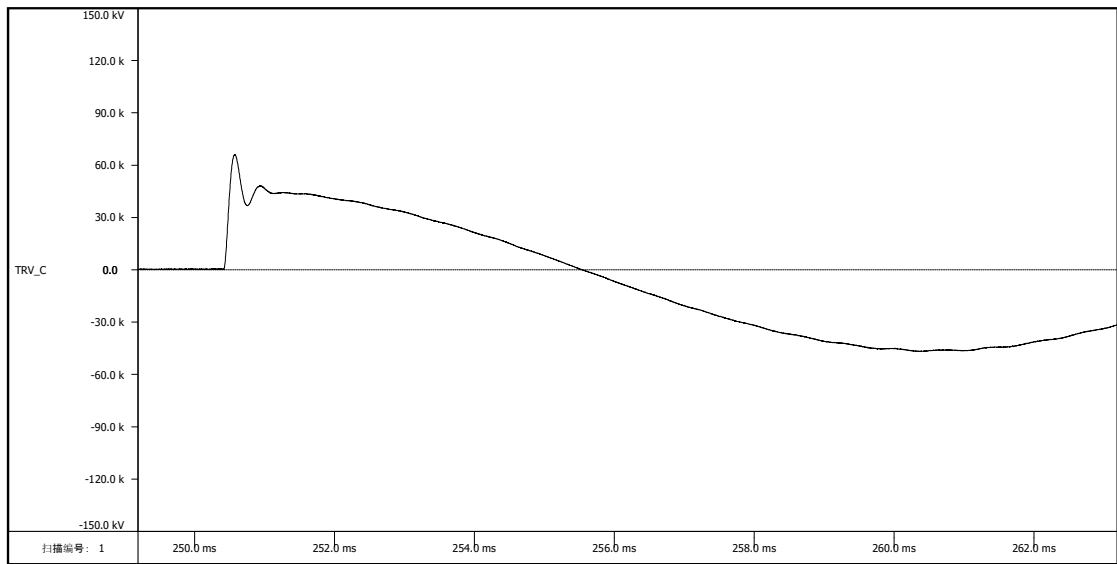
TRV of breaking test duty 1

No: /-TRV001, TRV001-1



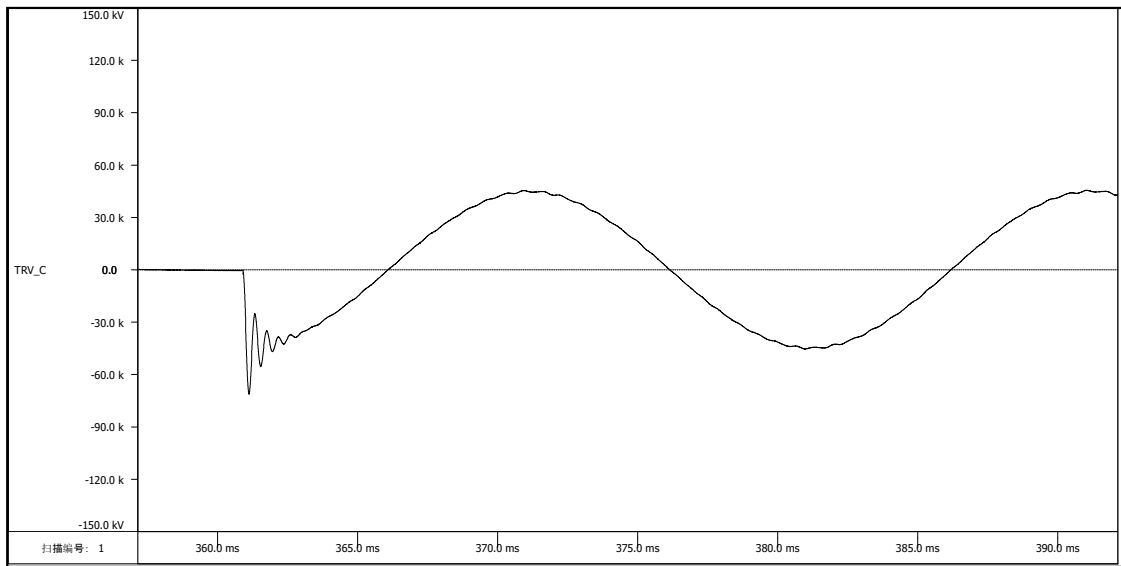
TRV of breaking test duty 2

No: /-TRV002,TRV002-1



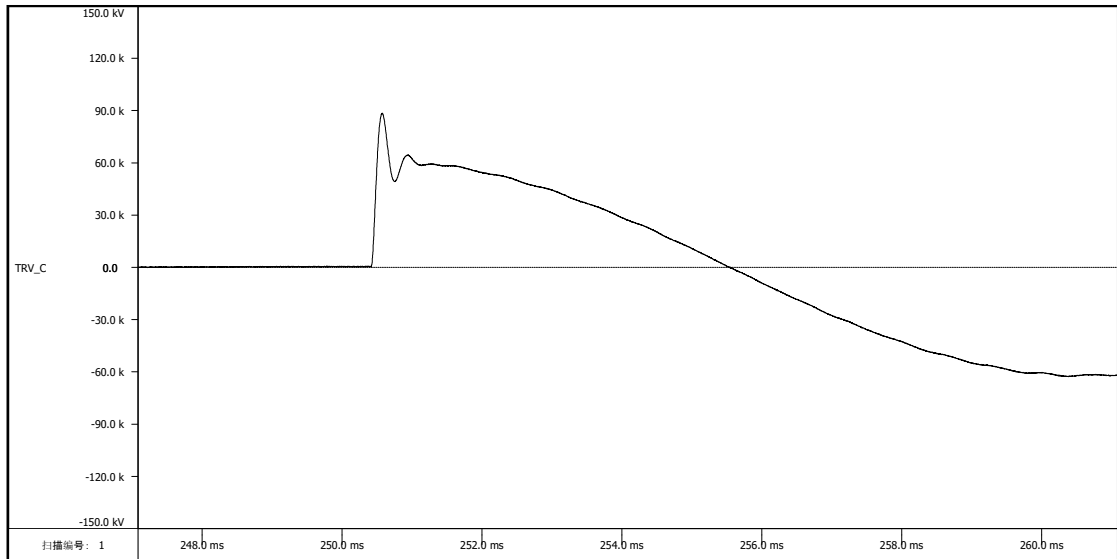
TRV of breaking test duty 3

No: /-TRV003,TRV003-1



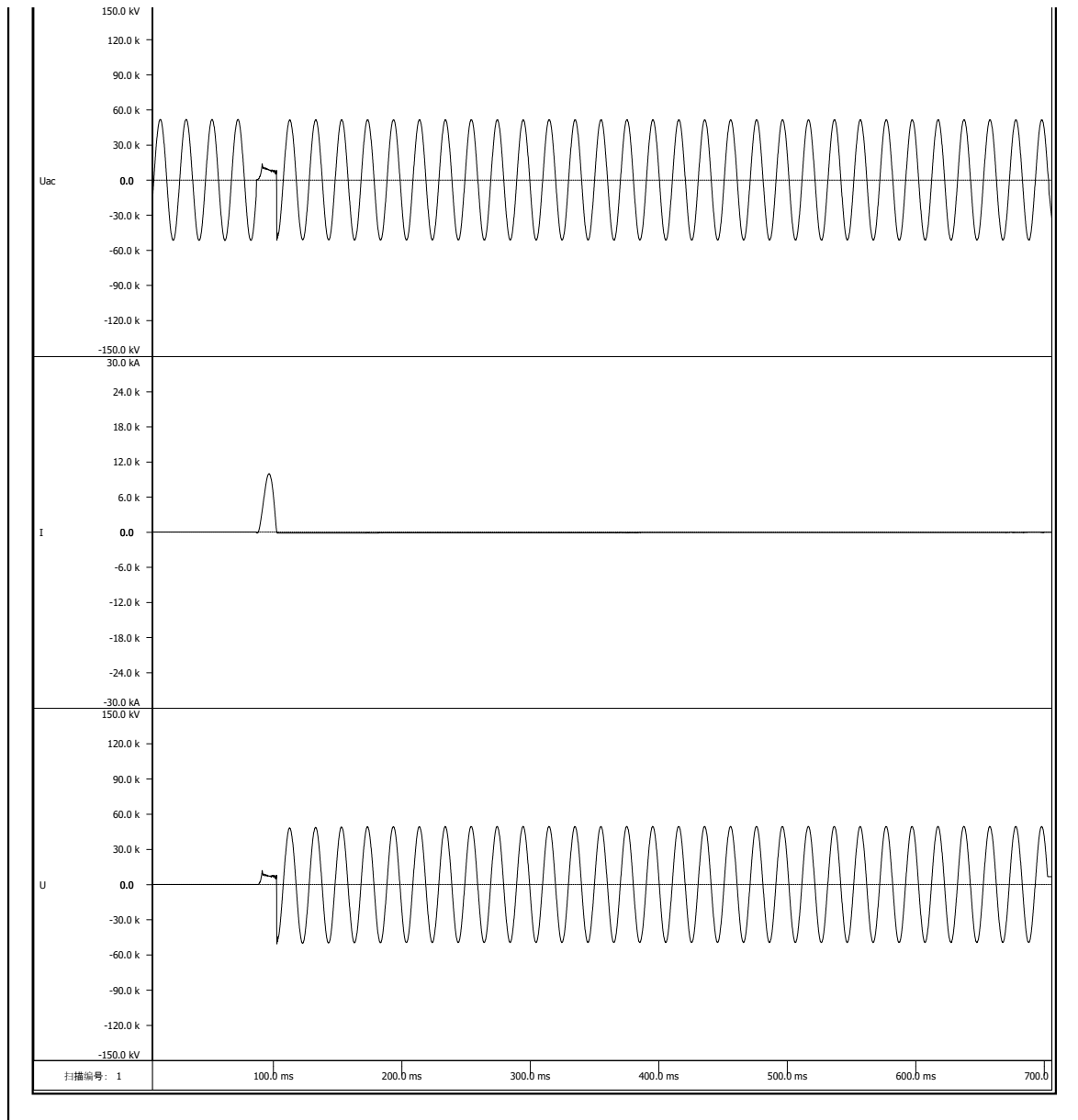
TRV of breaking test duty 4

No: /-TRV004,TRV004-1



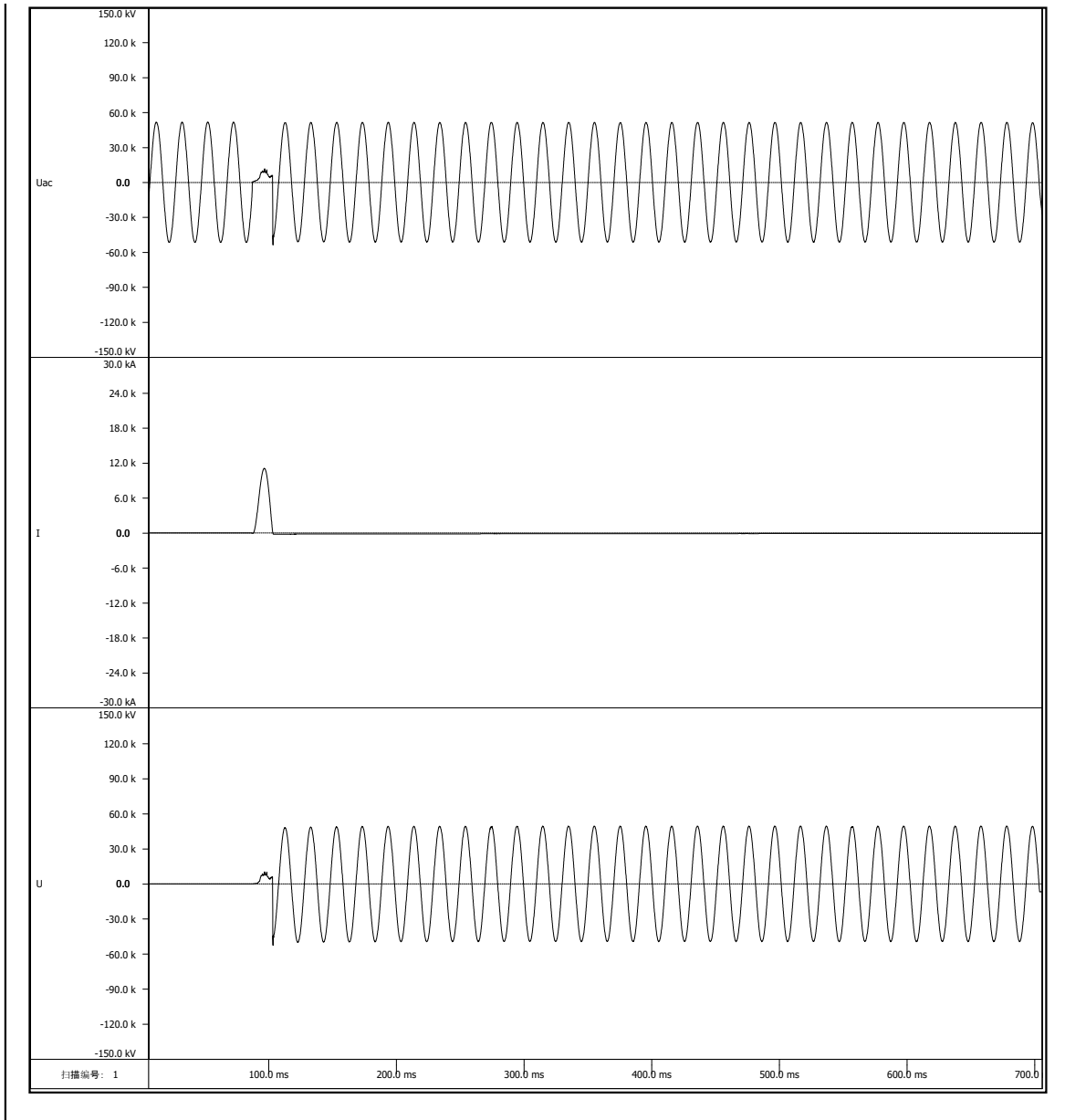
Oscillogram of breaking test duty 1

No: /-T001



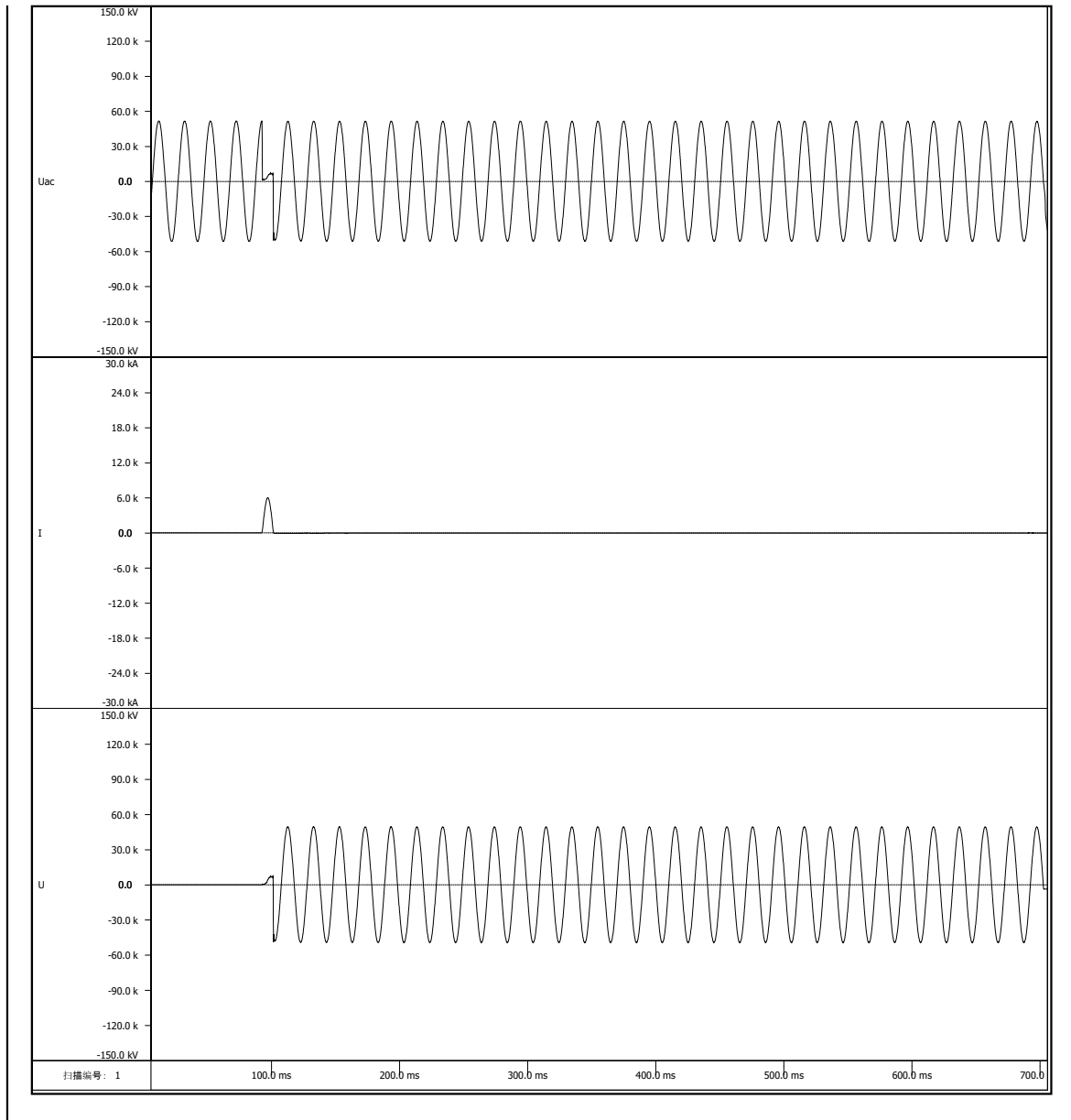
Oscillogram of breaking test duty 1

No: /-T002



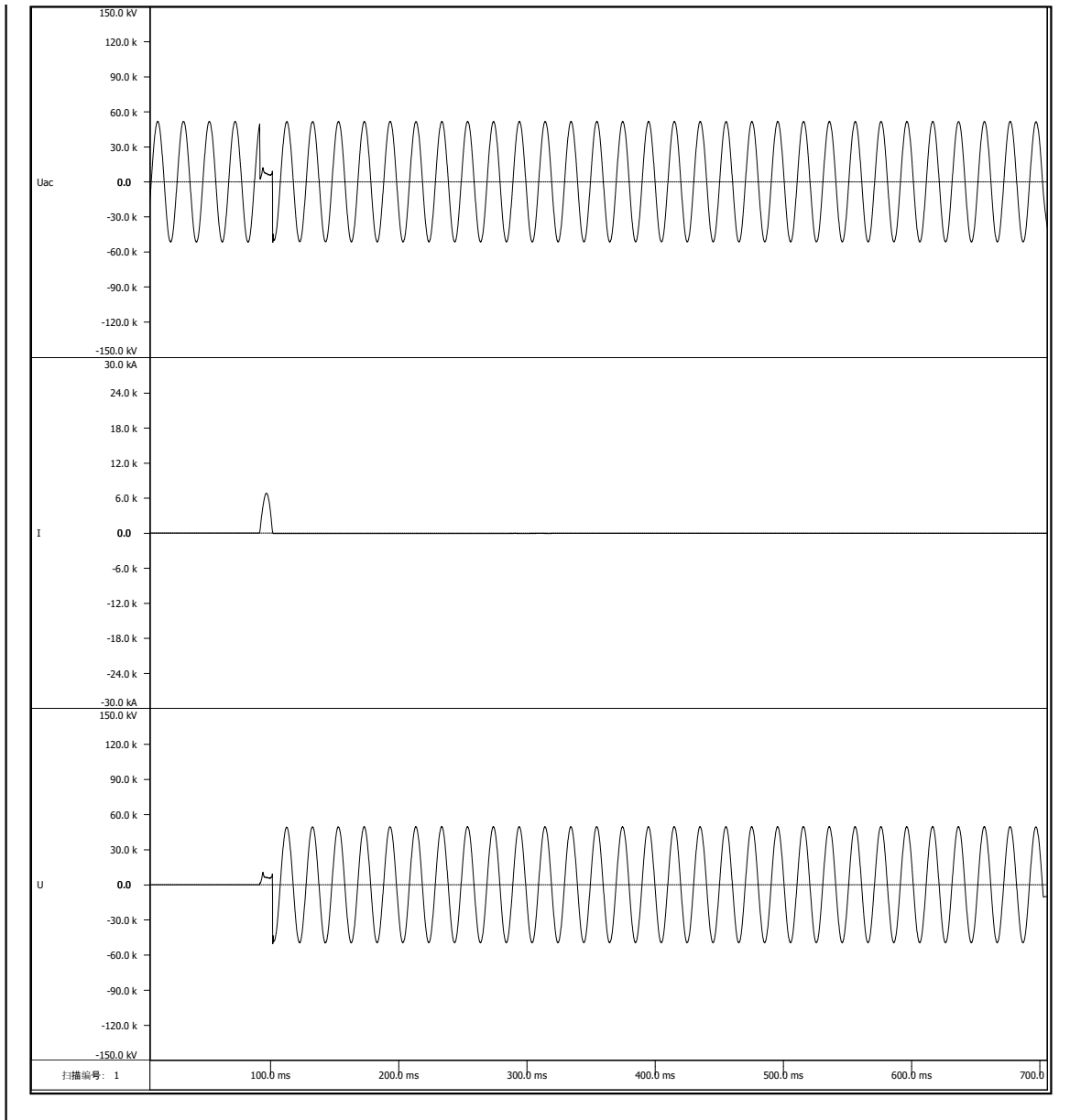
Oscillogram of breaking test duty 1

No: /-T003



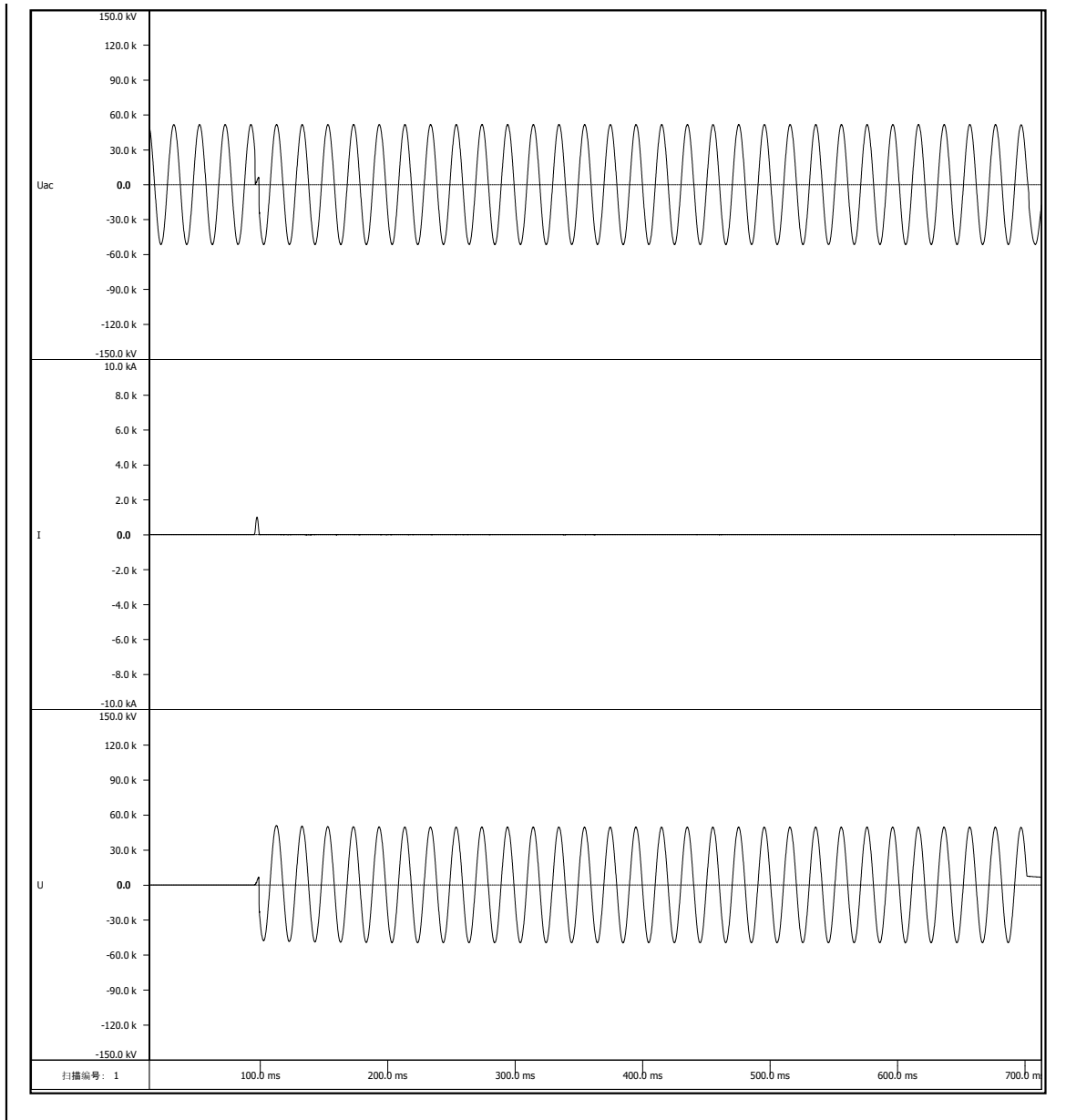
Oscillogram of breaking test duty 1

No: /-T004



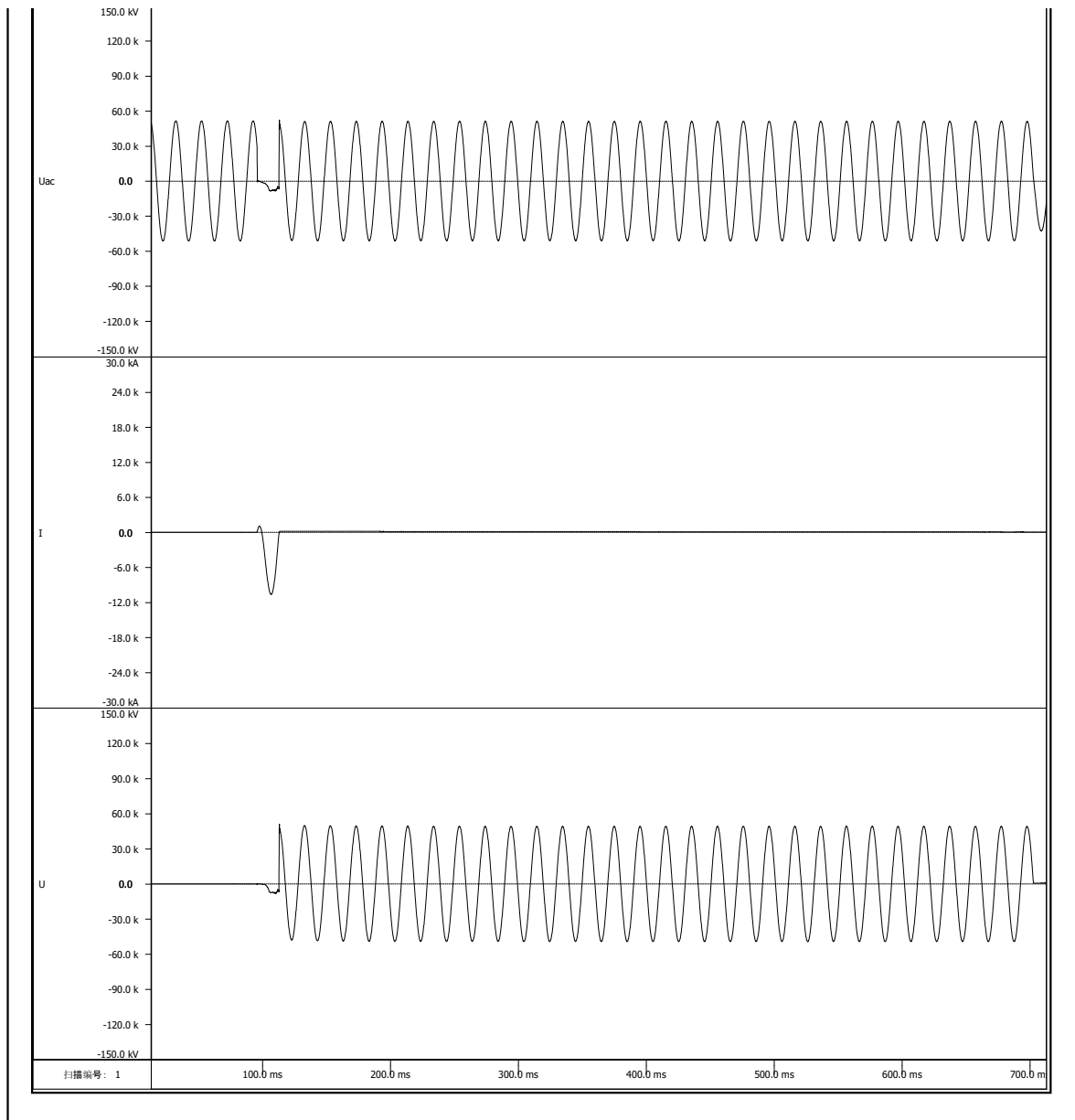
Oscillogram of breaking test duty 1

No: /-T005



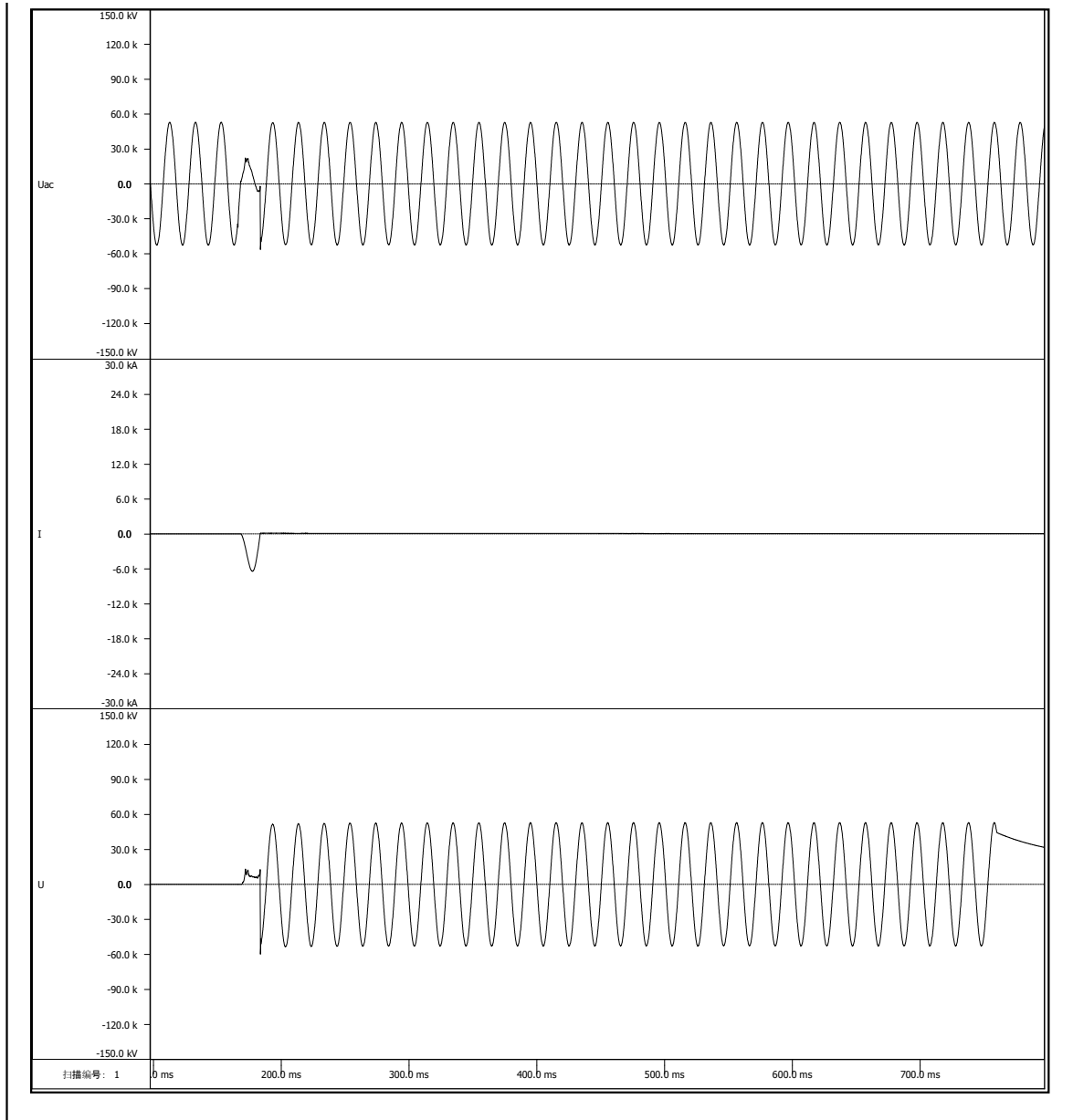
Oscillogram of breaking test duty 1

No: /-T006



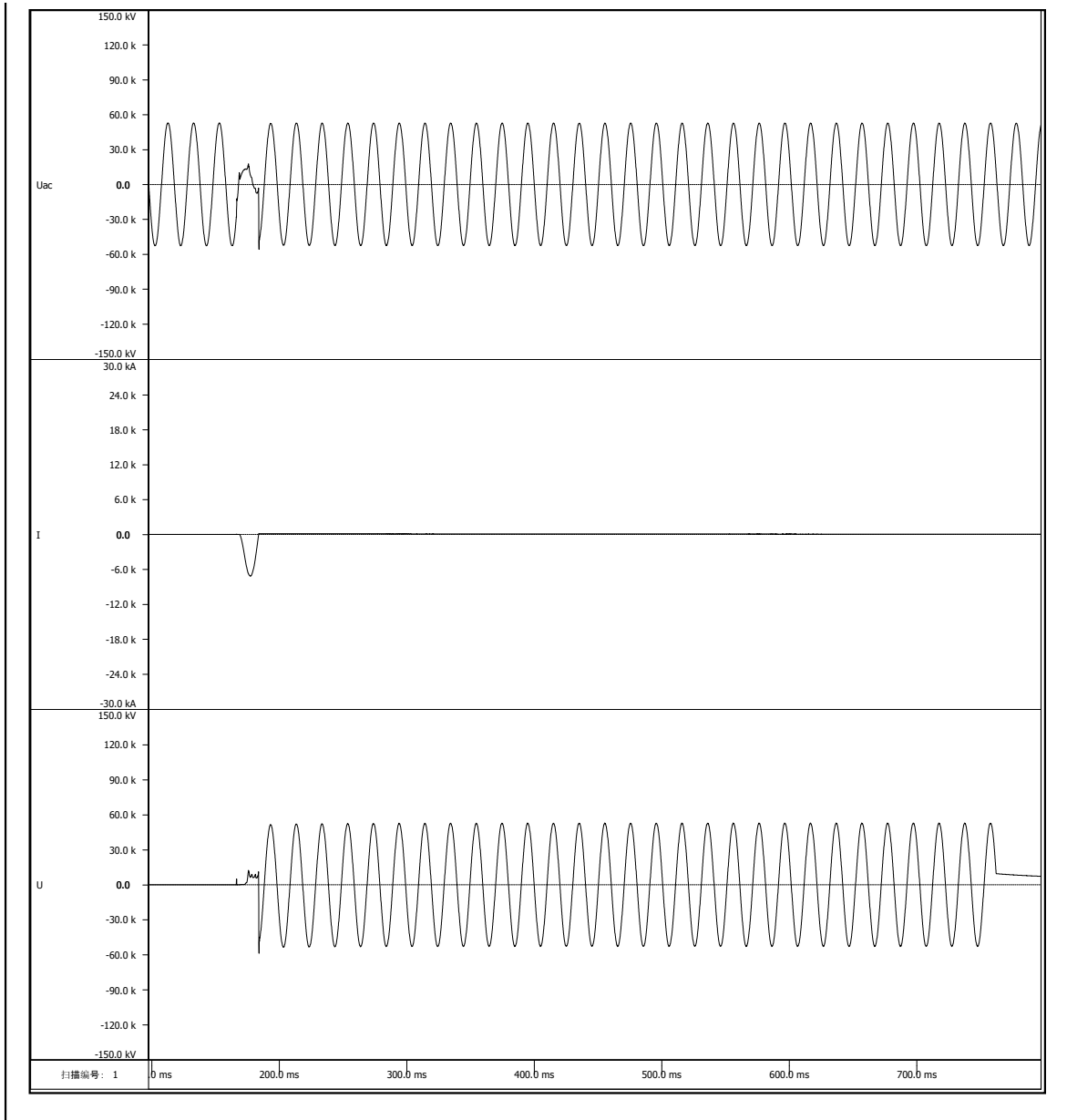
Oscillogram of breaking test duty 2

No: /-T007



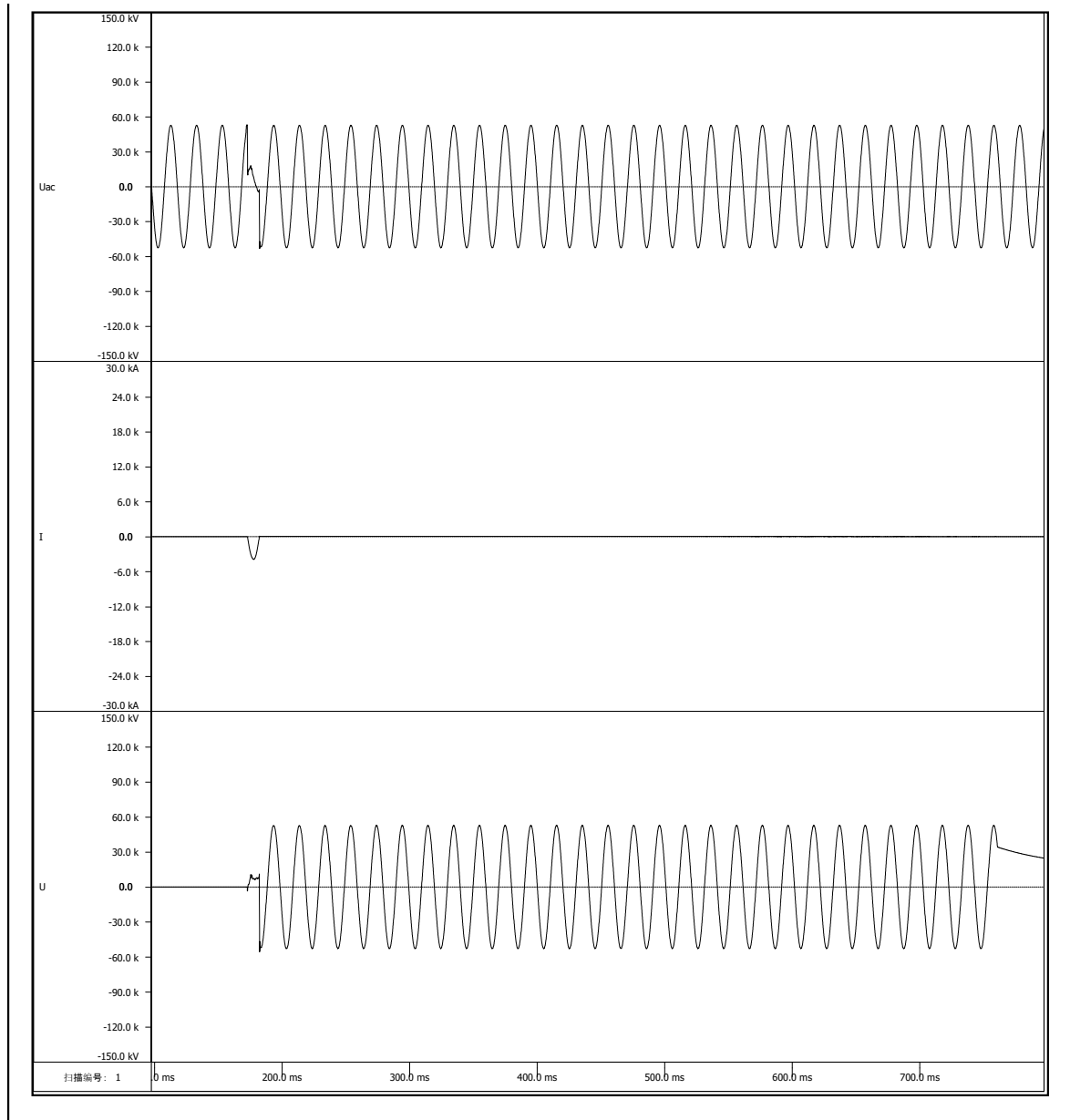
Oscillogram of breaking test duty 2

No: /-T008



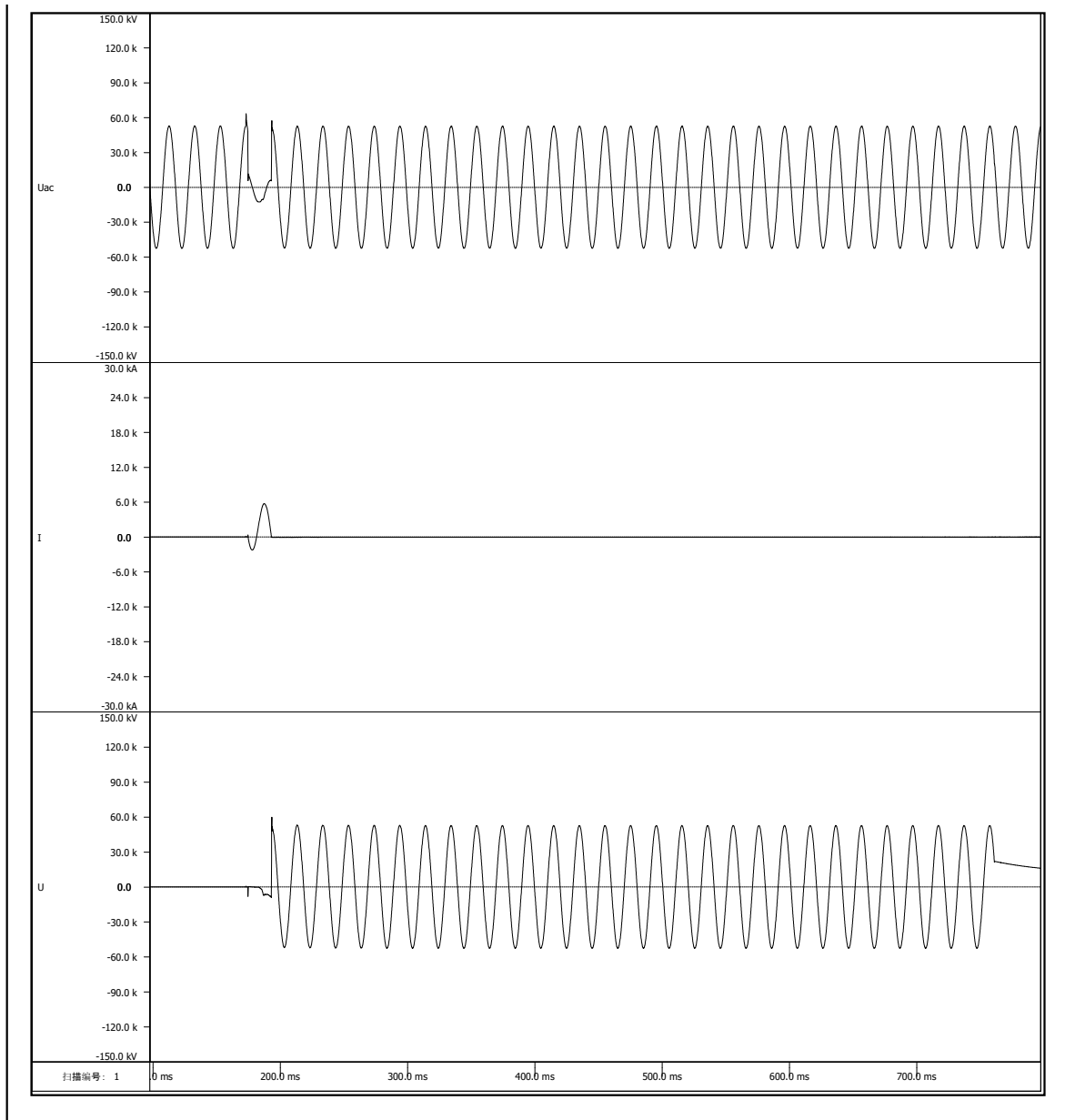
Oscillogram of breaking test duty 2

No: /-T009



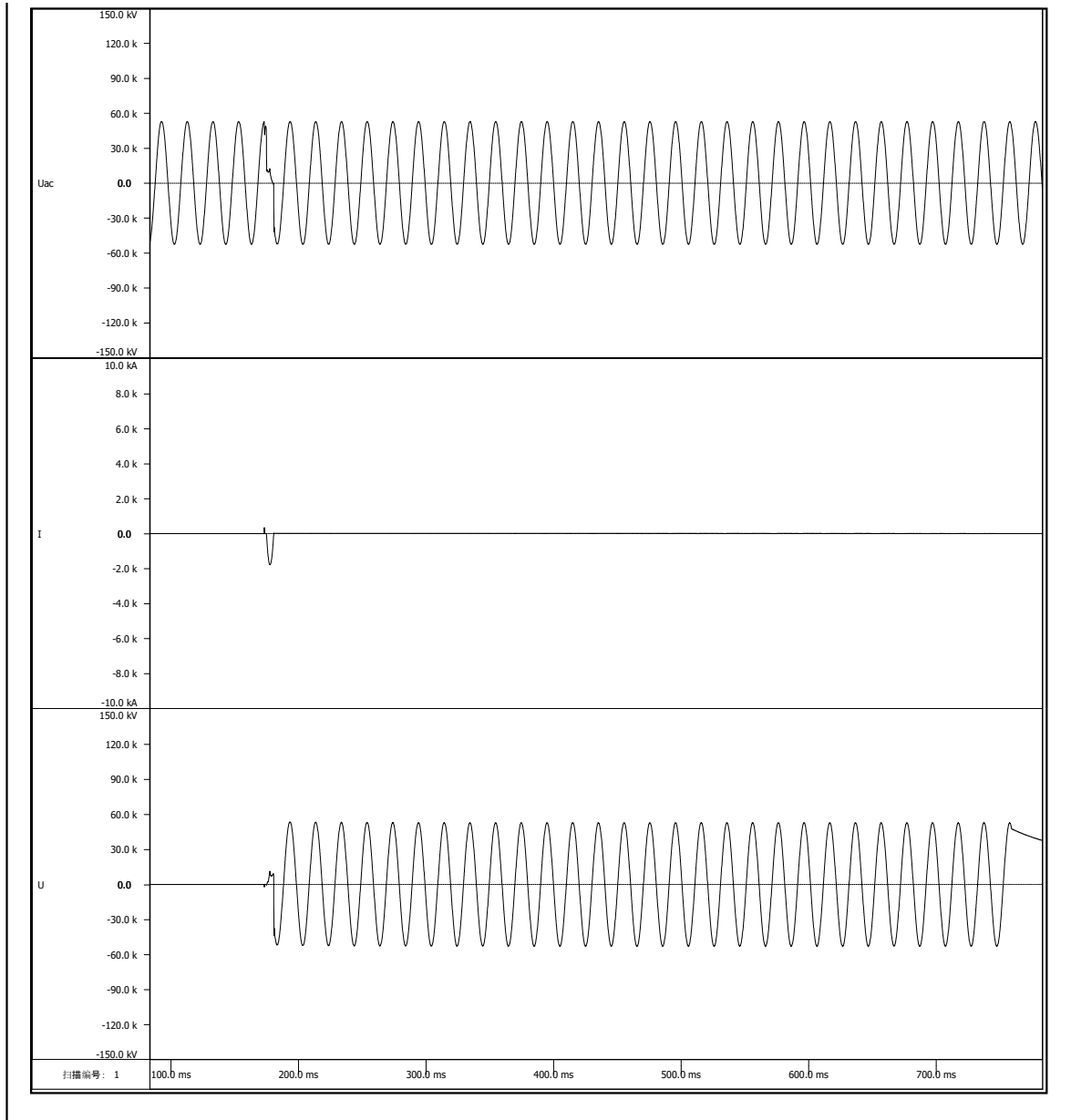
Oscillogram of breaking test duty 2

No: /-T010



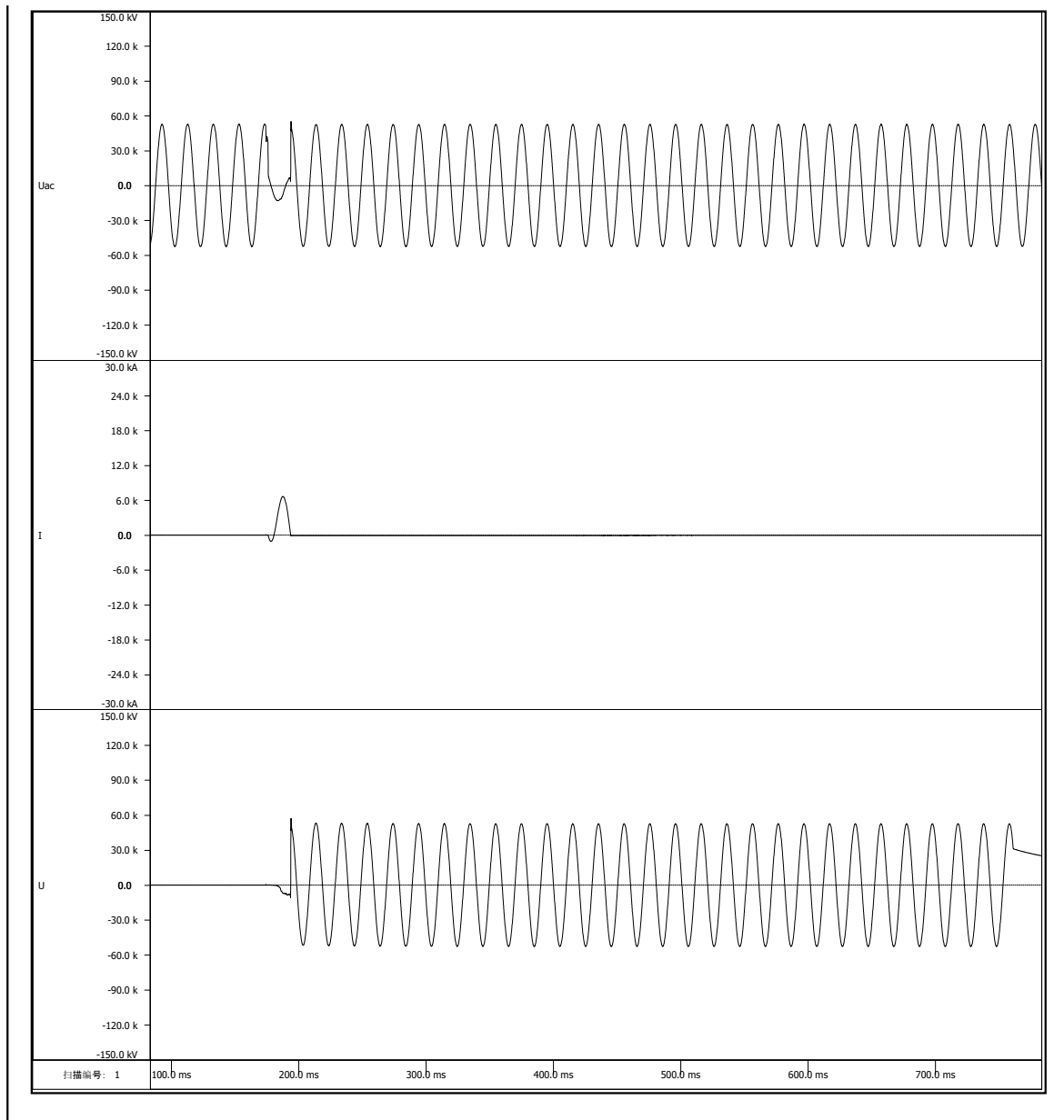
Oscillogram of breaking test duty 2

No: /-T011



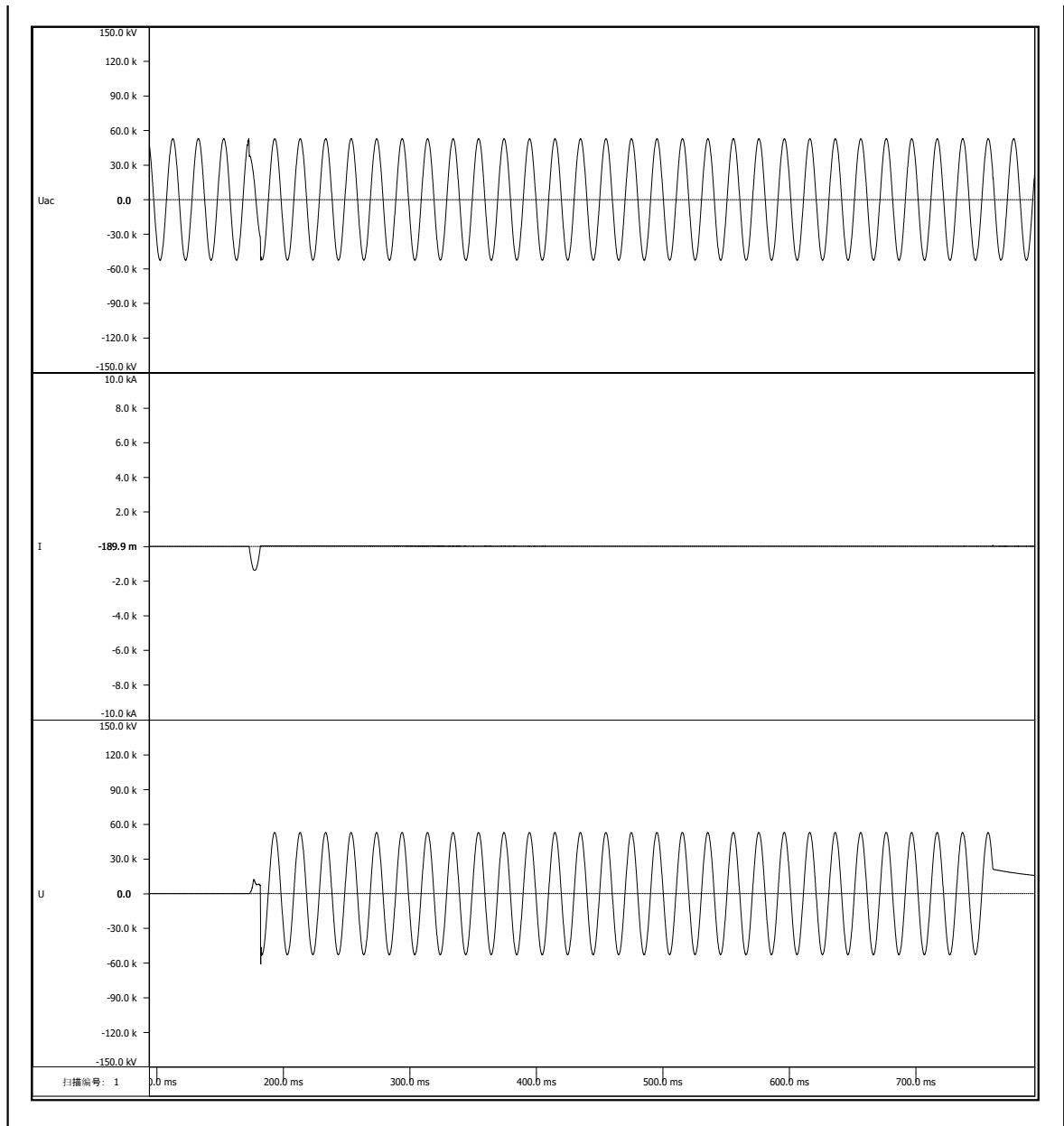
Oscillogram of breaking test duty 2

No: /-T012



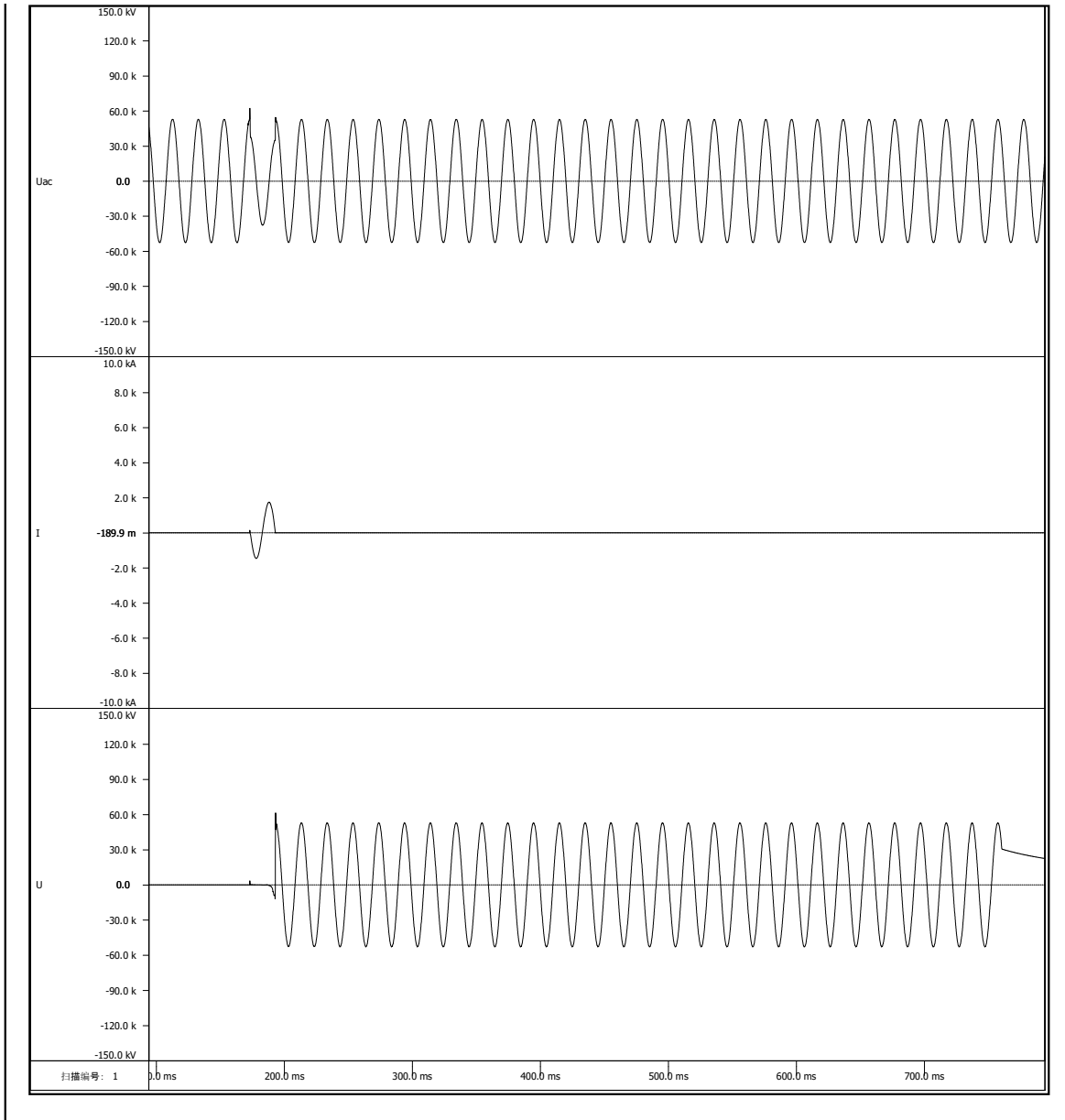
Oscillogram of breaking test duty 3

No: /-T013



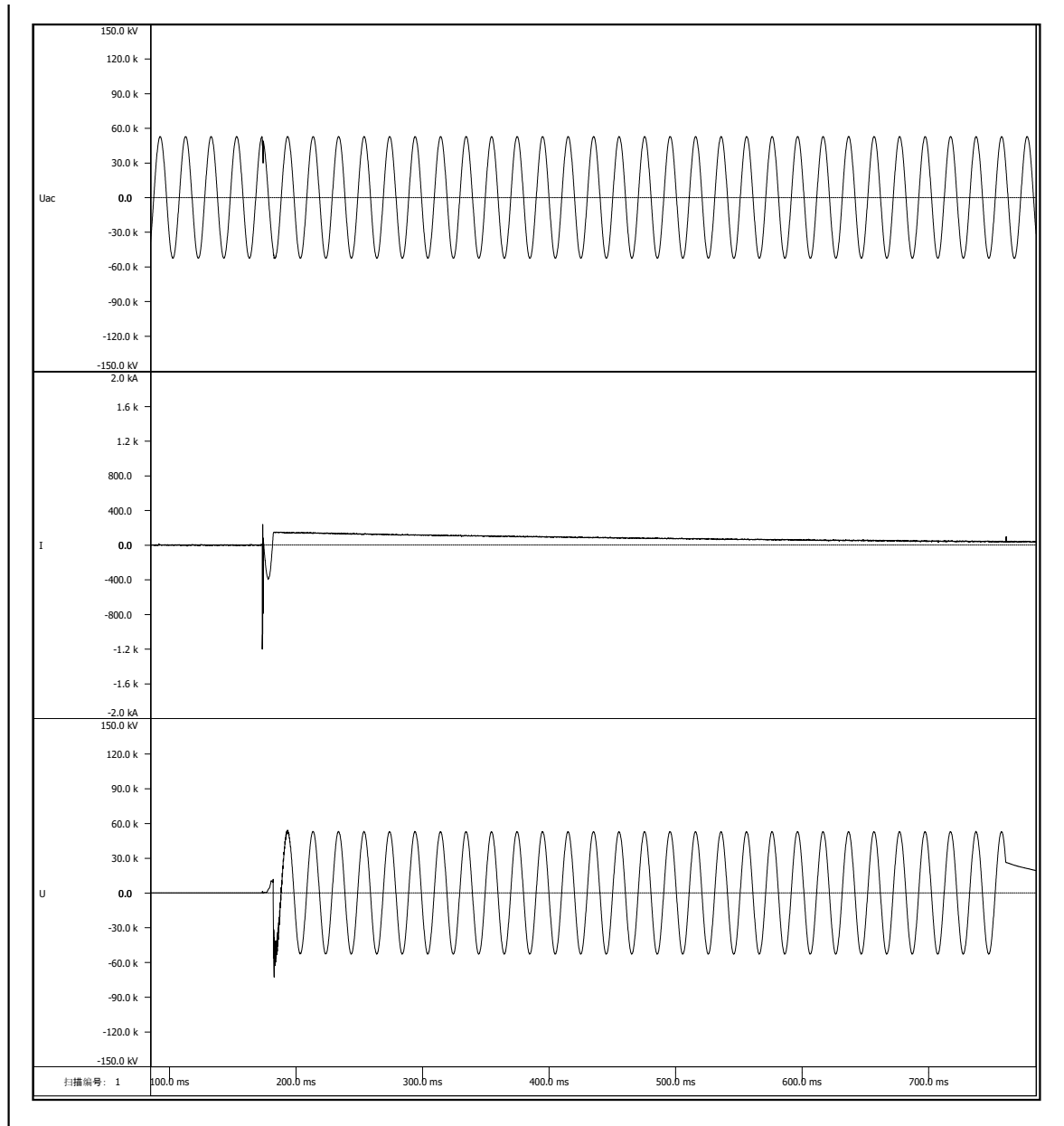
Oscillogram of breaking test duty 3

No: /-T014



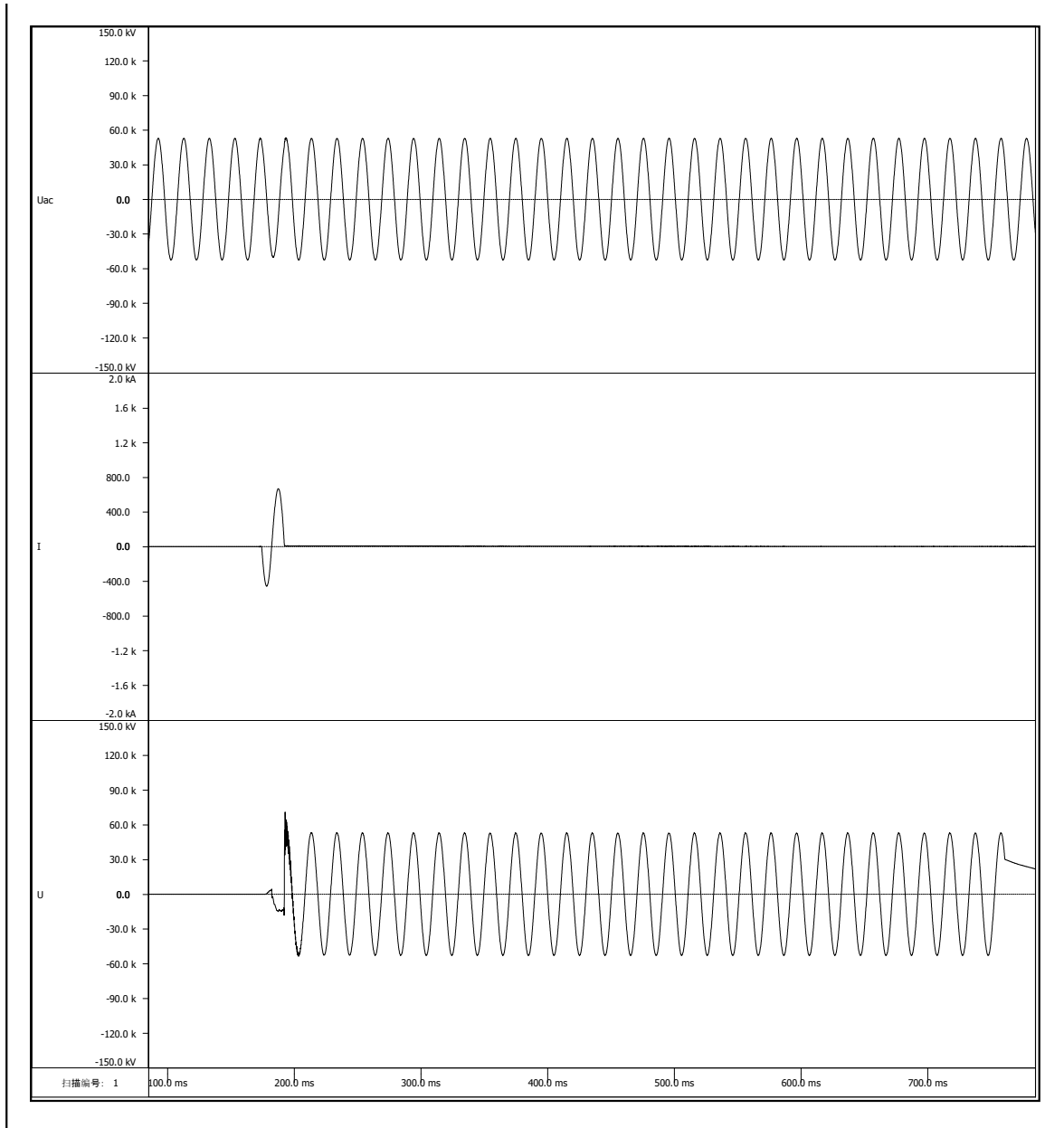
Oscillogram of breaking test duty 4

No: /-T015



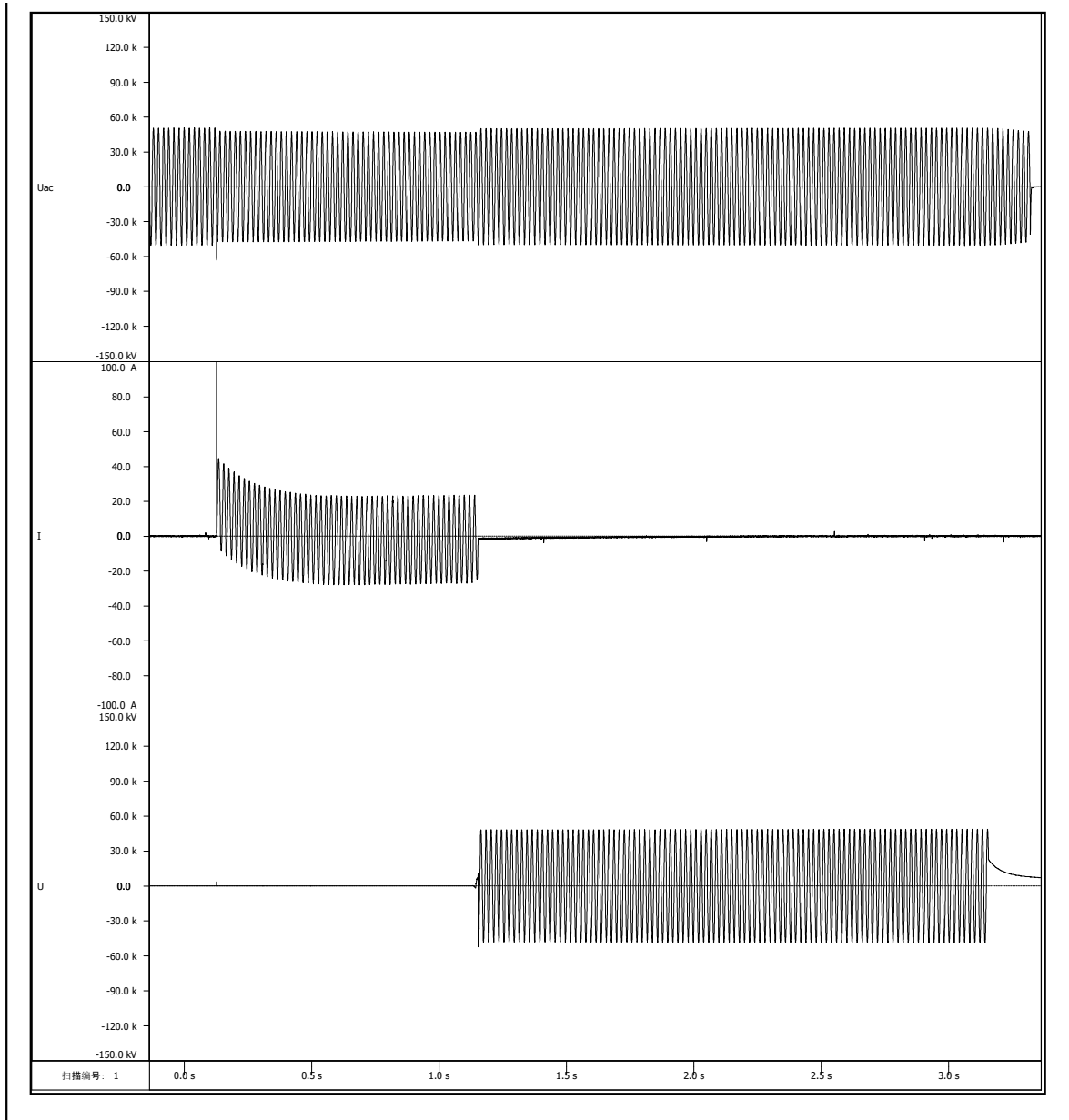
Oscillogram of breaking test duty 4

No: /-T016



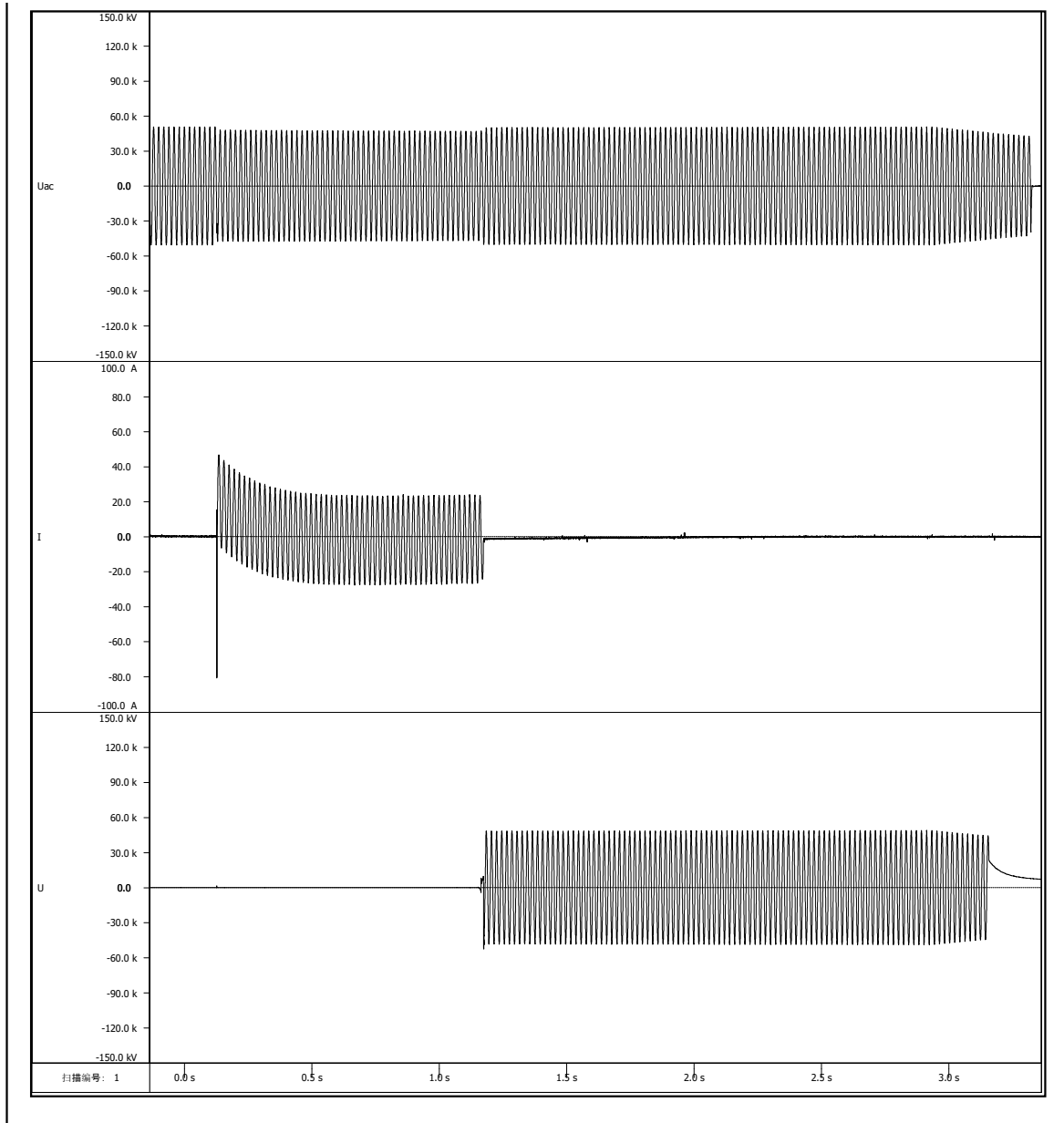
Oscillogram of breaking test duty 5

No: /-T017



Oscillogram of breaking test duty 5

No: /-T018



POLIPAR	Test Report	YKFCO1-15
Mechanical tests		
Test date: June.12, 2022		
<p>1. Mechanical testing of fuse bases and fuse-carrying parts</p> <p style="padding-left: 40px;">The three fuses are closed and opened 500 times each.</p> <p style="padding-left: 40px;">At the end of the operation, the fuse was in an operable condition without any damage to the insulator or mechanical properties.</p>		
Test date: June. 12, 2022		
<p>2. Mechanical strength of fused parts</p> <p>a) Static tension test:</p> <p style="padding-left: 40px;">Apply 125%*60N axial tension to five fuses gradually, without sudden movement.</p> <p style="padding-left: 40px;">No damage to the fused parts (e.g. broken, loose, dislodged connections, or significantly elongated components) was detected.</p>		
<p>Note: The test passed</p>		

POLIPAR	Test Report	FUSE CUT-OUT
Thermal cycle and torque tests		
Test date: June.8, 2022		
<p>Test Procedure:</p> <p>Each cycle consists of the following:</p> <ol style="list-style-type: none"> a. The fuse cutout samples were immersed in water for a minimum of 1h. Water temperature is from 5 to 35 °C. The depth of immersion provides a minimum water level of 13mm above any porcelain cavity, filled or open, or any hardware. b. The fuse cutout samples were removed from water. The temperature of the air surrounding the device is lowered from ambient room temperature to -40°C at a rate controlled to prevent thermal shock. A temperature of -40°C to -50°C was maintained for a minimum of 2h. c. The temperature of the air surrounding the fuse was raised from -40°C to 60°C at a rate controlled to prevent thermal shock. A temperature of 60°C to 70°C was maintained for a minimum of 2h. The device shall be permitted to return to room temperature before reimmersing it in water for subsequent test cycles. 		
Test date: June. 10, 2022		
<p>Acceptance of criteria:</p> <p>There shall be no cracks in the insulator or loose hardware after above tests.</p>		
<p>Note: The fuse cutout samples are in good condition after above tests. Test passed.</p>		

POLIPAR	Test Report	FUSE CUT-OUT
Torque tests		
Test date: June.8, 2022		
<p>Test Procedure:</p> <p>Torque tests were performed on fuses that utilize threaded fasteners to attach the hardware to the insulator. Five new fuse cutouts were tested.</p>		
Test date: June.8, 2022		
<p>Acceptance of criteria:</p> <p>A torque of 125% of the nominal values specified by manufacturer POLIPAR should be applied to the threaded fasteners that attach the hardware to the insulators. The specified value by POLIPAR is 20kN, so 25kN torque was tested. The condition of the device after testing must be no damage to the insulators, thread failures, or loose components.</p>		
<p>Note: The fuse cutout samples are in good condition after above tests. The test passed.</p>		

POLIPAR		Test Report			FUSE CUT-OUT		
Radio interference voltage (r.i.v.) tests							
Test date: June. 10, 2022							
Sample condition	Voltage applied to	Earth connected to	Measurement frequency(MHz)	Test applied voltage (kV)	Measured interference level (dBm)	Radio interference level U (μV)	Maximum allowable interference level (μV)
Fuse in closed position	Aa	F	1	15.3	32.8	43.6	≤250
Fuse in opened position	A	aF	1	15.3	33.3	46.1	≤250
	a	AF	1	15.3	33.5	47.2	≤250
<p>Condition of test object before test: The test sample is working properly.</p> <p>Note: A—one side terminal of tested parts; a—the other side terminal of tested parts; F—enclosure and base.</p> <p>The data in the table has been corrected into the standard atmospheric conditions.</p>							
Atmospheric conditions of test zone	<p>P= 102.5kPa; Ambient temperature t= 26°C; Relative humidity: 65%</p> <p>Atmospheric correction factor Kt= / Altitude correction factor Ka= /</p>						

