

Test Report

Sample name	35kV Cable cold shrinkable outdoor termination
Type and size	RJLW-26/35kV 3×400
Commission unit	Zibo Rongji Electric Power Co., Ltd.
Production unit	Zibo Rongji Electric Power Co., Ltd.
Category of test	Type test
Test date	2024-12-06~2025-01-19
Test standard	GB/T 12706.4-2020 "Power cables with extruded insulation and their accessories for rated voltage from 1Kv (Um=1.2kV) up to 35kV (Um= 40.5kV) -- Part 4: Test requirements on accessories for cables with rated voltage from 6kV (Um=7.2kV) up to 35kV (Um=40.5kV)"
Test conclusion	According to the requirements of GB/T 12706.4-2020, Commissioned test was carried out for 35kV Cable cold shrinkable outdoor termination of model RJLW-26/35kV 3×400, the test items have passed.

Authorized by ZUGO Electrical Testing Co., Ltd.

Zhong Cheng



Issue date: 2025-01-21

Inspector: Wang Yongyuan

Reviewer: Zhang Yuan

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1 .Sample information		
1.1 Sample receiving		
Sample name:35kV Cable cold shrinkable outdoor termination		
Type and size: RJLW-26/35kV 3×400		
Sample quantity: three sets		
Sample number: ZUGO24112-241120-011-01～03		
Sample number: Zibo Rongji Electric Power Co., Ltd.		
Address:Yixi Road, Linzi District, Zibo, Shandong		
Production unit: Zibo Rongji Electric Power Co., Ltd.		
Address:Yixi Road, Linzi District, Zibo, Shandong		
Delivering mode: Entrusting the unit to send samples		
Receiving date: 2024-11-29		
Sample state at receiving : Normal		
Receiving location: ZUGO Electrical Testing Co., Ltd. Ultra-high voltage (UHV) laboratory		
Note:The sample name, model/specifications, and manufacturer information are provided by the client		
1.2 Description of sample test loop		
According to GB/T 12706.4-2020, tests are carried out on three test loops, and details as follows:		
1.2.1 Test loop 1		
A set of 35kV Cable cold shrinkable outdoor termination (No.: ZUGO24112-241120-011-01) is installed on a Three-core power cable (ZC-YJV22 26/35kV 3 × 400mm ²) with the length of 7.8m. The supporting 35kV Cable cold shrinkable indoor termination and the 35kV Cable cold shrinkable straight joint are installed on the other end of the cable and the disconnect in the middle of the cable respectively. The length of the cable between the 35kV Cable cold shrinkable outdoor termination and the 35kV Cable cold shrinkable straight joint is 2.1m.		
1.2.2 Test loop 2		
A set of 35kV Cable cold shrinkable outdoor termination (No.: ZUGO24112-241120-011-02) is installed on a Three-core power cable (ZC-YJV22 26/35kV 3 × 400mm ²) with the length of 7.5m. The supporting 35kV Cable cold shrinkable indoor termination and the 35kV Cable cold shrinkable straight joint are installed on the other end of the cable and the disconnect in the middle of the cable respectively. The length of the cable between the 35kV Cable cold shrinkable outdoor termination and the 35kV Cable cold shrinkable straight		



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joint is 2.2m. 1.2.3 Test loop 3 A set of 35kV Cable cold shrinkable outdoor termination (No.: ZUGO24112-241120-012-03) is installed on a Three-core power cable (ZC-YJV22 26/35kV 3×400mm²) with the length of 5.4m. The supporting 35kV Cable cold shrinkable indoor termination is installed on the other end of the cable. The length of the cable between the 35kV Cable cold shrinkable outdoor termination and the 35kV Cable cold shrinkable indoor termination is 3.6m. 1.3 Test sequences 1.3.1 The test loop 1 and loop 2 are connected as a combinational loop, the test is carried out according to test sequence 1.1 given in Table 2 of GB/T 12706.4—2020. 1.3.2 Test loop 2 is tested according to Sequence 1.2 and Sequence 1.3 given in Table 2 of GB/T 12706.4—2020 after the test above. 1.3.3 Test loop 3 is tested according to Sequence 1.5 given in Table 2 of GB/T 12706.4—2020. (There is no content below this page)		



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2.Summary of Test items		
1.Test Item of Sequence 1.1 given in Table 2 of GB/T 12706.4-2020: 1.AC and DC voltage test: AC voltage (4.5U₀ /117kV,5min): No breakdown or flashover. DC voltage (4U₀/-104kV,15min): No breakdown or flashover. 2.AC voltage test (wet): Preprocessed according to GB/T 16927.1, AC voltage (4U₀ /104kV,1min): No breakdown or flashover. 3.Partial discharge test (ambient temperature): Partial discharge $\leq 10\text{pC}$ (1.73U₀ /45kV). 4.Impulse voltage test (θ t): The cable conductor should be heated and stabilized for at least 2h at a temperature of 5K to 10K above the maximum cable conductor temperature in normal operation, 10 impulses of each polarity: No flashover or breakdown (200kV). 5.Heating cycle voltage test (in air): The heating current is applied to the combination loop. Each heating cycle should be of 8h duration with at least 2h at a steady temperature of 5K to 10K above the maximum cable conductor temperature in normal operation for extruded insulation cables followed by at least 3h of natural cooling to within 10K of ambient temperature. The test assembly should be subjected to a total of 60 heating cycles in air. No flashover or breakdown,2.5U₀ (65kV). 6. Immersion test: The two terminals of the combined circuit should be submerged in water at ambient temperature to 0.030+0.02m above each component of the terminal. And the terminals should be submerged in water, including the ends of the sealing parts. Each heating cycle should be of 8h duration with at least 2h at a steady temperature of 5K to 10K above the maximum cable conductor temperature in normal operation for extruded insulation cables followed by at least 3h of natural cooling to within 10K of ambient temperature. The test assembly should be subjected to a total of 10 heating cycles, no voltage is applied to the loop. 7.Partial discharge test (θ t): The cable conductor should be heated and stabilized for at least 2h at a temperature of 5K to10K above the maximum cable conductor temperature in normal operation, before and during the partial discharge test, Partial discharge $\leq 10\text{pC}$ (1.73U₀ /45kV). 8.Partial discharge test (ambient temperature): Partial discharge $\leq 10\text{pC}$ (1.73U₀ /45kV) . 9.Impulse voltage test (ambient temperature):10 impulses of each polarity at ambient temperature: No breakdown or flashover (200kV).		

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10.AC voltage test: No flashover or breakdown (2.5U₀/65kV,15 min). 11. Examination: The following items should be examined: Presence of crack on any components. Presence of water or moisture beyond the sealing barriers. Presence of corrosion/electric leakage tracking on any metallic parts. Leakage of insulating material. etc. 2.Test Item of Sequence 1.2 and Sequence 1.3 given in Table 2 of GB/T 12706.4-2020: 1.AC and DC voltage test: AC voltage (4.5U₀ /117kV, 5min): No breakdown or flashover. DC voltage (4U₀/104kV,15min): No breakdown or flashover. 2. Thermal short-circuit test (screen): The cable conductor should be heated and stabilized for at least 2h at a temperature of 5K to10K above the maximum cable conductor temperature in normal operation. The test current of 3.5kA should be applied with the duration of 1s, two short circuits: no visible deterioration. 3. Thermal short-circuit test(conductor): The test should be carried out on the test loop at ambient temperature. Two short-circuits should be applied to raise the conductor temperature to the maximum permissible short-circuit temperature of the cable (250℃) within 5s, no visible deterioration. 4. Dynamic short-circuit(conductor): The test should be carried out on the test loop at ambient temperature. The short-circuit current (I_d=2.5I, t=1s) should be applied for a minimum of 10ms to ensure that the initial peak current, as specified in the relevant standard, is reached, no visible deterioration. 5.Impulse voltage test: 10 impulses of each polarity at ambient temperature: No flashover or breakdown (200kV). 6.AC voltage test: No flashover or breakdown (2.5U₀/65 kV, 15 min). 7. Examination: The following items should be examined: Presence of crack on any components. Presence of water or moisture beyond the sealing barriers. Presence of corrosion/electric leakage tracking on any metallic parts. Leakage of insulating material. etc. 3.Test Item of Sequence 1.5 given in Table 2 of GB/T 12706.4-2020: 1. Salt fog test: No flashover or breakdown, fault-trip times ≤3, no visible deterioration 1.25U₀ (32.5kV), 1000h. 2. Examination: The following items should be examined: Presence of crack on any components. Presence of water or moisture beyond the sealing barriers. Presence of corrosion/electric leakage tracking on any metallic parts. Leakage of insulating material. etc.		



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3.Test items and results					
S/N	Items	Unit	Requirements	Results	Verdict
3. 1	AC and DC voltage test	/	AC voltage (4.5U ₀ /117kV, 5min): No breakdown or flashover DC voltage (4U ₀ /-104kV ,15min): No breakdown or flashover	AC voltage: No breakdown or flashover on any phase of combinational loop (117.3kV, 5min) DC voltage: No breakdown or flashover on any phase of combinational loop (-104.0kV, 15min)	Y
3. 2	AC voltage test (wet)	/	Preprocessed according to GB/T 16927.1, AC voltage (104kV,1min): No flashover or breakdown.	The outdoor terminal should be rained for 15min in the specified conditions. AC voltage at ambient temperature (104.0kV, 1min). No flashover or breakdown in the combination loop.	Y

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S/N	Items	Unit	Requirements	Results	Verdict
3. 3	Partial discharge test (ambient temperature)	pC	Partial discharge ≤10pC, 1.73U ₀ (45kV).	Gradually raise the testing voltage to 52.0kV and stabilize for 10s, then slowly reduce the voltage to 45.0 kV, the partial discharge of the combinational loop is measured as follows: Test loop 1: Yellow phase: ≤ 2.5pC (Background noise:2.5pC) Green phase: ≤ 2.4pC (Background noise:2.4pC) Red phase: ≤ 2.7pC (Background noise:2.7pC) Test loop 2: Yellow phase: ≤ 2.7pC (Background noise:2.7pC) Green phase: ≤ 2.6pC (Background noise:2.6pC) Red phase: ≤ 2.5pC (Background noise:2.5pC)	Y

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3. 4	Impulse voltage test (θ_i)	/	The cable conductor should be heated and stabilized for at least 2h at a temperature of 5K to 10K above the maximum cable conductor temperature in normal operation, 10 impulses of each polarity: No flashover or breakdown (200kV).	Heat the cable conductor to 95°C~100°C and stabilize for 2h, 10 impulses of each polarity with the voltage of 200kV, no flashover / breakdown in the combination loop. (See Annex A.1)	Y
3. 5	Heating cycle voltage test (in air)	/	The heating current is applied to the combination loop. Each heating cycle should be of 8h duration with at least 2h at a steady temperature of 5K to 10K above the maximum cable conductor temperature in normal operation for extruded insulation cables followed by at least 3h of natural cooling to within 10K of ambient temperature. The test assembly should be subjected to a total of 60 heating cycles in air. No flashover or breakdown (2.5U ₀ /65kV).	Heat the conductor to 95°C~100°C with the voltage of 65kV for a total of 60 heating cycles in air, no flashover or breakdown in the combination loop.	Y

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S/N	Items	Unit	Requirements	Results	Verdict
3.6	Immersion test	/	Immersion test: The two terminals of the combined circuit should be submerged in water at ambient temperature to $0.03_0^{+0.02}$ m above each component of the terminal. And the terminals should be submerged in water, including the ends of the sealing parts. Each heating cycle should be of 8h duration with at least 2h at a steady temperature of 5K to 10K above the maximum cable conductor temperature in normal operation for extruded insulation cables followed by at least 3h of natural cooling to within 10K of ambient temperature. The test assembly should be subjected to a total of 10 heating cycles, no voltage is applied to the loop.	The two terminals of the combined circuit are submerged in water at ambient temperature, and the water is submerged to 0.05m above each component of the terminal, including the end of the sealing component. A heating current is applied to the combined loop, each heating cycle is of 8h duration with at least 2h at a steady temperature of 95°C~100°C, followed by 3h of natural cooling to within 10K of ambient temperature. The test assembly is subjected to a total of 10 heating cycles, no voltage is applied to the loop.	N/A

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S/N	Items	Unit	Requirements		Results	Verdict
3. 7	Partial discharge test (θ _i)	pC	The cable conductor should be heated and stabilized for at least 2h at a temperature of 5K to 10K above the maximum cable conductor temperature in normal operation. Partial discharge ≤10 pC,1.73U ₀ (45kV).		Heat the cable conductor to 95~100℃ , gradually raise the test voltage to 52.0kV and stabilized for 10s, then slowly reduce the voltage to 45.0kV, the partial discharge of the combinational loop is measured as follows: Test loop 1: Yellow phase: ≤ 2.6pC （Background noise:2.6pC） Green phase: ≤ 2.4pC （Background noise:2.4pC） Red phase: ≤ 2.5pC （Background noise:2.5pC） Test loop 2: Yellow phase: ≤ 2.5pC （Background noise:2.5pC） Green phase: ≤ 2.5pC （Background noise:2.5pC） Red phase: ≤ 2.6pC （Background noise:2.6pC）	Y

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3.8	Partial discharge test (ambient temperature)	pC	Partial discharge ≤ 10 pC ($1.73U_0/45$ kV)	Gradually raise the test voltage to 52.0kV and stabilized for 10s, then slowly reduce the voltage to 45.0kV, the partial discharge of the combinational loop is measured as follows: Test loop 1: Yellow phase: ≤ 2.5pC (Background noise:2.5pC) Green phase: ≤ 2.4pC (Background noise:2.4pC) Red phase: ≤ 2.5pC (Background noise:2.5pC) Test loop 2: Yellow phase: ≤ 2.5pC (Background noise:2.5pC) Green phase: ≤ 2.4pC (Background noise:2.4pC) Red phase: ≤ 2.5pC (Background noise:2.5pC)	Y
3.9	Impulse voltage test	/	10 impulses of each polarity at ambient temperature: No flashover or breakdown (200kV).	10 impulses of each polarity with the voltage of 200kV, no flashover or breakdown on any phase of the combinational loop. (See Annex A.2)	Y



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S/N	Items	Unit	Requirements	Results	Verdict
3.10	AC voltage test	/	No flashover or breakdown ($2.5U_0/65\text{kV}$, 15 min)	AC voltage: No flashover or breakdown on any phase of the combinational loop (65.4kV , 15min)	Y
3.11	Examination	/	The following items should be examined: Presence of crack on any components. Presence of water or moisture beyond the sealing barriers. Presence of corrosion/electric leakage tracking on any metallic parts. Leakage of insulating material. etc.	Test loop 1: no mentioned abnormality on the sample.	Y

Table 2 Test Sequence 1.2 and Sequence 1.3 in GB/T 12706.4—2020.

S/N	Items	Unit	Requirements	Results	Verdict
4.1	AC and DC voltage test	/	AC voltage ($4.5U_0/117\text{kV}$, 5min): No flashover or breakdown. DC voltage ($4U_0/-104\text{kV}$, 15min): No flashover or breakdown.	AC voltage: No flashover or breakdown on any phase of Test loop 2 (117.3kV , 5min) DC voltage: No flashover or breakdown on any phase of Test loop 2 (-104.0kV , 15min)	Y
4.2	Thermal short-circuit test (screen)	/	The test current of 3.5kA should be applied with the duration of 1s, two short circuits, no visible deterioration.	Test loop 2: Test 1: 3.554kA , 1.039s Test 2: 3.520kA , 1.050s , No visible deterioration. (See Annex A.4)	Y
4.3	Thermal short-circuit test (conductor)	/	The test should be carried out on the test loop at ambient temperature. Two short-circuits should be applied to raise the conductor temperature to the maximum permissible short-circuit temperature of the cable (250°C) within 5s, no visible deterioration.	Test loop 2 (At ambient temperature): Test 1: $I_a=51.89\text{kA}$, $I_b=52.02\text{kA}$, $I_c=51.73\text{kA}$ t: 2.033s Test 2: $I_a=52.42\text{kA}$, $I_b=52.58\text{kA}$, $I_c=52.29\text{kA}$ t: 2.035s . (See Annex A.5)	Y

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S/N	Items	Unit	Requirements	Results	Verdict
4.4	Dynamic short-circuit (conductor)	/	The short-circuit current ($I_d=2.5I$, $t=1s$) should be applied for a minimum of 10ms to ensure that the initial peak current, as specified in the relevant standard, is reached, no visible deterioration.	Test loop 2 (At ambient temperature): I_d : 183.3kA t : 30.65ms No visible deterioration. (See Annex A.6)	Y
4.5	Impulse voltage test	/	10 impulses of each polarity at ambient temperature: No flashover or breakdown (200kV).	At ambient temperature, 10 impulses of each polarity with the voltage of 200kV, no flashover or breakdown in the Test loop 2. (See Annex A.3)	Y
4.6	AC voltage test	/	No flashover or breakdown ($2.5U_0/65kV, 15\text{ min}$)	No flashover or breakdown on any phase of test loop 2 (65.2kV, 15min)	Y
4.7	Examination	/	The following items should be examined: Presence of crack on any components. Presence of water or moisture beyond the sealing barriers. Presence of corrosion/electric leakage tracking on any metallic parts. Leakage of insulating material. etc.	Test loop 2: No mentioned abnormality on the sample.	Y

Reference No.: ZUGOZTH2 ZTH20-011

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Table 2 Test Sequence 1.4 in GB/T 12706.4—2020.

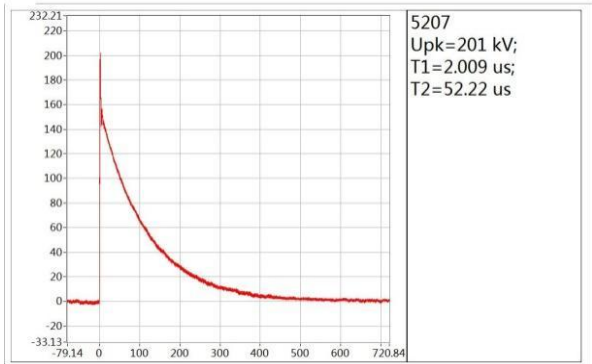
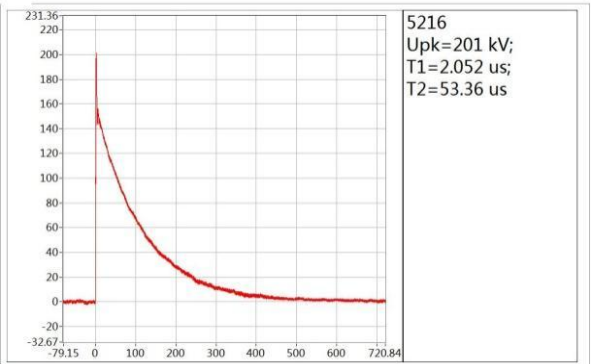
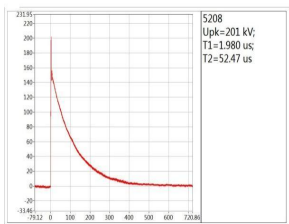
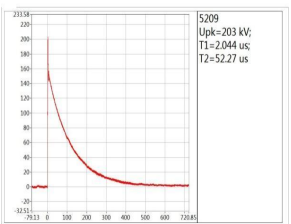
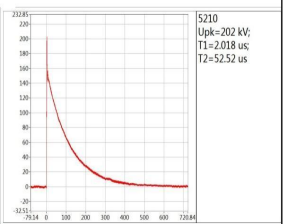
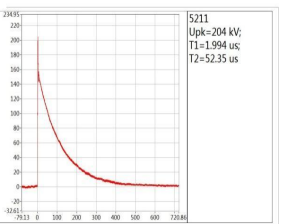
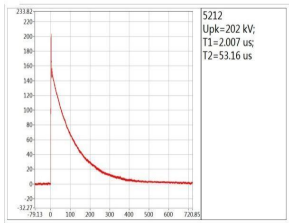
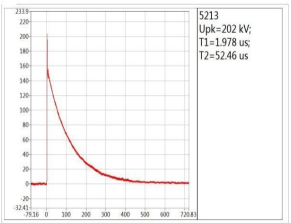
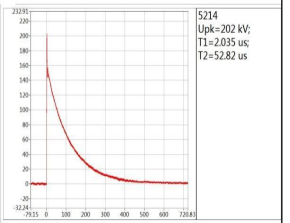
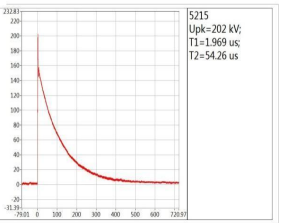
S/N	Items	Unit	Requirements	Results	Verdict
5.1	Humidity test	/	No flashover or breakdown, fault-trip times≤3, no visible deterioration, 1.25U ₀ (32.5kV), 300h.	Test loop 3: No flashover or breakdown, no fault-trip, no visible deterioration (32.5kV, 300h).	Y
5.2	Examination	/	The following items should be examined: Presence of crack on any components. Presence of water or moisture beyond the sealing barriers. Presence of corrosion/electric leakage tracking on any metallic parts. Leakage of insulating material. etc.	Test loop 3: No mentioned abnormality on the sample.	Y

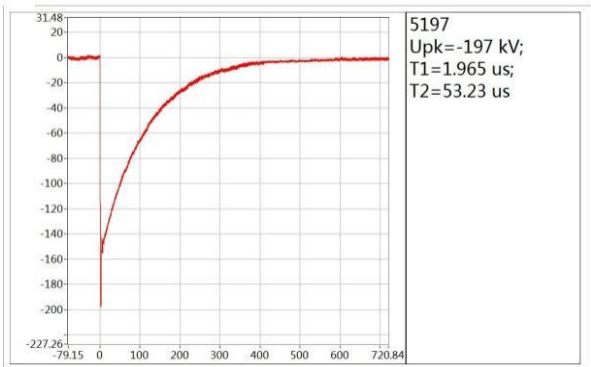
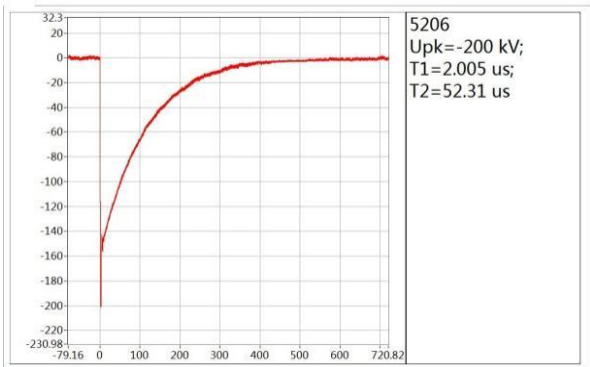
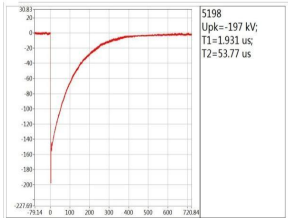
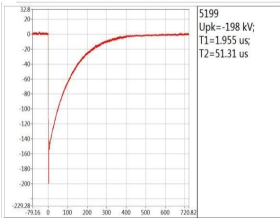
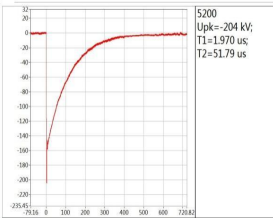
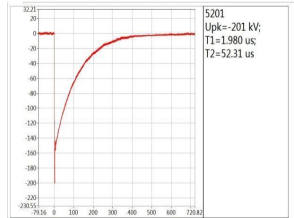
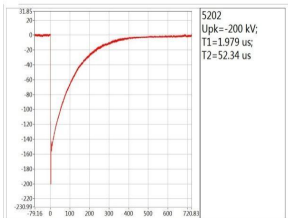
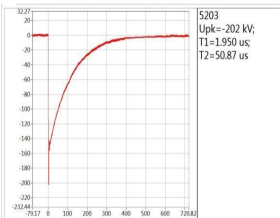
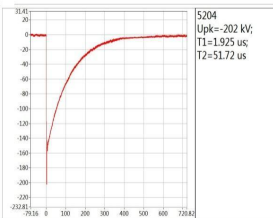
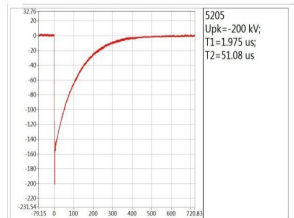
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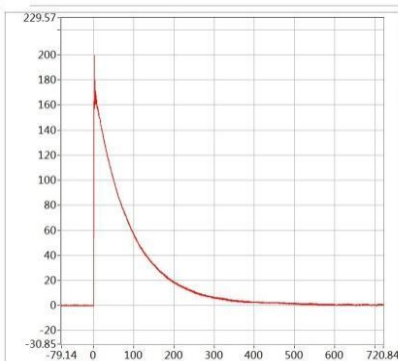
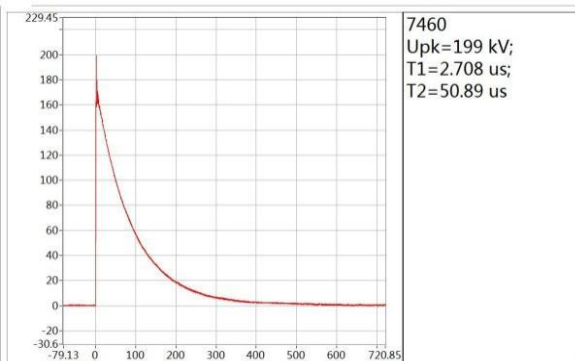
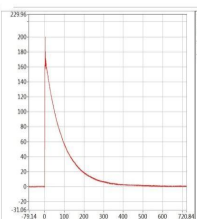
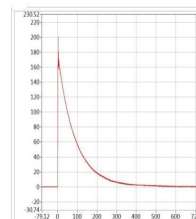
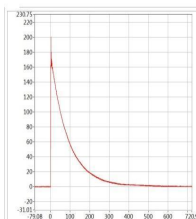
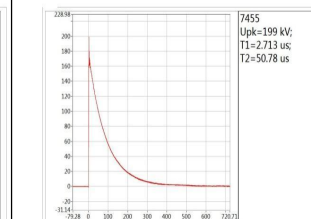
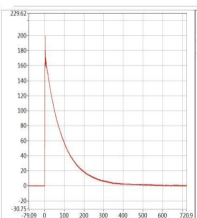
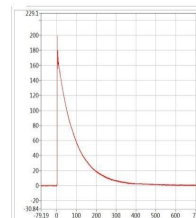
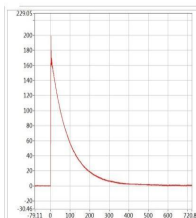
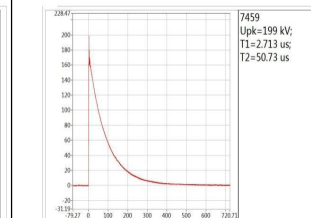
1)Thermal short-circuit test (screen)、 Thermal short-circuit test (conductor) and Dynamic short-circuit (conductor) are not within the scope recognized by ZUGO, which are subcontracted to Guangdong Product Quality Supervision and Inspection Institute(CNAS Certificate No. L0153, CMA Certificate No. 210020349096)

2) Definition of judgment symbol: Y represents compliance/pass;N represents non compliance/failure to pass; / represents No judgment is made, only detection data is provided.

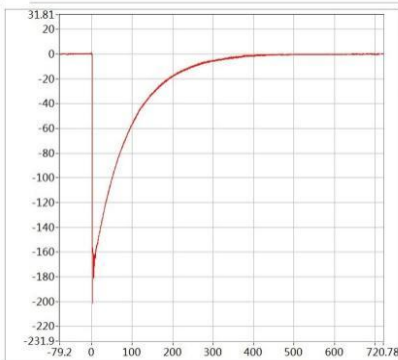
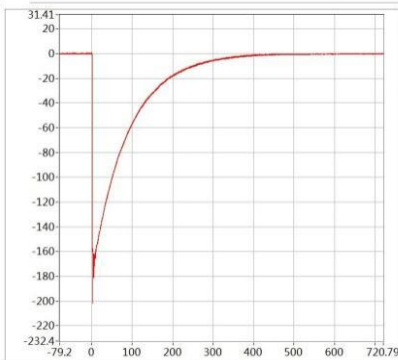
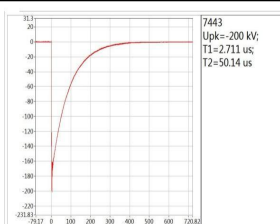
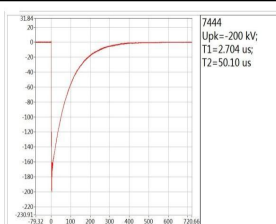
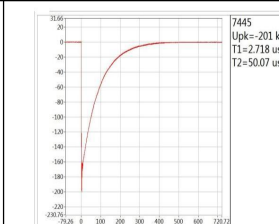
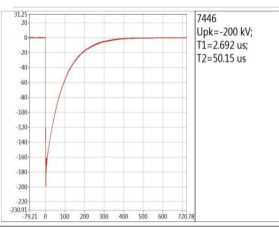
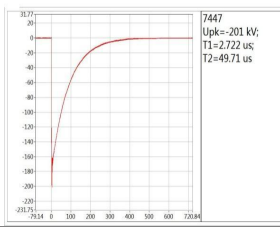
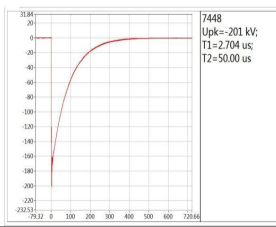
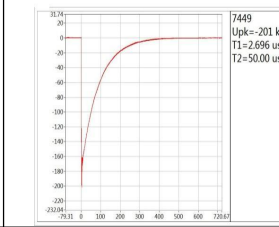
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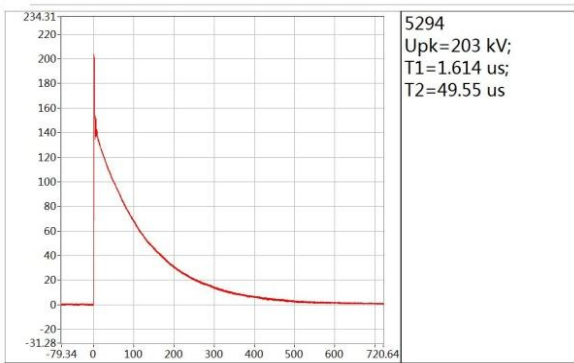
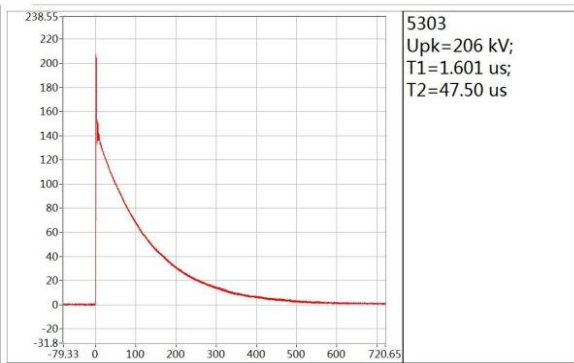
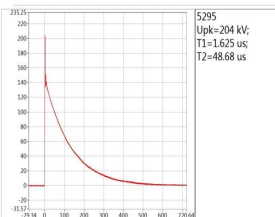
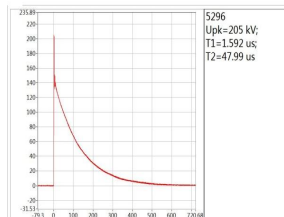
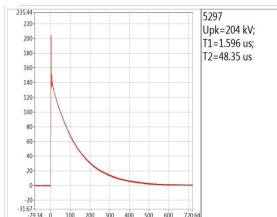
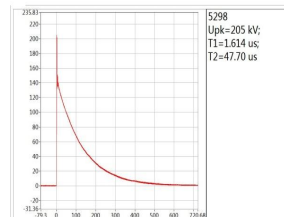
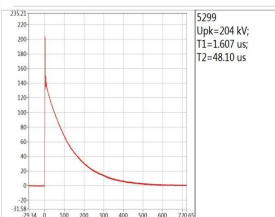
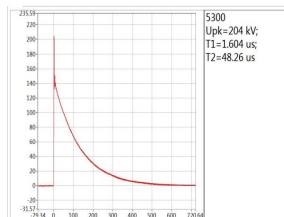
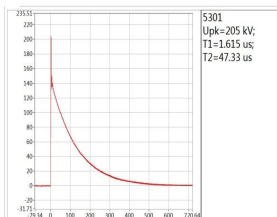
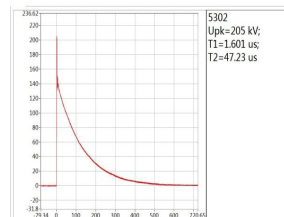
ZUGO Electrical Testing Co., Ltd.			Test Report			RJLW-26/35kV 3×400 35kV Cable cold shrinkable outdoor termination				
Annex A: Oscillogram										
Annex A.1 The value and waveform of Impulse voltage at elevated temperature (Before heating cycle voltage test, 200kV, ±3% tolerance; Wave front time T1 :(1 ~ 5)μs, half peak time T2 :(40 ~ 60)μs)										
A.1.1 Positive polarity impulse withstand voltage (kV)										
Test date: 2024-12-15			Ambient temperature:17.0℃			Relative humidity:52%		Atmosphere:0.1026MPa		
voltage (kV)	201	201	203	202	204	202	202	202	202	201
A.1.2 Positive polarity impulse voltage waveform diagrams										
										
1 st					10 th					
										
2 nd		3 rd		4 th		5 th				
										
6 th		7 th		8 th		9 th				

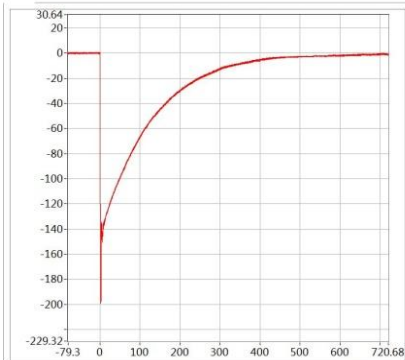
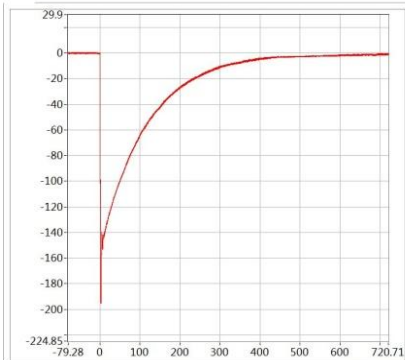
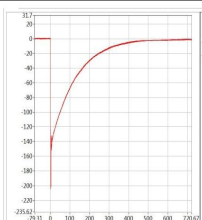
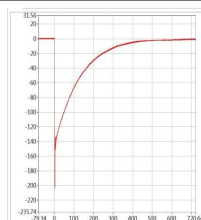
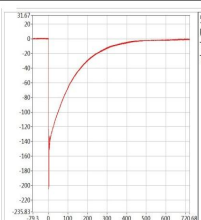
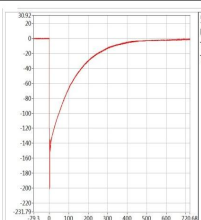
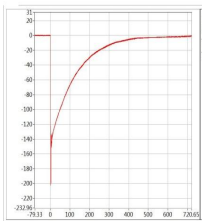
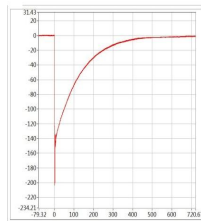
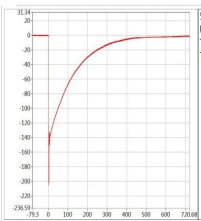
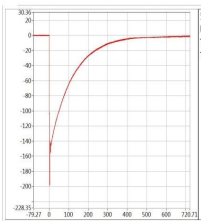
ZUGO Electrical Testing Co., Ltd.				Test Report				RJLW-26/35kV 3×400 35kV Cable cold shrinkable outdoor termination			
A.1.3 Negative polarity impulse voltage (kV)											
Test date: 2024-12-15			Ambient temperature:17.0℃			Relative humidity:52%			Atmosphere:0.1026MPa		
voltage (kV)	-197	-197	-198	-204	-201	-200	-202	-202	-200	-200	
A.1.4 Negative polarity impulse voltage waveform diagrams											
											
1 st						10 th					
											
2 nd		3 rd		4 th		5 th					
											
6 th		7 th		8 th		9 th					

ZUGO Electrical Testing Co., Ltd.				Test Report			RJLW-26/35kV 3×400 35kV Cable cold shrinkable outdoor termination			
A.2 The values and waveform of impulse voltages test at ambient temperature (after Heating cycle voltage test, 250 kV,±3 % tolerance, Wave front time T1 :(1 ~ 5) μs, half peak time T2 :(40 ~ 60) μs)										
A.2.1 Positive polarity impulse voltage (kV)										
Test date: 2025.01.17			Ambient temperature:19.4℃			Relative humidity:53%		Atmosphere:0.1026MPa		
voltage (kV)	199	200	200	200	199	199	199	199	199	199
A.2.2 Positive polarity impulse voltage waveform diagrams										
 7451 Upk=199 kV; T1=2.707 us; T2=50.81 us					 7460 Upk=199 kV; T1=2.708 us; T2=50.89 us					
1 st					10 th					
 7452 Upk=200 kV; T1=2.728 us; T2=50.30 us		 7453 Upk=200 kV; T1=2.728 us; T2=50.20 us		 7454 Upk=200 kV; T1=2.702 us; T2=50.55 us		 7455 Upk=199 kV; T1=2.713 us; T2=50.78 us				
2 nd		3 rd		4 th		5 th				
 7456 Upk=199 kV; T1=2.711 us; T2=50.52 us		 7457 Upk=199 kV; T1=2.704 us; T2=50.83 us		 7458 Upk=199 kV; T1=2.713 us; T2=50.89 us		 7459 Upk=199 kV; T1=2.713 us; T2=50.73 us				
6 th		7 th		8 th		9 th				



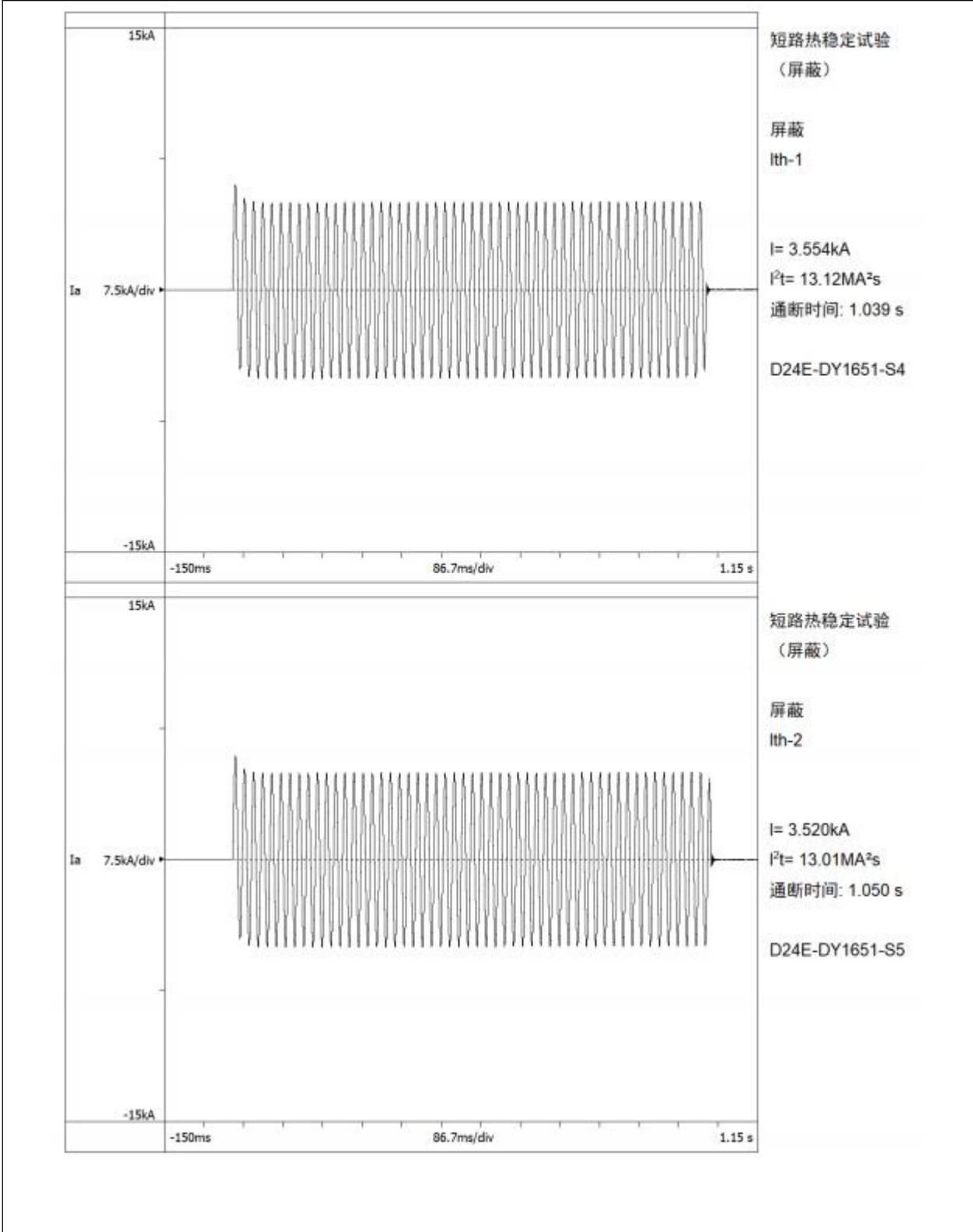
ZUGO Electrical Testing Co., Ltd.			Test Report			RJLW-26/35kV 3×400 35kV Cable cold shrinkable outdoor termination				
A.2.3 Negative polarity impulse voltage (kV)										
Test date: 2025.01.17			Ambient temperature:19.4℃			Relative humidity:53%		Atmosphere:0.1026MPa		
voltage (kV)	-200	-201	-200	-200	-201	-200	-201	-201	-201	-201
A.2.4 Negative polarity impulse voltage waveform diagrams										
										
1 st					10 th					
										
2 nd		3 rd		4 th		5 th				
										
6 th		7 th		8 th		9 th				

ZUGO Electrical Testing Co., Ltd.			Test Report			RJLW-26/35kV 3×400 35kV Cable cold shrinkable outdoor termination				
A.3 The values and waveform of impulse voltages test at ambient temperature after thermal/dynamic short-circuit test (250 kV, ±3 % tolerance, Wave front time T1 :(1 ~ 5)μs, half peak time T2 :(40 ~ 60) μs)										
A.3.1 Positive polarity impulse voltage (kV)										
Test date: 2024.12.24			Ambient temperature:19.4℃			Relative humidity:56%		Atmosphere:0.1026MPa		
voltage (kV)	203	204	205	204	205	204	204	205	205	206
A.3.2 Positive polarity impulse voltage waveform diagrams										
										
1 st					10 th					
										
2 nd		3 rd		4 th		5 th				
										
6 th		7 th		8 th		9 th				

ZUGO Electrical Testing Co., Ltd.			Test Report			RJLW-26/35kV 3×400 35kV Cable cold shrinkable outdoor termination				
A.3.3 Negative polarity impulse voltage (kV)										
Test date: 2024.12.24			Ambient temperature:19.4℃			Relative humidity:56%			Atmosphere:0.1026MPa	
voltage (kV)	-199	-205	-204	-204	-201	-202	-203	--205	-199	-195
A.3.4 Negative polarity impulse voltage waveform diagrams										
										
1 st					10 th					
										
2 nd		3 rd		4 th		5 th				
										
6 th		7 th		8 th		9 th				

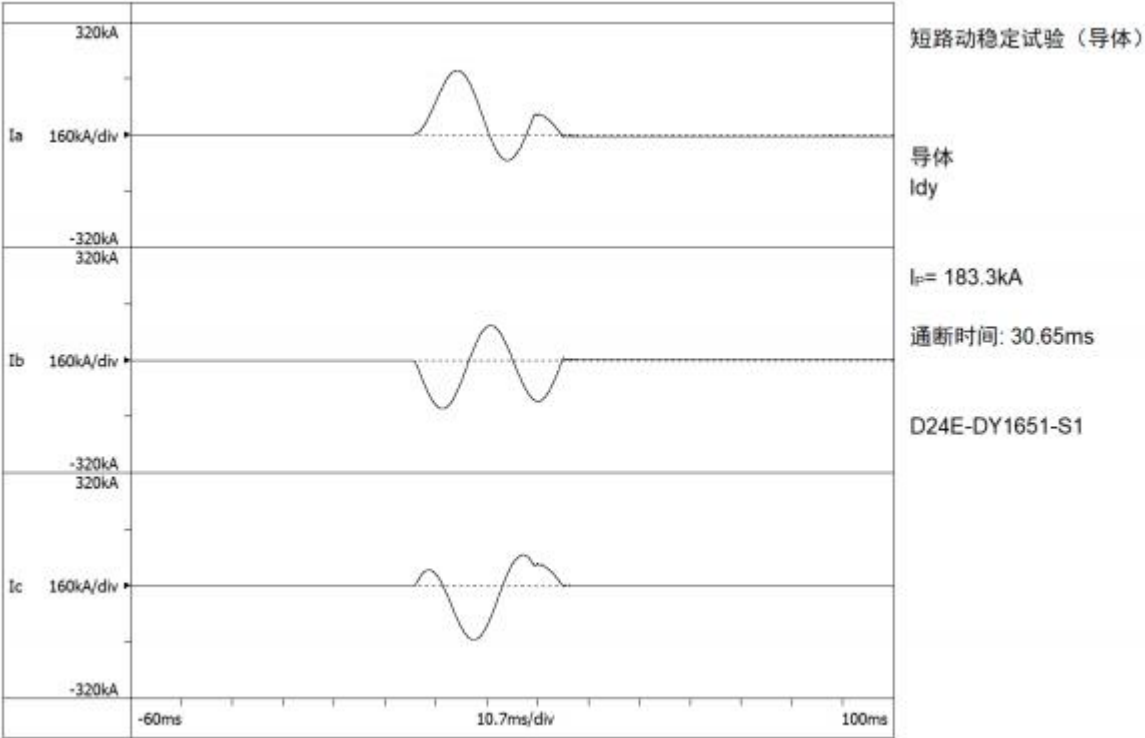
ZUGO Electrical Testing Co., Ltd.	Test Report	RJLW-26/35kV 3×400 35kV Cable cold shrinkable outdoor termination
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A.4 Test value and waveform for Thermal short-circuit test of Test loop 2. (screen)



ZUGO Electrical Testing Co., Ltd.	Test Report	RJLW-26/35kV 3×400 35kV Cable cold shrinkable outdoor termination
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A.6 Test value and waveform for Dynamic short-circuit of Test loop 2. (conductor)



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ZUGO Electrical Testing Co., Ltd.	Test Report	RJLW-26/35kV 3×400 35kV Cable cold shrinkable outdoor termination
Annex B Test Sample Photograph		
B.1 Photograph for the combined AC withstand voltage test before the constant voltage load cycle test	B.2 Photograph for Heating cycle voltage test (in air)	
		
B.3 Photograph for test sample	B.4 Photograph for anatomical test sample	
		

ZUGO Electrical Testing Co., Ltd.		Test Report	RJLW-26/35kV 3×400 35kV Cable cold shrinkable outdoor termination		
Annex C: Test Equipment List					
S/N	Equipment Name	Model Type	Device Number	Validity Calibration date	
1	Partial Discharge Tester	WHNR-JFD-2000	2018JFD1202	2025.03.14	
2	Series resonant power frequency local discharge test device	XZL-800kV/8000kV A	ZUGO-YQ004	2026.05.06	
3	Impulse Voltage Generator	3600kV/720kJ	17227-1	2026.05.06	
4	Cable Heating Cycle Test System	CHCT-5000A/220V	1610009	2026.05.06	
5	Power frequency voltage test system	JTGN-12.5kVA/50k V	1702010	2026.05.06	
6	DC High Voltage Generator	EDHV-120kV/2mA	EDHV20082415	2025.04.14	
7	Fully Intelligent Projector	YN31113	61780	2025.04.14	
8	Digimatic caliper	(0~300)mm/0.01	GH19129880	2025.04.15	
9	Steel tape measure	5m	ZUGO-YB072	2025.03.15	
10	Transient Recorder System	Saturn 8 channel	C28E032-02	2025.12.12	
11	Temperature And Humidity Table	TH40W-E	24T139-01	2025.06.03	
Annex D: Test matching cable information (continued table)					
Rated voltage U ₀ /U(U _m)kV		26/35 (40.5)			
Construction		Core number	Three-core		
		Screened	An extruded semi-conductive layer		
Conductor		Material	Copper		
		Shape	Stranded compacted circular		
		Cross-sectional area	400mm ²		
		Material	22.42mm	22.56mm	22.60mm

Reference No.: ZUGOZYH2-ZYH20-011		5		
ZUGO Electrical Testing Co., Ltd.	Test Report	RJLW-26/35kV 3×400 35kV Cable cold shrinkable outdoor termination		
Annex D: Test matching cable information (continued table)				
Insulation	Material	XLPE		
	Thickness	10.1mm	10.4mm	10.2mm
	Overall diameter	45.34mm	45.77mm	45.62mm
Screen	Thickness of conductor screen	1.0mm	1.1mm	1.0mm
	Thickness of insulation screen	0.8mm	0.8mm	0.8mm
	Strippability for insulation screen	Strippable		
	Overall diameter of insulation screen	47.03mm	47.39mm	47.37mm
	Metallic screen	Copper tape		
Armour	Steel tape			
Oversheath	Material	PVC		
	Overall diameter	112.8mm		
Cable marking	ZC-YJV22 26/35kV 3×400mm ²			

===== End of Report =====