



High voltage cable
accessories

Let's make it safer!



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CYG
CYG ELECTRIC CO., LTD.



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Let's make it smarter and stronger

Focus on line safety for 32 years

CYG Electric Co., Ltd. (Abbreviations: CYG Electric) is a subsidiary of Changyuan Group (Stock Code: 600525.SH), which engages itself as a state-level hi-tech enterprise in the development, manufacturing and sales of power cable accessories, ring main unit, branch boxes, and other automatic distribution equipment. As the model of rising national manufacturing industry, CYG Electric realizes the breakthrough from importing foreign products to completely researching and producing products by independent intellectual property rights, and cast the famous brand of power technology industry with the quality of Seiko, commits to technology innovation of global power grid and quality services.

With 32 years of trials and hardships, CYG Electric adheres to its product quality of "independent innovation, people oriented and consistency", escorting for circuit security. It will stick to the enterprise spirit of "integrity, inclusiveness, passion, respect" and the mission of "make it stronger and smarter", insists in continuous technology and management innovation and serves for power transmission and distribution system with professionalization and intelligence.

A number of national key engineering practices With consistent stability and security

Let's make it smarter
and stronger

The products produced by CYG Electric are widely used in the State Grid, China Southern Power Grid, steel, petrochemicals, railways and other industries. Key projects like Qinghai-Tibet Railway, Beijing Olympic Venues, Hangzhou Bay Bridge, Shenzhen Metro are adopting products of CYG.



▲ Unique Cable Accessory Supplier of Beijing Olympic Venue



- ▲ Hong kong-zhuhai-macao bridge project
- ▼ Unique Cable Accessory Supplier of Qinghai-Tibet Railway Lhasa – Golmud Full Line





- ▲ 330kV Russian St. Petersburg Southern substation to pulkovo line land cable project
- Unique Cable Accessory Supplier of Hangzhou Bay Bridge Full Line
- ◀ Zhoushan±200kV Flexible DC Power Transmission Technology Demonstration Project
- Poland Power Plant 132kV Project ▶



◀ Beijing 220kV Northwest Thermal Power Center Line Project



◀ Thailand TPI PP Garbage Power Plant 132kV GIS Termination Project



let`s make it safer !



Qualification Documents

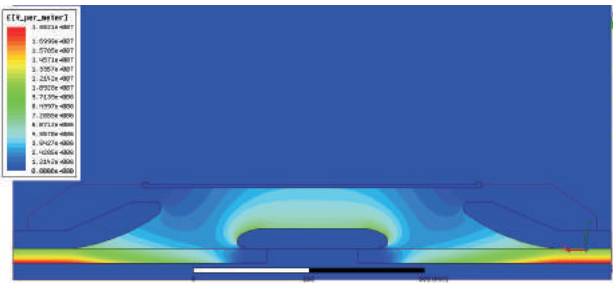


Technology R & D

The R&D team is mainly engaged in the research and development of power cable accessories. It has successfully developed 35kV and below fully cold shrink cable accessories, 110kV, 220kV, 500kV high-voltage and ultra-high-voltage cable accessories, and has applied for more than 20 patents, accumulated great design and development experience. With relatively good research, development, and testing conditions, strong technical innovation capabilities and high R&D expenditure, the research and innovation levels are at the leading among the same industry.

All cable accessories designed by CYG Electric are analyzed by the limit element software to determine the stress control curve, the interface pressure between the designed product and cables and equipment. Electric field distribution and interface pressure are the basic design content of modern high-voltage cable accessories. The correctness and accuracy will directly affect the performance of the designed cable accessories. The high-voltage cable accessory contains many interfaces, especially the interface performance between the field strength control element and the cable insulator, which plays a decisive role in the quality of the cable accessory.

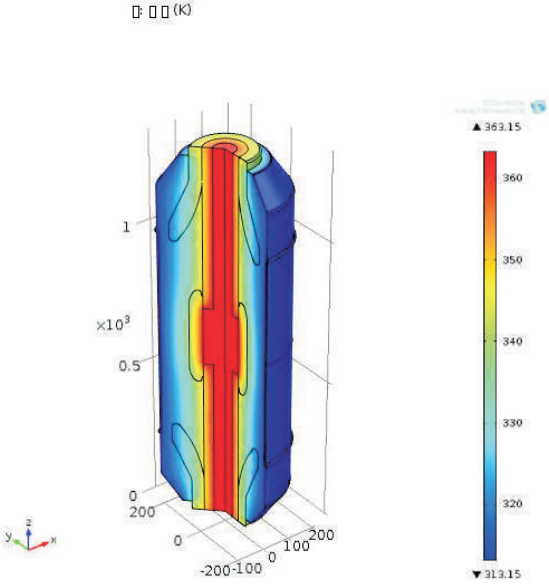
The performance of the interface not only relates to the material quality, installation conditions, and the processing state of the surface, but also affected by stress and temperature. Therefore, the design of the interface is a complex process of Electric-force-thermal multiply field mixing. The following is a design example for 500kV joint.



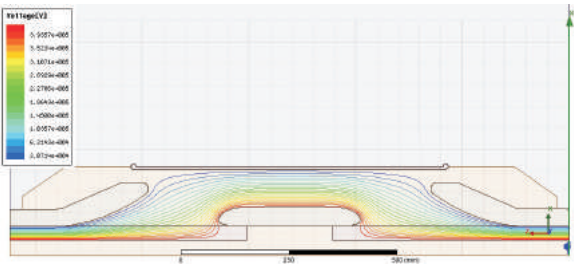
Electric Field of 500kV Cable Joint



500kV Joint



Thermal Field of 500kV Joint



Equipotential Line of 500kV Joint

Professional Training

CYG Electric provides a wide range of technical training in cable technology and accessories, and technical trainers have solid professional knowledge and the understanding of the latest technology. CYG Electric also provides training courses for cable accessory installation and practical operation of 500kV and below voltage. The course time depends on the selected training type and training plan. If you want to know more information about the training course, please contact with us.



Series of 56/66kV to 127/220kV products

Technical Parameters

56/66kV, 64k/10kV, 76/138kV, 127/200kV series cable accessories produced by CYG Electric all complied with GB/T 11017,GB/Z 18890, IEC 62067 standards, and have passed routine tests and type tests. 127/220kV series products have passed the pre-qualification test. The manufacturing process of products are managed in accordance with ISO9001 Quality Assurance System.

Type Test of Cable Accessories

Test Item	Standard Requirements and Test Results			
	56/66 kV	64/110 kV	76/138 kV	127/220kV
Partial Discharge Test	84 kV	96 kV	114 kV	190 kV
	No Detectable Discharge			
Thermal Cycle Voltage Test	112 kV	128 kV	152 kV	254 kV
	The Conductor is heated to the temperature of 95℃to 100℃ for a total of 20 cycles(Every cycle for 24h, heating 8h then cooling 16h) No breakdown, no flashover			
Lightning Impulse Voltage Test	500kV	550 kV	650 kV	1050 kV
	95℃~100℃, Positive and negative polarity 10 times each, no breakdown, no flashover			
Power Frequency Voltage Test after Lightning Impulse Voltage Test	15min , 112 kV	15min , 160 kV	15min , 152 kV	15min , 254 kV
Short Time Power Frequency Voltage Test(Wet Test) (Porcelain Outdoor Termination, Composite Outdoor Termination, Dry-type Termination)	1min , 140 kV	1min , 185 kV	1min , 220 kV	1min , 460 kV
	No breakdown, no flashover			
DC Voltage Test for Outer Protective Layer of Directly Buried Joint (Straight Joint/ Sectionalized Joint)	Apply 25kv, 1min between the metal sleeves at both ends of the joint, between the power cable metal sheath at each end and the protective layer of the joint outer sheath, no break down			
Impulse Voltage Test for Outer Protective Layer of Directly Buried Joint (Straight Joint/ Sectionalized Joint)	Apply U1 impulse voltage test to the metal sleeves at both ends of the joint, apply U2 impulse voltage test between the metal sleeve at each end of the cable and the outer grounding surface of the joint outer protective layer, no break down			
	U1=75kV, U2=37.5kV			U1=95kV, U2=47.5kV

Porcelain Outdoor Termination

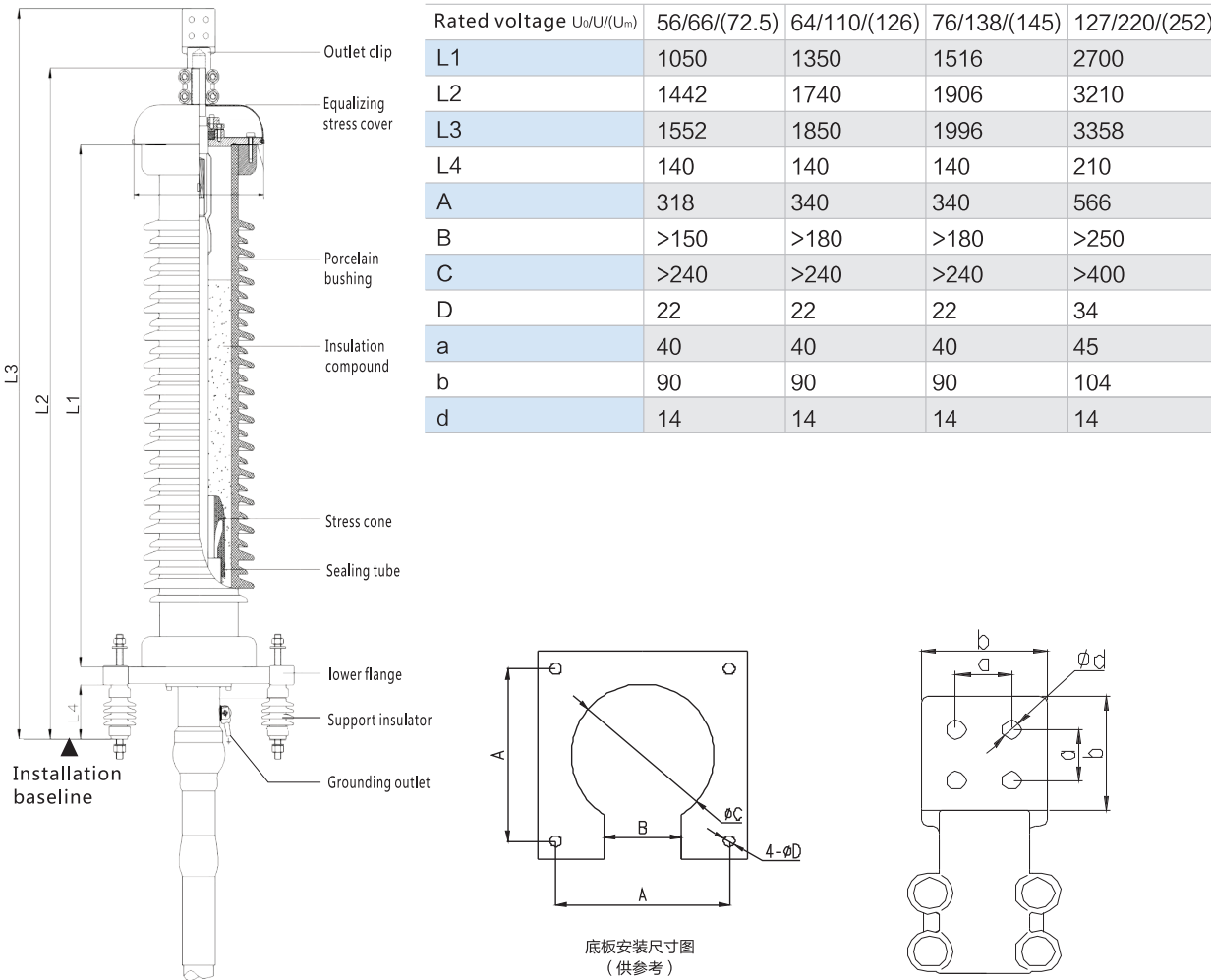
Product Model

Porcelain outdoor termination for XLPE insulated power cable with liquid filled CD YJZWY4 □/□ 1×□□□□ mm²
Dry-type porcelain outdoor termination for XLPE insulated power cable CD YJZWCG4 □/□ 1×□□□□ mm²
Voltage × Cable cross section

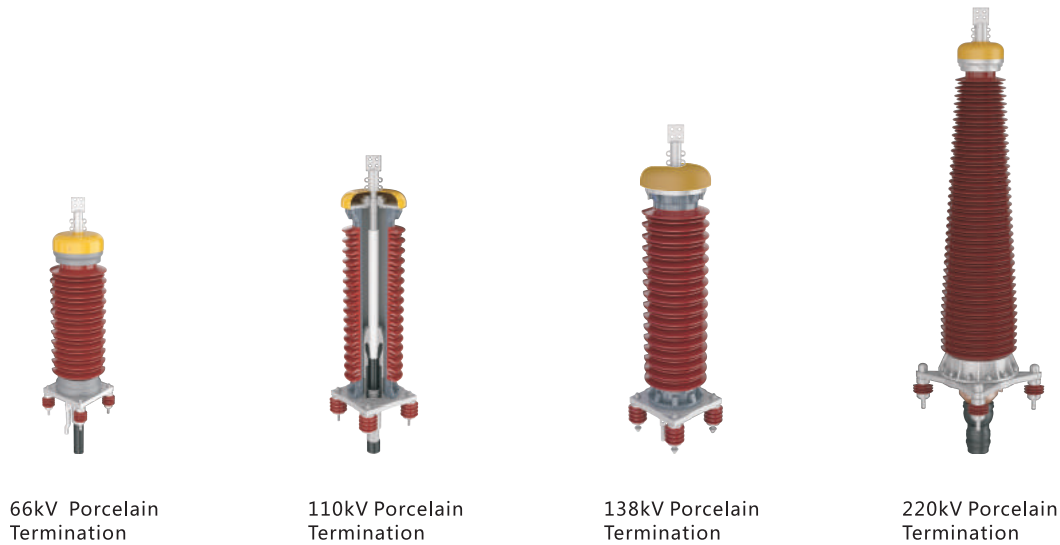
Product Features

- Porcelain bushing is made of high-strength electric porcelain. Upper and lower flanges are made of corrosion-resistant alloy material.
- Silicone rubber stress cone with excellent performance has excellent anti-aging property;it has no stress relaxation and g uarantees service life after long-term use.
- PIB material should be used for liquid-filled insulation and silicone gel material should be used for dry insulation between the stress cone and the inner wall of porcelain bushing.
- The design has adequate leakage distance and can be operated in heavily polluted environment in accordance with IEC 60071-2 and IEEE-1313.1 standards.

External structure and installation size



Product Appearance



Technical Parameters

Rated Voltage U ₀ /U/(U _m)	kV	56/66/(72.5)	64/110/(126)	76/138/(145)	127/220/(252)
Standard		IEC 60840, GB/T 11017	IEC 60840, GB/T 11017	IEC60840	IEC62067, GB/Z 18890
Rated Frequency	Hz	50~60	50~60	50~60	50~60
Rated Current	A	Not less than the connecting cable			
	A	Not less than the connecting cable			
Conductor Connection		Crimping Type	Crimping Type	Crimping Type	Crimping Type
Electric Field Control Method		Geometry Control Method(Stress Cone)			
Stress Cone Material		Silicone Rubber	Silicone Rubber	Silicone Rubber	Silicone Rubber
Insulating Filler		Polyisobutylene or Silicone Gel			
Support Insulator Withstand Voltage	kV	10/20			
Pollution Level		I ~IV			
Leakage Distance(Leakage Ratio)	mm/kV	>31			
Creepage Distance	mm	≥2450	≥4130	≥4500	≥10000
Applicable Cable Cross Section	mm ²	240~1600	240~1600	240~1600	240~2500
Applicable Cable Shield/Protective Sheath		Aluminum sheath, Rippled Aluminum Sheath, Copper Band + Copper Wire			
Weight	kg	About 120	About 180	About 210	About980

Operating Environment

Conductor Rated Temperature	Normal Operation	℃	90			
	Short Circuit	℃	250			
Adaptable Ambient Temperature Range		℃	-40~+40			
Altitude Height of Using Area		m	≤2500			
Allowable Seismic Intensity		Degree	Ⅷ			
Allowable Horizontal Pull Force of Connecting Wire		kN	≥2.0			
Bending Strength		kN.m	13	13	13	32
Maximum Internal Stress		MPa	2.0	2.0	2.0	2.3

Composite Outdoor Termination

Product Model

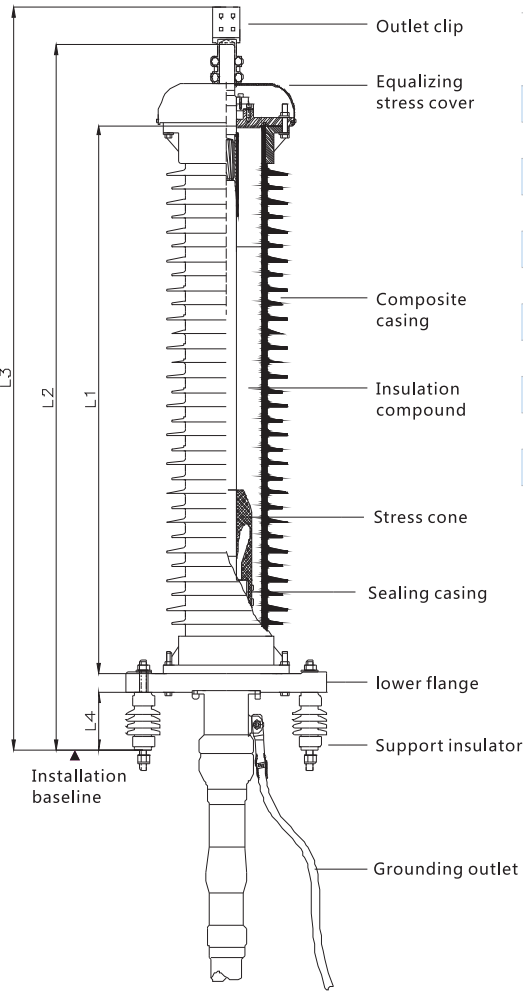
Composite outdoor termination for XLPE insulated power cable with liquid filled
Dry-type composite outdoor termination for XLPE insulated power cable

CD YJZWFY4 □/□ 1 × □□□□mm²
CD YJZWFG4 □/□ 1 × □□□□mm²
Voltage × Cable cross section

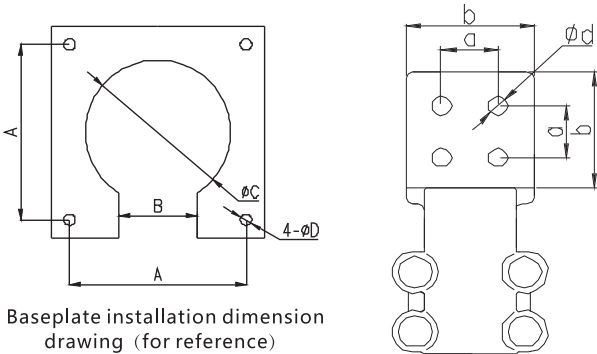
Product Features

- Composite insulated bushing is made of epoxy bushing outer composite silicone rubber umbrella skirt reinforced by glass fiber. Upper and lower flanges are made of corrosion-resistant alloy material.
- Silicone rubber stress cone with excellent performance has excellent anti-aging property;it has no stress relaxation and guarantees service life after long-term use.
- PIB material should be used for filling stress cone and composite casing.
- The design has adequate leakage distance and can be operated in heavily polluted environment in accordance with IEC 60071-2 and IEEE-1313.1 standards.
- Compared with porcelain outdoor termination,it has excellent explosion-proof performance and pollution prevention ability.

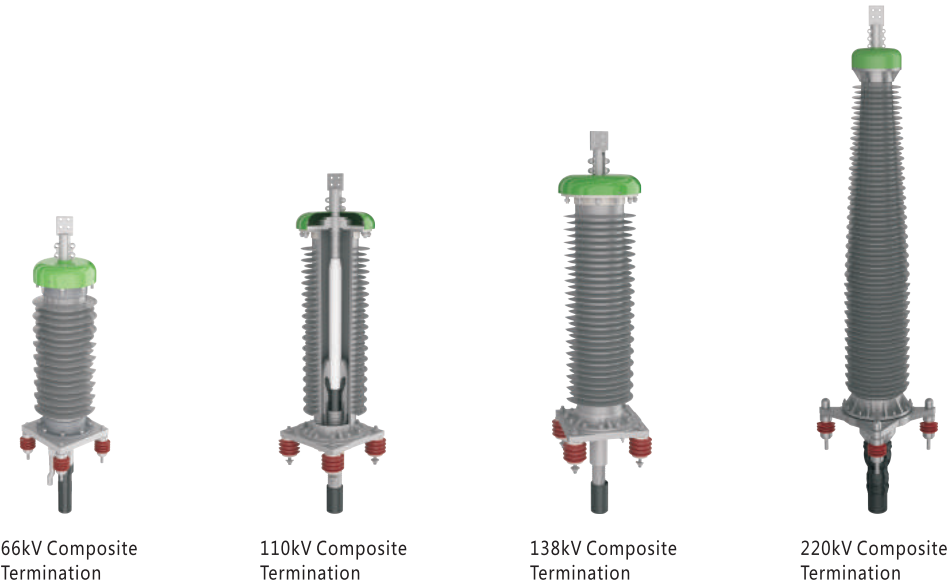
External structure and installation size



Rated voltage U ₀ /U/(U _m)	56/66/(72.5)	64/110/(126)	76/138/(145)	127/220/(252)
L1	1050	1360	1500	2570
L2	1442	1750	1890	3090
L3	1552	1860	2000	3243
L4	140	140	140	210
A	318	340	340	566
B	>150	>180	>180	>250
C	>240	>240	>240	>400
D	22	22	22	34
a	40	40	40	45
b	90	90	90	104
d	14	14	14	14



Product Appearance



Technical Parameters

Rated Voltage U ₀ /U/(U _m)	kV	56/66/(72.5)	64/110/(126)	76/138/(145)	127/220/(252)
Standard		IEC 60840, GB/T 11017	IEC 60840, GB/T 11017	IEC 60840	IEC 62067, GB/Z 18890
Rated Frequency	Hz	50~60	50~60		50~60
Rated Current	A	Not less than the connecting cable			
Short Circuit Current	A	Not less than the connecting cable			
Conductor Connection		Crimping Type	Crimping Type	Crimping Type	Crimping Type
Electric Field Control Method		Geometry Control Method(Stress Cone)			
Stress Cone Material		Silicone Rubber	Silicone Rubber	Silicone Rubber	Silicone Rubber
Insulating Filler		Polyisobutylene or Silicone Gel			
Support Insulator Withstand Voltage (ACDC)	kV	10/20			
Pollution Level		I ~IV			
Leakage Distance(Leakage Ratio)	mm/kV	>31			
Creepage Distance	mm	≥2500	≥4450	≥4500	≥8630
Applicable Cable Cross Section	mm ²	240~1600	240~1600	240~1600	240~2500
Applicable Cable Shield/Protective Sheath		Aluminum sheath, Rippled Aluminum Sheath, Copper Band + Copper Wire			
Weight	kg	About 85	About 125	About 150	About 760

Operating Environment

Conductor Rated Temperature	Normal Operation	℃	90			
	Short Circuit	℃	250			
Adaptable Ambient Temperature Range		℃	-40~+40			
Altitude Height of Using Area		m	≤2500			
Allowable Seismic Intensity		Degree	Ⅶ			
Allowable Horizontal Pull Force of Connecting Wire		kN	≥2.0			
Bending Strength		kN.m	9.1	9.1	9.1	21.6
Maximum Internal Stress		MPa	2.0	2.0	2.0	2.0

Dry-type GIS Termination/ Transformer Termination

Product Model

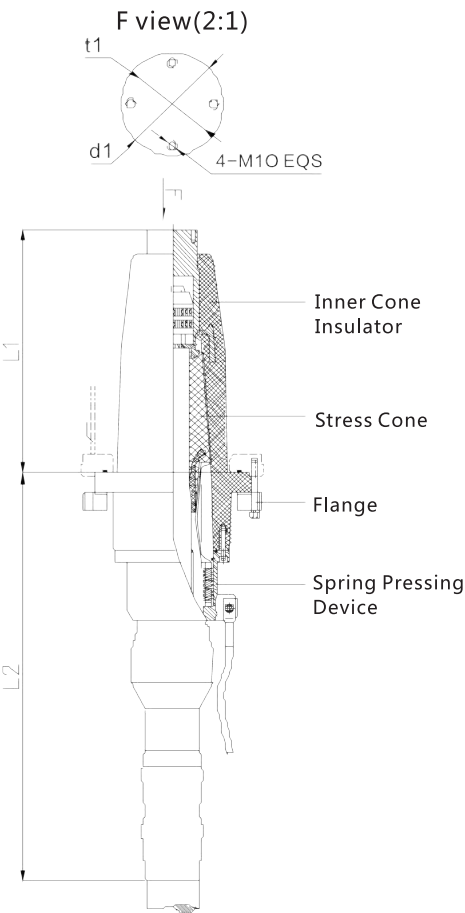
Dry-type insulated GIS termination for XLPE insulated power cable
Dry-type insulated(Transformer) oil-immersed termination for XLPE insulated power cable with

CD YJZGG □/□ 1X□□□□mm²
CD YJZYG □/□ 1X□□□□mm²
Voltage × Cable cross section

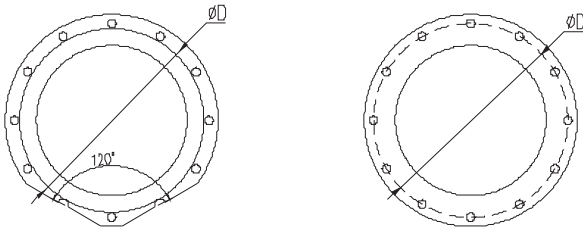
Product Features

- It is dry-type interface, no need for oil filling
- Its size is in accordance with IEC 62271-209 and GB/T 22381 size
- It uses pressure sealed epoxy casing, which can be operated at SF6 or transformer oil environment.
- It is pluggable structure, and the epoxy bushing could be pre-installed GIS/Transformer equipment.

External Structure and Installation Size



Rated voltage U ₀ /U/(U _m)	56/66/(72.5)	64/110/(126)	76/138/(145)	127/220/(252)
L1	310/583	470/757	470/757	620/960
L2	915	915	915	975
t1	80	80	80	110
d3	99	99	99	174/200
D				



Product Appearance



66kV GIS Termination 110kV/138kV GIS Termination 220kV GIS Termination

Technical Parameters

Rated Voltage U ₀ /U/(U _m)	kV	56/66/(72.5)	64/110/(126)	76/138/(145)	127/220/(252)
Standard		IEC60840,GB/T 11017			IEC62067, GB/Z 18890
		GB/T 22381, IEC62271-209			
Rated Frequency	Hz	50~60	50~60	50~60	50~60
Rated Current	A	Not less than the connecting cable			
Short Circuit Current	A	Not less than the connecting cable			
Conductor Connection		Crimping Type	Crimping Type	Crimping Type	Crimping Type
Electric Field Control Method		Geometry Control Method(Stress Cone)			
Stress Cone Material		Silicone Rubber	Silicone Rubber	Silicone Rubber	Silicone Rubber
Bushing Material		Epoxy Resin			
Stress Cone Fixation		Spring Pressing Device			
Outer Diameter of Bushing		252	298	298	559
Structural Length		310/583	470/757	470/757	620/960
SF6 Working Pressure	Mpa	0.2-0.6	0.2-0.6	0.2-0.6	0.25-0.6
Applicable Cable Cross Section	mm ²	240-1600	240-1600	240-1600	240-2500
Applicable Cable Shield/Protective Sheath		Aluminum sheath, Rippled Aluminum Sheath, Copper Band + Copper Wire			
Weight	kg	About 40	About 50	About 50	About 190

Operating Environment

Conductor Rated Temperature	Normal Operation	℃	90
	Short Circuit	℃	250
Adaptable Ambient Temperature Range		℃	-40~+40
Altitude Height of Using Area		m	≤2500
Allowable Seismic Intensity		Degree	Ⅷ

Fully Dry Flexible Cable Termination

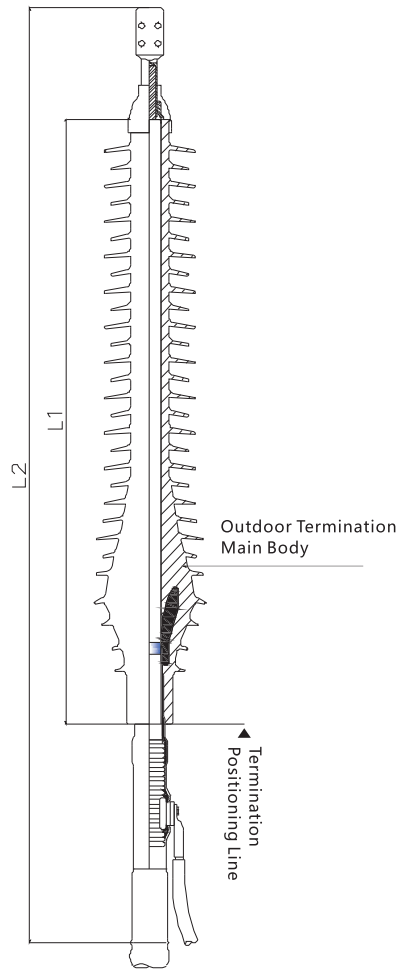
Product Model

XLPE insulated power cable with dry flexible cable termination
CD YJZWG4 □/□ 1X□□□□mm²
Voltage × Cable cross section

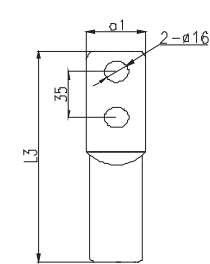
Product Features

- Silicone rubber material with excellent performance has excellent anti-flashover, UV resistant, anti-fouling and drowning property to meet the service life of 30 years.
- Prefabricate the stress cone, insulator and umbrella skirt integratedly in factory clean room.
- Oil-free, explosion-proof, maintenance-free
- Light weight,ease installation. The assembly can be completed on the ground and be lifted to install at final position.
- Flexible termination; adapts to upright or inclined installation and operation.
- Meet the IV level anti-fouling level; can be used indoor and various outdoor areas of foul environment.

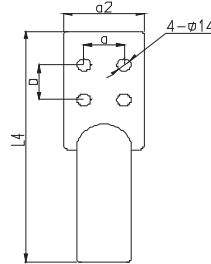
External Structure and Installation Size



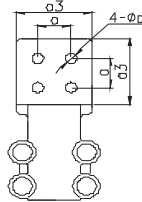
Rated voltage U ₀ /U/(U _m)	56/66/(72.5)	64/110/(126)	76/138/(145)
L1	1120	1375	1375
L2	2200	2450	2450
L3	190, 220	190, 220	190, 220
L4	320, 350	320, 350	320, 350
a1	40, 44	40, 44	40, 44
a2	75, 100, 120	75, 100, 120	75, 100, 120
a3	90	90	90
a	40	40	40
d	14	14	14



Suitable for cable cross-section of 240-500mm²



Suitable for cable cross-section of 630-1600mm²



Universal clip, rotatable, suitable for any cable cross-section

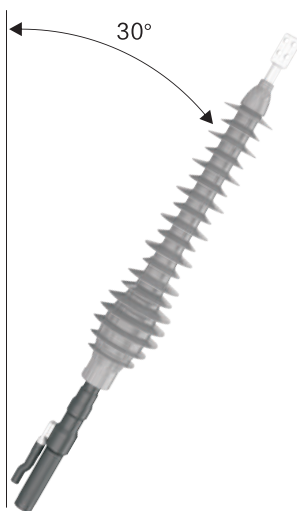
Product Appearance



66kV Dry Termination



110 Dry Termination



Maximum Inclination Angle is 30°

Technical Parameters

Rated Voltage U ₀ /U/(U _m)	kV	56/66/(72.5)	64/110/(126)	76/138/(145)
Standard		IEC60840, GB11017		
Rated Frequency	Hz	50~60	50~60	50~60
Rated Current	A	Not less than the connecting cable		
Short Circuit Current	A	Not less than the connecting cable		
Conductor Connection		Crimping Type	Crimping Type	Crimping Type
Electric Field Control Method		Geometry Control Method(Stress Cone)		
Stress Cone Material		Silicone Rubber	Silicone Rubber	Silicone Rubber
Pollution Level		I~IV		
Leakage Distance(Leakage Ratio)	mm/kV	>31		
Creepage Distance	mm	≥2300	≥4100	≥4500
Applicable Cable Cross Section	mm ²	240~1600	240~1600	240~1600
Applicable Cable Shield/Protective Sheath		Aluminum sheath, Rippled Aluminum Sheath, Copper Band + Copper Wire		
Weight	kg	About 25	About 30	About 30

Operating Environment

Conductor Rated Temperature	Normal Operation	°C	90
	Short Circuit	°C	250
Adaptable Ambient Temperature Range	°C	-40~+40	
Altitude Height of Using Area	m	≤2500	
Allowable Seismic Intensity	Degree	Ⅷ	
Allowable Horizontal Pull Force of Connecting Wire	kN	≥2.0	

Integrated Prefabricated Joint

Product Model

XLPE insulated power cable with integrated prefabricated rubber insulation straight through joint

CD YJJT12 □/□ 1X□□□□mm²

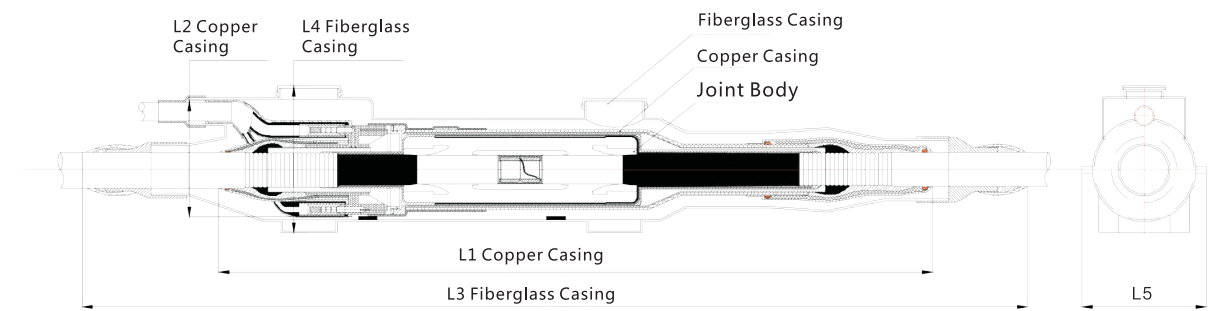
CD YJJJ12 □/□ 1X□□□□mm²

Voltage X Cable cross section

Product Features

- Design electric field distribution with finite element, reinforced insulation of stress cone, high-pressure shielding tube and joint, and mold outer shield layer with high-quality silicone rubber to ensure excellent electrical reliability and mechanical properties. The conductor adopts crimp connection and the computer controls silicone rubber vulcanization curve.
- Provide coppe casing and fiberglass casing, good mechanical protection and long-term sealing waterproof performance, ensure the safe and reliable operation of joints in harsh environments for long time
- optical cable distribution running status online detection system

External Structure and Installation Size

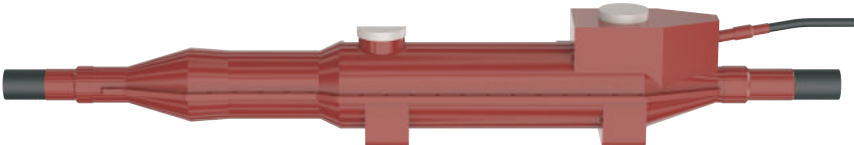


Rated voltage U ₀ /U/(U _m)	56/66/(72.5)	64/110/(126)	76/138/(145)	127/220/(252)
L1	1650	1650	1650	2087
L2	290	290	290	405
L3	2200	2200	2200	2829
L4	400	400	400	535
L5	380	380	380	500

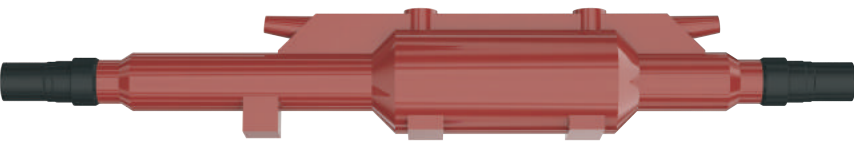
Product Appearance



110kV Joint



66kV Joint



220kV Joint

Technical Parameters

Rated Voltage U ₀ /U/(U _m)	kV	56/66/(72.5)	64/110/(126)	76/138/(145)	127/220/(252)
Standard		IEC 60840, GB/T 11017	IEC 60840, GB/T 11017	IEC 60840, GB/T 11017	IEC 62067, GB/Z 18890
Rated Frequency	Hz	50~60	50~60	50~60	50~60
Rated Current	A	Not less than the connecting cable			
Short Circuit Current	A	Not less than the connecting cable			
Conductor Connection		Crimping Type	Crimping Type	Crimping Type	Crimping Type
Electric Field Control Method		Geometry Control Method(Stress Cone)			
Joint Body Material		Silicone Rubber	Silicone Rubber	Silicone Rubber	Silicone Rubber
Outer Protective Layer Material		Copper Outer Casing, Copper + PE, Strengthen Glass Fiber+ Epoxy Resin			
Filling Glue Material		HV Cable Sealant			
Applicable Cable Cross Section	mm²	240~1600	240~1600	240~1600	240~2500
Applicable Cable Shield/Protective Sheath		Aluminum sheath, Rippled Aluminum Sheath, Copper Band + Copper Wire			
Weight	kg	About 70	About 80	About 85	About 203

Operating Environment

Conductor Rated Temperature	Normal Operation	℃	90
	Short Circuit	℃	250
Adaptable Ambient Temperature Range	℃	-40~+40	
Altitude Height of Using Area	m	≤2500	
Allowable Seismic Intensity	Degree	Ⅷ	
Joint Laying Method		Tunnel, Flooding, Direct Bury and so on	

Combined Assembly Type Joint

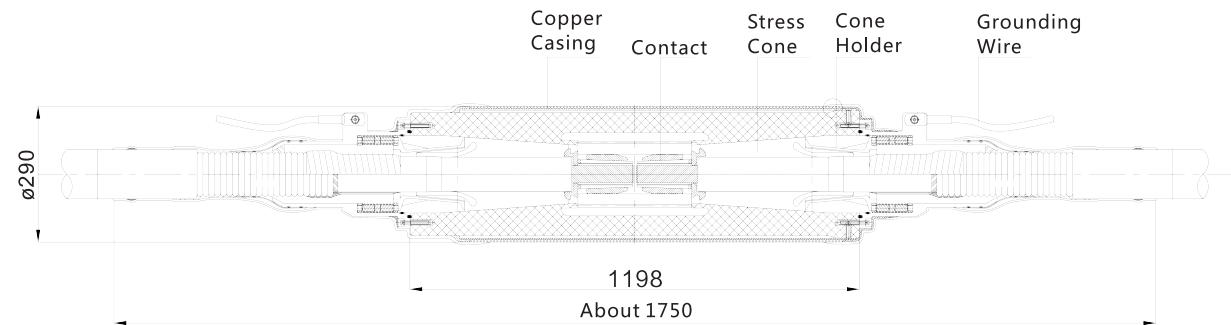
Product Model

Prefabricated rubber insulation part straight joint for XLPE insulated power cable CD YJJJZ □/□ 1X□□□□mm²
Prefabricated rubber insulated insulation part sectionalized joint for XLPE insulated power cable CD YJJTZ □/□ 1X□□□□mm²
VoltageX Cable cross section

Product Features

- It is full dry structure, no leakage factor.
- Insulation main body of joint adopts integral casting and has copper protective casing in its outside. It has excellent waterproof sealing performance, resistant to mechanical damage.
- The fixation of stress cone adopts spring pressing device to ensure stable electrical performance.
- Pluggable structure can achieve the connection of cable with different cross sections.
- It can provide fiberglass casing as alternative accessory.

External Structure and Installation Size



Product Appearance



Assembled-type Cable Joint

Technical Parameters

Rated Voltage $U_0/U/(U_m)$	kV	56/66/(72.5)	64/110/(126)	76/138/(145)
Standard		IEC60840,IEC62271-209,GB11017,IEEE404		
Rated Frequency	Hz	50~60	50~60	50~60
Rated Current	A	Not less than the connecting cable		
Short Circuit Current	A	Not less than the connecting cable		
Conductor Connection		Crimping Type	Crimping Type	Crimping Type
Electric Field Control Method		Geometry Control Method(Stress Cone)		
Material of Connector Body		Epoxy+Metal Casing		
Material of Waterproof Protective Casing		HV Cable Sealant		
Applicable Cable Cross Section	mm²	240-1600	240-1600	240-1600
Applicable Cable Shield/Sheath		Aluminum sheath, Rippled Aluminum Sheath, Copper Band + Copper Wire		
Weight	kg	About 150	About 180	About 180

Operating Environment

Conductor Rated Temperature	Normal Operation	℃	90
	Short Circuit	℃	250
Adaptable Ambient Temperature Range		℃	-40~+40
Altitude Height of Using Area		m	≤2500
Allowable Seismic Intensity		Degree	Ⅷ
Joint Laying Method			Tunnel, Flooding, Direct Bury and so on

Y-type Branch Joint

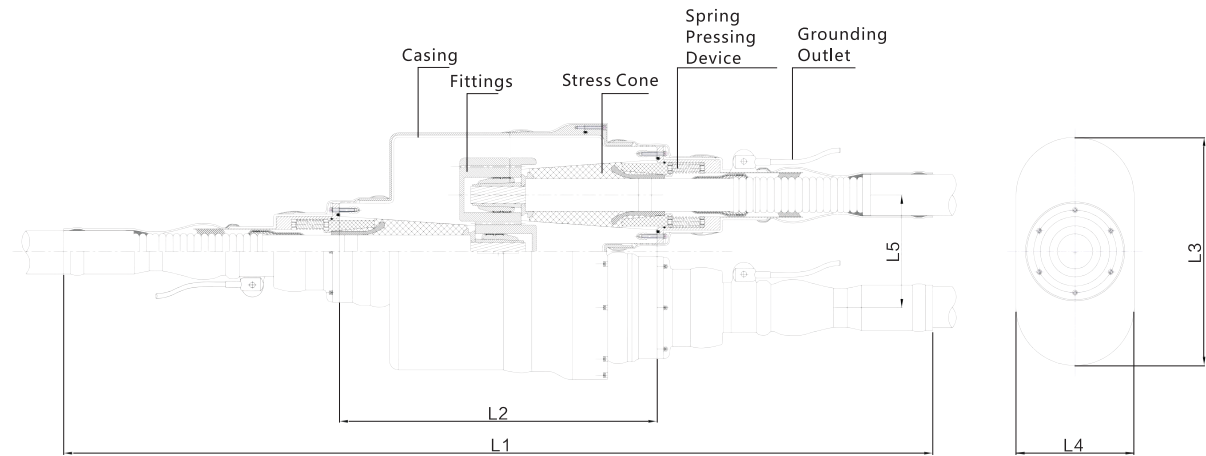
Product Model

Y-type branch joint for XLPE insulated power cable CD YJJF2 □/□ 1X□□□□mm²
Voltage X Cable cross section

Product Features

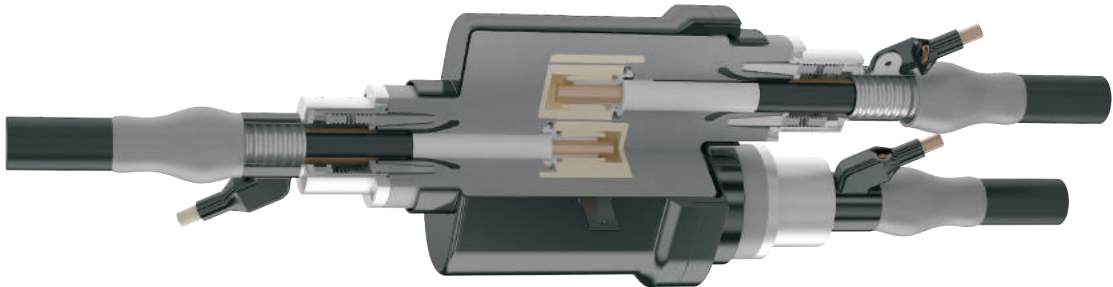
- It is fully dry structure, which prevents accident that caused by inflatable structure leakage.
- Branch main bodies are a whole. The casing is metal component which is water-proof, moisture- proof and resistance to mechanical stress damage, which ensure that each branch joint is normally operated in various installation environment.
- It has compact structure and small installation space which not only can be installed in cable well or cable ditch, but also can bury directly.
- Branch main bodies are prefabricated in factory. During installation, it only needs to insert the processed cable with stress cone which is convenient, it because that there is no any filler or insulated gas in branch body, it doesn' t need any repair during operation.

External Structure and Installation Size



Rated voltage	U ₀ /U/(U _m)	56/66/(72.5)	64/110/(126)	76/138/(145)
L1		About 2550	About 2640	About 2640
L2		725		
L3		540		
L4		300		
L5		275		

Product Appearance



Y-type Branch joint

Technical Parameters

Rated Voltage	U ₀ /U/(U _m)	kV	56/66/(72.5)	64/110/(126)	76/138/(145)
Standard			IEC60840, IEC62271-209,GB11017,GB/T22381		
Rated Frequency	Hz		50~60	50~60	50~60
Rated Current	A		Not less than the connecting cable		
Short Circuit Current	A		Not less than the connecting cable		
Conductor Connection			Crimping Type	Crimping Type	Crimping Type
Electric Field Control Method			Geometry Control Method(Stress Cone)		
Material of Connector Body			Silicone Rubber	Silicone Rubber	Silicone Rubber
Material of Waterproof Protective Casing			Spring Pressing Device	Spring Pressing Device	Spring Pressing Device
Applicable Cable Cross Section	mm ²		240-1600	240-1600	240-1600
Applicable Cable Shield/Sheath			Aluminum sheath, Rippled Aluminum Sheath, Copper Band + Copper Wire		
Weight	kg		About 260	About 260	About 260

Operating Environment

Conductor Rated Temperature	Normal Operation	℃	90
	Short Circuit	℃	250
Adaptable Ambient Temperature Range		℃	-40~+40
Joint Laying Method			Tunnel, Working Well and so on



290/500kV technical parameter

Technical Parameter

290/500kV series cable accessory products produced by CYG Electric all complied with GB/T 22078, IEC 62067 standards and have passed routine tests, type tests and prequalification test. The manufacturing process of products are managed in accordance with ISO9001 Quality Assurance System.

This series of products include porcelain outdoor termination, composite outdoor termination, GIS termination and sectionalized/straight through joint which can satisfy all working conditions of 290/500KV cable.

Test Item	Standard Requirements and Test Results
	290/500 kV
Partial Discharge Test	435 kV
	No detectable discharge
Thermal Cycle Voltage Test	580 kV
	Heat the conductor till its temperature is within the range of 95℃to 100℃ for a total of 20 cycles(Each cycle is 24h, heating for 8h then cooling for 16h), no breakdown, no flashover.
Operating Impulse Voltage Test	1550 kV
	95℃~100℃, Positive and negative poles each for 10 times, no breakdown, and no flashover
Power Frequency Voltage Test after Impulse Voltage Test	580 kV 、15min
	No breakdown, no flashover
DC Voltage Test for Outer Protective Layer of Directly Buried Joint (Straight Joint/ Sectionalized Joint)	Apply 25kv between the metal sheath at both ends of the joint, between the power cable metal sheath at each end and the grounding outer surface of the joint outer sheath for 1min, no break down.
Impulse Voltage Test for Outer Protective Layer of Directly Buried Joint (Straight Joint/ Sectionalized Joint)	Apply 75kv for impulse voltage test to the metal sheath at both ends of the joint, and apply 37.5kv impulse voltage test between the metal sheath at each end of the cable and the grounding outer surface of the joint outer protective layer, no break down



Porcelain Outdoor Termination

Product Model

Porcelain outdoor termination for XLPE power cable with liquid filled CD YJZWY4 290/500 1X□□□□mm²

Product Features

- The porcelain bushing is made by high strength electrical porcelain, while the upper and base flanges are made by corrosion resistant alloy material.
- The silicone rubber stress cone is made by special design, which has excellent ageing resistance and will not occur stress relaxation under long operation that can ensure the service life of stress cone.
- The gap between stress cone and inner wall of porcelain bushing is filled by polyisobutene.
- Its pollution level is IV, and can be used in different environment

Electrical Parameters

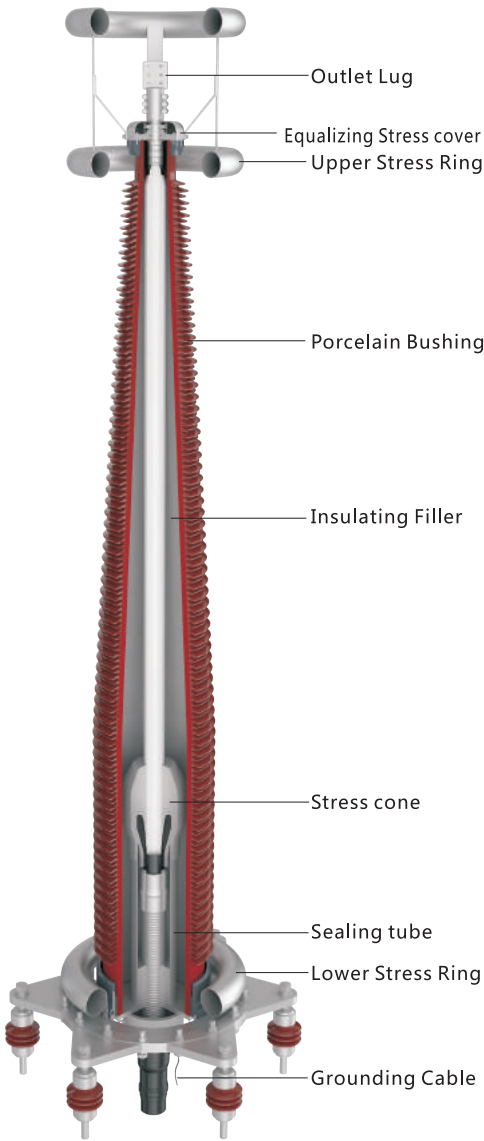
Rated Voltage $U_0/U/(U_m)$	kV	290/500/(550)
Rated Frequency	Hz	50/60
Lighting Impulse Voltage	kV	1550
Power Frequency Withstand Voltage	kV	580
Rated Current	A	Not less than the connecting cable
Short Circuit Current	A	Not less than the connecting cable
Leakage Distance(Leakage Ratio)	mm/kV	≥31
Creepage Distance	mm	≥18755
Support Insulator Withstand Voltage (AC/DC)	kV	10/20

Electrical Parameters

Structural Height (Not include Line Clip height)	mm	6340
Umbrella Skirt Diameter	mm	Φ820(max)
Bending strength	kN.m	50
Maximum Internal Pressure	MPa	2.3
Weight	kg	About 2500

Product Structure

Standard	IEC62067、GB/T 22078	
Conductor Connection	Crimping	
Electric Field Control Method	Geometry Control Method(Stress Cone)	
Stress Cone Material	Silicone Rubber	
Pollution Level	IV	
Insulating Filler	Polyisobutylene	
Applicable Cable Shield/Protective Sheath	Aluminum sheath, Rippled Aluminum Sheath, Copper Band + Copper Wire	
Grounding Connection	Welding	
Applicable Cable Cross Section	800–3500mm ²	
Operation Condition		
Adaptable Ambient Temperature Range	℃	–40~+40
Altitude Height of Using Area	m	≤1000
Allowable Seismic Intensity	Degree	Ⅷ



Composite Outdoor Termination

Product Model

Composite outdoor termination for XLPE insulated power cable with liquid-filled CD YJZFY4 290/500 1X□□□□mm²

Product Features

- Composite insulated bushing is made of epoxy bushing outer silicone rubber umbrella skirt reinforced by glass fiber. Upper and lower flanges are made of corrosion-resistant alloy material.
- Silicone rubber stress cone with special formula has excellent anti-aging property; it has no stress relaxation and guarantees service life after long-term use.
- PIB material should be used for filling stress cone and composite bushing inner wall.
- Anti-fouling grade can reach IV level and can be used indoor and outdoor areas of corresponding polluted environment.

Electrical Parameter

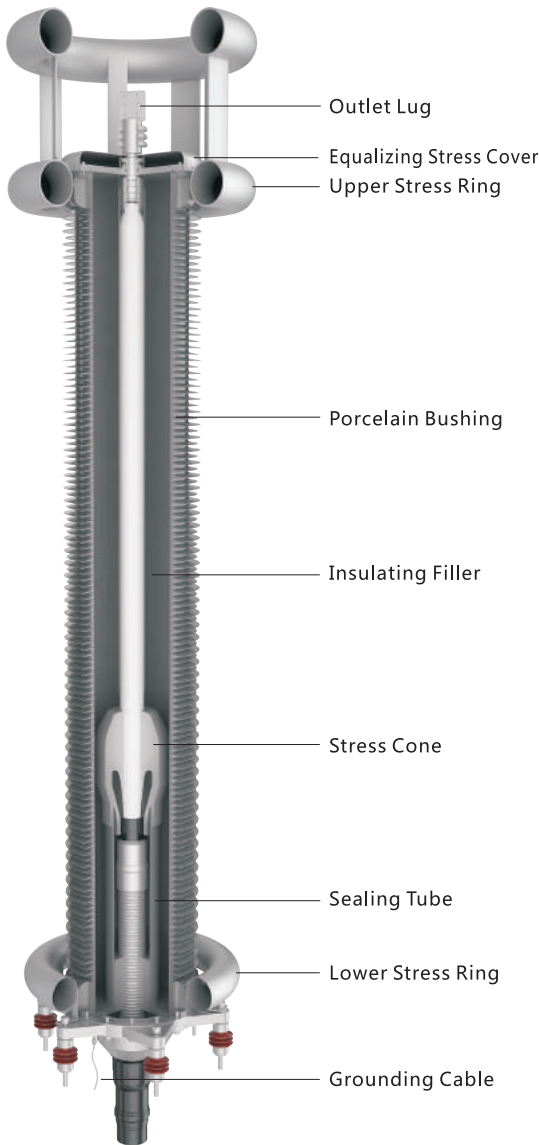
Rated Voltage $U_0/U/(U_m)$	kV	290/500/(550)
Rated Frequency	Hz	50/60
Lighting Impulse Voltage	kV	1550
Power Frequency Withstand Voltage	kV	580
Rated Current	A	Not less than the connecting cable
Short Circuit Current	A	Not less than the connecting cable
Leakage Distance(Leakage Ratio)	mm/kV	≥31
Creepage Distance	mm	≥17700
Support Insulator Withstand Voltage	kV	10/20

Mechanical Parameter

Structural Height (Not include Line Clip height)	mm	5335
Umbrella Skirt Diameter	mm	Φ784
Bending strength	kN.m	26
Maximum Internal Pressure	MPa	2.0
Weight	kg	About 2100

Product Structure

Standard	IEC62067、GB/T 22078	
Conductor Connection	Crimping	
Electric Field Control Method	Geometry Control Method(Stress Cone)	
Stress Cone Material	Silicone Rubber	
Pollution Level	IV	
Insulating Filler	Polyisobutylene	
Applicable Cable Shield/Protective Sheath	Aluminum sheath, Rippled Aluminum Sheath, Copper Band + Copper Wire	
Grounding Connection	Welding	
Applicable Cable Cross Section	800–3500mm²	
Operation Condition		
Adaptable Ambient Temperature Range	℃	–40~40
Altitude Height of Using Area	m	≤2500
Allowable Seismic Intensity	Degree	VII



Dry-Type GIS Termination/ Oil-immersed Transformer Termination

Product Model

Dry-type insulated GIS termination for XLPE insulated power cable CD YJZGG 290/500 1X□□□□mm²
Dry-type insulated (Transformer) Oil-immersed Termination for XLPE insulated power cable CD YJZYG 290/500 1X□□□□mm²

Product Features

- It is dry-type interface, doesn't need to fill oil.
- Its size is in accordance with IEC 62271-209 and GB/T 22381.
- It uses pressure sealed epoxy bushing and can be operated under SF6 or transformer oil environment.
- It is pluggable structure, and the whole termination is made of epoxy bushing and plug head. The epoxy bushing can be pre-installed in GIS/transformer factory, and separable connector can be assembled on site.

Electrical Parameter

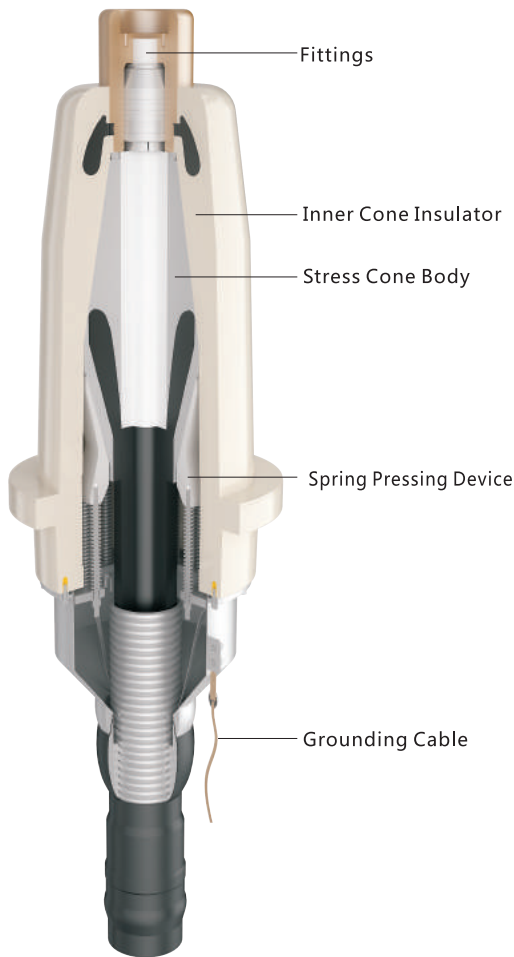
Rated Voltage $U_0/U/(U_m)$	kV	290/500 (550)
Rated Frequency	Hz	50/60
Lighting Impulse Voltage	kV	1550
Power Frequency Withstand Voltage	kV	580
Rated Current	A	Not less than the connecting cable
Short Circuit Current	A	Not less than the connecting cable

Mechanical Parameter

Structural Length (Specified according to IEC/GB)	mm	960/1400
Sf ₆ Working Pressure	MPa	0.25–0.6
Weight	kg	About 380

Product Structure

Standard	IEC62067, IEC62271–209, GB/T 22078, GB/T 22381	
Conductor Connection	Crimping Type	
Electric Field Control Method	Stress Cone	
Stress Cone Fixation	Spring Pressing Device	
Bushing Material	Epoxy Resin	
Applicable Cable Shield/Protective Sheath	Aluminum sheath, Rippled Aluminum Sheath, Copper Band + Copper Wire	
Grounding Connection		
Applicable Cable Cross Section	800–3500mm²	
Operation Condition		
Adaptable Ambient Temperature Range	℃	–40~+40
Altitude Height of Using Area	m	≤2500
Allowable Seismic Intensity	Degree	VII



Integrated Prefabricated Cable Joint

Product Model

Integrated prefabricated rubber insulation straight joint for XLPE insulated power cable

Integrated prefabricated rubber insulation sectionalized joint for XLPE insulated power cable

CD YJJT12 290/500 1X□□□□mm²

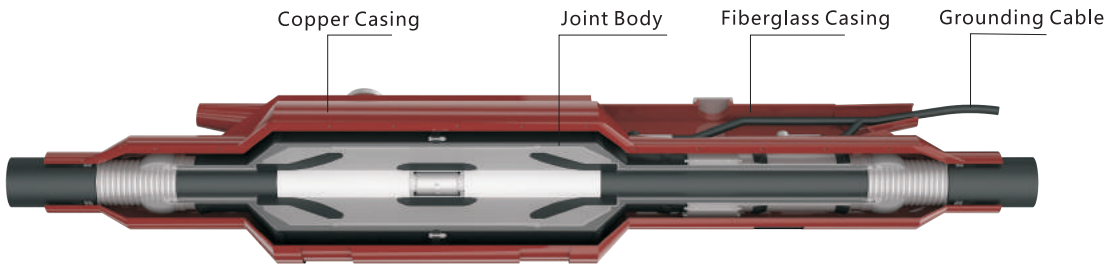
CD YJJJ12 290/500 1X□□□□mm²

Product Features

- It adopts finite element to design electric field distribution. The stress cone, HV shielding tube and joint reinforced insulation adopts high-quality silicone rubber. The computer controls silicone rubber vulcanization curve, which ensures excellent electrical reliability and mechanical properties. The conductor adopts crimping connection.
- It can provide insulated and straight connection according to installation method.
- Provide cable running status online detection system.

Electrical Parameter

Rated Voltage $U_0/U/(U_m)$	kV	290/500 (550)
Rated Frequency	Hz	50/60
Lighting Impulse Voltage	kV	1550
Power Frequency Withstand Voltage	kV	580
Rated Current	A	The same as cable
Short Circuit Current	A	The same as cable



Product Structure

Standard	GB22078、IEC62067、IEEE404	
Conductor Connection	Crimping	
Electric Field Control Method	Geometry Control Method(Stress Cone)	
Main Material	Silicone Rubber	
Outer Protective Layer Material	Copper Outer Casing; Copper+PE; Strengthen Glass Fiber+ Epoxy Resin	
Filling Glue Material	HV Cable Sealant	
Applicable Cable Shield/Protective Sheath	Aluminum sheath, Rippled Aluminum Sheath, Copper Band + Copper Wire	
Operation Condition		
Adaptable Ambient Temperature Range	℃	-40~+40
Altitude Height of Using Area	m	≤2500
Allowable Seismic Intensity	Degree	Ⅷ
Weight	kg	350

DC Accessories Series

Compared with traditional AC transmission technology, DC transmission has the advantages of large transmission capacity, low loss, the need for only two positive and negative wire of the line and low cost. With the advancement of the “West-to-East Power Transmission” and “Cross-sea Power Transmission” projects, high-voltage DC cable system is becoming an integral part of the future sustainable energy system and can help large-capacity, long-distance power transmission across regions. As a supporting DC cable product, cable termination and joints are independently designed and developed by our company. We have independent intellectual property rights and our performance indicators have reached the international advanced level. Our HVDC cable accessory products conform to the TICW 7.4-2012 standard and pass type testing. The product manufacturing process is managed in accordance with the ISO 9001 quality assurance system.

Electrical Parameters

VSC Load Cycle Test

The load cycle includes heating cycle and cooling cycle: heating for 8 hours and natural cooling for 16 hours as one cycle. During the last two hours of the heating cycle, the conductor temperature is maintained at 70°C. The heating cycle applies direct voltage UT, starting from the negative polarity. One of the inversions is consistent with the stop time of the load current in 24-hour load cycle. Each continuously applies 12 cycles.

VSC Superimposed Impulse Voltage Test

Test under Hot Conditions

DC Superimposed Operation Impulse Voltage Test

- Preheat and apply positive polarity U0 voltage for at least 10h;
Under positive polarity U0, superimposed positive polarity operation impulse voltage UP2, S, continuously for 10 times.
Under positive polarity U0, superimposed negative polarity operation impulse voltage -UP2, O, continuously for 10 times.
- Preheat and apply negative polarity U0 voltage for at least 10h;
Under negative polarity -U0, superimposed negative polarity operation impulse voltage -UP2, S, continuously for 10 times.
Under negative polarity -U0, superimposed positive polarity operation impulse voltage UP2, O, continuously for 10 times.

DC Superimposed Operation Impulse Voltage Test

- Preheat and apply positive polarity U0 voltage for at least 10h;
Under positive polarity U0, superimposed negative polarity lighting impulse voltage -UP1, continuously for 10 times.
- Preheat and apply negative polarity U0 voltage for at least 10h;
Under negative polarity U0, superimposed positive polarity lighting impulse voltage UP1, continuously for 10 times.

Subsequent DC Voltage Test

- Withstand negative polarity voltage -UT at room temperature, withstand voltage for 2h.

Rated Voltage		± 160 kV	± 200 kV	± 320 kV
VSC Load Cycle Test	UT	296	388.5	592
VSC Superimposed Impulse Voltage Test	U0	160	210	320
	UP2,S	610	800	700
	UP2,O	610	800	700
DC Superimposed Lighting Impulse Voltage Test	U0	160	210	320
	UP1	390	380	480
DC Voltage Test	UT	296	388.5	592

DC Porcelain Outdoor Termination

Product Model

XLPE insulated DC Porcelain Outdoor Termination
DC-ZWY □□□kV 1 X□□□□mm²

Porcelain outdoor termination is a traditional outdoor termination with stable and reliable operation. Porcelain bushing with high-strength electric porcelain has anti-fouling performance and easy to clean and maintain. The insulation level, current carrying capacity, operating temperature and other performances of the termination can fully meet the operational requirements of the DC cable system.



Porcelain Outdoor Termination

Rated Voltage	kV	± 160	± 200	± 320
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Technical Parameters

Standard		1.International Power Grid Conference Standard CIGRE 219 2.TICW7-2012<Test Specification for Rated Voltage 500kv and Below of HVDC Transmission with Extruded Insulated Power Cable System>		
Rated Current	A	Not less than the connecting cable		
Short Circuit Current		Not less than the connecting cable		
Conductor Connection		Crimping Type		
Electric Field Control Method		Electrical Conductivity Stress Cone		
Connector Body Material		DC Silicone Rubber		
Insulating Filler		SI-72 Insulating Filler		
Support Insulator Withstand Voltage	kV	10/20		
Leakage Distance (Leakage Ratio)	mm/kV	>31		
Creepage Distance	mm	≥ 11000	≥ 11000	≥ 14322
Applicable Cable Cross Section	mm ²	240-1600	240-1600	240-1800
Weight	kg	About 980	About 980	About 2500
Applicable Cable Shield /Protective Sheath		Aluminum protective sheath, Rippled Aluminum protective Sheath, Copper Band + Copper Wire		

Operating Environment

Conductor Rated Temperature	Normal Operation	℃	70	
	Short Circuit	℃	160	
Adaptable Ambient Temperature Range		℃	-40~+40	
Altitude Height of Using Area		m	1000	
Allowable Seismic Intensity		Degree	Ⅷ	
Allowable Horizontal Pull Force of Connecting Wire		kN	≥2.0	
Bending Strength	kN.m	13	32	32
Maximum Internal Stress	MPa	2	2.5	2.5

Size Parameters

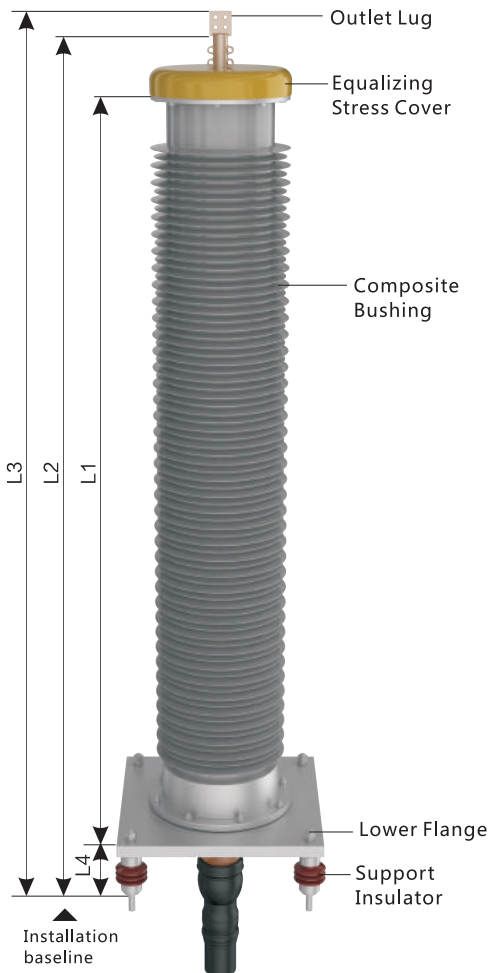
L1		2700	2700	3750
L2		3210	3210	4260
L3		3363	3363	4413
L4		210	210	210
A		566	566	566
B		>250	>250	>250
C		>400	>400	>400
D		34	34	34
a		45	45	45
b		104	104	104
r		14	14	14

DC Composite Outdoor Termination

Product Model

Composite Outdoor Termination for XLPE Insulated DC Cable
DC-ZFY □□□kV 1 X□□□□mm²

Composite Outdoor Termination adopts glass fiber reinforced epoxy resin hollow bushing to replace traditional porcelain insulated bushing. Compared to traditional materials, this termination has greater advantages, such as better anti-seismic performance, explosion-proof performance and insulation performance. It can be operated in coastal and highly contaminated areas at ambient temperatures of -40℃ to +40℃, especially in urban centers, device-intensive areas, and areas in which need to prevent spatter. Its insulation level, current carrying capacity, operating temperature and other performances can fully meet the requirements of matching cable.



Composite Outdoor Termination

Rated Voltage	kV	± 160	± 200	± 320
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Technical Parameters

Standard		1.International Power Grid Conference Standard CIGRE 219 2.TICW7-2012<Test Specification for Rated Voltage 500kv and Below of HVDC Transmission with Extruded Insulated Power Cable System>		
Rated Current	A	Not less than the connecting cable		
Short Circuit Current		Not less than the connecting cable		
Conductor Connection		Crimping Type		
Electric Field Control Method		Electrical Conductivity Stress Cone		
Connector Body Material		DC Silicone Rubber		
Insulating Filler		SI-72 Insulating Filler		
Support Insulator Withstand Voltage	kV	10/20		
Leakage Distance (Leakage Ratio)	mm/kV	>31		
Creepage Distance	mm	≥ 8630	≥ 8630	≥ 13600
Applicable Cable Cross Section	mm ²	240-1600	240-1600	240-1800
Weight	kg	About 760	About 760	About 1050
Applicable Cable Shield /Protective Sheath		Aluminum protective sheath, Rippled Aluminum protective Sheath, Copper Band + Copper Wire		

Operating Environment

Conductor Rated Temperature	Normal Operation	℃	70	
	Short Circuit	℃	160	
Adaptable Ambient Temperature Range		℃	-40~+40	
Altitude Height of Using Area		m	1000	
Allowable Seismic Intensity		Degree	Ⅷ	
Allowable Horizontal Pull Force of Connecting Wire		kN	≥2.0	
Bending Strength	kN.m	13	32	32
Maximum Internal Stress	MPa	2	2.5	2.5

Size Parameters

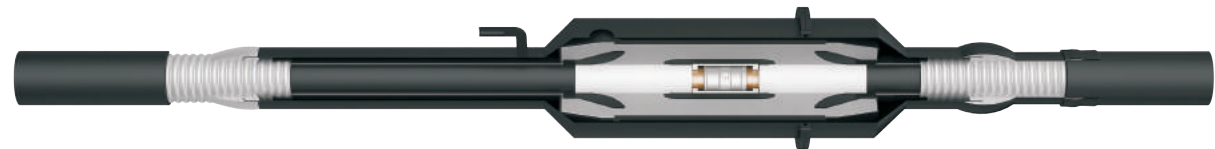
L1		2570	2570	3200
L2		3080	3080	3710
L3		3233	3233	3863
L4		210	210	210
A		566	566	566
B		>250	>250	>250
C		>400	>400	>400
D		34	34	34
a		45	45	45
b		104	104	104
r		14	14	14

DC Cable Joint

Product Model

Integrated prefabricated straight joint for XLPE insulated DC cable DCJTIZ □□□kV 1 X□□□□mm²

The main body of the prefabricated cable joint is made of liquid silicone rubber, which is suitable for composite insulation (XLPE) cable with aluminum or copper conductor, and mainly consists of a joint with two layers of outer casings. The outer casings include a thick-walled copper casing and a sturdy fiberglass casing filled with HV cable sealant. The product has excellent mechanical protective performance, reliable electrical property and excellent sealant performance.



Rated Voltage		kV	± 160	± 200	± 320
Technical Parameters					
Standard		Hz	1.International Power Grid Conference Standard CIGRE 219 2.TICW 7-2012 <Test Specification for Rated Voltage of 500kv and Below of DC Transmission for Extruded Insulated Power Cable System>		
Rated Current		A	The same as cable		
Short circuit Current			The same as cable		
Conductor Connection			Crimping		
Electric Field Control Method			Electrical Conductivity Stress Cone		
Stress Cone Material			DC Silicone Rubber		
External Protective Material			PE/ Copper protective tube		
Filling Material			HV Cable Sealant		
Applicable Cable Cross Section		mm ²	240~1600	240~1600	240~1800
Weight		kg	About 203	About 203	About 350
Applicable Cable Shield /Protective Sheath			Aluminum Protective Sheath, Rippled Aluminum Protective Sheath, Copper Band + Copper Wire		
Operating Environment					
Conductor Rated Temperature	Normal Operation	℃	90		
	Short Circuit	℃	250		
Adaptable Ambient Temperature Range		℃	-25~+40		
Joint Laying Method			Tunnel, Flooding, Direct Bury and so on		
Altitude Height of Using Area		m	≤2500		
Allowable Seismic Intensity		Degree	Ⅶ		
Size Parameter					
L1			2840	2840	4430
L2			Φ410	Φ410	Φ517

Link Box

The CD-JHX cross bonding link box is suitable for the cross bonding of high voltage (35kv, 66kv, 110kv, 220kv) grades of metal shield for single core XLPE cable, which can limit the overvoltage rise of sheath and both sides of sectionalized joint, restrict inductive voltage of metal protective sheath, reduce or eliminate the ring current on the sheath, increase the transmission capacity of the cable, prevent the cable outer sheath from breaking down and ensure the safe and reliable operation of the cable.

The CD-JX link box without SVL and the CD-JBX link box with SVL are suitable for the direct grounding or protective grounding of the high voltage (35kv, 66kv, 110kv, 220kv) metal shield single-core interconnected cable. CD-JX type is used for direct grounding of three phase single core cable sheath, and CD-JBX type is used for protective grounding of three phase single core cable sheath.

In addition, in order to make guard against theft and use real-time online monitoring system to solve current cable circulation, cable temperature, and equipment safety issues in real-time operation of power cable, we develop and produce new environmentally friendly smart link box with a set of HV cable online monitoring system to monitor the condition of the ground circulation and the insulation condition of cable joint, to ensure the safe operation of the power cable.

Product Features

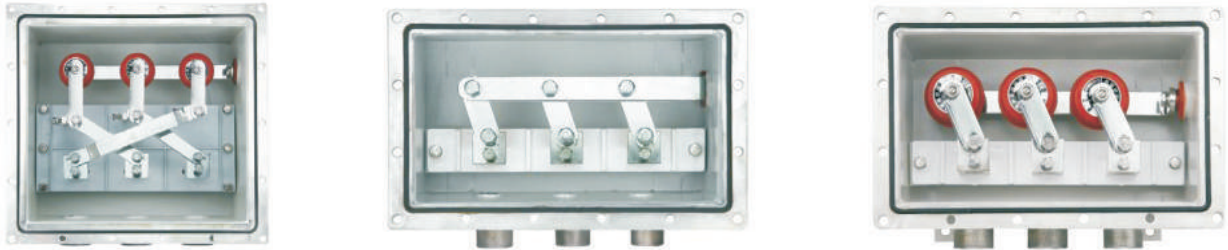
Link box is made of stainless steel plate and special insulation material. It has high mechanical strength, good insulation performance, good sealing and waterproof performance.

Its internal conductive parts are connected with steel plate, which has low contact resistance and excellent electrical conductivity.

CD-JBX products is equipped with CD-BHQ type cable sheath protector, which can effectively prevent the overvoltage of the cable sheath and ensure the normal operation of cable. The protector adopts twice-sealing, once-press molding which has good sealing performance.

Link box with SVL can equip with counter, cable sheath protector, and the counter can automatically record the number of discharges of the protector under over-voltage.

All types of link boxes can meet the requirements of direct bury and wall mounting installation.



Technical Parameter

Test Item	Technical Requirement
DC Withstand Voltage Test	20kV, 1min, For 1min, no flashover, no break down
Lighting Voltage Test	Peak Value40kV,Positive and negative polarity 10 times, no flashover, no breakdown
Insulation resistance test between connecting row and outer casing	Not less than 20MΩ
Contact resistance test of connecting row	Not more than 20 μ Ω

Table 1 Main technical parameter of cable sheath protector

Product Model	Applicable Cable System Voltage kV	Rated Voltage Continuous Operation Effective Value kV	Voltage Effective Value kV	Nominal Discharge Current kA	DC Reference Voltage U _{1mA} kV	Leakage Current at 0.75U _{1mA} μ A	Residual Pressure at Nominal Discharge Current (peak) kV	2000μs Square Wave Current A	Local Volume at 1.05U ₀ pC	4/10μs High Current Withstand (peak) kA
BHQ-7/200	35	2.8	2.24	5	≥4.0	≤30	≤7	200	≤14	65
BHQ-7/400	35、48、110	2.8	2.24	10	≥4.0	≤30	≤7	400	≤14	100
BHQ-7/600	110、220	2.8	2.24	10	≥4.0	≤30	≤7	600	≤14	100
BHQ-10/400	110、220	4.0	3.2	10	≥5.8	≤30	≤10	400	≤14	100
BHQ-10/600	110、220	4.0	3.2	10	≥5.8	≤30	≤10	600	≤14	100

Specification selection table (stainless steel outer box structure)

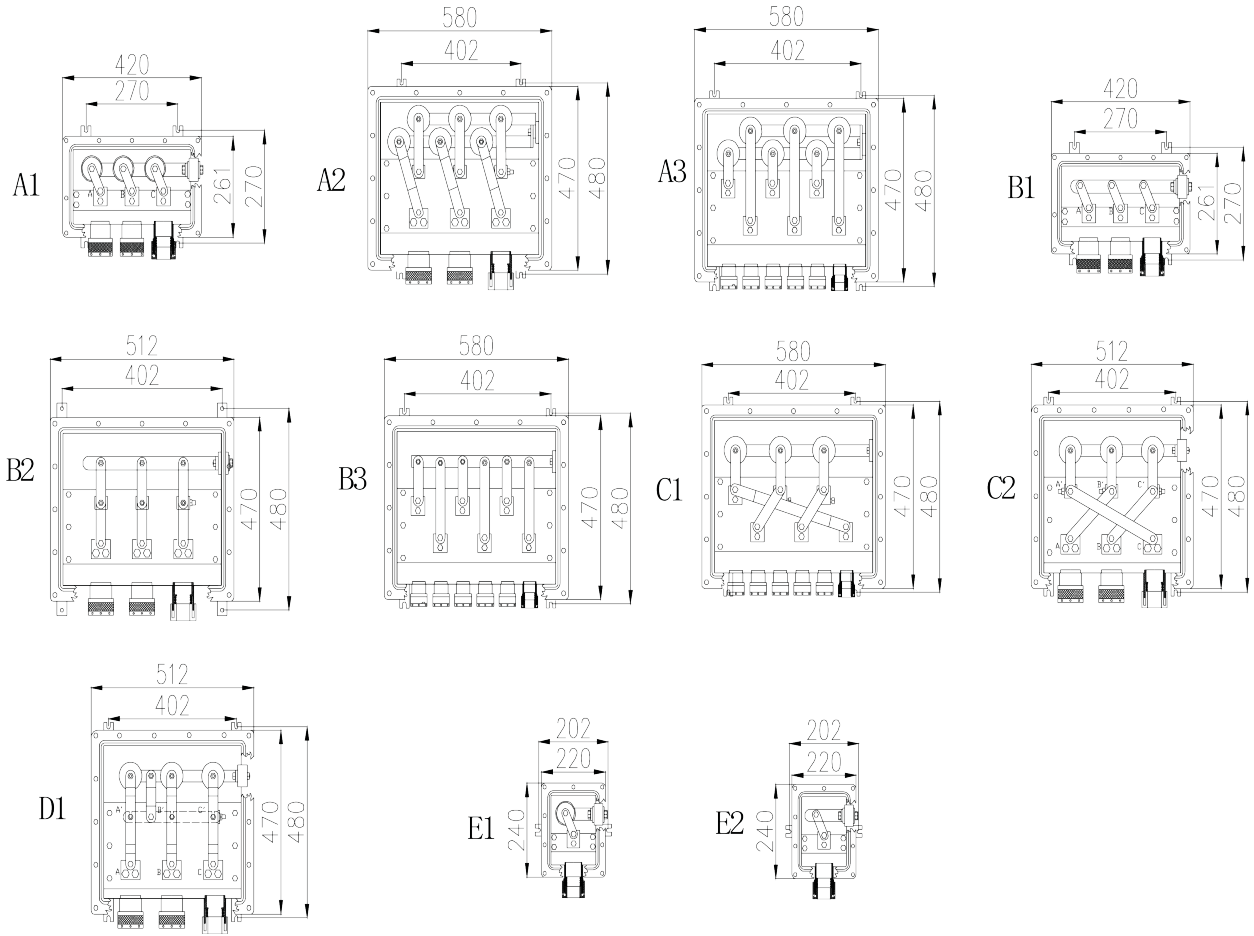
Size	Overall dimensions of link box L*W*H		Fixed size for installation L*W		Applicable cable(single core)	Correspondence drawing
Type	Three phase type	Six phase type	Three phase type	Six phase type	Grounding cable	A ₁ A ₃
Three phase link box with SVL	420×260×196	580×470×230	270×270	460×480	Coaxial cable	A ₂
	520×470×230		350×490		Grounding cable	B ₁ B ₃
Three phase link box without SVL	420×260×196	580×470×230	270×270	460×480	Coaxial cable	B ₂
	520×470×230		350×490		Grounding cable	C ₁
Three phase cross bonding link box		580×470×230		460×480	Coaxial cable	C ₂
	520×470×230		350×490		Coaxial cable	C ₁
Mixed link box	520×470×230		350×490		Grounding cable	E ₁
Single phase link box with SVL	220×262		202		Grounding cable	E ₂
Single phase link box without SVL	220×262		202			

Specification selection table(SMC composite material outer box structure)

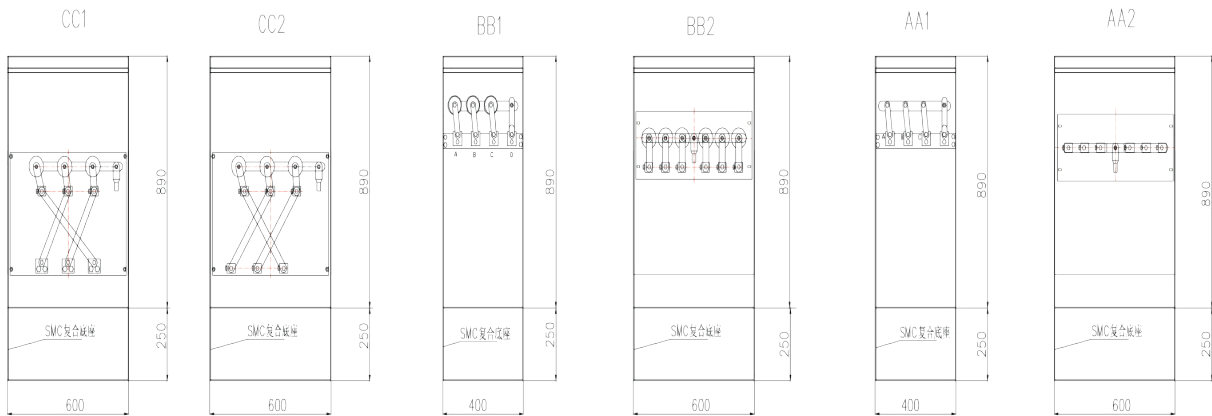
Size	Overall dimensions of link box L*W*H		Applicable cable(single core)	Correspondence drawing
Type	Three phase type	Six phase type		
Three phase link box without SVL	600×320×1140	600×320×1140	Grounding cable	
Three phase cross bonding link box	600×320×1140	600×320×1140	Grounding cable	
Three phase link box with SVL		600×320×1140	Grounding cable	
	600×320×1140		Coaxial cable	

Grounding scheme diagram

Stainless steel outer box



SMC composite outer box body

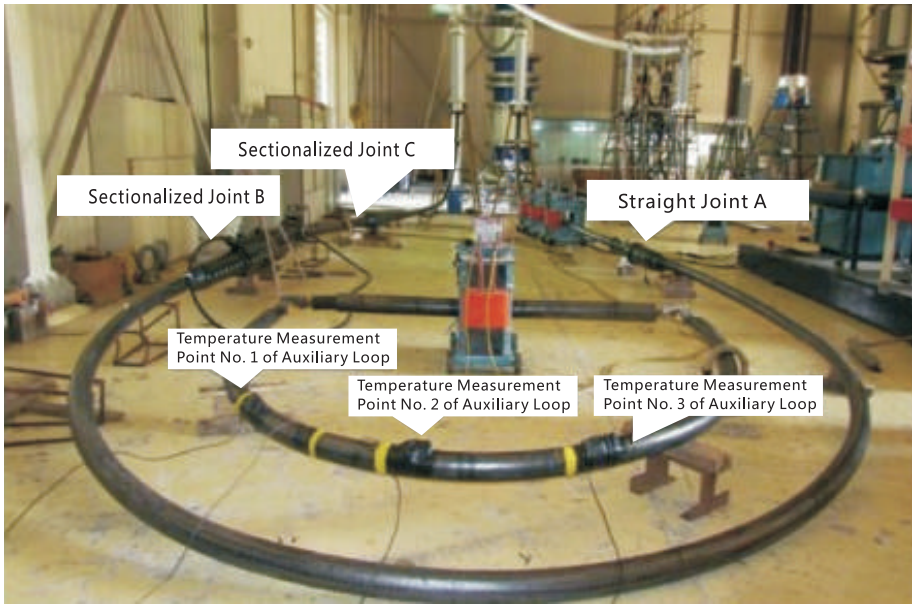


Smart temperature measuring cable joint

System performance parameters and key indicators

System performance parameter

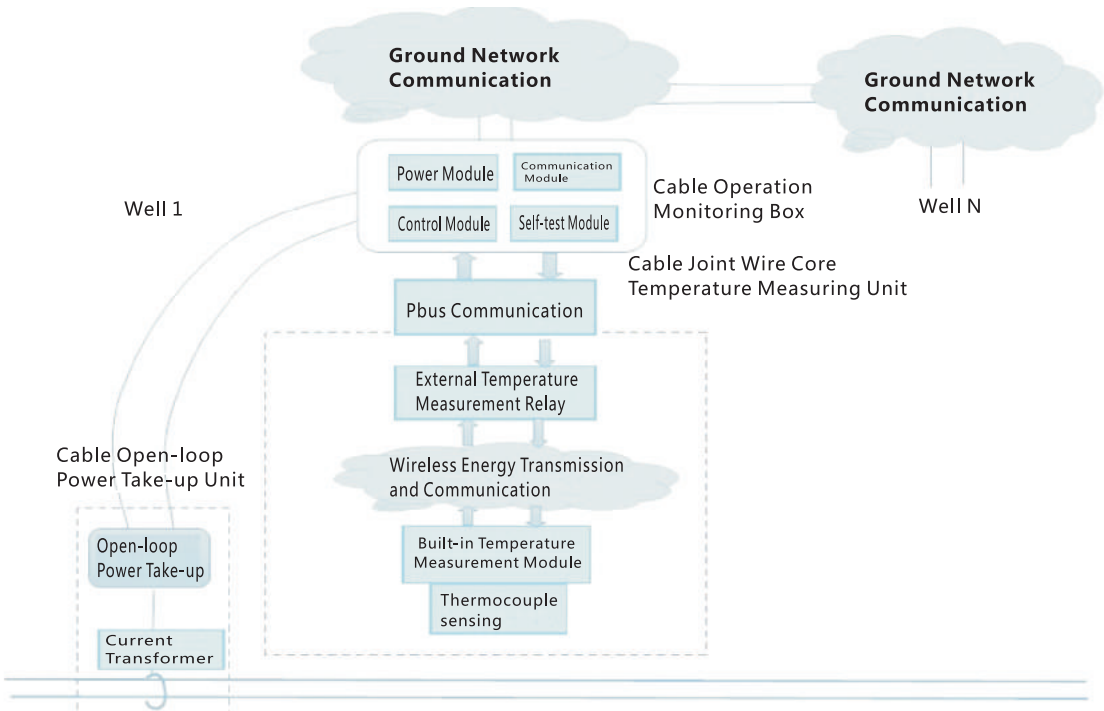
- 1. On-site power supply device output (DC15V/30W), backup battery (DDC12V/17AH), solar power 18V/20W.
- 2. Static power consumption should be less than 0.5W, dynamic power consumption should be less than 15W.
- 3. Color digital camera, 300,000 pixels.
- 4. Live sound and light alarm dual output, siren ≥90Db, and alarm time 60 seconds.
- 5. Fire alarm, marine alarm, 8 or more alarms, reserve alarm response signal port.
- 6. Reading range of electronic door lock key ≥8cm.
- 7. Working range: -30°C-+100°C. The system automatically enter thermal protection when exceed the limit, automatically wake up after cooling.
- 8. Temperature measuring range: 0°C-+300°C, measurement error $\pm 0.5^{\circ}\text{C}$, average sampling period less than 60 seconds, withstand high temperature impact time of 250°C should be not less than 30 minutes.
- 9. Power conditions: all-weather environment, operating current: AC100A-800A.
- 10. Built-in dedicated chip, thermal protective structure, maintenance-free technology, same service life as cable, in the cable operating temperature of 0°C-100°C, the working life is more than 30 years.



System Functions

- 1. Cable operation status wire core temperature online monitoring
- 2. Grounding system circulation, inductive voltage monitoring.
- 3. Real-time monitoring of parameters such as ambient temperature, humidity, water level, smoke, and vibration.
- 4. Equipment operation authority control and inspection management.
- 5. On-site security, sound and light alarms and image forensics.
- 6. Field device self-diagnosis and remote upgrade.
- 7. Analysis of the maximum capacity of the line, advanced application functions such as operation safety warning, installation and operation defect analysis, etc.
- 8. Mobile termination alarm linkage and defect elimination management.
- 9. Provide data support to other systems.

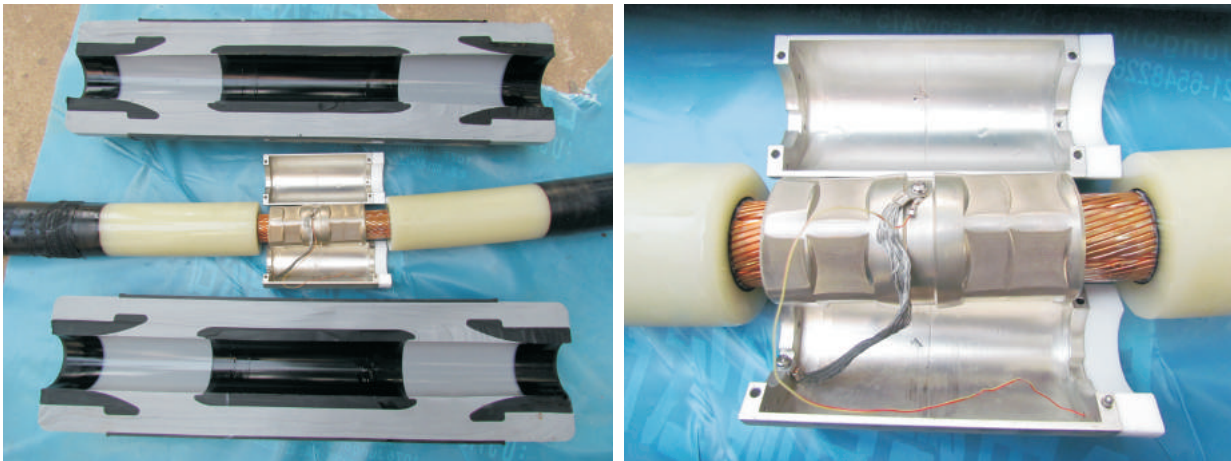
Typical Application Network Structure



Product Composition

Collecting Module

1) Wire core temperature acquisition module: direct contact measurement of core temperature through passive implant technology, and upload to data processing module through multi-stage transmission.



Implantable core temperature measuring unit

2) Grounding system operation parameter acquisition module: using PT, CT measurement unit, combined with high-voltage isolation technology, data collection and upload of circulating current and induced voltage of grounding system.

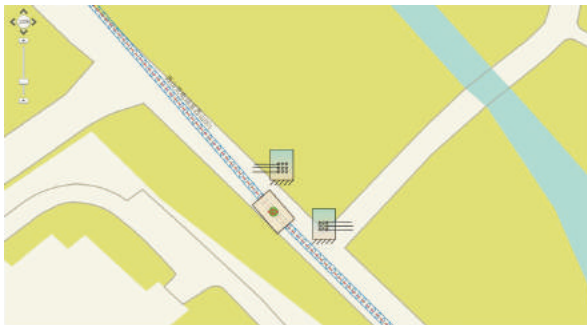


Environmentally friendly smart link box

Wall-mounted link box and monitoring unit

Analysis and Function Application Module

1) Device point search



3)View the current, voltage, and temperature graphs of a single joint at the selected period of time



2) Operating temperature and grounding parameters



4) Check the temperature comparison of multiple joints selected time of the same line and analyze the line operation defects

