Product Catalog

www.grlgroup.com

About GRL

- Zhejiang Provincial Invisible Champion Enterprise
- Zhejiang Provincial (Key) Enterprise Research Institute
- National High-Tech Enterprise
- Zhejiang Provincial Industrial Design Center
- Wenzhou Green Factory
- Zhejiang Provincial "Specialized, Sophisticated, Distinctive, and Innovative" Enterprise

Zhejiang GRL Electric Co., Ltd.Established in 1992, GRL specializes in R&D, production, and sales of fuses, enclosed busway systems, and disconnectors. Our core products include high/low-voltage fuses, disconnectors, enclosed busbar systems, new energy copper connections, and outdoor high-voltage. These products are widely used in energy storage, charging stations, power grids, photovoltaic/wind power generation, automotive manufacturing, machinery, marine power distribution, and building infrastructure. GRL has provided thousands of electrical components and solutions for new energy, industrial control, power systems, and new infrastructure, establishing itself as a leading brand in electrical connection and protection.

The company operates modern factory facilities spanning over 43,000 square meters, equipped with more than 150 machining equipment units, over 30 specialized production lines, and more than 80 testing devices—including fuse comprehensive characteristic test benches, switch temperature rise test benches, mechanical life test benches, and salt spray test chambers. By implementing scientific production processes and a rigorous quality management system, the company's products have achieved performance standards comparable to international industry benchmarks. Building upon the full adoption of process-oriented and standardized management frameworks, the corporation is actively advancing the development of lean digitalization and a comprehensive employee performance management system.

GRL is committed to advancing electrical safety, reliability, and efficiency while adhering to green development principles and social responsibility. We continuously improve to become a globally respected electrical brand.

IATF 16949 质量管理体系 ISO9001 质量管理体系 ISO14001 环境管理体系 ISO45001 职业健康安全管理体系 CCC CE CB TÜV RoHS UL CCS

Composite Tension & Suspension Insulator Series

Composite Tension & Suspension Insulator Series

Composite tension/suspension insulator mainly consists of a core rod (ECR type orFRP type), silicone rubber housing and metal end fittings. GRL is producing and exportingtension and suspension insulators from 10kV to 400 kV with various core rod sizes for distributionand transmission systems. (We HAVE exported 138kV, 245kV, 330kV, 400kV, insulators).

Core Rod - Made of high-quality Pultruded Epoxy Fiberglass Rod (FRP and ECR Types).

End Fittings - #45 Forged Steel or Ductile Iron, Hot Dip Galvanized, then directly crimp to thecore rod through a circumferential crimping process to achieve better performance.

Housing to Core - They are Chemically Bonded and the interface strength between the housing and core is higher than the tearing strength of housing itself.

Silicone Rubber Housing - HTV Silicone Rubber; made of high quality raw materials.

Corona/Grade Ring - Made of High-Grade Aluminum Alloy, suitable for (above) 110kV insulators

Sealing - Juncture between end fitting and Core rod is totally embedded in HTV silicon rubber,eliminating conventional and traditional sealing defects. (The other type is availablethat use RTV Silicone Sealant to seal the juncture between end fitting and core rod.)

Two Ends Of Connecting Hardware List

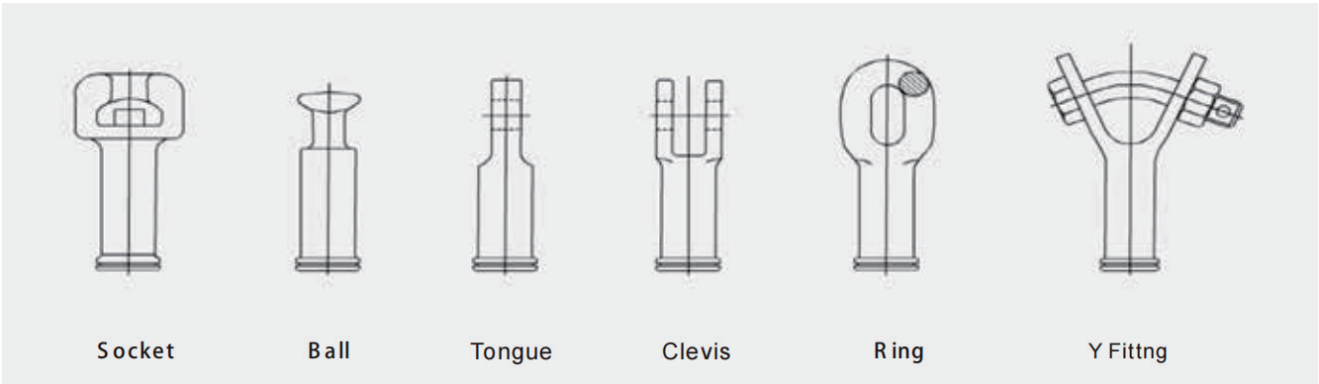
Attached to the letter	W Q	W D	W U	Q Q	C T	T T	U U	Y Q	R R
On behalf of fittings	Socket - Ball	Socket- Tongue	Socket - Clevis	Ball - Ball	Clevis-Tongue	Tongue-Tongue	Clevis- Clevis	Y-Ball	Ring- Ring
Connection mark	16-16	16-7	16-7	16-16	7-7	7-7	7-7	7-7	7-7

1. According to the requirements of hardware in models are indicated in the attached letter;

2. According to the requirements of users can formulate and match ends fitting;

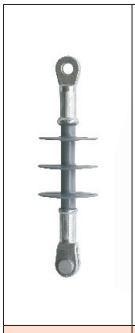
3. Silicone rubber color grayas the default, can also choose the other colors .

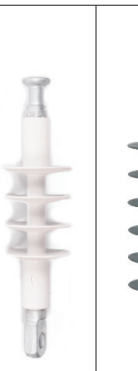
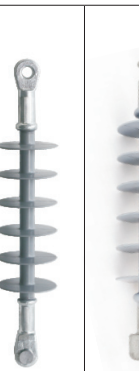
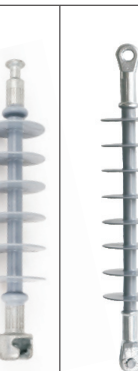
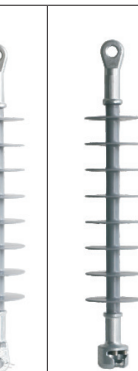
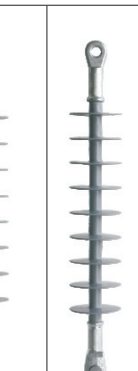
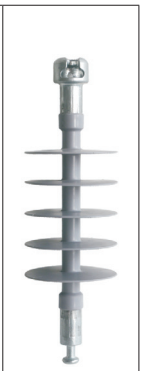
4. custom made according to customer’ s drawings



Composite Tension & Suspension Insulator Series

Composite Tension & Suspension Insulator Series

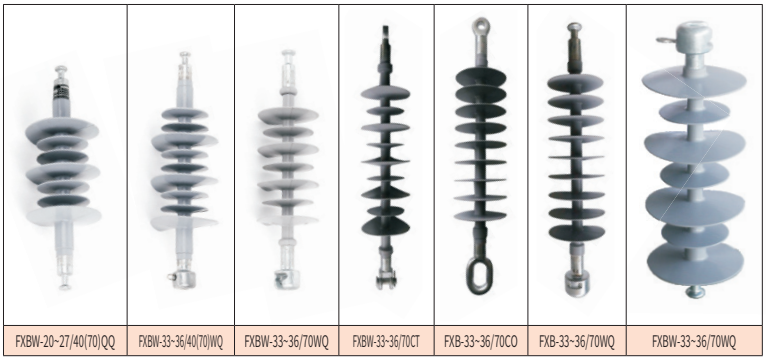
									
FXB-11~15/70CT	FXB-11~15/70WT	FXB-11~15/70CT	FXB-11~15/70WC	FXB-11~15/70CC	FXB-11~15/70WT	FXBW-11~15/70CT	FXBOW-11~15/70	FXBW-11~15/70	FXBW-11~15/70

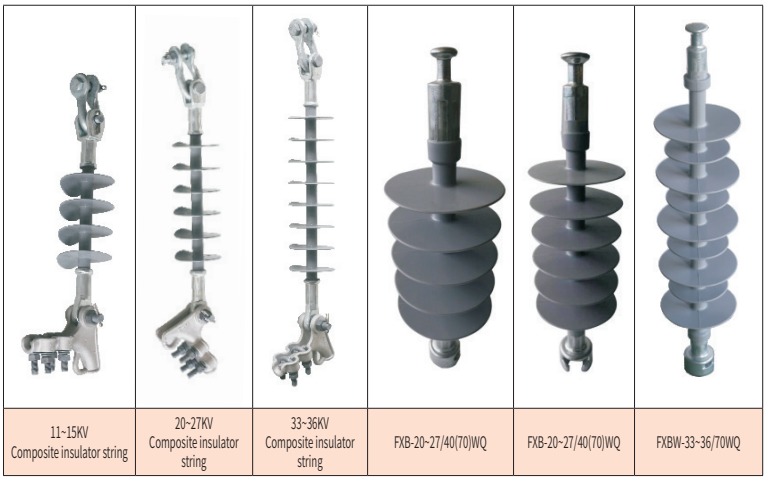
										
FXBW-1/70	FXB-11~15/70WT	FXB-11~15/70TQ	FXB-20~27/70CT	FXB-20~27/70WQ	FXB-33~36/70CT	FXBW-33~36/70WT	FXB-33~36/70CT	FXBOW-20~27/70	FXB-20~27/70YQ	FXB-20~27/40WQ

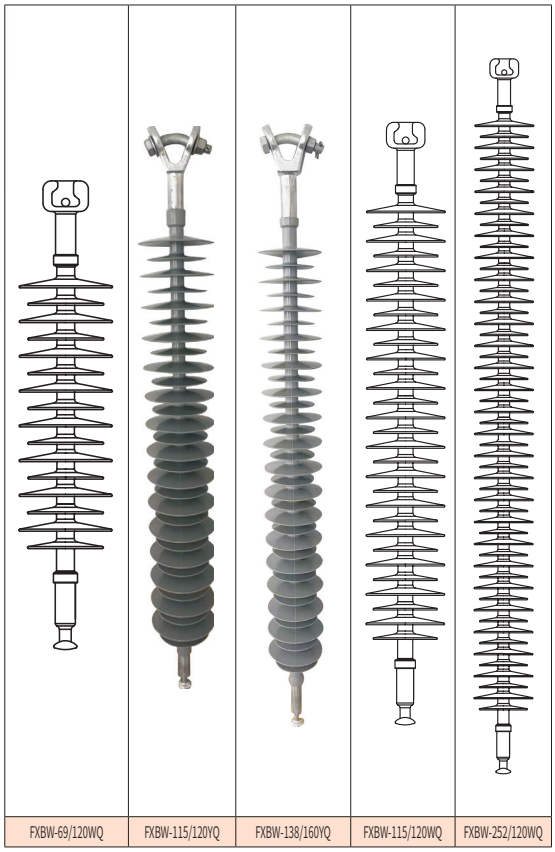
Product Type	Dimensions						Mechanical		Electrical		
	Height (mm)	Min Dry Arcing Distance (mm)	Min Creepage Distance (mm)	Diameter of the rod (mm)	Number of sheds (mm)	Sheds of diameter (mm)	Specified Mechanical Load(SML) (kN)	Routine Test Load(RTL) (kN)	Rated Voltage (kV)	Lightning Impulse withstand voltage (kV)	Power Frequency withstand Voltage (kV)
FXB-11~15/70CT	310±10	170	330	17	3	98	70	35	11~15	105	55
FXB-11~15/70WT	365±10	200	450	17	4	98	70	35	11~15	105	55
FXB-11~15/70CT	365±10	200	450	17	4	98	70	35	11~15	105	55
FXB-11~15/70WC	365±10	200	450	17	4	98	70	35	11~15	105	55
FXB-11~15/70CC	365±10	200	450	17	4	98	70	35	11~15	105	55
FXB-11~15/70WT	365±10	200	450	17	4	98	70	35	11~15	105	55
FXBW-11~15/70CT	365±10	200	450	18	4	115/85	70	35	11~15	105	55
FXBOW-11~15/70	365±10	190	360	18	4	115/85	70	35	11~15	105	55
FXBW-11~15/70	310±10	190	360	18	4	100/65	70	35	11~15	105	55
FXBW-11~15/70	350±10	190	480	18	4	115/85	70	35	11~15	105	55
FXBW-1/70	280±10	115	240	18	2	115/85	70	35	1	45	20
FXB-11~15/70WT	365±10	200	450	17	4	98	70	35	11~15	105	55
FXB-11~15/70TQ	365±10	200	450	17	4	98	70	35	11~15	105	55
FXB-20~27/70CT	460±10	200	675	17	6	98	70	35	20~27	135	65
FXB-20~27/70WQ	460±10	315	675	17	6	98	70	35	20~27	135	65
FXB-33~36/70CT	545±10	360	915	17	8	98	70	35	33~36	230	95
FXBW-33~36/70WT	545±10	360	915	17	8	98	70	35	33~36	230	95
FXB-33~36/70CT	590±10	410	1025	17	9	98	70	35	33~36	230	105
FXBOW-20~27/70	475±10	270	725	16	8	105/75	70	35	20~27	160	85
FXB-20~27/70YQ	450±10	280	680	18	5	120	70	35	20~27	230	75
FXB-20~27/40WQ	405±10	280	680	18	5	120	40	20	20~27	230	75

Composite Tension & Suspension Insulator Series

Composite Tension & Suspension Insulator Series







Product Type	Dimensions						Mechanical		Electrical		
	Height (mm)	Min Dry Arcing Distance (mm)	Min Creepage Distance (mm)	Diameter of the rod (mm)	Number of sheds (mm)	Sheds of diameter (mm)	Specified Mechanical Load(SML) (kN)	Routine Test Load(RTL) (kN)	Rated Voltage (kV)	Lightning Impulse withstand voltage (kV)	Power Frequency withstand Voltage (kV)
FXBW-20~27/40(70)QQ	400±10	305	700	18	7	130/90	70	35	20~27	135	65
FXBW-33~36/40(70)WQ	440±10	345	900	18	9	130/90	70	35	33~36	230	95
FXBW-33~36/70WQ	495±10	350	900	18	7	132/110	70	35	33~36	230	95
FXBW-33~36/70CT	650±10	460	1200	18	9	130/100	70	35	33~36	230	95
FXB-33~36/70CO	595±10	460	1200	18	9	130/100	70	35	33~36	230	95
FXB-33~36/70WQ	605±10	450	1200	18	9	130/100	70	35	33~36	230	95
FXBW-33~36/70WQ	440±15	445	1060	18	7	160/110	70	35	33~36	230	95
11~15KV Composite insulator string	365±10	200	450	17	4	98	70	35	11~15	100	55
20~27KV Composite insulator string	460±10	315	675	17	6	98	70	35	20~27	135	65
33~36KV Composite insulator string	545±10	410	915	17	8	98	70	35	33~36	230	95
FXB-20~27/40(70)WQ	405±10	280	680	18	5	120	70	35	20~27	135	65
FXB-20~27/40(70)WQ	445±10	320	815	18	6	120	70	35	20~27	135	65
FXBW-33~36/70WQ	600±10	500	1200	18	9	130/100	70	35	33~36	230	95
FXBW-69/120WQ	935±15	735	2150	18	16	142/112	120	60	69	425	165
FXBW-115/ 120YQ	1460±30	1275	4000	18	30	142/112	120	60	115	550	275
FXBW-138/160YQ	1400±30	1125	3800	24	30	150/115	160	80	115	550	275
FXBW-115/ 120WQ	1440±30	1275	4000	18	30	142/112	120	60	252	1000	425
FXBW-252/ 120WQ	2350±30	2215	7040	18	54	142/112	120	60	252	1000	425
FXBW-252/ 160WQ	2350±30	2125	7600	24	60	150/115	160	80	252	1000	425
FXBW-345/ 120WQ	3340±30	3150	10250	18	78	142/112	120	60	345	1425	570
FXBW-345/160WQ	3375±30	3100	11300	24	90	150/115	160	80	345	1425	570

Composite Post(Pin) Insulator

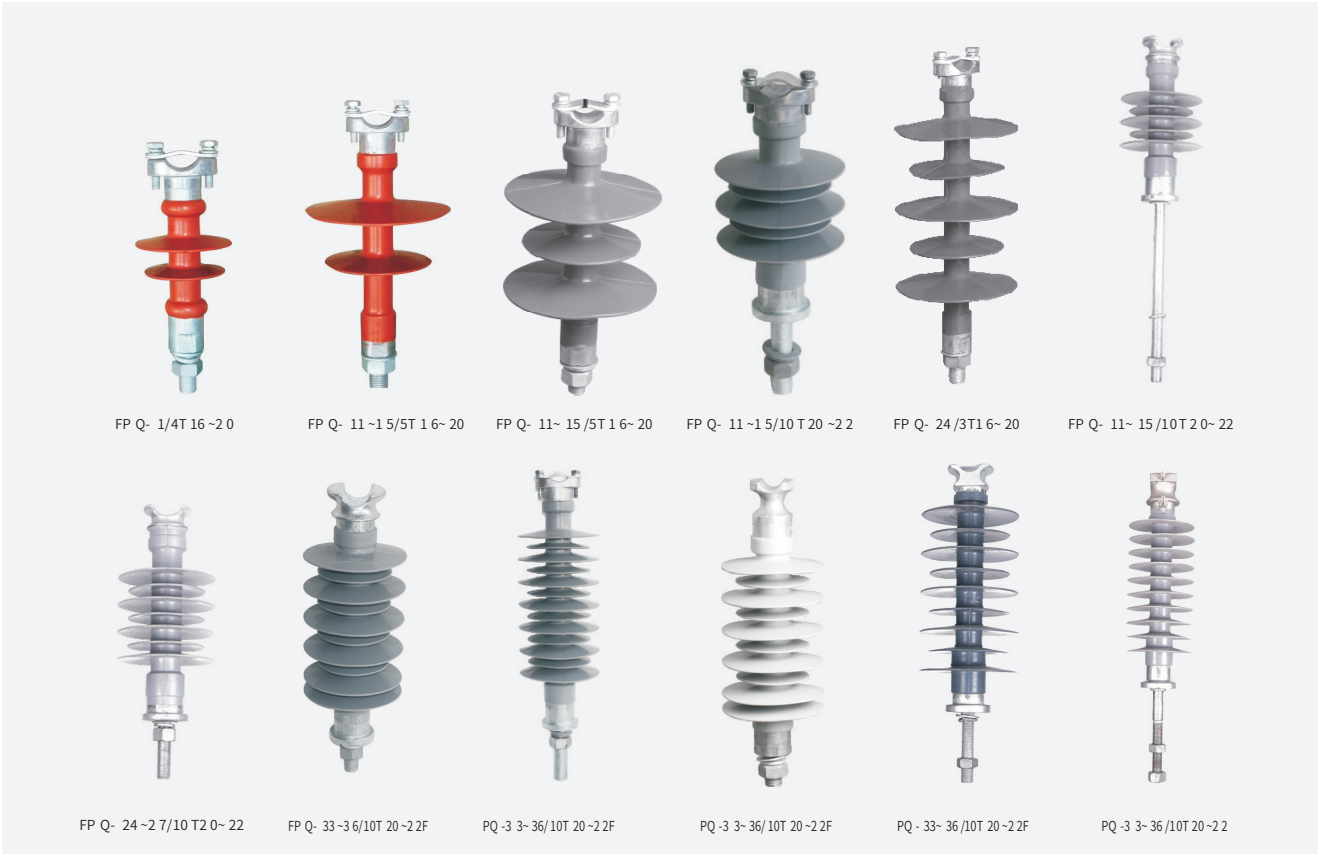
Composite Post (Pin) Insulator

Composite post (pin) Insulator are made of glassfiber epoxy core rod , silicone rubber shed and metal fittings ,The silicon rubber shed adopt the whole packing pressure technique , and then to solve the key problem – interface electric spark puncture , which would affect the reliability of composite insulator.

Connection of the glassfiber rod and metal fittings , adopts the pressure welding technique of the international advanced level , and have the full automatic sound wave detection of defects system, high intension, beautiful outline, small volume , light weight , and the metal fitting of galvanization can corrosion prevention and exchange used with porcelain insulator.

This product is reliable structure , can' t damage the core rod , and take full advantage of the mechanical strength.

The dimension can be customized as per client ' s requirement.



FP Q- 1/4T 16 ~2 0 FP Q- 11 ~1 5/5T 1 6~ 20 FP Q- 11~ 15 /5T 1 6~ 20 FP Q- 11 ~1 5/10 T 20 ~2 2 FP Q- 24 /3T1 6~ 20 FP Q- 11~ 15 /10 T 2 0~ 22

FP Q- 24 ~2 7/10 T2 0~ 22 FP Q- 33 ~3 6/10T 20 ~2 2F PQ -3 3~ 36/ 10T 20 ~2 2F PQ -3 3~ 36/ 10T 20 ~2 2F PQ - 33~ 36 /10T 20 ~2 2F PQ -3 3~ 36 /10T 20 ~2 2

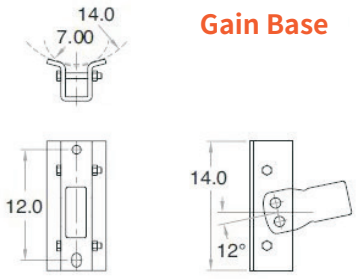
Product Type	Dimensions							Mechanical	Electrical		
	Height (mm)	Min Dry Arcing Distance (mm)	Min Creepage Distance (mm)	Diameter of the rod (mm)	Number of sheds (mm)	Sheds of diameter (mm)	Screw diameter /screw length (mm)	Rated bending Load (kN)	Rated Voltage (kV)	Lightning Impulse withstand voltage (kV)	Power Frequency withstand Voltage (kV)
FPQ-1/4T16~20	170±10	120	165	22	2	Φ85/70	16~20/40-300	4	1	30	15
FPQ-11~15/5T 16~20	225±10	200	345	24	2	Φ140/105	16~20/40-300	5	11~15	105	45
FPQ-11~15/5T 16~20	252±10	210	450	24	3	Φ145/110	20~22/40-300	5	11~15	105	50
FPQ-11~15/10T 20~22	275±10	210	500	38	5	Φ140/110	20~22/40-300	10	11~15	105	50
FPQ-24/3T16~20	345±10	300	650	24	5	Φ145/110	16~20/40-300	3	24	145	65
FPQ-11~15/10T 20~22	275±10	210	500	38	5	Φ140/110	20~22/40-300	10	11~15	105	50
FPQ-24~27/10T20~22	300±10	250	680	38	7	Φ140/110	20~22/40-300	10	24~27	145	65
FPQ-33~36/6T20~22	330±10	260	900	34	6	Φ125/90	20~22/40-300	6	33~36	230	90
FPQ-33~36/10T20~22	385±10	330	1080	38	11	Φ140/110	20~22/40-300	10	33~36	250	105
FPQ-33~36/10T20~22	385±10	330	1080	38	11	Φ140/110	20~22/40-300	10	33~36	250	105
FPQ-33~36/10T20~22	375±10	330	1080	38	9	Φ150/125	20~22/40-300	10	33~36	250	105
FPQ-33~36/10T20~22	400±10	330	1080	34	10	Φ125	20~22/40-300	10	33~36	250	105

Composite Post(Pin) Insulator

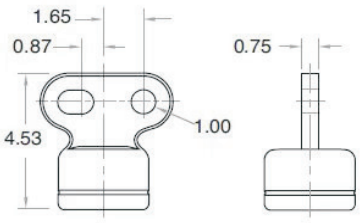
Composite Post(Pin) Insulator

						
FPQ-33~36/10T20~22	FZSW-11~15/10	FZSW-11~15/10	FZSW-33~36/10	FZSW-33~36/10	FZSW-66~72.5/10	FZSW- 66~72.5/20

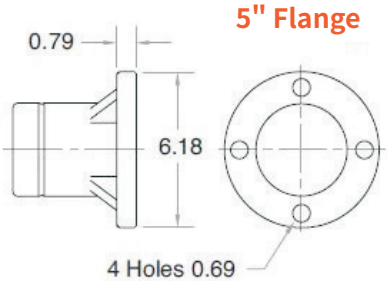
Gain Base



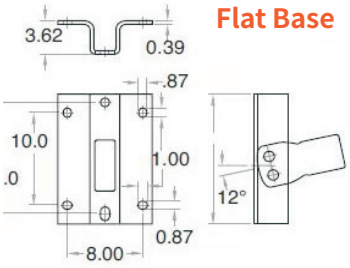
Drop Tongue



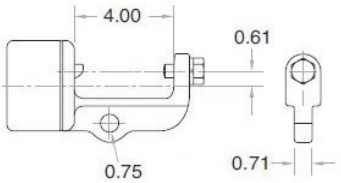
5" Flange



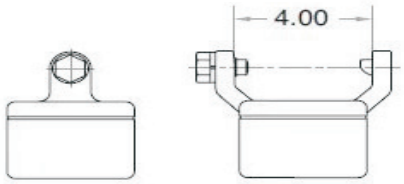
Flat Base



Horizontal Trunnion:ANSI C29.7



Vertical Trunnion: ANSI C29.7



Product Type	Dimensions							Mechanical	Electrical		
	Height (mm)	Min Dry Arcing Distance (mm)	Min Creepage Distance (mm)	Diameter of the rod (mm)	Number of sheds (mm)	Sheds of diameter (mm)	Screw diameter /screw length (mm)	Rated bending Load (kN)	Rated Voltage (kV)	Lightning Impulse withstand voltage (kV)	Power Frequency withstand Voltage (kV)
FPQ-33~36/10T20~22	390±10	330	1100	38	11	Φ140/110	16~20/40-300	10	33~36	230	95
FZSW-11~15/ 10	285±10	180	500	30	5	Φ125/95	Φ22/255	10	11~15	150	80
FZSW-11~15/ 10	285±10	180	500	30	5	Φ125/95	Φ22/255	10	11~15	150	80
FZSW-33~36/10	495±10	1080	1080	40	10	Φ140/110	Φ22/255	10	33~36	255	125
FZSW-66~72 .5/ 10	585±10	425	1080	40	11	Φ144/114	Φ22/255	10	66~72.5	255	125
FZSW-66~72 .5/ 10	850±10	700	1830	50	15	Φ165/135	Φ22/255	10	66~72.5	410	230
FZSW-66~72 .5/20	950±30	735	2000	70	18	Φ175/145	Φ24/24	20	66~72.5	410	230

Composite Cross Arm Insulator

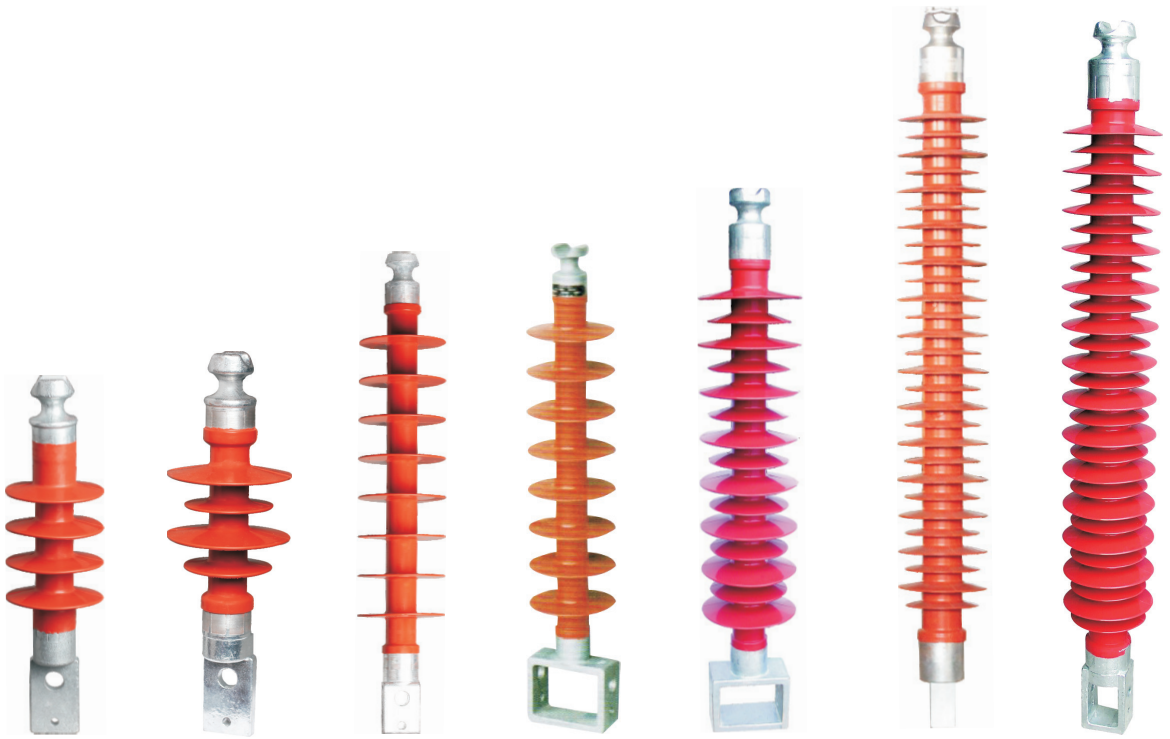
Composite Cross Arm Insulator

Composite cross arm insulator can effectively use the narrow corridor open pressure transmission, suitable for city networktechnical transformation, can reduce the pole tower height, can save a large amount of manpower, material and financial resourcesno repace te prouctt nas te advantage or smal voume.gt weign, shock snoc esistance abty oes not nee anuaicleaning, in order to guarantee safe operation of.

Technical Parameters Table

Model specifications	Rated voltage (kV)	Rated bending load (kN)	Structure height (mm)	Minimal arc distance (mm)	Minimum nominal creepage distance (mm)	Lighting full-wave impulse withstand voltage (kV)	Operation impact resistance and voltage (1minkV)	Mounting dimensions		
								Mounting hole	Stability of hole	Hole center distance
FS-10/2 .5	10	2.5	290±15	190	355	95	60	Φ 18	Φ 8	40
FS-10/5	10	5	290±15	175	355	95	60	Φ 18	Φ 8	40
FS-20/8	20	8	475±15	328	860	170	70	Φ22	Φ 11	40
FS-35/5	35	5	635±15	455	1280	230	95	Φ22	Φ 11	40
FS-35/5	35	5	635±15	455	1280	230	95	Φ22	Φ 11	40
FS-35/10	35	10	605±15	440	1380	230	95	Φ22	Φ 11	40
FS-66/5	66	5	830±15	664	2110	410	185	Φ22	Φ 11	40
FS-66/5	66	5	815±15	664	2110	410	185	Φ22	Φ 11	40
FS-110/10	110	10	1270±30	1050	3150	550	230	Φ25	Φ25	40(45)
FS-110/10	110	10	1270±30	1050	3150	550	230	Φ22	Φ 11	40(45)
FS-110/10	110	10	1270±30	1050	3150	550	230	Φ24	Φ 14	40(45)
FS-220/6	220	6	2250±30	2000	6400	1050	395	Φ22	Φ22	52

Order information：1. If the user needs a different end fittings , mounting dimensions please state .



FS-10/2.5 FS-10/5 FS-35/5 FS-35/5D FS-66/5 FS-110/8 FS-110/8

Composite Post Insulator

Composite Post insulator bending resistance performance is good , antifouling ability , strong impact resistance, vibration and anti brittle fracture performance , small volume , light weight , convenient installation , maintenance free not people of dissection , and porce -lain has interchangeability.

Technical Parameters Table

Model specifications	Rated voltage (kV)	Rated bending load (kN)	Structure height (mm)	Minimal arc distance (mm)	Minimum nominal creepage distance (mm)	Lighting impulse withstand voltage (kV)	Power frequency withstand voltage (wet)	Bore x aperture hole center circle	
								Mounting hole size	Lower mounting hole size
FZN4 - 12/4	12	4	230 ±3	125	330	75	30	M10	4 ×Φ14- Φ76
FZSW - 12/4	12	4	235 ±3	125	330	75	30	2 ×M12- Φ76	4 ×M12- Φ76
FZSW - 24/8	24	8	345 ±3	200	540	150	60	4 ×M12- Φ76	4 ×M12- Φ76
FZSW - 24/8	24	8	345 ±3	200	540	150	60	4 ×Φ14- Φ140	4 ×Φ14- Φ140
FZSW - 33/10	33	10	618 ±10	450	1080	220	14 5	4 ×Φ14- Φ140	4 ×Φ14- Φ140
FZSW - 35/6 - 76	40.5	6	435 ±3	290	1260	185	80	2 ×M8- Φ36	4 ×Φ14- Φ76
FZSW - 40. 5/6L (IEC)	40.5	6	435 ±3	340	1260	200	80	4 ×M12- Φ76	4 ×M12- Φ76
FZSW - 72. 5/8	72.5	8	780 ±5	600	1850	350	16 0	4 ×Φ14- Φ140	4 ×Φ14- Φ140
FZSW - 72. 5/10	72.5	10	780 ±5	600	1950	350	16 0	4 ×Φ14- Φ140	4 ×Φ14- Φ140
FZSW - 126/8	126	8	1240 ±5	1050	3150	550	230	4 ×M12- Φ140	4 ×Φ18- Φ140
FZSW - 126/10	126	10	1240 ±5	1050	3150	550	230	4 ×M12- Φ140	4 ×Φ14- Φ140
FZSW - 126/12.5	126	12.5	1440 ±5	1050	3500	550	230	4 ×M12- Φ140	4 ×Φ14- Φ140
FZSW - 252/6K	252	6	2240 ±15	2070	6300	1050	460	4 ×M16- Φ140	8 ×Φ20- Φ225
FZSW - 252/8	252	8	2340 ±15	2000	6700	1050	460	4 ×M16- Φ190	8 ×Φ20- Φ225

ordering notice:1. need to be specfied when ordering product specifications, model and quantity:2,spectficaly two center hole distance.if not explicitly according to IEC standards and other related.



FZSW-12/4



FZSW-24/8



FZSW-24/8



FZSW-35/6







FZSW-252/8



FZS W-40.5/6



FZS W-40.5/6



FZSW-72.5/8



FZSW-126/8



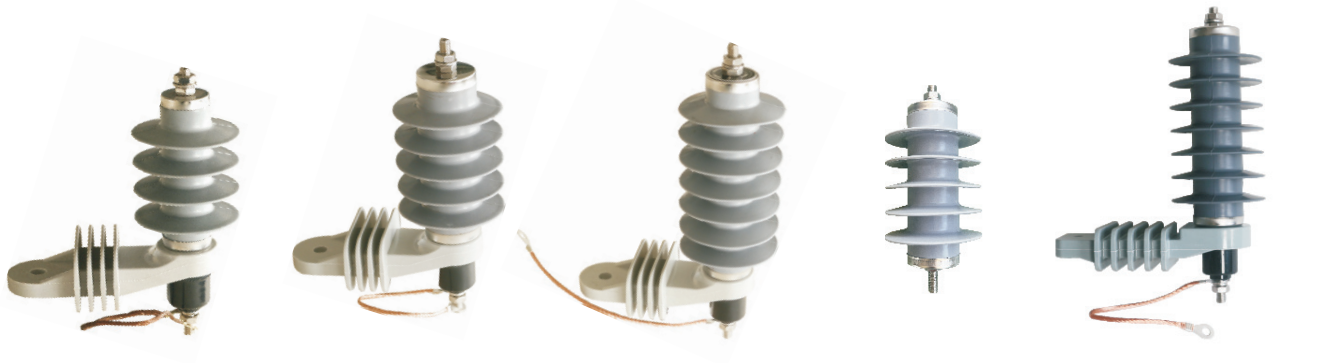
FZSW-33/10

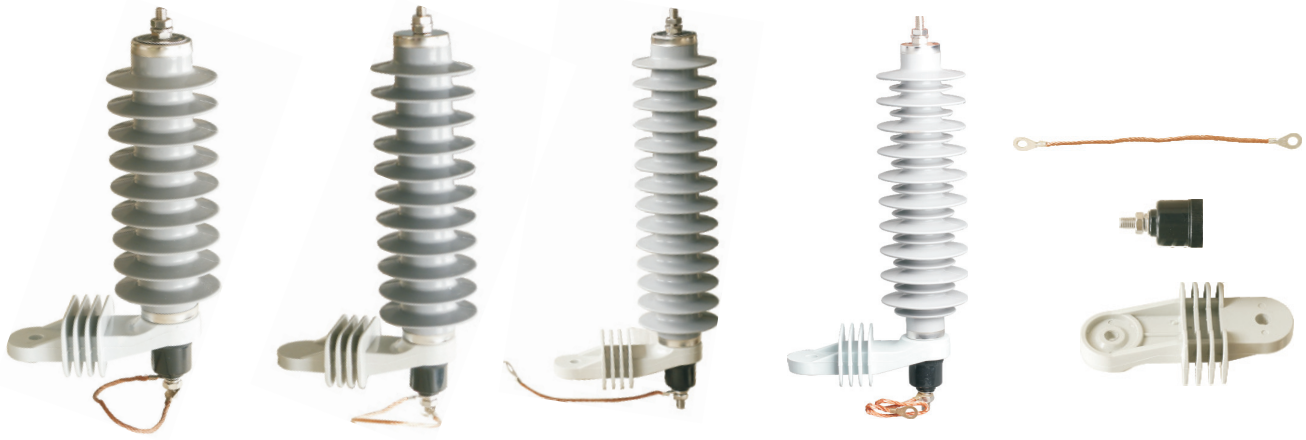
Surge Arrester

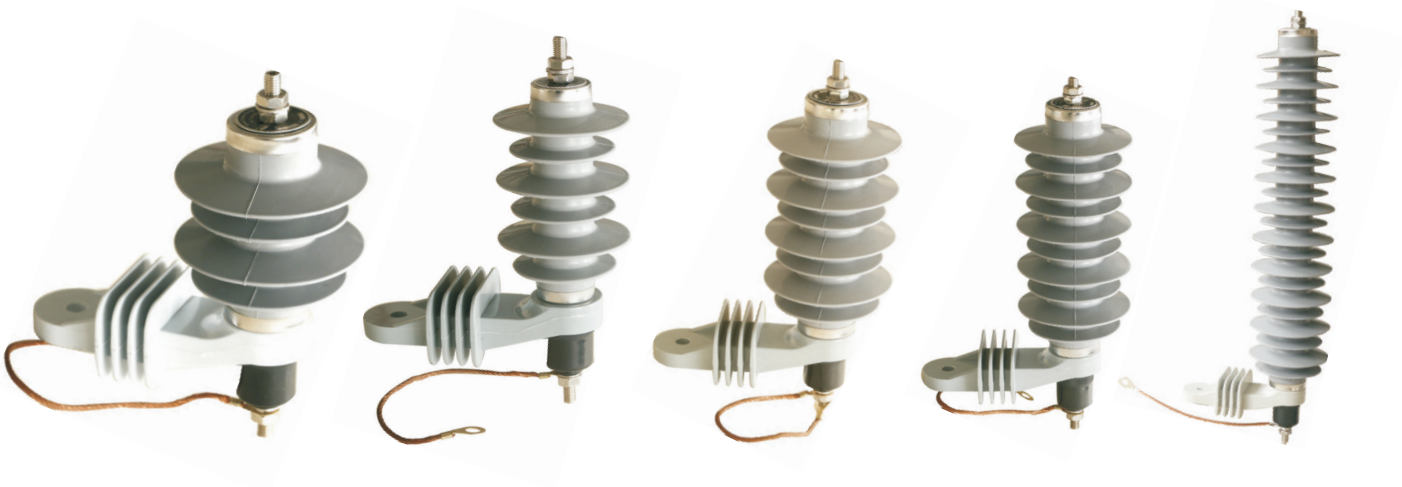
Surge Arrester

The distribution class surge arrester is the most common type of protective devicesused on power systems today. The primary function of the distribution surge arrester is toprotect the insulation of distribution class oil-filed transformers.GRL supplies both polymer-housed and porcelain-housed surge arresters up to 48kV.

Polymer Housed Surge Arrester Photo Reference (3 Sheds to 22 Sheds)





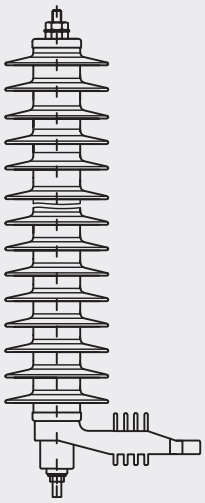


Surge Arrester

Polymeric Housed Metal Oxide Surge Arrest er without Gaps
Nominal Discharge Current: 5kA

Model specifications	Rated Voltage (kV)	MCOV (kV)	1/4 uS Lightning Current Impulse	8/20us Lightning Current Impulse	30/60 us Switching Current Impulse	2000 us Rectangular Current Impulse Withstand	4/10us High Current Impulse Withstand
(HY)YH5W--3	3	2.55	11.3	9	8.90	150	65
(HY)YH5W--6	6	5.10	22.6	18	16.8	150	65
(HY)YH5W--9	9	7.05	33.7	27	23.8	150	65
(HY)YH5W-10	10	8.40	36.0	30	23.0	150	65
(HY)YH5W-11	11	9.40	40.0	33	30.0	150	65
(HY)YH5W-12	12	10.2	42.2	36	27.0	150	65
(HY)YH5W-15	15	12.7	51.0	45	38.5	150	65
(HY)YH5W-18	18	15.3	61.5	54	46.2	150	65
(HY)YH5W-21	21	17.0	71.8	63	54.2	150	65
(HY)YH5W-24	24	19.5	82.0	72	62.0	150	65
(HY)YH5W-27	27	22.0	92.0	81	69.8	150	65
(HY)YH5W-30	30	24.4	102	90	79.0	150	65
(HY)YH5W-33	33	27.5	112	99	86.7	150	65
(HY)YH5W-36	36	29.0	123	108	92.4	150	65

Physical Specifications for Polymer-Housed Surge Arrester

Model	Dimensions (mm)		Leakage Distance (mm)	Shed No . PCS	Drawing Reference
	A	B			
(HY)YH5W--3	110	200	215	3	
(HY)YH5W--6	135	225	300	4	
(HY)YH5W--9	160	250	372	5	
(HY)YH5W-10	160	250	372	5	
(HY)YH5W-11	160	250	372	5	
(HY)YH5W-12	160	250	372	5	
(HY)YH5W-15	210	300	480	7	
(HY)YH5W-18	235	325	575	8	
(HY)YH5W-21	260	350	630	9	
(HY)YH5W-24	285	375	680	10	
(HY)YH5W-27	310	400	750	11	
(HY)YH5W-30	335	425	820	12	
(HY)YH5W-33	385	475	950	14	
(HY)YH5W-36	385	475	950	14	

Shed numbers and terminals can be changed to meet specific .

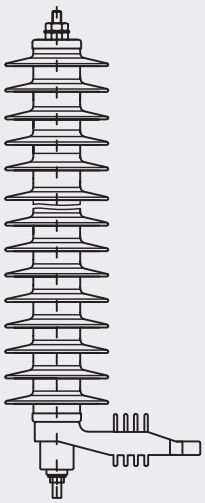
OEM and custom size of polymer-housed surge arrest ers are available upon request.

Surge Arrester

Polymeric Housed Metal Oxide Surge Arrester without Gaps
Nominal Discharge Current: 10kA

Model	Rated Voltage (KV)	MCOV (KV)	1/4μs Lightning Current Impulse	8/20μs Lightning Current Impulse	30/60μs Switching Current Impulse	2000μs Rectangular Current Impulse Withstand	4/10μs High Current Impulse Withstand
(HY)YH10W--3	3	2.55	11.3	9	8.90	250	100
(HYYH10W--6	6	5.10	22.6	18	16.8	250	100
(HYYH10W--9	9	7.05	33.7	27	23.8	250	100
(HY)YH10W-10	10	8.40	36.0	30	23.0	250	100
(HY)YH10W-11	11	9.40	40.0	33	30.0	250	100
(HY)YH10W-12	12	10.2	42.2	36	27.0	250	100
(HY)YH10W-15	15	12.7	51.0	45	38.5	250	100
(HY)YH10W-18	18	15.3	61.5	54	46.2	250	100
(HY)YH10W-21	21	17.0	71.8	63	54.2	250	100
(HY)YH10W-24	24	19.5	82.0	72	62.0	250	100
(HY)YH10W-27	27	22.0	92.0	81	69.8	250	100
(HY)YH10W-30	30	24.4	102	90	79.0	250	100
(HY)YH10W-33	33	27.5	112	99	86.7	250	100
(HYYH10W-36	36	29.0	123	108	92.4	250	100
(HY)YH10W-48	48	39.0	165.6	144	122.4	250	100

Physical Specifications for Polymer-Housed Surge Arrester

Model	Dimensions (mm)		Leakage Distance (mm)	Shed No . PCS	Drawing Reference
	A	B			
(HY)YH10W--3	106	196	180	4	
(HY)YH10W--6	134	224	300	6	
(HY)YH10W--9	162	252	372	8	
(HY)YH10W-10	162	252	372	8	
(HY)YH10W-11	162	252	372	8	
(HY)YH10W-12	162	252	372	8	
(HY)YH10W-15	190	280	480	10	
(HY)YH10W-18	218	308	575	12	
(HY)YH10W-21	246	336	630	14	
(HY)YH10W-24	274	364	750	16	
(HY)YH10W-27	274	364	750	16	
(HY)YH10W-30	302	392	925	18	
(HY)YH10W-33	302	392	925	18	
(HY)YH10W-36	358	448	1120	22	
(HY)YH10W-48	522	612	1450	22	

Shed numbers and terminals can be changed to meet specific .
OEM and custom size of polymer-housed surge arrest ers are available upon request.

Fuse Cutout Series

Drop type fuse and load drop type fuse is the outdoor high voltage protective device. Itequipmentin distribution transformer high voltage side or distributionine branch trunk road, as the transformer and ine short road, overload protection and points, closing load curent. Drop type fuse by the insulating bracket ansthe fuse tube is composed of two parts,the static contact is mounted in the insulated bracket at both ends, moving contact mounting of the fuse tube ends of wretube comprises a layer of arc tube and an outer layerof epoxy glas tube. Load dropping ype fuse increased elastic auxliary contact and arc extinguishing cover with points, closing load current.

Drop type fuse in normal operation, the fuse tube with fuse tension after the formation of the closed position. When a fault occurs, faut curenthat the fuse isfused quickly, and the formation of arc, arc tube by arc burning, decompostion of the large amounts of gas, so that the tube is formed inside the high pressureand along the pipeline to form long iudinal blow, arc is rapidly stretched out.Ater the fuse wire is broken, the lower moving contact wthout puling down, thelocking mechanism to release the fuse ube, fuse tube fals, formed apparent breaking postion. When the need to pul the load with the insulating rod, movingcontact, when active, static help contact stlran contact. continue to use the insulating rod pulling contact auxliary contact separation, also, in the auxiliarycontacts between arc, arc inthe arc cover sitis elongated, and arc extinguishing coverto generate gas, in the electrical fiow throughzero, the extinction of arc.

1、Normal conditions of use:

a) Environmental temperature not higher than40DEG C + , not lower than - 40DEG C);

b) Altitude does not exceed1000m;

c) The maximum wind speed of no more than 35m / S;

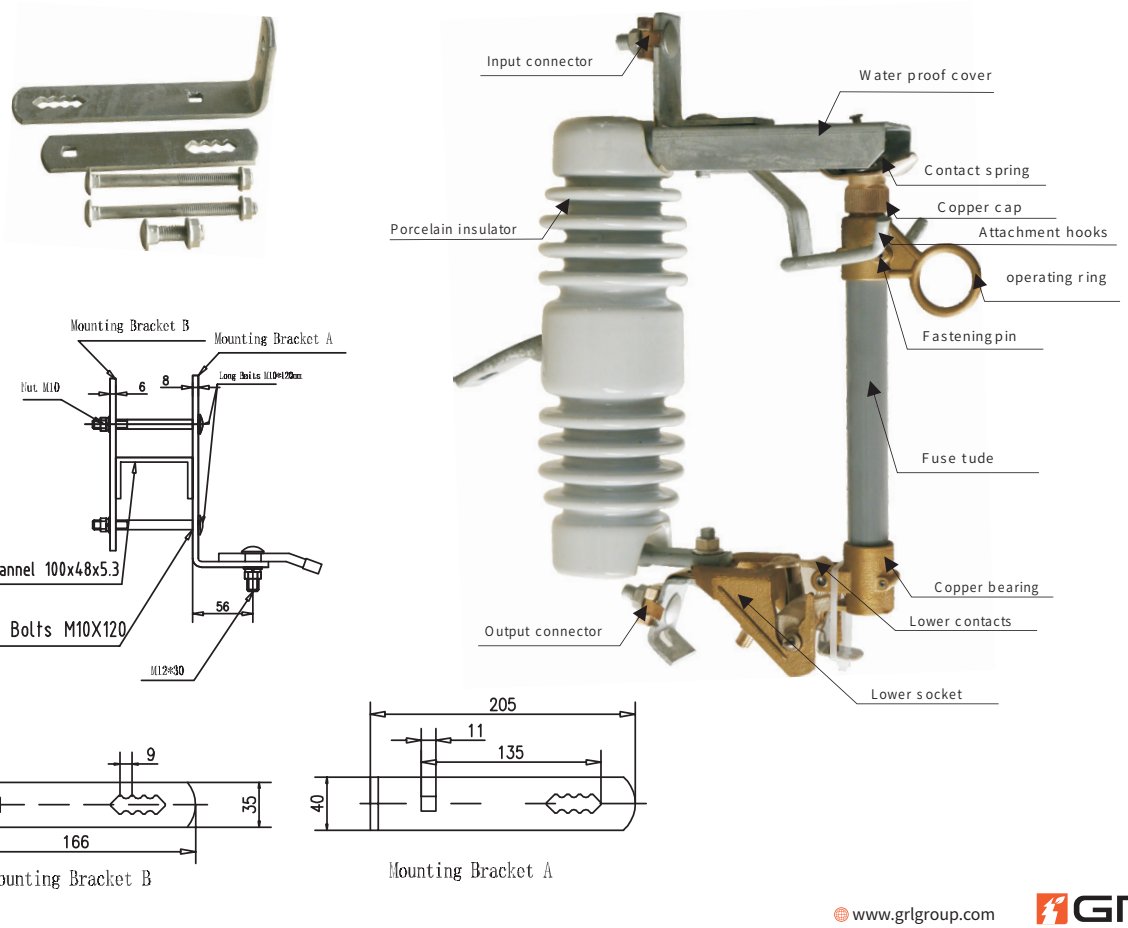
d) Does not exceed 8degree earthquake intensity.

2、The product is not applicable to the following locations:

a) Combustion or explosion risk areas;

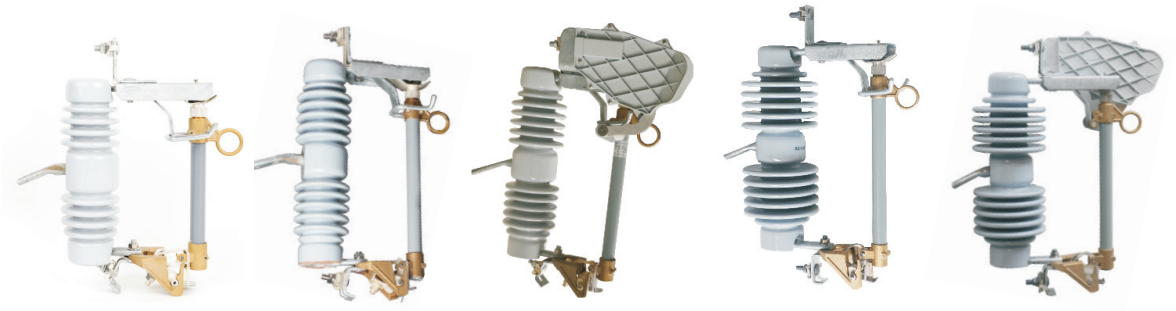
b) With severe vibration or shock sites;

c) A conductive , chemical gas and serious pollution , salt fog area.

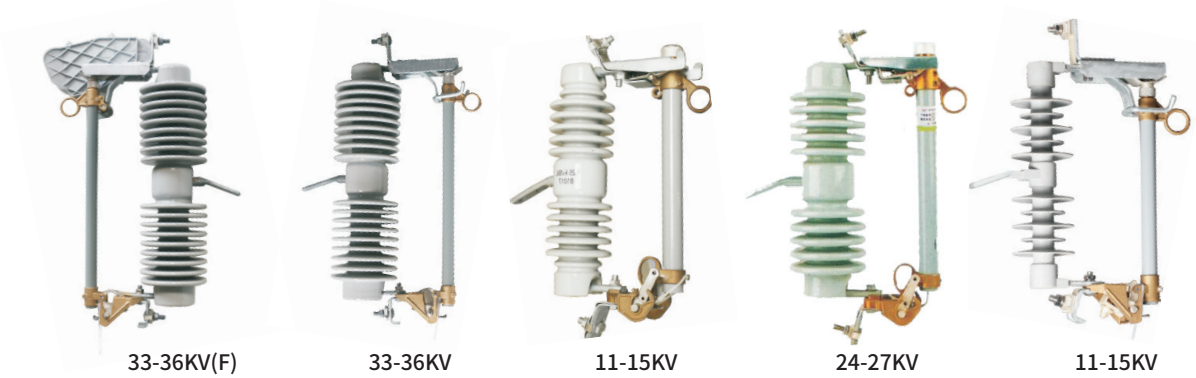


Fuse Cutout Series

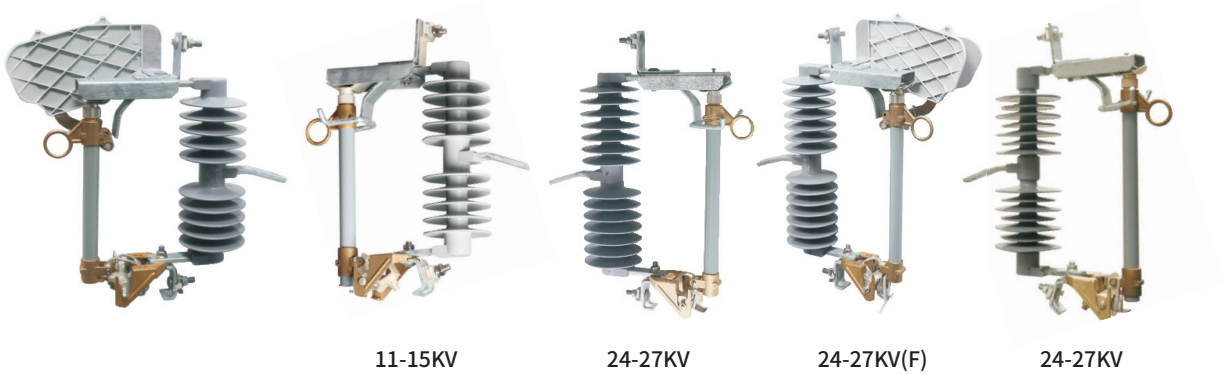
Fuse cutout Series 11 ~36kV



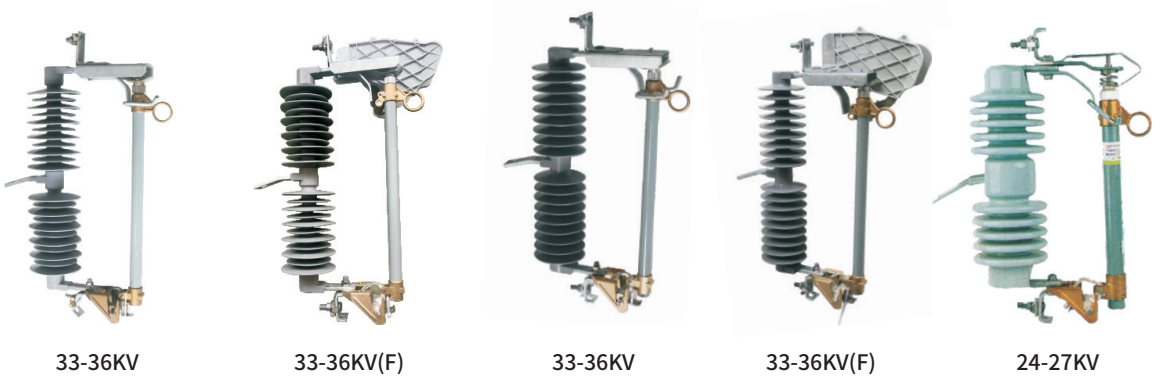
11-15KV　11-15KV　11-15KV(F)　24-27KV　24-27KV(F)



33-36KV(F)　33-36KV　11-15KV　24-27KV　11-15KV



11-15KV　24-27KV　24-27KV(F)　24-27KV



33-36KV　33-36KV(F)　33-36KV　33-36KV(F)　24-27KV

Fuse Cutout Series

Fuse cut out Series 12 ~36kV



11~ 15 kV

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
RW12-11~15	11~15	100	10	110	40	240	7	420 ×370 × 135
RW12-11~15	11~15	200	12	110	40	240	7.5	



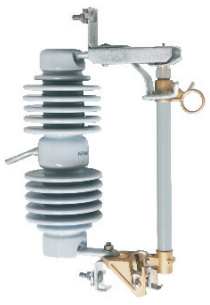
11~ 15 kV

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
RW12-11~15	11~15	100	10	110	40	372	8.5	520 ×370 × 135
RW12-11~15	11~15	200	12	110	40	372	9	



11~ 15 kV(F)

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
RW12-11~15	11~15	100	10	110	40	372	8.5	580 ×400 × 150
RW12-11~15	11~15	200	12	110	40	372	9	



24~27kV

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
RW12-24~27	24~27	100	10	125	65	530(480)	11	525 ×380 × 170
RW12-24~27	24~27	200	12	125	65	530(480)	1 1.5	



24~27kV(F)

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
RW12-24~27	24~27	100	10	125	65	530(480)	11	525 ×380 × 170
RW12-24~27	24~27	200	12	125	65	530(480)	11.5	

Fuse Cutout Series

Fuse cut out Series 12 ~36kV



33kV~36kV

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
RW12-33~36(F)/100	33~36	100	10000	170	70	660(720)	15.5	640(680) ×450 ×170
RW12-33~36(F)/200	33~36	200	12500	170	70	660(720)	16	



33kV~36kV

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
RW12-33~36/100	33~36	100	10000	170	70	660(720)	14.5(15)	620(660) ×380 ×170
RW12-33~36/200	33~36	200	12500	170	70	660(720)	15(15 .5)	



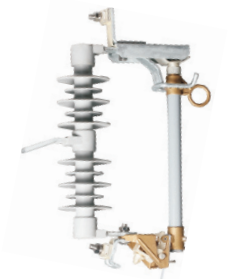
11~ 15kV

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
RW10-11~15/100	11~ 15	100	10000	110	40	372	8.5	520 ×370 × 135
RW10-11~15/200	11~ 15	200	12500	110	40	372	9	



24~27kV

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
RW10-24~27/100	24~27	100	10000	125	65	480	10.5	525 ×380 × 170
RW10-24~27/200	24~27	200	12500	125	65	480	11	



11~ 15kV

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
HRW12-11~15/100	11~ 15	100	10000	110	45	372	5	520 ×400 × 140
HRW12-11~15/200	11~ 15	200	12500	110	45	372	5.5	

Fuse Cutout Series

Fuse cut out Series 12 ~36kV



11 kV~ 15kV

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
HRW12-11~15(F)/100	11~ 15	100	10000	110	45	480	6	480×480 ×145
HRW12-11~15(F)/200	11~ 15	200	12500	110	45	480	6.5	



11 kV~ 15kV

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
HRW12-11~15/100	11~ 15	100	10000	110	45	480	6	620(660) ×380 ×170
HRW12-11~15/200	11~ 15	200	12500	110	45	480	6.5	



24~27kV

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
HRW12-24~27/100	24~27	100	10000	150	70	660	6	520 ×370 × 135
HRW12-24~27/100	24~27	200	12500	150	70	660	6.5	



24~27kV

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
HRW10-24~27(F)/100	24~27	100	10000	150	70	660	6	510 ×400 × 145
HRW10-24~27(F)/200	24~27	200	12500	150	70	660	6.5	



24~27kV

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
HRW10-24~27/100	24~27	100	10000	150	70	660		520 ×400 × 140
HRW10-24~27/200	24~27	200	12500	150	70	660		

Fuse Cutout Series

Fuse cut out Series 12 ~36kV



11 kV~ 15kV

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
HRW12-33~36/100	33~36	100	10000	195	85	1080	6	620 ×360 × 135
HRW12-33~36/200	33~36	200	12500	195	85	1080	6.5	



11 kV~ 15kV

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
HRW12-33~36(F)/100	33~36	100	10000	195	85	1080	6.5	670 ×380 × 135
HRW12-33~36(F)/200	33~36	200	12500	195	85	1080	7	



24~27kV

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
HRW12-33~36/100	33~36	100	10000	195	85	825	6.5	615 ×400 × 145
HRW12-33~36/200	33~36	200	12500	195	85	825	7	



24~27kV

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
HRW12-33~36(F)/100	24~27	100	10000	195	85	825	7	655 ×480 × 145
HRW12-33~36(F)/200	24~27	200	12500	195	85	825	7.5	



24~27kV

Type	Rated voltage (kv)	Rated current (A)	Breaking current (kA)	Impulse voltage (BIL)	Power frepuency withstand voltage	Leakage distance (mm)	Weight (kG)	Dimensions (mm)
RW-24~27/100	24~27	100	10000	125	65	480	10.5	525 ×380 × 170
RW-24~27/200	24~27	200	12500	125	65	480	11	

Fuses Links

“KB、KU、KS” type fuses links belong



“KB、KU、KS” type fuses links belong to “K” and “T” type fuses, it has general type, universal type and screw type available accarding to IEC-282 standard. The product drop-out type fuse of 11~36V grade.

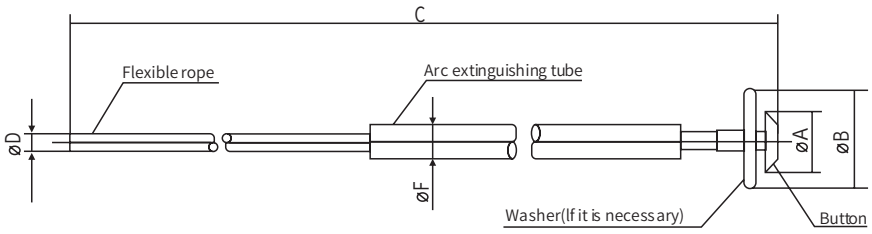
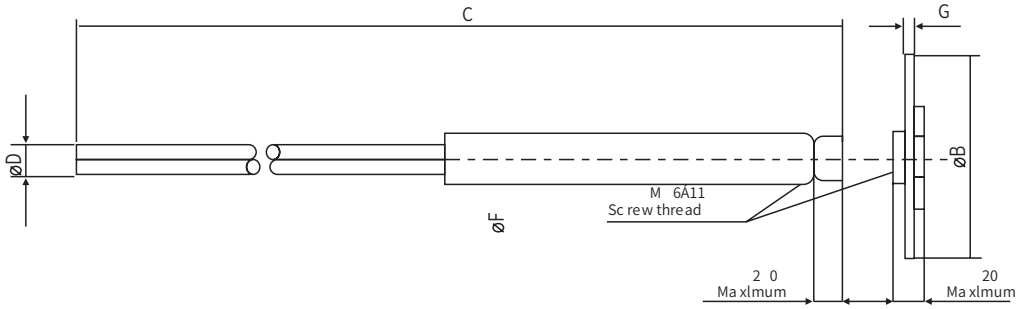


Fig. B. Ta button type



Rated current(A)	Dimension(mm)					Quantity/carton
	A	B	C	D	F	
1~25	12.5±0.2	19.0±0.2	Note 1	2.0	6.5	500
30~40	12.5±0.2	19.0±0.2	Note 1	3.0	8.0	500
50~100	19.0±0.3	Not applicable	Note 1	5.0	10.0	250
140~200	19.0±0.3	Not applicable	Note 1	7.0	12.0	150

Suspension Clamps

Suspension Clamps

suspension clamps are used to hang conductor or ground wire through insulators or link fitting to tower arms or substation structures. The clamps are made of malleable iron or aluminium alloy.
The meanings ofthe letter & arabic figure in the catalog are shown as follow.
X- suspension clamp G- fixed S-double clamp U- U bolt J-strength H-aluminium alloy F-corona control
K- under axle type T-envelope type A - with a socket-clevis B- with U Clevis X-hang-down type
The suspension angle of suspension clamps is not less than 25℃ ,the radius of curvature is not less than the dia of installed leads by 8 , and the percentage of the grip on different kinds of leads to the calculating capability of snap show in following table.

The percentage slip strength of suspension clamp to rated ultimate strength of conductors is shown in the following table.

conductor	construction (Al/st)	% percentage %
ACSR	> 1 7	12
	4 . 0 -4 . 5	18
	5 . 0 - 6 . 5	20
	7.0-8.0	22
	1 1 . 0 -20 . 0	24
steel wire	1 176 - 1274N/mm2)	14
Al-conductor		30

As the suspension clamps are used to AAC andACSR , the conductor maybe wound by aluminium tapes or preformed armour rods for protecting these taps or rods are included in the diameter of suitable conductor.



XGH aluminium alloy clamp (envelop type)



XGF suspension clamp (hang-down type)



XGF suspension clamp (carried-up type)



XGF suspension clamp (for high height)



XGF suspension clamp



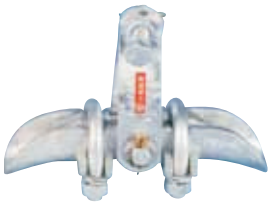
XGJ suspension clamps



XCS perpendicular double clamp



XCS perpendicular double clamp



XGU suspension clamp



XGU suspension clamp (with U-clevis)



XGU suspension clamp (with socket-clevis eye)



Suspension clamps for Twin jumper conductors

Strain Clamp

Strain Clamp

strain clamps are used to fix condcutor and ground wire through insulators or link fitting to tower arms or substation structures. according to the clamp construction and mounting way,the clamps include three types as compression type and bolt type wedge type,The compression type includes hydraulic type and explosive type.

The meaning of letter &Arabic figure in the catalog are shown as follow ·

N-strain clamp L- bolt type D-inverse mounting Y-hydraulic type B-explosive type

The figures mean the of assembled leads which apply to each other numbers.

Additional letter: A-jumper 0 o B-jumper 30 。

The radius of curvature is more than eightfold diameter of the suitable conductor,the percentage minimum slip strength of clamp to rated ultimate strength of conductor is shown in the following table.

PLACE	Type	(%) percentage (%)
Electric rline	compression Bolt	95 90
Note: For Extra-large Cross-section conductors, tension-resistant clamps for extended conductors and insulated wires can be used with a grip of 65%.		

As the bolt type strain clamp is used to AAc and ACSR , the conductor may be wound by aluminium tape or preformed armour rods for protecting



NEL series wedge type aluminum alloy tensile resistant wire clip



NLL series bolt type aluminium alloy strain clamp



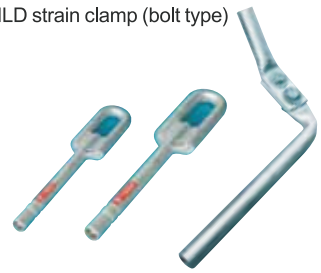
NLD strain clamp (bolt type)



NY series strain clamp



NY series strain clamp



NB series strain clamp



NY series strain clamp



Anchor



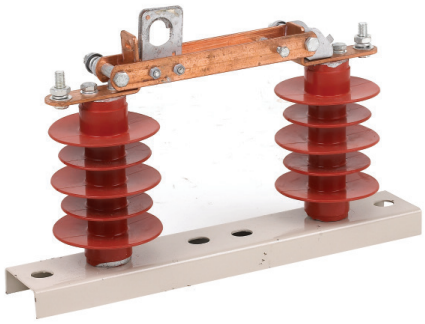
NY-G strain clamp for steel wire

Disconnect Switch

Disconnect Switch

>> GW9 Series Disconnect Switch





Technical Parameters

No .	Item		Unit	Datas
1	Rated frequency		Hz	50
2	Rated voltage		kV	12
3	Rated current		A	630(1250)
4	Rated short-time withstand current and duration		kA/s	20 (25)/45
5	Rated peak withstand current		kA	50(63)
6	Rated short-time power frequency withstand voltage	lnterphase ,to earth (dry)	kV/ min	42/ 1
		Break (dry)		48/1
		lnterphase ,to earth (wet)		30/1
		Break(wet)		36/1
7	Rated lightning impulse withstand voltage	lnterphase ,to earth	kV	75
		Break		85
8	Circuit resistance		μΩ	80
9	Mechanical life		Time	3000
10	Pollution grade			e
11	Creepage distance		mm	372
Note:if altitude over than 1000m，the rated insulation level should be modify as appropriate.				

Disconnect Switch

>> GW1 Series Disconnect Switch



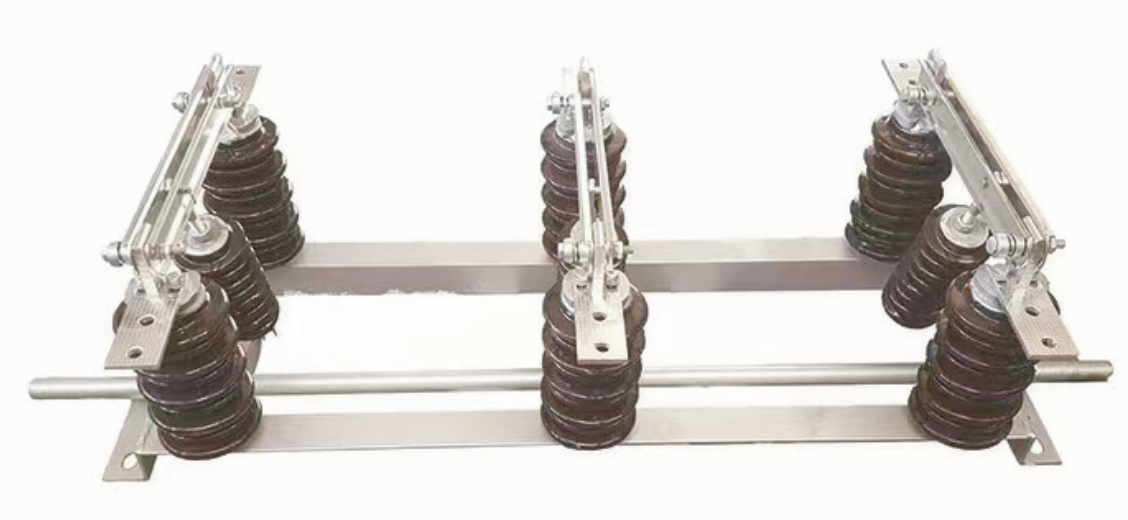
Technical Parameters

No .	Item		Unit	Datas			
1	Rated voltage		kV	10	15		20
2	Rated voltage		kV	12	17.5		24
3	1 min power frequency	To earth	kV	38	40		50
	withstand voltge	Break	kV	42	47		60
4	Rated lightnin impulse	To earth	kV	75	105		125
	withstand voltage	Break	kV	85	120		145
5	Rated frequency		Hz		50		
6	Rated current		A	200	400	630	1250
7	4s short time withstand current		kV	6.3	12 .5	20	31 .5
8	Peak withstand current		kV	16	31 .5	50	80
9	Mechanism supplied for disconnectol		CS8-1、CS8-D、CS8-llD Rain type manual mechanism or CJ35 motor drive mechanism				

Disconnect Switch

Disconnect Switch

>> RH-B Series Disconnect Switch



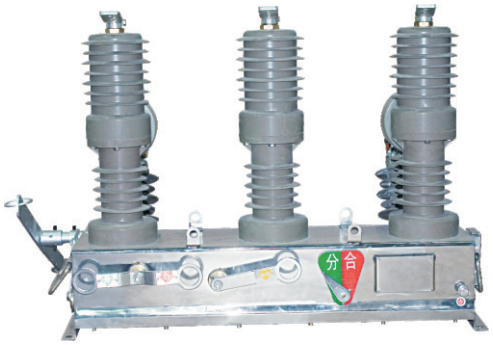
Technical Parameters

Type	Rated voltage (kV)	Rated current	4s heat steady current	Shock steady current A	Lightning impulse withstand voltage		Power-Frequency withstand voltage	
					To earth	Across the isolating distance	To earth	Across the isolating distance
RH-B	11	400	12500	31500	75	95	38	42
		630	20000	50000				
	33	400	12500	31500	170	195	70	80
		630	20000	50000				

Vacuum Circuit Breaker

>> ZW32 Series Vacuum Circuit Breaker





Technical Parameters

No .	Item		Unit	Datas		
1	Rated voltage		kV	12	24	40.5
2	Rated frequency		Hz		50/60	
3	Rated current		A	630/1250		1250/1600
4	Rated short-time power frequency withstand voltage	lnterphase ,to earth (wet)	kV/ min	34/ 1	50/64	80/95
		lnterphase ,to earth (dry)		42/ 1	65/79	118
		Break(dry)		48/1	65/79	118
		Secondary circuit to earth		2	2	2
5	Rated lightning impulse withstand voltage	lnterphase ,to earth	kV	75	125	185
		Break		85	145	215
6	Rated short-circuit breaking current		kA	20/25		25/31 .5
7	Rated short-circuit making current(peak)		kA	50/63		63/80
8	Rated short-time withstand current and duration		kA/s	20/25		25/31 .5
9	Rated peak withstand current		kA	50/63		63/80
10	Rated short-circuit breaking current breaking times		times	30		
11	Rated operating voltage and rated voltage ofauxiliary circuit		V	AC/ DC220 , DC48 , DC24		
12	Mechanical life		times	10000		

Vacuum Circuit Breaker

Vacuum Circuit Breaker

>> ZW7 Type Vacuum Circuit Breaker





Technical Parameters

No.	Item		Unit	Datas
1	Rated frequency		kV	50
2	Rated voltage		HZ	40.5
3	Rated current		A	1250/1600/2000
4	Rated short-time power frequency withstand voltage	Interphase, to earth (wet)	kV/ min	80/1
		Interphase, to earth (dry)		95/1
		Break(dry)		118/1
		secondary circuit to earth		2/1
5	Rated lightning impulse withstand voltage	Interphase, to earth	kV	185
		Break		215
6	Rated short-circuit breaking current		kA	31.5
7	Rated short-circuit making current peak)		kA	80
8	Rated short-time withstand current and duration		kA/s	31.5/4
9	Rated peak withstand cu rent		kA	80
10	Rated short-circuit breaking cu rent breaking times		times	20
11	Rated operating voltage and rate dvotage of auxiliary circuit		v	AC/DC220 AC/DC110
12	Main circuit resistance(without cT)		μΩ	⩽ 100
13	Mechanical life		times	10000

Vacuum Circuit Breaker

Vacuum Circuit Breaker

>> LW Type Sulphur Hexafluoride SF6 Gas Circuit Breaker



Applicable for 12-145kV,the following is 72 .5kV type Technical Parameters

No.	Item		Unit	Datas
1	Maximum Voltage		kv	72.5
2	Rated Voltage		kv	67
3	Rated Frequency		Hz	60
4	Rated Current		A	2500
5	Rated short circuit breaking current	short-circuit current	kA	40
		DC component	/	40%
6	Rated duration ofshort-circuit		S	4
7	Rated short time withstand current(peak)		kA	40
8	Rated short circuit making current(peak)		kA	100
9	Rated power frequency withstand current(effective values)	phase to earth	kV	160
		between open contacts	☒V	200
10	Rated lightning impulse withstand voltage(peak)	phase to earth	kV	350
		between open contacts	kV	440
11	Rated peak withstand current		kA	100
12	Rated out - of- phase breaking current		kA	10
13	Rated line-charging breaking current		A	50
14	Rated operating sequence		/	0-0.3S-CO-180S-CO
15	Closing time		ms	100
16	Opening time		ms	50
17	Opening - simultaneity		ms	< 3
18	Closing - simultaneity		ms	< 5
19	Rated SF6 gas pressure (20C)		Mpa	0.5
20	Sf6 Annual gas leakage rate		%	0.5%
21	Gaseous fuelwater content		ppm(v/v)	150
22	Resistance ofeach primary loop		μΩ	70
23	weight of fill SF6 gas		kg	8
24	Mechanical life		times	10000
25	Weight of circuit breaker		kg	1700

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