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为电网系统提供**专业、环保、智能**的电气连接

Provide **Professional, Environmentally Friendly and Intelligent** Electrical
Connections to the Grid Systems.

以诺电气有限公司

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以诚立业·有诚有诺
护航电力可靠、智能传输

Operating on the foundation of integrity
Making power transmission safe
reliable and intelligent



公司简介 Company Profile

浙江以诺电气有限公司，座落在丽水市松阳县赤寿生态工业园，占地50亩，建筑面积达30000平方。集工作、娱乐、生活、体验、运动等全方面设计，实现员工劳逸结合，幸福工作！

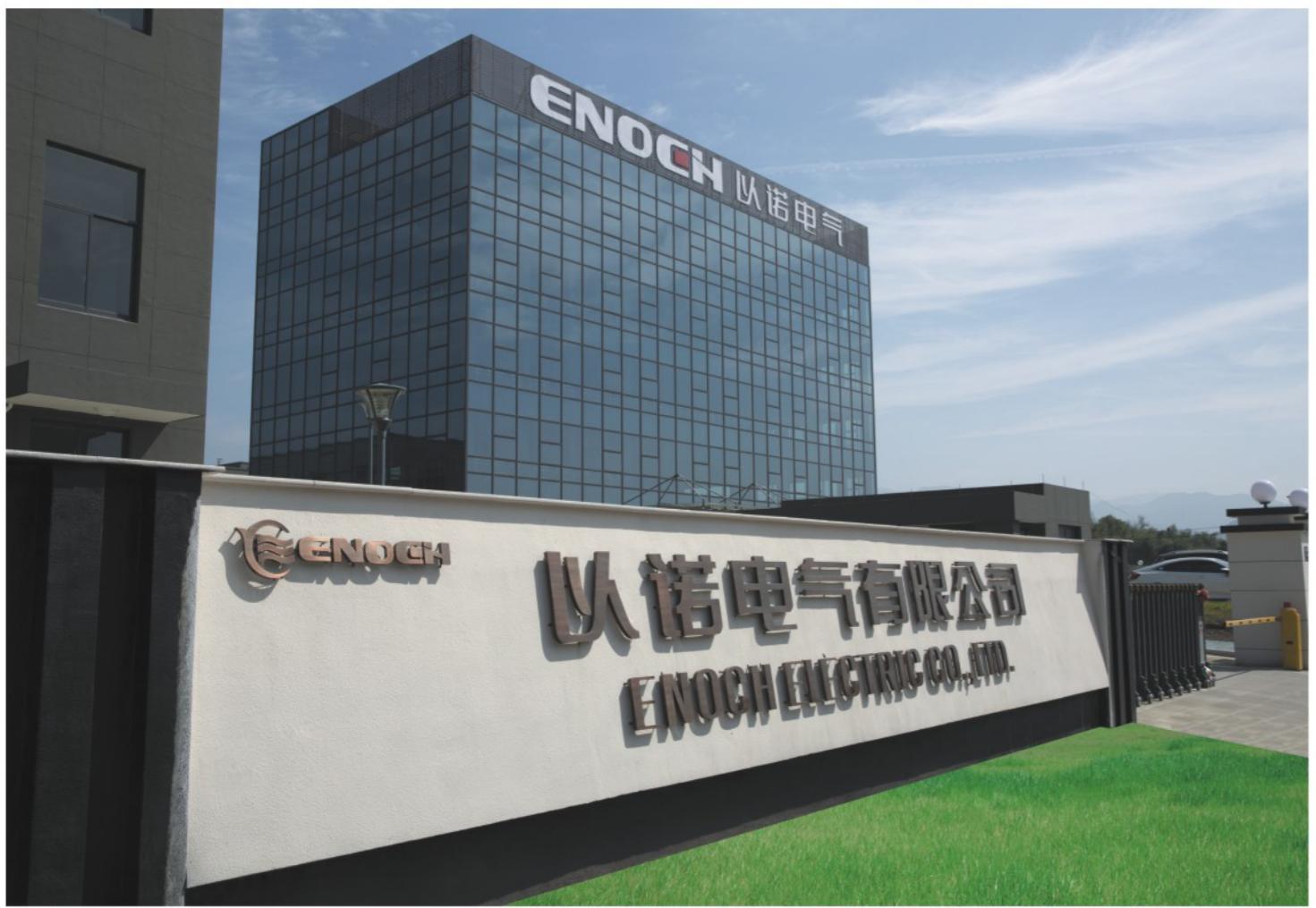
公司多年致力于避雷器阀片、电力电缆附件、开关、中低压成套、箱变等产品的研究、开发、生产和销售。公司始终坚持“和谐利他、务实高效、积极创新、有诚有诺”的价值观，坚持“专业制造、专心服务、成就员工幸福生活，为电力更好地服务人类做贡献”的经营理念，立足于创造一个“专业、环保、智能”的系统产业链。

Zhejiang Enoch electric co.,ltd was established in 1997. Our company is specialized in production of arresters, resistors, high-voltage cable accessories and mid-voltage & low-voltage transformers.

Enoch has internationally advanced rubber products to compound in shaping equipment, the high-voltage electric testing laboratory, part set test equipment, X-rays test equipment, the relevant performance test equipment of rubber products and the purifying workshop.

In the last 20 years, ISO9001 Certification verifies our company's scientific management mode and guarantees sound quality of our products.





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一、产品概述 General

本公司专业规模生产0.22kV~500kV交流系统用氧化锌电阻片，适用于0.22kV~500kV交流系统的过电压保护。同时，根据用户的不同需要，生产各种适用于特殊地区及场合使用的氧化锌电阻片。

Our company are specialize in producing 0.22kV~500kV ZnO resistors for AC systems, use for overvoltage protection of 0.22kV~500kV AC systems. According to the different requirements of users, we produce various kinds of ZnO resistors to application for special areas and situations.

二、使用条件 Service Condition

- 1、环境温度：-40°C ~ +40°C
 - 2、交流电源频率：48Hz~62Hz
 - 3、长期施加在氧化锌电阻片上的工频电压应不超过所装配的避雷器持续运行电压
 - 4、地震烈度7级以下地区
1. Ambient temperature: -40°C~+40°C.
 2. The AC power frequency is 48Hz~62Hz.
 3. Impose on the resistors frequency voltage should not exceed its continuous operating voltage.
 4. Earthquake intensity: 7 degree.

三、出厂试验项目 Routine Test Items

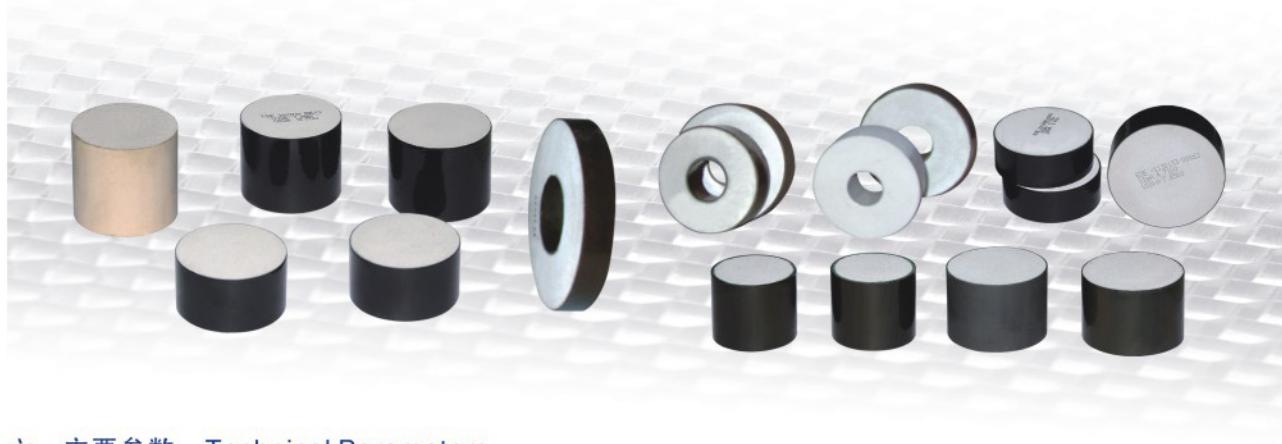
- 1、2ms方波冲击试验
 - 2、8/20 μs标称雷电冲击试验
 - 3、直流参考电压试验 (U1mA)
 - 4、0.75U1mA下泄漏电流试验
1. 2 ms square wave shock test
 2. 8/20 UGS nominal lightning impulse test
 3. DC Reference Voltage Test (U1mA)
 4. Leakage current test under 0.75U1mA



四、订货须知 For Order

1. 规格型号
 2. 结构类型 (注明环状或饼状, 环状时需标明内孔直径)
 3. 标准规定之外的其它特殊要求
1. Specification
2. Struct types (note ring type or pie type, if order ring type, please note inner bore diameter)
3. Other requirements

五、产品图片 Photos of Products



六、主要参数 Technical Parameters

等 级 Level	规 格 Spec.	直 径 ± 0.5 mm Diameter ± 0.5 mm	厚 度 ± 0.5 mm Thickness ± 0.5 mm	直 流 1 mA(2mA) 参 考 电 压 ± 0.3kV Diameter 1mA (2mA) reference voltage ± 0.3kv				雷 电 冲 击 电 流 残 压 8/20 μs (峰 值) ± 0.5 kV Lightning impulse current residual voltage 8/20μs (peak value)±0.5kV				大 电 流 冲 击 耐 受 能 力 4/10 μs 2次 kA High current impulse tolerant capacity 2ms 18 times A	方 波 冲 击 电 流 耐 受 能 力 2ms 18次 A Impulse current withstand discharge capacity 2ms 18 times A	平 均 压 比 ≤ Residual voltage ratio ≤	加 速 老 化 试 验 (115°C) 1000h Aging test
				1.5 kA	5 kA	10 kA	20 kA	1.5 kA	5 kA	10 kA	20 kA				
一 等 品 First Grade	D3	28	24	5.2		9.6		65	100 (120)	1.80	0.9				
		30	24	5.2		9.6		65	100 (120)	1.80					
		32	22	4.7		9.2		65	100 (120)	1.80					
		32	24	5.2		9.6		65	100 (120)	1.80					
		35	24	5.2		9.4		65	120 (150)	1.75					
D4	42	22	4.8			9.3		100	250 (350)	1.82	1.0				
		42	24	5.1		9.8		100	250 (350)	1.82					
	D5	52	22	4.8		9.0		100	400 (500)	1.75					
		52	24	5.0		9.3		100	400 (500)	1.75					
		52	24	4.8		8.7		100	600	1.72					
D6	60	24	4.8			9.0		100	600 (800)	1.72	1.1				
		63	22	4.8		9.0		100	600 (800)	1.72					
	D7	70	22	4.7		9.0		100	800 (1000)	1.72					
		72/26	22	4.7		9.0		100	800 (1000)	1.72					
D8	85	22	4.7			8.3		100	1000 (1200)	1.65					
D9	93/26	22	4.7			8.3		100	1500 (1800)	1.65					
D11	115/42	22	4.7			8.8		100	1800 (2200)	1.72					

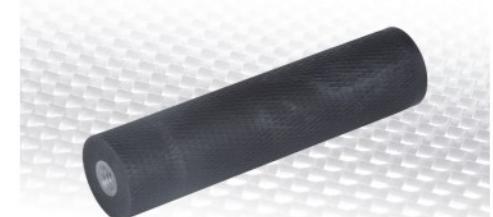
氧化锌避雷器芯体 (杜力顿)
Surge Arrester Core

产品概述 General

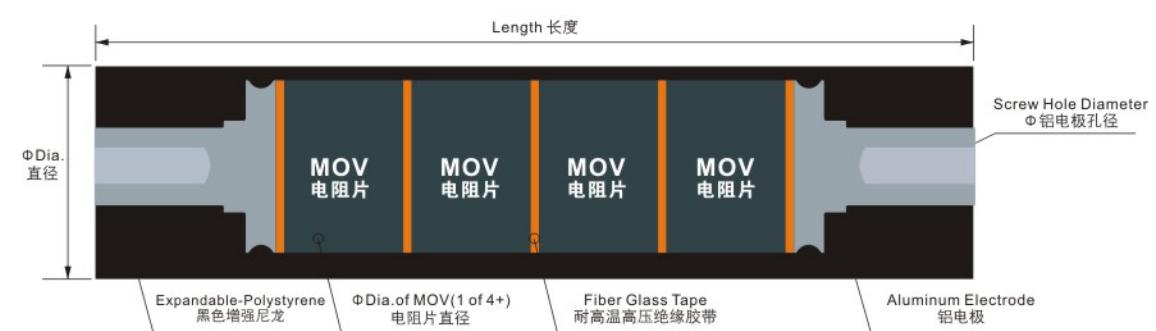
氧化锌避雷器芯体 (杜力顿) 优越性:
Superiority of Surge arrester core.

电气绝缘性能好、介电强度高、抗漏痕、抗电蚀、耐热、耐寒、耐老化、防爆、憎水性、密封性能好等优点。

Good electric insulation performance, High dielectric strength, and it has the features of leakage resistance, electric erosion resistance, heat-resisting, cold-resisting, aging resistance, explosion proofing, hydrophobicity, good sealing performance.



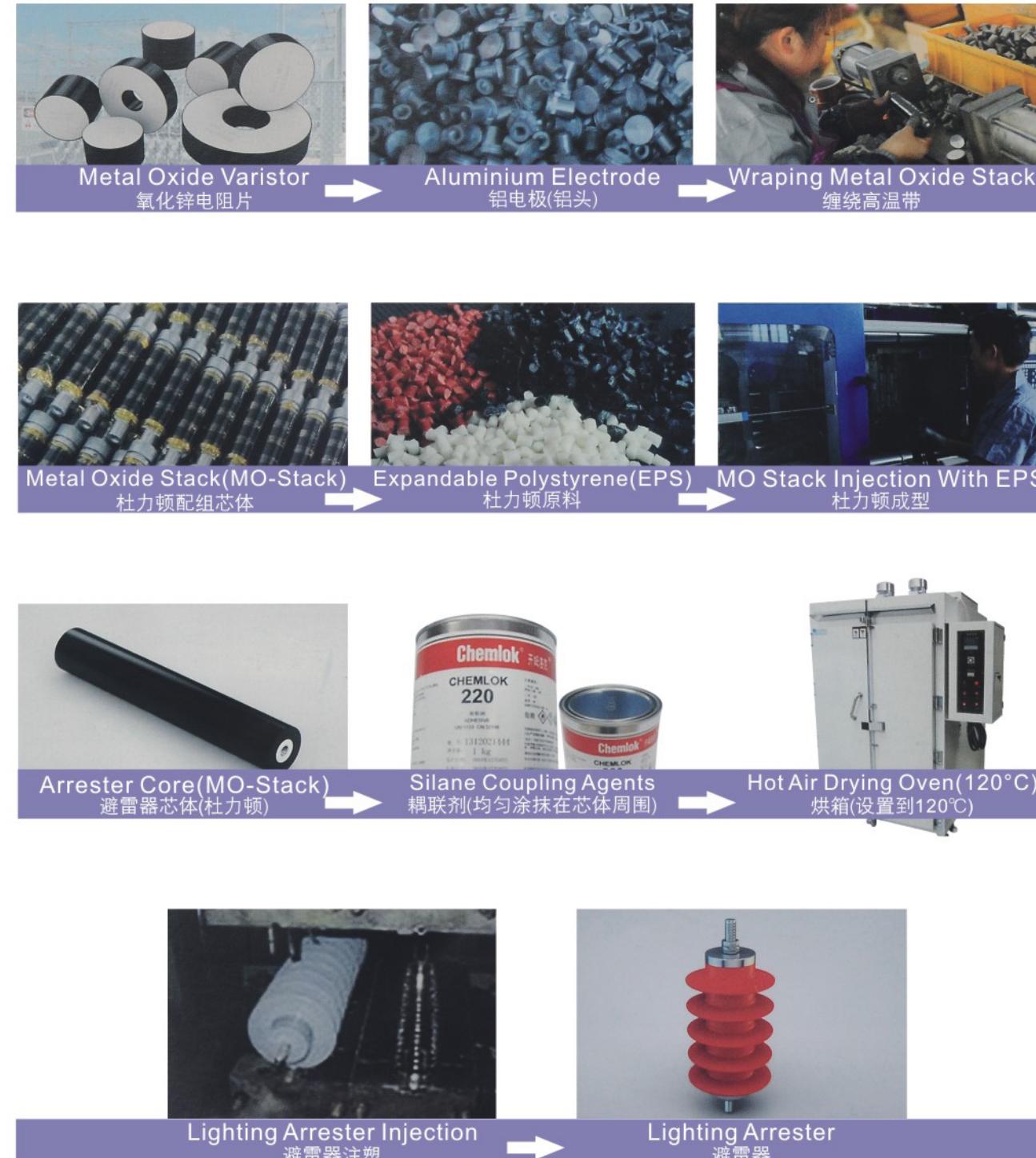
MOV Dia. 电阻片直径	Arrester Core Dia 避雷器芯体直径	Arrester Core Length 避雷器芯体长度	Screw HOLE Dia 铝电极孔径
Φ28-32mm	Φ35mm	65-210mm(Max.)	M6-M16(可定制)
Φ28-32mm	Φ36-39mm	65-210mm(Max.)	M6-M16(可定制)
Φ28-32mm	Φ38mm	65-380mm(Max.)	M6-M16(可定制)
Φ28-35mm	Φ40mm	65-320mm(Max.)	M6-M16(可定制)
Φ28-35mm	Φ42mm	65-380mm(Max.)	M6-M16(可定制)
Φ28-38mm	Φ44-45mm	65-320mm(Max.)	M6-M16(可定制)
Φ28-40mm	Φ46-52mm	65-380mm(Max.)	M6-M16(可定制)
Φ28-46mm	Φ52-53mm	65-550mm(Max.)	M6-M16(可定制)
Φ28-48mm	Φ58mm	65-550mm(Max.)	M6-M16(可定制)
Density 密度		≥1.37g/cm³	
Hygroscopicity 吸水性		<0.5%	
Bending Strength 弯曲强度		≥500MPa	
Dielectric Dissipation Factor 介质损耗因素		≤0.01	
Leakage Current 泄露电流		≤10 μA	
Insulation Resistance 绝缘电阻		≥5*104MΩ	
Power Frequency Dry Resisting Vol. 工频干耐受电压		60 (No Flashover) kV/min	
Aging Test 老化系数		1000H≤1.0	
Heat Distortion Temperature 热变形温度		180-220°C	



The drawing only for the reference purpose and the quantity of MOV is according to customers' specific request or protected equipment. Please also notice, The MOV and Alu electrode size can be customized.

以上尺寸图仅供参考，电阻片的配组片数按实际客户要求或被保护的设备为主，电阻片和铝电极的尺寸大小可以按照客户详细要求和图纸定做。

避雷器流程图 Folw Chart of MOA



一、产品概述 General

0.22kV ~ 220kV 交流系统用复合外套 (YH系列)、瓷外套 (Y系列)、金属氧化物避雷器，适用于0.22kV ~ 220kV 交流系统的过电压保护，同时，根据用户的不同需要，生产各种适用于特殊地区及场合使用的避雷器。

Complete range of zinc oxide (ZnO) surge arresters housed in polymer (YH series) and porcelain (Y series) with voltage from 0.22kV to 220kV with nominal discharge current from 5kA and 10kA according to IEC99-4. All the arresters are used to protect for 0.22kV to 220kV A.C. System against over-voltage damage. Our company also produce different arresters as user's special requirement for difference area.

二、使用条件 Service Condition

1. 环境温度为 -50°C ~ +50°C;
2. 海拔高度不超过 1000m;
3. 长期施加在避雷器上的工频电压应不超过其持续运行电压;
4. 最大风速不超过 45m/s;
5. 地震裂度 7 度及以下地区。

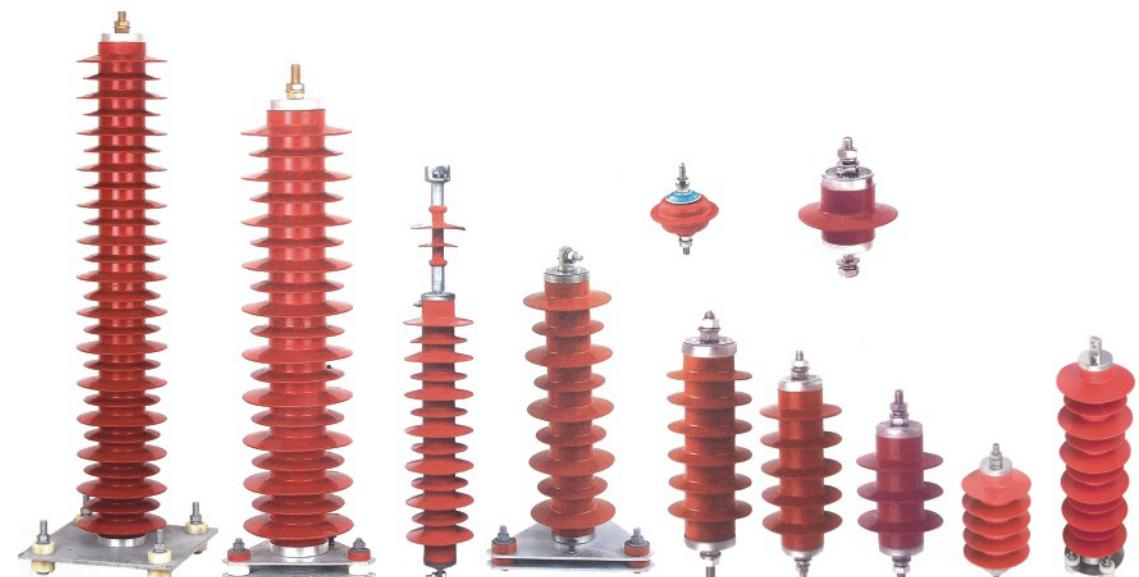
三、出厂测试项目 Routine test items

1. 直流参考电压试验 (U1mA) ;
2. 0.75U1mA 下直流泄漏电流试验;
3. 局部放电试验;
4. 密封性能试验;
5. 持续电流试验;
6. 工频参考电压试验 (阻性电流 1mA 下) ;
7. 标称电流下的残压试验;
8. 外观检查。

四、订货须知 For order

1. 产品型号
2. 结构类型
3. 环境要求 (污秽等级、海拔高度等)
4. 要求的附件 (计数器、监测仪、脱离器等)
5. 标准规定之外的其它特殊要求

- 1.Type of arrester
- 2.Specification
- 3.Environmental requirements
- 4.Requirement for accessories
- 5.Other requirements



五、产品技术参数 Technology Parameter

续表

电压等级 Voltage Class	使用场所 Service scope	系统标称电压 有效值 (kV) Virtual value of nominal system voltage (kV)	避雷器国标型号 Chinese standard arrester model	无间隙避雷器 Gapless arrester		有间隙避雷器 Gapped arrester		残压(kV)峰值(不大于) Peak value of residual voltage (kV) (no larger than)		2000 μ s 方波通流容量 A) 2000 μ s square wave flow capacity (A)	4/10 大电流耐受能力 (kA) 4/10 high current compression capacity (kA)				
				持续运行电压 有效值 (kV) Virtual value of arrester rated voltage (kV)	直流1mA 参考电压 有效值 (kV) Virtual value of continuous voltage (kV)	0.75倍直流参考电压下最大泄漏 电流(μ A) Max leakage (μ A) under 0.75 times of D.C. reference voltage	工频放电电压(kV) 不小于 Virtual value of P.F. discharge voltage (kV) is no less than	1.2/50 冲击放电电压(kV) 峰不大于 Peak value of 1.2/50 impulse discharge voltage (kV) is no larger than	最大导电电流 (μ A) Max. conduction current (μ A)	8/20 雷电冲击电流下 8/20 under the lightning current impulse	30/60 操作冲击电流下 30/60 under switching current impulse	1/4 陡波冲击电流下 1/4 under steep current impulse			
低压 Low voltage	配电型 Distribution model	0.22	YH1.5W-0.28/1.3	0.28	0.24	0.6	50	-	-	-	1.3	-	-	75	25
		0.38	YH1.5W-0.5/2.6	0.5	0.24	1.2	50	-	-	-	2.6	-	-	75	25
	电机型 Motor model	0.66*	YH2.5WD-1.3/3.6	1.3	0.95	1.8	50	-	-	-	3.6	-	-	200	40
		1.14*	YH2.5WD-2.6/2.7	2.6	1.9	3.6	50	-	-	-	7.2	-	-	200	40
3kV	配电型 Distribution model	3	YH5WS-3.8/15	3.8	2.0	7.5	50	-	-	-	15.0	12.8	17.3	75	40
		3	YH5WS-5/15	5	4.0	7.5	50	-	-	-	15.0	12.8	17.3	75	40
		3	YH5CS-3.8/13.5	3.8	-	-	-	9.0	13.5	20	13.5	11.4	15.0	75	40
	电站型 Power model	3	YH5WZ-3.8/13.5	3.8	2.0	7.2	50	-	-	-	13.5	11.5	15.5	200	65
		3	YH5WZ-5/13.5	5	4.0	7.2	50	-	-	-	13.5	11.5	15.5	200	65
		3	YH5CZ-3.8/12.0	3.8	-	-	-	8.0	12.0	20	12.0	10.2	13.5	200	65
	电容型 Capacitor model	3	YH5WR-3.8/13.5	3.8	2.0	7.2	50	-	-	-	13.5	10.5	-	400	65
		3	YH5WR-5/13.5	5	4.0	7.2	50	-	-	-	13.5	10.5	-	400	65
		3	YH5CR-3.8/12.0	3.8	-	-	-	8.0	12.0	20	12.0	9.6	-	400	65
	发电机型 Generator model	3.15*	YH5WD-3.8/9.5	3.8	2.0	5.7	50	-	-	-	9.5	7.6	10.7	400	65
		3.15*	YH5WD-4/9.5	4	3.15	5.7	50	-	-	-	9.5	7.6	10.7	400	65
		3.15*	YH5CD-3.8/8.6	3.8	-	-	-	7.5	8.6	20	8.6	6.9	9.8	400	65
6kV	电动机型 Electric Motor model	3.15*	YH2.5WD-3.8/9.5	3.8	-	-	-	7.5	8.6	20	8.6	6.9	9.8	400	65
		3.15*	YH2.5WD-4/9.5	4	3.15	5.7	50	-	-	-	9.5	7.6	10.7	400	65
		3.15*	YH5CD-3.8/8.6	3.8	-	-	-	7.5	8.6	20	8.6	6.9	9.8	200	65
	中型点型 Neutral point model	3.15*	YH2.5CD-3.8/8.6	3.8	-	-	-	7.5	8.6	20	8.6	6.9	9.8	200	65
		3.15*	YH1.5W-2.4/6	2.4	1.9	3.4	50	-	-	-	6.0	5.0	-	200	65
		6	YH5WS-7.6/30	7.6	4.0	15.0	50	-	-	-	30.0	25.6	34.6	75	40
	电站型 Power model	6	YH5WS-10/30	10	8.0	15.0	50	-	-	-	30.0	25.6	34.6	75	40
		6	YH5CS-7.6/27	7.6	-	-	-	16.0	27.0	20	27.0	22.5	30.0	75	40
		6	YH5WZ-7.6/27	7.6	4.0	14.4	50	-	-	-	27.0	23.0	31.0	200	65
	电容型 Capacitor model	6	YH5WZ-10/27	10	8.0	14.4	50	-	-	-	27.0	23.0	31.0	200	65
		6	YH5CZ-7.6/24	7.6	-	-	-	16.0	24.0	20	24.0	20.4	27.0	200	65
		6	YH5WR-7.6/27	7.6	4.0	14.4	50	-	-	-	27.0	21.0	-	400	65
10kV	发电机型 Generator model	6	YH5WR-10/27	10	8.0	14.4	50	-	-	-	27.0	21.0	-	400	65
		6	YH5CR-7.6/24	7.6	-	-	-	16.0	24.0	20	24.0	19.5	-	400	65
		6.3*	YH5WD-7.6/18.7	7.6	4.0	11.2	50	-	-	-	18.7	15.0	21.0	400	65
	电动机型 Electric Motor model	6.3*	YH5WD-8/18.7	8	6.3	11.2	50	-	-	-	18.7	15.0	21.0	400	65
		6.3*	YH5CD-7.6/17	7.6	-	-	-	15.0	17.0	20	17.0	13.8	19.6	400	65
		6.3*	YH2.5WD-7.6/18.7	7.6	4.0	11.2	50	-	-	-	18.7	15.0	21.0	200	65
	中型点型 Neutral point model	6.3*	YH2.5WD-8/18.7	8	6.3	11.2	50	-	-	-	18.7	15.0	21.0	200	65
		6.3*	YH2.5CD-7.6/17	7.6	-	-	-	15.0	17.0	20	17.0	13.8	19.6	200	65
		6.3*	YH1.5W-4.8/12	4.8	3.8	6.8	50	-	-	-	12.0	10.0	-	200	65
220kV	配电型 Distribution model	10	YH5WS-12.7/50	12.7	6.6	25	50	-	-	-	50	42.5	57.5	75	40
		10	YH5WS-17/50	17	13.6	25	50	-	-	-	50	42.5	57.5	75	40
		10	YH5CS-12.7/45	12.7	-	-	-	26.0	45	20	45	38.4	51.0	75	40
	电站型 Power model	10	YH5WZ-12.7/45	12.7	6.6	24	50	-	-	-	45	38.3	51.8	200	65
		10	YH5WZ-17/45	17	13.6	24	50	-	-	-	45	38.3	51.8	200	65
		10	YH5CZ-12.7/41	12.7	-	-	-	26.0	41	20	41	35.0	46.0	200	65
	电容型 Capacitor model	10	YH5WR-12.7/46	12.7	6.6	24	50	-	-	-	46	35.0	-	400	65
		10	YH5WR-17/46	17	13.6	24	50	-	-	-	46	35.0	-	400	65
		10	YH5CR-12.7/41	12.7	-	-									

一、产品概述 General

额定电压3.8 -220kV交流无间隙复合外套氧化锌避雷器是用于保护交流输变电设备免受大气过电压和操作过电压损害的重要保护电器适用于户内外。

Zinc-oxide arrester is used to protect for A.C system against atmospheric over-voltage damage and operating over-voltage damage. The rating voltage is 3.8-220kV. It is for indoor and outdoor. Our company also produce different arresters as user's special requirement for difference area.

二、执行标准 Standard

- ①. GB 11032交流无间隙金属氧化物避雷器
- ②. GB/T 16434高压架空线路和发电厂、变电所环境污区分级及外绝缘选择标准
- ③. GB50260电力设施抗震设计规范
- ④. JB/T7617六氟化硫罐式无间隙金属氧化物避雷器
- ⑤. JB/T8952交流系统用复合外套无间隙金属氧化物避雷器
- ⑥. JB/T10497交流系统用有串联间隙复合外套金属氧化物避雷器
- ⑦. IEC 60099-4交流无间隙金属氧化物避雷器
- ⑧. Cigre33/14.05高压直流换流站无间隙金属氧化物避雷器使用导则
- ①. GB 11032 exchange non-clearane metal oxide surge arrester
- ②. GB/T 16434 high voltage overhead line and power plants, substation environment pollution area classification and external insulation selection criteria
- ③. GB50260 power facilities seismic design code
- ④. JB/T7617 sulfur hexafluoride tank non-clearane metal oxide surge arrester
- ⑤. JB/T8952 communication system using composite coat non-clearane metal oxide surge arrester
- ⑥. JB/T10497 communication system with series gap composite coat of metal oxide surge arrester
- ⑦. IEC 60099-4 exchange non-clearane metal oxide surge arrester
- ⑧. Cigre33/14.05 high voltage direct current converter stations use guideline non-clearane metal oxide surge arrester.



三、使用条件 Service Condition

- 1、环境温度为 -50°C ~ +50°C；
- 2、海拔高度不超过 1000m；
- 3、长期施加在避雷器上的工频电压应不超过其持续运行电压；
- 4、最大风速不超过 45m/s；
- 5、地震裂度 7 度及以下地区。
1. Ambient temperature: -50°C~+50°C
2. Altitude: above 1000m
3. Impose on the arrester frequency voltage should not exceed its continuous operating voltage;
4. Maximum wind velocity: 45m/s
5. Earthquake intensity: 7 degree, 0.3g

四、出厂测试项目 Routine Test Items

- 1、直流参考电压试验 (U1mA)；
- 2、0.75U1mA 下直流泄漏电流试验；
- 3、局部放电试验；
- 4、密封性能试验；
- 5、持续电流试验；
- 6、工频参考电压试验 (阻性电流 1mA 下)；
- 7、标称电流下的残压试验；
- 8、外观检查。

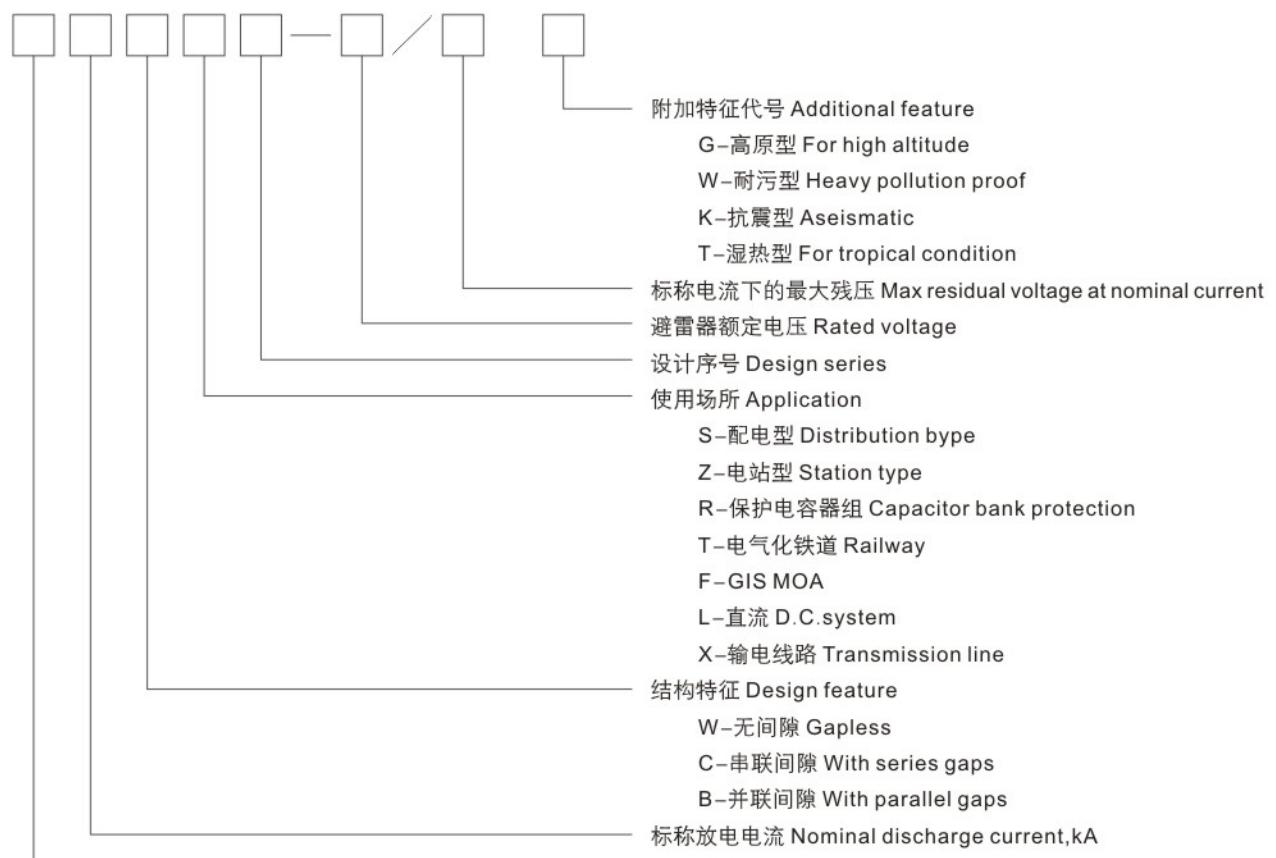
Our company produces surge arrester according to IEC 60099-4 and ANSI standards, we will perform routine test items specified in IEC for every piece of arresters as follows:

1. DC reference voltage test
2. Leakage current test under 0.75U1mA
3. Partial discharge test
4. Power frequency reference voltage test
5. Resistive current test
6. Residual voltage test
7. Sealing performance test
8. Visual inspection

五、订货须知 For order

- | | |
|-------------------------|-------------------------------|
| 1. 产品型号 | 1.Type of arrester |
| 2. 结构类型 | 2.Specification |
| 3. 环境要求 (污秽等级、海拔高度等) | 3.Environmental requirements |
| 4. 要求的附件 (计数器、监测仪、脱离器等) | 4.Requirement for accessories |
| 5. 标准规定之外的其它特殊要求 | 5.Other requirements |

六、避雷器型号说明 MOA type Designation



一、产品概述 General

额定电压3.8 -228kV交流无间隙复合外套氧化锌避雷器是用于保护交流输变电设备免受大气过电压和操作过电压损害的重要保护电器适用于户内外。

Zinc-oxide arrester is used to protect for A.C system against atmospheric over-voltage damage and operating over-voltage damage. The rating voltage is 3.8-228kV. It is for indoor and outdoor. Our company also produce different arresters as user's special requirement for difference area.

二、执行标准 Standard

- ①.GB 11032交流无间隙金属氧化物避雷器
- ②.GB/T 16434高压架空线路和发电厂、变电所环境污区分级及外绝缘选择标准
- ③.GB50260电力设施抗震设计规范
- ④.JB/T7617六氟化硫罐式无间隙金属氧化物避雷器
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- ⑧.Cigre33/14.05 high voltage direct current converter stations use guideline non-clearane metal oxide surge arrester.



三、使用条件 Service Condition

- 1、环境温度为 -50°C ~ +50°C；
- 2、海拔高度不超过 1000m；
- 3、长期施加在避雷器上的工频电压应不超过其持续运行电压；
- 4、最大风速不超过 45m/s；
- 5、地震裂度 7 度及以下地区。

- 1.Ambient temperature: -50°C~+50°C
- 2.Altitude: above 1000m
- 3.Impose on the arrester frequency voltage should not exceed its continuous operating voltage;
- 4.Maximum wind velocity: 45m/s
- 5.Earthquake intensity: 7 degree, 0.3g

四、出厂测试项目 Routine Test Items

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- 3、局部放电试验；
- 4、密封性能试验；
- 5、持续电流试验；
- 6、工频参考电压试验 (阻性电流 1mA 下)；
- 7、标称电流下的残压试验；
- 8、外观检查。

Our company produces surge arrester according to IEC 60099-4 and ANSI standards, we will perform routine test items specified in IEC for every piece of arresters as follows:

- 1. DC reference voltage test
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- 6. Residual voltage test
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- 8. Visual inspection

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 - 4、最大风速不超过 45m/s；
 - 5、地震裂度 7 度及以下地区。
- 1. Ambient temperature: -50°C~+50°C
 - 2. Altitude: above 1000m
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- 4、密封性能试验；
- 5、持续电流试验；
- 6、工频参考电压试验 (阻性电流 1mA 下) ；
- 7、标称电流下的残压试验；
- 8、外观检查。

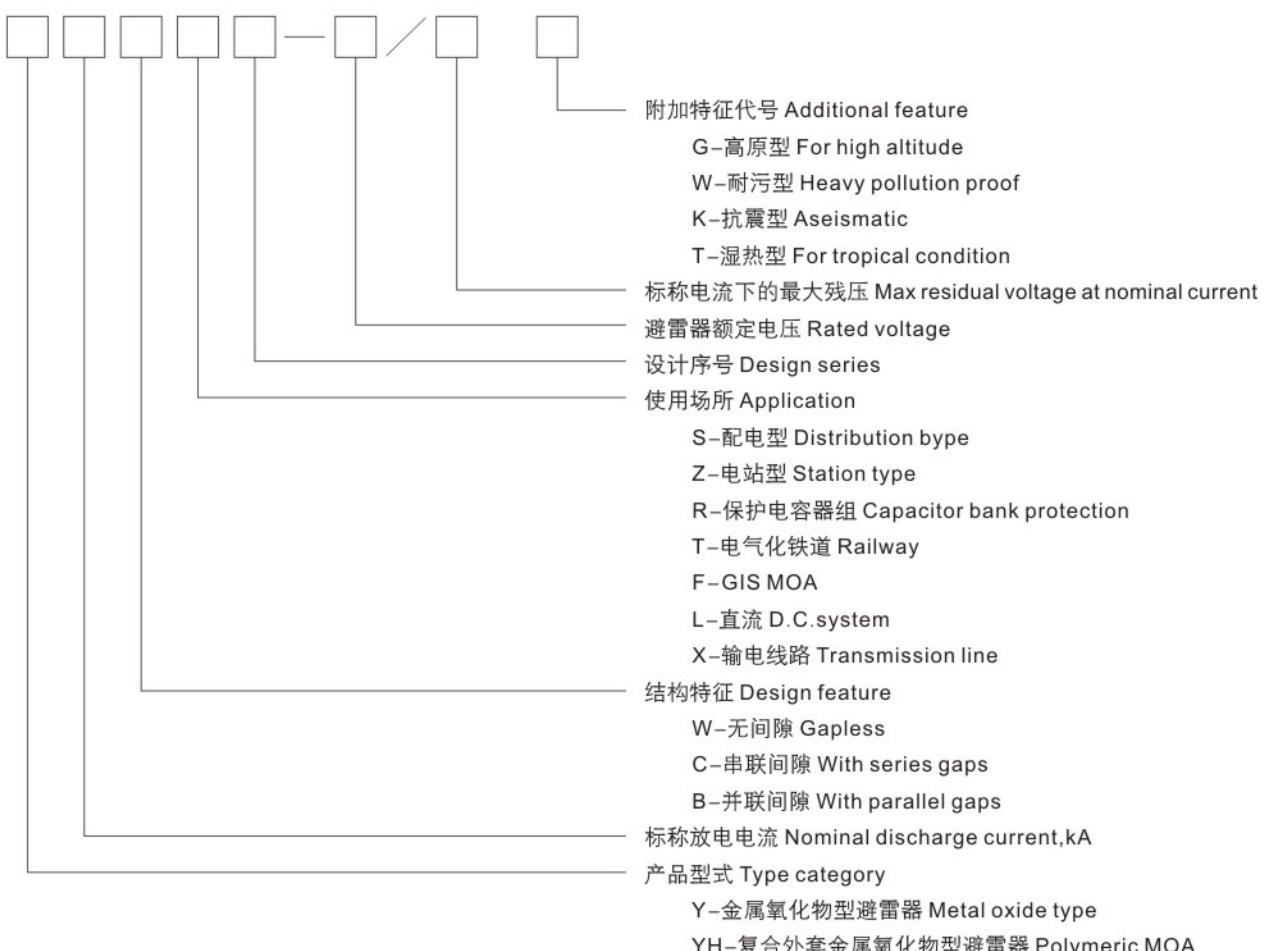
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- 4. Power frequency reference voltage test
- 5. Resistive current test
- 6. Residual voltage test
- 7. Sealing performance test
- 8. Visual inspection

五、订货须知 For Order

- 1、产品型号
- 2、结构类型
- 3、环境要求 (污秽等级、海拔高度等)
- 4、要求的附件 (计数器、监测仪、脱离器等)
- 5、标准规定之外的其它特殊要求

六、避雷器型号说明 MOA Type Designation



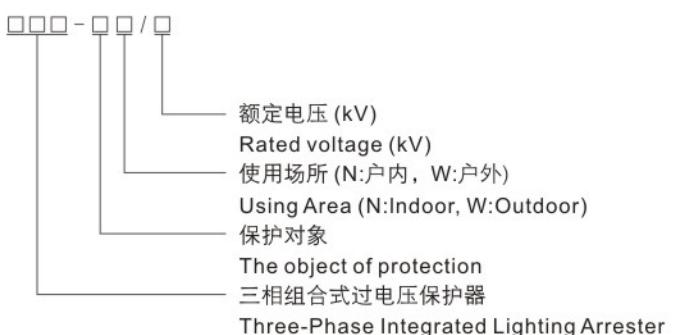
过电压保护器 Overvoltage Protector

一、产品概述 General

三相组合式过电压保护器是一种新颖的过电压保护设备，主要用于35kV以下电力系统中，保护变压器，开关，母线，电动机，并联补偿电容器等电气设备，可限制大气过电压及各种真空断路器引起的操作过电压，相对地和相间的过电压均能引起可靠的限制作用。三相组合式过电压保护器由四只避雷器组成四星型接法，从而使各相地，相间的过电压都得到保护。由于结构上的巧妙配合，使一台过电压器起到了6只避雷器的作用。同时克服了简单的三只避雷器星型接法不能更好保护相间过电压的缺点。三相组合式过电压保护器可以是有串联间隙型，也可以是无间隙型。

Three-Phase integrated lightning arrester is a new type lightning arrester which is mainly used to protect transformer, switch, bus bar, electrometer, parallel compensating capacitor in 35kV electric system, it also can limit over-voltage of air, vacuum circuit breaker, phase to earth, phase to phase. Three-Phase integrated lightning arrester consists our lightning arrester by four-stars type, So it can protect each phase to earth and phase to phase from over-voltage,because of its smart structure, its function is equal to six lightning arresters, it also solve the problem that lightning arresters can't protect phase to phase very well. Three-Phase integrated lightning arrester, can be either gap or no series.

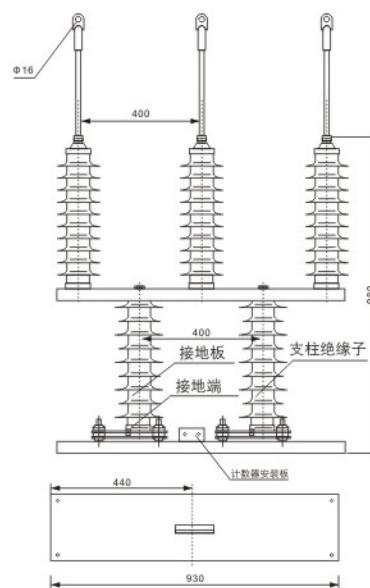
二、型号说明 Type Designation



35kV 户外用 TBP-400W1 型
35kV TBP-400W1 for outdoor use

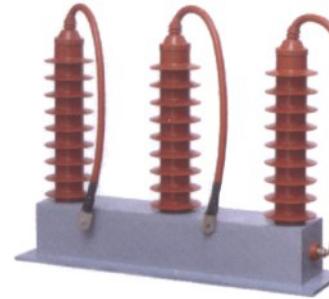
三、使用条件 Service Condition

- 1、适用于户内，户外；
- 2、环境温度为-40°C~+40°C；
- 3、海拔高度不超过2500m；
- 4、电源频率不大于62Hz，不小48Hz；
- 5、最大风速不超过35m/s；
- 6、地震烈度7度及以下地区；
- 7、过电压保护器长期工作电压，应不超过持续运行电压。
- 1. Suitable for both indoor and outdoor;
- 2. Ambient temperature:-40°C~40°C;
- 3. Altitude: <=2500m;
- 4. Power frequency: between 48Hz and 62Hz;
- 5. Wind speed<=35m/s;
- 6. Earth quake: no more than seven grade;
- 7. It can't operate long time in a voltage which is over the continuous operation voltage.



过电压保护器
Overvoltage Protector

ENOCH
GROUP



35kV柜内用TBP-310型
35kV TBP-310 for cabinet use



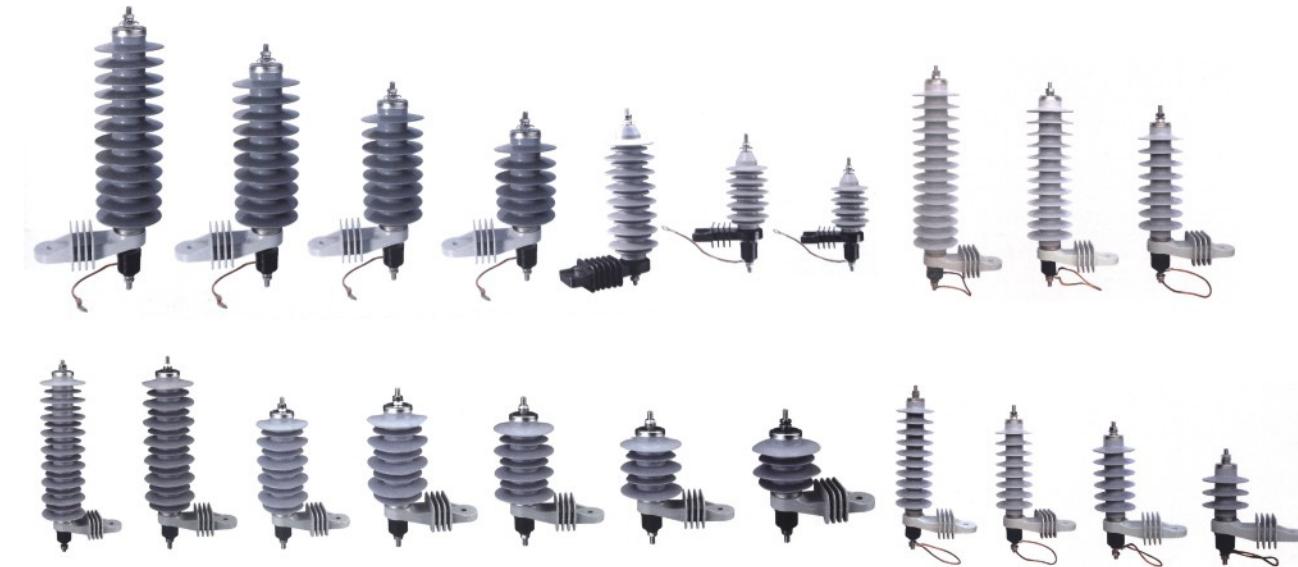
35kV柜内用TBP-200型
35kV TBP-200 for cabinet use

四、技术参数 Technologh Parameter

TBP-C系列 (电动机型) TBP-C Series (Motor Type)				
电动机额定电压 (kV) Electromotor Rated voltage (kV) Virtual Value		6	10	35
保护器额定电压 (kV) Lightning Arrester Rated voltage(kV)	有效值 Virtual Value	7.6	12.7	42
工频放电电压不小于 (kV) Power frequency discharge		16.0	26.0	80.0
直流 U1mA 参考电压不小于 (kV) DC(U1mA) Ref.Oltage(<kV)		14.4	24	73
30/60操作冲击电流残压不大于 (kV) Residual voltage of 30/60 operating impulse current (>kV)	有效值 Virtual Value	19.0	32.0	99.0
8/20雷电冲击电流表残压不大于 (kV) Residual voltage of 8/20 lingting impulse current (>kV)		24.0	41.0	124.0
2000μs方波冲击电流 (A) 2000 μs Square wave impulse current (A)		400	400	400
安全净距离不小于(mm) Safe net distance (<mm)		95	120	285
沿面爬距不小于 (mm) Surface creapage distance (<mm)		140	235	1020
最小相间距离 (mm) Min. phase to phase distance(mm)		115	145	470

TBP-O系列 (电动中性点型) TBP-O Series (Electromotor Neutral point Type)			
保护器额定电压(kV) Lightning Arrester Rated voltage(kV)	电机额定电压有效值(kV) Lightning Arrester Rated voltage (Virtual Value)(kV)	8/20 μs雷电冲击电流残压 峰值不大于(kV) Residual voltage of 8/20 μs lighting impulse current (Peak)(kV)	直流U1mA参考电压峰值 不大于(kV) DC(U1mA)Ref.Voltage (Peak)(kV)
4.8	6.3	12.0	6.8
8	10.5	19.0	11.4

出口型避雷器
Surge Arrester for Export



技术参数 Technologh Parameter

型号 Type	额定电压 Rated voltage (kV)	持续运行电压 Continuous operating voltage (kV≥)	1/4陡波 冲击电流 1/4Steep current residual voltage (kV≤)	8/20雷电 冲击电流残压 8/20 Lightning current residual voltage (kV ≤)	30/60S 冲击残压 30/60S witching current residual voltage (kV ≤)	2000μs 方波流通容量 (A) 2000μs Rectangular wave current impulse(A)	4/10 大电流 耐受能力 4/10 Current withstand discharge capacity(kA)
YH5W-3L	3	2.55	9.5	9	7.7		
YH5W-6L	6	5.10	19.0	18	15.4		
YH5W-9L	9	7.65	28.5	27	23.1		
YH5W-12L	12	10.2	38.0	36	30.8		
YH5W-15L	15	12.7	47.5	45	38.5		
YH5W-18L	18	15.3	57.0	54	46.2		
YH5W-21L	21	17.0	66.5	63	53.9		
YH5W-24L	24	19.2	76.0	72	61.6		
YH5W-27L	27	21.9	85.5	81	69.3		
YH5W-30L	30	24.4	95.0	90	76.5		
YH5W-33L	33	26.8	104.5	99	84.7		
YH5W-36L	36	29.0	114.0	108	92.4		
YH5W-42L	42	34.1	132.3	126	100.1		
YH10W-3L	3	2.55	9.5	9	7.7		
YH10W-6L	6	5.10	19.0	18	15.4		
YH10W-9L	9	7.65	28.5	27	23.1		
YH10W-12L	12	10.2	38.0	36	30.8		
YH10W-15L	15	12.7	47.5	45	38.5		
YH10W-18L	18	15.3	57.0	54	46.2		
YH10W-121L	21	17.0	66.5	63	53.9		
YH10W-24L	24	19.2	76.0	72	61.6		
YH10W-27L	27	21.9	85.5	81	69.3		
YH10W-30L	30	24.4	95.0	90	76.5		
YH10W-33L	33	26.8	104.5	99	84.7		
YH10W-36L	36	29.0	114.0	108	92.4		
YH10W-42L	42	34.1	132.3	126	100		

一、产品概述 General

由于电磁感应，长线路高压单芯电力电缆金属蔽（或金属护套）会产生较高的感应电压，一旦感应电压超过电缆外护套击穿电压值，导致外护套击穿时，形成单芯电缆多点接地故障。因此，DL/T401《高压电力电缆选用导则》规定，必须采用电缆护层保护器以限制电力电缆金属屏蔽层（或金属护套）上的过电压幅值。

By reason of electromagnetic induction, the higher induced voltage will be produced when the long line of high pressure single core cable metal shield (metal sheath), once the induced voltage over the breakdown voltage value of cable outer sheath, cause the outer sheath breakdown, form the single core cable multipoint ground faults. As a consequence, the rule of DL/T401 «High-voltage power cable selection guideline», the sheath protector of cable must be used to limit value of amplitude of overvoltage in the power cable metal shield (metal sheath).

二、产品特点 Features

采用ZnO的电阻片作为保护元件，无串联间隙，响应速度快，保护特性好，具有优良的非线性伏安特性曲线。

本产品不仅具有瓷套式金属氧化物避雷器的优点，还具有电气绝缘性能好、介电强度高、抗漏痕、抗电蚀、耐热、耐寒、耐老化、防爆和良好的化学稳定性、憎水性、密封性。

Using the ZnO resistors as protection components, no series gaps, fast response and good protective properties, it has excellent nonlinear volt-ampere characteristic curve.

The protector has the features of porcelain type metal ZnO surge arrester. Also with good electric insulation performance, High dielectric strength, and it has the features of leakage resistance, electric erosion resistance, heat-resisting, cold-resisting, aging resistance, explosion proofing, hydrophobicity, good sealing performance.

三、保护范围 Scope of Protection

电缆护层保护器可将安装电缆护层感应电压（峰值）限制在标称雷电残压之下。若系统存在超出保护器耐受能力的工频过电压，应将保护器进行串联使用，否则易损坏。

The sheath protector can block the induced voltage (peak value) of installed sheath under the nominal lightning residual pressure. If the power frequency overvoltage exceed tolerance of protector in the system, then the protectors must be used in series, otherwise damage easily.

四、使用条件 Service Condition

环境温度：-45℃~55℃

海拔不超过：4000m

频率范围：48Hz~62Hz

Ambient temperature: -45℃~+55℃

Altitude: Less than 4000m

Frequency range: 48Hz~62Hz

五、订货须知 For Order

订货时请提供电缆的电压等级，或者提供电缆护层保护器氧化锌电阻片的参数及订货数量，交货数量，交货时间。如有特殊要求，应在订货时提出。

Please provide the voltage level of cable or technical parameters and quantity of sheath protector ZnO resistors. And delivery quantity, delivery time. If need other special requirements, please note it when order.



避雷器脱离器 Arrester Disconnector

避雷器脱离器 Arrester Disconnector

避雷器脱离器是一种可以在避雷器损坏时，使避雷器引线与系统断开以排除系统持续故障，并给出事故避雷器可见标志的装置。TL-1型脱离器是一种热爆型脱离器，产品性能符合IEC60099-4的规定。

Arrester disconnector is a device for disconnecting an arrester from the system in the event of arrester failure, to prevent a persistent fault on the system and to give visible indication of the failed arrester, TL-1 is a thermal explode disconnector, performance of our products meets the specifications of IEC60099-4.



JS-8放电计数器 Discharging Counter

JS-8、JS-8A型放电计数器（以下简称计数器）是串联在避雷器下面，用来记录避雷器动作次数的一种装置，JS8型用于6kV~220kV电压等级。JS8A型用于330kV及以上电压等级的阀式避雷器，使用地点的环境条件与相连接的避雷器相同，海拔高度不超过4000米，环境温度为-40℃~+40℃，它不适用于有严重腐蚀金属及绝缘件的气体，有严重污染和有剧烈振动的地方。

JS-8, JS-8A discharging counter (hereinafter short for counter) is connected under the arrester in series for recording the arrester's operation times; JS8 is applied for 6kV~220kV arresters; JS8A is used in valve type arresters at 330kV above. The environment condition should be the same with that of the connected arrester, height is no larger than 4000 meters and temperature is -40℃~+40℃. It is not applicable in the serious metal or insulating fitting-corrosion gas, or places with bad pollution and strong vibration.



JCQ-C4监测器 Arrester Monitor

JCQ-C4型避雷器监测器，是串联在避雷器下面用来监测泄露电流和记录避雷器动作次数的一种装置，用于500kV及以下电压等级的氧化锌避雷器，使用的环境条件与相连接的避雷器相同，避雷器监测的特点是电磁计数，电流指针指示，耐振动。

JCQ-C4 arrester monitor is a kind of device connected under the arresters in series to monitor the leak current and record the operation times of the arresters, which is used in the arrester at 500kV and below types. The service conditions are the same with that of the connected arresters. It has the features of electromagnetic counting, current indicator displaying and vibration resistance.

