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ZONRI®

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ZHONGRUI
ELECTRIC CO., LTD.

产品选型手册

Product Selection Manual

ZONRI® 中瑞电气有限公司
ZHONGRUI ELECTRIC CO., LTD.

地址：浙江省乐清市翁垟雪湾工业区　传真：0577-62517868　Http://www.zonri.com.cn

电话：0577-62510688　邮编：325606　E-mail:zonri@188.com

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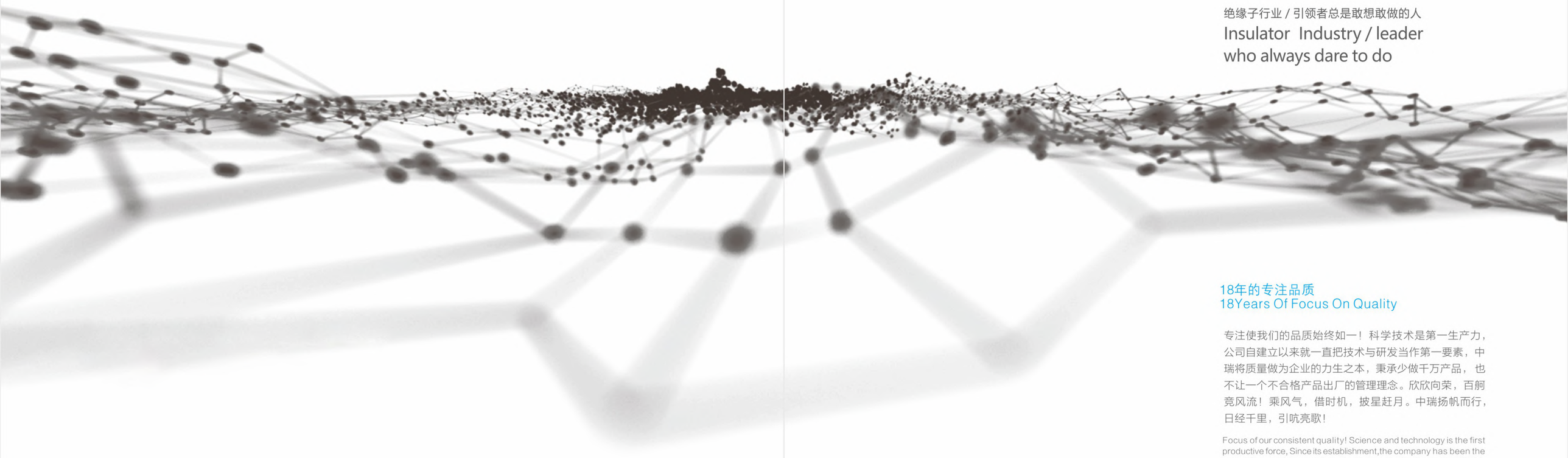
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中瑞电气有限公司
ZHONGRUI ELECTRIC CO., LTD.

科技创新/开创未来
Teknologi Inovasi / Bright new future

>



中瑞电气有限公司
ZHONGRUI ELECTRIC CO., LTD.

引领

绝缘子行业 / 引领者总是敢想敢做的人
Insulator Industry / leader
who always dare to do

18年的专注品质
18Years Of Focus On Quality

专注使我们的品质始终如一！科学技术是第一生产力，公司自建立以来就一直把技术与研发当作第一要素，中瑞将质量做为企业的力生之本，秉承少做千万产品，也不让一个不合格产品出厂的管理理念。欣欣向荣，百舸竞风流！乘风气，借时机，披星赶月。中瑞扬帆而行，日经千里，引吭亮歌！

Focus of our consistent quality! Science and technology is the first productive force, Since its establishment,the company has been the technology and research as the first goal. The basis of ZONRI is quality,we keep living up to the belief of" Do less thousands of product, don't let an unqualified products out." Honest selling,best quality, people-orientation and benefits to customers.Let's set sail,to the thousands of miles,..

ZONRI

ZONRI® 中瑞电气有限公司
ZHONGRUI ELECTRIC CO., LTD.

企业简介

Company profile

中瑞电气有限公司坐落在（中国电器之都）浙江省乐清市，创建于2000年，拥有30000平方米的现代化生产厂房，具有目前国内最先进的硅橡胶绝缘子生产设备和齐全的硅橡胶性能及电力产品试验、检测设备200余台。员工200多名，其中从事研究、设计的高级技术人员40多名。并建有国内一流的高压试验大厅，机械性能检测和硅橡胶性能理化实验室。通过了ISO9001：2008国家质量体系认证，是一家集生产、销售与科研院所联合研发为一体的国家高新技术企业。年生产、销售各型号复合绝缘子及电容型干式套管等系列产品200余万只。

公司专业生产复合绝缘子，复合电容型穿墙套管、电力机车套管，玻璃钢干式变压器套管，绝缘管形母线，复合氧化锌避雷器，跌落式熔断器，隔离开关等系列产品。所有产品均通过中国电力科学研究院、国家绝缘子避雷器质量监督检验中心、铁道部产品质量监督检验中心、国家电器产品质量监督检验中心，国家变压器质量监督检验中心及荷兰（KEMA）实验室等国内外知名检测机构的验证，产品符合国家标准（GB）、行业标准（JB）及国际电工协会（IEC）的相应标准，并通过中电联及有关权威机构的产品鉴定。复合绝缘子和电容型干式套管被列为国家星火计划和国家火炬计划项目并顺利通过验收。公司目前已获得专利十余项，2012年公司成立了市级产品研发技术中心，公司注册生产的（ZONRI®）商标复合绝缘子获得市级名牌商标和市名牌产品荣誉称号。公司已成为国家电网公司、南方电网公司和中国中车集团合格供应商。截至2014年，公司产品已远销希腊，阿根廷，智利，厄瓜多尔，约旦，伊朗，越南、也门，印度，加纳，肯尼亚，坦桑尼亚，墨西哥，苏丹，乌干达，尼日利亚等60多个亚洲、欧美及非洲等国家和地区，赢得国内外用户的一致好评。

目前，公司可根据用户的要求，设计、制造和加工各种绝缘子产品。竭诚欢迎新老朋友洽谈业务。中瑞公司愿与您真诚合作，携手并进，共创辉煌明天。

KEMA国际认证 国家高新技术企业 WWW.ZONRI.COM.CN

Zhongrui Electric Co.,Ltd.Located at “Chinese Electric City” -ZhejiangProvince Yueqing City,founded in 2000. We own domestic most advanced production equipment and complete silicone rubber silicone rubber insulator performance and electrical products testing, testing equipment more than 200 sets. More than 200 employees, include research, design, senior technical personnel more than 40. And with the domestic first-class high-voltage test hall, the mechanical properties testing and performance of silicone rubber physical and chemical laboratory. Passed the ISO9001:2008 national quality system certification,we are a high technical enterprise that have succeed in turning produce and sell together. The sales of various models of composite insulator and capacitance type dry casing and other products more than 2 million in a year.

Our company specializes in the series of products of compositie insulator, composite dry wall bushing, Electric locomotive casing, FRP dry type transformer bushing, insulated tubular busbar, lightning arrester and fuse cut-out, isolating switch, etc. All products are qualified by Domestic and foreign well-known inspection institutions, such as the Netherlands KEMA laboratory verification such as China electric power academy of sciences 、National Insulator & Lightning Arrester quality inspection center、The Ministry of railways quality control test of inspection center、National Electric products quality control test of inspection center,National transformer quality control test of inspection center and Netherlands “KEMA” laboratory.Products corresponding national standards (GB) Industry standards (JB) and standards of international electrotechnical society (IEC), and accreditation Itu and relevant authorities in the product identification. Composite Insulator and Composite insulator and capacitance type dry casing has been placed “National Star plan” and “National torch plan” by Chinese Technical department. The company has more than 10 national patents, In 2012 company was founded the municipal product research and development technology center, Company registered（ZONRI®）the trademark production of composite insulator has won the honorary title of city famous trademark and city famous brand product.Company has become a qualified supplier for National grid company、Southern power grid company and China southern railway group.As for 2014,our products sell well through all parts of the country, as well as finding good markets in Greek ,Argentina,Chile,Ecuador, Jordan,Vietname ,yemen,India,Ghana,Kenya,Tanzania,Mexico,Sudan, Uganda,Nigeria and so on more than 60 Asia,Europ and United States and Africa and other countries and region, Won the domestic and foreign customers consistent high praise.

At present, we can design and produce all type insulators as per customers requirement.Warmly welcome all old and new customers to negotiate business. ZONRI company will go ahead together with you,and cooperate with you in sincerely.



ZONRI®

缔 造 行 业 精 品

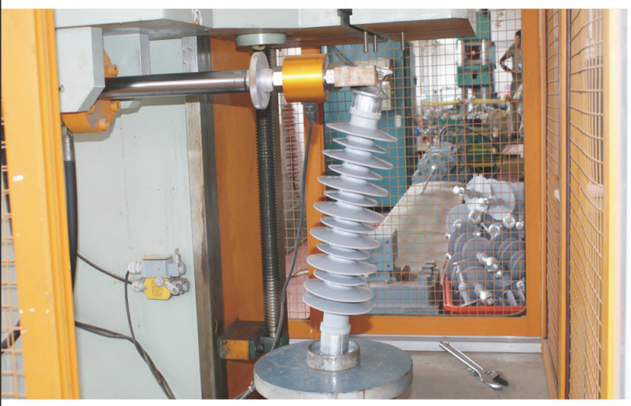
www.zonri.com.cn

TESTING
EQUIPMENT
检 测 设 备

优质的产品，是我们的根本，完善的检测设备，使产品内在的品质与外在个性化紧密结合，从而满足并引领工业现代化的需求。先进的品质管理技术严格的控制每件产品的质量，定期对品质管理部人员进行专业技术培训，确保产品的完美品质。

The high quality product, it is our fundamental, perfect testing equipment, make the product intrinsic quality and external connected with personalized to meet the demand of the modern and leading industry. The advanced quality management technology strictly control the quality of each product, professional and technical training to quality management department personnel on a regular basis, to ensure the perfect quality of products.







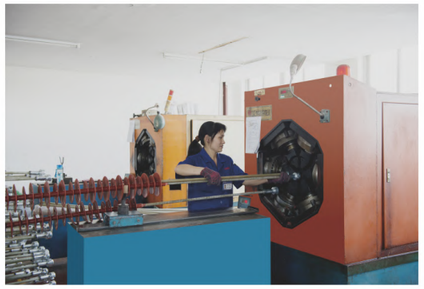












MANUFACTURING STRENGTH

制造实力

拥有国际先进的生产设备，严格按照国家标准和国际标准组织生产，并注重对产品研发的投入和科技人才的培养，现已拥有了一整套完善的产品研发和制造核心技术。

制定"以客户需求为中心，以生产管理为基础，持续改进质量体系，提供用户满意的产品"的质量方针。

Own international advanced production machine,strictly according with national (GB) and international (IEC) standard.Focus on product research and the talent tech person.Now has a completlt set of product research and the core technology of the manufacture.

The quality policy is” Customer requirement as the first,basic of the production management,continuously improve the quality system.

ZONRI®

缔 造 行 业 精 品

www.zonri.com.cn



公司资质 Company Qualification

ZONRI®
缔 造 行 业 精 品


营业执照
（副 本）
统一社会信用代码 330382000061040 (1/1)
名 称 中瑞电气有限公司
类 型 有限责任公司
住 所 乐清市虹桥镇智慧工业区
法定代表人 李永东
注册资本 伍仟零贰万元整
成立日期 2000年08月17日
营业期限 2000年08月17日至长期
经营范围 研发、制造、销售：变压、变流、控制电源、高压开关柜、高压成套设备、电力电子装置及元器配件制造、加工；销售：技术进出口、货物进出口。（依法须经批准的项目，经相关部门批准后方可开展经营活动）
登记机关
2014年08月11日


实用新型专利证书
局长 申飞雨


发明专利证书
局长 申飞雨


国家火炬计划
产业化示范项目证书
项目名称：复合外套电容式干式穿墙套管
承担单位：中瑞电气有限公司
项目编号：2014GH043749
批准机关：中华人民共和国科学技术部
授证机关：科学技术部火炬高技术产业开发中心
授证日期：二〇一四年七月


质量管理体系认证证书
证书编号：00115Q21509R2S3300
兹证明
中瑞电气有限公司
We hereby certify that
Zhongrui Electric Co.,Ltd.
ISO9001:2008
GB/T 19001-2008
CHINA QUALITY CERTIFICATION CENTRE


QUALITY MANAGEMENT SYSTEM
CERTIFICATE
Certificate No. 00115Q21509R2S3300
We hereby certify that
Zhongrui Electric Co.,Ltd.
Quality Management System
ISO9001: 2008
GB/T 19001-2008
CHINA QUALITY CERTIFICATION CENTRE


职业健康安全管理体系认证证书
证书号：201580101724R0M
兹证明
中瑞电气有限公司
职业健康安全管理体系符合标准：
GB/T28001-2011 idt OHSAS18001:2007
通过认证范围如下：
复合绝缘子的设计开发及复合氧化锌避雷器、槽型式交流高压隔断器、3-36KV交流高压复合开关、复合干式套管的生产及相关的管理活动
Zhejiang Shengbiao Testing Certification Co.,Ltd.

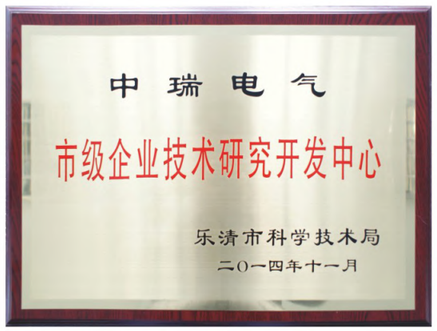

OHSMS CERTIFICATION
This is to certify that the system of
Zhongrui Electric Co.,Ltd
is in conformity with
GB/T28001-2011 idt OHSAS18001:2007
Zhejiang Shengbiao Testing Certification Co.,Ltd.


ENVIRONMENTAL MANAGEMENT
SYSTEM CERTIFICATION
This is to certify that the system of
Zhongrui Electric Co.,Ltd
is in conformity with
GB/T24001-2016 idt ISO14001:2015
Zhejiang Shengbiao Testing Certification Co.,Ltd.


环境管理体系认证证书
证书号：201580101724R0M
兹证明
中瑞电气有限公司
环境管理体系符合标准：
GB/T24001-2016 idt ISO14001:2015

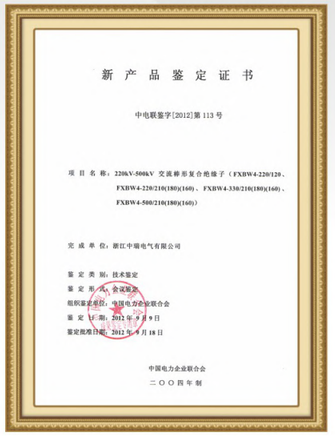

乐清市名牌商标证书
浙江中瑞电气有限公司：
经认定，你单位注册并使用在第9类：电线连接物；避雷器；熔断器上的ZONRI商标为第十届乐清市名牌商标。
（有效期三年）
乐清市人民政府
二〇一三年二月四日


高新技术企业
证书
企业名称：中瑞电气有限公司
证书编号：GR201533000233
发证时间：2015年9月17日
有效期：三年
批准机关：


中 瑞 电 气
市级企业技术研究开发中心
乐清市科学技术局
二〇一四年十一月


KEMA
REPORT OF PERFORMANCE 07-1209
OBJECT Suspension Insulator
TYPE FXBW – 24/70
CLIENT Zhejiang Zhongrui Electric Co. Ltd. Yueqing city, China
MANUFACTURER Zhejiang Zhongrui Electric Co. Ltd. Yueqing city, China
TESTED BY KEMA HIGH-VOLTAGE LABORATORY Arnhem, The Netherlands
DATE(S) OF TESTS 26 July 2006 up to and including 6 February 2007
TEST PROGRAMME Tests in accordance with IEC 61109 (1995) clause 5.3, Annex C (see page 2)
SUMMARY AND CONCLUSION The tests were passed.
This Report of Performance applies only to the object tested. The responsibility for conformity of any object having the same designations with that tested rests with this Manufacturer.
This report consists of 14 sheets in total.
KEMA Nederland B.V.
KEMA T&D Testing Services Managing Director
Arnhem, 13 March 2007


KEMA
REPORT OF PERFORMANCE 07-1210
OBJECT Line Post Insulator
TYPE FZSW-24/6
CLIENT Zhejiang Zhongrui Electric Co. Ltd. Yueqing city, China
MANUFACTURER Zhejiang Zhongrui Electric Co. Ltd. Yueqing city, China
TESTED BY KEMA HIGH-VOLTAGE LABORATORY Arnhem, The Netherlands
DATE(S) OF TESTS 26 July 2006 up to and including 6 February 2007
TEST PROGRAMME Tests in accordance with IEC 61109 (1995) clause 5.3, Annex C (see page 2)
SUMMARY AND CONCLUSION The tests were passed.
This Report of Performance applies only to the object tested. The responsibility for conformity of any object having the same designations with that tested rests with the Manufacturer.
This report consists of 13 sheets in total.
KEMA Nederland B.V.
P.Zijl Bsc
KEMA T&D Testing Services Managing Director
Arnhem, 13 March 2007


新产品鉴定证书
中电联字[2012]第113号
项目名称：220kV-500kV 交流棒形复合绝缘子（FXBW4-220/120、FXBW4-220/210(180)(160)、FXBW4-330/210(180)(160)、FXBW4-500/210(180)(160)）
完成单位：浙江中瑞电气有限公司
鉴定类别：技术鉴定
鉴定形式：会议鉴定
组织鉴定单位：中国电力企业联合会
鉴定日期：2012年4月9日
鉴定批准日期：2012年4月18日
中国电力企业联合会
二〇〇四年制


科学技术成果鉴定证书
编号：部技协鉴字[2015]第229号
成果名称：FSP-110/0.8防风偏复合绝缘子
完成单位：中瑞电气有限公司
鉴定形式：会 议
组织鉴定单位：浙江省技术经纪人协会（盖章）
鉴定日期：2015年12月20日
鉴定批准日期：2015年12月22日
国家科学技术委员会
一九九四年制


CNAS No. L0222 (测量认证字[2009]号)
MA No. MJ-126(1)-2004(E)
国家绝缘子避雷器质量监督检验中心
CHINA NATIONAL CENTRE FOR QUALITY SUPERVISION AND TEST OF INSULATORS AND SURGE ARRESTERS
检验报告
TEST REPORT
Object 产品名称 FXBW-24/70 Composite insulator for high voltage overhead lines
Client 委托单位 ZheJiang ZhongRui Electrical Co., LTD
Classification 检验类别 Prototype tests
中国 西安 XIAN CHINA 2004 08 11月 Nov 08日 2004


MA 2012300378Z
实验室名称：国家电器产品质量监督检验中心
Lab Name: China National Center for Quality Supervision and Test of Electrical Apparatus Products
№ 12R0045-S
检验（试验）报告
Test Report
委托单位：Zhejiang Zhongrui Electric Co., Ltd.
Client:
产品名称：Drop-out fuse
Name of Product:
产品型号：HPRWG2-40.5/200-8
Product Type:
检验类别：Type test
Test Category:
本实验室对出具的检验（试验）结果负责。未经实验室书面同意，不得部分地复制本报告。
The laboratory is responsible for the inspection (Test) results. The report shall not be reproduced except in full, written approval of the laboratory.


DNV·GL
KEMA Laboratories


DNV·GL
KEMA Laboratories


MA CNAS
编号：J/ 4
铁道部产品质量监督检验中心
机车车辆检验站
检验报告
（2013）JL字第W—892号
产品名称：FCGW-12/1200型穿墙套管
委托单位：中瑞电气有限公司
检验类别：委托检验
检验单位：铁道部产品质量监督检验中心
机车车辆检验站
报告签发日期：2013年11月18日


编号 G2010055
电力工业电力设备及仪表质量检验测试中心
检验报告
（电力绝缘子避雷器质检站）检字 G2010 第 055 号
样（试）品名称：复合外套式干式穿墙套管
样（试）品型号：FCW-126/1600
生产单位：浙江中瑞电气有限公司
委托单位：浙江中瑞电气有限公司
检验类别：型式试验
2010年5月20日

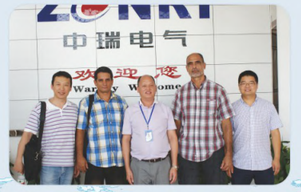
SALES AND SERVICE
销 售 服 务

我们一直致力于以品质、服务、品牌来巩固和开拓市场。积极推行品牌营销、服务营销、提倡诚信经营，向顾客提供优质优廉的高端产品和优良服务，从容应对全球经济一体化，更好的参与国际竞争。

We have been committed to quality, service, brand to consolidate and expand the market. Actively promote the brand marketing, services marketing, good faith management, to provide customers good quality inexpensive products and excellent service, calmly deal with the global economic integration, better participate in international competition.





























ZONRI®
缔 造 行 业 精 品

Connection The World Of Power
Welcome To ZONRI

ENTERPRISE
Product Selection Guide
选型目录

ZONRI®
绝 缘 行 业 精 品

Connection The World Of Power
Welcome To ZONRI

1 2 3 4-5

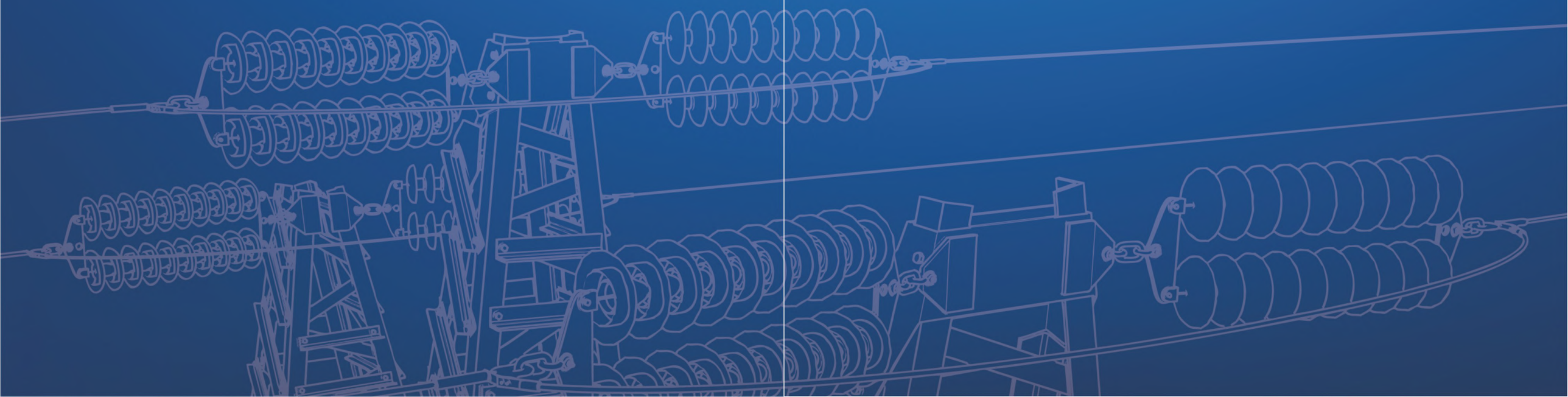
P01-17
绝缘子系列
Insulator series

P18-27
玻璃钢干式电容型套管系列
GFRP dry capacitor bushing

P28-31
氧化锌避雷器系列
ZnO Lighting Arrester Series

P32-37
跌落式熔断器系列
Cut-out fuse series

P38-40
隔离开关系列
Disconnect Series



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科技创新/开创未来
Teknologi Inovasi / Bright new future

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ZhongRui
ELECTRIC
服务于中国电力、电网改造建设系统
Serves for electric power of china and construction and transformation projects of state electricity grid system



1

绝缘子系列
Insulator Series

10-500kV复合悬式绝缘子
Composite suspension insulator

10-220kV复合支柱绝缘子
Composite Post insulator

10-220kV复合横担绝缘子
Composite Cross-arm Insulator

10-35kV复合针式绝缘子
Composite Pin-type Insulator

35-220kV复合防风偏绝缘子
Wind Deflection Of Composite Insulator

复合相间间隔棒
Composite interphase spacers

电气化铁道用复合绝缘子
Composite Insulator for Electric-railway

出口绝缘子
Export Insulator

拉紧绝缘子
Tension insulator

产品概述 Introduction

◎电气性能优越，机械强度高，内部承载的环氧玻璃纤维引拔棒抗弯强度比普通钢材高2倍，是高强度瓷材料的8-10倍，有效提高了安全运行的可靠性。

◎耐污性能好，抗污闪能力强，其湿耐受电压和污秽耐受电压为相同爬距瓷绝缘子的2-2.5倍，且不需清扫，能在重污秽地区安全运行。

◎体积小、重量轻（仅为同电压等级瓷绝缘子的1/6-1/9），结构轻巧，便于运输和安装。

◎硅橡胶伞裙具有良好的憎水性能，其整体结构保证了内绝缘不受潮，不需进行预防性绝缘监测试验，不需清扫，减少了日常维护工作量。

◎密封性能好，耐电蚀能力强，伞裙材料耐漏电起痕达TMA4.5级水平，具有良好的耐老化、耐腐蚀、耐低温性能，可适用于-40℃~+50℃地区。

◎具有很强的抗冲击性和防震性能，其良好的防脆性和抗蠕变性，不易破碎、抗弯曲、抗扭强度高，可承受内部压强，防爆力强，可与瓷、玻璃绝缘子互换使用。

◎根据空气动力学原理，优化伞形结构尺寸设计，合理配置均压环，抑制泄漏电流产生，保护硅橡胶伞裙不受电弧的侵蚀，提高复合绝缘子的使用寿命。

◎复合绝缘子系列产品，其机械性能和电气性能均优于瓷绝缘子，运行安全裕度大，是电力线路用的更新产品。

◎Good electrical specification, strong mechanical strength, tensile bending of the epoxy glassfiber rod of internal loadbearing is double than normal rolled steel ,8~10 times of high strength porcelain material, can effectively improve the reliable of sale operation.

◎Fine anti-pollution, strong prevent flash accident, and the wet withstand voltage and pollution withstand voltage is 2~2.5 times than the same creepage distance porcelain insulator, and no need cleanup, can safe operate in the serious polluted areas.

◎Small volume, light weight (only for the same voltage grade of porcelain insulator 1/6~1/9), lightness structure, to easy for tran sportation and installation. The shed has favorable waterproof performance, which the whole structure assure the internal insul ation is net wet, not need to test of prevent insulation and cleanup, to reduce the routine maintenance work capacity.

◎Good sealing performance, strength anti-electrolyticcorrosion, the shed has good anti-ageing, corrosion proof, low-tempera ture proof performance and the level is TMA4.5 class, is applied to -40℃~+50℃ areas. They have strong resistance to impact and quakeproof performance, good brittle resistance and creep resistance, unbreakable, anti-bend, high anti-bend strength, loading internal force and strong explosion proof, can exchange use of porcelain, glass insulator each other.

◎According to the aerodynamics principle, we optimize the size design of the shed type structure , dispose the equalizing ring reasonably, prevent electric current divulging, protect the silicon rubber sheds skirt from the corroding of electric arc, and enhance the service life of the compound insulator.

◎The mechanical performance and electric performance Composite insulator series products, are better than porcelain insulator, and the tolerance of safe operation is big, and it is the renew product for electric power line.

型号说明Model and Meaning

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- 额定机械负荷(kN)
  Rated mechanical load(kN)
- 系统标称电压(kV)
  Rated voltage (kV)
- 设计序号：以阿拉伯数字表示
  Design sequence
- 结构特征：W-大小伞， X-悬挂型， E-定位型
  Structure feature:W-big/small shed, X-hang- type, E-orient type
- 用途：XB-悬式棒形， ZS-支柱， S-横担，Q-电气化铁道用，G-间隔棒
  Usage: XB-Suspension/tension, ZS-post, S-Cross-arm,
  Q-For electric-railway, G-Distance rod
- 复合材料
  Composite material

产品结构 Product Structure

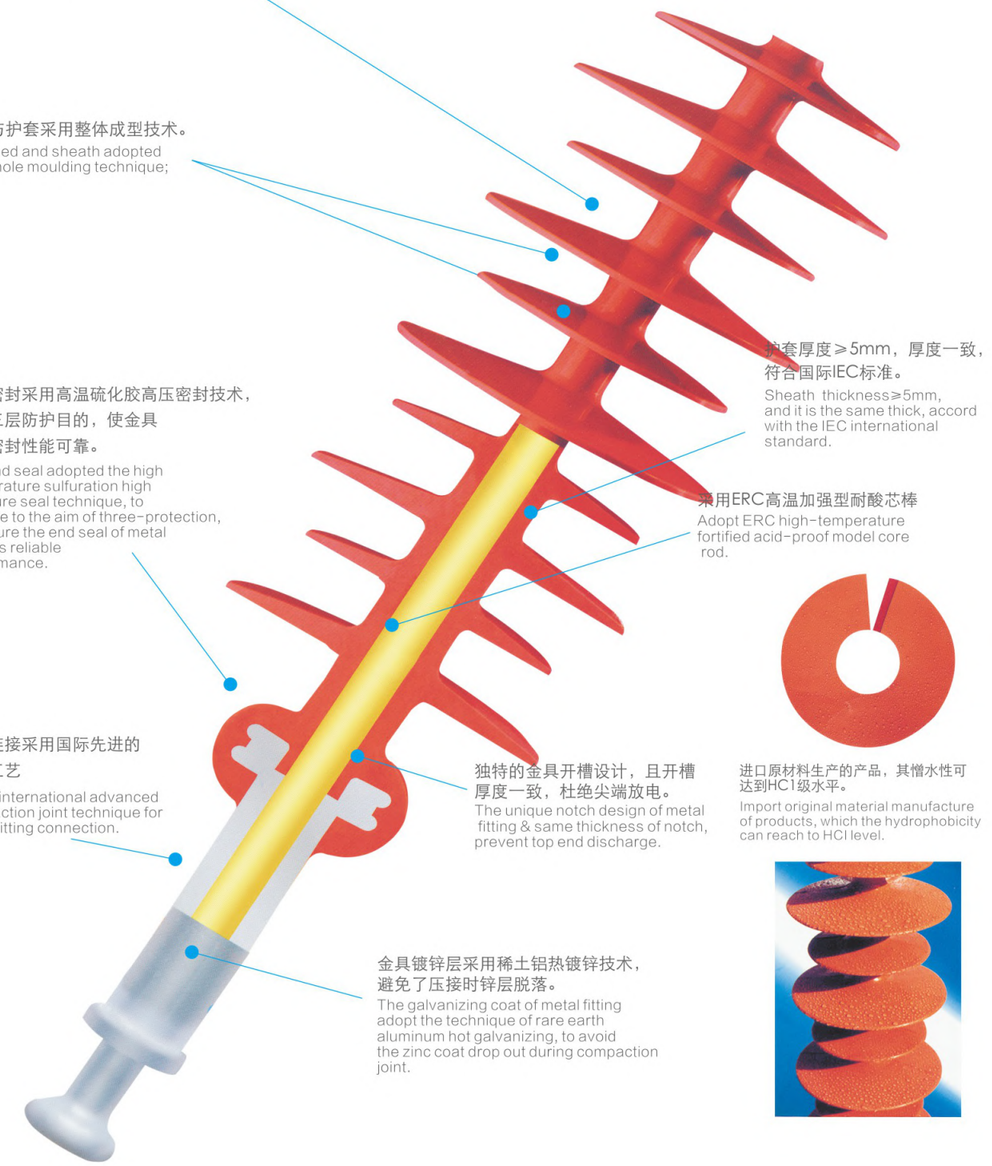
本系列产品由玻璃纤维环氧树脂引拔棒，硅橡胶伞裙，金具三部分组成。其硅橡胶伞裙采用整体注压工艺，从而解决了影响复合绝缘子可靠性的关键问题—界面电气击穿。玻璃引拔棒与金具的联接采用最先进的压接工艺，配有全自动声波探伤检测系统，强度高、外形美观，体积小，重量轻，金具镀锌可防锈蚀，可与瓷绝缘子互换使用，本产品结构可靠，不损伤芯棒，能充分发挥其机械强度。

The series products are made of glass fiber epoxy core rods, silicone rubber shed and metal fitting. The silicon rubber shed adopt the whole pressure technique, and it solve the key problem---- interface electric spark puncture, which would affect the reliability of composite insulator. Connection of the glassfiber rod with metal fittings, adopts the international advanced crimping technical, which 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 instead of porcelain insulator. The product is reliable structure, and take full advantage of the mechanical strength if not damage the core rod.

复合绝缘子
Composite insulator

伞裙设计采用独特的空气动力学原理。
The design of shed adopted unique aerodynamics principle;

伞裙与护套采用整体成型技术。
The shed and sheath adopted the whole moulding technique;



护套厚度≥5mm，厚度一致，符合国际IEC标准。
Sheath thickness≥5mm, and it is the same thick, accord with the IEC international standard.

采用ERC高温加强型耐酸芯棒
Adopt ERC high-temperature fortified acid-proof model core rod.

端部密封采用高温硫化胶高压密封技术，达到三层防护目的，使金具端部密封性能可靠。
The end seal adopted the high temperature sulfuration high pressure seal technique, to achieve to the aim of three-protection, to ensure the end seal of metal fitting is reliable performance.

进口原材料生产的产品，其憎水性可达到HC1级水平。
Import original material manufacture of products, which the hydrophobicity can reach to HCI level.

金具连接采用国际先进的压接工艺
Adopt international advanced compaction joint technique for metal fitting connection.

独特的金具开槽设计，且开槽厚度一致，杜绝尖端放电。
The unique notch design of metal fitting & same thickness of notch, prevent top end discharge.

金具镀锌层采用稀土铝热镀锌技术，避免了压接时锌层脱落。
The galvanizing coat of metal fitting adopt the technique of rare earth aluminum hot galvanizing, to avoid the zinc coat drop out during compaction joint.

ZONRI®

缔 造 行 业 精 品

KEMA国际认证
国家高新技术企业

WWW.ZONRI.COM.CN

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复合悬式绝缘子
Composite Suspenion Insulator



10-500kV复合悬式绝缘子
Composite suspension insulator

ZONRI®
缔 造 行 业 精 品

产品概述 Introduction

本产品尤其适用于污秽地区、高机械拉伸负荷、大跨距和紧凑型线路。具有重量轻，体积小不易破碎、弯曲，抗扭强度高，防爆型强。产品机械负荷适应50~210KN。

This product is special for badly polluted areas, high mechanical tension load, long span and compact power line. And have features of light weight, small volume, unbreakable, anti-bent, high strength for anti-twist and strong explosion protection.

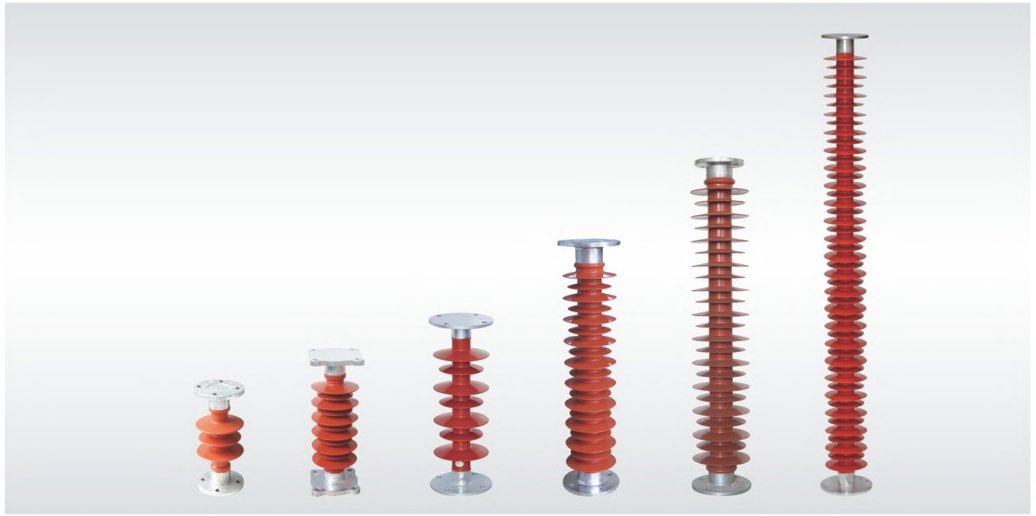
主要技术参数 (性能满足GB/T9519-2008、IEC61109)
Main Technical Parameters (Performance meet the GB/T9519-2008、IEC61109)

产品型号 Product Model	额定电压 Rated Voltage (kV)	额定机械负荷 Rated mechanical bending load (kN)	结构高度 Structure height H. (mm)	最小电弧距离 Minimum Arc distance Li.(mm)	最小公称爬电距离 Min.creepage distance Lc.(mm)	伞径 Diameter of shed D.(mm)	雷电冲击耐受电压峰值 Lightning impulse withstand voltage (peak)(kV)	工频1min湿耐受电压有效值 P.F.1min wet withstand voltage (Virtual value)(kV)	联接标记结构 Connect size
FXBW4-6/70	6	70	270±5	80	260	148/118	60	25	16
FXBW4-10/70	10	70	310±5	175	425	125/95	95	42	16
FXBW4-10/100	10	100	367±5	220	460	125/95	95	42	16
FXBW4-35/70	35	70	670±15	490	1350	138/128	230	95	16
FXBW4-35/100	35	100	670±15	450	1320	148/118	230	95	16
FXBW4-66/70	66	70	870(940)±15	710	2248	148/118	410	185	16
FXBW4-66/100	66	100	870(940)±15	710	2248	148/118	410	185	16
FXBW4-110/100	110	100	1240(1440)±15	1000(1200)	3150(3860)	148/118	550	230	16
FXBW4-110/160	110	160	1340±15	1000	3380	148/118	550	230	R20
FXBW4-145/120	145	120	1480±30	1240	4123	148/118	725	355	16
FXBW4-220/100	220	100	2240(2350)(2470)±30	2020(2080)(2210)	6450(6760)(7150)	148/118	1000	395	16
FXBW4-330/160	330	160	2990±30	2600	9075	148/118	1425	570	R20
FXBW4-220/210(160)	220	210/160	2350±30	2000	6800	158/128	1000	230	R20
FXBW4-330/210(160)	330	210/160	2930±30	2650	8790	158/128	1425	570	R20
FXBW4-500/210(160)	500	210/160	4450±30	4075	14860	195/158/128	2050	740	R20

注：可根据用户要求，生产特殊连接结构和高度的产品。

Note: we can according to your requirements, production of special connection structure and the height of the product.

10-220kV复合支柱绝缘子
Composite Post insulator



产品概述 Introduction

本产品适用于电站设施。具有良好的憎水性、抗老化性、耐漏电起痕性和耐电蚀损性，具有很高的抗张强度和抗弯强度，其机械强度高，抗冲击性能、防震和防脆断性能好，重量轻、安装方便，其顶部和底部安装尺寸与相应的瓷针式安装尺寸相同，可以互换使用。产品抗弯负荷满足4~10kN。

This product is applied to high voltage power line service. And have features of good hydrophobicity , anti-aging, anti-leakage trace and electrical erode proof, tensile strength and bending strength, strong mechanical strength, with good performance in shock resistance good quakeproof & brittle-break proof, light weight, easy to installation, and the installation outline of top and base are the same size with porcelain pin type, they can exchange to use each other.

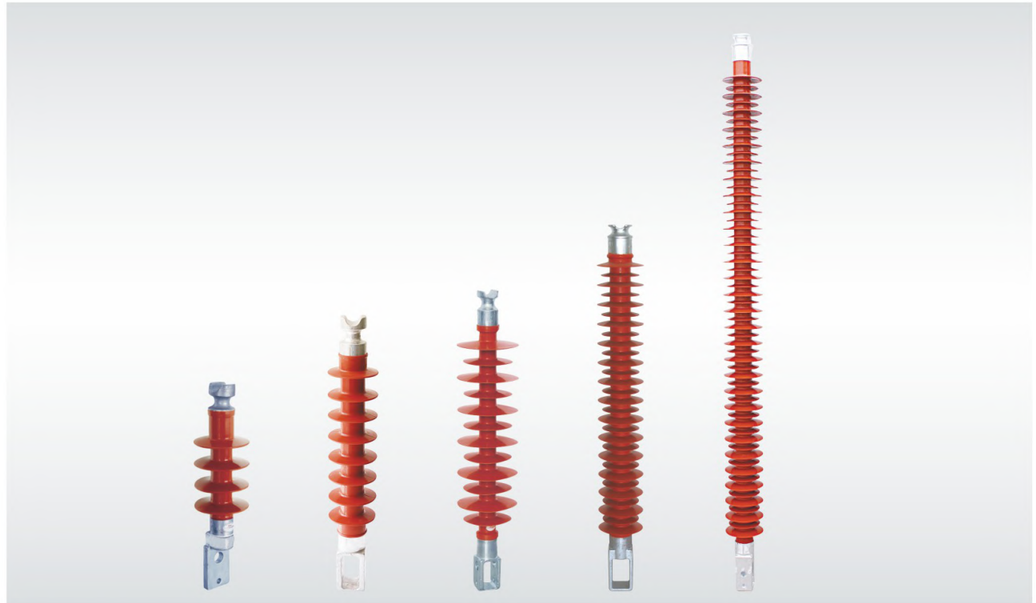
主要技术参数 (性能满足GB/T20142-2006、IEC61952)
Main Technical Parameters (Performance meet the GB/T20142-2006、IEC61952)

产品型号 Product Model	额定电压 Rated Voltage (kV)	额定机械负荷 Rated mechanical bending load (kN)	额定扭转负荷 Rated catileve load (KN.mm)	结构高度 Structure height H (mm)	最小电弧距离 Minimum Arc distance Li.(mm)	最小公称爬电距离 Min.creepage distance Lc.(mm)	伞径 Diameter of shed D.(mm)	雷电冲击耐受电压峰值 Lightning impulse withstand voltage (peak)(kV)	工频1min湿耐受电压有效值 P.F.1min wet withstand voltage (Virtual value)(kV)	上附件安装尺寸(孔径n-孔径d-孔中心圆直径D) Top accessories install dimension (hole numbers n-hole diameter d-cnter hole diameter D)	下附件安装尺寸（孔径n-孔径d-孔中心圆直径D) Botton accessories install dimension (hole numbers n-hole diameter d-cnter hole diameter D)
FZSW-10/5	10	5	0.6	215	125	290	100/90	75	42	4-M12-Φ76	4-M12-Φ76
FZSW-15/5	15	5	0.6	245	170	600	138/118	105	45	4-M12-Φ76	4-M12-Φ76
FZSW-20/8	20	8	1.2	400	300	920	122/92	125	50	4-Φ14-Φ140	4-Φ14-Φ140
FZS-20/8	20	8	1.2	420	320	700	138	125	50	4-Φ14-Φ140	4-Φ14-Φ140
FZSW-35/6	35	6	2	460	360	900	148/118	185	95	4-Φ14-Φ140	4-Φ14-Φ140
FZSW-66/8	66	8	1.5	770	650	1930	160/130	325	140	4-Φ14-Φ140	4-Φ14-Φ140
FZSW-66/12	66	12	2	760	630	1940	215/185	325	140	4-Φ14-Φ140	4-Φ14-Φ140
FZSW-110/6	110	6	1.5	1150	1050	2950	160/130	325	200	4-Φ14-Φ140	4-Φ14-Φ140
FZSW-110/10	110	10	4	1220	1060	3260	215/185	450	200	4-Φ14-Φ140	4-Φ18-Φ180
FZSW-220/10	220	10	4	2250	2050	6520	215/185	950	395	4-Φ14-Φ140	4-Φ18-Φ225

注：1、产品最小公称爬电距离，根据产品高度不同略有差别；
2、产品高度及上、下附件安装尺寸，可根据表中所列选取，也可另提供尺寸；220kV产品可是单节，也可以是二节组合；
3、110Kv~220kV 复合棒形支柱绝缘子，目前只适合用于母线支柱或挑线支柱，对用于刀闸开关的支柱，需进行技术商议。

Note: 1、The mini creepage distance is a little different as per product height.
2、The product height and top, bottom accessories install dimension could be choosed from table, also could be supplied their dates to us by yourself. The 220 kV insulator could be one section, and also two sections.
3、110Kv~220kV composite core post insulator only could be applied to busbar post or lateral post. It should be discussed with manufacturer if the products are used for knife switch post.

10-220kV复合横担绝缘子
Composite Cross-arm Insulator



产品概述 Introduction

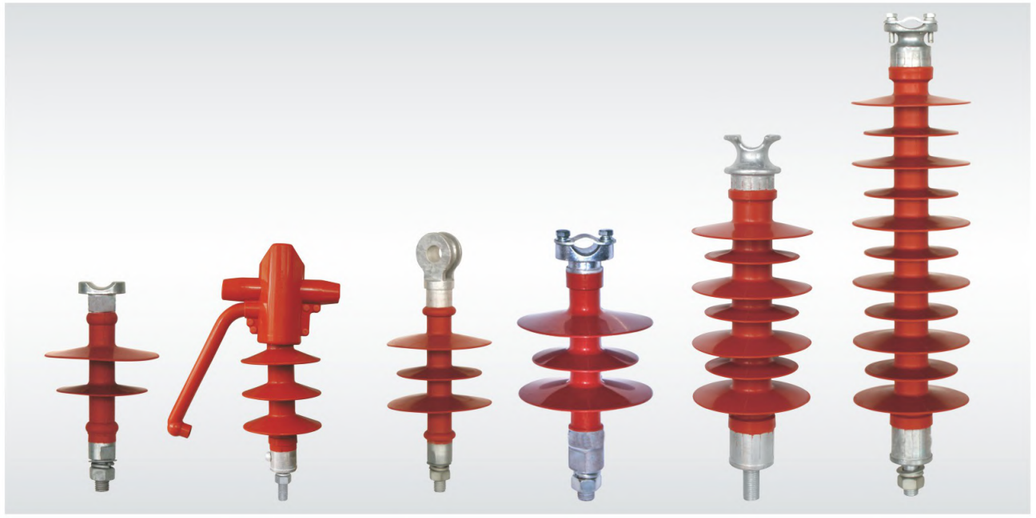
本产品适用于城网技术改造，能有效地利用城市狭窄的走廊面积升压送电，可降低杆塔高度，可节约大量的财力物力。产品适应于抗弯曲负荷4~10kN，由于其弯曲强度高，可防止瓷横担容易出现的级连断裂事故，而且耐污性能好，是瓷横担无法替代的产品。

These products for the urban net rebuild can effectively solve the shortage of corridor in urban power line, reduce the pole height and economy lots of financial and material resources. Because of the high strength, to avoid the porcelain cross-arm causes to conc atenate breakage of high strength accident, and fine anti-pollution. And the products of porcelain cross-arm cannot instead of it.

主要技术参数(性能满足GB/T20142-2006、JB/T8460-1996及JB/T8737-1998)
Main Technical Parameters (Performance meet the GB/T20142-2006、JB/T8460-1996 and JB/T8737-1998)

产品型号 Product Model	额定电压 Rated Voltage (kV)	额定机械负荷 Rated mechanical bending load (kN)	结构高度 Structure height H (mm)	最小电弧距离 Minimum Arc distance Li.(mm)	最小公称爬电距离 Min.creepage distance Lc.(mm)	伞径 Diameter of shed D.(mm)	雷电冲击耐受电压峰值 Lightning impulse withstand voltage (peak)(kV)	工频1min湿耐受电压有效值 P.F.1min wet withstand voltage (Virtual value)(kV)
FS-10/5	10	5	280	130	300	85	75	42
FS-15/6	15	6	400	245	520	80	75	42
FSW-35/5	35	5	625	480	1400	145/115	265	95
FS2-35/5	35	5	660	480	1120	142	265	95
FSW-66/10	66	10	790	650	1920	160/140	325	140
FSW-110/10	110	10	1260	1060	3360	215/185	550	230
FSW-220/2.5	110	5	2165	1920	5510	160/140	1050	395
FS-110/6	110	6	1220	965	2860	160/140	550	230

10-35kV复合针式绝缘子
Composite Pin-type Insulator



产品概述 Introduction

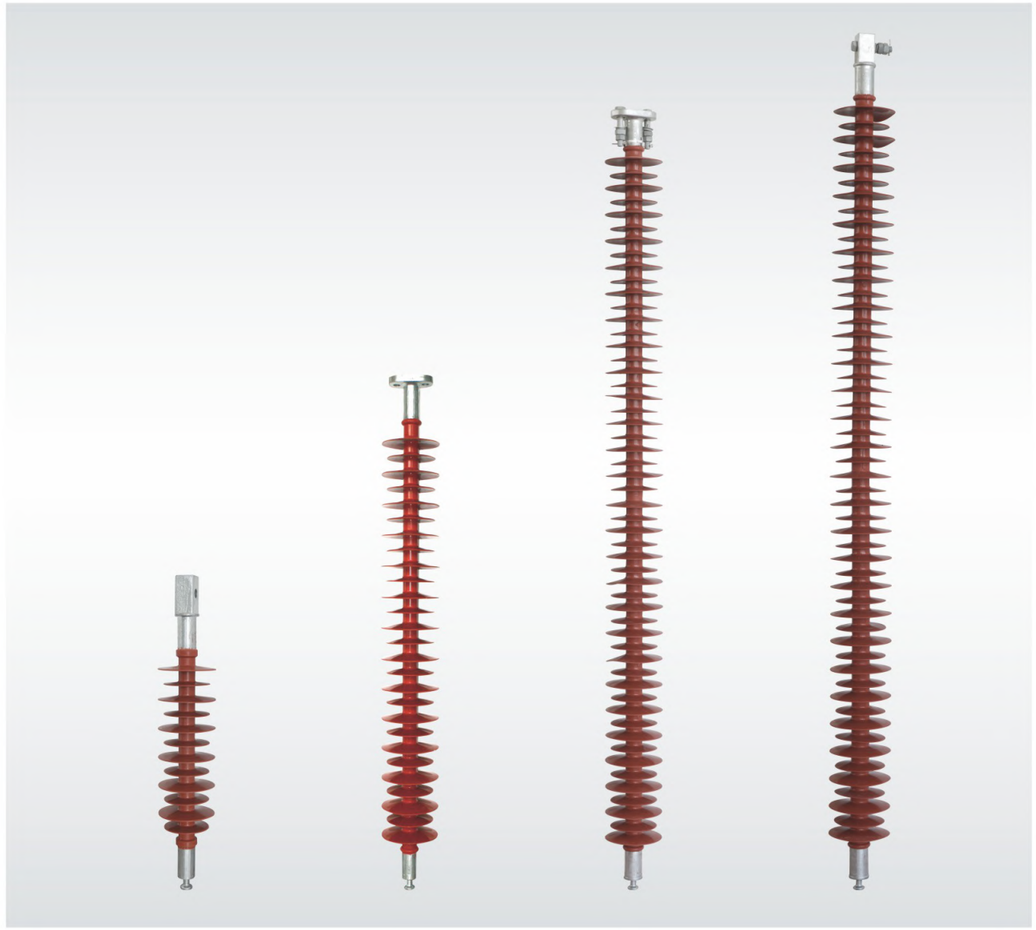
本产品适用于高压线路设施。具有良好的增水性、抗老化性、耐漏电起痕性和耐电蚀损性，具有很高的抗张强度和抗弯强度，其机械强度高，抗冲击性能、防震和防脆性能好，重量轻、安装方便，其顶部和底部安装尺寸与相应的瓷针式安装尺寸相同，可以互换使用。产品适应抗弯曲负荷5~12.5kN。

This product is applied to high voltage power line service. And have features of good hydrophobicity , anti-aging, anti-leakage trace and electrical erode proof, tensile strength and bending strength, strong mechanical strength, shock resistance good quakeproof and brittle-failure proof, light weight, easy to installation, and the installation outline of top and base are the same size with porcelain-pin type, they can exchange to use each other.

主要技术参数(性能满足GB/T20142-2006、IEC61952)
Main Technical Parameters(Performance meet the GB/T20142-2006、IEC61952)

产品型号 Product Model	额定电压 Rated Voltage (kV)	额定机械负荷 Rated mechanical bending load (kN)	结构高度 Structure height H (mm)	最小电弧距离 Minimum Arc distance Li.(mm)	最小公称爬电距离 Min.creepage distance Lc.(mm)	伞径 Diameter of shed D.(mm)	雷电冲击耐受电压峰值 Lightning impulse withstand voltage (peak)(kV)	工频1min湿耐受电压有效值 P.F.1min wet withstand voltage (Virtual value)(kV)
FPQ-10/4T20	10	4	215	125	300	140/115	75	42
FPQ4-10/4T16	10	4	250	165	420	140/115	105	42
FPQ4-10/5T20	10	5	250	165	420	140/115	105	42
FPS-105/5	10	5	250	180	380	90	105	42
FPQ-20/12.5	20	12.5	380	290	780	140/110	125	50
FPQ-12/5	12	5	250	150	370	115	95	42
FPQ-35/10	35	10	420	350	1160	122/92	200	95

35~220kV 复合防风偏绝缘子
Wind Deflection Of Composite Insulator



主要技术参数(性能满足GB/T20142-2006、IEC61952)
Main Technical Parameters(Performance meet the GB/T20142-2006、IEC61952)

产品型号 Product Model	额定电压 Rated Voltage (kV)	额定机械弯曲负荷 Rated mechanical bending load(kN)	额定机械负荷 Rated mechanical bending load (kN)	结构高度 Structure height H (mm)	最小电弧距离 Minimum Arc distance Li.(mm)	最小公称爬电距离 Min.creepage distance Lc.(mm)	雷电冲击耐受电压峰值 Lightning impulse withstand voltage (peak)(kV)	工频1min湿耐受电压有效值 P.F.1min wet withstand voltage (Virtual value)(kV)	联接标记结构 Connect size
FSP-35/0.8-AQ(TQ)	35	0.8	100	710±15	470	1380	230	95	16
FSP-66/0.8-AQ(TQ)	66	0.8	100	950±15	710	2200	410	185	16
FSP-110/0.8-AQ(TQ)	110	0.8	100	1440±15	1200	3800	550	230	16
FSP-220/0.8-AQ(TQ)	220	0.8	100	2250±30	2050	7280	1000	395	16

复合相间间隔棒
Composite interphase spacers

产品概述 Introduction

复合相间间隔棒用于紧凑型高压输电线路，能有效地控制相间距离保持线路安全，减少输电走廊的空间，减少线路建设的投资。复合相间间隔棒具有良好的抗弯曲、抗冲击能力，防污能力强，防震和防脆断性能好，自身重量轻，安装方便，可免维护，不需人工清扫，值得推广使用。

Composite interphase spacers for compact high-voltage transmission lines, can effectively control the line phase distance to maintain safety and reduce transmission corridor space, reduce the line-building investments. Composite interphase spacers has a good anti-bending, strong impact, shock and anti-brittle performance, light weight, easy installation, maintenance-free, without manual cleaning, be widely used.

型号说明Model and Meaning

FXGB-□-□-□

- 适用最大导线截面(mm^2)
  Application of maximum conductor section (mm^2)
- 相间距离(mm)
  Distance (mm)
- 额定电压(kV)
  Rated voltage (kV)
- F代表复合；X代表相间；GB代表间隔棒
  F representative composite; X represents white; GB represents a spacer

主要技术参数 Main Technical Parameters

规格型号 Model specifications	额定电压 kV Rated voltage	相间距离 (mm) Phase distance	额定拉伸负荷kN Rated tensile load	额定弯曲负荷kN Rated bending load	压缩耐受负荷kN Compression load resistant	扭转耐受负荷N.m Reverse tolerance to load	绝缘距离 (mm) Insulation distance	最小公称爬电距离 (mm) Minimum nominal creepage distance	雷电全波冲击耐受电压kV Full wave impulse withstand voltage of lightning strike	工频湿耐受电压1min kV Wet power frequency withstand voltage of
FXGB-220-2990-□	220	3150	100	225	7.5	75	2820	8500	1000	395

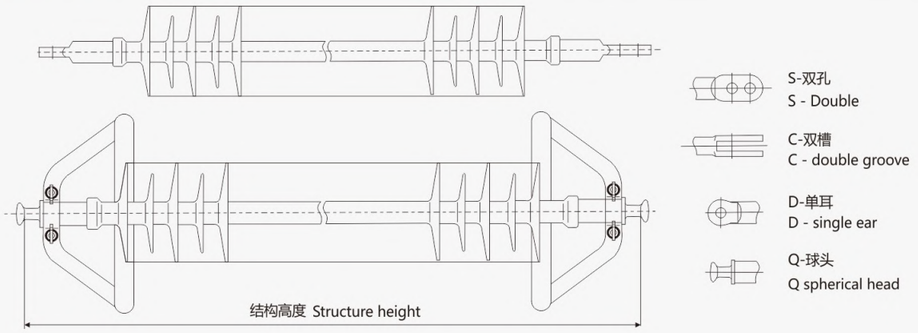
订货须知：1、在订货时需要明确指出相间距离，爬电距离和导线线径，若为分裂导线应注明间隔棒类型和型号。
2、我公司可根据设计要求定制。

Order information: 1、In order to clear distance, creepage distance and wire diameter, if split conductor should indicate the spacing rod type and model.
2、Our company can be customized according to design requirements.

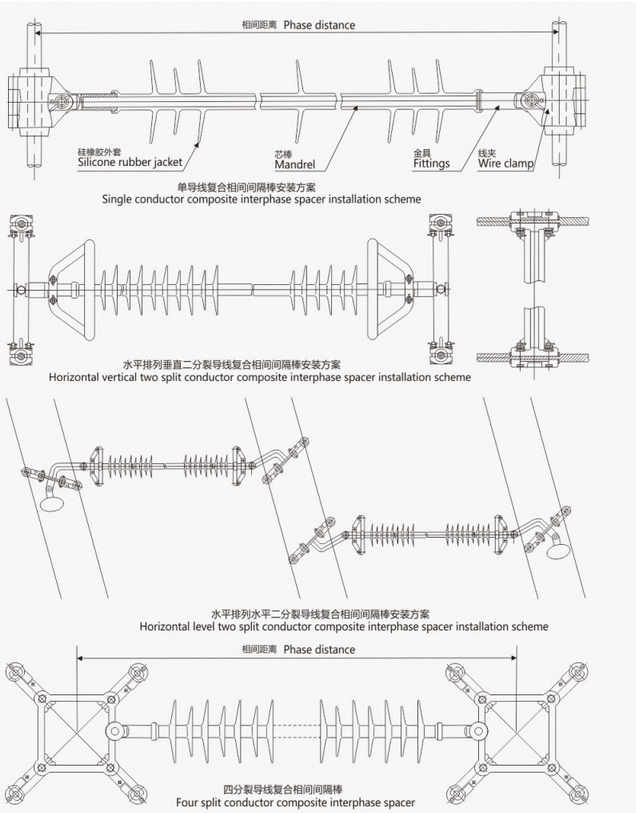
复合相间间隔棒
Composite interphase spacers

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安装外形 The Installation Appearance

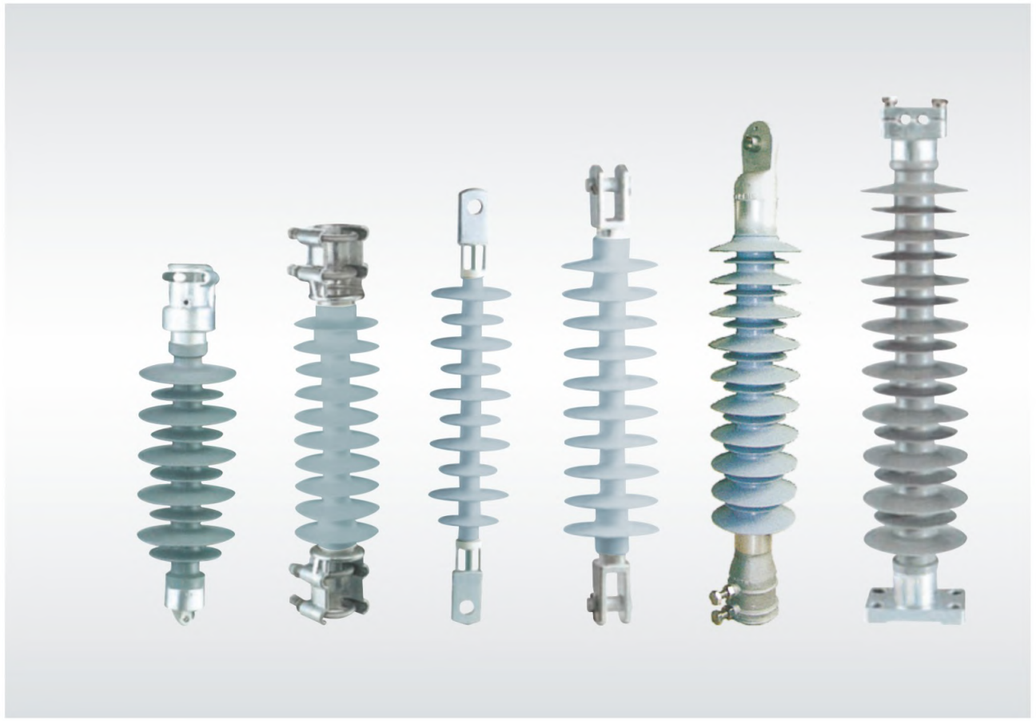


主要图样 The Main Pattern





电气化铁道用复合绝缘子
Composite Insulator for Electric-railway



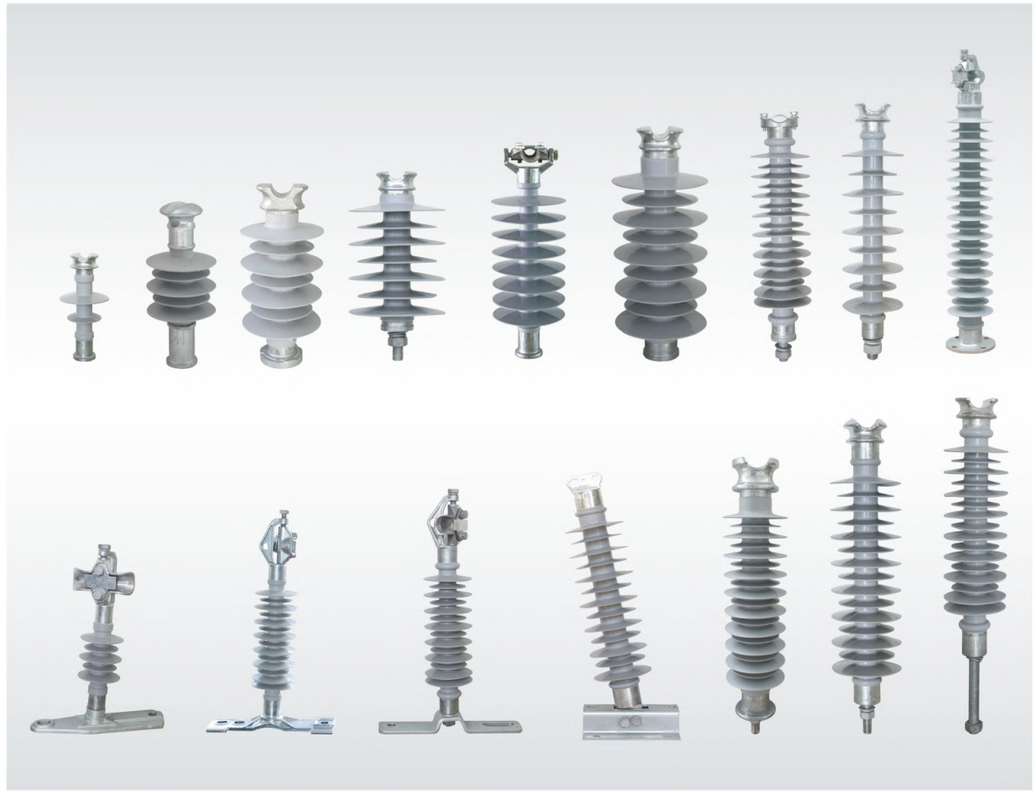
产品概述 Introduction

本产品适用于运行条件复杂的电气化铁路隧道。能有效地防止污闪事故，减少清扫维护工作量。由于其尺寸小，在隧道净空较小时，是瓷、玻璃绝缘子无法替代的产品。

This product is suitable for electric-railway of complex operation conditions, can effectively prevent flashover accidents and decrease the time of clear and maintenance. Because of small volume ,and when in the small clear headway of tunnel, the products of porcelain, glass insulator cannot instead of it.

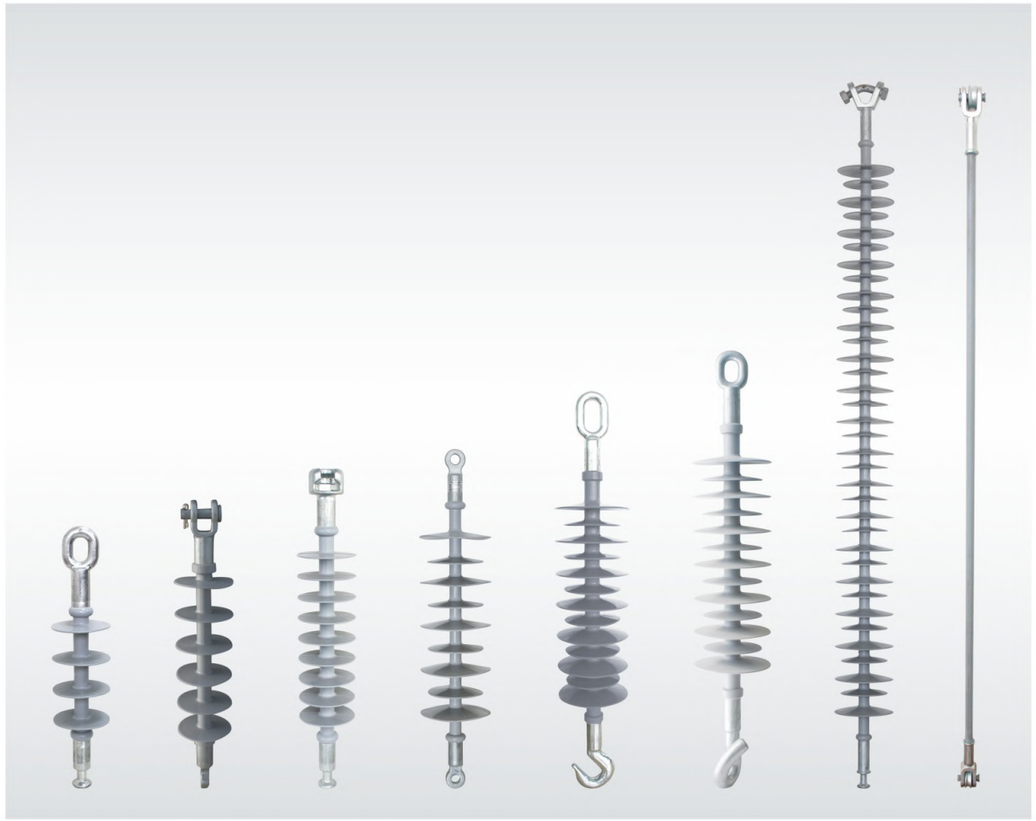
主要技术参数(性能满足GB/T20142-2006、IEC61952)
Main Technical Parameters(Performance meet the GB/T20142-2006、IEC61952)

产品型号 Product Model	额定电压 Rated Voltage (kV)	最小公称爬电距离 Min.creepage distance Lc.(mm)	额定机械负荷 Rated mechanical bending load (kN)	标准雷电全波冲击耐受电压 Lightning impulse withstand voltage peak (kV)	工频1min湿耐受电压(有效值)不小于 P.F. 1 min wet withstand voltage (Virtual value)(kV)
FQZ-27.5/8	27.5	1610	8	300	150
FQX1-52/135	52	1230	135	250	115
FQB1-52/6	52	1215	6	240	115
FQB-25/5C	25	900	5	200	95
FQX1-25/135	25	900	135	200	95



主要技术参数(性能满足GB/T20142-2006、IEC61592)
Main Technical Parameters(Performance meet the GB/T20142-2006、IEC61592)

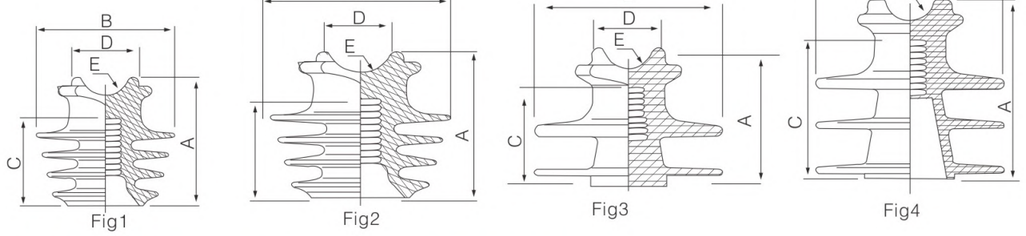
产品型号 Product Model	额定电压 Rated Voltage (kV)	额定机械负荷 Rated mechanical bending load (kN)	结构高度 Structure height H (mm)	最小电弧距离 Minimum Arc distance Li.(mm)	最小公称爬电距离 Min.creepage distance Lc.(mm)	伞径 Diameter of shed D.(mm)	雷电冲击耐受电压峰值 Lightning impulse withstand voltage (peak)(kV)	工频1min湿耐受电压有效值 P.F.1min wet withstand voltage (Virtual value)(kV)
FPQ-11/4	11	4	295	140	360	90/88	105	105
FPQ-11/5	11	5	280	180	380	90	105	105
FPQ-11/10	11	10	300	165	420	140/114	105	105
FPQ-11/12.5	11	12.5	320	195	450	110	95	95
FPQ-15/10	15	10	280	160	665	130/100	145	145
FPQ-24/8	24	8	315	200	450	120/100	145	145
FPQ-24/11	24	11	476	165	610	135/105	145	145
FPQ-33/8	33	8	425	320	1150	122/92	230	230
FPQ-33/10	33	10	406	280	940	122/92	200	200
FPQ-33/12	33	12	545	380	1485	200	250	250
FPQ-33/12.5	33	12.5	545	405	1650	150/120	265	265



主要技术参数(性能满足GB/T20142-2006、IEC61592)
Main Technical Parameters(Performance meet the GB/T20142-2006、IEC61592)

产品型号 Product Model	额定电压 Rated Voltage (kV)	额定机械负荷 Rated mechanical bending load (kN)	结构高度 Structure height H (mm)	最小电弧距离 Minimum Arc distance Li.(mm)	最小公称爬电距离 Min.creepage distance Lc.(mm)	伞径 Diameter of shed D.(mm)	雷电冲击耐受电压峰值 Lightning impulse withstand voltage (peak)(kV)	工频1min湿耐受电压有效值 P.F.1min wet withstand voltage (Virtual value)(kV)
FXBW-11/70-SB	11	70	350	180	420	92	95	45
FXBW-11/100-SB	11	100	380	185	420	92	95	45
FXBW4-11/80-SB	11	80	450	280	550	144/114	125	65
FXB-24/70-EE	24	70	425	230	575	98/88	125	65
FXBW-24/70-SB	24	70	440	270	850	130/100	125	65
FXBW-24/120-SB	24	120	545	320	900	115/85	145	65
FXB-25/70-CT	25	70	500	330	735	92	145	65
FXB-33/70-SB	33	70	505	330	900	92	200	95
FXBW-33/100-SB	33	100	570	385	920	115/75	200	95
FXBW-33/80-SB	33	80	720	555	1650	144/114	250	135
FXBW-35/100-EH	35	100	750	430	1400	130/100	185	95
FXBW-36/120-SB	36	120	670	430	1400	130/100	185	95





主要尺寸和性能 Main Dimensions and Standard Particulars

图号Fig			1	2	3	4
产品型号Catalog Number			JHG-IP-15F	JHG-IP-25F1	JHG-IP-25F2	JHG-IP-25F2
美标等级Class ANSI			55-4	55-5	55-5	55-6
主要尺寸 Main Dimensions (mm)		A	129.5	150	140	181
		B	140	190	190	191
		C	88	99	100	140
		D	68	68	74	85
		E	25.4	25.4	25.4	25.4
		F	16	20	20	19
额定电压Nominal Voltage(kV)			15	25	25	35
爬电距离Creep age Distanc e(mm)			360	390	370	508
最小击穿电压 Minimun Flashover Voltage	工频电压 Power-frequeney	干闪Dry/kV	75	89	85	110
		湿闪Wet/rkV	50	60	55	75
		干耐受Dry: kV/min	70	70	80	90
		湿耐受Wet: kV/min	40	50	50	70
		正极闪络电压Pos/kV	110	140	130	160
		负极IN络电压Neg/kV	145	170	150	200
击穿电压Puncturc VoltagctkV			160	180	180	200
干弧距离Dry Arcing Distance(mm)			160	183	200	254
弯曲强度Cantilever Failing L.oad(kN)			13	13	13	13
重量 Weight (kg)			0.6	0.85	0.91	1.1
箱/数量Qty(pcs)/Ctn			18	9	9	9
20英尺集装箱/数量Qty(pcs)/20 FT			7560	3780	3780	3150

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拉紧绝缘子
Tension insulator



概述An overview of the

适用于当拉线穿越或临近 35 kV及以下线路时作隔离绝缘体使用；
It is suitable for isolating the insulator when the drawing line passes through or is close to 35 kV or below.

技术参数Technical parameters

型号 Model	破坏拉力 Destroy the tension	1分钟工频耐压
JH10-90	90 KN	42 KV
JH10-120	120 KN	42 KV
JH20-90	90 KN	68 KV
JH20-120	120 KN	68V

结构特点Structural characteristics of

采用安全的双重保护设计，用户在超过拉力（90 KN）的使用过程中，或发生意外现象，如雷击、车辆或其他外力撞击拉线，使拉紧绝缘子绝缘层破坏，此时第二道拉力保护同事动作，两个闭合的铁环互联，防止倒杆事故的发生，使整个事故范围缩小至最小影响面，为电网的安全运行提供了十分的保障。事后拉紧绝缘子的调换十分简单，拉线不必重新制作，只需更换拉紧绝缘子即可。
设备选用高强度的优质、特殊复合绝缘材料制作而成，配以抗老化添加剂，保证设备户外运行20年不发生变质现象；
五道防污裙设计，整体防污能力强、泄漏比距大；

Adopt safe double protection design, the user is in exceed pull (90 KN) use process, or produce accident phenomenon, such as lightning strike, vehicle or other external force impinge pull line, makeWhen the insulation layer of the tension insulator is damaged, the second tension protects the colleague's action, and the two closed iron rings are connected to prevent the occurrence of inverted bar accidents, so as to minimize the scope of the whole accidentInfluence surface, for the safe operation of the power grid to provide a very good guarantee. The replacement of the post-tensioning insulator is very simple, so the drawing line need not be remanufactured, just replace the tension insulator.
The equipment is made of high strength, high quality and special composite insulation materials, together with anti-aging additives, so as to ensure the outdoor operation of the equipment for 20 years without deterioration.
Five anti-fouling skirt design, overall anti-fouling ability strong, leakage ratio distance big;

型号说明Model specification

J 代表设备类别为拉紧绝缘子　H 代表材料类型为复合材料　10代表适用于10 KV及以下电压等级的线路
20适用于20KV及以下电压等级的线路　90 代表拉紧绝缘子的破坏拉力为90 KN
J represents the device class as the tension insulator　H represents the material type as the composite material
10 represents the line suitable for 10 KV and below voltage levelsLine　90, which is applicable to 20KV and below voltage levels, represents 90 KN of the breaking tension of the tensioning insulator

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2 玻璃钢干式电容型套管系列
GFRP dry capacitor bushing

玻璃钢干式电容型穿墙套管
GFRP dry capacitor wall bushing

玻璃钢增强干式电容型套管
GFRP dry capacitor transformer bushing

24kV玻璃钢干式电容型变压器套管
FRP dry type capacitive bushing

40.5kV玻璃钢干式电容型变压器套管
FRP dry type capacitive bushing

72.5kV玻璃钢干式电容型变压器套管
FRP dry type capacitive bushing

126kV玻璃钢干式复合电容型变压器套管
GFRP dry type composite capacitive transformer casing

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玻璃钢干式电容型穿墙套管

GFRP dry capacitor wall bushing



产品概述 Introduction

本产品是一种新型电容式穿墙套管，套管芯体采用电容均布结构和先进的干式生产技术，产品性能稳定，局部放电量小，介质损耗小，产品免于维护。同时由于产品采用合理的设计结构，产品内部电场分布均匀，热稳定性能好，安全运行系数较高。另外，产品外绝缘材料还采用电气性能、憎水性能和耐老化性能优异的高温硫化硅橡胶材料。因此产品具有优异的耐污能力和防爆性能，在产品运输、安装等方面极为快捷方便，符合电力产品环保、无油化、小型化的发展趋势。是满足城乡高电压电网改造要求的新一代产品。

This product is a new type of capacitive wall casing, casing core body capacitance uniform structure and use of advanced dry production technology, product performance is stable, partial discharge capacity is small, small dielectric loss, products from maintenance. At the same time due to product adopts reasonable design structure, uniform electric field distribution inside the product, good thermal stability, safe operation of the coefficient is higher. In addition, the product insulation materials but also the electrical properties, hydrophobic property and resistance to aging performance of high temperature vulcanization silicone rubber materials. So the product has excellent resistance to carrying capacity and explosion-proof performance, very convenient in transportation, installation and other products, composite power products, environmental protection, without oil, the development trend of miniaturization. Satisfy the requirement of high voltage power grid transformation between urban and rural areas is a new generation of products.

主要技术参数(性能满足GB/T4109)
Main Technical Parameters(Performance meet the GB/T4109)

产品型号 Product Model	额定电压 Rated Voltage (kV)	额定电流 Raled current (A)	允许弯曲负荷 Permitted Bending load (N)	弯曲破坏负荷 Bending break load (N)	雷电冲击耐受电压峰值 Lightning impulse withstand voltage (peak)(kV)	工频1min湿耐受电压有效值 P.F.1min wet withstand voltage (Virtual value)(kV)	介质损耗正切(%) Tangent of dielectric loss(%)	局部放电量最大值(PC)1.05Ur/√3 Part discharge max value 1.05Ur/√3
FCGW-12/200-630	10	200~630	625	1250	75	30		
FCGW-12/800-4000	10	800~4000	625	1250	75	30	≤0.7	≤10
FCGW-24/630-4000	20	630~4000	625	1250	150	57	≤0.7	≤10
FCGW-40.5/630-3150	35	630~3150	625	1250	200	95	≤0.7	≤10
FCGW-72.5/630-2000	66	630~2000	625	1250	325	147	≤0.7	≤10
FCGW-126/630-2000	110	630~2000	625	1250	550	230	≤0.7	≤10

复合干式穿墙套管安装尺寸
Composite dry bushing install diamension

产品型号 Product Model	总长度 Total length (mm)	户外绝缘距离 Outdoor insulation distance (mm)	户外最小爬电距离 Outdoor mini creepage distance (mm)	户内绝缘距离 Indoor insulation distance (mm)	户内最小爬电距离 Indoor mini creepage distance (mm)	户内端最大长度 Indoor max length (mm)	安装法兰厚度 Installed flange thickness (mm)	安装法兰中心孔距 Idistance between center holes on flange (mm)	安装法兰孔数 Hole numbers on flange (n)	接线端子孔距 Distance between holes of the connecting terminal (mm)	接线端子孔数 Hole numbers on the connecting teminal(n)
FCGW-12/200~630	530	190	285	200	240	280	10	Φ90	4-Φ14	M20	4-Φ14
FCGW-12/800~3150	780	170	420	170	340	370	15	Φ200	4-Φ18	40X40	4-Φ14
FCGW-12/4000	980	210	440	210	430	470	15	Φ200	4-Φ18	50X50	4-Φ14
FCGW-24/630~4000	980	210	640	220	620	480	15	Φ200	4-Φ18	40X40	4-Φ14
FCGW-40.5/630~3150	1250	410	1140	370	780	580	15	Φ200	4-Φ18	40X40	4-Φ14
FCGW-72.5/630~2000	2100	710	2250	710	2200	1100	15	Φ350	6-Φ18	40X40	4-Φ14
FCGW-126/630~2000	3000	1150	3150	1150	3100	1520	15	Φ350	6-Φ18	40X40	4-Φ14

注：2000A以上的套管长度加80mm，接线端子孔距为50 X 50mm。

可根据用户要求，生产特殊安装尺寸的产品。

Note: The bushing should be lengthened 80mm, and distance between holes of the connecting terminal should be 50 X 50mm if current is opto 2000A.

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玻璃钢干式电容型变压器套管

GFRP dry capacitor transformer bushing



玻璃钢干式变压器套管
FRP dry transformer bushing

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产品概述 Introduction

玻璃钢干式电容型套管的主要绝缘是电容芯子，电容芯子是用高绝缘性能玻璃纤维浸以超低粘度耐高温环氧树脂，用微机控制缠绕设备按测地缠绕交叉叠加构成绝缘层，采用半导体式形材料制成电容屏，绝缘层与电容屏交替缠绕间隔设置经高温固化制成纯固体电容芯子；联结法兰由高强度铝合金制成，与电容芯子胶装成一体；增爬伞裙采用硅橡胶一次注射成型在电容芯子表面，与电容芯子形成有机整体。该产品除满足GB/T4109-2008、IEC60137-Ed.6.0还具有以下显著优点：

1、本产品属无油、纯固体主绝缘结构产品，因此无需专门的维修保养；
2、套管的绝缘设计裕度大，以半导体材料为电容屏，大大提高了套管的局放起始电压；
3、阻燃绝缘材料，无分解，电气性能稳定，无燃烧及爆炸危险；
4、结构紧凑、体积小、重量轻、便于运输，可任意角度安装；
5、玻璃纤维增强缠绕、优化力学铺层设计，抗弯强度高，机械性能优异，尤其适用于重震地区的使用；
6、极佳的耐高低温性能，最高耐温+155℃，最低耐温-200℃；
7、采用硅橡胶复合外套时防污性能优异，可用于重污秽地区；
8、使用寿命长，长期运行成本低；
9、产品生产周期短，可根据用户要求进行特殊设计；
10、还可以提供高强瓷增爬伞裙供用户选择；
11、可满足智能电网要求，套管可以加装智能装置，可实现对套管的绝缘状态进行在线监测。

The major insulation of fiberglass dry-type capacitance transformer bushings is capacitor core.Pure solid capacitor core is made by solidifying alternatively wound and interval arranged insulating layer(made by winding,intersecting and superimposing high-insulation fiberglass immersed in ultra-low-viscosity high-temperature-resistant epoxy resin by microcomputer control winding equipment according to geodesic) and capacitor screen (made of semiconductor adaptive materials)in high temperature.Coupling flange is made of high-strength aluminum alloy,which is cemented with capacitor core as a whole.Creepage extenders are injected and shaped with silicon rubber noce on the surface of capacitor core,to be an organic integrity with the capacitor core.

1、It is unnecessary to adopt special repair and maintenance for the products as they belong to the oil-free and pure-solid major insulation structure products;
2、The partial discharge starting voltage has been improved greatly due to the large insulation design margin and semiconducting materials as the capacitor screen;
3、Inflaming retarding insulating materials with stable electrical performance and without decomposition,without combustion and explosion hazard;
4、Compact structure,small volume,light weight,convenient for transportation,may be installed at any angle;
5、The products are especially suitable for the heavy earthquake regions for their reinforced fiberglass winding,optimized dynamic laying design,high bending strength and excellent mechanical performance;
6、Perfect high and low temperature resistant performance,ranging from +155℃,to -200℃;
7、The products with silicon rubber compound shell may be used to the heavy polluted area for their excellent anti-fouling property;
8、Long performance life and low longtime running cost;
9、Production period is short;the product may be designed specially according to the users'requirements;
10、High-strength enamel creepage extenders may also be available for the customer ;
11、Bushing may be equipped with intelligent devices that are used for the on-line inspection of bushing insulation state,so as to meet the requirements of smart power grid.

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玻璃钢增强干式电容型套管
GFRP dry capacitor transformer bushing

型号说明Model and Meaning

F B R G W(L) — 40.5 kV / 1600 A

- 额定电流 Rated current
- 额定电压 Rated voltage
- 带CT Clever & Tougue
- 防污型 Anti-pollution model
- 干式 Dry type
- 电容型 Capacitance
- 变压器套管 Transformer bushing
- 复合外套 Composite Bushing

玻璃钢干式电容型变压器套管电气性能表
GFRP dry capacitor transformer bushing Electrical Performance

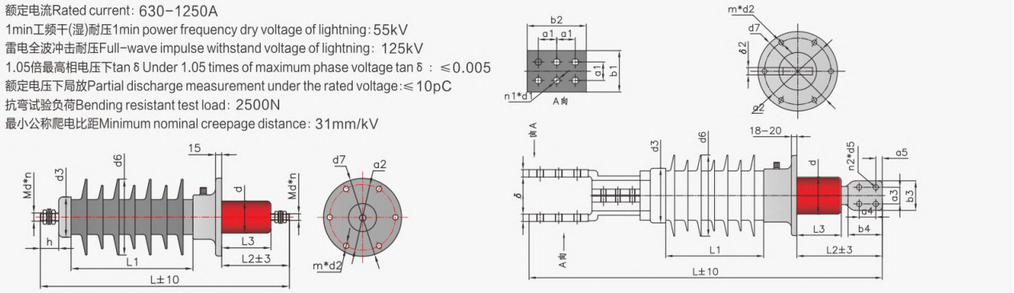
系统标称电压 Un kV nominal system voltage		35	66	110	132	150~154	220
额定电压 Ur kV Rated voltage(kV)		40.5	72.5	126	145	170	252
设备最高工作相电压 Ur/ kV highest operating voltage		23.5	42	73	84	98.5	146
60S工频耐受电压 60s power frequency withstand voltage	干kV(r.m.s)dry	95	165	255	305	355	505
	湿kV(r.m.s)wet	80	147	230	275	340	460
雷电冲击耐受电压 Lightning impulse withstand voltage peak (kv)	全波kV(peak)full wave	200	325	550	650	750	1050
	截波kV(peak) choped wave			635	750	865	1210
操作冲击耐受电压(干或湿)kV (peak) rated aperating impulse withstand voltage							850
介质损耗角正切% tangent of dielectric loss(%)	增值peak value 不大于no more than	1.05Ur/√3~Ur:0.1					
	最大值max value 不大于no more than 40.5kV~550kV	1.05Ur/√3下测量:0.6					
Ur下局部放电量（不大于no more than） magnitude of partial discharge under Ur		10pC					

24kV玻璃钢干式电容型变压器套管
FRP dry type capacitive bushing

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外形及安装尺寸 Outlinge and installing dimension

执行标准Technical standards：GB/T 4109-2008 IEC 60137 Ed.6.0
额定电压Rated voltage：24kV
额定电流Rated current：630-1250A
1min工频干(湿)耐压1min power frequency dry voltage of lightning：55kV
雷电全波冲击耐压Full-wave impulse withstand voltage of lightning：125kV
1.05倍最高相电压下tan δ Under 1.05 times of maximum phase voltage tan δ ：≤0.005
额定电压下局放Partial discharge measurement under the rated voltage:≤10pC
抗弯试验负荷Bending resistant test load：2500N
最小公称爬电比距Minimum nominal creepage distance：31mm/kV



主要性能Main performance：1min工频干(湿)耐压power frequency withstand voltage：55kV；雷电全波冲击耐压lightning impulse withstand voltage：125kV；1.05倍最高相电压下times of maximum phase voltage tan δ：≤0.005
额定电压下局放Partial discharge measurement under the rated voltage：≤10pC；抗弯试验负荷The bending test load：1000-3500N

型号 Type / 主要尺寸(mm) Main dimension	图号 Mode	套管总长 Total length of casing	接线端子 terminal 螺纹螺距 pitch screw	螺杆长 pitch screw	孔数孔径 Hole number and diameter	孔距 Pitch of holes	板面 board	板厚 Thickness	头部直径 head diameter	引线接头孔径 The pitch of pin connector	复合外绝缘 composite insulation 绝缘距离 insulation distance	公称爬电距离 Nominal creepage distance	最大伞径 Maximum diameter of shed	法兰 Flange 法兰盘外径 Outer diameter of flange plate	安装孔中心距 Center distance of insulation hole	孔数孔径 Hole number and diameter
		L	Md*n	h	n1*d	a1	b1*b2	δ	d3	d8	L1	S	d6	d7	a2	m*d2
FBRGW-24/100-315-4	1	605	16*2	45					98		295	840	185	190	160	6*14
FBRGW-24/400-500-4	1	625	20*2	55					98		295	840	185	190	160	6*14
FBRGW-24/630-800-4	2	770			4*14	30	63*63	11	108	28	290	820	195	190	160	6*14
FBRGW-24/1000-1250-4	2	800			4*14	40	80*80	10	108	32	290	820	195	190	160	6*14
FBRGW-24/630-800-4	3	725			4*14	30	63*63	11	98		295	840	185	190	160	6*14
FBRGW-24/1000-1250-4	3	755			4*14	40	80*80	10	98		295	840	185	190	160	6*14
FBRGW-24/1600-4	3	810			4*18	50	100*100	16	98		295	840	185	190	160	6*14
FBRGW-24/2000-4	4	820			4*18	50	100*100	16	98		295	840	185	190	160	6*14
FBRGW-24/2500-4	4	865			4*18	50	100*100	20	123		285	875	219	235	200	6*16
FBRGW-24/3150-4	4	910			4*18	60	125*125	20	123		285	875	219	235	200	6*16
FBRGW-24/4000-4	4	950			6*18	50	112*160	20	123		285	875	219	235	200	6*16
FBRGW-24/5000-4	5	980			6*18	50	112*160	20	134		275	865	232	235	200	6*16
FBRGW-24/6300-4	5	1060			4*18	60	120*130	20	173		300	945	268	290	250	6*18
FBRGW-24/8000-4	5	1070			6*18	60	180*130	20	173		300	945	268	290	250	6*18

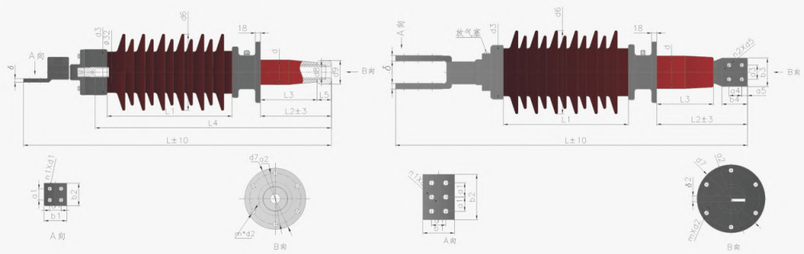
型号 Type / 主要尺寸(mm) Main dimension	浸油部分总长 Oiled section length	油中主体直径 In the oil body diameter	油端绝缘长度 Oil insulation length	缆线长度 lenth of cable	均压球 Equipotential shielding for HV bushing		导电管的内径 The inner diameter of the conductive tube	油中接线端子 In the oil terminal 板面 board		孔距 Pitch of holes			孔数孔径 Hole number and diameter	板厚 Thickness
	L2	d	L3	L4	L5	d9	d10	b3	b4	a3	a4	a5	n*d5	δ 2
FBRGW-24/100-315-4	165	78	120											
FBRGW-24/400-500-4	175	78	120											
FBRGW-24/630-800-4	170	88	120	570	50	84	40							
FBRGW-24/1000-1250-4	170	88	120	570	50	84	40							
FBRGW-24/630-800-4	200	78	120					40	65		30	15	2*14	20
FBRGW-24/1000-1250-4	200	78	120					40	65		30	15	2*14	20
FBRGW-24/1600-4	230	78	120					65	90		45	20	2*14	20
FBRGW-24/2000-4	240	78	120					80	90	40	45	20	4*14	20
FBRGW-24/2500-4	240	102	120					80	90	40	45	20	4*14	20
FBRGW-24/3150-4	240	102	120					80	90	40	45	20	4*14	20
FBRGW-24/4000-4	240	102	120					100	90	50	45	20	4*14	20
FBRGW-24/5000-4	250	116	120					100	100	50	50	25	4*14	25
FBRGW-24/6300-4	300	148	120					120	150	60	80	32.5	4*18	30
FBRGW-24/8000-4	280	148	120					160	130	50	60	32.5	6*18	30

注：表中产品外形尺寸为推荐尺寸，关键安装配合尺寸都可以根据用户要求设计，最终尺寸以双方确定图纸尺寸为准。
Product appearance size is recommended in the table size, the key installation dimension can be designed according to user requirements, the final size will be subject to both parties determine the drawings

40.5kV玻璃钢干式电容型变压器套管
FRP dry type capacitive bushing

外形及安装尺寸 Outlinge and installing dimension

执行标准Technical standards：GB/T 4109-2008　IEC 60137　Ed.6.0
额定电压Rated voltage：40.5kV
额定电流Rated current：630-1250A
1min工频干(湿)耐压1min power frequency dry voltage of lightning:95kV
雷电全波冲击耐压Full-wave impulse withstand voltage of lightning:200kV
1.05倍最高相电压下tan δ Under 1.05 times of maximum phase voltage tan δ ：≤0.005
额定电压下局放Partial discharge measurement under the rated voltage：≤10pC
抗弯试验负荷Bending resistant test load：2500N
最小公称爬电比距Minimum nominal creepage distance:31mm/kV



主要性能Main performance	1min工频干(湿)耐压power frequency withstand voltage：55kV；雷电全波冲击耐压lightning impulse withstand voltage：125kV；1.05倍最高相电压下times of maximum phase voltage tan δ：≤0.005 额定电压下局放Partial discharge measurement under the rated voltage：≤10pC；抗弯试验负荷The bending test load：1000-3500N

主要尺寸(mm) Main dimension / 型号 Type	图号 Mode	套管总长 Total length of casing	接线端子 terminal				电缆引入长度 Length of cable is introduced into	头部直径 head diameter	引线接头孔径 The pitch of pin connector	复合外绝缘 composite insulation			法兰 Flange		
			孔数孔径 Hole number and diameter	孔距 Pitch of holes	板面 board	板厚 Thickness				绝缘距离 insulation distance	公称爬电距离 Nominal creepage distance	最大伞径 Maximum diameter of shed	法兰盘外径 Outer diameter of flange plate	安装孔中心距 Center distance of insulation hole	孔数孔径 Hole number and diameter
		L	n1*d	a1	b1*b2	δ	L4	d3	d8	L1	S	d6	d7	a2	m*d2
CFBRGW-40.5/630-800-4	2	1060	4*14	30	63*63	11	850	168	28	440	1290	252	215	180	6*16
CFBRGW-40.5/1000-1250-4	2	1090	4*14	40	80*80	10	850	168	32	440	1290	252	215	180	6*16
CFBRGW-40.5/630-800-4	3	1030	4*14	30	63*63	11		168		440	1290	252	215	180	6*16
CFBRGW-40.5/1000-1250-4	3	1060	4*14	40	80*80	10		168		440	1290	252	215	180	6*16
CFBRGW-40.5/1600-4	4	1105	4*18	50	100*100	16		168		440	1290	252	215	180	6*16
CFBRGW-40.5/2000-4	4	1115	4*18	50	100*100	16		168		440	1290	252	215	180	6*16
CFBRGW-40.5/2500-4	5	1160	4*18	50	100*100	20		178		440	1290	272	240	200	6*18
CFBRGW-40.5/3150-4	5	1205	4*18	60	125*125	20		178		440	1290	272	240	200	6*18
CFBRGW-40.5/4000-4	5	1230	6*18	50	112*160	20		190		440	1290	294	240	200	6*18

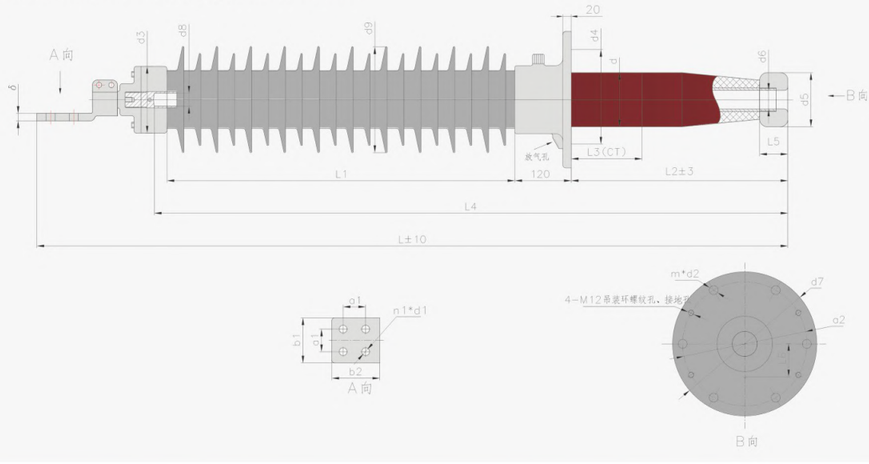
主要尺寸(mm) Main dimension / 型号 Type	浸油部分总长 Oiled section length	油中主体直径 In the oil body diameter	油端绝缘长度 Oil insulation length	均压球 Equipotential shielding for HV bushing		导电管的内径 The inner diameter of the conductive tube	油中接线端子 In the oil terminal						
							板面 board		孔距 Pitch of holes			孔数孔径 Hole number and diameter	板厚 Thickness
	L2	d	L3	L5	d9	d10	b3	b4	a3	a4	a5	n*d5	δ2
CFBRGW-40.5/630-800-4	250	88	200	50	84	40							
CFBRGW-40.5/1000-1250-4	250	88	200	50	84	40							
CFBRGW-40.5/630-800-4	290	88	200				40	65		30	15	2*14	20
CFBRGW-40.5/1000-1250-4	290	88	200				40	65		30	15	2*14	20
CFBRGW-40.5/1600-4	310	88	200				65	90		45	20	2*14	20
CFBRGW-40.5/2000-4	320	88	200				80	90	40	45	20	4*14	20
CFBRGW-40.5/2500-4	335	102	200				80	90	40	45	20	4*14	20
CFBRGW-40.5/3150-4	335	102	200				80	90	40	45	20	4*14	20
CFBRGW-40.5/4000-4	320	116	200				100	90	50	45	20	4*14	20

注：表中产品外形尺寸为推荐尺寸，关键安装配合尺寸都可以根据用户要求设计，最终尺寸以双方确定图纸尺寸为准。
Product appearance size is recommended in the table size, the key installation dimension can be designed according to user requirements, the final size will be subject to both parties determine the drawings。

72.5kV玻璃钢干式电容型变压器套管
FRP dry type capacitive bushing

外形及安装尺寸 Outlinge and installing dimension

执行标准Technical standards：GB/T 4109-2008　IEC 60137　Ed.6.0
额定电压Rated voltage：72.5kV
额定电流Rated current：630-1250A
1min工频干(湿)耐压1min power frequency dry voltage of lightning:155(140)kV
雷电全波冲击耐压Full-wave impulse withstand voltage of lightning：325kV
1.05倍最高相电压下tan δ tan δ Under 1.05 times of maximum phase voltage tan δ ：≤0.005
额定电压下局放Partial discharge measurement under the rated voltage：≤10pC
抗弯试验负荷Bending resistant test load：2500N
最小公称爬电比距Minimum nominal creepage distance:31mm/kV



主要尺寸(mm) Main dimension / 型号 Type	套管总长 Total length of casing	接线端子 terminal				电缆引入长度 Length of cable is introduced into	头部直径 head diameter	引线接头孔径 The pitch of pin connector	复合外绝缘 composite insulation		
		孔数孔径 Hole number and diameter	孔距 Pitch of holes	板面 board	板厚 Thickness				绝缘距离 insulation distance	公称爬电距离 Nominal creepage distance	最大伞径 Maximum diameter of shed
	L	n1*d	a1	b1*b2	δ	L4	d3	d8	L1	S	d6
FBRGW-72.5/630-800-4	1515	4*14	40	80*80	10	1290	138	28	740	2250	232
FBRGW-72.5/630-800-4	1915	4*14	40	80*80	10	1690	138	28	740	2250	232
FBRGW-72.5/1250-4	1520	4*18	50	100*100	13	1290	138	32	740	2250	232
FBRGW-72.5/1250-4	1920	4*18	50	100*100	13	1690	138	32	740	2250	232

主要尺寸(mm) Main dimension / 型号 Type	法兰 Flange			浸油部分总长 Oiled section length	油中主体直径 In the oil body diameter	油中接地长度 In the oil body diameter	均压球 Equipotential shielding for HV bushing		导电管的内径 The inner diameter of the conductive tube
	法兰盘外径 Outer diameter of flange plate	安装孔中心距 Center distance of insulation hole	孔数孔径 Hole number and diameter						
	d7	a2	m*d2	L2	d	L3	L5	d9	d10
FBRGW-72.5/630-800-4	290	250	6*18	390	116	0	60	110	40
FBRGW-72.5/630-800-4	290	250	6*18	790	116	400	60	110	40
FBRGW-72.5/1250-4	290	250	6*18	390	116	0	60	110	40
FBRGW-72.5/1250-4	290	250	6*18	790	116	400	60	110	40

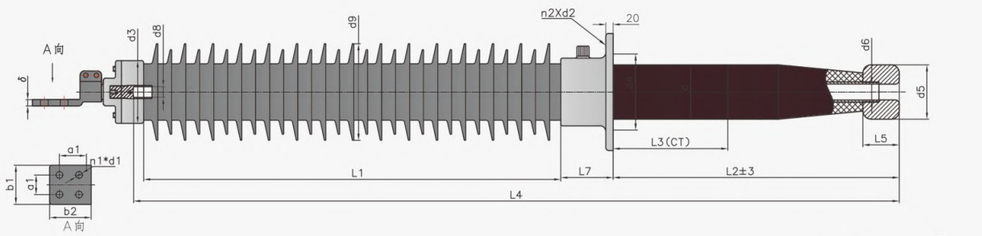
注：表中产品外形尺寸为推荐尺寸，关键安装配合尺寸都可以根据用户要求设计，最终尺寸以双方确定图纸尺寸为准。
上表中只列出一种CT长度，用户可根据产品要求制定CT长度。随着CT长度的变化，同时浸油部分总长（L2）、电缆引入长度（L4）和总长（L）相对变化。
Product appearance size is recommended in the table size, the key installation dimension can be designed according to user requirements, the final size will be subject to both parties determine the drawings。
Superscript in the list only a CT length, The user can make CT length according to the product requirements, As the change of CT length, at the same time introduced oiled section presidents (L2) cable length (L4) and length (L) relative changes

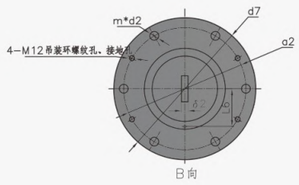
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126kV玻璃钢干式复合电容型变压器套管
GFRP dry type composite capacitive transformer casing

外形及安装尺寸 Outlinge and installing dimension

执行标准Technical standards：GB/T 4109-2008　IEC 60137　Ed.6.0
额定电压Rated voltage：126kV
额定电流Rated current：1600-3150A
1min工频干(湿)耐压1min power frequency dry voltage of lightning:230kV
雷电全波冲击耐压Full-wave impulse withstand voltage of lightning：550kV
1.05倍最高相电压下tan δ tan δ Under 1.05 times of maximum phase voltage tan δ ：≤0.005
额定电压下局放Partial discharge measurement under the rated voltage：≤10pC
抗弯试验负荷Bending resistant test load：3150-4000N
最小公称爬电比距Minimum nominal creepage distance：31mm/kV





主要尺寸(mm) Main dimension / 型号 Type	套管总长 Total length of casing	接线端子 terminal				头部直径 head diameter	瓷套外绝缘 porcelain insulation			法兰 Flange				
		孔数 孔径 Hole number and diameter	孔距 Pitch of holes	板面 board	板厚 Thickness		绝缘距离 insulatation distance	公称爬电距离 Nominal creepage distance	最大伞径 Maximum diameter of shed	法兰盘外径 Outer diameter of flange plate	安装孔中心距 Center distance of insulation hole	孔数 孔径 Hole number and diameter	密封面内径 sealing face	放气孔中心距 Vent hole center distance
	L	n1*d	a1	b1*b2	δ	d3	L1	S	d9	d7	a2	m*d2	d4	L6
FBRGW-126/630	2345	4*14	50	100*100	16	184	1150	3910	298	400	350	6*24	180	95
FBRGW-126/800	2645	4*14	50	100*100	16	184	1150	3910	298	400	350	6*24	180	95
FBRGW-126/1250	2345	4*18	50	100*100	16	184	1150	3910	298	400	350	6*24	180	95

主要尺寸(mm) Main dimension / 型号 Type	浸油部分总长 Oiled section engtth	油中主体直径 In the oil body diameter	油中接地长度 Length of oil in the ground	均压球 Equipotential shielding for HV bushing			油中接线端子 In the oil terminal					
							板面 board		油中接线端子孔距 In the oil terminal Pitch of holes		孔数 孔径 Hole number and diameter	板厚 Thickness
	L2	d	L3	L5	d5	d6	b3	b4	a3	a4	n*d5	δ 2
FBRGW-126/630	790	162	100	250	260	185	65	90		45	2*14	20
FBRGW-126/800	1090	162	400	250	260	185	65	90		45	2*14	20
FBRGW-126/1250	790	162	100	250	260	185	80	90	40	45	4*14	20

注：表中产品外形尺寸为推荐尺寸，关键安装配合尺寸都可以根据用户要求设计，最终尺寸以双方确定图纸尺寸为准。
上表中只列出一种CT长度，用户可根据产品要求制定CT长度。随着CT长度的变化，同时浸油部分总长（L2）、电缆引入长度（L4）和总长（L）相对变化。
Product appearance size is recommended in the table size, the key installation dimension can be designed according to user requirements, the final size will be subject to both parties determine the drawings。
Superscript in the list only a CT length, The user can make CT length according to the product requirements, As the change of CT length, at the same time introduced oiled section presidents (L2) cable length (L4) and length (L) relative changes

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氧化锌避雷器系列
ZnO Lightning Arrester Series

氧化锌避雷器系列
ZnO Lightning Arrester Series

基本原理 Main principle

◎氧化锌避雷器是目前国际最先进的过电压保护器。由于其核心元件电阻片采用氧化锌及多种金属氧化物制成，与传统碳化硅避雷器相比，大大改善了电阻片伏安特性，提高了电阻片的通流能力，从而带来避雷器特性的根本变化。

◎当避雷器在正常工作电压下，流过避雷器的电流仅有微安级，当遭受过电压时，避雷器优异的非线性伏安特性发挥作用，流过避雷器的电流瞬间增大到数千安培，避雷器处于导通状态，释放过电压能量，从而有效地限制了过电压对输变电设备的侵害。

◎ ZnO lighting arrester is one kind most world advanced over-voltage protector at present. Due to its core components of resistance applying ZnO and other metal oxide to make of, comparing with traditional carborundum arrester. It Improves greatly V-A characteristics of Resistance, increases the getting through ability of resistance, thereby it brings fundamental change to features of arrester.

◎ Under normal working voltage, the current passing arrester only A class, when bearing over voltage, the excellent non-linear V-A features of arrester would make effect , the current passing through the arrester increase high to thousands of Ampere instant, the arrester is under getting through state, to release over-voltage energy, therefore it effective limits the damage to power transmission equipments due to over voltage.

用途特征 Usage &Feature

氧化锌避雷器，是用以保护交流电力系统的电气设备免大气过电压和操作过电压危害的保护设备。

ZnO lighting Arrester, is one kind protecting equipment preventing electric equipments in AC power system from high voltage and over-voltage operation.

使用条件 using environments

◎环境温度不低于-40℃， 不高于+40℃；

◎海拔不超过1000m(高原地区定货时应说明)；

◎电源频率为48~62Hz；

◎长期施加在避雷器上的工频电压应不超过避雷器的持续运行电压；

◎最大风速不超过35m/s;

◎地震强度7级以下地区;

◎污秽地区应注明;

◎Ambient temperature range - 40 ℃ ~ + 40 ℃;

◎Above sea level no higher than 1000m (order should be indicated if used in tableland area);

◎Power frequency is 48-62 HZ;

◎Continuous power frequency voltage on the lightning arrester no higher than continuous working voltage of lighting arrester;

◎Utmost wind velocity no higher than 35m/s;

◎Area where earthquake intensity less than 7 degree;

◎Messy area should be indicated;

氧化锌避雷器系列
ZnO Lightning Arrester Series

型号说明Model and Meaning

Y H □ □ □ □-□/□ □

- 使用特征：W-防污型； G-高原型
  Using feature : W- Anti- pollution model ; G-Tableland model
- 标称放电电流下最大残压(kV)
  Max . residual voltage under nominal discharging current (kV)
- 避雷器额定电压 (kV)
  Rated voltage for lighting arrester (kV)
- 产品设计序号：以阿拉伯数字表示
  Product design sequence No
- S-配电; Z-电站； R-电容器组； X- 线路； T- 铁道； D- 发电机、电动机；
  F-用于全封闭电器中保护； O- 用于油中。
  S-Distribution ;Z- station ; R-capacitor bank ; X- line ;T- railway ;D-electric motor;
  F-protection for full - sealed electric equipment ; O- in oil.
- W-无间隙； C- 有串联间隔
  W-Gapless ;C-Gap in series
- 标称放电电流 (kA)
  Nominal discharging current (kA)
- 金属氧化锌避雷器。
  Metal ZnO lighting Arrester.
- 复合有机外套。
  Composite organic bushing.

技术性能technical performance

◎产品性能符合GB11032-2000(eqvIEC60099-4)国家标准技术要求。

◎主要电气性能参见表

◎Product performance conforms to National standard technical requirements of GB11032-2000 (equal to IEC60099-4) .

◎Main electric features see following table



复合外套避雷器其他型号参数表
Composite coat arrester other model parameter list

(型号) Model	(额定电压) Rated Voltage (kV rms)	Continuous operating voltage (kV rms)（持续运行电压）	Lightning Impulse residual Voltage Under Nominal Discharge Current (≤vKp)（冲击放电电压不大于）	Line Discharge Class	Creepage Distance (mm)（爬电距离）	2ms square wave impuls current withstand (A) (2000μs方波通流容量）	4/10μ High Current Impulse Withstand (4/10大电流耐受能力）
YH5W-6	6	4.8	18	1	320	150	65
YH5W-9	9	7.2	27	1	430	150	65
YH5W-12	12	9.6	36	1	430	150	65
YH5W-15	15	12	45	1	530	150	65
YH5W-18	18	14.4	54	1	530	150	65
YH5W-21	21	16.8	63	1	640	150	65
YH5W-24	24	19.2	72	1	640	150	65
YH5W-27	27	21.6	81	1	740	150	65
YH5W-30	30	24	90	1	890	150	65
YH5W-33	33	26.4	99	1	890	150	65
YH5W-36	36	28.8	108	1	1115	150	65
YH10W-3	3	2.4	9	1	180	250	100
YH10W-6	6	4.8	18	1	240	250	100
YH10W-9	9	7.2	27	1&2	300/340	250	100
YH10W-12	12	9.6	36	1&2	380/400	250	100
YH10W-15	15	12	14	1&2	400/450	250	100
YH10W-18	18	14.4	54	1&2	510/400	250	100
YH10W-21	21	16.8	63	1&2	580/730	250	100
YH10W-24	24	19.2	72	1&2	640/730	250	100
YH10W-27	27	21.6	81	1&2	710/730	250	100
YH10W-30	30	24	90	1&2	780/1125	250	100
YH10W-33	33	26.4	99	1&2	840/1125	250	100
YH10W-36	36	28.8	108	1&2	920/1125	250	100
YH10W-42	42	33.6	126	2&3	1260	400	100
YH10W-45	45	36	128	2&3	1260	400	100
YH10W-54	54	42	160	2&3	1260	400	100
YH10W-60	60	48	178	2&3	1465	400	100
YH10W-66	66	52.8	196	2&3	1465	400	100
YH10W-72	72	57	214	2&3	2255/2780	400	100
YH10W-84	84	67.2	244	2&3	2255/2780	400	100
YH10W-90	90	72.5	249	2&3	2255/2780	400	100
YH10W-96	96	77	265	2&3	3555	800	100
YH10W-108	108	84	281	2&3	3555	800	100

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跌落式熔断器系列
Cut-out fuse series

10kV 跌落式熔断器
10kV Cut-out fuse series

35kV 跌落式熔断器
35kV Cut-out fuse series

结构特征及基本原理 Structure feature and main Principle

◎跌落式熔断器由绝缘支座、动静触头、熔丝管三部分组成。静触头安装在绝缘支座两端，d动触头安装在熔丝管两端，熔丝管由内层的消弧管和外层的酚醛纸管或还氧玻璃纤维布管组成。拉负荷跌落熔断器增加了弹性辅助触头及灭弧罩，用以分合负荷电流。跌落式熔断器在正常运行时，熔丝管借助熔丝张紧后形成闭合位置。

◎当系统发生故障时，故障电流使熔丝迅速熔断，并行成电弧，消弧管受电弧灼热，分解出大量气体，使管内形成很高的压力，并沿管道强烈纵吹，电弧迅速被拉长而熄灭。熔丝熔断后，下部静触头失去张力而下翻，使缩紧机构释放熔丝管，熔丝管跌落形成明显的开断位置。

◎当需要拉负荷时，用绝缘杆拉开动触头，此时主动、静触头依然接触，继续用绝缘杆拉动触头，辅助触头也分开，在触头之间产生电弧，电弧在灭弧罩狭缝中被拉长，同时灭弧罩产生气体，在电流过零时，将电弧熄灭。

◎Cut-out fuse is made of insulating base, live and fixed contact and fuse tube. Fixed contact installed on both sides of insulating base, and live contact installed on both sides of fuse tube , and out Bakelite paper tube or epoxy –glass fiber fabric tube . Load-off cutout fuse is used for breaking &making load current with adding spring auxiliary contacts and arc-quenching cover. When cutout fuse under normal working condition . Fuse tube forms close location with help of tight for fuse link.

◎When any fault come out in system, fault current make fuse link melt promptly , and form arcing , arc-quenching tube heated by arc , decompose lot of gas ,produce great pressure inside of tube, and blow vertically in high strength, the electric arc would be lengthened and quenched quickly. After melting of fuse link, fixed contact below turn down due to lost of tension, it makes locking mechanism to release fuse tube to fall down, it forms obvious breaking off location.

◎When necessary to pull-off load, unhinge contact with insulating link, live and fixed contacts are still connected , to pull contacts continuous with insulating link , auxiliary switch also would be apart , it make electric arc between auxiliary switches ,arc would be lengthened in narrow slot of arc-quenching cover , which produce gas at same time, to quench the arc when current over zero.

型号说明Model and Meaning

H R □ □-□□/□□

- 额定电流(A) Rated current (A)
- 额定电压 (kV) Rated voltage (kV)
- 产品设计序号 Product design series
- N:户内，W:户外 N: indoor, W: outdoor
- R-熔断器 R-fuse
- H-复合外套绝缘支座 H-composite busing insulating base

适用范围及主要用途 Application scope &main usage

跌落式熔断器及拉负荷跌落式熔断器, 适用于频率为50HZ、额定电压为35KV及以下的电力系统中,它装置在配电变压器高压侧或配电之干线路上。用作变压器和线路的短路、过载保护及分、合负荷电流，是户外高压保护电器。

Cut-out fuse and load-off cut-out fuse , are suitable for power transformer and line short circuit , over –load protection as well as breaking and making load current using in power system which rated frequency 50Hz , rated voltage 35kV or less , installing high voltage side of power distribution transformer or distributing main line. They are one kind ideal outdoor protector.

使用环境条件 Using Environment Conditions

产品正常使用条件：
1、环境温度：-40℃～40℃；
2、海拔不超过1000m；
3、风速不超过35m/s；
4、地震烈度不超过8度；
产品不适用于下述场所：
1、有燃烧或爆炸危险的场所；
2、有剧烈震动或冲击的场所；
3、有导电、化学气体作用及严重空气污秽，盐雾地区。

Product normal using conditions;
1、The environment temperature – 40 ℃ ~ + 40 ℃
2、The altitude does not exceed 1000 m;
3、Maximum wind speed no exceeding 35m/s;
4、Earthquake intensity no exceeding 8 degree.
Product is not suitable for following location;
1、With inflammation or explosive danger area ;
2、With intensive shark or shock area;
3、A conductive, severe chemical gas and air is polluted, salt fog area.

技术性能 Technical Performance

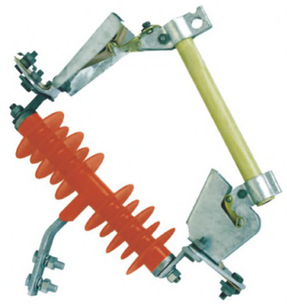
◎产品性能符合GB15166.3-94国家标准和IEC282-2国际标准技术要求。
◎主要电气性能参见表

◎Product performance according with technical requirements of GB15166.3-94 national standard and IEC282-2 international standard.
◎Main electric features see following table



Type 类型	额定电压（kV）Rated Volatge(KV)	额定电流（A）Rated Current(A)	断路电流（A）Breaking Current(A)	冲击电压（A）Impulse Voltage(A)	工频阻抗D电压（千伏）Power-frequency Withstand Voltage (KV)	爬电距离 Creepage Distance
HRW-12/100	12	100	10000	110	45	380
HRW-12/200	12	200	12000	110	45	380
HRW-24/100	24	100	6000	150	65	620
HRW-24/200	24	200	8000	150	65	620
HRW-33/100	33	100	6000	185	75	1100
HRW-33/200	33	200	8000	185	75	1100

10kV跌落式熔断器 10kV drop fuse



HRW7-10kV

产品型号 Product model		HRW7–10/100	HRW7–10/200
额定电压(kA) Rated voltage (kA)		10	10
额定电流(A) Rated current (A)		100	200
断流容量(MVA) Cut-off capacity (MVA)	上限 Upper limit	100	200
	下限 lower limit	30	30
额定短路开断电流(kA) Rated short-circuit breaking current (kA)		6.3	12.5
工频湿耐受电压(kA) Power frequency humidity withstand voltage (kA)		34	34
工频干耐受电压(kA) Power frequency dry withstand voltage (kA)		42	42

10kV跌落式熔断器 10kV drop fuse



HPRWG1–10kV

产品型号 Product model	HPRWG1–10F/100	HPRWG1–10F/200
额定电压(kA) Rated voltage (kA)	10	10
额定电流(A) Rated current (A)	100	200
额定短路开断电流（kA） Rated short-circuit breaking current (kA)	6.3	12.5
冲击电压（kV） Impulse voltage (kV)	75	75
工频耐压（kV） Power frequency withstand voltage (kV)	42	42

10kV跌落式熔断器 10kV drop fuse



HRW11-10kV

产品型号 Product model	HRW11–10F/100	HRW11–10F/200
额定电压(kA) Rated voltage (kA)	10	10
额定电流(A) Rated current (A)	100	200
额定短路开断电流（kA） Rated short-circuit breaking current (kA)	6.3	12.5
冲击电压（kV） Impulse voltage (kV)	75	75
工频耐压（kV） Power frequency withstand voltage (kV)	42	42

跌落式熔断器系列
Cut-out fuse series

35kV跌落式熔断器 35kV drop fuse



HPRWG2-35kV

产品型号Product model	HPRWG2-35/100	HPRWG2-35/200
额定电压（kV）Rated voltage (kV)	35	35
额定电流(A) Rated current (A)	100	200
额定短路开断电流（kA） Rated short-circuit breaking current (kA)	5	12.5
冲击电压（kV）Impulse voltage (kV)	185	185
工频耐压（kV） Power frequency withstand voltage (kV)	70	70

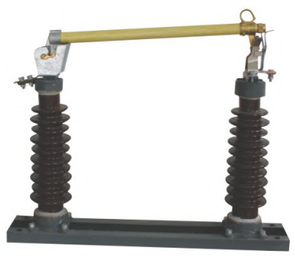
35kV跌落式熔断器 35kV drop fuse



HRW10-35kV

产品型号 Product model	HRW10-35F/100	HPRW10-35F/200
额定电压（kV）Rated voltage (kV)	35	35
额定电流(A) Rated current (A)	100	200
额定短路开断电流（kA） Rated short-circuit breaking current (kA)	5	12.5
冲击电压（kV）Impulse voltage (kV)	185	185
工频耐压（kV） Power frequency withstand voltage (kV)	70	70

35kV跌落式熔断器 35kV drop fuse



HRW5-35kV

产品型号 Product model		HRW5-35/100	HRW5-35/200
额定电压(kA) Rated voltage (kA)		35	35
额定电流(A) Rated current (A)		100	200
断流容量(MVA) Cut-off capacity (MVA)	上限 Upper limit	400	800
	下限 lower limit	10	30
额定短路开断电流(kA) Rated short-circuit breaking current (kA)		80	80
工频湿耐受电压(kA) Power frequency humidity withstand voltage (kA)		95	95
工频干耐受电压(kA) Power frequency dry withstand voltage (kA)		60	60

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隔离开关系列
Disconnect Series

HGW9-10kV 隔离开关
HGW9-10kV Disconnect

适用范围及用途 Application Scope & Main Usage

HGW9-10 型户外隔离开关，适用于10kV高压输配电线路，用以切断和闭合无负载有电压的单相或三相电路。
HGW9-10 type outdoor disconnect switch is used for opening and closing single phase or three phase circuits under the voltage but no-load condition in 10KV power system。

结构特征 Structure Features

◎HGW9-10型户外隔离开关供三相线路系统单相使用，其结构简单，经济，使用方便。开关主要由底座、支柱绝缘子，导电部分和机构部分组成。采用闸刀式结构分合闸达到切断和闭合线路。每相闸刀同两片导电刀片组成，刀片两侧装有压缩弹簧，调节弹簧的高度可以得到开关闸刀所需的接触压力。开关分合闸时，用绝缘钩棒操作机构部分便可以进行分合闸运动。闸刀有自锁装置。

◎HGW9-10 type outdoor disconnect switch has simple structure, convenient price, simple use. It is composed of base, support insulator, electricity conduct part and mechanism, using blade structure to open and close circuit. Blade of each phase is composed of two blades. There are compress springs on the two sides of blades, to adjust for getting needed pressure. When open and close switch, use insulating bar operating mechanism. Blade have self-lock device.

正常使用条件 Operation Condition

◎ 海拔高度不超过1000米；
◎ 环境温度不高于+40℃，不低于-30℃。
◎ 户外风速不超过35米/秒；
◎ 地震烈度不超过8级；
◎ 安装场所应无频繁的剧烈振动。
◎ 安装场所应无严重影响开关绝缘和导电能力的气体，蒸汽，化学性质沉积、盐雾、灰尘污垢。及其他爆炸性、侵蚀性介质。

◎ Altitude above the sea: no more than 1000m;
◎ Ambient temperature: upper limits +40℃, lower limits -30℃(high cold area lower limits -40℃);
◎ Outdoor wind speed : not exceeding 35m/s ;
◎ Earthquake intensity: not exceeding 8degree;
◎ Occasion without sever vibration;
◎ Occasion without matter which will badly influence the insulation performance and conductivity of disconnector, such as gas, steam, chemical sediment, saltfog, dust, and the other explosive and corrosive matters.

型号说明Model and Meaning

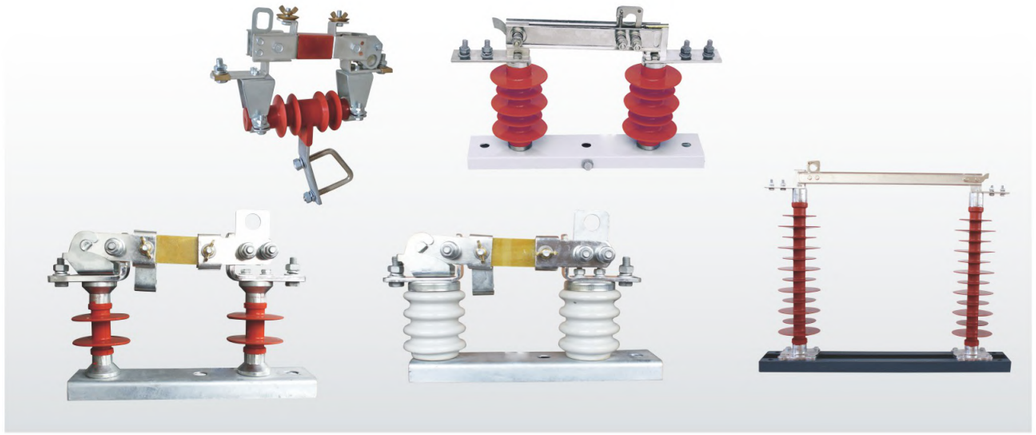
H G □ □-□□/□□

- 额定电流(A) Rated current (A)
- 额定电压(kV) Rated voltage (kV)
- 产品设计序号 Product design series
- N:户内，W:户外 N: indoor, W: outdoor
- G-隔离开关 G-Disconnector
- H-复合外套绝缘支座 H-composite busing insulating base

技术性能technical performance

◎产品性能符合GB1985-89《交流高压隔离开关》和IEC129（1984）《交高压隔离开关与接地开关》、IEC694(1980)《高压开关设备和控制设备共同条款》规定的各项技术要求。
◎主要电气性能参见表

◎Product performance according with standards: GB1985-89《AC HV disconnector》and IEC129（1984）《AC disconnector and earthing switch》、IEC694(1980)《HV switch equipment and control equipment common clause》.
◎Main electric features see following table



产品型号Product model		HGW9-10W/200	HGW9-10W/400
额定电压(KV) Rated Voltage		12	12
额定电流(A)Rated Current		200	400
4s热稳定电流(A) 4s Heat stabilization current (A)		12500	12500
稳定电流(A) Dynamic stabilization current (A)		31500	31500
冲击耐压(kV) impulse withstand voltage (kV)	相对地phase to earth	75	75
	断口间between opening contacts	85	85
工频耐压(kV) P.F. withstand voltage (kV)	相对地phase to earth	38	38
	断口间between opening contacts	42	42

产品型号Product model	HJDW2-0.5/500	HJDW2-0.5/800	HRWK-0.5/200	HRWK-0.5/400	JDW3-0.5/600	JDW3-0.5/800
额定电压(kV)RatedVoltage(kV)	0.5	0.5	500	500	500	500
额定电流(A)RatedCurrent(A)	500	800			600	800
开断电流(A)BreakingCurrent(A)	30~500	30~800	30~200	30~400	30~200	30~600