



XIONGCHU
ELECTRIC



雄

展雄风之志，扬楚汉精神！

Show great ambition
and promote the spirit of Chu and Han!

楚

电气

PRODUCT GUIDE
产品选型手册

浙江雄楚电气科技有限公司

ZHEJIANG XIONGCHU ELECTRIC TECHNOLOGY CO., LTD.



COMPANY PROFILE

XIONGCHU ELECTRIC

企业简介

浙江雄楚电气科技有限公司是一家具有现代化生产规模的企业，公司主要产品有高低压成套电力设备、箱式变电站、电缆分支箱、预付费计量装置、三箱类、户内外高压元器件等。

本公司拥有多方面的专业技术人才，先后不断引进高水平的各类生产检测设备。产品率先通过了 ISO9001:2000 质量管理体系认证，环保体系认证，3C 认证，产品经电力工业部、电力科技研究院检测合格。

公司凭借优良的品质和周到的服务得到了广大消费者的高度认可。

面对充满挑战和机遇的二十一世纪，我们将不断完善、超越自我，秉持“用户至上、质量上乘、管理高效、维誉至诚”的企业理念，以可靠的质量，富有竞争力的价格，完善周到的服务与国内外客商真诚合作，共享创造繁荣之喜悦，永无止境地向着更加辉煌的未来奋进！

Zhejiang Xiongchu Electric Technology Co., Ltd. is an enterprise with modern production scale. Its main products include high and low voltage complete sets of power equipment, box-type substations, cable branch box, prepaid metering devices, three boxes, indoor and outdoor high-voltage components, etc.

The Company has a wide range of professional and technical personnel, and has continuously introduced various high-level production testing equipment. The products have first passed the ISO 9001: 2000 quality management system certification, environmental protection system certification and 3C certification, and the products have passed the inspection by the Ministry of Power Industry and the Institute of Power Science and Technology.

With its excellent quality and considerate service, the company has been highly recognized by the vast number of consumers.

Facing the 21st century full of challenges and opportunities, we will continue to improve and surpass ourselves, uphold the corporate philosophy of "customer first, high quality, efficient management and sincere reputation", cooperate sincerely with domestic and foreign merchants with reliable quality, competitive price, perfect and thoughtful service, share the joy of creating prosperity, and forge ahead to a more glorious future forever!



DEDICATE TO THE SOCIETY WITH ENTHUSIASM
AND MAKE BRILLIANT ACHIEVEMENTS WITH THE NEW ERA
以热情洋溢之心奉献于社会，与新时代共铸辉煌





雄楚电气
XOCELE

METICULOUS WORK

XIONGCHU ELECTRIC

精工细作

我们深知专业的设备是优秀企业的必备条件，公司自成立之初就对生产设备的革新与改造从未有过的一丝松懈，同时为设备的改造与革新投入了大量的资金，这些专业的设备给优质生产带来了极大的方便和极高的效益，从而保证了产品的质量，满足了需求。

We are well aware that professional equipment is a necessary condition for excellent enterprises. Since its establishment, the company has never slackened the innovation and transformation of production equipment. At the same time, it has invested a lot of money in the transformation and innovation of equipment. These professional equipment have brought great convenience and high benefits to high-quality production, thus ensuring the quality of products and meeting the demand.



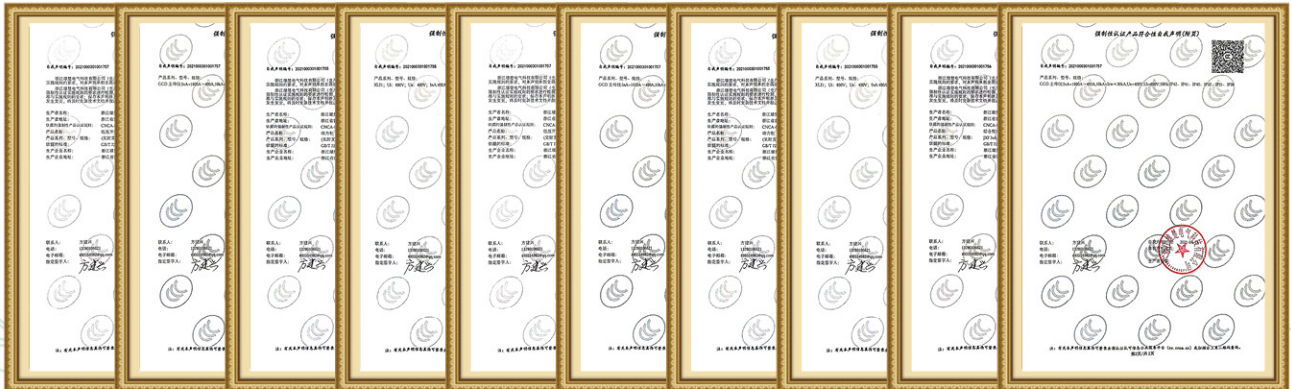
XIONGCHU ELECTRIC

电力连接科技 / 科技创新未来

Power connection technology / Future of technological innovation







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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。



雄楚电气
xocle

加拿大
美国
英国
西班牙
德国
意大利
法国
俄罗斯
中国
伊朗
巴基斯坦
韩国
日本
雄楚电气
Xiongchu electric
巴西
玻利维亚
澳大利亚

业务范围覆盖全球
The business scope covers the whole world

不断拓展的企业格局，
让发展蓝图步步成真！

The continuous expansion of
the enterprise pattern,
Let the development blueprint come true!

We have been committed to consolidating and developing the market with quality, service and brand. Actively promote brand marketing, service marketing, and advocate honest management, provide customers with high-quality and inexpensive high-end products and excellent services, calmly cope with global economic integration, and better participate in international competition.





以热情洋溢之心奉献于社会，与新时代共铸辉煌

DEDICATE TO THE SOCIETY WITH ENTHUSIASM
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NEW ERA



企业宗旨

全心全意发展企业
一心一意服务电力



企业理念

诚信 服务
和谐 创新



品牌形象

万家灯火
雄楚情深



企业使命

工作高效、服务真诚
无私奉献、优质服务

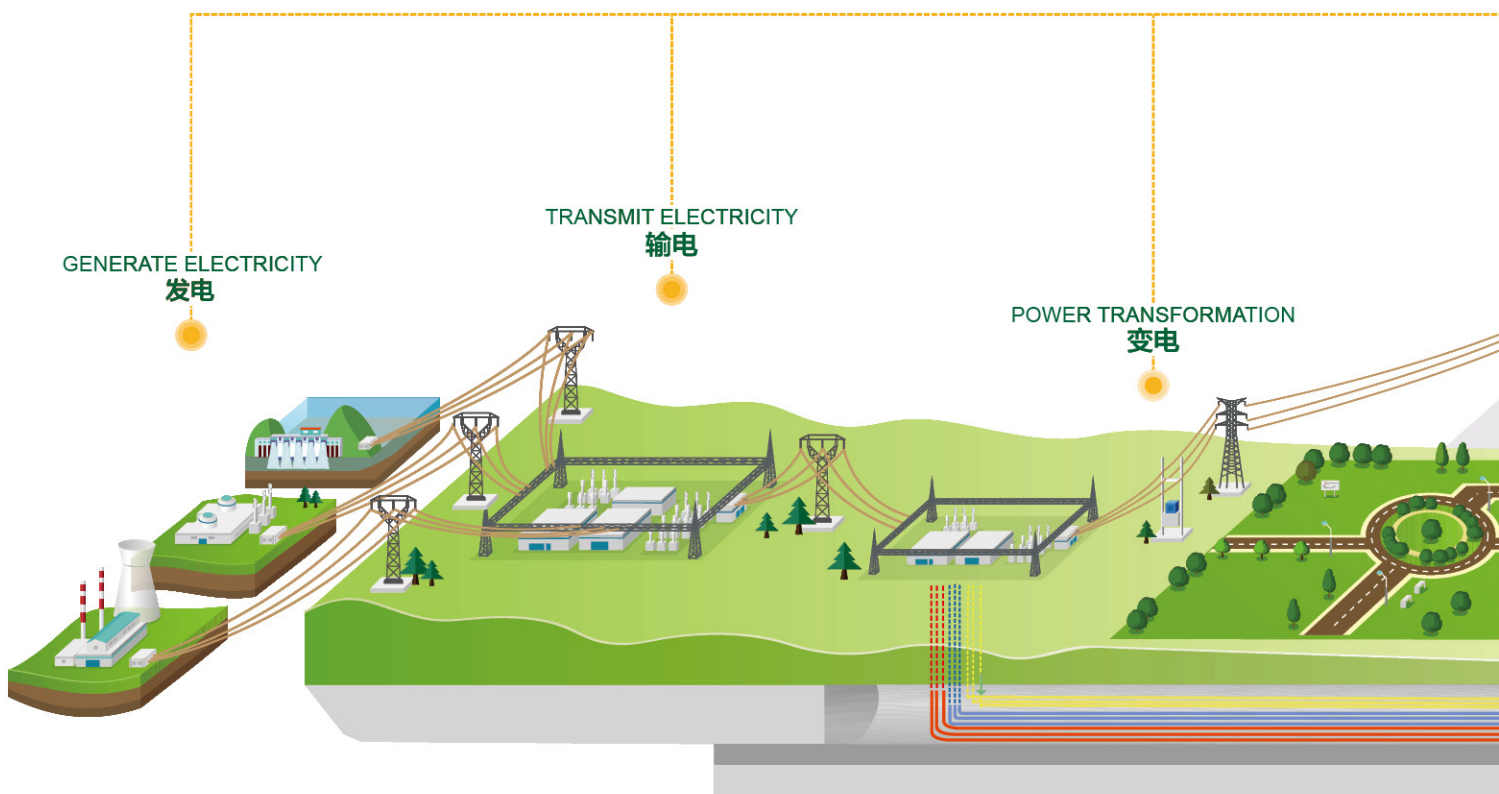


雄楚精神

勇于变革
乐于奉献

电力生态力图

Electric power ecological diagram





企业愿景

打造安全、可靠、绿色、高效的智能电网
成为引领发展、广受尊敬的卓越企业



安全理念

一切事故都
可以预防



服务理念

以客为尊
和谐共赢



团队理念

忠诚干净担当



发展战略

创建管理精益、服务精细、业绩优秀、
品牌优异的国际一流企业



经营理念

创造价值
创新发展



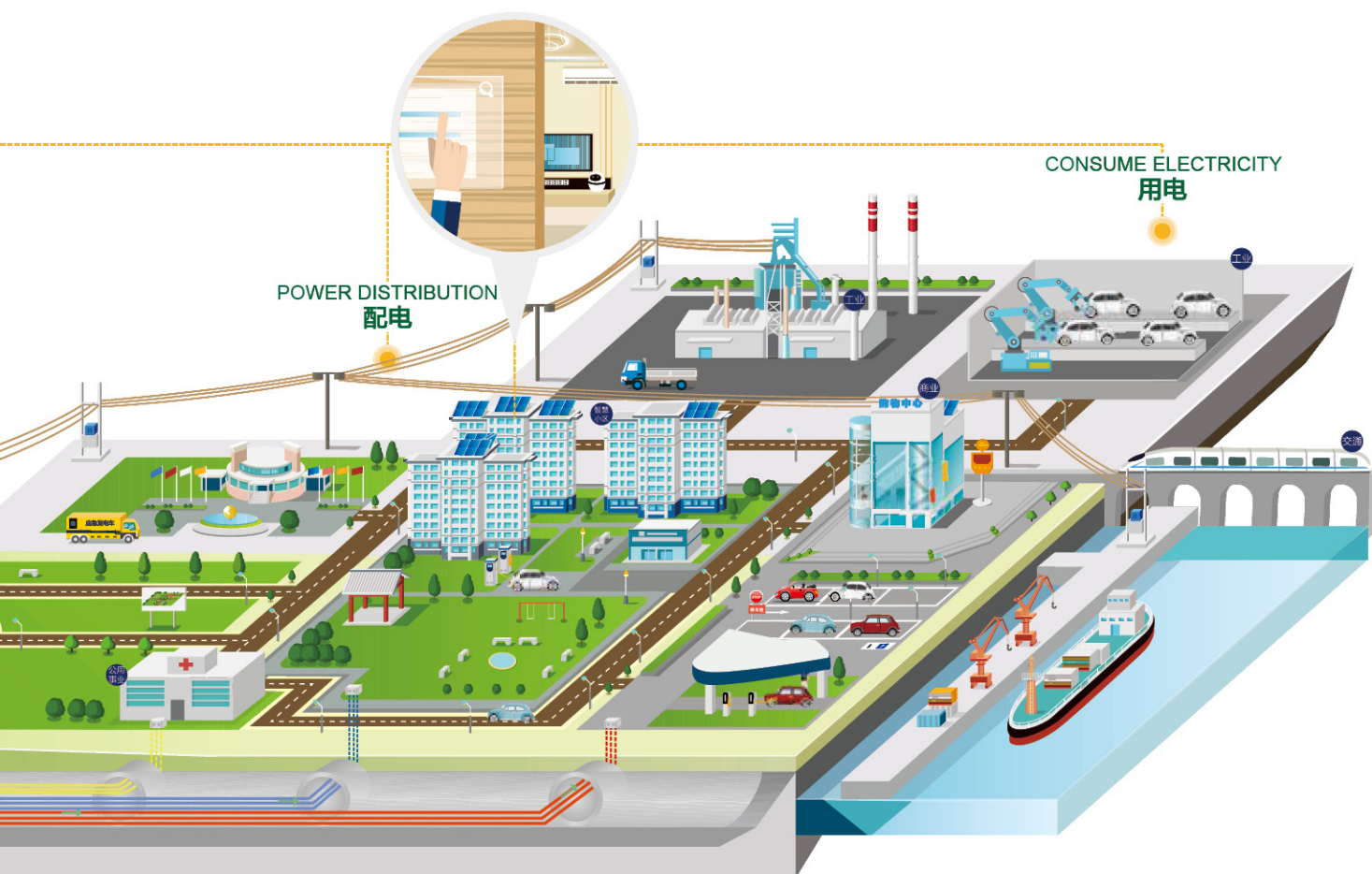
法治理念

知法于心
守法于行



行为理念

诚信做人
规矩做事



Product catalog

产品目录

A 箱变系列 Box transformer series

- 001 YBW35KV 环保型组合式变电站 Environmentally-friendly modular substation
- 006 XBZ2/XBJ2 24KV(20KV) 智能型 / 紧凑型箱式变电站 Smart/compact box substation
- 012 YB 智能型预装式变电站 Intelligent prefabricated substation
- 019 YB6 智能型一体化变电站 Intelligent integrated substation

B 高压开关设备系列 High voltage switch equipment series

- 025 XGN □ -12 全密封全绝缘充气式环网开关设备 Fully sealed fully insulated inflatable ring network switchgear
- 030 XGN □ -40.5 全密封全绝缘充气式环网开关设备 Fully sealed fully insulated inflatable ring network switchgear
- 032 XGN-12 智能固体绝缘柜 Intelligent solid insulation cabinet
- 037 XCHBN-12 节能环保型全绝缘环网柜 Energy-saving and environment-friendly full insulation ring network cabinet
- 047 HXGN □ -12(SF6) 单元式交流金属封闭环网开关设备 Unit type AC metal closed ring network switchgear
- 057 KYN61-40.5(Z) 铠装移开式交流金属封闭开关柜 Armored removable AC metal enclosed switchgear
- 064 KYN28-24(Z) 铠装移开式交流金属封闭开关设备 Armored removable AC metal enclosed switchgear
- 072 KYN28A-12(XCS1) 铠装移开式交流金属封闭开关设备 Armored removable AC metal enclosed switchgear
- 077 HXGN66-12 固定式金属封闭开关设备 Fixed metal enclosed switchgear
- 080 TBBZ 高压无功自动补偿装置 Automatic compensation device for high-voltage reactive power
- 083 HXGN17-12 箱型固定式金属封闭开关设备 Box type fixed metal enclosed switchgear
- 088 DFW-12/630 户外智能化箱式开闭所 Outdoor intelligent box opening and closing
- 091 DFW2-12/630 可触摸电缆分支箱 (欧式) Touchable cable branch box (Europe)
- 093 DFW10-12 电缆分支箱 Cable branch box
- 096 DFW10-12 SF6 负荷开关的电缆分接箱 SF6 load switch cable distribution box
- 099 DFW8-12/630 SF6 六氟化硫负荷开关电缆分接箱 Sulfur hexafluoride load switch cable distribution box

C 低压开关设备系列 Low-voltage switchgear series

- 101 GCK 低压抽出式开关柜成套开关设备 Low voltage draw-out switchgear complete switchgear
- 104 GCS 低压抽出式成套开关设备 Low-voltage with drawable switchgear
- 108 MNS 低压抽出式成套开关设备 Low-voltage with drawable switchgear
- 113 GGD 交流低压固定式成套开关设备 AC low-voltage fixed switchgear
- 117 GGJ 低压无功智能补偿装置 Low-voltage reactive power intelligent compensation device

D 电缆分支箱系列 Cable branch box series

- 120 XL-21 动力配电柜 Power distribution cabinet
- 125 MG 电机软启动柜 Motor soft start cabinet
- 127 DXF 低压电缆分接箱 Low-voltage cable distribution box
- 129 JP 综合配电箱 (补偿 \ 控制 \ 终端 \ 照明) Comprehensive distribution box (compensation \ control \ terminal \ lighting)
- 134 MJ 三箱类系列 Series of sedan

E 户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

- 139 ZN63(VS1)-12 户内高压手车式真空断路器 Indoor high-voltage handcart vacuum circuit breaker
- 141 VBG-12 系列户内高压真空断路器 Series indoor high voltage vacuum circuit breakers
- 143 VZF-12R 移开式真空负荷开关熔断器组合电器 Removable vacuum load switch fuse combination electric appliance
- 145 ZN63(VS1)-12 户内高压侧装式真空断路器 Indoor high voltage side mounted vacuum circuit breaker
- 147 XCD-12GD 户内高压三工位真空断路器 Indoor high voltage three-station vacuum circuit breaker
- 149 XCV-12KV-630A 充气柜断路器 (带隔离带接地) Inflatable cabinet circuit breaker (with isolation belt grounding)
- 151 ZN85-40.5 手车式高压真空断路器 Handcart type high voltage vacuum circuit breaker
- 153 FKRN12-12D 户内高压压气式负荷开关 Indoor high pressure pneumatic load switch
- 155 FZRN25-12D 户内高压真空负荷开关 Indoor high voltage vacuum load switch
- 157 FZN66-12(D)T630-25 交流高压真空负荷开关 AC High Voltage Vacuum Load Switch
- 159 FZN21-40.5 户内高压真空负荷开关 Indoor high voltage vacuum load switch
- 161 FN5-10RD/630A 户内高压负荷开关 + 熔断器组合电器 Indoor high voltage load switch + fuse combination electric appliance
- 163 FLN36-12D 户内高压交流负荷开关 Indoor high voltage AC load switch
- 165 GN30-12 户内高压隔离开关 Indoor high voltage isolation switch
- 167 GN19-12 户内高压隔离开关 Indoor high voltage isolation switch
- 169 JN15-12 户内高压接地开关 Indoor high voltage grounding switch
- 171 ZW32-12F 户外高压真空断路器 / 智能型 Outdoor high voltage vacuum circuit breaker / intelligent type
- 173 ZW20-12F 户外高压真空断路器 Type B electric load control metering box
- 175 AB-3S-12 户外高压真空断路器 Outdoor high voltage vacuum circuit breaker
- 177 ZW7-40.5 户外高压真空断路器 Outdoor high voltage vacuum circuit breaker
- 179 GW4-10/35/66/110&(DDW)-630~4000A 户外双柱水平开启式高压隔离开关 Outdoor double column horizontal open type high voltage isolating switch
- 181 GW9-10 户外隔离开关 Outdoor isolation switch
- 183 RW12-12 跌落式熔断器 Drop-out fuse



DEDICATE TO THE SOCIETY WITH ENTHUSIASM
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箱变系列 Box transformer series

YBW35KV

环保型组合式变电站
Environmentally-friendly modular substation

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

YBW35KV 环保型组合式变电站是一种将电压开关设备、变压器、低压配 设备组装成一体的成套性产品。它作为城市建筑，生活小区、中型工厂、矿山油田等用电部门的变配电设备，具有成套性强、体积小结构紧凑、可靠性高、现场安装工作量小、安装周期短，以及可移等特点，适当改变其外型和颜色，使之与环境相适应，还可以起到美化环境的作用，是目前城乡土建变配电站的替代产品和城网建设、改造的新型成套设备。

YBW35KV environment-friendly combined substation is a complete set of products integrating voltage switchgear, transformer and low-voltage distribution equipment. As a power transformation and distribution equipment in urban buildings, living quarters, medium-sized factories, mines and oil fields, it has the characteristics of strong package, small size, compact structure, high reliability, small field installation workload, short installation period, and portability, etc. It can change its appearance and color appropriately to adapt to the environment and beautify the environment. It is a substitute product of urban and rural civil power transformation and distribution stations and a new complete set of equipment for urban network construction and reconstruction.

型号及含义 Model and meaning



使用环境条件 Use environmental conditions

- ◇ 海拔高度：不超过 1000 米；
- ◇ 环境温度：+40°C -25°C；
- ◇ 相对湿度：日平均不超过 95%，月平均不超过 90%；
- ◇ 地震烈度：无经常性剧烈振动和冲击；
- ◇ 安装环境：户外、安装在无火灾、爆炸危险、无严重污秽、腐蚀性气体及粉尘、无剧烈冲击的场所；

注：超过以上条件时，可与我公司协商。

- ◇ Altitude: ≤ 1000m;
- ◇ Ambient temperature: +40°C -25°C ;
- ◇ Relative humidity: Daily average ≤ 95%, monthly average ≤ 90%;
- ◇ Abnormal severe vibration or impact;
- ◇ Environment for installation: mdoor, no fire or explosion danger, no corrosive gas or d ust, no sharp impact.

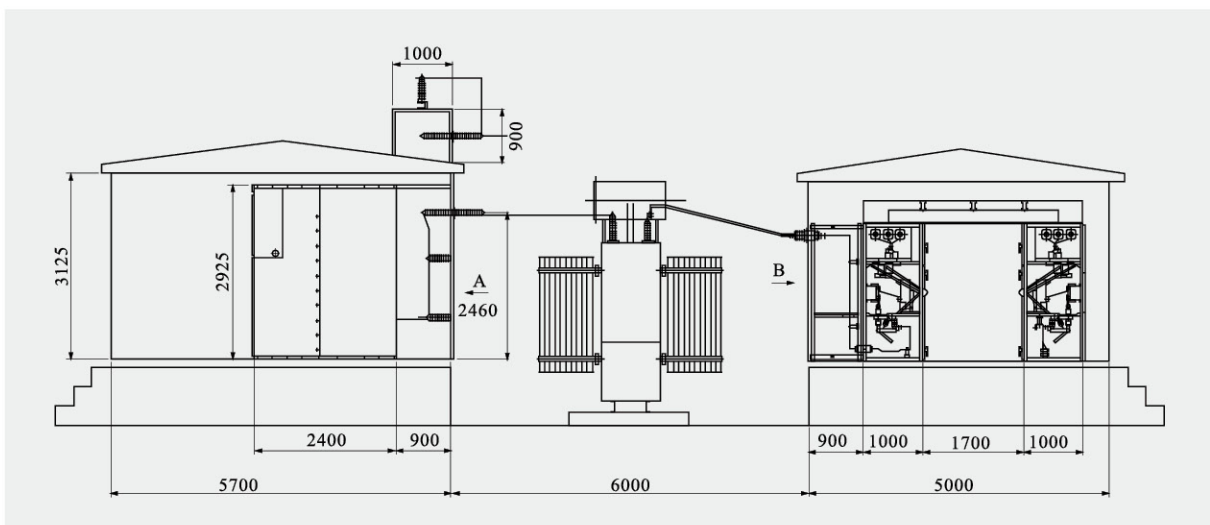
Note: Please negotiate with us if your product is used beyond the range of above conditions.

▶ 结构特点 Structural features

- 1、变电站由高压开关室、低压开关室、继电保护室和变压器室组成。高压开关室、低压开关室、继电保护室外壳可采用铝合金板、钢板或复合板制作。铝合金板表面经阳极氧化处理，增强了铝合金板的耐腐蚀性强度。钢板及钢结构件都经磷化处理，复合板具有色彩鲜艳美观并有隔热、阻燃等特点。变压器室不设封闭外壳构而高置安全网罩，既有利于变压器通风散热，又能确保人身和设备安全。
 - 2、高压开关室 HV 高压开关室可装 JYNI-35, KYN10-35 开关柜或 35KV 负荷开关。35KV 进线和出线方式用户可自由选择架空式电缆方式。
 - 3、低压开关室 LV
 - a. 当低压侧为 10KV 时，低压开关室可安装 XGN2-1, KZNI-12, KYNI-12 开关柜, HXGNII-10F, HXGN26-10 (F) 环网柜。
 - b. 当低侧为 0.4KV 时，低压开关室（为节省空间一般不做低压开关柜）内安装 DW15T 系列、ME 系列、M 系列、F 系列框架式断路器 和 DZ20 系列、CM 系列、H 系列、S 系列塑壳空气断路器。
 - 4、断电保护室断电保护室内安装交流屏、直流屏、信号屏、保护屏、运动控制屏（RTU）载波机屏或光纤终端机。
- 注：根据用户要求本变电站可采用常规继电器保护，也可采用变电站微机综合自动化系统。
- 5、35KV 变电站平面、立面布置示意图见图。

1. The substation consists of high voltage switch room, low voltage switch room, relay protection room and transformer room. The shells of high-voltage switch room, low-voltage switch room and relay protection room can be made of aluminum alloy plate, steel plate or composite plate. The surface of aluminum alloy plate is anodized, which enhances the corrosion resistance of aluminum alloy plate. Steel plates and steel structures are all treated by phosphating, and the composite plate has the characteristics of bright color, beautiful appearance, heat insulation and flame retardance. The transformer room is not provided with a closed shell structure, but is provided with a safety net cover, which is beneficial to ventilation and heat dissipation of the transformer and can ensure personal and equipment safety.
 2. HV switch compartment: The HV switch compartment can be mounted with JYNI-35 switchgear or 35KV load switch Aerial cable types available for mounting 35kV inlet wire.
 3. LV switch compartment
 - a. when it is 10kV at low voltage side, the LV switch compartment can be mounted with XGN2-10, KZNI-12 switchgear, HXGNII-10F, HXGN26-10(F) Ring main unit.
 - b. when it is 0.4kV at LV switch compartment (no preparation of LV switch gear in consideration of space saving) can be series mounted with DW15T series, ME series and F frame type circuit breaker as well as DZ20 series, CM series, H series and S series molded case air circuit breaker.
 4. Power off protection compartment: the power off protection compartment is mounted with AC panel, DC panel, signal panel protection panel, motion control panel (RTU), carrier wave machine panel or optical fiber termination set.
- Note: This transformer substation can adopt general relay protection, also microcomputer based integrated automatic control system is available on request.
5. Refer to the plan layout and vertical plane layout of transformer of 35KV.

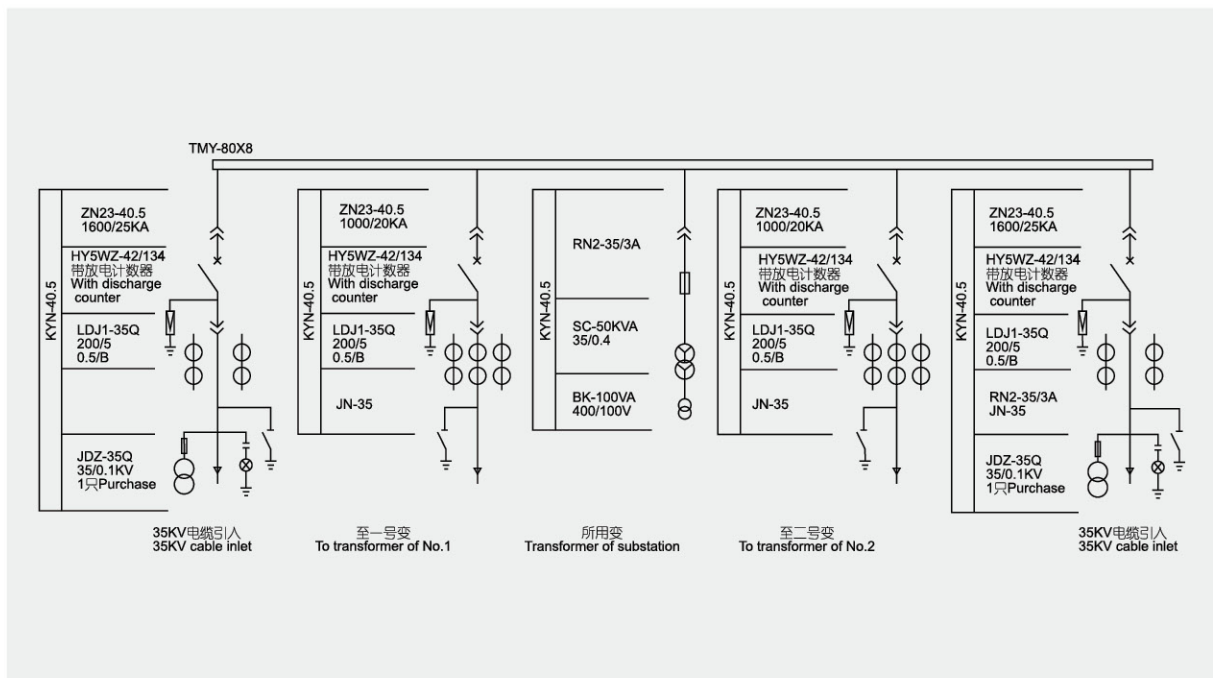
▶ 平面、立面布置示意图 Plane, elevation layout



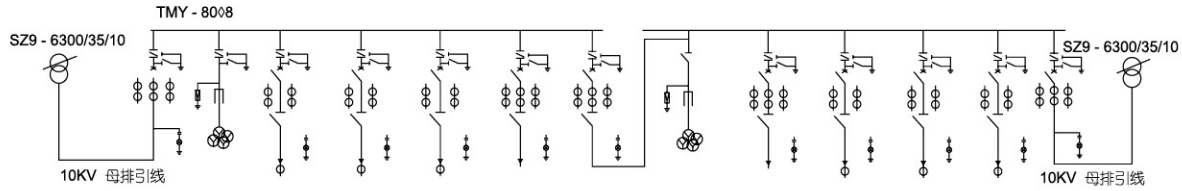
▶ 负荷开关技术参数

型号 Model	额定电压 (kV) Rated voltage	额定容量 (KVA) Rated capacity	变化 (KV/KV) Change
Sz7	35	400-20000	35/10, 35/6.3, 35/0.4
Sz9	35	400-20000	35/10, 35/6.3, 35/0.4

▶ 典型一次接线图 Typical (Primary) wiring diagram



▶ 35KV 侧一次单线图 35KV side Primary diagram



用途 Application	1# 进线 Incoming	1#PT	1# 进线 Incoming	2# 出线 Outgoing	3# 备用 Standby	# 电容 Capacitor	分段 Breaking	2#PT	2# 电容 Capacitor	4# 出线 Outgoing	5# 出线 Outgoing	6# 备用 Standby	2# 进线 Incoming
柜型 Cabinet type	XGN66	XGN66	XGN66	XGN66	XGN66	XGN66	XGN66	XGN66	XGN66	XGN66	XGN66	XGN66	XGN66
隔离开关 Isolating switch GN30D-10, GN19-10C	1000A	630A	630A 630A	630A 630A	630A 630A	630A 630A	1000A 1000A	630A	630A 630A	630A 630A	630A 630A	630A 630A	1000A
断路器 VS1-12 (VCB)	1250 /31.5KA-1		630/ 20kA 1	630/ 20kA 1	630/ 20kA 1	630/ 20kA 1	1250/ 31.5kA 1		630/ 20kA 1	630/ 20kA 1	630/ 20kA 1	630/ 20kA 1	1250/ 31.5kA 1
电流互感器 LZBJ-10 Current transformer	400/5, 200/5,0.2		400/5, 200/5, 0.2	300/5, 100/5, 0.2	300/5, 100/5, 0.2	100/5, 0.2/5	300/5, 100/5, 0.2		100/5, 0.2/5	400/5,200 2	200/5,100 2	200/5,100 2	400/5,200 2
电压互感器 JDZJ-10 Voltage transformer		$10\sqrt{3}$:0.1 $\sqrt{3}$:0.1 $\sqrt{3}$:0.1 $\sqrt{3}$						$10\sqrt{3}$:0.1 $\sqrt{3}$:0.1 $\sqrt{3}$:0.1 $\sqrt{3}$					
熔断器 RN2-10 Fuse		3	1					3	1				
避雷器 HY5WZ-12.7/50 Lightning arrester	1	3	1					3					
带电显示器 GSN-10 Electrification display			1	1	1	1	1			1	1	1	1
零序互感器 LJ-100 Zero sequence transformer				1	1				1	1	1	1	1
微机保护装置 Microcomputer protection device	装于主变保护屏上 Be mounted on protection scfoon of main transformer			1	1	1	1			1	1	1	装于主变保护屏上 Be mounted on prtectiionscfoon of main transformer

▶ 安装 Installation

- ◇ 本型组合式变电站只需在户外空地上浇钢筋混凝土基础即可。
- ◇ 变压器室、35KV 开关室、10KV 或 0.4KV 开关室都为单个的输出单元，在现场进行拼装联接；电源的引入与引出。
- ◇ 电源的引入与引出采用架空与电缆两种形式，用户可根据需要选择，订货时请注明。
- ◇ This type of combined transformer substation only requires reinforced concrete foundation outdoor
- ◇ Transformer compartment、35 kV switch compartment, 10 kV or 0.4kV switch compartment are all individual output units and are assembled on site, inlet and outlet of power supply.
- ◇ Inlet and outlet of power supply have overhead and cable two modes for selecting please select according to requirements and give clear indication when placing the order.

▶ 运输及储存 Transportation and storage

组合变电站出厂迁移时，需分成几个运输单元进行运输，若装设 SF6 新断路器，则应放气至零表压。本产品应储存与通风干燥，无腐蚀性气体的场所。

When the combined type transformer substation is (shipped), it should be divided into several parts for easy transportation. If it has been equipped with SF6 circuit breaker, please discharge it to zero pressure gauge before disconnect. This product should be stored in draughty area free from corrosive gas.

箱变系列 Box transformer series

XBZ2/XBJ2 24KV(20KV)

智能型 / 紧凑型箱式变电站
Smart/compact box substation

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



▶ 任务来源 Task source

随着我国经济的发展，城镇用电迅速增加，特别是市区负荷密度增大更快，一些城镇进行电网建设与改造规划中，将对原有配电网电压等级不合格和维修困难的电网进行升压改造。我国的城网改造应吸取国外的一些有益经验，国外的技术经济比较均匀证明 24kV 方案比 12kV 方案优越。这不仅是因为 24kV 与 12kV 相比，其供电半径与容量几乎比后者增加一倍，同时降低了损耗和单位容量建设投资及维修费用，且避免大拆大换，节约投资。我国一些负荷密度高的城市，继续沿着 12kV 外延将难以继续。城网改造 12kV 升级至 24kV 是未来的发展趋势，有一些省市已开始试点。

XBZ2 智能型 /XBJ2 紧凑型 24kV (20kV) 箱式变电站是天津电气传统设计研究所、中国电器工业协会电控配电设备分会组织全国七十余家企业，为满足国民经济日益发展的需要，针对我国国情的特点，满足国家电网需求，而开发出新式通过型式试验的 24kV 箱式变电站。

(With economy develops), the urban electric energy consumption is increased day after day especially the load density downtown rises more quickly as for this problem, some towns increase the voltage of the power grid whose distribution voltage class is improper or it is difficult to repair in their plans for construction and reform of power grids. Our construction of urban power grid shall absorb some foreign useful experience; both the domestic and foreign technology and economy prove the scheme of 24KV is superior to that one of 12KV. This not only lies in the comparison of 24KV and 12 kV but also the power supply radius and capacity almost is once more than those of the latter. Meanwhile the former lowers the loss, unit capacity construction capital and maintenance expense avoids the overhaul and saves the investments. In Chinese cities of high load density if the extension of 12 kV is used continuously, it will be difficult to carry on. In the construction of urban grid, the scheme from 12 kV upgrade to 24 kV is the future development trend, now some provinces and cities have begun to test that scheme.

XBZ2 intelligent/XBJ2 compact box-type substation of 24 kV (20KV) has passed the type test, it is a new generation of 24KV box type substation that is developed by Tianjin Electric Drive Design Institute, Electric Control and Distribute Equipment Institute of china electrical equipment industry association together with more than 70 national enterprises based on the situation of our country, to meet the demand of national increasing of economy development and of the state grid. Intelligent /compact box type substation of 24 kV (20KV).

▶ 概述 Overview

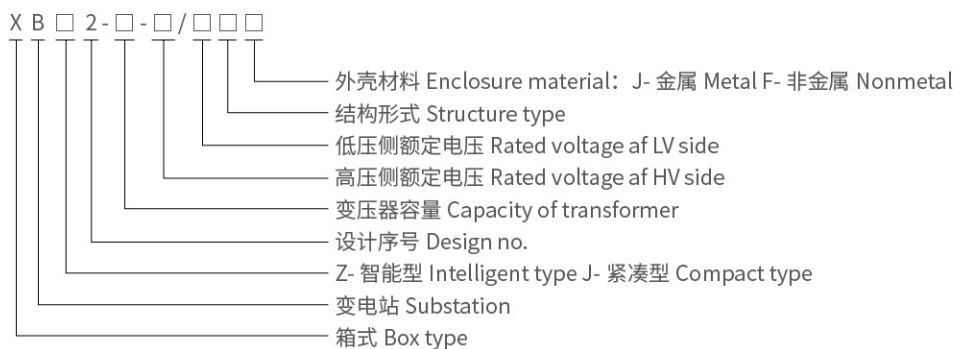
XBZ2 智能型 /XBJ2 紧凑型 24kV (20kV) 箱式变电站 (以下简称箱变) 吸收国外箱变的优点，采用了新工艺和领先的电器部件及高、低压自动化技术，满足了我国电网自动化及电力部门的要求。箱式变电站是由高压开关设备、配电变压器、低压开关设备、电能计量设备和功率补偿装置等组装在一个或几个箱体构成的。在高压、低压侧安装智能化模块，实现配电网中的自动化要求，实现遥控、遥测、遥信、遥调、上机系统管理。

此设备适用于城市高层建筑、住宅小区、厂矿企业、市政建设、公路、路灯等场所，及临时施工用电。本产品具有成套性强，安装周期短，占地面积小，投资省，少维护，运行安全可靠，外形美观，使用周期长，易与周围环境相协调等特点。

XBZ2 intelligent /XBJ2 compact 24kV(20kV) box substation (hereinafter referred to as box substation) absorbs the advantages of foreign box substation, adopts new technology, leading electrical components and high and low voltage automation technology, and meets the requirements of power grid automation and power sector in China. Box-type substation is composed of high-voltage switchgear, distribution transformers, low-voltage switchgear, electric energy metering equipment and power compensation devices assembled in one or several boxes. Intelligent modules are installed on the high-voltage and low-voltage sides to meet the automation requirements of distribution network, and realize remote control, telemetry, remote communication, remote adjustment and computer system management.

This equipment is suitable for urban high-rise buildings, residential quarters, factories and mines, municipal construction, highways, street lamps and other places, and temporary construction. This product has the characteristics of strong complete set, short installation period, small occupied area, low investment, less maintenance, safe and reliable operation, beautiful appearance, long service period and easy coordination with the surrounding environment.

▶ 型号及含义 Model and meaning



▶ 使用环境条件 Use environmental conditions

装于户外的箱变的正常使用条件

- a) 周围空气温度不超过 +40°C，且在 24h 内测得的温度平均值不超过 +35°C。最低周围空气温度可为 -10°C，-25°C。应为考虑温度的急骤变化。
- b) 应当考虑高达 1000W/m² (晴天中午) 的阳光辐射。
- c) 海拔不超过 1000m。
- d) 周围空气可以受到尘埃、烟、腐蚀性气体、蒸汽或烟雾的污染。污秽等级不超过 III 级。
- e) 覆冰对 1 级不超过 1mm，10 级不超过 10mm，20 级不超过 20mm。
- f) 风速不超过 34m/s。
- g) 应当考虑凝露和降水。
- h) 在二次系统中感应的电磁骚扰电压值不超过 1.6kV。

Normal service conditions of outdoor box transformer

- a) the ambient air temperature shall not exceed +40 °C , and the average temperature measured within 24h shall not exceed +35 °C . The lowest ambient air temperature can be -10 °C , -25 °C . Sudden changes in temperature should be considered.
- b) Solar radiation up to 1000W/m² (noon on sunny days) shall be considered.
- c) the altitude shall not exceed 1000m.
- d) The surrounding air can be polluted by dust, smoke, corrosive gas, steam or smoke. The pollution level shall not exceed Grade III.
- e) icing pairs shall not exceed 1mm for grade 1, 10mm for grade 10 and 20mm for grade 20.
- f) wind speed shall not exceed 34m/s ..
- g) condensation and precipitation should be considered.
- h) the electromagnetic disturbance voltage induced in the secondary system shall not exceed 1.6kV .

特殊使用条件

超过 3.1 的正常使用条件，应由制造厂与用户协调解决。

Special conditions of use

The normal use conditions exceeding 3.1 shall be solved by the manufacturer and the user through coordination.

▶ 主要技术参数 The main technical parameters

额定电压 (Ur) : 高压侧: 24kV 低压侧: 0.4kV

辅助回路: 交流 110V, 220V, 380V; 直流 24V

变压器额定容量: 100, 125, 160, 200, 250, 315, 400, 630, 800, 1000, 1250, 1600kVA

额定电流 (Ir) : 高压侧: 400, 630A 低压侧: 最大 2500A

额定频率 (fr) : 50Hz

额定短时耐受电流 (Ik) : 高压开关设备: 16kA 2s (4s) , 20kA 2s (4s)

低压开关设备: 15kA 用于 315-500kVA

30 kA 用于 630-1600kVA

试验时间: 1s

变压器容量小于 315kVA 时, 免试。

外壳防护等级: 不低于 IP23D

Ur: high voltage side: 24kV; low voltage side: 0.4kV

auxiliary circuit: AC 110V, 220V, 380V; ; Dc 24V

Transformer rated capacity: 100,125,160,200,250,315,400,630,800,1000,1250,1600kva

Rated current (Ir): high voltage side: 400,630 A; low voltage side: 2500A max

The rated frequency (fr): 50HZ

The rated short-time withstand current (Ik): High-voltage switchgear: 16kA 2s(4s), 20kA 2s(4s)

Low voltage switchgear: 15kA for 315-500kVA

30 kA for 630-1600kVA

Test time: 1s

When the transformer capacity is less than 315kVA, the test is exempted.

Enclosure protection level: not less than IP23D

▶ 结构特点 Structural features

1. 本设计考虑到地域、环境及用户需求的多样化，在箱变本身结构上采用了模块式结构，可由下列各种形式组合而成。

按高压开关接入电网型式分：环网型、终端型、高压电能计量形式、低压电能计量形式。

按设备布置方式分：“目”字型结构；“品”字型结构。

按内装变压器种类分：油浸全面密封变压器，干式变压器。

按高压开关选型分：真空式负荷开关及组合电器开关柜，六氟化硫负荷开关及组合电器开关，充气式开关柜。

按箱体（外壳）材质分：金属外壳，非金属外壳

金属外壳底架材料采用槽钢，工字钢焊接，侧壁及顶盖为双层组装而成的，外部有吊装脚、安装脚，金属门均有良好接地线，底架与地基都有连通的接地导体。

变压器室两侧装有门，便于变压器安装及检修，门内还有安全隔离网门，防止人员误入带电间隔区，保证设备及人身安全。

2. 有良好的隔热通风措施：箱体四周均为双层结构，箱顶层中还设有隔热材料，有效降低了因日照而引起的室内温度升高，高压室侧门有自动控制的换气扇，可保证变压器在高温季节内满载安全运行。

3. 高压侧的高压开关柜有五防措施，与变压器室有带电可靠锁装置，确保人身安全。箱体防护等级达到 IP23D，防雨性能良好。

4. 操作维护方便

箱变外部有明显的标识，分高压室、变压器室、低压室，打开各室门可易操作。检修，各室均有自动照明装置，变压器室便于变压器安装、维护、更换，低压室均为前面接线和维修通道。

5. 外形美观，经久耐用

外壳除采用敷铝锌板，彩钢板等金属材料，经前期处理，喷涂工艺壳体外，还采用了玻纤加特种水泥经特殊工艺合成的非金属外壳，其外形可塑性强，抗腐蚀、隔热、隔音等优点，表面涂层附着力强，涂层色感柔和，美观耐用。

1. This design considers the territory, environment and variety of customer demands, it employs the modular structure combined with following types.

According to the HV switch connecting with the power grid: ring net type, terminal type, HV energy metering type, LV energy metering type.

According to the type of built-in transformer: oil-immersed full-seal transformer and dry-type transformer.

According to the type of HV switch: vacuum type load switch and combination unit switch gear, SF6 load switch and combination unit switch, gas-filled switchgear

According to the material of box body (enclosure): metallic enclosure and non-metallic enclosure

The metallic enclosure and frame are welded with the beam channel and steel I beam, the side wall and top cover is of two-layer assembly, the outer has the hoisting pin and mounting pin, the metallic door has the good earthing line and the under frame and foundation has the connecting earthing conductor. There are doors installed on both sides of transformer, which facilitate the installation and repair of the transformer; and safe and isolating net doors to prevent person entering into electrical isolating area by mistake and guarantee the safety of equipment and human.

2. Good heat insulation and ventilation measures are available: all sides of the box are of double-layer structure, and the top layer of the box is also provided with heat insulation materials, which effectively reduces the indoor temperature rise caused by sunshine. The side door of the high-pressure room is provided with an automatically controlled ventilation fan, which can ensure the safe operation of the transformer under full load in high temperature season.

3. The HV switchgear of HV side provided with five-prevention measures and there is an energized reliable lock with the transformer compartment to ensure the human security. can reach IP23D; It has good rain-proof performance.

4. Convenient operation and maintenance

There are some visible marks outside of the box type substation, indicating the HV compartment, through opening the compartment doors, they can be easily operated and repaired, each compartment has the automatic lighting device even the compartment of transformer is used for installing, maintaining and changing the transformer in addition LV compartment is of force connection and for repairing the channels.

5. Nice appearance and durability

The enclosure is made of AL-plates and color steel sandwich plates, it is given the pre-treatment and plating treatment, besides, it also can be non-metallic enclosure made of a glass fiber and special cement and with the special technology so it has the obvious advantage like the strong plasticity of appearance, corrosion resistance, heat isolation and sound isolation etc. The surface coating is beautiful and durable, with high cohesion and soft color sense.

型式试验 Type test

XBZ2 紧凑型 24kV (20kV) 箱式变电站三台样机均通过了国家电控配电设备质量监督检验中心的型式试验验证，满足相关标准的要求。

3pcs samples of XBZ2 intelligent XBZ2 compact box-type substation of 24kV(20kV) have passed the type test conducted by National Center of Quality Supervision and Inspection for Electrical Control and Distribution Equipment, and they have met the requirements of relevant standards.

▶ 主要特点和创新点 Key features and innovations

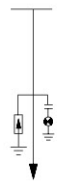
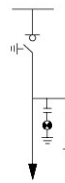
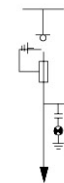
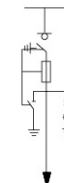
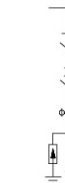

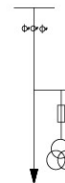
XBZ2 智能型 /XBJ2 紧凑型 24kV (20kV) 箱式变电站的创造性、领先性如下:

- 1) 高低压回路均配有智能模块, 运行信息和控制信号经现场总线或智能控制传至上位机, 实现遥控、遥测、遥信、遥调、上机系统管理。弥补了国内同类产品智能化控制方面的严重不足。无线 MODEM 采用 GPRS 方式与用户手机相连接, 用户可随时随地监控箱式变电站的运行情况。
- 2) 采用真空固封绝缘开关, 具有可靠性高、零排放、零污染、免维护、体积小、重量轻等特点, 更加环保和安全。
- 3) 创新的在箱式变电站中采用铜铝复合母线作为载流导体, 大幅度降低对我国有限的铜资源的消耗。
- 4) 采用组装式结构, 成套性强、生产效率高、安装周期短、运输成本低。
- 5) 采用氮气弹簧取代传统风钩, 解决了传统防风钩易脱落的问题, 且外形美观、操作简便。
- 6) XBJ2 紧凑型 24kV (20kV) 箱式变电站, 将高压负荷开关熔断器等高压组件, 进行结构优化, 完美组合置于变压器油箱里, 浸入油中。低压开关设备亦小型化, 使组合式变电站体积缩小, 占地面积仅为常见产品 1/3~1/5。变压器箱体裸露在空气中自然散热, 运行条件优良。具备机械强度高、低耗损、低噪音、低温升、过载能力强等优点, 结构为 "品" 字型。
- 7) XBJ2 紧凑型 24kV (20kV) 箱式变电站在控制原理、结构、新型部件等多个创新点申请发明专利 1 项和实用新型专利 8 项, 均已受理。

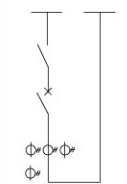
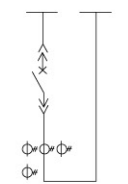
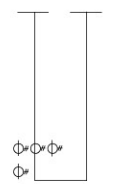
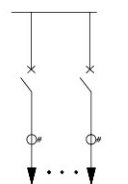
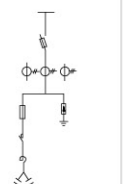
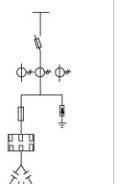

XBZ2 intelligent /XBJ2 compact 24kV(20kV) box substation is creative and leading as follows:

- 1) There are intelligent modules installed at HV and LV circuits, they can pass the operation information and control signal to the upper machine via the field bus or intelligent controller to realize the remote control, remote sensing, remote signaling, remote regulating and system management. It covers the serious shortage of domestic similar products in the intelligent control. The wireless MODEM employs GPRS mode to connect with the user's mobile phone, so that user can monitor the operation situation of box-type substation anywhere, anytime.
- 2) It uses the solid-encapsulated insulating switch, which has the features such as the high reliability zero discharge, zero pollution, free maintenance, small volume and light weight, etc., besides, this switch is more environmental protection and safe.
- 3) The innovation point rests with that the Cu-Al composite bus is used as the carrying-current conductor in the substation which can lower the consumption of Chinese limited copper resource to the larger extent.
- 4) It is designed with the assembled structure, with the features of strong completeness, high production efficiency, short installation period and low transportation cost.
- 5) It uses the nitrogen spring instead of the traditional windproof hook, can solve such problem that the traditional windproof hook easily comes off; and this spring is very nice and takes the convenience for the operation.
- 6) XBJ2 compact box-type substation of 24KV, through the structure optimization of the high voltage components like the HV load switch fuse, presents the perfect combination unit that is placed into the oil tank of transformer and immersed in the oil. LV switchgear is minimized to reduce the volume of combined substation, so its floor space is only 1/3~1/5 that of usual products. The box body of transformer can disperse the heat naturally if it is exposed in the air, therefore, it has the good operation conditions. What's more, it possesses the outstanding advantages like the high mechanical strength, low loss, low noise, low temperature rise, strong overload capacity, etc., its structure presents the type of Chinese character "品".
- 7) XBJ2 compact 24kV(20kV) box-type substation has applied for one invention patent and eight utility model patents in many innovations such as control principle, structure and new components, which have been accepted.

▶ 高压侧主电路方案 Hv-side main circuit scheme

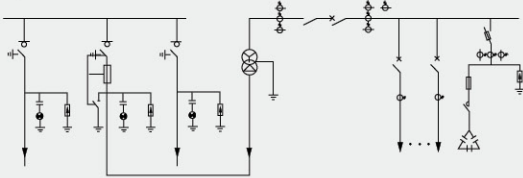
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单线图 Line diagram							
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▶ 低压侧电路方案 Lv-side circuit scheme

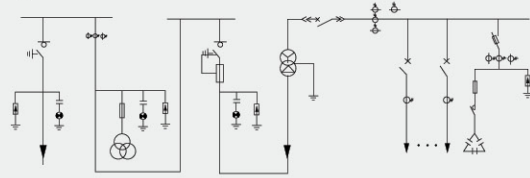
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单线图 Line diagram							
用途 Purpose	受电 Electrification	受电 Electrification	受电 Electrification	馈电 Feeding	无功补偿 Reactive compensation	无功补偿 Reactive compensation	低压计量 Low-voltage metering

▶ 典型系统方案举例参考 Typical system schem

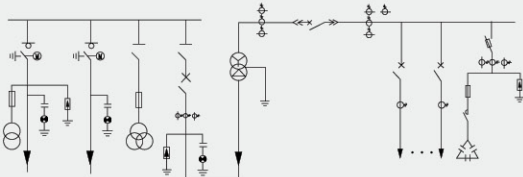
电缆进出线，环网供电，高供低计，手动操作
 Cable incoming and outgoing; ringnefw ork power supply; HV supply and LV metering; manual operation



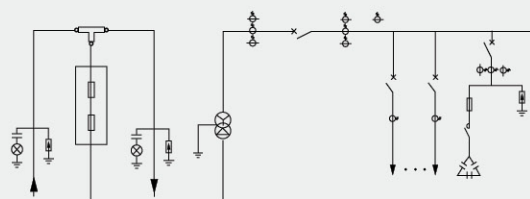
电缆进出线，环网供电，高供低计，手动操作
 Cable incoming and outgoing; ringnefw ork power supply; HV supply and LV metering; manual operation



电缆进出线，环网供电，高供低计，手动操作
 Cable incoming and outgoing; ringnefw ork power supply; HV supply and LV metering; manual operation



紧凑型组合方案示例
 Example of compact type combination scheme



箱变系列 Box transformer series

YB

智能型预装式变电站
Intelligent prefabricated substation

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.

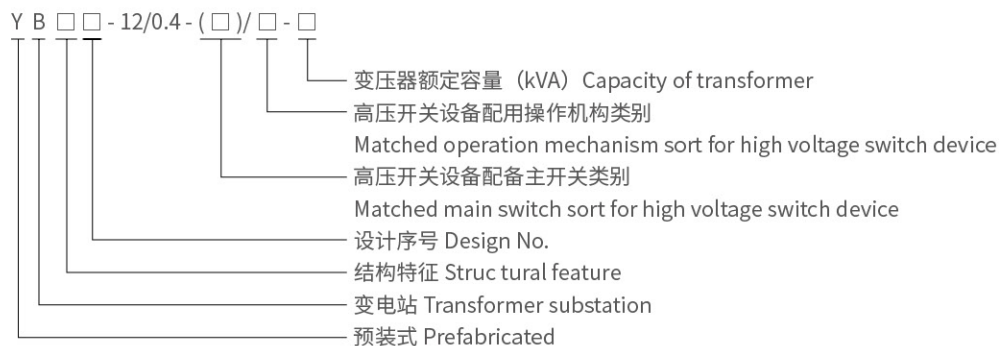


概述 Overview

YB 系列智能型箱式变电站是由本公司自主开发的新产品，它吸收了美式箱变、欧式箱变和国产箱变三大派别的优点，适合于我国的国情特点，采用了环保、新材料、新工艺及领先的元器件和高压自动化技术，其中高压（12KV）侧能满足电力部门对于配电网自动化的要求，低压（0.4KV）侧能满足小区物业管理智能化的要求，可以用设置在中心站或物业管理处的上位机对箱式变电站进行“四遥”（遥测、遥讯、遥调、遥控）系统管理。当多台智能型箱式变电站连接成“手拉手”环网供电时，在自主软件配合下，能完成故障区段自动定位、故障切除、负荷转带、网络重构等功能，从而保证在一分钟内恢复送电。该系列智能型箱式变电站是由高压单元、电力变压器、低压单元、计量单元及智能系统等，优化组合成的完整的智能化供配电成套装置，它功能多、用途广，运行安全可靠，外型美观，并具有安装方便、少占地、少维护、少投资、见效快、寿命长等特点。可作为城市建筑、居民小区、市政设施、工厂、矿山、公路、码头、油田及施工临时用电等部门、场所的变配电设备。

Intelligent box substation of YB series, the newest product developed independently by our Company integrates the advantages of American box substation, European box substation and home box substation which adopts environment protection and new material, new technology and advanced components as well as high-low voltage automation technology, and among them, the high voltage side (12KV) can meet the demand of power department for power distribution automation, and the low voltage side (0.4KV) can meet the demand of intelligent community property management, and the upper monitor which is located in the central station or the property management department can be used for four-remote(remote measurement, remote communication remote adjustment, remote control) system management. When several intelligent box substations connect into "hand-in-hand"ring network and supply power, they, combined with autonomous software,can accomplish the functions of automatic location, fault clearance, load shifting and network reconfiguration at the fault section, so that the recovery of power transmission is guaranteed in one minute. This series of intelligent box substation is one optimized combination of complete intelligent power supply and distribution integrated device consisting of high voltage unit,power transformer,low voltage unit, metering unit and intelligent is system etc. It has the characteristics of multi-functions, wide application,safe and reliable operation, beautiful out line,as well as convenient installation,little land occupation, little maintenance,low cost,quick effect and long service life.It can be used as power transformation and distribution equipment in the following departments and places, such as urban architecture, residential areas, municipal facilities, factories, mines, roads, wharves and oil fields, as well as construction in need of temporary power supply.

型号及含义 Model and meaning

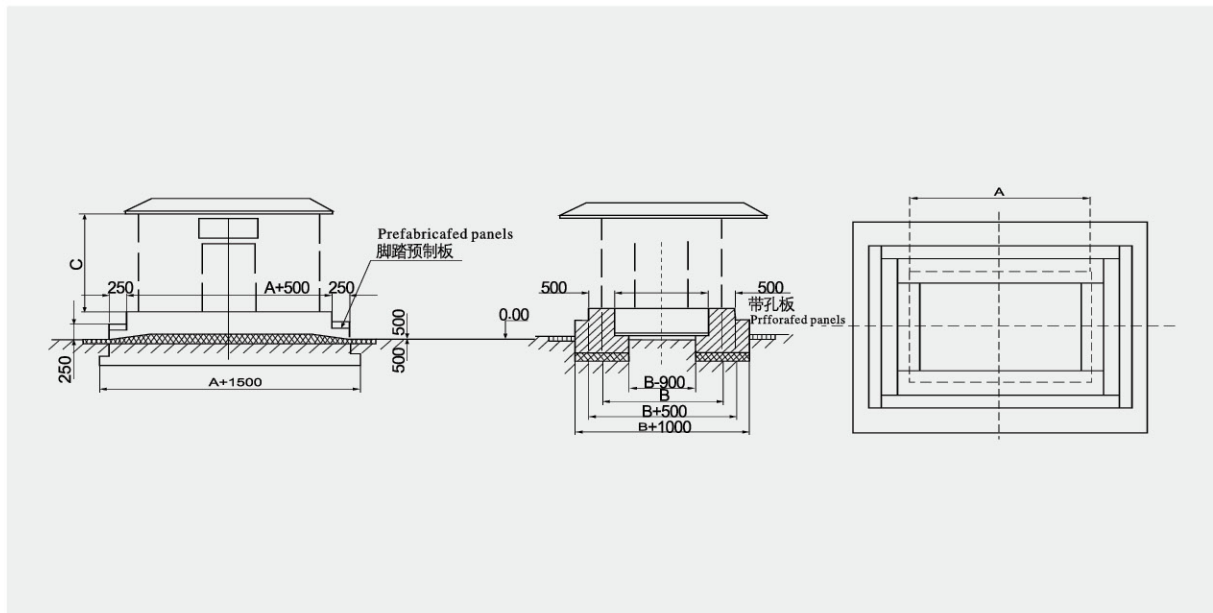


▶ 主要技术参数 The main technical parameters


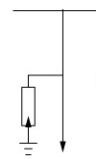
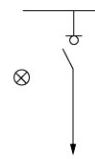
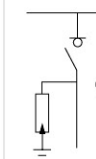
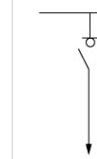


项目 Item	单位 Unit	高压电器 High voltage electrical equipment	变压器 Transformer	低压电器 Low voltage electrical equipment
额定电压 Rated voltage	kV	7.2~12	6/0.4, 10/0.4	0.4
额定容量 Rated capacity	kVA		目型 "目" type: 200-1250	
			品型 "品" type: 50-400	
额定电流 Rated current	A	200~630		100~3000
额定开断电流 Rated breaking current	A	负荷开关 Load switch 400~630A		15~63
	kA	组合电器取决于熔断器 Combined electrical equipment is dependent on fuse		
额定短时耐受电流 (秒) Rated short time withstand current	kA(xs)	20x(2)	200~400kVA	15x1
		(12.5x4)	400kVA	30x1
额定峰值耐受电流 Rated peak withstand current	kA	31.5, 50	200~400kVA	30
			400kVA	63
额定关合电流 Rated making current	kA	31.5, 50		
工频耐受电压 Power frequency withstand voltage	kV	相对地及相同 Phase to earth and phase similar 32, 40	油浸 Oil immersed: 35/5min	≤ 300V 2kV
		隔离断口 Isolated fracture 34, 48	干式 Dry type: 28/5min	300,600V 2.5kV
雷击冲击 Lightning impulse withstand voltage	kV	相对地及相同 Phase to earth and phase similar 60, 75	75	
		隔离断口 Isolated fracture 75, 85	75	
噪声水平 Noise level	dB		油浸 Oil immersed: <55	
			干式 Dry type: <65	
防护等级 Protection level			IP23D	
外形尺寸 Outline dimension		根据所选变压器容量和形式, 选定不同的外形尺寸 As capacity and form of transformer, different dimension selected.		

常用外形尺寸 Common size

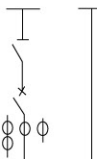
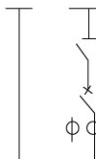
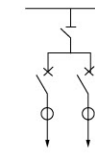
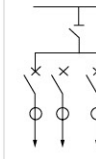
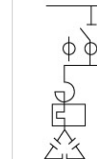
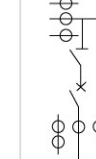

序号 No.	箱体型式 Box type	外形尺寸 (mm) Outline dimension	结构形式 Structure type	操作方式 Operation mode
1	平顶型 Flat top type	3000x1600x2200	目字型目 -shaped	单面户外操作 Single-side outdoor operation
		3200x2200x2500	目字型目 -shaped	单面户外操作 Single-side outdoor operation
		3700x 2300x2500	目字型目 -shaped	单面户外操作 Single-side outdoor operation
		4000x 2500x2500	目字型目 -shaped	单面户外操作 Single-side outdoor operation
		4300x2500x2500	目字型目 -shaped	走廊式双面操作 Double-side corridor operation
		4700x2500x2500	目字型目 -shaped	走廊式双面操作 Double-side corridor operation
		5300x2500x2500	目字型目 -shaped	走廊式双面操作 Double-side corridor operation
		6300x2500x2700	目字型目 -shaped	走廊式双面操作 Double-side corridor operation
		8000x2500x2700	目字型目 -shaped	走廊式双面操作 Double-side corridor operation
2	尖顶型 Fastigium type	3200x2200x2500	目字型目 -shaped	单面户外操作 Single-side outdoor operation
		3200x2500x2500	目字型目 -shaped	单面户外操作 Single-side outdoor operation
		3600x2300x2500	品字型品 -shaped	单面户外操作 Single-side outdoor operation
		4300x2300x2500	目字型目 -shaped	走廊式双面操作 Double-side corridor operation
		4500x2300x2500	目字型目 -shaped	走廊式双面操作 Double-side corridor operation
3	斜顶型 Slanted-top type	3500x2000x2500	品字型品 -shaped	单面户外操作 Single-side outdoor operation
4	半敞开型 Half-open type	2800x1800x2500	品字型品 -shaped	单面户外操作 Single-side outdoor operation

安装基础图 Installation diagram


▶ 高压主电路常用方案 High voltage main circuit common scheme

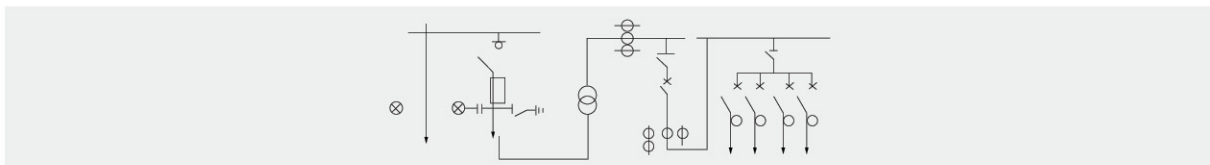
方案编号 Scheme No.	01	02	03	04	05	06	07
单线图 Line diagram							
用途 Purpose	电缆进出线 Cable incoming and outgoing	电缆进出线 Cable incoming and outgoing	电缆进出线 Cable incoming and outgoing	电缆进出线 Cable incoming and outgoing	双电源电缆进 出线 Incoming and outgoing line of dual power supply	左(左、右) 联络、出线 Left (left, right) intercon- nection, outgoing line	高压计量 High voltage metering

▶ 低压主电路常用方案 Low-voltage main circuit common scheme

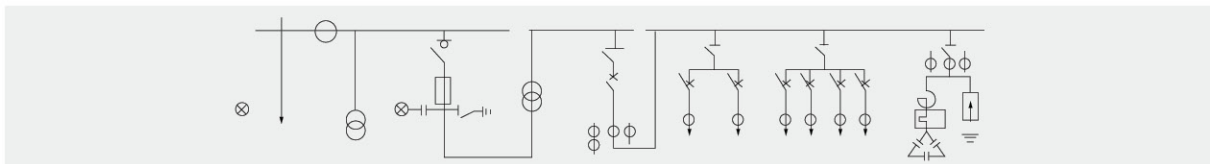
方案编号 Scheme No.	01	02	03	04	05	06	07
单线图 Line diagram							
用途 Purpose	受电 Electrification	受电 Electrification	馈电 Feeding	馈电 Feeding	无功补偿 Reactive compensation	受电 Electrification- metering	低压计量 Low voltage metering

▶ 典型系统方案举例参考 Typical system scheme

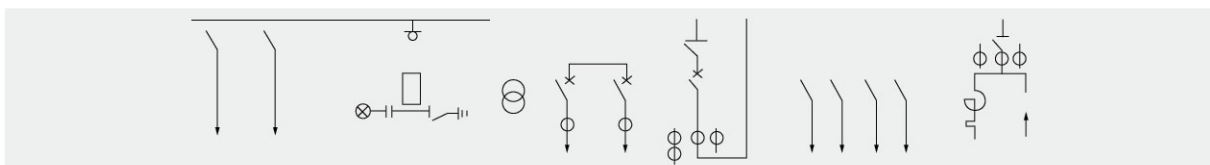
电缆进出，终端供电，低压计量 Cable incoming and outgoing, terminal power supply, low voltage metering



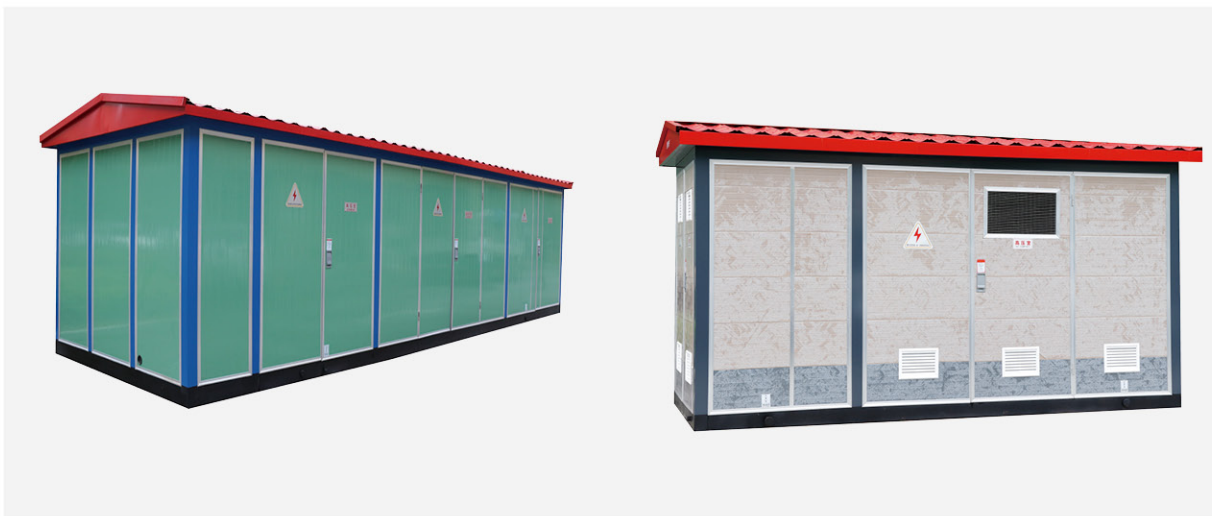
电缆进出，终端供电，高压计量，低压走廊图，低压电容补偿 Cable incoming and outgoing, terminal power supply, high voltage metering, low voltage corridor diagram, low voltage capacitance compensation.



电缆进出，环网供电，低压计量，低压走廊式，低压电容补偿 Cable incoming and outgoing, ring network power supply, low voltage metering, low voltage corridor diagram, low voltage capacitance compensation.







箱变系列 Box transformer series

YB6

智能型一体化变电站
Intelligent integrated substation

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

本智能型一体化变电站是本公司推出的国产化美式箱变。该产品作为电缆化配电网中重要的供电单元，集高压控制、保护、变电、以及配电设备于一体的成套预装产品，广泛应用于城乡配电网之中。该产品将高压负荷开关、高压熔断器置于变压器油中，具有与变压器身共箱或分箱两种结构形式。油箱采用全密封结构，配有油温表、油位表、压力表、压力释放阀、放油阀等元件监测变压器运行状况。该产品分为环网型、终端型及电源型供电方式。为了使此种产品更适合于我国电网的实际要求，本公司又推出了插拔型干式熔断器，熔丝的熔断不影响变压器油的性能。根据低压馈出要求的复杂程度，此产品分为标准型、加强型和综合型三种外壳形式，使用户和设计单位在选型时，做到更灵活、更经济。

This intelligent integrated transformer substation is a nationalized type American box substation developed by our Company. As an important power supply unit in the cable distribution network, it is an integrated prefabricated product of high voltage control, protection, power transformation and power distribution. which is widely used in the urban and rural distribution network. The high voltage load switch and high voltage fuse are put into the transformer oil, so this product has two structure forms of one box and divided box with the transformer body. The oil box is of full-sealed structure with oil temperature indicator, oil level gauge, pressure gauge, pressure relief valve and oil drain valve to monitor the operation condition of the transformer. This kind of products has three types of power supply modes ring network type, terminal type and power type. In order to make the product meet the actual demands of the power grid in China better, our company promotes plug-pull dry type fuse and the fusing of the fuse wire has no effect to the performance of transformer oil. According to the complicated degree of low voltage outgoing demands, this product has three types of enclosure-standard type, reinforced type and integrated type, as a result, the clients and design agents have more choices.

型号及含义 Model and meaning



使用环境条件 Use environmental conditions

- ◇ 环境温度：最高气温 +40℃，最低气温 -30℃；
- ◇ 海拔：≤ 1000m；
- ◇ 风速：相当 34m/s（不大于 700Pa）；
- ◇ 湿度：日相对湿度平均值不大于 95%，月相对湿度平均值不大于 90%；
- ◇ 防震：水平加速不大于 0.4m/s²；垂直加速不大于 0.15m/s²；
- ◇ 安装地点倾斜度：不大于 3°；
- ◇ 安装环境：周围空气不受腐蚀性，可燃性气体等明显污染，安装地点无剧烈震动；
- ◇ 订购本产品超出上述条件的规定时，可与本公司协商。
- ◇ Ambient temperature: maximum +40℃, minimum -30℃；
- ◇ Altitude: ≤ 1000m；
- ◇ Wind speed: About 34m/s (≤ 700Pa)；
- ◇ Humidity: Average daily relative humidity ≤ 95%；Average monthly relative humidity ≤ 90%；
- ◇ Shockproof: Level acceleration ≤ 0.4m/s²；vertical acceleration ≤ 0.15 m/s²；
- ◇ Gradient of installation position: ≤ 3°；
- ◇ Installing environment: ambient air has not been obviously polluted by corrosive or flammable gas, and there is no strong feeling of shock；
- ◇ Please negotiate with the company when the purchased product is beyond above stipulated conditions.

▶ 产品额定参数 Product rated parameters

额定电压 Rated voltage	10kV/0.4kV
高压侧额定电压 Rated voltage of HV side	10kV
高压侧最高电压 Max.voltage of high-voltage side	12kV
低压侧额定电压 Rated voltage of LVside	0.4kV
额定频率 Rated frequency	50Hz
高压开关热稳定容量 Thermal stability capacity of high-voltage breaker	20kA/2S
低压主回路开关额定短路分断能力 Rated short-circuit breaking capacity of low-voltage main circuit switch	35kA
低压配出回路开关额定短路分断能力 Rated short circuit breaking capacity of low-voltage branch circuit switch	35kA
高压负荷开关转移电流 Transferred current of high-voltage load switch	> 1500A
噪音水平 Noise level	< 50dB
箱壳防护等级 Enclosure protection level	不低于 IP3X Not less than IP3X

▶ 绝缘水平 Insulation level

额定电压 (kV) Rated voltage	10			0.4
	变压器 Transformer	开关对地及相间 Switch to earth and interphase	开关隔离断口间 Switch isolating inter- fracture	
工频耐压 (kV) Power frequency withstand voltage	35	42	48	-2.5
冲击耐压峰值 (kV) Peak impulse withstand value	75	75	85	

▶ 结构特点 Structural features

箱壳骨架结构采用槽钢及角钢制造，有较高的机械强度，外壳采用铝合金板等材料制造，表面光滑平整，产品美观大方，且具有较好的防腐性能。箱体的基座高出地基 300-600mm。

柜壳所有的门均向外开，开启角度大于 90°，且设定位置，并装有把手，暗门和能防雨、防堵、防锈的暗锁。箱体均为全密封防盗结构；为保证在一般周围空气温度下运行时，所有的电器设备的温度不超过其最大允许温度，箱体设有足够的自然通风口和隔热措施。预装式变电站的箱体设有专用接地导体，该接地导体上设有与接地网相连的固定连接端子，其数量为两个以上，有明显的接地标志。接地端子为直径不小于 12mm 有铜质螺栓。接地导体采用铜带，其电流密度不大于 200A/mm² 截面不小于 30mm²，并保证流过最大短路电流时不发生过热和影响周围物体的安全。专用接地导体所承受的动、热稳定电流应与高压配电装置的接地方式相配合。

The frame structure of the box shell is made of channel steel and angle steel, which has high mechanical strength. The shell is made of aluminum alloy plate and other materials, with smooth and flat surface, beautiful products and good corrosion resistance. The base of the box body is 300-600mm higher than the foundation.

All doors of the cabinet shell are opened outwards, with an opening angle greater than 90, and are equipped with a positioning device, a handle, a secret door and a secret lock which can prevent rain, blockage and rust. The boxes are all fully sealed anti-theft structures; In order

to ensure that the temperature of all electrical equipment does not exceed the maximum allowable temperature when running at the general ambient air temperature, the box does not have enough natural vents and thermal insulation measures. The box body of the pre-installed substation is provided with a special grounding conductor, which is provided with more than two fixed connection terminals connected with the grounding grid, with obvious grounding marks. Grounding terminal is copper bolt with diameter not less than 12mm. The grounding conductor adopts copper tape, and its current density is not more than 200A/mm², and its cross section is not less than 30mm², so as to ensure that overheating does not occur and the safety of surrounding objects is not affected when the maximum short-circuit current flows. The dynamic and thermal stable current borne by the special grounding conductor should be matched with the grounding mode of high voltage distribution equipment.

▶ 变压器性能参数 Transformer performance parameters

10kV 预装式变电站用 S9、S10、S11 系列油浸式变压器性能水平
 Performance Of S9, S10, S11 Series Oil-immersed Transformer For, 10kv Prebricafed Syubstation

序号 No.	额定容量 (kVA) Rated capacity	额定电压 Rated voltage		调压范围 (%) Voltage tapping range	连接组标号 Connection group mark	空载电流 (%) No-load current		损耗 (W) Loss					阻抗电压 (%) Impedance voltage	噪音 (dB) Noise	温升 Temperature rise
		高压 (kV) High-voltage	低压 (kV) low-voltage			空载 No-load		负载 On-load							
						S9	S10/S11	S9	S10	S11	S9	S10/S11			
1	30	6 6.3 10	0.4 (0.69)	±5 (±2x2.5)	Yyn0 Dyn11	2.2	2.0	130			600		4	55	顶层油温 Oil temperature of top layer 65° 线圈 coil 65°
2	50					2.0	1.8	170			870				
3	63					1.9	1.5	200			1040				
4	80					1.7	1.2	250			1250				
5	100					1.6	1.1	290			1500				
6	125					1.5	1.0	340	270		1800				
7	160					1.4	1.0	400	310		2200				
8	200					1.4	0.8	480	375		2600				
9	250					1.2	0.8	560	455	400	3050	3000			
10	315					1.1	0.7	670	540	475	3650	3600			
11	400					1.0	0.7	800	650	570	4300	4200			
12	500					1.0	0.6	960	775	680	5100	5000			
13	630					0.9	0.6	1200	920	800	6200	6000			
14	800					0.8	0.6	1400	1120	980	7500	7400			
15	1000					0.7	0.5	1700	1320	1150	10300	9860			
16	1250					0.6	0.5	1950	1560	1360	12800	12000			
17	1600					0.6	0.5	2400	1880	1640	14500	14000			

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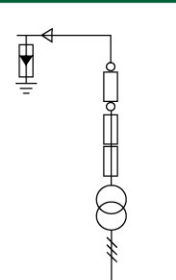
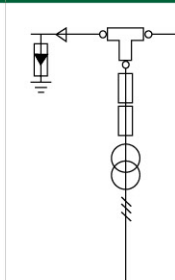
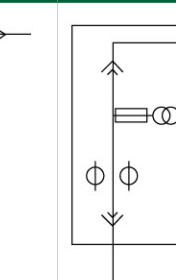
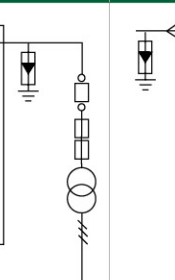
- a. 根据顾客要求变压器的高压分接范围可设计为 ±2*2.5%。
- b. 根据顾客要求变压器的低压可设计为 0.69kV。
- a.The high-voltage tapping range can be designed to ±2*2.5% according to customer's requirement.
- b.The low voltage of transformer can be designed to 0.69kV according to customer's requirement.

▶ 变压器性能参数 Transformer performance parameters

负荷开关性能参数 Performance parameter of load switch

额定电流 (A) Rated current	额定电压 (kV) Rated voltage	冲击耐压 (kV) Impulse withstand voltage	工频耐受电压 (1min.kV) Power frequency withstand voltage	额定短时耐受电流 (kA/s) Rated short-time withstand current	短路关合电流 (kA) Short-circuit making current	额定峰值耐受电流 (kA) Rated peak withstand current	负荷操作次数 (kA) Times of load operation	机械操作次数 Times of mechanic alopertim
315	12	75	42	12.5/2	31.5	31.5	100	2000
630	12	75	42	16/4	40	40	100	3000

主回路方案图 Scheme diagram of main circuit

编号 No.	01	02	03	04
系统方案 System scheme				
FYN-12 负荷开关 Load switch	用于终端 For terminal use 315A/630A	环网供电 Ring network power supply 315A/630A	高压计量 High voltage metering 315A/630A	双电源供电 Dual power supply 315A/630A

注:

- 插入式熔断器与后备限流熔断器的额定值由制造厂家按变压器容量确定。
 - 进线可加装高压带电指示器或故障指示器。
 - 根据需要可加装高压计量装置。
- The rated values of plug-in type fuse and backup current limiting fuse are subject to transformer's capacity by manufacturer.
 - High-voltage charged indicator or fault indicator can be extra installed for incoming line.
 - High-voltage metering device can be extra installed according to requirement.



高压开关设备系列 High voltage switch equipment series

XGN □ -12

全密封全绝缘充气式环网开关设备

Fully sealed fully insulated inflatable ring network switchgear

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

XGN □ -12 系列全绝缘全封闭环网开关设备是 SF6 气体绝缘的金属共箱式封闭开关设备，该设备可由负荷开关单元、负荷开关熔断器组合电器单元、真空断路器单元、母线进线单元等模块组成。采用一系列领先技术和材料。具有优异的电气性能和机械性能，受环境和气候影响小，体积小，易于安装，操作方便，无需维护，且具有灵活的组合方式。清晰直观的设计保证操作简单、直接。馈线接线容量大，适合多种接线系统。

XGN □ -12 series fully insulated and fully enclosed ring network switchgear is SF6 gas insulated metal box-type enclosed switchgear, which can be composed of load switch unit, load switch fuse combination electrical unit, vacuum circuit breaker unit, bus incoming line unit and other modules. Adopt a series of leading technologies and materials. It has excellent electrical and mechanical properties, little influence by environment and climate, small size, easy installation, convenient operation, no maintenance and flexible combination. Clear and intuitive design ensures simple and direct operation. The feeder has large wiring capacity and is suitable for various wiring systems.

型号及含义 Model and meaning



四大核心竞争力 Four core competitiveness

1. 操作安全。通过以下安全措施，我们可为用户提供特别的安全保障：

- ◇ 一体化三工位负荷开关
- ◇ 断路器采用负荷开关替代隔离开关，更安全可靠
- ◇ 一次侧全密闭设计提供意外接触的保护
- ◇ 满足五防要求的机械联锁
- ◇ 带电显示器可提供进出线路带电指示

2. 运行可靠。全密闭设计，所有 10kV 开关及母线带电体均密封在 3mm 不锈钢板焊接成的气箱中；配硅橡胶电缆插头，实现电缆头全绝缘全密封从而不受灰尘、潮湿、小动物等外界环境影响：

- ◇ 弹簧储能操作机构，可人工或电动操作
- ◇ 面板模拟线图提供开关位置指示
- ◇ 柜体用镀锌板制作，表面静电喷涂，增强抗腐蚀性能
- ◇ 压力表监视箱体内 SF6 气体安全压力范围

3. 经济性。

- ◇ 免维护
- ◇ 高度可靠
- ◇ 使用寿命可达 20 年

4. 方案灵活

- ◇ 多种进线方式，可实现左、右、上或前进线
- ◇ 多种组合方式，各单元之间可实现任意组合
- ◇ 采用绝缘母线，可实现前后并柜或左右并柜
- ◇ 设计方案灵活
- ◇ 弹簧机构与永磁机构可选配置

1. Operational safety. Through the following security measures, we can provide users with special security guarantees:

- ◇ Integrated three-station load switch
- ◇ Circuit breaker adopts load switch instead of isolation switch, which is more safe and reliable
- ◇ One-side fully enclosed design provides protection against accidental contact
- ◇ Mechanical interlock to meet the requirements of five defenses
- ◇ Electricity display can provide instructions for electrification on the incoming and outgoing lines

2. reliable operation. Fully sealed design, all 10kV switch and busbar charged body are sealed in the air box welded with 3mm stainless steel plate; equipped with silicone rubber cable plug to realize the cable head Edge sealed so that it is not affected by dust, moisture, small animals and other external environment:

- ◇ Spring energy storage operating mechanism, can be manually or electrically operated

- ◇ Panel model line diagram provides switch position indication
- ◇ Cabinet made of galvanized sheet, electrostatic spraying on the surface to enhance corrosion resistance
- ◇ The pressure gauge monitors the safe pressure range of SF6 gas in the box
- 3. Economicality.
 - ◇ Maintenance-free
 - ◇ Highly reliable
 - ◇ Service life up to 20 years
- 4. The program is flexible.
 - ◇ A variety of ways to enter, can achieve left, right, up or forward line
 - ◇ Multiple combinations, any combination between the units can be achieved
 - ◇ Insulation busbars can be used to combine front and back cabinets or cabinets
 - ◇ Flexible design
 - ◇ Optional arrangement of spring mechanism and permanent magnet mechanism

▶ 主要技术参数 The main technical parameters

项目 Item	单位 Unit	C 模块负荷开关单元 C module load switch unit	F 模块负荷开关 - 熔断器组合电器单元 F module load switch-fuse combination electric unit	V 模块断路器单元 V breaker unit
额定电压 Rated voltage	kV	12	12	12
额定电流 Rated current	A	630	125 注 (1)	630
工频耐压 /1 分钟 Power frequency withstand voltage/ 1 minute	相地 / 相间 Phase to ground/phase to phase	kV	42	42
	断口 Fracture	kV	48	48
冲击耐压 Zmpact withstand volfage	相地 / 相间 Phase to ground/phase to phase	kV	75	-
	断口 Fracture	kV	85	85
额定闭环开断电流 Rated closed-loop breaking current	A	630	-	-
额定电缆充电开断电流 Rated cable charging breaking current	A	30	-	-
额定开断感性电流 Rated breaking inductive current	A	注 (2)	-	-
额定短时耐受电流 /3s Rated short-time withstand current/3s	kA	20	-	20
额定峰值耐受电流 Rated withstand current peak	kA	50	1700	50
额定转移电流 Rated transfer current	A	-	2	-
额定短路开断电流 Rated short-circuit breaking current	kA	-	注 (3)	20
额定短路关合电流 Rated short-circuit making current	kA	50	-	-
额定短路开断次数 Rated short circuit breaking times	次	-	-	30
额定短路关合次数 (负荷开关 / 接地开关) Rated short circuit closing times (load switch/grounding switch)	次	5/5	-	-
额定电流开断次数 Rated current breaking times	次	>100	-	-
机械操作次数 (负荷开关 / 接地开关) Times of mechanical operations (load switch/grounding switch)	次	5000/2000	5000/2000	30000

► **非扩展标准模块 Non-extended standard modules**

共提供以下十五种标装组合

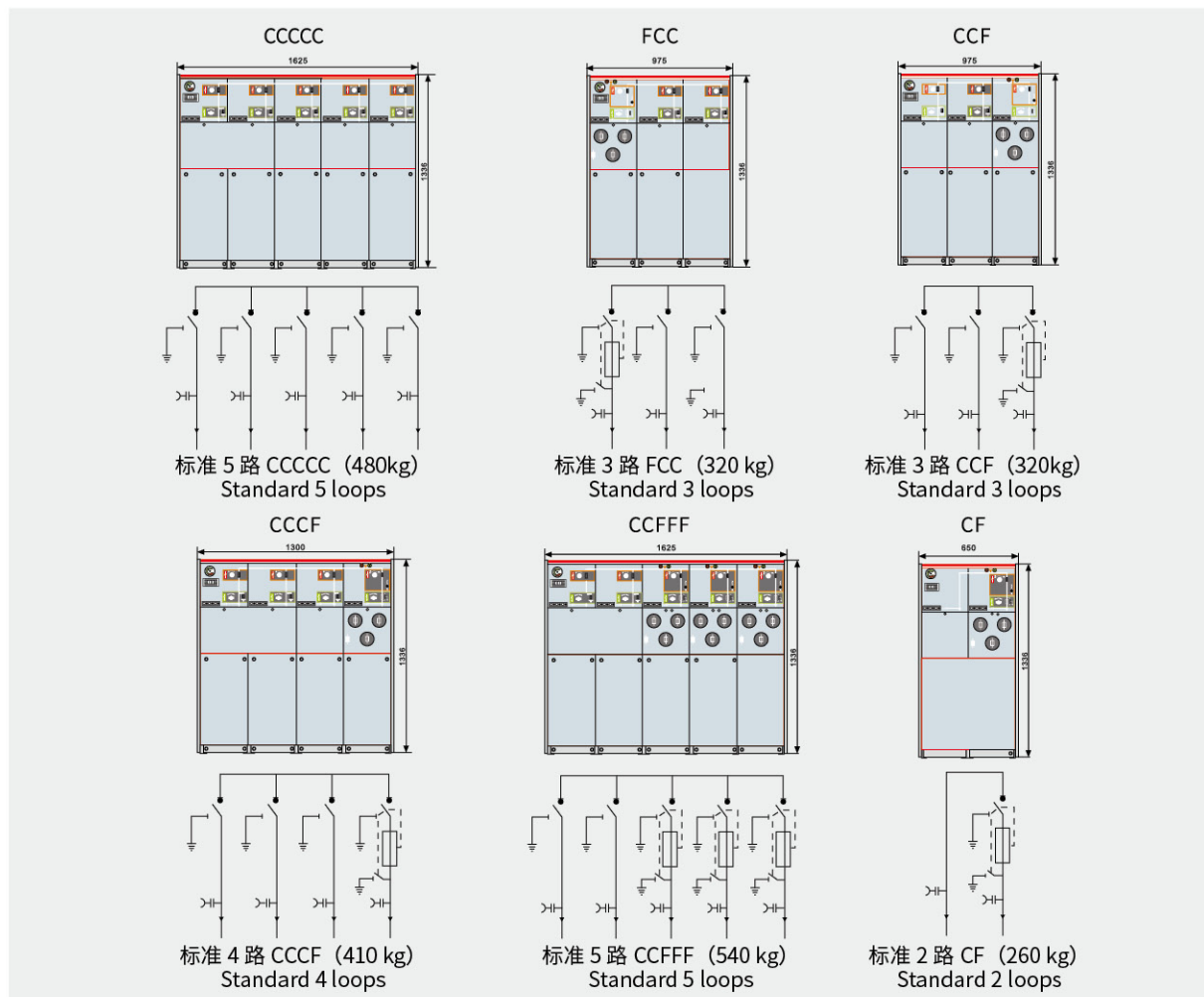
XGN □ -12 各类非扩展标准组合单元柜的每个模块具有下列配置

- ◇ D 柜——提升模块
“不带接地刀的电缆连接模块”中标准配置与特性
- ◇ C 柜——负荷开关模块
“负荷开关模块”中标准配置与特性
- ◇ F 柜——负荷开关熔断器组合电器模块
“负荷开关熔断器组合电器模块”中标准配置与特性
- ◇ V 柜——真空开关模块
“真空开关模块”中标准配置与特性
- ◇ 进线套管的电容性电压指示器
- ◇ 每个气室安装一个监测 SF6 密度的压力表计
- ◇ 吊装用的吊耳
- ◇ 操作手柄
- ◇ 选配
电动操作机构
电缆短路及接地故障指示器
电流互感器及表计
远程监控及连接

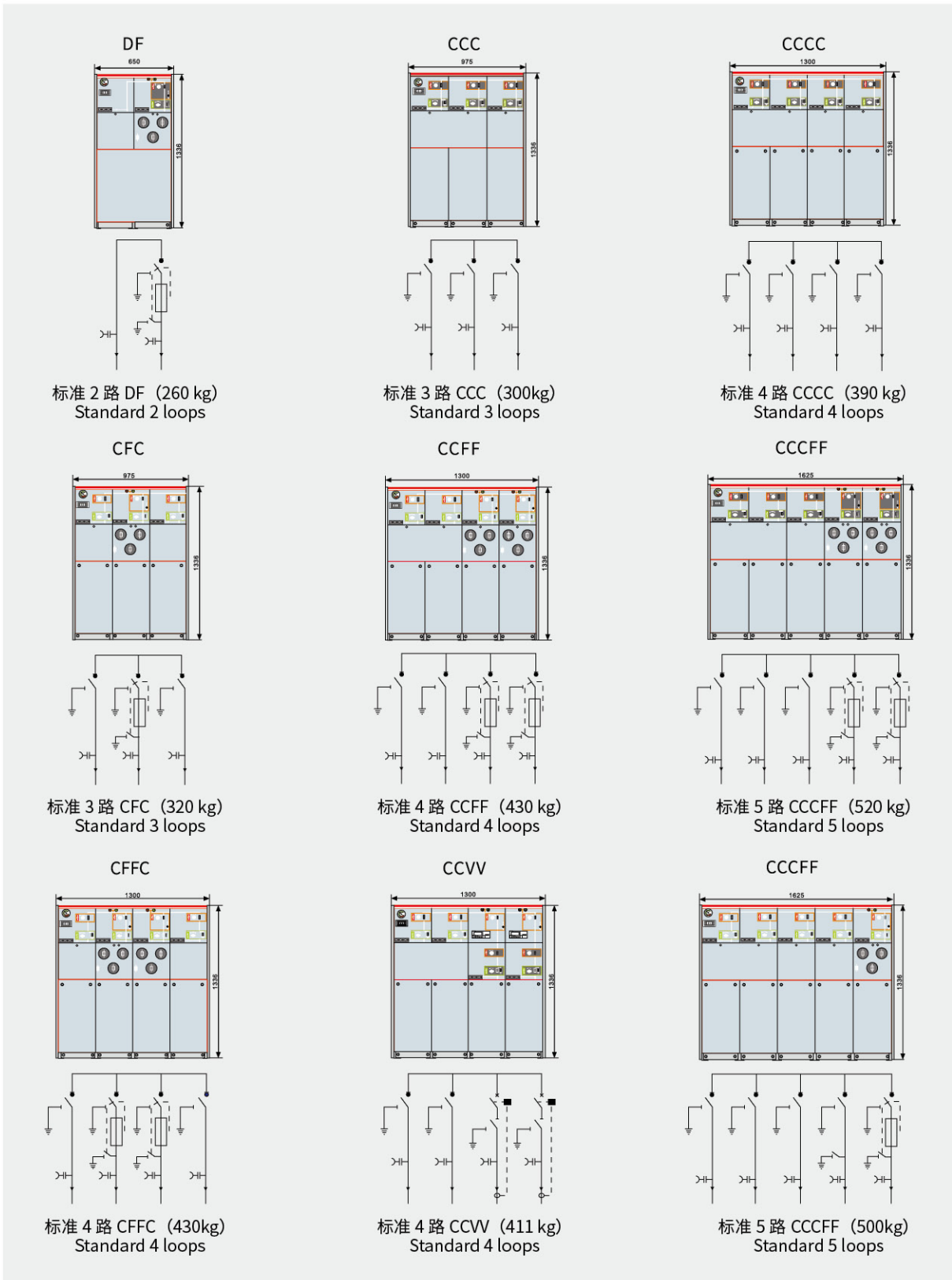
A total of the following 15 standard combinations

Each module of XGN □ -12 non-expansion standard modular unit cabinets has the following configuration

- ◇ D cabinet a lifting module
Standard Configuration and Features of "Cable Connection Module without Grounding Knife"
- ◇ C cabinet one load switch touch block
Standard Configuration and Characteristics in "Load Switch Modular Block"
- ◇ F cabinet-load switch fuse assembly cross section
"Standard Configuration and Features of Load Switch Fuse Combination Module"
- ◇ V cabinet vacuum switch cross piece
Standard Configuration and Features in "Vacuum Switch Module"
- ◇ Capacitive Voltage Indicator for Inlet Sleeve
- ◇ Install a pressure gauge for monitoring SF6 density in each air chamber
- ◇ Lifting lug
- ◇ Operation handle
- ◇ Optional
Electric operating mechanism
Cable short circuit and ground fault indicator
Current transformers and meters
Remote monitoring and connection



▶ 非扩展标准模块 Non-extended standard modules



高压开关设备系列 High voltage switch equipment series

XGN □ -40.5KV

全封闭全绝缘充气式环网开关设备

Totally enclosed and fully insulated inflatable ring network switching equipment

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

XGN □ -40.5 系列环网柜提供了 10 种标准组合形式，能够适应大多数 36~40.5kV 配电网的应用要求。XGN □ -40.5 是紧凑型开关柜，可以提供所选功能单元的几乎是任意的组合。

XGN □ -40.5 系列具有接口和用户界面，提供了 36~ 40.5kV 二次配电网中完整的开关应用解决方案。

XGN □ -40.5 系列的不锈钢气室内部充满了 SF6 气体，将所有带电部件与开关完全密封，与外界隔绝。这种全密封系统使内部开关和所有带电部分不受外部环境变化的影响，确保了可靠性高、人员安全以及实际上的免维护。

XGN □ -40.5 series ring network cabinets provide 10 standard combination forms, which can meet the application requirements of most 36~40.5kV distribution networks. XGN □ -40.5 is a compact switch cabinet, which can provide almost any combination of selected functional units.

XGN □ -40.5 series has interface and user interface, and provides a complete switch application solution in 36~ 40.5kV secondary distribution network.

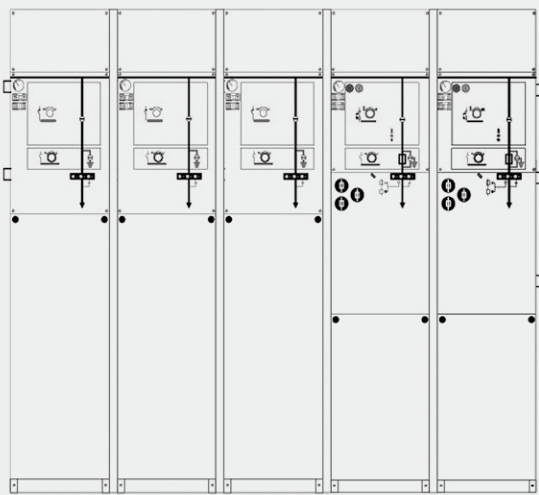
XGN □ -40.5 series stainless steel gas chamber is filled with SF6 gas, which completely seals all live parts with switches and isolates them from the outside world. This fully sealed system makes the internal switch and all live parts not affected by the change of external environment, and ensures high reliability, personnel safety and maintenance-free in practice.

使用场所 Place of use

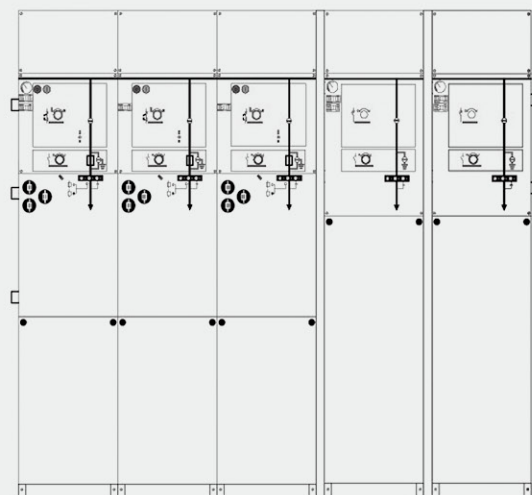
- | | |
|--|--|
| ◇ 紧凑型二次变电所 | ◇ D- 直接电缆连接单元 |
| ◇ 小型工矿企业 | ◇ De- 带接地开关的直接电缆连接单元 |
| ◇ 风力发电厂 | ◇ F- 负荷开关 - 熔断器组合电器单元 |
| ◇ 酒店、商场、办公楼、商业中心等 | ◇ V- 真空断路器单元 |
| ◇ C- 负荷开关单元 | |
| ◇ Compact secondary substation | ◇ D- direct cable connection unit |
| ◇ Small industrial and mining enterprises | ◇ De- Direct cable connection unit with grounding switch |
| ◇ Wind power plant | ◇ F- load switch-fuse combined electrical unit |
| ◇ hotels, shopping malls, office buildings, commercial centers, etc. | ◇ V- vacuum breaker unit |
| ◇ C- load switch unit | |

XGN □ -40.5 应用 XGN □ -40.5 application

XGN □ -40.5 紧凑型开关柜，全模块化设计，典型配置
XGN □ -40.5 compact switchgear, fully modular design, typical configuration



XGN □ -40.5 紧凑型开关设备，典型配置
XGN □ -40.5 compact switchgear, typical configuration



高压开关设备系列 High voltage switch equipment series

XGN-12

智能固体绝缘柜

Intelligent solid insulation cabinet

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



▶ 概述 Overview

XGN-12 系列固体全绝缘封闭式环网开关设备是一种全绝缘、全密封、免维护的固体绝缘真空开关设备。所有高压带电部分均用绝缘性能优良的环氧树脂材料浇注成型，将真空灭弧室、主导电回路、绝缘支撑等有机结合为一整体，功能单元通过全绝缘固体汇流母线连接。因此，整个开关设备不受外部环境影响，可确保设备运行的可靠性和操作人员的安全性。

该环网柜具有结构简单、操作灵活、联锁可靠、安装方便等特点，适用于 50Hz，12 千伏的电力系统，广泛应用于工业及民用电缆环网及配网终端工程，作为电能的接受和分配之用，特别适用于城市居民区配电、小型变电站、开闭所、电缆分支箱、箱式变电站、工矿企业、商场、机场、地铁、风力发电、医院、体育场、铁路、隧道等场所使用。

由于该产品具有全绝缘、全密封、全屏蔽的优点，所以特别适用于高海拔、高温、湿热、严寒、污染严重等环境恶劣的地区使用。

XGN-12 series solid all-insulated closed ring network switchgear is a kind of solid insulation vacuum switchgear with full insulation, full seal and maintenance-free. All high-voltage live parts are insulated. Excellent epoxy resin material is cast and molded, which organically combines the vacuum arc extinguishing chamber, main electric circuit and insulation support into a whole, and the functional units are connected by fully insulated solid bus bars. Therefore, the whole Each switchgear is not affected by external environment, which can ensure the reliability of equipment operation and the safety of operators.

The ring network cabinet has the characteristics of simple structure, flexible operation, reliable interlocking and convenient installation. It is suitable for 50Hz and 12 kV power systems and is widely used in industrial and civil cable ring networks and distribution Network terminal engineering, as the receiving and distribution of electric energy, is especially suitable for power distribution in urban residential areas, small substations, opening and closing stations, cable branch box, box-type substations, industrial and mining enterprises, shopping malls and machines Field, subway, wind power generation, hospitals, stadiums, railways, tunnels and other places.

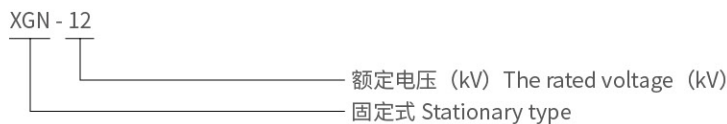
Because the product has the advantages of full insulation, full sealing and full shielding, it is especially suitable for high altitude, high temperature, damp heat, severe cold and severe pollution.

▶ 产品分类 Cotegory

根据开关类型，分为负荷开关带接地组装件（简称 C 模块），负荷开关不带接地组装件（简称 CB 模块），断路器带接地组装件（简称 V 模块），断路器不带接地组装件（简称 VB 模块），断路器联络开关（简称 VZ 模块），负荷开关 + 熔断器组合电器开关组装件（简称 F 模块），隔离开关组装件（简称 G 模块）。

According to switch types, it is divided into load switch with grounding assembly (c module for short), load switch without grounding assembly (CB module for short) and circuit breaker with grounding assembly (v module for short). Circuit breaker without grounding assembly (VB module for short), circuit breaker contact switch (VZ module for short), load switch+fuse combination electrical switch assembly (F module for short) and isolating switch assembly (g module for short).

▶ 型号及含义 Model and meaning



▶ 使用条件 Conditions of use

- ◇ 环境温度：-45°C ~+45°C；
- ◇ 湿度：最大平均相对湿度，日平均≤ 95%、月平均≤ 90%；
- ◇ 海拔高度：≤ 2000 米；
- ◇ 抗震能力：8 度；
- ◇ 防护等级：带电体密封 IP67，熔断器筒 IP67，开关柜外壳 IP3X。
- ◇ Ambient temperature: -45°C ~+45°C；
- ◇ Humidity: maximum average relative humidity, with daily average ≤ 95% and monthly average ≤ 90%；
- ◇ Altitude: ≤ 2000 meters；
- ◇ Seismic resistance: 8 degrees；
- ◇ Protection grade: live body seal IP67, fuse barrel IP67, switch cabinet shell IP3X。

▶ 应用领域 Application field

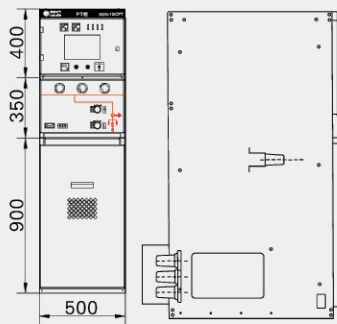
- ◇ 低温寒冷地区: 无 SF6 气体应用, 无需考虑 SF6 气体低温运行问题, 在 -45°C 下也能正常运行;
 - ◇ 高原地区: 无需考虑高原大气压对绝缘性能的影响;
 - ◇ 强风沙地区: 固体绝缘环网柜本体安全防护等级 IP67, 控制回路室采用特殊处理确保强风沙地区长期运行;
 - ◇ 沿海潮湿地区: 环氧树脂密封, 抗潮湿, 抗盐雾腐蚀, 确保在沿海地区能长期使用;
 - ◇ 高环保要求地区: SF6 气体对大气温暖化影响已经高度引起重视, 固体环网柜取消了 SF6 气体, 对环境 and 人身无任何污染和伤害;
 - ◇ 智能电网中: 由于主开关, 隔离开关都能实现电动, 选配本公司研发的智能控制器, 可对开关设备和变电站现场进行遥控、遥测、通讯, 既能进行分散控制, 又能方便集中控制。
- ◇ Low temperature and cold area: there is no application of SF6 gas, so it can run normally at -45°C without considering the low temperature operation of SF6 gas;
- ◇ Plateau area: it is unnecessary to consider the influence of plateau atmospheric pressure on insulation performance;
- ◇ Strong sandstorm area: The safety protection level of solid insulation ring network cabinet body is IP67, and the control loop room adopts special treatment to ensure long-term operation in strong sandstorm area;
- ◇ Coastal wet pool area: sealed with epoxy resin, resistant to moisture and salt spray corrosion, ensuring long-term use in coastal areas;
- ◇ Areas with high environmental protection requirements: The influence of SF6 gas on atmospheric warming has been paid great attention to, and SF6 gas has been eliminated in solid ring network cabinets, thus causing no pollution and harm to the environment and people;
- ◇ In smart grid: since the main switch and isolating switch can be electrically operated, the intelligent controller developed by our company can be selected for remote control, telemetry and telecommunication of switching equipment and substation site, which can not only carry out decentralized control, but also facilitate centralized control.

▶ 主要技术参数 The main technical parameters

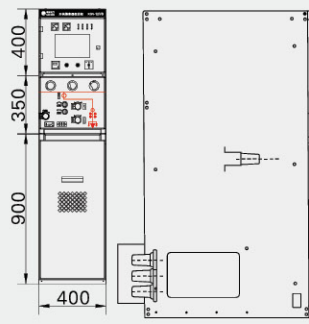
项目 Item	单位 Unit	参数 Parameter
常规 Conventional		
额定电压 Rated voltage	kV	12
额定频率 Rated frequency	Hz	50
工频耐压 Power frequency withstand voltage	kV/min	42/48
雷电冲击电压 Lightning impulse withstand voltage	kV	75/85
燃弧持续时间 Arc duration	s	≥ 0.5
一次部件防护等级 (计量柜除外) Protection grade of primary components(except metering cabinet)		IP67
柜体防护等级 Cabinet protection level		IP4X
隔间防护等级 Protection level between compartments		IP2X
操作电源电压 Operating supply voltage	V	DC24、48、110、220 AC110、220
母线系统 Busbar system		
额定电流 Rated current	A	630(1250)
额定短时耐受电流 Rated short-time withstand current	kA/s	20/4(25/4)
额定峰值耐受电流 Rated withstand current peak	kA	50(63)
额定峰值耐受电流 Rated peak withstand c	kA	50
负荷开关单元 Load switch unit		
额定电流 Rated current	A	630
额定短路关合电流 Rated short circuit closing current	kA	50
额定短时耐受电流 Rated short-time withstand current	kA/S	20/4
负荷开关机械寿命 Mechanical life of load switch	次 times	
负荷开关电气寿命 Electrical life of load switch	次 times	E3
局部放电 Partial discharge	PC	≤ 5
断路器单元 Circuit breaker unit		
额定电流 Rated current	A	630(1250)
额定短路开断电流 Rated short circuit breaking current	kA	20(25)

项目 Item	单位 Unit	参数 Parameter
额定短路关合电流 Rated short circuit closing current	kA	50(63)
额定短时耐受电流 Rated short-time withstand current	kA/S	20/4(25/4)
断路器机械寿命 Mechanical life of circuit breaker	次 times	20000
断路器电气寿命 Circuit breaker electrical life	次 times	E2
额定操作顺序 Rated operating sequence		O-0.3s-co-180s-CO
局部放电 Partial discharge	PC	≤ 5
负荷开关 - 熔断器组合电气单元 Load switch-Fuse combination electric unit		
额定电流 (最大) Rated current (maximum)	A	200
额定短路开断电流 Rated short circuit breaking current	kA	31.5
额定短路关合电流 Rated short circuit closing current	kA	80
局部放电 Partial discharge	PC	3150
隔离开关 Isolating switch		
额定电流 Rated current	A	630/1250
额定短时耐受电流 Rated short-term withstand current	kA	20/25
额定短时持续时间 Rated short time duration	s	4
额定峰值耐受电流 Rated withstand current peak	kA	50/63
机械寿命 Mechanical life	次 times	3000
接地开关 Earthing switch		
额定电流 Rated current	A	630/1250
额定短时耐受电流 Rated short-time withstand current	k	20/25
额定短时持续时间 Rated short duration	s	4
额定峰值耐受电流 Rated peak withstand current	k	50/63
额定短路关合电流 (峰值) Rated short-circuit closing current (Peak value)	kA	50
额定短路关合电流次数 Rated short circuit closing current times	次 times	2
机械寿命 Mechanical life	次 times	3000

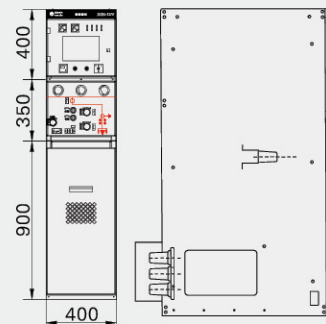
▶ 外形尺寸 Dimensions



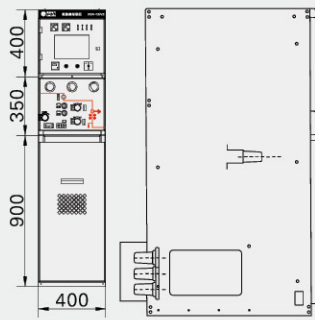
500*950*1650
带负荷开关的 PT 柜
PT cabinet with load switch



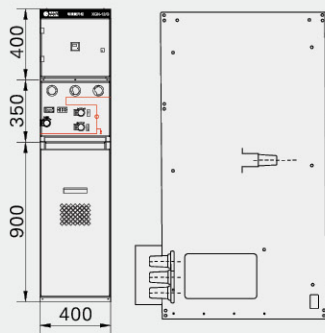
400*950*1650
断路器柜
Circuit breaker cabinet



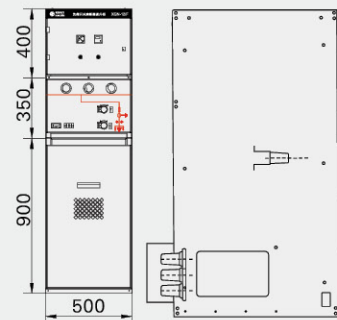
400*950*1650
断路器柜
Circuit breaker cabinet



400*950*1650
断路器母联柜
Circuit breaker bus coupler cabinet

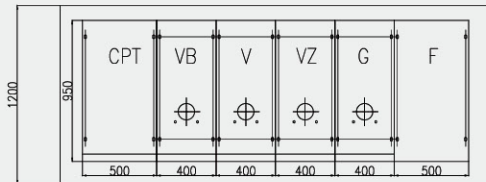
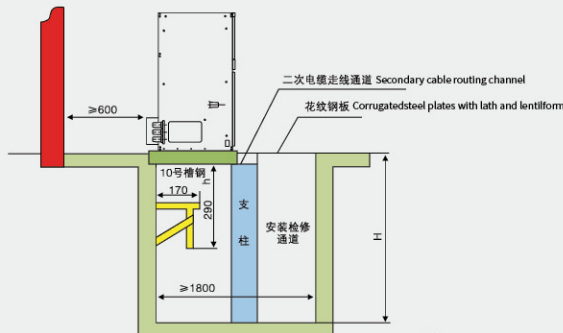
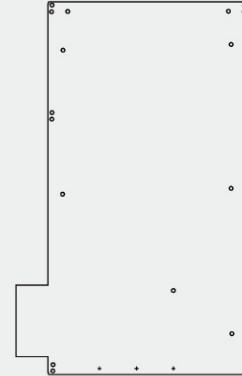
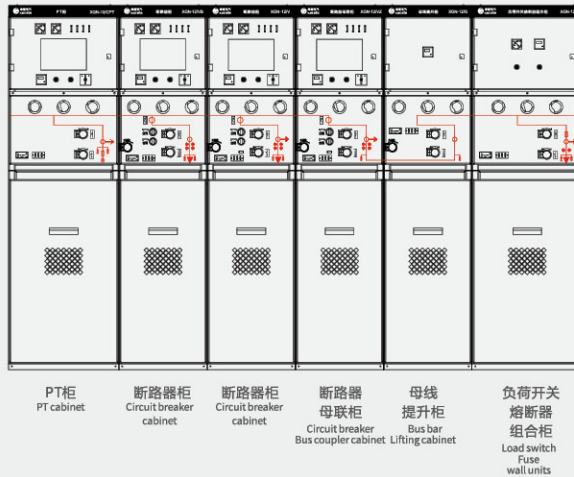


400*950*1650
母线提升柜
Bus lifting cabinet



500*950*1650
负荷开关熔断器组合柜
Load switch fuse combination cabinet

▶ 外形尺寸 Dimensions



注:

- 1、混凝土垫层底部应素土夯实;
- 2、开关柜总长不超过 2 米可不加支柱, 但开关柜总长超过 2 米时, 每隔 2 米跨度需加一支柱;
- 3、图中柜后 ≥ 600 空间为开关柜泄压通道故一组开关柜, 柜后两端需加防护栅;
- 4、图中 H 根据最大电缆弯曲半径而定。

Note:

1. The bottom of the concrete cushion should be plain soil compaction;
2. The total length of the switch cabinet does not exceed 2 meters, but when the total length of the switch cabinet exceeds 2 meters, one pillar should be added every 2 meters span;
3. In the figure, the space ≥ 600 behind the cabinet is the pressure relief channel of the switch cabinet, so a group of switch cabinets need to be equipped with protective barriers at both ends behind the cabinet;
4. H in the drawing is determined according to the maximum bending radius of cable.

高压开关设备系列 High voltage switch equipment series

XCHBN-12

节能环保型全绝缘环网柜

Energy-saving and environment-friendly full insulation ring network cabinet

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



▶ 概述 Overview

20 世纪 50 年代以来，中压开关设备发展经历了敞开式、箱式、金属封闭式等阶段，在满足设备的功能性使用要求方面已经不存在任何问题，而且产品早已系列化和使用范围全覆盖。体积小、免维护、高模块化、安全可靠的环保气体绝缘环网柜快速发展，可实现对电力系统配电网络的远程监测、控制、管理，实现了电网优化、用电安全、电能管理、节能降耗的需求；系统同时可广泛应用于交通、工厂、医院、学校、建筑、住宅小区及商用写字楼等智能配电领域。

XCHBN-12 节能环保型全绝缘环网柜全面引进领先的生产设备及制造技术，实现本地化生产，大大降低了制造成本，缩短了交货周期，推出后深受用户好评。

Since 1950s, the development of medium voltage switchgear has gone through open, box and metal closed stages. There is no problem in meeting the functional requirements of the equipment, and the products have already been serialized and the scope of use has been fully covered. The environment-friendly gas insulated ring network cabinet with small size, maintenance-free, high modularity, safety and reliability has developed rapidly, which can realize remote monitoring, control and management of power system distribution network, and realize the needs of power grid optimization, electricity safety, power management, energy saving and consumption reduction; At the same time, the system can be widely used in intelligent power distribution fields such as transportation, factories, hospitals, schools, buildings, residential quarters and commercial office buildings.

XCHBN-12 energy-saving and environment-friendly all-insulated ring network cabinet has fully introduced leading production equipment and manufacturing technology, realized localized production, greatly reduced manufacturing cost and shortened delivery cycle, and was well received by users after its launch.

▶ 产品特点 Product features

◇ 功能复合、一体化产品

开关设备的充气壳体采用高品质的厚 2.5mm 不锈钢板通过激光焊接而成，保证气箱密闭可靠性，机械强度高，耐腐蚀性好，充气壳体的防护等级达到 IP67；气箱装有防爆膜片，能有效防止气压过高时对人和设备造成的损害；将全部导电部件封闭在气箱当中，既能避免外界环境因素的影响，又能提高运行可靠性，使其具备免维护（或少维护）的功能，同时还能符合体积小化要求。

开关采用三工位（隔离 + 接地）+ 真空灭弧室，该结构是目前技术最成熟的配置方式，特别适合目前电网运行维护需求。

◇ 环保、无污染

XCHBN-12 序列充气柜的绝缘介质是零级干燥空气（外购）或符合 GB/T 8979-2008 的 99.99% 纯 N₂，气体的泄露对外界环境不会造成任何影响，无需进行任何回收处理。

◇ 完善的机械连锁

XCHBN-12 序列充气柜的操作面板具有完善的五防机械连锁功能，所有的连锁功能都在内部已配置好，操作时请按操作说明顺序操作，使用非常方便。

◇ 灵活的拓展化设计

XCHBN-12 序列充气柜为模块化设计，可以将各种模块通过专用的母线连接件，实现多样化的单元组合，最大限度的满足中国各个地方复杂多样的配电设计方案。

◇ Functional composite and integrated products

The inflatable shell of switch equipment is made of high-quality stainless steel plate with thickness of 2.5mm by laser welding, which ensures the sealing reliability of air box, high mechanical strength and good corrosion resistance, and the protection level of inflatable shell reaches IP67; ; The gas box is equipped with explosion-proof membrane, which can effectively prevent the damage to people and equipment when the air pressure is too high; Sealing all conductive parts in the air box can not only avoid the influence of external environmental factors, but also improve the operation reliability, so that it has the function of maintenance-free (or less maintenance), and can also meet the requirements of miniaturization.

The switch adopts three stations (isolation+grounding)+vacuum arc extinguishing chamber, which is the most mature configuration mode at present, especially suitable for the current power grid operation and maintenance requirements.

◇ Environmental protection and no pollution

The insulating medium of XCHBN-12 series inflatable cabinets is zero-grade dry air (purchased) or 99.99% pure N₂ conforming to GB/T 8979-2008. The leakage of gas will not cause any impact on the external environment, and no recovery treatment is needed.

◇ Complete mechanical chain

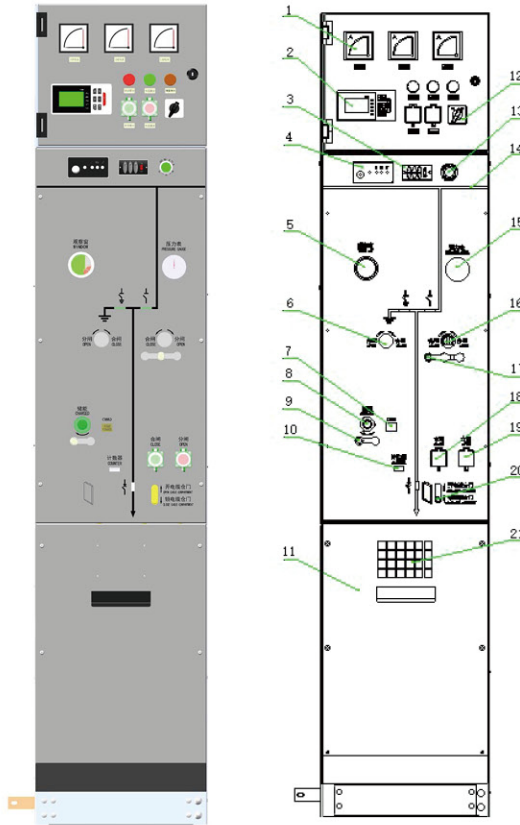
The operating panel of XCHBN-12 series inflatable cabinet has perfect five-prevention mechanical interlocking function, and all interlocking functions have been configured internally. Please operate according to the operating instructions in order to make it very convenient to use.

◇ Flexible and expanded design

XCHBN-12 series inflatable cabinets are modular in design, and various modules can be combined with various units through special bus connectors, so as to meet the complex and diverse power distribution design schemes in various places in China to the maximum extent.

▶ 产品结构 Product mix

1. 电流表
2. 微机综合保护装置
3. 容性带电指示器
带电指示器显示套管是否带电，指示灯下方三个插孔可用于二次核相。带电指示器设置开关按钮，有效延长了使用寿命。
4. 故障指示器
检测供电线路中电流，当出现短路故障电流、接地故障电流时出现报警指示。
5. 隔离观察窗
通过此观察窗，可以看到接地开关的分合闸情况以及隔离开关是处于合闸还是分闸
6. 接地开关操作孔
利用操作手柄转动接地开关操作轴，可对接地进行分、合闸操作
7. 主开关储能指示
观察主开关储能指示可以掌握主开关操作机构的储能情况
8. 储能操作孔
利用操作手柄转动储能机构轴，令主开关操作机构储能。
9. 储能操作孔挂锁装置
挂锁装置联动的挂锁板将储能操作孔遮挡，只有拨动挂锁装置才可以将操作手柄插入操作孔。不操作时可配置挂锁，防止非授权人员误操作。
10. 计数器指示
指示主开关操作机构的累积合分闸次数。
11. 电缆室门
12. 远方 / 就地转化开关
通过远方 / 就地转化开关实现设备所在地的控制和后台控制之间的控制方式的转换。
13. 隔离照明按钮
通过观察窗照明按钮控制照明灯的开关。
14. 模拟线路图
指示主开关及接地开关处于合闸还是分闸
15. 气压表
显示气箱内部相对外部的气压值。
16. 隔离开关操作孔
利用操作手柄转动隔离开关操作轴，可对隔离开关进行分、合闸操作
17. 隔离开关操作孔和接地开关操作孔挂锁装置
挂锁装置联动的挂锁板将接地开关操作孔或隔离操作孔遮挡，只有拨动挂锁装置才可以将操作手柄插入接地开关操作孔或隔离开关操作孔。不操作时可配置挂锁，防止非授权人员误操作。
18. 主开关合闸按钮
可通过合闸按钮对主开关进行合闸操作
19. 主开关分闸按钮
可通过分闸按钮对主开关进行分闸操作
20. 柜门连锁装置
电缆室门与接地开关互锁。当装有互锁机构时，只有在接地开关处于接地合闸以及柜门连锁拉至解锁位置，电缆室门才可打开，柜门打开后，开关将无法操作。
21. 电缆室观察窗
1. Ammeter
2. Microcomputer integrated protection device
3. Capacitive live indicator The live indicator shows whether the casing is live, and the three sockets below the indicator can be used for secondary nuclear phase. The live indicator is provided with a switch button, which effectively prolongs the service life.
4. Fault indicator Detect the current in the power supply line, and give an alarm indication when short-circuit fault current and ground fault current appear.
5. Isolate the observation window Through this observation window, you can see the opening and closing of the grounding switch and whether the isolating switch is closing or opening.
6. Grounding switch operation hole Use the operating handle to turn the operating shaft of the grounding switch to open and close the grounding.
7. Main switch energy storage indication Observing the energy storage indication of the main switch can grasp the energy storage situation of the operating mechanism of the main switch .
8. Energy storage operation hole Use the operating handle to rotate the shaft of the energy storage mechanism, so that the main switch operating mechanism can store energy.
9. Padlock device for energy storage operation hole The padlock plate linked with the padlock device shields the energy storage operation hole, and the operation handle can be inserted into the operation hole only by toggling the padlock device. Padlocks can be configured when not in operation to prevent unauthorized personnel from misoperation.
10. counter indication Indicates the cumulative opening and closing times of the main switch operating mechanism.
11. Cable room door
12. Remote/local conversion switch The remote/local conversion switch is used to realize the conversion of control mode between local control and background control.
13. Isolated lighting button The switch of illumination lamp is controlled by the illumination button of observation window.
14. Analog circuit diagram Indicates whether the main switch and grounding switch are on or off
15. barometer Displays the air pressure inside the air box relative to the outside.
16. Operating hole of isolating switch
The isolating switch can be opened and closed by turning the operating shaft of the isolating switch with the operating handle
17. padlock device for isolating switch operation hole and grounding switch operation hole The padlock plate linked by padlock device blocks the grounding switch operation hole or isolation operation hole, and only by toggling the padlock device can the operation handle be inserted into the grounding switch operation hole or isolation switch operation hole. Padlocks can be configured when not in operation to prevent unauthorized personnel from misoperation.
18. the main switch closing button The main switch can be closed by the closing button
19. main switch opening button The main switch can be opened by opening button
20. Cabinet door interlocking device The cable room door is interlocked with the grounding switch. When the interlocking mechanism is installed, the cable room door can only be opened when the grounding switch is in the grounding closing position and the cabinet door is interlocked and pulled to the unlocking position. After the cabinet door is opened, the switch cannot be operated.
21. cable room observation window



型号及含义 Model and meaning

XCHBN □ - 12 (□) / T □ - □

- 额定短路开断 / 额定短时耐受电流 (kA)
Rated short circuit breaking / rated short-time withstand current (kA)
- 额定电流 (A) Rated current (A)
- 操动机构类型 (弹操) Type of operating mechanism (elastic operation)
- 主开关类型 (Z: 真空断路器) (F: 真空负荷开关) (F·R: 真空负荷开关—熔断器组合电器) Main switch type (z: vacuum circuit breaker) (f: vacuum load switch) (f r: vacuum load switch-fuse combination appliance)
- 额定电压 (kV) (用十位和个位数表示)
Rated voltage (kV) (expressed in ten digits and single digits)
- 设计序号 Design serial number
- 企业型号 Enterprise model

注：企业型号定义如下

XCHBN-E-V: 可扩展断路器方案

XCHBN-E-C: 可扩展负荷开关方案

XCHBN-E-T: 可扩展负荷开关—熔断器组合电器方案

XCHBN-V/C/C: 不可扩展断路器 + 负荷开关 + 负荷开关三单元共箱方案

Note: the enterprise model is defined as follows

XCHBN-E-V: scalable circuit breaker scheme

XCHBN-E-C: scalable load switch scheme

XCHBN-E-T: expandable load switch-fuse combination electrical appliance scheme

XCHBN-V/C/C: non-expandable circuit breaker+load switch+load switch three-unit common box scheme

▶ 使用环境 Operational environment

- ◇ 海拔高度: ≤ 2000m (安装海拔高度超过 2000m) ;
- ◇ 环境温度: 最高温度: 40°C; 最低温度: -40°C; 24h 内平均气温不超过 35°C ;
- ◇ 环境湿度: 24h 相对湿度平均不超过 95%; 月相对湿度平均值不超过 90% ;
- ◇ 安装环境: 周围空气没有爆炸性和腐蚀性气体, 安装场所无剧烈振动冲击 ;
- ◇ 抗震裂度: 8 度。
- ◇ Altitude: ≤ 2000m (installation altitude exceeds 2000m);
- ◇ Ambient temperature: Maximum temperature: 40 °C ; Minimum temperature:-40 °C ; The average temperature within 24 hours does not exceed 35°C ;
- ◇ Ambient humidity: the average relative humidity within 24 hours does not exceed 95%; The average monthly relative humidity does not exceed 90%;
- ◇ Installation environment: there is no explosive and corrosive gas in the surrounding air, and there is no severe vibration impact in the installation site;
- ◇ Seismic cracking degree: 8 degrees.

▶ 依据标准 According to standards

GB/T 11022—2011 高压开关设备和控制设备标准的公用技术要求	JB/T 3855—2008 3.6kV ~ 40.5kV 户内交流高压真空断路器
GB 3906—2006 3.6kV ~ 40.5kV 交流金属封闭开关设备和控制设备	GB 4208—2008 外壳防护等级 (IP 代码)
GB 1984—2014 高压交流断路器	GB/T 4205—2010 人机界面 (MMI) —操作规则
GB 3804—2004 3.6kV ~ 40.5kV 高压交流负荷开关	GB/T 6388—1986 运输包装收发货标志
GB 16926—2009 高压交流负荷开关—熔断器组合电器	GB 9969—2008 工业产品使用说明总则
GB 1985—2014 高压交流隔离开关和接地开关	GB/T 13384—2008 机电产品包装通用技术条件
GB 3309-1989 高压开关设备常温下的机械试验	GB/T 14436—1993 工业产品保证文件总则
DL/T404-2007 3.6kV-40.5kV 交流金属封闭开关设备和控制设备	GB/T 191—2008 包装储运图示标志
Common technical requirements of GB/T 11022—2011 high voltage switchgear and control equipment standard	JB/T 3855—2008 3.6 kV ~ 40.5 kV Indoor AC High Voltage Vacuum Circuit Breaker
GB 3906—2006 3.6 kV ~ 40.5 kV AC metal enclosed switchgear and control equipment	GB4208-2008 enclosure protection level (IP code)
GB 1984—2014 high voltage AC circuit breaker	GB/T 4205—2010 man-machine interface (MMI)— operating rules
GB 3804—2004 3.6 kv ~ 40.5 kv high voltage AC load switch	GB/T 6388—1986 marks of receipt and delivery of transport packages
GB 16926—2009 high voltage AC load switch-fuse combination electrical appliance	GB 9969—2008 general instructions for industrial products
GB 1985—2014 high voltage AC isolating switch and grounding switch	GB/T 13384—2008 general technical conditions for packaging of mechanical and electrical products
Mechanical test of high voltage switchgear at room temperature	GB/T 14436—1993 general principles of industrial product guarantee documents
DL/T404-2007 3.6kV-40.5kV AC metal enclosed switchgear and control equipment	GB/T 191—2008 graphic signs of packaging, storage and transportation

▶ 技术参数 Technical parameter

XCHBN-12 序列环保气体绝缘环网开关设备主要技术参数表

Table of main technical parameters of XCHBN-12 series environmental protection gas insulated ring network switchgear

项目 Project		单位 Unit	断路器 Circuit breaker	负荷开关 Load switch
额定电压 Nominal voltage		kv	12	12
额定电流 Rated current		A	630	630
额定频率 Rated frequency		Hz	50	50
额定绝缘水平 Rated insulation level	1min 工频耐压 (相间及相对地) 1min power frequency withstand voltage (phase-to-phase and relative ground)	kv	42	42
	1min 工频耐压 (隔离断口) 1min power frequency withstand voltage (isolated fracture)		48	48
	工频耐压 (控制和辅助回路) Power frequency withstand voltage (control and auxiliary circuit)		2	2
	雷电冲击耐压 (相间及相对地) Lightning impulse withstand voltage (interphase and relative ground)		75	75
	雷电冲击耐压 (隔离断口) Lightning impulse withstand voltage (isolated fracture)		85	85
额定短路开断电流 Rated short circuit breaking current		KA	20	-
额定短路关合电流 Rated short-circuit closing current		KA	50	50
额定短时耐受电流 Rated short-term withstand current		KA	20	20
额定短路持续时间 Rated short-circuit duration		s	4	4
额定峰值耐受电流 Rated peak withstand current		KA	50	50
交接电流 / 转移电流 Transfer current / transfer current		A	-	-
额定操作顺序 Rated operating sequence		-	O—0.3s—CO—180s—CO	
额定充气压力 (20°C时表压) Rated inflation pressure (gauge pressure at 20°C)		MPa	0.02	
最小功能压力 (20°C时表压) Minimum functional pressure (gauge pressure at 20°C)		MPa	0	
压力释放装置释放压力 (20°C时表压) Pressure release device releases pressure (gauge pressure at 20°C)		MPa	0.16	
年漏气率 Annual air leakage rate		-	≤ 0.01%	
机械寿命 Mechanical life		次	10000	10000
主回路电阻 Main circuit resistance		μΩ	≤ 150	≤ 150

以上参数满足国家电网公司、南方电网公司及江苏省电力公司 12kV 环网开关设备 II 类接地系统技术规范，全面兼容不同的中性点接地方式。

配合 XCHBN-12 序列 12kV 电缆附件可实现三路电缆连接组合或两路电缆加一路避雷器连接组合。

备注：I 类：中性点经低电阻接地系统；II 类：中性点经消弧线圈接地或不接地系统。

The above parameters meet the technical specifications of Class II grounding system of 12kV ring network switchgear of State Grid Corporation, China Southern Power Grid Corporation and Jiangsu Electric Power Company, and are fully compatible with different neutral grounding methods. With XCHBN-12 serial 12kV cable accessories, three cable connection combinations or two cables plus one lightning arrester connection combination can be realized. Remarks: Class I: neutral point grounding system with low resistance; Class ii: system with neutral point grounded or ungrounded via arc suppression coil.

基本单元方案 Basic unit scheme

负荷开关单元 C

标准配置与特性:

- 630A 母线
- 真空负荷开关
- 真空负荷开关手动操作机构
- 三工位隔离开关
- 三工位隔离开关手动操作机构
- 负荷开关和三工位隔离开关位置指示牌
- 电缆连接套管
- 显示套管带电的容性电压指示器
- 压力表
- 挂锁装置
- 柜体
- 接地母排
- 操作手柄

可选配置与特性:

- 真空负荷开关电动操作机构
- 短路及接地故障指示器
- 可分离连接器 (电缆接头)
- 避雷器
- 进线带电接地闭锁装置
- 钥匙机械互锁装置
- 环形电流互感器

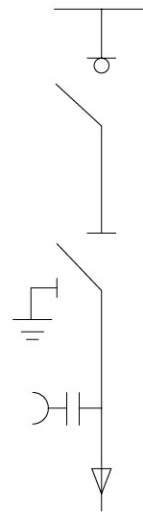
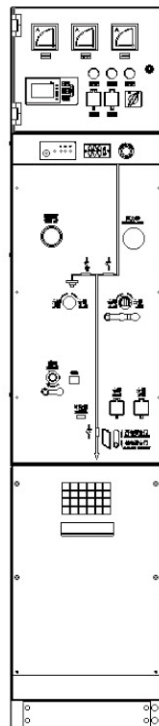
The load switch unit C

Standard configuration and features:

- 630A bus
- Vacuum load switch
- Manual operating mechanism of vacuum load switch
- Three-station isolating switch
- Manual operating mechanism of three-station isolating switch
- Position indicator of load switch and three-station isolating switch
- Cable connecting sleeve
- Capacitive voltage indicator showing the electrification of bushing
- Pressure gage
- Padlock device
- Cabinet
- Grounding bus bar
- Operating handle

Optional configurations and features:

- Electric operating mechanism of vacuum load switch
- Short circuit and ground fault indicator
- Detachable connector (cable joint)
- Lightning arrester
- Live grounding locking device for incoming line
- Mechanical interlocking device of key
- Ring current transformer



▶ 真空断路器单元 V Vacuum circuit breaker unit V

标准配置与特性:

630A/1250A 母线

真空开关

真空开关电动操作机构

三工位隔离开关

三工位隔离开关手动操作机构

真空开关和三工位隔离开关位置指示牌

电缆连接套管

显示套管带电的容性电压指示器

压力表

挂锁装置

柜体

接地母排

操作手柄

电流互感器 (保护专用)

数字式继电器保护装置

Standard configuration and features:

Bus 630A/1250A

Vacuum switch

Electric operating mechanism of vacuum switch

Three-station isolating switch

Manual operating mechanism of three-station isolating switch

Position indicator of vacuum switch and three-station isolating switch

Cable connecting sleeve

Capacitive voltage indicator showing the electrification of bushing

Pressure gage

Padlock device

Cabinet

Grounding bus bar

Operating handle Current transformer (special for protection)

Digital relay protection device

可选配置与特性:

短路及接地故障指示器

可分离连接器 (电缆接头)

避雷器

进线带电接地闭锁装置

钥匙机械互锁装置

环形电流互感器及表计

Optional configurations and features:

Short circuit and ground fault indicator

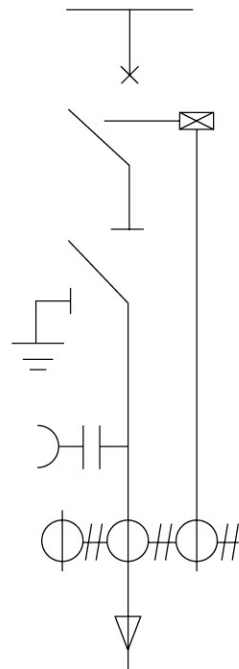
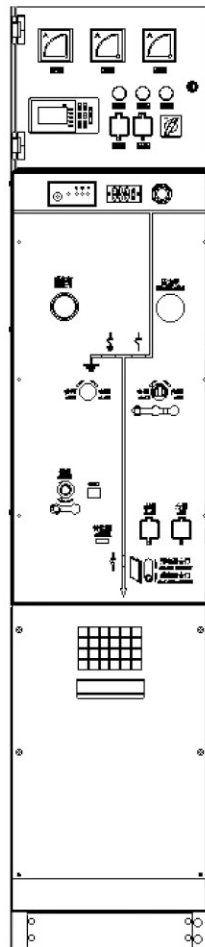
Detachable connector (cable joint)

Lightning arrester

Live grounding locking device for incoming line

Mechanical interlocking device of key

Annular current transformer and meter



▶ **核心元器件技术简介——主开关设计** Brief introduction of core components technology-main switch design

a、简洁的一次回路设计，均匀的电场分布结构、无需较多的复合绝缘、具有宽敞的气箱空间，满足良好的散热对流；

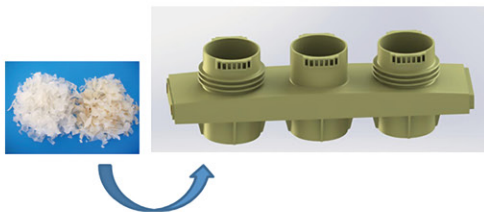
b、使用机械强度高、耐热性能优良的可回收再利用的环保热塑性材料，通过一次注射成型的三相整体真空灭弧室骨架替代环氧浇筑真空灭弧室骨架，具有结构简单、场强均匀、绝缘性能好、生产效率高、少调整、易装配等诸多优点；

c、低压力、大空间，正常充气表压力为 0.02MPa，最低功能压力为零表压；

a、Simple primary circuit design, uniform electric field distribution structure, no need for more composite insulation, and spacious air box space to meet good heat dissipation and convection;

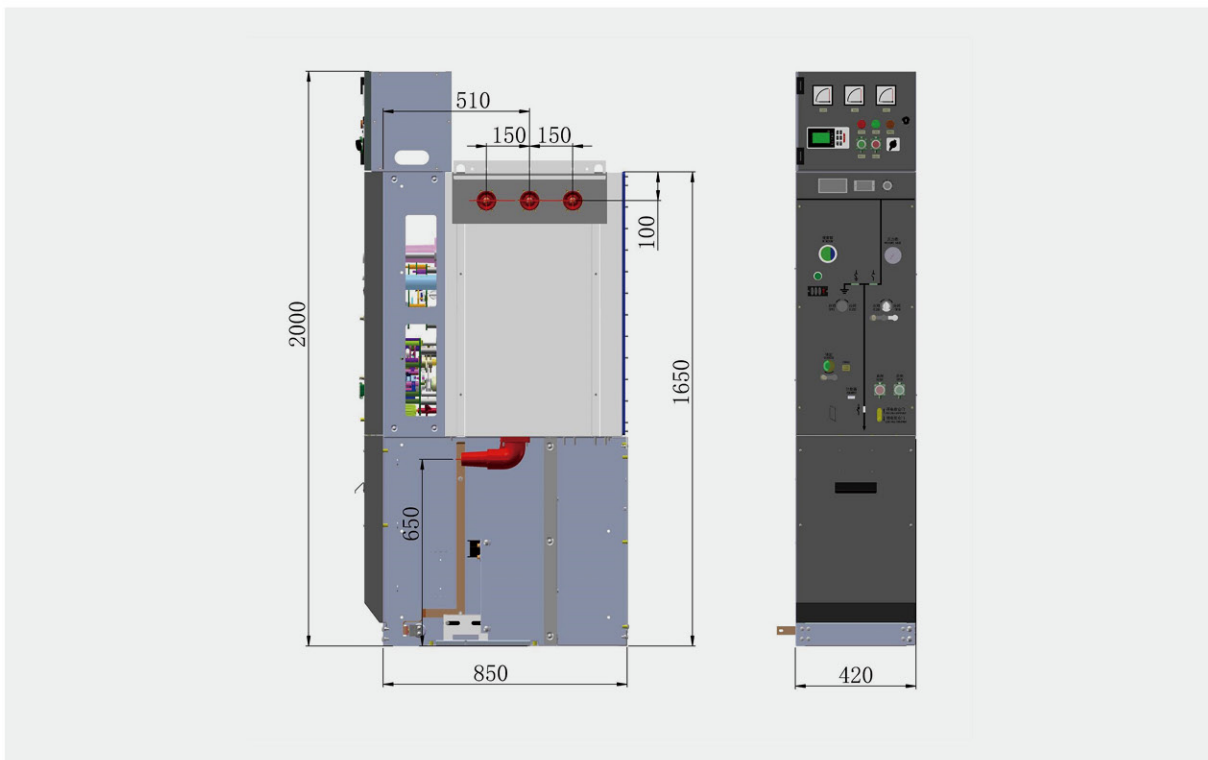
b、The recyclable environment-friendly thermoplastic material with high mechanical strength and excellent heat resistance is used, and the epoxy pouring vacuum interrupter frame is replaced by the three-phase integral vacuum interrupter frame formed by one-time injection molding, which has many advantages such as simple structure, uniform field strength, good insulation performance, high production efficiency, less adjustment, easy assembly and so on;

c、Low pressure, large space, the normal inflation gauge pressure is 0.02MPa, and the lowest functional pressure is zero gauge pressure;



▶ **外形及相关尺寸** Appearance and related dimensions

XCHBN-12-V/C 外形尺寸 Overall dimensions of XCHBN-12-V/C



高压开关设备系列 High voltage switch equipment series

HXGN □ -12(SF6)

单元式交流金属封闭环网开关设备
Unit type AC metal closed ring network switchgear

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

HXGN □ -12 (SF6) 型单元式交流金属封闭环网开关设备（以下简称环网柜）是我们在引进国外先进技术并按照国内农电及城网改造之要求而自行设计、研制成功的高压电器产品。各项技术性能指标全部达到 IEC298 和 GB3906 标准。

环网柜的主开关、操作机构及元器件采用 ABB 公司原装件或采用进口部件国内组装生产的 SFL-12/24 型开关设备，也可根据用户需要配装 ABB 公司原装 HAD/US 型 SF₆ 断路器或 VD4-S 型真空断路器，其操作方式分为手动、电动两种。

柜体经数控机床加工后铆接而成，防护等级达到 IP3X，并有可靠的机械联锁和防误操作功能。本产品具有体积小、重量轻、外形美观、操作简便、长寿命、高参数、无污染、少维护等极具显著的特点。

HXGN □ -12(SF6) type unit AC metal closed-loop network switchgear (hereinafter referred to as ring network cabinet) is a high-voltage electrical product designed and developed by ourselves after introducing foreign leading technology and according to the requirements of domestic rural power and urban network transformation. All technical performance indexes meet IEC298 and GB3906 standards.

The loop-net cabinet smain switch,the operating mechanism and the components is made ofthe ABB Corporation original piece or the SEL-12/24 switch equipment imported overseas and assembled at home We can also install the ABB Corporation original piece of HAD/US type SF₆ according to the request of uers. The circuit breaker or the VD4-S vacuum circuit-breakr divide into two kinds: be operated manually and electricly according to the operating mode.

The cabinet body is riveted after processed by numerical control machine tool with reliable mechanical interlocking and the misoperating prevention function. The protection grade reaches IP3X.This product has the remarkable characteristics such as the small volume, light weight, artistic appearance, simple operation long life, high parameter with no pollution and little maintenance.

使用环境条件 Use environmental conditions

- ◇ 海拔不超过 2000m;
- ◇ 周围气温度：上限 +40°C 下限 -25°C ；
- ◇ 相湿度：日平均值不大于 95%，月平均值不大于 90%；
- ◇ 周围空气不受腐蚀性气体或可燃性气体、水蒸气等明显污染；
- ◇ 无经常性的剧烈振动。
- ◇ The altitude should not exceed 2000m;
- ◇ Surrounding air temperature:-25°C -+40°C;
- ◇ Relative temperature: the daily average value ≤ 95%, the monthly average value ≤ 90%;
- ◇ Surrounding air without caustic gas or ignitable gas, steam and other obvious pollution;
- ◇ Without fierce vibration.

用途 Application

HXGN □ -12 (SF6) 型单元式交流金属环网开关设备，适用于交流 50Hz、12Kv 中，作为电能接受和分配之用。

HXGN □ -12 (SF6) unit type exchange metal ring-net switching equipment, is suitable to exchange 50Hz、12Kv, searving as device of receiving and distribution of electrical energy.

型号及含义 Model and meaning



▶ 主要技术参数 The main technical parameters

项目 Item	单位 Unit	参数 Parameters
额定电压 Rated voltage	kV	12
额定频率 Rated frequency	Hz	50
主母线额定电流 / 熔断器最大额定电流 Max rated current of main busbar and fuse	A	630/125
主回路、接地回路额定短时耐受电流 Max rated current of main busbar and fuse Rated short-circuit current of main	kA/s	20/3
主回路、接地回路额定峰值耐受电流 Main loop, earthed loop maximum endurable rated current Rated withstand current of main loop and	kA	50
主回路、接地回路额定短路关合电流 Main loop, earthed loop short circuit on-and off rated current Rated short-circuit on-off current of main time withstand current of main	kA	50
负荷开关满容量开断数 The opening times of the load switch with full capacity	次	100
熔断器开断电流 The fused breaker opening the current Breaking current of fuse	kA	31.5 □ 40
额定闭环开断电流 Rated closed loop breaking current	A	630
额定转移电流 Rated shift current	A	1600
机械寿命 Machine life Mechanical life	次	2000
1min 工频耐压 (峰值) 相间、对地 / 隔离断口 1 min line frequency resistance (peak value) recurrence, to the earth/isolation fracture	kV	42/48
雷电冲击耐受电压 (峰值) 相间、对地 / 隔离断口 Lighting impulse withstand voltage (peak value) recurrence, to the earth/isolation fracture	kV	75/85
二次回路 1min 工频耐压 Secondary loop 1min power frequency withstand voltage	kV	2
防护等级 Protection level		IP3X

▶ 结构特点及工作原理 Structural features and working principle

产品外形结构见图 1、图 2，安装尺寸如图 3 所示。本环网柜是以空气为绝缘介质的，主要装配 ZFN □ -10/630 型真空负荷开关，主要方案有进线柜和出线柜等。

1. 进线柜方案

柜内主回路有一台 ZFN □ -10/630 型真空负荷开关，它装配有隔离刀、酌情还装配接地刀所组成，三者共装在一个机架上，并互有联锁。因此可实现接通母线、隔离、接地三个工位的操作，柜内还可灵活装配 CT，PT 等元件。

2. 出线柜方案

柜内主回路有一台 ZFN □ -10/630 型真空负荷开关和带撞击器的熔断器（有隔离开关的作用）及接地刀所组成，也可实现三工位操作，柜内还可灵活装配 CT/PT 和 ZNO 避雷器等元件，因此有时可省去计量柜。进、出线柜均配有与接地开关联锁的绝缘防护隔板，柜内各开关与隔板及柜门间采用机械联锁，并达到“五防”要求，柜体外壳防护等级为 IP2X。

The outline structure of the product is referred to as diagram 1 and diagram 2; the installation dimension is referred to as diagram 3. This ring network type cabinet makes air as the insulating medium, mainly assembled with ZFN □ -10/630 type vacuum load switch. And there are two cabinet schemes-incoming cabinet and outgoing cabinet.

1. Incoming cabinet scheme

There is a ZFN □ -10/630 type vacuum load switch on the main circuit inside the cabinet with isolating knife, and grounding knife conditionally. The three of them are all installed in one machine stand and there are interlocks among them, so that it is realized to connect the operation of three working stations of bus, isolation and grounding. Inside the cabinet the components such as CT, PT are available.

2. Outgoing cabinet scheme

ZFN □ -10/630 type vacuum load switch, fuse with striker (used as isolating switch) and grounding knife on the main circuit inside the cabinet, and the three working stations operation can be realized. Inside the cabinet the components such as CT/PT and ZNO arrester are available, so the metering cabinet can be omitted. Inside the incoming cabinet and outgoing cabinet, there is insulating protecting baffle interlocked with grounding switch. And inside the cabinets, the mechanical interlocks are adopted between each switch and baffle as well as the cabinet door with the requirement of "five-prevention" and IP2X of the protection degree of the cabinet enclosure.

▶ 吊运、安装、调试和熔断器的更换 Lifting, installation, commissioning and replacement of fuses

1. 吊运

吊运前按规定进行开箱前的检查。柜体吊运时按作业标记要求，小心轻放、防震等。

2. 安装

开箱后，检查柜体及柜内元件是否完好，动作是否正常，是否受潮等，在确认无误后，方可进行安装。

3. 调试

如发现柜内元件达不到其技术要求或联锁不到位时，需按下列过程调试：

(1) 对负荷开关和接地或隔离开关，可通过调节拉杆长度和变换拉杆与操作杆角度和位置来达到技术要求。

(2) 若有联锁不到位时，可微调相应的操作拉杆长度来改变联锁孔的位置，使联锁到位。

4. 更换熔断器

必须严格按停电顺序操作，首选将负荷开关分闸，然后打开熔断器到隔离位置，并将接地开关合上，在插入绝缘防护隔板后，柜门方可打开，才能进行更换熔断器。

1. Lifting

Before handling, undertake check before opening the cabinet according to the regulations. When the cabinet is handling delivered, it's a must to operate according to the operation marking demands. Handle with care and without shake

2. Installation

After opening the cabinet, check whether the cabinet body and the components inside are good, whether they work normally, and whether they are moistened. Only after definite confirmation can the installation be undertaken.

3. Commissioning

It's necessary to have a commissioning according to the following steps if the components inside the cabinet don't meet the technical requirements or the interlocks don't locate well:

(1) For the load switch, grounding switch or isolating switch, you can make them meet the technical demands by adjusting the drag rod length, changing the angle and position of drag rod and operating rod.

(2) If there is any interlock that doesn't locate well, you can make it locate by finc adjusting relevant operating rod length to change the position of interlock hole.

4. Replacement of fuses

It must operate strictly according to the sequence of power of. First, turn off the load switch, turn on the fuse to the isolating position and then turn on the grounding switch. Only after plugging the insulating protecting baffle can the cabinet door be opened and can the fuse be replaced.

▶ 使用与故障处理 Operfion and troubleshooting

1. 使用

请务必严格按照下列步骤操作，否则易造成损害。

(1) 负荷开关的操作顺序

a 合闸：当负荷开关处于分闸状态时，将操作手柄插入负荷开关操作孔内顺时针转动（约 180 度），使其合闸。

b 分闸：当负荷开关处于合闸状态时，可由手动脱扣按钮或脱扣电磁铁操作使负荷开关分闸，对配有带撞击器的熔断器的负荷开关，熔断器熔断后，其撞击器也可使负荷开关分闸。

(2) 停电操作顺序

a 将负荷开关分闸，使它与隔离和接地开关之间的联锁解除。

b 将操作手柄插入隔离和接地开关操作孔内，按顺时针方向转动（约 90 度），隔离刀被打开。

c 再按顺时针方向转动（约 90 度）后，接地开关快速闭合。

d 插入绝缘隔板，使门联锁解除。

e 开门检修。

(3) 送电操作顺序

a 关闭柜门。

b 抽出绝缘隔板，柜门锁住。

c 将操作手柄插入隔离和接地开关操作孔内，逆时针转动（约 90 度），使接地开关分断。

d 对负荷开关进行操作，合闸送电。

2. 故障处理

环网柜在工作过程中，如果出现紧固件松动，机械部分润滑不良，真空灭弧室真空度下降等故障，在停电后采用紧固、加润滑剂、打耐压等方法来检查和消除以上故障。

1. Operation

Please operate strictly according to the following steps, otherwise some damage may be caused.

(1) Operating sequence of load switch

a. Switch-on: When the load switch stays on, plug the operating handle into the operating hole of the load switch and turn it clockwise (about 180°) to make it stay on.

b. Switch-off: When the load switch stays on, manually operate the tripping button or the tripping electromagnet to make the load switch stay off. For the load switch with fuse striker, after the fuse is fused, the striker can make the load switch stay off.

Operating sequence of power off

a. Turn off the load switch to unlock the interlock between the isolating and grounding switches.

b. Plug the operating handle into the operating hole of the isolating and grounding switches and turn it clockwise (about 90°) to open the isolating knife

c. Turn again clockwise (about 90°) to turn off the grounding switch rapidly.

d. Plug the insulating baffle to unlock the door interlock.

e. Open the door and maintain.

(3) Operating sequence of power transmission.

a. Close the cabinet door.

b. Extract the insulating baffle and lock the cabinet door.

c. Plug the operating handle into the operating hole of the isolating and grounding switches and turn it anticlockwise (about 90°) to turn off the grounding switch.

d. Operate the load switch and turn it on to transmit the power.

2. Lroubleshooting

During the operation of the ring network type cabinet, if there is any fault, such as loose fasteners, bad lubrication of mechanical parts and reduced vacuum degree in the vacuum interrupter. etc. After the power off, check and remove the faults by fastening, adding lubricant and adding withstand voltage, etc.

▶ 维修与修理 Maintenance and repair

1. 开箱后，应对所有绝缘件进行检查，对确已受潮的元件，应将其拆下，放入 70-80°C 的烘箱内，烘 48 小时后，取出装上重新调试。
2. 产品储放期间，如发现受潮或腐蚀，应立即进行清理，清理后做好防护处理。
3. 运行中的环网柜应进行定期维修检查。
 - (1) 真空灭弧室的真空度；
 - (2) 触头磨损情况；
 - (3) 机械紧固件是否松动；
 - (4) 开距超程等机械电气参数；
 - (5) 操作转动是否灵活；
 - (6) 联锁是否可靠；
 - (7) 所有零部件，特别是绝缘件是否清洁。
4. 下列情况时，应对环网柜进行全面检查和调试：
 - (1) 每年一次的例行检查和清洁工作；
 - (2) 负荷开关每动作 2000 次后。

1. After the cabinet is open, check all of the insulation pieces and disassemble the damp ones, put them into 70-80°C drying box, and take out for debugging again after 48 hours drying.
2. If the product is damp or rusty during the storage, please clean it at once and protect it well.
3. Maintenance and repair should be done to ring network cabinet during operation.
 - (1). Vacuum extent of vacuum arc-extinguishing room
 - (2). Contact abrasion degree
 - (3). Whether the fastening pieces are loose or not;
 - (4). Mechanical electric parameter such as open travel, over travel.
 - (5). Whether the running is flexible or not;
 - (6). Whether the interlock is reliable or not;
 - (7). Whether all of the parts are clean, especially for insulation fittings.
4. Do overall examination and debugging to ring network cabinet in following conditions:
 - (1). Routine examination and cleaning for every
 - (2). After every 2000 times operation of load switch

▶ 储存 Storage

环网柜应储存在干燥通风，温度在 -30°C ~ +40°C 的仓库中。

Ring network cabinet should be stored in the dry and ventilated warehouse with temperature of -30°C ~ +40°C .

▶ 随机文件 Shipment

- ◇ 产品合格证 Certificate of quality
- ◇ 安装使用说明书 Installation and operation instruction
- ◇ 装箱单 Packing list
- ◇ 随机附件清单 Appending accessories list
- ◇ 二次接线图 Secondary connection diagram

▶ 环网柜安装 Ring main unit

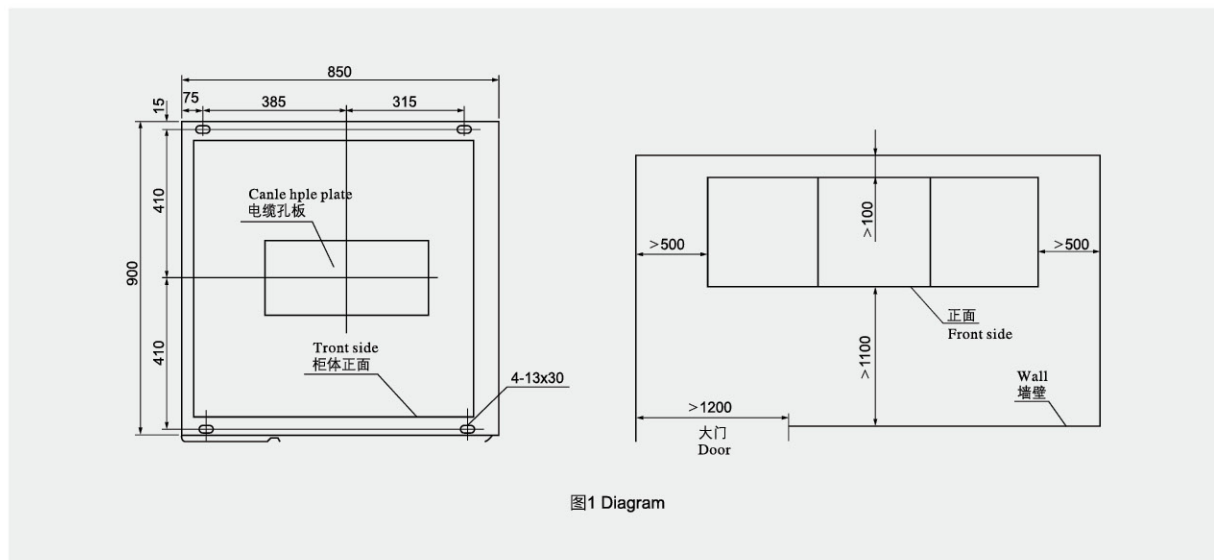
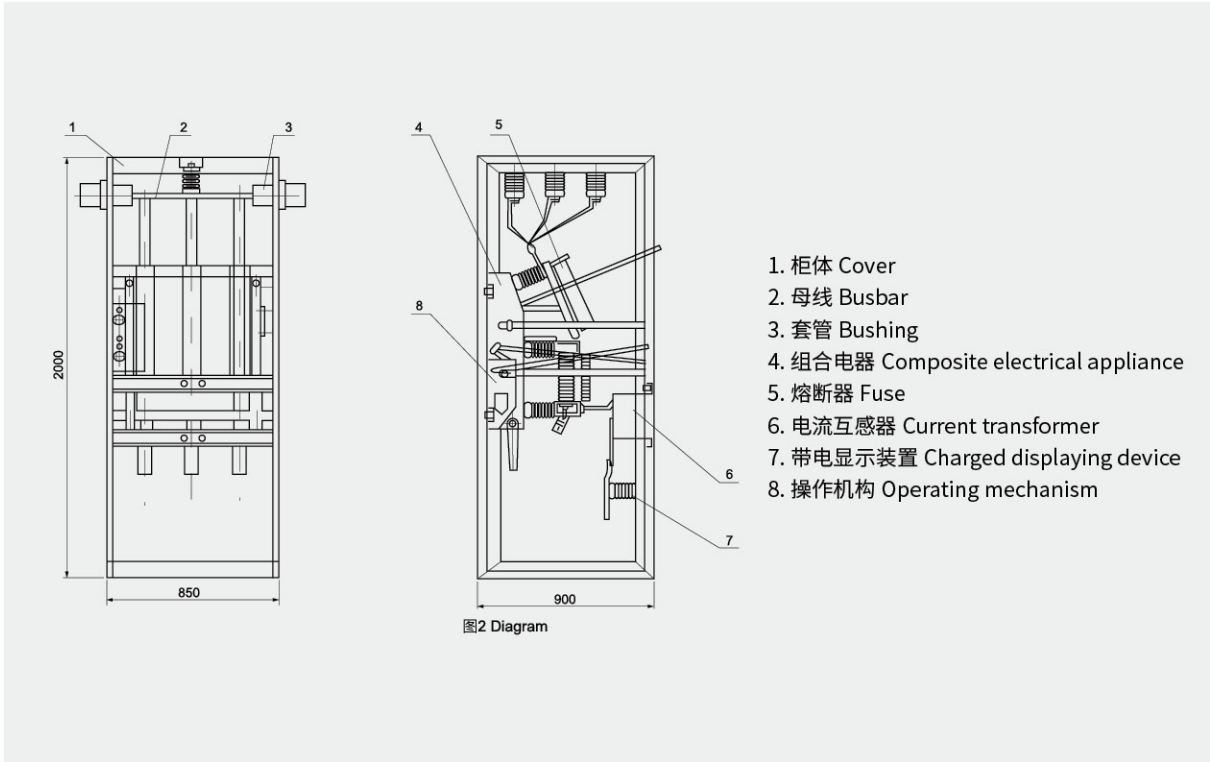
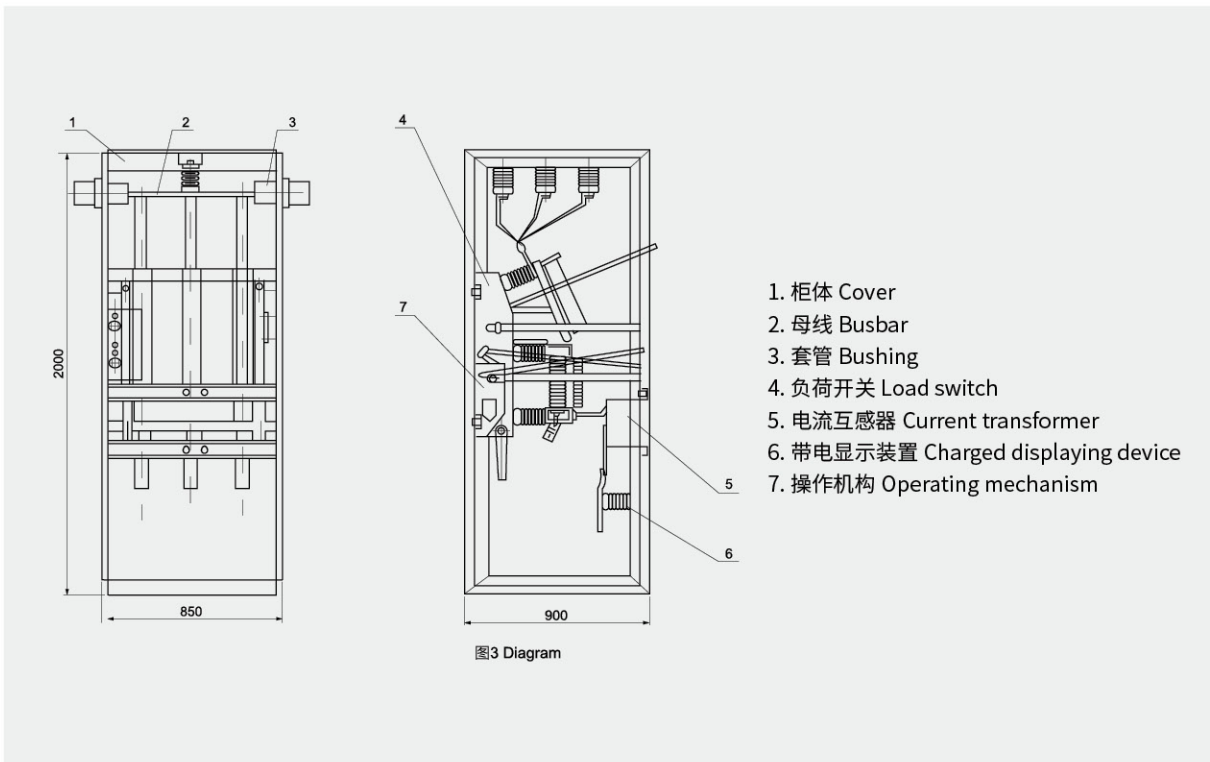


图1 Diagram



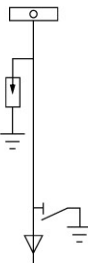
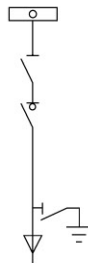
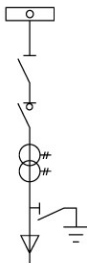
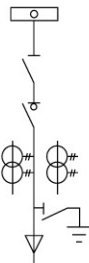
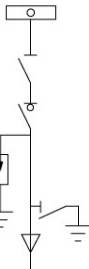
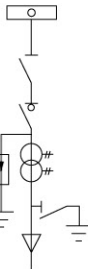
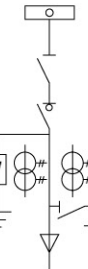
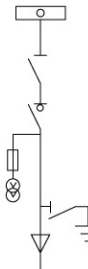
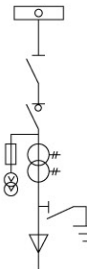
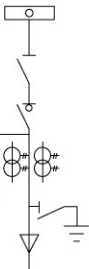
▶ 组合电器柜 Combination electrical cabinet

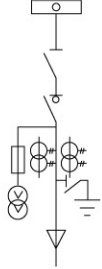

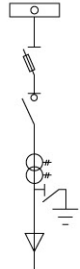
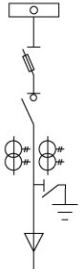
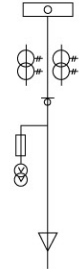




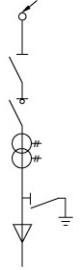
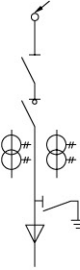
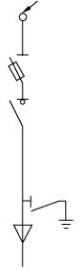
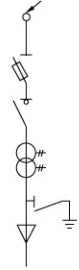
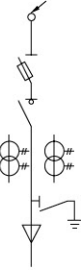
▶ 负荷开关柜 Load switch cabinet

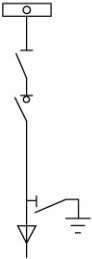
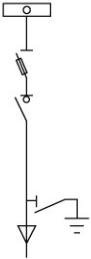
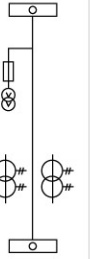
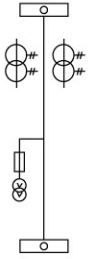
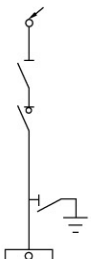
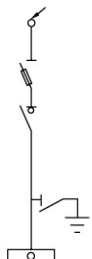


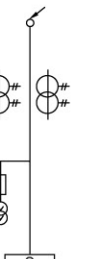
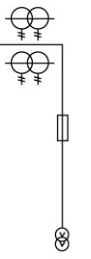
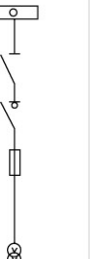
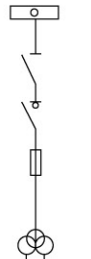
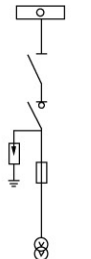
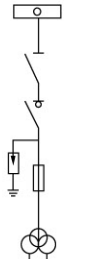
▶ 方案组合示例 Scheme

方案编号 Scheme number		01	02	03	04	05	06
主电路方案图 Main circuit scheme diagram							
用途 Purpose		电缆进线或出线 Cable incoming or outgoing					
Primary element 一次元件	负荷开关 ZFN-10 Load switch				1	1	1
	隔离开关 Isolating switch				1	1	1
	接地开关 Grounding switch	1	1	1	1	1	1
	熔断器 SFL-J Fuse		3				
	电流互感器 LZZEJ Current transformer						
	电压互感器 JDZ-10 Voltage transformer					1	2
	避雷器 Y5W Arrester			3			
方案编号 Scheme number		07	08	09	10	11	12
主电路方案图 Main circuit scheme diagram							
用途 Purpose		电缆进线或出线 Cable incoming or outgoing					
Primary element 一次元件	负荷开关 ZFN-10 Load switch	1	1	1	1	1	1
	隔离开关 Isolating switch	1	1	1	1	1	1
	接地开关 Grounding switch	1	1	1	1	1	1
	熔断器 SFL-J Fuse						
	熔断器 RN2 Fuse				3	3	3
	电流互感器 LZZEJ Current transformer		1	2		1	2
	电压互感器 JDZ-10 Voltage transformer				2	2	2
	避雷器 Y5W Arrester	3	3	3			

方案编号 Scheme number		13	14	15	16	17	18
主电路方案图 Main circuit scheme diagram							
	用途 Purpose	电缆进线或出线 Cable incoming or outgoing					
Primary element 一次元件	负荷开关 ZFN-10 Load switch	1	1	1	1		
	隔离开关 Isolating switch	1	1	1	1		
	接地开关 Grounding switch	1	1	1	1		1
	熔断器 SFL-J Fuse			3	3		
	熔断器 RN2 Fuse	3				3	
	电流互感器 LZZEJ Current transformer	2				2	
	电压互感器 JDZ-10 Voltage transformer						
	避雷器 Y5W Arrester						

方案编号 Scheme number		19	20	21	22	23	24
主电路方案图 Main circuit scheme diagram							
	用途 Purpose	电缆进线或出线 Cable incoming or outgoing					
Primary element 一次元件	负荷开关 ZFN-10 Load switch	1	1	1	1	1	1
	隔离开关 Isolating switch	1	1	1	1	1	1
	接地开关 Grounding switch	1	1	1	1	1	1
	熔断器 SFL-J Fuse				3	3	3
	熔断器 RN2 Fuse					1	2
	电流互感器 LZZEJ Current transformer		1	2			
	电压互感器 JDZ-10 Voltage transformer						
	避雷器 Y5W Arrester						

方案编号 Scheme number		25	26	27	28	29	30
主电路方案图 Main circuit scheme diagram							
用途 Purpose		联络 T:e		计量联络 Metering T:e		架空进线联络 Overhead incoming tie	
一次元件 Primary element	负荷开关 ZFN-10 Load switch	1	1			1	1
	隔离开关 Isolating switch	1	1			1	1
	接地开关 Grounding switch	1	1			1	1
	熔断器 SFL-J Fuse		3				3
	熔断器 RN2 Fuse			3	3		
	电流互感器 LZZEJ Current transformer			2	2		
	电压互感器 JDZ-10 Voltage transformer			2	2		
	避雷器 Y5W Arrester						

方案编号 Scheme number		31	32	33	34	35	36
主电路方案图 Main circuit scheme diagram							
用途 Purpose		计量架空进线 联络 Metering overhead incoming tie	计量 Metering	电压互感器 Voltage transformer		电压互感器避雷器 Voltage transformer Arrester	
一次元件 Primary element	负荷开关 ZFN-10 Load switch			1	1	1	1
	隔离开关 Isolating switch			1	1	1	1
	接地开关 Grounding switch						
	熔断器 SFL-J Fuse						
	熔断器 RN2 Fuse	3	3	3	3	3	3
	电流互感器 LZZEJ Current transformer	2	2				
	电压互感器 JDZ-10 Voltage transformer	2	2	2	JDZJ-10 3只	2	JDZJ-10 3只
	避雷器 Y5W Arrester					3	3

方案编号 Scheme number	37	38	39	40	41	42
主电路方案图 Main circuit scheme diagram						

用途 Purpose	电缆进线或出线 Cable incoming or outgoing					
负荷开关 ZFN-10 Load switch				1	1	1
隔离开关 Isolating switch				1	1	1
接地开关 Grounding switch						
熔断器 SFL-J Fuse		3				
熔断器 RN2 Fuse						
电流互感器 LZZEJ Current transformer					1	2
电压互感器 JDZ-10 Voltage transformer			3			
避雷器 Y5W Arrester						

方案编号 Scheme number	43	44	45	46	47	48
主电路方案图 Main circuit scheme diagram						

用途 Purpose	电缆进线或出线 Cable incoming or outgoing					
负荷开关 ZFN-10 Load switch	1	1	1	1	1	1
隔离开关 Isolating switch	1	1	1	1	1	1
接地开关 Grounding switch						
熔断器 SFL-J Fuse						
熔断器 RN2 Fuse				3	3	3
电流互感器 LZZEJ Current transformer		1	2		1	2
电压互感器 JDZ-10 Voltage transformer				2	2	2
避雷器 Y5W Arrester	3	3	3			

高压开关设备系列 High voltage switch equipment series

KYN61-40.5(Z)

铠装移开式交流金属封闭开关柜

Armored removable AC metal enclosed switchgear

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

KYN61-40.5 (Z) 型铠装移开式交流金属封闭开关柜 (以下简称开关柜) 系三相交流 50Hz, 额定电压 40.5kV 的户内成套配电装置。作为发电厂、变电站及工矿企业接受和分配电能之用。对电路起到控制、保护和检测等功能, 还可用于频繁操作的场所。本开关柜符合 GB/T11022-1999、GB3906-1991 及 DL404-1997 等标准。

KYN61-40.5(2) type alternating current metal-clad and metal-enclosed with drawable switchgear (hereinafter referred to as switchgear) is a indoor complete set of power distribution unit of three-phase AC50Hz and rated voltage of 40.5kV. Used for receiving and distributing the electric energy in power plants, transformer substations, mining and industrial enterprises, etc., it controls, protects and detects the circuits, also is applicable to frequent operation locations. This switchgear complies with GB/T11022-1999, GB3906-1991, DL404-1997, etc.

主要特点 Main feature

- ◇ 柜体结构采用组装式, 断路器采用手车落地式结构;
- ◇ 配用全新型复合绝缘真空断路器, 并具有互换性好更换简单之特点;
- ◇ 手车车架中装有丝杠螺母推进机构, 可轻松移动手车, 并防止误操作而损坏推进结构;
- ◇ 所有的操作均可在柜门关闭状态下进行;
- ◇ 主开关、手车、开关柜门之间的联锁均采用强制性机械闭锁方式, 满足“五防”功能;
- ◇ 电缆室空间充裕, 可连接多根电缆;
- ◇ 快速接地开关用于接地和回路短路;
- ◇ 外壳防护等级 IP3X, 手车室门打开状态下, 防护等级 IP2X;
- ◇ 产品符合 GB3906-1991、DL404-1997 及参照采用国际 IEC-298 标准。
- ◇ Cabinet structure is of assembled type, the circuit breaker adopts floor type handcart structure;
- ◇ Equipped with brand new composite insulated vacuum circuit breaker, is featured with good interchangeability, and is simple to change;
- ◇ The handcart frame is mounted with lead screw nut propelling mechanism, it is able to move the handcart easily, and prevent damage of propelling mechanism caused by misoperation;
- ◇ All operations can be carried out when the cabinet door is closed;
- ◇ Interlocking among the main switch, handcart and switchgear adopts compulsory mechanical locking mode, meeting the "five preventions" function;
- ◇ Cable chamber is large enough, it could connect multi cables;
- ◇ The fast earthing switch is used for earthing and circuit short-circuit;
- ◇ Of protection of the enclosure is IP3X, and is IP2X when the door of handcart chamber is opened;
- ◇ The product complies with GB3906-1991, DL404-1997 and refers to IEC-298.

使用环境条件 Use environmental conditions

- ◇ 环境温度: 上限 +40°C, 且 24h 内测得的平均值不超过 35°C, 下限 -10°C;
- ◇ 海拔高度: 不超过 1000m;
- ◇ 相对湿度: 日平均值不超过 95%, 月平均值不超过 90%;
- ◇ 地震烈度: 不超过 8 度;
- ◇ 水蒸汽压力: 日平均值不超过 2.2kPa, 月平均值不超过 1.8kPa;
- ◇ 周围环境: 无火灾、爆炸危险、严重污秽、化学腐蚀及剧烈振动的场所。
- ◇ Ambient temperature: -10°C ~+40°C, average value measured within 24h should not exceed 35°C;
- ◇ Altitude: ≤ 1000m;
- ◇ Relative humidity: daily ≤ 95%. monthly ≤ 90%;
- ◇ Seismic intensity: ≤ 8;
- ◇ Vapor pressure: daily ≤ 2.2kPa, monthly ≤ 1.8kPa;
- ◇ Ambient environment: the installation site should be free of fire, explosive danger, serious pollution, chemical corrosion or severe vibration.

▶ 真空开关柜主要技术参数 Vacuum breaker switchgear main technical parameters

名称 Name	单位 Unit	数值 value
额定电压 Rated voltage	kV	40.5
额定电流 Rated current	A	1250 1600 2000
额定频率 Rated frequency	Hz	50
额定短时耐受电流 Rated short-time withstand current	kA	20 25 31.5
额定峰值耐受电流 Rated peak withstand current	kA	50 63 80
额定工频耐受电压 Rated power frequency withstand voltage	kV	95/1 min
额定雷电冲击耐受电压 Rated lightning impulse withstand voltage	kV	185
额定短路持续时间 Rated short-circuit duration	S	4
防护等级 Degree of protection		IP3X

▶ 真空断路器主要技术参数 Vacuum circuit breaker main technical parameters

名称 Name	单位 Unit	数值 value
额定电压 Rated voltage	kV	40.5
额定频率 Rated frequency	Hz	50
额定工频耐受电压 Rated power frequency withstand voltage	kV	95/1min
额定雷电冲击耐受电压 Rated lightning impulse withstand voltage	kV	185
额定电流 Rated current	A	1250 1600 2000
额定短时耐受电流 Rated short-time withstand current	kA	20 25 31.5
额定短时开断电流 Rated short-time breaking current	kA	20 25 31.5
额定峰值耐受电流 Rated peak withstand current	kA	50 63 80
额定短路持续时间 Rated short-circuit duration	ms	4
分闸时间 Opening time	ms	$30 \leq t \leq 60$
合闸时间 Closing time	s	$50 \leq t \leq 100$
额定短路开断电流次数 Rated short-circuit breaking current times	次 times	20
机械寿命 Protection Level	次 times	10000

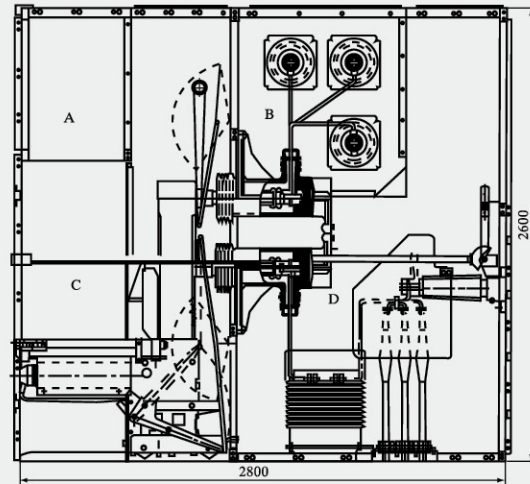
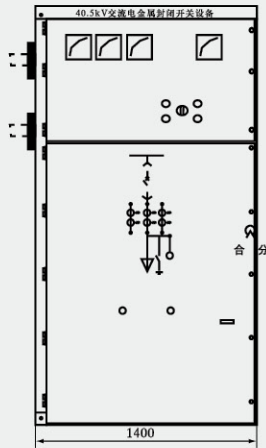
▶ 弹簧操动机构主要技术参数 Spring operating mechanism main technical parameters

名称 Name	单位 Unit	数值 value	
额定操作电压 Rated operating voltage	分闸线圈 Opening coil	V	DC220/110, AC220/110
	合闸线圈 Closing coil		
额定操作电流 Rated operating current	分闸线圈 Opening coil	A	0.96(220V), 1.05(110V)
	合闸线圈 Closing coil		
储能电机功率 Power of energy-storage motor	W	230	
储能电机额定电压 Rated voltage of energy-storage motor	V	DC220/110, AC220/110	
储能时间 Energy-storage time	S	≤ 12	

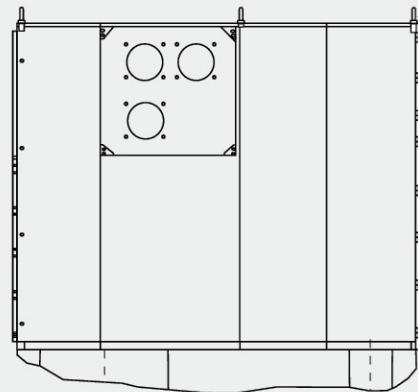
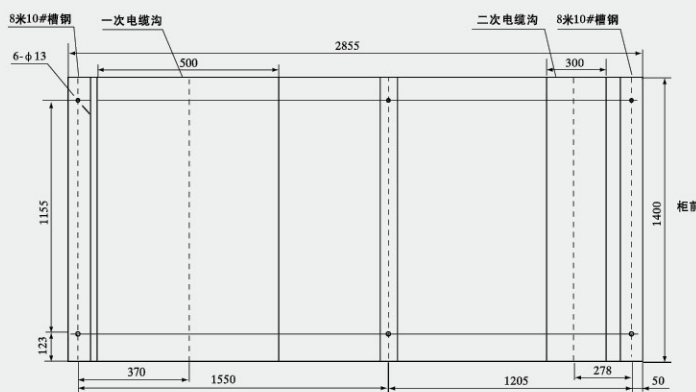
▶ 开关柜结构特征 Switchgear structure features

开关柜外形尺寸 Outline dimension of switchgear
外形尺寸 (宽 x 深 x 高)
Outline dimension (WxDxH)
1400x2800x2600

开关柜结构示意图 Structural schematic diagram of switchgear
A 继电器仪表室 B 母线室 C 断路器室 D 电缆室
A relay meter chamber B bus chamber C circuit breaker chamber D cable chamber



▶ 开关柜的安装 Switchgear



开关柜安装基础示意图
Schematic diagram of installation foundation of switchgear

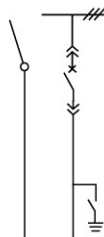
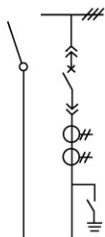
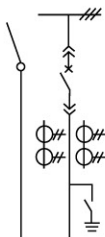
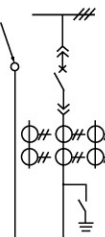
- a: 电器室的高度: $\geq 4500\text{mm}$;
- b: 柜后距墙距离: $\geq 1500\text{mm}$;
- c: 基础构架的平面度: $\leq 1\text{mm}/\text{m}^2$;
- d: 基础预埋槽钢高出地面部分不得超过 3mm;
- e: 可用螺栓或焊接方式固定在基础上;
- f: 开关柜重量约 1800kg;
- g: 开关柜操作走廊宽度 (单列): $\geq 3000\text{mm}$; 双面 (面对面) $\geq 4000\text{mm}$ 。

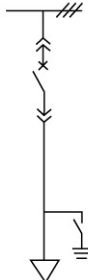
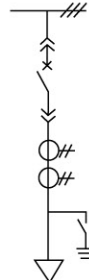
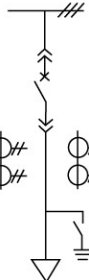
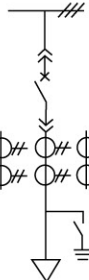
- Height of electrical room: $\geq 4500\text{mm}$;
- Distance between cabinet back and wall: $\geq 1500\text{mm}$;
- Flatness of foundation frame: $\leq 1\text{mm}/\text{m}^2$;
- The height of embedded channel steel of foundation shall not exceed 3mm above the ground;
- It can be fixed on the foundation by bolts or welding;
- The weight of switch cabinet is about 1800kg;
- The width of switch cabinet operation corridor (single row): $\geq 3000\text{mm}$; double face (face-to-face) $\geq 4000\text{mm}$.

▶ 变压器性能参数 Transformer performance parameters

开关柜的一次接线方案有 27 个常用典型方案，能满足用户电缆进出线、架空进出线，联络及测量、保护等的需要，若有不同与现有方案的其他方案的需要，请与厂方协商。


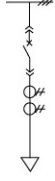
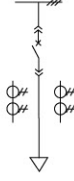

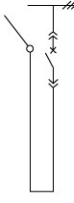
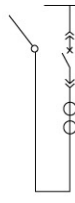

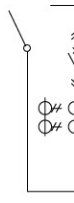
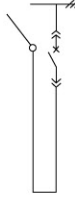
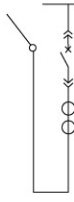
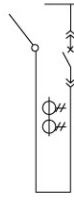
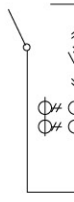
Primary wiring schemes of switchgear include 27 typical schemes, meeting users' demands on cable incoming and outgoing lines, overhead incoming and outgoing lines tie, measurement and protection, if require other schemes, required please conta with ct the manufacturer.

方案编号 Scheme number		01	02	03	04
一次线路图 Primary circuit diagram					
Main elements 主要元件	额定电流 Rated current	1250, 1600, 2000			
	断路器 Circuit breaker ZN85-40.5	1	1	1	1
	电流互感器 Current transformer LDBJ8(9)-35		1	2	3
	接地开关 Earthing switch JN22-40.5/31.5	1	1	1	1
用途 Application	架空出线 Overhead outgoing line	架空出线 Overhead outgoing line	架空出线 Overhead outgoing line	架空出线 Overhead outgoing line	架空出线 Overhead outgoing line

方案编号 Scheme number		05	06	07	08
一次线路图 Primary circuit diagram					
Main elements 主要元件	额定电流 Rated current	1250, 1600, 2000			
	断路器 Circuit breaker ZN85-40.5	1	1	1	1
	电流互感器 Current transformer LDBJ8(9)-35		1	2	3
	接地开关 Earthing switch JN22-40.5/31.5	1	1	1	1
用途 Application	电缆出线 Cable outgoing line	电缆出线 Cable outgoing line	电缆出线 Cable outgoing line	电缆出线 Cable outgoing line	电缆出线 Cable outgoing line

方案编号 Scheme number		09	10	11	12
一次线路图 Primary circuit diagram					
Main elements 主要元件	额定电流 Rated current	1250, 1600, 2000			
	断路器 Circuit breaker ZN85-40.5	1	1	1	1
	电流互感器 Current transformer LDBJ8(9)-35		1	2	3
用途 Application		左 (右) 联络 Left (right) tie	左 (右) 联络 Left (right) tie	左 (右) 联络 Left (right) tie	左 (右) 联络 Left (right) tie

方案编号 Scheme number		13	14	15	16
一次线路图 Primary circuit diagram					
Main elements 主要元件	额定电流 Rated current	1250, 1600, 2000			
	断路器 Circuit breaker ZN85-40.5				
	电流互感器 Current transformer LDBJ8(9)-35		1	2	3
用途 Application		隔离、联络 Isolation, tie	隔离、联络 Isolation, tie	隔离、联络 Isolation, tie	隔离、联络 Isolation, tie

方案编号 Scheme number		17	18	19	20
一次线路图 Primary circuit diagram					
Main elements 主要元件	额定电流 Rated current	1250, 1600, 2000			
	断路器 Circuit breaker ZN85-40.5	1	1	1	1
	电流互感器 Current transformer LDBJ8(9)-35		1	2	3
	用途 Application	电缆出线 Cable outgoing line	电缆出线 Cable outgoing line	电缆出线 Cable outgoing line	电缆出线 Cable outgoing line
方案编号 Scheme number		21	22	23	24
一次线路图 Primary circuit diagram					
Main elements 主要元件	额定电流 Rated current	1250, 1600, 2000			
	断路器 Circuit breaker ZN85-40.5	1	1	1	1
	电流互感器 Current transformer LDBJ8(9)-35		1	2	3
	用途 Application	架空出线 Overhead outgoing line	架空出线 Overhead outgoing line	架空出线 Overhead outgoing line	架空出线 Overhead outgoing line
方案编号 Scheme number		25	26	27	28
一次线路图 Primary circuit diagram					
Main elements 主要元件	额定电流 Rated current	1250, 1600, 2000			
	电流互感器 Current transformer JDZX9-35	2	3		
	熔断器 Fuse XRNP-35	3	3	3	
	避雷器 Lightning arrester YH5WS-51/134Q				
用途 Application		电压互感器 Voltage transformer	电压互感器 Voltage transformer	所有变 All transformers	

高压开关设备系列 High voltage switch equipment series

KYN28-24(Z)

铠装移开式交流金属封闭开关设备
Armored removable AC metal enclosed switchgear

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.

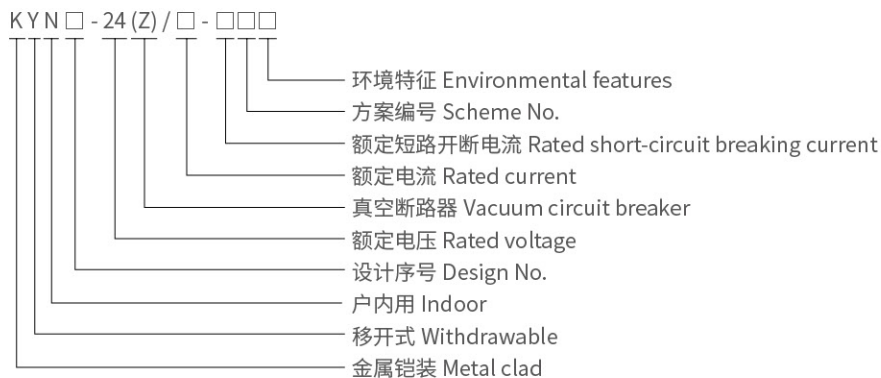


概述 Overview

KYN28-24 (Z) 系列铠装移开式交流金属开关设备（以下简称“开关设备”），系 20kV 三相交流 50（60）Hz 单母线及单母线分段系统的成套配电装置。主要用于发电厂、中小型发电机送电、工矿企事业配电以及电业系统的二次变电所的受电、送电及大型高压电动机启动等。实行控制保护、监测之用。本开关设备具有防止带负荷推拉断路器手车、防止误分合断路器、防止接地开关处在闭合位时关合断路器、防止误入带电隔室、防止在带电时误合接地开关的“五防”连锁功能，既可配用我公司开发试制的 NV1-24 型真空断路器，实为一种性能优越的配电装置。标准该产品采用 GB 3906、GB/T 11022、IEC 60298 等标准要求。

KYN28-24(Z) series alemating-current metal-clad and metal-enclosed with drawable swichgear (hereinafter referred to as "switchgear") is a complete set of power dstrubution unit of three-phase single busbar and singlbusbar ebussection system of 20kV and AC50(60) Hz.This switchgear is mainly applicable to power plants, power transmitting of middle and small sized generators,distribution of industrial and mining enterprises, electricity receiving and tansmitting of secondary substations, as well as starting of large high-voltage motors, etc, realizes control protection and monitoring.It has"five preventions", it prevents on-load pushing or pulling circuit breaker's handcart, prevents making or breaking circuit breaker by mistake, prevents closing circuit breaker when the earthing swich is at closing position, prevents entering into live compartment by mistake, and prevents closing earthing switch under live condition. It can be equipped with the NV1-24 type vacuum circuit breaker developed by our company, it really is an ideal distribution equipment with perfect performances.It complies with the standards GB 3906. GB/T 11022 and IEC 60298.

型号及含义 Model and meaning



使用环境条件 Use environmental conditions

- ◇ 周围空气温度：-15°C ~+40°C；
- ◇ 海拔高度：1000m 及以下；
- ◇ 相对湿度：日平均相对湿度不大于 95%，月平均相对湿度不大于 90%；
- ◇ 地震烈度：不超过 8°；
- ◇ 无火灾、爆炸危险、严重污秽、化学腐蚀及剧烈振动的场所；
- ◇ 在超过 GB3906 规定的正常环境条件下使用时，请用户与我公司协商。
- ◇ Ambient air temperature: -15°C ~+40°C；
- ◇ Altitude: ≤ 1000m；
- ◇ Relative humidity: daily ≤ 95%, monthly ≤ 90%；
- ◇ Seismic intensity: ≤ Ms8；
- ◇ The isallation site should be free of fire, explosive danger, serious pollution, chemical corrosion or severe vibration；
- ◇ Nole: Plcase negotiate with us if your product is used beyond the range of above condition.

▶ 主要技术参数 The main technical parameters

名称 Name	单位 Unit	数值 value
		配用断路器 Matched circuit breaker NV1-24
额定电压 Rated voltage	kV	24
1 min 工频耐受电压 Imin power frequency withstand voltage	kV	(50) 65
额定冲击耐受电压 (峰值) Rated impulse withstand voltage (peak)	kV	125
额定频率 Rated frequency	Hz	50 (60)
额定电流 Rated current	A	630 1250 1600 2000 2500 3150
分支母线额定电流 Rated current of branchbusbar	A	630 1250 1600 2000 2500
额定短时耐受电流 Rated short-time withstand current	kA	16 20 25 31.5
额定峰值耐受电流 Rated peak withstand current	kA	40 50 63 80
额定短路持续时间 Rated short-circuit duration	s	4
防护等级 Protection level		外壳为 IP4X, 隔室门、断路器室门打开时为 IP2X The enclosure is IP4X, it is IP2X when the compartment door and circuit breaker chamber door are opened
质量 Mass	kg	800 1000 (额定电流 1600A 以上 Rated current above 1600A)

▶ 产品结构性能特色 Product structure performance characteristics

1. 体积小巧的 24kV 开关设备

本产品结构型式与 12kV 中置开关设备类同, 用在 20kV 的系统中, 不需要复合绝缘, 不需要加相间隔板, 因此产品的绝缘水平优越。

2. 结构安全、安装灵活

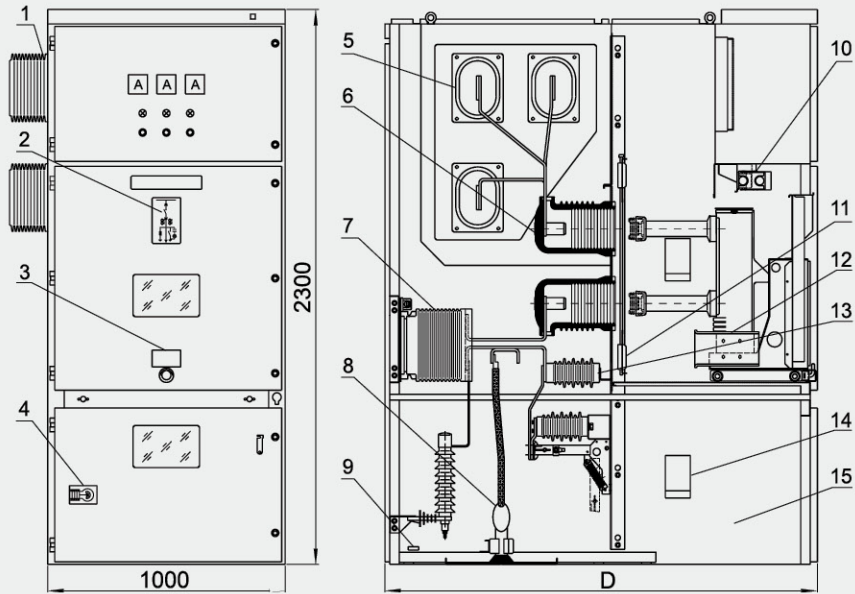
开关设备由柜体和可抽式部件 (即手车) 两大部分组成。柜体分四个单独的隔室, 外壳防护等级为 IP4X, 各小室外间和断路器室门打开时防护等级为 IP2X。具有架空进出线、电缆进出线及其它功能方案, 经排列、组合后能成为各种方案形式的配电装置。本开关设备可以从正面进行安装调试和维护, 因此它可以背靠背组成双重排列和靠墙安装, 提高了开关设备的安全性、灵活性, 减少了占地面积。

1. Switchgear of 24kV with compact volume

Structure of this product is similar to that of mid-set switchgear of 12kV, the product is applicable to systems of 20kV, not need composite insulation or interphase separator, with outstanding insulation performance.

2. Safe structure, flexible installation

This switchgear is composed of cabinet body and mid-set withdrawable part (i.e. handcart) two parts. The cabinet body is divided into four separate compartments, degree of protection of the enclosure is IP4X, and the protection degree is IP2X when compartment doors and circuit breaker chamber door are opened. It has overhead incoming and outgoing lines, cable incoming and outgoing lines and other function schemes, it can become power distribution unit of different schemes and forms after permutation and combination. This switchgear can be installed, debugged and maintained from the front side, so it can be arranged in duplex by means of back-to-back or arranged against the wall, which not only improves its safety and flexibility. but also reduces the floor space.

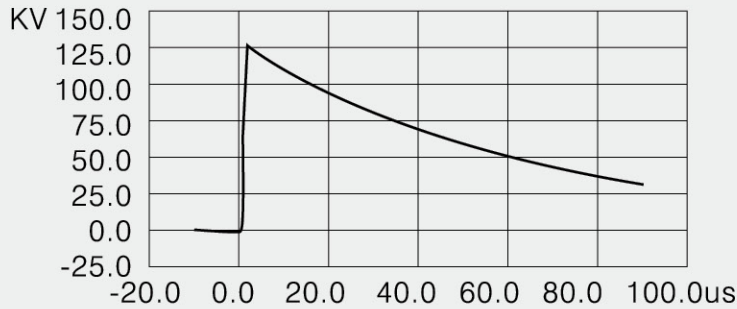


开关设备结构图 Structure drawing of switchgear

- | | |
|---------------------------------|--|
| 1. 穿墙转管 Wall bushing | 8. 一次电缆 Primary cable |
| 2. 模拟一次图 Analog primary diagram | 9. 接地母排 Earthing busbar |
| 3. 铭牌 Nameplate | 10. 二次联锁装配 Secondary interlocking assembly |
| 4. 照明灯 Illuminating lamp | 11. 活门机构 Valve mechanism |
| 5. 主母线 Main busbar | 12. 断路器手车 Handcart of circuit breaker |
| 6. 触头盒 Contact box | 13. 绝缘子 Insulator |
| 7. 电流互感器 Current transformer | 14. 加热器 Heater |
| | 15. 柜体框架 Framework of cabinet body |

柜深 Cabinet depth	D(mm)
电缆出线 Cable outgoing line	1820
架空进出线 Overhead incoming and outgoing lines	2150

3. 抗雷电冲击能力 Lightning impulse resistant capacity



$U_{pk}=125.33kV$

$T_1=1.11\mu s$

$T_2=45.45\mu s$

正级性雷电冲击全波 Full wave of lightning impulse of positive polarity

4. 手车种类多样、操作方便

手车骨架也采用薄钢板经 CNC 机床加工后组装而成。手车与柜体绝缘配合，机械联锁安全、可靠、灵活。根据用途同手车断路器手车、电压互感器手车、隔离手车，同规格手车可以百分之百互换。

手车在柜体内有断开位置、试验位置和工作位置，每一位置都分别有定位装置，以保证联锁可靠，必须按联锁防误操作程序进行操作。各种手车均采用丝杆摇动推进、退出。操作轻便、灵活，适合于各种值班人员操作。手车当需要移开柜体时，用一台专用转运车，就可以方便取出，进行各种检查、维护；而且采用中置式，整个手车体积小，检查、维护都极为方便。

4. Various handcart, convenient operation

Framework of the handcart is made up of steel sheets through machining of CNC machine tool. The handcart has good insulation coordination with the cabinet body, with safe, reliable and flexibly mechanical interlocking. It can be divided into circuit breaker handcart, voltage transformer handcart and isolating handcart according to the purposes, handcarts of the same specification are exchangeable absolutely.

There are breaking position, test position and working position in the cabinet body for handcart, each position has positioning device respectively that guarantees reliable interlocking, must carry out operation according to the interlocking anti-misoperation process. All handcarts adopt lead screw to rotate to push in or withdraw, it is convenient and flexible to operate, suitable for all kinds of operators on duty. When it is required to remove the handcart from the cabinet body, please use a special transfer car to take it out conveniently, then to carry out inspections and maintenance; it adopts mid-set type, has small volume, is convenient to check and maintain.



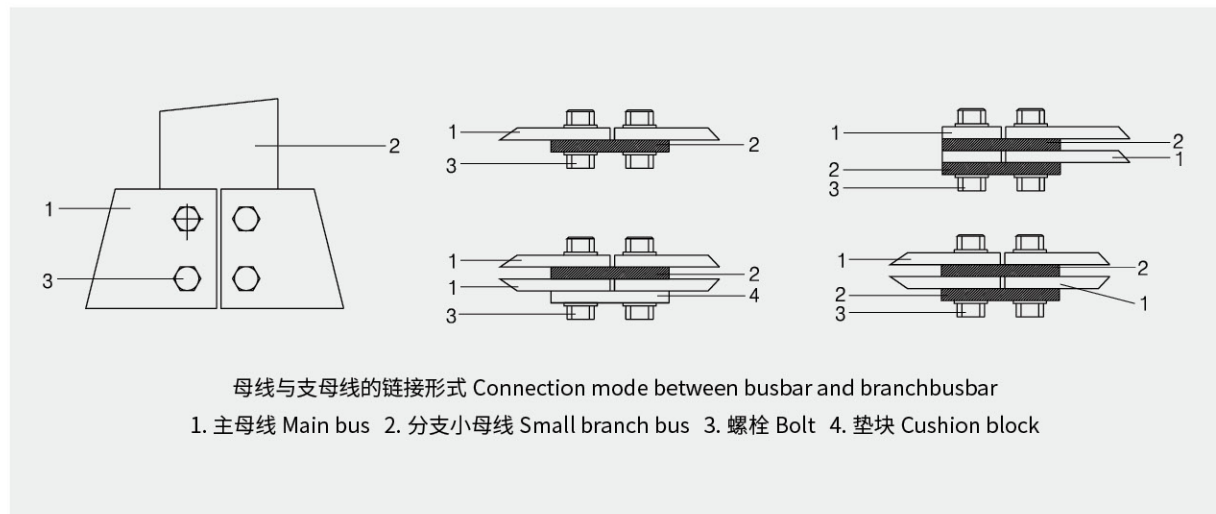
NVI-24 断路器 NVI-24 circuit breaker



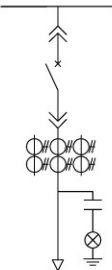
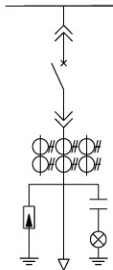
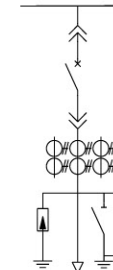
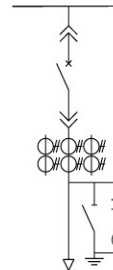
隔离手车 Isolating handcart

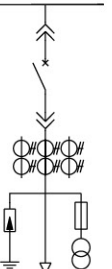
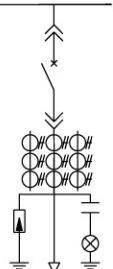
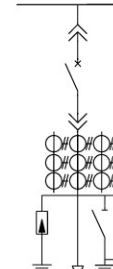
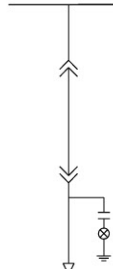


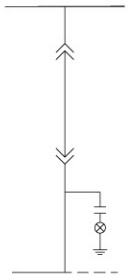
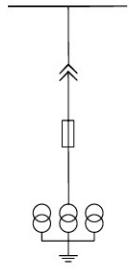
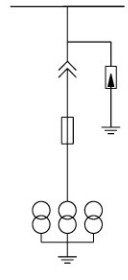
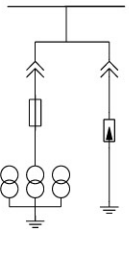
电压互感器手车 Voltage transformer handcart

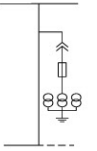
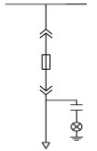
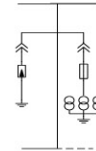
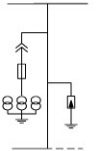


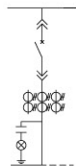
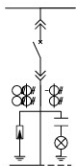
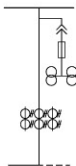
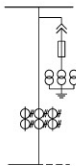
主要电路方案图 The main circuit scheme diagram


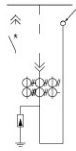
方案编号 Scheme number		01	02	03	04
一次线路图 Primary circuit diagram					
柜体尺寸 (宽 x 深 x 高) mm Dimension (WxDxH) mm		1000x1820x2300	1000x1820x2300	1000x1820x2300	1000x1820x2300
额定电流 (A) Rated current		630~3150A			
主要 电器 元件 Electrical element of main circuit	真空断路器 Vacuum circuit breaker NV1-24	1	1	1	1
	电流互感器 Current transformer LZB9-24	2~3	2~3	2~3	2~3
	电压互感器 Voltage transformer				1
	高压熔断器 High-voltage fuse				
	接地开关 Earthing switch			1	1
	避雷器 Lightning arrester			3	
用途 Application		受电、馈电 Electeification, feeding	受电、馈电 Electeification, feeding	受电、馈电 Electeification, feeding	受电、馈电 Electeification, feeding
备注 Remark					

方案编号 Scheme number		05	06	07	08
一次线路图 Primary circuit diagram					
柜体尺寸 (宽 x 深 x 高) mm Dimension (WxDxH) mm		1000x1820x2300	1000x1820x2300	1000x1820x2300	1000x1820x2300
额定电流 (A) Rated current		630~3150A			
主要 电器 元件 Electrical element of main circuit	真空断路器 Vacuum circuit breaker NV1-24	1	1	1	
	电流互感器 Current transformer LZB9-24	3	3	3	
	电压互感器 Voltage transformer	1			
	高压熔断器 High-voltage fuse	2			
	接地开关 Earthing switch			1	
	避雷器 Lightning arrester	3	3	3	
用途 Application		受电、馈电 Electeification, feeding	受电、馈电 Electeification, feeding	受电、馈电 Electeification, feeding	隔离 Isolation
备注 Remark					

方案编号 Scheme number		09	10	11	12
一次线路图 Primary circuit diagram					
柜体尺寸 (宽 x 深 x 高) mm Dimension (WxDxH) mm		1000x1820x2300	1000x1820x2300	1000x1820x2300	1000x1820x2300
主要 电器 元件 Electrical element of main circuit	额定电流 (A) Rated current	630~3150A			
	真空断路器 Vacuum circuit breaker NV1-24				
	电流互感器 Current transformer LZZB9-24				
	电压互感器 Voltage transformer		2~3	3	2~3
	高压熔断器 High-voltage fuse		3	3	3
	接地开关 Earthing switch				
	避雷器 Lightning arrester				3
用途 Application		母联隔离 Coupling isolafion	电压测量 Voltage measurement	电压测量 Voltage measuremen	电压测量 Voltage measuremen
备注 Remark					

方案编号 Scheme number		13	14	15	16
一次线路图 Primary circuit diagram					
柜体尺寸 (宽 x 深 x 高) mm Dimension (WxDxH) mm		1000x1820x2300	1000x1820x2300	1000x1820x2300	1000x1820x2300
主要 电器 元件 Electrical element of main circuit	额定电流 (A) Rated current	630~3150A			
	真空断路器 Vacuum circuit breaker NV1-24				
	电流互感器 Current transformer LZZB9-24				
	电压互感器 Voltage transformer	3		3	3
	高压熔断器 High-voltage fuse	3	3	3	3
	接地开关 Earthing switch				
	避雷器 Lightning arrester			3	3
用途 Application		测量 + 联络 Measurement + tie	熔断器 Fuse	测量 + 联络 Measurement + tie	测量 + 联络 Measurement + tie
备注 Remark					

方案编号 Scheme number		17	18	19	20
一次线路图 Primary circuit diagram					
柜体尺寸 (宽 x 深 x 高) mm Dimension (WxDxH) mm		1000x1820x2300	1000x1820x2300	1000x1820x2300	1000x1820x2300
主要 电器 元件 Electrical element of main circuit	额定电流 (A) Rated current	630~3150A			
	真空断路器 Vacuum circuit breaker NV1-24	1	1		
	电流互感器 Current transformer LZB9-24	2~3	2~3	3	3
	电压互感器 Voltage transformer			2	3
	高压熔断器 High-voltage fuse			3	3
	接地开关 Earthing switch				
	避雷器 Lightning arrester		3		
用途 Application		联络 Tie	联络 Tie	联络 + 计量 Tie + metering	联络 + 计量 Tie + metering
备注 Remark					

方案编号 Scheme number		21	22	23	24
一次线路图 Primary circuit diagram					
柜体尺寸 (宽 x 深 x 高) mm Dimension (WxDxH) mm		1000x2150x2300	1000x2150x2300		
主要 电器 元件 Electrical element of main circuit	额定电流 (A) Rated current	630~3150A			
	真空断路器 Vacuum circuit breaker NV1-24	1	1		
	电流互感器 Current transformer LZB9-24	2~3	3		
	电压互感器 Voltage transformer				
	高压熔断器 High-voltage fuse				
	接地开关 Earthing switch				
	避雷器 Lightning arrester		3		
用途 Application		联络 + tie	架空进线 Overhead incoming line		
备注 Remark					

高压开关设备系列 High voltage switch equipment series

KYN28A-12(XCS1)

铠装移开式交流金属封闭开关设备
Armored removable AC metal enclosed switchgear

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



▶ 概述 Overview

本装置系户内金属铠装抽出式开关设备（以下简称开关设备），系 3.6-12 千伏三相交流 50Hz 单母线及单母线分段系统的成套配电装置主要用于发电厂，中小型发电机送电、工矿企事业单位配电以及电业系统的二次变电所的受电、送电及大型高压电动机启动等。实行控制保护、监测之用，本开关设备满足 IEC298、GB3906 等标准要求，具有防止带负荷推拉断路器手车、防止误分合断路器、防止接地开关处在闭合位置时关合断路器、防止误入带电室、防止在带电时误合接地开关的联锁功能，既可配用 VS1 真空断路器，又可配用 ABB 公司的 VD4 真空断路器。实为一种性能优越的配电装置。

This equipment is indoor metal armoring with drawable switchgear (hereafter refer to as switchgear.3.6-12 kilovolt three phase AC 50Hz single bus bar and the single bus bar section system's complete electricity distribution equipment is used in the power plant, small and medium-sized generator power transmission, industry and mining business power distribution as well as electrical industry system's second transformer substation's electric take-over, power transmission and large-scale high pressure motor starting and so on. The purpose is to control, protect and monitor. This switch equipment is up to the standard of IEC 298, GB3906 and can prevent the charge from pushing and pulling the breaker, from opening and closing the breaker, from insulation with electricity by mistaken, from earthed switch closing the breaker, from opening the switch's interlock when it with electricity mistakenly. It can not only use with VS1 vacuum circuit breaker, but with ABB Corporation's VD4 vacuum circuit-breaker. It is indeed a kind of power distribution equipment with superior performance.

▶ 使用环境条件 Use environmental conditions

1. 正常条件：
 - a. 周围环境空气温度：上限，+40°C 下限，-10°C；
 - b. 海拔：≤ 1000M；
 - c. 相对湿度：日平均相对湿度不大于 95%，月平均相对湿度平均不大于 90%；
 - d. 地震：烈度不超过 8 度；
 - e. 周围空气应不受腐蚀性或可燃气体、水蒸汽等明显污染；
 - f. 无严重污秽及经常性的剧烈振动，严酷条件下严酷度设计满足 1 类要求。
2. 特殊工作条件：

* 在超过 GB3906 规定的正常的环境条件下使用时，由用户和制造厂协商。

1. Normal condition :
 - a. Surrounding air temperature: -10°C ~ +40°C;
 - b. Altitude: ≤ 1000M;
 - c. Relative environment humidity: The daily relative average humidity ≤ 95%, the monthly relative average humidity ≤ 90%;
 - d. Earthquake: ≤ 8 degree;
 - e. The surrounding air without corrosive or flammable gas or water vapour;
 - f. Without a lot of dirtiness and regular fierce vibration, under the severe condition, the intensity meets the first kind requirement.
2. Special working conditions :

Note: Please negotiate with us if your product is used beyond the range of above condition.

▶ 主要技术参数 The main technical parameters

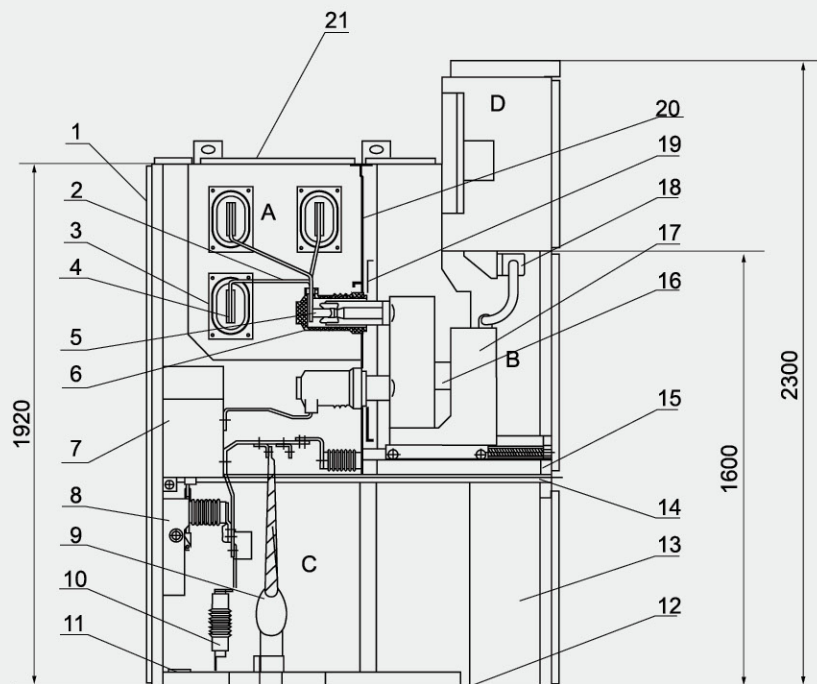
名称 Name	单位 Unit	数据 Data	
		配用断路器 Matched breaker	
		ZN63A-12(VS1)	VD4
额定电压 Rated voltage	kV	12	12
1min 工频耐受电压 1min power frequency endurable voltage	kV	42	42
额定冲击耐受电压 (峰值) Rated impulse withstand voltage (peak value)	kV	75	75
额定频率 Rated frequency	Hz	50	50
额定电流 Rated current	A	630、1250、1600、2000、2500、3150、4000、5000	
分支母线额定电流 Rated current of branch busbar	A	630、1250、1600、2000、2500、3150、4000、5000	
额定短时耐受电流 (有效值) Rated short time withstand current (virtual value)	kA	16、20、25、31.5、40、50	16、20、25、31.5、40、50
额定峰值耐受电流 Rated peak endurable voltage	kA	40、50、63、80、100、125	40、50、63、80、100、125
额定短路持续时间 Rated short-circuit duration	s	4	
防护等级 Protection level		外壳为 IP4X, 隔室门、手车室门打开时为 IP2X The shell is IP4X, and IP2X when compartment door and handcart door are opened	
重量 Weigh	kg	700~1200	700~1200

▶ 结构简介 Structure Introduction

开关设备按 GB3906-91 中的铠装式金属封闭开关设备而设计。整流器体是由柜体和中置式可抽出部件（既手车）两大部分组成，见图 1。柜体分四个单独的隔室，外壳防护等级为 IP4X，各小室间和断路器室门打开时防护等级为 IP2X。具有架空进出线、电缆进出线及其它功能方案，经排列、组合后能成为各种方案形式的配电装置。本开关设备可以从正面进行安装调试和维护，因此它可以背靠背组成双重排列和靠墙安装，提高开关设备的安全性、灵活性，减少了占地面积。

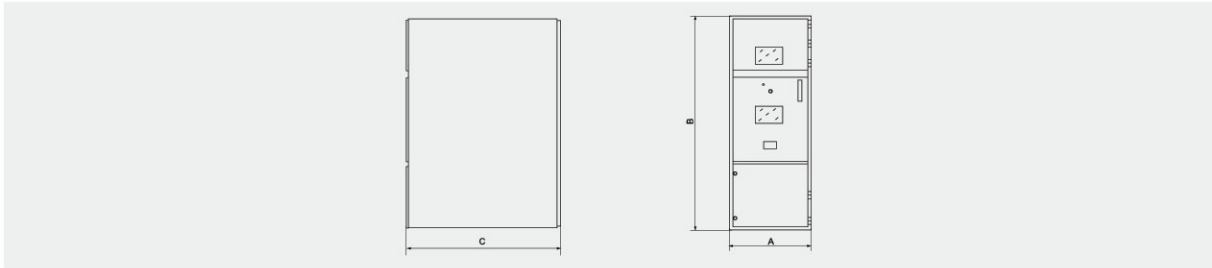
The switch equipment is designed according to GB3906-91 metal armoring seal switch equipment. The rectifier body is made up of the cabinet body and draw-out parts (namely handcart placed in the middle). See charter 1. The cabinet divides into four separate rooms, the outer covering protection grade is IP4X, when each small room and the circuit breaker is opened, the protection grade is IP2X. It can suspend the inlet, outlet line. cable's inlet, outlet line and other function plan. After arranged and combined, it can become each kind of plan form of the power distribution equipment. This switch equipment may be installed and maintained from the frontage, therefore it may compose the dul arrangement back to back and be installed against the wall, improving the switch equipment's security and flexibility and making full use of the occupying area.

▶ 开关设备结构图 Switchgear structure diagram

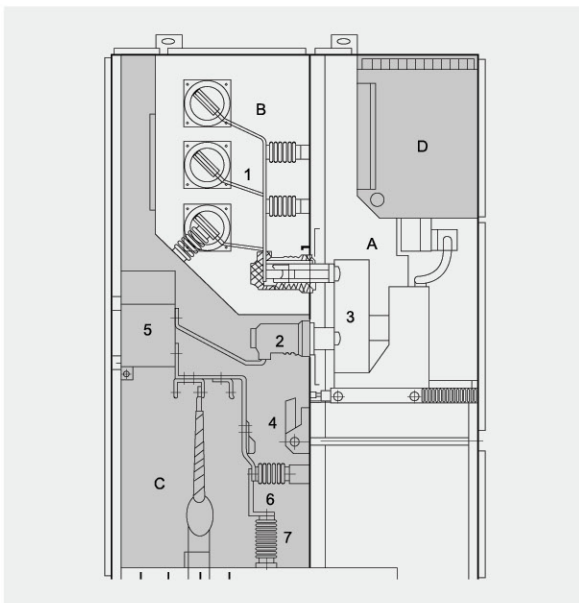


- | | |
|---|--|
| A、母线室 the bus bar room | 10、避雷器 arrester |
| B、断路器手车室 the circuit breaker handcart room | 11、接地主母线 earthed main bus bar |
| C、电缆室 the cable room | 12、底板 mother board |
| D、继电器仪表室 the relay instrument room | 13、控制小母线 control the small bus bar |
| 1、外壳 cover | 14、接地开关操作机构 earthed switch operating mechanism |
| 2、分支小母线 branch small bus bar | 15、可抽出式水平隔板 draw-out horizontal clapping board |
| 3、母线套管 bus bushing | 16、加热装置 heating device |
| 4、主母线 main bus bar | 17、断路器手车 circuit breaker handcart |
| 5、静触头装置 static contact device | 18、二次插头 secondary plug |
| 6、触头盒 contact box | 19、隔板（活门）clapping board (valve) |
| 7、电流互感器 current mutual induction current transfor | 20、装卸式隔板 loading and unloading clapping board |
| 8、接地开关 earthed switch | 21、泄压通道 pressure release channel |
| 9、电缆 cable | |

▶ 开关柜外形尺寸图 Switchgear Dimensions



▶ 开关柜外形尺寸图 Switchgear Dimensions



A 手车 Hand cart



B 母线室 Bus chamber



C 电缆室 Cable chamber

A 手车 Handcart

手车骨架系采用薄钢板经 CNC 机床加工后经铆、焊而成的。根据用途，手车可分为断路器手车、电压互感器手车、隔离手车、计量手车等等，相同规格的手车能方便互换。手车在柜内有隔离位置、试验位置和工作位置，每一位置均设有定位装置，以保证手车处于以上位置时不能随便移动、而移动手车时必须解除联锁。

The framework of handcart is made of steel sheet through the procession of CNC machine tool and rivet welding. According to the application, the handcarts can be divided into circuit breaker handcart, voltage transformer handcart, isolating handcart and metering handcart, etc. The handcarts of the same specification can be exchanged conveniently. In the cabinet, the handcart has isolating position, testing position and operating position, each of which is designed with a location device to assure that the handcart can't move easily at the above-mentioned positions, while the interlock must be unlocked to move the handcart.

B 母线室 Bus chamber

母线从一个开关柜引至另一开关柜，通过分支母线和静触头盒固定。扁平的分支母线通过螺栓连接于静触头盒和主母线，不需要任何其它的线夹或绝缘子联接。当用户和工程特殊需要时，母线排上的联接螺栓可用绝缘和端帽封装。在母线穿越开关柜隔板时，用母线套管固定。如果出现内部故障电弧，能限制事故蔓延到邻柜，并能保障母线的机械强度。

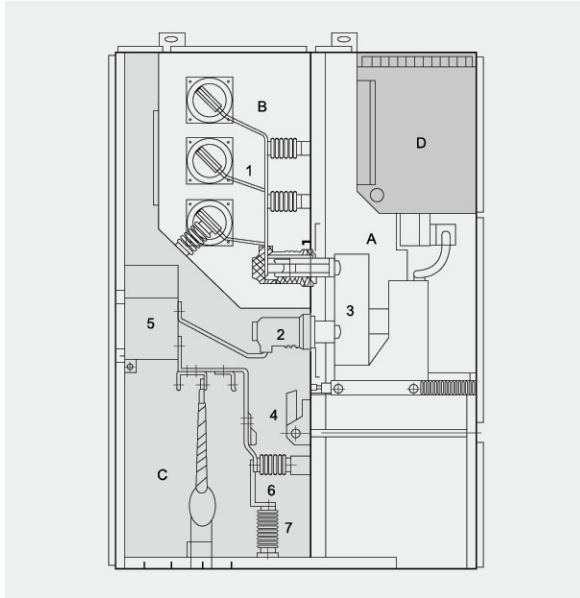
The busbar is led from one switch cabinet to another one and fixed with static contact box through branch bus. The flat branch bus is connected through the bolt to the static contact box and main bus, not needing any other line clamps or insulators. When there is special demand of the clients or the project, the connecting bolt on the bus bar can be encapsulated with insulation and end cap. When the bus crosses the baffle of the switch cabinet, fix it with bus bushing, so that, if there is any internal fault arc, it can prevent the fault spreading to another cabinet and can guarantee the mechanical strength of the bus.

C 电缆室 Cable chamber

电缆室内可安装电流互感器、接地开关、避雷器以及电缆、并在其底部配制开缝的可卸铝板，以确保现场的施工方便。

Inside the cable chamber, the current transformer, grounding switch arrester and cable can be installed, and on the bottom is designed slotted removeable aluminum sheet to assure the convenient site construction.

▶ 开关柜外形尺寸图 Switchgear Dimensions



D 继电器仪表室
Relay instrument chamber



泄压装置
Pressure releasing device

D 继电器仪表室 Relay instrument chamber

继电器仪表室用于安装各类继电器、仪表、信号指示、操作开关等元器件。此外可根据用户要求在仪表室顶部增加小母线室，可敷设十六路控制小母线。

Relay instrument chamber is used to install all kinds of components, such as relays, instruments, signal indicator and operating switch, ect. In addition, it's available to add a small bus chamber on the top of the instrument chamber according to the demand of the clients, and set 16 lines to control the small bus.

泄压装置 Pressure releasing device

在手车室、母线室、电缆室的上方设有泄压装置，当断路器或主母线、电缆室内发生内部故障电弧时，伴随电弧的出现，开关柜内部气压上升，达到一定的压力后，顶部装置的压力释放金属板将被自动打开，释放压力和排泄气体，以确保操作人员 and 开关柜安全。

On the handcart chamber, bus chamber and cable chamber is installed pressure releasing device. When there is internal fault are in the breaker, main bus or inside the cable chamber, and with the appearance of electric arc, the internal pressure in the switch cabinet rises. After it rises to a certain pressure, the pressure releasing metal sheet of the top device will be opened automatically, and the pressure and the gas are released to guarantee the safety of the operator and the switch cabinet.

锁扣结构 Latching device

中门与柜体之间的联接采用锁扣结构，并配以提升机构，使中门开启更为方便，当中门处于关闭状态时，其与柜体的联接强度更好，增强了有效抗击内部燃弧故障的能力。

Latching device is used to connect the central exit and cabinet body, and the lifting device is also designed to make it more convenient to open the central exit. When the central exit stays closed, the connecting strength with the cabinet body is the best and the capability against the internal arcing fault effectively is strengthened.

高压开关设备系列 High voltage switch equipment series

HXGN66-12

固定式金属封闭开关设备
Fixed metal enclosed switchgear

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

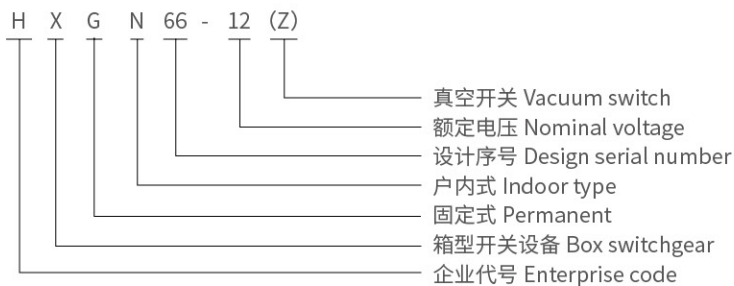
HXGN66-12 型固定式金属封闭开关设备 (以下简称开关柜) 是我公司新推出高压电器成套产品, 符合国家标准 GB/T3906 《3.6kV-40.5kV 交流金属封闭开关设备和控制设备》电力部 DLT404 《户内交流高压开关柜订货技术条件》的要求, 也满足国际标准 IEC60298 《1kV 以上 52kV 以下交流金属封闭开关设备和控制设备的要求》。

该产品吸收了国外的标准技术, 它体积小, 仅是普通开关柜体积的 50%; 断路器具有可靠性高, 性能好; “五防” 连锁机构可靠、简单等优点。开关柜是 3.6、7.2、12kV 三相交流电 50Hz 单母线分段的户内成套装置, 作为接受和分配电能之用。并具有对电路进行控制、保护和监测等功能, 可使用在各类发电、变电站及工矿企业, 高层建筑等场所, 也可与环网柜组合应用于开闭所中。

HXGN66-12 fixed metal-enclosed switchgear (hereinafter referred to as switchgear) is a complete set of high-voltage electrical equipment newly launched by our company, which meets the requirements of national standard GB/t3906 "3.6 kV-40.5 kV AC metal-enclosed switchgear and control equipment", DLT404 "Technical conditions for ordering indoor AC high-voltage switchgear", and also meets the international standard IEC 60298 "AC metal-enclosed switchgear above 1 kV and below 52kV"

This product has absorbed foreign standard technology, and its volume is small, which is only 50% of the volume of ordinary switchgear; Circuit breaker has high reliability and good performance; The "Five Prevention" interlocking mechanism is reliable and simple. Switchgear is a complete set of indoor devices with 3.6, 7.2 and 12kV three-phase alternating current and 50Hz single bus section, which is used for receiving and distributing electric energy. It has the functions of controlling, protecting and monitoring circuits, and can be used in various power plants, substations, industrial and mining enterprises, high-rise buildings and other places, and can also be combined with ring network cabinets to be used in opening and closing stations.

型号及含义 Model and meaning



正常使用条件 Regular service conditions

- ◇ 海拔高度不超过 1000m; ◇ The altitude does not exceed 1000m;
- ◇ 环境温度: -25°C ~+40°C, 24 小时内平均温度不超过 +35°C; ◇ Ambient temperature: -25°C ~+40°C, and the average temperature within 24 hours shall not exceed +35°C;
- ◇ 水平倾斜度不大于 3 度; ◇ Horizontal inclination is not more than 3 degrees;
- ◇ 地震烈度不超过 8 级; ◇ Seismic intensity shall not exceed Grade 8;
- ◇ 无剧烈振动和冲击及爆炸危险场所。 ◇ There is no dangerous place for violent vibration, impact and explosion.

真空断路器主要技术参数 Main technical parameters of vacuum circuit breaker

序号 Serial number	项目 Project	单位 Unit	技术参数 Technical parameter
1	额定电压 Nominal voltage	kV	3.6, 7.2, 12
2	额定工频耐受电压 Rated power frequency withstand voltage	kV	对地, 相间: 42; 断口: 48 Ground, interphase: 42; fracture: 48
3	额定雷电冲击耐受电压 Rated lightning impulse withstand voltage	kV	对地, 相间: 75; 断口: 85 Ground, interphase: 75; fracture: 85
4	额定频率 Rated frequency	Hz	50
5	额定电流 Rated current	A	630, 1250,
6	额定短路开断电流 (有效值) Rated short-circuit breaking current (effective value)	kA	20, 25, 31.5,
7	额定短路关合电流 (峰值) Rated short-circuit closing current (peak value)	kA	50, 63, 80,
8	额定动稳定电流 (峰值) Rated dynamic stable current (peak value)	kA	50, 63, 80
9	额定热稳定电流 4s (有效值) The rated thermal stability current is 4s (effective value)	kA	20, 25, 31.5
10	防护等级 The protection grades		IP2X
11	外形尺寸 (宽 × 深 × 高) Overall dimensions (width × depth × height)	mm	900 × 1000 × 2300
12	重量 Weight	kg	≈ 600

▶ **功能及特点 Functions and characteristics**

- ◇ 柜体采用优质角钢焊接而成。
- ◇ 断路器室位于柜体中（下）部，安装、调试、维护方便。标准配备 VS1 断路器，并设有压力释放通道，确保人身安全。
- ◇ 采用领先可靠的旋转式隔离开关，可在主母线带电下安全进入断路器室检修。
- ◇ 整柜防护等级 IP2X。
- ◇ 设有可靠功能齐全的强制性机械闭锁装置，简便有效达到“五防”要求。
- ◇ 具有可靠的接地系统。
- ◇ 门上装有观察窗，可清楚观察到柜内元件地工作状态。
- ◇ 进出线电缆低于柜体前部，方便用户连接。
- ◇ The cabinet is welded with high-quality angle steel.
- ◇ The circuit breaker room is located in the middle (lower) part of the cabinet, which is convenient for installation, debugging and maintenance. VS1 circuit breaker is equipped as standard, and pressure relief channel is provided to ensure personal safety.
- ◇ The leading and reliable rotary isolating switch can safely enter the circuit breaker room for maintenance when the main bus is electrified.
- ◇ the protection level of the whole cabinet is IP2X.
- ◇ There is a reliable and fully functional mandatory mechanical locking device, which can simply and effectively meet the requirements of "Five Preventions".
- ◇ Reliable grounding system.
- ◇ The door is equipped with an observation window, which can clearly observe the working state of the components inside the cabinet.
- ◇ Incoming and outgoing cables are lower than the front of the cabinet, which is convenient for users to connect.

▶ **产品外形尺寸图 Overall dimension drawing of products**

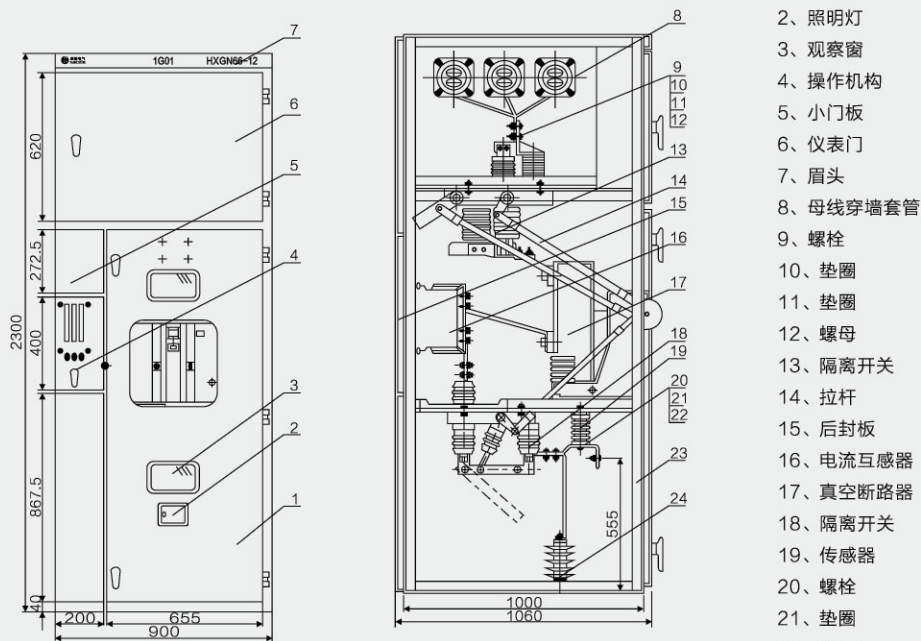


图1：开关柜布置示意图

- 1、柜门
- 2、照明灯
- 3、观察窗
- 4、操作机构
- 5、小门板
- 6、仪表门
- 7、眉头
- 8、母线穿墙套管
- 9、螺栓
- 10、垫圈
- 11、垫圈
- 12、螺母
- 13、隔离开关
- 14、拉杆
- 15、后封板
- 16、电流互感器
- 17、真空断路器
- 18、隔离开关
- 19、传感器
- 20、螺栓
- 21、垫圈
- 22、垫圈
- 23、骨架
- 24、避雷器

高压开关设备系列 High voltage switch equipment series

TBBZ

高压无功自动补偿装置

Automatic compensation device for high-voltage reactive power

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.

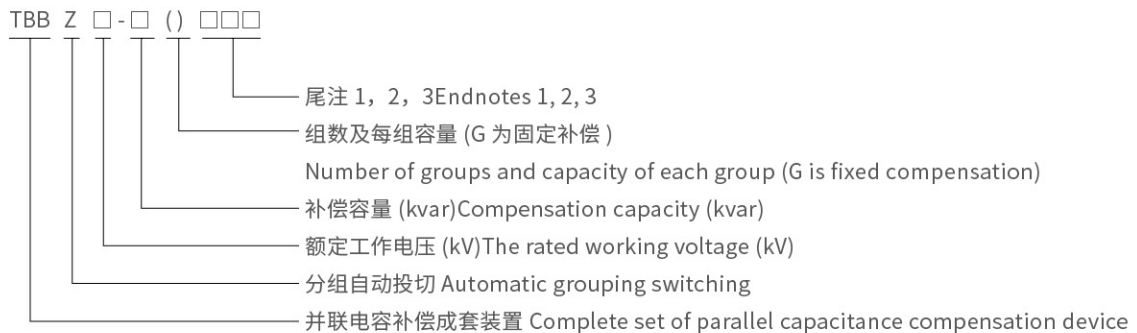


概述 Overview

TBBZ 系列高压无功自动补偿装置根据 6KV、10KV 供母线的电网及负荷状况，通过控制系统电容器组自动跟踪投电切，进行无功功率自动跟踪补偿，功率因数达到 0.9 以上。极大的优化电能质量、节损降耗，提高输配电系统的输送容量。

According to the power grid and load conditions of 6KV and 10KV power supply buses, TBBZ series high-voltage reactive power automatic compensation devices automatically track and compensate reactive power by controlling the capacitor bank of the system, and the power factor reaches above 0.9. Greatly optimize the power quality, save losses and reduce consumption, and improve the transmission capacity of the transmission and distribution system.

型号及含义 Model and meaning



例如：TBBZ10-1500(600+900)-AK 表示电压为 10kV，装置容量为 1500kvar，分两组自动投切，一组 600kvar，一组 900kvar，单星型接线，开口三角电压保护。

For example, TBBZ10-1500(600+900)-AK indicates that the voltage is 10kV, the capacity of the device is 1500kvar, and it is automatically switched in two groups, one group is 600kvar, the other group is 900kvar, single star connection, and open delta voltage protection.

工作条件 Working conditions

- ◇ 海拔高度：不高 1000m； ◇ Altitude: not higher than 1000m;
- ◇ 环境温度：-25°C ~+55°C； ◇ Ambient temperature: -25°C ~+55°C；
- ◇ 相对湿度：不超过 85%； ◇ relative humidity: no more than 85%；
- ◇ 运行场所不允许有爆炸危险的介质，周围介质中不应含有腐蚀性和破坏绝缘的气体及导电介质，不允许充满水蒸汽及有严重的霉菌存在。 ◇ The medium with explosion danger is not allowed in the operating place, the surrounding medium should not contain corrosive and insulating gas and conductive medium, and it is not allowed to be filled with water vapor and have serious mold.

产品特点 Product features

- ◇ 装置能在 1.1 倍额定工作电压的稳态过电压下长期运行；
- ◇ 装置能在方均根值不超过 1.3 倍电容器组额定电流的过电流下连续运行；
- ◇ 装置采用真空接触器投切，可频繁操作；
- ◇ 每组电容器设有放电线圈，在 5 秒内可剩余电压降致 50V 以下；
- ◇ 每组电容器可用继电器保护或是微机保护控制单元，实现电容器组的过流、电压不平衡、系统的欠压、过压保护；
- ◇ 当某组电容器出现故障后，可切断本组电容器，不影响其他电容器的使用；
- ◇ 单台电容器有喷逐式熔断器保护，每组配有避雷器起操作过电压及雷击过压保护；
- ◇ 大屏幕液晶显示控制器，实时显示系统电压、电流、功率因数；具有 RS232/RS485 标准通讯接口，并可实现“四遥”功能；
- ◇ 每组可配置电抗器抑制合闸涌流或抑制谐波放大。
- ◇ The device can run for a long time under the steady-state overvoltage of 1.1 times the rated working voltage;
- ◇ The device can run continuously under overcurrent with the mean square root value not exceeding 1.3 times the rated current of the capacitor bank;
- ◇ The device is switched by vacuum contactor, which can be operated frequently;
- ◇ Each group of capacitors is equipped with a discharge coil, and the residual voltage can drop below 50V within 5 seconds;
- ◇ Relay protection or microcomputer protection control unit can be used for each group of capacitors to realize overcurrent, voltage imbalance, undervoltage and overvoltage protection of the system;
- ◇ When a group of capacitors fails, it can be cut off without affecting the use of other capacitors;

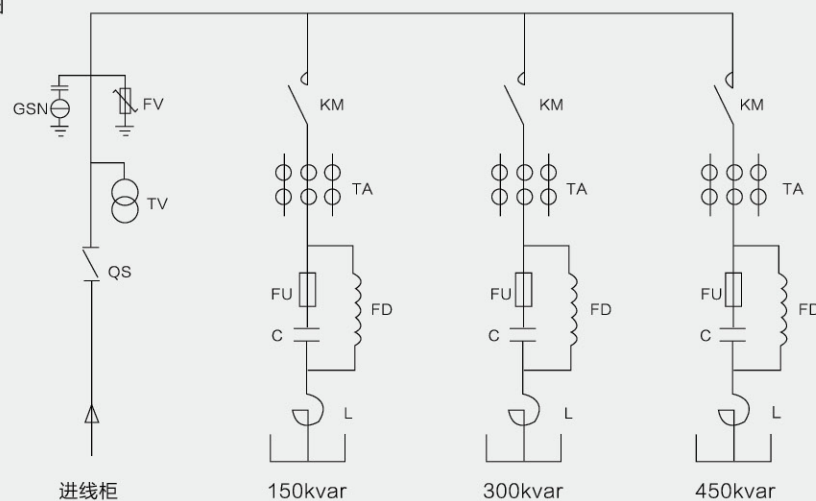
- ◇ Single capacitor has spray fuse protection, and each group is equipped with lightning arrester starting overvoltage and lightning overvoltage protection;
- ◇ Large-screen LCD controller, displaying system voltage, current and power factor in real time; With RS232/RS485 standard communication interface, and can realize "four remote" function;
- ◇ Each group can be configured with reactors to suppress switching inrush current or harmonic amplification.

▶ 主要技术参数 Main technical parameters

- | | |
|---------------------------------|--|
| ◇ 额定电压: 6-10kV; | ◇ Rated voltage: 6-10kV; |
| ◇ 额定频率: 50Hz; | ◇ Rated frequency: 50Hz; |
| ◇ 额定容量: 100-10000kvar; | ◇ Rated capacity: 100-10000kvar; |
| ◇ 分组数量: 1-5 组; | ◇ Number of groups: 1-5 groups; |
| ◇ 电抗器参数选择: 抑制合闸涌流, 电抗率为 0.1-1%; | ◇ Reactor parameter selection: suppress switching-on inrush current, and the reactance rate is 0.1-1%; |
| ◇ 抑制 5 次以上谐波, 电抗率为 6%; | ◇ Suppress more than 5 harmonics with reactance rate of 6%; |
| ◇ 抑制 3 次以上谐波, 电抗率为 12%。 | ◇ Suppress more than three harmonics, and the reactance rate is 12%。 |



一次原理图



高压开关设备系列 High voltage switch equipment series

HXGN17-12

箱型固定式金属封闭开关设备
Box type fixed metal enclosed switchgear

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

HXGN17-12 箱型固定式金属开关设备（简称开关柜），用于 3.6、7.2、12KV 三相交流 50Hz 系统中作为接受与分配电能之用，特别适合于频繁操作的场合，其母线系统为单母线（并可派生出单母线带旁路和双母线结构）。

本开关柜符合国家标准 GB3906《3-35KV 交流金属封闭开关设备》及国际标准 IEC298 的要求，并达到“五防”闭锁功能。

本开关柜的主开关采用 ZN28A-12 或 ZN22-12 系列真空断路器配用 CD17A 电磁操作机构和 CT19B 弹簧操作机构，隔离开关采用 GN30-12 旋转式隔离开关、GN22-10 大电流隔离开关系列产品。

HXGN17-12 box-type fixed metal switchgear (referred to as switchgear for short) is used for receiving and distributing electric energy in 3.6, 7.2 and 12KV three-phase AC 50Hz systems, especially suitable for frequent operation occasions. Its bus system is single bus (and can be derived from single bus with bypass and double bus structure).

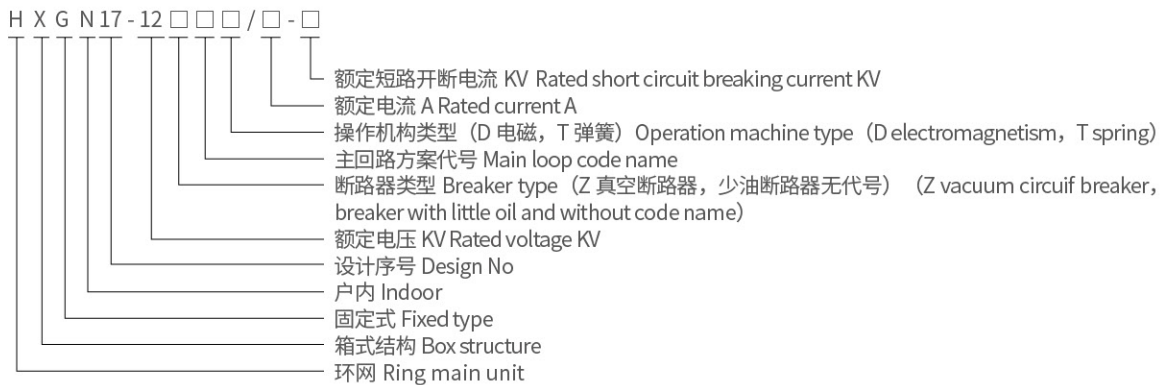
This switch cabinet meets the requirements of national standard GB 3906 "3-35 kV AC Metal Closed Switchgear" and international standard IEC298, and achieves the locking function of "Five Preventions".

The main switch of this switch cabinet adopts ZN28A-12 or ZN22-12 series vacuum circuit breaker with CD17A electromagnetic operating mechanism and CT19B spring operating mechanism, and the isolating switch adopts GN30-12 rotary isolating switch and GN22-10 high current isolating switch series products.

使用环境条件 Use environmental conditions

- ◇ 环境温度：上限 +40℃，下限 -25℃；
 - ◇ 海拔高度不超过 1000m；
 - ◇ 相对湿度：日平均值不大于 95%；月平均值不大于 90%；
 - ◇ 地震烈度不超过 8 度；
 - ◇ 没有火灾、爆炸危险和污染等级不超过 3 级、化学腐蚀及剧烈震动的场所。
- ◇ Ambient temperature:-25℃ ~ +40℃；
 - ◇ Altitude ≤ 1000M；
 - ◇ Relative environment humidity: The daily relative humidity average ≤ 95%; The monthly relative humidity average ≤ 90%；
 - ◇ The earthquake intensity ≤ 8 degree；
 - ◇ Without fire, the danger of explosion, chemical corrosion and fierce vibration place and the pollution grade not beyond 3 level.

型号及含义 Model and meaning



主要技术参数 The main technical parameters

项目 Item	单位 Unit	VS1
额定电压 Rated voltage	kV	3.6、7.2、12
额定电流 Rated current	A	630, 1250, 1600, 2000, 3150
额定短路开断电流 Rated short circuit breaking current	kA	16, 20, 31.5, 40
额定短路关合电流 (峰值) Rated short circuit making current (peak value)	kA	40, 50, 80, 100
额定短路动稳定电流 (峰值) Rated short circuit stable moving current (peak value)	kA	40, 50, 80, 100
额定热稳定电流 Rated heat stable heating current	kA	16, 20, 31.5, 40
额定热稳定时间 Rated heat stable heating time	s	4
防护等级 Protection level		IP2X
结构型式 Structure type		单母线分断及单母线带旁路 Single bus bar disjunction and single bus bar with branches
操作方式 Operation mode		电磁式, 弹簧储能式 electromagnetic, spring and energy storage type
外形尺寸宽 X 深 X 高 dimension width X deep X is high	mm	1100x1200x2650 (一般型) (common type)
重量 Weight	kg	1000

▶ 结构特点 Structural features

HXGN17-12 开关柜为金属封闭箱式结构，柜体骨架由角钢焊接而成，柜内分为断路器室、母线室、电缆室、继电器室等，室与室之间用钢板隔开。

1、断路器室在柜体前下部，断路器的转动由拉杆与操动机构连接，断路器上接线端子与上隔离开关连接，断路器下接线端子与电流互感器连接，电流互感器与下隔离开关接线端子连接，断路器室还设有压力释放通道，若内部电弧发生时，气体可通过排气通道将压力释放。

2、母线室在柜体后上部，为了减小柜体高度，母线呈品字形排列，以 7350N 抗弯强度的瓷质绝缘子支持，母线与上隔离开关接线端子相连接，相邻两柜母线室之间可隔离。

3、电缆室在柜体下部的后方，电缆室内支持绝缘子可设有电压监视装置，电缆固定在支架上，对于主结线为联络方案时，本室则为联络电缆室，继电器室在柜体上部前方，室内安装板可安装各安装各种继电器等，室内有端子排支架，门上可安装指示仪表、信号元件等二次元件，顶部还可布置二次小母线。

4、断路器的操动机构装在正面左边位置，其上方为隔离开关的操作及联锁机构，开关柜为双面维护，前面检修继电器室的二次元件，维护操动机构，机械联锁及传动部分，检修断路器，后面维修主母线和电缆终端，在断路器室装有照明灯，前门的下方设有与柜宽方向平行的接地铜母线，其截面为 4x40mm。

5、机械联锁：为了防止带负荷分合隔离开关，防止误分误合断路器，防止误入带电间隔；防止带电合接地开关；防止带接地刀合闸，开关柜采用相应的机械联锁，机械联锁的动作原理如下：

(1) 停电操作（运行 - 检修）

开关柜处于工作位置，即上下隔离开关、断路器处于合闸状态，前后门已锁好，并处于带电运行之中，这时的小手柄处于工作位置，先将断路器分闸后，再将小手柄插入下隔离的操作孔内从上往下拉，拉到下隔离分闸位置，将手柄拿下，再插入上隔离操作孔内，从上往下拉，拉到上隔离分闸位置，再将操作手柄拿下，插入接地开关操作孔内，从下向上推，使接地开关处于合闸位置，这时可将小手柄扳至“检修”位置，可先打开前门，取出后门边钥匙打开后门，停电操作完毕，检修人员对断路器室及电缆室进行维护和检修。

(2) 送电操作（检修 - 运行）

若已检修完毕，需要送电，其操作程序如下：

将后门关闭，钥匙取出后关前门，将小手柄从“检修”位置扳到“分断闭锁”位置，这时前门被锁定，断路器不能合闸，用操作手柄插入接地开关操作孔内，从上向下拉，使接地开关处于分闸位置，将操作手柄拿下，再插入上隔离的操作孔内，从下向上推，使上隔离处于合闸位置，将操作手柄拿下，插入下隔离的操作孔内，从下向上推，使下隔离处于合闸位置，取出操作手柄，将小手柄扳至工作位置，这时可将断路器合闸。

6、产品外形尺寸及结构图（见图 1、图 2、图 3）

HXGN17-12 switch cabinet is the metal-enclosed box structure, its cabinet frame is welded together by the angle iron, the cabinet inside is divided into breaker room, bus bar room cable room, relays room and so on. Rooms are separated by armor plate.

1、The circuit breaker room is located below in front of the cabinet body. It is connected by the tenon bar and the drive mechanism. Line terminal above the breaker connects with isolated switch. Line terminal below the breaker connects with the current mutual inductance which connects isolated switch line terminal. The circuit breaker room also is equipped with the pressure release channel, if internal electric arc it occurs, the gas passable exhaust channel released the pressure through exhaust channel.

2、Bus bar room is behind, upside cabinet body. In order to reduce the cabinet body altitude, bus bar room shows itself like the word "品" supported by the 7350N anticurved intensity porcelain insulator. Bus bar connects with upside insulated switch's line terminal. Bus bar room in neighboring two cabinets can be isolable.

3、The cable room is behind and below the cabinet body. The supporting insulator inside the cable room may be equipped with the voltage monitor device. The electric cable fixes on the support. When the main line is used to connect, this room is connecting cable room. The relay room is upside and in front of the cabinet body. The install panel inside the cable room can install each kind of the relay. There are terminal supporters inside. The door of the cable room can be installed indication instrument, the signal part and other twice parts. The top can be installed twice small busbar.

4、Circuit breakers drive mechanism is installed face and left side of the breaker. Above it is isolated switch operation and the interlocking mechanism. The switch cabinet is the two-sided maintenance. The front is twice component checking and repairing relay room and breaker, maintaining the drive mechanism, interlocking mechanism and transmission parts; the back is repairing the main bus bar and cable terminal. There is head lamp inside the breaker. The downside of front doors equipped with bus bar connected by copper paralleling with cabinet. The section is 4x40mm.

5、Mechanical interlocking: In order to prevent the load from turning on and off the isolated switch and the circuit breaker by mistake, prevent from isolating with charge and earthed switch with charge and turning on the knife switch. The switch cabinet uses the corresponding mechanical interlocking. The mechanical interlocking movement principle as follows:

(1) power-cut operation (operation-examination)

The switch cabinet is in the working position, namely the upside and downside isolated switch, the circuit breaker are at turn-on condition, the front and back door has been locked and at electriferous condition, at this time, the small handle was in the working position.

First, turn the breaker off, insert the small handle into downside isolated operation hole, then pull to the isolated turn-off position from down to up. Then take the handle down, insert the handle into upside isolated operation hole, pull to the isolated turn-off position from up to down. Then take the handle down and insert it into switch hole, push from down to up to make the switch turn off.

At this time, pull the small handle to the "examination and repair condition". Then open the front door first, then open the back door, the power cut operation finish, the examiner maintain and repair the breaker and the cable room

(2) Power transmission operation (examination repair-movement)

If examination repair operation has finished, the power transmission is needed, its operation procedure as follows:

Close the back door, after the key is taken out, close the front door, pull the small handle from "the examination repair" position to disjunction and closedown" position, at this time the front door is locked, the circuit breaker can not be turned on. Insert the operation handle to the earthed switch operational hole, push the upside isolator to the turn on position from down to up, take the operation handle out and insert into the downside isolating operational hole, pull the downside isolator to the turn-on operation from down to up and take the operational handle out, pull the small handle to the operation position, at this time, turn the breaker on.

6. Products external dimensions and the structure chart (see chart 1, chart 2, chart 3)

图 1 HXGN17-12 外形尺寸及结构图 Diagram 1 Dimension and structure of HXGN17-12 type

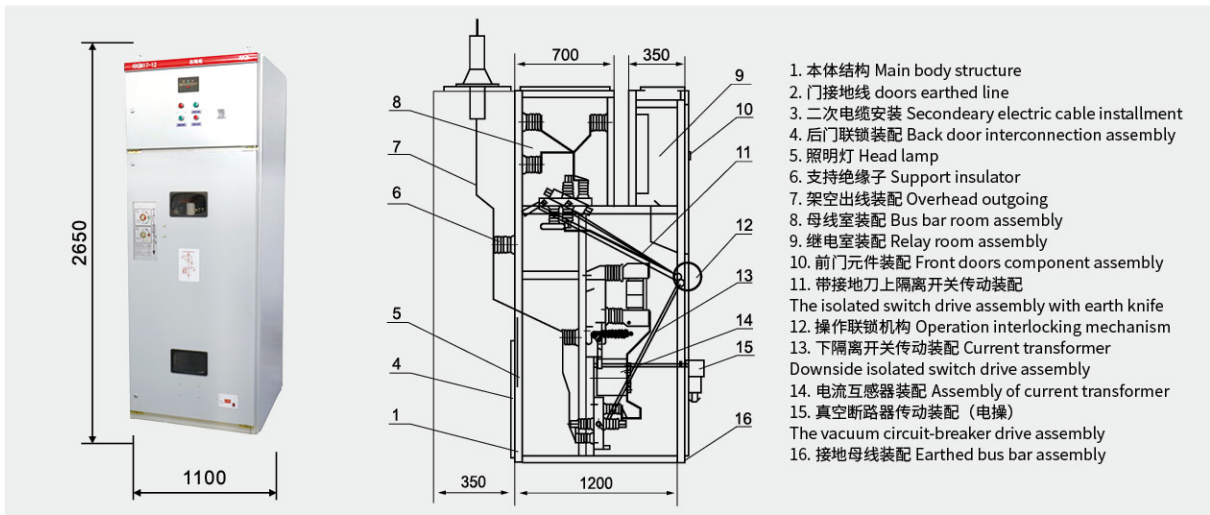


图 2 HXGN17-12 大电流柜外形结构图 (配备 ZN28A 系列真空断路器) Diagram 2 Outline structure of HXGN17-12 heavy current cabinet (equipped with ZN28A series vacuum circuit breaker)

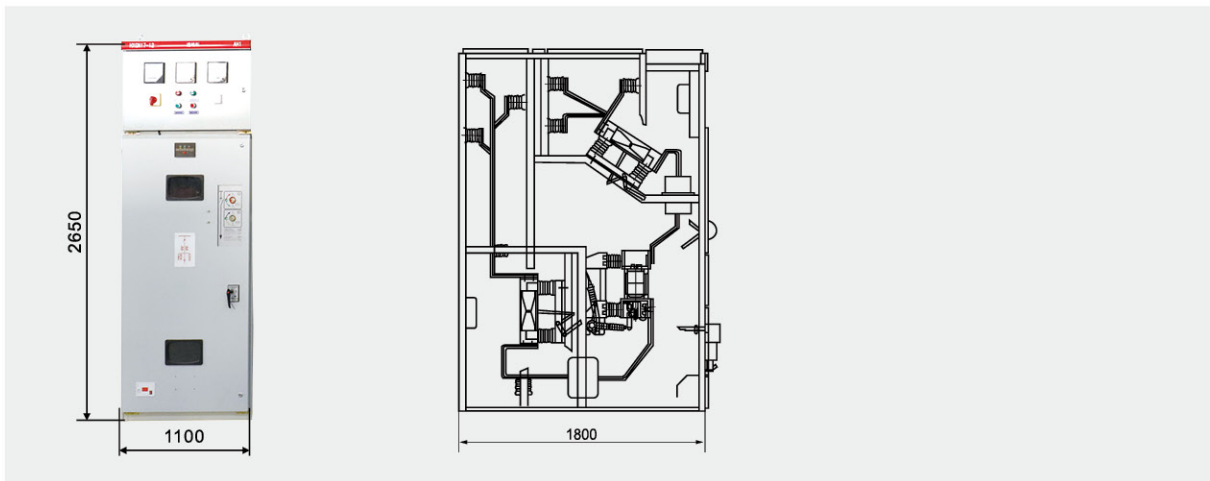


图 3 HXGN17-12 旁路电缆出线柜外形结构图 Diagram 3 Outline structure of HXGN17-12 bypass cable outgoing cabinet

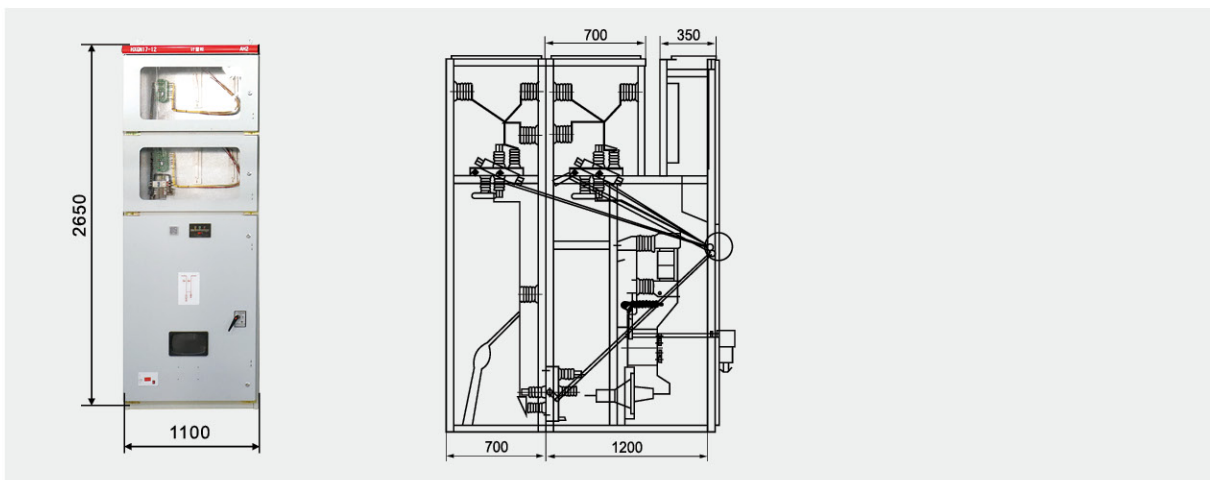


图 4 HXGN17-12 型安装尺寸图 Diagram 4 Mounting size of HXGN17-12 type

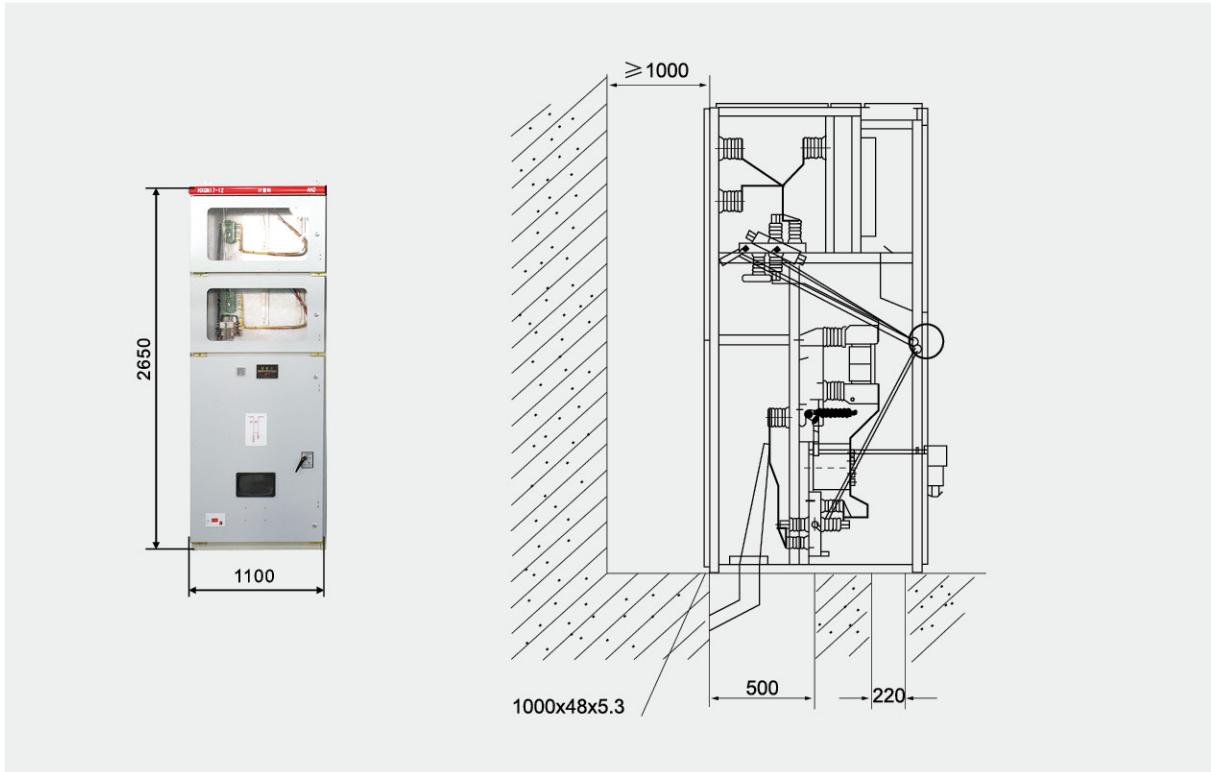
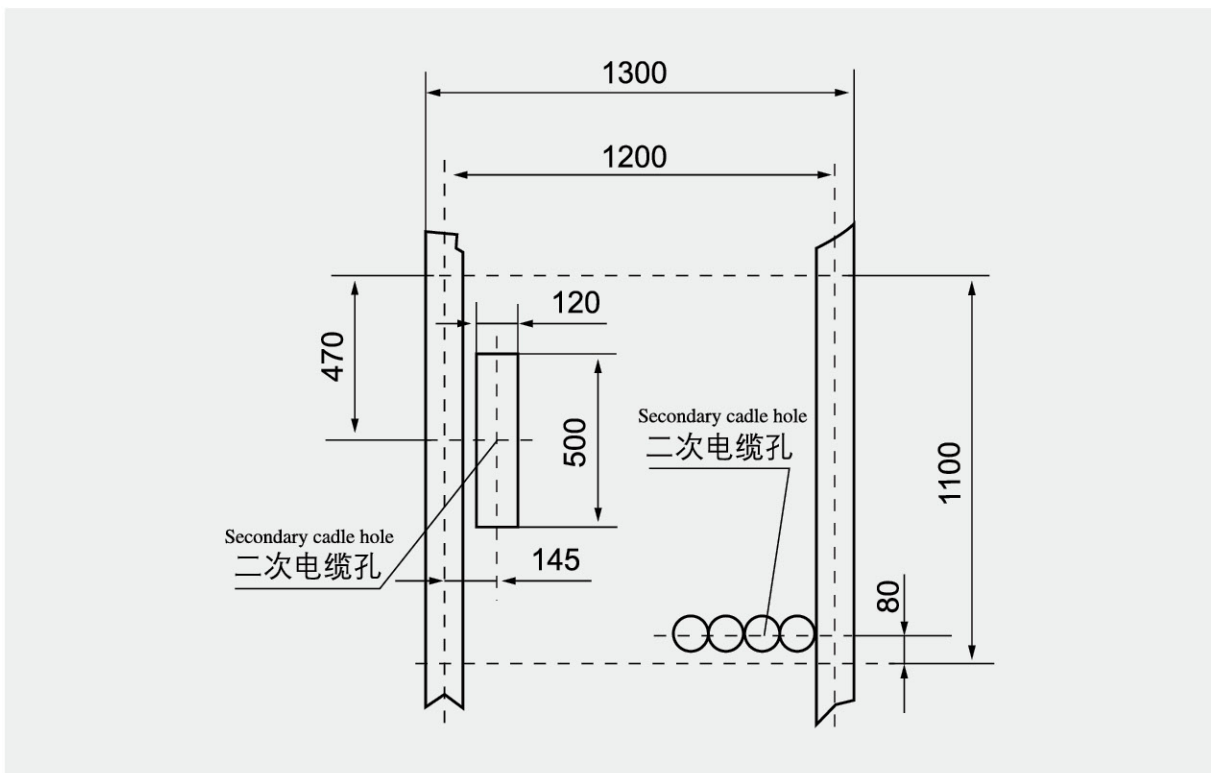


图 5 HXGN17-12 型安装尺寸图 Diagram 5 Mounting size of HXGN17-12 type



高压开关设备系列 High voltage switch equipment series

DFW-12/630

户外智能化箱式开闭所

Outdoor intelligent box opening and closing

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

广泛应用于城电网改造、住宅小区、商业中心等用电人口密集区。

Widely used in urban power grid transformation, residential districts, commercial centers and other densely populated areas.

型号含义 Type meaning



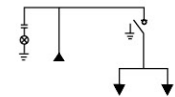
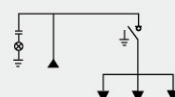
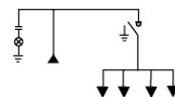
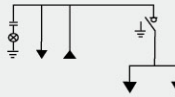
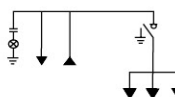

功能特点 Features

- ◇ 采用预制式带电可触摸硅橡胶电缆头，全密封、全绝缘、免维护，可靠保证人身安全；
- ◇ 结构紧凑，外形小巧美观，不锈钢双层箱体，使用寿命可达二十年以上；
- ◇ 在不影响主网运行的前提下，实现区域停电检修，减小停电范围；
- ◇ 可配一台或多台 SF6 负荷开关。接线方式灵活多样，分支出线最多，可达 8 回路；
- ◇ 可选避雷器、短路故障指示器、限流熔断器等，满足用户各种要求。
- ◇ Prefabricated live touchable silicone rubber cable head, fully sealed, fully insulated, maintenance free, reliable guarantee of personal safety;
- ◇ Compact structure, small and beautiful appearance, stainless steel double box, the service life of up to 20 years;
- ◇ Under the premise of not affecting the operation of the main net work, realize regional outage maintenance and reduce the scope of power outage;
- ◇ Can be equipped with one or more SF6 load switches. The wiring is flexible and diverse, with up to 8 loops in the branch outlet;
- ◇ Optional arrester, short-circuit fault indicator, current limiting fuses, etc., to meet the user's various requirements.

主要技术参数 The main technical parameters

序号 No.	名称 Name	参数 Parameter
1	额定电压 Rated voltage	12 kV
2	额定电流 Rated current	630A
3	工频耐压（相地） Frequency withstand voltage (phase)to ground	42 kV/min
4	雷电冲击电压 Lightning impulse withstand voltage	75kV
5	额定开断电流 Rated breaking current	630A
6	额定短路开合电流（峰值） Rated short-circuit opening and closing current (peak)	50kA
7	额定短时耐受电流 Rated short-time withstand current	25kA/4S
8	额定峰值耐受电流 Rated peak withstand current	50kA
9	额定开断电容电流 Rated breaking capacitor current	45A
10	额定开断电感电流 Rated breaking inductor current	16A
11	满负荷开断次数 Full load breaking frequency	> 100
12	分合闸机械操作次数 Switching and closing machine operation times	2000

▶ 典型接线方案 Typical wiring scheme

型号 Model	线号说明 Line number description	一次接线图 Primary wiring diagram	外观尺寸 (长 X 宽 X 高) Appearance size (length X width X height)
DFW-102K	一进二分支带一台开关 One incoming two branches with a switch		1180x1050x1600
DFW-103K	一进三支带一台开关 One incoming three branches with a switch		1250x1050x1600
DFW-104K	一进四分支带一台开关 One incoming four branches with a switch		1250x1050x1600
DFW-112K	一进一出二分支带一台开关 One mcoming and one outgoing two branches with a switch		1350x1050x1600
DFW-113K	一进一出三支带一台开关 One incoming three branches with a switch		1420x1050x1600
DFW-114K	一进一出四分支带一台开关 One incoming four branches with a switch		1420x1050x1600

高压开关设备系列 High voltage switch equipment series

DFW2-12/630

可触摸电缆分支箱（欧式）
Touchable cable branch box (Europe)

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▶ 结构特点 Structural features

- ◇ 硅橡胶预制式插件结构, 全绝缘、全密封;
- ◇ 防尘、防潮、防水、耐腐蚀、适用户内外各种运动行环境;
- ◇ 扩展性强、进出线从 2 路到 8 路, 灵活组合, 满足多种接线要求;
- ◇ 免维护、体积小、结构紧凑、安装便捷、外形美观;
- ◇ 独特的应力锥结构, 将应力控制和硅橡胶一体化结构有效解决电缆外屏蔽切断处电场应力;
- ◇ 产品有不可触摸式 CJB 和触摸式 CJK 供选择。
- ◇ Silicon rubber prefabricated connector structure, full insulation, full seal;
- ◇ With functions of proofing the dust, wetness, water and corrosion, it is suitable for indoor and outdoor various environment;
- ◇ Strong extendability, the inlet and outlet wires from 2 circuits to 8 circuits can be combined flexibly to meet various requirements for connection;
- ◇ Maintenance free, small volume, compact structure, convenient installation, nice appearance;
- ◇ Unique stress cone structure, integrated with silicon rubber structure can control the stress of electric field at the cutting of cable external shield;
- ◇ The product has two selections: non-touchable CJB and touchable CJK.

▶ DFW2-12/630 型可触摸电缆分接箱附件 Touchable cable distribution box attachment



图 2 高压带电显示器装置
 Fig.2 High voltage charged displayc

▶ 主要技术参数 The main technical parameters

额定电压 Rated voltage (kV)	长期最高 工作电压 Long term wrbing wlfoge (kV)	额定电流 Rated current (A)	额定动稳电流 (峰值) Rated moung stability current (peak) (Hz)	额定频率 Rated frequency (A)	额定热稳定电流 kA Rated thermal stability current	工频耐压 kV Power frequency withstand voltage	雷电冲击耐压 kV Lightning impulse withstand voltage
10	15	630	50	20/25	50	45	150
连接点电阻 Contact resistance	导体工作温度°C Working temperature of conductor	局部放电 Partial discharge PC/kV	潮湿试验 Dampness test kV/h	适用电缆类型 Applicable cable type	适用电缆截面 mm ² Applicable cable sectional area	适用环境温度°C Applicable environment temperature	适用海拔高度 m Applicable altitude
≤ 40	≤ 95°C	≤ 10PC/13kV	11kV/100h 通过 pass	XLPE	25-400mm ²	40°C ~50°C	≤ 3000m

▶ DFW2-12/630 型常用方案号 Common scheme number

编号 Numbering	01	02	03	04	05	06
接线方案 Wiring scheme						
编号 Numbering	07	08	09	10	11	12
接线方案 Wiring scheme						

高压开关设备系列 High voltage switch equipment series

DFW10-12

电缆分支箱
Cable branch box

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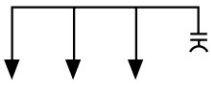
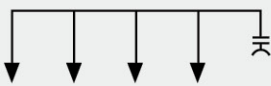
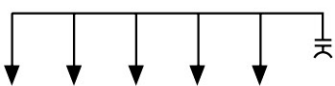

▶ 结构特点 Structural features

- ◇ 全绝缘、全密封结构，全防护、全工况；
- ◇ 进出线灵活，实际应用最多有八分支进出线；
- ◇ 抗凝露、抗凝霜；
- ◇ 带有半导体屏蔽层的硅橡胶电缆接头，确保人身安全；
- ◇ 实现小区多路送电；
- ◇ 电缆头为可触摸型。
- ◇ Full insulation, fully sealed structure, full protection, full working conditions;
- ◇ Flexible entry and exit, the actual application of the most branches and exports of eight branches;
- ◇ Anti frost, anti condensation;
- ◇ With semi conductive shielding layer of silicone rubber cable connector, to ensure personal safety;
- ◇ The realization of district multi-channel transmission;
- ◇ The cable head is touch type.

▶ 主要技术参数 The main technical parameters

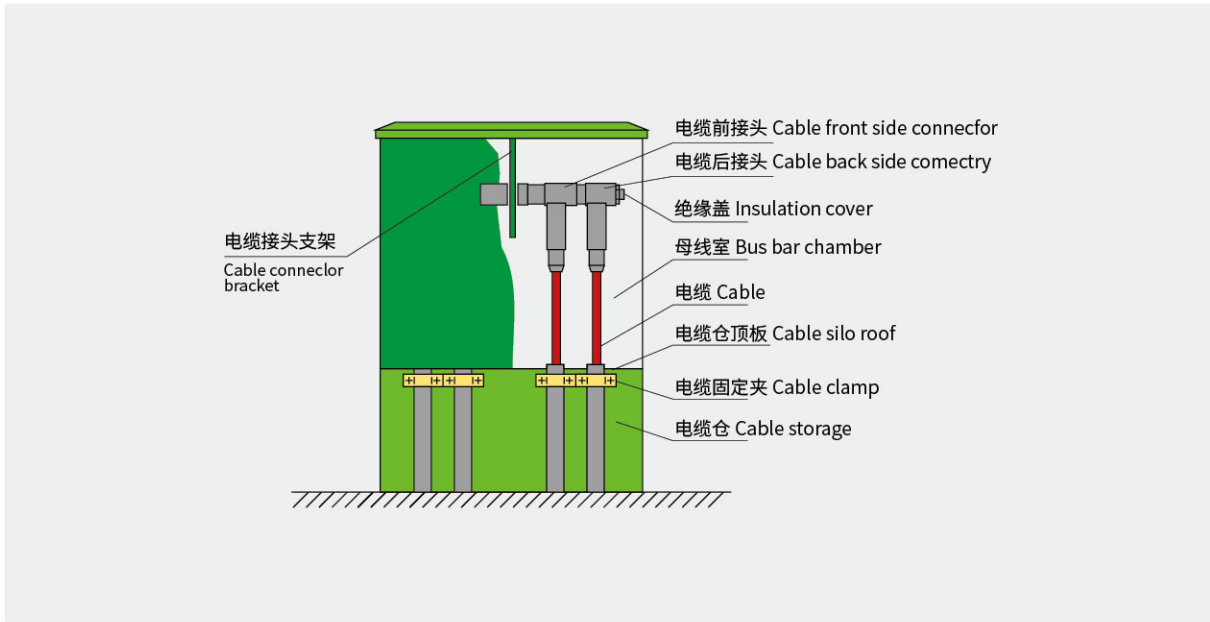
技术指标 Technical indicators	参数 parameter
额定电压 Rated voltage	10kV
最高工作电压 Maximum operating voltage	12kV
额定电流 Rated current	630A
工频耐压（相地） Power frequency withstand voltage(phase to ground)	45kV/1min
局部放电 Partial Discharge	<3PC
冲击电压 Impulse voltage	105kV
直流耐压 DC withstand voltage	52kV/15min

▶ 典型接线方案 Typical wiring scheme

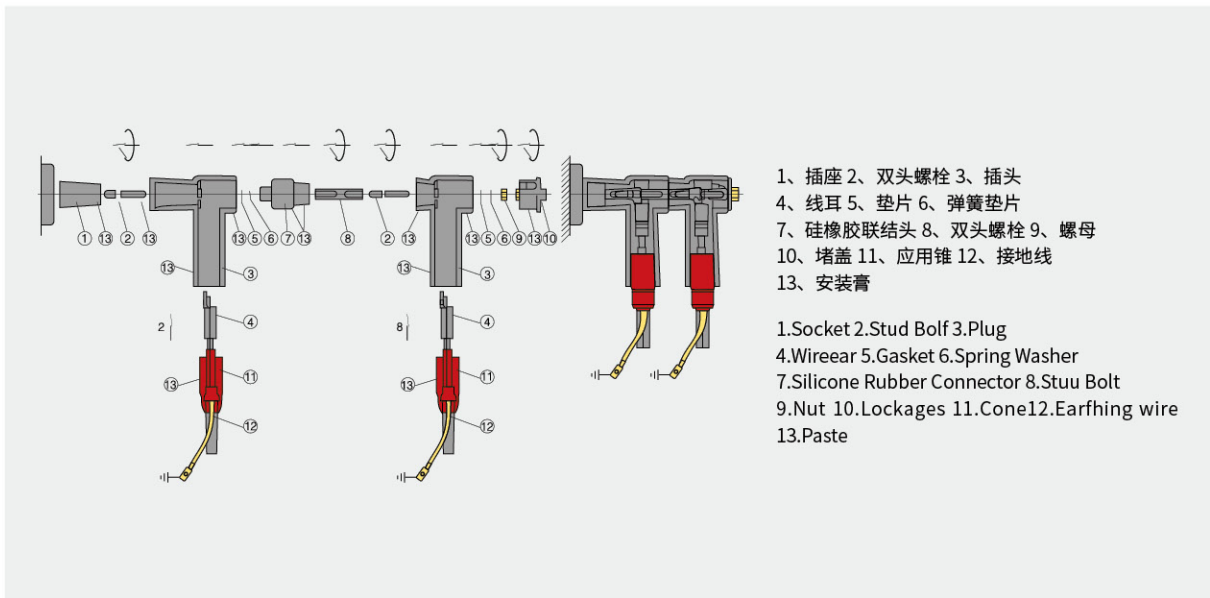
型号 Model	一次方案图 A plan	尺寸（宽 x 深 x 高） Size (WxDxH)
DFW10-12-3		890×720×980
DFW10-12-4		890×720×980
DFW10-12-5		1170×720×980
DFW10-12-6		1170×720×980

注：“⚡”为带电指示器。Note：“⚡”is a live indicator.

▶ 普通型四分支电缆分支箱结构示意图 Ordinary four branch cable branch box structure diagram



▶ 安装示意图 Installation diagram



应力锥编号 Stress cone number	电缆截面 Cable surface	芯绝缘直径 Core insulation diameter
5002	25-35	14.8-19.2
5003	50-95	17.0-24.3
5005	120-240	22.4-33.6
5410	300-400	30.9-36.1

高压开关设备系列 High voltage switch equipment series

DFW10-12

SF6 负荷开关的电缆分接箱
SF6 load switch cable distribution box

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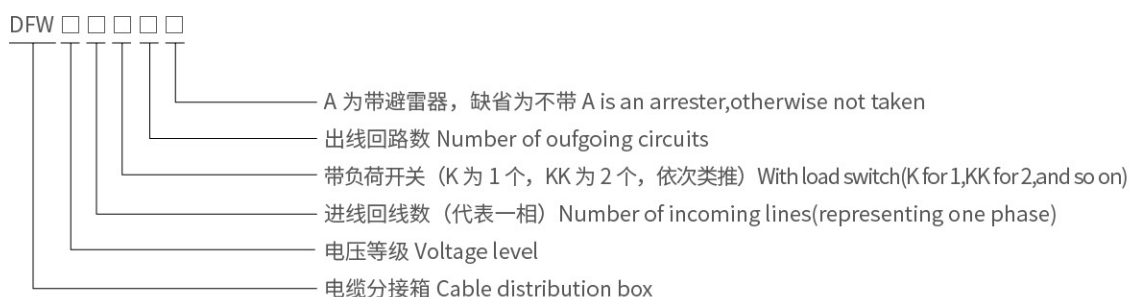


▶ 结构特点 Structural features

采用三工位 SF6 负荷开关组装，巧妙的左右进出线置，最小的结构设计，最强的电缆配置功能，进出线可达 8 路。该分接箱既保留了传统分接箱的优点，又具有环网柜的部分优点，是城网改造的理想设备。体积小，免维护，技术经济性好，可靠性高，安装简单使用方便。带 SF6 负荷开关的电缆分接箱的特点在于：在箱体内部有三个隔室，其中一个隔室密闭，密闭隔室中充有微增压六氟化硫气体，其中有一组以上负荷开关，负荷开关的操作机构位于操作驱动隔室内，电缆隔室内有电缆桩线及电缆终端，电缆终端与负荷开关连接。隔室密闭的负荷开关隔室内的负荷开关为转盘动静触点式负荷开关，每个负荷开关的转轴上固定在绕轴的对称扇形面有三层。电缆隔室内的电缆为三相一组，每组三个电缆终端平行依次斜下方分布，每个电缆终端与电缆桩线垂直相接，三个电缆桩线相互平行。密闭隔室有泄压管道。

It is assembled by three-station SF6 load switch, with clever left and right incoming and outgoing lines, the smallest structural design and the strongest cable configuration function, with up to eight incoming and outgoing lines. This tap box not only retains the advantages of traditional tap box, but also has some advantages of ring network cabinet, which is an ideal equipment for urban network reconstruction. Small size, maintenance-free, good technical economy, high reliability, simple installation and convenient use. The cable tap box with SF6 load switch is characterized in that there are three compartments in the box body, one of which is sealed, and the sealed compartment is filled with slightly pressurized sulfur hexafluoride gas, in which there are more than one group of load switches, the operating mechanism of the load switches is located in the operating driving compartment, and there are cable pile wires and cable terminals in the cable compartment, and the cable terminals are connected with the load switches. The load switch in the closed load switch compartment is a rotary table dynamic and static contact type load switch, and the rotating shaft of each load switch is fixed on the symmetrical sector around the shaft with three layers. The cables in the cable compartment are in three-phase groups, and three cable terminals in each group are distributed diagonally downward in parallel. Each cable terminal is vertically connected with the cable pile line, and the three cable pile lines are parallel to each other. The enclosed compartment has a pressure relief pipe.

▶ 型号含义 Type meaning



▶ 主要技术参数 The main technical parameters

技术指标 Technical indicators	参数 parameter
额定电压 Rated voltage	12kV
额定电流 Rated current	630A
额定热稳定电流 (2S) Rated thermal stability current (2S)	20kA
额定短路关合电流 (峰值) Rated short-circuit closing current (peak)	50kA
额定转移电流 Rated transfer current	2000A
雷电冲击电压 Lightning impulse voltage	85kV
工频耐压 Power frequency withstand voltage	48kV
机械寿命 Mechanical life	2000 次
SF6 气体额定压力 SF6 gas rated pressure	0.03MPa
SF6 气体年泄漏率 SF6 gas annual leakage rate	≤ 0.5%



高压开关设备系列 High voltage switch equipment series

DFW8-12/630 SF6

六氟化硫负荷开关电缆分接箱

Sulfur hexafluoride load switch cable distribution box

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概述 Overview

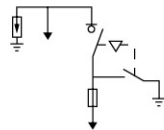
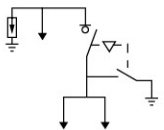
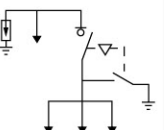
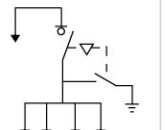
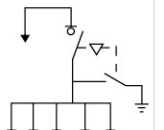
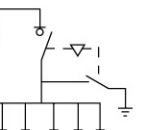
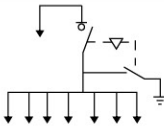
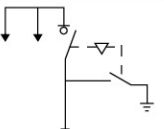
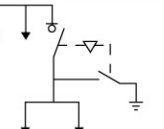
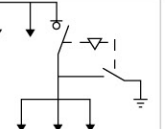
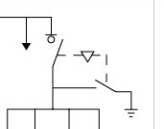
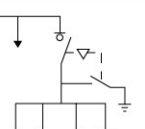
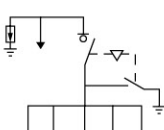
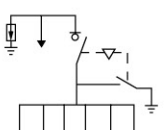
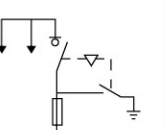
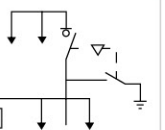
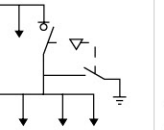
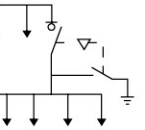
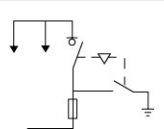
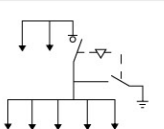
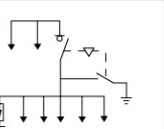
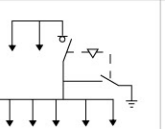
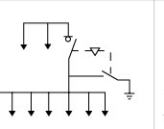
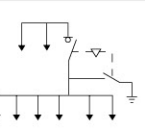
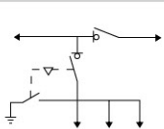
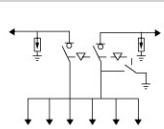
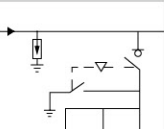
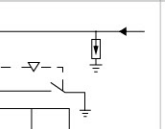
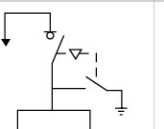
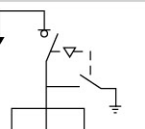
DFW8-12/630 系列带负荷开关的电缆分接箱，采用 SF6 气体绝缘的三工位负荷开关，开关进出线由套管引出，外接美式可欧式全绝缘电缆接头，适用于 3-12kV 地下电缆配电系统。该分支箱既保留了传统分支箱的优点，又具有环网柜的部分优点，是城网改造的理想设备。

DFW8-12/630 series cable branch box with load switch adopts SF6 gas-insulated three-position load switch, with external American/European-style full-insulation cable joint, the inlet and outlet wires of switch are led out from the sleeve. Suitable for underground distribution system of 3-12kv, it is the ideal equipment for renovation of urban power grid, not only retains the advantages of traditional branch boxes, but also possesses some merits of ring main units.

主要技术参数 The main technical parameters

额定电压 Rated voltage (kV)	额定电流 Rated current (A)	额定频率 Rated Frequency (Hz)	额定短路 关合电流 (kA) Rated short circuit closing current	额定短时 耐受电流 (kA) Rated short time withstand current	额定峰值 耐受电流 (kA) Rated peak withstand current	
12	630	50	50	25(1s)	50	
操作机构 Operation mechanism	额定转移电流 A Rated transfer current	Imin 工频耐受电压 KV Imin power frequency with- stand voltage	雷电冲击耐 受电压 kV Lightning impulse withstand voltage	机械寿命次 Mechanical life (times)	SF6 气体标准充气 压力 (20C) BAR Standard charged pressure of SF6 gas (20°C)	SF6 气体年 泄露率 % Annual leakage ratio of SF6 gas
AC/DC220V、 AC/DC110V、 D4C8V、 DC24V、	1800	42 48	95 110	2000 次	0.4	

DFW8-12/630 型常用方案号 Common scheme number

编号 Numbering	01	02	03	04	05	06
接线方案 Wiring scheme						
编号 Numbering	07	08	09	10	11	12
接线方案 Wiring scheme						
编号 Numbering	13	14	15	16	17	18
接线方案 Wiring scheme						
编号 Numbering	19	20	21	22	23	24
接线方案 Wiring scheme						
编号 Numbering	25	26	27	28	29	30
接线方案 Wiring scheme						

低压开关设备系列 Low-voltage switchgear series

GCK

低压抽出式开关柜成套开关设备

Low voltage draw-out switchgear complete switchgear

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

GCK 低压抽出式开关柜成套开关设备适用于交流 50Hz, 额定工作电压 380V 的低压配电系统。它包含动力中心 (PC) 和电动机控制中心 (MCC) 的功能, 各项技术参数均达到国家标准, 具有结构完善、外形美观、电气性能高、防护等级高、安全可靠、维护方便等特点, 是冶金、石油、化工、电力、机械、轻纺等行业低压供电系统理想的配电装置。

本产品符合 IEC-439、GB7251.1 标准。

GCK low-voltage draw-out switchgear is suitable for low-voltage distribution system with AC 50Hz and rated working voltage of 380V. It contains the functions of power center (PC) and motor control center (MCC), and all technical parameters meet the national standards. It has the characteristics of perfect structure, beautiful appearance, high electrical performance, high protection level, safety and reliability, and convenient maintenance. It is an ideal distribution device for low-voltage power supply systems in metallurgy, petroleum, chemical industry, electric power, machinery, textile and other industries.

This product conforms to IEC-439 and GB7251.1 standards.

主要特点 Main feature

- ◇ GCK1, GCJ1 为拼装式组合结构, 基本骨架采用专用型材, 拼装而成;
- ◇ 柜体骨架, 零件尺寸以及开孔尺寸按基本模数 E=25mm 变化;
- ◇ 在 MCC 方案中, 柜内部分成五个区域 (室): 水平母线区、垂直母线区、功能单元区、电缆室、中性接地母线区。各区互相隔离, 保证线路正常运行, 有效防止故障扩大;
- ◇ 由于框架的所有结构均以螺钉紧固连接而成, 避免了焊接变形和应力, 提高了精度;
- ◇ 零部件通用性强, 适用性好, 标准化程度高;
- ◇ 功能单元 (抽屉) 的抽出、插入为杠杆操作, 加上配置滚动轴承操作轻便、可靠。
- ◇ GCK1 and GCJ1 are assembled composite structures, and the basic skeleton is assembled by special profiles;
- ◇ The cabinet frame, part size and opening size change according to the basic modulus E=25mm;
- ◇ In MCC scheme, the cabinet is divided into five areas (rooms): horizontal bus area, vertical bus area, functional unit area, cable room and neutral grounding bus area. The districts are isolated from each other to ensure the normal operation of the line and effectively prevent the fault from expanding;
- ◇ Because all the structures of the frame are fastened and connected by screws, the welding deformation and stress are avoided and the accuracy is improved;
- ◇ Parts have strong universality, good applicability and high standardization.
- ◇ The extraction and insertion of functional units (drawers) are lever operation, and the operation with rolling bearings is light and reliable.

使用环境条件 Use environmental conditions

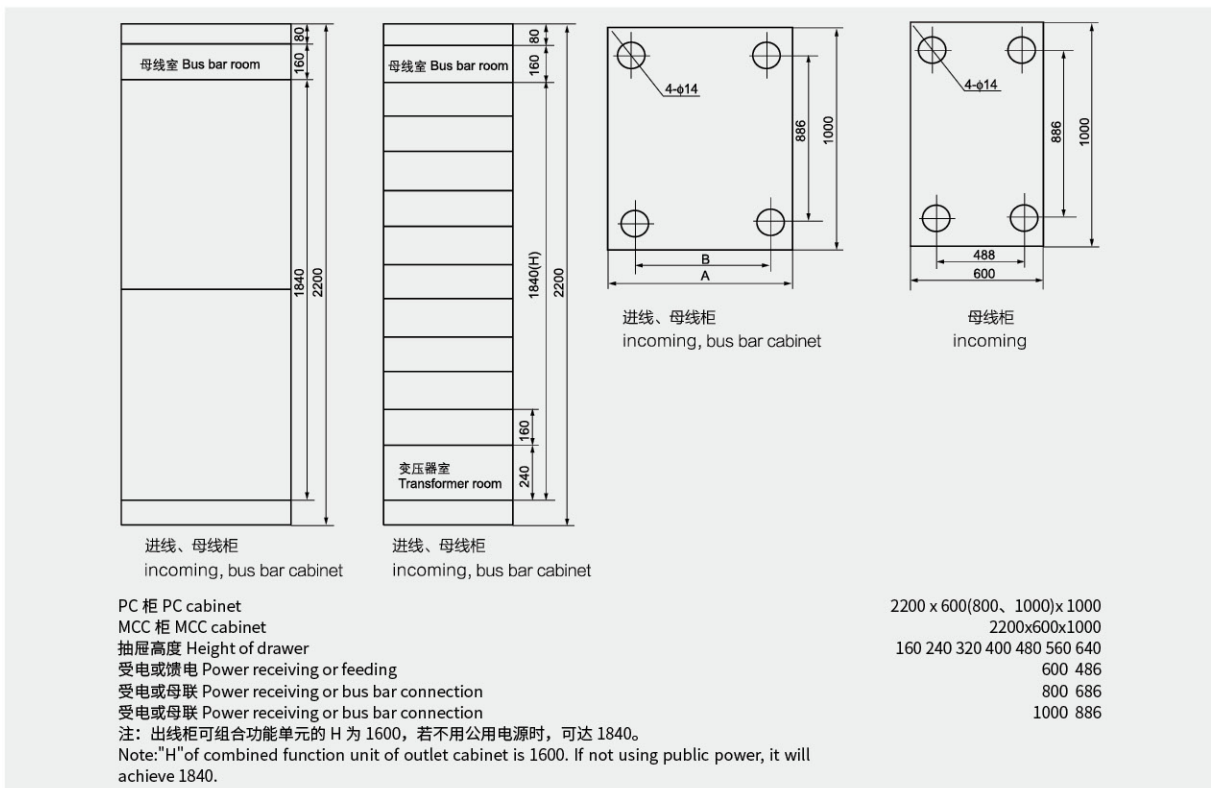
- ◇ 海拔高度不超过 2000 米;
- ◇ 周围空气温度不高于 +40°C, 不低于 -5°C, 并且 24h 内平均温度不高于 +35°C;
- ◇ 大气条件: 空气清洁, 相对湿度在温度为 +40°C 时不超过 50%, 在温度较低时具有较高的相对湿度, 例如 +20°C 时为 90%;
- ◇ 没有火灾、爆炸危险、严重污染、化学腐蚀及剧烈震动的场所;
- ◇ 与垂直面倾斜不超过 5°;
- ◇ 控制中心适于以下温度的运输和储存过程: -25°C ~ +55°C, 在短时间内 (不超过 24h) 不超过 +70°C;
- ◇ Altitude above sea level should not exceed 2000M;
- ◇ Ambient air temperature: -5°C ~ +40°C and the average temperature \leq +35°C in 24h;
- ◇ Air condition: With clean air. Relative humidity should not exceed 50% at +40°C. Higher relative humidity is allowed at lower temperature. Ex. 90% at +20°C;
- ◇ Places without fire, explosive danger, serious pollution, chemical corrosion and fierce vibration;
- ◇ Installation gradient not exceed 5°;
- ◇ Control center is suitable to the transportation and store with following temperature: -25°C ~ +55°C, in short time (within 24h) it should not exceed +70°C.

▶ 主要技术参数 The main technical parameters

防护等级 Protection level	IP40、IP30
额定工作电压 Rated working voltage	AC、380 (V)
频率 Frequency	50Hz
额定绝缘电压 Rated insulation voltage	660V
工作条件 Working conditions	
环境 Environment	室内 Indoors
海拔高度 Altitude	≤ 2000m
环境温度 Ambient temperature	-5°C ~+40°C
在储存、运输条件下, 最低温度为 The min temperature under store and transportation	-30°C
相对湿度 Relative humidity	≤ 90%
控制电动机容量 (kW) Capacity of control motor (kW)	0.4~155

额定电流 (A) Rated current (A)	
水平母线 Horizontal bus bar	1600、2000、3150
垂直母线 Vertical bus bar	630、800
主电路触头接插件 Contact connector of main circuit	200、400
馈电电路 Feeding circuit	1600
最大电流 Max current	PC 柜 cabinet 630
受电电路 Power receiving circuit	MCC 柜 cabinet 1000、1600、2000、2500、3150
额定短时耐受电流 (kA) Rated short time withstand current (kA)	
有效值 Virtual value	50、80
峰值 Peak value	105、176
工频耐压 (V//1min) Line frequency withstand voltage (V/1min)	2500

▶ 内部结构 Internal structure



低压开关设备系列 Low-voltage switchgear series

GCS

低压抽出式成套开关设备
Low-voltage with drawable switchgear

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

GCS 低压抽出式成套开关设备（以下称装置）是原国家机械部、电力部联合设计组根据行业主管部门，广大电力用户及设计单位的要求研制出的符合国情、具有较高技术性能指标、能够适应电力市场发展需要并可与现有引进产品竞争的低压抽出式开关柜。该装置一九九六年七月在上海通过了两部联合主持的鉴定，受到生产制造单位和电力使用部门的重视和肯定。

该装置适用于发电厂、石油、化工、冶金、纺织、高层建筑等行业的配电系统。在大型发电厂、石化系统等自动化程度高，要求与计算机接口的场所，作为三相交流 50(60)Hz，额定工作电压 380V，额定电流 4000A 及以下的发、供电系统中的配电、电动机集中控制、无功功率补偿使用的低压成套配电装置。

该装置符合 IEC439-1 和 GB7251.1 标准。

GCS low-voltage draw-out switchgear (hereinafter referred to as device) is a low-voltage draw-out switchgear developed by the joint design team of the former Ministry of Machinery and the Ministry of Electric Power according to the requirements of the competent departments of the industry, the vast number of power users and design units, which conforms to the national conditions, has high technical performance indexes, can meet the development needs of the power market and can compete with the existing imported products. In July, 1996, the device passed the appraisal jointly sponsored by the two departments in Shanghai, and was valued and affirmed by the manufacturing units and power users.

This device is suitable for power distribution system in power plant, petroleum, chemical industry, metallurgy, textile, high-rise building and other industries. In large-scale power plants, petrochemical systems and other places with high automation degree, which require computer interface, it is used as a low-voltage jacketed power distribution device for power distribution, motor centralized control and reactive power compensation in power generation and power supply systems with three-phase AC 50(60)Hz, rated working voltage 380V and rated current of 4000A or less.

The device meets IEC439-1 and GB7251.1 standards.

主要特点 Main feature

- ◇ 主构架采用 8MF 型钢，型钢的二侧面分别有模数 20mm 和 100mm 的 $\phi 9.2\text{mm}$ 安装孔，内部安装灵活方便；
- ◇ 主构架装配形式设计为两种，全组装式结构和部分（侧框和横梁）焊接式结构，供用户选择；
- ◇ 装置的各功能室相互隔离，其隔室分为功能单元室、母线室和电缆室。各室的作用相对独立；
- ◇ 水平母线采用柜后平置排列方式，以增强母线抗电动力的能力，是使装置的主电路具备高短路强度能力的基本措施；
- ◇ 电缆隔室的设计使电缆上下进出均十分方便。
- ◇ Main framework adopts 8MF bar steel. Both sides of bar steel is installed with $\phi 9.2\text{mm}$ mounting hole with modulus 20mm and 100mm. Inner installation is flexible and easy;
- ◇ Two types of assembly form design for main framework, full assembly structure and partial (side frame and cross rail) welding structure for user selection;
- ◇ Each function compartment of device is separated mutually. The compartments are divided into function unit compartment, bus bar compartment and cable compartment. Each one has relative independent function;
- ◇ Horizontal bus bar adopts cabinet back level placed array pattern for enhancing the capacity of resisting electrodynamic force for bus bar. It is the basic measure for obtaining high short circuit strength capacity for main circuit;
- ◇ Cable compartment design makes cable outlet and inlet up and down convenient.

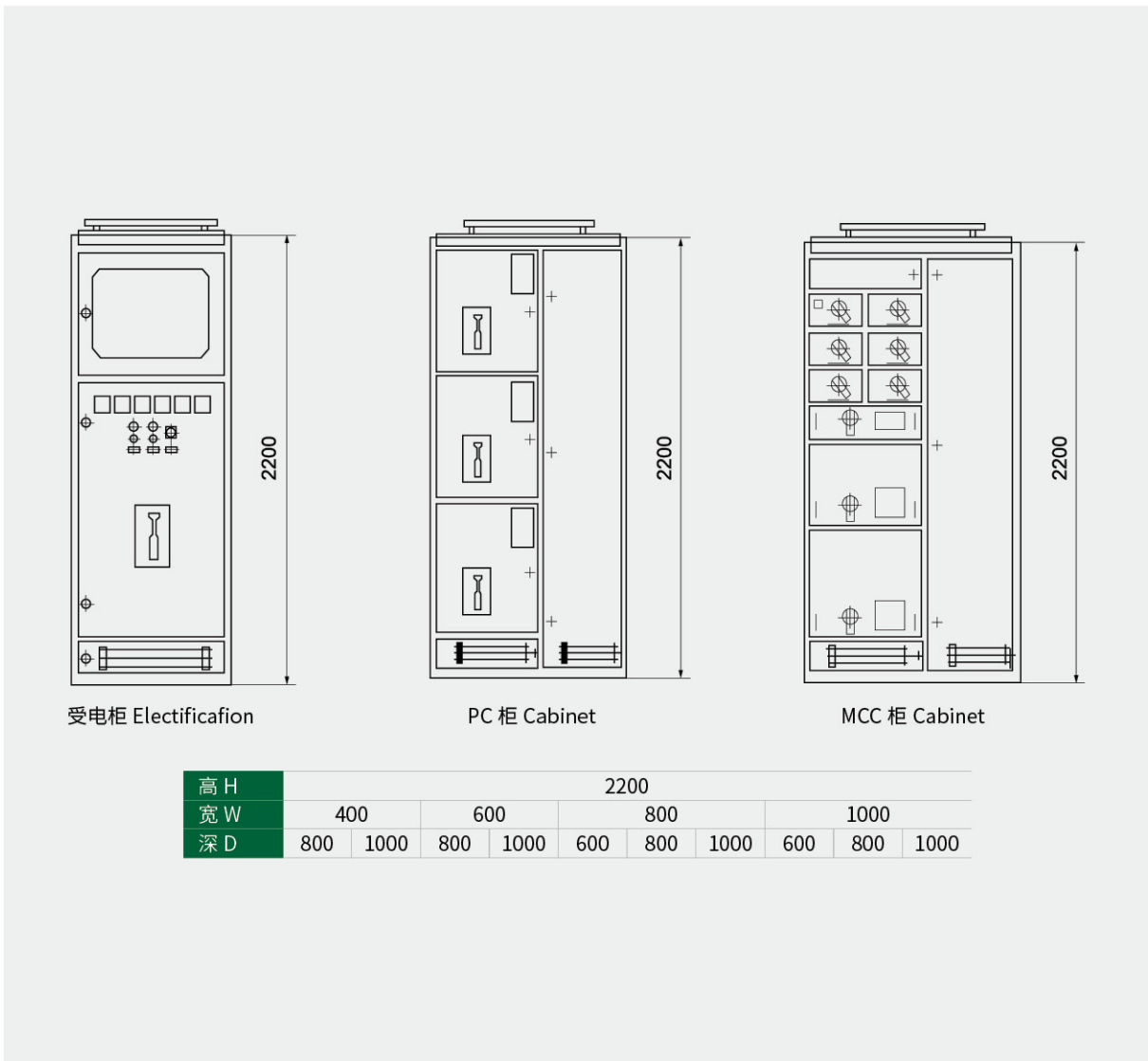
主要技术参数 The main technical parameters

主电路额定电压 (V) Rated voltage of main circuit			
交流 AC	380(400)、 (660)	母线额定短时耐受电流 (kA/1s) Rated short time withstand current of bus bar	50、80
辅助电路额定电压 (V) Rated voltage of auxiliary circuit		母线额定峰值耐受电流 (kA/0.1s) Rated peak withstand current of bus bar	105、176
交流 AC	220、380(400)	工频试验电压 (V/1min) power frequency test voltage	
直流 DC	110、220	主电路 Main circuit	2500
额定频率 (Hz) Rated frequency	50(60)	辅助电路 Auxiliary circuit	1760
额定绝缘电压 (V) Rated insulation voltage	660(1000)	母线 Bus bar	
额定电流 (A) Rated current		三怕四线制 Three-phase four-wire system	A.B.C.N
水平母线 Horizontal bus bar	≤ 4000	三相五线制 Three-phase five-wire system	A.B.C.PE.N
垂直母线 (MCC) Vertical bus bar	1000	防护等级 Protection level	IP30、IP40

▶ 使用环境条件 Use environmental conditions

- ◇ 周围空气温度不高于 +40°C，不低于 -5°C，并且 24h 内平均温度不高于 +35°C；
- ◇ 相对湿度在最高温度时不超过 50%，在较低温度时允许有较高的相对湿度，例如 +20°C 时为 90%。但应考虑到温度变化，有可能会偶然地产生适度的凝露；
- ◇ 海拔高度不超过 2000 米；
- ◇ 安装倾斜不超过 5°；
- ◇ 没有粉尘，腐蚀性气体和雨水侵袭的户内。
- ◇ Ambient air temperature: -5°C ~+40°C and the average temperature should not exceed +35°C in 24h;
- ◇ Relative humidity should not exceed 50% at max temperature. Higher relative humidity is allowed at lower temperature. Ex.90% at +20°C . But in view of the temperature change, it is possible that moderate dews will produce casually;
- ◇ Altitude above sea level should not exceed 2000M;
- ◇ Installation gradient not exceed 5°;
- ◇ Indoor without dust, corrosive gas and rain water attack.

▶ 内部结构 Internal structure



方案组合示例 Scheme

主电路方案 Main circuit scheme	01							02							03							04											
单线图 Line diagram																																	
用途 Purpose	受电 (上进线) Electrification (upper incoming line)							受电 (下侧进线) Electrification (lower incoming line)							受电 (电缆进线) Electrification (lower incoming line)							联络 Interconnection											
规格序号 Specification serial No.	A	B	C	D	E	F	G	A	B	C	D	E	F	G	A	B	C	D	E	F	G	A	B	C	D	E	F	G					
短时耐受电流 / 瞬时耐受电流 (kA) Short time withstand current / instantaneous withstand current	80/176							80/176							50/105							80/176											
额定电流 (A) Rated current	50/105							50/105							50/105							50/105											
	30/63							30/63							30/63							30/63											
	4000	3150	2500	2000	1600	1000	630	4000	3150	2500	2000	1600	1000	630	2500	2000	1600	1000	630	4000	3150	2500	2000	1600	1000	630							
Main electrical appliance 主断路器设备	AH-40C	1						1																		1							
	AH-30CH		1						1																		1						
	AH-25C			1						1							1											1					
	AH-20C				1						1							1											1				
	AH-16B					1						1							1											1			
	AH-10B						1						1							1											1		
	AH-6B							1							1							1										1	
SDL- □															(1)	(1)	(1)	(1)	(1)														
SDH- □ □ /5	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)											
柜宽 mm Cabinet width	800(1000)							800(1000)							800							1000											
柜深 mm Cabinet depth	1000							1000							800							1000											
占用小室高度 mm Occupied cabinet height																																	

主电路方案 Main circuit scheme	05							06							07							08											
单线图 Line diagram																																	
用途 Purpose	母线转接 Bus adaptation							馈电 Feeding							双电源手动切换 Manual switch-over of dual power supply							双电源手动切换 Manual switch-over of dual power supply											
规格序号 Specification serial No.								A	B	C					A	B						A	B	C	D	E	F	G					
短时耐受电流 / 瞬时耐受电流 (kA) Short time withstand current / instantaneous withstand current								50/105							50/105							50/105											
额定电流 (A) Rated current								30/63							30/63							30/63											
								1600	1000	630					1000	630					1000	630											
Main electrical appliance 主断路器设备	AH-16B							1						1					1							1							
	AH-10B								1						1					1							1						
	AH-6B									1						1					1							1					
	QPS-1000																																
	QPS-630																																
	SDL- □							(1)	(1)	(1)																							
	SDH- □ □ /5							1(3)	1(3)	1(3)				3(4)	3(4)				3(4)	3(4)						3(4)	3(4)						
柜宽 mm Cabinet width	400(600)							1000							1000							1000											
柜深 mm Cabinet depth	800(1000)							800(1000)							800							800											
占用小室高度 mm Occupied cabinet height	640																																

备注: 1.AH 是主选断路器, 也可选用其它性能更领先或进口中 F、MT 系列断路器。Remarks: 1.AH is the main circuit breaker, but other F and MT series circuit breakers with more advanced performance or imported ones can also be selected.

2.01、02、04 方案如 PE +N 需进入电源柜时宽用括号内尺寸。01, 02, 04 scheme, eg: When the PE+N needs to enter power cabinet, the width size adopts the one in the bracket.

3.SDL、SDH 是 BGCS 柜专用电流互感器。SDL and SDH are special current transformers for BGCS cabinet.

低压开关设备系列 Low-voltage switchgear series

MNS

低压抽出式成套开关设备
Low-voltage with drawable switchgear

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

MNS 低压抽出式成套开关设备（以下简称为装置）是参考瑞士 ABB 公司 MNS 系列低压开关柜并加以综合改进后用标准模块件生产制造的产品。本装置适用于交流 50Hz，额定工作电压 660V 及以下的系统。作为各种发电、输电、配电、电能转换和电能消耗设备的控制设备，能广泛应用于各工矿企业、大楼宾馆、市政建设等低压配电系统中。除一般陆用外，经过特殊处理后，还可以用于海上石油钻采平台和核电站中。

本装置符合国际标准 IEC439-1，国家标准 GB7251.1。

MNS low-voltage draw-out switchgear (hereinafter referred to as the switchgear) is a product manufactured by referring to MNS series low-voltage switchgear of ABB Company of Switzerland and using standard modules after comprehensive improvement. This device is suitable for systems with AC 50Hz and rated working voltage of 660V and below. As the control equipment of various power generation, transmission, distribution, power conversion and power consumption equipment, it can be widely used in low-voltage distribution systems such as industrial and mining enterprises, buildings, hotels and municipal construction. Besides general land use, it can also be used in offshore oil drilling and production platforms and nuclear power plants after special treatment.

The equipment conforms to international standard IEC439-1 and national standard GB7251.1.

主要特点 Main feature

- ◇ 设计紧凑：以较小的空间能容纳较多的功能单元；
- ◇ 结构通用性强，组装灵活，以 25mm 为模数的 C 型型材能满足各种结构型式、防护等级、使用环境的要求；
- ◇ 采用标准模块设计：分别可组成保护、操作、转换、控制、调节、测定、指示等标准单元。用户可根据需要任意选用组装，以 200 余种零件可以组成不同方案的柜架结构和抽屉单元；
- ◇ 安装性好：大量采用高强度阻燃型工程塑料组件，有效加强防护安全性能；
- ◇ 技术性能高：主要参数达到国内领先水平。
- ◇ Compact design: Contain more function units with less space;
- ◇ Strong versatility for structure, flexible assembly. C type bar section of 25mm modulus can meet the demands of various structure and type, protection grade and operating environment;
- ◇ Adopt standard module design, can be combined into protection operation, transfer, control, regulation, measurement, indication etc such standard units. User can choose assembly according to requirement at will. Cabinet structure and drawer unit can be formed with more than 200 components;
- ◇ Fine security: Adopt high strength antifracking type engineering plastic pack in large quantity to effectively enhance the protective safety performance;
- ◇ High technical performance: the main parameters have reached the domestic leading level.

主要技术参数 The main technical parameters

额定工作电压 (V) Rated working voltage	额定绝缘电压 (V) Rated insulation voltage	额定工作电流 (A) Rated working current		额定短时耐受电流有效值 (IS) 峰值 (kA) Rated short time withstand current effective value/peak		外壳防护等级 IP30、IP40 Protection grade of shell 外形尺寸高 x 宽 x 深 Outline dimension HxWxD
		水平母线 Horizontal bus bar	垂直母线 Vertical bus bar	水平母线 Horizontal bus bar	垂直母线 Vertical bus bar	
380、660	660、1000	630-5000	800-2000	50-100/ 105-250	60/130 - 150	2200x 600(800、1000) x 800(1000)

垂直母线额定工作电流：

单面或双面操作的抽出式 MCC 为 800A，柜深 1000mm 单面操作的 MCC 为 800~2000A。

Rated working current of vertical bus bar:

Draw-out type MCC with single side or double sides operation: 800A. MCC with 1000mm depth and single operation: 800~2000A.

▶ 使用环境条件 Use environmental conditions

- ◇ 周围空气温度不高于 +40°C，不低于 -5°C，并且 24h 内其平均温度不高于 +35°C；
- ◇ 大气条件：空气清洁，相对湿度在最高温度 + 40°C 时不超过 50%，在较低温度时允许有较高的相对湿度，例如 + 20°C 时为 90%，但应考虑到温度变化，有可能会偶然产生适度的凝露；
- ◇ 海拔高度不超过 2000m；
- ◇ 本装置适应于以下温度的运输和储存过程：-25°C 至 +55°C 的范围之间，在短时间内（不超过 24h）可达 + 70°C，在这些极限温度下装置不应遭到任何不可恢复的损伤，而且在正常的条件下应能正常工作；
- ◇ 如果上述使用条件不能满足时，应由用户和制造厂协商解决；
- ◇ 当本装置使用于海上石油钻采平台和核电站时，应另签订技术协议。
- ◇ Ambient air temperature: -5°C ~+40°C and the average temperature \leq +35°C in 24h;
- ◇ Air condition: With clean air. Relative humidity should not exceed 50% at+40°C . Higher relative humidity is allowed at lower temperature. Ex.90% at+20°C . But in view of the temperature change, it is possible that moderate dews will produce casually;
- ◇ Altitude above sea level should not exceed 2000M;
- ◇ The device is suitable to the transportation and store with following temperature-25°C ~+55°C , in short time (within 24h) it reaches +70°C . Under the limiting temperature, device should not suffer damage that can't recover,and it can works normally under normal conditions.Not suffer damage that can't recover, and it can works normally under normal conditions;
- ◇ If the above operating conditions not meet user's demand. Consult with manufactory;
- ◇ Technical agreement should be signed additionally if the device is used for marine petrol drill taken platform and nuclear power station.

▶ 使用环境条件 Use environmental conditions

- ◇ 周围空气温度不高于 +40°C，不低于 -5°C，并且 24h 内其平均温度不高于 +35°C；
- ◇ 大气条件：空气清洁，相对湿度在最高温度 + 40°C 时不超过 50%，在较低温度时允许有较高的相对湿度，例如 + 20°C 时为 90%，但应考虑到温度变化，有可能会偶然产生适度的凝露；
- ◇ 海拔高度不超过 2000m；
- ◇ 本装置适应于以下温度的运输和储存过程：-25°C 至 +55°C 的范围之间，在短时间内（不超过 24h）可达 + 70°C，在这些极限温度下装置不应遭到任何不可恢复的损伤，而且在正常的条件下应能正常工作；
- ◇ 如果上述使用条件不能满足时，应由用户和制造厂协商解决；
- ◇ 当本装置使用于海上石油钻采平台和核电站时，应另签订技术协议。
- ◇ Ambient air temperature: -5°C ~+40°C and the average temperature \leq +35°C in 24h;
- ◇ Air condition: With clean air. Relative humidity should not exceed 50% at+40°C . Higher relative humidity is allowed at lower temperature. Ex.90% at+20°C . But in view of the temperature change, it is possible that moderate dews will produce casually;
- ◇ Altitude above sea level should not exceed 2000M;
- ◇ The device is suitable to the transportation and store with following temperature-25°C ~+55°C , in short time (within 24h) it reaches +70°C . Under the limiting temperature, device should not suffer damage that can't recover,and it can works normally under normal conditions.Not suffer damage that can't recover, and it can works normally under normal conditions;
- ◇ If the above operating conditions not meet user's demand. Consult with manufactory;
- ◇ Technical agreement should be signed additionally if the device is used for marine petrol drill taken platform and nuclear power station.

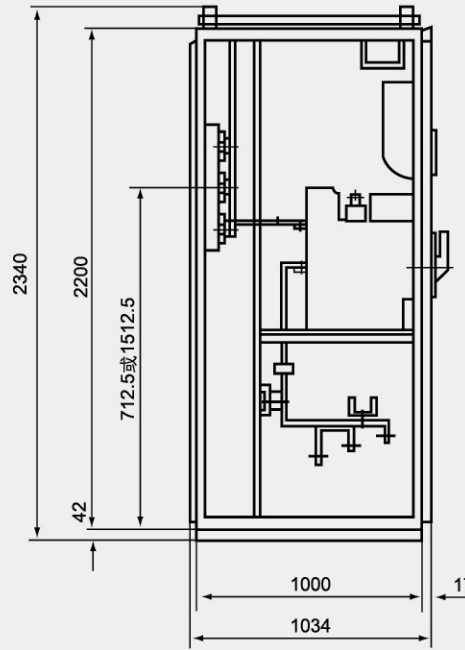
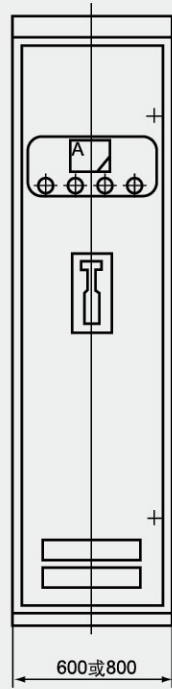
▶ 结构特点 Structural features

装置的基本框架为组合式装配结构，框架的基本结构件都经过镀锌处理，通过自攻锁紧螺钉或 8.8 级方角螺丝紧固互相连接成基本框架，再按方案变化需要，加上相应的门、封板、隔板、安装支架，以及母线、功能单元等零部件，组装成一台完整的装置。装置内零部件尺寸，隔室尺寸实行模数化（模数单位 c=25mm）。

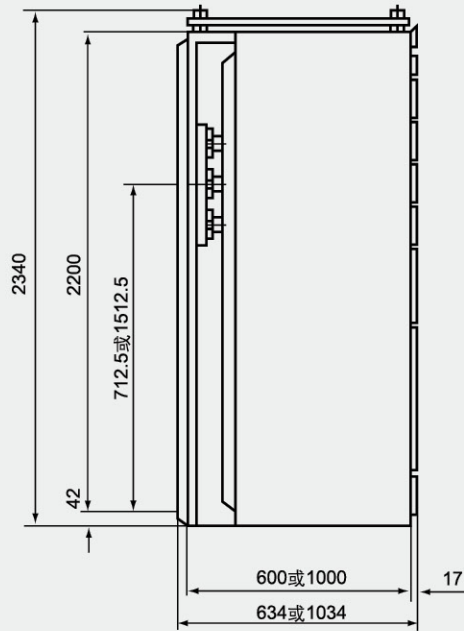
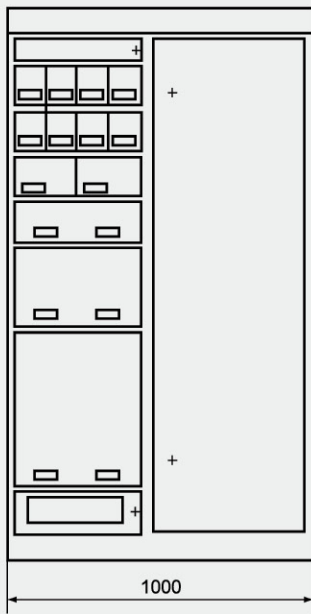
The basic cabinet of device is combined assembly structure. Basic structural pieces of cabinet is zine plated, connected and firmied into basic bracket through self tapping locking screw or 8.8 grade square corner screw. According to the change demand of proiect, additionally add corresponding gate,closing board,baffle plate, installation support and the components of bus bar, function units, to assemble a complete set of device. Perform modulus to interior component and compartment size (Modulus unite-25mm).



▶ 内部结构 Internal structure

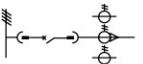
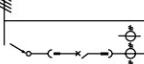


PC 柜
PC cabinet



抽出式 MCC 柜 (单面操作)
Draw-out type MCC cabinet (Single side operation)

一次回路方案图 Primary circuit scheme

方案编号 Scheme number	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	
一次方案 Primary scheme																					
柜宽 (mm) Cabinet width	400	600	800	1000	600	800	1000	600	800	1000	600	800	1000	600	800	1000	600	800	1000	20	
设备室高 Equipment chamber height	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	20	
最大工作电流 (A) Max.working current	1500	1500	2300	3150	1500	3200	4000	1600	3200	4000	2000	3200	4000	2000	3000	3600	1500	3200	4000	20	
主要设备 Main equipment	ME1605 F1-1600 M16 BHG-60II	ME630- ME1605 BHG-100	ME2000- ME2505 ME3205 BHG- 120II	ME3200- ME3205 BHG- 120II	AH- 4B- 20CH- AH-16B AH30CH BHG-100	AH- 40C BHG- 120II	M08- M16 BHG-100	M20- M32 BHG-100	M40 BHG- 120II	F1-1250 -F1-2000 BHG-100	F2-2000 -F4-3200 BHG-100	F5-4000 BHG-120	F1-1250 -F1-2000 BHG-100	F2-2000 F2-3000 F3-3200 4 极开关	F4-3200 F4-3600 4 极开关	F4-3200 F4-3600 4 极开关	AH6B AH16B 4 极开关	M28 M32 4 极开关	M40 4 极开关 BHG- 120II	20	
用途 Purpose	电缆进线或出线 Cable incoming or outgoing																				
方案编号 Scheme number	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
一次方案 Primary scheme																					
柜宽 (mm) Cabinet width	400/600	800	1000	400/600	800	1000	600	800	1000	600	800	1000	600	800	1000	600	800	1000	600	800	40
设备室高 Equipment chamber height	1500	2300	3150	1500	3000	4000	1600	3200	4000	2000	3200	4000	2000	3200	3600	3600	3200	4000	3200	4000	40
最大工作电流 (A) Max.working current	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	40
主要设备 Main equipment	ME630- ME-1605 M16 BHG-60II	ME2000- ME2505 ME3205 BHG-100	ME3200- ME3205 BHG-120	AH20CH- AH30CH BHG- 120II	AH40C BHG- 120II	M08- M16 BHG-100	M20- M32 BHG- 120II	M40 BHG- 120II	F1-1250 -F1-2000 BHG-100	F2-2000 -F4-3200 BHG-100	F5-4000 BHG-120	F1-1250 -F1-2000 BHG-100	F2-2000 F2-3000 F3-3200 4 极开关	F4-3200 F4-3600 4 极开关	F4-3200 F4-3600 4 极开关	F4-3200 F4-3600 4 极开关	M08 M32 4 极开关	M40 4 极开关 BHG- 120II	M40 4 极开关 BHG- 120II	40	
用途 Purpose	柜顶进线 Incoming/outgoing line of cabinet top																				

低压开关设备系列 Low-voltage switchgear series

GGD

交流低压固定式成套开关设备
AC low-voltage fixed switchgear

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

GGD 交流低压固定式成套开关设备适用于发电厂、变电站、厂矿企业等电力用户的交流 50Hz，额定工作电压 380V，额定电流至 3150A 以下的配电系统中作为动力、照明及配电设备的电能转换、分配和控制之用。

该产品具有分断能力高、动热稳定性好、电气方案灵活、组合方便、系列性实用性强、结构新颖、防护等级高等特点。

GGD 交流低压配电柜符合 IEC439《低压成套开关设备和控制设备》及 GB7251.1《低压成套开关设备》等标准。

GGD AC LV fixed type switchgear is applicable to the distribution system with AC 50Hz, rated working voltage 380V, rated current to 3150A below in power station, substation, plant enterprise etc., used for power transfer, distribution and control for power, lighting and distribution devices.

The product has characteristics of high breaking capacity, fine dynamic and thermal stability, flexible electric project, convenient combination, better serial practicability, novel structure and high protection grade etc.

It accords with the standards IEC439 "Low voltage complete switch device and control device" and GB7251.1 "Low voltage complete switch device" etc.

主要特点 Main feature

◇ GGD 交流低压配电柜的柜体采用通用柜形式。构架用 8MF 冷弯型钢局部焊接组装而成。构架零件及专用配套零件由型钢定点生产厂配套，以保证柜体的精度和质量。通用柜的零部件按模块原理设计，并有 20 模的安装孔，通用系数高；

◇ 充分考虑到柜体运行中的散热，在柜体上下两端均有不同数量的散热槽孔；

◇ 按现代工业产品造型设计要求，采用黄金分割比的方法设计柜体外形和各部分的分割尺寸，使整柜美观大方；

◇ 柜门用转轴式活动铰链与构架相连，安装、拆卸方便。门的折边处均嵌有一根山型缘胶条，关门时门与构架之间的嵌条有一定的压缩行程，能防止门与柜体直接碰撞，也提高了门的防护等级；

◇ 装有电器元件的仪表门用多股软铜线与构架相连。柜内的安装件与构架间用滚花螺钉连接，整柜构成完整的接地保护电路；

◇ 柜体顶盖在需要时可拆除，便于现场主母线的装配和调整，柜顶的四角装有吊环，用于起吊和装运；

◇ 柜体的防护等级为 IP30，用户可根据环境的需要在 IP20-IP40 之间选择。

◇ The body of GGD AC LV fixed type switchgear adopts universal cabinet type. Framework is assembled with 8MF cold bending bar steel through part welding. Framework components and special mating elements are matched by bar steel pointed manufactory for ensuring the precision and quality of cabinet. Components of universal cabinet is designed according to module principle, and with 20 modulus mounting hole and high universal coefficient;

◇ Completely in view of the heat rejection during cabinet running. Heat rejection slots of different quantities are installed in upper and underside both ends of cabinet;

◇ According to the requirements on mold design for modern industry products, adopting the method of golden mean ratio to design cabinet outline and parting dimensions of each part, to make the whole cabinet beautiful and decent;

◇ Cabinet gate is connected with framework with rotation axis type movable hinge, With convenient installation and disassembly. One mount type rubber strip is set in edge fold of gate. Filler rod between gate and framework has certain compression stroke when closing the gate. It can prevent gate from impacting cabinet directly and also advance the protection grade for gate;

◇ Connect the meter gate set with electrical components with framework by multi-strand soft copper wire. Connect the mounting pieces inside the cabinet with framework by knurled screws. The whole cabinet constructs complete earthing protective circuit;

◇ Top cover of cabinet can be disassembled if necessary for convenience to the assembly and adjustment for main bus bar at site. Four squares of cabinet are set with slinger for hoisting and shipping;

◇ Protection grade of cabinet: IP30. User can choose within IP20-IP40 according to environmental requirements.

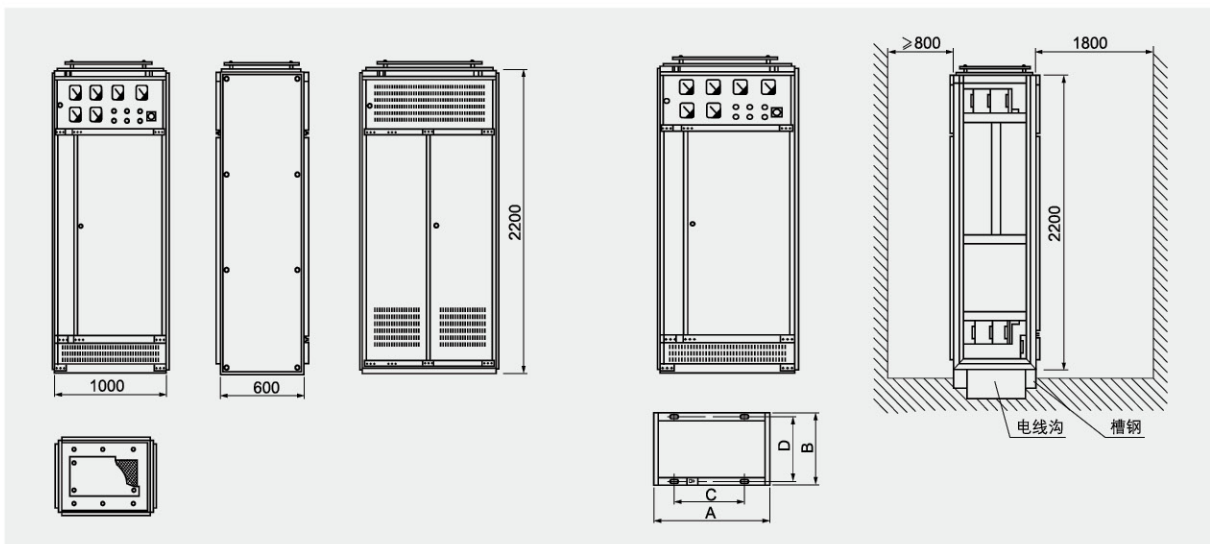
主要技术参数 The main technical parameters

型号 Type	额定电压 Rated voltage (V)	额定电流 Rated current (A)	额定短路 开断电流 (kA) Rated short circuit breaking current	耐受电流 (kA) Rated short time withstand current	额定峰值 耐受电流 (kA) Rated peak with stand current
GGD1	380	1000 600(630) 400	15	15(1S)	30
GGD2	380	1500 1600 1000	30	30(1S)	63
GGD3	380	3150 (2500) 2000	50	50(1S)	105

▶ 使用环境条件 Use environmental conditions

- ◇ 周围空气温度不高于 +40°C，不低于 -5°C，并且 24h 内其平均温度不高于 +35°C；
- ◇ 户内安装使用，使用地点的海拔高度不超过 2000 米；
- ◇ 周围空气相对湿度在最高温度 +40°C 时不超过 50%，在较低温度时允许有较大的相对湿度，例如 +20°C 时为 90%，应考虑到温度变化，可能会偶然产生凝露的影响；
- ◇ 设备安装时与垂直面的倾斜度不超过 5°；
- ◇ 设备安装在无剧烈震动和冲击的地方，以及不足以使电器元件受到腐蚀的场所；
- ◇ 用户有特殊要求时可与制造厂协商。
- ◇ Ambient air temperature: -5°C -+40°C and the average temperature \leq +35°C in 24h;
- ◇ Install and use indoors. Altitude above sea level for operation site \leq 2000M;
- ◇ Relative humidity should not exceed 50% at max temperature +40°C .Higher relative humidity is allowed at lower temperature. Ex.90% at +20°C .But in view of the temperature change, it is possible that moderate dews will produce casually;
- ◇ Installation gradient not exceed 5° ;
- ◇ Install in the places without fierce vibration and shock and the sites insufficient to erode the electrical components;
- ◇ Any specific requirement, consult with manufactory.

▶ 内部结构 Internal structure



产品代号 Product code	A	B	C	D
GGD06	600	600	450	556
GGD06A	600	800	450	756
GGD08	800	600	650	556
GGD08A	800	800	650	756
GGD10	1000	600	850	556
GGD10A	1000	800	850	756
GGD12	1200	800	1050	756

方案组合示例 Scheme

方案编号 Scheme number	01			02			03			04			05			06		
主电路方案图 Main circuit scheme diagram																		
用途 Purpose	受电 Electrification			受电 Electrification			受电 Electrification			受电 Electrification			受电 electrification 馈电 Feeding			受电 Electrification		
型号规格 Model specification	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
HD13BX-1000/31				1			1			1			1					
HD13BX-600/31					1			1			1			1				
HD13BX-400/31						1			1			1			1	2	2	2
DW15-1000/3[] 电动 Motor													1					
DW15-630/3[] 电磁 Electromagnetic														1				
DW15-400/3[] 电磁 Electromagnetic															1			
CJ20-400/3																2		
CJ20-250/3																		
CJ20-160/3																		2
LMZ1-0.66[]/5										1	1	1	3	3	3	2		
LMZ3-0.66[]/5																	2	2
(LMZ1-0.66[]/5)																		
柜宽 mm Cabinet width	600	600	600	1000	800	800	1000	800	800	600	600	600	800	800	800	800	800	800
柜深 mm Cabinet depth	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600

方案编号 Scheme number	07			08			09			10			11			12		
主电路方案图 Main circuit scheme diagram																		
用途 Purpose	受电 Electrification 联络 Interconnection			受电 Electrification 联络 Interconnection			受电 Electrification 联络 Interconnection			受电 Electrification 联络 Interconnection			受电 electrification			受电 Electrification 联络 Interconnection		
型号规格 Model specification	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
HD13BX-1000/31	1			1			1			1			2			2		
HD13BX-600/31		1			1			1			1			2			2	
HD13BX-400/31			1			1			1			1			2			2
DW15-1000/3[] 电动 Motor				1			1			1			1			1		
DW15-630/3[] 电磁 Electromagnetic					1			1			1			1			1	
DW15-400/3[] 电磁 Electromagnetic									1			1			1			1
LMZ3-0.66[]/5																		
(LMZ1-0.66[]/5)				3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)
柜宽 mm Cabinet width	600	600	600	800	800	800	1000	800	800	1000	800	800	1000	800	800	1000	800	800
柜深 mm Cabinet depth	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600

低压开关设备系列 Low-voltage switchgear series

GGJ

低压无功智能补偿装置

Low-voltage reactive power intelligent compensation device

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

GGJ 低压无功智能补偿装置采用计算机辅助设计 (CAD)，引入微电脑控制，对无功量实行智能化跟踪补偿，其结构合理，技术领先，广泛应用低压电网，提高功率因数，减少无功损耗，改善供电质量，是新的节电产品。专用于容 130-600KVA 三相变压器的无功功率补偿。

GGJ low-voltage reactive power intelligent compensation device adopts computer aided design (CAD), introduces microcomputer control, and implements intelligent tracking compensation for reactive power. It has reasonable structure and advanced technology, and is widely used in low-voltage power grid to improve power factor, reduce reactive power loss and improve power supply quality. It is a new energy-saving product. Used for reactive power compensation of 130-600KVA three-phase transformer.

型号及含义 Model and meaning



工作条件 Working conditions

- ◇ 海拔高度: ≤ 2000m;
- ◇ 环境温度: -20°C ~ +45°C;
- ◇ 相对湿度: 20°C时 ≤ 90%;
- ◇ 安装环境: 无有害气体和蒸汽, 无导电性或爆炸性尘粒及严重霉菌。
- ◇ Altitude: ≤ 2000m;
- ◇ Ambient temperature: -20 °C ~ +45°C ;
- ◇ Relative humidity: ≤ 90% at 20°C ;
- ◇ Installation environment: no harmful gases and steam, no conductive or explosive dust and serious mold.

主要特点 Main feature

- ◇ 采用智能控制器控制, 功能齐全, 性能可靠, 补偿方式自动; 可将功率因数提高至 0.9 以上;
- ◇ 实时显示电网功率因数, 显示范围: 滞后 (0.00-0.99), 超前 (0.00-0.99);
- ◇ 具有过电压、过谐波、过补偿、系统故障、缺相、过载等多种综合保护功能;
- ◇ 记忆已设定的参数, 系统停电后不会丢失参数, 电网恢复正常后, 自动进入运行状态, 无须人员值守;
- ◇ 可根据电网负荷平衡状况, 采取分相补偿或混合补偿;
- ◇ 抗干扰能力强, 能抵御从电网直接输入的幅值 2000V 干扰脉冲, 高于国家专业标准。
- ◇ Intelligent controller control, full-featured. Reliable performance, automatic compensation; can increase the power factor to 0.9 or more;
- ◇ Real-time display power grid power factor, display range: lag (0.00-0.99), ahead (0.00-0.99);
- ◇ With over-voltage, harmonic, over compensation, system failure, lack of phase, overload and other comprehensive protection;
- ◇ Memory has been set parameters, the system will not lose the parameters after power failure, the grid back to normal, automatically enter the running state, no personnel on duty;
- ◇ According to the grid load balance, to take the phase compensation or mixed compensation;
- ◇ Anti-interference ability, can withstand the direct input from the grid amplitude of 2000V interference pulse, higher than the national professional standards.

▶ 主要技术参数 The main technical parameters

- ◇ 额定电压: 0.38-0.66kV;
- ◇ 额定频率: 50Hz;
- ◇ 额定容量: 1-600kvar;
- ◇ 适用电压范围: (0.85-1.1) 倍额定电压;
- ◇ 最大允许电流: 1.3 倍额定电流;
- ◇ 控制回路: 1-16 回路;
- ◇ 投切时间: 1-150s/次, 可调;
- ◇ 工作方式: 自动, 连续运行。
- ◇ Rated voltage:0.38-0.66kV;
- ◇ Rated frequency:50Hz;
- ◇ Rated capacity:1-600kvar;
- ◇ Applicable voltage range:(0.85-1.1) times the rated voltage;
- ◇ Maximum allowable current:1.3 times the rated current;
- ◇ Control circuit:1-16loop;
- ◇ Switching time:1-150s/times, adjustable;
- ◇ Work: automatic, continuous operation.

▶ 可配电网检测功能 Distribution network detection function

- ◇ 实时测量和整点纪录变压器低压侧的三相电压、电流、频率、有功功率、无功功率、功率因数、有功电度、无功电度; 电压电流总畸变率和 2-25 次谐波含量;
- ◇ 具有 RS-232 和 RS-485 接口, 可进行掌上电脑数据抄录, 也可通过远程通讯功能实现无线抄表, 装置测试, 参数设置和实时测量数据及纪录数据的读取;
- ◇ 数据分析功能: 可对运行负荷数据进行分析处理、统计查询; 综合分析供电质量, 计算电压合格率, 供电负荷率, 可靠率及最大负荷率; 分时段查询功率因数、有功功率和无功功率; 绘制各相电压、电流、功率因数等曲线图; 打印综合分析及统计报表。
- ◇ Real-time measurement and the whole point of the record transformer low-voltage side of the three-phase voltage, current, frequency, active power, reactive power, power factor, active power, reactive power; voltage and current total distortion rate and 2-25 Subharmonic content;
- ◇ RS-232 and RS-485 interface, can be handheld computer data copy, but also through the remote communication function to achieve wireless meter reading, device testing, parameter settings and time measurement data and records Data reading;
- ◇ Data analysis function: the operation load data can be analyzed and processed, statistical query; comprehensive analysis of power supply quality, calculate the voltage pass rate, power supply load rate, reliability and maximum load rate; Query power factor, active power and reactive power; draw each phase voltage, current, power factor curve; print comprehensive analysis and statistical reports.

电缆分支箱系列 Cable branch box series

XL-21

动力配电柜
Power distribution cabinet

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.

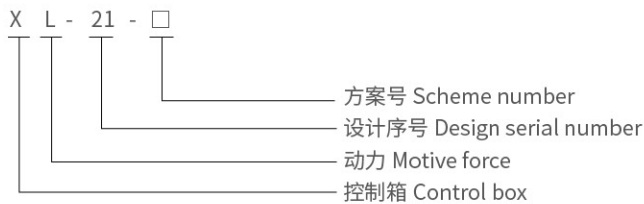


概述 Overview

XL-21 型低压动力配电柜适用于发电厂及工矿企业中，在交流电压 500 伏及以下的三相四线或三相五线系统作动力配电之用。XL-21 型低压动力配电箱系户内装置靠墙安装，屏前检修。

XL-21 low-voltage power distribution cabinet is suitable for power distribution in power plants and industrial and mining enterprises, which is used in three-phase four-wire or tn-s systems with AC voltage below 500 volts. XL-21 low-voltage power distribution box is installed against the wall and overhauled before the screen.

型号含义 Type meaning



结构特点 Design feature

XL-21 型低压动力配电柜系封闭式，外壳用钢板弯制而成，刀开关操作手柄装于箱前右柱上部，可以作为切换电源之用。配电箱前面装有一只电压表，指示母线的电压。配电箱前面有门，门打开后，配电箱内全部设备敞露、便于检修维护。本配电箱均采用国内自行设计的型组件，具有结构紧凑，检修方便，线路方案可以灵活组合等特点。配电箱除装有空气断路器和熔断器作为短路保护外，还装有接触器和热继电器，箱前门可装操作按钮和指示灯。

XL-21 low-voltage power distribution cabinet is closed, and its shell is bent with steel plate. The operating handle of knife switch is installed on the upper part of the right column in front of the cabinet, which can be used for switching power supply. A voltmeter is installed in front of the distribution box to indicate the bus voltage. There is a door in front of the distribution box. After the door is opened, all equipment in the distribution box will be exposed for easy maintenance. This distribution box adopts self-designed components in China, which is characterized by compact structure, convenient maintenance and flexible combination of circuit schemes. In addition to air switch and fuse as short circuit protection, the distribution box is also equipped with contactor and thermal relay, and the front door of the box can be equipped with operation buttons and indicator lights.

正常使用条件 Regular service conditions

- ◇ 环境温度：-50℃ ~+40℃，且 24h 内的平均温度不超过 +36℃；
- ◇ 海拔高度：不超过 2000m；
- ◇ 相对湿度：在周围空气湿度为 +40℃时不超过 50%；在较低湿度下可以有较高的相对湿度（如：+20℃时为 90%），考虑到温度的变化允许产生适度的凝霜；
- ◇ 设备安装时与垂直面的倾斜度应不超过 5°，设备应安装在无剧烈震动、无冲击及无腐蚀的场所。
- ◇ Ambient temperature: -50℃ ~+40℃, and the average temperature within 24h shall not exceed+36℃ ;
- ◇ Altitude: no more than 2000m;
- ◇ Relative humidity: when the ambient air humidity is +40 °C , it shall not exceed 50%; Under lower humidity, it can have higher relative humidity (for example, 90% at +20°C). Considering the change of temperature, it is allowed to produce moderate frost;
- ◇ When the equipment is installed, the inclination with the vertical plane shall not exceed 5, and the equipment shall be installed in a place without violent vibration, impact and corrosion.

使用、维护和检修 Use, maintenance and overhaul

动力配电箱在安装或检修后，在投入运行前须进行下列各项检查与试验（检修后的检查与试验，视其检修性质而定）。

- ◇ 检查动力配电柜内部装设电器设备和二次接线是否符合图纸要求。
- ◇ 检查用于操作的刀开关、空气开关是否灵活，应无卡轧现象。
- ◇ 检查所装设的电器设备的接触是否良好，是否符合该电器设备的本身使用要求。
- ◇ 检查动力配电柜内部有无其他异物及各部分坚固螺钉是否有松动现象。

After installation or maintenance, the power distribution box shall be inspected and tested as follows before being put into operation (the inspection and test after maintenance depends on the quality of maintenance).

- ◇ Check whether the electrical equipment and secondary wiring installed inside the power distribution cabinet meet the drawing requirements.
 - ◇ Check whether the knife switch and air switch used for operation are flexible and have no jam.
 - ◇ Check whether the contact of the installed electrical equipment is good and whether it meets the use requirements of the electrical equipment itself.
 - ◇ Check whether there are other foreign bodies inside the power distribution cabinet and whether there are loose solid screws in each part.
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 - ◇ Check whether there are other foreign bodies inside the power distribution cabinet and whether there are loose solid screws in each part.

▶ 外形安装尺寸 Outline installation dimension

- ◇ 动力配电柜 A 型结构的外形及安装尺寸见图 1。
- ◇ 动力配电柜 B 型结构的外形及安装尺寸见图 2。
- ◇ See fig. 1 for the appearance and installation dimensions of type a structure of power distribution cabinet.
- ◇ See fig. 2 for the appearance and installation dimensions of b-type structure of power distribution cabinet.

▶ 主要设备的技术参数 Technical parameters of main equipment

刀熔组合开关 Knife melting combination switch

型号 Type	额定电流 Rated current (A)	熔体额定电流 (A) Melt rated current (A)	备注 Remarks
HR3-400/34	400	150,200,250,300,350,400	装隔离刀片时无熔体

电流互感器 Current transformer

型号 Type	额定电流 Rated current (A)	次级电流 (A) Secondary current (A)	备注 Remarks
LM-0.5	75、100、150、200、300、600	5	

熔断器 Fuse protector

型号 Type	熔断器 Fuse protector	熔体额定电流 (A) Melt rated current (A)	备注 Remarks
RL1-15	15	2、4、5、6、10、15	
RL1-60	60	20、25、30、35、40、50、60	
RL1-100	100	30、40、50、60、80、100	
RL1-200	200	80、100、120、150、200	
RL1-400	400	150、200、250、300、350、400	

交流接触器 Ac contactor

型号 Type	额定电流 Rated current (A)	吸引线圈电压 (V) Attraction coil voltage (V)	备注 Remarks
CJ10-10	10	交流 110 220 380	
CJ10-20	20		
CJ10-40	40		
CJ10-80	80		
CJ10-150	150		

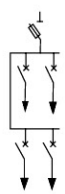
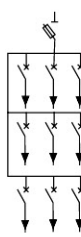
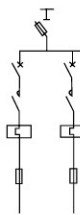
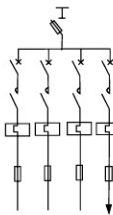
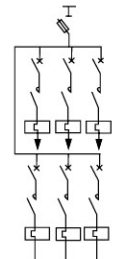
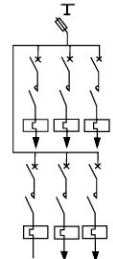
▶ 订货须知 Ordering instructions

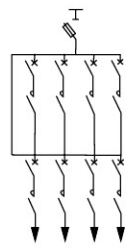
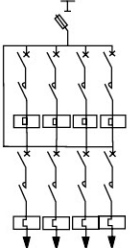
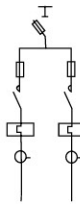
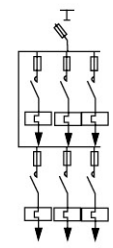
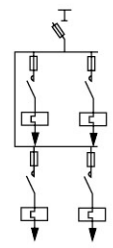
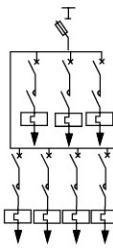
订货时客户应提供下列资料：

- ◇ 一次线路方案及单线系统图；
- ◇ 二次线路展开系统图；
- ◇ 每箱内所装各种电器设备详细规格及数据；
- ◇ 在订购 B 型结构时须提供动力配电柜的排列图和平面布置图。

The customer shall provide the following information when ordering:

- ◇ Primary line scheme and single-line system diagram;
- ◇ Deployment system diagram of secondary line;
- ◇ Detailed specifications and data of various electrical equipment installed in each box;
- ◇ When ordering B-type structure, the arrangement diagram and layout diagram of power distribution cabinet shall be provided.

方案号 Scheme number	01	02	03	04	05	06
主电路方案图 Main circuit scheme diagram						

方案号 Scheme number	07	08	09	10	11	12
主电路方案图 Main circuit scheme diagram						

方案号 Scheme number	13	14	15	16	17	18
主电路方案图 Main circuit scheme diagram						

方案号 Scheme number	19	20	21	22	23	24
主电路方案图 Main circuit scheme diagram						

方案号 Scheme number	25	26	27	28		
主电路方案图 Main circuit scheme diagram						

电缆分支箱系列 Cable branch box series

MG

电机软启动柜
Motor soft start cabinet

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

MG 数字式软启动器是我公司专为用户设计制造的新产品。结构简单、使用方便、安全可靠、功能齐全、启动电流小、体积小、节能、高寿命。它能克服传统的 Y- Δ 启动、自耦变压器启动、电阻降压启动所带来的缺陷。如高冲击电流、转矩的冲击。克服了体积庞大、线路复杂、能耗高、维修率高等缺点，是传统启动器的理想换代产品。

MG digital soft starter is a new product designed and manufactured by our company for users. Simple structure, convenient use, safety and reliability, complete functions, small starting current, small size, energy saving and long service life. It can overcome the defects caused by traditional Y- Δ starting, autotransformer starting and resistance step-down starting. Such as high impact current and torque impact. It overcomes the disadvantages of huge volume, complex circuit, high energy consumption and high maintenance rate, and is an ideal replacement product of traditional starter.

型号含义 Type meaning



箱体外形尺寸 Overall dimensions of box

型号 Type	功率 (KW) Power	额定电流 (A) Rated current	外形尺寸 (mm) Outline dimension						重量 (Kg) Weight
			A	B	C	D	E	F	
MG-15-30	15,17,22,30	32,37,54,75	1000	500	350	35	250	440	
MG-37~75	37,45,55,75	86,97,130,155	1400	600	430	35	345	390	
MG-90	90	180	1600	660	530	35	440	500	90
MG-110	110	220	1600	660	530	35	440	500	90
MG-132	132	260	1600	660	530	35	440	500	120
MG-160	160	318	1600	660	530	35	440	500	120
MG-225	225	460	1600	660	530	35	440	500	145
MG-250	250	490	1800	660	530	35	500	450	145
MG-320	320	630	1800	660	530	35	500	450	170
MG-400	400	790	2000	800	600	35	400	610	200
MG-500	500	980	2000	800	600	35	400	610	200
MG-600	600	1100	2000	800	600	35	400	610	200
MG-810	810	1400	2000	800	600	35	400	610	200

电缆分支箱系列 Cable branch box series

DXF

低压电缆分接箱

Low-voltage cable distribution box

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

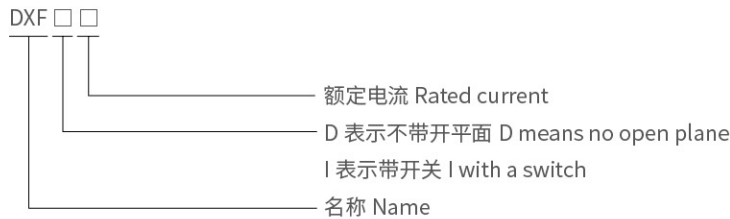
DXF 低压电缆分接箱是一种电电缆向其它设备（非消耗电能的设备）分配电源的户外安装的封闭式成套设备，有地面安装式、柱上安装式、悬挂式及嵌入式 4 种，它用于公用三相系统中。

产品符合 GB7251.5 和 IEC439-1（1992）等标准。

DXF low-voltage cable distribution box is a kind of electric cable to other equipment(non-power consumption equipment) to allocate power to install the outdoor installation of the closed sets of equipment, ground-mounted, column mounted, hanging and embedded into the type of 4, it is used for public three-phase system.

Products meet GB7251.5 and IEC439-1(1992) and other standards.

型号含义 Type meaning



使用环境条件 Use environmental conditions

- ◇ 箱体选用 1.5mm 厚冷轧钢板或 1.2mm 厚不锈钢制作，表面经酸洗磷化喷塑处理，外形美观；
- ◇ 箱体左右两边进线，下面有出线孔，进出线方便；
- ◇ 箱体内焊有主接地点，方便与地连接；
- ◇ 箱体、挡板和其它绝缘部件具有耐高温和耐火花能力，内装或外装部件具有耐腐蚀和耐老化能力；
- ◇ 外表防护等级为 IP34D，当电缆连接好时，防护等级最少为 IP23C。
- ◇ The cabinet selection of 1.5mm thick cold-rolled steel or 1.2mm thick stainless steel production, the surface of the acid sprayed spray treatment, beautiful appearance;
- ◇ The left and right sides of the box into the line, the following outlet hole, easy access;
- ◇ The cabinet has a main grounding point, easy to connect with the ground;
- ◇ Box, baffle and other insulating parts with high heat and spark resistance, built-in or exterior parts with corrosion resistance and aging resistance;
- ◇ The appearance of the protection level IP34D, when the cable is connected, the minimum protection level IP23C.

主要技术参数 The main technical parameters

序号 Serial number	项目 Project	参数 Parameter
1	额定绝缘工作电压 Rated insulation working voltage	400
2	额定工作电压 Rated operating voltage	AC380、AC220
3	最大额定电流 Maximum rated current	100A
4	短时耐受电流 Short time withstand current	6kA
5	防护等级 Protection level	IP30

电缆分支箱系列 Cable branch box series

JP

综合配电箱 (补偿 \ 控制 \ 终端 \ 照明)

Comprehensive distribution box (compensation \ control \ terminal \ lighting)

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

JP 系列户外综合配电箱,是集计量、出线、无功补偿等 多功能于一体达到户外综合配电装置,具有短路、过载、过电压、漏电保护等功能,体积小、外型美观、经济实用,安装于户外柱上变压器的电杆上,是城乡电网改造的理想配电产品。

JP series outdoor integrated distribution box is an outdoor integrated distribution device integrating metering, outgoing line and reactive power compensation. It has the functions of short circuit, overload, overvoltage, leakage protection, etc. It is small in size, beautiful in appearance, economical and practical. It is installed on the pole of outdoor transformer and is an ideal distribution product for urban and rural power grid reconstruction.

型号含义 Type meaning



正常使用环境 Normal use environment

- ◇ 环境温度: -25°C ~+40°C;
- ◇ 空气相对湿度: 日平均值不大于 90%, 月平均值不大于 90%;
- ◇ 海拔高度: 不大于 2000m;
- ◇ 安装在不剧烈震动和冲击、无腐蚀性气体的场所。
- ◇ Ambient temperature:-25°C ~+40°C ;
- ◇ Air relative humidity: daily average value is not more than 90%, and monthly average value is not more than 90%;
- ◇ Altitude: no more than 2000m;
- ◇ Installation in places without violent vibration and impact and corrosive gas.

结构特点 Design feature

箱体结构分立式和卧式,外壳采用 2mm 优质不锈钢板经多重折边工艺弯制 (或采用蜂窝结构的不锈钢双夹层复合板,具有阻燃、环保、隔热、防凝露等性能),采用特殊不锈钢焊接工艺,箱体成型后整体强度高,表面光洁如镜,不留焊缝痕迹;内部安装梁(板)为热镀锌工艺处理,确保二十年内不锈蚀;箱体前后开门,便于用户操作和检修,门四周镶有高弹力耐老化密封胶条,每扇门均装有明暗两种门锁,明锁配有防堵防锈的遮雨罩;计量室全封闭带铅封装置;箱体侧面装有防雨防异物的进线电缆穿管,底部冲有通风孔和电缆出线孔,顶部设有通风道和丝网,具有防水、防锈、防尘、防异物的功能,防护等级: IP54。

The box structure is divided into vertical and horizontal. The shell is made of 2mm high-quality stainless steel plate and bent by multiple folding process (or made of honeycomb structure stainless steel double sandwich composite plate with flame retardant, environmental protection, heat insulation, anti-condensation and other properties). The special stainless steel welding process is adopted. After the box is formed, the overall strength is high, and the surface is bright and clean as a mirror, leaving no weld trace; Internal installation beams (plates) are treated by hot dip galvanizing process to ensure no corrosion within 20 years; The front and rear doors of the box body are opened to facilitate the user's operation and maintenance. The doors are surrounded by high-elastic aging-resistant sealing strips. Each door is equipped with light and dark door locks, and the open locks are equipped with anti-blocking and rust-proof rain shields; The metering room is fully enclosed with lead sealing device; The side of the box body is provided with rain-proof and foreign matter-proof incoming cable penetrating pipes, the bottom is punched with ventilation holes and cable outlet holes, and the top is provided with ventilation ducts and silk screens, which have waterproof, rust-proof, dust-proof and foreign matter-proof functions, and the protection grade is IP54.

主要技术参数 Main technical parameters

序号	名称	单位	参数
1	变压器容量	kVA	30-400
2	额定工作电压	V	AC400
3	辅助回路工作电压	V	AC220,AC380
4	额定频率	Hz	50
5	额定电流	A	≤ 630
6	额定漏电动作电流	mA	30~300 可调
7	防护等级		IP54

- ◇ “ ” 为隔离开关, 型号可选 HD11F 等系列;
- ◇ “ ” 为刀熔开关, 型号可选 HR5, HR6 等系列;
- ◇ “ ” 为断路器, 型号可选 DZ20、CM1、NS、DZ47 等系列;
- ◇ “ ” 为交流接触器, 型号可选 CJ20, B 系列, CJX2、CJ19 切换电容等系列;
- ◇ “ ” 为零序互感器和漏电继电器, 型号可选 JD/LLJ 等系列;
- ◇ “ ” 为电流互感器, 型号可选 LMZ1-0.5、LMK-0.66 等系列;
- ◇ “ ” 为避雷器, 型号可选 FYS、Y3W 等系列;
- ◇ “ ” 为电容器, 型号可选 BSMJ, BCMJ 等系列;
- ◇ “ k ” 为自动补偿控制器, 型号可选 JKL、JKG 等系列;

补偿回路数 1-4 回可选, 每回容量 3-20Kvar 可选,

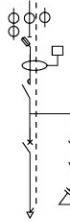

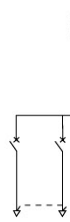


另: 根据用户需求, 箱内可选装温湿度控制装置。



- ◇ “ ” "is an isolating switch, and the model can be selected from HD11F series;
- ◇ “ ” "is a knife melting switch, and the model can be selected from HR5, HR6 and other series;
- ◇ “ ” "is a circuit breaker, and the model can be selected from DZ20, CM1, NS, DZ47 and other series;
- ◇ “ ” "is an AC contactor, and the model can be selected from CJ20, B series, CJX2, CJ19 switched capacitor and other series;
- ◇ “ ” "is zero-sequence transformer and leakage relay, and the model can be selected from JD/LLJ series;
- ◇ “ ” "is a current transformer, and the model can be selected from LMZ1-0.5, LMK-0.66 and other series;
- ◇ “ ” "is lightning arrester, and the model can be selected from FYS, Y3W and other series;
- ◇ “ ” "is a capacitor, and the model can be BSMJ, BCMJ and other series;
- ◇ “ k ” "is an automatic compensation controller, and the model can be selected from JKL, JKG and other series; The number of compensation loops is 1-4 times, and the capacity of each loop is 3-20Kvar. In addition, according to the user's requirements, the temperature and humidity control device can be installed in the cabinet.

主回路方案图 Scheme diagram of main circuit

方案号 Scheme number	01	02	03	04	05
主电路方案图 Main circuit scheme diagram					
说明 Explain	总计量 / 一回 出线 / 漏保 Total metering/primary metering Outgoing/ leakage protection	总计量 / 总漏保 / 二回出线 Total measurement/ total leakage insurance/ Secondary outgoing line	总计量 / 总漏保 / 三回出线 Total metering/total leakage protection/triple outgoing line	总计量 / 二回出 线 / 分支漏保 Total metering/secondary return Line/branch leakage protection	总计量 / 三回出 线 / 分支漏保 Total metering/three returns Line/branch leakage protection

方案号 Scheme number	06	07	08	09	10
主电路方案图 Main circuit scheme diagram					
说明 Explain	总计量 / 一回 出线 / 漏保 Total metering/primary metering Outgoing/ leakage protection	总计量 / 总漏保 / 二回出线 Total measurement/ total leakage insurance/ Secondary outgoing line	总计量 / 总漏保 / 三回出线 Total metering/total leakage protection/triple outgoing line	总计量 / 二回出 线 / 分支漏保 Total metering/secondary return Line/branch leakage protection	总计量 / 三回出 线 / 分支漏保 Total metering/three returns Line/branch leakage protection

▶ 箱体外形尺寸 Overall dimensions of box

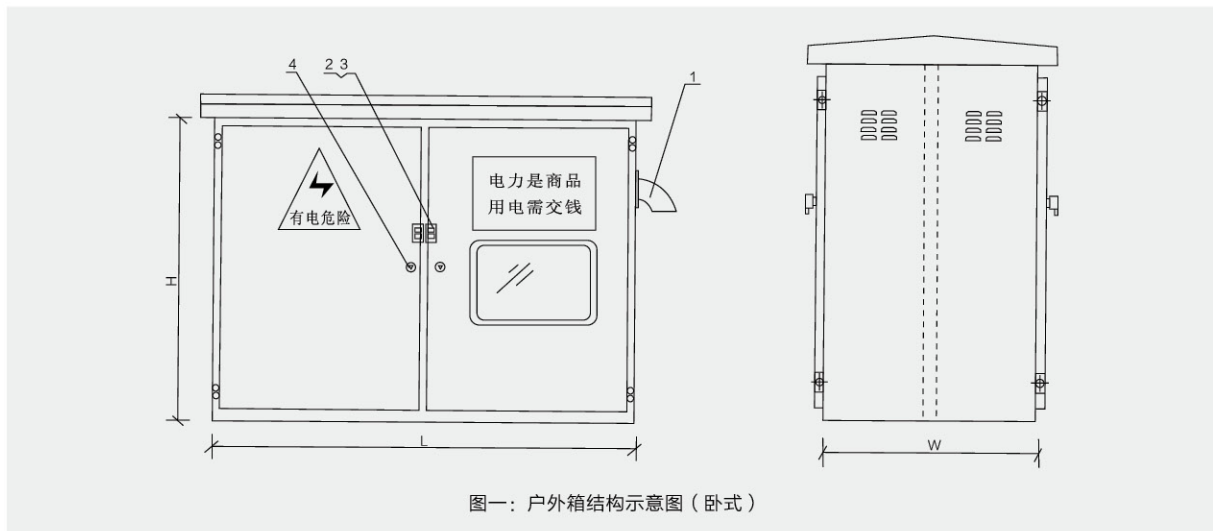
卧式箱体外形尺寸 Overall dimensions of horizontal box

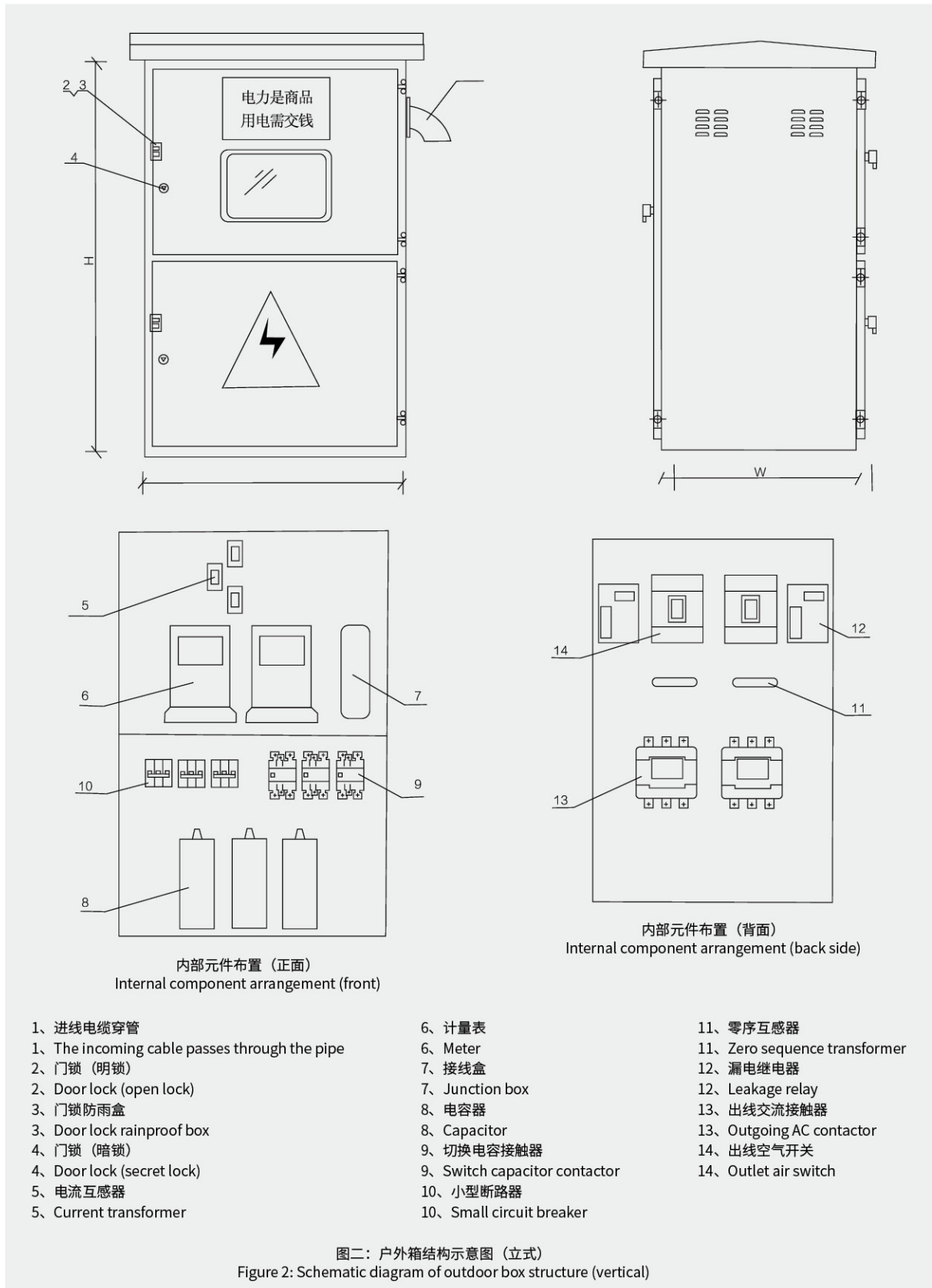
变压器容量 Transformer capacity	方案号 Scheme number	L	W	H
30~100kVA	01、06	800	450	700
30~250kVA	02、04、07、09	900	500	700
100~400kVA	03、05、08、10	1100	600	800

立式箱体外形尺寸 Overall dimensions of vertical box

变压器容量 Transformer capacity	方案号 Scheme number	L	W	H
30~100kVA	01、06	600	450	1000
30~250kVA	02、04、07、09	700	500	1000
100~400kVA	03、05、08、10	800	600	1100

▶ 箱体结构示意图 Schematic diagram of box structure



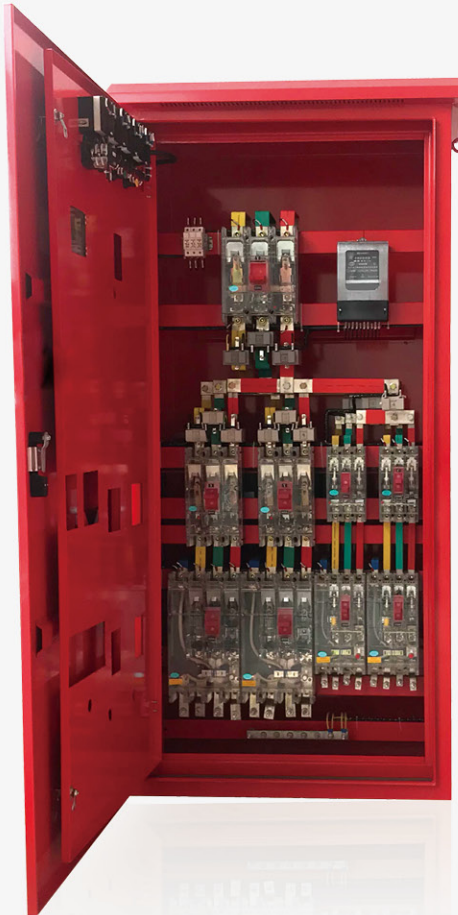


电缆分支箱系列 Cable branch box series

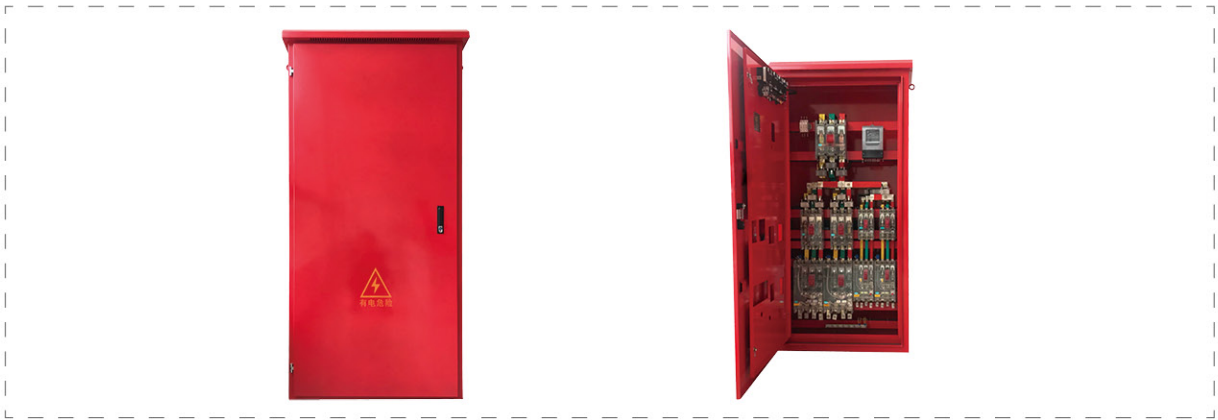
MJ

三箱类系列
Series of sedan

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



▶ 一级动力柜 First-class power cabinet



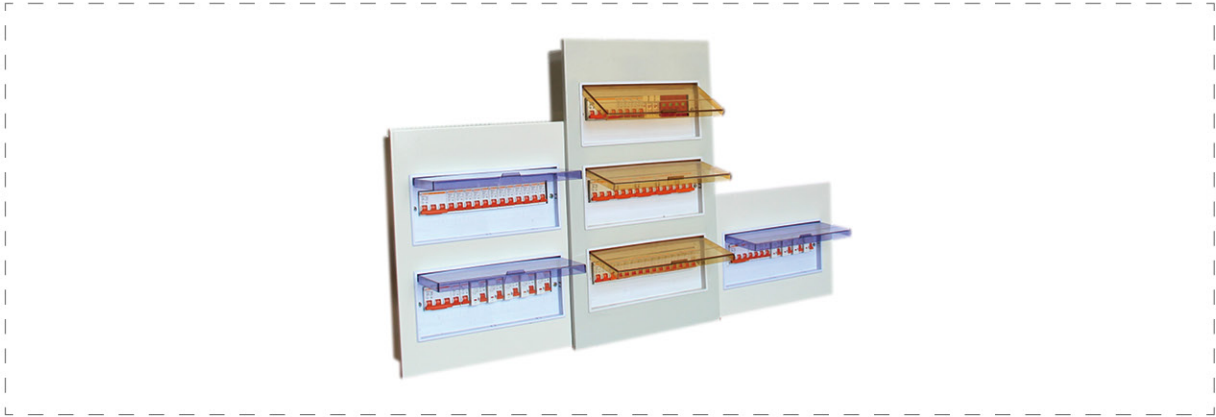
▶ 二级配电箱 Secondary distribution box



▶ 三级配电箱 Three-level distribution box



▶ MJ 照明配电箱 MJ lighting distribution box

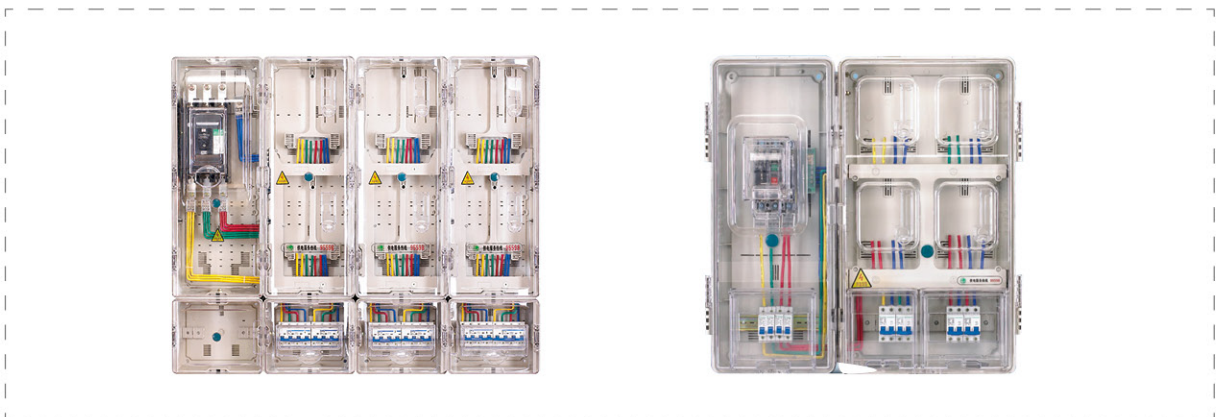


▶ 不锈钢电表箱 Stainless steel meter box



▶ DBX 三相六表位电能计量箱
DBX three-phase six-bit electric energy metering box

▶ 三相四表位电能计量箱
Three-phase four-position electric energy metering box



▶ 单相二表位电能计量箱 (国网款)
Single-phase two-position electric energy metering box (State Grid)



▶ 三相二表位电能计量箱 (带 CT 国网款)
Three-phase two-position electric energy metering box (with CT State Grid)



▶ DFW 落地式电缆分支箱 DFW floor cable branch box



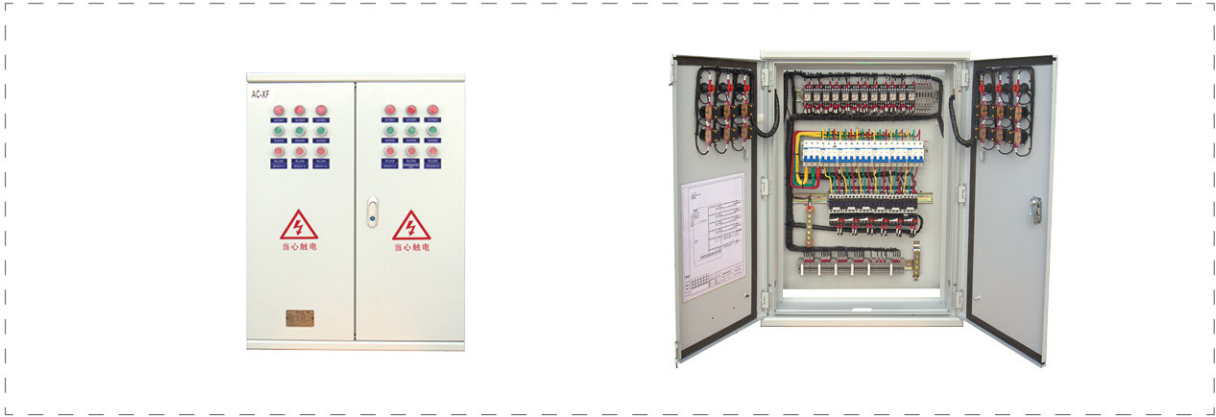
▶ 挂壁式电缆分支箱 Wall mounted cable branch box



▶ 新型防水箱 Novel waterproof box



▶ 控制箱 MJ Control box MJ



▶ 控制箱 MJ Control box MJ



▶ 动力照明箱 XL Power lighting box XL



户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

ZN63(VS1)-12

户内高压手车式真空断路器

Indoor high-voltage handcart vacuum circuit breaker

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



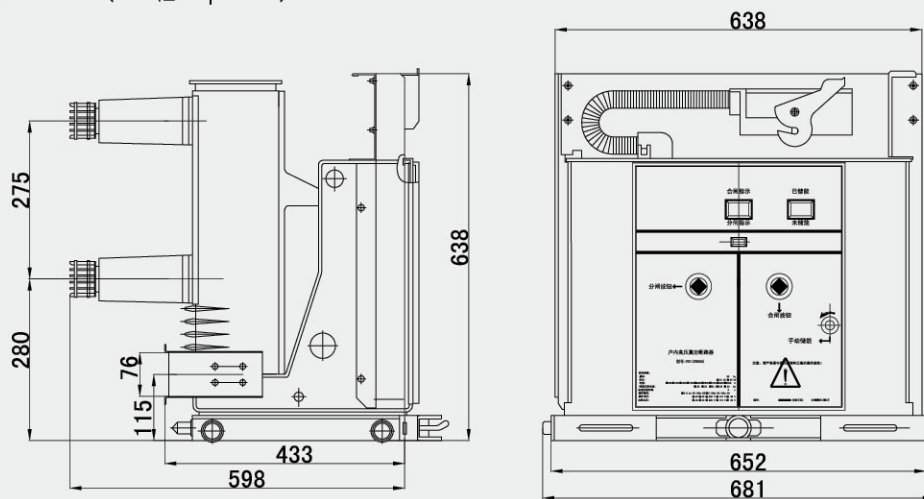
概述 Overview

ZN63(VS1)-12 系列户内手车式高压真空断路器是三相交流 50Hz, 额定电压为 12kV 的户内开关设备, 可供工矿企业、发电厂及变电站、电气设施的控制和保护之用, 并适合于频繁操作的场所。采用操动机构与断路器本体一体化, 设计即可做为固定安装单元, 也可配备专用推进机构, 组成手车单元使用。主回路部分可采用整体固封极柱, 以实现断路器小型化、高可靠、免维护, 可配备 KYN28A-12(GZS) 等中置手车式开关柜, 固定式也可配备于 XGN 系列固定式开关柜。

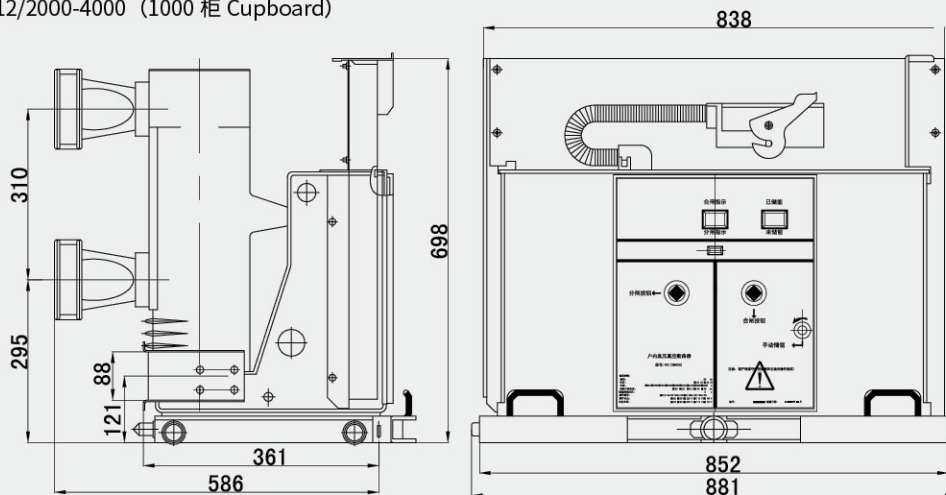
The ZN63(VS1)-12 series indoor handcart high-voltage vacuum circuit breaker is a three-phase AC 50Hz indoor switchgear with a rated voltage of 12kV, which can be used for control and protection of industrial and mining enterprises, power plants, substations and electrical facilities, and is suitable for frequent operation places. The operating mechanism is integrated with the circuit breaker body, which can be designed as a fixed installation unit, and can also be matched with a special propulsion mechanism to form a handcart unit for use. The main circuit part can adopt integral sealed pole to realize miniaturization, high reliability and maintenance-free of circuit breaker. It can be equipped with KYN28A-12(GZS) and other middle handcart switchgear, and fixed switchgear can also be equipped with XGN series fixed switchgear.

外形及安装尺寸 Appearance and installation dimensions

VS1-12/630-1600 (800 柜 Cupboard)



VS1-12/2000-4000 (1000 柜 Cupboard)



户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

VBG-12

系列户内高压真空断路器

Series indoor high voltage vacuum circuit breakers

ZHEJIANG
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CO., LTD.



概述 Overview

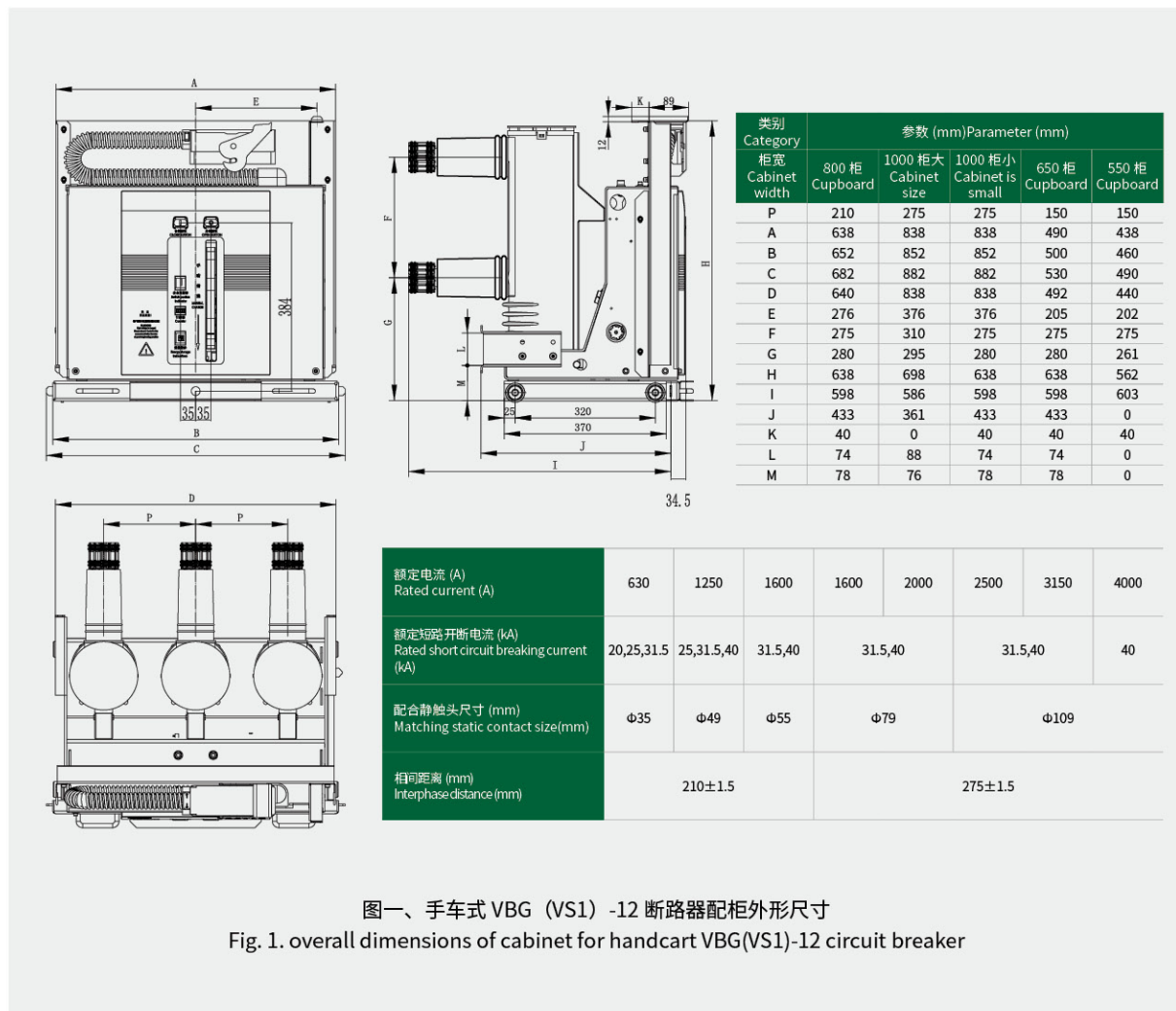
VBG-12 系列户内高压真空断路器采用固体绝缘结构，利用标准的环氧密封技术，首次将真空灭弧室、主导电回路、绝缘支撑等有机地组合成为一个集成密封极柱。成功地从根本上解决了真空断路器的环境耐受问题，使其应用更为广泛。集成密封极柱采用了自对流专利通风技术，巧妙地解决了固体绝缘结构所带来的散热难问题。

VBG-12 系列户内高压固封式真空断路器是国内第一个实现免维护概念的断路器。其高寿命的真空灭弧室以及环氧浇注密封技术的应用保证了集成密封极柱的免维护，同时还可配用高可靠性永磁操动机构保证了操动机构的免维护，电子控制部分弃传统的辅助开关而代之以光电接近开关，并采用全电子化电源和智能控制单元保证了电子控制部分的免维护。

VBG-12 series indoor high-voltage vacuum circuit breakers adopt solid insulation structure and use standard epoxy sealing technology to organically combine vacuum interrupter, main conducting circuit and insulation support into an integrated sealing pole for the first time. The problem of environmental tolerance of vacuum circuit breaker has been successfully solved fundamentally, which makes it more widely used. Self-convection patented ventilation technology is adopted in the integrated sealed pole, which skillfully solves the problem of heat dissipation caused by solid insulation structure.

VBG-12 series indoor high-voltage sealed vacuum circuit breaker is the first circuit breaker to realize maintenance-free concept in China. The application of its long-life vacuum interrupter and epoxy pouring sealing technology ensures the maintenance-free of the integrated sealing pole, and at the same time, it can be equipped with a high-reliability permanent magnet operating mechanism to ensure the maintenance-free of the operating mechanism. The electronic control part replaces the traditional auxiliary switch with the photoelectric proximity switch, and adopts the full electronic power supply and intelligent control unit to ensure the maintenance-free of the electronic control part.

外形及安装尺寸 Appearance and installation dimensions



图一、手车式 VBG (VS1) -12 断路器配柜外形尺寸
 Fig. 1. overall dimensions of cabinet for handcart VBG(VS1)-12 circuit breaker

户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

VZF-12R

移开式真空负荷开关熔断器组合电器

Removable vacuum load switch fuse combination electric appliance

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

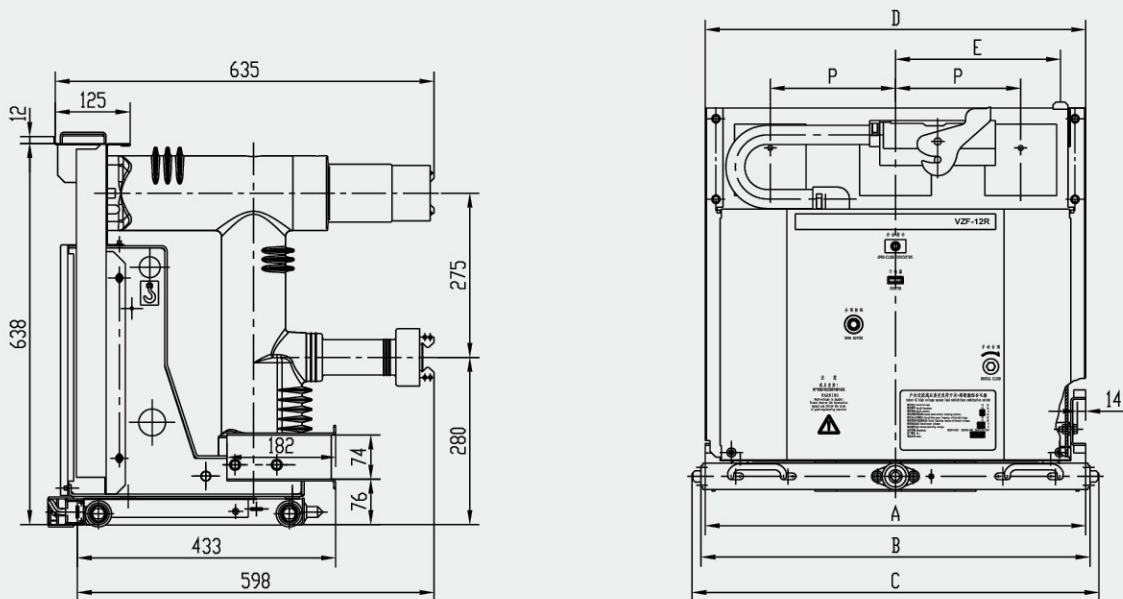
VZF-12R 中置固封式真空负荷开关 - 熔断器组合电器（以下简称真空开关），是根据特殊的设计概念并结合市场需求而研发的新型真空开关设备，它广泛应用于户内铠装式空气绝缘开关柜中，他符合 GB3804-2004 GB16926-1997 等标准规定。

VZF-12R 中置固封式真空负荷开关 - 熔断器组合电器在正常使用条件下，只要在真空开关的技术参数范围内，它就可以保证安全、可靠地运行与相应电压等级的电网中。

VZF-12R built-in sealed vacuum load switch-fuse combination electrical appliance (hereinafter referred to as vacuum switch) is a new type of vacuum switch equipment developed according to the special design concept and combined with market demand. It is widely used in indoor armored air insulated switchgear, and it conforms to GB3804-2004 GB16926-1997 and other standards.

VZF-12R built-in sealed vacuum load switch-fuse combination electrical appliance can ensure safe and reliable operation in power grid with corresponding voltage grade as long as it is within the technical parameters of vacuum switch.

外形及安装尺寸 Appearance and installation dimensions



尺寸参数 Dimension parameter

柜宽 (单位: mm) Cabinet width (unit: mm)	P(mm)	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)
650	150	490	500	530	490	205
800	210	638	652	682	638	276
1000	275	838	852	882	838	376

户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

ZN63(VS1)-12

户内高压侧装式真空断路器

Indoor high voltage side mounted vacuum circuit breaker

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

ZN63(VS1)-12 系列户内侧装式高压真空断路器是户内高压开关设备，适用于额定电压 12kV、频率 50Hz 的三相电力系统中，作为保护和控制电器使用，由于真空断路器的特殊优越性，尤其适用于需要额定电流下频繁操作，或多次开断短路电流的场所。

ZN63(VS1)-12 系列侧装式真空断路器采用固定式安装，主要用于固定式开关柜，该断路器既可单独使用，又可用于环网供电、箱式变或各种非标供电系统。

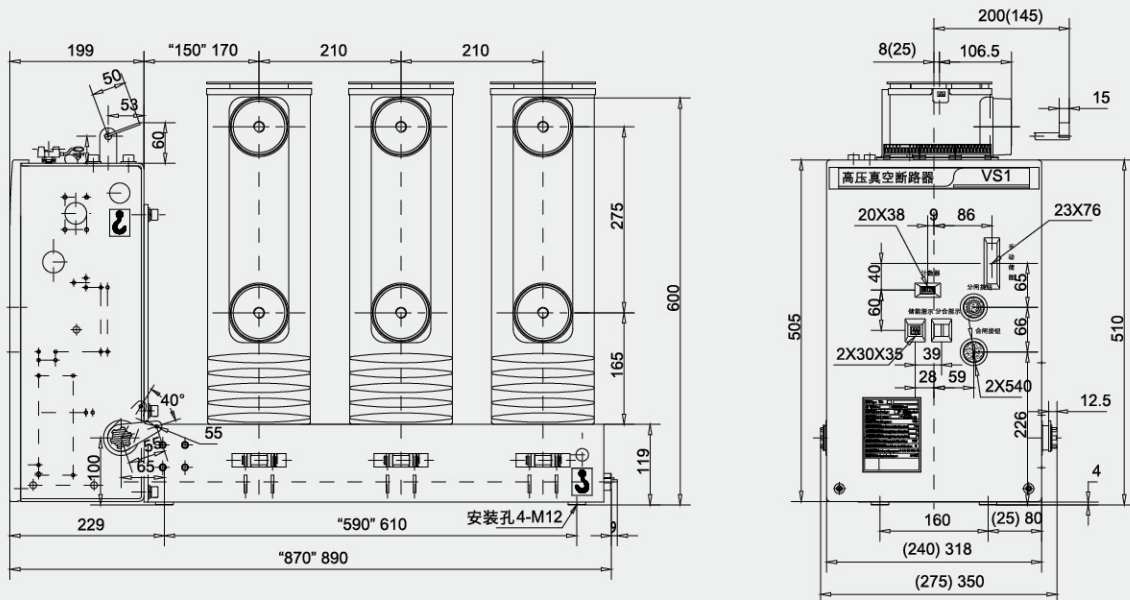
The ZN63(VS1)-12 series indoor high-voltage vacuum circuit breaker is an indoor high-voltage switchgear, which is suitable for three-phase power system with rated voltage of 12kV and frequency of 50Hz. It is used as protection and control appliance. Due to the special advantages of vacuum circuit breaker, it is especially suitable for places that need frequent operation under rated current or break short-circuit current for many times.

ZN63(VS1)-12 series side-mounted vacuum circuit breakers are installed in a fixed way, which is mainly used for fixed switch cabinets. The circuit breakers can be used independently, and can also be used for ring network power supply, box transformer or various non-standard power supply systems.

外形及安装尺寸 Appearance and installation dimensions

双引号处尺寸可为客户特殊提供（非标）

The dimensions in double quotation marks can be specially provided by customers (non-standard)



户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

XCD-12GD

户内高压三工位真空断路器

Indoor high voltage three-station vacuum circuit breaker

ZHEJIANG
XIONGCHU
ELECTRIC
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CO., LTD.

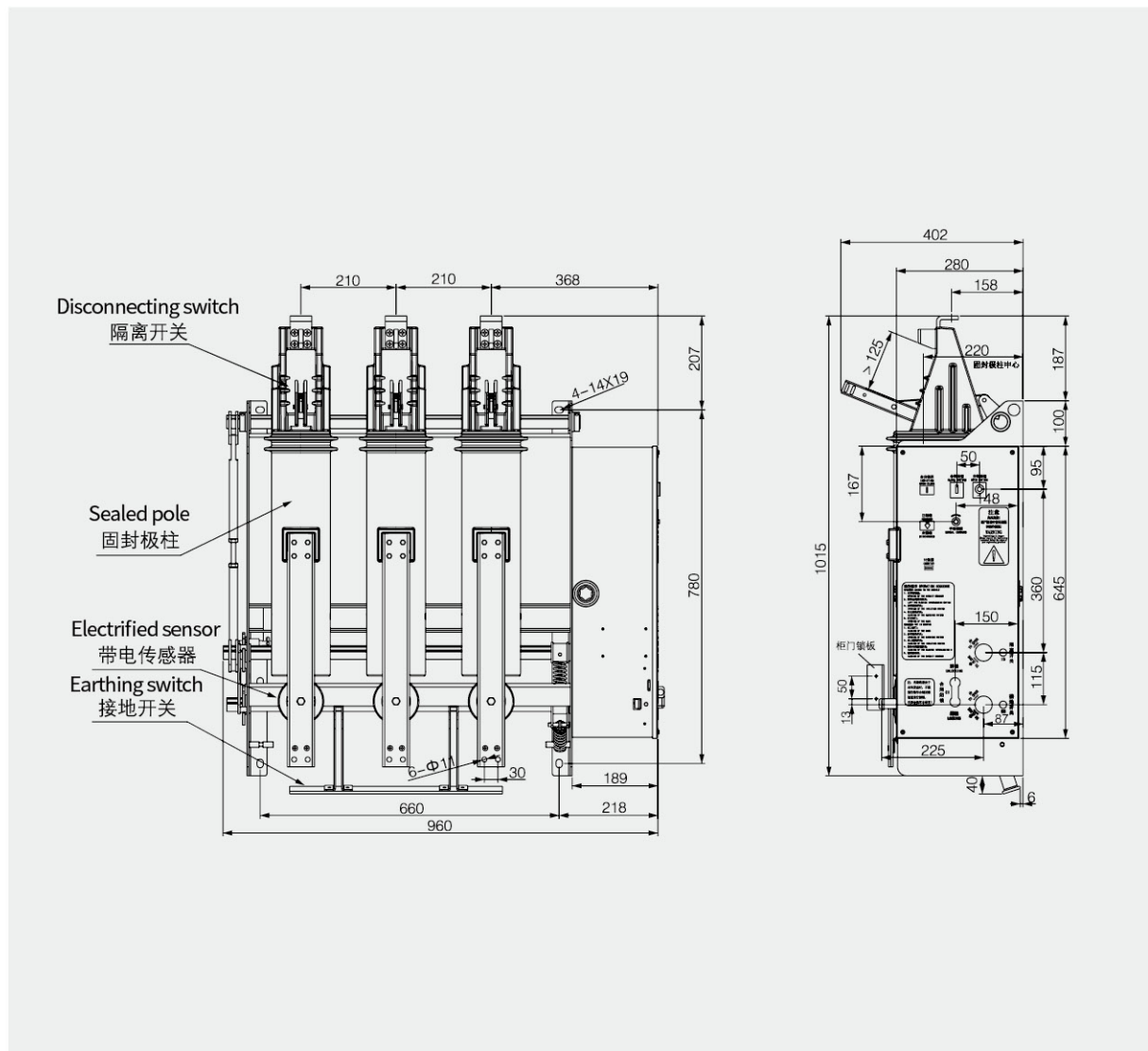


概述 Overview

适合于 6-12kV 中压电网使用的产品；可提供二种产品 XCD-12GD/630-25、XCD-12GD/1250-31.5；该产品集真空断路器、隔离开关、接地开关、传感器于一体；产品设计为侧装式产品，符合小型化的趋势，适配柜体尺寸为 (450x1000x1800)，传统高压固定式开关柜 XGN2 或 XGN66 等，在成套厂内需要分别单独安装隔离开关、真空断路器、接地开关、传感器，安装调试机械联锁，工艺复杂、耗工时长、对工人技术要求高，使用该产品后，配多功能真空断路器，开关本体具有隔离工位、断路器工位、接地工位更加集成化、系统化，安装简单、快捷、方便、可靠。

Products suitable for 6-12kV medium voltage power grid; Two products XCD-12GD/630-25 and XCD-12GD/1250-31.5 can be provided. This product integrates vacuum circuit breaker, isolating switch, grounding switch and sensor. The product design is a side-mounted product, which conforms to the trend of miniaturization. The size of the cabinet is (450x1000x1800), and the traditional high-voltage fixed switch cabinet XGN2 or XGN66, etc. It is necessary to separately install isolating switches, vacuum circuit breakers, grounding switches and sensors in the complete factory, and install and debug mechanical interlocks. The process is complex, time-consuming and requires high technical requirements for workers. After using this product, it is equipped with multifunctional vacuum circuit breakers.

外形及安装尺寸 Appearance and installation dimensions



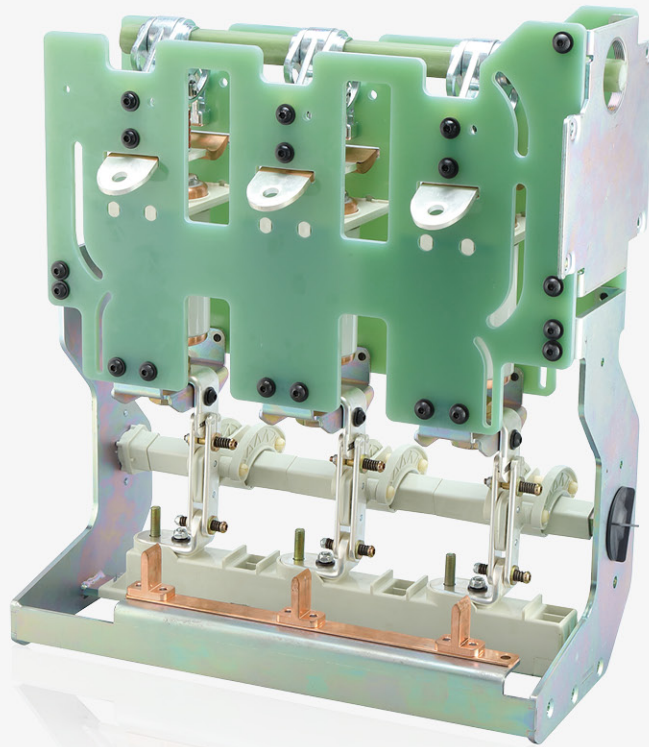
户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

XCV-12KV-630A

充气柜断路器 (带隔离带接地)

Inflatable cabinet circuit breaker (with isolation belt grounding)

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



▶ 概述 Overview

XCV-12KV-630A 断路器开关具有易安装、维修少、寿命长、体积小、价格便宜安全可靠等优点。

该产品符合 GB1984-89, GB/T1984-2003 交流高压断路器的技术要求。

主回路 630A-20KA、25KA、机械寿命 10000 次。

接地回路 20KA, 机械寿命 5000 次。

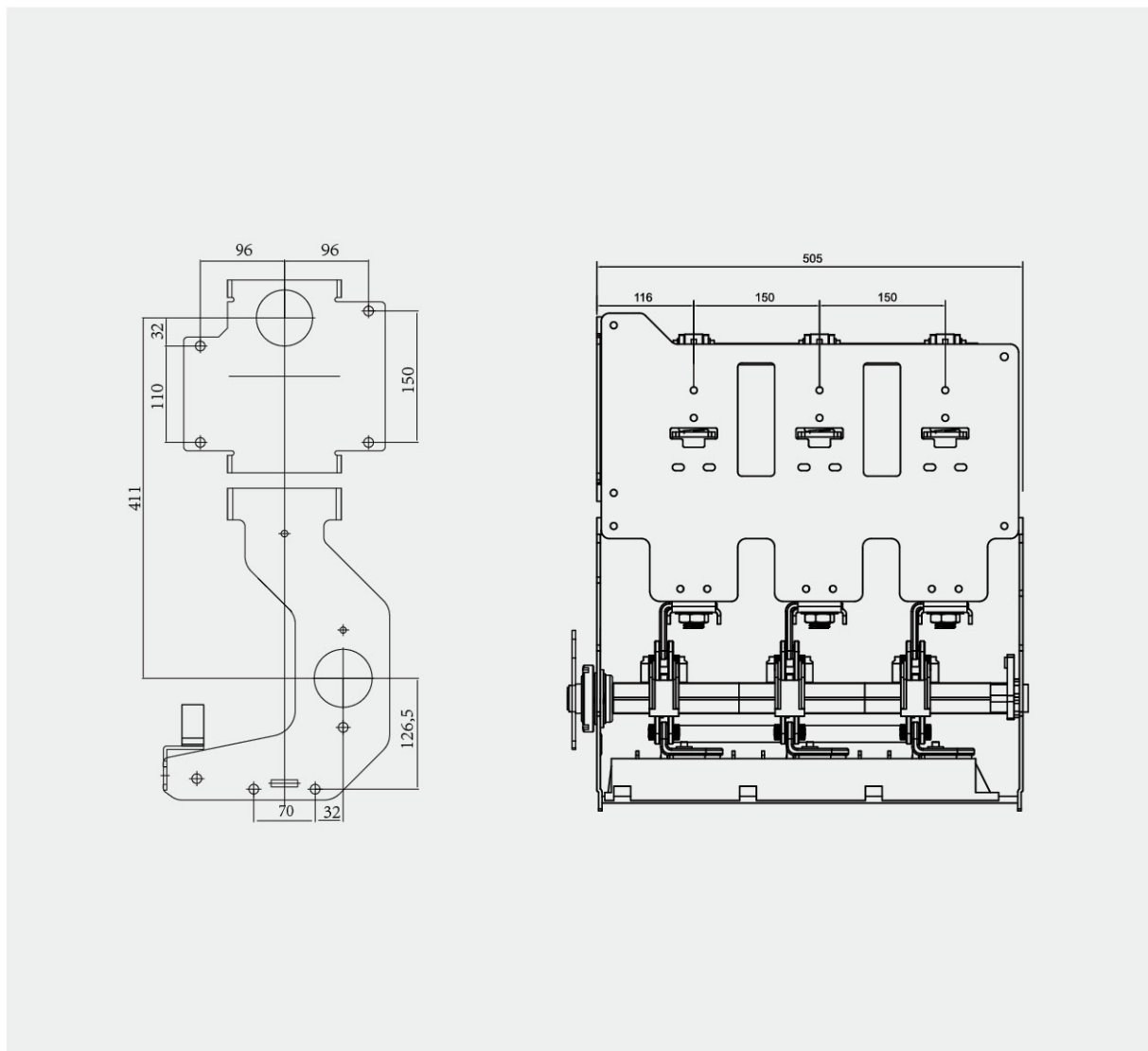
XCV-12KV-630A circuit breaker switch has the advantages of easy installation, less maintenance, long service life, small size, low price, safety and reliability, etc.

The product meets the technical requirements of GB1984-89 and GB/T1984-2003 AC high voltage circuit breaker.

Main circuit 630A-20KA, 25KA, mechanical life 10000 times.

The grounding circuit is 20KA, and the mechanical life is 5000 times.

▶ 外形及安装尺寸 Appearance and installation dimensions



户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

ZN85-40.5

手车式高压真空断路器

Handcart type high voltage vacuum circuit breaker

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

ZN85-40.5 系列户内高压真空断路器 (以下简称断路器), 适用于三相交流 50Hz, 额定电压 40.5kV 电力系统中, 可供工矿企业、发电厂及变电站作为分合负荷电流、过载电流、故障电流之用。断路器与操动机构采用上下布置结构, 有效地降低了断路器的深度。

三相灭弧室和相联带电体由三只独立的环氧树脂绝缘筒相隔离, 构成复合绝缘结构, 断路器满足正常运行条件下的空气距和爬距要求, 并有效地减小了断路器的体积。主导电回路真空灭弧室和动静导电联接安装在绝缘筒内, 使相间距仅为 300mm。主回路电气连接全部采用固定式连接, 具有很高的可靠性。绝缘筒安装在断路器框架上方。

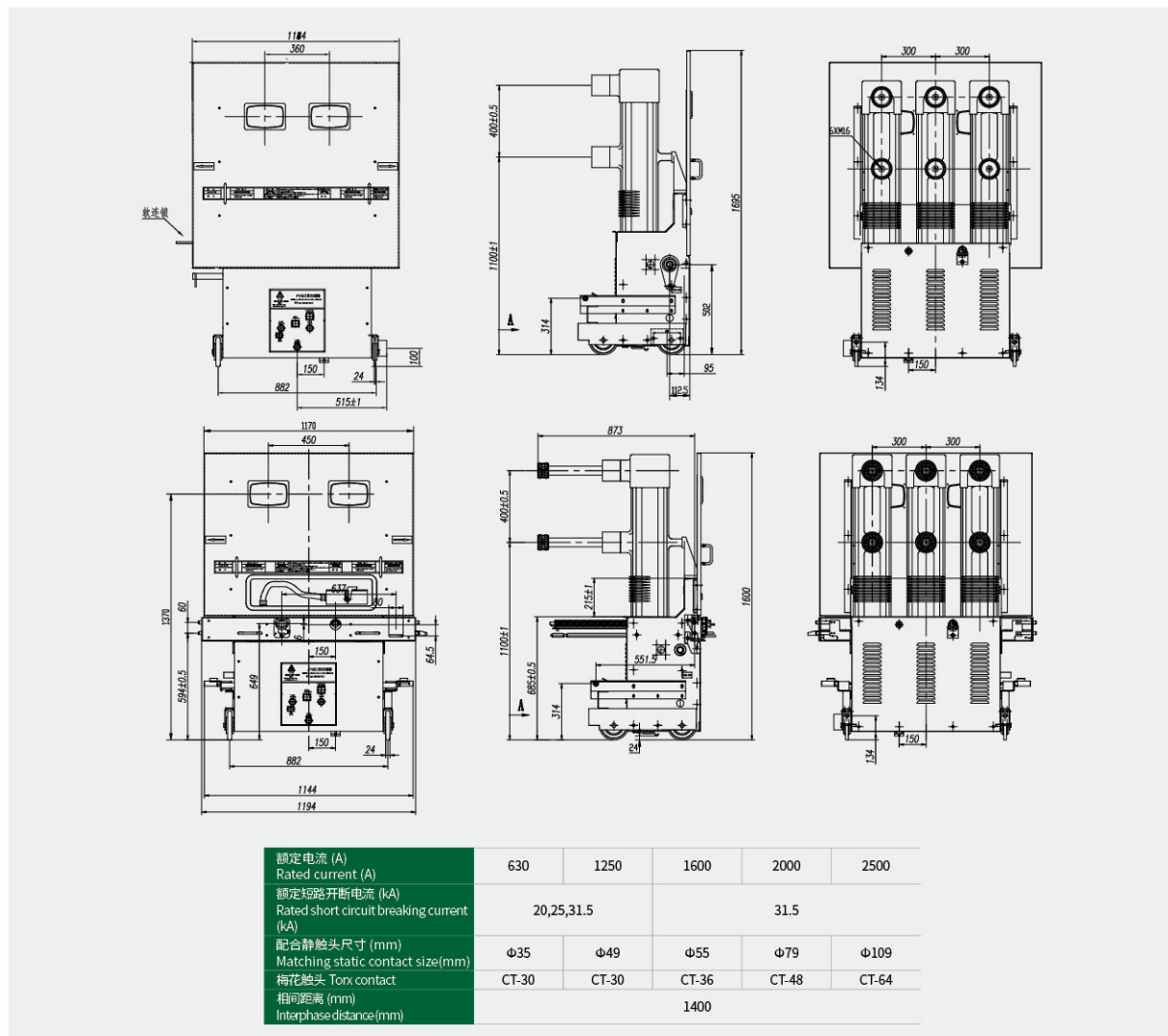
为这种新型断路器专门设计的弹簧操动机构, 安装在断路器框架内, 其结构特点更适合断路器的上下布置形式, 并成为断路器整造词体结构中不可分割的一部分。机构设计简单, 输出曲线及其性能更适用 40.5kV 真空断路器的特点和要求。

ZN85-40.5 series indoor high-voltage vacuum circuit breakers (hereinafter referred to as circuit breakers) are suitable for three-phase AC 50Hz power system with rated voltage of 40.5kV, and can be used for industrial and mining enterprises, power plants and substations to separate load current, overload current and fault current. The circuit breaker and the operating mechanism are arranged up and down, which effectively reduces the depth of the circuit breaker.

The three-phase arc extinguishing chamber and the associated electrified body are separated by three independent epoxy resin insulation cylinders to form a composite insulation structure. The circuit breaker meets the requirements of air distance and climbing distance under normal operation conditions, and effectively reduces the size of the circuit breaker. The vacuum interrupter of the main conducting circuit and the dynamic and static conductive connection are installed in the insulation cylinder, so that the phase spacing is only 300 mm. The main circuit electrical connections are all fixed connections with high reliability. The insulation cylinder is installed above the breaker frame.

The spring operating mechanism specially designed for this new type of circuit breaker is installed in the frame of the circuit breaker, and its structural characteristics are more suitable for the up-and-down arrangement of the circuit breaker, and become an integral part of the whole word structure of the circuit breaker. The mechanism design is simple, and the output curve and its performance are more suitable for the characteristics and requirements of 40.5kV vacuum circuit breaker.

外形及安装尺寸 Appearance and installation dimensions



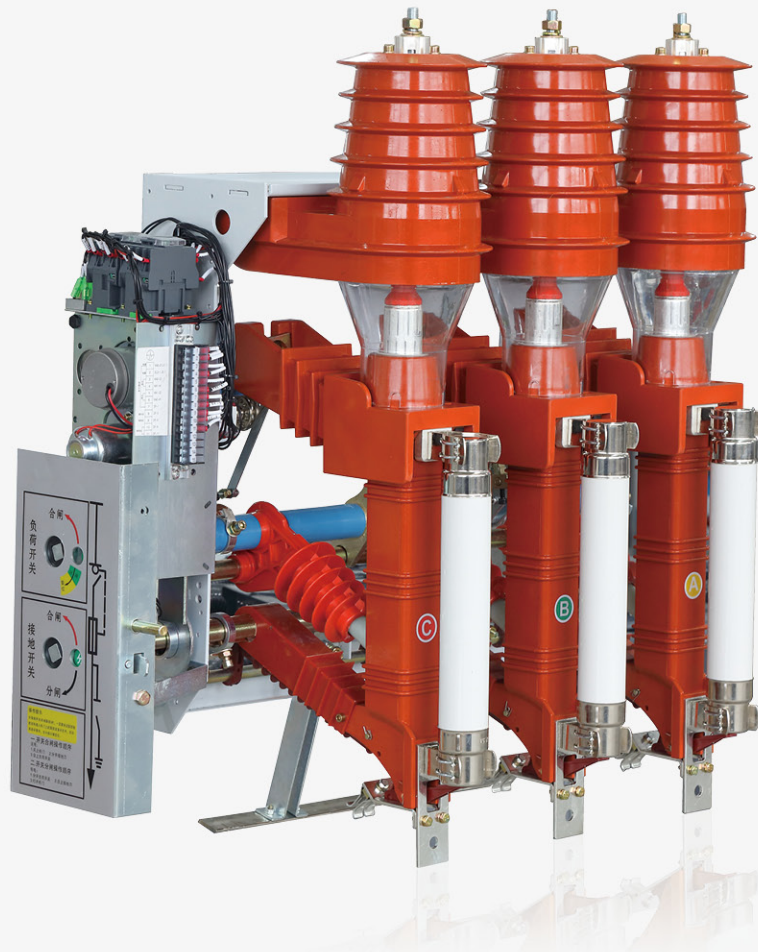
户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

FKRN12-12D

户内高压压气式负荷开关

Indoor high pressure pneumatic load switch

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.

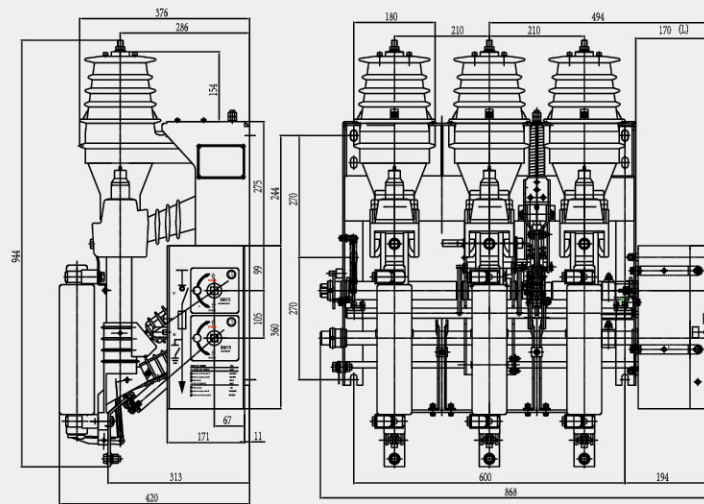


概述 Overview

FKN12-12D 压气式负荷开关, FKRN12-12D 系列压气式负荷开关 - 熔断器组合电器, 适用于 12kV 及以下三相配电系统中, 作为变压器、电缆、架空线路等电力设备的控制和保护之用; 特别适用于城网、农网的终端变电站及箱式变电站。并适用于环网、双辐射供电单元的控制和保护。FKN12A-12D 系列压气式负荷开关可以分合负载电流和过载电流。FKRN12-12D 系列压气式负荷开关 - 熔断器组合电器可以分合负载电流, 过载电流, 开断线路短路电流。

FKN12A-12D compressed load switch, FKN 12A-12D series compressed load switch-fuse combination appliance, suitable for three-phase distribution system of 12kV and below, used for control and protection of power equipment such as transformers, cables and overhead lines; Especially suitable for terminal substations and box-type substations of urban and rural power grids. It is also suitable for the control and protection of ring network and double radiation power supply unit. FKN12A-12D series compressed air load switches can split load current and overload current. FKRN12A-12D series compressed load switch-fuse combination appliances can separate load current, overload current and short circuit current of breaking line.

外形及安装尺寸 Appearance and installation dimensions

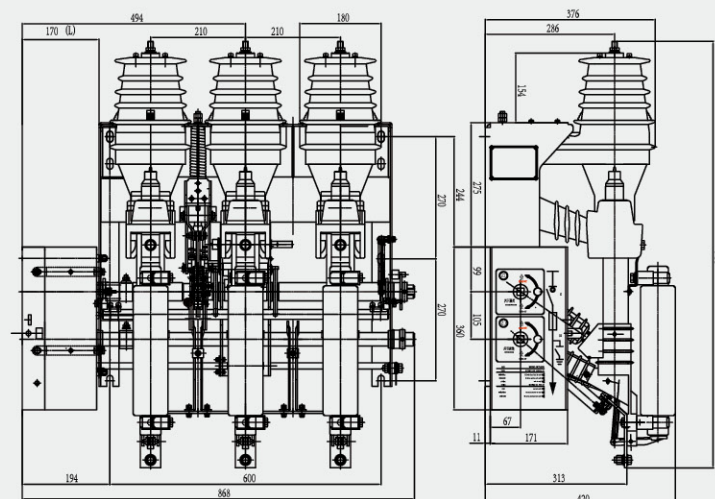


注: 图中L可由用户自定, 常规为L=170.

图1 FKRN12-12 (D) /125-31.5右操顺装组合电器外型及安装尺寸图

Note: The L in the drawing can be customized by the user, and the conventional L=170.

Fig. 1 FKRN12-12(D)/125-31.5 Outline and installation dimension drawing of right-hand sequential assembled electrical apparatus



注: 图中L可由用户自定, 常规为L=170.

图1 FKRN12-12 (D) /125-31.5左操顺装组合电器外型及安装尺寸图

Note: L in the figure can be customized by the user, and the conventional L=170. Fig.

1 FKRN12-12(D)/125-31.5 Outline and installation dimension drawing of left-hand sequential assembled electrical apparatus

户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

FZRN25-12D

户内高压真空负荷开关
Indoor high voltage vacuum load switch

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

FZN25-12/FZ(R)N25-12D 型户内高压真空负荷开关和 FZRN25-12D/T200-31.5 型户内高压真空负荷开关 - 熔断器组合电器是三相交流 50Hz、12kV 配电系统的控制和保护装置，产品无油、无毒、无火灾与爆炸危险，广泛使用于工矿企业及城市大楼配电站等场所。后者对变压器等电气设备的保护作用比断路器更可靠，特别适合于环网、双辐射供电单元和箱式变电站。

FZN25-12D/630-20 型户内高压真空负荷开关（以下简称负荷开关）是三相交流 50Hz、额定电压 12kV 的户内装置，适用于工矿企业配电所及变电站等场所，作为电气设施的保护和控制，用于分合负荷电流、闭环电流、空载变压器和电缆充电电流。它具有关合短路电流能力的接地开关。其操作机构可手动和电动，便于实现电力系统的三遥控制要求。

FZRN25-12D/200-31.5 型户内高压真空负荷开关 - 熔断器组合电器（以下简称组合电器）是三相交流 50Hz、额定电压 12kV 的户内装置，适用于工矿企业配电所及变电站等场所，作负荷控制和短路保护之用。它还具有关合短路电流能力的接地开关。其操作机构可手动和电动，便于实现电力系统的三遥控制要求。

FZN25-12/FZ(R)N25-12D indoor high-voltage vacuum load switch and FZRN25-12D/T200-31.5 indoor high-voltage vacuum load switch-fuse combination electric appliance are control and protection devices of three-phase AC 50Hz and 12kV power distribution system. The products are oil-free, nontoxic, free of fire and explosion hazards, and are widely used in industrial and mining enterprises and distribution stations of urban buildings. The latter is more reliable in protecting transformers and other electrical equipment than circuit breakers, especially suitable for ring network, double auxiliary power supply units and box-type substations.

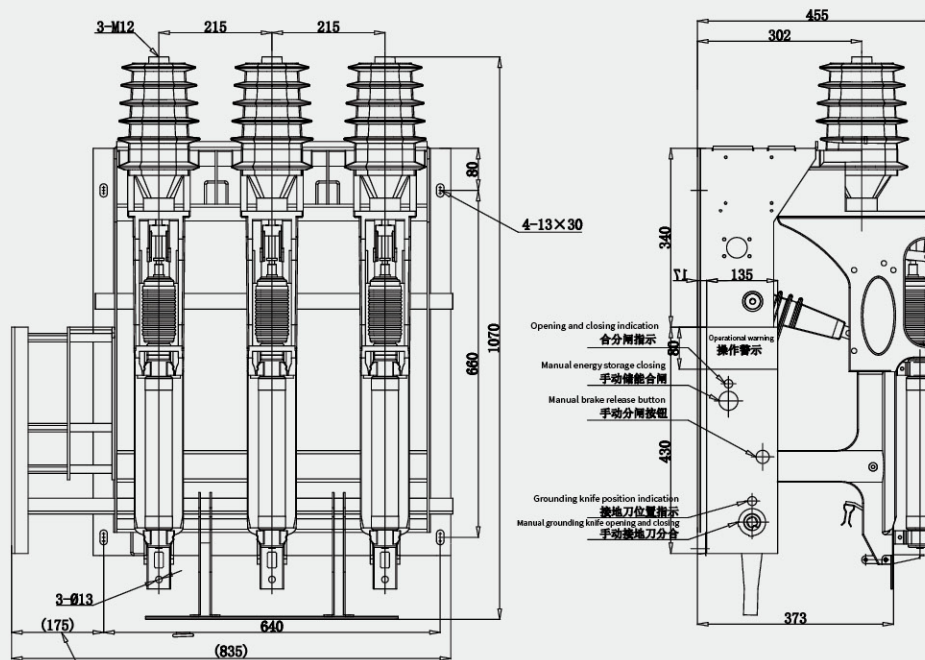
FZN25-12D/630-20 indoor high-voltage vacuum load switch (hereinafter referred to as load switch) is an indoor device with three-phase AC 50Hz and rated voltage of 12kV, which is suitable for distribution stations and substations in industrial and mining enterprises, as the protection and control of electrical facilities, and is used for opening and closing load current, closed-loop current, no-load transformer and cable charging current. It has a grounding switch capable of closing short-circuit current. Its operating mechanism can be operated manually or electrically, which is convenient for realizing the three remote control requirements of power system.

FZRN25-12D/200-31.5 indoor high-voltage vacuum load switch-fuse combination electrical appliance (hereinafter referred to as combination electrical appliance) is an indoor device with three-phase AC 50Hz and rated voltage of 12kV, which is suitable for load control and short-circuit protection in distribution stations and substations of industrial and mining enterprises. It also has a grounding switch capable of closing short-circuit current. Its operating mechanism can be operated manually or electrically, which is convenient for realizing the three remote control requirements of power system.

外形及安装尺寸 Appearance and installation dimensions

FZN25-12D 安装尺寸图（侧装左操）新型

FZN25-12D installation dimension drawing (side installation and left operation) new type



常规长度175，长度可按用户要求定做（加长长度通常有：70mm、100mm）

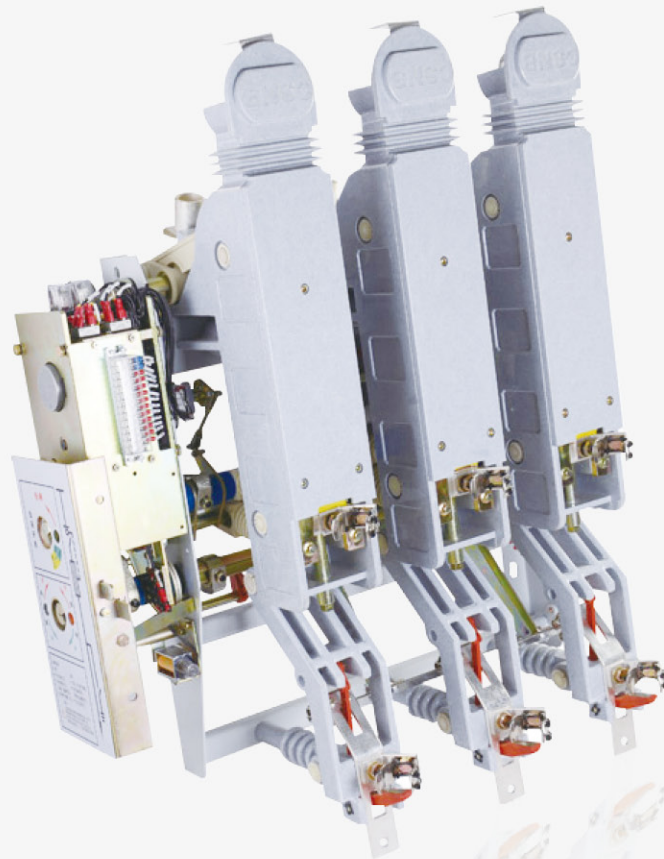
The conventional length is 175, and the length can be customized according to the user's requirements (the extended length is usually 70mm and 100mm)

户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

FZN66-12(D)T630-25

交流高压真空负荷开关
AC High Voltage Vacuum Load Switch

ZHEJIANG
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► 概述 Overview

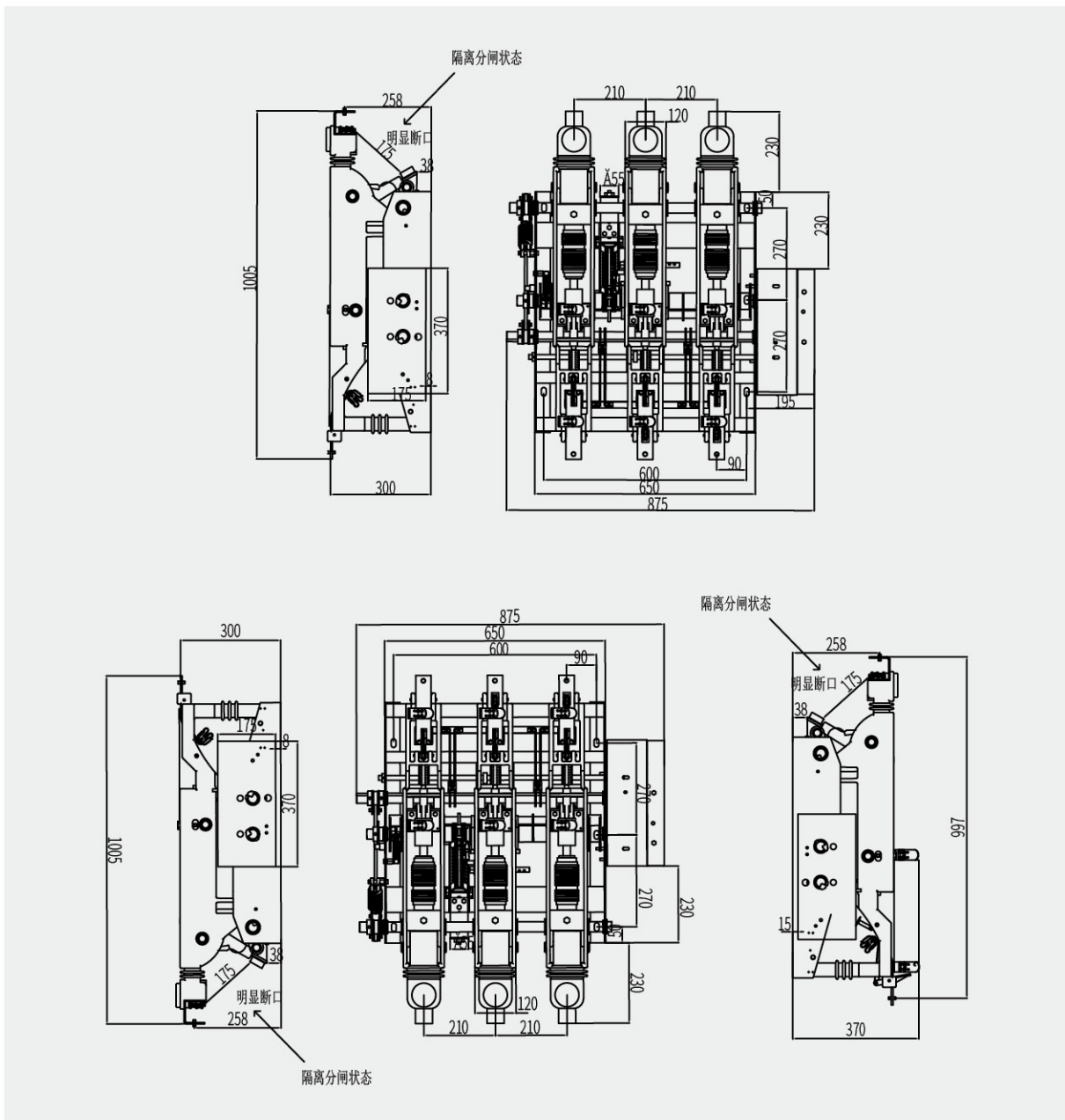
FZN66 系列负荷开关及其组合电器，是消化吸收国外技术，并结合我国的用户要求加以改进，由我厂自行设计、研制而成的。是适用于城市电网改造和建设需要的新型高压电器产品。

性能符合 GB/T3804 《3~6kV 交流高压负荷开关》和 GB/T16926 《交流高压负荷开关 - 熔断器组合电器》标准，产品委托国家高压电器质量监督检验中心西安高压电器研究所按国家标准进行全面型式试验，主要技术参数已属国内同类产品的领先水平。

FZN66 series load switches and their combined electrical appliances are designed and developed by our factory by digesting and absorbing foreign technologies and improving them according to the requirements of our customers. It is a new type of high-voltage electrical appliance which is suitable for the reconstruction and construction of urban power grid.

The performance meets the standards of GB/T 3804 "3 ~ 6 kV AC High Voltage Load Switch" and GB/T16926 "AC High Voltage Load Switch-Fuse Combination Electric Appliance". The products are entrusted to Xi'an Institute of High Voltage Electric Appliances, National High Voltage Electric Appliance Quality Supervision and Inspection Center, to conduct comprehensive type test according to the new national standard, and the main technical parameters have already reached the leading level of similar products in China.

► 外形及安装尺寸 Appearance and installation dimensions

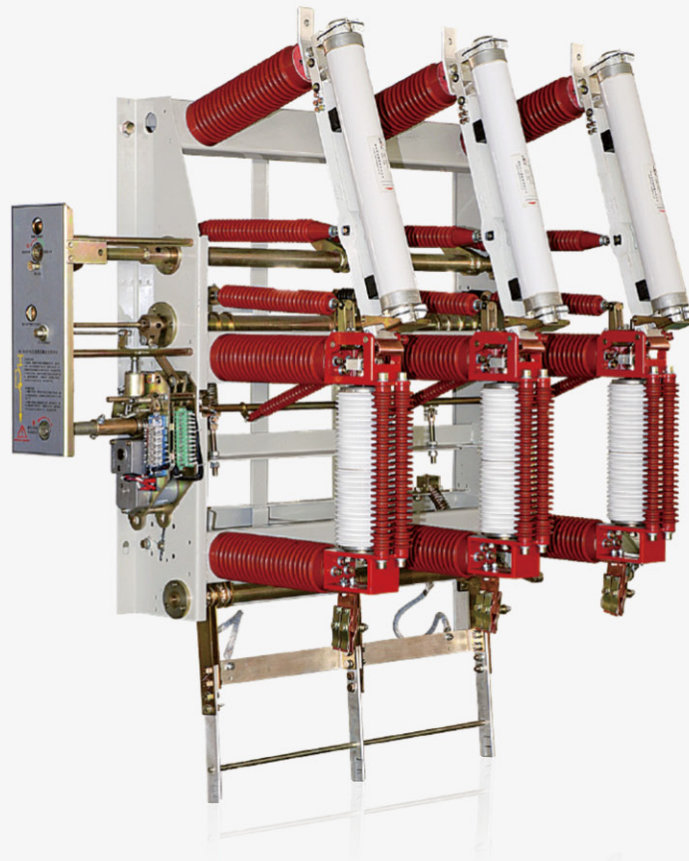


户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

FZN21-40.5

户内高压真空负荷开关
Indoor high voltage vacuum load switch

ZHEJIANG
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CO., LTD.



概述 Overview

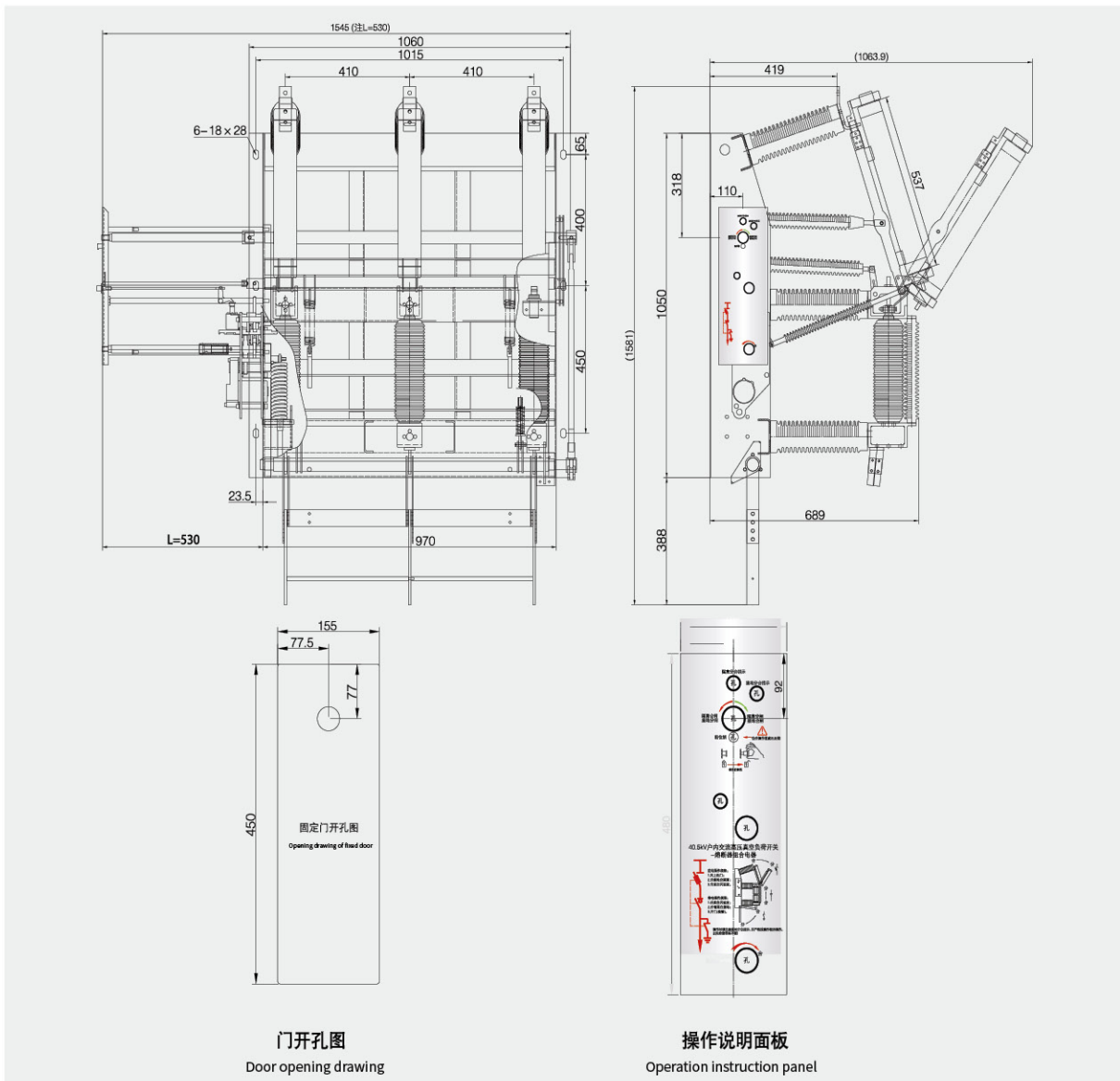
FZN21-40.5型高压真空负荷开关及组合电器，适用于三相交流 40.5kV、50Hz 的电力系统中，或与套配电设备及环网开关柜，组合式变电站等配套使用，广泛用于风力发电，城网建设改造工程，工矿企业，高层建筑和公共设施等，可作为环网供电单元或终端设备，起着电能的分配，控制和保护作用。该产品技术性能符合 GB16926-1997《交流高压负荷开关-熔断器组合电器》及 IEC420《交流高压负荷开关-熔断器组合电器》的要求。

本产品具有开断能力大、安全可靠、电寿命长、可频繁操作、结构紧凑、体积小、重量轻，基本不需维护等优点。具有开断额定电流、过载电流、短路电流和防止设备缺相运行的能力，开关有明显可见的隔离断口，装配具有关合能力的接地开关及电动弹簧机构，具有远动遥控能力。

FZN21-40.5 high-voltage vacuum load switch and combined electrical appliance are suitable for three-phase AC power system of 40.5kV and 50Hz, or used in combination with set of distribution equipment, ring network switch cabinet, combined AC power station, etc. They are widely used in wind power generation, urban network construction and reconstruction projects, industrial and mining enterprises, high-rise buildings and public facilities, etc. They can be used as power supply units or terminal equipment of ring network, and play the role of power distribution, control and protection. The technical performance of this product meets the requirements of GB16926-1997 AC high voltage load switch-fuse combination electrical appliance and IEC420 AC high voltage load switch-fuse combination electrical appliance.

This product has the advantages of large breaking capacity, safety and reliability, long electrical life, frequent operation, compact structure, small size, light weight and no maintenance. It has the ability to break rated current, overload current and short-circuit current and prevent equipment from running out of phase. The switch has obvious isolation fracture, and is equipped with grounding switch and electric spring mechanism with closing ability, and has remote control capability.

外形及安装尺寸 Appearance and installation dimensions



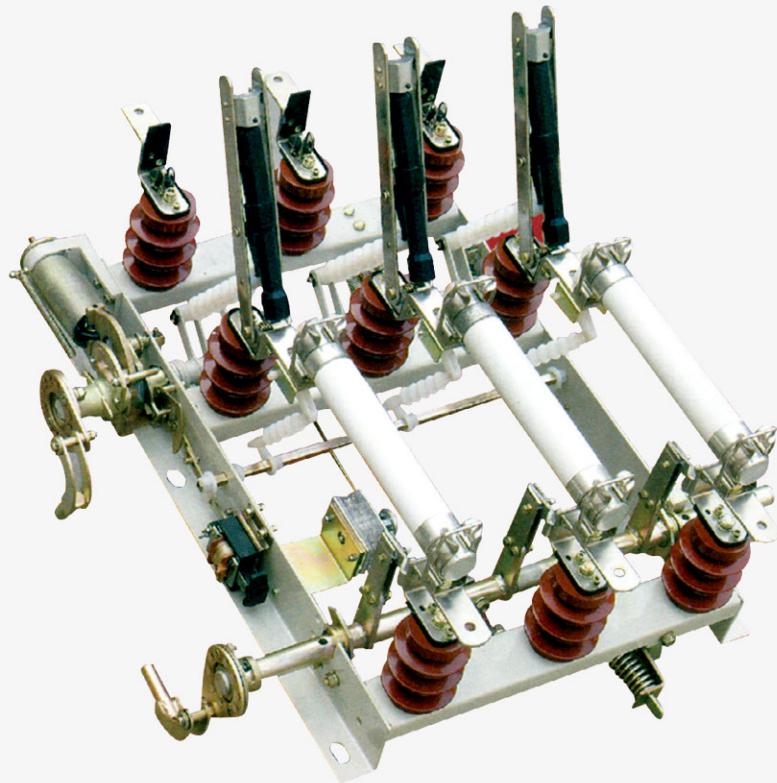
户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

FN5-10RD/630A

户内高压负荷开关 + 熔断器组合电器

Indoor high voltage load switch + fuse combination electric appliance

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概述 Overview

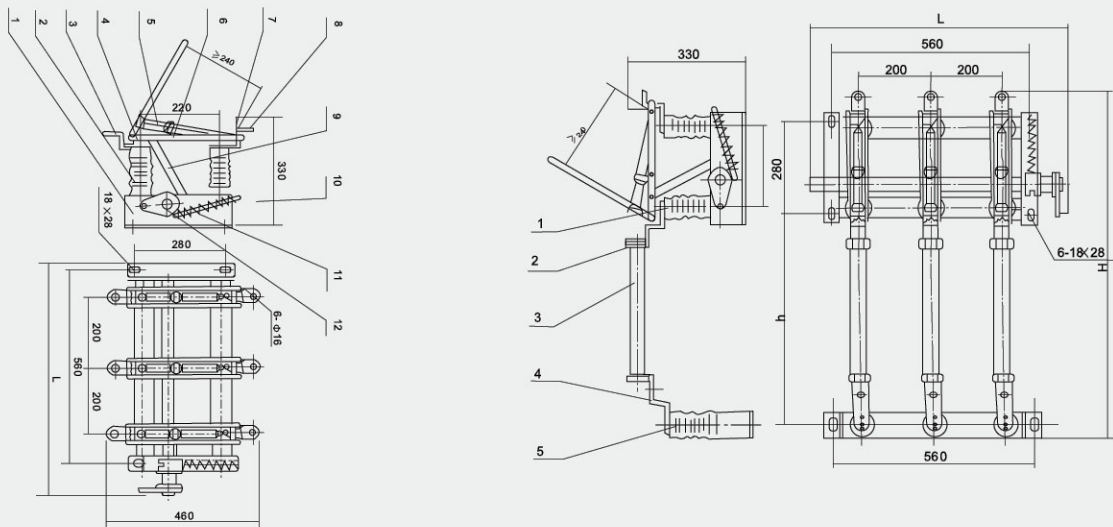
FN5-10 型户内高压负荷开关及熔断器组合电器 (以下简称负荷开关) 适用于交流 50Hz、12kV 的配电网中, 作为开断负荷电流及关合短路电流之用。带有熔断器的负荷开关可切断短路电流, 作保护开关之用。

负荷开关可配用 CS6-1 型手机操作机构、本产品专用的 CS 手动操动机构或 CJ 电动操动机构。

FN5-10 indoor high-voltage load switch and fuse combination appliance (hereinafter referred to as load switch) is suitable for 50Hz and 12kV AC distribution network, which is used for breaking load current and closing short-circuit current. The load switch with fuse can cut off the short-circuit current and be used as a protective switch.

The load switch can be equipped with CS6-1 mobile phone operating mechanism, CS manual operating mechanism dedicated to this product or CJ electric operating mechanism.

外形及安装尺寸 Appearance and installation dimensions



- | | |
|------------|------------|
| 1- 底架 | 7- 导向片 |
| 2- 支柱绝缘子 | 8- 触座接线板 |
| 3- 支座接线板 | 9- 拉杆 |
| 4- 触刀 | 10- 转轴 |
| 5- 灭弧管 | 11- 弹簧储能机构 |
| 6- 扭簧及扭簧锁轴 | 12- 操作盘 |
-
- | | |
|---|-------------------------------------|
| 1- Chassis | 7- Guide piece |
| 2- Post insulator | 8- Contact terminal block |
| 3- Support terminal block | 9- Pull rod |
| 4- Touch the knife | 10- Rotating shaft |
| 5- Arc extinguishing tube | 11- Spring energy storage mechanism |
| 6- Torsion spring and torsion spring lock shaft | 12- Operation panel |

- | | |
|---------------|----------|
| 1-FN5-12 负荷开关 | 3- 支柱绝缘子 |
| 2- 支座熔断器接线板 | 4- 接地触座 |
- FN5-12 户内高压负荷开关及熔断器组合电器外形图 FN5-12R 户内高压负荷开关及熔断器组合电器外形图

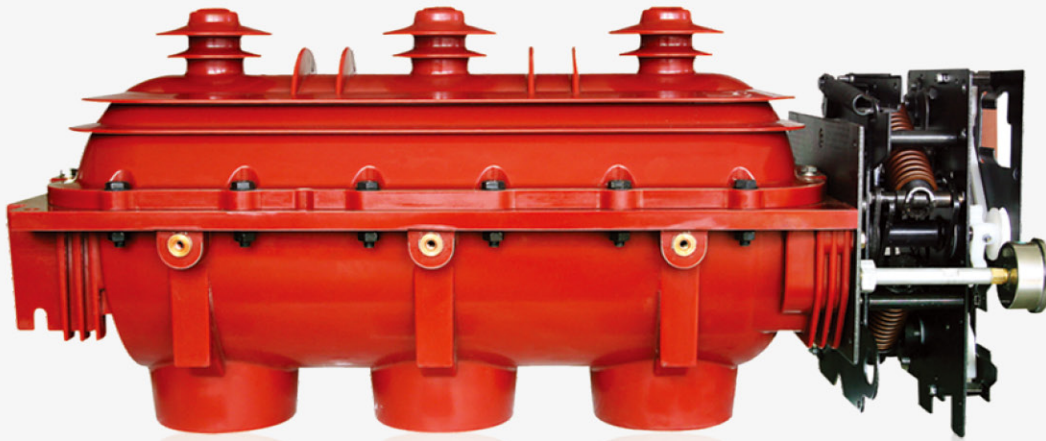
- | | |
|--------------------------------|---------------------------|
| 1-FN5-12 load switch | 3- post insulator |
| 2- support fuse terminal block | 4- grounding contact seat |
- Outline drawing of FN5-12 indoor high-voltage load switch and fuse combination electrical equipment FN5-12R outdoor high-voltage load switch and fuse combination electrical equipment outline drawing

户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

FLN36-12D

户内高压交流负荷开关
Indoor high voltage AC load switch

ZHEJIANG
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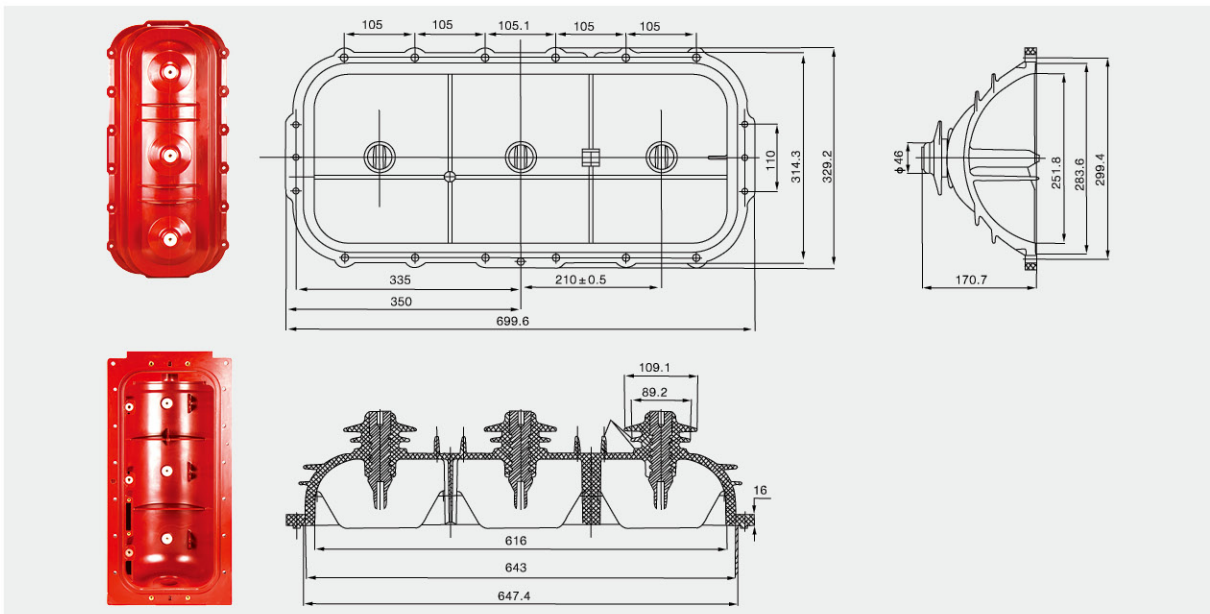


► 概述 Overview

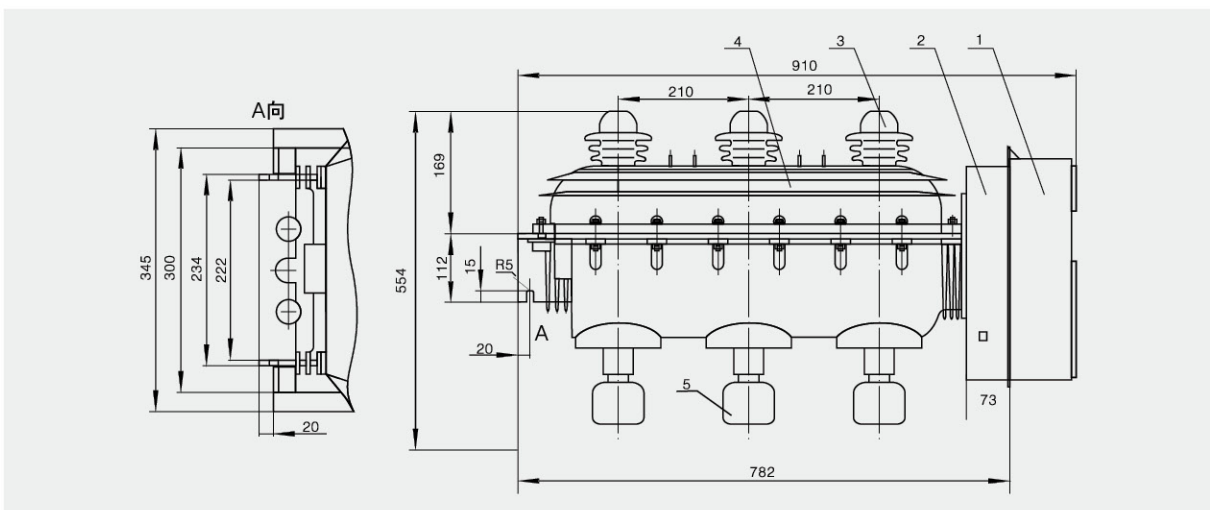
FLN36-12D 型户内高压交流负荷开关是我公司参照国际新技术，并根据我国电力系统的有关标准自行开发研制的中压开关设备，其各项性能指标完全符合 IEC420694, 129 及国家标准 GB3804-2004 《3.6kV-40.5kV 高压交流负荷开关》，GB1985-2004 《高压交流隔离开关和接地开关》，GB/T11022-1999 《高压开关设备和控制设备标准的共用技术要求》，是环网柜的主要开关元件。该负荷开关是集合闸、分闸、接地为一体的多功能中压开关设备，在一个全密封的，具有加强结构的环氧树脂外壳内充以 0.05MPa 的 SF6 气体，用最少的零件实现以上三种功能，确保了产品质量，提高了可靠性。免维护，正常条件下可安全运行 20 年以上。

The FLN36-12D indoor high-voltage AC load switch is a medium-voltage switchgear developed by our company with reference to the new international technology and according to the relevant standards of China's power system, and its various performance indexes fully conform to IEC 420694,129 and national standards GB 3804-2004 "3.6 kV-40.5 kV high-voltage AC load switch" and GB1985-2004 "High-voltage AC isolating switch and grounding switch" The load switch is a multi-functional medium-voltage switch device integrating integrated switching, opening and grounding. SF6 gas with 0.05MPa is filled in a fully sealed epoxy resin shell with reinforced structure, and the above three functions are realized with the least number of parts, thus ensuring the product quality and improving the reliability. Maintenance-free, safe operation for more than 20 years under normal conditions.

► FLN36-12 SF6 壳体 FLN36-12 SF6 casing



► FLN36-12 六氟化硫负荷开关 FLN36-12 sulfur hexafluoride load switch



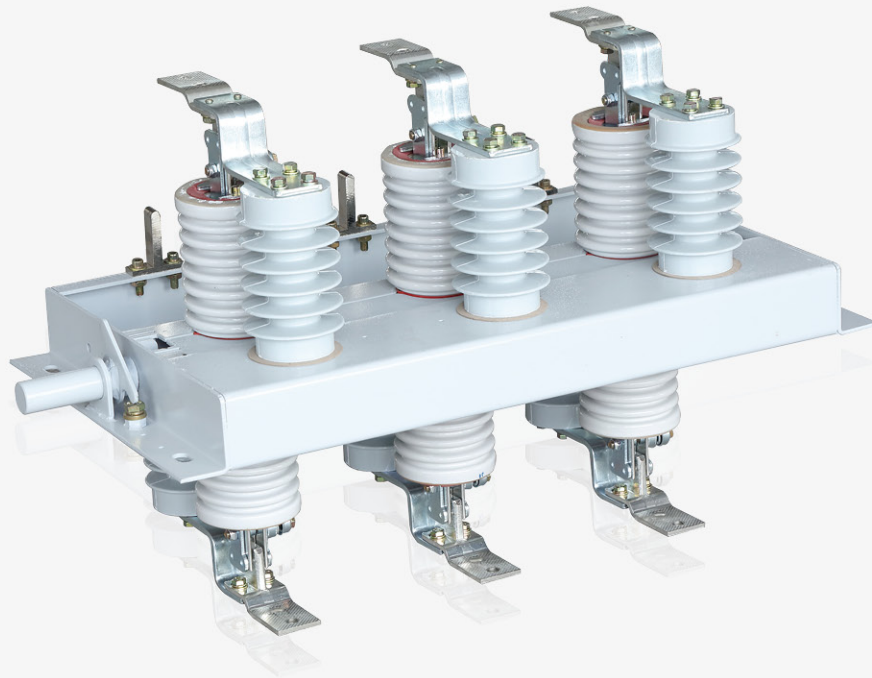
户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

GN30-12

户内高压隔离开关

Indoor high voltage isolation switch

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概述 Overview

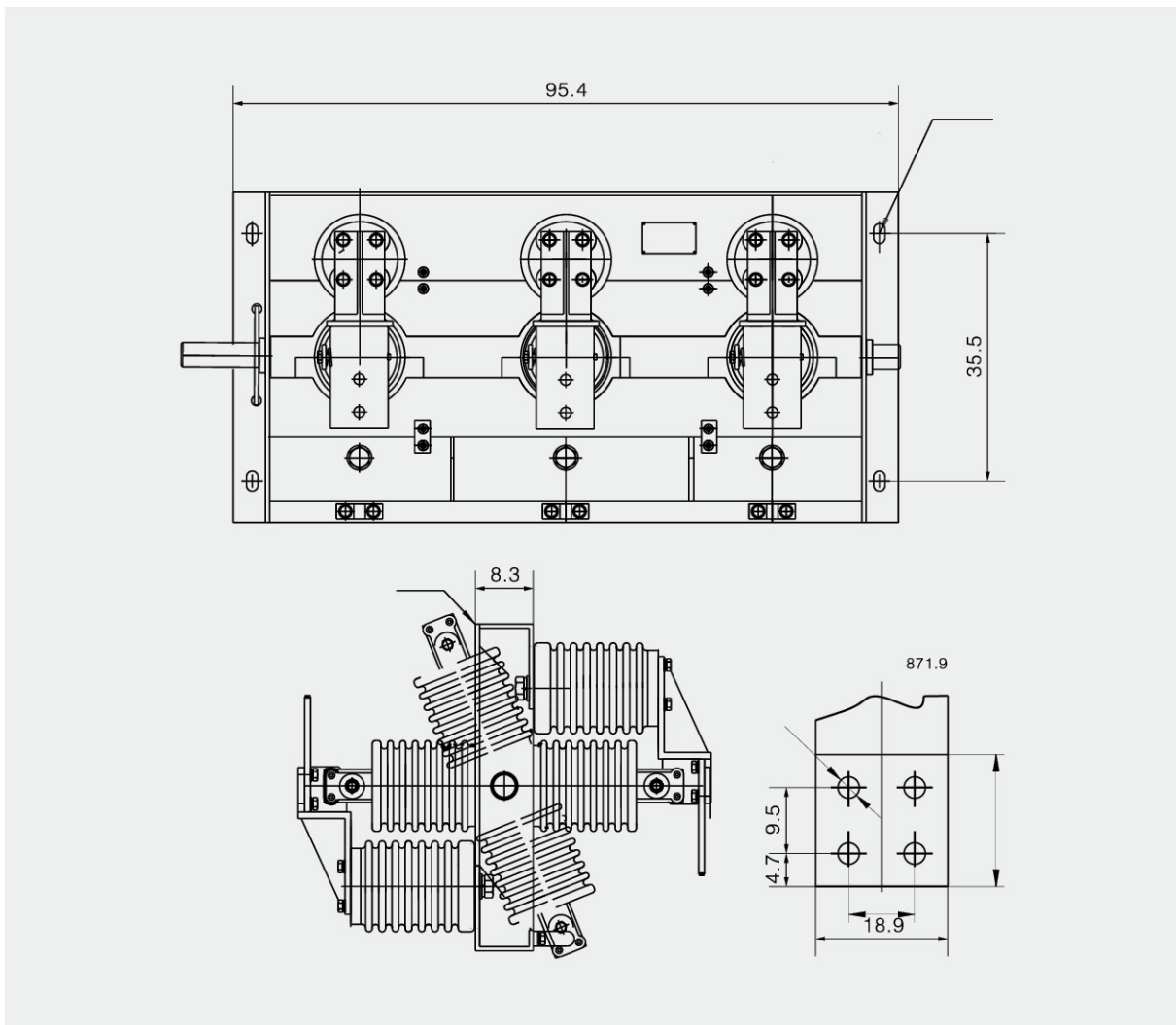
GN30-12 型户内旋转式高压隔离开关是一种旋转触刀式的新型隔离开关，主要结构是在三相共底架的上、下两个平面上，固定两组绝缘子及触头，通过旋转触刀，从而实现开关的分合闸。

GN30-12D 型户内旋转式高压隔离开关是在 GN30-12 型户内旋转式高压隔离开关基础上增加带接刀的形式，可满足不同电力系统的需要。本产品设计紧凑、占用空间小、绝缘能力强、易于安装调整，其性能符合 GB1985-89《交流高压隔离开关和接地开关》的要求，适用于额定电压 10 千伏交流 50Hz 以下户内系统中，作为在有电压无负载情况下，分合电路之用。可与高压开关柜配套使用，也可单独使用。

GN30-12 indoor rotary high-voltage isolating switch is a new type of isolating switch with rotary contact knife. Its main structure is to fix two sets of insulators and contacts on the upper and lower planes of the three-phase common chassis, and to realize the opening and closing of the switch by rotating the contact knife.

GN30-12D indoor rotary high-voltage isolating switch is based on GN30-12 indoor rotary high-voltage isolating switch, which can meet the needs of different power systems. This product has compact design, small occupied space, strong insulation ability and easy installation and adjustment. Its performance meets the requirements of GB1985-89 AC High Voltage Isolating Switches and Grounding Switches. It is suitable for indoor systems with rated voltage below 10 kV AC 50Hz, and can be used for opening and closing circuits under the condition of voltage and no load. It can be used with high-voltage switchgear or used alone.

外形及安装尺寸 Appearance and installation dimensions



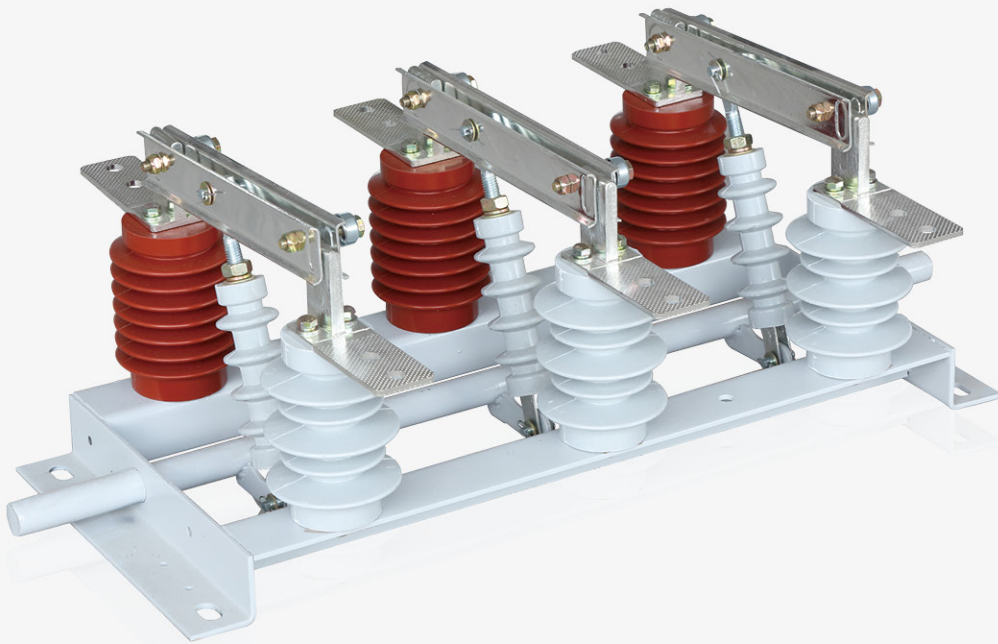
户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

GN19-12

户内高压隔离开关

Indoor high voltage isolation switch

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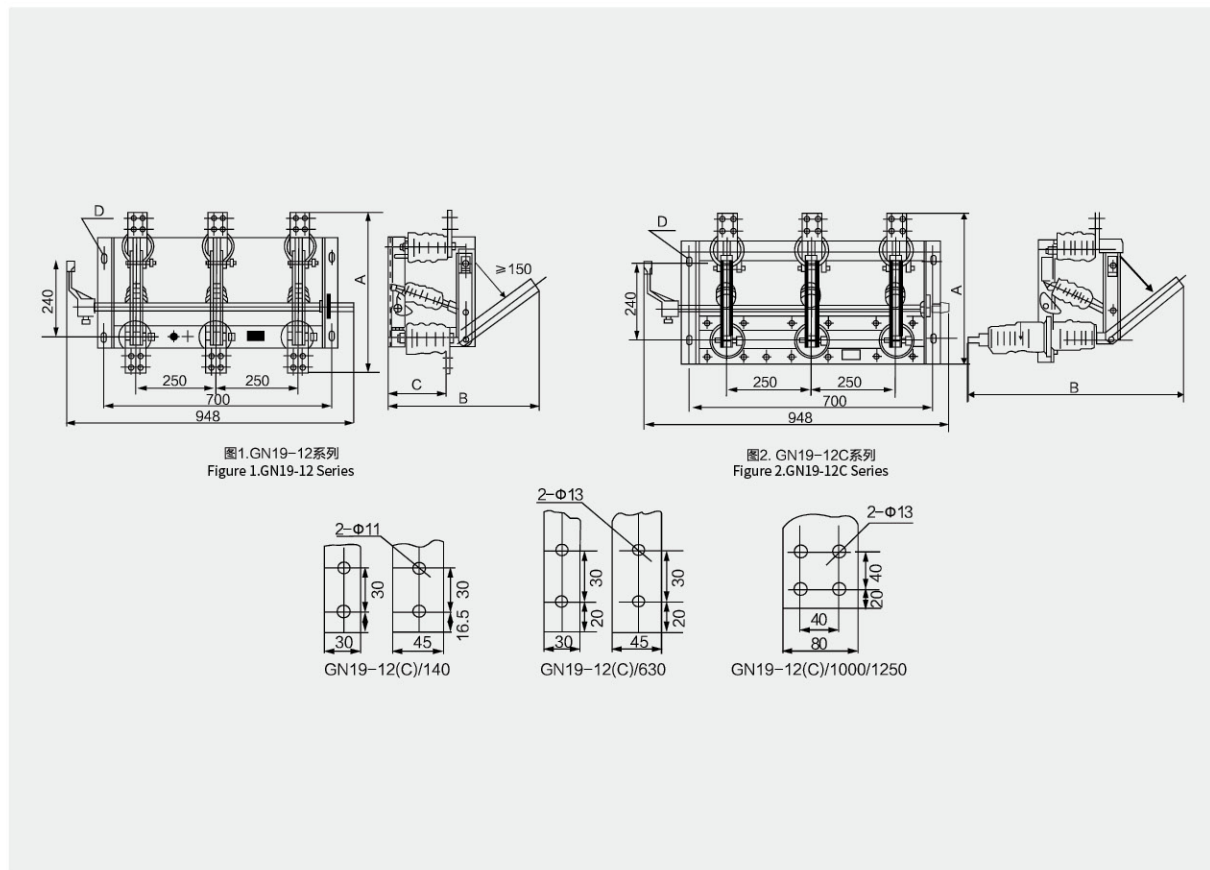


概述 Overview

GN19-12 型系列户内高压隔离开关系高压开关设备，用于额定电压 12KV，交流 50HZ 及以下电力系统中，配用 CS6-1 型人力操作机构，作为在有电压而无负载的情况下，分、合电路之用，亦有派生产品防污型、高原型的和加装带电显示装置等。

GN19-12 series indoor high-voltage isolated high-voltage switchgear is used in power system with rated voltage of 12KV and AC 50HZ and below. It is equipped with CS6-1 manual operating mechanism for opening and closing circuits under the condition of voltage but no load. There are also derivative products such as anti-pollution type, plateau type and charged display device.

外形及安装尺寸 Appearance and installation dimensions



产品型号 Product model	A	B	C	D			E			F		
GN19-12/400	450	436	4-14×24	210	230	250	620	660	700	870	900	940
GN19-12/630	490	436										
GN19-12/1000/1250	510	530	4-18×28									
GN19-12C/400	420	625	4-14×24									
GN19-12C/630	460	625										
GN19-12C/1000/1250	505	745	4-18×28									

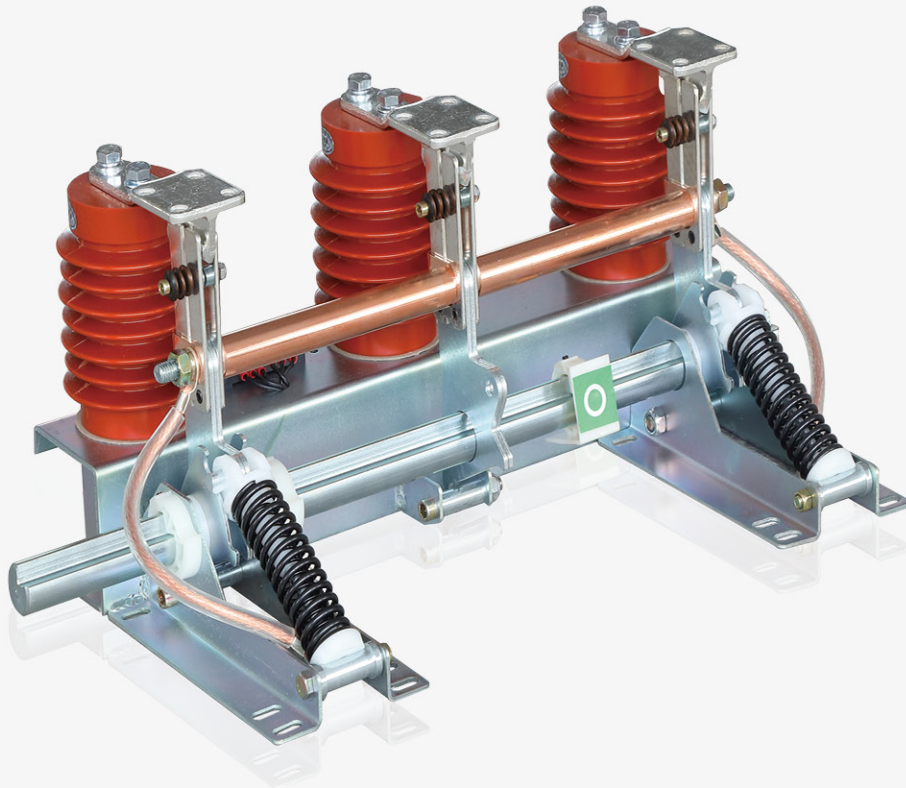
户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

JN15-12

户内高压接地开关

Indoor high voltage grounding switch

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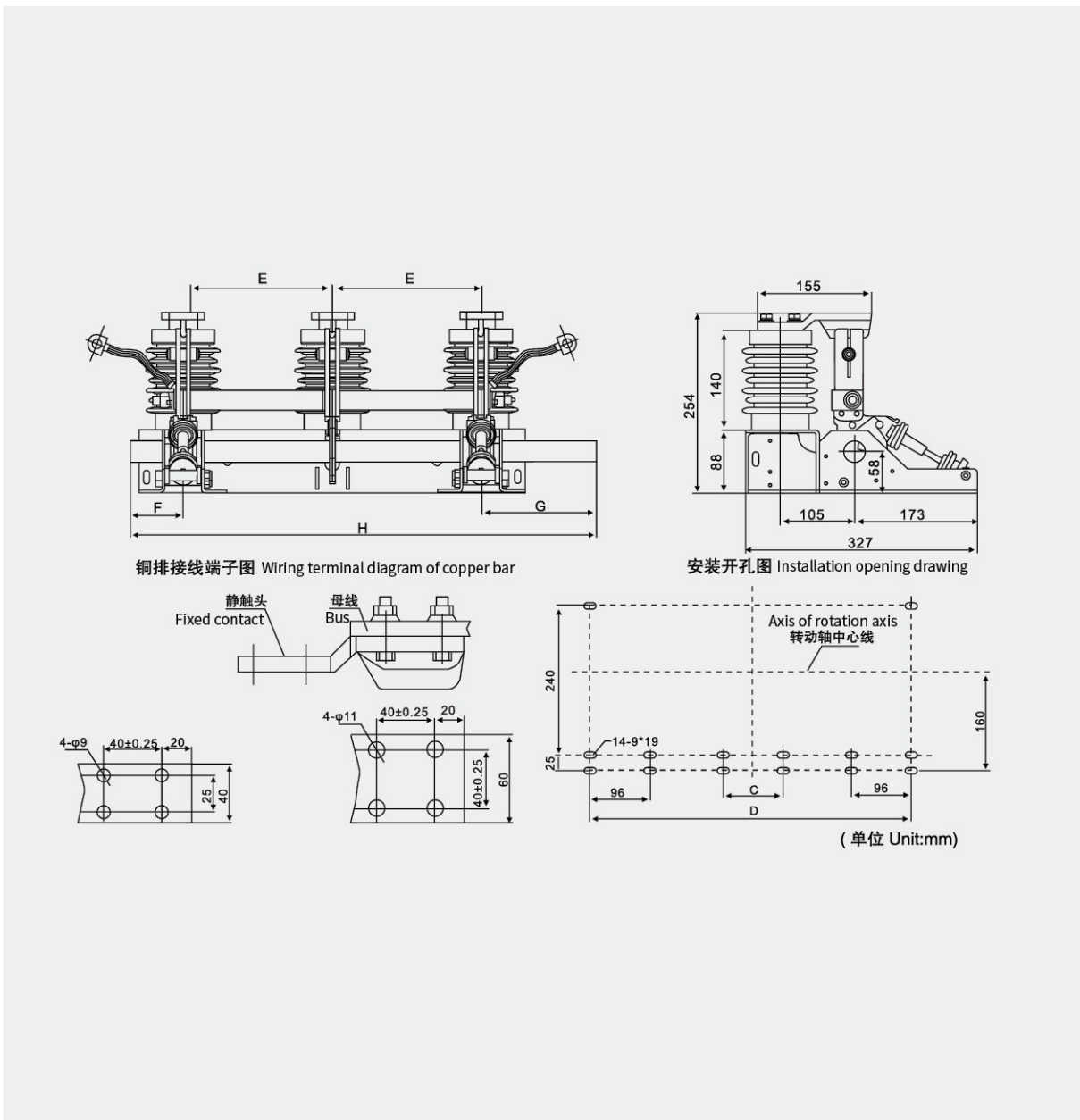


▶ 概述 Overview

JN15-12 型户内高压接地开关是一种达到国内标准水平的产品。其性能符合 GB1985-2004 《交流高压隔离开关和接地开关》及 IEC129 的要求，适用于 12kV 及以下交流 50Hz 的电力系统中，可与各种型号高压开关设备配套使用，亦可作为高压电器设备检修时接地保护用。

JN15-12 indoor high-voltage grounding switch is a product that reaches the domestic standard level. Its performance meets the requirements of GB1985-2004 AC High Voltage Isolating Switches and Grounding Switches and IEC129. It is suitable for 12kV and below AC 50Hz power system, can be used with various types of high voltage switchgear, and can also be used as grounding protection for maintenance of high voltage electrical equipment.

▶ 外形及安装尺寸 Appearance and installation dimensions



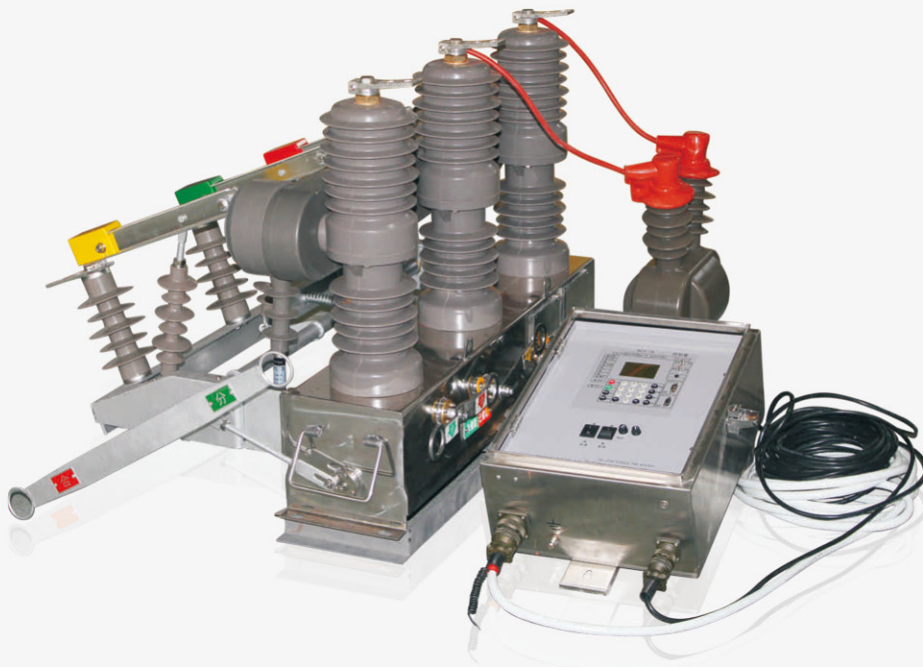
户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

ZW32-12F

户外高压真空断路器 / 智能型

Outdoor high voltage vacuum circuit breaker / intelligent type

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概述 Overview

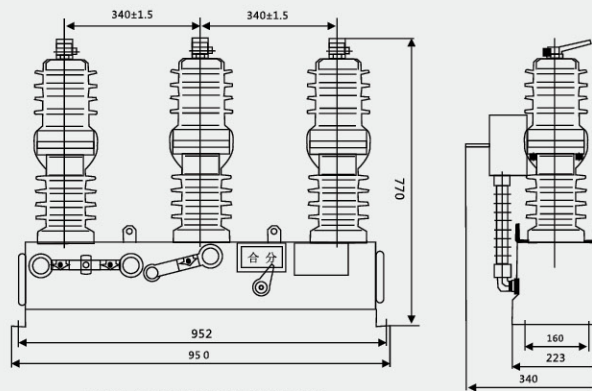
ZW32-12(F) 系列户外高压真空断路器 (以下简称“断路器”) 是额定电压 12kV、三相交流 50Hz 的户外配电开关设备。断路器主要用于开断、关合电力线路中的负荷电流、过载电流及短路电流, 具有过载及短路保护功能, 满足控制和测量要求, 还可实现远方控制和监视功能, 广泛应用于变电站、工矿企业配电系统中作为控制和操作之用, 特别适合需频繁操作场所。

断路器符合 GB1984-2003、DL/T 402-2007 和 IEC60056 等技术标准。

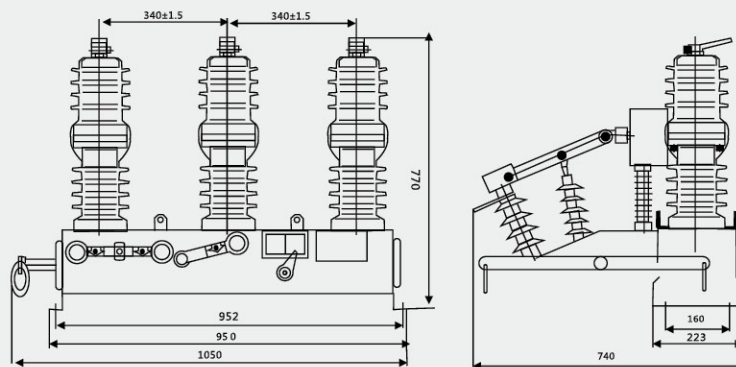
ZW32-12(F) series outdoor high-voltage vacuum circuit breakers (hereinafter referred to as "circuit breakers") are outdoor distribution switchgear with rated voltage of 12kV and three-phase AC of 50Hz. Circuit breakers are mainly used to switch on and off load current, overload current and short circuit current in power lines. They have overload and short circuit protection functions, meet the control and measurement requirements, and can also realize remote control and monitoring functions. They are widely used in substations, industrial and mining enterprise distribution systems for control and operation, especially in places requiring frequent operation.

Circuit breakers meet technical standards such as GB1984-2003, DL/T 402-2007 and IEC60056.

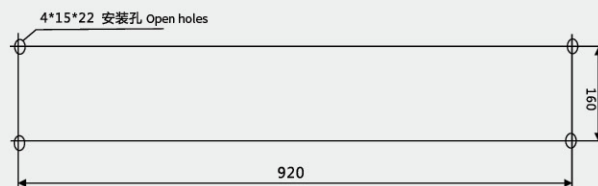
外形及安装尺寸 Appearance and installation dimensions



断路器 (不带隔离开关) 外形尺寸图
 Outline dimension drawing of circuit breaker (without isolating switch)



断路器 (不带隔离开关) 外形尺寸图
 Outline dimension drawing of circuit breaker (without isolating switch)



断路器安装尺寸图
 Installation dimension drawing of circuit breaker

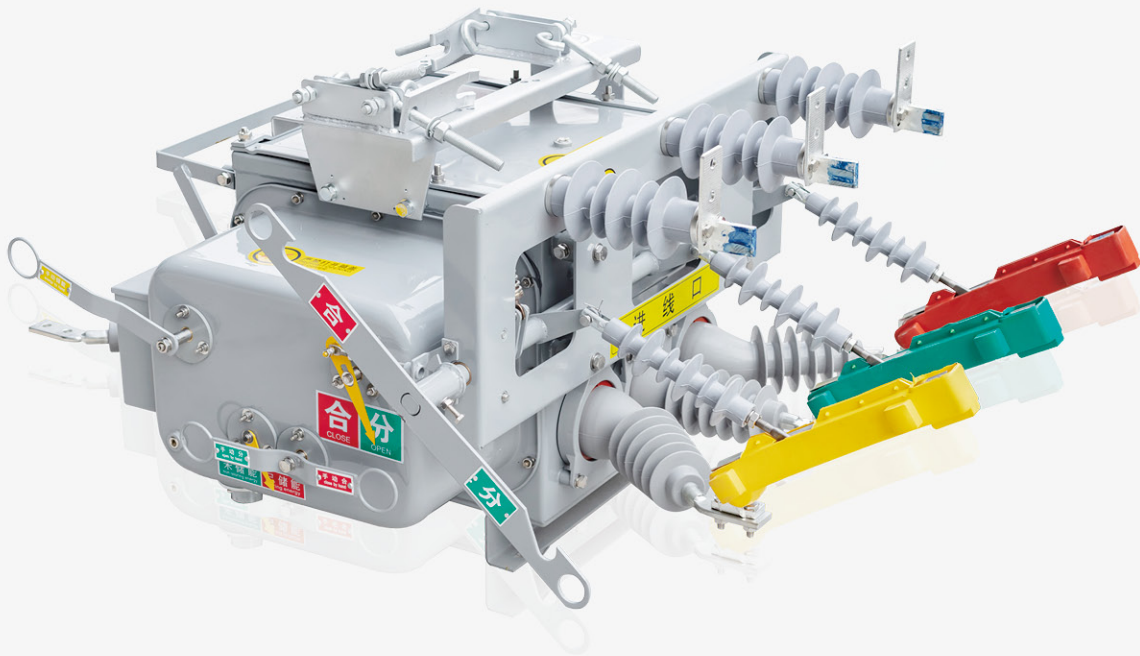
户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

ZW20-12F

户外高压真空断路器

Type B electric load control metering box

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

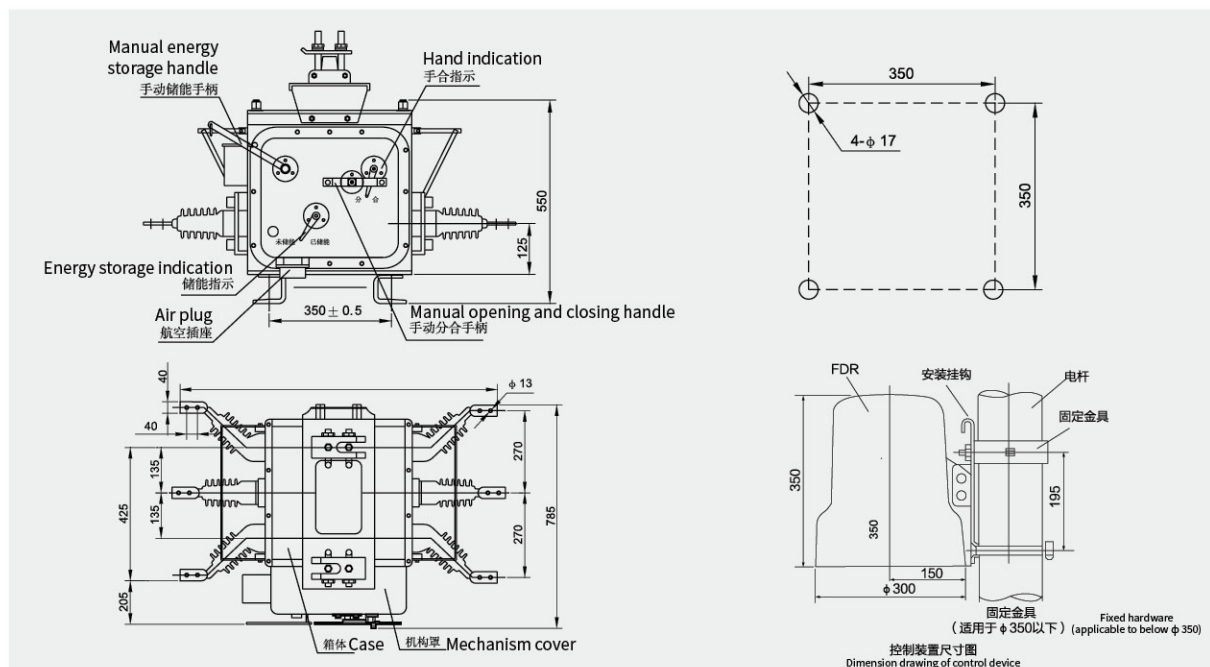
ZW20-12F/T □ - □ 系列型户外高压真空断路器（以下简称断路器）为额定电压 12kV, 三相交流 50Hz 的户外配电设备。它采用真空灭弧和 SF6 气体作为绝缘介质，是 ZW20-12F 型柱上真空断路器改进型产品。箱体采用了引进日本东芝公司 VSP5 的气体密封、防爆、绝缘结构技术，进出线导管也进行了密封性能改进，整体密封性能优良，内部充装的 SF6 气体不泄漏，不受个界环境影响；其弹簧操作机构进行了小型化设计和可靠性和稳定性优化，采用直动链条主传动和多级脱扣系统，动作可靠性和稳定性比国内传统的弹簧操作机构提高了好几倍；主回路的轴与套之间的接触采用了内收外张式表链结构，主回路的接触电阻小、温升低。所以，ZW20-12F 型户外柱上真空断路器是一种免维护产品，是柱上断路器中的佳品。

ZW20-12F 还增加了过流保护、机构弹簧储能指示，并配备航空插座作二次电气连接，便于与智能化控制器相结合。优良的电气和机械性能，使 ZW20-12F 型户外柱上真空断路器得到广泛的应用。主要用于开断、关合 10kV 电力系统的负荷电流及短路电流，适用于变电站及工矿企业配电系统中作保护和控制之用，更适用于电网频繁操作的场所。本产品与控制器配套，具有优良的重合器功能，能满足配电自动化系统要求。

ZW20-12F/T □ - □ series outdoor high-voltage vacuum circuit breakers (hereinafter referred to as circuit breakers) are outdoor distribution equipment with rated voltage of 12kV and three-phase AC of 50Hz. It adopts vacuum arc extinguishing and SF6 gas as insulation medium, and is an improved product of ZW20-12F post vacuum circuit breaker. The gas sealing, explosion-proof and insulation structure technology imported from Japan Toshiba VSP5 is adopted in the box body, and the sealing performance of the inlet and outlet conduits is also improved, so that the overall sealing performance is excellent, and the SF6 gas filled inside does not leak and is not affected by the individual environment; Its spring operating mechanism has been miniaturized and optimized in reliability and stability. It adopts direct chain main drive and multi-stage tripping system, and its action reliability and stability are several times higher than those of domestic traditional spring operating mechanism. The contact between the shaft and sleeve of the main circuit adopts the structure of adduction and extension bracelet, which has small contact resistance and low temperature rise. Therefore, ZW20-12F outdoor column vacuum circuit breaker is a maintenance-free product and a good product among column circuit breakers.

ZW20-12F also adds overcurrent protection and mechanism spring energy storage indication, and is equipped with aviation socket for secondary electrical connection, which is convenient to combine with intelligent controller. With excellent electrical and mechanical properties, ZW20-12F outdoor post vacuum circuit breaker has been widely used. It is mainly used to switch on and off the load current and short-circuit current of 10kV power system, and is suitable for protection and control in substations and distribution systems of industrial and mining enterprises, and is more suitable for places where power grids are frequently operated. This product is matched with the controller and has excellent recloser function, which can meet the requirements of distribution automation system.

外形及安装尺寸 Appearance and installation dimensions



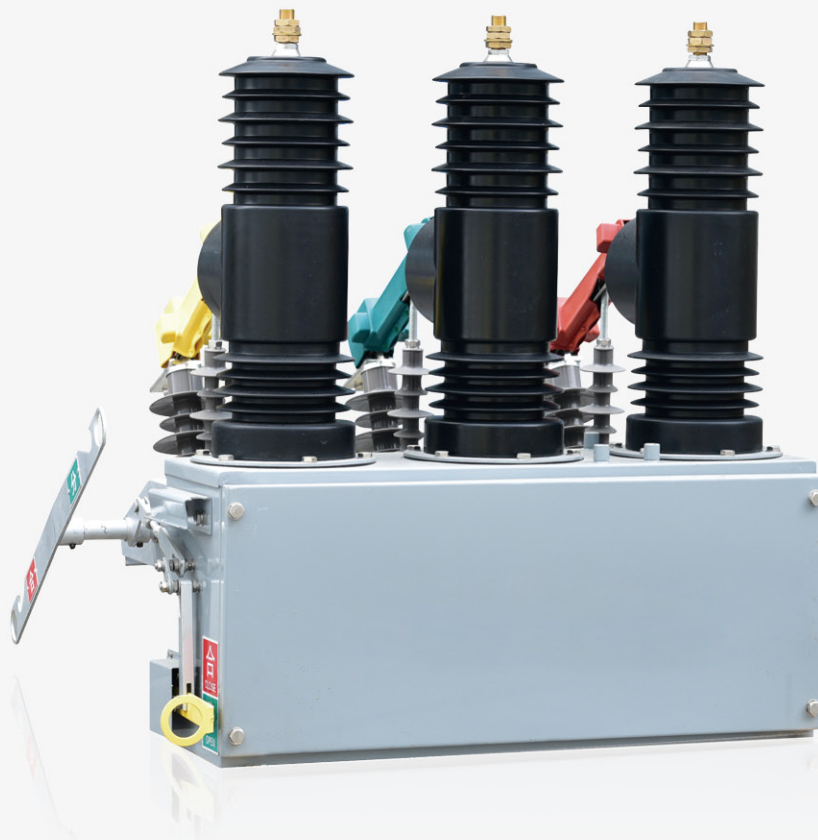
户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

AB-3S-12

户外高压真空断路器

Outdoor high voltage vacuum circuit breaker

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CO., LTD.

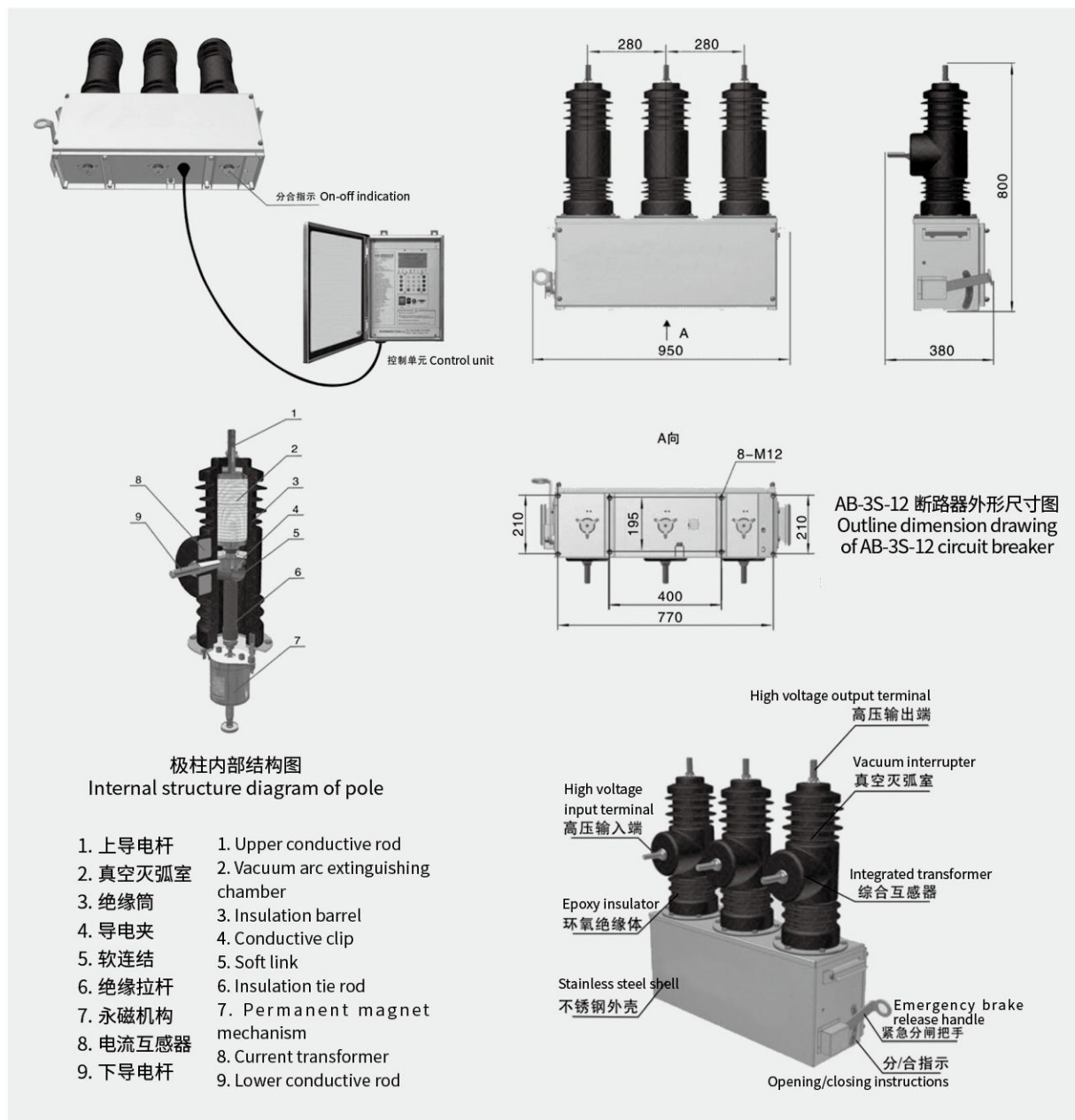


概述 Overview

AB-3S-12 型系列断路器是本公司综合国内外标准技术、博采众家之长、采用全新设计理念、选用高科技手段、新研制的一代柱上智能真空断路器。该产品既可作为 35kV 变电所主变 10KV 侧及 10KV 出线的开关，也可以作为配电网的柱上开关，和本公司生产的各种控制单元相结合便可方便地实现控制、保护、测量、通讯，是实现配网自动化和小型化的首选设备。

AB-3S-12 series circuit breakers are a new generation of intelligent vacuum circuit breakers developed by our company, which integrates domestic and foreign standard technologies, adopts new design concepts and selects high-tech means. This product can be used as a switch for 10KV side and 10KV outgoing line of main transformer in 35kV substation, and can also be used as a column switch of distribution network. Combined with various control units produced by our company, it can realize control, protection, measurement and communication conveniently, and it is the preferred equipment for realizing automation and miniaturization of distribution network.

外形及安装尺寸 Appearance and installation dimensions



户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

ZW7-40.5

户外高压真空断路器

Outdoor high voltage vacuum circuit breaker

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



▶ 概述 Overview

ZW7-40.5 系列户外高压真空断路器（以下简称“断路器”）用于交流 50Hz、额定电压 40.5kV 的三相电力系统中，作为分、合负荷电流、过载电流及短路电流之用。

ZW7-40.5 series outdoor high-voltage vacuum circuit breakers (hereinafter referred to as "circuit breakers") are used in the three-phase power system with AC 50Hz and rated voltage of 40.5kV, and are used for splitting and combining load current, overload current and short-circuit current.

▶ 外形及安装尺寸 Appearance and installation dimensions

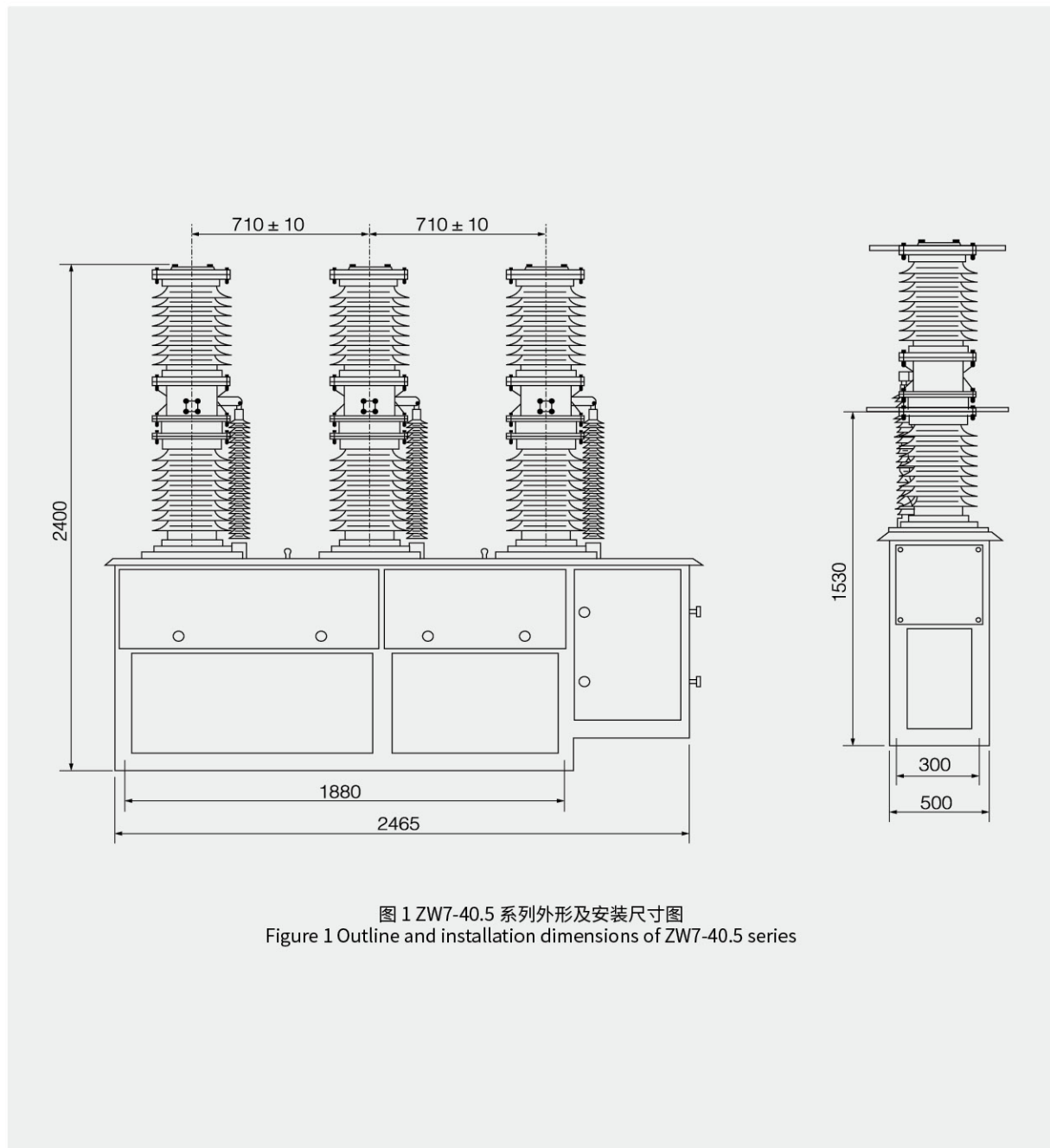


图 1 ZW7-40.5 系列外形及安装尺寸图
Figure 1 Outline and installation dimensions of ZW7-40.5 series

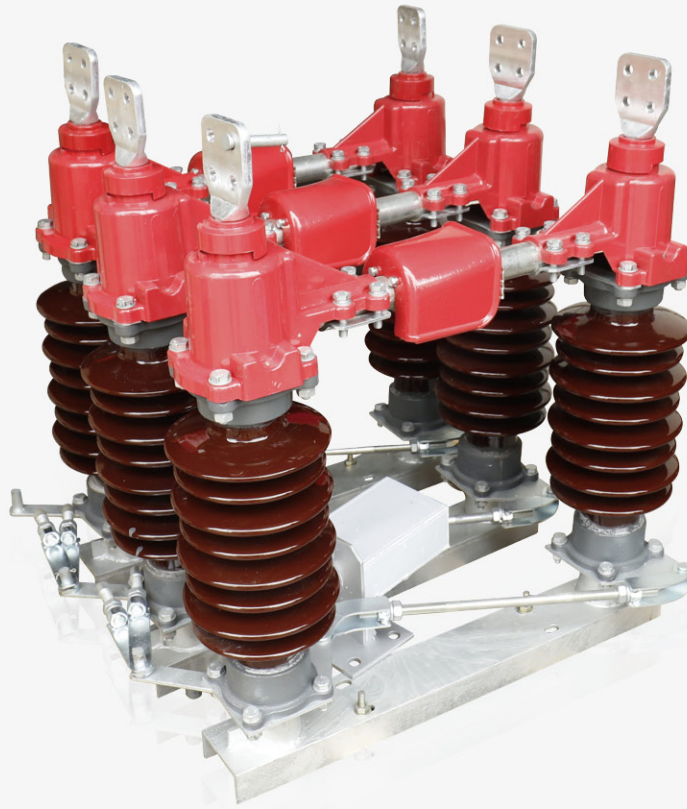
户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

GW4-10/35/66/110&(DDW)-630~4000A

户外双柱水平开启式高压隔离开关

Outdoor double column horizontal open type high voltage isolating switch

ZHEJIANG
XIONGCHU
ELECTRIC
TECHNOLOGY
CO., LTD.



概述 Overview

全部采用热镀锌工艺防腐处理，热镀锌不能保证配合要求转动的部位一般采用不锈钢材料，紧固件 M8 以下采用不锈钢，其余均采用热镀锌。导电部分铜管软连接型，中间触头为“握手”式自力型触指，弹簧外压式无电流通过，隔离开关只有中间一个接触点，其余均用软连接固定联接。采用新的触头结构，将触片一端与触座固定，靠触片变形及弹簧产生接触压力，使触指末端的滑动接触改为固定接触，提高导电可靠性。

触指弹簧改为外置式，以避免弹簧分流。

增加磁锁板，提高热稳定性。

转动部分配有自润滑套，无需润滑脂。

主接线端子为平板型。电流等级为 630A 时，导电部件表面镀锡；电流等级为 1250A-4000A 时，导电部件表面镀银。

瓷件上、下帽采用热镀锌防锈，并根据使用地区污秽等级的不同可选用不同爬距的瓷件；在生产制造过程中按正差控制，爬电距离设计时将公称值较标准值设计的高。

开关用支柱绝缘子强度密度大，稳定可靠，配方采用高强度瓷料制造，减少了产品强度的分散性，增加了产品的抗拉强度，结构设计时已对产品已有较大的强度预留度，使产品在运行中保证稳定可靠。

All of them are treated by hot dip galvanizing. The parts that cannot be rotated according to the requirements of hot dip galvanizing are generally made of stainless steel, the fasteners below M8 are made of stainless steel, and the rest are made of hot dip galvanizing.

The conductive part of copper tube is of soft connection type, the middle contact is of "handshake" type, the spring external pressure type has no current passing through, the isolating switch has only one contact point in the middle, and the rest are fixedly connected by soft connection.

Using a new contact structure, one end of the contact piece is fixed with the contact seat, and the sliding contact of the end of the contact finger is changed into a fixed contact by the deformation of the contact piece and the contact pressure generated by the spring, thus improving the conductivity reliability.

The finger spring is changed to the external type to avoid spring shunting.

The magnetic locking plate is added to improve the dynamic and thermal stability.

Rotating parts are equipped with self-lubricating sleeves without grease.

The main wiring terminal is flat. When the current level is 630A, the surface of conductive parts is tinned; When the current level is 1250A-4000A, the surface of conductive parts is silvered.

The upper and lower caps of porcelain pieces are galvanized to prevent rust, and porcelain pieces with different climbing distances can be selected according to the different pollution levels in the region; In the manufacturing process, it is controlled according to the positive difference, and the nominal value is higher than the standard value when the creepage distance is designed.

The post insulator for switch has high strength density, stability and reliability. The formula is made of high strength porcelain material, which reduces the dispersion of product strength and increases the tensile strength of the product. The structural design has already reserved a large degree of strength for the product, which ensures the stability and reliability of the product in operation.

外形及安装尺寸 Appearance and installation dimensions

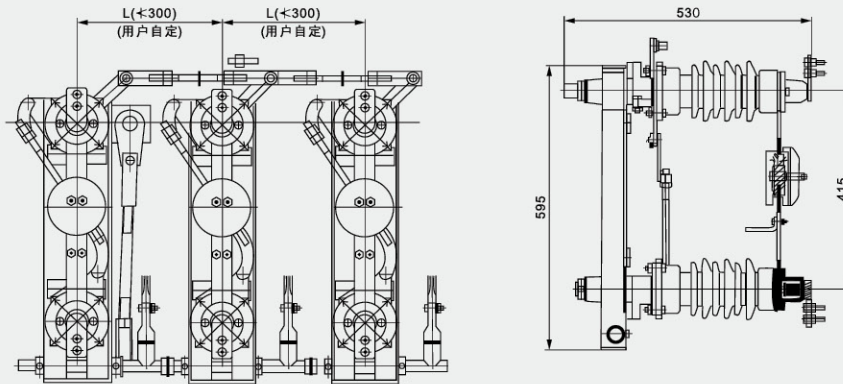


图1 GW4-40.5D/630三极联动装配图

Fig. 1 assembly drawing of gw4-40.5/630 three-pole linkage

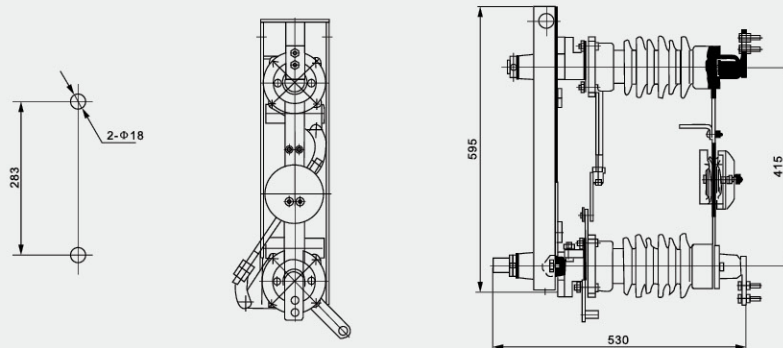


图2 GW4-40.5D/630单极隔离开关

Fig. 2 GW4-40.5D/630 single-pole isolating switch

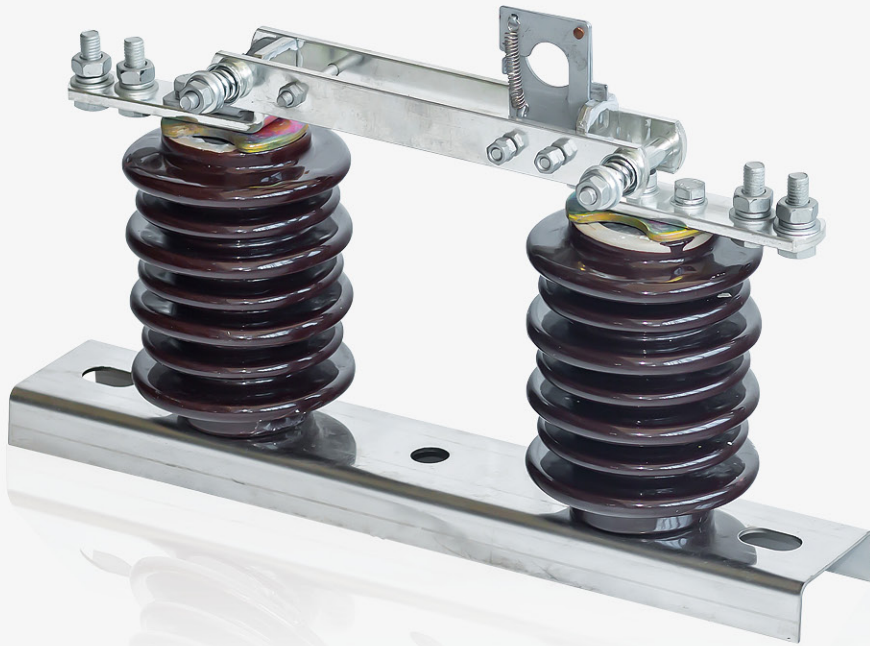
户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

GW9-10

户外隔离开关

Outdoor isolation switch

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TECHNOLOGY
CO., LTD.



概述 Overview

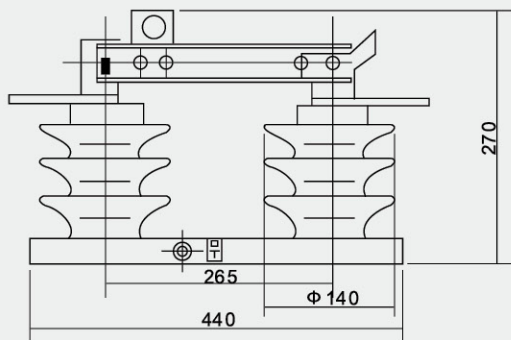
GW9-10 型户外高压隔离开关为交流 50Hz 的户外高压电器设备，额定电压等级有 10kV，15kV，24kV 供高压线路在无负载情况下进行开合，以及对被检修高压母线、断路器等电气设备带电的高压线路进行电气隔离之用，也可用于开、合小的电容或电感电流。

本系列户外隔离开关满足 GB1985《交流高压隔离开关和接地开关》、IEC60129《交流隔离开关与接地开关》以及 GB/T11022《高压开关设备和控制设备标准的共用技术要求》等标准的相关规定。

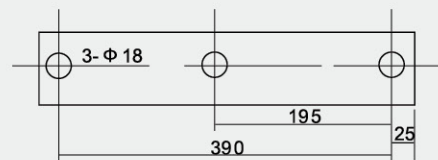
GW9-10 outdoor high-voltage isolating switch is an outdoor high-voltage electrical equipment with AC 50Hz, with rated voltage levels of 10kV, 15kV and 24kV, which can be used for opening and closing high-voltage lines under no load, and for electrically isolating high-voltage lines with live electrical equipment such as high-voltage buses and circuit breakers to be repaired, and can also be used for opening and closing small capacitance or inductance currents.

This series of outdoor isolating switches meet the relevant regulations of GB1985 AC High Voltage Isolating Switches and Grounding Switches, IEC60129 AC Isolating Switches and Grounding Switches and GB/T11022 Common Technical Requirements for High Voltage Switchgear and Control Equipment Standards.

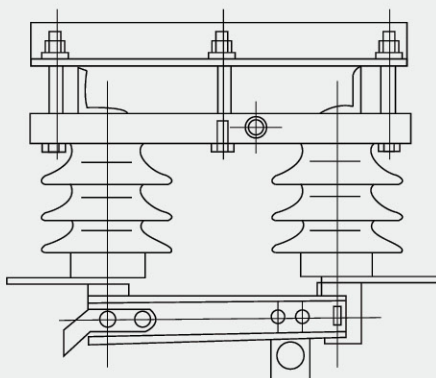
外形及安装尺寸 Appearance and installation dimensions



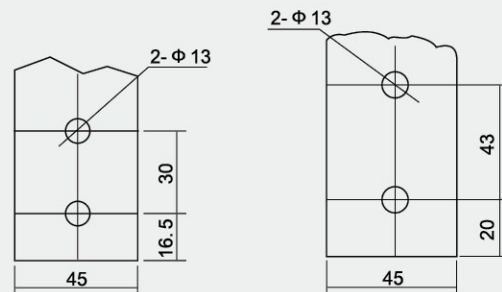
GW9-12(W)/⁶³⁰/₄₀₀ 外形尺寸 Outline dimension



安装孔尺寸
Mounting hole size



隔离开关的安装
Installation of isolating switch



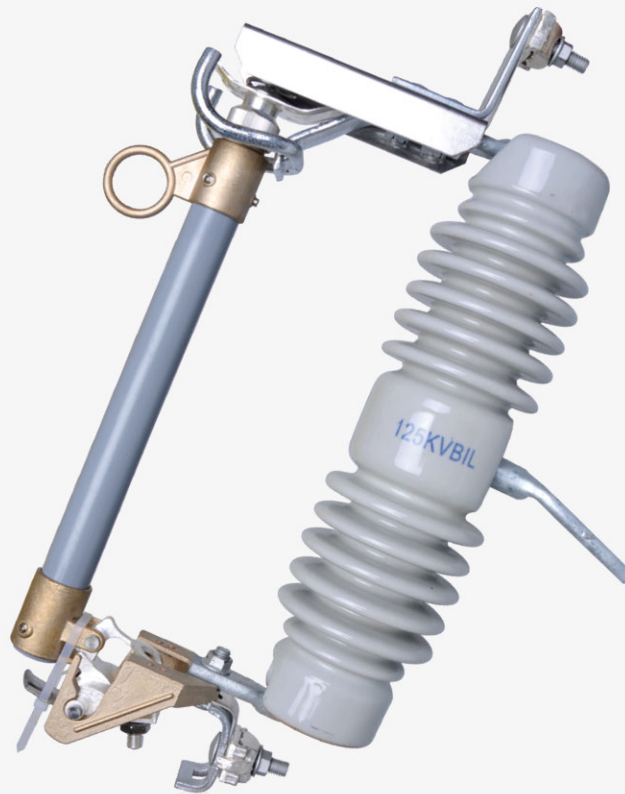
接线端子图
Wiring terminal diagram

户内外高压真空断路器 Indoor and outdoor high voltage vacuum circuit breaker

RW12-12

跌落式熔断器
Drop-out fuse

ZHEJIANG
XIONGCHU
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▶ 概述 Overview

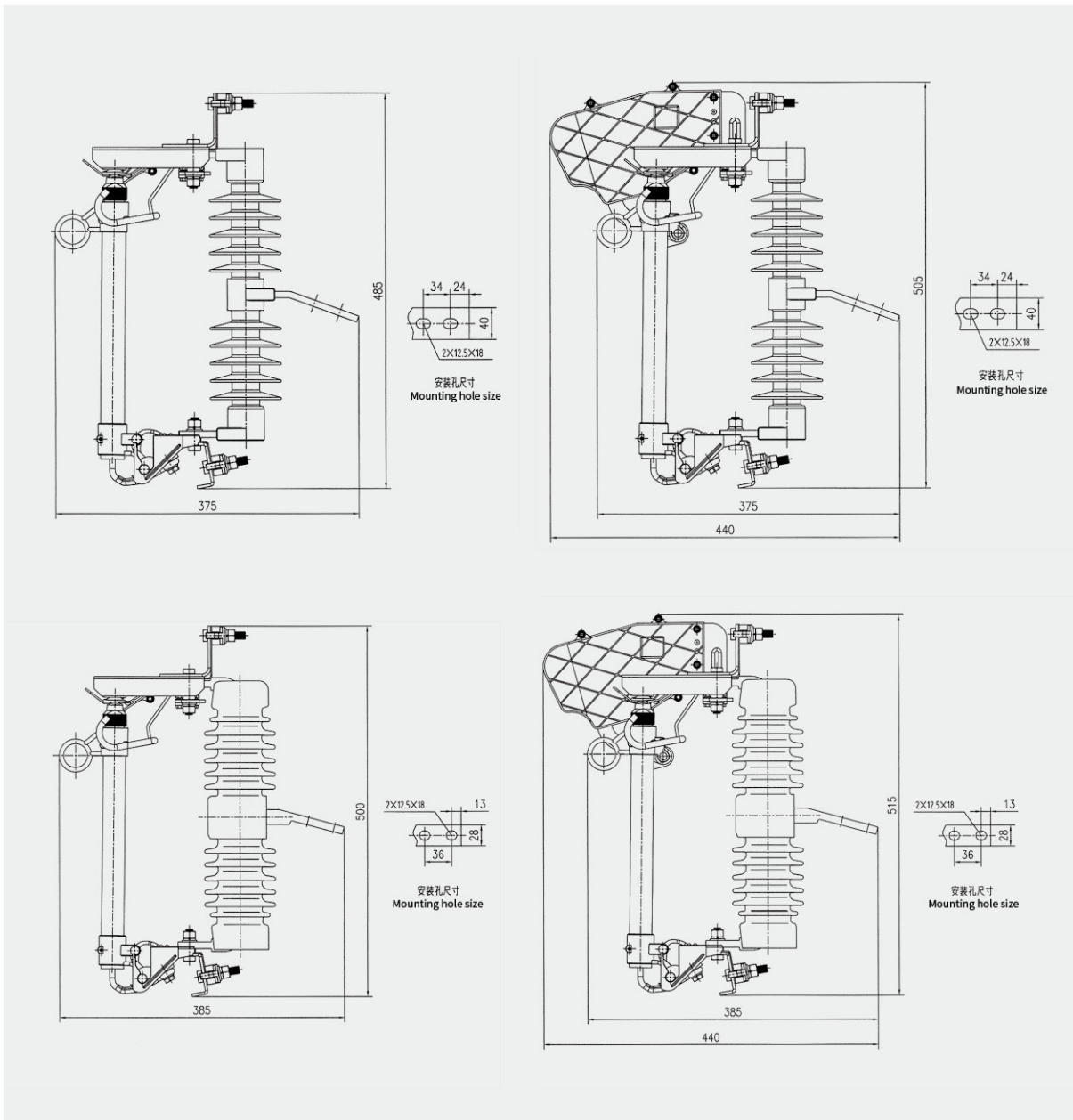
RW12-12 型熔断器有对工业提供安全、可靠的过电流保护的长期历史。RW12-12 设计将对可能由于系统过载或故障条件而引起损坏的设备提供过电流保护。

此外，RW12-12 型熔断器具备应用的灵活性，优良的特性，安装简便，长时间的无故障运行使用寿命等优点。

RW12-12 fuse has a long history of providing safe and reliable overcurrent protection for industry. RW12-12 design will provide overcurrent protection for equipment that may be damaged due to system overload or fault conditions.

In addition, RW12-12 fuse has the advantages of flexibility in application, excellent characteristics, simple installation, long trouble-free service life and so on.

▶ 外形及安装尺寸 Appearance and installation dimensions



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