



产品选型手册  
Complete power transmission and distribution  
Product selection guide

# 科盾天成 华彩绽放

光伏新能源——高低压成套设备  
PHOTOVOLTAIC NEW ENERGY  
HIGH AND LOW VOLTAGE COMPLETE EQUIPMENT

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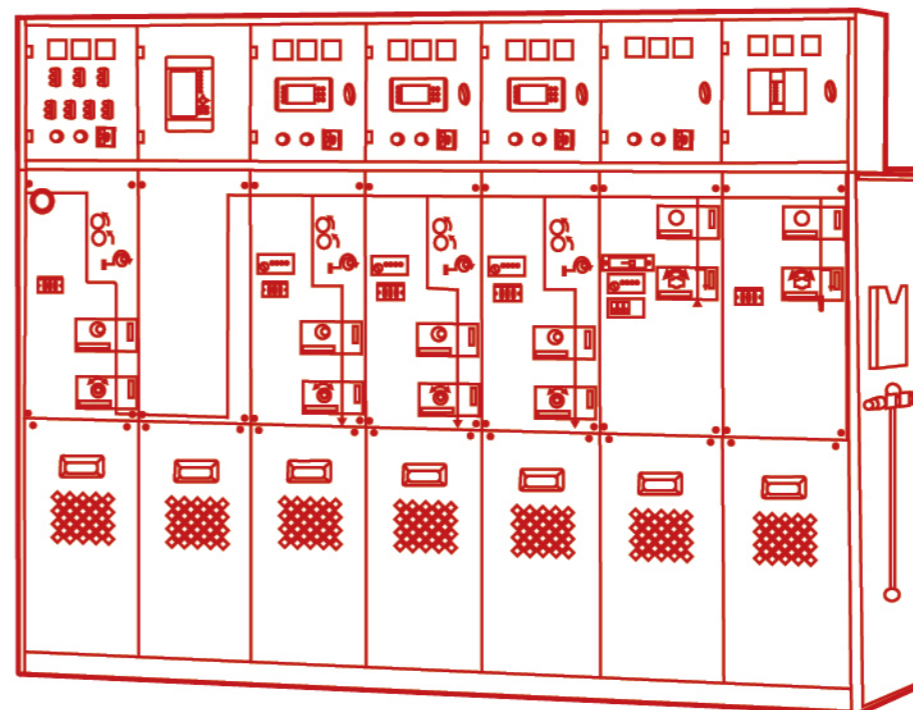
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### 高效清洁发展，打造绿色能源体系 EFFICIENT AND CLEAN DEVELOPMENT, CREATING A GREEN ENERGY SYSTEM

将环境保护视为企业发展的重要责任，坚持清洁生产，减少碳排放，保护生态环境，推动绿色能源的普及和应用，实现企业与自然的和谐共生。

Regard environmental protection as an important responsibility for the development of the enterprise. Adhere to clean production, reduce carbon emissions, protect the ecological environment, promote the popularization and application of green energy, and achieve the harmonious coexistence between the enterprise and nature.



能源发电  
ENERGY  
GENERATION



光伏储能  
ENERGY  
STORAGE



商业供电  
POWER  
SUPPLY





## 发展战略 STRATEGY

浙江华朴电气驱动技术创新，加大技术投入合作，拓展国内外市场；强化品牌建设，靠质量服务立口碑。

Zhejiang Huapu Electric Drive Technology Innovation, Increase Technology Investment Cooperation, Expand Domestic and Foreign Markets, Strengthen brand building and establish reputation through quality service.

## 企业使命 MISSION

公司致力于为客户提供全方位的绿色能源解决方案。

The company is committed to providing customers with comprehensive green energy solutions.

## 企业愿景 VISION

深化在多元领域的合作，努力成为客户值得信赖的合作伙伴。

Deepen cooperation in diverse fields and strive to become a trusted partner for customers.

## 价值观 VALUES

以客户为中心，关注客户需求，满足客户期望。

Customer-centric, focusing on customer needs, and striving to meet customer expectations.

## 公司简介

# COMPANY PROFILE

浙江华朴电气有限公司自 2018 年成立以来，始终扎根于充满创新活力的浙江省温州市。公司专注于为电力电网提供高效、智能的系统解决方案，产品涵盖新能源一体化预制舱、新能源箱变、高压开关柜、低压开关柜、箱式变电站、电缆分支箱、户外开闭所、户外真空断路器，广泛应用于各类工业生产、电力电网、交通枢纽、民用建筑等用电场景。

在产品技术攻关方面，公司汇聚了一批来自电气、自动化、软件等多领域的专业人才，组建了一支实力雄厚的技术团队。他们不断探索和突破技术瓶颈，致力于将创新性的科技融入到充电桩产品中。为了确保工作的高效开展。

在生产环节中，公司拥有现代化的生产基地和完善的生产设备，严格遵循 ISO 质量管理体系，从原材料采购到产品组装、测试，每一个环节都进行了严格的质量把控。我们的生产团队不仅具备丰富的实践经验，还始终保持着高度的责任心和严谨的工作态度，确保每一台出厂的充电桩都符合高品质的标准。

在销售与服务上，我们构建了完善的销售网络和售后服务体系。销售团队深入了解客户需求，为不同类型的客户提供个性化的充电解决方案，无论是个人用户、商业场所还是公共设施，都能得到适合的产品和服务。售后服务团队 24 小时待命，随时响应客户的需求，为客户提供及时、高效的技术支持和故障排除服务，让客户无后顾之忧。

展望未来，公司将继续加大在技术和创新方面的投入，不断提升产品的性能和品质，拓展业务领域，致力于成为全国知名的新能源汽车充电解决方案提供商，为推动新能源汽车产业的发展和实现绿色出行的美好愿景而不懈努力。

Since its establishment in 2018, Zhejiang Huapu Electric Co., Ltd. has always been rooted in Wenzhou City, Zhejiang Province, which is full of innovative vitality. The company focuses on providing efficient and intelligent system solutions for power grids. Its products cover new energy integrated prefabricated cabins, new energy box-type transformers, high-voltage switchgear, low-voltage switchgear, packaged substations, cable branching boxes, outdoor switchgears, outdoor vacuum circuit breakers, etc., and are widely applied to various power consumption scenarios such as industrial production, power grids, transportation hubs, and civil buildings.

In terms of product technology research and development, the company has gathered a group of professional talents from multiple fields such as electrical engineering, automation, and software, and established a powerful technical team. They continuously explore and break through technical bottlenecks, and are committed to integrating innovative technologies into charging pile products. In order to ensure the efficient implementation of work.

In the production process, the company has a modern production base and complete production equipment, and strictly follows the ISO quality management system. Every link, from raw material procurement to product assembly and testing, is strictly quality-controlled. Our production team not only has rich practical experience but also always maintains a high sense of responsibility and a rigorous work attitude to ensure that every charging pile leaving the factory meets high-quality standards.

In terms of sales and service, we have established a complete sales network and after-sales service system. The sales team has an in-depth understanding of customer needs and provides personalized charging solutions for different types of customers. Whether it is individual users, commercial venues or public facilities, they can all receive suitable products and services. The after-sales service team is on standby 24 hours a day, ready to respond to customers' needs, providing them with timely and efficient technical support and troubleshooting services, so that customers have no worries.

Looking ahead, the company will continue to increase its investment in technology and innovation, continuously improve the performance and quality of its products, expand its business areas, and is committed to becoming a well-known provider of new energy vehicle charging solutions nationwide, and will make unremitting efforts to promote the development of the new energy vehicle industry and realize the beautiful vision of green travel.



浙江华朴电气有限公司



## Engineering Case

### 工程案例



Intelligent Fast Charging  
电动时代，智能速充，一触即达

#### 应用场景多样化

华朴可以根据用户的不同需求，提供充电桩服务。应用场景多样多变，根据公交车的充电需求建设公交充电站，主要服务公交车辆。也可承接停车场充电项目，充电运营面向社会通勤车辆。

#### 智充，速达，安全，无忧

华朴直流（DC）充电桩具备快速充电能力，能够在较短时间内为电动汽车补充大量电能，大大缩短了充电时间，提高了充电效率。充电桩配备智能管理系统，支持远程监控和管理功能，管理员可以通过后台系统实时查看充电桩的工作状态、充电数据等信息，进行远程控制 and 故障诊断，确保充电安全和电池寿命。



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## 生产设备 PRODUCTION EQUIPMENT

### 高效生产，科技赋能 EFFICIENT · TECHNOLOGY

我们拥有高效的智能化生产线和专业的工程技术团队，致力于为客户提供高品质的成套设备解决方案。从设计到生产，每一个环节都经过严格把控，确保产品性能稳定、可靠耐用。

We have efficient intelligent production lines and a professional engineering and technical team, committed to providing customers with high-quality complete equipment solutions. From design to production, every step is strictly controlled to ensure stable, reliable, and durable product performance.



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# YZC

## 新能源一体化光伏预制舱

### NEW ENERGY INTEGRATED PHOTOVOLTAIC PREFABRICATED CABIN



#### 产品概述 OVERVIEW

YZC 新能源一体化光伏预制舱，欧式一体机。

欧式一体机的排布与常规欧变相似，整机外壳采用集装箱外壳制作，内含变压器室、高压室、通讯动力柜室及逆变器室。各室之间通过隔板或瓦楞板隔开，逆变器与高、低压室分布在变压器室两侧，整体为目字型结构。逆变器呈镜像布置，逆变器过道之间设置有下入井口，逆变器侧面出线，通过铜排、软连接与变压器一侧的低压套管连接。变压器常规采用干式变压器，配套真空负荷开关加熔断组合电器，真空负荷开关加熔断器组合电器与变压器室通过高压电缆连接，通讯动力柜与美式一体机相似。变压器散热方式通常采用自然风冷或强制风冷。

集装箱式外壳安装有通风百叶、风机出风口、风机，用于整台箱变的内外空气循环，逆变器室内安装有消防应急灯、火灾探测器、防爆照明灯及灭火器。

YZC New Energy Integrated Photovoltaic Prefabricated Cabin, European style Integrated Machine.

The layout of the European all-in-one machine is similar to that of conventional European transformers. The entire machine casing is made of a container casing, including a transformer room, high-voltage room, communication power cabinet room, and inverter room. Each room is separated by a partition or corrugated board, and the inverter and high and low voltage rooms are distributed on both sides of the transformer room, with an overall herringbone structure. The inverter is arranged in a mirror image, with a lower inlet wellhead set between the inverter passages, and the inverter side outlet connected to the low-voltage bushing on one side of the transformer through copper bars and soft connections. The transformer is usually a dry type transformer, equipped with a vacuum load switch and fuse combination appliance. The vacuum load switch and fuse combination appliance is connected to the transformer room through high-voltage cables, and the communication power cabinet is similar to the American integrated machine. The heat dissipation method of transformers usually adopts natural air cooling or forced air cooling.

The containerized shell is equipped with ventilation louvers, fan outlets, and fans for internal and external air circulation of the entire substation. The inverter room is equipped with fire emergency lights, fire detectors, explosion-proof lighting, and fire extinguishers.

#### 正常使用条件 NORMAL CONDITION

- ◇ 海拔高度：≤ 3000 米；
- ◇ 周围环境温度：-45℃ ~ +45℃；
- ◇ 环境湿度：相对湿度日平均不大于 60%，月平均不大于 90%；没有火灾，爆炸危险，化学腐蚀及剧烈震动的场所。

- ◇ Altitude: ≤ 3000 meters;
- ◇ Surrounding environment temperature: -45 °C ~ +45 °C ;
- ◇ Environmental humidity: The daily average relative humidity shall not exceed 60%, and the monthly average relative humidity shall not exceed 90%; Places without fire, explosion hazard, chemical corrosion, and severe vibration.

#### 主要材料 (以 20FT 标准箱体为例) MAIN MATERIALS (TAKING THE 20FT STANDARD BOX AS AN EXAMPLE)

项目 project	配置明细 Configuration Details	说明 Illustrate	备注 notes
底架总成 Underframe assembly	横梁 beam	4mm; (数量根据箱体长度定) 4mm; (The quantity is determined based on the length of the box)	SPA-H 材质 material
	边梁 / 纵梁 Edge beam/longitudinal beam	16/18/20# 槽钢或 160*80*4 矩形管 16/18/20 # channel steel or 160 * 80 * 4 rectangular tube	Q235B 材质 material
	底板 floor	3mm/5mm 平板 3mm/5mm flat plate	Q235B 材质 material
前围总成 Front wall assembly	前围立柱 Front wall pillar	6mm 折弯件 (结构同集装箱立柱) 6mm bending piece (structure similar to container column)	SPA-H 材质 material
	顶梁 Top beam	矩管 60*3 (同集装箱顶梁) Rectangular tube 60 * 3 (same as container top beam)	Q235B 材质 material
	底梁 Bottom beam	16# 槽钢 16 # channel steel	Q235B 材质 material
后围总成 Rear wall assembly	前墙板 Front wall panel	1.6/2mm, 八字板 (同集装箱前墙板) 1.6/2mm, splayed plate (same as the front wall panel of the container)	SPA-H 材质 material
	后围立柱 Rear wall pillar	6mm 折弯件, (结构同集装箱后立柱) 6mm bending piece (with the same structure as the rear column of the container)	SPA-H 材质 material
	后围顶梁 Rear wall top beam	矩形管或同等结构件 Rectangular tube or equivalent structural component	Q235B 材质 material
集装箱门板总成 Container door panel assembly	后门框 Rear door frame	16# 槽钢或同等结构件 16 # channel steel or equivalent structural components	Q235B 材质 material
	后门板 Rear door panel	边框 100*50 矩管; 上下 3mm 折弯 2mm, 36 (3 波板) Frame 100 * 50 rectangular tube; Bend 3mm up and down 2mm, 36 (3-wave plate)	Q235B 材质 material
	后门密封 Rear door seal	EPDM 防水密封条 EPDM waterproof sealing strip	SPA-H 材质 material
左 / 右侧总成 Left/Right Assembly	门锁 Door lock	锁杆, 镀锌集装箱锁杆 Lock rod, galvanized container lock rod	
	左侧顶梁 Left roof beam	矩管 60/80*3 (同集装箱顶梁) Rectangular tube 60/80 * 3 (same as container top beam)	Q235B 材质 material
箱顶总成 Box top assembly	侧板 Side panel	集装箱侧瓦楞板 1.6mm, 36 (5 波板) Container side corrugated board 1.6mm, 36 (5-wave board)	SPA-H 材质 material
	箱顶板 Box top plate	集装箱顶板, 2mm, 5 波 Container top plate, 2mm, 5-wave	SPA-H 材质 material
	加强梁 Reinforced beam	矩管 60*3 Rectangular tube 60 * 3	Q235B 材质 material

#### 产品特点 PRODUCT FEATURES

- ◇ 高度集成：首创一站式解决直流输入、逆变和升压输出；厂内统一安装调试，现场整体吊装，一站式完成运输、安装和维护。
- ◇ 适应性强：全面考虑排风散热，防风沙、防雨雪、防腐蚀、抗低温等要求。
- ◇ 性能稳定：集成度高，故障点少，提高性能稳定性；过载 20%~50% 可稳定运行（植物油型）。
- ◇ 高收益性：减少交流电缆投资，集中优化断路器、防雷、供电及监控等电气设备；占地面积小，施工难度低。
- ◇ 可取代传统的“MW 房 + 光伏箱变”模式。

- ◇ Highly integrated: pioneered a one-stop solution for DC input, inverter, and boost output; Unified installation and debugging in the factory, overall lifting on site, one-stop completion of transportation, installation, and maintenance.
- ◇ Strong adaptability: Fully consider requirements such as ventilation and heat dissipation, wind and sand resistance, rain and snow resistance, corrosion resistance, and low temperature resistance.
- ◇ Stable performance: high integration, few fault points, improving performance stability; Stable operation with an overload of 20%~50% (vegetable oil type).
- ◇ High profitability: reduce investment in AC cables, concentrate on optimizing electrical equipment such as circuit breakers, lightning protection, power supply, and monitoring; Small footprint and low construction difficulty.
- ◇ It can replace the traditional "MW room+photovoltaic box transformer" mode.

# DFW-12 电缆分支箱

## CABLE BRANCH BOX



### 产品概述 OVERVIEW

DFW-12 电缆分支箱是近年来广泛用于电力配网系统中的电缆化工程设备，它的主要特点是双向开门、利用对接套管作为连接母排，具有长度小、电缆排列清楚、三芯电缆不需大跨度交叉等显著优点。其所采用的电缆接头符合 DIN476 36 标准。一般采用额定电流 630A 螺栓固定连接式电缆接头。

DFW-12 cable branch box is a widely used cable engineering equipment in power distribution network systems in recent years. Its main characteristics are bidirectional door opening, using docking sleeves as connecting busbars, and having significant advantages such as small length, clear cable arrangement, and no need for large span crossing of three core cables. The cable joints used comply with DIN476 36 standard. Generally, a bolted connection type cable joint with a rated current of 630A is used.

### 型号及含义 MODEL AND MEANING

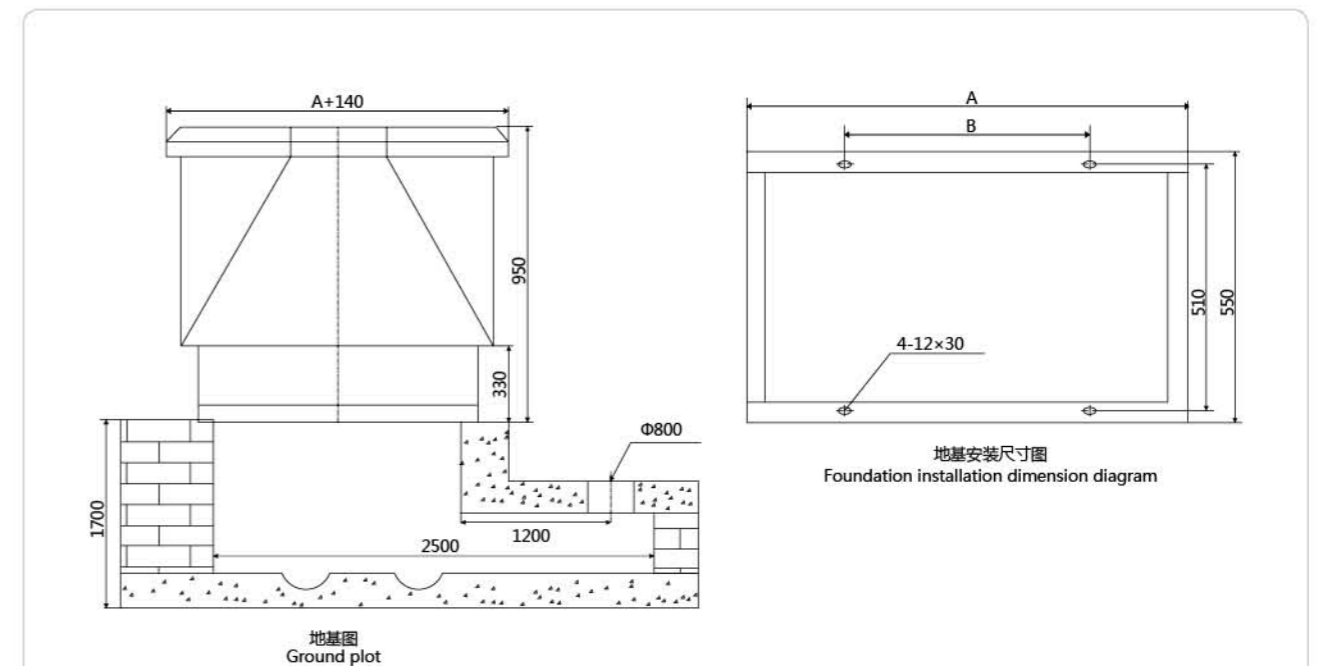
DFW □ - □ □  
 ① ② ③ ④

①	电缆分支箱	Cable branch box
②	电压等级	Voltage level
③	回路数 (一相中进出线总数)	Number of circuits (total number of incoming and outgoing lines in one phase)
④	A 为带避雷器, 缺省为不带	A is equipped with lightning arrester, default is not equipped

### 主要技术参数 MAIN TECHNICAL PARAMETERS

名称 name	单位 unit	参数 parameter
额定电压 Rated voltage	kV	12
额定电流 Rated current	A	630
动稳定电流 Dynamic stable current	kA/s	50/0.3
热稳定电流 Thermal stability current	kAs	20/3
1 分钟工频耐压 1 minute power frequency withstand voltage	kV	42
15 分钟直流耐压 15 minute DC withstand voltage	kV	52
雷电冲击耐压 Lightning impulse withstand voltage	kV	105
箱体防护等级 Cabinet protection level	IP	33

### 电缆分支箱地基图 CABLE BRANCH BOX FOUNDATION DIAGRAM



分支数 Number of branches	2	3-4	5-6	7-8	9-12
A	550	850	1090	850	1090
B	550	550	550	650	650



# XGW-12

## 户外智能化开闭所

### OUTDOOR INTELLIGENT SWITCHING STATION



#### 产品概述 OVERVIEW

随着社会的不断发展进步，我国城市电网发生了巨大变化，大多数城市已经形成或正在形成众多的用电负荷密集区。过去那种从变电站 12/24kV 线路（或分支线路）到直接用户的供电已经难以满足城市发展的要求。因而产生了一种新的供电方式通过开闭所向用户供电。但是随着城市密集化的加剧，原有的一些土建型开闭所已受到土地和城市规划的限制，因此出现了一种更加先进、实用的 DFW 户外智能化箱式开闭所。此开闭所无需土建而且占地面积少，配置非常灵活供电方式更加可靠，建设安装，调试时间大为缩短，总体造价降低。

DFW 户外智能化箱式开闭所将 12/24kV 开关柜、断路器、负荷开关、电流电压互感器、12/24kV 电源 PT、开闭所 FTU、RTU、通信控制终端 (CCU)、12/24kV 计量及自动抄表、USP 电源及指示仪表等安装调试好装入一个可移动、密封防潮的不锈钢箱体内，从而实现了城市配电网中一、二次系统的集成化、装配的模块化，缩短了建设周期，大大地提高了城市电网运行的可靠性。

With the continuous development and progress of society, the urban power grid in China has undergone tremendous changes, and most cities have formed or are forming numerous electricity load intensive areas. In the past, the power supply from 12/24kV substation lines (or branch lines) to direct users has been difficult to meet the requirements of urban development. Therefore, a new power supply method has emerged that supplies power to users through switching stations. However, with the intensification of urban density, some existing civil engineering type switching stations have been limited by land and urban planning, resulting in the emergence of a more advanced and practical DFW outdoor intelligent box type switching station. This switching station does not require civil engineering and occupies a small area. The configuration is very flexible and the power supply method is more reliable. The construction, installation, and debugging time are greatly shortened, and the overall cost is reduced.

DFW outdoor intelligent box type switching station will install and debug 12/24kV switchgear, circuit breakers, load switches, current and voltage transformers, 12/24kV power PT, switching station FTU, RTU, communication control terminal (CCU), 12/24kV metering and automatic meter reading, USP power supply and indicating instruments, etc. into a movable, sealed and moisture-proof stainless steel box, thus achieving the integration and modular assembly of the primary and secondary systems in the urban distribution network, The construction cycle has been shortened, greatly improving the reliability of urban power grid operation.

#### 型号及含义 MODEL AND MEANING

XGW - □ □ □ K □  
 ① ② ③ ④ ⑤ ⑥

①	带开关电缆分支箱	Cable branch box with switch
②	进线回路数	Number of incoming circuits
③	出线回路数	Number of outgoing circuits
④	分支回路数	Number of branch circuits
⑤	分支回路带开关	Branch circuit with switch
⑥	分支回路开关数：一台开关可省略	Number of branch circuit switches: One switch can be omitted

#### 主要技术参数 MAIN TECHNICAL PARAMETERS

序号 Serial number	名称 name	单位 unit	技术要求 technical requirement	
			负荷开关柜 Load switch cabinet	组合电器柜 Combined electrical cabinet
1	额定电压 Rated voltage	kV	12	
2	额定频率 Rated frequency	Hz	50	
3	额定电流 Rated current	A	630	200
4	额定负荷开断电流 Rated load breaking current	A	630	630
5	额定短时耐受电流 (有效值) Rated short time withstand current (effective value)	kA	20	
6	额定短路持续时间 Rated short-circuit duration	s	3	
7	额定峰值耐受电流 Rated peak withstand current	kA	50 / 63	
8	闭环开断电流 Closed loop breaking current	A	630	
9	额定电缆充电开断电流 Rated cable charging breaking current	A	25	
10	额定空载变压器开断电流 Rated no-load transformer breaking current	A	16	
11	额定开断转移电流 Rated breaking transfer current	A	1750	
12	熔断器预期短路开断电流 (有效值) Expected short-circuit breaking current of fuse (effective value)	kA	63	
13	接地开关短时耐受电流 / 持续时间 Short time withstand current/duration of grounding switch	kA / s	25/1	
14	额定电流开断次数 Rated current breaking times	次	≥ 200	
15	机械寿命 Mechanical life	次	≥ 2000	
16	SF6 气体年泄漏率 Annual leakage rate of SF6 gas		≤ 1%	
17	1min 工频耐受电压 (有效值) 1min power frequency withstand voltage (Effective value)	断口间 Inter fracture	kV	48
		相间 Interphase	kV	42
		相对地 Relative ground	kV	42
	雷电冲击耐受电压 (峰值) Lightning impulse withstand voltage (peak)	断口间 Inter fracture	kV	85
		相间 Interphase	kV	75
		相对地 Relative ground	kV	75
18	弹簧操作机构 Spring operating mechanism		手动, 可升级为电动	
19	操作电压 Operating voltage	V	DC 48V AC 220V	
20	外绝缘爬电比距 External insulation creepage distance	mm/kV	≥ 20	
21	分闸不同期性 Opening asynchrony	ms	< 5	
22	合闸不同期性 Closing asynchrony	ms	< 5	
23	主回路电阻 Main circuit resistance	uΩ	< 140	
24	柜壳防护等级 Cabinet shell protection level		IP4X	

# DFW-40.5

## 电缆分支箱

### CABLE BRANCH BOX



#### 产品概述 OVERVIEW

DFW-40.5 型电缆分支箱用于 40.5kV 三相交流 50Hz 配电系统中，连接电缆，作为接受和分配电能之用。产品无外露导电部分，所有导电部分均用高绝缘强度凝胶环氧树脂或硅橡胶作封闭，安全可靠，外表可触摸，没有触电危险。

电缆通过肘形插头进线，通过穿墙套管将电能分配出去。电缆分支箱的进出线可以满足截面为 50~300mm<sup>2</sup> 的电力电缆的使用，本产品可提供单电缆进出线、双电缆进出线等多种安装方式，安装维护简单，没有火灾危险，特别适用于工矿企业及高压输电及作为电能分配之用。是一种适合电缆输配电使用的新型配电设备。

The DFW-40.5 cable branch box is used in the 40.5kV three-phase AC 50Hz distribution system to connect cables and receive and distribute electrical energy. The product has no exposed conductive parts. All conductive parts are sealed with high insulation strength gel epoxy resin or silicone rubber. It is safe and reliable. The appearance is touchable, and there is no danger of electric shock.

The cable enters through an elbow plug and distributes electrical energy through a wall bushing. The inlet and outlet wires of the cable branch box can meet a cross-section of 50-300mm<sup>2</sup>. The use of power cables, this product can provide multiple installation methods such as single cable inlet and outlet, double cable inlet and outlet, etc. It is easy to install and maintain, and has no fire risk. It is particularly suitable for industrial and mining enterprises, high-voltage transmission, and power distribution. It is a new type of distribution equipment suitable for cable transmission and distribution.

#### 型号及含义 MODEL AND MEANING

DFW - 40.5 □ / 630 - □  
 ① ② ③ ④ ⑤

①	高压电缆分支箱（带开关）	High voltage cable branch box (with switch)
②	额定电压	Rated voltage
③	R: 带熔断器; RD: 带熔断器、带接地开关	R: With fuse; RD: With fuse and grounding switch
④	额定电流	Rated current
⑤	进出线回路数	Number of incoming and outgoing circuit

#### 正常使用条件

- ◇ 环境温度: -10℃~+45℃, 最大日温差 30℃;
  - ◇ 相对湿度: 日平均最大为 95%, 月平均最大为 90% (25℃);
  - ◇ 风速: 最大 35m/s;
  - ◇ 污秽种类和等级: IV 级;
  - ◇ 日照: 0.1W/cm<sup>2</sup>, 0.5m/s;
  - ◇ 覆冰厚度: 0~30mm;
- 注: 订购本产品超出上述条件规定时, 请与本公司协商。

- ◇ Environmental temperature: -10 °C ~+45 °C , maximum daily temperature difference of 30 °C ;
  - ◇ Wind speed: maximum 35m/s;
  - ◇ Sunlight: 0.1W/cm<sup>2</sup> , 0.5m/s;
  - ◇ Relative humidity: The daily average maximum is 95%, and the monthly average maximum is 90% (25 °C );
  - ◇ Types and levels of pollution: Level IV;
  - ◇ Ice thickness: 0-30mm;
- Note: When ordering this product beyond the above conditions, please consult with our company.

#### 引用标准 REFERENCED STANDARDS

- ◇ GB3906-2006 3.6kV~40.5kV 交流金属封闭开关设备和控制设备
  - ◇ GB/T 4208-2008 外壳防护等级 (IP 代码)
  - ◇ GB/T 11022-1999 高压开关设备和控制设备标准的共同技术要求 (IEC 60298: 1996)
  - ◇ GB/T 16927.1-1997 高电压试验技术第一部分: 一般试验 (IEC60060-1: 1989)
  - ◇ GB/T 16927.2-1997 高电压试验技术第二部分: 测量系统 (IEC 60060-2: 1994)
  - ◇ GB311.1-1997 高压输变电设备的绝缘配合
  - ◇ DL/T593-2005 高压开关设备的共用订货技术导则
  - ◇ DL/T404-2005 户内交流高压开关柜订货技术条件
  - ◇ SDGJ14-1986 导体和电器选择设计技术规定
- ◇ GB3906-2006 3.6kV~40.5kV AC Metal Enclosed Switchgear and Control Equipment
  - ◇ GB/T 4208-2008 Degrees of Protection Provided by Enclosures (IP Code)
  - ◇ GB/T 11022-1999 Common technical requirements for high-voltage switchgear and control equipment standards (IEC 60298:1996)
  - ◇ GB/T 16927.1-1997 High Voltage Testing Techniques Part 1: General Tests (IEC60060-1:1989)
  - ◇ GB/T 16927.2-1997 High Voltage Testing Techniques Part 2: Measurement Systems (IEC 60060-2:1994)
  - ◇ GB311.1-1997 Insulation Coordination for High Voltage Transmission and Transformation Equipment
  - ◇ DL/T404-2005 Technical Conditions for Ordering Indoor AC High Voltage Switchgear
  - ◇ DL/T593-2005 Technical Guidelines for Common Ordering of High Voltage Switchgear
  - ◇ SDGJ14-1986 Technical Regulations for the Selection and Design of Conductors and Electrical Appliances

#### 主要技术参数 MAIN TECHNICAL PARAMETERS

	名称 name	单位 unit	参数 parameter
分支箱 Branch box	额定电压 Rated voltage	kV	35
	额定频率 Rated frequency	Hz	50
	额定电流 Rated current	A	630
	额定绝缘水平 Rated insulation level	kV	40.5
	额定短时工频耐受电压 (有效值) Rated short-term power frequency withstand voltage (effective value)	kV	117
	额定雷电冲击耐受电压 (峰值) Rated lightning impulse withstand voltage (peak)	kV	200
防护等级 Protection grade		-	≥ IP54
电缆附件 Cable accessories	冲击耐压 Impulse withstand voltage	200kV, 正负极性各 10 次, 不击穿, 不闪络 200kV, with 10 positive and 10 negative polarities, without breakdown or flashover	
	直流耐压 DC withstand voltage	104kV (负极性), 15min, 不击穿, 不闪络 104kV (negative polarity), 15min, no breakdown, no flashover	
	局部放电 partial discharge	45kV 下放电量 ≤ 10pc 45kV discharge capacity ≤ 10pc	

# KYN61-40.5

## 铠装移开式交流金属封闭开关设备

### ARMORED REMOVABLE AC METAL ENCLOSED SWITCHGEAR



#### 产品概述 OVERVIEW

KYN61-40.5 铠装移开式交流金属封闭开关设备（以下简称开关柜）系三相交流量 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、保护和监测等功能，还可用于频繁操作的场所。本开关柜符合 GB3906-2006、GB/T11022-1999 及 DL/T 404-2007 等标准。

KYN61-40.5 Armored Removable AC Metal Enclosed Switchgear (hereinafter referred to as the switchgear) is a complete indoor distribution device with a three-phase alternating current of 50Hz and a rated voltage of 40.5kV. As a power plant, substation, and industrial and mining enterprise receiving and distributing electricity, it has functions such as control, protection, and monitoring of circuits, and can also be used in frequently operated places. This switchgear complies with standards such as GB3906-2006, GB/T11022-1999, and DL/T 404-2007.

#### 主要技术参数 MAIN TECHNICAL PARAMETERS

弹簧操动机械主要技术参数  
 Main technical parameters of spring operating machinery

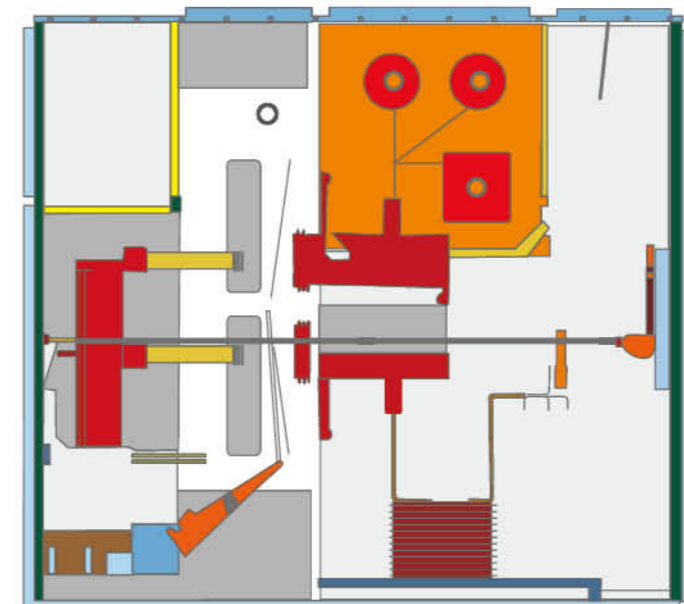
名称 name	单位 unit	参数 parameter
额定操作电压 Rated operating voltage	V	分闸线圈 Opening coil
		合闸线圈 Closing coil
额定操作电流 Rated operating current	A	分闸线圈 Opening coil
		合闸线圈 Closing coil
储能电机功率 Energy storage motor power	W	230
储能电机额定电压 Rated voltage of energy storage motor	V	DC220/110 AC220/110
储能时间 Energy storage time	S	≤ 12

真空开关柜主要技术参数  
 Main technical parameters of vacuum switchgear

序号 Serial Number	名称 name	单位 unit	参数 parameter
1	额定电压 Rated voltage	kV	40.5
2	额定电流 Rated current	A	1250 1600 2000
3	额定频率 Rated frequency	Hz	50
4	额定短时耐受电流 Rated short time withstand current	kA	20 25 31.5
5	额定峰值耐受电流 Rated peak withstand current	kA	50 63 80
6	额定工频耐受电压 Rated power frequency withstand voltage	kV	95/1min
7	额定雷电冲击耐受电压 Rated lightning impulse withstand voltage	kV	185
8	额定短路持续时间 Rated short-circuit duration	s	4
9	防护等级 Protection level		IP3X

真空开关柜主要技术参数  
 Main technical parameters of vacuum switchgear

序号 Serial Number	名称 name	单位 unit	参数 parameter
1	额定电压 Rated voltage	kV	40.5
2	额定频率 Rated frequency	A	1250 1600 2000
3	额定工频耐受电压 Rated power frequency withstand voltage	Hz	50
4	额定雷电冲击耐受电压 Rated lightning impulse withstand voltage	kA	20 25 31.5
5	额定电流 Rated current	kA	50 63 80
6	额定短时耐受电流 Rated short time withstand current	kV	95/1min
7	额定短路开断电流 Rated short-circuit breaking current	kV	185
8	额定峰值耐受电流 Rated peak withstand current	s	4
9	额定短路持续时间 Rated short-circuit duration		IP3X
10	分闸时间 Opening time		
11	合闸时间 Closing time		
12	额定短路开断电流次数 Rated short-circuit breaking current frequency		
13	机械寿命 Mechanical life		



# KYN28-24

## 铠装移开式交流金属封闭开关设备

## ARMORED MOVABLE AC METAL ENCLOSED SWITCHGEAR



### 产品概述 OVERVIEW

KYN28-24(Z)(GZS1) 铠装移开式交流金属封闭开关设备（以下简称“开关设备”），适用于三相交流 50Hz 电力系统，用于接受和分配电能并对电路实行控制，保护及监测。

本产品符合标准：GB3906《3.6-40.5kV 交流金属封闭开关设备和控制设备》，GB/T11022《高压开关设备和控制设备标准的共用技术要求》，IEC62271:200《额定电压 1kV 以上 52 以下交流金属封闭开关设备和控制设备》，DL/T404《户内交流高压开关柜订货技术条件》。

KYN28-24 (Z) (GZS1) armored movable AC metal enclosed switchgear (hereinafter referred to as "switchgear") is suitable for three-phase AC 50Hz power systems, used for receiving and distributing electrical energy, and controlling, protecting, and monitoring circuits.

This product meets the standards: GB3906 "3.6-40.5kV AC Metal Enclosed Switchgear and Control Equipment", GB/T11022 "Common Technical Requirements for High Voltage Switchgear and Control Equipment Standards", IEC62271:200 "AC Metal Enclosed Switchgear and Control Equipment with Rated Voltages of 1kV and Below 52", DL/T404 "Technical Conditions for Ordering Indoor AC High Voltage Switchgear".

### 型号及含义 MODEL AND MEANING

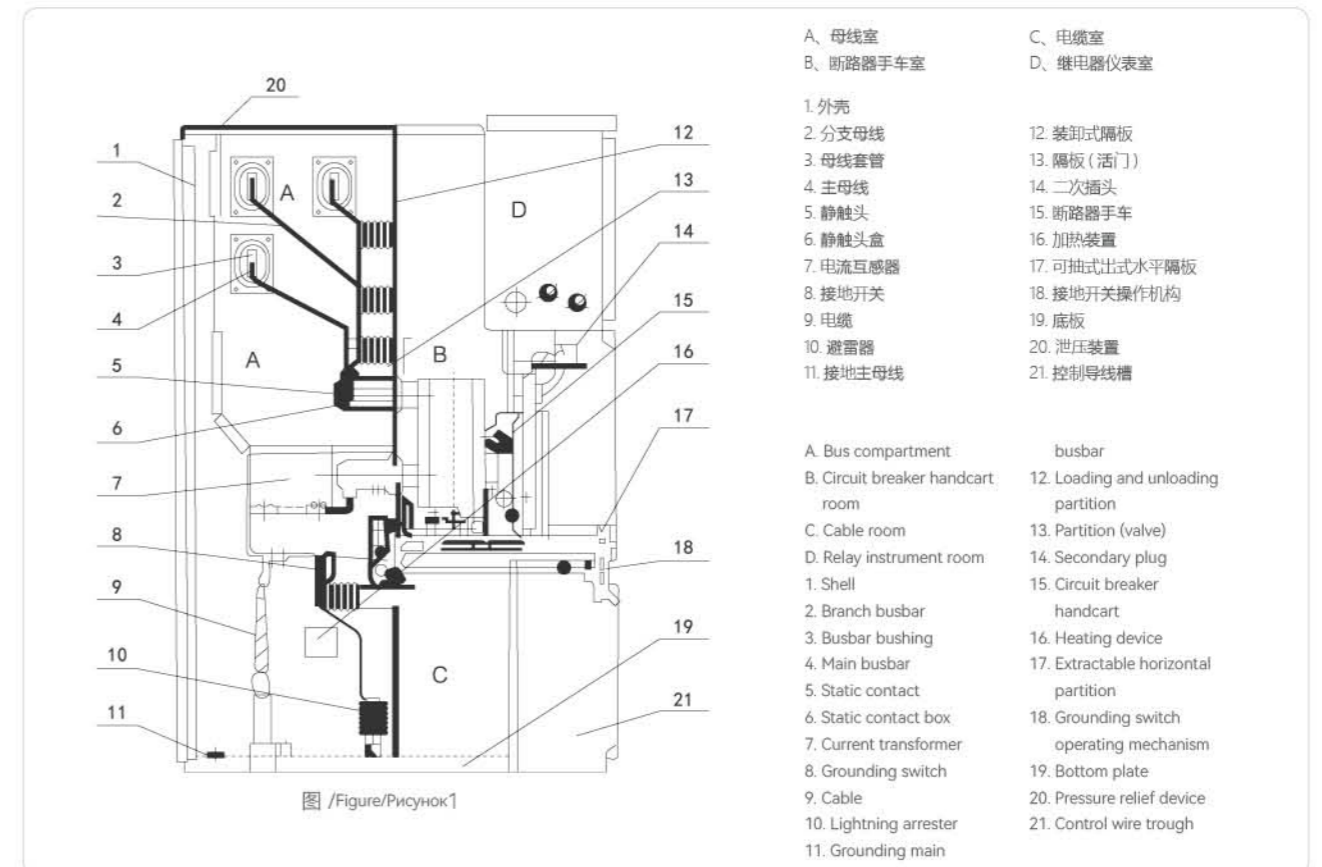
K Y N 28 - 24 - (Z)  
① ② ③ ④ ⑤ ⑥

①	铠装移开式金属封闭开关设备	Armor
②	移开式	Mobile type
③	使用条件: (户内)	Usage conditions: (indoor)
④	设计序号	Design serial number
⑤	额定电压 (kV)	Rated voltage (kV)
⑥	一次方案号	Vacuum circuit breaker

### 主要技术参数 MAIN TECHNICAL PARAMETERS

名称 name	单位 unit	参数 parameter		
额定电压 Rated voltage	kV	24		
额定频率 Rated frequency	Hz	50		
断路器额定电流 Rated current of circuit breaker	A	630、1250、1600、2000、2500、3150		
开关柜额定电流 Rated current of switchgear	A	630、1250、1600、2000、2500、3150		
额定动稳定电流 (4s) Rated dynamic stable current (4s)	kA	20、25、31.5		
额定稳定电流 (峰值) Rated stable current (peak)	kA	50、63、80		
额定短路开断电流 Rated short-circuit breaking current	kA	20、25、31.5		
额定短路关合电流 (峰值) Rated short-circuit making current (peak)	kA	50、63、80		
额定绝缘水平 Rated insulation level	1min 工频耐受电压 Power frequency withstand voltage	极间、极对地间 Between poles, between poles and ground	kV	65
		断口间 Between fracture surfaces	kV	79
	雷冲击耐受电压 (峰值) Lightning impulse withstand voltage (peak)	极间、极对地间 Between poles, between poles and ground	kV	125
		断口间 Between fracture surfaces	kV	145
防护等级		外壳 IP4X、隔离间、断路器室门打开时为 IP2X When the enclosure IP4X, isolation barrier, and circuit breaker room door are open, it is IP2X		

### 开关柜外形尺寸 OUTLINE DIMENSIONS OF SWITCHGEAR





# SRM6-12

## 全绝缘充气式环网开关设备

### FULLY INSULATED INFLATABLE RING NETWORK SWITCHGEAR



#### 产品概述 OVERVIEW

SRM6-12 全绝缘充气式环网开关设备产品广泛用于 10kV/6kV 配电系统，是城乡各类用户变配电系统的选用开关产品。开关柜为模块化单元模式，可根据不同用途进行组合；由固定式单元组合与可扩展单元两大类，满足各种变电站对紧凑型开关柜灵活使用的需要。

SRM6-12 全绝缘充气式环网开关设备是一个完全密封的系统，其所带电部件以及开关封闭在不锈钢的本体内。整个开关装置不受外部环境条件影响，从而可以确保运行可靠性及人身安全。并且实现了免维护。通过选择可扩展母线，可以实现任何组合，达到全模块化。扩展母线安全绝缘和屏蔽，确保了可靠性和安全性。SRM6-12 全绝缘充气式环网开关设备同时可以提供 TV 化的自动化解决方案，形成了智能化开关的概念，并将现场安装及调试工作量降到最低。

SRM6-12 全绝缘充气式环网开关设备分为非扩展标准配置和可扩展标准配置。由于具有全模块和半模块的组合性以及自可扩展性，因而具有极特殊的灵活性。

SRM6-12 全绝缘充气式环网开关设备执行 GB 标准。在室内条件下 (20℃) 运行的设计寿命超过 30 年。

The SRM6-12 fully insulated inflatable ring network switchgear product is widely used in 10kV/6kV distribution systems and is the preferred switch product for various urban and rural user transformation and distribution systems.

The switchgear adopts a modular unit mode, which can be combined according to different purposes; It consists of two main categories: fixed unit combination and expandable unit, meeting the flexible use of compact switchgear in various substations.

The SRM6-12 fully insulated inflatable ring network switchgear is a fully sealed system, with its charged components and switches enclosed in a stainless steel body. The entire switching device is not affected by external environmental conditions, thus ensuring operational reliability and personal safety. And maintenance free has been achieved. By selecting expandable busbars, any combination can be achieved, achieving full modularity. The expansion of busbar safety insulation and shielding ensures reliability and safety. The SRM6-12 fully insulated inflatable ring network switchgear can provide TV-based automation solutions, forming the concept of intelligent switches and minimizing on-site installation and debugging workload.

The SRM6-12 fully insulated inflatable ring network switchgear is divided into non expandable standard configurations and expandable standard configurations. Due to the combination of full module and half module, as well as self scalability, it has extremely special flexibility.

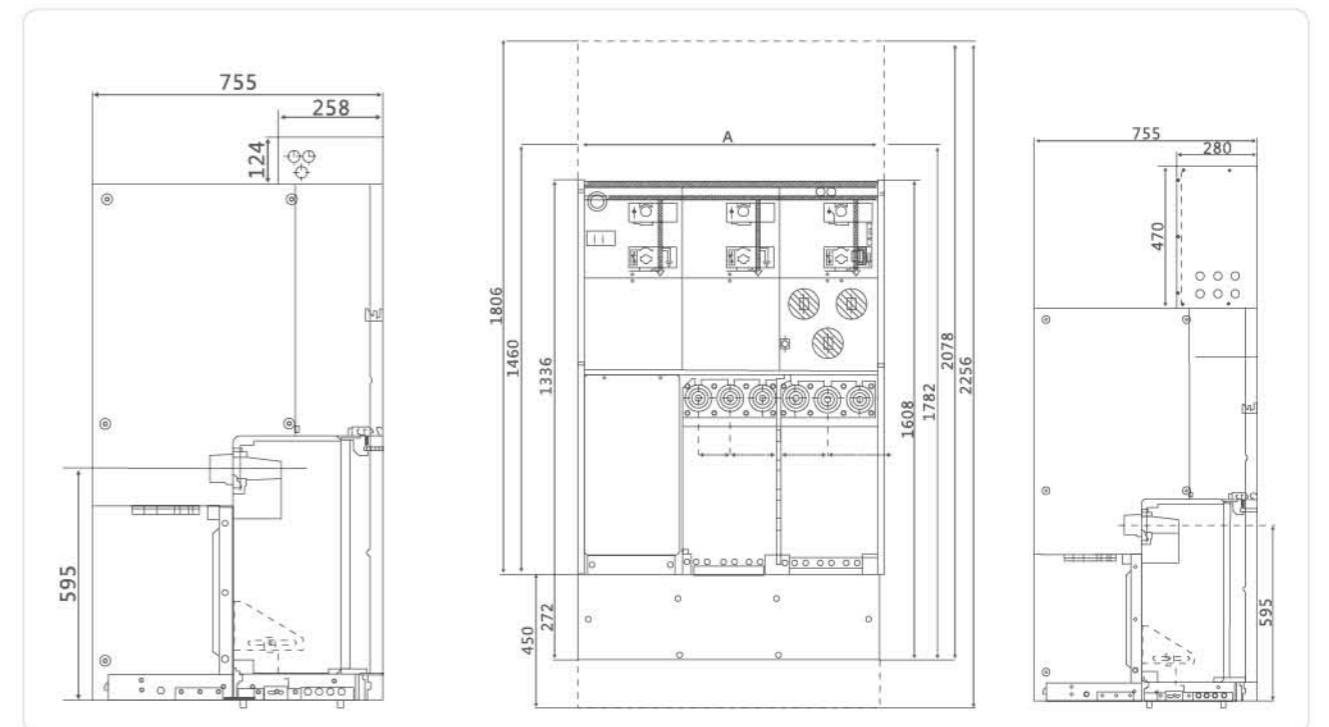
SRM6-12 fully insulated inflatable ring network switchgear complies with GB standards. The design life for operation under indoor conditions (20 °C) exceeds 30 years.

#### 主要技术参数 MAIN TECHNICAL PARAMETERS

项目 project	单位 unit	C 模块 C module	F 模块 F module	V 模块 V module		CB 模块 CB module	
		复合开关 Composite switch	组合电器 GIS	真空开关 Vacuum Switch	隔离 / 接地开关 Isolation/ grounding switch	真空断路器 Vacuum Circuit Breaker	隔离 / 接地开关 Isolation/ grounding switch
额定电压 Rated voltage	kV	12	12	12	12	12	12
额定频率 Rated frequency	Hz	50	50	50	50	50	50
工频耐受电压 (相间 / 端口) Power frequency withstand voltage (phase to phase/port)	kV	42/48	42/48	42/48	42/48	42/48	42/48
雷电冲击耐受电压 Lightning impulse withstand voltage	kV	75/85	75/85	75/85	75/85	75/85	75/85
额定电流 Rated current	A	630	注 1)	630		1250/630	1250/630
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	135/135					
额定短路关合电流 (峰值) Rated short-circuit closing current (peak)	A	50	80				
额定峰值耐受电流 Rated peak withstand current	kA	50					
额定短时耐受电流 Rated short-time withstand current	kA/3s	20					
额定短路开断电流 Rated short circuit breaking current	kA		31.5	20		25	25
额定转移电流 Rated transfer current	A		1750				
配用熔断器最大电流 Maximum current of equipped fuse	A	-	125				
回路电阻 Loop resistance	-n	≤ 300	≤ 600				
机械寿命 Mechanical life	次 order	5000	3000	5000	2000	5000	5000

备注 :1) 取决于熔断器的电流额定值

#### 安装尺寸图 DRAWING



## SRM6-40.5

### 全封闭全绝缘充气式环网开关设备

#### FULLY ENCLOSED, FULLY INSULATED, INFLATABLE RING NETWORK SWITCHGEAR



#### 产品概述 OVERVIEW

SRM6-40.5 全封闭全绝缘充气式环网开关设备系户内 12~40.5kV 三相交流 50Hz, 作为接受和分配电能的成套设备, 是我公司生产的新一代开关产品。主要用于各类发电厂、变电所、工矿企业、地铁、民用和商用建筑等中压电力系统的变电送电, 实行控制、保护、监测之用。具有性能可靠、适应性强、体积小等特点。

The SRM6-40.5 fully enclosed, fully insulated, and inflatable ring network switchgear is a complete set of indoor 12~40.5kV three-phase AC 50Hz equipment that receives and distributes electrical energy. It is a new generation of switchgear products produced by our company. Mainly used for the transformation and transmission of medium voltage power systems in various power plants, substations, industrial and mining enterprises, subways, civil and commercial buildings, etc., for control, protection, and monitoring purposes. It has the characteristics of reliable performance, strong adaptability, and small size.

#### 符合标准 COMPLIANT WITH STANDARDS

- ◇ GB3906-2011 《3.6kV~40.5kV 交流金属封闭开关设备和控制设备》
- ◇ DL/T404-1997 《户内交流高压开关柜订货技术条件》
- ◇ IEC 62271-200:2003 《额定电压 1kV 以上 52kV 以下交流金属封闭开关设备》
- ◇ 1016001/003-0000-00 《国家电网公司物资采购标准 12kV、24kV、40.5kV 高压开关柜通用技术规范》
- ◇ GB3906-2011 "3.6kV~40.5kV AC Metal Enclosed Switchgear and Control Equipment"
- ◇ DL/T404-1997 "Technical Conditions for Ordering Indoor AC High Voltage Switchgear"
- ◇ IEC 62271-200:2003 "AC metal enclosed switchgear for rated voltages above 1kV and below 52kV"
- ◇ 1016001/003 0000 00 "General Technical Specification for 12kV, 24kV, and 40.5kV High Voltage Switchgear of State Grid Corporation of China Material Procurement Standards"

#### 正常使用条件 NORMAL CONDITION

- ◇ 周围空气温度  
最高温度: 40°C; 最低温度: -25°C; 且 24h 内测得的平均值不超过 35°C。
- ◇ 相对湿度  
在 24h 内测得的相对湿度的平均值不超过 95%;  
月相对湿度的平均值不超过 90%;  
在高湿度期间温度急骤变化时可能出现凝露;  
在 24h 内测得的水蒸气压力的平均值不超过 2.2kPa;  
月水蒸气压力平均值不超过 1.8kPa;
- ◇ 海拔  
设备安装场所的海拔不超过 1000m。
- ◇ 地震烈度不超过 8 度。
- ◇ 在二次系统中感应的电磁干扰的幅值不超过 1.6kV。
- ◇ 周围空气没有明显地受到尘埃、烟、腐蚀性和可燃性气体、蒸气或盐雾的污染。  
注: 当使用条件超出以上规定时, 可与用户协商确定解决方案。
- ◇ Surrounding air temperature  
Maximum temperature: 40 °C; Minimum temperature: -25 °C; And the average value measured within 24 hours shall not exceed 35 °C.
- ◇ Relative humidity  
The average relative humidity measured within 24 hours shall not exceed 95%;  
The average monthly relative humidity shall not exceed 90%;  
During periods of high humidity, condensation may occur due to sudden changes in temperature;  
The average value of water vapor pressure measured within 24 hours shall not exceed 2.2kPa;  
The average monthly water vapor pressure shall not exceed 1.8kPa;
- ◇ Altitude  
The altitude of the equipment installation site shall not exceed 1000m.
- ◇ The seismic intensity shall not exceed 8 degrees.
- ◇ The amplitude of electromagnetic interference induced in the secondary system shall not exceed 1.6kV.
- ◇ The surrounding air is not significantly polluted by dust, smoke, corrosive and combustible gases, vapors, or salt mist.  
Note: When the usage conditions exceed the above regulations, a solution can be determined through consultation with the user.

#### 主要技术参数 MAIN TECHNICAL PARAMETERS

序号 serial number	项目 project	单位 unit	参数 parameter		
1	额定电压 Rated voltage	kV	12	40.5	
2	额定电流 Rated current	A	1250~3150	1250~2500	
3	额定频率 Rated frequency	Hz	50		
4	额定短时耐受电流 Rated short time withstand current	kVs	25、31.5		
5	额定峰值耐受电流 Rated peak withstand current	kA	63、80		
6	额定短路电流持续时间 Rated short-circuit current duration	s	4		
7	额定短路开断电流 Rated short-circuit breaking current	kA	25、31.5		
8	额定短路关合电流 Rated short-circuit making current	kA	63、80		
9	燃弧持续时间 Arc duration	s	0.5		
10	机械寿命 mechanical life	断路器 Circuit breaker	2000	10000	
		隔离开关 Isolation switch	3000		
		接地开关 Grounding switch	3000		
11	断路器电寿命 Circuit breaker electrical life	次 times	30		
12	额定充气压力 (20°C表压) Rated inflation pressure (20 °C gauge pressure)	MPa	0.05		
13	最低功能压力 (20°C表压) Minimum functional pressure (20 °C gauge pressure)		0.03		
14	SF <sub>6</sub> 气体年泄漏率 Annual leakage rate of SF <sub>6</sub> gas	-	≤ 0.5%		
15	额定绝缘水平 Rated insulation Edge level	额定工频 1min 耐受电压 (有效值) Rated power frequency 1min Withstand voltage (effective value)	相间, 相对地 Phase to phase	42	95
			隔离断口、真空断口 Isolation fracture, vacuum fracture	48	118
		额定雷电冲击耐 受电压 (峰值) Rated lightning impulse resistance Received voltage (peak)	相间, 相对地 Phase to phase	75	185
			隔离断口、真空断口 Isolation fracture, vacuum fracture	85	215

# HBXGN-12

## 环保型空气绝缘交流金属封闭开关设备

### ENVIRONMENTALLY FRIENDLY AIR INSULATED AC METAL ENCLOSED SWITCHGEAR



#### 产品概述 OVERVIEW

HBXGN-12 系列环保气体绝缘金属封闭式开关设备是采用真空灭弧室灭弧，环保气体为主绝缘介质、少量固体绝缘支撑件、主回路无任何封装，正常运行时为零表压或微正压（气箱的气压 $\leq 0.02\text{MPa}$ ），并且相对地及相间的绝缘能力满足零表压下空气绝缘要求的配电开关设备。

The HBXGN-12 series environmentally friendly gas insulated metal enclosed switchgear is a distribution switchgear that uses a vacuum arc extinguishing chamber for arc extinguishing, with environmentally friendly gas as the main insulation medium, a small amount of solid insulation support, and no encapsulation in the main circuit. During normal operation, it is at zero gauge pressure or micro positive pressure (gas box pressure  $\leq 0.02\text{MPa}$ ), and its insulation capacity to ground and between phases meets the air insulation requirements at zero gauge pressure.

#### 型号及含义 MODEL AND MEANING

HBXGN- □ □ / □ □ - □  
 ① ② ③ ④ ⑤ ⑥

①	产品型号	Product model
②	额定电压	Rated voltage
③	柜型模块*	Cabinet type module*
④	操动方式	Operation mode
⑤	额定电流	Rated current
⑥	开断电流	Breaking current

备注：  
 \*HBXGN-12 系列通用柜型模块有：  
 C—负荷开关模块  
 V—真空断路器模块  
 F—负荷开关-熔断器组合电器模块

Remarks:  
 \*The HBXGN-12 series universal cabinet modules include:  
 C - Load switch module  
 V - Vacuum circuit breaker module  
 F - Load switch fuse combination electrical module

#### 正常使用条件 NORMAL CONDITION

- ◇ 环境温度：最高温度： $+40^{\circ}\text{C}$ ，最低温度： $-25^{\circ}\text{C}$ ，24 小时平均温度： $\leq 35^{\circ}\text{C}$ ；
- ◇ 环境湿度：最大平均相对湿度：24 小时平均值 $\leq 95\%$ ，月平均值： $\leq 90\%$
- ◇ 海拔高度： $\leq 1500$  米（常规型，标准充气压力下）， $> 1500$  米需特殊说明
- ◇ 特殊条件：对于超出正常使用环境的特殊运行条件，可事先与我公司协商。

- ◇ Environmental temperature: maximum temperature: $+40^{\circ}\text{C}$ , minimum temperature:  $-25^{\circ}\text{C}$ , 24-hour average temperature:  $\leq 35^{\circ}\text{C}$ ;
- ◇ Environmental humidity: Maximum average relative humidity: 24-hour average  $\leq 95\%$ , monthly average  $\leq 90\%$
- ◇ Altitude:  $\leq 1500$  meters (conventional type, under standard inflation pressure), special instructions are required for  $>1500$  meters
- ◇ Special conditions: For special operating conditions beyond the normal operating environment, we can negotiate with our company in advance.

#### 结构特点 STRUCTURAL CHARACTERISTICS

- ◇ 所有带电部分均密封在气箱中，气箱采用不锈钢焊接而成，内充 1.4bar 的干燥空气。气箱的防护等级达到 IP67。
- ◇ 气箱安装压力表，可实时监视气箱内气体压力。
- ◇ 气箱底部安装了防爆膜，当内部故障引起压力升高时，防爆膜爆破，释放内部压力。并将气体朝后部泄放，防止伤害柜前操作人员。
- ◇ 开关柜通过内部燃弧试验，IAC- AFLR /20kA, 1s。
- ◇ All live parts are sealed in an air box, which is welded with stainless steel and filled with 1.4 bar of dry air. The protection level of the air box reaches IP67.
- ◇ Install a pressure gauge in the gas box, which can monitor the gas pressure in real time.
- ◇ An explosion-proof membrane is installed at the bottom of the gas box. When an internal fault causes a pressure increase, the explosion-proof membrane bursts and releases internal pressure. And release the gas towards the rear to prevent injury to the operators in front of the cabinet.
- ◇ The switchgear has passed internal arc test, IAC - AFLR/20kA, 1s.

#### 主要技术参数 MAIN TECHNICAL PARAMETERS

序号 Serial Number	项目 project	V 模块 module			
		C 模块 module 负荷开关 load switch	F 模块 module 组合电器 combined electrical appliances	真空断路器 vacuum circuit breaker	隔离 / 接地开关 isolation/grounding switch
1	额定电压 kV Rated voltage kV	12			
2	1min 工频耐受电压 kV 1min power frequency withstand voltage kV	42/48			
3	雷电冲击耐受电压 kV Lightning impulse withstand voltage kV	75/85			
4	额定电流 A Rated current A	630	125*	630	630
5	分断能力 Breaking capacity				
	闭环开断电流 A Closed loop breaking current A	630			
	电缆充电开断电流 A Cable charging breaking current A	135			
	5% 有功负荷开断电流 A 5% active load breaking current A	31.5			
	接地故障开断电流 A Earth fault breaking current A	200			
	短路开断电流 kA Short circuit breaking current kA		31.5*	25	
6	额定转移电流 A Rated transfer current A	1500			
7	选用熔断器最大电流 A Select the maximum current A of the fuse	125			
8	短路关合电流 kA Short circuit making current kA	63	80*	25	
9	短时耐受电流 kA Short time withstand current kA	25		25	25
10	短路持续时间 s Short circuit duration s	4		4	4
11	机械寿命次 Mechanical life times	5000	5000	10000	3000
12	气体压力 MPa Gas pressure MPa	0.025 (20°C)			
13	年泄露率 Annual leakage rate	$\leq 0.05\%$			
14	灭弧方式 Arc extinguishing method	真空灭弧 Vacuum arc extinguishing			
15	防护等级 Protection level	IP67/3X (气箱 / 外壳) (Air box/casing)			



# GTXGN-12

## 交流金属固体绝缘环网开关设备

### AC METAL SOLID INSULATED RING NETWORK SWITCHGEAR



#### 产品概述 OVERVIEW

GTXGN-12 交流金属固体绝缘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的影响，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。

The GTXGN-12 AC metal solid insulated ring network switchgear is a fully insulated, fully sealed, and maintenance free solid insulated vacuum switchgear. All high-voltage live parts are molded using epoxy resin material with excellent insulation performance, which organically combines the vacuum arc extinguishing chamber, main electrical circuit, insulation support, etc. into a whole, and the functional units are connected through fully insulated solid busbar. Therefore, the entire switchgear is not affected by the external environment, which can ensure the reliability of equipment operation and the safety of operators.

This ring network cabinet has the characteristics of simple structure, flexible operation, reliable interlocking, and convenient installation. It is suitable for 50Hz, 12 kV power systems, and is widely used in industrial and civil cable ring networks and distribution network terminal projects. It is used for energy reception and distribution, especially suitable for urban residential distribution, small substations, switching stations, cable branch boxes, box substations, industrial and mining enterprises, shopping malls, airports, subways, wind power generation, etc. Used in hospitals, sports venues, railways, tunnels, and other places.

Due to its advantages of full insulation, sealing, and shielding, this product is particularly suitable for use in areas with harsh environments such as high altitude, high temperature, humid heat, severe cold, and severe pollution.

#### 型号及含义 MODEL AND MEANING

GTXGN □ - 12 / 630(1250) □ □ - □  
① ② ③ ④ ⑤ ⑥ ⑦

①	固体全绝缘封闭式环网开关设备	Solid fully insulated enclosed ring network switchgear
②	设计序号	Design serial number
③	额定电压 (kV)	Rated voltage (kV)
④	额定电流 (A)	Rated current (A)
⑤	开关类别： C- 负荷开关；V- 断路器； G- 隔离开关； F- 负荷开关-熔断器组合电器开关； CB- 负荷开关不带接地； VB- 断路器不带接地； VZ- 断路器联络开关	Switch category: C-load switch; V-circuit breaker; G-isolation switch; F-load switch fuse combination electrical switch; CB load switch without grounding; VB circuit breaker without grounding VZ circuit breaker interconnection switch
⑥	额定短时耐受电流 (20,25kA)	Rated short time withstand current (20,25kA)
⑦	B: 不带接地开关；Z: 下直出线	B: Without grounding switch; Z: Lower straight lead

#### 主要技术参数 MAIN TECHNICAL PARAMETERS

##### 开关设备技术参数

Technical parameters of switchgear

名称 name	单位 unit	参数 parameter	
额定电压 Rated voltage	kV	12	
额定频率 Rated frequency	Hz	50	
额定电流 Rated current	A	630	1250
额定绝缘水平 rated insulation level	工频耐受电压 Power frequency withstand voltage	断口 Fracture	48
		相间 Interphase	42
		相对地 Relative ground	42
	雷电冲击耐受电压 Lightning impulse withstand voltage	断口 Fracture	85
	相间 Interphase	75	
	相对地 Relative ground	75	
额定短路开断电流 (1s) Rated short-circuit breaking current (1s)	kA	25	31.5
额定短时耐受电流 (4s) Rated short time withstand current (4s)	kA	25	31.5
额定峰值耐受电流 (1p) Rated peak withstand current (1p)	kA	63	80
额定短路关合电流 (峰值) (1ma) Rated short-circuit making current (peak) (1ma)	kA	63	80
外壳防护等级 Shell protection level		IP4X	
操作方式 Operation mode		弹簧储能式 Spring energy storage type	

##### 隔离接地开关技术参数

Technical parameters of isolation grounding switch

序号 serial number	名称 name	单位 unit	参数 parameter	
1	额定电压 Rated voltage	kV	12	
2	额定电流 Rated current	A	630	1250
3	4S 额定短时耐受电流 (有效值) 4S rated short time withstand current (effective value)	kA	25	31.5
4	额定峰值耐受电流 (峰值) Rated peak withstand current (peak)	kA	63	80
5	1min 工频耐受电压 1min power frequency withstand voltage	相间及对地 Phase to phase and ground	42	
		隔离断口 Isolation fracture	48	
6	额定雷电冲击耐受电压 rated lightning impulse withstand voltage	相间及对地 Phase to phase and ground	75	
		隔离断口 Isolation fracture	85	
7	主开关机械寿命 Mechanical life of the main switch	次 order	3000	
8	接地开关机械寿命 Mechanical life of grounding switch	次 order	3000	

# YBW

## 新能源一体化光伏预装箱式变电站

### NEW ENERGY INTEGRATED PHOTOVOLTAIC PREFABRICATED BOX SUBSTATION



#### 产品概述 OVERVIEW

YBW 新能源一体化光伏预装箱式变电站，欧式一体机。

欧式一体机包括油浸式变压器、高压室、通讯动力柜、逆变器室、高压室。逆变器室分别放置在变压器的两侧，通讯动力柜放在高压室旁边。整体为目字型结构，采用集装箱作为逆变器室的防火保温外壳，逆变器室内逆变器呈镜像布置，逆变器过道之间设置有上下井口。逆变器侧面出线，通过铜排、软连接与变压器一侧的低压套管连接，变压器左右两侧安装有散热片、变压器仪表箱。采用油浸式负荷开关加插入式熔芯，变压器的高压熔断器盒、高压套管及避雷器在高压室内，高压套管及电缆通过隔板与熔断器隔离。通讯动力柜远端监测室内设置有远端监测终端设备，辅助变压器、UPS、监测终端等设备。动力柜柜内二次线通过高、低压室之间的穿线管敷设导线与逆变器室相通，变压器散热方式为自然风冷（ONAN）。

YBW New Energy Integrated Photovoltaic Prefabricated Box Substation, European style Integrated Machine.

The European integrated machine includes an oil immersed transformer, a high-voltage chamber, a communication power cabinet, an inverter chamber, and a high-voltage chamber. The inverter room is placed on both sides of the transformer, and the communication power cabinet is placed next to the high-voltage room. The overall structure is a herringbone shape, using a container as the fireproof and thermal insulation shell of the inverter room. The inverters in the inverter room are arranged in a mirror image, and there is a downward entry wellhead between the inverter aisles. The side outlet of the inverter is connected to the low-voltage bushing on one side of the transformer through copper bars and soft connections. The left and right sides of the transformer are equipped with heat dissipation fins and transformer instrument boxes. Using an oil immersed load switch with plug-in fuse core, the high-voltage fuse box, high-voltage bushing, and lightning arrester of the transformer are located in the high-voltage room. The high-voltage bushing and cable are isolated from the fuse through a partition. The communication power cabinet remote monitoring room is equipped with remote monitoring terminal equipment, auxiliary transformers, UPS, monitoring terminals, and other equipment. The secondary wires inside the power cabinet are connected to the inverter room through conduit laying between the high and low voltage rooms, and the transformer is cooled by natural air cooling (ONAN).

#### 正常使用条件 NORMAL CONDITION

- ◇海拔高度：≤ 3000 米；
- ◇周围环境温度：-45℃ ~ +45℃；
- ◇环境湿度：相对湿度日平均不大于 60%，月平均不大于 90%；没有火灾，爆炸危险，化学腐蚀及剧烈震动的场所。
- ◇ Altitude: ≤ 3000 meters;
- ◇ Surrounding environment temperature: -45 °C ~ +45 °C;
- ◇ Environmental humidity: The daily average relative humidity shall not exceed 60%, and the monthly average relative humidity shall not exceed 90%; Places without fire, explosion hazard, chemical corrosion, and severe vibration.

#### 主要技术参数 MAIN TECHNICAL PARAMETERS

项目 project	单位 unit	高压电器 high voltage electrical appliances	变压器 transformer	低压电器 low Voltage Apparatus
额定电压 Rated voltage	kV	6/10	6/0.4 10/0.4	0.4
额定容量 Rated capacity	kVA		50~1600	
额定电流 Rated current	A	200、400、630		100~3200
额定短路开断电流 Rated short circuit breaking current	kA	负荷开关 400~630 Load switch 400~630 组合开关取决于熔断器 The combination switch depends on the fuse		15~63kA
额定短时耐受电流 Rated short-time withstand current	kA	16, 20(4s)		15(1s) 30(1s)
额定峰值耐受电流 Rated peak withstand current	kA	31.5, 50		30 63
工频耐压 (1min) Power frequency withstand voltage (1min)	kV	相对地及相间 32/42 Phase to ground and phase to phase 32/42 隔离断口 36/48 Isolation fracture 36/48	25/35(油浸) (Oil immersed) 20/28(干式) (Dry type)	≤ 0.3,2 >0.3,2.5
雷电冲击耐压 (峰值) Lightning impulse withstand voltage (peak)	kV	相对地及相间 60/75 Phase to ground and phase to phase 60/75 隔离断口 70/85 Isolation fracture 70/85	60/75	
箱体防护等级 Cabinet protection level			IP32	
噪声水平 noise level	db		55	
执行标准 Executive standards		GB/T 17467 《高压 / 低压预装式变电站》 GB/T 17467 "High Voltage/Low Voltage Prefabricated Substation" DL/T537 《6-35kV 箱式变电站订货技术条件》 DL/T537 "Technical Conditions for Ordering 6-35kV Box Substation"		

#### 产品特点 PRODUCT FEATURES

- ◇高度集成：首创一站式解决直流输入、逆变和升压输出；厂内统一安装调试，现场整体吊装，一站式完成运输、安装和维护。
- ◇适应性强：全面考虑排风散热，防风沙、防雨雪、防腐蚀、抗低温等要求。
- ◇性能稳定：集成度高，故障点少，提高性能稳定性；过载 20%~50% 可稳定运行（植物油型）。
- ◇高收益性：减少交流电缆投资，集中优化断路器、防雷、供电及监控等电气设备；占地面积小，施工难度低。
- ◇可取代传统的“MW 房 + 光伏箱变”模式。
- ◇ Highly integrated: pioneered a one-stop solution for DC input, inverter, and boost output; Unified installation and debugging in the factory, overall lifting on site, one-stop completion of transportation, installation, and maintenance.
- ◇ Strong adaptability: Fully consider requirements such as ventilation and heat dissipation, wind and sand resistance, rain and snow resistance, corrosion resistance, and low temperature resistance.
- ◇ Stable performance: high integration, few fault points, improving performance stability; Stable operation with an overload of 20%~50% (vegetable oil type).
- ◇ High profitability: reduce investment in AC cables, concentrate on optimizing electrical equipment such as circuit breakers, lightning protection, power supply, and monitoring; Small footprint and low construction difficulty.
- ◇ It can replace the traditional "MW room+photovoltaic box transformer" mode.

# HXGN □ -12

## 单元式金属封闭环网开关设备

### UNIT TYPE METAL ENCLOSED RING NETWORK SWITCHGEAR



#### 产品概述 OVERVIEW

HXGN □ -12 箱型固定式金属封闭环网开关设备 (简称环网柜) 适用于交流 50Hz, 12kV 的电力系统。广泛用于工业及民用电缆环网及供电终端。

特别适用于小型二次变电站、开闭所、城市居民区配电、工矿企业、商场、机场、地铁、风力发电、医院、体育场、铁路等场所。

HXGN □ -12 box type fixed metal enclosed ring network switchgear (referred to as ring network cabinet) is suitable for AC 50Hz, 12kV power systems. Widely used in industrial and civil cable ring networks and power supply terminals.

Especially suitable for small secondary substations, switching stations, urban residential distribution, industrial and mining enterprises, shopping malls, airports, subways, wind power generation, hospitals, sports venues, railways and other places.

#### 型号及含义 MODEL AND MEANING

H X G N □ - 12 / 630 - □  
 ① ② ③ ④ ⑤ ⑥ ⑦ ⑧

①	环网单元	Ring network unit
②	箱式结构	Box structure
③	固定式	Fixed
④	户内型	Indoor type
⑤	设计序号	Design serial number
⑥	额定电压 kV	Rated voltage kV
⑦	额定电流 A	Rated current A
⑧	I: FLN36-12 负荷开关 II: FLN48-12 负荷开关	I: FLN36-12 load switch II: FLN48-12 load switch

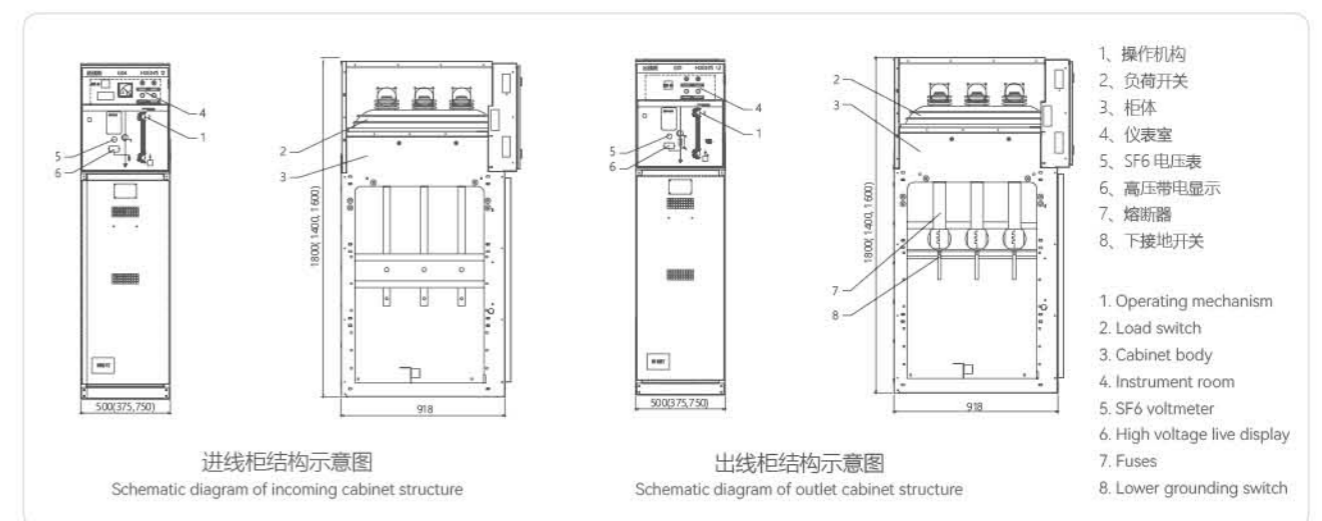
#### 主要技术参数 MAIN TECHNICAL PARAMETERS

序号 Serial Number	名称 name	单位 unit	参数 parameter
1	额定电压 Rated voltage	kV	12
2	额定频率 Rated frequency	Hz	50
3	主母线额定电流 / 熔断器最大额定电流 Rated current of main busbar/maximum rated current of fuse	A	630,125
4	主回路、接地回路额定短时耐受电流 Rated short time withstand current of main circuit and grounding circuit	kA/S	20,3
5	主回路、接地回路额定峰值耐受电流 Rated peak withstand current of main circuit and grounding circuit	kA	50
6	主回路、接地回路额定短路关合电流 Rated short-circuit making current of main circuit and grounding circuit	kA	50
7	负荷开关满容量开断数 Number of full capacity interruptions of load switch	次 order	100
8	熔断器开断电流 Fuse breaking current	kA	31.5, 40
9	额定闭环开断电流 Rated closed-loop breaking current	A	630
10	额定转移电流 Rated transfer current	A	1600
11	机械寿命 Mechanical life	次 order	2000
12	1min 工频耐压 (峰值) 相对、对地 / 隔离断口 1min power frequency withstand voltage (peak) relative to ground/isolated fracture	kV	42,48
13	雷电冲击耐受电压 (峰值) 相间、对地 / 隔离断口 Lightning impulse withstand voltage (peak), phase to phase, ground/isolation break	kV	75,85
14	二次回路 1min 工频耐压 1min power frequency withstand voltage of secondary circuit	kV	2
15	防护等级 Protection level		IP3X

#### 外形尺寸 OVERALL DIMENSIONS

名称 name	尺寸 size	适用范围 Applicable scope
高度 H(mm)	1400	适用于单芯电缆 Suitable for single core cables
	1600	适用于单芯电缆 Suitable for single core cables
	1800	适用于三芯电缆 Suitable for three core cables
宽度 W(mm)	375	进线、出线 Incoming and outgoing lines
	500	
深度 D(mm)	750	
	918	

#### 结构简图 STRUCTURE DIAGRAM







# GCS 低压抽出式开关柜

## LOW VOLTAGE WITHDRAWABLE SWITCHGEAR



### 产品概述 OVERVIEW

GCS 低压抽出式开关柜适用于发电厂、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，作为三相交流频率为 50(60)Hz，额定工作电压为 380V(400V)，(660V)，额定电流为 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。

GCS low-voltage withdrawable switchgear is suitable for distribution systems in industries such as power plants, petroleum, chemical, metallurgical, textile, and high-rise buildings. In places with high automation levels such as large power plants and petrochemical systems that require computer interfaces, low-voltage complete distribution devices are used for distribution, centralized control of electric motors, and reactive power compensation in power generation and supply systems with a three-phase AC frequency of 50 (60) Hz, rated working voltage of 380V (400V), (660V), and rated current of 4000A and below.

### 型号及含义 MODEL AND MEANING

G C S - □ - □  
① ② ③ ④ ⑤

①	封闭式开关柜	Enclosed switchgear
②	抽出式	Withdrawable type
③	电气系统	electrical system
④	主电路方案编号	Main circuit scheme number
⑤	辅助电路方案编号	Auxiliary circuit scheme number

### 基本技术参数 BASIC TECHNICAL PARAMETERS

主电路额定电压 (V) Rated voltage of main circuit (V)	交流 380(400)、(660) AC 380 (400), (660)	
辅助电路额定电压 (V) Rated voltage of auxiliary circuit (V)	交流 (AC) 220、380(400) 直流 (DC) 110、220	
额定频率 (Hz) Rated frequency (Hz)	50(60)	
额定绝缘电压 (V) Rated insulation voltage (V)	660(1000)	
额定电流 (A) Rated current (A)	水平母线 Horizontal busbar	≤ 4000
	垂直母线 (MCC) Vertical busbar (MCC)	1000
母线额定短时耐受电流 (kA, 1 s) Rated short time withstand current of busbar (kA, 1 s)	50, 80	
母线额定峰值耐受电流 (kA/0.1s) Rated peak withstand current of busbar (kA/0.1s)	105, 176	
工频试验电压 (V/1 min) Power frequency test voltage (V/1 min)	主电路 Main circuit	2500
	辅助电路 Auxiliary circuit	1760
母线 Generatrix	三相四线制 Three phase four wire system	A,B,C,PE,N
	三相五线制 Three phase five wire system	A,B,C,PE,N
防护等级 Protection grade	IP30, IP40	

### 安装示意图 INSTALLATION DIAGRAM



图 2、PC 柜安装示意图 Figure 2. Installation diagram of PC cabinet



图 3、MCC 柜安装示意图 Figure 3. Installation diagram of MCC cabinet



# GCK 低压抽出式开关柜

## LOW VOLTAGE WITHDRAWABLE SWITCHGEAR



### 产品概述 OVERVIEW

GCK 低压抽出式开关柜由动力配电中心 (PC) 柜和电动机控制中心 (MCC) 二部分组成, 适用于发电厂、变电站、工矿企业等电力用户作为交流 50Hz, 最大工作电压至 660V, 最大工作电流至 3150A 的配电系统中, 作为动力配电、电动机控制及照明等配电设备的电能转换分配控制之用。

GCK low-voltage withdrawable switchgear is composed of two parts: a power distribution center (PC) cabinet and a motor control center (MCC). It is suitable for power plants, substations, industrial and mining enterprises, and other power users as an AC 50Hz distribution system with a maximum working voltage of 660V and a maximum working current of 3150A. It is used for power distribution, motor control, and lighting distribution equipment for energy conversion and distribution control.

### 型号及含义 MODEL AND MEANING

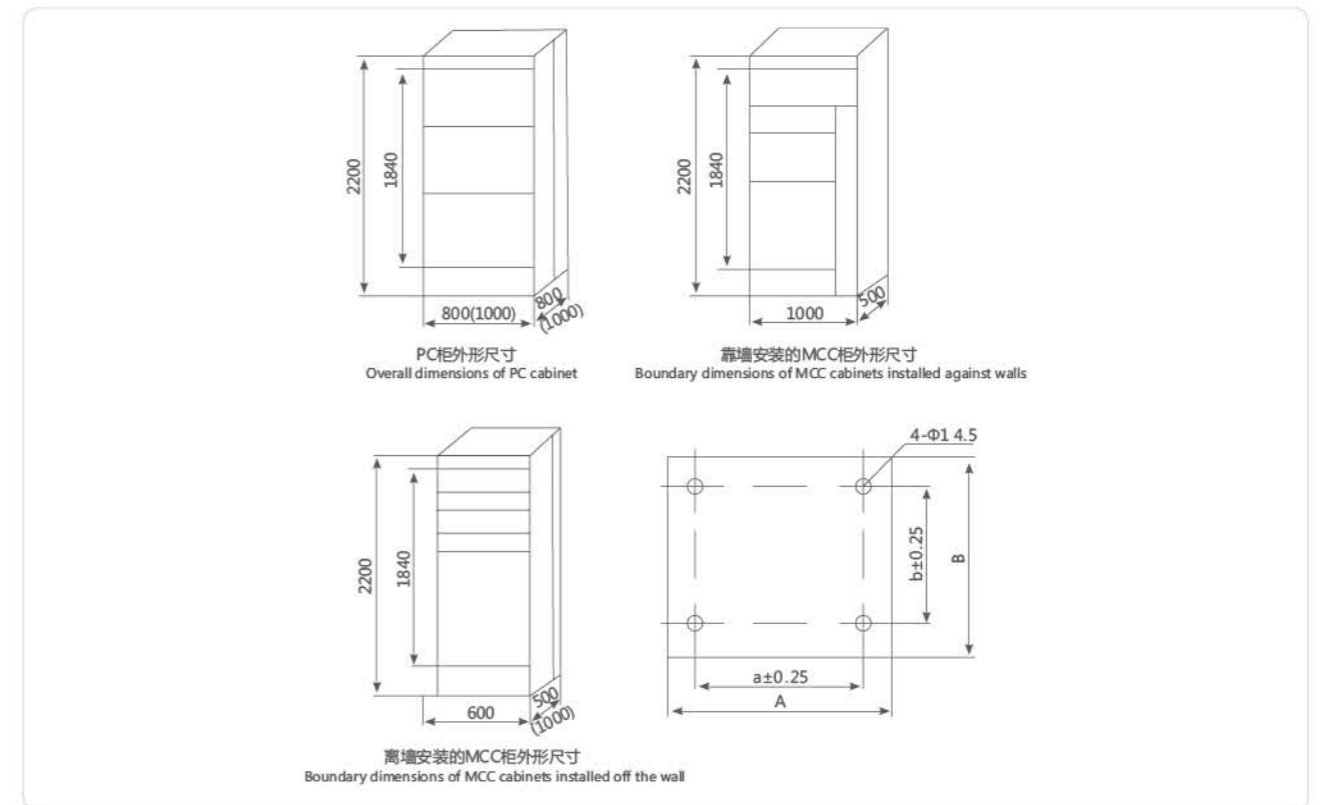
G C K(L) □ - □  
① ② ③ ④ ⑤

①	封闭式	Closed
②	抽出式	Withdrawable type
③	用途代号: K- 控制中心、L- 动力	Usage code: K-control center, L-power
④	设计序号: 1、2、3	Design number: 1, 2, 3
⑤	主电路方案号	Main circuit scheme number

### 基本技术参数 BASIC TECHNICAL PARAMETERS

额定工作频率 (Hz) Rated operating frequency (Hz)		50
额定工作电压 (V) Rated working voltage (V)		380, 660
额定绝缘电压 (V) Rated insulation voltage (V)		660
额定工作电流 (A) Rated working current (A)	水平母线 Horizontal busbar	630-3150
	垂直母线 Vertical busbar	600
额定短时耐受电流 Rated short time withstand current	水平母线 Horizontal busbar	80kA/1s(有效值)(Effective value)
	垂直母线 Vertical busbar	50kA/1s(有效值)(Effective value)
额定峰值耐受电流 Rated peak withstand current	水平母线 Horizontal busbar	176kA/0.1s
	垂直母线 Vertical busbar	110kA/0.1s
主电路接插件 (A) Main circuit connector (A)		200, 400
辅助电路接插件 (A) Auxiliary circuit connector (A)		10
工频耐压 1 分钟 (V) Power frequency withstand voltage for 1 minute (V)		2500
防护等级 Protection level Класс защиты		IP40
操作方式 Operation mode Режим работы		就地, 远方, 自动 Local, remote, automatic

### 外形及安装尺寸 APPEARANCE AND INSTALLATION DIMENSIONS



### 安装尺寸及安装孔 INSTALLATION DIMENSIONS AND HOLES

柜宽 Cabinet width	柜深 Cabinet depth	安装孔距 Installation hole spacing	安装孔距 Installation hole spacing
800	500	685	385
600	800	485	685
600	1000	485	885
800	800	685	685
800	1000	685	885
1000	800	885	685
1000	1000	885	885

# GGD

## 交流低压配电柜

### AC LOW-VOLTAGE DISTRIBUTION CABINET



#### 产品概述 OVERVIEW

GGD 型交流低压配电柜适用于发电厂、变电站、厂矿企业等电力用户的交流 50Hz，额定工作电压 380V，额定工作电流至 3150A 的配电系统，作为动力、照明及配电设备的电能转换、分配与控制之用。

GGD 型交流低压配电柜是根据能源部主管上级与广大电力用户及设计部门的要求，本着安全、经济、合理、可靠的原则设计的新型低压配电柜。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，可作为低压成套开关设备的更新换代产品使用。

GGD 型交流低压配电柜符合 IEC 439 《低压成套开关设备和控制设备》，GB 7251 《低压成套开关设备》等标准。

GGD type AC low voltage distribution cabinet is suitable for power plants, substations, mining enterprises and other power users with AC 50Hz, rated working voltage 380V, and rated working current up to 3150A in distribution systems. It is used for power conversion, distribution, and control of power, lighting, and distribution equipment.

GGD type AC low-voltage distribution cabinet is a new type of low-voltage distribution cabinet designed based on the principles of safety, economy, rationality, and reliability, in accordance with the requirements of the superior authorities of the Ministry of Energy and the majority of power users and design departments. The product has the characteristics of high breaking capacity, good dynamic and thermal stability, flexible electrical solutions, convenient combination, serializability, strong practicality, novel structure, and high protection level. It can be used as an updated product for low-voltage switchgear.

The GGD type AC low-voltage distribution cabinet complies with standards such as IEC 439 "Low Voltage Switchgear and Control Equipment" and GB 7251 "Low Voltage Switchgear".

#### 型号及含义 MODEL AND MEANING

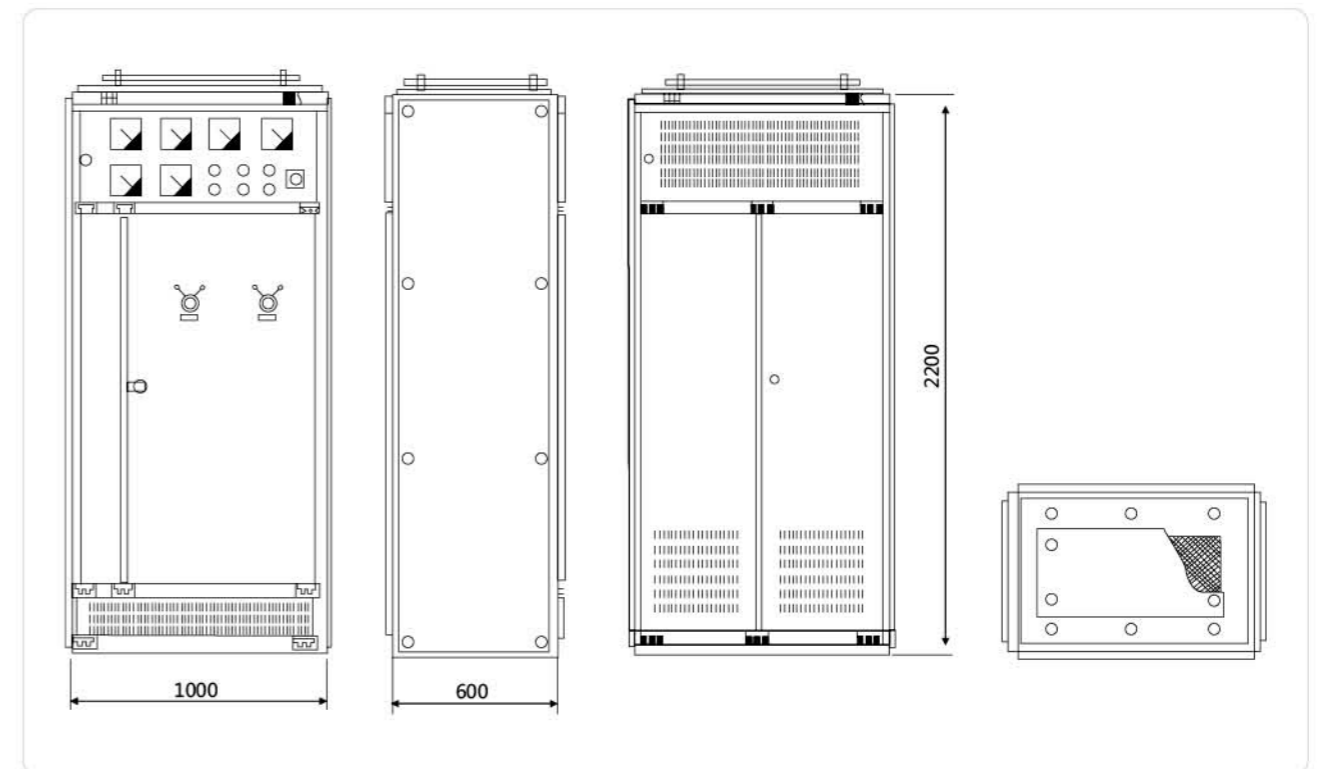
G G D □ - □ □  
 ① ② ③ ④ ⑤ ⑥

①	电力用柜	Power cabinet
②	电器元件固定安装、固定接线	Fixed installation and wiring of electrical components
③	交流低压配电柜	AC low-voltage distribution cabinet
④	设计序号: 1-- 分断能力为 15kA 2-- 分断能力为 30kA 3-- 分断能力为 50kA	Design number: 1- Breaking capacity of 15kA 2- Breaking capacity is 30kA 3- Breaking capacity is 50kA
⑤	主电路方案代号	Main circuit scheme code
⑥	辅助电路方案代号	Auxiliary circuit scheme code

#### 电气性能 ELECTRICAL PERFORMANCE

型号 model	额定电压 rated voltage	额定电流 rated current	额定短路开断电流 rated short circuit breaking current	额定短时耐受电流 rated short circuit breaking current	额定峰值耐受电流 rated peak withstand current
GGD1	380	A 1000	15	15	30
		B 600(630)			
		C 400			
GGD2	380	A 1500(1600)	30	30	63
		B 1000			
		C 600			
GGD3	380	A 3150	50	50	105
		B 2500			
		C 2000			

#### 安装尺寸及安装孔 INSTALLATION DIMENSIONS AND HOLES





**GGJ**  
低压智能无功补偿柜

**LOW VOLTAGE INTELLIGENT REACTIVE POWER  
COMPENSATION CABINET**



**产品概述** OVERVIEW

GGJ 低压智能无功补偿柜是针对电网实际情况而专门设计的，它采用智能控制技术，一方面有效解决了在谐波工况下并联电容器自动投切无功补偿的问题，另一方面可以根据用户实际要求滤除谐波，清洁电网环境，降低损耗，消除谐波危害；并向系统提供容性无功，改善功率因数。可用于电力、冶金、石油化工、工矿企业、建筑、机械等行业配电系统中。

GGJ low-voltage intelligent reactive power compensation cabinet is specially designed for the actual situation of the power grid. It adopts intelligent control technology, effectively solving the problem of automatic switching of reactive power compensation by parallel capacitors under harmonic conditions. On the other hand, it can filter out harmonics according to user actual requirements, clean the power grid environment, reduce losses, and eliminate harmonic hazards; And provide capacitive reactive power to the system to improve power factor. It can be used in power distribution systems in industries such as electricity, metallurgy, petrochemical, industrial and mining enterprises, construction, machinery, etc.

**型号及含义** MODEL AND MEANING

GGJ □ - □ / □ □  
① ② ③ ④ ⑤

①	低压智能无功补偿柜	Low voltage intelligent reactive power compensation cabinet
②	额定电压 (kV)	Rated voltage (kV)
③	额定电流 (A)	Rated current (A)
④	谐波支路 (3、5、7、11)	Harmonic branch (3, 5, 7, 11)
⑤	J: 静态 D: 动态	J: Static D: Dynamic

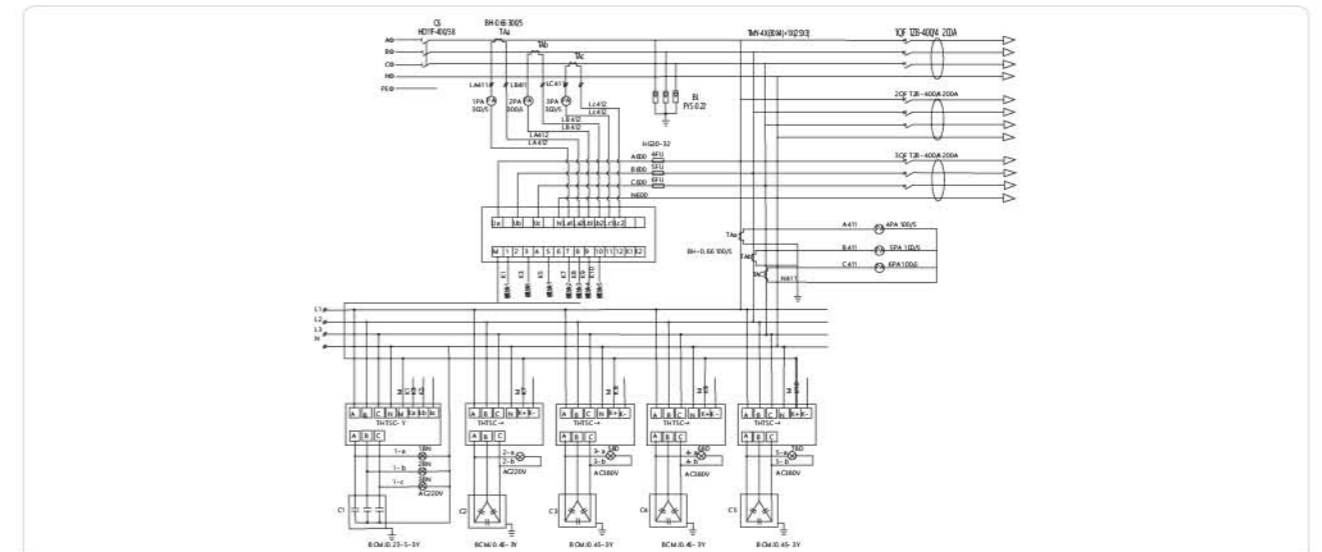
**技术参数** TECHNICAL PARAMETER

电动机就地补偿计算及确定所需的电容电量  
Calculation and determination of the required capacitance quantity for on-site compensation of electric motors

为获得所需 COSΦ2 每千瓦负荷所需电容器千乏数  
To obtain the required COS Φ 2 Kilometers of capacitors required per kilowatt load

tanΦ1	补偿前 Before compensation cosΦ1	为获得所需 COSΦ2 每千瓦负荷所需电容器千乏数										
		cosΦ2 =0.7	cosΦ2 =0.75	cosΦ2 =0.8	cosΦ2 =0.82	cosΦ2 =0.85	cosΦ2 =0.87	cosΦ2 =0.9	cosΦ2 =0.92	cosΦ2 =0.95	cosΦ2 =0.97	cosΦ2 =1.00
4.9	0.2	3.88	4.02	4.15	4.2	4.28	4.33	4.41	4.47	4.57	4.65	4.9
3.87	0.25	2.85	2.99	3.12	3.17	3.25	3.31	3.39	3.45	3.54	3.62	3.87
3.18	0.3	2.16	2.3	2.43	2.48	2.56	2.61	2.7	2.75	2.85	2.93	3.18
2.68	0.35	1.66	1.79	1.93	1.98	2.06	2.11	2.19	2.25	2.35	2.43	2.68
2.29	0.4	1.27	1.41	1.54	1.59	1.67	1.72	1.81	1.87	1.96	2.04	2.29
2.16	0.42	1.14	1.28	1.41	1.46	1.54	1.59	1.68	1.74	1.83	1.91	2.16
2.04	0.44	1.02	1.16	1.29	1.34	1.42	1.47	1.56	1.62	1.71	1.79	2.04
1.93	0.46	0.91	1.05	1.18	1.23	1.31	1.36	1.45	1.5	1.6	1.68	1.93
1.83	0.48	0.81	0.95	1.08	1.13	1.21	1.26	1.34	1.4	1.5	1.58	1.83
1.73	0.5	0.71	0.85	0.98	1.03	1.11	1.17	1.25	1.31	1.4	1.48	1.73
1.64	0.52	0.62	0.76	0.89	0.94	1.02	1.08	1.16	1.22	1.31	1.39	1.64
1.56	0.54	0.54	0.68	0.81	0.86	0.94	0.99	1.07	1.13	1.23	1.31	1.56
1.48	0.56	0.46	0.6	0.73	0.78	0.86	0.91	1	1.05	1.15	1.23	1.48
1.4	0.58	0.38	0.52	0.65	0.71	0.78	0.84	0.92	0.98	1.08	1.15	1.4
1.33	0.6	0.31	0.45	0.58	0.64	0.71	0.77	0.85	0.91	1	1.08	1.33
1.27	0.62	0.25	0.38	0.52	0.57	0.65	0.7	0.78	0.84	0.94	1.01	1.27
1.2	0.64	0.18	0.32	0.45	0.5	0.58	0.63	0.72	0.77	0.87	0.95	1.2
1.14	0.66	0.12	0.26	0.39	0.44	0.52	0.57	0.65	0.71	0.81	0.89	1.14
1.08	0.68	0.06	0.2	0.33	0.38	0.46	0.51	0.59	0.65	0.75	0.83	1.08
1.02	0.7		0.14	0.27	0.32	0.4	0.45	0.54	0.59	0.69	0.77	1.02
0.96	0.72		0.08	0.21	0.27	0.34	0.4	0.48	0.54	0.63	0.71	0.96
0.91	0.74		0.03	0.16	0.21	0.29	0.34	0.42	0.48	0.58	0.66	0.91
0.86	0.76			0.11	0.16	0.24	0.29	0.37	0.43	0.53	0.6	0.86
0.8	0.78			0.05	0.1	0.18	0.24	0.32	0.38	0.47	0.55	0.8
0.75	0.8				0.05	0.13	0.18	0.27	0.32	0.42	0.5	0.75
0.7	0.82					0.08	0.13	0.21	0.27	0.37	0.45	0.7
0.65	0.84					0.03	0.08	0.16	0.22	0.32	0.4	0.65
0.59	0.86						0.03	0.11	0.17	0.26	0.34	0.59
0.84	0.88							0.06	0.11	0.21	0.29	0.54
0.48	0.9								0.06	0.16	0.23	0.48
0.48	0.92									0.1	0.18	0.43
0.36	0.94									0.03	0.11	0.36
0.29	0.96										0.01	0.29
0.2	0.98											0.2

**参考方案** REFERENCE SCHEME



# GZDW 直流电源柜

## DC POWER SUPPLY CABINET



### 产品概述 OVERVIEW

GZDW 直流电源柜应用于大中小型发电厂和变电站，作为正常运行和事故状态下的高压开关分合闸、继电保护、自动控制、事故照明、灯光和音响信号等所需的直流电源也可应用于冶金、铁道、矿山、石化、邮电、通讯、医疗卫生、银行、宾馆、高层建筑和计算机网络等行业所需的直流电源；微机控制直流电源柜可用于无人职守、远程集中监控的发电厂、变电站和其他行业的直流电源。

本产品符合 JB/T5777 4-2000 《电力系统直流电源设备通用技术条件及安全要求》标准。

The GZDW DC power supply cabinet is applied to large, medium, and small power plants and substations as a DC power supply for high-voltage switch opening and closing, relay protection, automatic control, accident lighting, lighting, and audio signals under normal operation and accident conditions. It can also be used as a DC power supply for industries such as metallurgy, railway, mining, petrochemical, postal and telecommunications, communication, medical and health, banks, hotels, high-rise buildings, and computer networks; The microcomputer controlled DC power cabinet can be used for unmanned and remote centralized monitoring of DC power supply in power plants, substations, and other industries.

This product complies with the JB/T5777 4-2000 "General Technical Conditions and Safety Requirements for DC Power Supply Equipment in Power Systems" standard.

### 型号及含义 MODEL AND MEANING

G Z D W - □ □  
① ② ③ ④ ⑤ ⑥

①	柜	cabinet
②	直流电源	DC power supply
③	电力系统	Power system
④	微机控制型	Microcomputer controlled type
⑤	电池容量	Battery capacity
⑥	电压等级	Voltage level

### 技术参数 TECHNICAL PARAMETER

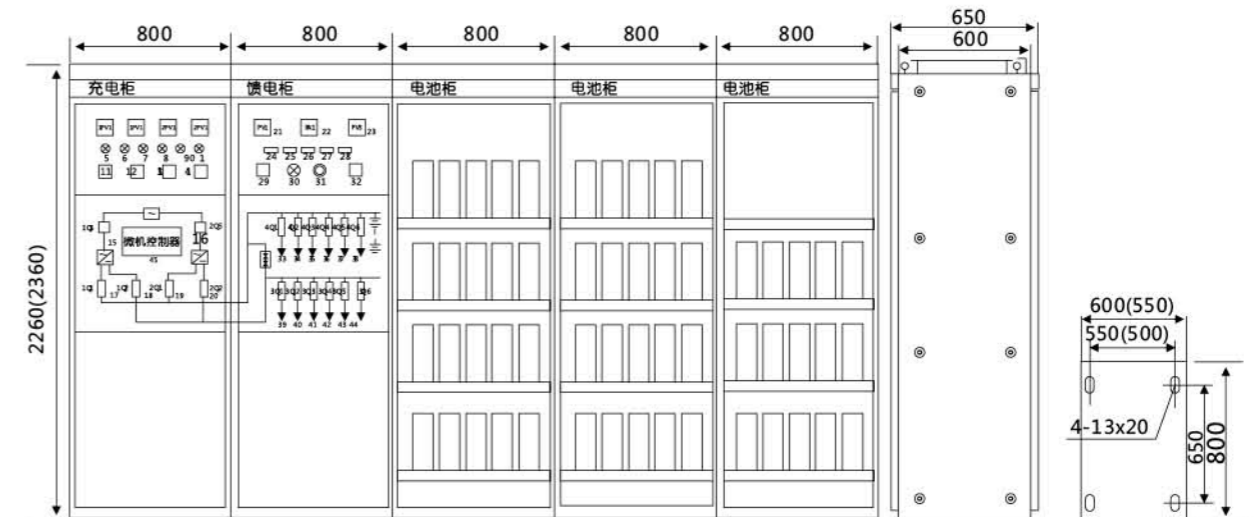
- ◇ 输入电源电压：三相交流 380V±10%，50Hz±5%；
- ◇ 输出直流电压额定值：24V；48V；110V；220V；
- ◇ 输出直流电流额定值：5A，8A，10A，15A，20A，30A，40A，50A，80A，100A，150A，200A，250A；
- ◇ 蓄电池额定容量：10Ah，20Ah，38Ah，40Ah，50Ah，60Ah，65Ah，80Ah，100Ah，150Ah，200Ah，250Ah，300Ah，400Ah；
- ◇ 电压调节范围（见表 1）；
- ◇ 输出直流电流调节范围：额定值的 0~100%；
- ◇ 稳定精度 <±1%；
- ◇ 稳流精度 <±1%；
- ◇ 纹波系数：<1%；
- ◇ 整机噪声：<55dB；
- ◇ 主变压器温升：70℃；
- ◇ 工作方式：连续工作；
- ◇ 效率 >90%；
- ◇ 防护等级：IP20~IP30；

- ◇ Input power supply voltage: three-phase AC 380V±10%, 50Hz±5%;
- ◇ Rated output DC voltage: 24V; 48V; 110V; 220V;
- ◇ Rated output DC current: 5A, 8A, 10A, 15A, 20A, 30A, 40A, 50A, 80A, 100A, 150A, 200A, 250A;
- ◇ Rated capacity of battery: 10Ah, 20Ah, 38Ah, 40Ah, 50Ah, 60Ah, 65Ah, 80Ah, 100Ah, 150Ah, 200Ah, 250Ah, 300Ah, 400Ah;
- ◇ Voltage regulation range (see Table 1);
- ◇ Output DC current regulation range: 0-100% of rated value;
- ◇ Stable accuracy <± 1%;
- ◇ Stable current accuracy <± 1%;
- ◇ Ripple coefficient: <1%;

表 1 Table 1

输出直流电压额定值 Output DC voltage rating номинальное выходное напряжение постоянного тока	24V	48V	110V	220V
浮充电压调节范围 Floating charge voltage regulation range диапазон регулирования напряжения заряда	21-28	43-57	99-130	198-260
均充电压调节范围 Equalizing charging voltage regulation range диапазон регулирования среднего зарядного напряжения	27-31	54-62	125-140	198-286
主充电压调节范围 Main charging voltage regulation range диапазон регулирования напряжения основного заряда	21-36	43-70	99-162	187-310

### 安装尺寸及安装孔 INSTALLATION DIMENSIONS AND HOLES



直流电源柜屏面布置及安装图例（按用户实际需要作屏面布置）  
DC power cabinet screen layout and installation legend (screen layout according to user's actual needs)

## 消防泵自动巡检控制设备

## AUTOMATIC INSPECTION AND CONTROL EQUIPMENT FOR FIRE PUMPS



### 产品概述 OVERVIEW

随着城市的快速发展,各种建筑日益增多,各种易燃物的大量运用,加上人对防火的意识不强,这大大增加了发生火灾的可能性。尽管目前每幢建筑都配备了消防灭火系统,但经验和教训都证明,火灾的补救成功与否,主要取决于消防给水设备是否完好。消防水泵是灭火系统中的一个重要组成部分,其特点是平时长期不用,一旦使用就要100%发挥作用,由于长期处于闲置状态,加上泵房的环境潮湿,很容易发生消防泵轴和叶轮锈蚀、锈死和电气元件不能正常使用的现象,以至发生火灾时,消防泵不能正常运转,无法扑灭火灾,危害了人民群众的生命财产安全。

为解决这些消防难题,我公司结合以上问题,研制出了集报警、监视、控制、管理于一体的智能型消防巡检系统并已批量投入生产和使用;本产品可防止消防水泵锈蚀、受潮、水泵不正常等故障的作用,做到“养兵一日,用兵一时”的目的,本设备还具有主备水泵自动互投,当主泵故障后,备用泵自动投入。主备电源自动互投,当主电源故障后,备用电源会自动投入等功能并会对上述所有功能提供数据远传、图像监控、故障报警、信息打印等功能;该产品符合公安部颁布的行业性强制标准《GA30.2 固定消防给水设备的性能要求和经验方法》和国家标准 GB16806,并且通过国家 CCCF 强制认证。

With the rapid development of cities, various types of buildings are increasing, and a large amount of flammable materials are being used. In addition, people's awareness of fire prevention is not strong, which greatly increases the possibility of fires. Although each building is currently equipped with a fire extinguishing system, experience and lessons have proven that the success of fire remediation mainly depends on whether the fire water supply equipment is intact. The fire pump is an important component of the fire extinguishing system. Its characteristic is that it is not used for a long time, but once it is used, it must be 100% effective. Due to its long-term idle state and the humid environment of the pump room, it is easy for the fire pump shaft and impeller to rust and die, and the electrical components to not function properly. In the event of a fire, the fire pump cannot operate normally and cannot extinguish the fire, endangering the safety of people's lives and property.

To solve these fire safety problems, our company has developed an intelligent fire inspection system that integrates alarm, monitoring, control, and management, and has been put into mass production and use. This product can prevent the fire pump from rusting, getting damp, and malfunctioning, achieving the goal of "raising troops for a day and using them for a while". The equipment also has automatic exchange of main and backup water pumps. When the main pump fails, the backup pump will automatically be put into operation. The main and backup power supplies are automatically switched on. When the main power supply fails, the backup power supply will automatically switch on and provide functions such as data remote transmission, image monitoring, fault alarm, and information printing for all the above functions. This product complies with the industry mandatory standard "GA30.2 Performance Requirements and Experience Methods for Fixed Fire Water Supply Equipment" issued by the Ministry of Public Security and the national standard GB16806, and has passed the national CCCF mandatory certification.

### 使用环境 USAGE ENVIRONMENT

- ◇ 环境温度: -10°C~55°C;
- ◇ 空气机对湿度应低于95% (在温度为40°C±2°C);
- ◇ 海拔高度不超过2000m;
- ◇ 运行地质无导电、爆炸尘埃,没有腐蚀性金属和破坏性绝缘气体;
- ◇ 运行地无震动和冲击。

- ◇ Environmental temperature: -10°C~55°C;
- ◇ The humidity of the air conditioner should be below 95% (at a temperature of 40°C±2°C);
- ◇ Altitude not exceeding 2000m;
- ◇ The geological operation is free from conductive and explosive dust, corrosive metals, and destructive insulating gases;
- ◇ There is no vibration or impact during operation.

### 工作条件 WORKING CONDITIONS

- ◇ 市电输入三相电压;
- ◇ 市电输入电压: 170V-250V;
- ◇ 市电频率: 50Hz±2.5Hz。

- ◇ Input three-phase voltage of mains power;
- ◇ mains input voltage: 170V-250V;
- ◇ mains frequency: 50Hz±2.5Hz.

### 产品功能 PRODUCT FUNCTION

- ◇ 降压巡检水泵: 通过星形降压轮流启动对每台水泵进行周期性巡检,既解决高水压对管网冲击又能将水泵状态反馈保存
- ◇ 水泵温度及绝缘检测: 实时对水泵的温度及绝缘性检测,提高水泵寿命和安全性
- ◇ 电源监控: 传感器对电流、电压、断相、缺相、相序检测等信号采集和数据保存
- ◇ 火灾监控及主动灭火: 电线电缆、设备温度、火灾检测等进行监控和报警,发现火灾时自动灭
- ◇ 火控制设备除湿: 检测控制设备的温湿度,进行加热除湿或散热
- ◇ 消防池液位检测: 通过液位传感器进行消防池的超低液位报警和水位实时检测
- ◇ 管网检测: 通过传感器对进水管道的压力和流量进行检测,出水口消防及喷淋管道压力进行检测物联网采集及数据保存: 实时对以上所有数据进行保存及打印,并通过物联网采集发送至监控终端,具有故障报警、掉电闪存功能、故障存储记录功能,可存储256条故障记录,方便维修人员检修和故障分析,可与公司监控中心或公安消防部门的计算机联网,24小时对设备实时监控、监测,实现计算机远程监控、全方位网络中心管理,进一步加强了安全监控
- ◇ 采用中文大液晶触摸屏作为人机界面,操作方便,简单直观
- ◇ 巡检过程中如遇消防信号立即退出巡检,并马上启动消防栓泵和喷淋泵

◇ Pressure reduction inspection of water pumps: Periodic inspections of each water pump are carried out by alternately starting star shaped pressure reduction, which not only solves the impact of high water pressure on the pipeline network but also provides feedback and saves the status of the water pumps

◇ Water pump temperature and insulation detection: Real time temperature and insulation detection of the water pump to improve its service life and safety

Power monitoring: Sensors collect and store signals such as current, voltage, phase failure, phase loss, and phase sequence detection  
Fire monitoring and active fire extinguishing: monitoring and alarming of wires and cables, equipment temperature, fire detection, etc., and automatically extinguishing when a fire is detected

Dehumidification of fire control equipment: detect the temperature and humidity of the control equipment, and perform heating, dehumidification or heat dissipation

◇ Fire pool liquid level detection: The ultra-low liquid level alarm and real-time water level detection of the fire pool are carried out through liquid level sensors

Pipeline network detection: The pressure and flow of the inlet main pipeline are detected through sensors, and the pressure of the outlet fire and sprinkler pipelines is detected through IoT collection and data storage. All the above data is saved and printed in real time, and sent to the monitoring terminal through IoT collection. It has fault alarm, power down flash memory function, fault storage record function, and can store 256 fault records, which is convenient for maintenance personnel to repair and analyze. It can be connected to the computer network of the company's monitoring center or the public security fire department, and the equipment can be monitored and monitored in real-time 24 hours, realizing remote computer monitoring and all-round network center management, further strengthening safety monitoring

Adopting a large Chinese LCD touch screen as the human-machine interface, it is easy to operate, simple and intuitive  
If a fire signal is encountered during the inspection process, immediately exit the inspection and start the fire hydrant pump and sprinkler pump immediately

**JP**  
户外综合配电箱

**OUTDOOR COMPREHENSIVE DISTRIBUTION BOX**



**产品概述**

JP户外综合配电箱是集计量、出线、无功补偿等多功能于一体的，户外综合配电装置，集短路、过载、过电压、漏电等保护功能；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，是城乡电网改造的新一代理想配电产品。

JP outdoor comprehensive distribution box is an outdoor comprehensive distribution device that integrates multiple functions such as metering, outgoing lines, and reactive power compensation; Integrate protection functions such as short circuit, overload, overvoltage, and leakage; Small in size, aesthetically pleasing in appearance, economical and practical, installed on outdoor pole mounted transformers, it is a new generation of ideal distribution products for urban and rural power grid renovation.

**型号及含义** MODEL AND MEANING

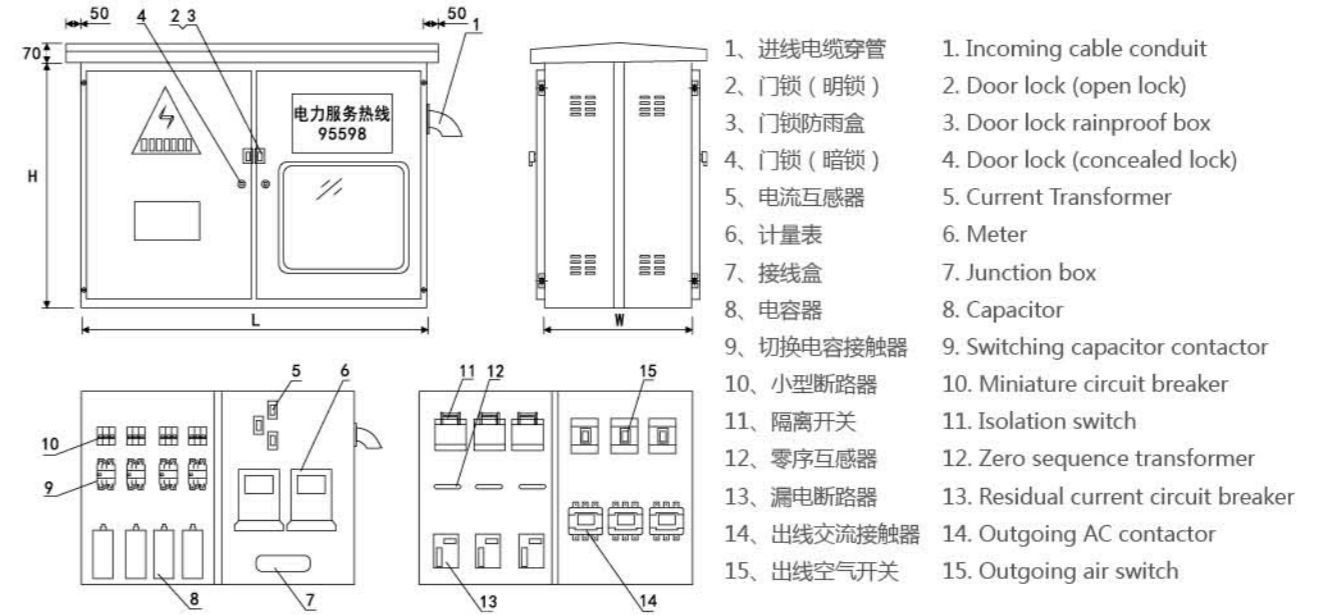
JP - □ / □  
① ② ③

①	综合配电箱	Comprehensive distribution box
②	变压器容量	Transformer capacity
③	主回路方案号	Main circuit scheme number

**技术参数** TECHNICAL PARAMETER

序号 Serial Number	名称 Name	单位 Unit	参数 Parameter
1	变压器容量 Transformer capacity	KVA	30-400
2	额定工作电压 Rated working voltage	V	AC400
3	辅助回路工作电压 Auxiliary circuit working voltage	V	AC220, AC380
4	额定频率 Rated frequency	HZ	50
5	额定电流 Rated current	A	≤ 630
6	额定落点动作电流 Rated landing point action current	A	30-300 可调 adjustable
7	防护等级 Protection level		IP44

**安装尺寸图** DRAWING



变压器容量 transformer capacity	方案号 Scheme number	L	W	1H
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

## 风光储能升压一体舱

### WIND AND SOLAR ENERGY STORAGE AND BOOST INTEGRATED CABIN



#### 产品概述 OVERVIEW

风光储能升压一体舱，将箱式逆变器站与箱式升压站融合为一体，在一面箱体内即可完成光伏直流输入至三相高压交流输出，优化系统结构，去除功能重复，结构更合理，功能更完善，体积更小巧，设备全部工厂化施工与调试，并省掉原箱式逆变器站与箱式升压站之间的电缆及电缆沟，为业主节约了大量的设备及施工费用，为业主创造了更多的经济效益，此类型变可称为“具备逆变功能的箱变”分为 35kV 欧式一体式光伏电站与 35kV 美式一体式光伏电站。

The integrated cabin for wind solar energy storage and boost integrates the box type inverter station and the box type boost station into one, which can complete the photovoltaic DC input to three-phase high-voltage AC output in one box. It optimizes the system structure, removes functional duplication, has a more reasonable structure, more complete functions, and a smaller size. All equipment is factory constructed and debugged, and the cables and cable trenches between the original box type inverter station and the box type boost station are saved, saving a lot of equipment and construction costs for the owners and creating more economic benefits. This type of transformer can be called "box transformer with inverter function", which is divided into 35kV European style integrated photovoltaic power station and 35kV American style integrated photovoltaic power station.

#### 35kV 欧式风光储能升压一体舱 35KV EUROPEAN STYLE WIND SOLAR ENERGY STORAGE BOOST INTEGRATED CABIN

分裂变压器电压等级为 35kV，集成逆变模块、升压模块，将光伏组件发出的直流电能，直接逆变升压到 35kV 电压等级后，并入电网的光伏升压箱变。箱体布置呈“目”字型结构，分高压室、变压器室、逆变器室，融合民电最新设计理念，整体结构紧凑、功能完善，箱体防腐能力强，环境适应性好，现场安装简单，只需预制基础即可，大幅提高了现场工作效率。

The voltage level of the split transformer is 35kV, and it integrates an inverter module and a boost module to directly invert and boost the DC power generated by the photovoltaic modules to 35kV voltage level, and then integrate it into the photovoltaic boost box transformer of the power grid. The box is arranged in a "eye" shaped structure, divided into high-voltage room, transformer room, and inverter room, integrating the latest design concepts of civil power. The overall structure is compact, the functions are complete, the box has strong anti-corrosion ability, good environmental adaptability, and simple on-site installation. Only prefabricated foundations are needed, greatly improving on-site work efficiency.

#### 35kV 美式风光储能升压一体舱 35KV AMERICAN STYLE WIND SOLAR ENERGY STORAGE BOOST INTEGRATED CABIN

分裂变压器电压等级为 35kV，集成逆变模块、升压模块，将光伏组件发出的直流电能，直接逆变升压到 35kV 电压等级后，并入电网的箱变。箱体布置呈“L”字型结构，分高压室、低压室、逆变器室，融合民电最新设计理念，整体结构紧凑、功能完善，箱体防腐能力强，环境适应性好，现场安装简单，只需预制基础即可，大幅提高了现场工作效率。

The product features a split transformer with a voltage level of 35kV. It integrates an inverter module and a boost module to directly invert and boost the DC power generated by photovoltaic modules to a voltage level of 35kV, which is then connected to the grid as a box transformer. The box is arranged in an "L" - shaped structure, divided into high voltage room, low voltage room, and inverter room, integrating the latest design concepts of civil power. The overall structure is compact, the functions are complete, the box has strong anti-corrosion ability, good environmental adaptability, simple on-site installation, and only requires prefabricated foundations, greatly improving on-site work efficiency.

#### 产品特点 PRODUCT FEATURES

- 集成式吊顶，整体美观，产品档次高。
- 一体化风道，通风量大，逆变器运行更安全、效率更高。
- 箱柜一体化，箱变各模块与箱体融为一体，外观档次高。
- 空间最优化，充分利用箱体内空间，便于检修、维护。

- Integrated ceiling, overall beauty, high product grade.
- Integrated air duct, large ventilation volume, safer and more efficient inverter operation.
- Integrated box and cabinet, the modules of the box transformer are integrated with the box body, and the appearance is of high grade.
- Space optimization, fully utilizing the space inside the box for easy maintenance and repair.

**XL-21**  
动力箱

POWER



**产品概述** OVERVIEW

XL-21 动力箱广泛用于发电厂及工矿企业中，在三相交流 500V 以下三相三线、三相四线、三相五线等配电系统中作动力或照明配电之用，系户内靠墙安装，屏前操作，屏前检修；箱体为全封闭结构，由 C 型材或 8MF 型材拼装而成。箱内采用新型旋转式负荷隔离开关，可带负荷操作，正面上装有电压、电流指示仪表以及信号灯、按钮、转换开关等主令元件。本配电箱内采用自行设计的新型组件，结构紧凑，造型美观大方，维护方便，多种接线方案可供用户选择。

The XL-21 power box is widely used in power plants and industrial and mining enterprises. It is used for power or lighting distribution in distribution systems with three-phase AC below 500V, including three-phase three wire, three-phase four wire, and three-phase five wire. It is installed indoors against the wall, operated in front of the screen, and maintained in front of the screen; The box is a fully enclosed structure, assembled from C profiles or 8MF profiles. The box adopts a new type of rotating load isolation switch, which can be operated with load. The front door is equipped with voltage and current indicating instruments, as well as signal lights, buttons, conversion switches and other main components. This distribution box adopts self-designed new components, with a compact structure, beautiful and elegant appearance, convenient maintenance, and multiple wiring schemes for users to choose from.

**型号及含义** MODEL AND MEANING

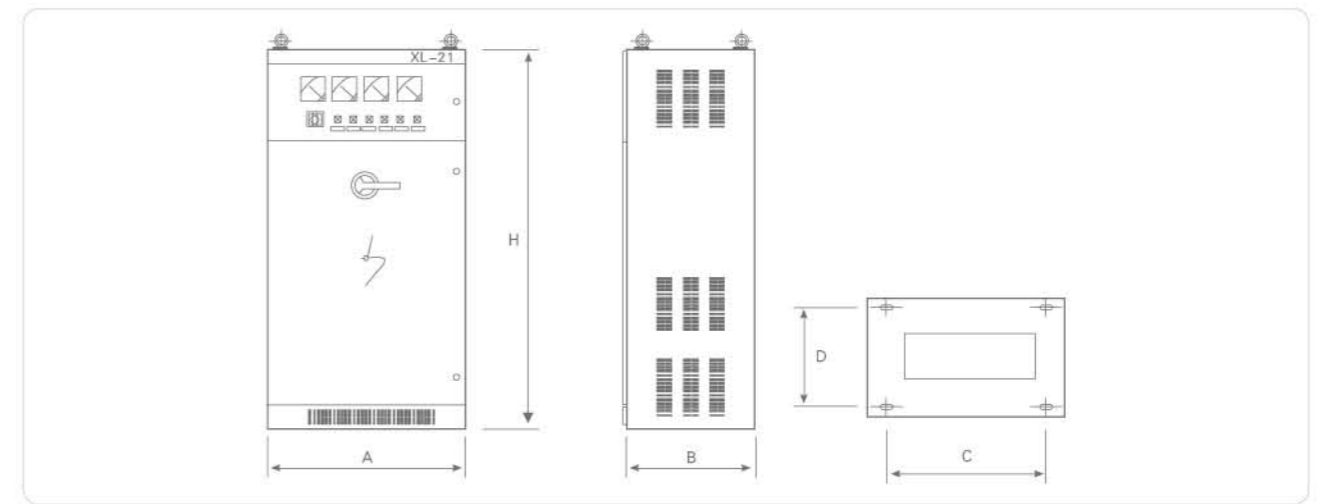
X L (F) - 21 - □  
① ② ③ ④ ⑤

①	箱式	Box type
②	动力	power
③	防尘式	Dustproof type
④	设计序号	Design serial number
⑤	主电路方案号	Main circuit scheme number

**技术参数** TECHNICAL PARAMETER

序号 Serial	名称 Name	单位 Unit	参数 Parameter
1	主电路额定电压 Rated voltage of main circuit	V	AC:380
2	辅助电路额定电压 Rated voltage of auxiliary circuit	V	AC:220,380
3	额定频率 Rated frequency	HZ	50
4	额定绝缘电压 Rated insulation voltage	V	660
5	额定电流 Rated current	A	≤ 800A

**箱体外形及安装尺寸** BOX APPEARANCE AND INSTALLATION DIMENSIONS



A	B	C	D	H
800(600) 可选 optional	500(400) 可选 optional	650(450)	450(350)	1800(1600) 可选 optional

新 XL-21 型动力配电箱外形及安装尺寸图  
Outline and Installation Dimension Drawing of New XL-21 Power Distribution Cabinet

**主回路方案** MAIN CIRCUIT SCHEME

注: Pour: A.

“  ”	为隔离开关: 型号可选用 QSA 系列、HR5(箱内操作);	For isolating switches: models can be selected from QSA series or HR5 (box operated);
“  ”	为隔离开关: 型号可选用 QA、QP 系列;	For isolating switches: QA and QP series models can be selected;
“  ”	为熔断器: 型号可选用 RTO、NT00 等;	For fuses: models such as RTO and NT00 can be selected;
“  ”	为断路器: 型号可选用 DZ20、NM1、DZ47、NS、C45 等;	For circuit breakers: models can be selected such as DZ20, NM1, DZ47, NS, C45, etc;
“  ”	为接触器: 型号可选用 CJ20、B 系列、N 系列等;	Contactor: Model options include CJ20, B series, N series, etc;
“  ”	为热继电器: 型号可选用 JR20、JRS1、NR3 系列等;	For thermal relays: models can be selected from JR20, JRS1, NR3 series, etc;
“  ”	为互感器: 型号可选用 LMZJ1-0.5、LMK1-0.66 等;	Transformer: Models such as LMZJ1-0.5 and LMK1-0.66 can be selected;

以上产品型均可由客户另行指定。  
The above product types can be specified by the customer separately.

# ZW32-12F

户外高压智能分界  
真空断路器 (看门狗)

Outdoor High Voltage Intelligent Boundary Vacuum  
Circuit Breaker (Watchdog)



## 产品概述 OVERVIEW

ZW32F-12(G) 型户外交流高压分界真空断路器是我公司生产的一款新型产品, 分界断路器是集真空断路器、分界断路器、分段器四大开关与一体的多功能智能化装置产品, 主要配置由真空分界断路器本体、MGK16 型控制器、外置电压互感器 (注: 配网自动化环网线路中可选双侧 PT) 三大部分组成, 产品广泛用于 10kV 城市、农村配电网架空环网线路中作分段隔离开关、联络开关、可实行环网线路负荷调配的自动化开关装置, 在大用户供电的分支线路中可作为分界开关 (俗称看门狗), 馈线架空配电网作分界断路器分段器之用, 真空分界断路器具有远程管理模式, 保护控制功能及通讯功能。能可靠判断、检测界内毫安级零序电流及相间短路故障电流, 实现自动切除单相接地、故障和相间短路故障。

产品符合标准: GB1984、GB/T17215、GB17201。

ZW32F-12 (G) outdoor AC high-voltage boundary vacuum circuit breaker is a new product produced by our company. The boundary circuit breaker is a multi-functional intelligent device product integrating four switches, namely, vacuum circuit breaker, boundary circuit breaker and sectionalizer. It is mainly composed of three parts, namely, vacuum boundary circuit breaker body, MGK16 controller and external Voltage transformer (note: double side PT can be selected in the distribution automation ring network line). The product is widely used in 10kV urban and rural distribution network overhead ring network lines as segmented isolation switches, contact switches, and automated switching devices that can implement load allocation of ring network lines. It can be used as a boundary switch (commonly known as a watchdog) in branch lines powered by large users, and as a segmented circuit breaker for feeder overhead distribution networks. The vacuum boundary circuit breaker has remote management mode, protection control function, and communication function. Reliable judgment and detection of milliampere level zero sequence current and interphase short circuit fault current within the boundary, achieving automatic removal of single-phase grounding, faults, and interphase short circuit faults.

The product meets the standards: GB1984, GB/T17215, GB17201.

## 型号及含义 MODEL AND MEANING

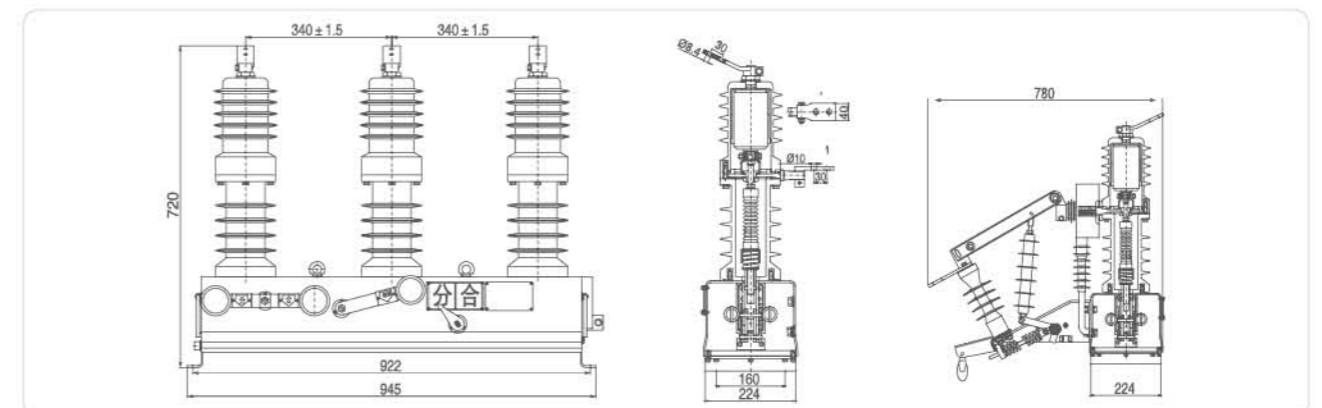
ZW 32 12 - F / □ □  
 ① ② ③ ④ ⑤ ⑥

①	户外真空断路器	Outdoor vacuum circuit breaker
②	设计序号	Design serial number
③	额定电压 (kV)	Rated voltage (kV)
④	分界式	Boundary equation
⑤	额定电流 (A)	Rated current (A)
⑥	额定短路开断电流 (kA)	Rated short-circuit breaking current (kA)

## 技术参数 TECHNICAL PARAMETER

项目 project	单位 unit	参数 parameter
额定电压 Rated voltage	kV	12
额定频率 Rated frequency	Hz	50
额定电流 Rated current	A	630, 1250
额定短路开断电流 Rated short-circuit breaking current	kA	16      20
额定短时耐受电流 Rated short time withstand current		16      20
额定峰值耐受电流 (峰值) Rated peak withstand current (peak)		40      50
额定短时持续时间 Rated short-term duration	S	4
额定短路关合电流 (峰值) Rated short-circuit making current (peak)		50
1min 工频耐压 1min power frequency withstand voltage	相间、对地 Phase to phase, ground to ground	42
	断口 fracture	48
雷电冲击耐压 Lightning impulse withstand voltage	相间、对地 Phase to phase, ground to ground	75
	断口 fracture	85
额定操作顺序 Rated operating sequence		分 O-0.3S-合分 CO-180S-合分 CO
额定电流开断次数 Rated current breaking times		10000
额定短路电流开断次数 Rated short-circuit current breaking times	次 OPS	50
机械寿命 mechanical life		30000
二次回路 1min 工频耐压 (电子器件除外) 1min power frequency withstand voltage of secondary circuit (excluding electronic devices)	V	2000

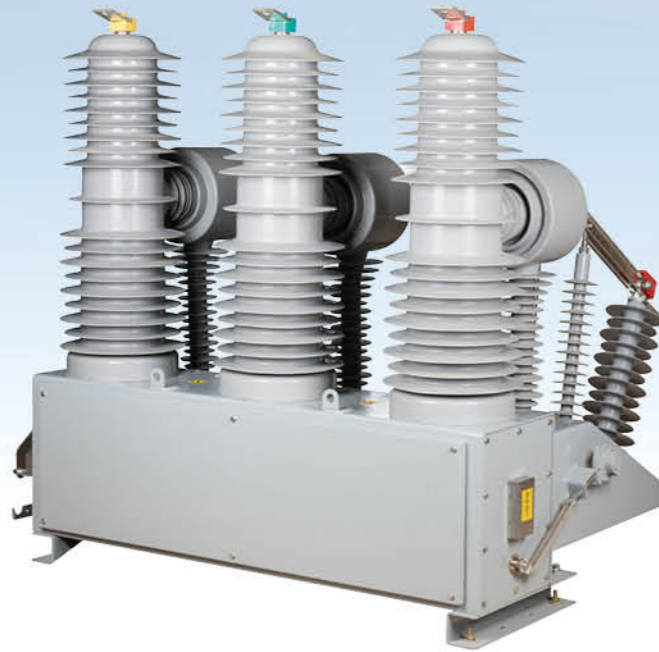
## 安装尺寸图 DRAWING



# ZW32-40.5FG

## 型户外高压真空断路器

### Outdoor High Voltage Vacuum Circuit Breaker



#### 产品概述 OVERVIEW

ZW32-40.5FG 型户外高压真空断路器主要由集成密封极柱、电流互感器、操动机构及箱体组成。可加装隔离开关，该型号断路器为小型化设计，外壳采用优质钢箱体。电流互感器可根据用户需要选择。

该装置主要应用于中压架空线电网，作为分、合负荷电流、过载电流、短路电流之用。

The ZW32-40.5FG outdoor high-voltage vacuum circuit breaker mainly consists of an integrated sealed pole, a current transformer, an operating mechanism, and a box. An isolation switch can be installed, and this model of circuit breaker is designed for miniaturization, with a high-quality steel casing. Current transformers can be selected according to user needs.

This device is mainly used in medium voltage overhead power grids as a means of breaking and closing load currents, overload currents, and short-circuit currents.

#### 型号及含义 MODEL AND MEANING

Z W 32 - 40.5 F M G / □ □

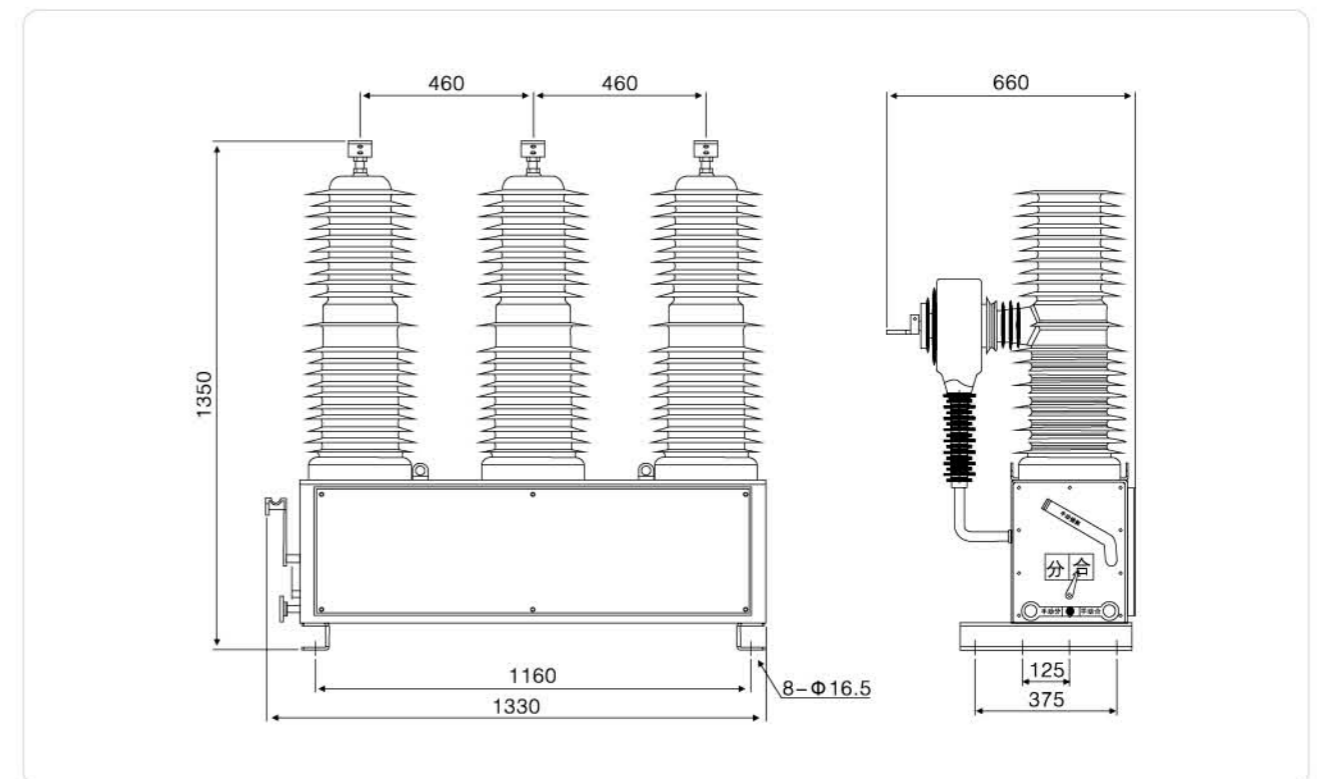
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

①	真空断路器	Vacuum circuit breaker
②	户外	Outdoor
③	产品设计序号	Product design serial number
④	额定电压 (kV)	Rated voltage (kV)
⑤	分界开关	Boundary switch
⑥	永磁开关	Permanent magnet switch
⑦	隔离开关	Isolation switch
⑧	额定电流 (A)	Rated current (A)
⑨	额定短路开断电流 (kA)	Rated short-circuit breaking current (kA)

#### 技术参数 TECHNICAL PARAMETER

项目 project	单位 unit	参数 parameter
额定电压 Rated voltage	kV	40.5
额定电流 Rated current	A	1250/1600
额定频率 Rated frequency	Hz	50 或 60
工频耐压 1min (湿) (干) 相间、对地/断口 Power frequency withstand voltage for 1 minute (wet) (dry) phase to phase, to ground/fracture	kV	80 95/95
雷电冲击耐受电流 (峰值) 相间、对地/断口 Lightning impulse withstand current (peak) between phases, to ground/break	kV	185
额定短路开断电流 Rated short-circuit breaking current	kA	25/31.5
额定短路关合电流 (峰值) Rated short-circuit making current (peak)	kA	63/80
额定峰值耐受电流 Rated peak withstand current	kA	63/80
4s 短时耐受电流 Short time withstand current for 4 seconds	kA	25/31.5
额定操作循环 Rated operating cycle		分 O-0.1s- 合分 CO-3s- 合分 CO-6s 合分 CO-60s 恢复
额定短路电流开断次数 Rated short-circuit current breaking times	次 OPS	30
机械寿命 Mechanical life	次 OPS	10000
机构控制电压 Mechanism control voltage	V	AC/DC220
二次回路 1min 工频耐压 1min power frequency withstand voltage of secondary circuit	kV	2

#### 安装尺寸图 DRAWING





# YZC 集装箱式储能系统

## CONTAINER TYPE ENERGY STORAGE SYSTEM



### 产品概述 OVERVIEW

本系统采用电气集成设计，将电池系统以外的所有设备进行封装及优化设备整体给用户，实现“即插即用”。通过预设和优化设计，降低定制化的要求，减少因本地安装差异和管理风险所带来的安全隐患。

This system adopts an electrical integration design, encapsulating and optimizing all devices except for the battery system to provide users with the overall device, achieving "plug and play". By presetting and optimizing the design, the requirements for customization are reduced, and the security risks caused by local installation differences and management risks are reduced.

### 产品特点 PRODUCT FEATURES

- ◇ 半集成式可实现快速安装调试
- ◇ 热仿真能力电池仓风道热仿真设计模拟真实应用场景
- ◇ 为维护设计系统能量密度更大
- ◇ 工业级散热系统维持最佳电池个仓温度提高电池使用寿命
- ◇ 完善的消防控制系统可进行声光报警与故障上传
- ◇ 双电源供电满足带载黑启动，即插即用
- ◇ 2小时耐火测试保证箱体的安全性

- ◇ Semi integrated for fast installation and debugging
- ◇ Thermal simulation ability: Thermal simulation design of battery compartment air duct, simulation of real application scenarios
- ◇ Design a system with higher energy density for maintenance purposes
- ◇ Industrial grade heat dissipation system maintains optimal battery compartment temperature to improve battery life
- ◇ A comprehensive fire control system can provide sound and light alarms and upload faults
- ◇ Dual power supply meets the requirements of on-load black start, plug and play
- ◇ 2-hour fire resistance test to ensure the safety of the box

### 正常使用条件 NORMAL CONDITION

产品规格 Product specifications	20 尺集装箱 20 foot container
功率 power	50-500kW
容量 capacity	根据客户需求订制 Customized according to customer needs
防护等级 Protection level	IP54
工作温度 working temperature	-30°C ~55°C
海拔 altitude	3000 米 3000 metre
尺寸 size	2438×2591×6058
散热系统 Heat dissipation system	工业空调 / 强制冷风 Industrial air conditioning/forced cold air
消防系统 Fire protection system	气体消防 Gas fire protection
耐火测试 Fire resistance test	2 小时 hours
风荷数 Wind load number	6kN/m <sup>3</sup>
抗震等级 Seismic rating	10 级 level
漆面 Paint finish	富锌底漆 + 氟碳面漆≥ 100μm Zinc rich primer+fluorocarbon topcoat ≥ 100 μm

产品规格 Product specifications	40 尺集装箱 40 foot container
功率 power	100-1000kW
容量 capacity	根据客户需求订制 Customized according to customer needs
防护等级 Protection level	IP54
工作温度 working temperature	-30°C ~55°C
海拔 altitude	3000 米 3000 metre
尺寸 size	2438×2591×12191
散热系统 Heat dissipation system	工业空调 / 强制冷风 Industrial air conditioning/forced cold air
消防系统 Fire protection system	气体消防 Gas fire protection
耐火测试 Fire resistance test	2 小时 hours
风荷数 Wind load number	6kN/m <sup>3</sup>
抗震等级 Seismic rating	10 级 level
漆面 Paint finish	富锌底漆 + 氟碳面漆≥ 100μm Zinc rich primer+fluorocarbon topcoat ≥ 100 μm

# HYB

## 新能源预装式变电站 (华式箱变)

### NEW ENERGY PREFABRICATED SUBSTATION (HUASHI BOX SUBSTATION)



#### 产品概述 OVERVIEW

HYB 新能源预装式变电站 (欧式箱变, 简称欧变, 其中变压器采用油浸式且散热器敞露在户外的结构形式又称为华变), 是集升压变压器、高压开关设备、低压开关设备及相应辅助配套装置于一体的高/低压预装式变电站。电压等级为 35kV 及以下, 容量范围为 100~6300kVA, 主要适用于新能源行业。

HYB New Energy Prefabricated Substation (European style box transformer, abbreviated as European transformer, in which the transformer adopts an oil immersed structure with radiators exposed outdoors, also known as Huabian) is a high/low voltage prefabricated substation that integrates step-up transformers, high-voltage switchgear, low-voltage switchgear, and corresponding auxiliary equipment. The voltage level is 35kV and below, with a capacity range of 100~6300kVA, mainly suitable for the new energy industry.

#### 正常使用条件 NORMAL CONDITION

用户如订货需提供以下资料:

- ◇ 海拔高度:  $\leq 2000\text{m}$ , 在订货时应先注明;
- ◇ 环境温度:  $-25^{\circ}\text{C} \sim +40^{\circ}\text{C}$ ;
- ◇ 相对湿度: 日平均值不大于 95%, 月平均值不大于 90%;
- ◇ 防震水平: 水平加速度  $0.4\text{m/s}^2$ , 垂直加速度  $0.15\text{m/s}^2$ ;
- ◇ 安装地点无剧烈冲击、无严重污染和化学腐蚀、无导电尘埃及爆炸危险, 当不能满足正常使用条件要求时, 请用户与我公司协商解决。

If the user places an order, they need to provide the following information:

- ◇ Altitude:  $\leq 2000\text{m}$ , please indicate it first when ordering;
- ◇ Environmental temperature:  $-25^{\circ}\text{C} \sim +40^{\circ}\text{C}$ ;
- ◇ Relative humidity: The daily average value shall not exceed 95%, and the monthly average value shall not exceed 90%;
- ◇ Seismic resistance level: horizontal acceleration  $0.4\text{m/s}^2$ , vertical acceleration  $0.15\text{m/s}^2$ ;

- ◇ The installation site is free from severe impact, serious pollution, chemical corrosion, and the risk of conductive dust explosion in Egypt. When normal usage conditions cannot be met, please consult with our company to resolve the issue.

#### 产品特点 PRODUCT FEATURES

- ◇ 智能化: 内部设置智能监控单元, 具有监测、保护、遥控、视频监控等功能, 满足用户对箱变的远程控制和监测实时数据等功能的要求。
- ◇ 环保型: 变压器内部可采用植物油 (FR3), 其燃点高于  $360^{\circ}\text{C}$ , 自然降解率可达到 90% 以上, 比矿物油变压器过载能力更强。
- ◇ 环境适应性强: IP54 外壳防护、多重的防腐设计、加热除湿机及轴流风机配合的除湿方案, 能够适应各种潮湿、重盐雾的恶劣自然环境。
- ◇ 优良电气性能: 高压真空断路器短时耐受参数可达  $31.5\text{kA}/4\text{S}$ , 从而更好的满足客户对箱变单台容量的增大需求。
- ◇ 创新性结构设计: 华式箱变的箱体顶部可以设置放水装置, 可以防止叶片覆冰坠落损坏箱体及变压器散热器。

- ◇ Intelligentization: An intelligent monitoring unit is installed internally, which has functions such as monitoring, protection, remote control, and video monitoring, meeting the requirements of users for remote control and real-time data monitoring of the box transformer.
- ◇ Environmentally friendly: Vegetable oil (FR3) can be used inside the transformer, with an ignition point above  $360^{\circ}\text{C}$  and a natural degradation rate of over 90%, which is stronger than mineral oil transformers in terms of overload capacity.
- ◇ Strong environmental adaptability: IP54 shell protection, multiple anti-corrosion design, dehumidification scheme combined with heating dehumidifier and axial flow fan, can adapt to various harsh natural environments such as humidity and heavy salt mist.
- ◇ Excellent electrical performance: The short-term withstand parameters of the high-voltage vacuum circuit breaker can reach  $31.5\text{kA}/4\text{S}$ , which better meets the increasing demand of customers for the capacity of a single box transformer.
- ◇ Innovative structural design: A drainage device can be installed on the top of the box of the Huashi box transformer, which can prevent the blades from falling due to ice and damaging the box and transformer radiator.

#### 主要技术参数 MAIN TECHNICAL PARAMETERS

项目 project	单位 unit	高压电器 high voltage electrical appliances	变压器 transformer	低压电器 low Voltage Apparatus
额定电压 Rated voltage	kV	6/10	6/0.4 10/0.4	0.4
额定容量 Rated capacity	kVA		50~1600	
额定电流 Rated current	A	200, 400, 630		100~3200
额定短路开断电流 Rated short circuit breaking current	kA	负荷开关 400~630 Load switch 400~630		15~63kA
		组合开关取决于熔断器 The combination switch depends on the fuse		
额定短时耐受电流 Rated short-time withstand current	kA	16, 20(4s)		15(1s) 30(1s)
额定峰值耐受电流 Rated peak withstand current	kA	31.5, 50		30 63
工频耐压 (1min) Power frequency withstand voltage (1min)	kV	相对地及相间 32/42 Phase to ground and phase to phase 32/42	25/35(油浸) (Oil immersed)	$\leq 0.3, 2$
		隔离断口 36/48 Isolation fracture 36/48	20/28(干式) (Dry type)	$>0.3, 2.5$
雷电冲击耐压 (峰值) Lightning impulse withstand voltage (peak)	kV	相对地及相间 60/75 Phase to ground and phase to phase 60/75	60/75	
		隔离断口 70/85 Isolation fracture 70/85		
箱体防护等级 Cabinet protection level			IP32	
噪声水平 Noise level	db		55	
执行标准 Executive standards		GB/T 17467 《高压 / 低压预装式变电站》 GB/T 17467 "High Voltage/Low Voltage Prefabricated Substation"		
		DL/T537 《6-35kV 箱式变电站订货技术条件》 DL/T537 "Technical Conditions for Ordering 6-35kV Box Substation"		

# ZGS

## 新能源 (风力 / 光伏) 发电组合式变压器 (美式箱变)

### NEW ENERGY (WIND/PHOTOVOLTAIC) POWER GENERATION COMBINED TRANSFORMER (AMERICAN STYLE BOX TRANSFORMER)



#### 产品概述 OVERVIEW

ZGS 新能源 (风力 / 光伏) 发电组合式变压器是集升压变压器 (美式箱变)、高压限流熔断器、油浸式负荷开关、低压开关柜及相应辅助配套装置于一体的用于风力或光伏发电的组合变压器, 容量范围为 500~5800kVA, 电压等级为 35kV 及以下, 适用于陆地、水面及海上的光伏、风力发电场。

ZGS New Energy (Wind/Photovoltaic) Power Generation Combined Transformer is a combination transformer that integrates step-up transformers (American style box transformers), high-voltage current limiting fuses, oil-immersed load switches, low-voltage switchgear, and corresponding auxiliary equipment for wind or photovoltaic power generation. The capacity range is 500~5800kVA, and the voltage level is 35kV and below. It is suitable for photovoltaic and wind power plants on land, water, and sea.

#### 正常使用条件 NORMAL CONDITION

海拔高度 Altitude	≤ 3000m
环境温度范围 Environmental temperature range	-45℃~+45℃
户外风速 Outdoor wind speed	≤ 35m/s
防震 Shockproof	水平加速度不大于 0.3g, 垂直加速度不大于 0.15g Horizontal acceleration not greater than 0.3g, vertical acceleration not greater than 0.15g
污秽等级 Pollution level	III级 grade
外壳防护等级 Shell protection level	IP54
安装地点 Installation location	户外 outdoors

注: 超出上述正常使用环境条件时, 用户可与本公司协商解决。

Note: If the above normal usage environment conditions are exceeded, users can negotiate with our company to resolve the issue.

#### 产品特点 PRODUCT FEATURES

- ◇ 自然通风或自动控制的强迫散热排风装置设计, 能有效控制与降低箱内温度, 满足全负荷运行要求。
- ◇ 机械强度和刚度, 满足起吊、运输和安装需求。
- ◇ The design of natural ventilation or automatically controlled forced heat dissipation and exhaust devices can effectively control and reduce the temperature inside the box, meeting the requirements of full load operation.
- ◇ High mechanical strength and stiffness, meeting the needs of lifting, transportation, and installation.
- ◇ Low loss, energy-saving and environmentally friendly.
- ◇ It has a reasonable protective and dustproof structure, can withstand low temperature environments, is resistant to exposure to sunlight, corrosion, wind and sand, and rainwater.
- ◇ 损耗低, 节能环保。
- ◇ 具有合理的防护、防尘结构, 可耐受低温环境, 抗暴晒、抗腐蚀、抗风沙、防雨水。

#### 主要技术参数 MAIN TECHNICAL PARAMETERS

项目 project	单位 unit	参数 parameter
额定电压 Rated voltage	kV	10/0.4( 高压 / 低压 ) (high/low voltage)
最高工作电压 Maximum operating voltage	kV	12( 高压侧 ) (High voltage side)
额定频率 Rated frequency	Hz	50
额定容量 Rated capacity	kVA	50-800
1 分钟工频耐压 1 minute power frequency withstand voltage	k	35
雷电冲击电压 Lightning impulse voltage	kV	75
冷却方式 Cooling method		油浸自冷 ONAN
高压后备熔断器开断电流 High voltage backup fuse breaking current	kA	50
插入式熔断器开断电流 Interrupting current of plug-in fuse	kA	25
环境温度 ambient temperature	℃	-35~+40
线圈允许温升 Allowable temperature rise of coil	℃	65
无载调压 No-load voltage regulation		±5% 或 ±2x2.5%
噪声等级 Voice level	db	50
防护等级 Protection level		IP43

# YB □ -12 预装式变电站

## PREFABRICATED SUBSTATION



### 产品概述 OVERVIEW

本产品完全符合 GB17467 《高压 / 低压预装式变电站》标准。适用于城市公共配电、路灯配电、工矿企业、市区建筑、住宅小区、油田码头、宾馆、公园及工地施工等，可实现环网或终端型供电方式。

This product fully complies with the GB17467 "High Voltage/Low Voltage Prefabricated Substation" standard. Suitable for urban public power distribution, street light distribution, industrial and mining enterprises, urban buildings, residential communities, oil fields and docks, hotels, parks, and construction sites, etc., it can achieve ring network or terminal power supply.

### 型号及含义 MODEL AND MEANING

YB □ □ □ / □ - □  
 ① ② ③ ④ ⑤ ⑥

①	预装式变电站	Prefabricated substation
②	结构特征: P- 品字形; M- 目字形	Structural features: P-pin shape; M-mesh shape
③	设计序号	Design serial number
④	高压侧额定电压 (kV)	Rated voltage on high-voltage side (kV)
⑤	低压侧额定电压 (kV)	Rated voltage on low voltage side (kV)
⑥	变压器额定容量 (kVA)	Rated capacity of transformer (kVA)

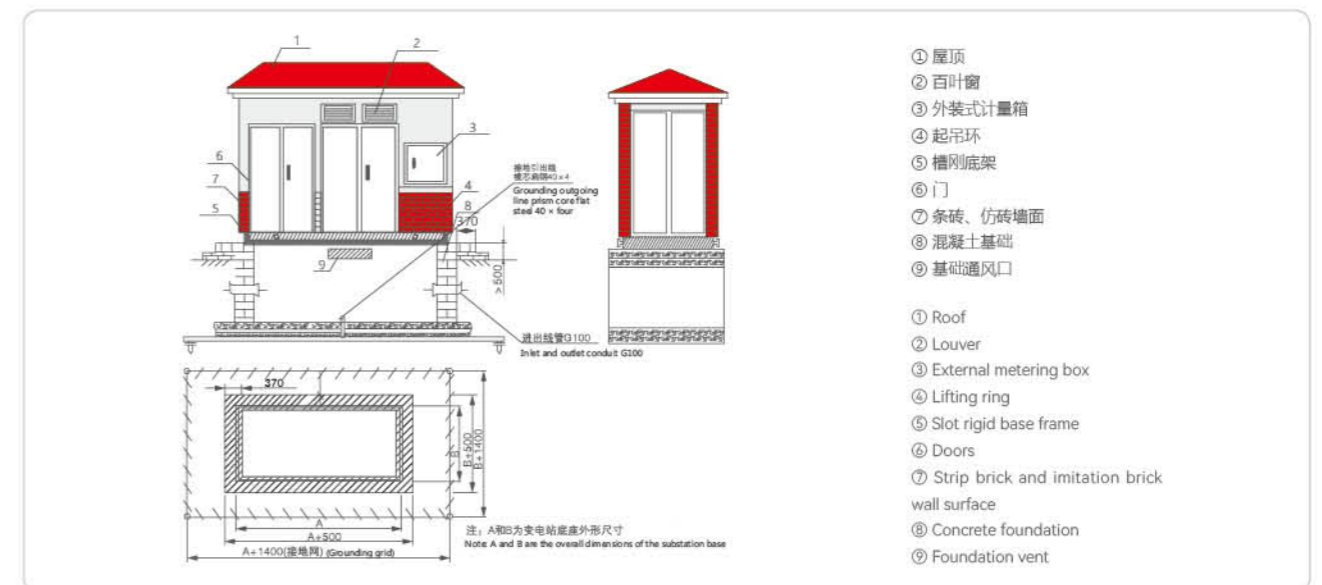
### 主要技术参数 MAIN TECHNICAL PARAMETERS

序号 Serial number	名称 name	单位 unit	高压电器 High voltage electrical appliances	变压器 transformer	低压电器 Low voltage electrical appliances
1	额定电压 Rated voltage	kV	6/10	60/0.4 10/0.4	0.4
2	额定容量 Rated capacity	kVA		50~1600	
3	额定电流 Rated current	A	200、400、630		100~3200
4	额定短路开断电流 Rated short-circuit breaking current	kA	负荷开关 400-600 Load switch 400-600 组合开关取决于熔断器 The combination switch depends on the fuse		15~63kA
5	额定短时耐受电流 Rated short time withstand current	kA	16,20(4s)		15(1s) 30(1s)
6	额定峰值耐受电流 Rated peak withstand current	kA	31.5, 50		30 63
7	工频耐压 (1min) Power frequency withstand voltage (1min)	kV	相对地及相间 32/42 Phase to ground and phase to phase 32/42 隔离断口 36/48 Isolation fracture 36/48	25/35(油浸) Oil immersion 20/28(干式) dry	≤ 0.3, 2 >0.3, 2.5
8	雷电冲击耐压 (峰值) Lightning impulse withstand voltage (peak)	kV	相对地及相间 60/75 Phase to ground and phase to phase 60/75 隔离断口 70/85 Isolation fracture 70/85	60/75	
9	箱体防护等级 Cabinet protection level				
10	噪声水平 noise level	ab		IP23	
11	执行标准 Executive standards		GT/T 17467 《高压低压预装式变电站》 GT/T 17467 "High Voltage and Low Voltage Prefabricated Substation" DL/T537 《6-35kV 箱式变电站订货技术条件》 DL/T537 "Technical Conditions for Ordering 6-35kV Box Substation"	55	

注: 变压器容量小于 200kVA 时项 5、6 不作要求。

Note: When the transformer capacity is less than 200kVA, items 5 and 6 are not required.

### 安装尺寸图 DRAWING



# ZGS11-12

## 组合美式预装式变电站

### COMBINED AMERICAN PREFABRICATED SUBSTATION



#### 产品概述 OVERVIEW

ZGS11-12 系列组合美式预装式变电站整台产品具有体积小、安装维护简便、低噪音、低损耗、防盗、全保护、过负荷能力强等特点。适用于新建小区、绿化带、公园、车站宾馆、工地、机场等场所。

ZGS11-12 系列组合美式预装式变电站，适用于10kV 环网供电，双电源供电或终端供电系统中，作为变电、计量、补偿控制和保护装置。本产品符合下列标准：GB17467《高压/低压预装式变电站》DL/T537《高压/低压预装式变电站选用导则》。

The ZGS11-12 series combined American style prefabricated substation has the characteristics of small size, easy installation and maintenance, low noise, low loss, anti-theft, full protection, and strong overload capacity. Suitable for newly built residential areas, green belts, parks, stations, hotels, construction sites, airports, and other places.

The ZGS11-12 series combination American style prefabricated substation is suitable for 10kV ring network power supply, dual power supply or terminal power supply systems, as a substation, metering, compensation control and protection device. This product meets the following standards: GB17467 "High Voltage/Low Voltage Prefabricated Substation" DL/T537 "Selection Guide for High Voltage/Low Voltage Prefabricated Box Substation".

#### 型号及含义 MODEL AND MEANING

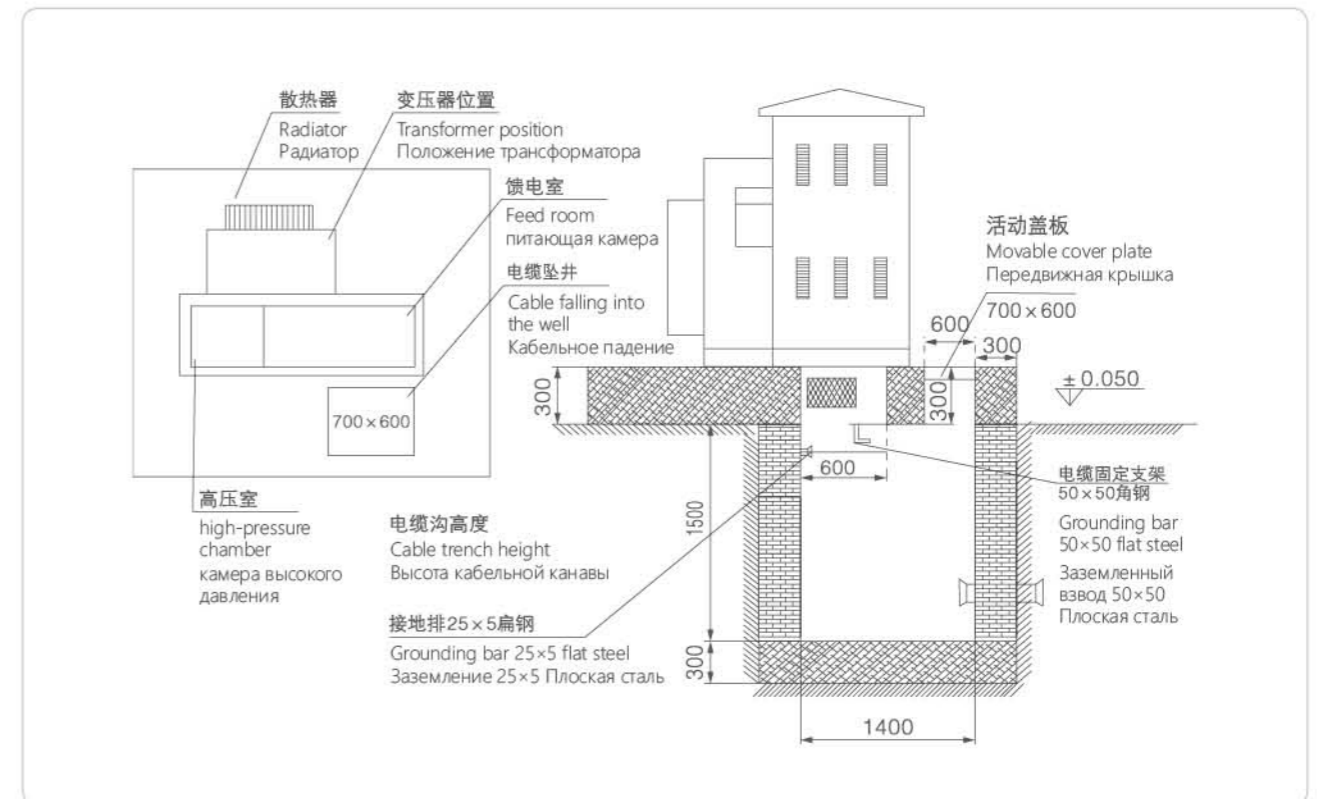
ZGS □ - 12/0.4 (□) / □ □  
 ① ② ③ ④ ⑤ ⑥

①	预装式变电站 (美式)	Prefabricated substation (American style)
②	设计序号	Design serial number
③	额定电压	Rated voltage
④	高压开关设备配备主开关类别: F- 负荷开关; F·R- 负荷开关 + 熔断器	High voltage switchgear equipped with main switch category: F-load switch; F·R - load switch+fuse
⑤	高压开关设备配备操动机构类别: T- 弹簧机构; S- 手动机构	Type of operating mechanism for high-voltage switchgear: T-spring operating mechanism; S-manual mechanism
⑥	变压器额定容量 (kVA)	Rated capacity of transformer (kVA)

#### 主要技术参数 MAIN TECHNICAL PARAMETERS

序号 Serial number	名称 name	单位 unit	参数 parameter
1	额定电压 Rated voltage	kV	10/4( 高压 / 低压 )(High pressure/low pressure)
2	最高工作电压 Maximum operating voltage	kV	12( 高压侧 )(High voltage side)
3	额定频率 Rated frequency	Hz	50
4	额定容量 Rated capacity	kVA	50-1600
5	1分钟工频耐压 1 minute power frequency withstand voltage	kV	35
6	雷电冲击电压 Lightning impulse voltage	kV	75
7	冷却方式 Cooling method		油浸自冷 Oil immersed self cooling
8	高压后备熔断器开断电流 High voltage backup fuse breaking current	kA	50
9	插入式熔断器开断电流 Interrupting current of plug-in fuse	kA	25
10	环境温度 Ambient temperature	°C	-35~+40
11	线圈允许温升 Allowable temperature rise of coil	°C	65
12	无载调压 No-load voltage regulation		±5%±2.5%
13	噪声等级 Noise level	db	50
14	防护等级 Protection level		IP43

#### 安装尺寸图 DRAWING



# YBD-12 景观型地埋式箱变

## LANDSCAPE BURIED BOX TRANSFORMER



### 产品概述 OVERVIEW

YBD-12 景观型地埋式箱变主要由安装在地下的地下式变压器（含预制式地坑）和安装在地上的户外广告灯箱式高低压开关设备两部分组成。其中，地下式变压器是一种带有高压熔断器保护，能够一段时间内浸入水中运行的新型配电变压器，在我国的机场、高速公路、桥梁、隧道等场所已经有了较为广泛的使用；户外灯箱式高低压开关设备的内部为户外高低压配电柜，箱体外侧为广告灯箱。可以根据周围环境、用户要求设计广告画的内容。整个产品占地面积小，美观大方，不但能与周围环境高度协调，还能实现广告作用。

The YBD-12 series landscape buried box transformer mainly consists of two parts: an underground transformer (including prefabricated pit) installed underground and an outdoor advertising light box high and low voltage switchgear installed above ground. Among them, underground transformer is a new type of distribution transformer with high-voltage fuse protection that can be immersed in water for operation for a period of time. It has been widely used in airports, highways, bridges, tunnels and other places in China; The interior of the outdoor light box type high and low voltage switchgear is an outdoor high and low voltage distribution cabinet, and the outer side of the box is an advertising light box. The content of the advertisement can be designed according to the surrounding environment and user requirements. The entire product occupies a small area and is aesthetically pleasing. It can not only be highly coordinated with the surrounding environment, but also achieve advertising effectiveness.

### 型号及含义 MODEL AND MEANING

Y B D - □ - □ / □  
① ② ③ ④ ⑤ ⑥

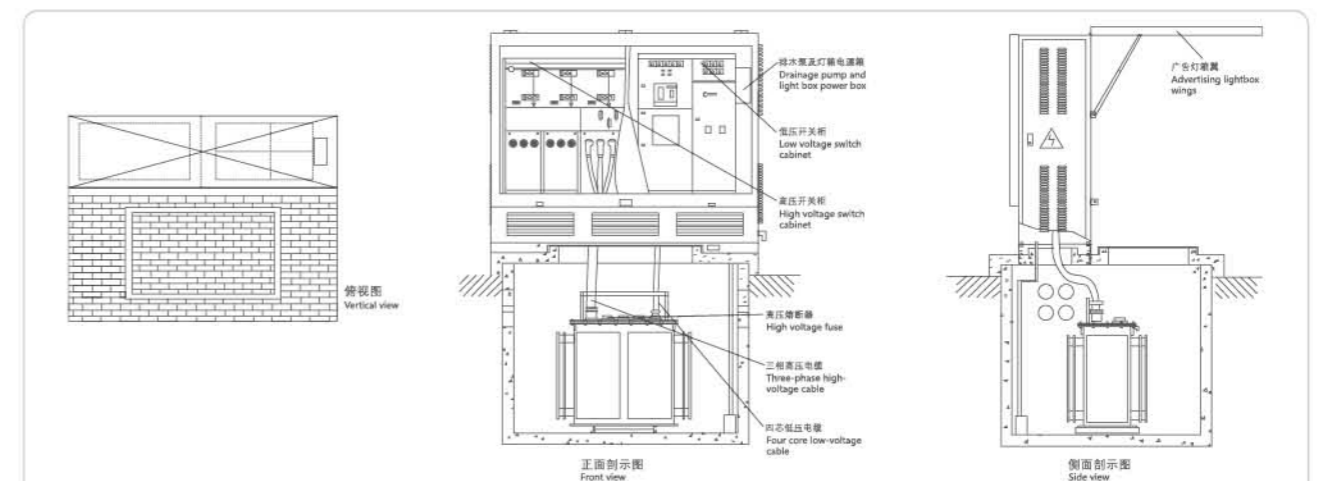
①	预装式	Pre installed
②	变电站	transformer substation
③	地下式	Underground type
④	变压器额定容量 (kVA)	Rated capacity of transformer (kVA)
⑤	高压侧额定电压 (kV)	Rated voltage on high-voltage side (kV)
⑥	低压侧额定电压 (kV)	Rated voltage on low voltage side (kV)

### 主要技术参数 MAIN TECHNICAL PARAMETERS

◇ 额定电压等级: 35kV 和 10kV 及以下 ◇ 频率: 50Hz ◇ 绝缘水平 (见下表)  
◇ Rated voltage level: 35kV and 10kV and below ◇ Frequency: 50Hz ◇ Insulation level (see table below)

类别 category	名称 name	单位 unit	参数 parameter
高压开关单元 High voltage switch unit	高压单元额定电压 Rated voltage of high-voltage unit	kV	10
	额定频率 Rated frequency	Hz	50
	额定电流 Rated current	A	630
	1min 工频耐受电压 (对地和相间 / 隔离断口) 1min power frequency withstand voltage (to ground and phase to phase/isolation break)	kV	42/48
	雷电冲击电压 Lightning impulse voltage	kV	75/85
	额定短时耐受电流 Rated short time withstand current	kA/2s	20
低压开关单元 Low voltage switch unit	额定峰值耐受电流 Rated peak withstand current	kA	50
	防护等级 Protection level	IP67	
	低压单元额定电压 Rated voltage of low-voltage unit	kV	0.4
	主回路额定电流 Rated current of the main circuit	A	50~3200
	额定短时耐受电流 Rated short time withstand current	kA/1s	30
	额定峰值耐受电流 Rated peak withstand current	kA	63
地下式变压器 Underground transformer	分支回路数 Number of branch circuits	Way	0~32
	防护等级 Protection level	IP34	
	变压器单元额定电压 Rated voltage of transformer unit	kV	10
	额定容量 Rated capacity	kVA	30~1600
	频耐电压 Frequency withstand voltage	kV	35
	雷电冲击电压 Lightning impulse voltage	kV	95
	联结组别 Connection level	Dyn11	
	阻抗电压 Impedance voltage	4%/4.5%	
损耗 loss	S11		
防护等级 Protection level	IP68		

### 安装尺寸图 DRAWING



注:

- ◇ 本产品由地下式变压器、灯箱式户外高/低压开关柜和预置式地坑组成。
- ◇ 灯箱式户外高/低压开关柜为双门式设计，即使灯箱遭受破坏后高低压设备仍然有独立的外壳防护。
- ◇ 预置式地坑为全密封防水式设计；地坑盖上铺高装饰地砖，并设置带锁的检修孔盖板。
- ◇ 地下式变压器的高压侧和低压侧均采取三相电缆同时插拔的连接方式，密封性能达到 IP68 水平，可长时间浸入水中运行。

Note:

- ◇ This product consists of an underground transformer, a light box outdoor high/low voltage switchgear, and a pre installed pit.
- ◇ The outdoor high/low voltage switchgear of the lightbox type is designed as a double door type, and even if the lightbox is damaged, the high and low voltage equipment still has independent casing protection.
- ◇ The pre installed pit is fully sealed and waterproof in design; Lay high decorative floor tiles on the pit cover and install a locked manhole cover.
- ◇ The high-voltage and low-voltage sides of the underground transformer are connected by simultaneously plugging and unplugging three-phase cables, with a sealing performance of IP68 level, and can be immersed in water for long-term operation.