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POWER DISTRIBUTION SOLUTION PROVIDER

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Giantele®



Professional Design
Premium Materials
Precision Manufacturing
Strict Inspection

PRODUCTS SELECTION CATALOGUE

www.giant-electric.com

Giantele®

COMPANY PROFILE

Zhejiang Zhegui Electric Co., Ltd. is a prominent provider of low-voltage and medium-voltage switchgear, specializing in Transformers, circuit breakers, and various electrical accessories. Established in 2013, we have accumulated over a decade of invaluable experience in delivering high-quality products and services to a global clientele, serving customers in more than 50 countries around the world.

Our focus is on providing advanced power solutions that adhere to global standards such as IEC, CE, GOST, and ISO. Our highly skilled technical team excels in offering customized power distribution designs, covering voltage ranges from 0.4KV to 35KV. This expertise enables us to assist clients in establishing new product lines and achieving local certifications efficiently.
We also offer comprehensive services such as power solution design, factory system integration, and professional consultation. Our multilingual teams collaborate closely with customers to deliver tailored solutions, ensuring seamless communication and superior after-sales support.

Driven by innovation, we strive to build long-term partnerships, enhance energy infrastructure, and provide cost-effective, sustainable power solutions on a global scale.

COMPANY ACHIEVEMENT

2013 year

2013 zhegui electric was established.

12 years

12 years of continuous development.

60 sets

60 sets of high-tech machinery and equipment.

50+

The products are exported to more than 50 countries overseas.



MANUFACTURING

We specialize in providing end-to-end high-quality electrical assembly solutions, from design and production to installation. Our products, including LV and MV, and vacuum circuit breakers, are widely used across industries such as power, metallurgy, and petrochemicals.

Backed by a dedicated technical team offering customized, multilingual power drawings and design solutions, as well as a professional sales team providing multilingual communication, we deliver expertise in meeting global power standards like IEC, CE, GOST, and ISO.

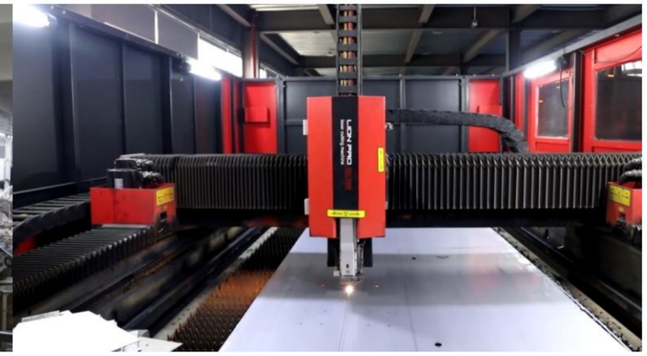
Environmentally friendly material

Craftsmanship

Diamond quality













COMPANY ACHIEVEMENT

For many years, Zhegui Electric has upheld a spirit of professionalism and excellence, earning corporate honors that testify to our team's efforts and client support.Our ISO 9001 Quality Management System certification demonstrates our commitment to maintaining high standards and requirements in product quality control and service management.

These accolades not only affirm our past achievements but also serve as motivation and encouragement for our future development. Moving forward, we will continue to adhere to the principles of integrity, innovation, quality, and customer-centricity, constantly striving for self-improvement and excellence. With a dedicated technical team and a professional sales force, we have supported EPC projects in over 50 countries and assisted clients in obtaining local certifications. Thank you for your support and trust.



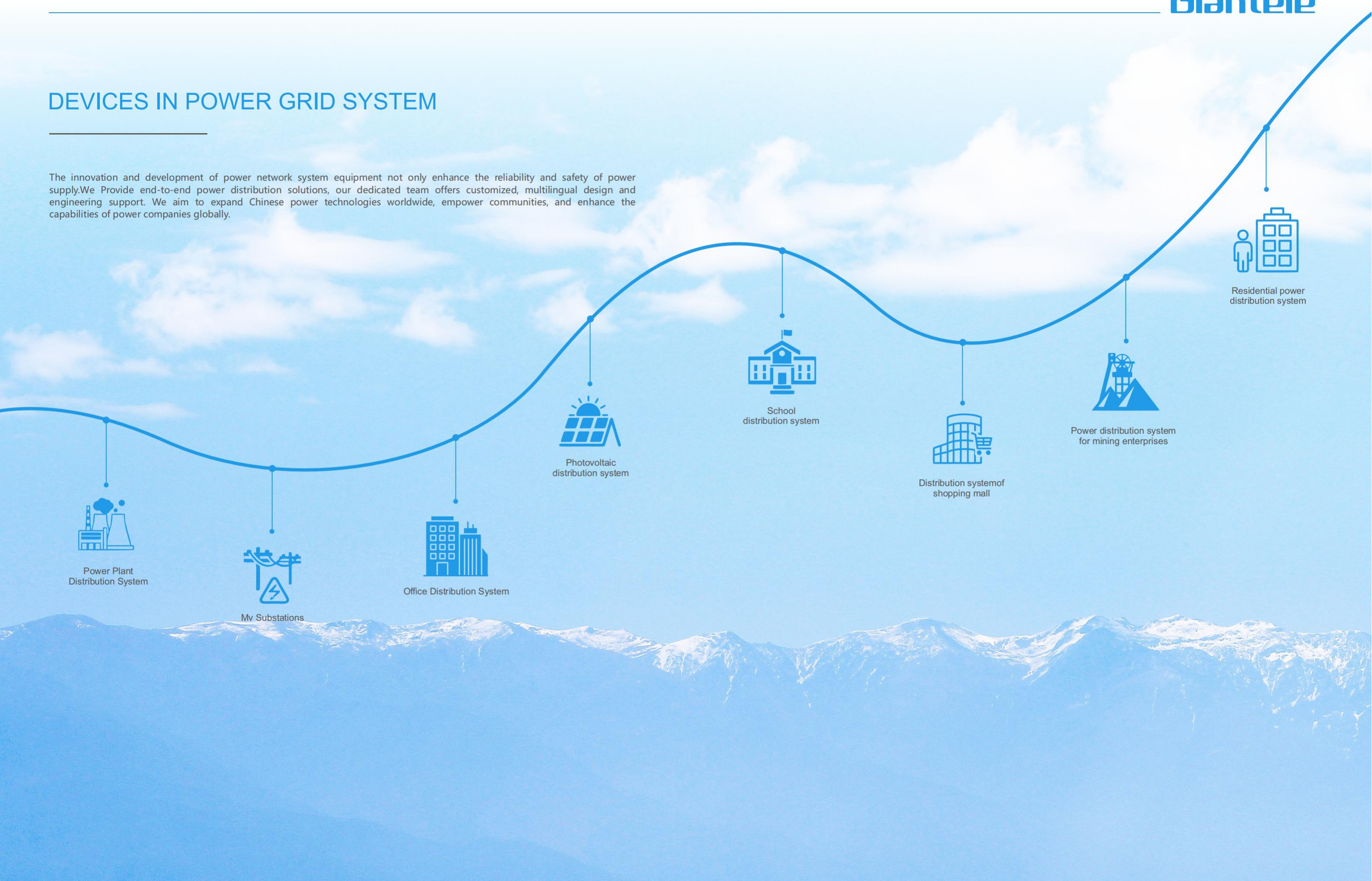






DEVICES IN POWER GRID SYSTEM

The innovation and development of power network system equipment not only enhance the reliability and safety of power supply.We Provide end-to-end power distribution solutions, our dedicated team offers customized, multilingual design and engineering support. We aim to expand Chinese power technologies worldwide, empower communities, and enhance the capabilities of power companies globally.

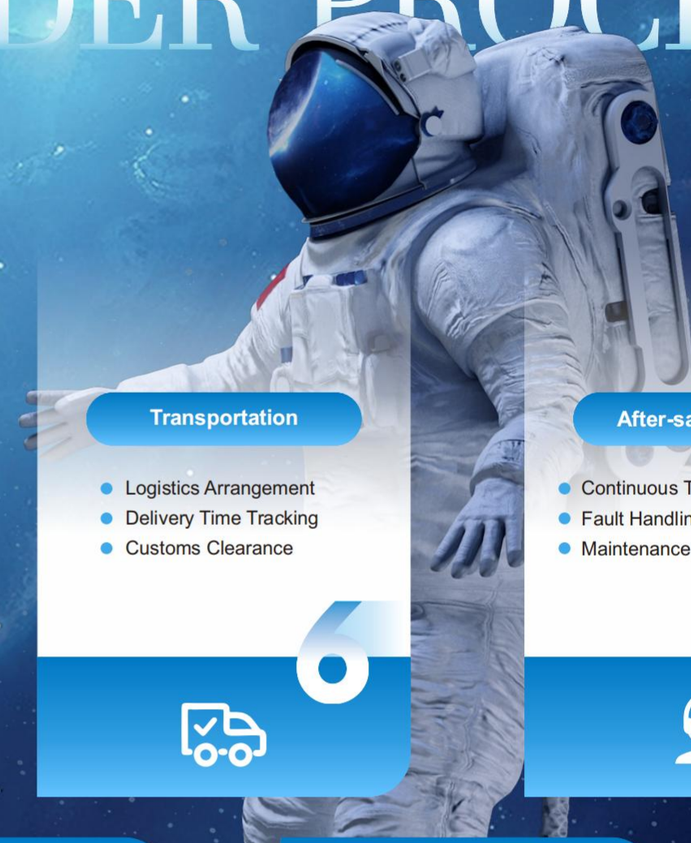


Professional Efficient Innovative

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ORDER PROCESS



1 Requirements Confirmation

- Request Received
- Analyze Requirements
- Confirm Budget and Technology

2 Solution Design

- Confirm Technical Specifications
- Product Suggestions
- Solution Design

3 Quotation and Technical Disclosure

- Feedback Compilation
- Optimization and Adjustment
- Product Quotation
- Technical Disclosure

4 Contact Confirmation

- Confirm Delivery Time
- Sign Contact

5 Production and Delivery

- Production Schedule
- Debugging and Inspection
- Product Acceptance

6 Transportation

- Logistics Arrangement
- Delivery Time Tracking
- Customs Clearance

7 Technical Support

- Online & Remote Guidance
- Installation and Maintenance
- Customer Training and Support

8 After-sales service

- Continuous Technical Support
- Fault Handling
- Maintenance Suggestion



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GGD

Low Voltage Fixed Switchgear

GGD type AC low-voltage distribution cabinet is suitable for power plants, substations, factories and mining enterprises and other power users of AC 50Hz, rated working voltage 380V, rated working current to 3150A distribution system, as a power. Electrical energy conversion, distribution and control of lighting and distribution equipment.

The product has the characteristics of high breaking capacity, good dynamic and thermal stability, flexible electrical scheme, convenient combination, series, practicability, novel structure, high protection level, and can be used as the replacement of low-voltage switchgear. GGD type AC low-voltage distribution cabinet conforms to IEC439 "Low-voltage switchgear ".



Giantele®

○ Model definition and description

G	G	D	□	□	/	□
1	2	3	4	5		6

1.AC low-voltage power distribution cabinet.

2.Electricalcomponentsfixed installation, fixed wiring.

3.Electric power cabinet.

4.Design number: Breaking capacity is 15kA; Breaking capacity is 30kA; The breaking capacity is 50kA.

5.Main circuitscheme code.

6.Auxiliary circuit scheme code.

○ Environmental condition

- The ambient air temperature shall not be higher than +40℃, not lower than -5℃, and the average temperature within 24 hours shall not be higher than +35℃;
- For indoor installation and use, the altitude of the use place shall not exceed 2000m;
- The relative humidity of the surrounding air should not exceed 50% at the maximum temperature of +40℃, and a larger relative humidity should be allowed at a lower temperature (such as 90% at +20℃), considering that the effect of condensation may occur occasionally due to changes in temperature;
- The inclination between the equipment and the vertical plane shall not exceed 5°;
- The equipment should be installed in a place without violent vibration and impact, and not enough to corrode the electrical components;
- Users have special requirements can be negotiated with the manufacturer to solve.

○ Technical parameter

Model number	Rated voltage (V)	Rated current (A)		Rated short circuit breaking current (kA)	Rated short-time withstand current (1s)(kA)	Rated peak withstand current (kA)
GGD	380	A	1000	15	15	30
GGD	380	B	600(630)	15	15	30
GGD	380	C	400	15	15	30
GGD	380	A	1500(1600)	30	30	63
GGD	380	B	1000	30	30	63
GGD	380	C	600	30	30	63
GGD	380	A	3150	50	50	105
GGD	380	B	2500	50	50	105
GGD	380	C	2000	50	50	105

Main circuit scheme

- The main circuit scheme is selected after soliciting the opinions of the majority of design and use departments, and increases the scheme required by the power plant. The rated current is increased to 3150A, suitable for distribution transformers of 2000kVA and below.
- In addition, GGJ1 and GGJ2 capacitor compensation cabinets are designed to meet the needs of reactive power compensation, with 4 main circuit schemes and 12 specifications.

Auxiliary circuit scheme

- The design of the auxiliary circuit is divided into two parts: the power supply scheme and the power plant scheme.
- There is enough space in the GGD cabinet to install the secondary components.

Electrical component selection

- 1.GGD cabinet mainly uses the domestic has been able to mass production of more advanced electrical components, such as ME, DW15, etc., but also according to the principle of economy, reasonable, in full consideration of the feasibility of the premise of retaining part of the available old products such as DZ20. Do not use obsolete products.
- 2.HD13BX and HS13BX rotary operating knife switch is a special component designed to meet the needs of the unique structure of GGD cabinet. It changes the operation mode of the mechanism and retains the advantages of the old product. It is a utility model electrical component.
- 3.If the design department chooses new electrical components with better performance and more advanced technology according to the needs of users, the GGD cabinet will generally not cause difficulties in manufacturing and installation due to its good installation flexibility.
- 4.In order to further improve the dynamic stability of the main circuit, the GGD cabinet special ZMJ composite bus clamp and insulation support. Bus clamp by high strength, high flame retardant type PPO alloy material thermoplastic molding, high insulation strength, good self-extinguishing ability, unique structure, just adjust the building block can be easily combined into a single bus clamp or double bus clamp, insulation support sleeve molding structure, low cost, high strength, to solve the old product creepage distance is not enough defects.

Structure introduction

- GGD type AC low-voltage power distribution cabinet adopts the form of general cabinet, the frame is made of 8MF cold-formed steel by partial welding assembly, and the frame parts and special supporting parts are supplied by the section steel fixed point production factory to ensure the accuracy and quality of the cabinet.
- The components of the general cabinet are designed according to the module principle and have 20 mold mounting holes. The high general coefficient can enable the factory to achieve pre-production, which not only shortens the production cycle, but also improves the work efficiency.
- GGD cabinet design fully takes into account the heat dissipation problem in the operation of the cabinet. There are different number of heat dissipation slots at both ends of the cabinet.
- When the electrical components in the cabinet are heated, the hot air rises and is discharged through the upper slot, and the cold air is constantly supplemented by the lower slot into the cabinet, so that the sealed cabinet forms a natural ventilation channel from the bottom up to achieve the purpose of heat dissipation.
- GGD cabinet in accordance with the requirements of modern industrial product design, the golden section ratio method is used to design the shape of the cabinet and the partition size of each part, so that the whole cabinet is beautiful and elegant.

Dimensions (mm)

Outline diagram

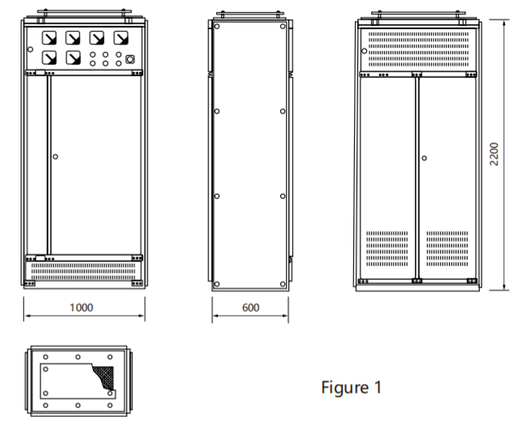


Figure 1

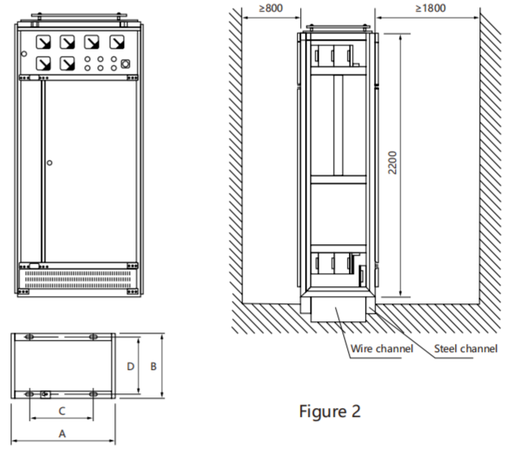


Figure 2

Installation diagram

Model	A(mm)	B(mm)	C(mm)	D(mm)
GGD06	600	600	450	556
GGD06A	600	800	450	756
GGD08	800	600	650	556
GGD08A	800	800	650	756
GGD10	1000	600	850	556
GGD10A	1000	800	850	756
GGD12	1200	800	1050	756

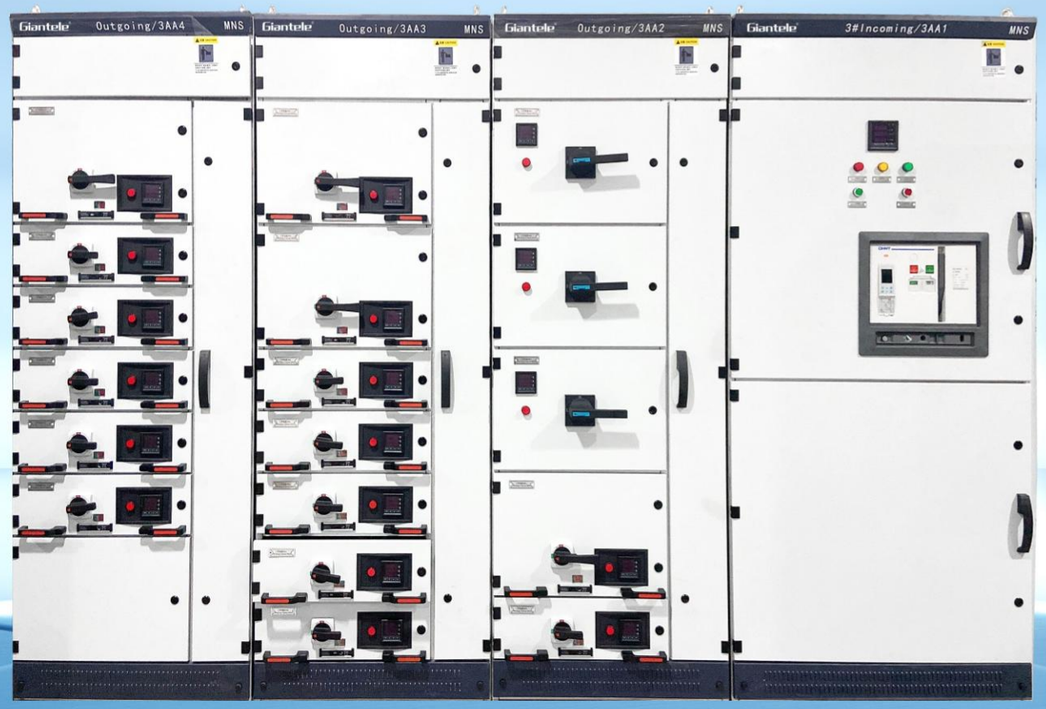
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MNS

Low Voltage Withdrawable Switchgear

This series of low-voltage drawout switchgear is suitable for power conversion, distribution and control of power in power plants, substations, petrochemical industry, metallurgical steel rolling, transportation energy, light power textile and other factories and mining enterprises, residential areas, high-rise buildings and other places, as AC 50-60Hz, rated working voltage AC 660V and below the current system."Low-voltage switchgear and control equipment" GB7251 "Low-voltage switchgear" and other standards.



Model definition and description

M	N	S	—	□	—	□
1	2	3		4		5

1.Modular, modular.

2.New type.

3.System.

4.Main circuit scheme number.

5.Auxiliary circuit scheme number.

Environmental condition

- The ambient air temperature is not higher than +40°C, not lower than -5°C, and the average temperature within 24 hours is not higher than +35°C;
- Atmospheric conditions: The air is clean, the relative humidity is not more than 50% at the maximum temperature of +40°C, and a higher relative humidity is allowed at a lower temperature, such as 90% at +20°C, but the temperature change should be taken into account, and condensation may occur occasionally; The altitude does not exceed 2000m;
- The device is suitable for transport and storage processes at the following temperatures; Within the range of -25°C to +55°C, +70°C can be reached in a short period of time (not more than 24h), and the device shall not suffer any irreparable damage at these limit temperatures, and shall be able to work normally under normal conditions; If the above conditions of use cannot be met, it shall be resolved by negotiation between the user and the manufacturer.
- When the device is used on offshore oil drilling platforms and nuclear power plants, a separate technical agreement shall be signed.

Technical parameter

Ltem	Technical parameter
Rated insulation voltage	AC690V
Rated operating voltage	AC400V
Rated current of main bus	≤6300A
Rated withstand current of main bus (1s)	50KA,80KA
Rated peak withstand current of main bus	105KA,176KA
Maximum operating current of the distribution bus (vertical bus)	1500A
Distribution busbar	
Normal form	105kA(Max.)/0.1s
Enhanced	176kA(Max.)/0.1s

Class of protection

- In line with IEC529, DIN40050 standards.
- IP30 for solid protection greater than Φ2.5MM.
- IP40 for solid protection with diameter greater than Φ1.0MM.
- The IP54 protects against dust and splashes in any direction.
- (IP54 protection should be ordered in consultation with the manufacturer)

Cabinet parameters

- Structure: Assembled from C-section profiles. All galvanized structural components form the base frame via self-tapping locking screws or hex bolts. Doors, panels, partitions, mounting brackets, and busbar units are added for complete assembly.
- Compartmentalization: Divided into three isolated chambers:

  Horizontal busbar chamber (rear),

  Drawer compartment (front),

  Cable chamber (lower/front-right).
  Separated by steel plates or high-strength flame-retardant plastic panels. Ventilated metal plates between drawers prevent arc faults or short circuits.
- Wiring Flexibility: Supports multiple configurations (top/top, top/bottom, bottom/top, bottom/bottom).
- Modular Design: E=25mm modular system ensures component universality, flexible assembly, and customizable layouts for system requirements.
- Busbar Protection: High-strength flame-retardant, high-insulation plastic panels provide arc fault resistance for safe operation and maintenance.
- Drawer Safety: Standardized mechanical interlocks with three positions (Connected, Test, Disconnected) ensure reliability.
- Standardized Modules: Configurable protection, operation, conversion, control, regulation, measurement, and indication units for tailored solutions.
- Quality Assurance: High universality, standardization, and ease of assembly ensure reliability.
- Protection: Standard IP30/IP40 rating, customizable per user needs.

Cabinet size

- Standard width: 600mm, 800mm, 1000mm
- Standard depth: 800mm, 1000mm, 1200mm
- Standard height: 2200mm

Drawer size

- 8E/4: Height 200mm (occupies 1/4 of cabinet height).
- 8E/2: Height 200mm (occupies 1/2 of cabinet height).
- 8E: Height 200mm (1 full-height unit).
- 16E: Height 400mm (2 full-height units).
- 24E: Height 600mm (3 full-height units).

Drawer divider

- Equipped with effective segregation measures, each drawer operates as an independent functional unit, electrically isolated from others to enable flexible circuit configuration and maintenance.

Plug-in connection

- High-strength, high-reliability plug-in connectors ensure electrical connectivity between the drawer and cabinet, rated for over 2,000 insertion/extraction cycles to guarantee stable and reliable performance.

Mechanical interlocking

- It has a perfect mechanical interlocking device to ensure that the drawer is reliably positioned between the three positions of "working", "testing" and "separating" to prevent misoperation. Translate into English

Fixed partition unit

- Fixed separation unit: suitable for large current or special function of the circuit, the use of fixed installation, with high electrical performance and stability.

  Rated current: Can be configured based on actual requirements.

  Compartment protection: Metal partitions are used to effectively separate the compartment where the fixed partition unit is located from other compartments to improve safety.

GGJ

Low Voltage Reactive Power Compensation Cabinet

Because the device can effectively improve the power factor of the power load, reduce the line loss, improve the actual load capacity of the transformer, with significant energy-saving effect, while the use of specific reactors in the system, but also effectively prevent harmonic amplification, effectively absorb most of the harmonic current, so that the harmonic voltage total anomaly rate limit and each harmonic current content limit in line with the national standard, harmonic control. If the ordinary contactor is used to switch the capacitor bank, it will bring large inrush current, slow compensation time, high maintenance costs and short service life, therefore, we recommend that users give priority to the use of dynamic reactive power compensation devices in the following occasions. Such as: industrial and mining enterprises substation, production workshop and civil buildings in the low-voltage power grid, especially suitable for load often changes, reactive power unstable transmission and distribution system.

This product complies with: IEC 61921, "Power capacitors - Low-voltage power factor correction banks", IEC60439 "Low voltage complete switchgear and control equipment" and other standards.



○ Model definition and description

GGJ	□	□	—	□	—	□
1	2	3		4		5

1.Connection modeD: Angle connection Y Star connection.

2.Voltage class 230V 400V.

3.Compensation capacity kvar.

4.Compensation mode 1 is dynamic compensation,Conventional omission.

5.Compensating tank.

○ Environmental condition

1. Ambient temperature: -5℃~+40℃.

2. Ambient relative humidity: not more than 90%(20℃).

3. Altitude: not more than 2000m.

4. The surrounding medium has no explosion risk, no gas that can damage and corrode metal, no conductive dust, installation is not easy to violent vibration, no rain and snow erosion.

○ Technical characteristics

1. Automatic compensation of reactive power, improve power factor.

2. Improve equipment efficiency and save investment.

3. Reduce distribution line losses and transformer losses.

4. Change the voltage quality to improve the reliability of power supply.

○ Technical summary of plant

- **Rated voltage Ue**
  Main circuit, 380(400)V
- **Compensation capacity per step**
  10, 15, 20, 30, 45, 60 kvar
- **Steps**
  6, 8, 10, 12 or 7, 11, 15
- **Total capacity**
  up to 600 kvar (two cabinets)
- **Switching mode**
  loop or code plus loop
- **Compensation method**
  centralized compensation
- **Protection class**
  IP40 or IP43 (glass door)

○ Product characteristics

1. Strong general performance. The compensation cabinet can be combined with any cabinet at home and abroad, such as MNS, GCK, GGD, etc.

2. The combination of capacitor compensation is diverse and flexible. It has a Y-type compensation mode, a ▲ type compensation mode, and a Y+▲ combination compensation mode.

3. Diversity of communication methods. With RS-232/485 communication interface, wireless data transmission module or GPRS module to implement long-distance communication;

4. Accurate and safe control. Implement voltage crossing trigger, no inrush current crossing zero cutting when input, no high voltage when breaking;

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XL-21

Low Voltage Power Distribution Cabinet

XL-21 low-voltage power distribution cabinet is suitable for power distribution of three-phase four-wire or three-phase five-wire system with AC voltage of 500 volts and below in power plants and industrial and mining enterprises. XL-21 type low-voltage power distribution box is installed against the wall, and the screen is repaired before the installation.



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○ Model definition and description

X	—	L	—	21	—	□
1		2		3		4

1.Control box.

2.Dynamic control.

3.Design sequence number.

4.Scheme number.

○ Environmental condition

- Ambient temperature: -50℃ ~+40℃, and the average temperature within 24h does not exceed +36℃;
- Altitude: no more than 2000m;
- Relative humidity: no more than 50% when the ambient air humidity is +40℃; At lower humidity there can be a higher relative humidity (e.g. 90% at +20 ° C), allowing for moderate condensation taking into account the change in temperature.
- The inclination between the vertical plane and the device should not exceed 5°. The device should be installed in a place without severe vibration, impact, or corrosion.

○ Technical parameter

Name	Unit	Data
Rated voltage of main circuit	V	AC380
Rated voltage of auxiliary circuit	V	AC220,380
Rated frequency	Hz	50
Rated insulation voltage	V	660
Rated current	A	≤1250

○ Structural characteristics

- XL-21 cabinet uses C/8MF profiles for modular assembly, optimized for space and flexible configurations. Frame and components are precision-engineered in-house for quality assurance.
- Removable hinges on doors simplify installation/maintenance.
- Components grounded via stranded copper wires and knurled washers, ensuring full protection.
- Auxiliary circuits support local/remote/auto modes with DC contactor options.
- Main switch offers thermal-magnetic/instantaneous trip (adjustable to prevent cascading trips), plus auto/manual switching.
- Multi-protection (short-circuit, overload, undervoltage, phase-loss).
- Silent AC contactors with low-power operation.
- Main switches include trip/overload/earth leakage (optional for feeders).
- Incoming circuit has integrated ammeter/voltmeter.

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XGN15-12

Fixed Metal Enclosed Switchgear

XGN15-12 box type fixed metal closed ring network switchgear, is a new generation of SF6 load switch as a switch and the whole cabinet adopts air insulation, suitable for distribution automation, both compact and extensible metal closed switchgear, with high-grade, miniaturization, full parameters, low price, less maintenance and other characteristics.

The product has a "one part one ground" three-station arc extinguishing chamber, with a "five prevention" function (to prevent the main switch with load switching; Prevent stray live intervals; Prevent misopening and closing the main switch; Prevent live grounding wire: Prevent the grounding switch in the grounding position), reliable interlock, high fracture insulation strength, large climb distance design, the outlet end with pressure protection, special dynamic seal and fixed seal design, coupled with advanced technical performance and light and flexible assembly scheme, can fully meet the changing requirements of the market, is a new generation of high-voltage switchgear equipped with urban power grid. It can also be equipped with ABB's original SFG type SF6 load switch or Schneider's original SM6 load switch according to user needs. Or install imported vacuum circuit breaker VD4 switch.

This product is suitable for three-phase AC 10KV, 50Hz power system, as industrial and mining enterprises, high-rise buildings, residential areas, pre-installed substation and other places, used to break, close the load current, fault current, control and protection of lines and distribution transformers.



○ Model definition and description

X	G	N	15	12	□	□
1	2	3	4	5	6	7

1.Box construction.

2.Stationary.

3.Indoor type.

4.Design sequence number.

5.Voltage level (KV).

6.FLN36 Load switch.

7.FLN48 Load switch

○ Environmental condition

- Altitude: no more than 1000M; (If there are special requirements can be indicated when ordering)
- Ambient temperature: -15℃+40℃;
- Relative humidity: the daily average relative humidity is not more than 95%, the monthly average relative humidity is not more than 90%;
- Seismic strength: not more than 8 degrees;
- There is no serious pollution in the surrounding air, such as dust, smoke, chemical etchant, flammable gas, gasoline and salt.

○ Technical parameter

NO.	Item	Unit	Technical parameter
1	Rated voltage	kV	12
2	Rated current	A	630 125
3	Rated short circuit closing current (peak)	kA	50
4	Rated short circuit closing current (peak)	kA	31.5
5	Rated active load breaking current	A	630
6	3S heat stable current	kA	630
7	Rated dynamic stable current (peak)	kA	50
8	Imin power frequency withstand voltage	kV	42(Fracture, 48)
9	Lightning impulse withstand voltage	kV	75(Fracture, 85)
10	Mechanical life	Time	5000
11	Rated transfer current	A	1700
12	Mode of operation		Manual or electric
13	Class of protection		≥IP30

○ Technical characteristics

- More than 5 years experience in safe operation in China.
- Excellent technical performance, long electrical life, maintenance-free.
- The assembly gate, opening gate and ground switch are located in one body and are packaged in epoxy filled with SF6 gas.
- Resin shell, three positions interlock, compact structure, high safety and reliability.
- Small size, light weight, easy maintenance, easy to operate and safe.

POWER DISTRIBUTION SOLUTION PROVIDER

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RM6-12

Gas Insulated Ring Switchgear

RM6-12 gas insulated ring network switchgear is modular unit mode, which can be combined according to non-use; It consists of fixed unit combination and expandable unit to meet the needs of flexible use of compact switchgear in various substations.

RM6-12 inflatable switchgear is a completely sealed system with all live parts and switches enclosed in a stainless steel housing. The entire switching device is not affected by external environmental conditions, thus ensuring operational reliability and personal safety, and achieving maintenance-free. Any combination can be fully modular by selecting an expandable bus. Extended bus safety insulation and shielding ensure high reliability and safety.

RM6-12 inflatable switchgear can also provide TV-oriented automation solutions; The concept of intelligent switch is formed, and the workload of on-site installation and commissioning is minimized.

RM6-12 inflatable switchgear is divided into non-expandable standard configuration and expandable standard configuration. Due to the combination of full module and half module and its own scalability, it has extremely special flexibility.



○ Model definition and description

RM	12	630	20
1	2	3	4

1.Gas insulated ring switchgear.

2.Voltage level.

3.Rated current.

4.Breaking current.

○ Technical characteristics

- RM6-12 series inflatable cabinet SF6 gas is used as arc extinguishing and insulating medium.
- The switchgear is fully sealed and fully insulated; Bus bars, switches and live parts are completely enclosed in stainless steel housing.
- The chamber is filled with 1.4bar SF6 gas, and the protection level reaches IP67. The entire switch device is completely unaffected by external environmental conditions, and can ensure the normal operation of the switch even in extreme cases such as brief flooding.
- The switchgear has a perfect "five prevention" interlock device to completely eliminate personnel and equipment operating failures that may be caused by human error.
- All switchgear has a reliable safe pressure relief channel, which can guarantee the personal safety of the operator even in extreme circumstances.
- The switchgear is divided into two categories: fixed unit combination and expandable unit combination.
- The switch cabinet usually enters and exits from the front, and can also be realized by side exit or side expansion according to different installation positions. The size of the cabinet is easy to install, and can be suitable for small space and poor environmental conditions.
- The switchgear can be configured with electric, remote control and detection devices according to the different needs of users.

○ Environmental condition

- **Gas pressure** 20° C is 1.4bar

Annual leakage rate of gas	0.2‰/ year
Class of protection	IP67
Air chamber stainless steel thickness	3.0 mm

- **Normal operating environment conditions**

Maximum temperature	40℃
Minimum temperature	-40℃
Maximum mean relative humidity	≤95%
Altitude	≤2000m

- **Bus bar**

Switchgear inside bus	400mm2Cu
Switchgear ground bus	150mm2Cu

- **Meet the criteria**

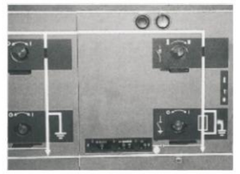
IEC60056 IEC60129 IEC60256 IEC60298
IEC60420 IEC60694

- **Colour**

Switch cabinet front panel	RAL 7035
Side panel and cable room front cover plate	RAL 7035

Technical parameter

Name	Unit	C module	F module	V module		V module	
		Load switch	Combination apparatus	Vacuum switch	Isolated ground switch	Vacuum circuit breaker	Isolated ground switch
Rated voltage	KV	12	12	12	12	12	12
Rated frequency	HZ	50	50	50	50	50	50
Power frequency withstand voltage (same/fracture)	kV	42/48	42/48	42/48	42/48	42/48	42/48
Aegis; Knock withstand voltage	kV	75/85	75/85	75/85	75/85	75/85	75/85
Rated current	A	630	Notice	630		1250/630	
Breaking capacity							
Rated closed-loop breaking current	A	630					
Rated cable charging breaking current	A	10					
Rated short circuit closing current (peak)	A	50	80				
Rated peak withstand current	kA	50					
Rated short-time withstand current	kA/35	20					
Rated short-circuit breaking current	kA		31.5	20		25	
Rated transfer current	A		1700				
Maximum current of fuse	A		125				
Loop resistance	-n	≤300	≤600				
Mechanical life	Times	5000	3000	5000	2000	5000	5000



Capacitive voltage indicator



Cable connection



Pressure indicator

Auxiliary contact

2NO+2NC indicating switch position is available on all load switches and circuit breakers. A parallel trip coil (AC or DC) can be installed to the transformer switch/circuit breaker. The low pressure control unit is located behind the front panel.

Voltage indication

The capacitive voltage indicator shows whether the bushing is charged and the jack on it can be used for the nuclear phase.

Short circuit/ground fault indicator

To facilitate fault location, cable switch modules can be equipped with short circuit/ground fault indicators for simple fault detection.

Electric operation

Manual operation of the cable switch unit and transformer unit is the standard scheme. Optionally, an electric operating mechanism can be installed. Cable switches, vacuum circuit breakers and ground switches are all operated through structures located behind the front panel. For all switches and circuit breakers, they can be operated by an operating handle (standard) or they can be equipped with a motor operating structure (accessories). However, the ground switch can only be operated manually and is equipped with a mechanism capable of meeting the fault current. The electric operating mechanism is easy to implement in stages.

Cable connection

The inflatable cabinet is fitted with standard bushing. All bushings are at the same height from the ground and are protected by a cable room cover. The cover plate can be interlocked with the ground switch, and for double cable entry, a special double cable room cover plate can also be used.

Pressure indicator

Usually equipped with a pressure indicator, the indicator is in the form of a pressure gauge. Electrical contacts can also be provided to indicate pressure reduction.

POWER DISTRIBUTION SOLUTION PROVIDER

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RM6-24

Gas Insulated Ring Switchgear

RM6-24 series ring main unit is a fully-sealed system, and its main circuit switch body and various live parts are enclosed in a stainless steel shell flled with SF6 gas under a certain pressure. The entire switchgear is not affected by the external environment and ensures reliable operation and personnel safety realizing maintenance-free.

RM6-24 series ring main unit has standard module units and fixed combination module units. Multiple combinations can be realized through the selected extended busbars to achieve full modularization. The extended busbars are fully insulated and shielded to ensure high reliability and safety. The rich combinations of modules not only meet the needs of network nodes and end users, but also meet the needs of fexible use of compact switchgear in various secondar substations.

SF6 gas insulated ring main unit is used in a power distribution system for control, protection, measurement, monitoring, and communication. With its many advantages such as small size, maintenance-free, and main circuit not afected by external environment, such switchgear is especially suitable for applications with high reliability requirements and with relatively harsh natural environments and conditions such as underground, plateau, and coastal areas. The product is widely used in many places such as industrial and mining enterprises, railways, airports, urban commercial centers, and residential area.

SF6 fully insulated ring main unit complies with IEC 62271, IEC 60420.



Giantele®

○ Model definition and description

RM	24	□	□
1	2	3	4

1.Gas insulated ring switchgear.

2.Voltage level.

3.Rated current.

4.Breaking current.

○ Environmental condition

- Altitude: ≤4000m (when the equipment is running at an altitude of 1,000 meters or more, please especially indicate it for adjustment of charge pressure when manufacturing).
- Ambient temperature: Max. temperature: +40℃; Min. temperature: -25℃; mean temperature in 24h does not exceed 35℃.
- Ambient humidity: the mean relative humidity in 24h does not exceed 95%; the mean monthly relative humidity does not exceed 90%.
- Installation environment: There is no explosive or corrosive gas in the ambient air, and there is no severe vibration or shock applied in the installation site.
- Seismic capacity: 8 magnitude scales.
- Special conditions: The special operating conditions different from normal operating conditions must be agreed by the manufacturer and the end user. For particularly harsh operating environments, please contact the manufacturer and supplier.

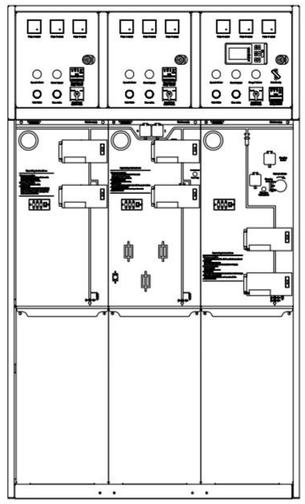
○ Technical characteristics

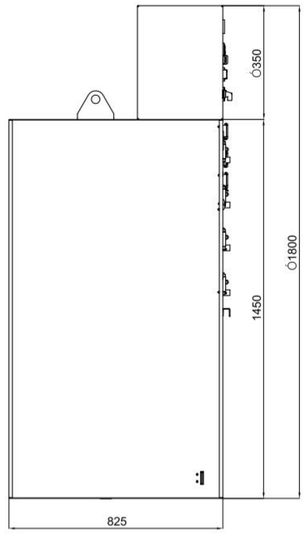
- 5.1 Modular Design Includes load switch unit (C), load switch + fuse unit (F), circuit breaker unit (V), and busbar PT unit (PT). The main circuit is connected externally through the bushing that complies with the DIN47636 standard. Modules can be flexibly combined to form various configurations.
- 5.2 Fully Insulated and Sealed Primary live parts and switch bodies are enclosed in a stainless steel gas box (IP67). External connections use fully insulated, shielded bushings, offering flood resistance and anti-condensation capabilities.
- 5.3 Flexible and Expandable Standard modules can form fixed or expandable units, allowing custom power supply solutions for diverse applications.
- 5.4 High Safety and Reliability Live parts are enclosed in a sealed gas box with pressure relief devices and mechanical interlocks to prevent faults and misoperations.
- 5.5 Reliable Mechanism Equipped with a spring operating mechanism developed in-house, ensuring high quality through strict design and production control.

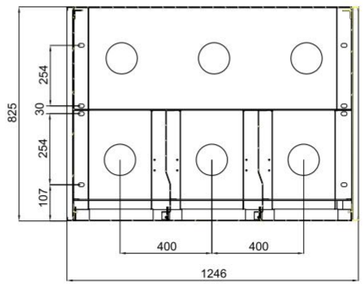
Technical parameter

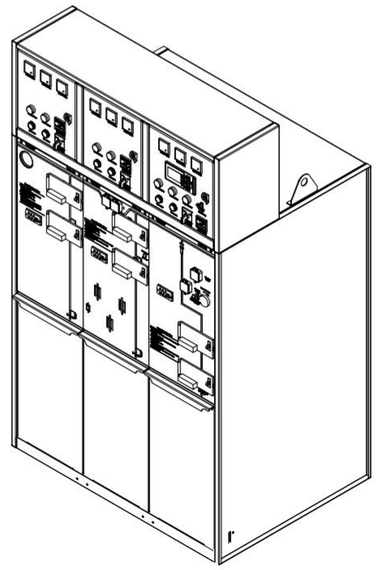
No.	Item		Unit	Load switch unit	Combined apparatus unit	breaker unit Circuit
1	Rated voltage		kV	24	24	24
2	Rated freq.		Hz	50	50	50
3	Rated current		A	630	80 (depending on the current of fuse)	630
4	Rated insulati on level	1 minute power frequency withstand voltage	Phase-to-phase, phase-to-earth	kV	65	65	65
			Open contacts		79	79	79
			Control and aux. circuit		2	2	2
		Lighting impulse withstand voltage	Phase-to-phase, phase-to-earth		125	125	125
			Open contacts		145	145	145
5	Rated short-time withstand current		kA/s	25/4	—	25/4
6	Rated peak withstand current		kA	63	—	63
7	Rated short-circuit making current		kA	63	Limited by high-voltage fuse	63
8	Rated short-circuit breaking current		kA	—	Limited by high-voltage fuse	25
9	Rated transfer current		A	—	1200	—
10	Rated active load breaking current		A	630	—	—
11	Rated closed-ring breaking current		A	630	—	630
12	Mechanical life	Load switch / circuit breaker	Times	5,000	5,000	10,000
		Disconnect switch / earthing switch		3,000	3,000	3,000
13	Loop resistance		μΩ	≤150	—	≤150
14	Rated charge pressure (gauge pressure at 20℃)		MPa	0.04	0.04	0.04
15	Annual relative leakage rate of gas		Yearly	≤0.01%	≤0.01%	≤0.01%
16	Protection grade	Cabinet body		IP4X	IP4X	IP4X
		Gas box		IP67	IP67	IP67

Dimensions (mm)









RM6-40.5
Gas Insulated Ring Switchgear

RM6-40.5 series ring main unit is a fully-sealed system, and its main circuit switch body and various live parts are enclosed in a stainless steel shell flled with SF6 gas under a certain pressure. The entire switchgear is not affected by the external environment and ensures reliable operation and personnel safety realizing maintenance-free.

RM6-40.5 series ring main unit has standard module units and fxed combination module units. Multiple combinations can be realized through the selected extended busbars to achieve full modularization. The extended busbars are fully insulated and shielded to ensure high reliability and safety. The rich combinations of modules not only meet the needs of network nodes and end users, but also meet the needs of fexible use of compact switchgear in various secondar substations.

SF6 gas insulated ring main unit is used in a power distribution system for control, protection, measurement, monitoring, and communication. With its many advantages such as small size, maintenance-free, and main circuit not afected by external environment, such switchgear is especially suitable for applications with high reliability requirements and with relatively harsh natural environments and conditions such as underground, plateau, and coastal areas. The product is widely used in many places such as industrial and mining enterprises, railways, airports, urban commercial centers, and residential area.

SF6 fully insulated ring main unit complies with IEC 62271, IEC 60420.



○ Model definition and description

RM	40.5	□	□
1	2	3	4

1.Gas insulated ring switchgear.

2.Voltage level.

3.Rated current.

4.Breaking current.

○ Environmental condition

- Altitude: ≤4000m (when the equipment is running at an altitude of 1,000 meters or more, please especially indicate it for adjustment of charge pressure when manufacturing).
- Ambient temperature: Max. temperature: +40℃; Min. temperature: -25℃; mean temperature in 24h does not exceed 35℃.
- Ambient humidity: the mean relative humidity in 24h does not exceed 95%; the mean monthly relative humidity does not exceed 90%.
- Installation environment: There is no explosive or corrosive gas in the ambient air, and there is no severe vibration or shock applied in the installation site.
- Seismic capacity: 8 magnitude scales.
- Special conditions: The special operating conditions different from normal operating conditions must be agreed by the manufacturer and the end user. For particularly harsh operating environments, please contact the manufacturer and supplier.

○ Technical characteristics

- Due to the use of excellent insulation performance of sulfur hexafluoride gas as insulation and arc extinguishing medium, all can greatly reduce the volume of the switch cabinet, more compact, miniaturization.
- High reliability and safety The conductive part of the main circuit is sealed in SF6 gas, the high voltage live conductor is closed, and is not affected by changes in external environmental conditions, so that the equipment can operate safely for a long time, with high reliability and no electric shock and fire risk.
- Independent modular design, gas box for high-precision aluminum plate installation can be removed, isolation switch adopts three-station linear transmission, in order to reduce the control relay and line clutter, for this purpose, another design of PLC nearly 100 points of control module, to achieve grounding, isolation switch, all electric remote operation, modular design of the mechanism switch, the closing point is connected by the contact of the hook.
- It eliminates the possibility that the original rotary isolation switch and ground switch do not operate, changes the problem that the original rotary isolation switch contact resistance is unstable and too large, and all the external contacts are equipped with shielding pressure equalizing covers, completely solving the problem of local release in the production of switch breakpoints.
- Gas insulated switchgear as an independent unit, through the combination can meet the requirements of various main wiring. In the form of unit delivery to the site, can shorten the site installation period, and improve the reliability.

Conditions of use

Installation site	Indoor
Ambient temperature (℃)	-15~40
Altitude (m)	≤5000
Seismic intensity	≤8°
Charging pressure	0.05MPa
Relative annual air leakage rate of each compartment	≤0.2%
Electromagnetic interference amplitude induced in a secondary system (kV)	≤1.6

There is no flammable gas and fire, explosion danger around, the severity of condensation and dirty operation: according to the GB3906 level one.

Technical parameter

Item	Unit	C unit Load switch	F unit Combination apparatus	V unit Vacuum circuit breaker	Disconnecting switch	Vacuum circuit breaker
Rated voltage	kV	40.5	40.5	40.5	40.5	40.5
Rated current	A	630	125	630-3150	630-3150	630-3150
Rated frequency	Hz	50	50	50	50	50
Main loop resistance	μΩ	≤200≤60	≤400≤60	≤200≤60	≤200≤60	≤200≤60
Rated short-time power frequency withstand voltage	kV	95	95	95	95	95
Rated lightning impulse withstand voltage	kV	185	185	185	185	185
Rated short-circuit breaking current	kA	20-25	31.5	20-40	20-40	20-40
Rated short-circuit closing current	kA	50	80	80	80	80
Rated short-time power frequency withstand voltage	time	118	118	115	118	118
Rated lightning impulse withstand voltage	kA	215	215	215	215	215
Rated short circuit duration	S	4	4	4	4	4
Rated peak withstand current	kA	50	80	80	80	80
Three-phase switching discontinuity	ms	≤5	3≤	≤2		
Rated transfer current	A	1750				
Internal arc test (AFLR class)	kA/s	31.5/0.5s (kA including bus room, switch room, cable room)				
Partial discharge	PC	≤10				
Class of protection		IP67	IP67	IP67		
Mechanical life	time	10000	10000	10000	3000	3000

Enforce standards

IEC 62271-1: High-voltage switchgear and controlgear - Part 1: Common specifications.

IEC 62271-200: High-voltage switchgear and controlgear - Part 200: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV

IEC 60071-1: Insulation coordination - Part 1: Definitions, principles and rules.

IEC 60060-1: High-voltage test techniques - Part 1: General definitions and test requirements.

IEC 60060-2: High-voltage test techniques - Part 2: Measuring systems.

IEC 60270: High-voltage test techniques - Partial discharge measurements.

IEC 62271-100: High-voltage switchgear and controlgear - Part 100: AC circuit-breakers.

IEC 62271-102: High-voltage switchgear and controlgear - Part 102: Alternating current disconnectors and earthing switches.

IEC 60529: Degrees of protection provided by enclosures (IP Code)

IEC 60376: Specification of technical grade sulfur hexafluoride (SF6) for use in electrical equipment.

IEC 60480: Guidelines for the checking and treatment of sulfur hexafluoride (SF6) taken from electrical equipment and specification for its re-use.

Type test

- Insulation test.
- Temperature rise test.
- Loop resistance measurement.
- Short-time withstand current and peak withstand current test.
- Verification of closing and breaking capability.
- Mechanical operation and mechanical characteristic test.
- Protection level detection.
- Additional tests of auxiliary and control circuits.
- Pressure tolerance test for inflatable compartments.
- Seal test Internal arc test.
- Electromagnetic compatibility test.

KYN28-12

Armored Metal-Clad Switchgear

KYN28A-12(Z) (GZS1) type armoured disengaged AC metal enclosed switchgear (hereinafter referred to as "switchgear") It is suitable for three-phase AC 50Hz power system, used to receive and distribute electrical energy and control, protect and monitor the circuit.

This product conforms to the standards: IEC 62271-200 "High-voltage switchgear and controlgear - Part 200: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV", IEC 62271-1 "High-voltage switchgear and controlgear - Part 1: Common specifications",IEC60298 "rated voltage 1kV and above AC metal enclosed switchgear and control equipment".



Model definition and description

K	Y	N	28	12	Z
1	2	3	4	5	6

1.Metal armoured type.

2.Shifting type.

3.Indoor.

4.Design sequence number.

5.Rated voltage (kV).

6.Vacuum circuit breaker.

Environmental condition

- Ambient air temperature: maximum temperature +40℃, minimum temperature -15℃;
- Relative humidity: daily average relative humidity: ≤ 95%, daily average water vapor pressure does not exceed 2.2KPa; Monthly average relative humidity ≤ 90%; The average monthly steam pressure does not exceed 1.8KPa;
- Altitude: ≤ 1000m;
- Earthquake intensity: not more than 8 magnitude;
- The surrounding air should be free from corrosive or flammable gases, water vapor and other obvious pollution;
- No severe vibration site;
- If it is used under normal conditions beyond GB3906, the user and the Company shall negotiate.

Technical parameter

Item		Unit	Data
Rated voltage		kV	3.6, 7.2, 12
Rated frequency		Hz	50
Circuit breaker rated current		A	630, 1250, 1600, 2000, 2500, 3150
Rated current of switchgear		A	630, 1250, 1600, 2000, 2500, 3150
Rated short-time withstand current (4S)		kA	20, 25, 31.5, 40
Rated peak withstand current (peak)		kA	50, 63, 80, 100
Rated short-circuit breaking current		kA	20, 25, 31.5, 40
Rated short circuit closing current (peak)		kA	50, 63, 80, 100
Rated insulation level 1min power frequency withstand voltage	Between poles, poles to the ground	kV	24, 32, 42
	Between fractures	kV	24, 32, 42
Lightning impulse Withstand voltage (peak)	Between poles, poles to the ground	kV	40, 60, 75
	Between fractures	kV	46, 70, 85
Class of protection			The enclosure is IP4X, and the compartment and circuit breaker room doors are IP2X when opened.

VD4, VS1-12 vacuum circuit breaker technical parameters

Item		Unit	Data
Rated voltage		kV	12
Rated frequency		Hz	50
Circuit breaker rated current		A	630，1250，1600，2000，2500，3150
Rated dynamic stability current (4S)		kA	16，20，25，31.5，40，50
Rated stable current (peak)		kA	40，50，63，80，100，125
Rated short-circuit breaking current		kA	16，20，25.31.5，40，50
Rated short circuit closing current (peak)		kA	40，50，63，80，100，125
Rated insulation level	1min power frequency withstand voltage	kV	42
	Lightning impulse withstand voltage	kV	75
Rated operating sequence			O-0.3S-CO-180S-CO
Rated short circuit breaking current breaking times		Times	50
Mechanical life		Times	20000

VD4, VS1 vacuum circuit breaker mechanical characteristics

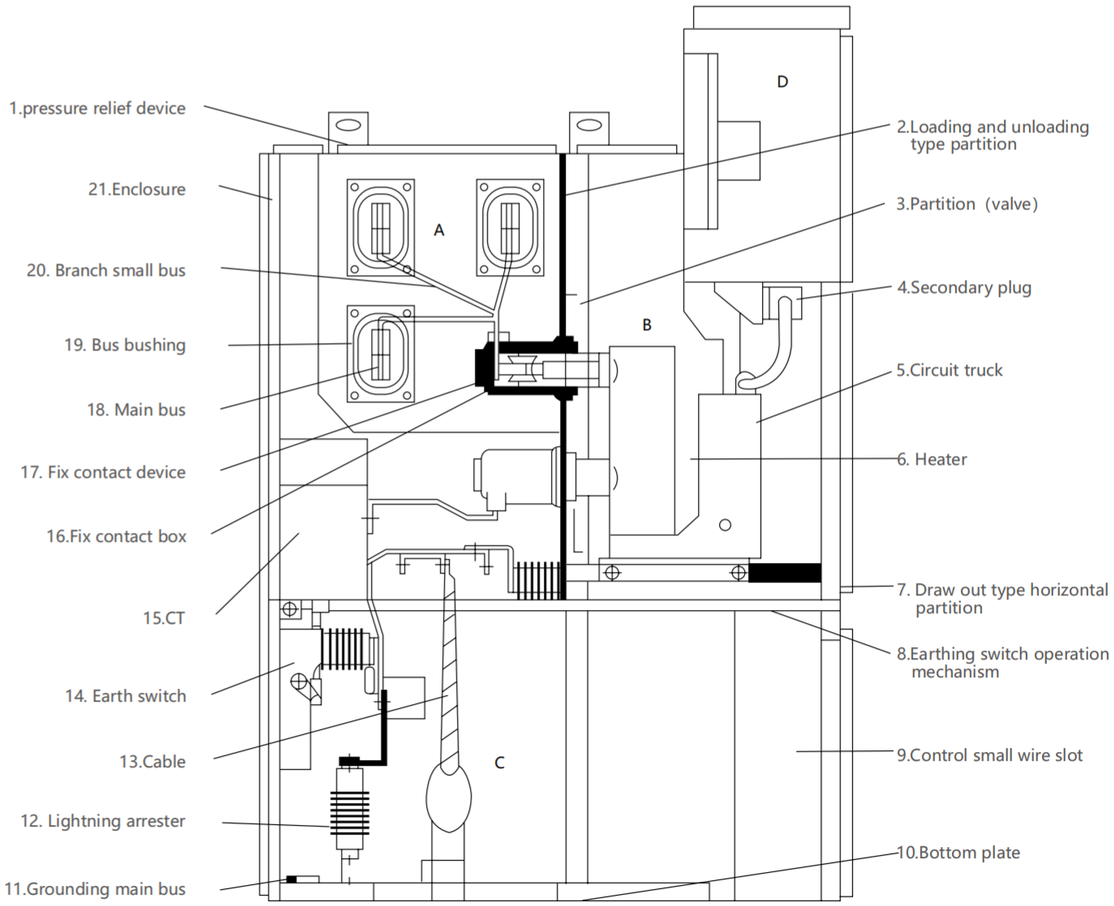
Item		Unit	Data
Contact opening distance		mm	11±1
overtravel		mm	4±0.5
Interphase center distance		mm	210±0.5, 275±0.5
Closing contact bounce time		ms	≤2
Three phase switching is different		ms	≤2
Switching time when operating voltage	The highest	ms	≤ 50
	Rated	ms	≤ 50
	Minimum	ms	≤ 60
Closing time		ms	≤ 100
Average closing speed		m/s	0.9-1.2
Average opening speed		m/s	0.6-0.8

Structural characteristics

The switchgear structure is shown below. All-metal modular assembly structure, the cabinet is made of imported aluminum-zinc plate with strong anti-corrosion ability, without surface treatment, processed by CNC high-precision equipment, using advanced multiple flanging technology, and connected with rivet nuts and high-strength bolts, high precision, light weight and good strength.

The switchgear can be equipped with VS1 series, VD4 series, ZN65 series and other vacuum circuit breakers produced by our company, which has wide adaptability and strong interchangeability. The handcart is provided with a working position and a test position, and each position is equipped with a positioning and display device, which is safe and reliable.

The cable room can be equipped with up to 9 single-core cables, and the equipment has a reliable mechanical and electrical interlocking device, which fully meets the requirements of "five defenses". Each room is equipped with pressure relief channel to ensure personal safety.



A.Bus chamber B.Circuit breaker chamber C.Cable chamber D.Relay instruments chamber

Mounting size (mm)

mm

Height B		2300(2200)
Width A	Rated current up to 1250A	800
	Rated current 1600A and above (altitude 4000m rated current 1250A)	1000
Depth C	Cable inlet and outlet	1500
	Overhead inlet and outlet line	1660

mm

Cabinet width A	Cabinet depth B	L1	L2	L3	L4
800	1500 Cable	530	630	150	490
	1660 Aerial	530	630	310	650
1000	1500 Cable	730	830	150	490
	1660 Aerial	730	830	310	650

Operating mechanism technical parameters

Item		Unit	Data
Rated operating voltage	Closing coil	V	AC/DC220,110
	Opening coil	V	AC/DC220,110
Coil power	Closing coil	W	245
	Opening coil	W	245
Energy storage motor power		W	50
Rated voltage of energy storage motor		V	AC/DC220,110
Energy storage time		S	

Structural characteristics

- The switchgear is designed according to the armored metal enclosed switchgear in GB3906-91.
- The whole is composed of two parts (see Figure 1) : the cabinet and the middle withdrawable part (i.e. the hand car).
- The cabinet is divided into four separate compartments1 The shell protection level is IP4X, and the class of each compartment and circuit breaker room is IP2X when the door is opened.
- It has aerial inlet and outlet lines, cable inlet and outlet lines and other functional schemes, and forms a complete set of distribution system 1 system device after arrangement and combination.
- The switchgear can be installed, debug and maintained from the front, so it can be back-to-back, composed of dual arrangements and installed against the wall, improving the safety and flexibility of the switchgear and reducing the footprint.

Enclosures and others

- The main cabinet frame of the switchgear is made of aluminum-zinc thin steel plate, processed by CNC machine tool, and adopts multiple flanging process, so that the whole cabinet not only has the advantages of high precision, strong corrosion resistance and oxidation resistance, but also makes the cabinet light in weight, high mechanical strength and beautiful appearance than other similar equipment cabinets due to the use of multiple flanging process.
- The cabinet body is assembled and connected with riveted nuts and high-strength bolts, so that the processing cycle is short, the parts are versatile, the area is small, and the production is easy to organize.

Handcart

- The frame of the handcart is made of thin steel plate processed by CNC machine tool and assembled.
- The hand car is insulated with the cabinet body, and the mechanism interlock is safe, reliable and flexible.
- According to the use, the handcart can be divided into circuit breaker handcart, voltage transformer handcart, metering handcart, isolation handcart and so on.
- All kinds of handcarts according to the module, block type change, the same specification of handcarts can be 100 percent free interchange.
- The handcart has a disconnect position, a test position and a working position in the cabinet, and each position is equipped with a positioning device to ensure that the interlock is reliable, and must be operated according to the interlock anti-error operation procedure.
- All kinds of handcart are carried out by nut and screw to push forward and exit, and its operation is light and flexible, suitable for the operation of the personnel on duty.
- When the hand car needs to remove the cabinet, with a special transfer car, it can be easily extracted for various inspections and maintenance: and the use of mid-mounted, the whole hand car is small in size, inspection and maintenance is very convenient.

Compartment

The main electrical components of the switchgear have their own independent compartments, namely: circuit breaker handcart room, bus bar room, cable room, relay instrument room. The protection level of each compartment reaches IP2X; In addition to the relay room, the other three compartments have their own pressure relief channels. Due to the use of mid-mounted form, the cable room space is greatly increased, so the equipment can be connected to multiple cables.

Breaker compartment

Rails are installed on both sides of the compartment for the handcart 5 to slide from the disconnecting position and the test position to the working position in the cabinet, and the partition board 3(valve) of the static contact box 16 is installed behind the rear wall of the compartment. When the handcar moves from the disconnecting position and the test position to the working position, the valve on the upper and lower static contact boxes are linked with the handcar and automatically open at the same time; When moving in the opposite direction, the valve is automatically closed until the hand car has retreated to a certain position and completely covers the static contact box, forming an effective isolation. Since the upper and lower valves can be operated separately, the valve on the live side can be locked during maintenance, so as to ensure that the maintenance and maintenance personnel do not touch the live body. When the circuit breaker room door is closed, the hand car can also be operated. Through the observation window of the middle door, the hand car in the compartment can be observed, the closing position and the energy storage condition can be displayed.

Bus compartment

The main busbar 18 is a single splicing through each other, fixed by a busbar 20 and a static contact box. The main busbar and the connecting busbar are rectangular copper bars, which are composed of two busbars when the current load is high. The branch busbar is bolted to the static contact box 16 and the main busbar, and no other support is required. For special needs, the busbars can be covered with heat shrink bushing and connecting bolt insulation sleeves and end caps, and the busbars in adjacent cabinets are fixed with bushing 19. In this way, the air buffer retained between the bus bars can prevent melting if there is an internal fault arc, and the casing 19 can effectively limit the accident to the cabinet and not spread to other cabinets.

POWER DISTRIBUTION SOLUTION PROVIDER

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KYN28-24

Armored Metal-Clad Switchgear

KYN28-24 armoured removable enclosed switchgear. It is suitable for three-phase AC rated voltage 24kV, rated frequency 50Hz power system, used to receive and distribute electric energy and control, protect and monitor the circuit.

Meet the standard:

IEC 62271-200 "High-voltage switchgear and controlgear - Part 200: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV"

IEC 60694 "Common specifications for high-voltage switchgear and controlgear standards"

IEC298(1990) "Rated voltage above 1kV 50kV and below AC metal enclosed switchgear and control equipment"

DL404-97 "Indoor AC High voltage Switch cabinet ordering technical conditions"



Model definition and description

K	Y	N	24	□	□
1	2	3	4	5	6

1.Metal armoured type.

2.Shifting type.

3.Indoor.

4.Design sequence number.

5.Primary loop scheme.

6.Environmental character code.

Environmental condition

- Ambient air temperature: -25℃~+40℃;
- Relative humidity: daily average relative humidity ≤95%; Daily average steam pressure ≤2.2KPa; Monthly average relative humidity ≤90%; Monthly average steam force ≤1.8KPa;
- Earthquake intensity: not more than 8 degrees;
- The surrounding air should be free from corrosive or flammable gases, water vapor and other obvious pollution;
- No severe vibration site;
- If it is used under normal conditions beyond GB3906, the user and the Company shall negotiate.

Technical parameter

- Rated power frequency withstand voltage (min): 65kV
- Rated lightning impulse withstand voltage (peak):125kV
- Rated voltage: 24V
- Rated frequency: 50Hz
- Rated current: S3150A
- Rated short-circuit breaking current: 31.5kA
- Rated short-circuit closing current: 80kA
- Rated short-time withstand current and duration :31.5/4 kA/s
- Rated peak withstand current: 80kA
- The auxiliary and control circuit short-time power frequency withstand voltage: 2kv
- partial discharge test voltage: 1.1x24
- Partial discharge single insulation: <3pC
- Protection grade housing: IP4X
- Protection level IP2X between compartments
- Creepage distance Porcelain material (to ground) : 2432mm
- Creepage distance for organic materials (to ground) : 2480mm
- Clear distance between phase and relative ground (air insulation) : ≥ 180mm
- Loss of operational continuity category: LSC2
- Minimum clear distance from SMC separator (if any) to live conductor: 245mm
- SMC partition thickness :≥5
- Cooling method: self-cooling *
- Allowable duration of internal arc: 1s
- Temperature rise test: 1.1r

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KYN61-40.5

Armored Metal-Clad Switchgear

KYN61-40.5 armored removable AC metal closed switchgear (hereinafter referred to as "switchgear") its main features are ZN85-40.5 fully insulated vacuum circuit breaker and spring operating mechanism in the cabinet, the cabinet is assembled by steel spray plastic, which improves the coordination accuracy of the hand car and the cabinet, and the hand car is very light and has strong interchangeability. Beautiful appearance, complete scheme, safe and reliable use.



○ Model definition and description

K	Y	N	61	-	40.5	/	□	□	□	-	□□
1	2	3	4		5		6	7	8		9

1.Metal armoured type.

2.Shifting type.

3.Indoor.

4.Design sequence number.

5.Rated voltage.

6.Operating mechanism class.

7.Special service conditions.

8.Rated current.

9.Disengaging (hand car type) metal armoured type.

○ Environmental condition

- Ambient air temperature: maximum temperature +40℃, minimum temperature 15 ℃.
- Humidity conditions: daily average relative humidity :≤95%, daily average water vapor pressure does not exceed 2.2kPa.
- The average monthly relative humidity is 90%, and the average monthly water vapor pressure is 1.8kPa.
- Altitude: 4000m and below.
- Earthquake intensity: No more than 8 degrees.
- The surrounding air should be free from corrosive or flammable gases, water vapor and other obvious stains.
- No frequent violent vibration site.
- When used under normal conditions in excess of GB3906, the user and the manufacturer shall negotiate.

○ Production standard

- This product is used in 35kV three-phase AC 50Hz power system, as a power plant, substation and industrial and mining enterprises of the power distribution room to accept and distribute energy, with control, protection and monitoring functions.
- This product complies with:
- IEC 62271-200 “High-voltage switchgear and controlgear - Part 200: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV”
- IEC 60694 “Common specifications for high-voltage switchgear and controlgear standards”
- DL/T404 "AC high voltage switchgear ordering technical conditions",
- IEC60298 "rated voltage above 1kV 52kV and below AC metal enclosed switchgear and control equipment" standards.

Technical parameter

Name		Unit	Data
Rated voltage		kV	40.5
Rated current	Rated current of the main bus	A	630, 1250, 1600
	The rated current of the circuit breaker	A	630, 1250, 1600
Rated insulation level	1min withstand voltage, between poles, poles/ports	kV	95/110
	Lightning impulse withstand voltage (peak), between electrodes, between machine and ground/between fractures	kV	185/215
	Power frequency withstand voltage of auxiliary loop and control loop	V/1min	2000
Rated frequency		Hz	50
Rated short-circuit breaking current		kA	20, 25, 31.5
Rated short-time withstand current/rated short-circuit duration		kA/4s	20, 25, 31.5
Rated peak withstand current		kA	50, 63, 80
Rated short-circuit closing current		kA	50, 63, 80
Rated voltage of control loop		V	DC:110220,AC:110220
Class of protection	Switchgear housing		IP4X
	Compartment (when cabinet door is open)		IP2X

Technical parameters of circuit breaker with spring operating mechanism

Name		Unit	Data
Rated voltage		kV	40.5
Rated current		A	630, 1250, 1600
Rated insulation level	1min withstand voltage, between poles, poles/ports	kV	95/110
	Lightning impulse withstand voltage (peak), between electrodes, between machine and ground/between fractures	kV	185/215
	Power frequency withstand voltage of auxiliary loop and control loop	V/1min	2000
Rated frequency		Hz	50
Rated short-circuit breaking current		kA	20, 25, 31.5
Rated peak withstand current		kA	50, 63, 80
Rated short-circuit closing current		kA	50, 63, 80
Rated short-time withstand current/rated short-circuit duration		kA/4s	20, 25, 31.5
Mechanical life		Times	1000
Closing time		ms	50~100
Opening time		ms	35~60
Rated operating sequence			Open-0.3 s-O/C-180 s- O/C

ZG-GZDW-3

Microcomputer Type DC Power Supply Panel

ZG-GZDW-3 microcomputer DC power supply panel is a standard DC power supply system designed for users with different capacities. Using 7 inch touch screen monitoring system as the core, Chinese menu display, touch operation, multiple password permissions, man-machine interface friendly and rich, with simple operation, intelligent management, high efficiency and energy saving and remote control features. The system can be composed of monitoring module, rectifier module, buck module, battery inspection module, branch monitoring module and switch output module. The input voltage is AC220V, AC380V, and the maximum output capacity is DC110V/1500Ah, DC220V/1000Ah. If the system needs to provide external flash signal, accident signal, warning signal, inverter power supply, DC24V or DC48V power supply and other functions can be selected and added according to user needs, and the external size can be customized.

Suitable for power plants, hydropower stations, all kinds of substations, switching-closing offices and other users using DC equipment, for electromagnetic operating mechanism, permanent magnet operating mechanism and spring energy storage operating mechanism and other types of circuit breakers, as well as secondary circuit instrumentation, control circuit, relay protection and accident lighting and other types of high and low voltage equipment to provide DC power supply.



Model definition and description

ZG	–	G	Z	□	W	–	□	–	□	–	□	–	□	□
1		2	3	4	5		6		7		8		9	10

1. Enterprise code (ZHEGUI Electric)
2. Screen (cabinet)
3. DC power supply
4. Application type :D. power system, T. communication system
5. microcomputer type
6. Monitoring type :1:ZG-JK01B(wall mounted), 2:ZG-JK01B(vertical cabinet), 3:ZG-JK07T, 4:ZG-JK05T
7. Battery capacity (Ah), dual battery pack x2
8. Input voltage (AC):380V, 220V
9. Output voltage (DC):220V, 110V, 48V, 24V
10. Battery voltage (DC) : 12V, 2V

Environmental condition

- DL/T 459-2017 DC power supply equipment for electric power; DL/T 637-2019 Fixed valve-controlled lead-acid battery for electric power;
- DL/T 724-2000 Technical specification for operation and maintenance of accumulator DC power supply device for power system;
- DL/T 781-2001 High frequency switching rectifier module for electric power;
- DL/T 856-2004 DC power supply monitoring device for electric power;
- DL/T 857-2004 Technical conditions for rectifier inverters for batteries in power plants and substations;
- DL/T 1392-2014 DC power system insulation monitoring device technical conditions;
- DL/T 5044-2014 Power engineering DC power system design technical specification;
- IEC 62040-1"Uninterruptible power systems (UPS) - Part 1: General and safety requirements for UPS"
- IEC 61000-4-18"Electromagnetic compatibility (EMC) - Part 4-18: Testing and measurement techniques - Damped oscillatory wave immunity test"

Product parameter

Item	Parameter index
Rated input voltage	AC 220V/AC 380V±20%
Rated output voltage	220VDC, 110VDC
Rated output current	6A, 9A, 10A, 15A, 20A, 30A, 40A, 50A, 60A, 70A 80A, 90A, 100A, 120A, 130A, 150A, 180A, 200A, 260A, 300A
Accumulator capacity	7Ah, 20Ah, 38Ah, 65Ah, 100Ah, 150Ah, 200Ah, 500Ah, 600Ah, 800Ah
Stable pressure accuracy	≤±0.5%
Stable flow accuracy	≤±1%
Ripple factor	≤±0.5%
Power grid frequency	50Hz±10%
power factor	≥0.95%(full load output)
Insulation strength	>10MΩ, 2KVAC for one minute,no flash over,no breakdown
operate mode	Continuous long-term operation
cooling-down method	Intelligent temperature-controlled air cooling,efficient and natural cooling
Can smell the noise	≤50dB

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VS1-12

VS1-12 Series Indoor High Voltage Vacuum Circuit Breaker

VS1-12 indoor high-voltage vacuum circuit breaker (hereinafter referred to as circuit breaker) is used for indoor switching equipment in 12KV power system, as the protection and control unit of power grid equipment, industrial and mining enterprises. Because of the special advantages of vacuum circuit breaker, it is especially suitable for frequent operation requiring rated working current, or multiple times to break the short circuit current.

The circuit breaker adopts the integrated design of the operating mechanism and the circuit breaker body, which can be used as a fixed installation unit or a special propulsion mechanism to form a handcart unit.



○ Model definition and description

V	S	1	12	□	□
1	2	3	4	5	6

1.Vacuum circuit breaker.

2.Indoors.

3.Product desian serial number.

4.Rated voltage (kV)

5.Rated current (A)

6.Rated short circuit breaking current (KA)

○ Environmental condition

Normal service condition

- Ambient temperature

  Maximum temperature: +40 ° C

  Minimum temperature: -25 ° C

- Ambient humidity

  Daily mean relative humidity: ≤95%

  Monthly mean relative humidity: ≤ 90%

- Altitude: No more than 1000m

  The intensity of the earthquake was not more than 8 degrees

- The use place is free from dripping water, flammable and explosive danger, chemical corrosive gas and violent vibration.

Special service conditions

- For special use conditions, by the manufacturer and the user to negotiate, and reached a consensus, to provide special design and supply;
- Special conditions of use are:

  ① The altitude above 1000m;

  ②Places with condensation risk under high humidity or climate conditions with large humidity mutation.

○ Production standard

- IEC 62271-100"High-voltage switchgear and controlgear - Part 100: Alternating-current circuit-breakers"
- JB/T 3855-2008 High Voltage AC Vacuum Circuit Breaker,
- DL/T 403-2000 "12kV-40.5kV High voltage vacuum Circuit breaker ordering Technical Conditions" standard requirements.
- And comply with IEC 62271-100 requirements.

○ Product parameter

NO.	Project	Unit	Numerical value
1	Rated voltage	kV	12
2	Rated short-time power frequency withstand voltage(1min)		42
3	Rated lightning shock tolerance voltage (peak)		75
4	Rated frequency	Hz	50
5	Rated current	A	630 / 630 1250 1600 / 1250 1600 2000 1250 / 2000 2500 3150 / 2500 3150 4000
6	Rated short-circuit breaking current	kA	20/25 / 31.5 / 40
7	Rated short-time withstand current		20/25 / 31.5 / 40
8	Rated short circuit duration	S	4
9	Rated peak tolerable current	kA	50/63 / 80 / 100
10	Rated short-circuit closing current		50/63 / 80 / 100
11	Secondary circuit power frequency withstand voltage (1min)	V	2000
12	Rated single/back-to-back capacitor group breaking current	A	630/400(800/400 for 40kA)
13	Rated capacitor bank turn-on inrush current	kA	12.5(Frequency not more than 100Hz)
14	Switching time (rated voltage)	ms	≤50
15	Closing time (rated voltage)		≤60
16	Mechanical life	Time	20000
17	Breaking times of rated current (electrical life)		20000
18	Number of breaks of rated short circuit current		50(40kA≤30)
19	Kinematic and static contacts allow wear accumulative thickness	mm	3
20	Rated closing operating voltage	V	AC110/220 DC110/220
21	Rated switching operating voltage		
22	Rated voltage of energy storage motor		
23	Rated power of energy storage motor	W	70
24	Energy storage time	S	≤10
25	Contact opening distance	mm	11±1
26	Overstroke		3.5±0.5
27	Contact closing bounce time	ms	≤2(40kA≤3)
28	Three - phase switching and closing are different		≤2
29	Average opening speed	m/s	1.1±0.2
30	Average closing speed		0.6±0.2
31	Main circuit resistance (fixed/hand)	μΩ	≤45/60(630A)≤40/55(1250A) ≤30/50(1600-2000A) ≤25/35(More than 2500A)
32	Contact closing contact pressure	N	2000+200(20kA) 2400+200(25kA) 3100±200(31.5kA) 4250±250(40kA)
33	Rated operation sequence		Opening -0.3s(180S)-Opening and closing 180S-Opening and closing

○ Product structure

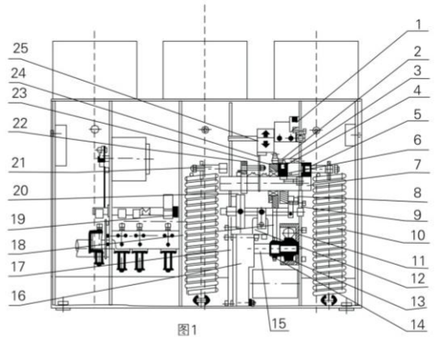


图1

1 Microswitch for energy storage in place switching
2 pins
3 Limit lever
4 Sliders
5 crank arm
6 Energy storage transmission wheel
7 Energy storage shaft
8 rollers
9 Energy storage retention switch
10 Closing spring
11 Manual energy storage worm
12 closing electromagnet
13 Manual energy storage transmission worm gear
14 Motor drive sprocket
15 Motor output shaft
16 Energy storage motor
17 Interlocking transmission bending plate
18 Transmission chain
19 Closing and holding axis
20 locking electromagnet
21 crank arm
22 cam
23 Energy storage transmission sprocket
24 connecting boards
25 Energy storage indicator board

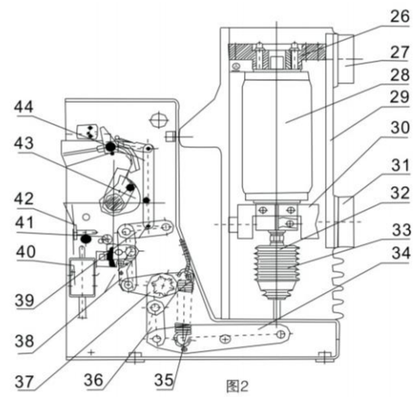


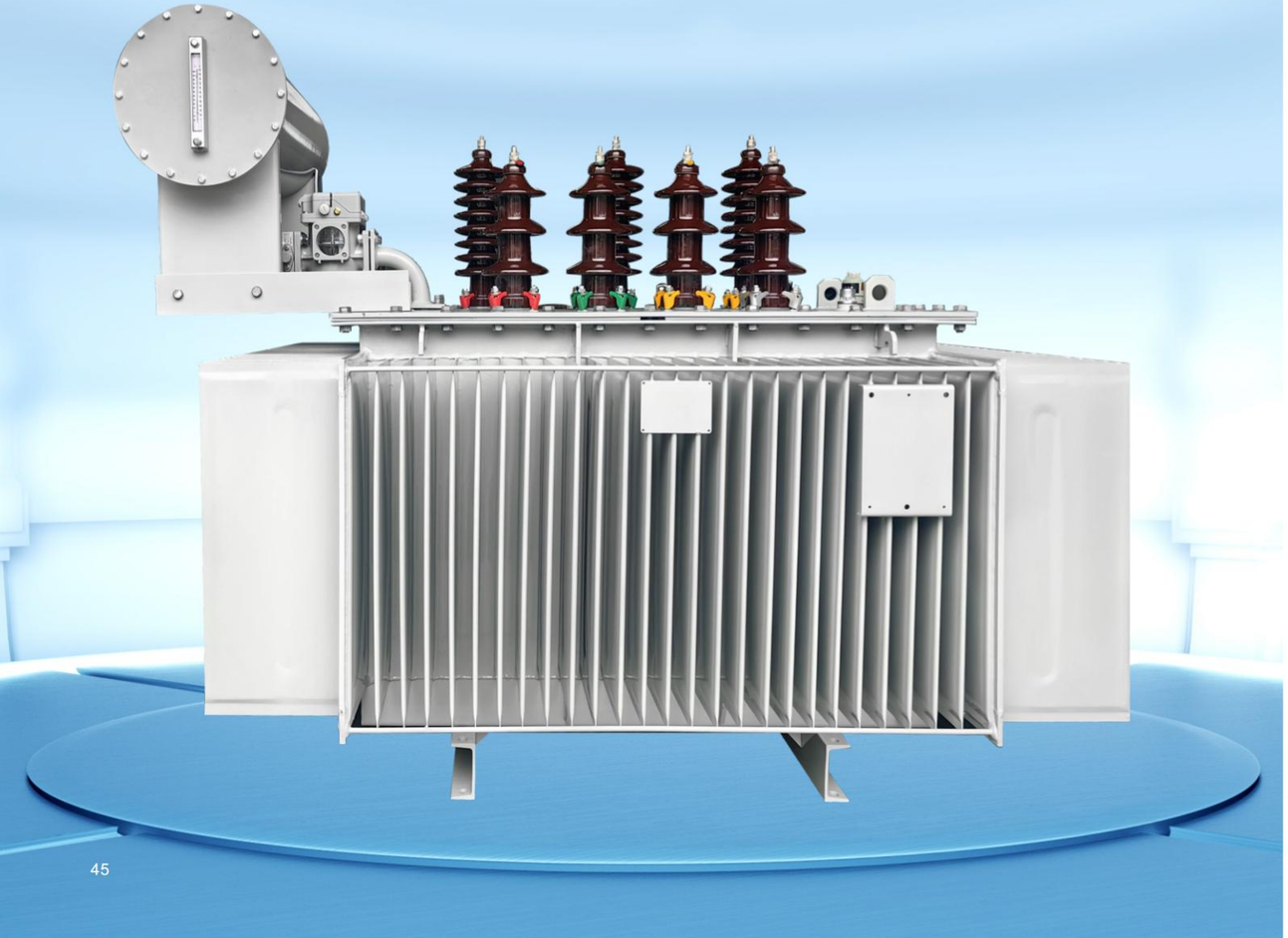
图2

26 Upper bracket
27 Upper outlet socket
28 Vacuum arc extinguishing chamber
29 Insulating cylinder
30 lower bracket
31 Lower outlet socket
32 contact pressure spring
33 insulated pull rod
34 Transmission crank arm
35 opening spring
36 Transmission connecting plate
37 Spindle transmission crank arm
38 closing and holding switch
39 connecting boards
40 opening electromagnet
41 Half shaft
42 Manual opening top rod
43 cam
44 Opening and closing indicator board connection board

Note: When the circuit breaker is already in the closing state or the locking device is selected without unlocking the locking device and the hand-driven circuit breaker is in the process of pushing out, the closing operation cannot be carried out.

S11
Oil Immersed Transformer

The S11-M series fully sealed oil-immersed power transformer developed and produced by our company has the advantages of low loss, low noise and high efficiency, which can achieve good energy saving effect and reduce pollution. Compared with the ordinary oil-immersed transformer, the fully-sealed transformer eliminates the oil storage tank, the oil volume change is automatically adjusted and compensated by the elasticity of the corrugated sheet of the corrugated oil tank, the transformer is isolated from the air, prevents and slows down the deterioration of the oil and insulation aging, enhances the operation reliability, and the normal operation is maintenance-free.



○ Model definition and description

S	11	M	□	□
1	2	3	4	5

1.Three phase

2.Performance level code

3.Complete seal

4.Rated capacity (KVA)

5.Voltage level (KV)

○ Environmental condition

- 1. Maximum ambient temperature: +40℃
- 2. Minimum ambient degree: -25℃
- 3, altitude: < 1000m
- 4. Maximum monthly average relative humidity: 90%(20℃)
- 5, installation location: installed in a place without fire, explosion danger, serious pollution, chemical corrosion and violent vibration, indoor or outdoor.

○ Executive standard

- IEC 60076 "Power Transformers"
- IEC 60076-7 "Power transformers - Part 7: Loading guide for oil-immersed power transformers"
- IEC 60076-1 "Power transformers - Part 1: General"
- IEC 60296 "Fluids for electrotechnical applications - Unused mineral insulating oils for transformers and switchgear"
- IEC 60071-1 "Insulation co-ordination - Part 1: Definitions, principles and rules"
- IEC 60076-3 "Power transformers - Part 3: Insulation levels, dielectric tests and external clearances in air"
- IEC 60076-3 "Power transformers - Part 3: Insulation levels, dielectric tests and external clearances in air"
- DL/T572 Transformer operation code.

○ Product characteristics

- 1. The transformer core is made of imported high-quality cold-rolled silicon steel sheet, which greatly reduces no-load loss and no-load current, and binds the core to ensure the firmness of the core and reduce noise.
- 2. The high and low voltage winding is wound with oxygen-free copper, the low voltage winding is 500kVA and below the double-layer cylinder structure, the 630kVA and above the double helix or quadruhelix structure, and the high voltage winding is multi-layer cylinder structure.
- 3. The transformer connection group adopts Dyn11 to reduce the influence of Norwave on the power grid and improve the quality of power supply.
- 4, the transformer is fully sealed structure, extend the service life, free lifting center, free maintenance.
- 5. Measured voice value is below standard.

Performance parameter

Model number	Rated capacity	Join group label	Voltage combination (kV)			No-load loss	Load loss	No-load current	Short-circuit impedance	Dimensions (mm)			Weight (kg)		Gauge
	kVA		High tension	Tapping range	Low pressure	W	W	%	%	L	W	H	Oil	weight	mm
S11-M-30	30	Yyn0 or Dyn11	6 6.3 10 10.5 11	±5% or ±2×2.5%	0.4	100	600	2.3	4.0	740	665	875	74	283	400×500
S11-M-50	50					130	870	2.0	4.0	770	675	965	88	362	400×500
S11-M-63	63					150	1040	1.9	4.0	820	700	1020	112	442	450×500
S11-M-80	80					180	1250	1.9	4.0	835	705	1040	117	481	450×500
S11-M-100	100					200	1500	1.8	4.0	850	715	1055	122	520	450×500
S11-M-125	125					240	1800	1.7	4.0	1180	740	1115	154	667	500×500
S11-M-160	160					280	2200	1.6	4.0	1225	775	1175	176	788	500×500
S11-M-200	200					340	2600	1.5	4.0	1245	790	1195	193	898	500×500
S11-M-250	250					400	3050	1.4	4.0	1340	880	1230	209	1027	550×500
S11-M-315	315					480	3650	1.4	4.0	1425	935	1260	234	1177	550×500
S11-M-400	400					570	4300	1.3	4.0	1470	955	1330	265	1399	550×600
S11-M-500	500					680	5100	1.2	4.0	1490	960	1405	283	1576	550×600
S11-M-630	630					810	6200	1.1	4.5	1585	1030	1370	317	1771	660×660
S11-M-800	800					980	7500	1.0	4.5	1675	1090	1480	366	2128	660×820
S11-M-1000	1000					1150	10300	1.0	4.5	1775	1175	1530	402	2379	660×820
S11-M-1250	1250					1360	12800	0.9	4.5	1965	1155	1700	542	3023	820×820
S11-M-1600	1600					1460	14500	0.8	4.5	2055	1210	1800	616	3591	820×820

Performance parameter

Model number	Rated capacity	Join group label	Voltage combination (kV)			No-load loss	Load loss	No-load current	Short-circuit impedance	Model number	Rated capacity	Join group label	Voltage combination (kV)			No-load loss	Load loss	No-load current	Short-circuit impedance
	kVA		High tension	Tapping range	Low pressure	W	W	%	%		kVA		High tension	Tapping range	Low pressure	W	W	%	%
S11-M-30	30	Dyn11	20	±5%	0.4	90	660	2.1	5.5	S11-M-315	315	Dyn11	20	±5%	0.4	480	4010	1.1	5.5
S11-M-50	50					130	960	2.0	5.5	S11-M-400	400			or		570	4730	1.0	5.5
S11-M-63	63					150	1145	1.9	5.5	S11-M-500	500			±2×2.5%		680	5660	1.0	5.5
S11-M-80	80					180	1370	1.8	5.5	S11-M-630	630					810	6820	0.9	6.0
S11-M-100	100					200	1650	1.6	5.5	S11-M-800	800					980	8250	1.8	6.0
S11-M-125	125			±5%		240	1980	1.5	5.5	S11-M-1000	1000					1150	11330	0.7	6.0
S11-M-160	160			or		290	2420	1.4	5.5	S11-M-1250	250					1350	13200	0.7	6.0
S11-M-200	200			±2×2.5%		330	2860	1.3	5.5	S11-M-1600	1600					1630	15950	0.6	6.0
S11-M-250	250					400	3350	1.2	5.5										

Insulation level

Voltage level (kv)	Maximum operating voltage kV (effective value)	Rated short-time power frequency withstand voltage kV(RMS)/1 minute	Rated lightning impulse withstand voltage kV (peak)	
			Full wave	Clipped wave
0.4	0.46	5	75	85
10	12	35		
20	23	55	125	140

SC(B)10
Dry-type Transformer

The performance indicators of the dry-type transformer produced by the company are in line with the standards, and the user has proved that the operation is reliable and has reached the national advanced level. This series of products using foreign advanced manufacturing technology, design drawings and technical documents complete, correct, clear, advanced production equipment, stable manufacturing process, complete measuring means, for the production of high quality products to provide a solid guarantee.



Model definition and description

S	11	M	□	□
1	2	3	4	5

1.Three phase

2.Performance level code

3.Complete seal

4.Rated capacity (KVA)

5.Voltage level (KV)

Environmental condition

- 1. The main performance parameters of SC(B)10 are shown in the table, and the main performance parameters of SC(B)9 are shown in the table.
- 2. Number of phases: 3 phases
- 3. Frequency: 50Hz
- 4, insulation heat resistance grade: F class
- 5, winding average temperature rise: ≤100K
- 6, local discharge: less than 5Pc

Insulation level

Voltage level (kv)	Maximum operating voltage kV (effective value)	Rated short-time power frequency withstand voltage kV(RMS)/1 minute	Rated lightning impulse withstand voltage kV (peak)	
			Full wave	Clipped wave
0.4	0.46	5	75	85
10	12	35	75	
20	24	50	125	
35	42	70	170	

Model meaning(35KV)

Model number	Rated capacity	Join group label	Voltage combination (kV)			No-load loss	Load loss	No-load current	Short-circuit resistance
	kVA		High tension	Tapping range	Low pressure	W	W	%	%
SC10-50	50	Yyn0 or Dyn11	35	± 2× 2.5% or $^{+3}_{-1}$ × 2.5%	0.4	500	1360	2.8	6.0
SC10-100	100					640	2000	2.4	
SC10-160	160					800	2690	1.8	
SC10-200	200					890	3180	1.8	
SC10-250	250					1000	3640	1.6	
SC10-315	315					1190	4320	1.6	
SC10-400	400					1390	5180	1.4	
SC10-500	500					1640	6360	1.4	
SC10-630	630					1880	7360	1.2	
SC10-800	800					2180	8640	1.2	
SC10-1000	1000					2460	10000	0.9	
SC10-1250	1250					2860	11910	0.9	
SC10-1600	1600					3180	14820	0.9	
SC10-2000	2000					3860	17460	0.9	
SC10-2500	2500					4500	20900	0.9	

Model meaning(10KV)

Model number	Rated capacity	Join group label	Voltage combination (kV)			No-load loss	Load loss	No-load current	Short-circuit resistance
	kVA		High tension	Tapping range	Low pressure	W	W	%	%
SC10-30	30	Yyn0 or Dyn11	10 6.3 6	± 2× 2.5% or $^{+3}_{-1}$ × 2.5%	0.4	190	700	2.4	4.0
SC10-50	50					270	990	2.4	
SC10-80	80					360	1370	1.8	
SC10-100	100					400	1570	1.8	
SC10-125	125					470	1840	1.6	
SC10-160	160					540	2120	1.6	
SC10-200	200					620	2520	1.4	
SC10-250	250					720	2750	1.4	
SC10-315	315					880	3460	1.2	
SC10-400	400					970	3980	1.2	
SC10-500	500					1160	4870	1.2	
SC10-630	630					1300	5950	1.0	
SC10-800	800					1520	6950	1.0	
SC10-1000	1000					1770	8120	1.0	
SC10-1250	1250					2090	9690	1.0	6.0
SC10-1600	1600					2450	11730	1.0	
SC10-2000	2000					3050	14450	0.8	
SC10-2500	2500					3600	17170	0.8	

Model meaning(20KV)

Model number	Rated capacity	Join group label	Voltage combination (kV)			No-load loss	Load loss	No-load current	Short-circuit resistance
	kVA		High tension	Tapping range	Low pressure	W	W	%	%
SC10-50	50	Yyn0 or Dyn11	20	± 2× 2.5% or $^{+3}_{-1}$ × 2.5%	0.4	345	1180	2.4	6.0
SC10-100	100					545	1910	2.2	
SC10-160	160					682	2780	1.8	
SC10-200	200					745	2820	1.8	
SC10-250	250					855	3280	1.6	
SC10-315	315					980	3910	1.6	
SC10-400	400					1165	4640	1.4	
SC10-500	500					1365	5550	1.4	
SC10-630	630					1545	6550	1.2	
SC10-800	800					1775	7910	1.2	
SC10-1000	1000					2090	9370	1.0	
SC10-1250	1250					2410	11050	1.0	
SC10-1600	1600					2820	13300	1.0	
SC10-2000	2000					3280	15690	0.8	
SC10-2500	2500					3910	18550	0.8	