PEOPLE

High Voltage Equipments

COMPLETE SETS OF EQUIPMENT

PEOPLE ELECTRIC
PRODUCT SALES MANUAL

人民电器


PEOPLE

COMPANY PROFILE

People Ele. Appliance Group was wholly owned company of People Holding Group, one of Chinese Top 500 Enterprise, and founded in the year 1996.

Industrial electrical products as the core business of People Ele. Appliance Group, People Electric owns Zhejiang, Shanghai, Nanchang , Fuzhou, Nantong and Zaozhuang six manufacturing bases, 35 wholly owned subsidiaries, 150 holding member enterprises, over 1500 cooperated processing enterprises and over 5000 sales companies.

The products are popularly sold to over 125 countries and regions, which are widely used in Pudong Airport, Beiing-Shanghai high-speed railway, Three Gorges Hydropower, Beijing Subway, Olympic venues, South North Water Transfer, Qinghai-Tibet Railway, Chang'e Lunar Exploration Project and Vietnam Taian hydropower project etc. major projects at home and abroad, which ranked among the World's Top 500 Machinery Enterprises.

Assess by the World's Brand Laboratory, the brand value reaches to RMB 101.636 bilion Yuan.

Perfect industry chain and personalize solutions, Satisfying the different requirements of global customers

Power and energy
- Power
- Petroleum and petrochemical
- Transportation

Industry and machinery
- Mining / building materials
- Water / water treatment
- Car

Date center
- IT
- High technology
- Internet

Commercial network
- Bank insurance
- Public construction
- Community facility

Building
- Official building
- Industrial building
- Basic facility

Residence
- Residential construction
- Public construction
- Community facility

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SWITCHGEAR

SWITCHGEAR CASING

COMPREHENSIVE PROTECTION DEVICE

HIGH VOLTAGE VACUUM CIRCUIT BREAKER

HIGH VOLTAGE DISCONNECTOR

8PT

Low voltage switchgear

Modular design

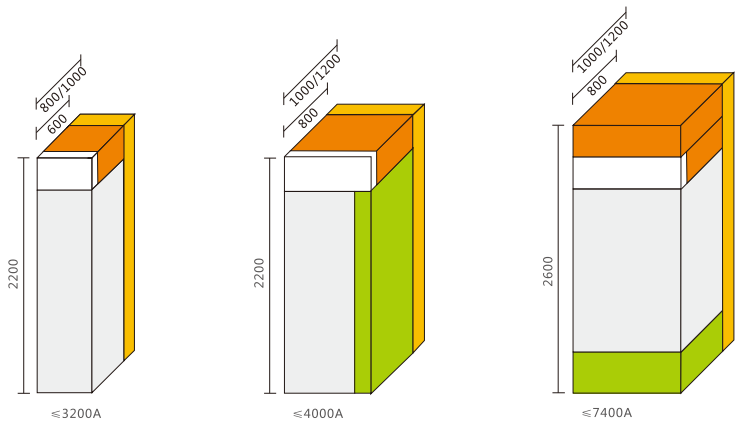
Each SIVACON is completely made of standardized and typical modules. All modules meet the evaluation indicators and design indicators of People's Electrical Appliances Group in terms of quality.
The module has a variety of combination possibilities, so it can meet various requirements. All high-quality People's Electrical Appliance Group switching appliances can ensure long service life and high operational reliability.

Characteristics of SIVACON

Type Tested Low Voltage Switchgear (TTA)
Horizontal busbars are uniformly arranged above the switchgear cabinet
3-pole and 4-pole horizontal bus systems with rated current up to 7400A
Rated peak withstand current Ipk up to 375kA
The depth and size of the device compartment are large, which is suitable for various installations
Device compartments can be divided into different units according to the analog structure
Switchgear can be installed on one side or back to back
The incoming line can be used as an up-incoming line or a down-incoming line

Optimally adapts to the conditions of the switchgear installation site

Reliable Wall Installation or Free Floor Installation
The cable can be selected from the upper or lower inlet line
Easy connection of horizontal busbar
The cable can be connected in front of the cabinet or in the back of the cabinet



- Device compartment
- Horizontal wiring compartment (optional)
- Horizontal busbar compartment
- Cable connection compartment, which may be connected at the side or bottom (depending on the technology applied)
- Cable inlet compartment for up/back inlet of cable

8PT

Low voltage switchgear

Skeleton and case: Precise size, firm structure

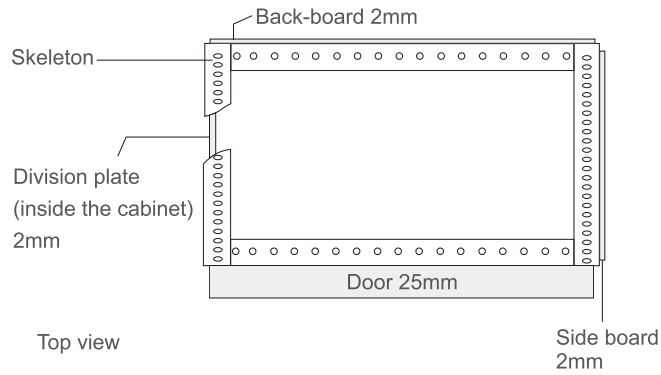
The frame is the load-bearing structure of the switchgear cabinet, which is composed of solid steel plate materials connected with each other.
The SIVACON has an accurate and stable skeleton. It comes in two structural types, either screw-connected or welded.
The skeleton has holes with a mold of 25mm, which can be extended for various purposes.
The door body is flexible and can meet all kinds of requirements,
The opening angle of the door can be up to 180 °.
The rotary shank barrel lock can reliably prevent the door from bouncing open due to negligence or accident.
The top of the cabinet is equipped with a pressure relief device.

Surface treatment
Powder spraying, spraying or zinc can be used.

Material
The skeleton and case are made of steel plate, the thickness of which is:
Skeleton: 2.5 mm
Outside case: 2.0 mm

The protection grade complies with the provisions of IEC 60529
IP30, IP31, IP40, IP41, IP42 Natural ventilation cabinets
Ip40, IP54 non-ventilated cabinets

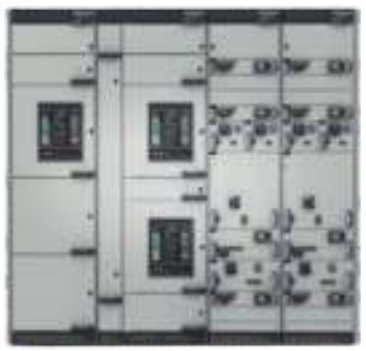
Outside dimensions of switchgear cabinets (without enclosure)



Depth of the cabinet	Depth of the cabinet	Depth of the cabinet
2200	400,600,800,1000,1200	600,800,1000,1200
2600	400,600,800,1000,1200	800,1000,1200

Blokset D

Low voltage switchgear (Authorized by Schneider)

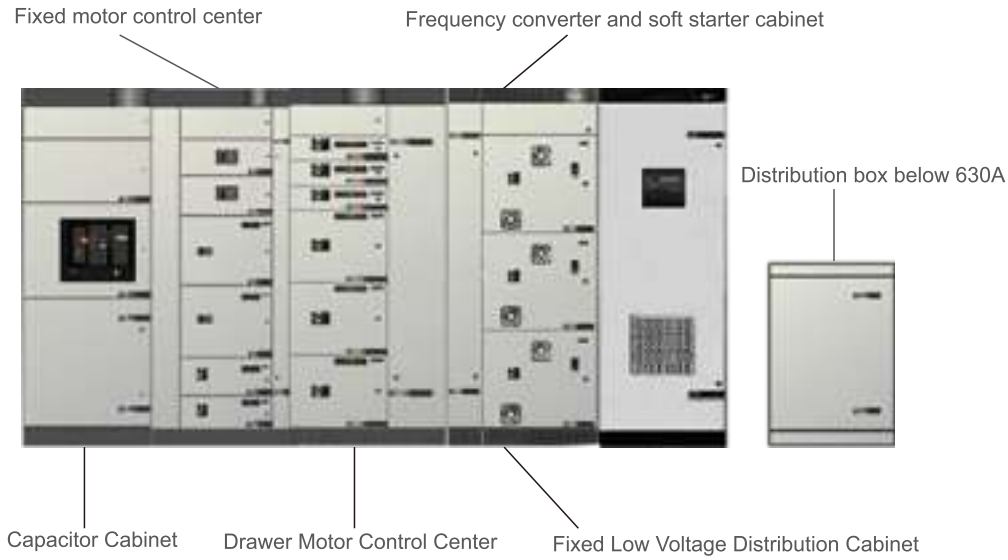


Solutions to global challenges

Blokset D is a new type of low voltage switchgear designed by Schneider Company introduced by People Electric Group Shanghai Co., Ltd. As a unified low voltage distribution solution for customer needs, it has extremely high safety, reliability and flexibility.

By cooperating with local excellent and high-level low-voltage switchgear manufacturers, Schneider has made them qualified "technical partners" of BloksetD, so that this multi-purpose BloksetD low-voltage switchgear can come to you completely. side.

A full range of designs to meet your different application requirements

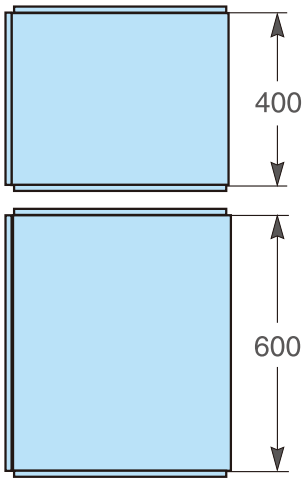


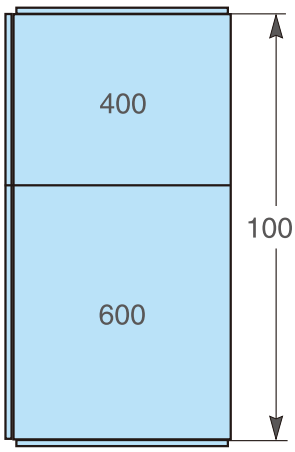
Modular multifunctional system

- D Type: Distribution cabinets below 6300A
- DC Type: power factor compensation cabinet
- Mf Type: fixed motor control center up to 6300A
- U Type: showcases below 6300A
- Mx Type: chest of drawers below 6300A
- Mw Type: Bending cabinets below 6300A
- Ms Type: frequency converter and soft starter cabinet

Blokset D

Low voltage switchgear
(Authorized by Schneider)





Case

Blokset can provide different case protection grades according to requirements, IP20-IP54. The outer case of the cabinet is sprayed with epoxy resin powder, the standard color is light gray RAL9002, and the ventilation baffle is dark gray RAL7016. All non-live parts of the metal structure are reliably grounded, and have obvious grounding marks to ensure the safety of operators.

Frame

The frame of Blokset is assembled by standard prefabricated components with preset spacing modulus holes, and the standard modulus of Blokset is M = 50mm. The switchgear with various widths and depths can be formed by combining the basic frame and the extended frame. The main structure adopts the assembly method, and it is guaranteed that there will be no deformation under the normal transportation, storage and installation conditions.

Depth and width

Blokset series switchgear can be composed of a variety of depth and width switchgear through the combination of basic frame and extended frame.

The basic frame can have 3 depths

- 400mm
- 600mm
- 1000mm

The 400mm deep frame is only used when the horizontal bus current is less than 1600A. The 600mm deep frame is the most commonly used basic frame. A 400mm depth extension can be added to the 600mm deep basic frame to achieve a depth of 1000mm, which is often used in the case of rear outlet lines.

The basic frame can come in a variety of widths

- 500mm (Mw type)
- 600mm (Mx/U)
- 700mm
- 800mm (U-shaped)
- 900mm (Mw/U)
- 1000mm (U-shaped)
- 1200mm (for Masterpact MT40b/50/63)

Expansion cabinets (200 to 400mm) can be added on both sides of the cabinets as needed.

MNS 2.0

Low voltage switchgear
(Authorized by ABB)

Description

MNS2.0-Low Voltage Switchgear is a new type of low voltage switchgear designed by ABB Company introduced by People Electric Appliance Group Shanghai Co., Ltd. As a unified low voltage distribution solution for customer needs, it has extremely high safety, reliability and flexibility.
By cooperating with local excellent and high-level low-voltage switchgear manufacturers, ABB has made them qualified ABB's "technical partners", allowing this multi-purpose ABB low-voltage switchgear to come to you completely side.

System characteristics

MNS 2.0 assembled low-voltage switchgear system has been used in the world market for many years, and its value has been confirmed. The whole system fully considers the future development space, and can avoid the risk of being eliminated due to technological development.
The cabinet structure adopted by the MNS 2.0 system has high flexibility, and once the structure is assembled, it does not need to be repaired. Different standard components can be installed in the cabinet to meet various usage requirements. Since the entire system including the electrical structure adopts a combined design, this optimized structural design meets the requirements of various components, and is suitable for different working environments, reaching the corresponding protection level.
Compared with traditional products, MNS 2.0 system has more advantages:

- Compact structure, saving the volume of the cabinet
- Cabinets are arranged back to back
- Distribution circuit layout is economical
- All standard components are selected, which is convenient for engineering designers to design
- Full series standardization
- The cabinet body can be designed with corresponding protection grades according to different requirements of work and environment
- Different types of functional components can be freely installed in one cabinet, such as: fixed components and withdrawal components
- Convenient equipment update and improvement
- High continuity and reliability of equipment operation
- The personal safety of operators is guaranteed

Structure design

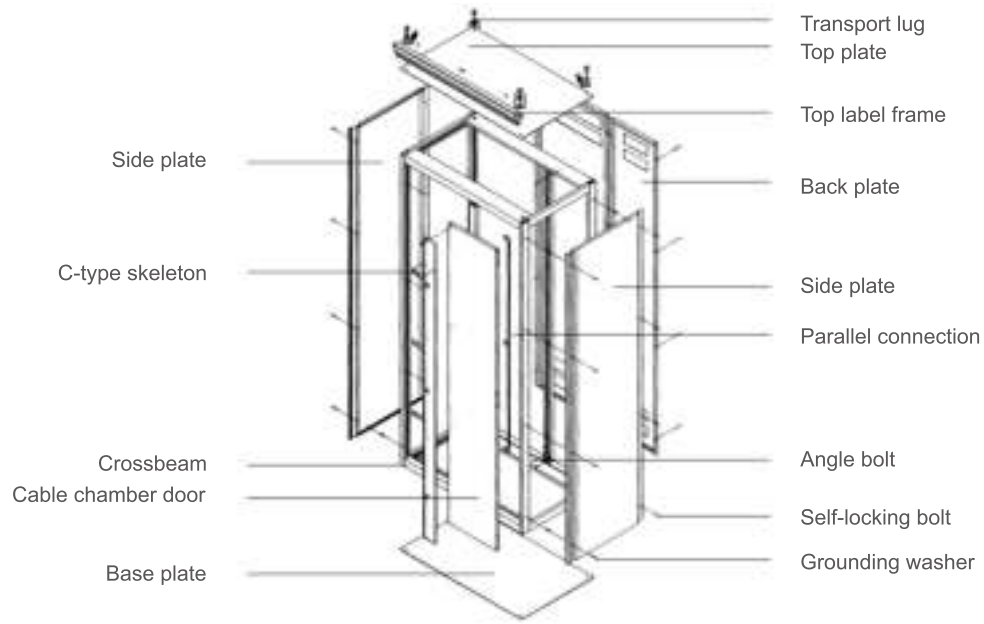
Frame
The basic part of the frame of MNS 2.0 system is a C-shaped frame (DIN43660) with 25mm interval modulus holes. The standard modulus of MNS system is E = 25mm. Due to the use of the standard modulus hole system, the frame structure can be assembled into various types of cabinets without special tools, such as front-operated and back-to-back switchgear cabinets with single or multiple sets.

Case
MNS 2.0 system can be designed with different protection levels according to different usage requirements. For rear operation and joint screen cabinets, the outer case with front protection level of IP30 can be selected, and the fully enclosed external charging protection level is IP40-IP54 (the withdrawal switchgear is fully enclosed). The hinge frame can be used for installation

MNS 2.0

Low voltage switchgear
(Authorized by ABB)

For electronic devices and instrument panels, and can also be used as device frames. A cover plate with/without observation holes can be added to the installation position of the chain frame. A bottom plate can be provided at the bottom of the cabinet, and an electrical system slot can be installed after adding a flange plate. Door panels and shells can be equipped with single/multiple vents, and the top plate can be fully ventilated (suitable for IP40 and IP41).



Cabinet structure

The cabinet structure of MNS 2.0 system can be divided into: device chamber, bus chamber and cable chamber. Dimensions (height x width x depth) are 2200mmx400/600/800/1000/1200mmx600/800/1000 mm. If the air circuit breaker is less than 2000A, the width of the switch cabinet can be 400mm. The maximum length of the transport unit is 3000mm. A switch (fixed disconnector/fixed or withdrawn molded case circuit breaker/air circuit breaker) is installed in the inlet/outlet cabinet and the bus cabinet. In MNS2.0 system, the components of the same functional group can be assembled to form a simple mechanical and electrical functional component, including power component and control component. According to different requirements, the structure of the cabinet frame can be divided into:

-In the device chamber are functional unit assemblies

-In the bus chamber are the bus and the distribution bus

-In the electrical system chamber is the inlet and outlet electrical system (upper and lower inlet and outlet lines are acceptable)

Connecting wires and components between functional unit components, such as cable clamps, electrical system connectors, parallel wires, wiring grooves, etc.

Separation can be made between the functional units and the cabinets in the cabinet, and the internal separation can reduce the arc destructiveness to the minimum.

MD190(HONOR)

Low-voltage distribution system, combined low-voltage switchgear (ABB authorized)

Product characteristics

ABB's full range of low voltage electrical components, including Megamax and Emax air circuit breakers, somax and Tmax molded case circuit breakers and A series contactors, are used to form a complete and most reliable low voltage system.

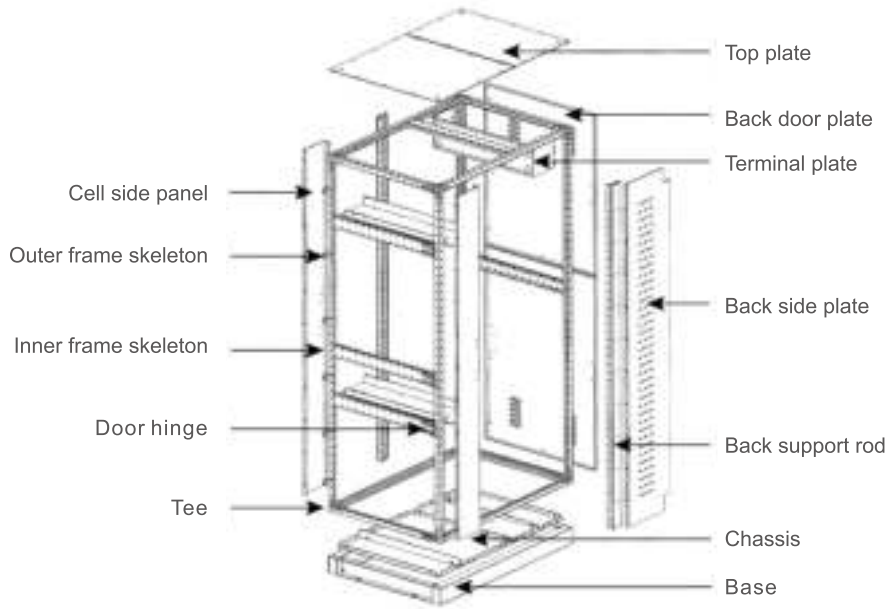
- High-strength profiles make the structure of the switchgear stronger.
- Complete scheme, with fixed partition type and drawer type for arbitrary selection and assembly, can keep the appearance consistent.
- Adopting modular frame cabinet depth width, height, strong adaptability and flexible design scheme.
- Compact arrangement, saving space and cost.
- Free combination of unit components, strong versatility, flexible changes, and meeting project needs.
- With different shell protection levels and internal isolation forms, users can choose according to requirements

Convenient and fast assembly, without special and complicated procedures.

Frame and case

The MD190 frame system takes 190 mm as a standard modulus (1U), and includes an outer frame and an inner frame (used as a strong cabinet structure for separating the cell). The connection of the outer frame uses tee links to ensure the symmetry of the frame installation.

The case protection level of MD190 is IP31 standard, the front adopts door panels that can be opened from the left or right, with waterproof sealant strips and ground screws. The rear adopts door covers, with waterproof sealant strips and heat dissipation holes. The protection level of the outer shell can be increased to IP54 as needed (double front doors, front outer doors with high-quality tempered glass).



MD190(HONOR)

Low-voltage distribution system, combined low-voltage switchgear (ABB authorized)

Internal separation form 4

Drawer type

Drawer type
internal separation

Structure design

Cabinet structure

The cabinet frame structure of Md190 adopts modular frame structural parts, so that the height, depth and width of the cabinet body can be changed and combined into a variety of different external dimensions according to modulus.

The inside of the cabinet is divided into three separate chambers:

a) Device chambers for unit assemblies

b) Busbar chambers of main busbars and distribution busbars

c) Inlet and outlet cable chamber (can go up and down inlet and outlet lines)

Main bus and distribution bus:

The main bus is assembled in the bus chamber and can be installed horizontally at different positions from top to bottom.

The capacity of the main bus is 800-6300A.

The distribution bus is installed vertically, and the capacity of the distribution bus is from 800-3200A.

Frame structure

Main busbar(5000A)

Connection of the outer frame

Main busbar(2500A)

Branch busbar

Cabinet frame structure of fixed separated type switchgear

Modular cabinet height, depth, width.

Cabinet height: Standard is 2090 (11 modules) + 95mm (base height)

Highest is 2280 (12 modules) + 95mm (base height)

Cabinet depth: rear wiring scheme, standard cabinet depth 1010mm/1200mm

Front wiring scheme, standard cabinet depth is 440/630/820mm (according to current carrying capacity)

MD190(HONOR)

Low-voltage distribution system, combined low-voltage switchgear (ABB authorized)

HMI (human-machine interface)

PMC916 instrument

M101-M、M102-M

Cabinet width: from 380mm (2 modules) to 1140mm (6 modules)
Example:
（1) Rear wiring MCC solution: 380mm (6 pcs of MCCB can be installed), 570mm, 760mm (12 pcs of MCCB can be installed) three Specifications.
（ii) Rear wiring incoming solution: 760mm, 950mm, 1140mm three specifications

Case protection: Standard IP31, up to IP54 according to project requirements.
The size of the integral cabinet frame remains unchanged, only double doors (exterior doors with strengthened glass) and the structure of small chambers inside the cabinet are used, and corresponding adjustments must be made.
Internal separation form: Form 3 (standard form) and Form 4, Form 2 (capacitive compensation cabinet and power control panel)

Standard solution:
1) Power distribution: incoming line, communication, feed, two power supply ATS system and three power supply ATS system
2) Motor control: direct start, reversible start, star-triangle start and soft start
3) Reactive power compensation: UA series contactor for switching capacitor of ABB company and CLMD series dry type with small size and good heat dissipation are used
Capacitor

Unit Component:
Specifications and solutions
1) There are six specifications for unit assemblies: (width X height)
380mmX (190/285/380) mm Three specifications
760mmX (190/285/380) mm Three specifications
The maximum number of unit circuits can be installed in the cabinet is 18, and the maximum current capacity is 160A.
2) Component solutions
Moulded Case Circuit Breaker for Distribution (MCCB)
Motor Control with Molded Case Circuit Breaker

Structural features:
1) There is a reliable interlock between the unit drawer circuit breaker and the door (that is, only when the circuit breaker is broken, the chamber door can be opened).
2) The two groups of the plug-ins for the drawer's main circuit incoming and outgoing, enter into the precalculated position step by step, which reduces the operating torque of tapped insertion and withdrawal.
3) The movement of the plug-ins adopts the propulsion and withdrawal mode of the combination of guide rail and screw rod, the operation force is small, the stability is good, and there is obvious connection, test and separation position indication.
4) Even after the unit components are withdrawn, the plug-in position of the components in the switchgear will still maintain the IP20 protection level.
IPD (Intelligent Power Device) series products are automation products for special sub-low voltage system intelligence launched by ABB.
The product series includes communication processor and HMI human-machine interface, M101-M/M102-M intelligent motor control unit, PMC916 power monitoring and control device, EM-plus intelligent power meter. RTU monitoring and distributed control device and special current transformer, etc.
IPD product series are complete, which can realize the functions from low-end intelligent data acquisition to high-end intelligent field monitoring and management.
The low-voltage switchgear equipped with IPD can directly establish communication connection with the superior system through the Ethernet interface (TCP/IP protocol), so IPD is an important tool to realize the transformation from traditional low-voltage switchgear to intelligent low-voltage switchgear. IPD products all adopt standard communication interfaces and open communication protocols, and can communicate with any computer management system, such as BAS system, DCS system, distribution network automation system, power dispatching system, etc.

GCS

Low-voltage drawer switchgear

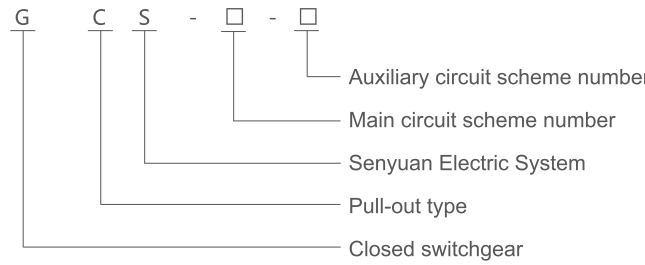
Description

GCS low-voltage drawer switchgear (hereinafter referred to as the device) is designed and developed by the two joint design groups according to the requirements of the industry competent department, the majority of power users and design units. It is a low-voltage extraction switchgear that conforms to the national conditions, has high technical performance indicators, can meet the development needs of the power market and can compete with the existing imported products. This device has been widely used by power users.

The device is suitable for power distribution systems in power plants, petroleum, chemical industry, metallurgy, textile, high-rise buildings and other industries. It is a low-voltage complete set of power distribution equipment used for power distribution, motor centralized control, and reactive power compensation in power generation and supply systems with three-phase AC frequency of 50 (60) Hz, rated working voltage of 380V (400), (660), rated current of 4000A and below in places with high degree of automation, such as large power plants and petrochemical systems.

The basic organization of the device is shown in Figure 1.
Devices are designed to meet the following criteria
IEC439-1 "Low Voltage Switches and Control Equipment"
Gb7251 Low Voltage Switchgear Set
JB/T9661 "Low Voltage Extraction Switchgear"

Model No.



Main technical parameter

1. Basic technical parameter to see table 1

Table 1

Rated voltage of main circuit (V)		AC 380 (400), (660)
Rated voltage of auxiliary circuit(V)		AC 220, 380(400), DC110, 220
Rated frequency (Hz)		50 (60)
Rated insulation voltage (V)		660(1000)
Rated current (A)	Horizontal wiring	≤ 4000
	Vertical busbar (MCC)	1000

GCS

Low-voltage drawer switchgear

Table 2

Rated short-time withstand current of busbar (kA/1s)		50 , 80
Rated peak value withstand current of busbar (kA/0.1s)		105 , 176
Power frequency testing voltage (V/1min)	Main circuit	2500
	Auxiliary circuit	1760
Busbar	Three phase four wire	A. B. C. PEN
	Three phase five wire	A. B. C. PE.N
Protection grade		IP3L0. IP4L0

2. Main circuit scheme

The main circuit scheme of the device has 32 groups and 118 specifications, excluding the schemes and specifications derived from the change of the control and protection of the auxiliary circuit. It includes the needs of power generation, power supply and other power users. The rated working current is 4000A, which is suitable for the selection of distribution transformers below 2500kVA. In addition, a capacitor compensation cabinet is designed to meet the needs of power supply and power factor improvement; Considering the need of comprehensive investment, the reactor cabinet is designed.

Remarks:

01. DW914 is the main circuit breaker, and other circuit breakers with more advanced performance or RDSW6 (RDW1), F, M series can also be selected.

02.01, 02, 04 solutions If the PE N cable needs to enter the power cabinet, the width of the cabinet should be sized in brackets.

03. SDL and SDH are special power transformers for GCS cabinets.

3. Auxiliary circuit scheme

There are 120 auxiliary circuit schemes in GCS Auxiliary Circuit Atlas, which are divided into two volumes. The first volume "AC Operation Part" is divided into 63 schemes, and the second volume "DC Operation Part" is divided into 57 schemes.

The auxiliary circuit scheme of the DC operation part is mainly used in the low voltage power plant (station) system of the power plant and substation. It is suitable for the low voltage power plant system of the unit with the capacity of 200MW and below and 300MW and above, and the general control mode of the working (backup) power supply incoming line, power supply feeder line and motor feeder line.

The auxiliary scheme of AC operation part is mainly used for low voltage system of substation in factories, mines, enterprises and high-rise buildings. There are 6 combined schemes suitable for double power supply operation control, and there are control circuits such as operation electric interlock backup self-switching and self-recovery, which can be directly used in engineering design.

The DC control power supply is DC 220V or 110V, and the AC control power supply is AC 380V or 220V. The 220V control power supply is drawn from the public control power supply supplied by the special control transformer in the cabinet. The public control power supply adopts the ungrounded mode to control the transformer, and the 24V power supply is reserved for the use of weak electric signal lamps. For the installation location of the watt-hour meter, the introduction method of voltage and other installation and use requirements, please refer to the "Compilation Instructions" of the auxiliary circuit diagram.

4. Bus

In order to improve the dynamic thermal stability of the bus bar and improve the temperature rise of the contact surface, TMY-T2 series hard copper bars are used in all devices. The connecting parts of the copper bars must be tin-enameled. Full-length tin-enameled copper bars are recommended, and full-length silver-plated copper busbars can also be used.

GCS

Low-voltage drawer switchgear

Electrical structure form of cabinet

a. Horizontal busbar level

The bus bar is located in the bus bar compartment at the back of the cabinet, and the upper and lower double layers are arranged for 3150A and above, and the single layer is arranged for 2500A and below. Each phase is composed of 4 or 2 busbars, which greatly improves the short-circuit strength of the bus bar.

The selection of horizontal busbar of the device is shown in Table 3.

Table 3

Rated current A	Busbar specification
630 1250	2 (50×5)
1600	2 (60×6)
2000	2 (60×10)
2500	2 (80×10)
3150	2×2 (60×6)
4000	2×2 (60×10)

b. Vertical busbar

The vertical busbar used for the drawer adopts "L"-shaped hard enameled-tin busbar. L-shaped busbar specification (mm): (height × thickness) + (bottom × thickness) (50 × 5) + (30 × 5) Rated current 100A

C. Neutral grounding bus

Use hard copper bars. Through horizontal neutral ground wire (PEN) or ground +neutral wire (PE + N) specifications are shown in Table 4.

Table 4

Phase conductor cross sections each mm ²	Select PE (N) wire cross section mm ²
500-720	40×5
1200	60×6
>1200	60×10

∗ The specifications of vertical PEN wires or PE + N wires in the device are all 40 × 5

5. Selection of electrical components

The equipment mainly selects electrical components with advanced technical performance index and imported technology, which can be mass-produced in China.

a. Main switch

For 630A and above power supply inlet and feeder switches, the main selection is DW914 series, and RDSW6 (RDW1), DW40, DW48 series, AE series, 3WE or RDW17 series can also be used. If necessary, imported M series or F series can also be used.

b. For 630A and below feeders and motor control switches, mainly choosing RDM949 series and RDM1 series MCCB, and can also use the NZM Series and TM30 Series MCCB.

c. AC contactor, mainly choose CJX8 series, CJX2 (RDC6) series, CJX1 series contactors and their matching thermal relays and interlocking mechanisms.

GCS

Low-voltage drawer switchgear

Main busbar

d. All current transformers adopt SDH series, SDL series and SDL1 series supervised by Senyuan Electric Co., Ltd.
e. Fuse selects HH15 series knife-fuse disconnector and NT00 series with high breaking capacity.
f. In order to improve the dynamic stability of the main circuit, the special CMJ bus clamp and insulation support for GCS series are designed. It is thermoplastic formed with high strength flame retardant composite material, which has high insulation strength, good self-extinguishing performance and unique structure. It is only necessary to adjust the building block block to be suitable for different specifications of the bus.
g. In order to reduce the temperature rise of the spacer, connector and electric head of the functional unit, the special adapter for GCS cabinet is designed. Compared with the same kind of products, the heat capacity of the adapter increases and the temperature rise decreases.
h. If the design department selects new electrical components with better performance and more advanced technology according to the needs of users, because the GCS series cabinets have good versatility, it will not cause difficulties in manufacturing and installation due to updating electrical components.

Structure characteristics

1. The main frame of the device adopts 8MF section steel, and the frame adopts two structural forms: assembly and partial welding. There are installation modulus holes E = 20mm on the main frame
2. Each function room of the device is strictly separated, and the compartments are mainly divided into function unit room, bus room and electrical system room. The functions of each unit are relatively independent.
3. The size series of the device cabinet is as shown in the table

Height	2200									
Width	400		600		800			1000		
Depth	800	1000	800	1000	600	800	1000	600	800	1000

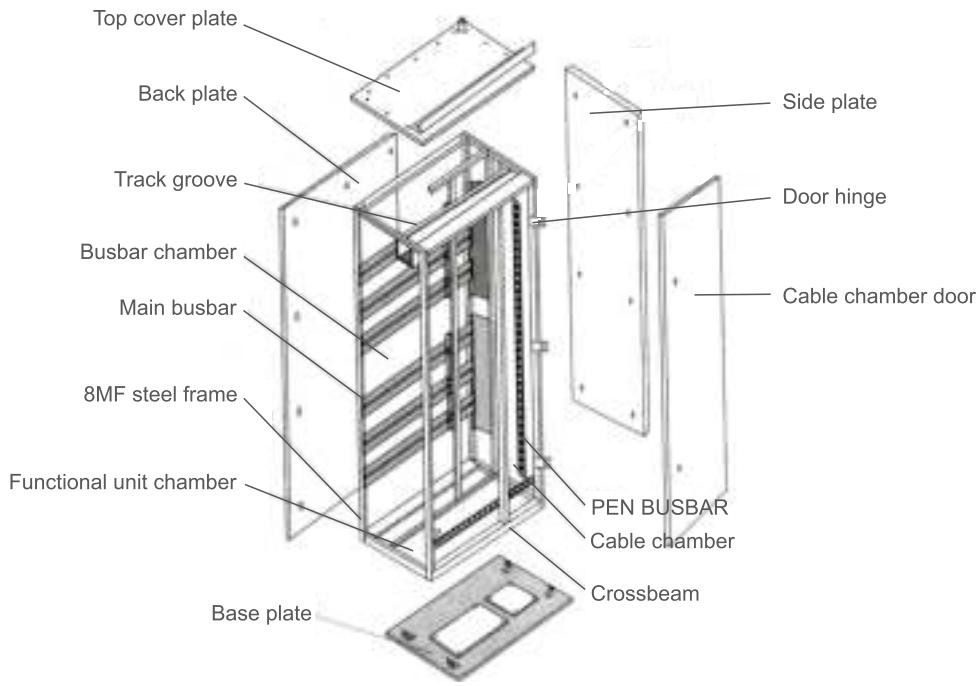
4. Functional units
A. The module of the drawer layer height is 160mm, which is divided into five size series: unit, unit 1, unit 1, unit 2, and unit 3.
Unit circuit rated current 400A and below.
b. The drawer changes only in height and size, and its width and depth are unchanged. Drawers with the same functional unit have good interchangeability.
c. Each MCC cabinet can install up to 11 one-unit drawers or 22-unit drawers. More than one unit drawer adopts multi-functional rear panel
d. The inlet and outlet lines of the drawer adopt connectors with the same specification and chip structure with different numbers of chips according to the current.
e. The adapter between the unit drawer and the cable room adopts the back plate structure ZJ-2 adapter.
f. The adapter between the unit drawer and the cable room adopts the same size rod or tube structure ZJ-1 adapter according to the current classification.
g. The drawer panel has obvious marks for the positions of splitting, closing, testing, and withdrawing.
h. The drawer unit is provided with a mechanical interlocking device.
5. Feeder cabinets and motor control cabinets are equipped with special cable compartments, and the connection between functional unit cabinets and cable rooms is realized by adapting parts or copper bars, which not only improves the reliability of cable use, but also greatly facilitates the installation and maintenance of cables by users.
The cable compartment has two widths (240mm and 440mm) to choose from, depending on the number of cables, the cross section and the user's requirements for easy installation and maintenance.

GCS

Low-voltage
drawer switchgear

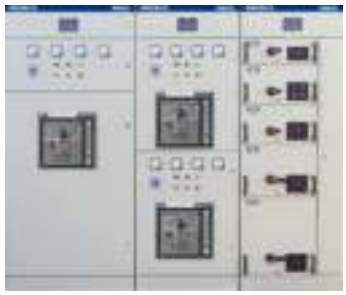
6. The number of auxiliary contacts of the functional unit of the device is 32 pairs for one unit or more, and 20 pairs for the unit, which can meet the needs of the interface between automation users and computers.
7. Considering the common safety of dry-type transformer and the economy of oil-immersed transformer, the device can be conveniently formed into a group with dry-type transformer, and can also be conveniently connected with the low-voltage bus of oil-immersed transformer.
8. The drawer is the main body, it has the drawer type and fixed type at the same time, which can be mixture combined, and can be selected arbitrarily.
9. The device is designed according to three-phase five-wire system and three-phase four-wire system. The design department and users can easily choose PE + N or PEN mode.
10. The protection level of the cabinet is IP3LO and IP4LO, which can also be selected according to the needs of the user.

General purpose cabinet frame



GCK、GCL

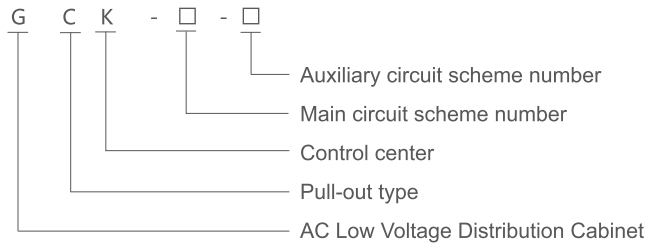
Low-voltage
drawer switchgear

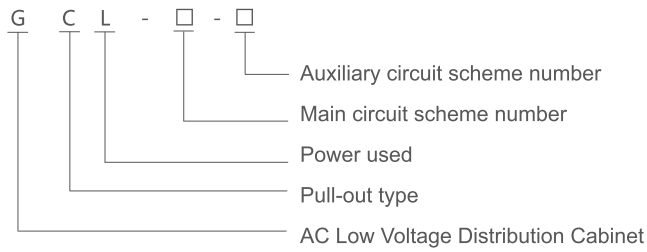


Description

GCK and GCL series low-voltage drawer type switchgear are designed by our company according to the needs of the vast number of users. They have the characteristics of advanced structure, beautiful appearance, high electrical performance, high protection grade, safety and reliability, and convenient maintenance. They are ideal distribution devices for low-voltage power supply systems in industries such as metallurgy, petroleum, chemical industry, electric power, machinery, and textiles.
It is listed as a recommended product for the transformation of the two grids and the ninth batch of energy-saving products by the state.

Model No. and its implication





Main technical parameter

- Rated insulation voltage: 660v
- Rated working voltage: 380V 660V
- Rated voltage of auxiliary circuit: AC220v, 380v, DC110v, 220v
- Using frequency: 50 ~ (60) Hz
- Rated current: horizontal bus ≤ 3150A, vertical bus 630A, 800A
- Rated short-term withstand current: 105kA/1S, neutral bus 30kA/1S

GCK、GCL

Low-voltage
drawer switchgear

- Rated peak current: 105kA/0.1 S, 50kA/0.1 S
- Functional unit (drawer) breaking capacity: 50kA (effective value)
- Case protection grade: IP30, IP40
- Bus setting: three-phase four-wire system, three-phase five-wire system
- Meet the standards:
IEC-439 BS5486 VDE0660, GB7251, NEMAIC2-322, JJB/T9661
- Operation mode: in-site, remote, automatic

Structure characteristics

The basic cabinets of GCK and GCL are the combined assembly structure, all the structural parts of the cabinets are galvanized, sprayed and fastened with screws to form the basic cabinets. Doors, baffles, partitions, drawers, mounting brackets, busbar and electrical components are added as needed to assemble a complete control center cabinet. The structure of this cabinet has the following characteristics:

1. Cabinet frame

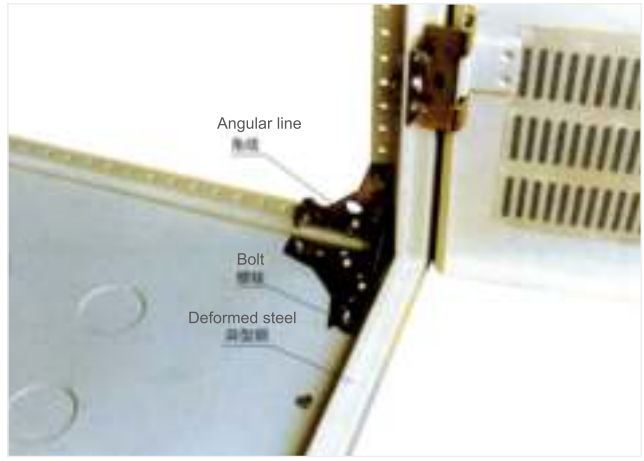
The cabinet frame adopts special-material steel, uses corner plate positioning, and bolts connection without welding structure.

a. Forming size of the spare parts, opening size and equipment interval uses modular. (Modulus E = 20mm, the same below).

b. The internal structural parts are galvanized.

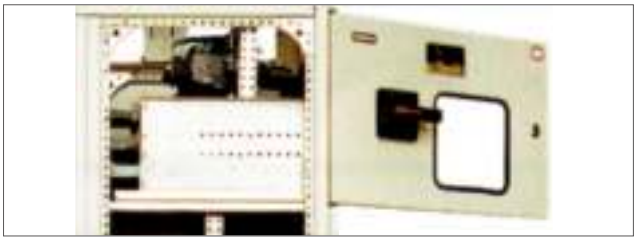
c. The exterior is phosphate: then sprayed with electrostatic epoxy powder.

d. The cabinets are divided into three separate sections: bus room, functional unit and cable room, which can prevent accident from spreading and convenient for the maintenance with live.



GCK、GCL

Low-voltage
drawer switchgear



GCK、GCL

Low-voltage
drawer switchgear

2. Functional unit (drawer part)
a. Functional units: Feed units, motor units, public power supply units.

b. The height modulus of the drawer layer is 200mm, and it is divided into six size series:-unit, 1 unit, 1-unit, 2 unit, 2-unit, and 3 unit. The rated current of the unit circuit is 630A and below.
c. Each MCC cabinet can be equipped with a maximum of 9 pcs of -unit drawers or 18 pcs of -unit drawers.
d. The door panel of the compartment is mechanically interlocked with the drawer by the operating mechanism of the main switch. When the main switch is in the closing position, the door panel cannot be opened.
e. The operating mechanism of the main switch can be locked in the closing or opening position with a pick lock, which can safely carry out maintenance of electrical equipment.

f. The functional unit compartments are separated by metal partitions.
g. The valve in the compartment opens and closes automatically with the push and pull of the draw, so that it cannot touch the vertical bus bar in the compartment.

GCK、GCL

Low-voltage
drawer switchgear

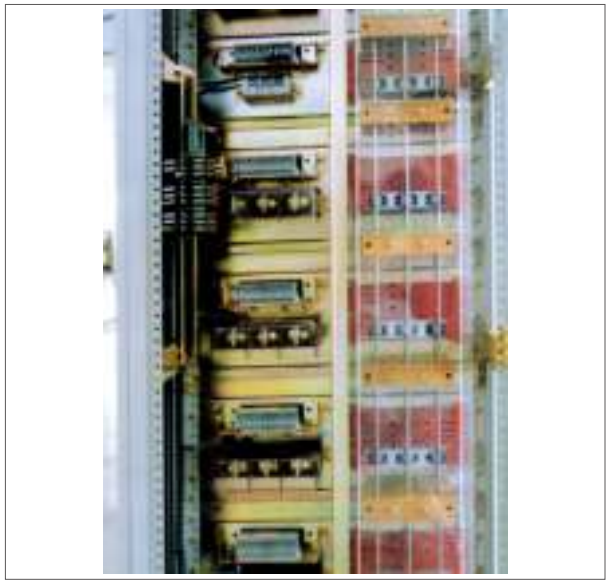
h. The back of the function unit is provided with an inlet and outlet plug of the main circuit, a secondary plug of the auxiliary circuit and a grounding plug.
I. The grounding plug ensures the continuity of the protection circuit when the drawer is separated from the test connection position

3. Busbar system
A. RGCK and RGCL bus systems adopt three-phase four-wire system and three-phase five-wire system. Horizontal bus wires are installed on the top of the cabinet, and N and PE wires can be installed on the top of the cabinet or on the bottom of the cabinet.
b. The three-phase horizontal bus bar adopts copper bus bar, which has high mechanical strength and good heat dissipation.

GCK、GCL

Low-voltage
drawer switchgear

C. The vertical bus is sealed with carbonate engineering plastic shell.



MNS

Low voltage switchgear

Description

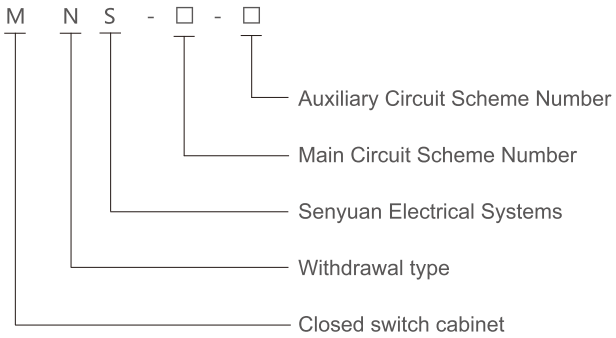
MNS type low-voltage switchgear (hereinafter referred to as low-voltage switchgear) is a product that our company has improved the selection of electrical components and cabinet structure based on the development trend of low-voltage complete switchgear in our country, and re-registered. The electrical performance and mechanical properties of this product fully meet the technical requirements of the original MNS products.

This low-voltage switchgear is suitable for power systems with AC 50 ~ 60Hz and rated working voltage of 660V and below. It is used as equipment control for power generation, transmission, distribution, electric energy conversion and electric energy consumption.

In addition to general land use, this low-voltage switchgear can also be used in offshore oil drilling platforms and nuclear power plants after special treatment.

This low voltage switchgear complies with IEC439, VDE0660 Part 5, GB7251-87 Low voltage complete switchgear and JB/T9661 “Low voltage withdrawable complete set of switchgear” industry standard.

Product model No. and its implication



Technical parameter

1. Main technical parameter of MNS type low voltage switchgear to see table below

Rated working voltage (V)		380、660
Rated insulation voltage (V)		660
Rated working current (A)	Horizontal busbar	630 ~ 5000
	Vertical busbar	800 ~ 2000*
Rated short-time withstand current Effective value (1S)/Peak value (kA)	Horizontal busbar	50 ~ 100/105 ~ 250
	Vertical busbar	60/130 ~ 150

MNS

Low voltage switchgear

Protection grade of case	IP30、IP40、IP54**
Overall dimension (W×D×H mm)	600×800、1000×600、(1000)×2200

* Rated operating current of vertical bus: 800A for single-sided or double-sided operation of pull-out MCC, 1000A for movable MCC; The cabinet depth is 1000mm and the MCC for single-side operation is 800 ~ 2000A,
* * Protection level IP54 is not recommended due to serious capacity reduction.

2. The technical data of the main electrical appliances in the cabinet of this product are shown in the table

Name	Model No.	Main parameter	Name	Model No.	Main parameter
Low voltage circuit breaker	DW914(AH)	600 ~ 4000A	Fuse type Disconnector	DCHR1	125 ~ 630A
Low voltage circuit breaker	RDW17	600 ~ 3900A	Fuse type Disconnector	HH15	125 ~ 800A
Low voltage circuit breaker	RDM1 RDM2	15 ~ 630A	AC contactor	CJX2-F(RDC6) CJX2(RDC6) CJX8	4.7 ~ 630A
Low voltage circuit breaker	DZ47-63 S503	10 ~ 63A	Fuse	NGT RT20/NT	4 ~ 630A
Low voltage circuit breaker	RDM8 LNA	6 ~ 100A	Thermal overload relay	JRS2 JRS8/NT	16 ~ 370A
Fuse type Load switch	SMP	125 ~ 630A	Current transformer	LMK1 LN LMZ2	15 ~ 5000/5A
Fuse type Load switch	OESA	63A	Capacitor	BSMJ CLMB	~400v(internal △)
Low voltage circuit breaker	RDSW6(RDW1)	600 ~ 3200A	Low voltage circuit breaker	M	600 ~ 6300A

Structure description

The basic cabinet frame of low-voltage switchgear is a combined assembly structure. All structural parts of the cabinet frame are galvanized, firmly connected with each other through self-tapping locking screws or 8.8 grade hexagonal screws to form a basic cabinet frame. Then, according to the needs of scheme changes, corresponding doors, sealing plates, partitions, installation brackets, busbars, functional units and other parts are added to assemble a complete low-voltage switchgear. The dimensions of parts and compartments in the switchgear are modularized (modulus unit E = 25mm, the same below).

1. Power distribution center (hereinafter referred to as PC)

● The PC cabinet is divided into four compartments, namely the horizontal busbar compartment, at the back of the cabinet; The functional unit compartment is on the upper part of the front of the cabinet or on the left side of the front of the cabinet; Cable compartment, on the lower part of the front of the cabinet or on the right part of the front of the cabinet: control circuit compartment, on the upper part of the front of the cabinet. Separation measures: melamine phenolic sandwich panels or steel plates are used between the horizontal busbar compartment and the functional unit compartment. The control circuit compartment and the functional unit compartment are separated by a flame-retardant polyurethane foam plastic molded seal shell. The functional unit compartment on the left and the electrical system compartment on the right are separated by a steel plate.

● Cabinet-frame circuit breakers installed in the cabinet can be manually operated outside the cabinet when the door is closed. Check the opening and closing status of the circuit breaker and determine whether the circuit breaker is in the test position or the working position according to the positional relationship between the operating mechanism and the door.

● The main circuit and the auxiliary circuit are designed as a separation structure. The auxiliary circuit units composed of instruments, signal lights and buttons are all installed on a plastic board. There is a cover made of flame-retardant polyurethane foam plastic behind the board. Separate from the main circuit

MNS

Low voltage switchgear

2. Withdrawable motor control center and low-current power distribution center (hereinafter referred to as withdrawable MCC)

● The withdrawable MCC cabinet is divided into three isolation rooms, namely, the horizontal bus compartment at the back of the cabinet, the functional unit compartment on the left side of the front of the cabinet, and the cable compartment on the right side of the front of the cabinet. The horizontal bus compartment and the functional unit compartment are separated by a functional wall made of flame-retardant foam plastic, and the cable compartment is separated by a steel plate from the horizontal bus compartment and the functional unit compartment.

● Withdrawable MCC has two structures: single-sided operation and double-sided operation.

● The withdrawable MCC has five standard sizes of drawers, which are 8E/4, 8E/2, 8E, 16E and 24E respectively. The structures of the 8E/4 and 8E/2 drawers are molded flame-retardant plastic parts and aluminum alloy profiles (4 pcs of 8E/4 or 2 pcs of 8E/2 forming an 8E-height interval). The total height of the functional unit compartment is 72E

● Five standard sizes of drawers generally have 16 secondary isolation contacts leading out. If necessary, except for the 8E/4 drawer, the other four drawers can be increased to 32. The terminals of each fixed contact can be connected with 3 pcs of wires at the same time. The above terminals are provided by the manufacturer with appropriate accessories and cold rolling pliers with the product.

● Through the operation procedure of the mechanical interlocking device, the drawer can only be moved when the main circuit and the auxiliary circuit are all disconnected. The mechanical interlocking device makes the drawer have a moving position, a breaking position and a separating position, and marks them with corresponding symbols.
The operating handle on the mechanical interlocking device and the operating handle of the main circuit breaker can be locked by three padlocks at the same time.

3. Movable motor control center and small current power distribution center (hereinafter referred to as movable MCC)

● The cabinet structural characteristics of the movable MCC are the same as (a) and (b) in clause 4.2.

● The functional unit is designed as a movable structure. The connection between the functional unit and the vertical busbar uses a primary isolation contact. Even if the circuit connected to it is live, the functional unit can be completely taken out from the equipment and put back. The other end is fixed structure.
The functional units of the movable MCC are divided into 3E, 6E, 8E, 16E, 24E and 40E functional unit compartments, and the total height is also 72E.

4. Busbar system

● Horizontal busbar (L1, L2, L3). The horizontal busbar is installed in an independent busbar compartment behind the cabinet. It has two optional installation positions, that is, 1/3 or 2/3 of the cabinet height. The busbar can be installed at the upper or lower part as needed, the upper and lower groups can also be installed at the same time. The two sets of busbars can be used separately or in parallel.
Each phase busbar consists of 2, 4 or 8 busbars connected in parallel, and the busbar cross sections have six kinds of 10x30x2, 10x60x2, 10x80x2, 10x60x4, 10x80x2x2 and 10x60x4x2.

● The vertical busbar L-shaped copper busbar with 50x30x5, which is embedded in the functional wall made of flame-retardant plastic, and the protection level of the live part reaches Ip20.

● Neutral wire (N wire) and protective grounding wire (PE wire). The neutral wire busbar and protective grounding wire busbar are installed in parallel at the lower part of the functional unit compartment and vertically in the cable compartment. If the N wire and PE wire are separated by insulators, the N wire and the PE wire are used separately. If the two are shorted with conductors, the PEN wire will be formed.

5. Protective grounding system
The protection circuit of this switchgear consists of two parts: PE wire (or PEN) installed separately and running through the entire arrangement length and conductive metal structural parts. Except for the external door and sealing plate, the rest of the metal structural parts have been tinned. The connections of the structure have been carefully designed to allow it to pass a certain short-circuit current.

6. Auxiliary circuit cable tray
An auxiliary circuit cable tray is installed on the top of the functional unit compartment, and the connecting lines between cabinets and public power lines can be placed in the tray.

7. Isolation measures of auxiliary circuits
In each circuit of the extractable MCC scheme, an isolation transformer can be installed according to the needs of the system. The capacity of the transformer is higher than that of the AC contactor, and the specifications are determined.

GGD

AC low voltage distribution cabinet

Description

GGD AC low-voltage distribution cabinet is suitable for power users such as power plants, substations, industrial enterprises, etc. It is used as power conversion, distribution and control of power, lighting and distribution equipment in power distribution systems with AC 50Hz, rated working voltage 380V, and rated current to 3150A. This product has the characteristics of breaking capacity and rated short-term withstand current of 50kA. The circuit scheme is flexible, convenient combination, strong practicability and novel structure. This product is one of the representative products of assembled and fixed panel switchgear in China.

This product meets the standards of IEC439 "Low Voltage Complete Switchgear and Control Equipment", GB7251 "Low Voltage Complete Switchgear" and other standards.

Product model No. and its implication

G G D - □ - □ - □ □

- □ “D” Power supply and consumption part
  “F” Power Generation Section
- □ Auxiliary circuit scheme code
- □ Main circuit scheme code
- □ Design serial number
  1-Breaking capacity is 15kA 2-Breaking capacity is 30kA 3-Breaking capacity is 50kA
- G Power cabinet
- G Fixed installation of electrical components, fixed wiring
- G AC low voltage distribution cabinet

Main parameter

1. Main technical parameter to see below table

Model No.	Rated voltage (V)	Rated current (A)		Rated short-circuit switching current (kA)	Rated short-time withstand current (kA)	Rated peak value withstand current (kA)
RGGD1	380	A	1000	15	15	30
		B	600(630)			
		C	400			
RGGD2	380	A	1500(1600)	30	30	63
		B	1000			
		C	600			
RGGD3	380	A	3150	50	50	105
		B	2500			
		C	2000			

GGD

AC low voltage distribution cabinet

2. Auxiliary circuit solution
The design of auxiliary circuit is divided into two parts: power supply and consumption scheme and power plant scheme.

3. Main bus
When the rated current is 1500A and below, a single copper busbar is used. When the rated current is greater than 1500A, a double copper busbar is used, and the overlapping surfaces of the busbars are treated with tin enameling process.

4. Electrical component selection
A. GGD cabinets mainly use more advanced electrical components that can be mass-produced in China.
Such as RDW17, DZ20, DW15, etc.
b. HD13BX and HS13BX rotary-operated knife switch is a special component designed by NLS to meet the needs of the unique structure of GGD cabinet. It changes the operation mode of the mechanism and retains the advantages of old products. It is a utility model electrical component.
c. If the design department selects new electrical components with better performance and more advanced technology according to user needs, GGD cabinets have good installation flexibility and generally will not cause manufacturing and installation difficulties due to updating electrical components.
d. In order to further improve the dynamic stability of the circuit, the bus support of the GGD cabinet adopts special ZMJ combined bus clamps and insulation supports.
The busbar clamps are hot-molded from high-strength, high-flame-retardant PPO composite materials. They have high insulation strength, good self-extinguishing performance, and a unique structure. They can be easily combined into single busbar or double busbar clamps only by adjusting the building blocks. The insulation support is a sleeve-type molded structure, which has low cost and high strength, and solves the defect of insufficient creepage distance of old products.

Structure characteristics

1. The cabinet of GGD AC low-voltage distribution cabinet adopts the form of a general cabinet. The frame is partially welded or assembled with 8MF cold-formed steel. The frame parts and special supporting parts are produced and supplied by our company to ensure the accuracy and quality of the cabinet. The parts of the general cabinet are designed according to the modular principle, and have 20 modular mounting holes. The general coefficient is high, which can enable the factory to achieve pre-production, which not only shortens the manufacturing cycle, but also improves the work efficiency.
2. The design of the GGD cabinet fully takes into account the heat dissipation problem during the operation of the cabinet. There are different numbers of heat dissipation slots at the upper and lower ends of the cabinet. When the electrical components in the cabinet generate heat, the heat rises and is discharged through the upper slots. The cold air is continuously supplemented into the cabinet through the lower slots, so that the sealed cabinet forms a natural ventilation channel from bottom to top to achieve the purpose of heat dissipation.
3. In accordance with the requirements of modern industrial product modeling design, the GGD cabinet adopts the golden ratio method to design the cabinet shape and the division dimensions of each part to make the entire cabinet beautiful and generous.
4. The cabinet door is connected to the frame with a rotating shaft movable hinge, which is easy to install and disassemble. A mountain-shaped rubber and plastic strip is embedded at the hem of the door. When closing the door, the strip between the door and the frame has a certain compression stroke, which can prevent Direct collision between the door and the cabinet, it also improves the protection grade of the door.

GGD

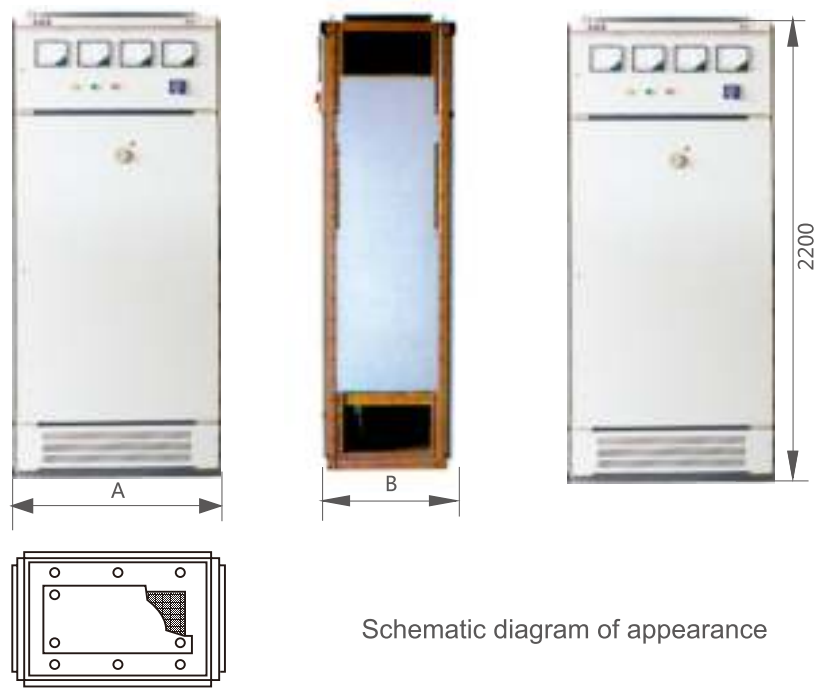
AC low voltage distribution cabinet

5. The instrument door equipped with electrical components is connected to the frame with multiple strands of soft copper wires. The mounting parts in the cabinet are connected to the frame with knurled gaskets, and the entire cabinet forms a complete grounding protection system.

6. The cabinet surface paint can be treated with polyester orange-shaped baking paint or plastic powder spray process. Both have the characteristics of strong adhesion and good texture. The entire cabinet has a matt tone, which avoids the glare effect and creates a more comfortable visual environment for the personnel on duty.

7. The top cover of the cabinet can be removed when needed to facilitate the assembly and adjustment of the main busbar on site. The four corners of the top of the cabinet are equipped with lifting rings for lifting and shipping.

8. The protection level of the cabinet is IP30, and users can also choose between IP20 and IP40 according to the requirements of the use environment.



Schematic diagram of appearance

KYN28-12

Indoor metal armored center-mounted removable switchgear

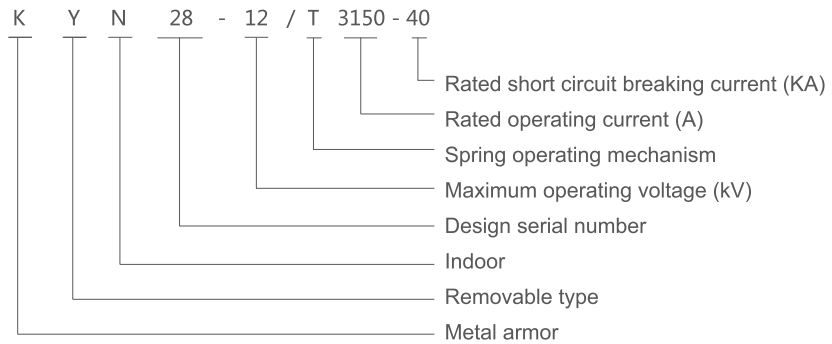
Description

KYN28-12 series indoor metal armored center-mounted removable switchgear is a three-phase AC 50Hz single bus segment system or double bus segment system indoor complete power distribution device. It is used to receive and distribute 3.6-12kV network power, and Implement control, protection, monitoring and measurement of power circuits.

KYN28-12 series switchgear includes all solution products with rated stable current from 16kA to 50KA, rated current of main bus and branch bus from 630A to 3150A. Its products all comply with national GB3906, DL403, DL404 standards and international IEC298 standards.

The KYN28-12 series switch cabinet is a fully assembled mid-mounted structure. The cabinet body is made of 2mm aluminum-zinc steel plate, processed by CNC processing equipment, and connected by high-strength bolts. The cabinet has a reasonable layout, complete functions, and has the ability to prevent misoperation. Circuit breaker, prevent the handle cart with load, prevent the grounding switch from being closed with electricity, This switchgear can be equipped with domestic vacuum circuit breaker and vacuum contactor, as well as foreign products of the same type. Its compact structure, high interchangeability of hand carts, ample cable room space, convenient maintenance, and its overall performance reaches the advanced level of foreign similar products. On this basis, the F-C circuit switchgear developed and produced is a new type of power distribution device that combines high voltage fuse with vacuum contactor, and has the advantages of compact structure, small volume, low noise, high reliability, and long-distance remote control operation in the central control room. This product can be widely used in metallurgy, petrochemical, power plant and other departments, and is mainly used to control and protect motors, transformers and capacitor banks.

Product model No. and its implication



Structure and characteristics

KYN28 series switch cabinet consists of cabinet body and functional unit compartments installed with different electrical components. See Figure 1

A. Instrument room B. Handcart room C. Cable room D. Busbar room

1. Cabinet body 2. Circuit breaker handcart 3. heater 4. secondary socket and interlock

5. Valve mechanism 6. Contact box 7, bus sleeve 8. main bus bar and branch bus bar

9. Current transformer 10. grounding switch 11. primary cable 12. lightning arrester

13. Grounding bus

KYN28-12

Indoor metal armored center-mounted removable switchgear

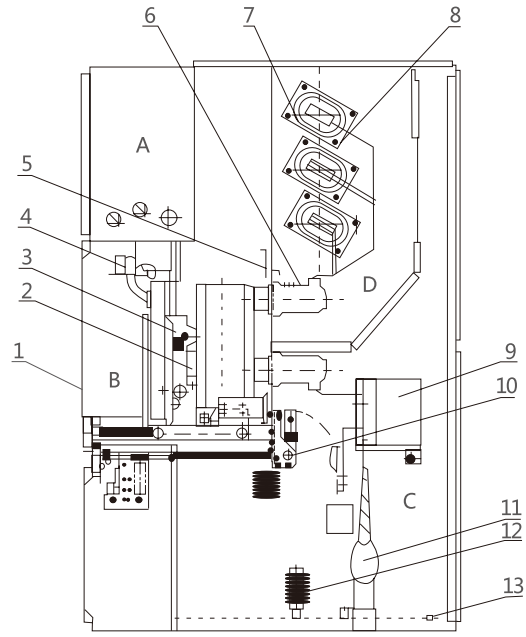


Diagram 1

1. Cabinet

The KYN28 series switchgear cabinet body and each functional unit are made of 2mm aluminum-zinc steel plate, processed by CNC machining equipment, and connected with high-strength bolts. (See Figure 2) Its products are very suitable for mass production and assembly, with dimensional accuracy is guaranteed, good interchangeability, all materials have strong oxidation and corrosion resistance, and have higher strength and stiffness than welding cabinets. The overall design meets the IP4X protection grade.

2. Functional unit

The KYN28 series switch cabinet has four functional unit compartments, namely the handcart room, busbar room, cable room and position table room. They are separated from each other by metal plates. See Figure 1

● Trolley room

The trolley room is equipped with a specific guide rail, so that the trolley can slide and work in it. The trolley has a working position and a test position (isolation position). When the trolley enters the working position from the testing position, the valve blocked on the fixed contact box will be pushed open, so that the moving contact of the trolley will be inserted into the fixed contact. When the trolley is pulled out, the valve will automatically drop again, which can prevent the operator from touching the live body. When the trolley is pulled out, the operator can also lock the valve to prevent the trolley from being pushed open and accidents occur. The trolley room can be equipped with circuit breaker trolley, voltage transformer trolley, isolation trolley and meter measuring trolley.

The trolley can be operated when the switch cabinet door is closed, and the position of the trolley and the status sign of the trolley can also be seen through the observation window on the door. Even if the door of the trolley compartment is opened, its protection level can still reach IP2X.

KYN28-12

Indoor metal armored center-mounted removable switchgear

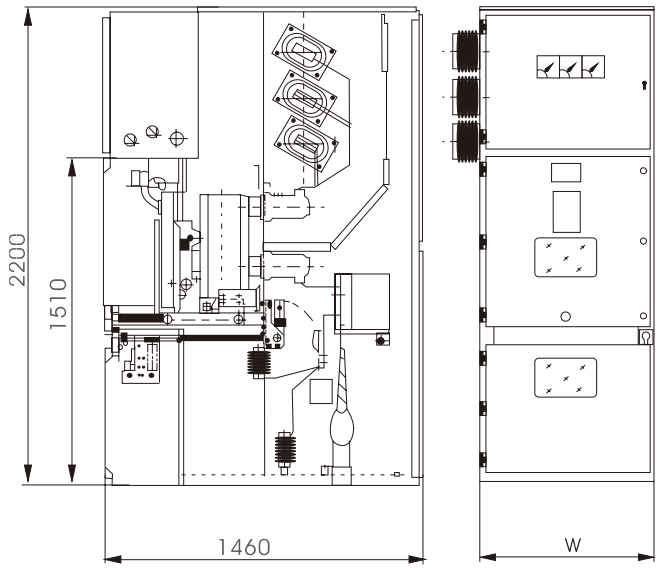


Figure 2 KYN28C switchgear cabinet structure

● Busbar room

The design of the bus room fully considers the installation mode of the main bus during the installation construction by users, so that the construction workers can conveniently install the bus by opening the rear baffle plate without climbing to the top of the cabinet.

The baffle plate between the segmented busbar passes through the cabinets is the wall bushing made of insulating and flame-retardant material, which can not only support the main busbar, but also limit the spread of the situation when an internal fault occurs.

● Cable room

The cable room has abundant space to install and overhaul current transformers, grounding switches, lightning arresters and cables.

The usage of cables can reach up to three to six groups. In the design, the special requirements of users are also taken into account, so that the installation height of the electrical system can reach more than 750mm. See Figure 1

The bottom plate structure of the cable room is also very suitable for construction workers to conveniently install cables.

● Instrument room

The instrument room can be equipped with relay protection components, instruments and other secondary equipment. The relay screen is pre-opened with installation holes to conveniently install the relay components. The control cable is laid in the wiring slot with sufficient space and is covered by a metal cover plate. The left wiring slot is reserved for the lead in and lead out of the control wire.

The control wire of the switchgear itself is laid on the right side, and the control wire crossing hole is opened on the side panel of the instrument room for construction.

● Pressure relief device

There are pressure release devices above the trolley room, bus room and electrical system room. When an internal fault occurs in the cabinet and arcs occur, the sharply rising air pressure will quickly open the release device so that the internal gas can be discharged in time, ensuring the safety of operators and switchgear. cabinets.

KYN28-12

Indoor metal armored center-mounted removable switchgear

When the switch cabinet is working normally, the special structure of the pressure release device can help dissipate heat, so that the temperature rise of each part of the primary circuit in the cabinet can always be kept within the normal working range.

- Interlocking device

The KYN28 series switchgear is also equipped with a flexible and reliable five-protection interlocking device, which provides a reliable guarantee for preventing accidents and the safe operation of the equipment. When the grounding switch is in the opening position, the trolley can be pushed from the testing position to the working position, and the circuit breaker trolley can only be pulled-in or pulled-out when it is opened; When the circuit breaker trolley is in the testing position or working position, the closing and opening operation can be carried out; When the trolley is in the working position, the grounding switch cannot be closed and the secondary plug cannot be pulled out; When the grounding switch is closed, the trolley cannot be pushed to the working position.

- Grounding device

Connecting the main grounding busbars of each cabinet together with the preset connecting board. Connecting all the leads to be grounded in the switchgear.

Connecting the foundation frame with the grounding bars. If there are more than 10 cabinets arranged, there must be more than two grounding bars.

Connecting the grounding wire of the grounding switch with the main grounding bus of the switchgear.

KYN28-24

Armored removable metal closed switchgear

Description

1. Scope of application and main uses

KYN28-24 armored removable AC metal-enclosed switchgear (hereinafter referred to as switchgear) is suitable for indoor three-phase 50/60 Hz, rated voltage 24KV power systems. It is mainly used in power plants, substations, industrial and mining enterprises and high-rise buildings, as receiving and distributing electric energy and controlling, protecting and monitoring circuits.

KYN28-24 switchgear has various functions to prevent misoperation, including preventing the trolley from moving with load, preventing the grounding switch from closing the circuit breaker when it is closed, preventing the grounding switch from being closed with electricity, and preventing mistakenly entering the live compartment. KYN28-24 switchgear is equipped with ZN73 series mid-mounted high-voltage AC vacuum circuit breaker and solid-sealed vacuum switch with excellent performance. The secondary circuit of the switchgear is equipped with advanced and reliable control and protection components; The bus is insulated by heat shrinkable insulation material or epoxy coating, the electrode shape is optimized, and the cabinet structure is compact. KYN28-24 switchgear is a power distribution equipment with advanced technology, stable performance, reasonable structure, easy use, safety and reliability.

2. Product reference standards

(a) GB1984 High Voltage AC Circuit Breaker.

(b) GB3906 3 ~ 35KV AC metal enclosed switchgear.

(c) Common technical requirements of GB/T11022 standards for high-voltage switchgear and control equipment.

(d) DL/T404 Indoor AC high voltage switchgear ordering technical conditions.

(e) DL/T593 Technical guidelines for common ordering of high voltage switchgear.

3. Use environmental conditions

● Normal use conditions

(a) Ambient temperature: maximum temperature: + 40 °C, minimum temperature:-15 °C, and the average value measured within 24 hours does not exceed 35 °C.

(b) Humidity conditions are as follows:

-the average daily relative humidity does not exceed 95%;

-the average daily water vapor pressure does not exceed 2.2 kpa: the average monthly water vapor pressure does not exceed 1.8 kpa;

Condensation occasionally occurs under such conditions;

(c) the altitude does not exceed 1000m;

(d) the ambient air is not significantly contaminated by dust, smoke, corrosive and/or combustible gases, vapors or salt spray;

(e) Vibration or ground motion from outside the switchgear and control equipment is negligible;

(f) The magnitude of electromagnetic interference induced in the secondary system does not exceed 1.6 KV.

● Special conditions of use

When used under normal environmental conditions exceeding the specifications of GB/T11022, the company and users can negotiate and reach an agreement on special operating conditions exceeding the normal operating conditions. In order to prevent condensation, the switchgear is equipped with a heater. When the switchgear is in standby state, it should be put into use. When the switchgear is operating normally, attention should also be paid to putting the heater into operation.

KYN28-24

Armored removable
metal closed switchgear

Technical parameter

1. Main technical parameter to see below table

No.	Name		Unit	Parameter			
1	Rated voltage		kV	24			
2	Rated frequency		Hz	50/60			
3	Rated insulation level	1min power frequency withstand voltage (effective value)	kV	Interphase	60	Insulation	79
		Lightning impulse withstand voltage (peak value)	kV	to ground	125	Fracture	145
		Power frequency withstand voltage of auxiliary control circuit	V	2000			
4	Rated current		A	630、1250、1600、2000、2500			
5	Rated short-circuit breaking current		kA	20		25	
6	Rated short-time closing current (peak value)		kA	50		63	
7	Rated short-time withstand current (4s)		kA	20		25	
8	Rated peak value withstand current		kA	50		63	
9	Rated voltage of auxiliary control circuit		V	DC or AC 110/220			
10	Protection grade			IP4X (Circuit breaker doors open or isolate compartment IP2X			
11	Overall dimension (W×D×H)		mm	800x1810x2380		1000x1810x2380	
12	Weight		kg	840~1440			

Note: The depth of the overhead inlet and outlet cabinet is 2360mm

2. Main technical parameter of ZN73-24 Vacuum circuit breaker

No.	Name		Unit	Parameter	
1	Rated voltage		kV	24	
2	Rated insulation level	1min power frequency withstand voltage (effective value)	kV	60	
		Lightning impulse withstand voltage (peak value)	kV	125	
3	Rated frequency		Hz	50/60	
4	Rated current		A	630、1250、1600、2000	630、1250、1600、2000、2500、3150
5	Rated short-circuit breaking current		kA	20	25
6	Rated short-time closing current (peak value)		kA	50	63
7	Rated short-time withstand current (4s)		kA	20	25

KYN28-24

Armored removable metal closed switchgear

8	Rated peak withstand current	kA	50	63
9	Rated single capacitor bank breaking current	kA	630	
10	Rated back-to-back capacitor bank breaking current	V	400	
11	Rated short circuit breaking current breaking cycles	cycles	50	
12	Mechanical life	cycles	20000	
13	Rated operating sequence		0-0.3s-CO-180s-CO	

3. Technical parameters of spring operating mechanism

No.	Name		Unit	Parameter
1	Rated operation voltage	Closing tripping coil	V	AC220、AC110、DC220、DC110
		Opening tripping coil		
2	Working current	Closing tripping coil	A	AC 220 or DC 220: 1.1 AC 110 or DC 110: 3.1
		Opening tripping coil		
3	Energy storage motor power		W	80、110
4	Energy storage motor Voltage		V	AC220、AC110、DC220、DC110
5	Motor energy storage time		S	≤ 10

KYN18A-12

Indoor AC armored removable metal closed switchgear

Description

KYN18A-12 indoor AC armored removable metal enclosed switchgear (hereinafter referred to as switchgear). It is a mid-mounted vacuum switchgear. The vacuum switch mainly uses ZN22B-12 vacuum circuit breaker, and can also be equipped with ZN12-10 vacuum circuit breaker. Circuit breaker and 3AF, 3AH vacuum circuit breaker.

This product complies with standards such as GB3906-91 "3-35kV AC Metal Enclosed Switchgear" DL404-91 "Technical Conditions for Ordering and Receiving Indoor AC Switchgear" and IEC298 "AC Metal Enclosed Switchgear and Control Equipment". It is suitable for 3-It is used to receive and distribute electric energy in 10kV AC three-phase 50Hz single bus power system. It can be widely used in various types of power plants, substations and industrial and mining enterprises. This product is reliable for wall installation (not recommended) and not against the wall.

Model No. and its implication

K Y N 18 A-12 / □ - □ - □ - □

- Rated breaking current (KA)
- Current Rating (A)
- Environmental characteristics: humid tropical zone TH, dry tropical zone TA, ordinary type no remark
- Main Circuit Scheme Number
- Rated voltage
- Modification code
- Design code
- Indoor type
- Removable type
- Metal armored closed switchgear

Technical parameter

1. See the following table for the basic technical parameters of the KYN18A-12 switchgear

Name	Unit	Parameter		
Rated voltage	kV	(3)、 6、10、12		
Rated short circuit breaking current	kA	31.5	40	50
Rated current	A	1250、1600、2000、2500	1600、2000、3150	
4s rated thermally stable current	kA	31.5	40	50 (3s)
Rated dynamic stable current	kA	80	100	125
Rated lightning impulse withstand voltage	kA	75		
Rated 1min power frequency withstand voltage	kA	42		
Protection level of enclosure and compartment		IP30		

KYN18A-12

Indoor AC armored removable metal closed switchgear

2. The technical parameters of ZN22B-12, ZN112-10Q type vacuum circuit breaker are shown in the table below

Name	Unit	Parameter		
Rated voltage	kV	12		
Rated current	A	1250, 1600, 2000, 3150	1600, 2000, 3150	
Rated short-circuit breaking current	kA	31.5	40	50
Rated short-circuit closing current	kA	80	100	125
Rated thermal stable current	kA	31.5/4s	40/4s	50/3s
Rated dynamic stable current	kA	80	100	125
Rated short-circuit breaking cycles	cycles	50	30	30
Rated operation sequence		0-0.3s-CO-180s-CO	0-180s-CO-180S-CO	

Technical parameters of ZN□10B type (permanent-magnetic mechanism) vacuum circuit breaker

Name	Unit	Parameter
Rated voltage	kV	10
Rated current	A	2000
Rated short-circuit breaking current	kA	31.5
Rated short-circuit closing current	kA	80
Rated thermal stable current (4s)	kA	31.5
Rated dynamic stable current (peak value)	kA	80
Rated short-circuit breaking cycles	cycles	50
Breaking single capacitor group current	A	630
Mechanical life	cycles	10000
Rated operation sequence		O-0.3s CO-0.3s-CO

Part technical parameters of LZZBJ9-10A current transformer

3. See the following table for the technical parameters of the current transformer

Rated primary current Ie A	Accuracy and relative rated output VA				1s thermal stable current Ith kA	Dynamic stable current kA
	0.2	0.5	1	10P10		
15, 20, 30, 40, 50		10	20	15	400Ie	2.5Ith
60		10	15	15	21	52.5
75		10	20	15	31.5	80

KYN18A-12

Indoor AC armored removable metal closed switchgear

100		10	20	15	45	112.5
150, 160		10	20	15	63	130
200		15	30	15		
300		10	20	15	80	160
400		10	20	20		
500		15	30	20		
600		15	30	20		
750, 800	10	30	60	20		
1200, 1250	20	30	60	30	100	160
1500, 1600	20	30	60	15		
2000	20	30	60	20		
2500	20	30	60	20		
3000;3150	30	60	90	10P15, 30		

Technical parameters of LAJ-10 current transformer

Rated primary current Ie A	Accuracy and relative rated output VA			
	grade 0.2	grade 0.5	grade 1	grade 10P15
1000, 1200, 1500	40	40	40	25
2000, 3000, 4000, 5000, 6000	60	60	60	35

Technical parameters of JDZJ-10 voltage transformer

4. Technical parameters of voltage transformer

Model No.	JDZJ-3	JDZJ-6	JDZJ-10
Frequency (Hz)	50		
Rated voltage ratio V	$\frac{3000}{\sqrt{3}} / \frac{100}{\sqrt{3}} - \frac{100}{\sqrt{3}}$	$\frac{6000}{\sqrt{3}} / \frac{100}{\sqrt{3}} - \frac{100}{\sqrt{3}}$	$\frac{10000}{\sqrt{3}} / \frac{100}{\sqrt{3}} - \frac{100}{\sqrt{3}}$
Rated secondary output VA 0.5 1 3	 30 50 80	 50 80 200	 50 80 200
Max. output (VA)	200	400	400
Rated insulation level (kV)	3.5/23/40	6.9/32/60	11.5/42/75

KYN18A-12

Indoor AC armored removable metal closed switchgear

Technical parameters of JDZ-10 voltage transformer

Model No.	JDZ-3	JDZ-6	JDZ-10
Frequency (Hz)	50		
Rated voltage ratio V	1000/100; 2000/100 3000/100	6000/100	10000/100
Rated secondary output VA 0.5 1 3	30 50 80	50 80 200	50 80 300
Max. output (VA)	200	400	400
Rated insulation level (kV)	3.5/23/40	6.9/32/60	11.5/42/75

Technical parameters of relay equipped with LXK-20 zero-sequence current transformer 5. The cable outlet cabinet can be equipped with a zero-sequence transformer according to user needs. Generally, it is equipped with an LXK-0120 zero-sequence transformer (the maximum diameter of the cable is 120mm). The technical parameters of the relay are shown in the table below.

Relay Model No.	Connection mode of relay coils	Relay scale value	Primary zero sequence current value (A)
DD-11/60	In series	15×1	2.4-4.5
		30×1	
	Paralleling	15×1	3-5
		30×1	
DD-1/60	In series	15×1	3-5
		30×1	
	Paralleling	15×1	3-6
		30×1	

Technical parameters of grounding switch

6. See the following table for the technical parameters of the grounding switch

Name	Unit	Parameter
Rated voltage	kV	10
Maximum operating voltage	kV	12
4s rated thermally stable current	kA	31.5, 40
Rated dynamic stable current	kA	80, 100

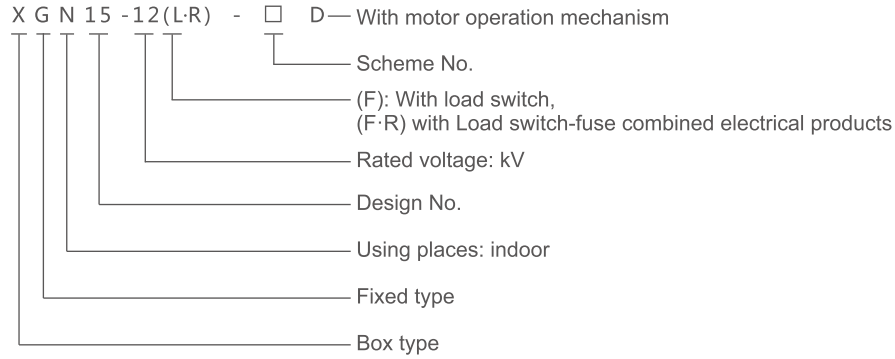
XGN15-12(L·R)

Box-type fixed indoor
AC metal closed switchgear

Description

XGN15-12 (L)/T630-25 and XGN15-12 (L · R)/T100-31. 5 box-type fixed AC metal-enclosed switchgear are mainly used for ring network power supply or double radiation power supply of three-phase AC 50Hz and rated voltage 10kV power systems. It can also be used for terminal power supply as electric energy control and protection device for electrical equipment. It is also suitable for installation in box-type substations, especially compact box substations.

Model No. and its implication



Technical parameter

No.	Name		Unit	Parameter	
				XGN15-12L	XGN15-12(L·R)
1	Rated voltage		kV	12	
2	Rated frequency		Hz	50	
3	Rated insulation level	1min power frequency withstand voltage	kV	To ground and interphase 42, Isolation fracture 48	
		Lightning impulse withstand voltage	kV	To ground and interphase 75, Isolation fracture 85	
4	Main busbar rated current		A	630	
5	Rated current		A	630	100
6	Rated closed-loop breaking current		A	630	
7	Rated active load breaking current		A	630	
8	Rated cable charging breaking current		A	10	
9	Rated transfer current		A		1700
10	Breaking No-load transformer capacity		kVA	1250	

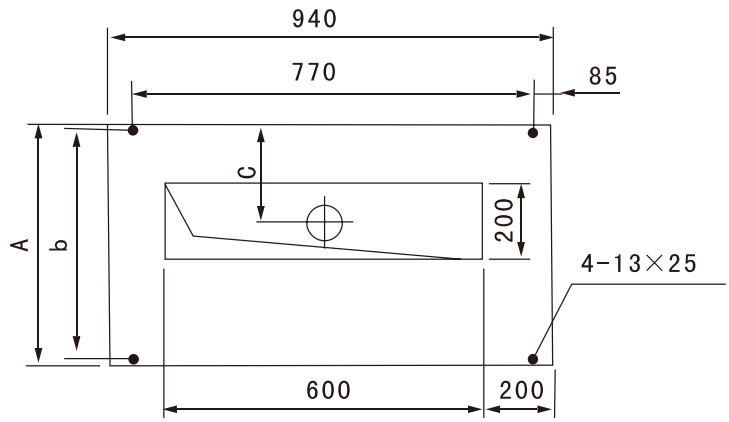
XGN15-12(L·R)

Indoor AC armored removable metal closed switchgear

No.	Name			Technical parameter	
				XGN15-12L	XGN15-12(L·R)
11	Rated closing current		kA	63	
12	Rated short-time withstand current (2s)		kA	25	
13	Rated peak value withstand current		kA	63	
14	Rated short-circuit breaking current		kA		31.5(expect)
15	Peak value withstand current of grounding circuit		kA	63	
16	Short-time withstand current of grounding circuit (2s)		kA	25	
17	Suited fuse model No.				S ☐LAJ
18	Rated voltage of auxiliary circuit		V	≃220 , -110	
19	Protection grade			IP3X	
20	Mechanical life	Load switch	Cycles	5000	
		Grounding switch	Cycles	2000	

Foundation installation dimensions

Scheme No.	001 005 009 010 011 012	002 003 004	006 007 008	013 014	015
Cabinet width a	375	500	625	750	800
Installation hole cabinet c	335×770	460×770	585×770	710×770	760×770
Foundation dimension c	188	288			400



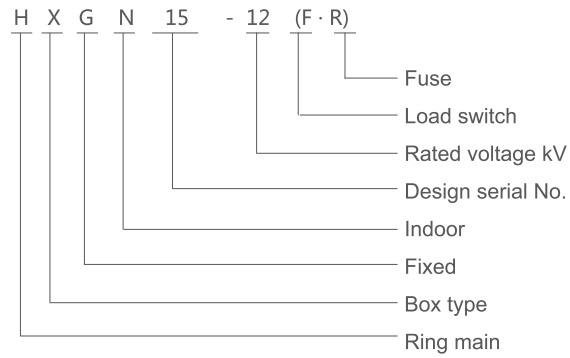
HXGN15-12(F·R)

Boxed type Fixed AC Metal Closed Ring Main Switchgear

Description

HXGN15-12 (F · R) box-type fixed AC metal closed ring gateway equipment (referred to as ring network cabinet for short) is a new type of high-voltage switchgear produced for the transformation and construction of urban power grid. It is also used for breaking load current and short-circuit current and closing short-circuit current in power supply system. This ring network cabinet is equipped with vacuum load switch, and its operating mechanism is spring operating mechanism, which can be operated manually or electrically. The grounding switch and isolation knife are equipped with manual operating mechanism.

Model No. and its implication



Technical parameter

No.	Name		Unit	Parameter
1	Rated voltage		kV	12
2	Rated current	Load switchgear	A	630
		Combined electrical cabinet		125
3	Rated short-circuit closing current (peak value)		kA	50
4	Rated short-circuit breaking current		kA	31.5
5	Rated active load breaking current		A	630
6	4s thermal stable current		kA	20
7	Rated dynamic stable current (peak value)		kA	50
8	1min power frequency withstand voltage		kV	42(fracture, 48)
9	Lightning impulse withstand voltage		kV	75(fracture, 85)
10	Mechanical life		cycles	10000

HXGN15-12(F·R)

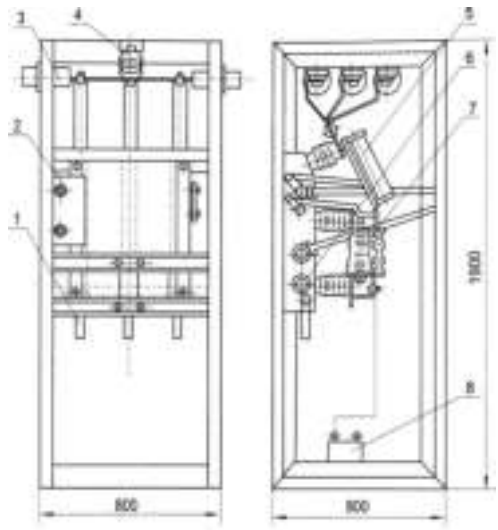
Boxed type Fixed AC Mental Closed Ring Main Switchgear

No.	Name	Unit	Parameter
11	Rated handover current	A	3150
12	Operational mode		Manual or motor
13	Protection grade		IP2X

Structure characteristics

1. Structural performance characteristics

The outer shell of the ring main cabinet consists of a basic skeleton, a top plate, a panel and a side plate. The top of the ring main cabinet is the busbar room, and the front of the busbar room is the instrument room. The two rooms are separated by steel plates. The upper part of the cabinet is the load switch room, and the middle and lower parts are the cable inlet and outlet lines and other component rooms. The main equipment of the ring main cabinet includes vacuum load switch, isolation switch (or isolation knife switch with fuse), grounding switch, lightning arrester, operating mechanism, interlocking mechanism and measurement and metering circuit (see the figure below).



1. Grounding switch
2. Operating mechanism
3. Wall sleeve
4. Insulator
5. Fuse (isolation knife)
6. Spring operation mechanism
7. Load switch
8. Current transformer

The ring main cabinet is equipped with FN25-12 high-voltage vacuum load switch, which is used to break the fault and overload current. The isolating switch, vacuum switch, grounding switch and cabinet door composed of the switch are interlocked with each other according to a certain program, which can effectively prevent misoperation; The vacuum switch cabinet is equipped with a motor-spring energy storage operating mechanism to achieve rapid closing and opening operations. It can be equipped with certain protective relays according to user requirements. The fuse combination electrical cabinet has a fuse pipe with a firing pin, in case of short circuit, the firing pin hits the tripping mechanism to achieve rapid opening and closing, which can effectively protect electrical equipment.

HXGN15-12(F·R)

Boxed type Fixed AC Mental Closed Ring Main Switchgear

2. The functional unit ring main cabinet is mainly equipped with FN25-12D two-station vacuum load switch. The main solutions are incoming cabinet and outgoing cabinet.

● The incoming cabinet solution is equipped with an FN25-12D two-station vacuum load switch in the cabinet, and the cabinet can also be flexibly equipped with CT and PT. The main circuit is controlled by an FN25-12D vacuum load switch equipped with an isolation knife and a grounding knife, which can reach three stations of bus connection, isolation and grounding respectively.

● The outlet cabinet solution is equipped with an FN25-12 D · R two-station vacuum load switch and a fuse equipped with an impactor in the cabinet, and CT, PT and ZnO arresters can be flexibly assembled in the cabinet, thus eliminating the need for metering cabinet.

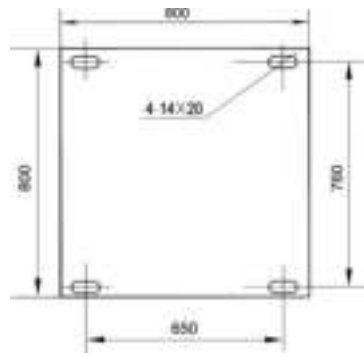
3. “Five protection” locking function

● Power transmission operation: only when the cabinet door is closed and locked, and the grounding switch is operated to the "open" position, can the load switch be operated to the closed position.

● Power outage operation: When the load switch is in the isolated position, the grounding switch can be closed. When the grounding switch is in the closed position, the cabinet door can be opened by inserting the insulating partition in place.

● There is reliable interlocking between the vacuum interrupter chamber and the isolation knife, while the isolation knife and the grounding knife are linked with each other and interlocked with the cabinet door, and the insulation partition and the cabinet door are also interlocked.

Overall and installation dimension



Installation dimension of Ring Main cabinet

Overall dimension of Ring Main cabinet

ZBW

Series Combined substation

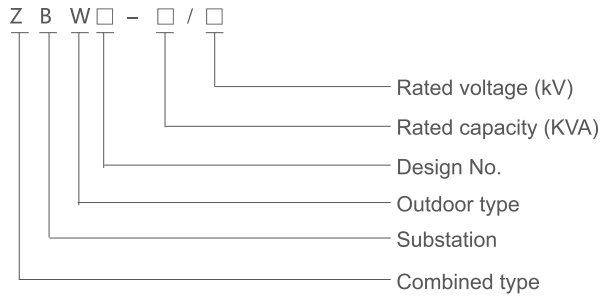
Description

ZBW series combined substations, commonly known as European-style box substations, combine high-voltage electrical equipment, transformers, low-voltage electrical equipment, etc. into compact complete sets of power distribution devices, which are used in urban high-rise buildings, urban and rural buildings, residential areas, high-tech development zones, small and medium-sized factories, mines, oil fields, and temporary construction electricity and other places for receiving and distributing electrical energy in the power distribution system.

ZBW series combined substations have the characteristics of strong complete set, small size, compact structure, safe and reliable operation, easy maintenance, and mobility. Compared with conventional civil-built substations, combined substations of the same capacity usually cover an area of only 1/10~1/5 of conventional substations, which greatly reduces the design workload and construction volume, and reduces construction costs.In the power distribution series, it can be used in the ring network power distribution system, as well as in the dual power supply or radiation terminal power distribution system. It is a new type of complete set of equipment for the construction and re-selection of urban and rural substations.

ZBW series combined substations meet the standards of SD320-1992 "Technical Conditions for Box-type Substations" and GB/T17467-1997 "High-voltage/Low-voltage Prefabricated Substations".

Model No.



Main technical parameter

No.	Item	Unit	High voltage	Transformer	Low voltage
1	Rated voltage Ue	kV	7.2、12	6/0.4、10/0.4	0.4
2	Rated capacity Se	kvA		Type: 200~1250	
3	Rated current I	kvA	200~630		100~3000
4	Rated breaking current	A	Load switch 400~630A		15~63
		kA	Combined products depends on fuse		
5	Rated short-time withstand current	kA	20 (2S)	200~400kvA	15 (1S)
			12.5 (4S)	400kvA	30 (1S)

ZBW

Series Combined substation

No.	Item	Unit	High voltage	Transformer	Low voltage
6	Rated peak withstand current	kA	31.5、50	200~400kvA	30
				400kvA	63
7	Rated closing current	kA	31.5、50		
8	Power frequency withstand voltage 1min.	kV	Phase to ground:42 interphase: 30	Oil: 35/5min	2kV when ⩽300V
			Isolation fracture: 48, 34	Dry: 28/5min	2.5kV when ⩽300, 660V
9	Lightning impulse	kV	Phase to ground:75 interphase: 60	75	
			Isolation fracture: 85, 75		
10	Noise level	dB		Oil: ＜55	
				Dry: ＜65	
11	Protection grade		IP33	IP23	IP33
12	Dimensions	Different dimensions are selected according to the selected transformer capacity and form.			

Product structure characteristics

1. This product is composed of a high-voltage power distribution device, a transformer and a low-voltage power distribution device connected, and is divided into three functional compartments, namely a high-voltage chamber, a transformer chamber and a low-voltage chamber. The high- and low-voltage chambers are fully functional, and the high-voltage side primary power supply system can be arranged into a variety of power supply methods such as ring network power supply, terminal power supply, and dual power supply. High-voltage metering devices can also be installed to meet the requirements of high-voltage metering. The transformer room can choose from S9 and S11 series low-loss oil-immersed transformers and SC(B) 9, SCR9, SC(B)10, and SCR10 series dry transformers; the transformer room is equipped with a self-starting forced air-cooling system and a lighting system, and the low-voltage room can adopt a panel or cabinet-mounted structure according to user requirements to form the power supply scheme required by the user. There are various functions such as power distribution, lighting distribution, reactive power compensation, electrical energy metering and power measurement to meet the different requirements of users, and to facilitate users' power supply management and improve power supply quality.

2. The high voltage chamber has a compact and reasonable structure, and has a comprehensive “five-protection” interlocking function to prevent misoperation. When the user has requirements, the transformer can be equipped with a track to easily enter and exit from the gates on both sides of the transformer room, and each room has automatic lighting devices. In addition, all the components selected in the high and low voltage rooms have reliable performance, easy operation, safe and reliable product operation, and easy operation and maintenance.

3. Two methods of natural ventilation and forced ventilation are used to make the ventilation and cooling good. Both the transformer room and the low-voltage room have ventilation ducts, and the exhaust fan has a temperature control device, which can be automatically started and turned off according to the set temperature to ensure the full load operation of the transformer.

4. The structure of the box can prevent rainwater and dirt from entering. It is made of special steel plate or aluminum alloy plate, which is anticorrosive and has the conditions for long-term outdoor use. Ensure anti-corrosion, waterproof and dust-proof performance, long service life, and beautiful appearance.

ZBW

Series Combined substation

Layout form and overall dimensions

1. ZBW series box-type substations, divided according to the arrangement:

”Mu" font arrangement (Figure 1-1, Figure 1-2):

”Pin" font arrangement (Figure 1-3, Figure 1-4);

Figure 1-1

Figure 1-2

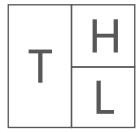


Figure 1-3

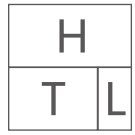


Figure 1-4

The picture shows the floor layout of ZBW series box-type substation

H-high voltage room T-transformer room L-low voltage room

2. Overall dimension to see figure 2, figure 3 and table 2

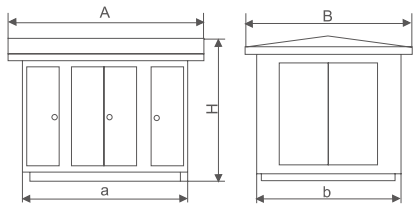


Figure 2 ZBW series box-type substation outline diagram (arranged in the shape of ”Mu")

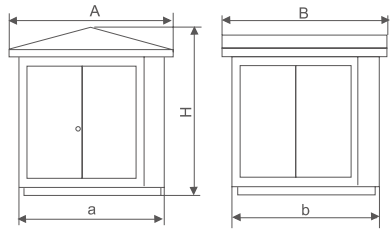


Figure 3 ZBW series box-type substation outline drawing (arranged in the shape of “Pin”)

Category			A	a	B	b	H	Suitable places
Three phase	“Mu” type	100-630kvA	4140	3750	2590	2290	2320	Industry and mining, oil fields, construction, etc
		800-1250kvA	5184	4880	2500	2290	2626	Living quarters
	“Pin” type	50-400kvA	2500	2300	2400	2200	2320	
Single phase	“Mu” type	≤ 50kvA	2500	2300	1260	1060	2215	Street lamp power supply
		80-100kvA	2500	2300	1840	1640	2215	

KYN61C-40.5

High voltage
Switchgear case

Description

This product is a three-phase AC 50Hz, rated voltage 40.5 kV indoor complete set of power distribution device. It is used for receiving and distributing electric energy in power plants, substations and industrial and mining enterprises. It also has the functions of controlling, protecting and detecting circuits.

Technical parameter and performance requirements

No.	Name		Unit	Parameter
1	Rated voltage		kV	40.5
2	Rated frequency		Hz	50
3	Rated current		A	≤3150
4	Temperature-rise testing			1.1Ir
5	Rated power frequency withstand voltage (1min)		kV	95
6	Rated lightning impulse withstand voltage (peak)		kV	185
7	Rated short-circuit breaking current		kA	31.5
8	Rated short-circuit closing current		kA	80
9	Rated short-time withstand current and continuous time		kA/s	31.5/4
10	Rated peak withstand current		kA	80
11	Short-time power frequency withstand voltage of the Auxiliary and control circuit		kV	2
12	Partial discharge	Testing voltage Single insulating parts	kV pC	1.1x 40.5 ≤3
13	Protection grade	Casing Compartments		IP4X IP2X
14	Creepage distance	Porcelain material (to ground) Organic material (to ground)	mm	≥729 ≥810
15	Interphase and phase to ground clear distance (air insulation)		mm	≥300
16	Loss of continuity of operation category			LSC2
17	Minimum clear distance of SMC baffle plate (if any) to live conductor		mm	≥60
18	Thickness of SMC baffle plate		mm	≥5
19	Cooling mode			Self cooling[1)]
20	Allowable duration of internal arc			LSC2

Note: 1) When the rated current is ≥ 3150A, air cooling is required.

SWITCHGEAR CASING

KYN61C-40.5

High voltage
Switchgear case

Structure characteristics

On the basis of keeping the original size of 1200x2400x2600 unchanged, the internal layout is reasonably adjusted, and the clear distance of copper bars in bus chamber is more than 300mm except phase-to-phase

On the basis of keeping the original size of 1200x2400x2600 unchanged, the internal layout is reasonably adjusted, and the clear distance of copper bars in bus chamber is more than 300mm except phase-to-phase

The valve of the cabinet body adopts a lever-type steel mechanism, which realizes that the valve can be driven normally only by unilateral force, without jamming, and is stable and reliable.

KYN61C-40.5

High voltage
Switchgear case

Structure characteristics

The new grounding interlocking mechanism has the advantages of small operation force, long service life, strong stability, convenient assembly, commisioning and maintenance, etc.

The handcart base adopts track structure and uses special welding fixture to tamp and stabilize.

The secondary line is laid in the secondary line groove with full metal protection, which can effectively protect the burning of the secondary line by the electric strength when the cabinet is in trouble, and the signal can be accurately transmitted to the comprehensive protection control system through the secondary line, so that the fault can be quickly removed, the damage degree of the electrical equipment caused by the fault can be reduced, and the stability of the power system can be improved.

SWITCHGEAR CASING

KYN28A-24

High voltage
Switchgear case

Description

This product is a three-phase AC 50Hz, rated voltage 24kV indoor complete set of power distribution device. It is used for receiving and distributing electric energy in power plants, substations and industrial and mining enterprises. It also has the functions of controlling, protecting and detecting circuits.

Technical parameter and performance requirements

No.	Name		Unit	Parameter
1	Rated voltage		kV	24
2	Rated frequency		Hz	50
3	Rated current		A	≤3150
4	Temperature-rise testing			1.1Ir
5	Rated power frequency withstand voltage (1min)		kV	65
6	Rated lightning impulse withstand voltage (peak)		kV	125
7	Rated short-circuit breaking current		kA	31.5
8	Rated short-circuit closing current		kA	80
9	Rated short-time withstand current and continuous time		kA/s	31.5/4
10	Rated peak withstand current		kA	80
11	Short-time power frequency withstand voltage of the Auxiliary and control circuit		kV	2
12	Partial discharge	Testing voltage Single insulating parts	kV pC	1.1x 40.5 ≤3
13	Protection grade	Casing Compartments		IP4X IP2X
14	Creepage distance	Porcelain material (to ground) Organic material (to ground)	mm	≥432 ≥480
15	Interphase and phase to ground clear distance (air insulation)		mm	≥180
16	Loss of continuity of operation category			LSC2
17	Minimum clear distance of SMC baffle plate (if any) to live conductor		mm	≥45
18	Thickness of SMC baffle plate		mm	≥5
19	Cooling mode			自冷1)
20	Allowable duration of internal arc		S	1

Note: 1) When the rated current is ⩾ 3150A, air cooling is required.

KYN28A-24

High voltage
Switchgear case

Structure characteristics

The structure of grounding interlock is simpler, the action is more flexible and reliable, and the interlocking function can be switched freely regardless of whether it is equipped with a grounding switch operated manually or electrically, without changing any parts.

A set of interlocking device is used to realize the interlock between the rear upper and lower doors, so as to ensure that the rear door cannot be opened when the rear lower door is not opened; On the contrary, the rear lower door cannot be closed when the rear door is not closed.

The side plate adopts internal folding double bending technology, the skeleton is connected with nested steel nails, and there are no protruding screws and abdication holes on the side, which can realize single replacement after failure and shorten the time for restoring power supply.

KYN28A-24

High voltage
Switchgear case

Structure characteristics

The valve mechanism adopts an integrated base, which has higher stability.
The valve guide rail adopts aluminum alloy guide rail, which has higher matching accuracy, makes the valve slide more flexible, and increases the air distance between the valve guide rail and the handcart, which improves the overall safety of the valve mechanism.

The secondary line is laid in the secondary line groove with full metal protection, which can effectively protect the burning of the secondary line by the arc when the cabinet is in trouble, and the signal can be accurately transmitted to the comprehensive protection control system through the secondary line, so that the fault can be quickly removed, the damage degree of the fault to the electrical equipment can be reduced, and the stability of the power system can be improved.

The instrument door is equipped with self-leading device to prevent drooping, opening limit device and adjustable wire binding frame. The instrument box is equipped with flippable terminal mounting beam to facilitate secondary wiring.

KYN28A-12

High voltage
Switchgear case

Description

This product is a three-phase AC 50Hz, rated voltage 40.5 kV indoor complete set of power distribution device. It is used for receiving and distributing electric energy in power plants, substations and industrial and mining enterprises. It also has the functions of controlling, protecting and detecting circuits.

Technical parameter and performance requirements

No.	Name		Unit	Parameter
1	Rated voltage		kV	12
2	Rated frequency		Hz	50
3	Rated current		A	≤4000
4	Temperature-rise testing			1.1Ir
5	Rated power frequency withstand voltage (1min)		kV	42
6	Rated lightning impulse withstand voltage (peak)		kV	75
7	Rated short-circuit breaking current		kA	40
8	Rated short-circuit closing current		kA	100
9	Rated short-time withstand current and continuous time		kA/s	40/4
10	Rated peak withstand current		kA	100
11	Short-time power frequency withstand voltage of auxiliary and control circuit		kV	2
12	Partial discharge	Testing voltage Single insulating parts	kV pC	1.1x 12 ≤3
13	Protection grade	Casing Compartments		IP4X IP2X
14	Creepage distance	Porcelain material (to ground) Organic material (to ground)	mm	≥216 ≥240
15	Interphase and phase to ground clear distance (air insulation)		mm	≥125
16	Loss of continuity of operation category			LSC2
17	Minimum clear distance of SMC baffle plate (if any) to live conductor		mm	≥30
18	Thickness of SMC baffle plate		mm	≥5
19	Cooling mode			Self-cooling*
20	Allowable duration of internal arc		S	1

Note: 1) When the rated current is ⩾ 3150A, air cooling is required.

KYN28A-12

High voltage
Switchgear case

Structure characteristics

The structure of grounding interlock is simpler, the action is more flexible and reliable, and the interlocking function can be switched freely regardless of whether it is equipped with a grounding switch operated manually or electrically, without changing any parts.

A set of interlocking device is used to realize the interlock between the rear upper and lower doors, so as to ensure that the rear door cannot be opened when the rear lower door is not opened; On the contrary, the rear lower door cannot be closed when the rear door is not closed.

The side plate adopts internal folding double bending technology, the skeleton is connected with nested steel nails, and there are no protruding screws and abdication holes on the side, which can realize single replacement after failure and shorten the time for restoring power supply.

KYN28A-12

High voltage
Switchgear case

Structure characteristics

The valve mechanism adopts an integrated base, which has higher stability.
The valve guide rail adopts aluminum alloy guide rail, which has higher matching accuracy, makes the valve slide more flexible, and increases the air distance between the valve guide rail and the handcart, which improves the overall safety of the valve mechanism.

The secondary line is laid in the secondary line groove with full metal protection, which can effectively protect the burning of the secondary line by the arc when the cabinet is in trouble, and the signal can be accurately transmitted to the comprehensive protection control system through the secondary line, so that the fault can be quickly removed, the damage degree of the fault to the electrical equipment can be reduced, and the stability of the power system can be improved.

The instrument door is equipped with self-leading device to prevent drooping, opening limit device and adjustable wire binding frame. The instrument box is equipped with flippable terminal mounting beam to facilitate secondary wiring.

SWITCHGEAR CASING

HXGN15-12

High voltage
Switchgear case

Description

HXGN15A-12(F·R) box-type fixed AC metal enclosed ring network switchgear is a new type of switchgear designed for the transformation and construction of urban power grids. The ring network cabinet is equipped with vacuum load switch and spring operating mechanism, which can be operated either manually or electrically. The grounding switch and isolating switch are equipped with manual operating mechanism.The ring network cabinet has strong complete set, small volume, no combustion and explosion danger, and has reliable five-defense functions.

Characteristics

The ring network cabinet is assembled with 8MF profile, and the modulus hole E = 20mm is installed on the whole frame. FZN21-12D type load switch or FZRN21-12D type fuse combination electrical appliance is equipped in the ring network cabinet. This type of electrical appliance has disconnecting switch, vacuum load switch, grounding half-opening, and both disconnecting switch and grounding switch have obvious fracture. Isolation switch, vacuum load switch, grounding switch and cabinet door have perfect and reliable mechanical linkage and interlocking devices, which can effectively prevent misoperation and ensure safe maintenance.

It can be operated manually and electrically.

The door of the measuring cabinet and the instrument door are provided with lead sealing pins.

Technical parameter

No.	Name		Unit	Parameter
1	Rated voltage		kV	12
2	Rated current	Load switchgear Combined electrical cabinet		630 125
3	Rated short-circuit breaking current		kA	31.5
4	Rated active load breaking current		A	630
5	Rated short-time withstand current		kA	20
6	Rated peak value withstand current		kA	50
7	Rated power frequency withstand voltage Between phase, to ground/fracture		kV	42/48
8	Lightning impulse withstand voltage Between phase, to ground/fracture		kV	75/85
9	Mechanical life		cycles	10000
10	Rated handover current		A	3150
11	Operation mode			Manual or motor type
12	Protection grade			IP2X

HXGN15-12

High voltage
Switchgear case

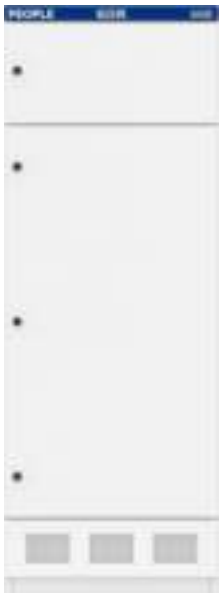
Technical parameter and performance requirement

No.	Name			Unit	Load switch unit	Combined electrical unit	Circuit breaker unit
1	Rated voltage			kV	12	12	12
2	Rated frequency			Hz	50	50	50
3	Rated current			A	630	125 (depends on the fuse current)	630
4	Rated insulation level	1min power frequency withstand voltage	Between phase, to ground	kV	42	42	42
			Fracture		48	48	48
			Control and auxiliary circuit		2	2	2
		Lightning impulse withstand voltage	Between phase, to ground		75	75	75
			Fracture		85	85	85
5	Rated short-time withstand current			kA/s	20、25/4	——	20、25/4
6	Rated peak value withstand current			kA	50、63	——	50、63
7	Rated short-circuit closing current			kA	50、63	Limited to the HV fuse	50、63
8	Rated short-circuit breaking current			kA	——	Limited to the HV fuse	20、25
9	Rated transfer current			A	——	1700	——
10	Rated active load breaking current			A	630	——	——
11	Rated closed loop breaking current			A	630	——	630
12	Mechanical life	Load switch/circuit breaker		cycles	10000	10000	20000
		Disconnector/grounding switch			3000	3000	3000
13	Circuit resistance			μΩ	≤150	——	≤150
14	Rated inflation pressure (gauge pressure at 20°C)			Mpa	0.04	0.04	0.04
15	Gas annual relative leakage rate			Year	≤0.01%	≤0.01%	≤0.01%
16	Protection grade	Cabinet body			IP4X	IP4X	IP4X
		Gas box			IP67	IP67	IP67
17	Burning arc test			kA/s	25/0.5	25/0.5	25/0.5
18	Compartment (IP code)			/	IP2XC		
	Gas box (IP code)			/	IP67		
	Cabinet body (IP code)			/	IP41		
	Cabinet body (IK code)			/	IP10		
19	Insulation gas			/	Sf6		

SWITCHGEAR CASING

GGD

Low voltage
Switchgear case



Description

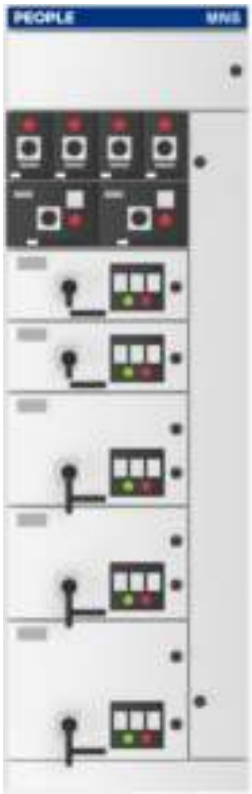
This product is suitable for power generation and supply systems with three-phase AC frequency of 50-60Hz, rated working voltage of 400V (690V) and below, and rated current of 6300A and below. It is used as centralized control and capacitance compensation in power, distribution and motors. Widely used in power plants, petroleum, chemical industry, metallurgy, textile, high-rise buildings and other places, this product complies with GB/T7251.1, GB/T7251.12, GB/T20641 and other standards.

Technical parameter and performance requirement

No.	Name		Unit	Parameter
1	Rated voltage	AC DC	v v	⩽1000 ⩽1500
2	Rated insulation voltage		v	690/1000
3	Rated frequency		Hz	50-60
4	Rated withstand impulse voltage		kV	8
5	Over-voltage grade		grade	III
6	Rated current		A	≤6300
7	Rated withstand current		KA	100
8	Rated peak value withstand current		KA	220
9	Rated short-time withstand current		KA	100
10	Protection grade Anti-collision level	Case Case	IP IK	IP3X Ik10
11	Internal compartment form		NONE	NONE
12	Type material modulus		mm	20/25
13	Incoming mode			Upper bus Lower cable Side bus
14	Outgoing mode			Rear upper cable Rear lower cable

MNS、GCK、GCS

Low voltage case



Description

This product is suitable for power generation and power supply systems with a three-phase AC frequency of 50-60Hz, a rated working voltage of 400V (690V) and below, and rated current of 6300A and below. It is widely used in power plants, petroleum, chemical industry, metallurgy, textiles, high-rise buildings and other places, this product complies with GB/T7251.12, GB/T20641, GB/T24274, JB/T10323, JB/T10263 standards.

Technical parameter and performance requirement

No.	Name		Unit	Parameter
1	Rated voltage	AC DC	v v	⩽1000 ⩽1500
2	Rated insulation voltage		v	690/1000
3	Rated frequency		Hz	50-60
4	Rated withstand impulse voltage		kV	8
5	Over-voltage grade		grade	III
6	Rated current		A	≤6300
7	Rated withstand current		KA	100
8	Rated peak value withstand current		KA	220
9	Rated short-time withstand current (1s)		kA	100
10	Distribution busbar	Standard type	kA	105
11	Peak value current	Improved type	kA	176
12	Protection grade	Case	IP	IP4X
		Internal	IP	IP2X
13	Anti-collision level	Case	IK	Ik10
14	Internal compartment form			3a/3b/4b
15	Drawer interlock mechanism			BPT dialing handle type three-station mechanism XJG-3 Hand Crank Mechanism for Door Opening DJG-5 hand crank mechanism MLS-3/4 Size interlock Mechanism JL-1/2 Hand pull mechanism JL-8 hand crank mechanism
16	Incoming mode			Upper bus Lower cable Side bus
17	Outgoing mode			Rear upper cable Rear lower cable

MNS、GCK、GCS

Low voltage case

Structure characteristics

Enhanced frame structure

Riveting

Primary plug-in component

Secondary plug-in component

Busbar frame

Back door

MNS、GCK、GCS
Low voltage case

Structure characteristics

Green and environmental protection manufacturing process

Double bending, steel rivet riveting, installation and positioning bayonet, primary plug-in for millions of trouble-free operation records, T-hole in the bottom plate of the drawer, which enhances the flexibility of the installation of components, the back plate of the drawer adopts rear bending, which increases the electrical gap of the leading busbar, and the interior of the drawer is equipped with secondary wire binding holes to ensure the rationality and consistency of the wiring.

Sliding mounting bracket

Hand crank mechanism

Visualized splice indication

Hand crank motor operation mechanism

XL-21

Power box case

Product characteristics

The XL-21 power distribution box is divided into two types. The box height of 1700mm and 1800mm is the ordinary type (P), which can be installed independently, and the entry and exit holes can be opened according to the requirements. The box height of 1900mm and above is the bus type with top (M type). The top of the box is equipped with a detachable cover plate, which is convenient for the installation and disassembly of the bus.

The frame of the box body is made of section steel, the door plate, side and rear sealing plate are all detachable, the installation plate and side depth can be adjusted, the installation and maintenance are flexible, convenient, the structure is tight, and the versatility is good.

Adopting precision casting adjustable door, the door opening is more than 135 ", the mounting bracket in the box body can be adjusted as a whole after the components are installed. It can be installed and inlet and outlet lines according to different use environments. It has strong versatility and can be used in combination with multiple sets.

Technical parameter

No.	Name	Unit	Parameter
1	Rated working voltage	V	380
2	Rated insulation voltage	V	690
3	Rated working current of horizontal bus	A	≤2000
4	Rated short-time withstand current effective value/peak value	IS/kA	30/63
5	Protection grade of the case		IP30
6	Overall dimensions(W×D×H)	mm	400-1000x600-1000x1400-2200

JXF

Distribution box case

Description

JXF distribution box is made of electrolytic steel plate bending and welding, and its surface is treated by epoxy tree gallbladder electrostatic spraying, which is beautiful and durable. According to its purpose, the distribution box is divided into lighting distribution box, power control box, metering box and other types, and according to its structure, it is divided into indoor wall-mounted control box and outdoor protective box. The outdoor protective box is divided into metal door and perspective door. General-purpose distribution boxes are flexible and diverse in style, and can be installed into control systems with different electrical performances as needed, such as lighting distribution boxes, power control boxes, metering boxes, air conditioning control boxes, water pump control boxes, fire control boxes, etc.

Technical parameter

No.	Name	Unit	Parameter
1	Rated working voltage	V	380、220
2	Rated insulation voltage	V	450
3	Rated working current of horizontal busbar	A	630
4	Breaking capacity	kA	10
5	Rated frequency	Hz	50
6	Protection grade of case		IP30

Single-phase, Three phase meter box

Model No.	Code	External dimension		
		A	B	C
XXC1-301S	One-position three-phase meter box	400	300	170
XXC1-301S（T）	One-position three-phase meter box with transformer	650	350	170
XXC1-302S	Two-position three-phase meter box	400	450	170
XXC1-302S(T)	Two-position three-phase meter box with transformer	650	550	170
XXC1-301DIS(T)	One-position single-phase and one-position three-phase meter box (CT)	650	450	170
XXC1-311S(T)	Type 100 meter box	650	550	170
XXC1-311DIS(T)	Type 100 one-position single-phase three-phase meter box	650	650	170
XXC1-321S(T)	Type 250 meter box	650	600	170
XXC1-321DIS(T)	Type 250 one-position single-phase three-phase meter box	650	700	170
XXC1-361S(T)	Type 600 meter box	1000	700	250
XXC1-361DIS(T)	Type 600 one-position single-phase three-phase meter box	1000	850	250

COMPREHENSIVE PROTECTION DEVICE

PS-2000

Comprehensive automation system of microcomputer substation

Description

PS-2000 microcomputer substation integrated automation system is a new generation of microcomputer protection measurement and control device integrated automation system, which is launched by People Electric Shanghai Company to meet the latest requirements of substation integrated automation system, and developed by applying the latest and most advanced DSP technology at home and abroad. This system is suitable for substations, terminal stations and rural network systems below 110KV, and highlights the long-term reliable operation problems of microcomputer protection and monitoring system in harsh environments (such as low temperature, high temperature, strong electromagnetic field interference, high altitude, many lightning, etc.), and the conventional control, measurement and signal compatibility.

The PS-2000 system has formed a series of products as follows

1. Auxiliary protection
PS-2661 standby automatic switching protection measurement and control device Conventional type: incoming line, bus connector
PS-2662 standby automatic switching protection measurement and control device self-restoration type: incoming line, bus connection
PS-2663 busbar PT protection measurement and control device single busbar PT
PS-2664 Busbar PT Protection Measurement and Control Device Double Busbar PT Parallel
PS-2665 Communication Management Master Control Device

2. Load protection
PS-2671 Line Protection Measurement and Control Device
PS-2672 bus coupling protection measurement and control device
PS-2673 Transformer Outlet Protection Measurement and Control Device
PS-2674 Capacitor Protection Measurement and Control Device
PS-2675 Motor Protection Measurement and Control Device

3. Backup protection
PS-2681 Transformer High Backup Protection Measurement and Control Device
PS-2682 Transformer Low Backup Protection Measurement and Control Device
PS-2683 Three-turn Variable Backup Protection Measurement and Control Device
PS-2684 main transformer backup protection operation device
PS-2685 main transformer non-electric power protection device
PS-2686 Generator Backup Protection Measurement and Control Device
PS-2687 Generator Grounding Protection Measurement and Control Device

PS-2000

Comprehensive automation system of microcomputer substation

4. Differential protection

PS-2691 Two-turn Variable Differential Protection Measurement and Control Device Without Control Loop

PS-2692 Two-turn Variable Differential Protection Measurement and Control Device with Control Loop

PS-2693 Three-turn Variable Differential Protection Measurement and Control Device

PS-2694 Motor Differential Protection Measurement and Control Device

PS-2695 Generator Differential Protection Measurement and Control Device

System characteristics

Chinese character display:

The device uses large-screen liquid crystal to directly display the required electrical quantities such as current, voltage, power, etc., and displays all kinds of information of protection actions on the screen, and records the action time and size of the recorder.

1. Easy to operate:

The protection on-off, setting value, data query, on-in signal detection, on-out test, etc. of the protection device can be directly operated on the panel of the protection device, which greatly improves the convenience of operation.

2. The instructions are obvious:

The protection device has seven photon rows under the large LCD screen, which can respectively display the working status, power supply status, monitoring status of self-test components and position monitoring of circuit breakers of the protection device.

3. Confidentiality function:

The device has a strong confidentiality function, and it is necessary to enter a password when changing the data content of the device, such as protection, switching and returning, setting the value, opening test, background communication address, etc., which greatly improves the safety of operation and operation.

4. Sampling display:

The bus voltage, measured current collected by the protection device and the calculated line voltage, active power, reactive power, power factor, frequency and other electrical quantities are all concentrated on the LCD screen and automatically displayed.

5. Sampling performance:

Each voltage loop, each protection current loop and measurement current loop are independent loops, which have good anti-saturation and anti-interference, and ensure the sampling accuracy.

6. Export independence:

Remote control opening and closing, protection trip, reclosing, accident signal, warning signal and special signal outlet all use one channel independently, which is convenient for the input and exit of protection and ensures the safety of operation.

PS-2000

Comprehensive automation system of microcomputer substation

7. Event records:

It can record more than 60 pieces of latest information. The displacement of the circuit breaker, displacement time, and the type, time and action value of protection actions will be recorded. At the same time, it has a power-off holding function, and the event records in the menu can be queried.

8. Self-protection function:

The device has the protection function of circuit breaker trip-closing coil to avoid burning the circuit breaker coil due to mechanical refusal. Each circuit breaker corresponds to an operating circuit, and the switch can be directly operated in case of emergency.

9. Anti-interference performance:

The devices all adopt closed chassis with double-layer shielding inside, which effectively resists the interference of external electromagnetic waves to the internal components of the devices.

10. Seismic performance:

All the boards of the protection device are connected to the chassis in the form of plug-ins, and are fixed by multiple screws, which have very strong fixability, thus avoiding the phenomenon of loosening and falling off of the product during long-distance and bad road conditions.

11. Strong automation:

The protection device has powerful functions. It takes the perfect microcomputer protection system program as the core, reliable self-test system and hardware equipment, and powerful "four remote" functions. It replaces the protection mode of conventional relays. All data analysis and processing completely realizes the unattended mode of substation.

12. Easy to design:

According to the on-site situation, different installation modes can be selected, that is, screen installation or scattered installation on each switch cabinet.

13. Various communications:

The protection device has two independent 485 interfaces, which can expand the number of background operation stations and easily realize dual-machine hot standby. It is also equipped with a local area network LAN port to form a local area network, providing hardware support for providing various background configurations.

14. Overall performance:

On the perfect software and hardware platform, the protection device has passed the detection of relevant national authoritative organizations, which well meets the quick action, accuracy and reliability of relay protection.

Note: Our company also produces RPS-5000 series protection. This protection is a product of the upgraded platform of RPS-2000. In terms of functions, it not only has full-function protection, but also can be modified to meet the needs of field applications, which is convenient and flexible; The measurement and control accuracy level is required to be higher; Hardware has been comprehensive upgraded, adoption all import chip component, reaction speed, accelerated, precision, reaktion, precision, high precision, adoption.

PS-2000

Background monitoring system

System introduction

PS-2000 local monitoring system is a comprehensive automation background monitoring system for substations based on current computers. It adopts international standards and is a multi-window and multi-task system. It runs in Chinese WINDOWSNT or WINDOWS98 or above operating system environment. It has stable operation, high reliability, and is easy to operate. Easy to learn.

General Hardware Configuration Requirements of PS-2000 Background Monitoring System

Selection of display (color plane right angle):

1. In a 10KV/6KV substation, when the number of protection measurement and control devices is less than 15, a 19-inch display can be selected.
2. When there are a large number of protection units in substations above 35KV and substations below 10KV, at least 21-inch monitors should be selected.
3. In addition to the models specified by the design institute, our company will follow the conventional Dell complete machine configuration.

Monitoring host selection:

1. The hard disk is above 320G;
2. The memory is not less than 1G;
3. The main frequency is not less than 3.2 G;
4. Sound card, network card, graphics card, optical drive, floppy drive, keyboard, mouse and other accessories.

Alarm speaker: adopts Edifier series;

Uninterruptible power supply: backup type and online type; Neither can be lower than 1KVA; 1 h;

Printer: HP A4

Communication line: shielded twisted pair.

System performance

Because of the high-performance and high-reliability industrial control machine, the average trouble-free running time is more than 20,000 to 50,000 hours, the modular design of software and the flexible configuration of real-time database greatly improve the reliability of the system.

In addition, the system has good compatibility and reliability, WindowsNt or Windows98 or above running environment, open software working platform, and easy to upgrade and expand.

VACUUM CIRCUIT BREAKER

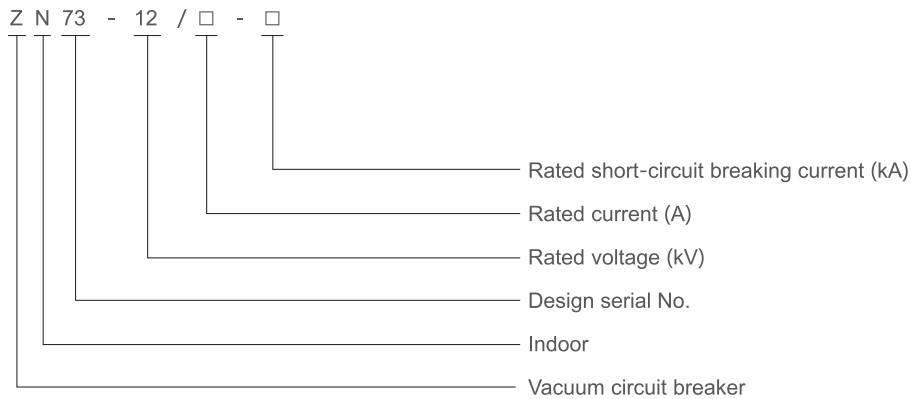
ZN73-12(VS1)

Indoor type high voltage
AC Vacuum circuit breaker

Description

ZN73-12 Series Indoor type high voltage AC vacuum circuit breaker is the indoor equipment with three phase AC50Hz, rated voltage 12KV, it is applicable for switching various different kinds of load and the places with frequent operation, as the use of electrical equipment's protection and control for the industrial mining, enterprise, power plant equipment and substation.

Model No. and its implication



Using environment

1. Ambient temperature: -10℃~+40℃;
2. Altitude: does not exceed 1000m;
3. Humidity: relative humidity: daily average value does not exceed 95%, monthly average value does not exceed 90%, saturated vapor pressure: daily average does not exceed 2.2×10-3MPa, monthly average does not exceed1.8×10-3MPa.
4. Earthquake intensity: does not exceed 8 degree
5. The surrounding air should not be corrosive or combustible gas, steam and other obvious pollution.
6. There is no regular violent vibration in the use place。

Remark: if the not the same with the above using condition, can be customized

ZN73-12(VS1)

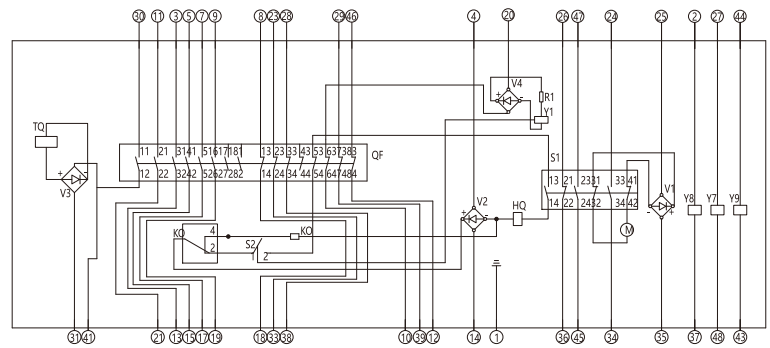
Indoor type high voltage
AC Vacuum circuit bre

Main technical parameter

Table 1

Rated voltage kV			12		
Rated frequency Hz			50		
Rated insulation level	1min Power frequency withstand voltage Interphase、phase to ground/ fracture kV		42/48(Effective value)		
	Lightning impulse withstand voltage Interphase、phase to ground/ fracture kV		75/85(Peak value)		
Rated operation sequency			O-t-CO-t'-CO*		
Main circuit resistance mΩ			≤50		
Mechanical life cycles			10000		
Model No.	Rated current A	Rated short-circuit breaking current kA	Rated short-circuit closing current (peak) kA	Rated short-circuit continuous time (s)	Rated short-circuit breaking current breaking time
ZN73-12/630-20	630	20/25	50/63	4	50
ZN73-12/1250-20	1250				
ZN73-12/1250-31.5	1250	31.5	80		50
ZN73-12/1600-31.5	1600				
ZN73-12/2000-31.5	2000				
ZN73-12/2500-31.5	2500				
ZN73-12/1250-40	1250	40	100		50
ZN73-12/1600-40	1600				
ZN73-12/2000-40	2000				
ZN73-12/2500-40	2500				
ZN73-12/3150-40	3150				

Remark: * when the short-circuit breaking current is 20, 25, 31.5kA, t=0.3s, t'=180s, When the short-circuit breaking current is 40KA, t=180s, t'=180s.

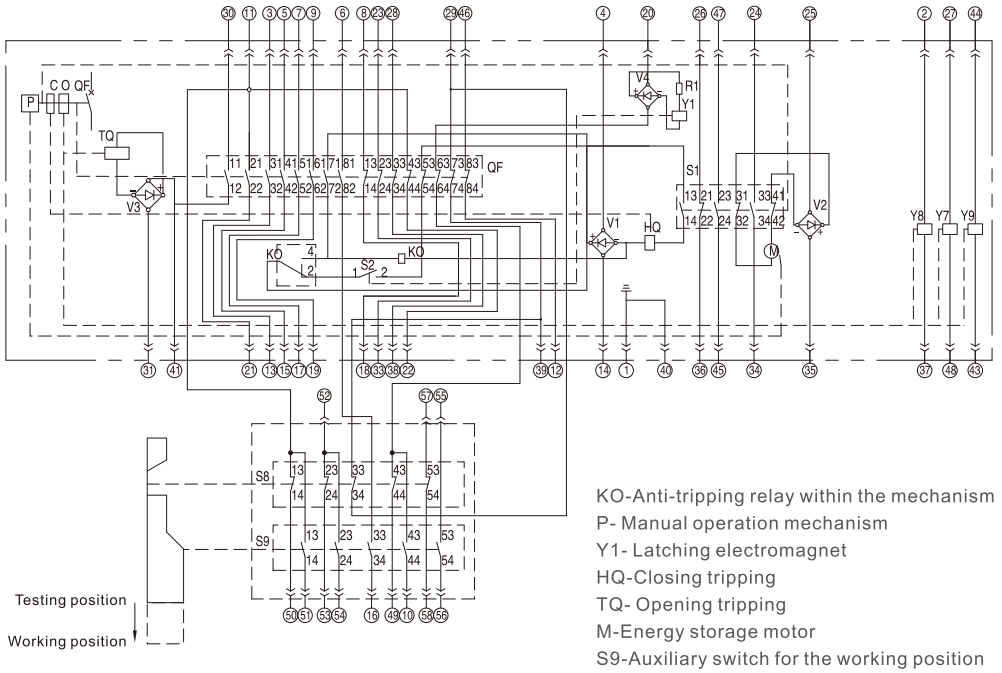


Y1：latching electromagnet　　Y7~Y9：Over-current trpping electromagnet
KO：Anti-tripping relay within the mechanism　　HQ: Closing electromagnet
QF: Auxiliary switch for circuit breaker's main contacts　　TQ: Opening electromagnet
S1: Micro switch for energy storage　　S2: Limit switch for latching electromagnet
M: Energy storage switch

Diagram 1 Inner electrical principle diagram for fixed type circuit breaker

ZN73-12(VS1)

Indoor type high voltage
AC Vacuum circuit breaker



KO-Anti-tripping relay within the mechanism
P- Manual operation mechanism
Y1- Latching electromagnet
HQ-Closing tripping
TQ- Opening tripping
M-Energy storage motor
S9-Auxiliary switch for the working position
S8- Auxiliary switch for the testing position
S2- Auxiliary switch for the latching electromagnet
S1- Micro switch for energy storage
QF- Auxiliary switch for the circuit breaker's main contacts

Diagram 2 Inner electrical principal diagram for the withdrawable circuit breaker (with anti-trip, latching, over-current)

Mechanical characteristics parameter for the circuit breaker — Table 2

	Unit	Parameter			
Contact's opening distance	mm	11±1			
Contact's overstroke	mm	3.5±0.5			
Three phase opening and closing synchronization	ms	≤2			
Contact closing tripping time		≤2			
Opening time		≤50			
Closing time		≤100			
Average opening speed		0.9~1.3			
Average closing speed		0.4~0.8			
Closing contact's contact pressure	N	20kA	25kA	31.5kA	40kA
		2000±200	2400±200	3100±200	4750±250
Accumulated allowable wear thickness for the moving and fixing contact	mm	3			

ZN73-12(VS1)

Indoor type high voltage
AC Vacuum circuit bre

Technical data of the operating mechanism

Table 3

Power supply for the operation		AC/DC	
Rated voltage		220V/110V	
Rated power	Opening tripping	264W	
	Closing tripping	264W	
	Energy storage motor	20kA 25kA 31.5kA	40kA
		70W	100W
Normal working voltage range	Opening tripping	65%~120% of rated voltage	
	Closing tripping	85%~110% of rated voltage	
	Energy storage motor	85%~110% of rated voltage	
Energy storage time		≤10s	

Overall and installation dimensions

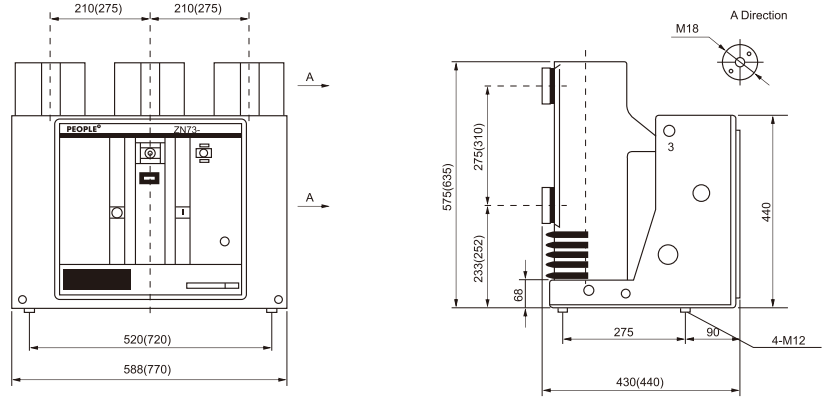
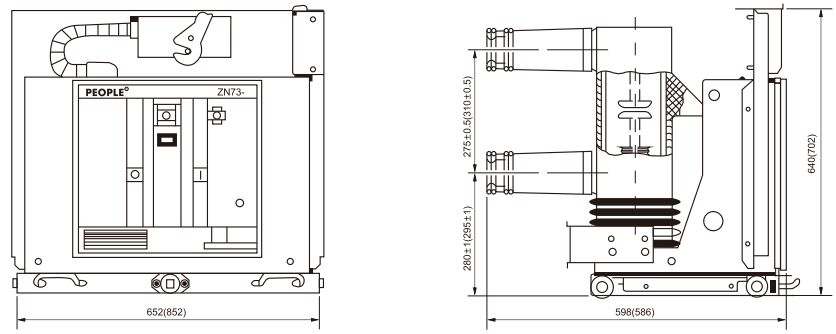


Diagram 3 Dimensions for the fixed type VCB



Note: 1. The travel distance in the cabinet is 200mm;
2. Figure within the parentheses is the dimensions for the circuit breaker's rated current over 1600A

Diagram 4 Dimensions for the withdrawable type VCB

VACUUM CIRCUIT BREAKER

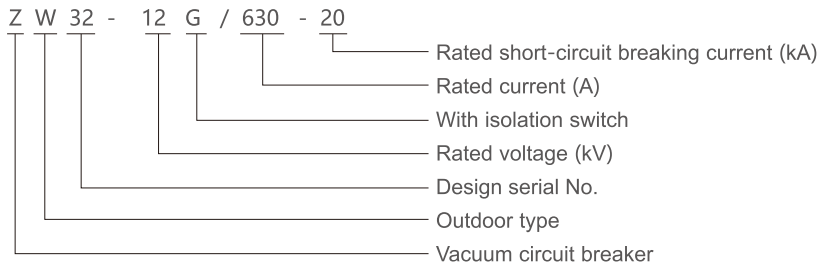
ZW32-12

Outdoor type High voltage
AC Vacuum circuit breaker

Description

ZW32-12 Outdoor high voltage vacuum circuit breaker is the outdoor high voltage switch equipment with three phase AC50Hz, Rated voltage of 12kV, it is suitable for breaking and closing the load current, overload current and shirt-circuit current of the urban or rural power distribution system.

Model No. and its implication



Main technical parameter

		Unit	ZW32-12/630-20	ZW32-12/630-25
Rated voltage		kV	12	
Rated current		A	630 1250	
Rated short-circuit breaking current		kA	20	25
Rated short-circuit closing current(peak)			50	63
Rated peak withstand current			50	63
Rated short-time withstand current			20	25
Rated short-circuit continuous time		s	4	
Rated insulation level	Lightning impulse withstand voltage (peak)	kV	Interphase, to ground 75, fracture85	
	1min power frequency withstand voltage		Interphase, to ground 42, fracture48	
Rated operation sequency			O-0.3s-CO-180s-CO(Electric operation)	
Rated short-circuit current breaking time		Cycles	30	
Electrical life			10000	
Rated operating voltage (Opening and closing coil)		V	DC220,110,AC220	
Moving and fixing contacts allowable accumulated thickness		mm	3	
Rated current of over-current tripping		A	5	
Current ration of current transformer (regular)			200/5 400/5 630/5	

ZW32-12

Outdoor type High voltage
AC Vacuum circuit breaker

		Unit	ZW32-12/630-20	ZW32-12/630-25
Contact opening distance		mm	9±1	
Contact overstroke			$2^{+1}_{-0.5}$	
Average opening speed		m/s	1.2±0.2	
Average closing speed			0.6±0.2	
Opening time		ms	15~50	
Closing time			25~80	
Closing tripping time			≤2	
Three phase opening and closing synchronism			≤2	
Each phase circuit DC resistance		mΩ	≤80	
Energy storage motor	Rated voltage	V	DC/AC 220	
	Rated power	W	70	
	Energy storage time	S	≤8	
Weight		kg	100	

Overall and installation dimensions

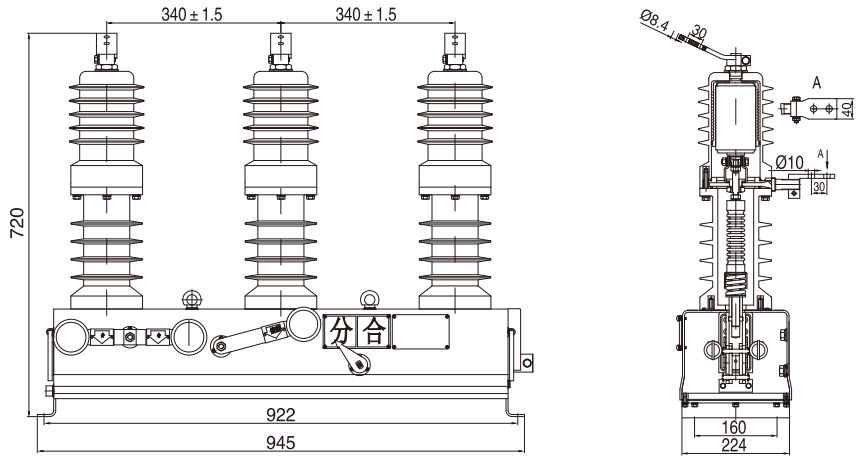


Diagram 1 ZW32-12 Outdoor high voltage vacuum circuit breaker

ZW32-12

Outdoor type High voltage
AC Vacuum circuit breaker

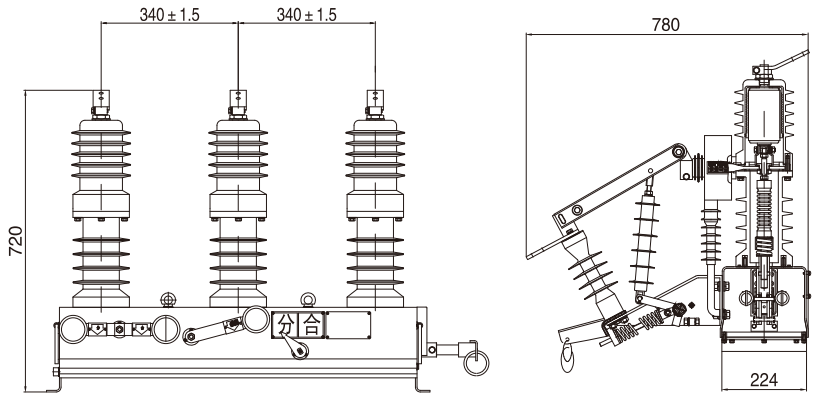


Diagram 2 ZW32-12(G) Outdoor high voltage vacuum circuit breaker

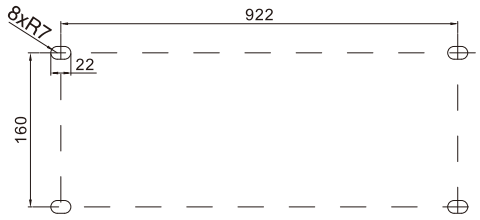


Diagram 3 ZW32-12(G) Outdoor high voltage vacuum circuit breaker installation dimension

ZN73S-24

Indoor High Voltage Vacuum circuit breaker

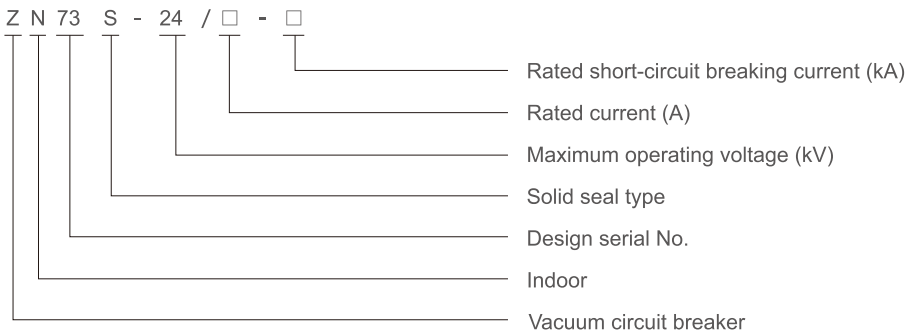
Description

ZN73S-24 Indoor high voltage vacuum circuit breaker is suitable for the indoor distribution equipment of 24kv, three phase AC50Hz, it is mainly used to break and close the load current, over current and short-circuit current in the circuit, plays a control and protection role, and it's the main switch components of medium central switchgear. It is used for protection and control in power distribution systems of substations,
enterprises and industrial and mining enterprises. It is suitable for rural power grids and places with frequent operations, especially for the needs of urban and agricultural network transformation.

Main function characteristics

●The circuit breaker adopts copper-chromium contact material and a cup-shaped longitudinal magnetic field contact structure. The electrical wear rate of the contacts is small, the dielectric insulation strength is stable, the recovery after arc is rapid, the cut-off level is low, the breaking ability is strong, and the electrical life is long.
●The operating mechanism is a spring energy storage mechanism arranged in a plane, which has manual energy storage and electric energy storage functions to make the operating performance of the circuit breaker more reliable.

Model No.



Main technical parameters and characteristic parameters of circuit breaker

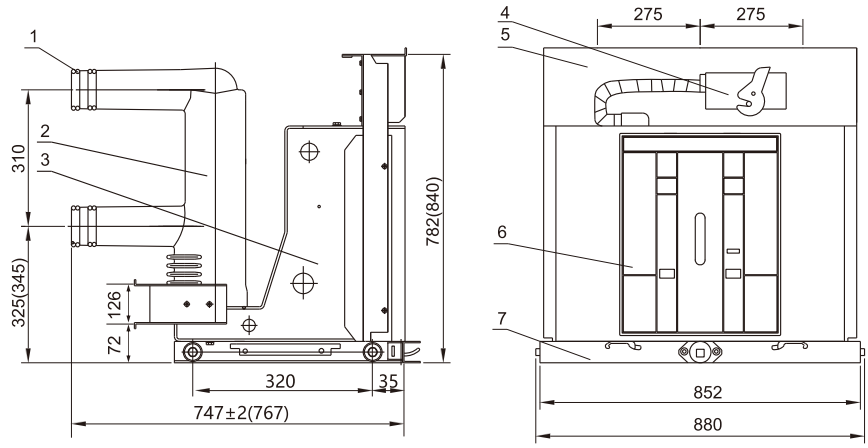
No.	Name	Unit	Parameter		
1	Rated voltage	kV	24		
2	Rated frequency	Hz	50		
3	Rated current	A	630	1250	1600,2000, 2500
4	Rated short-circuit breaking current	kA	20	25	31.5
5	Rated peak withstand current	kA	50	63	80
6	Rated short time withstand current	kA	20	25	31.5
7	Rated short-circuit closing current	kA	50	63	80
8	Rated operation sequence		O-0.3s-CO-180s-CO		
9	Mechanical life	Cycles	10000		

ZN73S-24

Indoor High Voltage
Vacuum circuit breaker

No.	Name		Unit	Parameter
10	Rated number of short circuit breaks		cycles	20
11	Power frequency withstand voltage 1min	Interphase, ground/break	kV	65/79
12	Lightning shock withstand voltage	Interphase, ground/break	kV	125/145
13	Allowable wear thickness of moving and fixed contacts		mm	3
14	Contact opening distance		mm	14±1
15	Contacts stroke		mm	4±1
16	Average opening speed (6mm just after opening)		m/s	1.3±0.2
17	Average closing speed (6mm just before closing)		m/s	1.0±0.2
18	Contact closing bounce time		ms	≤2
19	Three-phase opening and closing synchronicity		ms	≤2
20	Main loop resistance (without touch arm)		μΩ	≤45
21	Closing time		ms	35-70
22	Opening time		ms	20-50
23	Interphase center distance		mm	210±0.5, 275±0.5

Overall and installation dimensions



1. Plum blossom contact 2. Vacuum interrupter pole 3. Mechanism frame
4. GDZ-58 plugs and sockets 5. Fixing plate 6. Mechanism panel 7. Pull-in/out trolley

Note: The pull-in stroke of the drawer is 300mm, and the size in the brackets is the outer drawing of the rated current above 2000A.

ZW32-40.5

Outdoor High voltage AC Vacuum circuit breaker

Description

ZW32-40.5 F type intelligent vacuum circuit breaker is composed of an electric spring mechanism and a high-reliability intelligent controller. The device is mainly used in medium-voltage overhead line power grids as a dividing and combining load current, overload current, and short-circuit current, and has 0~3 automatic maximum closing.

- Extremely high reliability
- Completely maintenance-free throughout its life
- Has high mechanical life and electrical life
- The whole body is small in size, light in weight, and easy to install
- With standard relay protection and fast automatic reclosing function

Use environmental conditions

1. Ambient air temperature: -30℃~+60℃;
2. Altitude: no more than 2000 meters;
3. The wind speed does not exceed 34m/s;
4. Vibration or ground movement from outside the switchgear and control equipment is negligible;
5. Pollution level: Level IV;
6. Storage temperature -40℃~+85℃.

Main technical parameter

Main technical parameter of circuit breaker

Table 1

No.	Name	Unit	Parameter
1	Rated voltage	kV	40.5
2	Rated current	A	1250/1600
3	Rated frequency	Hz	50 or 60
4	Power frequency withstand voltage (wet)(dry)	kV	80/95
5	Lightning impulse withstand current (peak)	kV	185
6	Rated short-circuit breaking current	kA	31.5
7	Rated short-circuit closing current (peak)	kA	80
8	Rated peak withstand current	kA	80
9	4s short-time withstand current	kA	31.5
10	Rated operation sequence		O-0.1S-CO-3s-CO-6s-CO -60s recovery
11	Rated short-circuit current breaking cycles	cycles	30
12	Mechanical life	cycles	20000
13	Intelligent mechanism control voltage	V	Dc220
14	Secondary circuit 1min power frequency withstand voltage	kV	2

ZW32-40.5

Outdoor High voltage
AC Vacuum circuit breaker

Main mechanical parameter of circuit breaker

Table 2

No.	Item	Unit	Parameter
1	Contact opening distance	mm	16±1
2	Contact over-range	mm	4±0.5
3	Opening speed	m/s	1.4~1.8
4	Closing speed	m/s	0.4~0.8
5	Contacts closing bounce time	m/s	≤5
6	Interphase center distance	mm	560±2
7	Three-phase opening and closing synchronicity	ms	≤2
8	Each phase conductive circuit resistance	μΩ	＜120
9	Closing time	ms	25~45
10	Opening time	ms	20~45
11	Weight	kgs	315

Structure and working principal of circuit breaker

ZW32-40.5 F type intelligent circuit breaker is mainly composed of integrated solid sealing pole column, current transformer, motor operating mechanism and box. This type of circuit breaker is designed for miniaturization. At the same time, it is equipped with manual opening and closing devices. The current transformer can be selected according to user needs.

The control of ZW32-40.5 F type intelligent vacuum circuit breaker is completed by the supporting intelligent control unit. The opening and closing operation can be realized locally, or it can be operated remotely from a distance through the communication interface. Other information about the circuit breaker can also be transmitted to the control center, and the communication channels can be selected from cable, optical fiber, GPRS/CDMA, GSM, etc.

The intelligent control unit is installed close to the circuit breaker and is connected to the circuit breaker through a control cable. The power supply of the intelligent control unit is divided into the main power supply, the main power supply is AC or DC 220V, which is obtained by the high-voltage line through PT: the backup power supply is provided by the battery (installed in the intelligent control unit box).When working normally, the main power supply charges the backup power supply: when the main power supply is lost, the backup power supply can still complete the control of the circuit breaker and other operations in the control unit. The backup power supply (at full load) can maintain the whole machine for not less than 48 hours of work.

The circuit breaker operating mechanism is equipped with a manual emergency opening handle, which is used for emergency opening operation in the event of a control system or power failure.

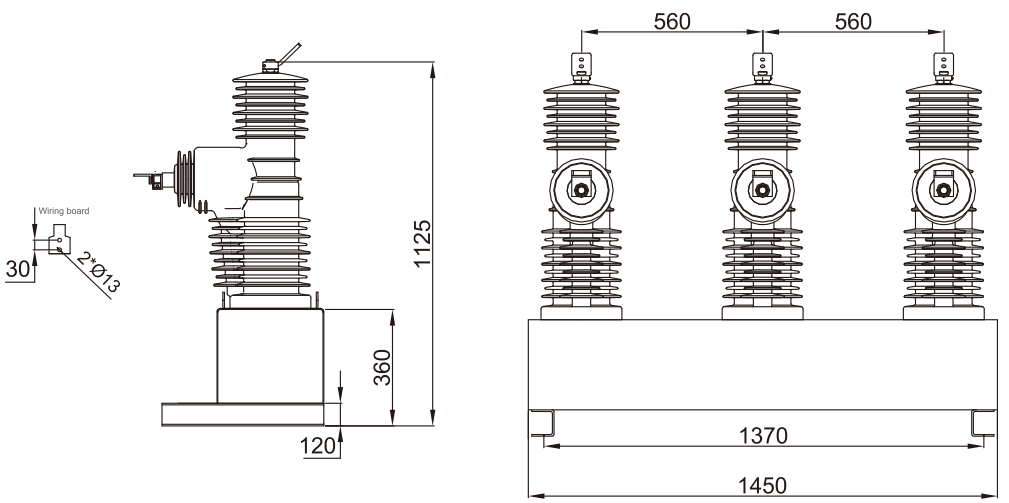
ZW32-40.5

Outdoor High voltage AC Vacuum circuit breaker

Working principle and process of circuit breaker

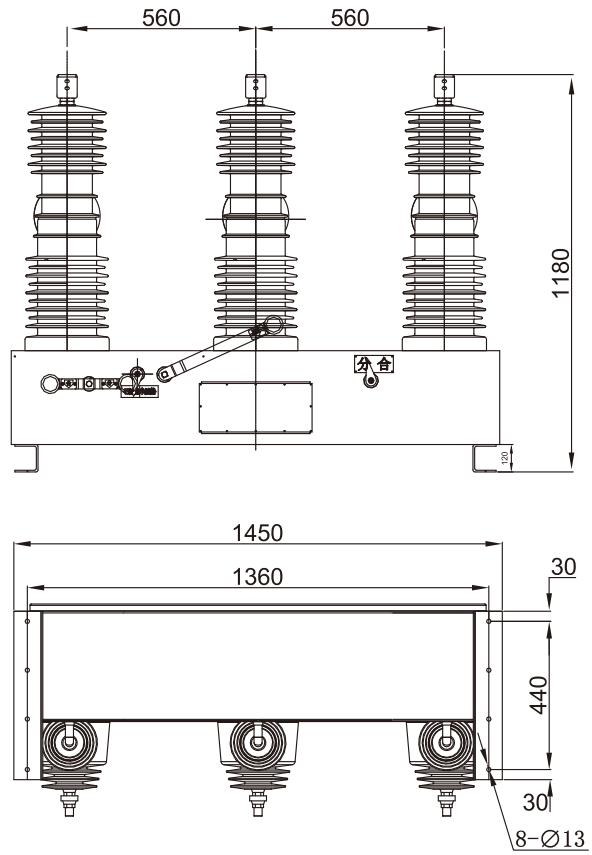
1. Arc extinguishing principle: ZW32-40.5 F type vacuum intelligent circuit breaker adopts a vacuum arc extinguishing chamber, which uses vacuum as the arc extinguishing and insulating medium, and has a very high degree of vacuum. When the moving and fixed contacts are electrically charged under the action of the operating mechanism, a vacuum arc will be generated between the contacts. At the same time, due to the special structure of the contacts, an appropriate longitudinal magnetic field will also be generated in the gap between the contacts, causing the vacuum arc to remain diffuse and the arc to be evenly distributed on the contact surface to burn and maintain a low isolation voltage. When the current naturally crosses zero, the remaining ions, electrons and metal vapor can be combined or condensed on the contact surface and the shield within the order of microseconds, and the dielectric insulation strength of the arc extinguishing chamber fracture is quickly restored, so that the arc is extinguished to achieve the purpose of breaking. Due to the use of longitudinal magnetic field to control the vacuum arc, the vacuum circuit breaker has a strong and stable ability to turn off the current.
2. Energy storage: ZW32-40.5 F type can store energy manually through the energy storage handle, or it can store energy motorized.
3. Closing operation: press the closing button on the intelligent controller locally, or remote control the closing operation from a distance, or use the opening and closing handle to close manually.
4. Opening operation: press the opening button on the intelligent controller locally, or remotely control the opening operation from a distance, or use the opening and closing handle to opening manually.

Installation dimension of circuit breaker (does not include the disconnector)



ZW32-40.5

Outdoor High voltage
AC Vacuum circuit breaker



ZW7-40.5

Outdoor High voltage AC Vacuum circuit breaker

Description

ZW7-40.5 outdoor high-voltage AC vacuum circuit breaker has the advantages of safe and reliable performance, easy maintenance, and long maintenance cycle. Due to the use of a new type of insulating material, the outer side of the arc extinguisher and the inner wall of the porcelain sleeve are non-condensing. The overall structure of the transformer placed in the mechanism box facilitates installation. It also avoids the oil, gas leakage and toxicity problems of other switches. Since the moving and fixed contacts of the circuit breaker are sealed in a vacuum arc extinguishing chamber, and vacuum is used as the insulating medium and arc extinguishing medium, it has a series of advantages unmatched by other types of switches. Therefore, this product is an ideal product to replace the DW multi-oil circuit breaker. The structure type of the operating mechanism box of this product in the middle of the circuit breaker is a central-mounted high-voltage vacuum circuit breaker. The shape, length and size of this type of circuit breaker are 260mm smaller than the original circuit breaker, which is suitable for installation in places with smaller spatial locations.

This product is suitable for 40.5kV, 50Hz three-phase power distribution system, as a combination of load current, overload current and short-circuit current.

Model No.

Z W 7 - 40.5 / □ - □

- □ — Rated short-circuit breaking current (kA)
- □ — Rated current (A)
- 40.5 — Rated voltage (kV)
- 7 — Design serial number
- W — Outdoor
- Z — Vacuum circuit breaker

Use environmental conditions

1. The upper limit of the ambient temperature is +40℃, the lower limit is -30℃ (general areas), and -40℃ (high and cold areas);
2. Altitude: no more than 1000m;
3. Wind pressure: no more than 700Pa (equivalent to wind speed 34/m/s) ;
4. The degree of air pollution: extreme III.

ZW7-40.5

Outdoor High voltage
AC Vacuum circuit breaker

Main technical parameter

Table 1

No.	Item			Unit	Parameter
1	Rated voltage			kV	40.5
2	Rated insulation level	1min power frequency withstand voltage (effective value) Lightning	Dry	kV	95
			Wet	kV	80
		Impulse withstand voltage (peak)		kV	185
3	Rated current			A	1250/1600/2000/2500
4	Rated short-circuit breaking current			kA	20/25/31.5
5	Rated operating sequence				O-0.3s-CO-180s-CO
6	Rated capacitor bank breaking current			A	400
7	Rated short-circuit breaking current breaking cycles			cycles	20
8	Rated short-circuit closing current (peak)			kA	50/63/80
9	Rated peak withstand current			kA	50/63/80
10	Rated short-term withstand current			kA	20/25/31.5
11	Rated short circuit continuous time			s	4
12	Full breaking time			s	≤0.08
13	Mechanical life			cycles	10000
14	Rated operating voltage and rated voltage of auxiliary circuit			V	AC, DC 220, 110

Table 2

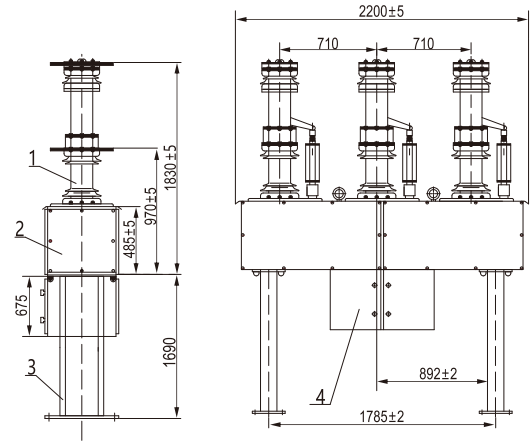
No.	Item	Unit	Parameter
1	Contact opening distance	mm	22±2
2	Contact over-range	mm	4±1
3	Average opening speed	m/s	1.5±0.2
4	Average closing speed	m/s	0.7±0.2
5	Opening time	ms	≤3
6	Closing time	ms	≤2
7	Closing bounce time	ms	≤150
8	Three-phase opening and closing synchronicity	ms	≤60
9	DC resistance per phase circuit	mΩ	≤100

ZW7-40.5

Outdoor High voltage
AC Vacuum circuit breaker

Overall and installation dimensions

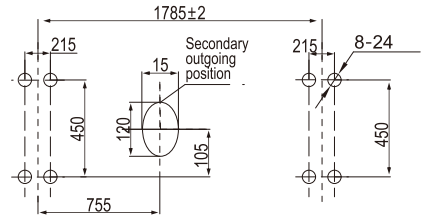
1. Overall dimension



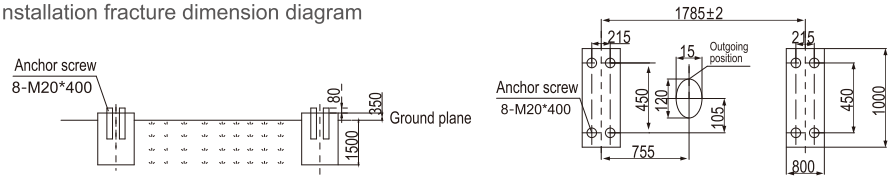
1. Porcelain bottle 2. Transformer chamber 3. Mounting frame 4. Mechanism box

2. Installation dimension

a. The installation size is shown in the figure



b. Installation fracture dimension diagram



GN19-12

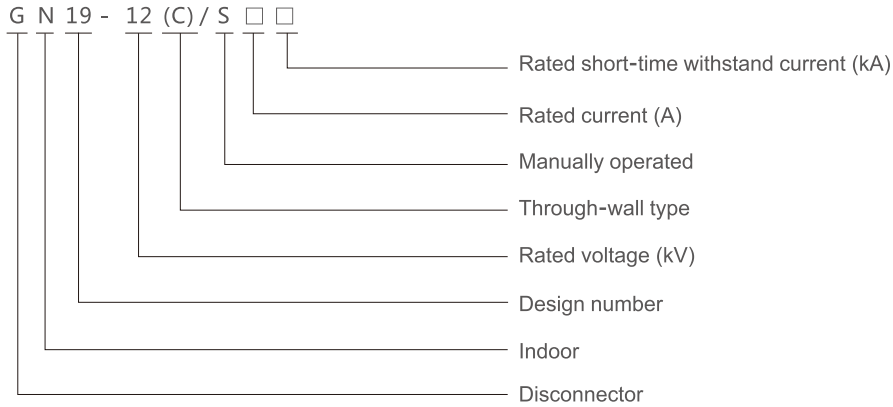
Indoor High Voltage AC Disconnector

Description

GN19-12 indoor high-voltage AC disconnector is suitable for AC 50Hz, rated voltage 12kV and the following power system, equipped with manpower operating mechanism, as in the case of voltage and no load, the use of opening and closing electrical equipments.

The performance of this product is in accordance with GB/T1985 “AC High Voltage Disconnector and Grounding Switches” standard.

Model No.



Main technical parameters

Model No.	Rated voltage (kV)	Rated current (A)	4s rated short-time withstand current (rms) (kA)	Rated peak withstand current (kA)
GN19-12/S400-12.5	12	400	12.5	31.5
GN19-12/S630-20	12	630	20	50
GN19-12S1000-31.5	12	1000	31.5	80
GN19-12/S1250-31.5	12	1250	31.5	80
GN19-12C/S400-12.5	12	400	12.5	31.5
GN19-12C/S630-20	12	630	20	50
GN19-12C/S1000-31.5	12	1000	31.5	80
GN19-12C/S1250-31.5	12	1250	31.5	80

GN19-12

Indoor High Voltage AC Disconnect Switches

Overall and installation dimensions

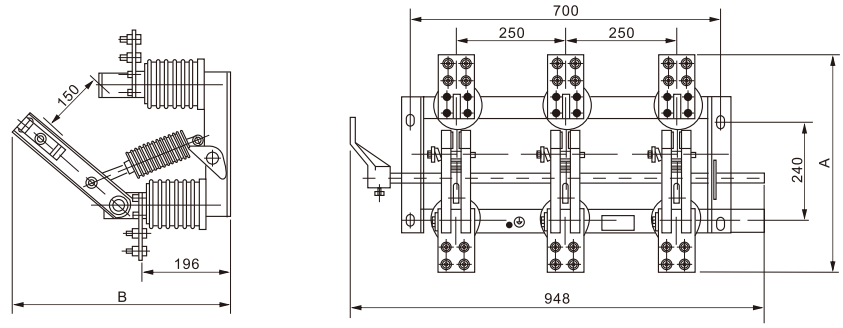


Figure 1 GN19-12 Series

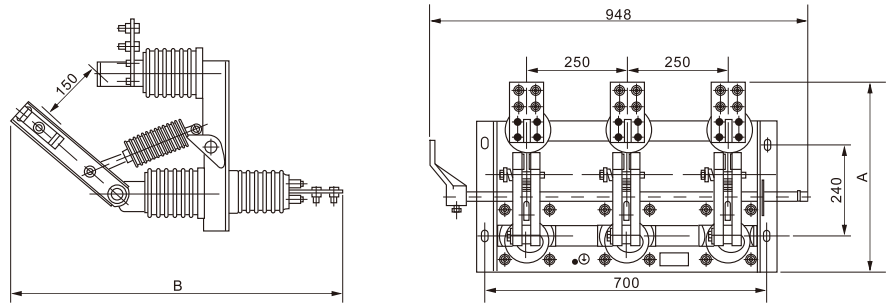
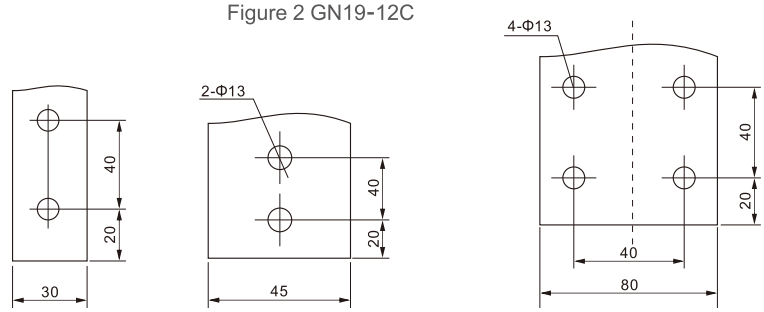


Figure 2 GN19-12C



GN19-12(C)/630/400 GN19-12(C)/1000/1250

Figure 3 Wiring Terminal Dimensions

Model No.	A	B	C
GN19-12/400	490	436	4-14×24
GN19-12/630	490	436	4-14×24
GN19-12/1000/1250	510	530	4-18×28
GN19-12C/400	460	625	4-14×24
GN19-12C/630	460	625	4-14×24
GN19-12C/1000/1250	505	745	4-18×28

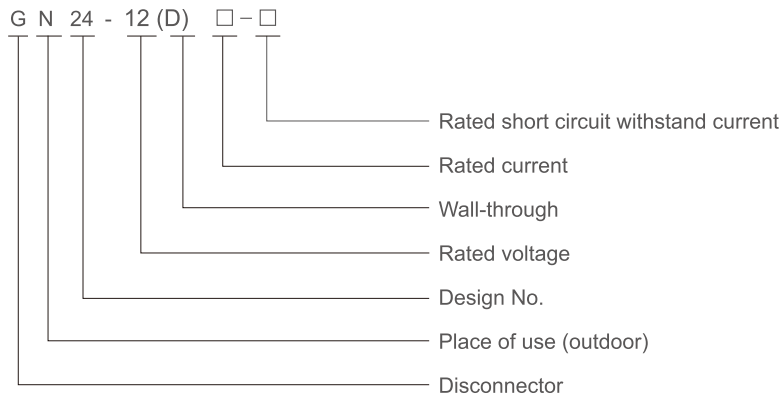
GN24-12D

Idoor High Voltage
AC disconnector

Description

GN24-12D (I, II), GN24-12D (I, II) C series indoor high voltage disconnector are indoor devices with a rated voltage of 12kV and a three-phase AC of 50Hz. Structure:
a.GN24-12D (I1.2; II 1.2) Q-type disconnector is in the form of moving (or fixed) contact side grounding; the main knife and the grounding knife are combined on an overall frame; Type 1 is operated on the left; type 2 is operated on the right; Type Q is a product under full working conditions, and can be equipped with a live display device according to the user's order requirements. b.GN24-12SD I, II (C1.2.3) type disconnector are the grounding form on both sides of the moving or fixed contacts, and the moving (or fixed) contact side can be changed to a wall-through sleeve; (or both sides can be changed to a wall-through sleeve); The main knife and two sets of grounding knives are combined on the same frame, one set of grounding knives can be operated separately, or one mechanism can be used to operate at the same time.

Model No.



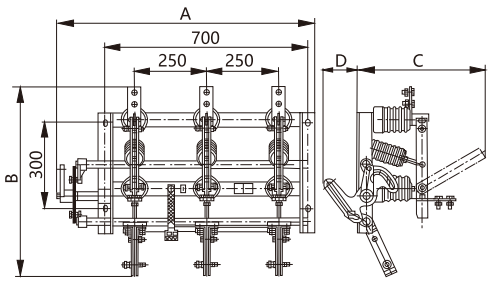
Normal using condition

1. Altitude: 1000m.
2. The ambient temperature
3. Relative humidity of the surrounding environment: the daily average value is not greater than 95%, and the monthly average value is not greater than 90%.
4. The earthquake intensity does not exceed 8 degrees.
5. There is no danger of fire, explosion, serious pollution, chemical corrosion and severe vibration.

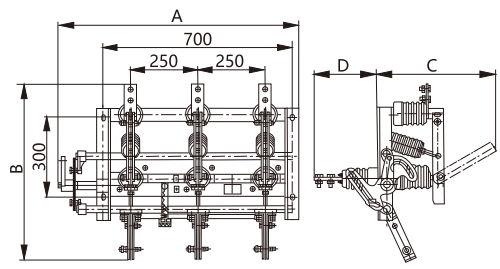
GN24-12D

Idoor High Voltage
AC disconnector

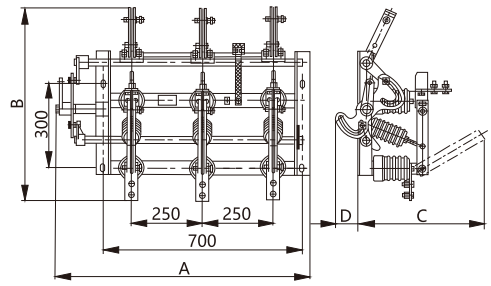
Overall and installation dimensions



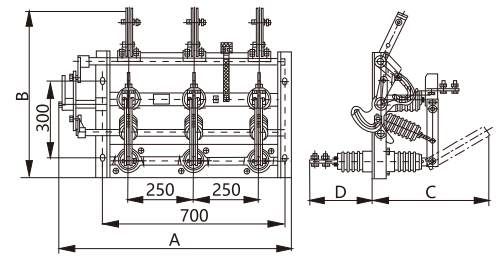
GN24-12D I 1 type



GN24-12DC I 1 type



GN24-12D II 1 type



GN24-12DC II 1 type

Parameter / Item / Specification	400A 630A				1000A				1250A				Installation hole size
	A	B	C	D	A	B	C	D	A	B	C	D	
GN24-12DI	890	660	450	125	890	690	480	125	890	700	500	125	700×300
GN24-12DII	890	660	450	125	890	690	480	125	890	700	500	125	
GN24-12DI	890	660	450	240	890	690	480	350	890	700	500	350	
GN24-12DIIC	890	660	450	240	890	690	480	350	890	700	500	350	
GN24-12DI	920	780	450	125	920	790	480	125	920	790	500	125	
GN24-12DIIC	920	780	450	240	920	790	480	350	920	790	500	350	

GW4-40.5

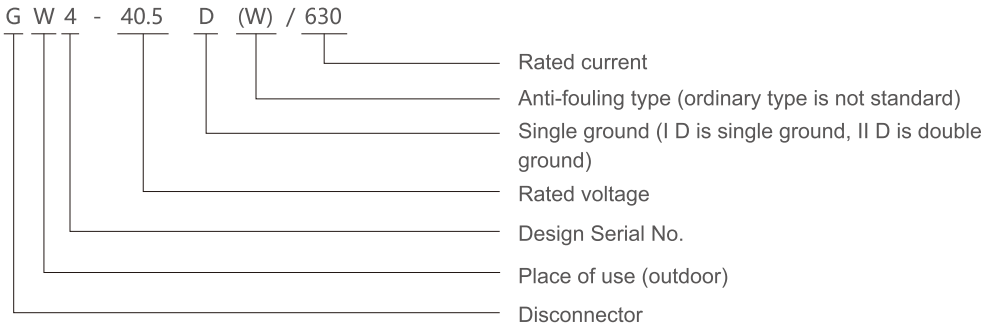
Outdoor High Voltage AC disconnector

Description

GW4-40.5 outdoor isolation switch is suitable for power systems with outdoor AC at 50Hz and rated voltage of 40.5 kV, respectively, for the line to be used as an opening and closing circuit when there is voltage and no load.

The products meet the requirements of GB/T 1985 and other related standards.

Model No.



Main technical parameter

Model No.	Rated voltage (kV)	Rated current (A)	Peak withstand current (kA)	4 seconds short-term withstand current (kA)
GW4-40.5 GW4-40.5D	40.5	400	50	20
		630	50	20
		1000	63	25
		1250	80	31.5
		1600	80	31.5

Structural Characteristics

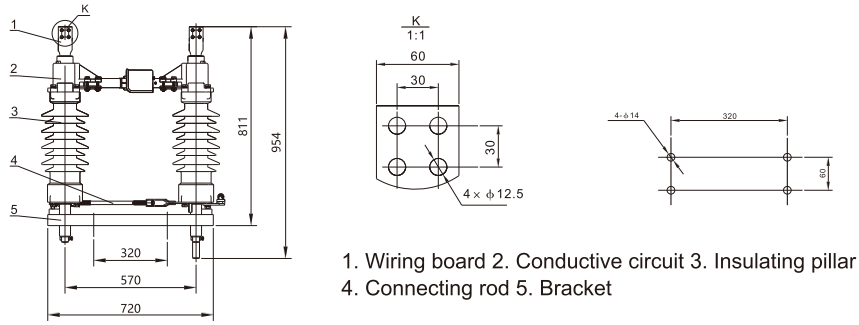
1.The disconnector consists of a base, an insulating pillar, a conductive part, and an operating mechanism. There are two pillars at each pole, and the upper end of each pillar is equipped with a conductive knife, and the contact of the knife on both sides is in the middle of the two pillars. The lower ends of the pillars are each equipped with bearing sleeves. Driven by the operating mechanism, the knife can be rotated horizontally by 90° to meet the requirements of opening and closing.

2.The disconnector is a unipolar type, and the three poles can also be connected into a three-pole type that can be linked by a connecting rod. Equipped with CS11 type or CS8-6D type manual mechanism operation. Among them, CS17 is used for disconnector with double grounding devices. (The motor mechanism can be equipped as needed).

3.The disconnector has a reasonable structure and flexible operation; it can be used as a single pole or as a three-pole, and it is easy to install; the opening distance of the contact knife is large, and the insulation is safe and reliable. It can also be ungrounded or equipped with single-sided grounding or double grounding according to user needs.

GW4-40.5

Outdoor High Voltage
AC disconnector



1. Wiring board 2. Conductive circuit 3. Insulating pillar
4. Connecting rod 5. Bracket

Figure 1 GW4-40.5 outdoor high voltage AC isolation switch outline diagram

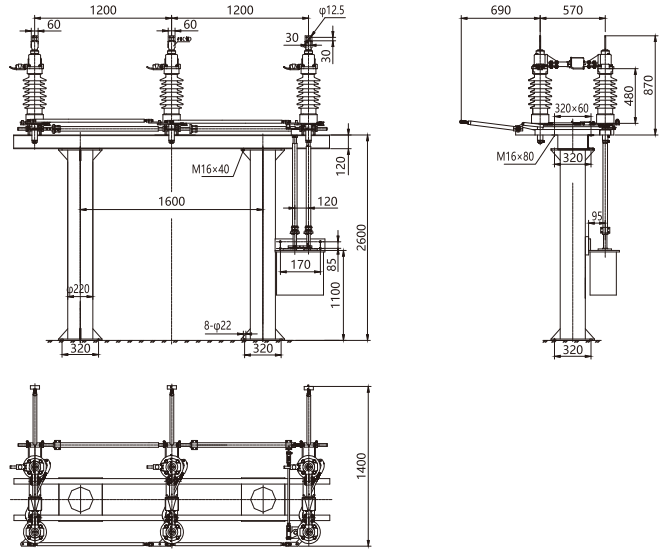
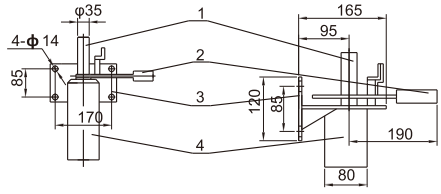
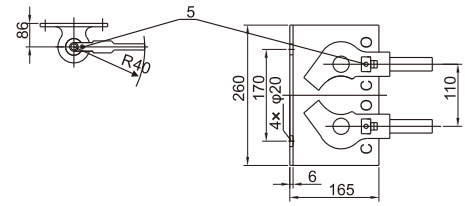


Figure 2 GW4-40.5 outdoor high voltage AC disconnector
(single ground) installation diagram



Cs11 Manual operation mechanism



CS8-6D Manual operation mechanism

1. Mechanism shaft 2. Handle 3. Base 4. Cover 5. Positioning lock

Figure 3 GW4-40.5 type outdoor high voltage AC isolation switch manual operation mechanism

Memo

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