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GCK Low pressure draw-out switch cabinet

TO THE WORLD WITH A STRONG SQUAD



Product Overview

GCK type drawout low-voltage switchgear, main frame adopts KB (25mm modulus) section steel, the material is cold-rolled steel plate, or aluminum and zinc plate as required by the buyer.

GCK type draw-out low-voltage switch cabinet, according to the GCK type scheme content to form a variety of functional structure cabinet, users according to the primary system diagram for combination.

Drawer structure, the height of drawer installation part is 1800mm, the height of unit drawer is mostly 200mm at present, there are 6 kinds of drawer specifications, the cabinet can hold up to 36 unit drawers of 1/4 unit, 18 unit drawers of 1/2 unit, 9 unit drawers of 1 unit, users can combine by themselves according to this rule, the maximum allowable current in the drawer is 630A.

There are 7 specifications of vertical bus in the drawer: 30x6, 40x6, 50x6, 60x6, 80x6, 100x6, 120x6.

The structure of the cabinet conforms to the technical requirements of the GCK type low-voltage switchgear.

Switch cabinet protection grade is IP30-IP40.

Main feature

The cabinet body is a combined assembly structure, and the skeleton is assembled by KB profile (C profile).The horizontal busbar is placed on the top of the cabinet, the top cover can be opened, the cabinet body is equipped with a back door, the outlet is used after the outlet, the installation and maintenance is more convenient.Cabinet protection grade IP3X-IP4X.The drawer adopts two kinds of propelling mechanism, namely three-position hand-pull type and hand-swing type, plastic shell switch type 63, type 100, type 160 and type 250, and the drawer adopts hand-pull propelling mechanism;Plastic shell switch type 400, 630, drawer using hand - type propulsion mechanism;Other schemes may also be adopted at the request of the buyer.The primary plug-in adopts a new valve - free mode with higher reliability.Rated current of unit circuit is 630A and below, the maximum current of 1/2 unit drawer can reach 125A.

Processing characteristics of cabinet body

All the structural parts of the cabinet are connected by self-tapping screws. Panels, partitions, brackets and drawer components are installed as needed to combine into a complete switchgear cabinet. The installation hole of cabinet body and components changes according to modulus E=25mm, which is flexible and convenient for installation.

Drawer unit has 200/4, 200/2, 200, 300, 400, 600 and other series of unit height, according to different loop current levels selected to occupy the height of drawer unit.Drawer with effective mounting height of 1800mm.

The main frame is KB (25mm modulus) section steel, made of cold-rolled steel plate, or aluminum and zinc coated plate as required by the buyer.

The installation holes of cabinet body and components vary according to modulus E=25mm, which is flexible and convenient for installation.

Drawer unit has 200/4, 200/2, 200, 300, 400, 600 and other series unit height, drawer effective installation height 1800mm.

Overall dimension of cabinet

Height (mm)	Width (mm)	Depth (mm)
2200 Install drawer space height is 1800	600	800/1000
	800	
	1000	

GCK Drawer specifications

	Height (mm)	Width (mm)	Depth (mm)
1/4 Unit	200	150	480
1/2 Unit	200	300	480
1 Unit	200	600	480
1.5 Unit	300	600	480
2 Unit	400	600	480
3 Unit	600	600	480

When the maximum unit drawer height is 200mm in the drawer cabinet
36 unit drawers in 1/4 unit, 18 unit drawers in 1/2 unit, 9 unit drawers in 1 unit

The maximum permissible current in the drawer is 360A

GCK Low-voltage draw-out switchgear type b

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Product Overview

Hundreds types product as like GCK low-voltage withdrawable switchgear by power distribution and motor control center (PC) ark (MCC) in two parts, is suitable for power plants, substations, industrial and mining enterprises and other power users as 50 hz, maximum working voltage 660 v, the maximum working current - 3150 - a power distribution system, as a power, motor control and lighting power distribution equipment such as electric energy conversion distribution control.

Main technical parameters of switch cabinet

Rated operating frequency(Hz)	50	
Rated working voltage (V)	380,660	
Rated insulation voltage (V)	660	
Rated operating current (A)	Horizontal bus	630-3150
	Vertical bus	600
Rated short time withstand current	Horizontal bus	80KA(valid value) in 1 second
	Vertical bus	50KA(RMS)/ door second
Rated peak withstand current	Horizontal bus	176KA/0.1s
	Vertical bus	110KA/0.1s
Main circuit connector (A)	200 400	
Auxiliary circuit connector (A)	10	
Power frequency voltage withstand 1 minute (V)	2500	
Level of protection	IP40	
Operating mode	Local, remote, automatic	

Architectural feature

The basic cabinet frame of this series of products is a combined assembly structure. All the structural parts of the cabinet frame are connected to each other through screw fastenings to form a basic frame. Then, doors, baffles, partitions, drawers, mounting brackets, bus bars, electrical components and other parts are added as required to assemble a complete switchgear cabinet.

1. The frame is made of v-shaped steel, the three-dimensional corner plate is used for positioning, and the welded structure is connected by bolts so as to avoid welding deformation and stress and improve the installation accuracy.
2. Mounting holes of frame and parts shall be changed according to modulus $E=20\text{mm}$.
3. The internal structural parts are galvanized.External pickling and phosphating treatment, electrostatic epoxy powder spraying.
4. In the power center (PC) wiring cabinet, the top is the horizontal bus area, and the bottom is the circuit breaker room. The circuit breaker can be equipped with domestic DW15C,ME and other series, or various kinds of circuit breakers produced by foreign electrical companies according to user needs, such as ABB f-series circuit breakers and intelligent circuit breakers.In general, the PC unit with the main circuit (including bus) with turnover, rated current of 630a-1600a, occupy the cabinet with the external dimension of 800x1000x2200 (wide x deep x high).The main circuit without turnover occupies a cabinet with an external dimension of 800 x 800 x 2000 (wide, deep and high).When the rated current is 1600a-3150a, it occupies a cabinet with an external dimension of 1000x1000x2200 (wide x deep x high).The main circuit without turnover occupies a cabinet with external dimensions of 1000x800x2200 (wide x deep x high).The structure of power center (PC) feeding cabinet is similar to the inlet cabinet. When the feeding current is 630a-1600a, a cabinet of 1000x1000x2200 (wide x deep x high) can be equipped with two circuits, which are arranged for upper and lower installation.
5. Motor control center (MCC) switchgear have installed against the wall and without wall two kinds, the top is horizontal bus bar area, level of busbar area for drawer below functional unit area, the area of the width is 600 mm, install the drawer function unit area is 1840 mm high, when the cabinet put oneself in another's position is against the wall to install ark of left as functional unit area, the right has a 200 mm wide area of the cable line, cabinet put oneself in another's position appearance size is 800/500/2200 (wide/deep/high), when the cabinet put oneself in another's position is installed from the wall, cabinet put oneself in another's width to 600 mm, cable outlet area in the rear of cabinet put oneself in another's position,The external dimension of the cabinet is 600x800(1000)x2200(wide x deep x high).Depth of cabinet put oneself in another's position has 800 and 1000 2 kinds, we suggest the user chooses 1000 deep cabinet put oneself in another's position, in order to unify with PC ark depth when drawer pulls out ark outside, live part inside cabinet is not exposed, safe and reliable.
6. The drawer function unit and the door are mechanically interlocked by the operating mechanism of the main switch. When the zui switch is in the closing position, the door cannot be opened.The functional unit compartments are separated by metal plates, and the drawers have good interchangeability, and have working position, test position and separation position.When the drawer is pushed to a certain position, the drawer is automatically positioned, at this time can pull the drawer on the left of the pull board drawer can remove positioning, into the next position, the drawer out of the cabinet when also have anti-fall off function.
7. In fixed schemes such as capacitor compensation and metering, the cabinets have the same appearance and the same position of horizontal bus.Thus ensured the drawer type and the fixed cabinet system can be used side by side.

GCS Low pressure draw-out switch cabinet

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Product Overview

Low-voltage draw-out switchgear is suitable for three-phase ac frequency of 50HZ, rated working voltage of 380V(690V), rated current of 4000A and below in power and power supply system, as power, distribution and motor centralized control, capacitor compensation. Widely used in power plants, petroleum, chemical, metallurgical, textile, high-rise buildings and other places, this product conforms to IEC60439-1, CB7251.1, JB/T9661 and other standards.

The cabinet adopts a new manufacturing process and modular design of each functional unit. The unit combination is flexible and convenient, which can realize and replace all schemes and functions of GCK, GCS and MNS on the market.

Main feature

Main circuit head: plug yellow location is an important guarantee of plug structure reliability, spring pressure, especially 500 times after the pressure change, is the biggest problem seen in the market. This plug-in is made of hard steel. Heat treatment, stable and reliable performance, plug adopts laminated, 4 pieces of copper as a group, each group has an independent contact charge fixed structure, strong ability to withstand overload current. All the input-outlet plug-ins shall cancel the connection mode of pressure riveting cable, so as to avoid adverse effects caused by unreliable pressure riveting and ensure the safety and reliability of the operation equipment; Secondary connector: long contact travel, meet the requirements of working location connection, the first in the industry to separate two rows of fixed terminal and two rows of outgoing terminal, wiring and outgoing do not interfere with each other, making wiring more convenient and beautiful;

Instrument panel: open door hollow structure, convenient for wiring, components installation and testing, components installation space 164mmx 12mm can meet the appearance of 96mm x 96mm digital display meter installation, but also can install other light button and other components, hollow with plastic plate, convenient for making holes; 1/2, 1/4 drawer structure: 1/2 and 1/4 drawer operation mode is hand pull three-position operation mechanism. Switch switch, drawer and cabinet put oneself in another's position of interlocking, cannot pull out drawers, 1/2 and 1/4 drawer MNS drawer type and new type two kinds of schemes, supply and demand side, MNS 1/2 and 1/4 drawer bottom adopts control aluminum extrusions, convenient installation, reliable performance, 1/2 drawer can meet 125 a current line, after a quarter of the drawer can meet the qualification, after 63 a new drawer adopts the method of making the side without the ribs, convenient and complete sets of factory installed components and wiring, 1/2 drawer can satisfy the qualification after 125 a current, a quarter of the drawer can meet the qualification after 63 a.

Vertical channel: rectangular iron channel scheme can be used for the cabinet type vertical channel. Door lock: it is applied to drawer door and fixed door, with the function of preventing door plate from falling down. After the door lock is locked, it will fall down no more than 0.5mm.

The drawer adopts the function of guiding and positioning: in addition to the drawer guide rail, the bottom of the drawer increases the guide device of the left and right limit of the drawer, and the upper and lower limit device of the upper and lower end of the drawer on both sides, so as to ensure the reliable insertion of plug-ins once or twice. Ensure that the drawer moves three positions without abnormal mechanical friction, no mechanical fault, drawer interchangeability 10%, the door seam vertical and horizontal direction can ensure within 1mm, 400mm or 600mm tall drawer advance easy and flexible, drawer up and down do not tilt, ensure the cabinet appearance high level, ensure the P40 disc protection level. At the same time, the single-point stress mode of the oil drawer baffles is changed to multi-point stress, making the drawer advance smoothly and able to withstand greater thrust. The dish surface is refined, the details of the cabinet body dish surface fully consider color collocation, hinge appearance, circuit marking frame, instrument panel, door lock, drawer structure, to ensure the neat dish surface and uniform and beautiful door seams:

This series of cabinets and drawers developed by our company can also adopt other operating institutions, and can be sent to produce a variety of cabinet type schemes, which can realize or replace all schemes of GCK, GCS and MNS cabinets, and users can choose and combine them according to their needs.

Processing characteristics of cabinet body

Cabinet body part: all the right-angle parts of parts that may be contacted by all operators can be inverted to prevent scratch injury: the improved bus frame is more convenient to install and more beautiful in appearance, especially the open structure, which facilitates users to place horizontal bus on site:

Drawer part: the drawer adopts self-tapping screw connection technology, and all parts and components adopt mould-secondary molding, truly realizing the 100% exchange of drawers;

Connector: drawer connector can be used directly with metal channel, the connector is convenient for wiring and beautiful for wiring.

Vertical channels: rectangular channels made of iron can be used, and Wells can be easily exchanged.

Overall dimension of cabinet

Height (mm)	Width (mm)	Depth (mm)
2200	600	800/1000
2200	800	800/1000
2200	1000	800/1000

GCS Lower voltage switchgear

TO THE WORLD WITH A STRONG SQUAD



Product Overview

GCS device is suitable for distribution system in power plant, petroleum, chemical industry, metallurgy, textile, high-rise building and other industries. In large power plants, petrochemical systems and other places with high degree of automation, three-phase AC frequency of 50 (60) Hz, rated working voltage of 380V (400V), (660V), rated current of 4000A and below, distribution in power supply system, centralized control of motor and low-voltage complete set for reactive power compensation are required. Electrical device.

Basic parameters

Rated voltage of main circuit(V)		Alternating current380(400).(660)
Auxiliary Circuit Rated Voltage(V)		Alternating current220.380(400) Direct current 110.220
Rated Frequency(HZ)		50(60)
Rated insulation voltage(V)		660(1000)
Rated current(A)	Horizontal Busbar	≅4000
	Vertical Busbar(MCC)	1000
Busbar rated short-term withstand current(KA/1S)		50,80
Nominal Peak Tolerance Current of Busbar(KA/0.1S)		105,176
Power Frequency Experimental Voltage (V/1MIN)	Main circuit	2500
	Auxiliary Circuit	1760
Busbar	Three-phase four-wire system	A.B.C.PEN
	Three-phase five-wire system	A.B.C.PE.N
IP Grade		IP30,IP40

Functional unit

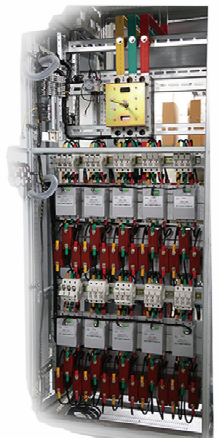
1. The modulus of drawer layer height is 160mm, which is divided into 1/2 unit, 1 unit, 3/2 unit, 2 unit, 3 unit and five size series. The rated current of unit circuit is 400A or less.
2. The drawer changes only in height and size, and its width and depth remain unchanged. Drawers with the same functional unit have good interchangeability.
3. Each GCS cabinet can install up to 11 one-unit drawers or 22 1/2-unit drawers. More than one unit drawer uses a multi-functional rear panel.
4. Drawer in and out wires are plug-ins of the same size and chip structure with different number of pieces according to current size.
5. 1/2 drawer and cable room are connected by back-plate ZJ-2 adapter.
6. The connection between unit drawer and cable room is classified according to current using the same size rod or tube structure ZJ-1 adapter.
7. The drawer unit is equipped with mechanical interlocking device.



Main electrical components

The selection principle of the main electrical components is based on the reference technology, which can be produced in series and batches in China and meet the requirements of high performance of the device.

1. The main selection of power supply and feeder unit circuit breakers is AH series. It can also choose M series produced by Schneider Company and F series produced by ABB Company. The AH circuit breaker has the characteristics of good performance, compact structure, light weight and strong series. The price is relatively low, the maintenance and use are convenient, and the performance indicators can meet the requirements of the device.
2. Drawer unit (motor control unit, part feeding unit) circuit breaker mainly chooses CM1, TG, TM30 series plastic case circuit breaker, and part chooses NZM-100A series produced by MOELLER company. These switches have the characteristics of good performance, compact structure, short arc or no arc, high technical and economic indicators, and can meet the requirements of the device.
3. Q series is selected for disconnecter and fuse type disconnecter. The series has high reliability, strong breaking ability and can realize mechanical interlocking.
4. The main selection of fuses is NT series.
5. AC contactors are B series and LCI-D series.



GGD Lower voltage switchgear

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Product Overview

GGD AC low-voltage distribution cabinet is suitable for power plants, substations, industrial and mining enterprises, etc. Power users as AC 50HZ rated working voltage 380V, rated working 3150A distribution system, as power, lighting and distribution equipment for power conversion, distribution and control purposes.

The product has the characteristics of high breaking energy retention, good dynamic and thermal stability and strong applicability.

GGD low-voltage distribution cabinet meets the national standard GB7251.1 "Low-voltage switchgear and control equipment" and international standard IEC 439.

Use of environmental conditions

The ambient air temperature should not be higher than + 40 degree C, not lower than - 5 degree C, and the average temperature within 24 hours should not be higher than + 35 degree C;

For indoor installation and use, the altitude of the place of use shall not exceed 2000;

The relative humidity of ambient air should not exceed 50% at the highest temperature of + 40 C. It should be allowed to have a larger relative temperature at a lower temperature (for example, 90% at + 20 C). Consideration should be given to the occasional effect of condensation due to the change of temperature.

When installing the equipment, the inclination with the vertical plane should not exceed 50.

The equipment should be installed in places where there is no severe vibration and impact, and where the electrical components are not sufficiently corroded.

Users may negotiate with the manufacturer when they have special requirements.

Electrical performance

1、Basic electrical parameters

Model	Rated voltage (V)	Rated current (A)		Rated short circuit breaking current(KA)	Rated short-time withstand current(1S)(KA)	Rated peak withstand current(KA)
		A	1000			
GGD1	380	B	600(630)	15	15	30
		C	400			
		A	1500(1600)			
GGD2	380	B	1000	30	30	65
		C	600			
		A	3150			
GGD3	380	B	2500	50	50	105
		C	2000			

2、Main Bus

Considering the price ratio and the feasibility of replacing copper with aluminium, single aluminium bus can be used when rated current is below 1500A and double copper bus can be used when rated current is greater than 1500A. The manufacturer manufactures the prototype according to this regulation and passes the type test. Of course, the manufacturer can also replace aluminium bus with copper bus with the same carrying capacity according to the user's requirements. Line. The overlap surfaces of buses are all treated by tin-enameling process.



KNY28-12 Armoured removable AC metal enclosed switchgear

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Product Overview

KNY28-12 armoured removable AC metal enclosed switchgear (hereinafter referred to as switchgear) is a three-phase AC 50Hz indoor distribution device, which is used to receive and distribute 3-12 kV network power and to control, protect and monitor the circuit. This product can install various types of computer-based integrated relay protection devices on the panel of relay chamber, and realize the intelligent control of the system. It has the functions of remote control, remote measurement, remote communication and remote adjustment, and controls the field network through CAN bus with communication interface. It also has the functions of preventing misoperation of circuit breakers, preventing loaded push-pull handcars, preventing live switch from closing grounding switches, preventing grounding switches from feeding electricity at the grounding position and preventing incorrect entry of live intervals, which are referred to as "five preventive" for short. The cabinet can be equipped with VSI (ZN63) and ZN12V vacuum circuit breakers, as well as imported VD4 vacuum circuit breakers and VC series vacuum contactors.

Use of environmental conditions

1. Ambient air temperature: upper limit + lower limit of 40 C in general area - 10 C;
2. Elevation: 1000m;
3. Temperature:

Relative humidity: daily average is not more than 95%, monthly average is not more than 90%; water vapor pressure: daily average is not more than 2.2 kpa, monthly average is not more than 1.8 kpa;

When the temperature drops sharply, condensation may occur, accompanied by pollution. This product is suitable for the following two more severe environmental conditions:

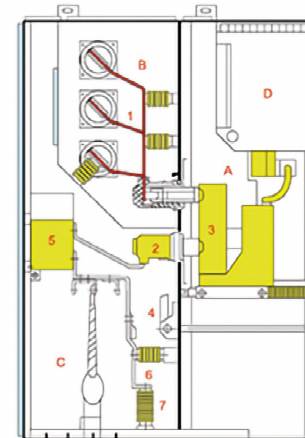
- (1) The condensation is infrequent (no more than twice a month on average) and slightly polluted;
 - (2) Generally no condensation occurs (no more than twice a year on average) and serious pollution occurs.
4. No fire, explosion danger or serious pollution, such as gases that corrode metals and destroy insulation, etc.
5. There is no place with violent vibration, turbulence and vertical inclination not exceeding 80.

Note: (1) Storage and transportation are allowed at - 30 degree C.

(2) When the altitude exceeds 1000 m, it should be treated according to JB/2102 "Technical Requirements for High Voltage Electrical Appliances in Elevation Areas". When the altitude does not exceed 2000 m, no measures need to be taken for low voltage auxiliary equipment.

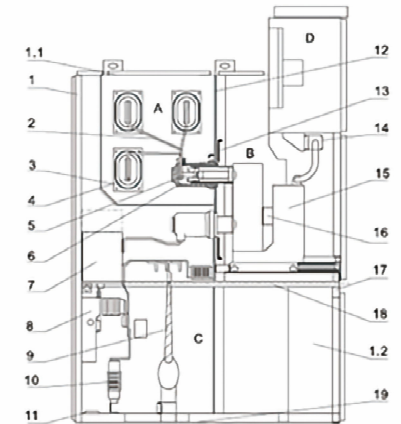
Use of environmental conditions

图1



- | | |
|--------------------------|--------------------------------|
| A. Breaker compartment | 3. Circuit Breakers |
| B. Bus compartment | 4. Grounding Switch |
| C. Cable room | 5. Current transformer |
| D. Relay Instrument Room | 6. Capacitance Voltage Divider |
| 1. Bus | 7. Arresters |
| 2. Static Contact Box | |

图2



- | | | |
|--------------------------|--|-----------------------------|
| 1. Shell | 12. Loading and unloading baffles | A. Bus Room |
| 2. Branch Bus | 13. partition (valve) | B. Circuit Breaker Car Room |
| 3. Bus bushing | 14. Secondary plug | C. Cable room |
| 4. Main Bus | 15. Circuit Breaker Handcart | D. Relay Instrument Room |
| 5. Static Contact Device | 16. Heater device | |
| 6. Static Contact Box | 17. Extractable horizontal partition | |
| 7. Current transformer | 18. Grounding Switch Operating Mechanism | |
| 8. Grounding Switch | 19. Baseboard | |
| 9. Cable | 1.1. Pressure relief device | |
| 10. Lightning arresters | 1.2. Control of small grooves | |
| 11. Grounded main bus | | |

KYN28A-12 armoured removable AC metal enclosed switchgear

TO THE WORLD WITH A STRONG SQUAD



Product Overview

KNY28A-12 armory movable AC metal enclosed switchgear (hereinafter referred to as switchgear) is a three-phase AC 50Hz indoor power distribution device, used to receive and distribute 3-12kv network electric energy and control and monitor the circuit. This product CAN install various types of microcomputer integrated relay protection devices on the panel of the relay chamber, and can realize the intelligent control of the system, with remote control, telemetry, remote communication and remote adjustment functions, through the CAN bus with communication interface to control the field network. It also has the function of "five prevention" to prevent misoperation of circuit breaker, to prevent load push-pull car, to prevent power switch from being switched on and off, to prevent power transmission of the ground switch at the ground position and to prevent straying into the live interval. The cabinet can be equipped with VSI(ZN63) and ZN12V vacuum circuit breakers, and can also be equipped with imported VD4 vacuum circuit breakers and VC series vacuum contactors.

Environmental conditions of use

- 1, the ambient air temperature: upper limit +40° C lower limit general area -10° C;
- 2, altitude :1000m;
- 3, humidity:

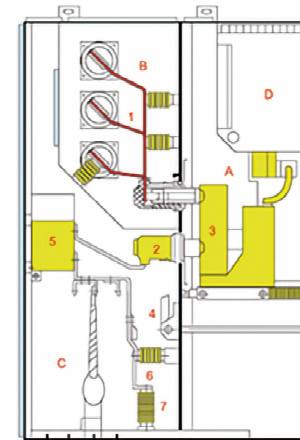
Relative humidity: the daily average is greater than 95%, the monthly average is less than 90%; Water vapor pressure: the daily average is not more than 2.2kpa, the monthly average is not more than 1.8kpa; Condensation may occur when the temperature drops sharply, accompanied by contamination. This product is suitable for the following two environmental conditions that are harsher than normal conditions:

- (1) condensation is not frequent (no more than twice a month on average) and there is more serious pollution;
- (2) There is generally no condensation (no more than twice a year on average) with more serious pollution;
- 4, no fire, explosion danger and serious pollution enough to corrode metal and destroy insulation gas and other harsh places;
- 5, there is no severe vibration, turbulence and vertical tilt does not exceed 80 places.

- (1) Allow storage and transportation at -30° C.
- (2) When the altitude of the area more than 1000m, according to JB/2102 "High voltage electrical appliances use altitude area technical requirements" treatment, when the altitude does not exceed 2000m, low-voltage auxiliary equipment does not need to take any measures.
- (3) When the actual conditions of use are different from the above, the user and the manufacturer shall negotiate.

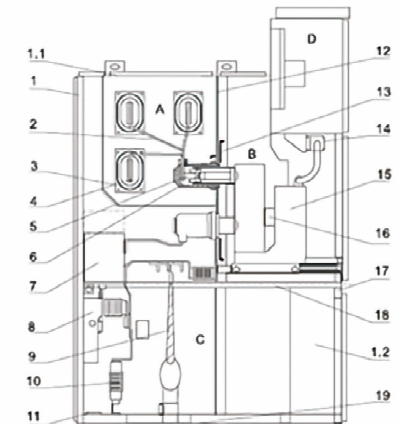
Switch cabinet structure diagram

图1



- | | |
|-----------------------------------|------------------------|
| A. Circuit breaker partition room | 3. Circuit Breaker |
| B. Bus compartment | 4. Ground switch |
| C. Cable room | 5. Current transformer |
| D. Relay instrument room | 6. Capacitance divider |
| 1. Bus bar | 7. Lightning arrester |
| 2. Quiet the contact box | |

图2



- | | | |
|--------------------------|---------------------------------------|-----------------------------|
| 1: Shell | 12. Loading and unloading partition | A. Bus bar room |
| 2. Branch small bus bars | 13. Diaphragm (valve) | B. Circuit breaker car room |
| 3. Busbar bushing | 14. Secondary plug | C. Cable room |
| 4. Main bus cable | 15. Circuit breaker hand car | D. Relay Instrument room |
| 5. Static contact device | 16. Heater device | |
| 6. Quiet the contact box | 17. Withdrawable horizontal partition | |
| 7. Current transformer | 18. Ground switch operation mechanism | |
| 8. Ground switch | 19. Bottom plate | |
| 9. Cables | 1.1. Pressure relief device | |
| 10. Lightning arrester | 1.2. Control small cable slots | |
| 11. Ground the main bus | | |

KYN28A-12 Armoring Movable Ac Metal Enclosed Switch Cabinet

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1、Product Overview

KYN28-12 armored medium position metal closed switchgear (hereinafter referred to as switchgear) is a new product designed and developed by our factory on the basis of absorbing domestic and foreign advanced manufacturing technology, which can replace various old metal closed switchgear, such as kyn1-10, jyn2-10, bcc-10 series products. Its products have the following obvious advantages:

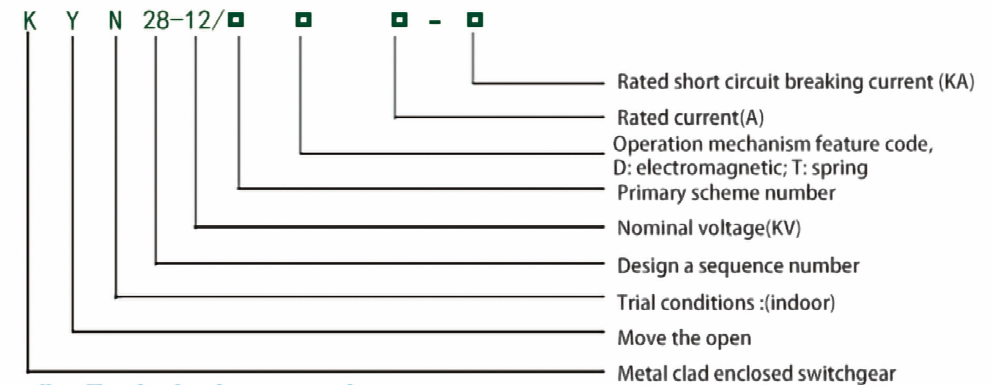
1. The shell of the product is completely made of aluminum and zinc clad steel plate which is processed by CNC machine with multiple bending forming and assembled by bolts. It has high mechanical strength and effectively ensures the neat and beautiful products. The product shell has IP4X protection level.
2. The main switch of this product can be equipped with VD4 vacuum circuit breaker produced by ABB, C3 series fixed load switch, and a variety of domestic series vacuum circuit breakers (such as VS1, VH1, VK, ZN28) to replace the same kind of foreign products.
3. No matter what kind of circuit breaker is used, the insulation distance of bare conductor air can be guaranteed to be greater than 125mm, and the composite insulation is greater than 60mm. Its circuit breakers have the unique advantages of long life, high parameters, less maintenance and small volume.

KYN28-12 armored middle metal enclosed switchgear is suitable for 3.6-12kv three-phase ac 50Hz power grid, which is used for receiving and distributing electric energy, controlling, monitoring and protecting the circuit. It can be used for single bus, single bus segment system or double bus system. Switchgear meet IEC298 52 kv and below the rated voltage 1 kv ac metal switchgear and control equipment ", IEC694 terms of high voltage switch and control equipment, our country GB3906 "3-35 kv ac metal-enclosed switchgear and DL404 indoor ac high voltage switch cabinet order conditions, German DIN. VDE670" rated voltage 1 kv ac switch equipment, such as the standard requirements. And has a perfect, reliable error prevention function.

2、Service Conditions

1. Ambient air temperature: upper limit +40°C, lower limit -10°C;
 2. Relative humidity: the daily average is no more than 95%, and the monthly average is no more than 90%;
 3. Altitude: not exceeding 1000m;
 4. Earthquake intensity shall not exceed 8 degrees;
 5. no fire, explosion risk, serious pollution, chemical corrosion and violent vibration occasions.
- When the use conditions exceed the above scope, the user shall negotiate with our company to determine the allowable scope and technical measures.

3、Types of meaning



4、Technical parameters

4.1 Technical parameters of switching equipment

Serial Number	Project	Unit	Parameter			
1	Nominal Voltage	KV	3.6, 7.2, 12			
2	Rated Current	HZ	50			
3	Circuit Breaker Rated Current	A	630, 1250, 1600, 2000, 2500, 3150			
4	Rated Current Of Switch Cabinet	A	630, 1250, 1600, 2000, 2500, 3150			
5	Rated Dynamic Stability Current (4S)	KA	16, 20, 25, 31.5, 40, 50			
6	Rated Dynamic Stability Current (peak)	KA	40, 50, 63, 80, 100, 125			
7	Rated Short Circuit Breaking Current	KA	16, 20, 25, 31.5, 40, 50			
8	Rated Short Circuit Shut-Off Current (peak)	KA	40, 50, 63, 80, 100, 125			
9	Rated Insulation Level	1min Power Frequency Withstand Voltage	KV	24	32	42
		Lightning Shock, Withstand Voltage	KV	40	60	75
10	Level Of Protection		The enclosure is IP4X, and the door of isolation room and circuit breaker room is IP2X			

KYN28A-12 Armoring Movable Ac Metal Enclosed Switch Cabinet

TO THE WORLD WITH A STRONG SQUAD

4.2 VD4、VSI-12 Technical parameters of vacuum circuit breaker switchgear

Serial Number	Project		Unit	Parameter
1	Nominal Voltage		KV	3.6, 7.2, 12
2	Rated Current		HZ	50
3	Rated Current		A	630, 1250, 1600, 2000, 2500, 3150
4	Rated Dynamic Stability Current (4S)		KA	16, 20, 25, 31.5, 40, 50
5	Rated Dynamic Stability Current (peak)		KA	40, 50, 63, 80, 100, 125
6	Rated Short Circuit Breaking Current		KA	16, 20, 25, 31.5, 40, 50
7	Rated Short Circuit Shut-Off Current (peak)		KA	40, 50, 63, 80, 100, 125
8	Rated Insulation Level	1min Power Frequency Withstand Voltage	KV	42
		Lightning Shock, Withstand Voltage	KV	75
9	Rated Operating Sequence			Ent -0.3S- Combined Cent - 180S- Combined Cent
10	Rated Number Of Short Circuit Breaking Current		Next	50
11	Mechanical Life		Next	20000

4.3 VD4、VSI-12 Mechanical characteristics of vacuum circuit breaker

Serial Number	Name	Unit	Numerical Value
1	Clearance Between Open Contacts	mm	11±1
2	Overtravel	mm	4±0.5
3	Phase Center Distance	ms	210±0.5,250±0.5,275±0.5
4	Closing Contact Bounce Time	ms	≤2
5	Three Phase Switching Is Not Synchronously Switched	ms	≤2
6	Switching Time Operating Voltage Is	The Highest	≤50
		Specified	≤50
		Minimum	≤60
7	Closing Time	ms	≤100
8	Average Switching Speed	m/s	0.9 ~ 1.2
9	Average Closing Speed	m/s	0.6 ~ 0.8
10	Resistance Of Each Phase Conducting Loop	μΩ	≤40
11	Contact Pressure	N	3200±100

When the circuit breaker is used to control the 3-10kv motor, if the starting current is less than 600A, the zinc oxide arrester must be added. The specific requirements shall be negotiated between the user and our company. The rated current of the capacitor bank shall not be greater than 80% of the rated current of the circuit breaker when the circuit breaker is used to open the cut-off container group.

4.4 Operating mechanism technical parameters

Serial Number	Name	Unit	Numerical Value	
1	Rated Operational Voltage	Closing Coil	V	DC220 , 110
		Closing Coil	V	AC220 , 110
2	Coil Power	Closing Coil	W	245
		Closing Coil	W	245
3	Energy Storage Motor Power	W	50	
4	Rated Voltage Of Energy Storage Motor	V	DC220 , 110	
5	Energy Storage Time	S	≤10	

4.5 ZM - 12 (VHI) Main technical parameters of vacuum circuit breaker

Serial Number	Name	Unit	Parameter
1	Nominal Voltage	KV	12
2	Rated Frequency	HZ	50
3	Rated Current	A	1250
4	Rated Short Circuit Breaking Current	KA	31.5
5	Rated Short Circuit Shut-Off Current	KA	80
6	Rated Peak Withstand Current	KA	80
7	Rated Short - Term Withstand Current	KA	315
8	Rated short Circuit DuratioS	S	4
9	Rated Breaking Current For A Single Capacitor Bank	V	630
10	Rated Back To Back Capacitor Bank Breaking Current	A	400
11	Power Frequency Withstand Voltage	KV	42
12	Lightning Impulse Withstand Voltage	KV	75
13	Rated Number Of Short Circuit Breaking Current	NEXT	50
14	Mechanical Life	NEXT	1000
15	Rated Operating Sequence		Cent -0.3s- combined cent -180s- combined cent
16	Opening Time	ms	≤60
17	Closing Time	ms	≤75

TO THE WORLD WITH A STRONG SQUAD

18	Control Voltage	V	AC , DC220 , 110
19	Closing Coil Power	VA	196
20	Switching Coil Power	VA	196

5. Main Performance Features

The switchgear is designed according to the armored metal enclosed switchgear in gb3906-91. The whole is composed of two parts: cabinet body and middle type extractable parts (i.e. handcart), see figure 1. The cabinet body is divided into four separate compartments. The enclosure protection class is IP4X, and the protection class is IP2X when the door of each compartment and circuit breaker chamber is opened. With overhead incoming and outgoing lines, cable incoming and outgoing lines and other functional programs, after the arrangement, combination can become a variety of program form of distribution device. This switch equipment can be installed from the front mode and maintenance, so it can be back-to-back double arrangement and wall installation, improve the safety of the switch equipment, flexibility, reduce the floor area.

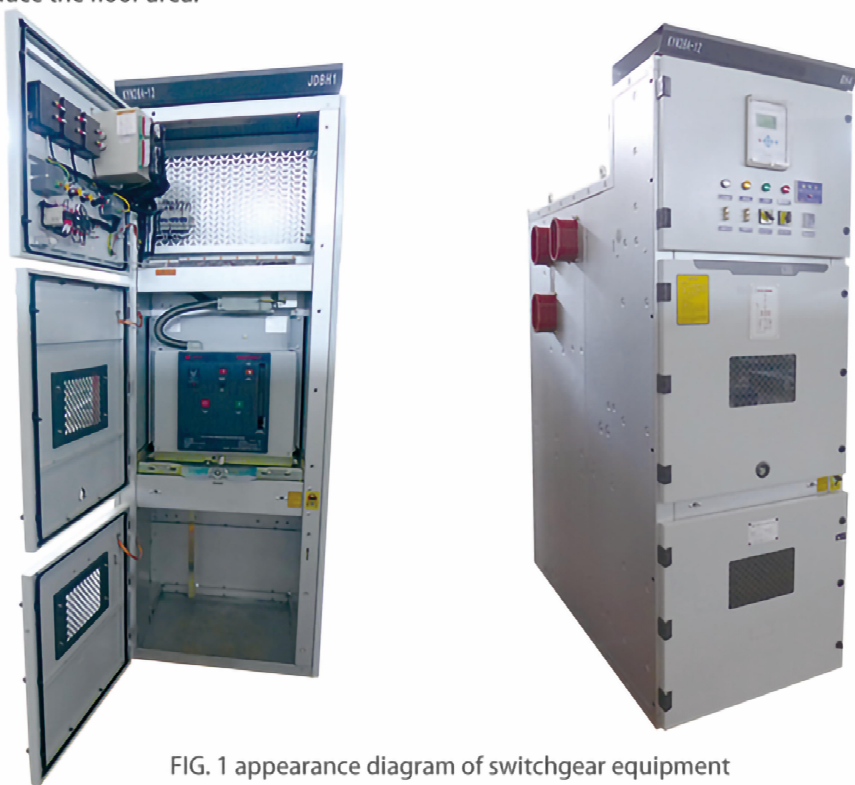


FIG. 1 appearance diagram of switchgear equipment

5.1 Hand Car

Handcart frame is also made of thin steel plate assembled by CNC machine. Handcart and cabinet insulation with mechanical interlock safe, reliable, flexible. According to different USES, the handcart is divided into circuit breaker handcart, voltage transformer handcart, metering handcart, isolated handcart. All kinds of handcart by module, building block type change, with the specification of handcart can be 100 percent free exchange. There are disconnection position/test position and working position of handcart in the cabinet. Each position is equipped with positioning device to ensure the reliability of interlock. The operation must be carried out according to the procedure of anti-error operation of interlock. All kinds of handcart adopt worm wheel and worm to push forward, exit, its operation is light and flexible, suitable for all kinds of on-duty personnel to operate. Handcart when the need to move the cabinet body, with a special transport car, it can be easily taken out, for a variety of inspection, maintenance; And the use of the middle type, the small volume of the car, inspection, maintenance are very convenient.

Circuit breaker handcart is equipped with vacuum circuit breaker and other auxiliary equipment. When the handcart transfer vehicle is transported into the cabinet circuit breaker room, it can be reliably locked in the disconnected position/test position; Cabinet position display lamp will show its position. And only when fully locked can the propulsion mechanism be shaken to push the handcart into the working position. After the handcart arrives at the working position, the push handle cannot be moved, and the corresponding position display lamp will show its position. The mechanical interlock of the handcart can reliably ensure that the circuit breaker can be closed only when the handcart is in the working position or the test position. The circuit breaker can only be moved when the handcart is in the open state.

5.2 Housing

The shell of the switch equipment is made of imported aluminum-zinc thin steel plate, which is processed by CNC machine and adopts multiple folding process. Make whole cabinet body to have precision not only high, very strong fight corrosion and fight oxidation action, and because use multifold fold edge craft, make cabinet body than other similar equipment cabinet body whole weight is light, mechanical strength is high, appearance is beautiful. Cabinet body adopts assembled structure, which is connected by riveting nuts and high-strength bolts. In this way, the processing and production cycle is short, the parts are universal, the floor area is less, and it is easy to organize production.

5.3 Compartment

The main electrical components of switching equipment have their own separate compartments, namely: circuit breaker compartments, bus compartments, cable compartments, relay instrument compartments. Each compartment protection class has reached IP2X; In addition to the relay room, the other three compartments have their own pressure relief channels. As a result of the use of the mid-type form, the cable room height is greatly increased, so the equipment can be connected to multiple cables.

(1) bus compartment A

4 sets of master bus are connected through each other. Through the branch bus 2 and static contact box fixed, the main bus and the contact bus for the rectangular section of the copper; Used for large current load with double-root bus. The supporting bus is bolted to the static contact box 4 and the main bus, no other support is required. For special requirements, the busbar can be covered with heat-shrinkable sleeve, coupling bolt insulation sleeve and end cap, and the adjacent cabinet busbar can be fixed with bushing. In this way, the air buffer reserved between the connecting busbars can prevent it from melting through in case of internal fault arc, and the casing can effectively limit the accident to the isolation without spreading to other cabinets.

KYN28A-12 Armored Movable AC Metal Enclosed Switch Cabinet

TO THE WORLD WITH A STRONG SQUAD

(2) circuit breaker compartment B

Rails are installed on both sides of the isolation. Handcart 13 slides from the isolation position/test position to the working position in the cabinet. The baffle 9 (valve) of the static contact device 4 is installed on the back wall of the handcart room. When the handcart moves from the disconnected position/test position to the working position, the valve door on the upper and lower static contact box is combined with the handcart and opens automatically. When moving in the opposite direction when the valve is closed automatically, until the handcart retreats to a certain position and safety covers the static contact box, forming effective separation, at the same time because the upper and lower linkage, valve is not in maintenance, lockable charged side of the valve, so as to ensure the maintenance staff don't touch the charged body, in the circuit breaker room door is closed, handcart can also be operation, through the door window, can see every other indoor handcart the location, display, storage, gate status.

(3) cable compartment C

The switch equipment adopts the middle type, so the cable room space is large. Current transformer 8. Ground switch 6 is installed on the back wall of the compartment, and lightning arrester is installed on the lower part of the compartment. After removing handcart 13 and removable uneven partition 19, the construction personnel can enter the cabinet from the front for installation and maintenance. The cables in the cable room are connected with conductors. Each phase can be connected with 1-3 single-core cables. If necessary, each phase can be connected with 6 single-core cables. The cabinet bottom of the connecting cable is prepared with dismountable non-metal sealing plate or non-magnetic metal sealing plate, which ensures the convenience of construction.

(4) relay instrument room D

Relay instrument room can be installed relay protection components, meters, live monitoring indicators, and special requirements of secondary equipment. The control line is laid in a slot with enough space and a metal cover to isolate the secondary line from the high voltage chamber. The left line groove is reserved for the introduction and extraction of the control line. The control line inside the switch cabinet is laid on the right side. There is also a small busbar crossing hole for easy construction on the TAB board of the relay instrument room.

5.4 Prevent Misoperation Of Interlock

Switch equipment is equipped with a safe and reliable interlock device, fully meet the requirements of the five.

A. The instrument room door is equipped with a suggestive presser or KK type change-over switch to prevent misfit and misopening of the circuit breaker.



B. Only when the handcart of circuit breaker is in the test or working position can the circuit breaker be combined and separated. Moreover, the handcart cannot move after the circuit breaker is closed, which prevents the circuit breaker from being pushed and pulled by mistake with load.

C only when the ground switch is in the opening position can the circuit breaker handcart be moved from the test/break position to the working position. Only when the circuit breaker handcart is in the test/break position can the ground switch be closed (the ground switch can be equipped with voltage display device). In this way, the circuit breaker can be closed when the grounding switch is in the closed position.

D when the ground switch is in the opening position, the lower door and the back door cannot be opened, preventing the accidental electrified interval.

E circuit breaker handcart is really in the test or working position, and there is no control voltage, can only manually switch off, not close.

F circuit breaker when the handcart is in the working position, the secondary plug is locked and cannot be removed.

G each cabinet can be equipped with electrical interlocks.

The switchgear can also be equipped with an electromagnet locking device on the ground switch operator to improve its reliability.

5.5 Pressure Relief Device

In circuit breaker handcart, busbar chamber and the upper part of the cable rooms are equipped with pressure relief devices, when a circuit breaker or bus internal arc fault occurs, along with the emergence of the arc, higher air pressure inside the switch cabinet, installed on the door of the special seal shut in front of the ark, the top is equipped with pressure relief plate will be automatically open, release pressure and discharge gas, to ensure the safety of operators and switchgear.

5.6 The secondary plug is interlocked with the handcart position

The connection between the secondary wire on the switchgear and the secondary wire of the handcart of the breaker is realized by manual secondary plug. The moving contact of the secondary plug is connected to the handcart of the breaker through a nylon corrugated telescopic pipe. The seat of the secondary static contact is installed on the upper right of the handcart of the switchgear cabinet. Circuit breaker handcart only in the test/disconnected position to remove plug in and quadratic interpolation, in working position due to mechanical interlocking circuit breaker handcart, quadratic interpolation is locked and cannot be touched, as a result of the circuit breaker handcart switch locked by electromagnet, circuit breaker handcart before quadratic interpolation were connected only to brake, so cannot make its closing.



KYN28A-12 Armoring Movable Ac Metal Enclosed Switch Cabinet

TO THE WORLD WITH A STRONG SQUAD

5.7 Live Display Device

If the user has a demand, the switch cabinet can be equipped with an optional detection of the operation of the primary circuit, that is, live display device. The device is composed of a high voltage sensor and a portable display unit connected by a user's external conductive wire. The device can not only indicate the electrified condition of the high-voltage circuit, but also cooperate with the electromagnetic lock to realize the forced locking switch handle and the screen door, so as to prevent the electrified closing of the ground switch and the wrong electrified interval, so as to improve the anti-error performance of the supporting products.

Prevent condensation and corrosion.

In order to prevent the risk of condensation in the climate environment with high humidity and large temperature variation, heaters are installed in the circuit breaker room and the cable room respectively for use in the above environment and to prevent corrosion.

5.8 Live Display Device

In the cable room, there is a $4 \times 40\text{mm}^2$ grounding copper row, which can run through the adjacent cabinets and have good contact with the cabinet. This grounding bar is used for directly grounded components. Meanwhile, as the whole cabinet is combined with aluminum-zinc plate, the whole cabinet is in a good external grounding state to ensure the safety of the operation personnel touching the cabinet.

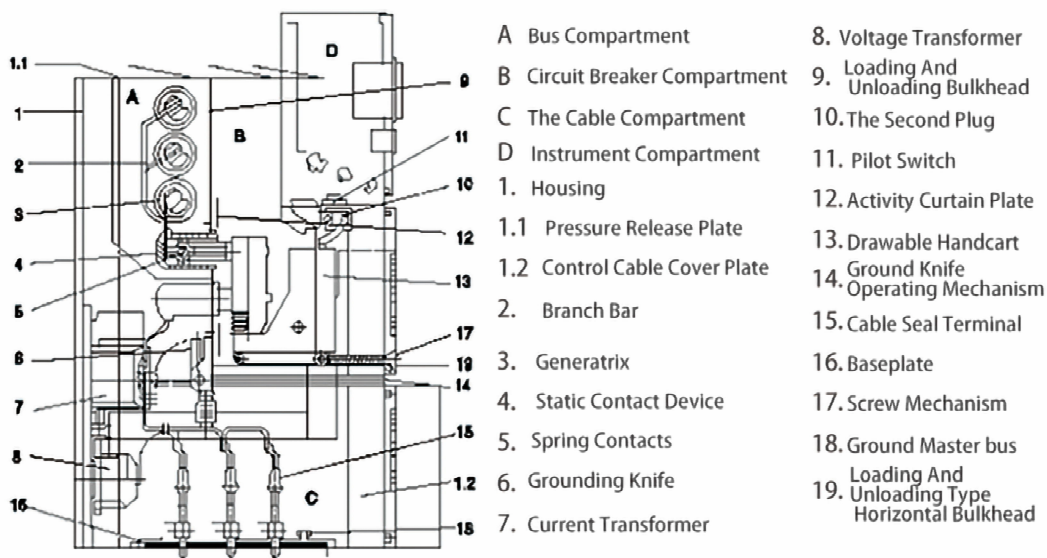


FIG. 2 schematic diagram of switchgear equipment structure T

6. Use And Maintenance

In the operation of switchgear, operators should observe the relevant regulations, but also should pay attention to the following problems.

6.1 Running Program

Although switchgear equipment design guaranteed switch equipment operating procedures of interlocking correctly, the parts but the operator to various parts of the switchgear equipment investment and exit, still should be in strict accordance with the procedures and the requirements of the technical documentation, should not be optional operation, more should not be stuck in operation, do not add analysis to operation, otherwise, easy to cause the equipment damage, even cause accidents.

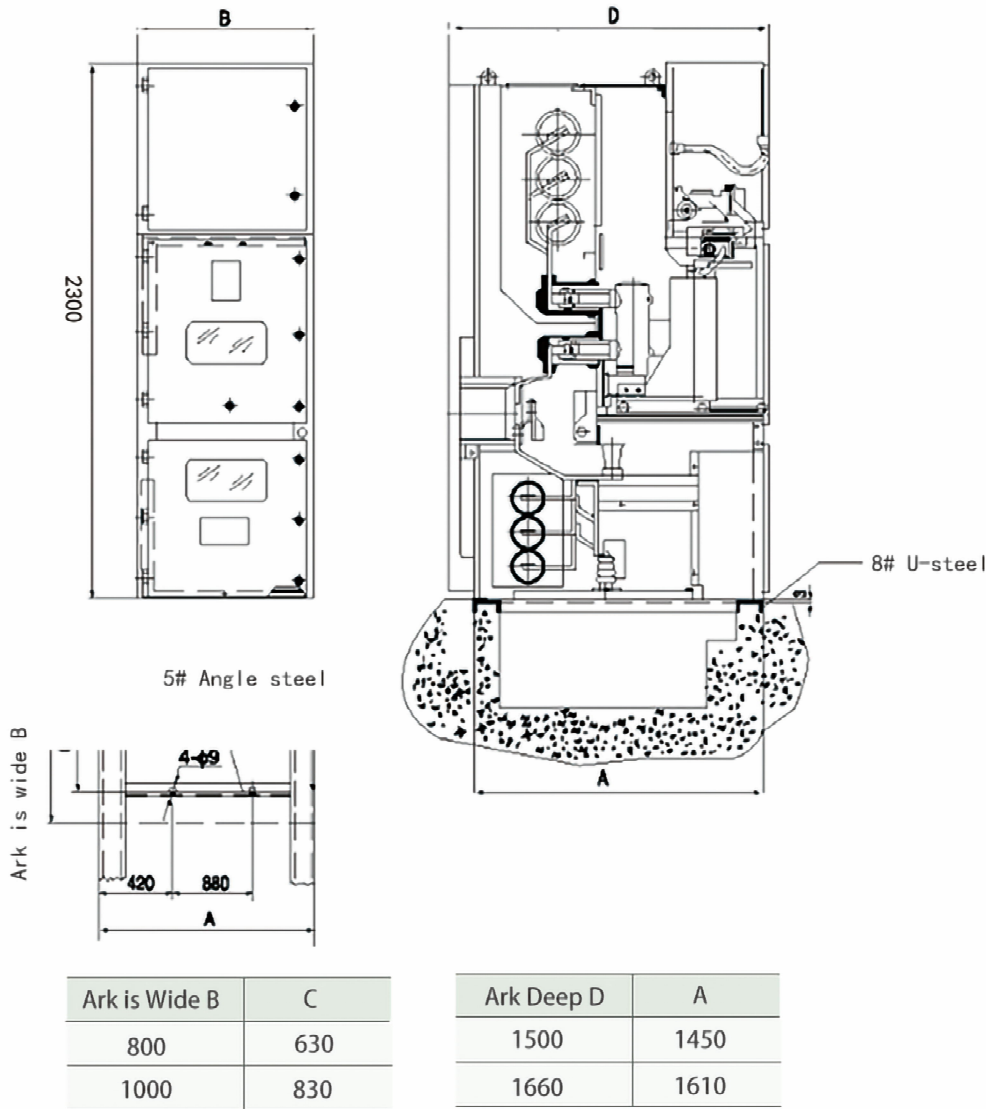
5.6 The secondary plug is interlocked with the handcart position

A. Load the removable parts of the circuit breaker into the cabinet: before the circuit breaker trolley is pushed into the cabinet from the cabinet, check whether the circuit breaker is in good condition, whether there are missing parts, whether there are tools and other sundries in the mechanism box or switch, and load the trolley on the transfer vehicle and lock it after confirming that there is no problem. Push the transfer vehicle to the front of the cabinet, lift the trolley to the appropriate position, insert the positioning lock plate of the front of the transfer vehicle into the baffle socket of the cabinet body and lock the transfer vehicle with the cabinet body, then open the small locking hook of the circuit breaker, push the trolley into the cabinet body smoothly and lock it. After confirming that the trolley has been locked with the cabinet, remove the lock between the transfer vehicle and the cabinet and push the transfer vehicle away.

B. the car inside ark operation: after the car from the transport vehicle load cabinet put oneself in another's position, namely in the ark disconnected position, if you want to put the car into operation, first of all make the small car in the test position, auxiliary circuit plug should be good, if electricity meter chamber test position indicator light on the panel, at this point in the primary loop without connected to electric car operation test, if you want to continue to operate, you must take all of cupboard door close, with the key in the lock hole, lock is good, and make sure the circuit breaker close all cupboard door, with a key in the lock hole, lock is good, and make sure the circuit breaker dispose brake state (see article D). At this time, the handcart operation rocker can be inserted into the operation hole on the middle panel, clockwise turn the rocker, until the rocker is obviously blocked and hear the clear sound of auxiliary switch switching, at the same time, the working position indicator light on the instrument room panel is on, and then remove the rocker. At this point, the main circuit is connected, the circuit breaker is in the working position, it can be closed through the control circuit, the operation. If the trolley is ready to exit from the working position, first of all, the circuit breaker should be confirmed to be in the breaking state (see article D), insert the handcart operation rocker, turn counterclockwise until the rocker is blocked and hear the clear sound of auxiliary switch switching, the trolley will return to the test position. At this point, the main loop is completely disconnected and the metal valve closes.

KYN28A-12 Armored Movable Ac Metal Enclosed Switch Cabinet

TO THE WORLD WITH A STRONG SQUAD



KYN28A-12 Installation foundation diagram

8. Primary Plan

KYN28A-12 Main wiring scheme of switch cabinet

Package Number	001	002	003	004	005	006
One - Time Solution Wiring Diagram						
Rated Current (A)	630-3150	630-3150	630-3150	630-3150	630-3150	630-3150
Primary equipment components at a time	Vacuum Breaker VS1 Or VD4	1	1	1	1	1
	Current Transformer LZZBJ9-12/150b/2 LZZBJ9-12/150b/4	2	2	2	3	3
	Current Transformer					
	High Voltage Fuse RN2-12					
	Earthing Switch JN15		1	1		1
Arrester HY5WS-17/50			3			3
Name Of The Loop	Receive And Feed Electricity	Receive And Feed Electricity	Receive And Feed Electricity	Receive And Feed Electricity	Receive And Feed Electricity	Receive And Feed Electricity
Remarks	Rated current 1600A and above, the cabinet width is 1000mm					

Package Number	007	008	009	010	011	012
One - Time Solution Wiring Diagram						
Rated Current (A)	630-3150	630-3150	630-3150	630-3150	630-3150	630-3150
Primary equipment components at a time	Vacuum Breaker VS1 Or VD4	1	1	1	1	1
	Current Transformer LZZBJ9-12/150b/2 LZZBJ9-12/150b/4	2	2	2	2	3
	Current Transformer					
	High Voltage Fuse RN2-12					
	Earthing Switch JN15		1		1	
Arrester HY5WS-17/50						1
Name Of The Loop	Contact (right)	Contact (right)	Contact (right)	Contact (right)	Contact (right)	Contact (right)
Remarks	Rated current 1600A and above, the cabinet width is 1000mm					

KYN28A-12 Armoring Movable Ac Metal Enclosed Switch Cabinet

TO THE WORLD WITH A STRONG SQUAD

Package Number	013	014	015	016	017	018	
One - Time Solution Wiring Diagram							
Rated Current (A)	630-3150	630-3150	630-3150	630-3150	630-3150	630-3150	
Primary equipment components at a time	Vacuum Breaker VS1 Or VD4	1	1	1	1	1	
	Current Transformer LZZBJ9-12/150b/2 LZZBJ9-12/150b/4	3	3	2	2	2	
	Current Transformer						
	High Voltage Fuse RN2-12						
	Earthing Switch JN15		1	1		1	
	Arrester HYSWS-17/50			3			3
	Name Of The Loop	Contact (left)	Contact (left)	Overhead incoming line (left liaison)	Overhead incoming line (left liaison)	Overhead incoming line (right contact)	Overhead incoming line (right contact)
Remarks	Rated current 1600A and above, the cabinet width is 1000mm						

Package Number	025	026	027	028	029	030			
One - Time Solution Wiring Diagram									
Rated Current (A)	630-3150	630-3150	630-3150	630-3150	630-3150	630-3150			
Primary equipment components at a time	Vacuum Breaker VS1 Or VD4	1	1	1	1	1			
	Current Transformer LZZBJ9-12/150b/2 LZZBJ9-12/150b/4	3	3	3	3	2	2		
	Current Transformer					RZL-10	2	RZL-10	2
	High Voltage Fuse RN2-12					3		3	
	Earthing Switch JN15	1		1	1			1	
	Arrester HYSWS-17/50	3			3				
	Name Of The Loop	Overhead incoming and outgoing wires	Overhead incoming and outgoing wires	Overhead incoming and outgoing wires	Overhead incoming and outgoing wires	Cable incoming + PT	Cable incoming + PT		
Remarks	Rated current 1600A and above, the cabinet width is 1000mm								

Package Number	019	020	021	022	023	024	
One - Time Solution Wiring Diagram							
Rated Current (A)	630-3150	630-3150	630-3150	630-3150	630-3150	630-3150	
Primary equipment components at a time	Vacuum Breaker VS1 Or VD4	1	1	1	1	1	
	Current Transformer LZZBJ9-12/150b/2 LZZBJ9-12/150b/4	3	3	3	3	2	2
	Current Transformer						
	High Voltage Fuse RN2-12						
	Earthing Switch JN15		1		1		1
	Arrester HYSWS-17/50						
Name Of The Loop	Overhead incoming line (left liaison)	Overhead incoming line (left liaison)	Overhead incoming line (right contact)	Overhead incoming line (right contact)	Overhead incoming and outgoing wires	Overhead incoming and outgoing wires	
Remarks	Rated current 1600A and above, the cabinet width is 1000mm						

Package Number	031	032	033	034	035	036					
One - Time Solution Wiring Diagram											
Rated Current (A)	630-3150	630-3150	630-3150	630-3150	630-3150	630-3150					
Primary equipment components at a time	Vacuum Breaker VS1 Or VD4	1	1	1	1	1					
	Current Transformer LZZBJ9-12/150b/2 LZZBJ9-12/150b/4	3	3	2	2	2	2				
	Current Transformer	RZL-10	2	RZL-10	2	RZL-10	2	RZL-10	3	RZL-10	3
	High Voltage Fuse RN2-12	3	3	3	3	3	3				
	Earthing Switch JN15			1			1				
	Arrester HYSWS-17/50	3			3						
Name Of The Loop	Cable incoming + PT	Cable incoming + PT	Cable incoming + PT	Cable incoming + PT	Cable incoming + PT	Cable incoming + PT					
Remarks	Rated current 1600A and above, the cabinet width is 1000mm										

KYN28A-12 Armoring Movable Ac Metal Enclosed Switch Cabinet

TO THE WORLD WITH A STRONG SQUAD

Package Number	037	038	039	040	041	042
One - Time Solution Wiring Diagram						
Rated Current (A)	630-3150	630-3150	630-3150	630-3150	630-3150	630-3150
Primary equipment components at a time	Vacuum Breaker VS1 Or VD4	1				
	Current Transformer LZZBJ9-12/150b/2 LZZBJ9-12/150b/4	2				
	Current Transformer	RZL-10 3	RZL-10 2	RZL-10 3	RZL-10 2	RZL-10 3
	High Voltage Fuse RN2-12	3	3	3	3	3
	Earthing Switch JN15					
	Arrester HYSWS-17/50	3			3	3
Name Of The Loop	Cable incoming + PT	voltage measurement	voltage measurement	voltage measurement	Voltage measurement lightning arrester	Voltage measurement lightning arrester
Remarks	Rated current 1600A and above, the cabinet width is 1000mm					

Package Number	049	050	051	052	053	054
One - Time Solution Wiring Diagram						
Rated Current (A)						
Primary equipment components at a time	Vacuum Breaker VS1 Or VD4					
	Current Transformer LZZBJ9-12/150b/2 LZZBJ9-12/150b/4					
	Current Transformer	RZL-10 2	RZL-10 3	RZL-10 3	RZL-10 3	RZL-10 3
	High Voltage Fuse RN2-12					
	Earthing Switch JN15					
	Arrester HYSWS-17/50					
Name Of The Loop						
Remarks	Rated current 1600A and above, the cabinet width is 1000mm					

Package Number	043	044	045	046	047	048
One - Time Solution Wiring Diagram						
Rated Current (A)	630-3150	630-3150	630-3150	630-3150	630-3150	630-3150
Primary equipment components at a time	Vacuum Breaker VS1 Or VD4					
	Current Transformer LZZBJ9-12/150b/2 LZZBJ9-12/150b/4					
	Current Transformer	RZL-10 3	RZL-10 2	RZL-10 3	RZL-10 2	RZL-10 3
	High Voltage Fuse RN2-12	3	3	3	3	3
	Earthing Switch JN15					
	Arrester HYSWS-17/50	3				3
Name Of The Loop	Voltage measurement lightning arrester	Voltage measurement bus	Voltage measurement bus	Voltage measurement bus	Voltage measurement bus	Voltage measurement + arrester + bus
Remarks	Rated current 1600A and above, the cabinet width is 1000mm					

Package Number	055	056	057	058	059	060
One - Time Solution Wiring Diagram						
Rated Current (A)	630-3150	630-3150	630-3150	630-3150	630-3150	630-3150
Primary equipment components at a time	Vacuum Breaker VS1 Or VD4	1	1	1	1	1
	Current Transformer LZZBJ9-12/150b/2 LZZBJ9-12/150b/4					
	Current Transformer			RZL-10 2	RZL-10 2	
	High Voltage Fuse RN2-12			3	3	
	Earthing Switch JN15					1
	Arrester HYSWS-17/50					3
Name Of The Loop	Isolation + liaison (left)	Isolation + liaison (left)	Isolation + contact (left) voltage measurement	Isolation + contact (right) voltage measurement	Qualification disguised	Qualification disguised
Remarks	Rated current 1600A and above, the cabinet width is 1000mm					

MNS Low pressure draw-out switch cabinet

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Product Overview

The low-voltage drawing-out cabinet is applicable to three-phase ac frequency force of 50HZ, rated working voltage of 380V1690M and power supply system with rated current of 4000A or below, for power distribution, centralized control of motors and capacitor compensation. It is widely used in power plants, petroleum, chemical industry, metallurgy, textile, high exhibition buildings and other places. The sound products comply with IEC60439-1, G87251.1, JB/T9661 and other standards. The cabinet adopts a new manufacturing process and each functional unit adopts rapid molding and no juice. The unit combination is flexible and convenient, which can realize and replace all the schemes and functions of GCK, GCS and MNS on the market.

Main feature

Main circuit plug: the location of plug spring is an important guarantee of the reliability of plug structure, the pressure of spring, especially the pressure change after 500 times of plug, is the biggest problem seen in the current market. This plug-in spring is made of manganese steel. Heat treatment, stable and reliable performance, plug adopts laminated type, 4 pieces of copper as a group, each group has an independent contact spring fixed structure, strong ability to withstand overload current. All input-outlet plug-ins shall cancel the connection mode of pressure riveting cable to avoid adverse effects caused by unreliable pressure riveting and ensure the safety and reliability of the operation equipment;

Secondary connector: long contact travel, meet the requirements of working location connection, the first in the industry to separate two rows of fixed terminal and two rows of outgoing terminal, wiring and outgoing do not interfere with each other, making wiring more convenient and beautiful;

Instrument panel: open door hollow structure, convenient for wiring, components installation and testing, components installation space 164mm x 122mm, can meet the appearance of 96mm x 96mm digital display table installation, but also can install other lamp buttons and other components, hollow with plastic plate, convenient for making holes;

1/2, 1/4 drawer structure: 1/2 and 1/4 drawer operation mode is hand pull three-position operation mechanism. Switch switch, drawer and cabinet put oneself in another's position of interlocking, cannot pull out drawers, 1/2 and 1/4 drawer MNS drawer type and new type two kinds of schemes, supply and demand side, MNS 1/2 and 1/4 drawer bottom adopts control aluminum extrusions, convenient installation, reliable performance, 1/2 drawer can meet 125 a current line, after a quarter of the drawer can meet the qualification after 63 a, the new drawer adopts the method of making the side without the ribs, convenient and complete sets of factory installed components and wiring, 1/2 drawer can meet 125 a current after qualification. 1/4 drawer can meet 63A outgoing line;

Vertical channel: rectangular channel made of iron can be used for the cabinet type vertical channel:
Door lock: it is applied to drawer door and fixed door, with the function of preventing door plate from falling down. After the door lock is locked, it will fall down no more than 0.5mm.

The drawer adopts the function of guiding and positioning: in addition to the drawer guide, the bottom of the drawer is equipped with the left and right limit guide device, and the upper and lower limit device of the upper and lower ends on both sides of the drawer, so as to ensure the reliable insertion of the first and second plug-ins. Ensure that the drawer moves three positions without abnormal mechanical friction, no mechanical failure, drawer interchangeability 10% door seam vertical and horizontal direction can be guaranteed within the 1mm, 400mm or 60mm high drawer into the easy and flexible drawer up and down not tilt, ensure the cabinet appearance high level, ensure the P40 disc surface protection level. At the same time, the single point force mode of the propulsion device on the drawer partition is changed to multi-point force, which makes the drawer advance smoothly and can bear greater thrust.

The dish surface is refined, the cabinet body dish surface details fully consider color collocation, hinge appearance, circuit marking frame, instrument panel, door lock, drawer structure, to ensure the neat and uniform appearance of the dish surface and the door dimension;

The series of oil drawers developed by our company can also adopt other operating institutions, and can be sent to produce a variety of cabinet type schemes, which can realize or replace all the schemes of GCK.

Processing characteristics of cabinet body

Cabinet body part: all the right-angle parts of parts that may be contacted by all operators can be inverted R Angle to prevent scratching injury. Improved bus frame installation bus more convenient, more beautiful appearance; The top part of the open structure, convenient for users to place the horizontal bus;

Drawer part: the drawer adopts self-tapping screw connection technology, and all parts and components adopt mould-secondary molding, truly realizing the 100% exchange of drawers;

Connector: the drawer inlet and outlet connector can be used directly with metal channel, the connector is convenient for wiring and beautiful wiring.

Vertical channel: iron rectangular channel is available.

Overall dimension of cabinet

Height (mm)	Width (mm)	Depth (mm)
2200	600	800/1000
2200	800	800/1000
2200	1000	800/1000

VS1 High voltage vacuum circuit breaker

TO THE WORLD WITH A STRONG SQUAD



■ Product Overview

Vs1-12 High voltage vacuum circuit breaker is the indoor switchgear of three-phase AC 50Hz fixed voltage 12KV power system, as the protection and control unit of power grid equipment and industrial and mining enterprise power equipment. It is suitable for frequent operation of rated working current or multiple short-circuit current switches. The circuit breaker adopts integrated operating mechanism and circuit breaker body design, which can be used as a fixed installation unit, and can also be equipped with a special propulsion mechanism to form a trolley unit. Among them, the fixed circuit breaker can increase the corresponding interlock to meet the needs of XGN2, GG1A and other fixed cabinets.

■ Working Condition

1. The upper limit of ambient air temperature shall not exceed 40°C. The lower limit shall not exceed -15°C;
2. No more than 35m/s;
3. The altitude is not higher than 1000 meters;
4. Earthquake intensity shall not exceed 8 degrees;
5. Ambient humidity: monthly average relative temperature does not exceed 90%, daily average relative humidity does not exceed 95%;
6. The installation site shall not contain flammable, explosive, chemical corrosive substances and frequent violent vibration.

■ Key Feature

1. Vs1-12 high voltage vacuum circuit breaker, the theme parts are set in the epoxy resin insulated tube made by APG process, this structure can effectively prevent external force impact, due to environmental pollution and other external factors on the vacuum arc extinguishing chamber.
- 2, the circuit breaker is equipped with a sealed ceramic interrupter, copper-chromium contact material, R contact structure, with strong crushing ability, low closing level, long battery life and other characteristics.
3. The vacuum interrupter is placed in the insulated pipe, so that the circuit breaker is maintenance-free, pollution-free, no explosion risk, low noise and high insulation level.
4. The operating mechanism is the spring energy storage operating mechanism. The closing unit is installed in a mechanical case. The mechanism and the body before and after integrated into one, high transmission efficiency, good operation performance, suitable for frequent operation, can be installed in the mobile fixed switch cabinet.
5. The operating mechanism is the spring energy storage operating mechanism, one of which operates the three-phase vacuum arc extinguishing chamber. The operating mechanism mainly consists of two energy storage with stretching spring, turning off the energy storage device, and even driving the interrupter panel, arm and tripping device at each stage, in addition, the front of the bar is equipped with such things as energy storage, release device, auxiliary switch, motor and control device, switch button, machine shaft, energy storage status indicator, brake brake sign, etc. The working mechanism is suitable for automatic reclosing operation, because of the short energy storage time of the motor, it can also be reclosing operation several times. There are two kinds of energy storage methods: artificial energy storage and electric energy storage.
6. The vacuum circuit breaker has stable operation performance, large disconnecting current, reasonable design and convenient secondary wiring.

