Electronic sample

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CHUANLI ELECTRIC CO,.LTD.

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www.cleleck.com

PRODUCT SELECTION GUIDE

Focus on high and low voltage
electrical equipment

CHUANLI ELECTRIC CO,.LTD.

CNCLELC®

CHUANLI ELECTRIC

The company has 27 years of experience in electrical equipmentmanufacturing

High and low voltage electrical equipment

China Chuanli Electric Co., Ltd. is located in Wenzhou City, Zhejiang Province. The company focuses on the research and development, production and sales of high and low voltage electrical equipment, the products cover high voltage switchgear, box type substation, low voltage switchgear, cable tap box, power transformer and other fields.

As an industry leader, we not only provide standardized products, but also provide customized electrical solutions according to customer needs.

Medium and high voltage electrical components

In terms of medium and high voltage electrical components, our core products include indoor vacuum circuit breakers, indoor load switches, indoor isolation switches, outdoor vacuum circuit breakers, indoor sulfur hexafluoride switchgear, indoor small ring network cabinets, outdoor cable branch boxes, etc.

These products are widely used in power transmission and distribution systems, industrial parks, rail transit, data centers and new energy fields to meet the power demand in different environments.

3000m²
Enterprise floor space

100+
Number of employees

100000000
Annual output value

50+
Number of original personnel

IEC GB/T ISO9001

The company has developed a perfect quality management process, and closely monitored all aspects to ensure the stability and control of product quality. We use lean production management system to ensure that every product from raw material procurement to the final factory is in line with international electrical standards (IEC, GB/T), and passed the ISO9001 quality management system certification.

Modern factory and advanced production equipment

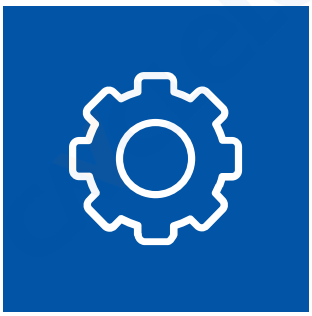
The company has a modern factory, with high-precision sheet metal processing, intelligent assembly, product testing and quality inspection and other production workshops, fully equipped with industry-leading laser cutting machine, CNC bending machine, automatic spraying production line, high pressure test bench and other equipment.

ENTERPRISE ADVANTAGE

Efficient technical team

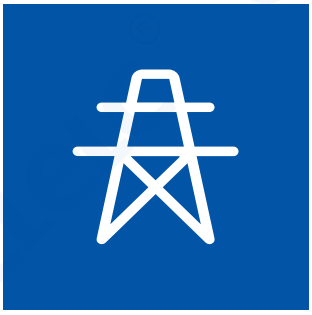
The core team of the company is composed of more than 100 electrical engineers, technical experts and R & D personnel with many years of industry experience, and is committed to the intelligent and digital upgrade of power equipment. We maintain long-term cooperation with well-known scientific research institutions, universities and power grid enterprises at home and abroad, and constantly promote technological innovation, optimize product performance, and improve the safety, stability and intelligence level of the power system.

Senior manufacturing experience



With deep industry experience, advanced manufacturing technology and excellent product quality, our products have been sold at home and abroad, and won the trust and praise of many customers. In the future, we will continue to deeply cultivate the electrical industry and contribute to the construction of global energy infrastructure with more efficient and smarter power solutions.

Strong production strength



As the industry's leading expert in intelligent manufacturing of electrical equipment, we build a super manufacturing matrix covering the whole industrial chain based on a modern industrial base. A team of more than 100 engineers continues to tackle core technologies and deeply integrate ISO9001 quality system with Industry 4.0 standards. From intelligent power distribution systems to transmission and distribution solutions, our production strength is not only reflected in scale, but also in the deep background of providing customized intelligent manufacturing services to customers around the world.

ADVANTAGE

SELF-OWNED FACTORY

3,000m² facility, 100+ employees, 100M+ annual output, 50+ R&D team.

STRICT QUALITY CONTROL

ISO 9001 & IEC compliant, 27 years of expertise since 1998.

CUSTOMIZED SOLUTIONS

High & low voltage equipment, tailored to client needs.

AFTER-SALES SUPPORT

Installation, maintenance, and training services.

CUSTOMER COMMITMENT

Sincerely treat every customer, aiming for long-term partnerships.

DIRECT MANUFACTURER

Source factory for high and low voltage switchgear—no middlemen.

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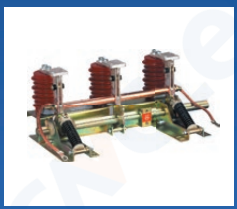


01

HIGH AND LOW VOLTAGE SWITCHGEAR SERIES

KYN61-40.5

Metalclad Removable
AC Metal-enclosed Switchgear

Overview

KYN61-40.5(Z) type armored movable AC metal closed switchgear (hereinafter referred to as "switchgear") It is suitable for three-phase AC 50Hz power system, for power plants, substations and industrial and mining enterprises of the distribution room to accept and distribute electrical energy, and the circuit control, protection and monitoring.

This product conforms to the standards: GB3906 "3~35kV AC metal enclosed switchgear", GB/T11022 "High voltage switchgear and control equipment standard common technical requirements", IEC60298 "rated voltage above 1kV and below 50kV AC metal enclosed switchgear and control equipment".

KYN61-40.5

Metalclad Removable AC Metal-enclosed Switchgear

Model meaning

K	Y	N	61	-	40.5	□	/	□	□
↓	↓	↓	↓		↓	↓		↓	↓
Metal armoured type	Shifting type	Indoor	Design sequence number		Rated voltage (kV)	Type of circuit breaker Z: Vacuum SF: 6Sulfur hexafluoride		Rated current (A)	Rated short circuit Breaking current (kA)

Conditions of use

- Ambient air temperature: maximum temperature +40℃ , minimum temperature -15℃ ;
- Altitude: ≤ 2000m;
- Surrounding relative humidity: daily average ≤ 95%, monthly average ≤ 90%;
- Ambient air: not suitable for places with corrosion, serious pollution, flammable gas and violent vibration;
- If an earthquake occurs, the intensity of the earthquake cannot exceed 8 degrees.

Structural characteristics

Switchgear structure GB3906-2006 and IEC298 armored metal closed switchgear standard design, the whole by the cabinet and withdrawable part (hand car) of two levels. The structure of the cabinet is assembled, and the part of the switchgear body is separated into the circuit breaker room, the main bus room, the cable room and the relay instrument room with a metal partition. The protection level of the enclosure reaches IP3X, the protection level of the compartments is IP2X, and all metal structural parts are reliably grounded, and the compartments of the main circuit system have independent exhaust pressure relief channels.

According to the use of the handcart can be divided into circuit breaker handcart, voltage transformer handcart, measuring handcart, isolation handcart, etc., all kinds of handcart outline size is the same, the same purpose of the handcart has good interchangeability; The cart has a test/isolation position and a working position in the cabinet, and each position is equipped with an interlock device to ensure that the cart cannot move freely when it is in the above two positions.

KYN61-40.5 Metalclad Removable AC Metal-enclosed Switchgear

Parameter		Unit	Value
Rated Voltage		KV	40.5
Rated Current	Rated current of main bus bar	A	1250,1600,2000,(2500)
	Rated current of matched VCB	A	1250,1600,2000,(2500)
Rated Insulation Level	1 min power frequency withstand voltage	KV	95
	Lightning impulse withstand voltage	KV	185
	"Power frequency withstands voltage of auxiliary circuit and control circuit"	V/1min	2000
Rated Frequency		Hz	50
Rated short-circuit breaking current		KA	20 25 31.5
Rated short-time withstand current		KA/4s	20 25 31.5
Rated withstands current (peak)		KA	50,63,80
Rated voltage of control circuit		V	DC:110, 220 AC:110, 220

KYN61-40.5

Metalclad Removable AC Metal-enclosed Switchgear

ZN85-40.5 Circuit Breaker with Spring Operating Mechanism (Integrated)

Parameter		Unit	Value
Rated Voltage		KV	40.5
Rated Current		A	630 1250 1600 2000
Rated Frequency		Hz	50
Rated Insulation Level	1min Power Frequency Withstand Voltage	KV	Phase to phase, phase to earth 95 Gaps 110
	Lightning Impulse Withstand Voltage (Peak)		Phase to phase, phase to earth 185, Gaps 215
	"Power frequency withstands voltage of auxiliary circuit and control circuit"	V/1min	2000
Rated Short-Circuit Breaking Current		KA	20、25、31.5
Rated Short-time Withstand Current (4s)			20、25、31.5
Rated Peak Withstand Current (Peak Value)			50、63、80
Rated Short-Circuit Making Current (Peak Value)		KA	50、63、80
Rated Short-Circuit Current Duration		S	4
Mechanical Lifetime (Operations)		Time	10000
Rated Power Frequency Withstand Voltage for Secondary Circuits (1-Minute)		V	2000
Rated Operating Sequence			O-0.3s-CO-180s-CO

Structural feature

This product is divided into cabinet, hand car two parts. The cabinet body is made of bent steel plate and assembled by bolts after spraying. According to the function characteristics, it can be divided into four parts: small bus room, relay instrument room, handcart room, cable room and bus room, and each part is separated by grounded metal partition. The protection grade of the cabinet shell is IP4X; The door of the car compartment is opened and the protection level is IP2X.

The switchgear has the main circuit scheme of cable inlet and outlet line, overhead inlet and outlet line, busbar connection, isolation, voltage transformer, lightning arrester, etc. The bus bar adopts composite insulation, and the interphase and connecting head are equipped with insulation sleeves made of flame retardant material by injection molding. The adjacent cabinets of the main bus bar are separated by bus bushing, which can effectively prevent the spread of accidents and play an auxiliary supporting role for the main bus bar. The cable room is equipped with ground switch and overvoltage protection device.

The metal valve is installed in front of the contact box. The upper and lower valve automatically opens when the hand car moves from the disconnect/test position to the working position, and automatically closes when the hand car moves in the opposite direction, effectively isolating it from high pressure. The interlock between the main switch, the handcar, the ground switch and the cabinet door adopts the mandatory mechanical locking mode to meet the "five prevention" function requirements.

Circuit breaker hand car adopts screw drive propulsion mechanism, overrunning clutch. The screw nut propulsion mechanism can easily operate to move the handcart between the test position and the working position, and the self-locking of the screw nut can make the handcart reliably locked in the working position to prevent accidents caused by the action of electric power. Overrunning clutch plays a role when the hand car moves back to the test position and to the working position, so that the operating shaft and the lead screw shaft are automatically detached and idling, which can prevent misoperation and damage the propulsion mechanism. Other handcars use lever propulsion mechanism. The test working position has positioning and locking.

Cabinet dimensions: width × depth × height (mm) : 1400×2200×2600

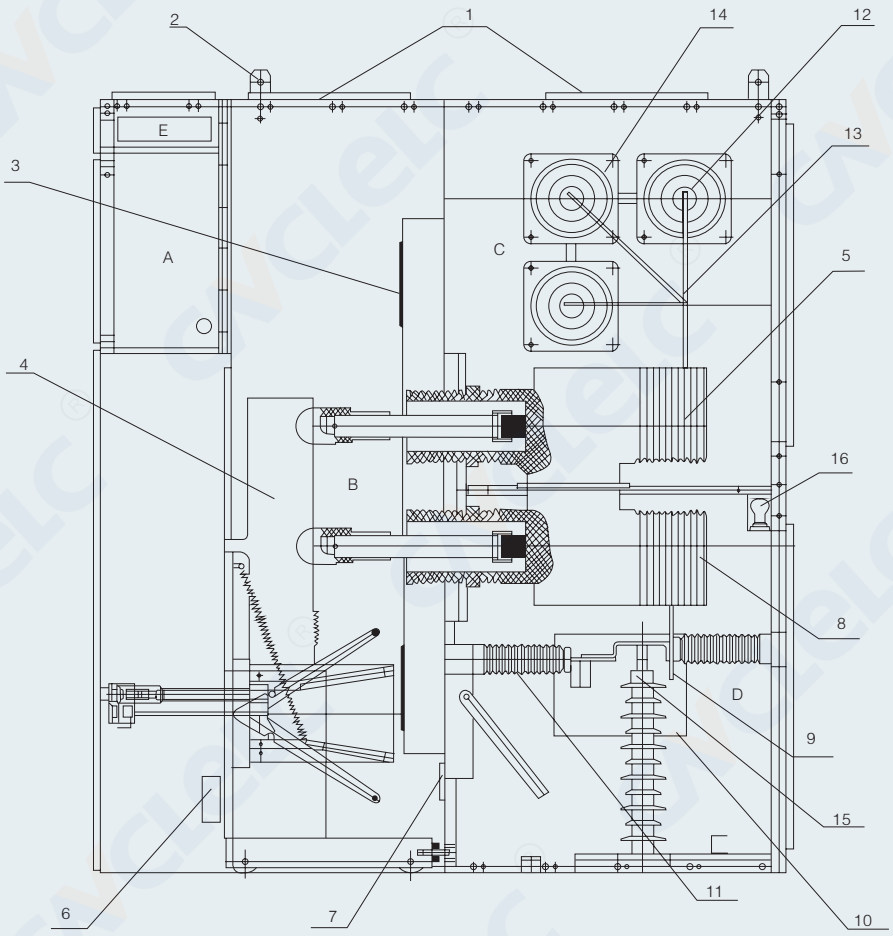
KYN61-40.5

Metalclad Removable AC Metal-enclosed Switchgear

Overall dimensions (mm)

Parameter		Value
Altitude		2650
Breadth	Rated current 1600A and below	1400
Profundity	Cable inlet and outlet	2870
Profundity	Overhead inlet and outlet line	2950

Equipment structure drawing



A. Instrument room
B, circuit breaker room
C, bus room
D, cable room
E, small bus room

1. Pressure relief plate
2. Hanging rings
3. Valve
4. Circuit breaker
5. Contact box

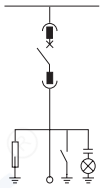
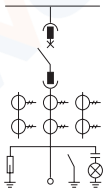
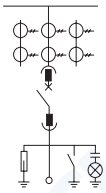
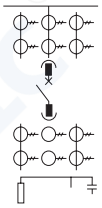
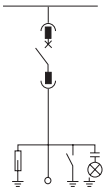
6. Secondary plug
7. Heating device
8. Current transformer
9. Cable
10, insulation partition

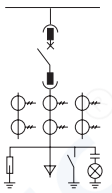
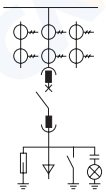
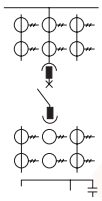
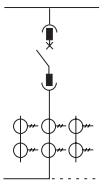
11. Ground switch
12. Main bus cable
13. Support bus bars
14. Bus bushing
15. Lightning arrester
16. Lights

KYN61-40.5

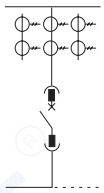
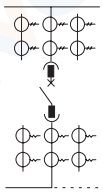
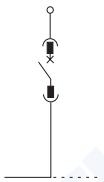
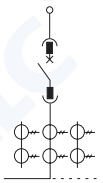
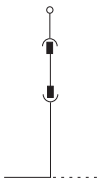
Metalclad Removable AC Metal-enclosed Switchgear

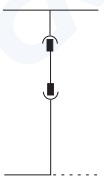
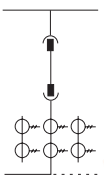
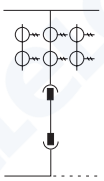
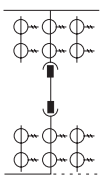
Main circuit scheme diagram

Scheme number		01	02	03	04	05
Main circuit scheme diagram						
Major electrical component	Vacuum circuit breaker ZN85-40.5	1	1	1	1	1
	Current transformer LDJ5-35		3	3	6	
	Voltage transformer JDJ9-35					
	A lightning arrester	Select 0 or 3	Select 0 or 3	Select 0 or 3	Select 0 or 3	Select 0 or 3
	Ground switch JN12-35	Select 0 or 1	Select 0 or 1	Select 0 or 1	Select 0 or 1	Select 0 or 1
	Live display	Select 0 or 1	Select 0 or 1	Select 0 or 1	Select 0 or 1	Select 0 or 1
	Fuse XRNP-35					
Transformer SC9-35						
Use		Overhead inlet (outlet) line	Overhead inlet (outlet) line	Overhead inlet (outlet) line	Overhead inlet (outlet) line	Cable in (out) line

Scheme number		06	07	08	09	10
Main circuit scheme diagram						
Major electrical component	Vacuum circuit breaker ZN85-40.5	1	1	1	1	1
	Current transformer LDJ5-35	1-3	1-3	4-6		1-3
	Voltage transformer JDJ9-35					
	A lightning arrester	Select 0 or 3	Select 0 or 3	Select 0 or 3		
	Ground switch JN12-35	Select 0 or 1	Select 0 or 1	Select 0 or 1		
	Live display	Select 0 or 1	Select 0 or 1	Select 0 or 1		
	Fuse XRNP-35					
Transformer SC9-35						
Use		Cable in (out) line	Cable in (out) line	Cable in (out) line	Left (right) contact	Left (right) contact

Main circuit scheme diagram

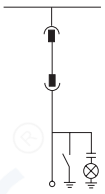
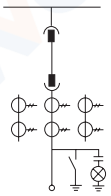
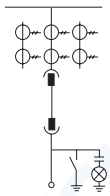
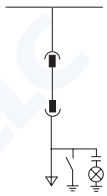
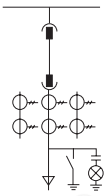
Scheme number		11	12	13	14	15
Main circuit scheme diagram						
Major electrical component	Vacuum circuit breaker ZN85-40.5	1	1	1	1	1
	Current transformer LDJ5-35	1-3	4-6		1-3	
	Voltage transformer JDJ9-35					
	A lightning arrester					
	Ground switch JN12-35					
	Live display					
	Fuse XRNP-35					
Transformer SC9-35						
Use		Left (right) contact	Left (right) contact	Overhead inlet (outlet) line connection	Overhead inlet (outlet) line connection	Overhead inlet (outlet) line connection

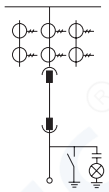
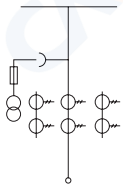
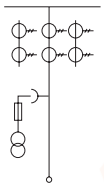
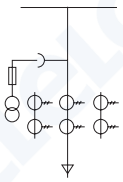
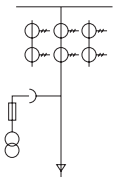
Scheme number		16	17	18	19	20
Main circuit scheme diagram						
Major electrical component	Vacuum circuit breaker ZN85-40.5					
	Current transformer LDJ5-35	1-3		1-3	1-3	4-6
	Voltage transformer JDJ9-35					
	A lightning arrester					
	Ground switch JN12-35					
	Live display					
	Fuse XRNP-35					
Transformer SC9-35						
Use		Cable in (out) line	Left (right) contact	Left (right) contact	Left (right) contact	Left (right) contact

KYN61-40.5

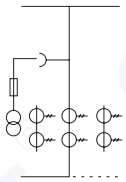
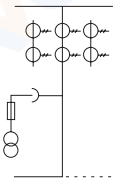
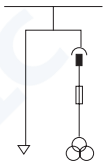
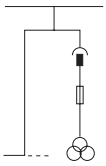
Metalclad Removable AC Metal-enclosed Switchgear

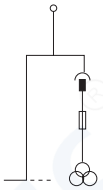
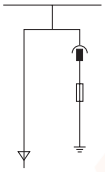
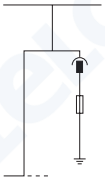
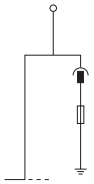
Main circuit scheme diagram

Scheme number		21	22	23	24	25
Main circuit scheme diagram						
Major electrical component	Vacuum circuit breaker ZN85-40.5					
	Current transformer LDJ5-35		1-3	1-3		1-3
	Voltage transformer JDJ9-35					
	A lightning arrester					
	Ground switch JN12-35	Select 0 or 1	Select 0 or 1	Select 0 or 1	Select 0 or 1	Select 0 or 1
	Live display	Select 0 or 1	Select 0 or 1	Select 0 or 1	Select 0 or 1	Select 0 or 1
	Fuse XRNP-35					
Transformer SC9-35						
Use		Overhead inlet (outlet) line	Overhead inlet (outlet) line	Overhead inlet (outlet) line	Cable in (out) line	Cable in (out) line

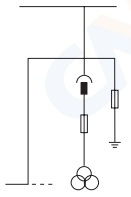
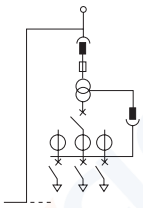
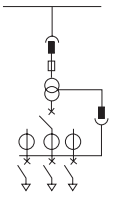
Scheme number		26	27	28	29	30
Main circuit scheme diagram						
Major electrical component	Vacuum circuit breaker ZN85-40.5					
	Current transformer LDJ5-35	1-3	1-3	1-3	1-3	1-3
	Voltage transformer JDJ9-35		2	2	2	2
	A lightning arrester					
	Ground switch JN12-35	Select 0 or 1				
	Live display	Select 0 or 1				
	Fuse XRNP-35		3	3	3	3
Transformer SC9-35						
Use		Cable in (out) line	Metering and overhead line	Metering and overhead line	Metering and overhead line	Metering and overhead line

Main circuit scheme diagram

Scheme number		31	32	33	34	35
Main circuit scheme diagram						
Major electrical component	Vacuum circuit breaker ZN85-40.5					
	Current transformer LDJ5-35	1-3	1-3			
	Voltage transformer JDJ9-35	2	2	1-3	1-3	1-3
	A lightning arrester					
	Ground switch JN12-35					
	Live display					
	Fuse XRNP-35	3	3	3	3	3
Transformer SC9-35						
Use		Measurement and liaison	Measurement and liaison	Voltage transformer	Voltage transformer and cable inlet and outlet line	Voltage transformer and liaison

Scheme number		36	37	38	39	40
Main circuit scheme diagram						
Major electrical component	Vacuum circuit breaker ZN85-40.5					
	Current transformer LDJ5-35	1-3		1-3	1-3	4-6
	Voltage transformer JDJ9-35					
	A lightning arrester		3	3	3	3
	Ground switch JN12-35					
	Live display					
	Fuse XRNP-35	3			3	3
Transformer SC9-35						
Use		PT overhead feed and contact	Lightning arrester	Lightning arrester and cable inlet and outlet line	Lightning arrester and liaison	Arrester overhead and liaison

Main circuit scheme diagram

Scheme number		41	42	43
Main circuit scheme diagram				
Major electrical component	Vacuum circuit breaker ZN85-40.5			
	Current transformer LDJ5-35			
	Voltage transformer JDJ9-35	1-3		
	A lightning arrester	3		
	Ground switch JN12-35			
	Live display			
	Fuse XRNP-35	3		
Transformer SC9-35			1	1
Use		With lightning arrester and contact Voltage transformer	Use transformer overhead and liaison	Applied variation

KYN28-24

Armored Withdrawable Type
AC Metal-Enclosed Switchgear

Overview

KYN28-24 switchgear has a variety of functions to prevent misoperation, including preventing moving handcar with load, preventing grounding switch from closing the circuit breaker, preventing live grounding switch and preventing straying into the live compartment. Switchgear equipped with excellent performance of VS1, VN2 series of medium high voltage AC vacuum circuit breaker and solid sealed vacuum switch. The secondary circuit of the switchgear is equipped with advanced and reliable control and protection elements; The bus bar adopts heat shrink insulation material or epoxy coated insulation means, optimizes the electrode shape, and the cabinet structure is compact. The switchgear is a power distribution equipment with advanced technology, stable performance, reasonable structure, convenient use, safety and reliability.

KYN28-24

Armored Withdrawable Type AC Metal-Enclosed Switchgear

Model meaning

K	Y	N	28	-	24	Z
↓	↓	↓	↓		↓	↓
Metal armoured type	Shifting type	Indoor	Design sequence number		Rated voltage (kV)	Vacuum circuit breaker

Conditions of use

◆ Environmental conditions: maximum temperature +40℃ , minimum temperature -15℃ , and the average measured within 24h does not exceed 35℃ ;

◆ Temperature conditions are as follows: the average daily relative humidity does not exceed 95%; The average monthly relative humidity is less than 90%. The average daily steam pressure does not exceed 2.2kPa; The average monthly vapor pressure does not exceed 1.8kPa;

◆ Altitude does not exceed 1000m;

The surrounding air is not significantly contaminated by dust, smoke, corrosive or combustible gases, vapors or salt spray;

◆ Vibration or ground movement from outside switchgear and control equipment can be ignored;

◆ The amplitude of electromagnetic interference induced in the secondary system does not exceed 1.6kV.

KYN28-24 Armored Withdrawable Type AC Metal-Enclosed Switchgear

Item		Units	Argument			
Rated short-time withstand current (4s)		kA	20		31.5	
Rated peak withstand current		kA	50		80	
Rated voltage of auxiliary control loop		V	Dc or AC 110/220			
Class of protection			IP4X(Open circuit breaker door or IP2X between compartmentalrooms)			
Overall dimensions (W X D X H)		mm	800×1810×2380		1000×1810×2380	
Weight		kg	840~1440		840~1440	
Rated voltage		kV	24		24	
Rated frequency		Hz	50/60		50/60	
Rated insulation level	Lightning impulse withstand voltage (peak)	kV	Interphase	60	Isolation fracture	79
	1min power frequency withstand voltage (RMS)	kV	Interphase	125	Isolation fracture	145
	Auxiliary control loop power frequency withstand voltage	V	2000			
Rated current		A	630,1250,1600,2000,2500,3150			
Rated short-circuit breaking current		kA	20		31.5	
Rated short circuit closing current (peak)		kA	50		80	

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

VS1-24, VN2-24 vacuum circuit breaker main technical parameters

Item		Units	Argument	
Rated voltage		kV	24	
Rated Insulation level	1min power frequency withstand voltage (RMS)	kV	60	
	Lightning impulse withstand voltage (peak)	kV	125	
Rated frequency		Hz	50/60	
Rated current		A	630,1250,1600,2000	630,1250,1600,2000,2500,3150
Rated short-circuit breaking current		kA	20	32
Rated short circuit closing current (peak)		kA	50	80
Rated short-time withstand current (4s)		kA	20	31.5
Rated peak withstand current		kA	50	80
Rated individual capacitor bank breaking current		A	630	
Rated back-to-back capacitor bank breaking current		A	400	
Rated short circuit breaking current breaking times		time	50	
Mechanical life		time	20000	
Rated operating sequence			O-0.3s-CO-180s-CO	

Technical parameters of spring operating mechanism

Item		Units	Argument
Rated operating voltage	Closing trip coil	V	AC220, AC110, DC220, DC110
	Opening trip coil		
Working current	Closing trip coil	A	The AC220 or DC220 is 1.1 AC110 or DC10 is 3.1
	Opening trip coil		
Energy storage motor power		W	80,100
Rated voltage of energy storage motor		S	AC220, AC110, DC220, DC110
Energy storage time		V	≤ 10

Dimensions and mounting dimensions (mm)

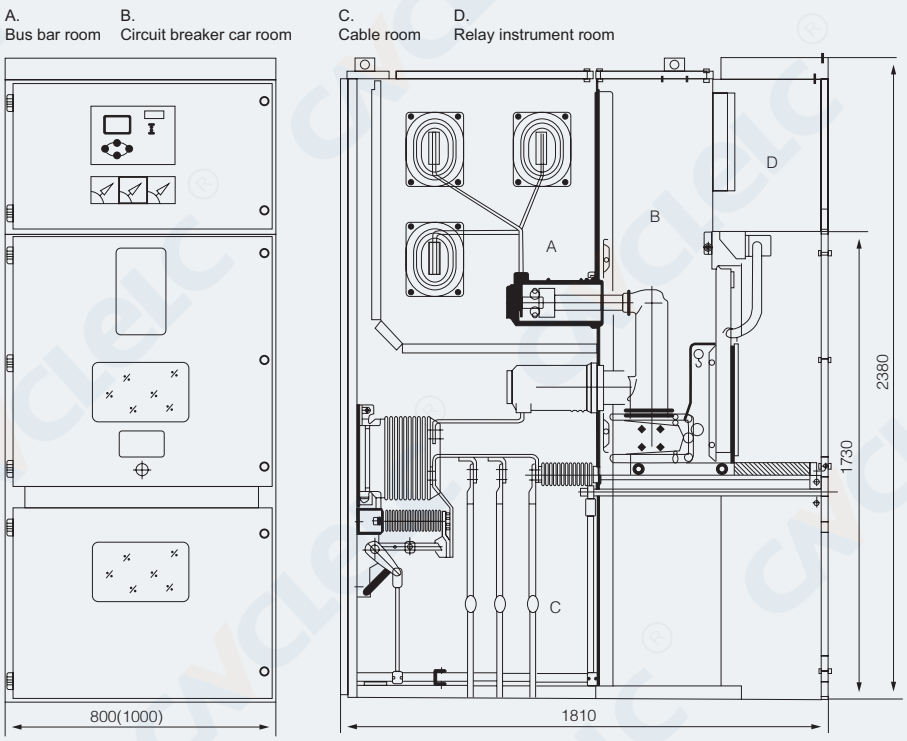


Figure 1 Structure diagram of KYN28–24 switchgear

Foundation Construction (mm)

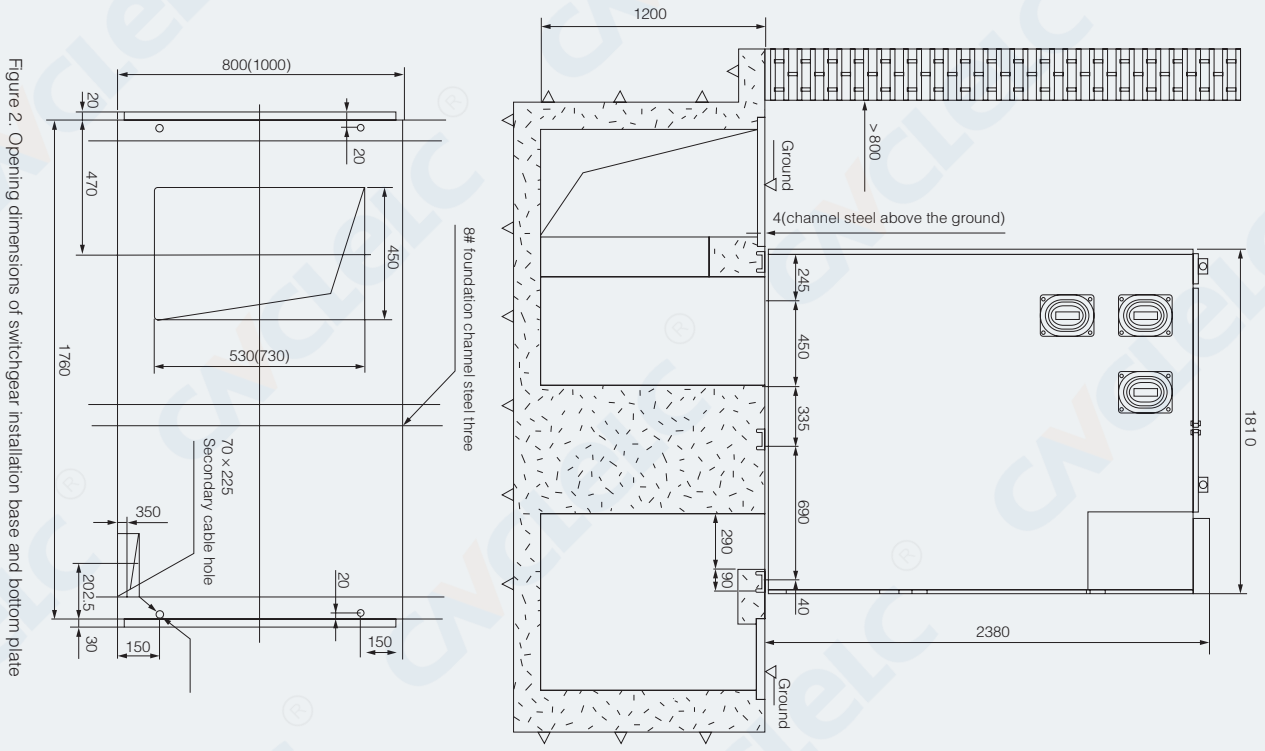
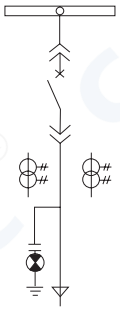
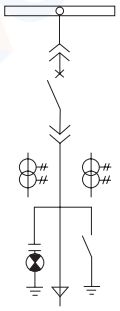
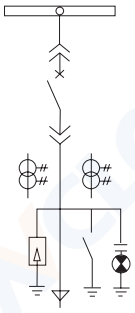
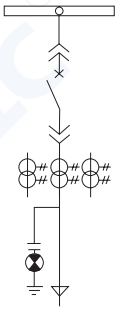
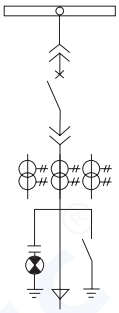
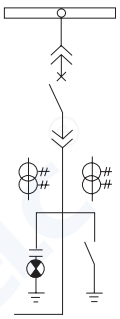
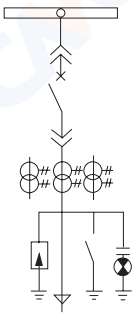
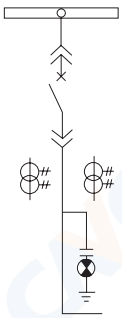
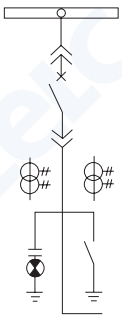
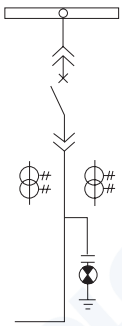


Figure 2. Opening dimensions of switchgear installation base and bottom plate

Main circuit scheme diagram

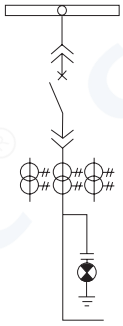
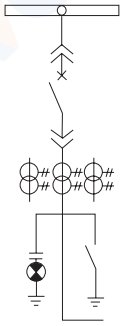
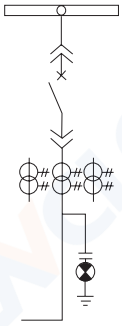
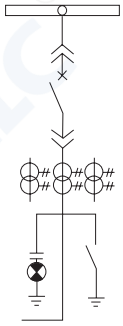
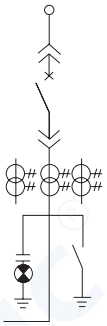
Scheme number		01	02	03	04	05
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1	1	1	1	1
	Voltage transformer LZZB9-24	2	2	2	3	3
	Voltage transformer JDZ11-20/JDZX11-20					
	High voltage fuse XRNP-24 0.5A					
	Ground switch JN15-24			1		1
	Lightning arrester HY5WZ-32/84			3		
Use		Receive electricity, feed electricity	Feed	Feed	Receive electricity, feed electricity	Feed

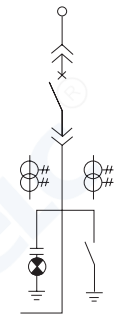
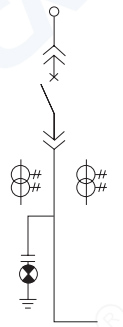
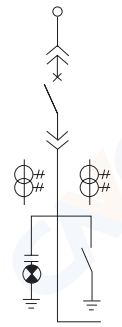
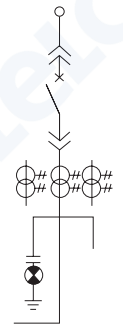
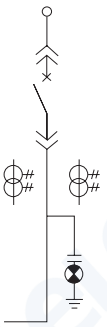
Scheme number		06	07	08	09	10
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1	1	1	1	1
	Voltage transformer LZZB9-24	3	2	2	2	2
	Voltage transformer JDZ11-20/JDZX11-20					
	High voltage fuse XRNP-24 0.5A					
	Ground switch JN15-24	1		1		1
	Lightning arrester HY5WZ-32/84	3				
Use		Feed	Contact (right)	Contact (right)	Contact (left)	Contact (left)

KYN28-24

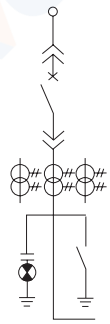
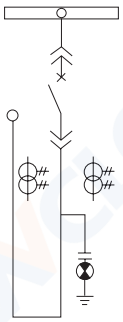
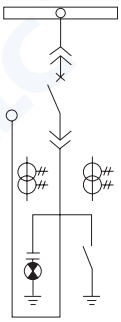
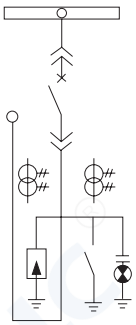
Armored Withdrawable Type AC Metal-Enclosed Switchgear

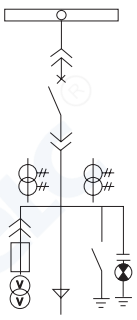
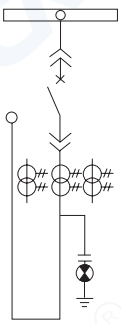
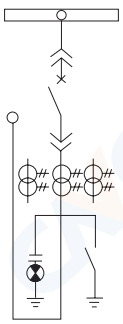
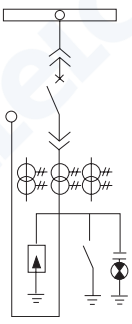
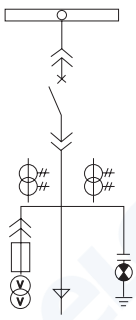
Main circuit scheme diagram

Scheme number		11	12	13	14	15
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1	1	1	1	1
	Voltage transformer LZZB9-24	3	3	3	3	2
	Voltage transformer JDZ11-20/JDZX11-20					
	High voltage fuse XRNP-24 0.5A					
	Ground switch JN15-24		1		1	
	Lightning arrester HY5WZ-32/84					
Use		Contact (right)	Contact (right)	Contact (left)	Contact (left)	Overhead line (left link)

Scheme number		16	17	18	19	20
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1	1	1	1	1
	Voltage transformer LZZB9-24	3	2	2	3	3
	Voltage transformer JDZ11-20/JDZX11-20					
	High voltage fuse XRNP-24 0.5A					
	Ground switch JN15-24	1		1		1
	Lightning arrester HY5WZ-32/84					
Use		Overhead line (left link)	Overhead line (right link)	Overhead line (right link)	Overhead line (left link)	Overhead line (left link)

Main circuit scheme diagram

Scheme number		21	22	23	24	25
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24					
	Voltage transformer LZZB9-24	1	1	1	1	1
	Voltage transformer JDZ11-20/JDZX11-20	3	3	2	2	2
	High voltage fuse XRNP-24 0.5A					
	Ground switch JN15-24		1		1	1
	Lightning arrester HY5WZ-32/84					3
Use		Overhead line (right link)	Overhead line (right link)	Overhead inlet and outlet line	Overhead inlet and outlet line	Overhead inlet and outlet line

Scheme number		26	27	28	29	30
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1	1	1	1	1
	Voltage transformer LZZB9-24	3	3	3	2	2
	Voltage transformer JDZ11-20/JDZX11-20				2	2
	High voltage fuse XRNP-24 0.5A				3	3
	Ground switch JN15-24		1	1		1
	Lightning arrester HY5WZ-32/84			3		
Use		Overhead inlet and outlet line	Overhead inlet and outlet line	Overhead inlet and outlet line	Receive electricity, feed electricity	Feed

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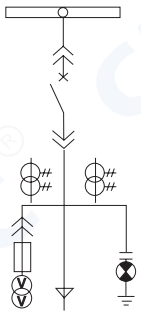
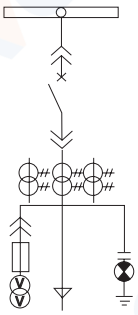
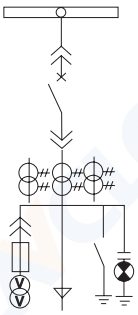
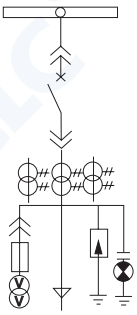
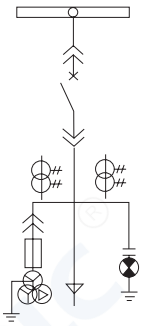
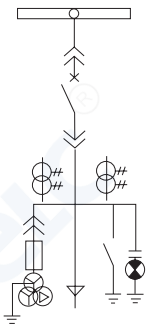
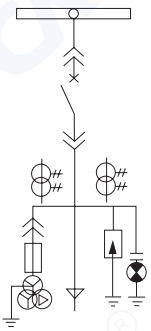
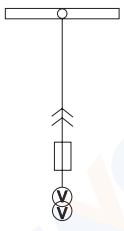
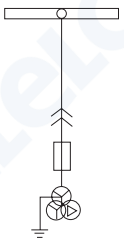
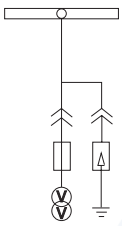
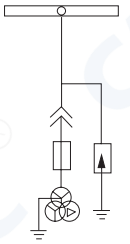
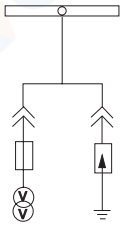
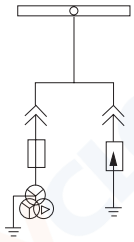
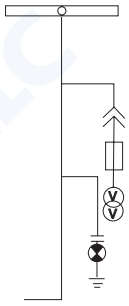
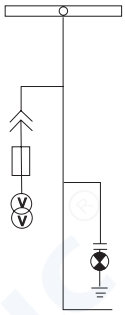
Armored Withdrawable Type AC Metal-Enclosed Switchgear

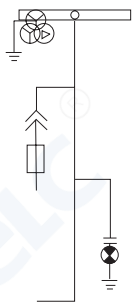
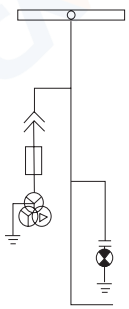
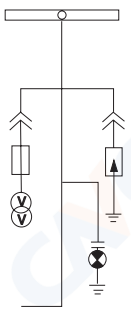
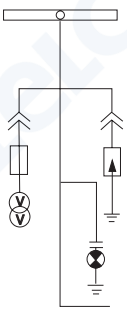
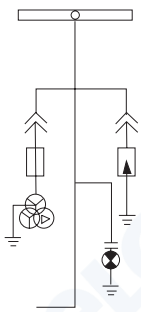
Main circuit scheme diagram

Scheme number		31	32	33	34	35
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1	1	1	1	1
	Voltage transformer LZZB9-24	2	3	3	3	2
	Voltage transformer JDZ11-20/JDZX11-20	2	2	2	2	3
	High voltage fuse XRNP-24 0.5A	3	3	3	3	3
	Ground switch JN15-24			1		
	Lightning arrester HY5WZ-32/84	3			3	
Use		Receive electricity, feed electricity	Receive electricity, feed electricity	Feed	Receive electricity, feed electricity	Receive electricity, feed electricity

Scheme number		36	37	38	39	40
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1	1			
	Voltage transformer LZZB9-24	2	2			
	Voltage transformer JDZ11-20/JDZX11-20	3	3	2	3	2
	High voltage fuse XRNP-24 0.5A	3	3	3	3	3
	Ground switch JN15-24	1				
	Lightning arrester HY5WZ-32/84		3			3
Use		Feed	Receive electricity, feed electricity	Voltage measurement	Voltage measurement	Voltage measurement + arrester

Main circuit scheme diagram

Scheme number		41	42	43	44	45
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24					
	Voltage transformer LZZB9-24					
	Voltage transformer JDZ11-20/JDZX11-20	3	2	3	2	2
	High voltage fuse XRNP-24 0.5A	3	3	3	3	3
	Ground switch JN15-24					
	Lightning arrester HY5WZ-32/84	3	3	3	3	
Use		Voltage measurement + arrester	Voltage measurement + arrester	Voltage measurement + arrester	Voltage measurement + left link	Voltage measurement + right link

Scheme number		46	47	48	49	50
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1	1			
	Voltage transformer LZZB9-24					
	Voltage transformer JDZ11-20/JDZX11-20	3	3	2	2	
	High voltage fuse XRNP-24 0.5A	3	3	3	3	3
	Ground switch JN15-24					
	Lightning arrester HY5WZ-32/84			3	3	3
Use		Voltage measurement + left link	Overhead inlet and outlet line	Voltage measurement + arrester + left link	Voltage measurement + arrester + right link	Voltage measurement + arrester + left link

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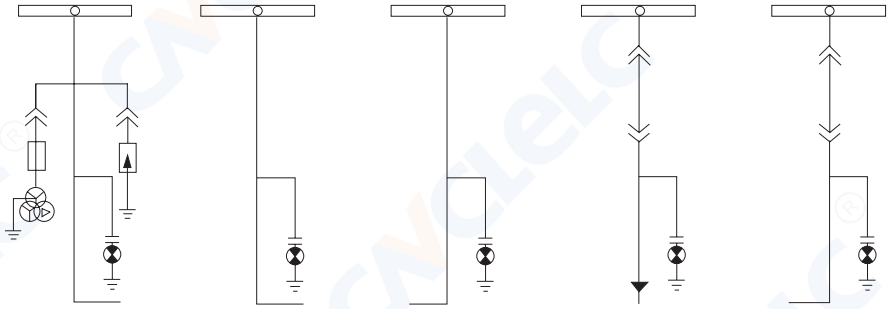
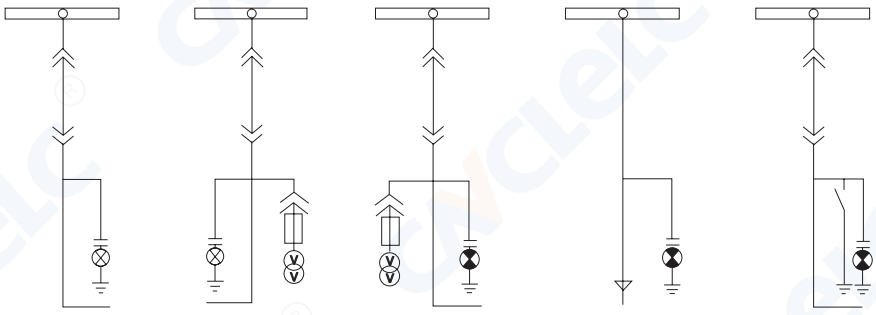
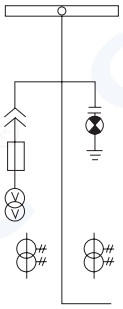
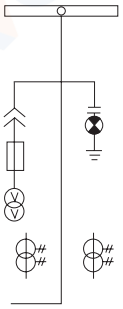
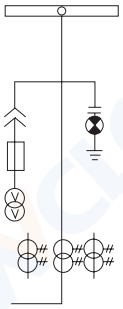
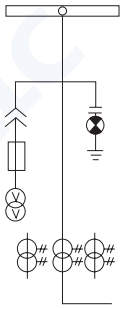
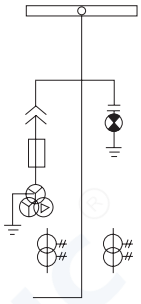
Armored Withdrawable Type AC Metal-Enclosed Switchgear

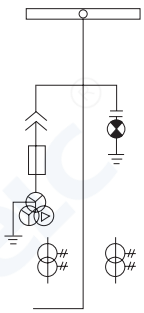
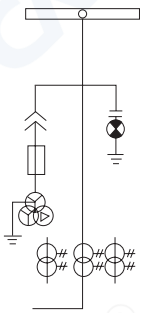
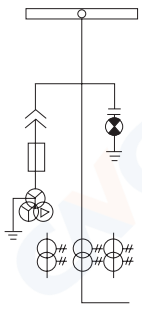
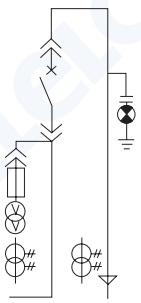
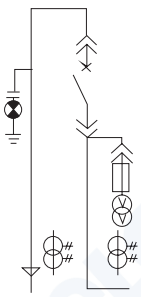
Main circuit scheme diagram

Scheme number	51	52	53	54	55
Main circuit scheme diagram					
Rated current (A)	630~3150				
Primary electrical component: Vacuum circuit breaker VS1-24					
Primary electrical component: Voltage transformer LZZB9-24					
Primary electrical component: Voltage transformer JDZ11-20/JDZX11-20	3				
Primary electrical component: High voltage fuse XRNP-24 0.5A	3				
Primary electrical component: Ground switch JN15-24					
Primary electrical component: Lightning arrester HY5WZ-32/84	3				
Use	Voltage measurement + arrester + right link	Contact (right)	Contact (left)	Isolate	Isolation + Contact (left)

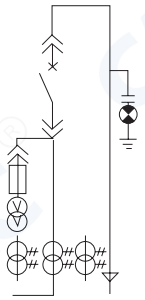
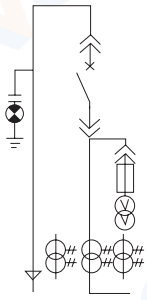
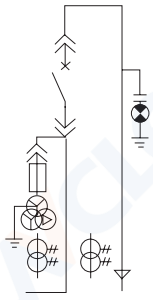
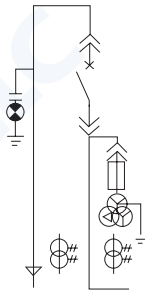
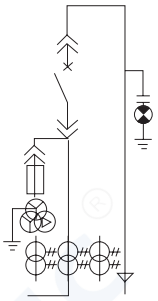
Scheme number	56	57	58	59	60
Main circuit scheme diagram					
Rated current (A)	630~3150				
Primary electrical component: Vacuum circuit breaker VS1-24					
Primary electrical component: Voltage transformer LZZB9-24					
Primary electrical component: Voltage transformer JDZ11-20/JDZX11-20		2	2		
Primary electrical component: High voltage fuse XRNP-24 0.5A		3	3		
Primary electrical component: Ground switch JN15-24					1
Primary electrical component: Lightning arrester HY5WZ-32/84					
Use	Isolation + Contact (right)	Isolation + contact (left) Voltage measurement	Isolation + connection (right) Voltage measurement	Wire in and out	Isolate

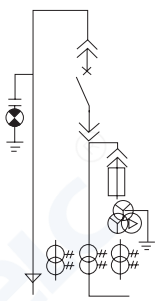
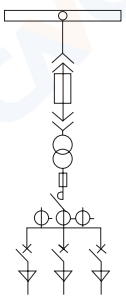
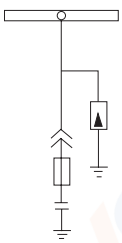
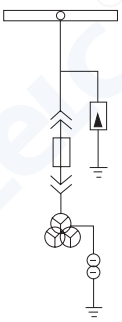
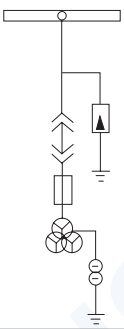
Main circuit scheme diagram

Scheme number		61	62	63	64	65
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24					
	Voltage transformer LZZB9-24					
	Voltage transformer JDZ11-20/JDZX11-20	2	2	3	3	2
	High voltage fuse XRNP-24 0.5A	2	2	2	2	3
	Ground switch JN15-24	3	3	3	3	3
	Lightning arrester HY5WZ-32/84					
Use		Metering + right link	Metrology + Left link	Metrology + Left link	Metering + right link	Metrology + Left link

Scheme number		66	67	68	69	70
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24				1	1
	Voltage transformer LZZB9-24	2	3	3	2	2
	Voltage transformer JDZ11-20/JDZX11-20	3	3	3	2	2
	High voltage fuse XRNP-24 0.5A	3	3	3	3	3
	Ground switch JN15-24					
	Lightning arrester HY5WZ-32/84					
Use		Metering + right link	Metrology + Left link	Metering + right link	Incoming line + metering	Incoming line + metering

Main circuit scheme diagram

Scheme number		71	72	73	74	75
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1	1	1	1	1
	Voltage transformer LZZB9-24	3	3	2	2	3
	Voltage transformer JDZ11-20/JDZX11-20	2	2	3	3	3
	High voltage fuse XRNP-24 0.5A	3	3	3	3	3
	Ground switch JN15-24					
	Lightning arrester HY5WZ-32/84					
Use		Incoming line + metering	Incoming line + metering	Incoming line + metering	Incoming line + metering	Incoming line + metering

Scheme numberScheme number		76	77	75	79	80
Main circuit scheme diagram						
Rated current (A)		630~3150				
Primary electrical component	Vacuum circuit breaker VS1-24	1				
	Voltage transformer LZZB9-24	3				
	Voltage transformer JDZ11-20/JDZX11-20	/3	1（Note 1）	3（Note 2）	4	4
	High voltage fuse XRNP-24 0.5A	3	XRNT 3	XRNT 3	3	3
	Ground switch JN15-24				3	3
	Lightning arrester HY5WZ-32/84			3		
Use		Incoming line + metering	All transformer cabinets (The width of the cabinet is determined by the variable size used)	Capacitor cabinet	Voltage measurement + arrester	Voltage measurement + arrester

Note 1：The transformer is from the user Select Recommended Use dry change
Note 2：Parallel capacitor Bm243-16-1

KYN28-12

Armored Withdrawable Type
AC Metal-Enclosed Switchgear

Overview

KYN28-12(GZS1) type armoured removable AC metal enclosed switchgear (hereinafter referred to as "switchgear") It is suitable for three-phase AC 50Hz power system, used to receive and distribute electrical energy and control, protect and monitor the circuit. The newly introduced and developed high-current and high-breaking switchgear can also be used separately as a high-voltage generator outlet.

This product conforms to the standards: GB3906 "3~35kV AC metal enclosed switchgear", GB/T11022 "High voltage switchgear and control equipment standard common technical requirements", IEC298 "rated voltage above 1kV 52kV and below AC metal enclosed switchgear and control equipment".

KYN28-12

Armored Withdrawable Type AC Metal-Enclosed Switchgear

Model meaning

K	Y	N	28	-	12	Z
↓	↓	↓	↓		↓	↓
Metal armoured type	Shifting type	Indoor	Design sequence number		Rated voltage (kV)	Vacuum circuit breaker

Conditions of use

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

KYN28-12 Armored Withdrawable Type AC Metal-Enclosed Switchgear

Parameter			Unit	Value
Rated Voltage			KV	3.6、7.2、12
Rated Frequency			Hz	50
Rated current of circuit breaker			A	630、1250、1600、2000、2500、3150、4000
Rated current of switchgear			A	630、1250、1600、2000、2500、3150、4000
Rated Short-time Withstand Current (4s)			KA	16、20、25、31.5、40、50
Rated Peak Withstand Current (Peak Value)			KA	40、50、63、80、100、125
Rated Short-Circuit Breaking Current			KA	16、20、25、31.5、40、50
Rated Short-Circuit Making Current (Peak Value)			KA	40、50、63、80、100、125
Rated Insulation Level	1min Power Frequency Withstand Voltage	Phase to phase, phase to earth	KV	24、32、42
		Gaps	KV	24、32、48
	Lightning Impulse Withstand Voltage (Peak)	Phase to phase, phase to earth	KV	40、60、75
		Gaps	KV	46、70、85
Protection (IP) Rating				IP4X

Note:

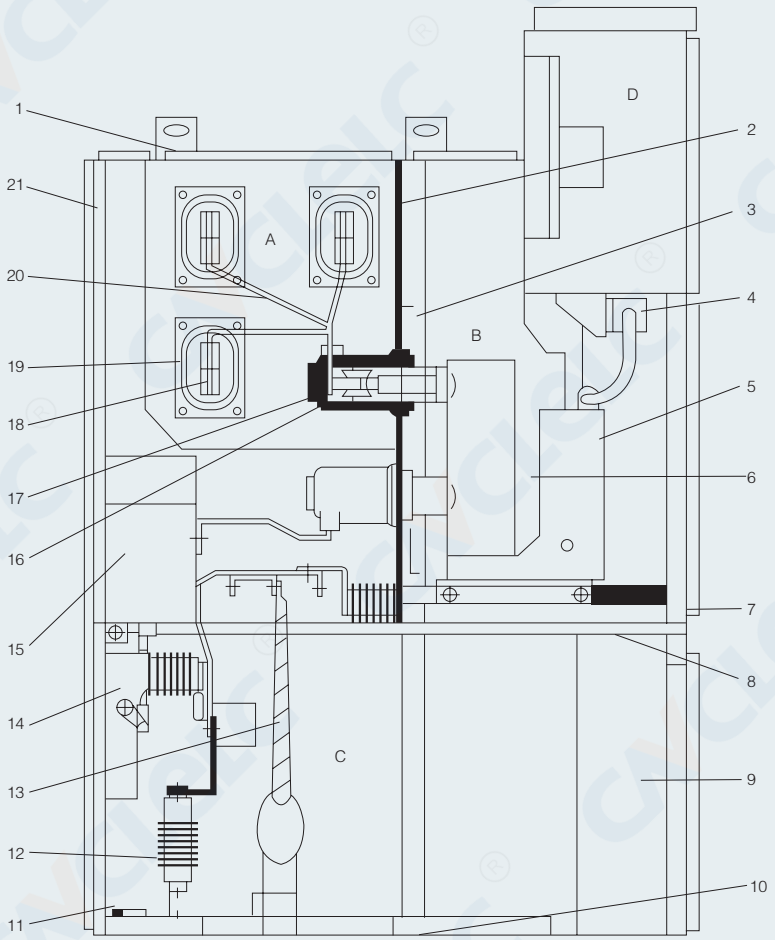
1. The short-circuit capacity of the current transformer should be considered separately.
2. For the technical parameters of the ZN63A-12, please refer to the corresponding datasheet.
3.For altitudes up to 1000m, the rated current ≤ 1250A, and the rated breaking current ≤ 31.5kA.

Structural characteristics

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

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

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



A, bus room
B, circuit breaker car room
C. Cable room
D, relay instrument
1. Pressure relief device
2, loading and unloading partition
3. Partition board (valve)
4. Secondary plug
5, circuit breaker hand car
6. Heating device
7. Withdrawable horizontal partition board
8. Ground switch operating mechanism
9. Control wire slot
10. Bottom plate
11. Ground the bus
12. Lightning arrester
13. Cable
14. Ground switch
15. Current transformer
16. Contact box
17, static contact device
18. Main bus cable
19. Busbar bushing
20. Branch bus
21. Shell

KYN28-12

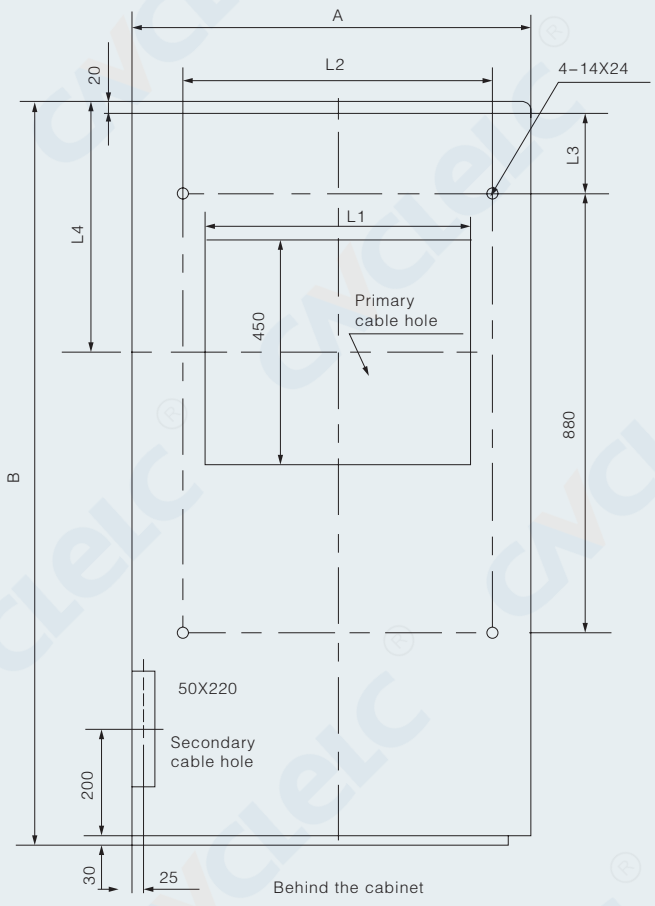
Armored Withdrawable Type AC Metal-Enclosed Switchgear

Overall dimensions (mm)

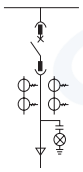
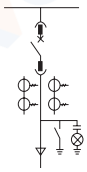
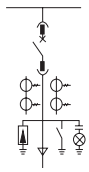
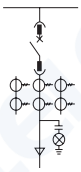
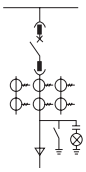
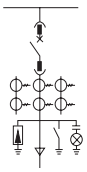
Height	Width		Depth	
	Rated current 1250A and below	Rated current 1600A and above	Cable inlet and outlet	Overhead inlet and outlet line
2300	800	1000	1500	1660

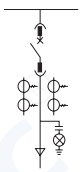
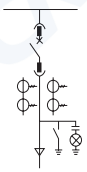
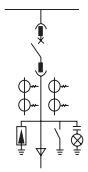
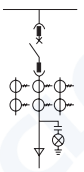
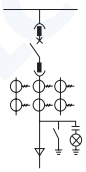
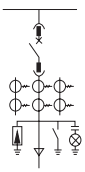
Mounting size (mm)

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



Main circuit scheme diagram

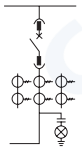
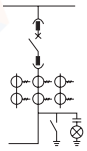
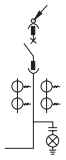
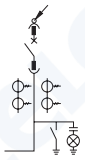
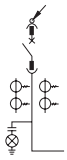
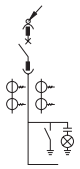
Scheme number	01	02	03	04	05	06
Main circuit scheme diagram						
Cabinet dimensions (W x D x H)mm	800(1000)×1500×2300					
Rated current (A)	630~3150					
Vacuum circuit breaker (VS1 or VD4)	1	1	1	1	1	1
Current transformer LZZBJ9 series	2	2	2	3	3	3
Ground switch JN15		1	1		1	1
Lightning arrester HY5W			3			3
Loop name	Receive electricity, feed electricity					
remark	1, rated current 1600A and above, cabinet width is 1000mm. 2, altitude 3000m~4000m plateau type switchgear rated current 1250A, cabinet width 1000m.					

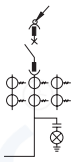
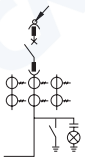
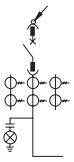
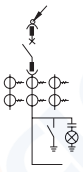
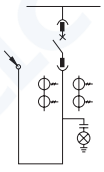
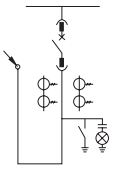
Scheme number	07	08	09	10	11	12
Main circuit scheme diagram						
Cabinet dimensions (W x D x H)mm	800(1000)×1500×2300					
Rated current (A)	630~3150					
Major electrical component: Vacuum circuit breaker (VS1 or VD4)	1	1	1	1	1	1
Major electrical component: Current transformer LZZBJ9 series	2	2	2	2	3	3
Major electrical component: Ground switch JN15		1		1		1
Loop name	Contact (right)	Contact (right)	Contact (left)	Contact (left)	Contact (right)	Contact (right)
Remark	The rated current is 1600A and above, and the width of the cabinet is 1000mm.					

KYN28-12

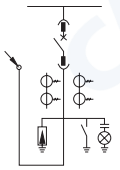
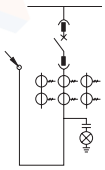
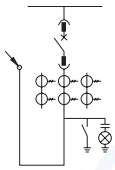
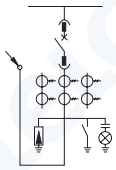
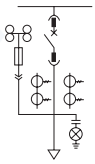
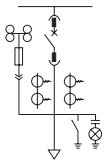
Armored Withdrawable Type AC Metal-Enclosed Switchgear

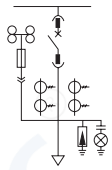
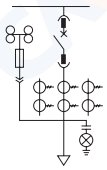
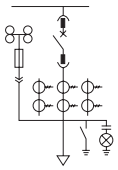
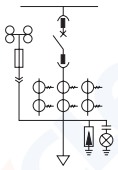
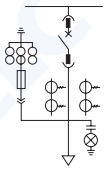
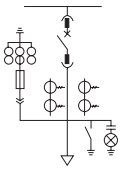
Main circuit scheme diagram

Scheme number	13	14	15	16	17	18
Main circuit scheme diagram						
Cabinet dimensions (W x D x H)mm	800(1000)×1660×2300					
Rated current (A)	630~3150					
Major electrical component: Vacuum circuit breaker (VS1 or VD4)	1	1	1	1	1	1
Major electrical component: Current transformer LZZBJ9 series	3	3	2	3	2	2
Major electrical component: Ground switch JN15		1		1		1
Loop name	Contact (left)	Contact (left)	Overhead entry line(left contact)	Overhead entry line(left contact)	Overhead entry line(right contact)	Overhead entry line(right contact)
Remark	The rated current is 1600A and above, and the width of the cabinet is 1000mm.					

Scheme number	19	20	21	22	23	24
Main circuit scheme diagram						
Cabinet dimensions (W x D x H)mm	800(1000)×1660×2300					
Rated current (A)	630~3150					
Major electrical component: Vacuum circuit breaker (VS1 or VD4)	1	1	1	1	1	1
Major electrical component: Current transformer LZZBJ9 series	3	3	2	3	2	2
Major electrical component: Ground switch JN15		1		1		1
Loop name	Contact (left)	Contact (left)	Overhead entry line(left contact)	Overhead entry line(left contact)	Overhead inlet and outlet line	Overhead inlet and outlet line
Remark	The rated current is 1600A and above, and the width of the cabinet is 1000mm.					

Main circuit scheme diagram

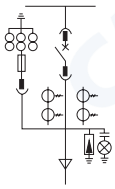
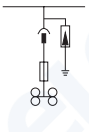
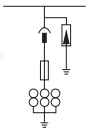
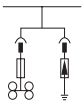
Scheme number		25	26	27	28	29	30
Main circuit scheme diagram							
Cabinet dimensions (W x D x H)mm		800(1000)×1660×2300					
Rated current (A)		630~3150					
Major electrical component	Vacuum circuit breaker (VS1 or VD4)	1	1	1	1	1	1
	Current transformer LZZBJ9 series	2	3	3	3	2	2
	Voltage transformer					JDZ10-10 2	JDZ10-10 2
	High voltage fuse RN2-10					3	3
	Ground switch JN15	1		1	1		1
	Lightning arrester HY5W	3			3		
Loop name		Overhead inlet and outlet line	Overhead inlet and outlet line	Overhead inlet and outlet line	Overhead inlet and outlet line	Cable inlet +PT	Cable inlet +PT
Remark		The rated current is 1600A and above, and the width of the cabinet is 1000mm.					

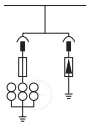
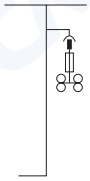
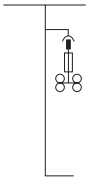
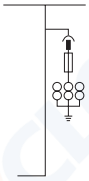
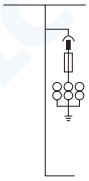
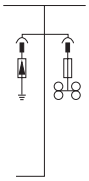
方案号		31	32	33	34	35	36
Main circuit scheme diagram							
Cabinet dimensions (W x D x H)mm		800(1000)×1500×2300					
Rated current (A)		630~3150					
Major electrical component	Vacuum circuit breaker (VS1 or VD4)	1	1	1	1	1	1
	Current transformer LZZBJ9 series	2	3	3	3	2	2
	Voltage transformer	JDZ10-10 2	JDZ10-10 2	JDZ10-10 2	JDZ10-10 2	JDZ10-10 3	JDZ10-10 3
	High voltage fuse RN2-10	3	3	3	3	3	3
	Ground switch JN15	1		1			1
	Lightning arrester HY5W	3			3		
Loop name		Cable inlet +PT	Cable inlet +PT	Cable inlet +PT	Cable inlet +PT	Cable inlet +PT	Cable inlet +PT
Remark		The rated current is 1600A and above, and the width of the cabinet is 1000mm.					

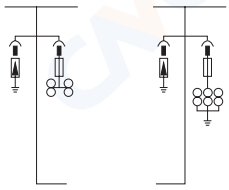
KYN28-12

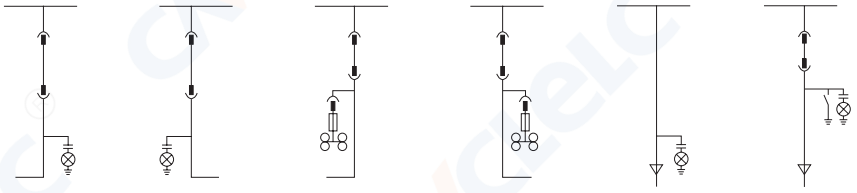
Armored Withdrawable Type AC Metal-Enclosed Switchgear

Main circuit scheme diagram

Scheme number		37	38	39	40	41	42
Main circuit scheme diagram							
Cabinet dimensions (W x D x H)mm		800(1000)×1500×2300					
Rated current (A)		630~3150					
Major electrical component	Vacuum circuit breaker (VS1 or VD4)	1					
	Current transformer LZZBJ9 series	2					
	Voltage transformer	JDZX10-10 3	JDZ10-10 2	JD10-10 2	JDZ10-10 3	JDZX10-10 3	JDZ10-10 2
	High voltage fuse RN2-10	3	3	3	3	3	3
	Lightning arrester HY5W	3			3		3
Loop name		Cable inlet +PT	Voltage measurement	Voltage measurement	Voltage measurement + Lightning arrester	Voltage measurement + Lightning arrester	Voltage measurement + Lightning arrester
Remark		The rated current is 1600A and above, and the width of the cabinet is 1000mm.					

Scheme number		43	44	45	46	47	48
Main circuit scheme diagram							
Cabinet dimensions (W x D x H)mm		800(1000)×1500×2300					
Rated current (A)		630~3150					
Major electrical component	Vacuum circuit breaker (VS1 or VD4)	1					
	Current transformer LZZBJ9 series	2					
	Voltage transformer	JDZX10-10 3	JDZ10-10 2	JD10-10 2	JDZ10-10 3	JDZX10-10 3	JDZ10-10 2
	High voltage fuse RN2-10	3	3	3	3	3	3
	Lightning arrester HY5W	3			3	3	3
Loop name		Voltage measurement + Lightning arrester	Voltage measurement + busbar	Voltage measurement + busbar	Voltage measurement + busbar	Voltage measurement + busbar	Voltage measurement + Arrester + busbar
Remark		The rated current is 1600A and above, and the width of the cabinet is 1000mm.					

Scheme number	49	50	51	52	53	54
Main circuit scheme diagram						
Cabinet dimensions (W x D x H)mm	800(1000)×1660×2300					
Rated current (A)	630~3150					
Major electrical component: Voltage transformer	JDZ10-10 2	JDZ10-10 3	JDZX10-10 3			
Major electrical component: High voltage fuse RN2-10	3	3	3			
Major electrical component: Lightning arrester HY5W	3	3	3			
Loop name	Voltage measurement + Arrester + busbar	Voltage measurement + Arrester + busbar	Voltage measurement + Arrester + busbar	Busbar	Busbar	Busbar
Remark	额定电流 1600A 及以上，柜宽为 1000mm。					

Scheme number	55	56	57	58	59	60
Main circuit scheme diagram						
Cabinet dimensions (W x D x H)mm	800(1000)×1500×2300					
Rated current (A)	630~3150					
Major electrical component: Voltage transformer			JDZ10-10 2	JDZ10-10 2		
Major electrical component: High voltage fuse RN2-10			3	3		
Major electrical component: Lightning arrester HY5W						1
Loop name	Isolation + Contact (left)	Isolation + Contact (right)	Isolation + Contact (left)+ Voltage measurement	Isolation + Contact (right)+ Voltage measurement	The exit line is disguised	The exit line is disguised
Remark	额定电流 1600A 及以上，柜宽为 1000mm。					

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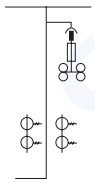
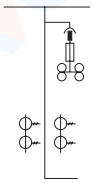
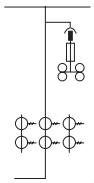
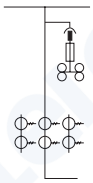
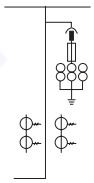
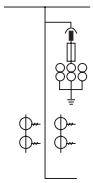
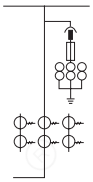
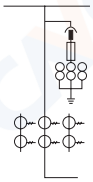
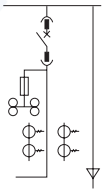
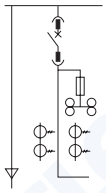
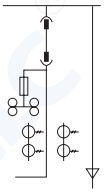
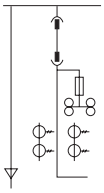
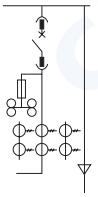
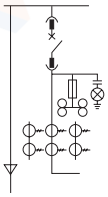
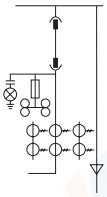
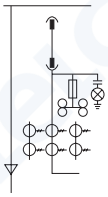
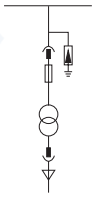
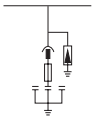
Armored Withdrawable Type AC Metal-Enclosed Switchgear

Main circuit scheme diagram

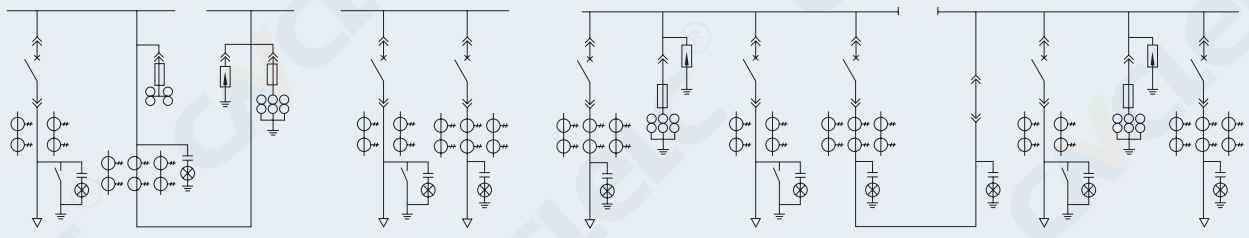
Scheme number		61	62	63	54	65	66
Main circuit scheme diagram							
Cabinet dimensions (W x D x H)mm		800(1000)×1500×2300					
Rated current (A)		630~3150					
Major electrical component	Current transformer LZZBJ9 series	2	2	3	3	2	2
	Voltage transformer	JDZ10-10 2	JDZ10-10 2	JDZ10-10 2	JDZ10-10 2	JDZX10-10 3	JDZX10-10 3
	High voltage fuse RN2-10	3	3	3	3	3	3
Loop name		Metrology + Left link	Metering + right link	Metrology + Left link	Metering + right link	Metrology + Left link	Metering + right link
Remark		The rated current is 1600A and above, and the width of the cabinet is 1000mm.					

Scheme number		67	68	69	70	71	72
Main circuit scheme diagram							
Cabinet dimensions (W x D x H)mm		800(1000)×1660×2300					
Rated current (A)		630~3150					
Major electrical component	Vacuum circuit breaker (VS1 or VD4)			1	1		
	Current transformer LZZBJ9 series	3	3	2	2	2	2
	Voltage transformer	JDZX10-10 3	JDZX10-10 3	JDZ10-10 2	JDZ10-10 2	JDZ10-10 2	JDZ10-10 2
	High voltage fuse RN2-10	3	3	3	3	3	3
Loop name		Metrology + Left link	Metering + right link	Incoming line + metering	Incoming line + metering	Incoming line + metering	Incoming line + metering
Remark		The rated current is 1600A and above, and the width of the cabinet is 1000mm.					

Main circuit scheme diagram

方案号	73	74	75	76	77	78
Main circuit scheme diagram						
Major electrical component: Vacuum circuit breaker (VS1 or VD4)	1	1				
Major electrical component: Current transformer LZZBJ9 series	3	3	3	3		
Major electrical component: Voltage transformer	JDZ10-10 2	JDZ10-10 2	JDZ10-10 2	JDZ10-10 2		3
Major electrical component: High voltage fuse RN2-10					RN3-10 3	3
Major electrical component: Lightning arrester HY5W					3	3
Major electrical component: transformer					1	
Major electrical component: condenser						3
Loop name	Metering + right link	Metering + right link	Metering + right link	Metering + right link	All-variable	Capacitor cabinet
Remark	The rated current is 1600A and above, and the width of the cabinet is 1000mm.					
Cabinet dimensions (W x D x H)mm	800(1000)×1660×2300					
Rated current (A)	630~3150					

Example of typical group scheme of main circuit



XGN15-12/24/36

Air Insulated RMU (Fixed Type)

Overview

XGN15-12/24/36 Air Insulated RMU (Fixed Type), used in rated voltage 12kV, rated current 630A and below the ring power supply or radiation power supply system, especially suitable for pre-installed substation as a power system control and protection. This product is equipped with FLN36-12D type sulfur hexafluoride load switch or FLRN36-12D type load switch and disintegrator combination electrical appliances, with small size, light weight, easy operation, light operation force, reliable interlock, maintenance-free and other characteristics, is a new generation of high voltage switchgear required for urban power grid transformation and construction.

This product complies with: GB3906 "3~35kV AC metal enclosed Switchgear", GB/T11022 "High voltage switchgear and control equipment standard common technical requirements", IEC298 "rated voltage above 1kV 50kV and below AC metal enclosed switchgear and control equipment", DI/T404 "Indoor AC high voltage switch cabinet ordering technical specifications" standard.

XGN15-12/24/36

Air Insulated RMU (Fixed Type)

Model meaning

X	G	N	15	-	12	(F·R)
↓	↓	↓	↓		↓	↓
Box type	Stationary	Indoor	Design sequence number		Rated voltage	Load switch-breaker combination appliance

Normal service condition

1 Ambient air temperature: -15℃ ~+40℃ ;

2 Altitude: 1000m and below;

3 Humidity conditions:

The daily average value is not more than 95%, and the daily average water vapor pressure is not more than 2.2kPa;

The monthly average value is not more than 90, and the monthly average water vapor pressure is not more than 1.8kPA.

4 Earthquake intensity: not more than 8 degrees;

5 There is no obvious pollution such as turbid or combustible gas.

Note: When the above normal conditions of use are exceeded, the user can negotiate with the company.

XGN15-12/24/36 Air Insulated RMU (Fixed Type)

Sr.No.	Description	Unit	Value		
01	Rated voltage(Ur)	kV	12	24	36
02	Rated current(Ir)	A	630	630	630
03	Rated frequency(fr)	Hz	50	50	50
04	Rated short-time power-frequency withstand voltage/1min (phase-to-phase &to-earth/across the isolating distance)	kV	28/32	50/60	70/80
05	Rated lightning impulse withstand voltage (phase-to-phase &to-earth/across the isolating distance)	kV	75/85	125/145	170/195
06	Rated short-time withstand current	kA/s	25/3	20/3	16/1
07	Rated peak withstand current	kA	62.5	50	40
08	Rated short-circuit making current	kA	62.5	50	40
09	Rated transfer breaking current	A	1700	1400	630
10	Rated closed-loop breaking current	A	630	630	630
11	Maximum rated current of the fuse	A	200	200	63
12	Main switch Mechanical endurance	ops	M2(5000)	M2(5000)	M1(1000)
13	Earthing switch	ops	M1(2000)	M1(2000)	M0(1000)
14	Electrical endurance	/	Class E3	Class E3	Class E3
15	IAC class	/	A-FLR 20kA/1s 25kA/1s	A-FLR 16kA/1s 20kA/1s	A-FLR 16kA/1s
16	Degree of protection	/	IP4X	P4X	IP4X

XGN15-12/24/36

Air Insulated RMU (Fixed Type)

Structural characteristics

Switchgear is composed of cabinet, main switch (SF6 load switch or combined appliance), ground switch, instrument room, bus and other electrical components and auxiliary components.

The cabinet body is composed of aluminum-zinc steel plate by modular forming. A pressure relief channel is provided at the back of the cabinet to protect the operator in case of internal failure.

The bus bar of the bus bar room is covered with insulation and directly connected to the terminal of the load switch: the three-phase bus bar is arranged longitudinally, so that the switchgear can be arbitrarily extended from left to right and it is easy to change its layout.

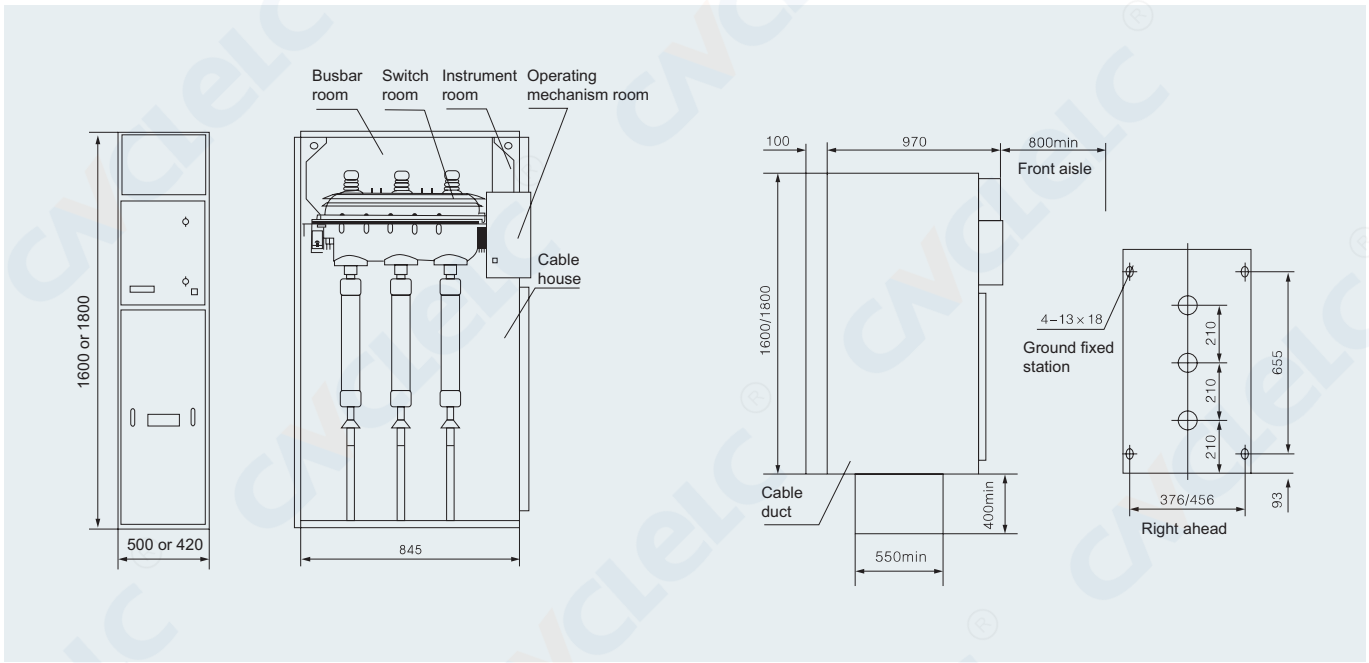
The instrument room is located in the upper part of the switchgear, which can be equipped with ammeter, voltmeter, indicator light and electric operating mechanism.

Controls

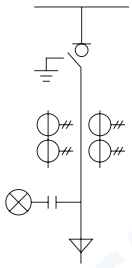
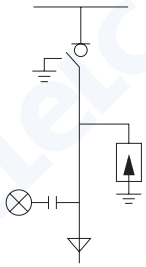
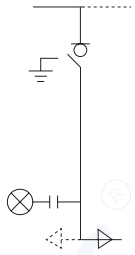
For a switchgear equipped with a load switch, use a special operating handle to operate on the front side of the switchgear. The front side of the operating mechanism is provided with upper and lower operating holes, the upper part is the ground switch operating hole, and the lower part is the load switch operating hole. When operating, the handle rotates clockwise to the closing direction of the switch, and rotates counterclockwise to the opening direction of the switch. It can also be equipped with electric parting and closing devices for remote control operation. (Note: sometimes the load switch does not have a ground switch, and the ground switch operating hole is used as a cabinet door unlock).

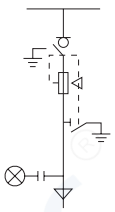
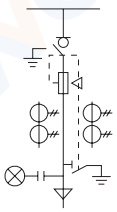
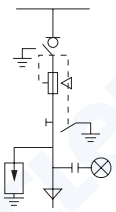
For switchgear equipped with combined electrical appliances, the operation sequence is the same as above, except that the load switch is operated with a manual switch. The lower ground switch of the combined electrical cabinet is separately arranged and connected with the upper ground switch through a connecting rod. The residual small current on the lower fuse holder is released when the switch is closed to improve the safety of the fuse replacement.

Dimensions and mounting dimensions (mm)

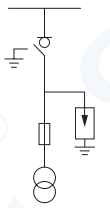
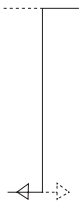


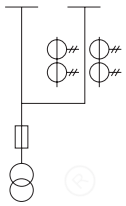
Main primary line scheme

Scheme number		01	01-1	01-2	01-3
Main circuit scheme diagram					
Use		Input-outlet line	Input-outlet line	Input-outlet line	Incoming and outgoing lines (left or right)
Major electrical component	Load switch FLN36-12D	1			
	fuse				
	Current transformer LZZJ2-12		1-3		
	High voltage live display device DXN6-T	1	1	1	1
	Lightning arrester HY5WZ or HY5WS			3	
Width × Depth × Height (mm)		420/500×845×1600/1800	500×845×1600/1800	500×845×1600/1800	420×845×1600/1800

Scheme number		02	02-1	02-2	
Main circuit scheme diagram					
Use		Protective transformer	Protective transformer	Protective transformer	
Major electrical component	Combined electric FLRN36-12D	1	1	1	
	Fuse	S □ LAJ	S □ LAJ	S □ LAJ	
	Current transformer LZZJ2-12		1~3		
	High voltage live display device DXN6-T	1	1	1	
	Lightning arrester			HY5WZ	
	Ground switch	1	1	1	
Width × Depth × Height (mm)		500×845×1600/1800	500×845×1600/1800	500×845×1600/1800	

KYN28-12 Armored Withdrawable Type AC Metal-Enclosed Switchgear

Scheme number		03	04	05	06
Main circuit scheme diagram					
Use		PT+ lightning arrester	Busbar connection	Cable entry	Contact
Major electrical component	Load switch FLN36-12D	1			1(without ground switch)
	Fuse	3(Protective voltage transformer) RN2-10/0.5			
	Current transformer LZZJ2-12	2-3			
	High voltage live display device DXN6-T				
	Lightning arrester	HY5WZ			
Width × Depth × Height (mm)		500×845×1600/1800	420×845×1600/1800	420×845×1600/1800	420×845×1600/1800

Scheme number		07			
Main circuit scheme diagram					
Use		Measure			
Major electrical component	Fuse RN2-10/0.5	3			
	Current transformer LZZJ2-12	2			
	Voltage transformer JDZ-10	2			
Width × Depth × Height (mm)		500×845×1600/1800			

CLM6-12/24/40.5KV

High Voltage SF6 Gas Insulated
Switchgear(GIS)

Overview

CLM6 series gas insulated compact type metal enclosed switchgear (hereinafter GIS) is our introducing of foreign advanced technology, adopting modular design, with its fixed and flexible expansion of the perfect unity to suit the end user or network node requirements, at the same time to meet a variety of requirement for distribution station, package substation, cable branch box.

CLM6-12/24/40.5KV

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Product Description

CLM6 series gas insulated compact type metal enclosed switchgear (hereinafter GIS) is our introducing of foreign advanced technology, adopting modular design, with its fixed and flexible expansion of the perfect unity to suit the end user or network node requirements, at the same time to meet a variety of requirement for distribution station, package substation, cable branch box. It is widely used in 7.2~40.5kV electric power distribution system .Switchgear has characteristic of completely sealed, free maintenance, small size, excellent performance, safety and reliability, long life etc, and it is popular by users. The switchgear meet the requirements of standard IEC62271-200,IEC62271-100 etc.

Features

Modular designation, each module can be in any arbitrary combined and expanded without charging and discharging, which is convenient for the design of the scheme and the design of high voltage measurement. SF6 insulated circuit breaker incomer and outgoing (vacuum or SF6 arc), load break switch incomer and outgoing , bus couple cabinet, metering cabinet, load break switch -fuse combination electric appliance cabinet, and TV cabinet (with or without switch), combination scheme for single unit, two units , three units, four units etc compact combination, to provide a broad application prospect for SF6 insulated ring main unit or multi loop power distribution cabinet.

Cabinet with armored structure, between the bus room and switch room, switch room and cable compartment has metal clapboard, primary protection grade of full insulation structure can reach IP67. Load break switch with three position welding in sealed stainless steel tank filled with SF6 gas , gas tightness is very good, with less gas, which can guarantee 30 years without leakage, and meet the requirements of environmental protection, It is suitable for indoor and outdoor configuration equipped with metal or non metal shell, or put the underground, semi-underground substation using. The operating mechanism adopts corrosion resistant metal, rotating part of the bearing for lubrication design , the products is not affected by the environment from regular maintenance, and convenient connection with the outside world, so that the operation power small, high reliability and long service life. The extended bus is made of a plug - in silicone rubber connector, which is fully insulated and shielded to ensure the reliability of the transmission and is not affected by the surrounding environment. The combined connection and expansion is convenient, which is convenient for the capacity expansion of the user or the substation in the future.

Using prefabricated silicone rubber insulated cable terminal in the front plug to eliminates the load break switch cabinet with small size and narrow space,which bring the inconvenience of the cable installation. Maintenance disassembly, quick recovery, convenient installation; the outer surface of using new semiconductor materials for shielding layer, the outer surface of grounding during running, which is not affected by damp, condensation, dust, pollution, high safety; maintenance free; diversity, novel and beautiful appearance, can be a branch or parallel with anti flood; It can run under 4.5m water at short time.

In order to adapt to the automation of power distribution network and improve the distribution system reliability, the new multi loop distribution cabinet is according to the demands to add electric mechanism, TV and distribution network control terminal unit, with three remote function, It can be achieved on the main components of the running state and fault monitoring, remote meter reading, remote operation, etc..

The cabinets of miniaturization design used three position rotary type load break switch, which is effectively reduce the number of parts and realized mechanical five anti interlocking . Vacuum circuit breaker filled with SF6 gas insulation, the advantages of using a vacuum interrupter and SF6 gas insulated to make the whole structure more compact; The current limiting fuse to miniaturization, high capacity, high breaking capacity, fast fusing, both combination, to make cabinet body more and more small.

Friendly operation interface to ensure the safety of operators and maintenance. The primary line analog single line diagram and analog display ,which can display the internal state of the switch, so that the operation is simple, accurate and safe.

SF6 load break switch - fuse combination of electrical equipment to replace the circuit breaker to protect transformer under 1250kVA is fully feasible, not only for the transformer with a comprehensive and reasonable protection, but also reasonable cost, simple protection. Under the same conditions, the user has the ability to purchase a higher performance free maintenance products. Therefore, the technical characteristics of the SF6 fully insulated ring main unit or multi loop distribution cabinet is very obvious, and the load break switch and fuse combination is an ideal product for protecting the distribution transformer.

CLM6-12/24/40.5KV

High Voltage SF6 Gas Insulated Switchgear(GIS)

Service Conditions

- Ambient temperature:-30℃ ~ +50℃ ;
- Ambient humidity: Daily average RH ≤ 90%;
- Monthly average RH ≤ 95%
- Altitude: Not exceed 2500m above sea level;
- No flammable, explosive, no serious pollution, no chemical corrosion and severe vibration.

Main technical parameters

Item	Unit	C/F Unit			V Unit		
		Load break switch			Circuit breaker		
Rated voltage	kV	12	24	36	12	24	36
Rated current	A	630~1250A					
Rated frequency	Hz	50/60					
1min Power frequency withstand voltage	kV	42	55	85	42	55	85
Lightning impulse withstand voltage	kV	75	125/150	170/185	75	125/150	170/185
Rated transferring current	A	1700					
Rated load circuit making current	A	630~1250					
Rated cable(line) charging breaking current	A	50&10					
Rated short circuit breaking current (peak)	kA	20	20	20	25/31.5	25/31.5	25/31.5
Rated short circuit making current (peak)	kA	63	63	63	63	63	63
Short time (2s) withstand current, load switch	kA	25/20	25/20	25/20	25/31.5	25/31.5	25/31.5
Rated withstand current (peak)	kA	63	63	63	63	63	63
Mechanism life	times	3000					
Protection level		IP67					
Dimension(W*D*H)	mm	12kV		24kV		36kV	
		325*751*1336		400*751*1336		450*885*2200	
		(+350)		(+350)			

Some product outline examples








XGN43-12/17.5/24/36KV

Series SF6 Gas Insulated Ring Main Unit

Overview

XGN Series are a new type of SF6 gas-insulated compact switchgear,in housedeveloped by Chuanli, suitable for most switching applications in medium voltage distribution networks. This adopts modular design and allows random combinations of 2-6 modules to satisfy the demands for flexible applications at secondary substations.

XGN Series switchgears offer a completely sealed system with a stainless steel tank, containing all parts and switching functions. The whole switchgear is free from external environmental impact, which ensures safe and reliable operation of equipment and free maintenance. They are widely applied in small secondary distribution substations, industrial, mine enterprises etc.

XGN43-12/17.5/24/36KV

Series SF6 Gas Insulated Ring Main Unit

Model meaning

XGN43	-	12	-	630
↓		↓		↓
Inflatable switchgear		Rated voltage (KV)		Rated current (KA)

Structural characteristics

1. SF6 gas of XGN43-12 series inflatable cabinet is used as arc extinguishing and insulating medium.

2 Switch cabinet is fully sealed, fully insulated structure; Bus bars, switches and live parts are completely enclosed in stainless steel housing.

The 3 cavities are filled with 1.4bar SF6 gas, and the protection level is IP67: The whole switch device is completely unaffected by external environmental conditions, and can ensure the normal operation of the switch even in extreme cases such as brief flooding, and the product is maintenance free for life.

4 The switchgear has a perfect "five prevention" interlock device to completely eliminate personnel and equipment operation failures that may be caused by human error.

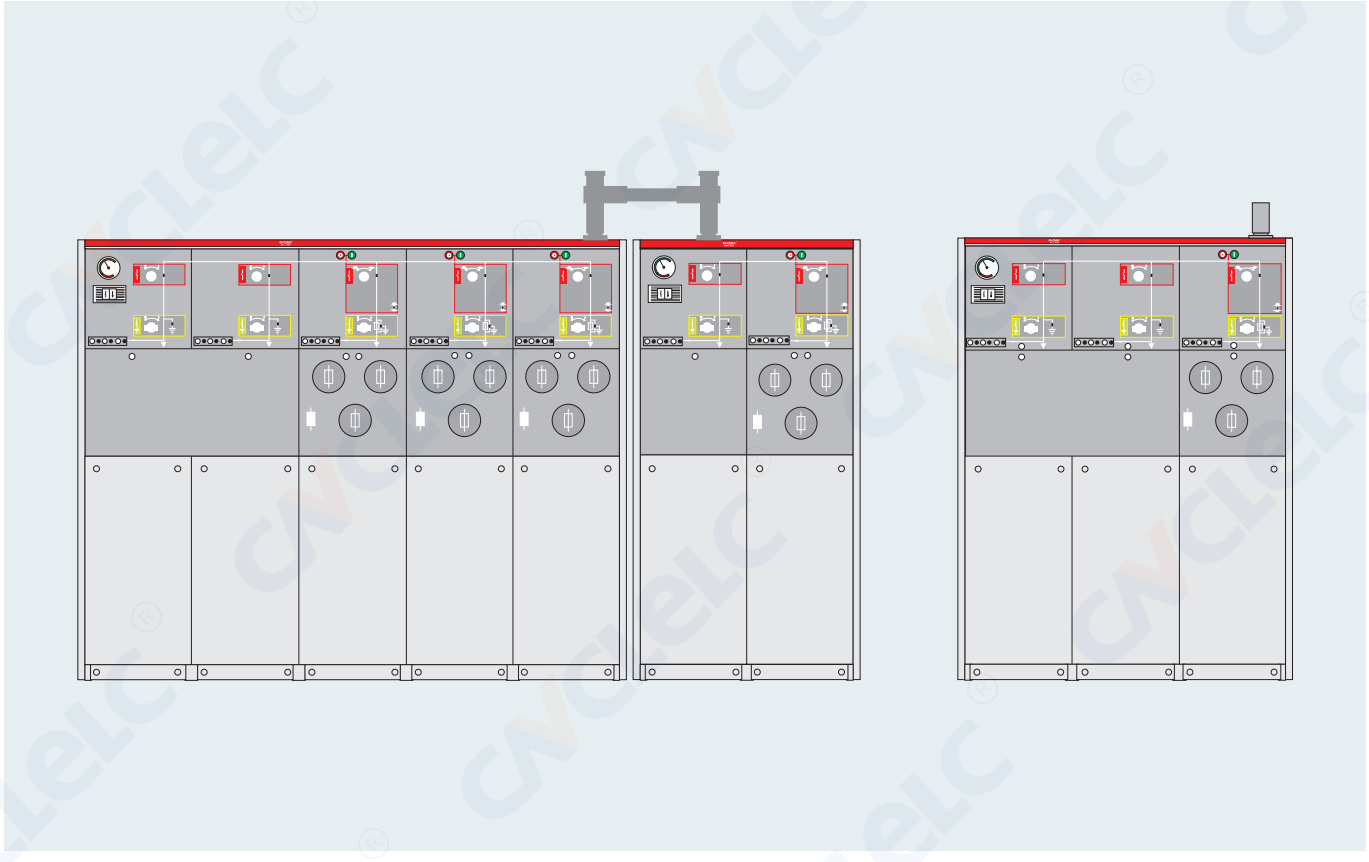
5 All switchgear has a reliable safe pressure relief channel, which can ensure the personal safety of the operator even in extreme circumstances.

6 The switchgear is divided into two categories: fixed unit combination and expandable unit combination.

7 The switch cabinet usually enters and exits from the front, and can also realize side exit or side expansion according to different installation positions.

8 cabinet size easy to install, and can be suitable for small space and poor environmental conditions.

9 The switch cabinet can be configured with electric, remote control and overflow detection according to different needs of users.



XGN43-12/17.5/24/36KV

Series SF6 Gas Insulated Ring Main Unit

Performance index

SF6 gas pressure: The absolute pressure at 20 ports is 1.4bar

Annual gas leakage rate: 0.2‰ /1 year

Protection level: IP67

Air chamber stainless steel thickness: 3.0mm

Bus bar

Bus in the switch cabinet: 400mm2Cu

Switchgear ground bus: 150mm2Cu

colour

Switchgear front panel: RAL 7012

Side panel and cable room front cover plate: RAL 7035

Normal operating environment conditions

Maximum temperature: 40℃

Minimum temperature: -40℃

Maximum average relative humidity: ≤ 95%

Altitude: ≤ 2000 m

Meet the criteria

GB/T11022	GB3906	GB1985
GB16926	GB38041	GB1984
GB3309		
IEC60056	IEC60129	IEC60256
IEC60298	IEC60420	IEC60694

XGN43-12kV/630A Technical Parameters

Sr.No.	Description			Unit	Load BreakeSwitch (C-module)	Switch- Fuse Combinations (F-module)	Vacuum Circuit Breaker(V/-module)
1	Rated voltage (Ur)			kV	12	12	12
2	Rated frequency(fr)			Hz	50	50	50
3	Rated current (Ir)			A	630	see (1)	630
4	Rated insulation level (Ud, Up,)	Power-frequency withstand voltage (Ud) (1 min)	Between phase and phase to earth	kV	42	42	42
			Across the isolating distance		48	48	48
			auxiliary and control circuits (Ua)		2	2	2
		Lightning impulse withstand voltage(Up)	Between phase and phase to earth		75	75	75
			Across the isolating distance		85	85	85
5	Rated short-time withstand current(Ik/tk)			kA/s	20/4 、 25/4	--	20/4 、 25/4
6	Rated peak withstand current (Ip)			kA	50 、 63	--	50 、 63
7	Rated short-circuit making current			kA	50 、 63	see (2)	50 、 63
8	Rated short-circuit breaking current(Isc)			kA	--	see (2)	20 、 25
9	Rated transfer current			A	--	1700	--
10	Rated active load breaking current			A	630	--	--
11	Rated closed-loop breaking current			A	630	--	--
12	Rated operating sequence.			/	--	--	O-0.3 s- CO -180 s-CO
13	Mechanical endurance	LBS/circuit breaker		Ops	10000	10000	20000
		Disc on nectar s Earthing s witc hes			3000	3000	3000
14	Circuit resistance			μQ	≤ 150	--	≤ 150
15	Rated pressure of SF6 gas(relative pressure at 20° ()			Mpa	≤ 0 .04		
16	Annual leakage rate (relati ve pressure)			/	5 0 .01%		
17	Insulating gas			/	SF6		
18	Degree of protection	Compartment		/	IP2XC		
		Gas tank		/	IP67		
		Enc losure		/	IP4X/IK10		
19	IAC c lassific ati on			/	A FLR 20kA/1 s, 25 kA/0.5 s		

XGN43-12/17.5/24/36KV

Series SF6 Gas Insulated Ring Main Unit

XGN43-17.5kV/630A Technical Parameters

Sr.No.	Description			Unit	Load BreakeSwitch (C-module)	Vacuum Circuit Breaker(V/-module)
1	Rated voltage (Ur)			kV	17.5	17.5
2	Rated frequency(fr)			Hz	50/60	50/60
3	Rated current (Ir)			A	630	630
4	Rated insulation level	Power-frequency withstand voltage (1min)	Common value	kV	38	38
			Across the isolating distance		45	45
			Control and auxiliary circuit		2	2
		Lightning impulse withstand voltage	Common value		95	95
			Across the isolating distance		110	110
5	Rated short-time withstand current(Ik/tk)			kA/s	21/1	21/1
6	Rated peak withstand current (Ip)			kA	62.5/65	62.5/65
7	Rated short-c ircuit making current			kA	--	--
8	Rated short-c ircuit breaking current(Isc)			kA	52.5/54.6	52.5/54.6
9	Rated transfer current			A	--	--
10	Rated active load breaking current			A	630	--
11	Rated closed-loop breaking current			A	630	630
12	Rated operating sequence.			/	--	O-0 3 s- CO -180 s-CO
13	Mec hanical endurance	LBS/circuit breaker		Ops	10000	10000
		Disc onnectors Earthing switc hes		Ops	3000	3000
14	Circuit res istance			μQ	≤ 150	≤ 150
1 5	Rated pressure of SF6 gas(relative pressure at 20° ()			Mpa	0.04	
16	Annual leakage rate			/	≤ 0.01%	
17	Insulating gas			/	SF6	
18	Degree of protection	Compar tment		/	IP2XC	
		Gas tank		/	IP67	
		Enc losure		/	IP41	

XGN43-24kV/630A Technical Parameters

Sr.No.	Description			Unit	Load BreakeSwitch (C-module)	Switch- Fuse Combinations (F-module)	Vacuum Circuit Breaker(V/-module)
1	Rated voltage (Ur)			kV	24	24	24
2	Rated frequency(fr)			Hz	50	50	50
3	Rated current (Ir)			A	630	see (1)	630
4	Rated insulation level (Ud, Up,)	Power-frequency withstand voltage (Ud) (1 min)	Between phase and phase to earth	kV	65	65	65
			Across the isolating distance		79	79	79
			auxiliary and control circuits (Ua)		2	2	2
		Lightning impulse withstand voltage(Up)	Between phase and phase to earth		125	125	125
			Across the isolating distance		145	145	145
5	Rated short-time withstand current(Ik/tk)			kA/s	20/4、25/4	--	20/4 、25/4
6	Rated peak withstand current (Ip)			kA	50、63	--	50 、63
7	Rated short-circuit making current			kA	50、63	see (2)	50 、63
8	Rated short-circuit breaking current(Isc)			kA	--	see (2)	20 、25
9	Rated transfer current			A	--	1700	--
10	Rated active load breaking current			A	630	--	--
11	Rated closed-loop breaking current			A	630	--	--
12	Rated operating sequence.			/	--	--	O-0.3 s- CO -180 s-CO
13	Mechanical endurance	LBS/circuit breaker		Ops	5000	5000	10000
		Disc on nectar s Earthing s witc hes			3000	3000	3000
14	Circuit resistance			μQ	≤ 150	--	≤ 150
15	Rated pressure of SF6 gas(relative pressure at 20° ()			Mpa	≤ 0 .04		
16	Annual leakage rate (relati ve pressure)			/	≤ 0.01%		
17	Insulating gas			/	SF6		
18	Degree of protection	Compartment		/	IP2XC		
		Gas tank		/	IP67		
		Enc losure		/	IP4X/IK10		

(1) Determined by the current rating of the fuse-link
(2) Limited by high voltage fuse-links

XGN43-12/17.5/24/36KV

Series SF6 Gas Insulated Ring Main Unit

XGN43-12kV /1250A Technical Parameters

Sr.No.	Description			Unit	Vacuum Circuit Breaker(V/-module)
1	Rated voltage (Ur)			kV	12
2	Rated frequency(fr)			Hz	50
3	Rated current (Ir)			A	1250
4	Rated insulation level	Power-frequency withstand voltage (1min)	Common value	kV	42
			Across the isolating distance		48
			Control and auxiliary circuit		2
		Lightning impulse withstand voltage	Common value		75
			Across the isolating distance		85
5	Rated short-time withstand current			kA/s	25、31.5/4
6	Rated peak withstand current			kA	63 、80
7	Rated short-circuit breaking current			kA	25、31.5
8	Rated short-circuit making current			kA	63 、80
9	Rated operation sequence			A	0.3s-C0-180s-CO
10	Mec hanical endurance	LBS/circuit breaker		Ops	10000
		Disc onnectors Earthing switc hes		Ops	3000
11	Circuit res istance			μQ	≤ 150
12	Rated pressure of SF6 gas(relative pressure at 20° ()			Mpa	0.04
13	Annual leakage rate			/	≤ 0.01%
14	Insulating gas			/	SF6
15	Degree of protection	compar tment(IP code)		/	IP2XC
		Tank(IP code)		/	IP67
		Switchgear(IP code)		/	IP41
		Switchgear(IK code)		/	Ik10
16	IAC classification			/	A FLR 31.SkA/0.5s

XGN43-36kV Technical Parameters

Sr.No.	Description			Unit	C-module	F-module	V-module
1	Rated voltage (Ur)			kV	36	36	36
2	Rated frequency(fr)			Hz	50	50	50
3	Rated current (Ir)			A	630	see [1)]	630
4	Rated insulation level	Power-frequency withstand voltage (1 min)	Common value	kV	95	95	95
			Across the isolatingd istance	kV	118	118	118
			Control and auxiliary circuit	kV	2	2	2
		Lightning impulse withstand voltage	Common value	kV	185	185	185
			Across the isolating distance	kV	215	215	215
5	Rated short-time withstand current			kA/ s	25/4	--	25/4
6	Rated peak withstand current			kA	63	--	63
7	Rated short-circuit breaking current			kA	--	see	25
8	Rated short-circuit making current			kA	63	see	63
9	Rated trans fer current			A	--	840	--
10	Rated on load breaking current			A	630	--	--
11	Rated c losed circuit breaking current			A	630	--	630
12	Rated operation sequence			/	--	--	0-0.3s-C0-180s-CO
13	Mechanical endurance	LBS/circuit breaker		Ops	5000	5000	10000
		Disc on nectar s Earthing s witc hes			3000	5000	3000
14	Circuit resistance			μQ	≤ 150	--	≤ 150
15	Rated pressure of SF6 gas(relative pressure at 20° ()			Mpa	0.04		
16	Annual leakage rate (relati ve pressure)			/	≤ 0. 01%		
17	Insulating gas			/	SF6		
18	Degree of protection	compartment(IP code)		/	IP2XC		
		Tank(IP code)		/	IP67		
		Switchgear(IP code)		/	IP41		
		Switchgear(IK code)		/	IK10		

(1) Determined by the current rating of the fuse-link

Non-extended standard module

Each module of the XGN43-12 switchgear has the following configurations

1 Capacitive voltage indicator for inlet bushing

2 Install a manometer for monitoring SF6 density in each chamber

3 Lifting lugs for lifting

4 Operation handle

Assorting

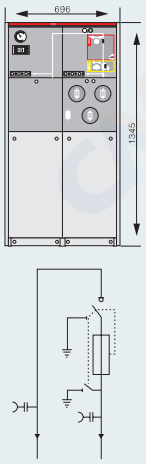
1 Electric operating mechanism

2 Cable short circuit and ground fault indicator

3 Cable transformer and meter

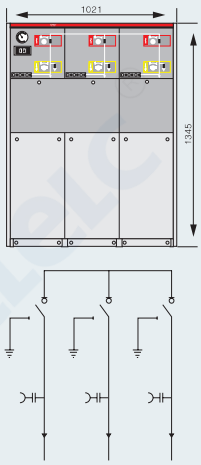
4. Remote monitoring and connection

DF



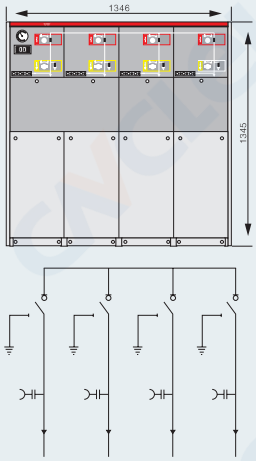
Standard 2-way DF(KG)

CCC



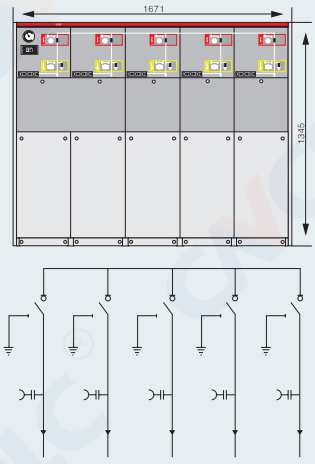
Standard 3-way CCC(KG)

CCCC



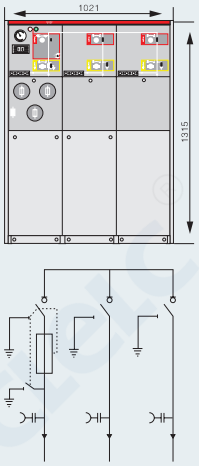
Standard 4-way CCCC(390KG)

CCCCC



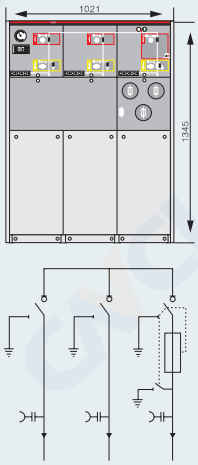
Standard 5-way CCCCC(480KG)

FCC



Standard 3-way FCC(320KG)

CCF



Standard 3-way CCF(320KG)

CLSR-12

Compact Solid Insulated
Ring Main Unit (RMU)

Overview

The CLSR-12 series is a new generation of compact solid insulated ring cabinet with a high level of operational safety, which is applied in the distribution network as the core unit of the distribution network. The main modular components of the equipment include circuit breaker and three-station isolation switch body, load switch and three-station isolation switch body, fuse tube, insulated bus and cable joint. All high-voltage live parts are cast with high-quality insulating materials. The vacuum interrupter, main circuit, insulation support, etc. are organically integrated into a whole to achieve a fully insulated, fully sealed, maintenance-free structure. At the same time, it also greatly reduces the insulation gap between switches, and observes the position state of the ground switch through an independent observation window each time to ensure the safety of operation overhaul and maintenance.

CLSR-12

Compact Solid Insulated Ring Main Unit (RMU)

Model meaning

CL	SR	-	12	(□)	/	D	□	□
↓	↓		↓	↓		↓	↓	↓
Corporate code	Solid insulation		Rated voltage	Type of master switch (C is the load switch, F is the load switch-fuse combination, V is the circuit breaker)		Ground distribution switch	Rated current	Breaking capacity

Product classification

According to the function in the system, it can be divided into incoming cabinet, outgoing cabinet, busbar cabinet, metering cabinet, PT cabinet, arrester cabinet and other powerEnergy unit, different functional units have different wiring schemes, usually represented by wiring schemes.

According to the main switch category of the configuration, it can be divided into load switch cabinet (referred to as C cabinet I), load switch fuse combination electrical cabinet (JaneCalled F cabinet), and circuit breaker cabinet (referred to as V cabinet).

Typical use

CLSR-12 series compact solid insulated ring cabinet is a green environmental protection switchgear independently developed and produced by our company. It has passed the product test of the National Electrical Products Quality Supervision and Inspection Center and is suitable for thousands of power distribution systems - including extremely harsh environments.

Substation

User substations, power systems and utilities of substations and open latches.

Industrial field

Wind power stations, high-rise buildings, airports, open-pit coal mines, subway stations, sewage treatment plants, port facilities, traction power supply systems, automotive industry, petroleum industry, chemical industry, cement industry, thermal power plants, textile industry, paper industry and emergency power supply systems.

CLSR-12

Compact Solid Insulated Ring Main Unit (RMU)

Product characteristics

● Safe to use

○ Completely using solid insulation, green environmental protection, there is no internal switch short circuit, pressure rise caused by the explosion caused by casualties;

○ Three-phase solid insulation installation, service life of up to 30 years;

○ Vacuum interrupter circuit breaker module, with the ability to open and close short circuit current;

○ Ground switch position Xuan visible, with the ability to close the short circuit current;

○ Three-station isolation switch with patented technology to optimize electric field structure;

○ Reliable mechanical and electrical interlock, effectively avoid misoperation.

● Green and environmental protection

○ SF6 gas is not used as arc extinguishing and insulation;

○ Circuit breaker, isolating switch and grounding switch adopt optimized integrated design, compact structure and small volume;

○ The main loop uses the minimum contact design to ensure low energy consumption during operation;

○ Fully designed with environmentally friendly materials.

● Intelligent design

○ Smart grid automation with advanced protection, control and monitoring functions;

○ The insulated bus and connecting components adopt a modular design, which can be flexibly combined according to the scheme to meet the needs of users to the greatest extent.

Standard

GB1984-2003 "High voltage AC Circuit breaker";

GB1985-2004 "High voltage AC isolation switch and ground switch";

GB3804-2004 3.6 ~ 40.5KV "High voltage AC load switch";

GB3906-2006 3.6 ~ 40.5KV "AC metal enclosed Switchgear and Control equipment";

GB16926-2009 "AC load switch - fuse combination appliance";

DL/T402-2007 "High voltage AC circuit breaker ordering technical conditions";

GB/T11022-2011 "High voltage switchgear and control equipment standard common technical requirements".

Use environment

● Ambient temperature: not higher than +40 house, not lower than -40 it;

● Altitude: no more than 3000 meters;

● Relative air temperature: daily average is not more than 95%, monthly average is not more than 90%, saturated steam pressure daily average is not more than 2.2Kpa, monthly average is not more than 1.8Kpa;

● Earthquake intensity: not more than 8 degrees;

● No fire, explosion, serious pollution, chemical corrosion and violent vibration.

Technical parameter

Rated voltage	Units	Argument
Routine		
Rated voltage	KV	12
Rated current	A	630
Rated frequency	Hz	50
Power frequency withstand voltage	kV/min	42/48
Lightning impulse voltage	KV	75/85
Arc waiting time	s	20kA/O 5s
Cabinet protection level		IP3X
Operating supply voltage	V	DC: 24,48,110,220 AC: 110, 220
Bus system		
Rated current	A	630
Rated short-time withstand current	kA/s	20/4
Rated peak withstand current	kA	50
Load Switch Unit (C)		
Rated current	A	630
Rated short-circuit closing current	kA	50
Rated short-time withstand current	KA/s	20/4
Load switch mechanical life	time	M2 1000
Three-station isolation switch mechanical life	time	M1 3000
Load switch electrical life	time	E3
Circuit Breaker Unit (V)		
Rated current	A	630
Rated short-circuit breaking current	kA	20
Rated short-circuit closing current	kA	50
Rated short-time withstand current	kA/s	20/4
Mechanical life of circuit breaker	time	M2 10000
Three-station isolation switch mechanical life	time	M1 3000
Circuit breaker electrical life	time	E2
Rated operating sequence		0-0 3s-C0-180s-CO
Load switch-Fuse Unit (F)		
Rated current	A	100
Rated short-circuit breaking current	kA	31.5
Rated short-circuit closing current	kA	80
Rated crossover current	A	3150

CLH-12

Series Eco-Friendly Gas Insulated RMU

Overview

MGA series eco-friendly gas insulated AC metal-enclosed switchgear and control equipment (hereinafter referred to as MGA series switchgear)is an environmentfriendly gas-insulated medium-voltage switchgear developed independently by Chuanli. It features green and environmentally friendly, reliable performance, guaranteed safety, compact design, small footprint, maintenance-free operation, long lifespan, and strong adaptability to various environmental conditions.

The MGA series switchgear is a fully sealed system, with all primary components and switches enclosed within a stainless steel shell, which is not affected by the environment. The product adopts a modular design, allowing for flexible arrangement according to different design schemes, enabling combinations of compact and expandable units to meet the requirements of various secondary distribution substations for compact switchgear.

The MGA series switchgear has passed the type tests conducted by the nationallevel high-voltage electrical apparatus testing center, making it suitable for a wide range of applications, including small-scale secondary distribution substations, compact switch houses, industrial and mining enterprises, airports, railways, commercial areas, high-rise buildings, highways, subways, tunnels, and locations with harsh environmental conditions.

CLH-12

Series Eco-Friendly Gas Insulated RMU

Model meaning

CLH	-	12	(□)	/	630	-	20
↓		↓	↓	↓	↓		↓
Rated short-timeWIthstand current (kA)		Rated current (A)	Switch module(C,V...)		Rated voltage(kV)		Enterprise type

Applicable Standards

IEC 62271-100 :2012 High-voltage switchgear and controlgear-Part 100: Alternating-current circuit-breakers

IEC 62271-105 High-voltage switchgear and controlgear-Part 105: Alternating current switch-fuse combinations

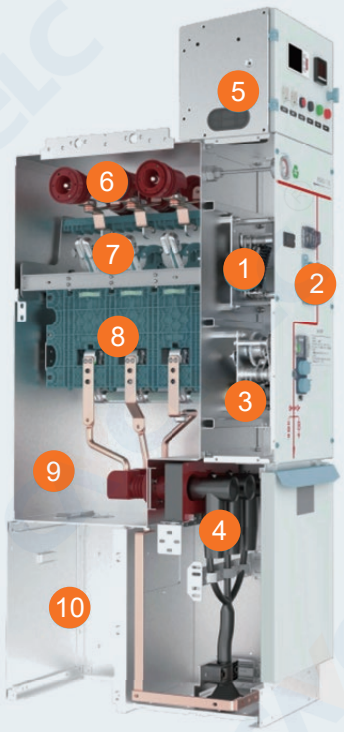
IEC 62271-102 High-voltage switchgear and controlgear-Part 102: Alternating current disconnectors and earthing switches

IEC 62271-103 High-voltage switchgear and controlgear-Part 103: Switches for rated voltages above 1 kV and up to and including 52 kV

IEC 62271-200 : 2011 High-voltage switchgear and controlgear-Part 200: AC metal-enclosed switchgear and controlgear for rated voltage above 1 kV and up to and including 52 kV

IEC 62271-1 : 2007 High-voltage switchgear and controlgear-Part 1: Common specifications

Main components of eco-friendly gas insulated ring main unit



① Main components
② Operation panel
③ Main switch mechanism
④ Cable compartment
⑤ LV compartment
⑥ Bus connection bushing
⑦ Isolator
⑧ Arc extinguishing device
⑨ Gas tank
⑩ Pressure relief device

Diagram of the core components of the VCB unit (upper isolation switch)

① Isolation switch mechanism

The isolation switch mechanism is with single spring and double operation hole structure;On the basis of the load switch mechanism, an interlock module with the circuit breaker mechanism is added;

Rigid interlocking method is adopted, ensuring safety and reliab 小 ty, and minimizing the risk of misoperation; The operation control unit is integrated and modularized and placed in front for easy maintenance.

② Vacuum circuit breaker mechanism

The vacuum circuit breaker mechanism is with fastreclosing function;

With comprehensive interlocking device and rigid interlocking method, ensuring safety and reliability, and minimizing the risk of misoperation;

The operation control unit is integrated and modularized and placed in front for easy maintenance.

③ Vacuum circuit breaker components

The vacuum circuit breaker adopts a cam-driven transmission mode, and the arc extinguishing chamber is fixed using end-face connections, ensuring stable overtravel and contact gaps. It employs an upper isolation structure, meeting the requirements of standardized customization for power grids. High-quality insulation materials are used to ensure that the partial discharge quantity at 1.1 times the rated voltage is less than 20pC.

Voltage equalization measures are implemented to ensure electric field balance, no additional insulating partitions are required between phases.

Diagram of the core components of isolating switch

① Isolation switch operating mechanism

The CLH series isolating switch operating mechanism, designed specifically for MGA series switchgear, is available as a compatible accessory. This mechanism is mainly designed for the VMA series isolating switch, enabling the opening, closing, and grounding functions of the three-position isolating switch

② Isolation switch components

The isolating switch adopts a three-position design of closing, opening and grounding, which is stable in operation, safe and reliable;

The optimized design of the conductor contact surface of the isolating switch improves the conductivity and operational stability;

High-quality insulation materials are used to ensure that the partial discharge quantity at 1.1 times the rated voltage is less than 20pC.

Voltage equalization measures are implemented to ensure electric field balance, no additional insulating partitions are required between phases.

Technical Parameters

Sr.No.	Description			Unit	Load BreakeSwitch (C-module)	Switch- Fuse Combinations (F-module)	Vacuum Circuit Breaker(V/-module)
1	Rated voltage (Ur)			kV	12	12	12
2	Rated frequency(fr)			Hz	50	50	50
3	Rated current (Ir)			A	630	125 see(1)	630
4	Rated insulation level (Ud, Up,)	Power-frequency withstand voltage (Ud) (1 min)	Between phase and phase to earth	kV	42	42	42
			Across the isolating distance		48	48	48
			auxiliary and control circuits (Ua)		2	2	2
		Lightning impulse withstand voltage(Up)	Between phase and phase to earth		75	75	75
			Across the isolating distance		85	85	85
5	Rate s h ort-ti me withstand current			kA/s	20/4	--	20/4
6	Rated peak withstand current			kA	50	--	50
7	Rated s hort- circuit breaking current			kA	--	see(2)	20
8	Rated s hort- circuit making current			kA	50	see(2)	50
9	Rated on load breaking current			A	630	--	--
10	Rated c l osed circuit breaking current			A	630	--	--
11	Rated operatiing sequence			/	--	--	O-0.3s-C0-180s-CO
12	Mec hanica l endurance	LBS/circuit breaker		Ops	10000	10000	10000
		Isolating/earthing switch		Ops	3000	3000	3000
13	Circuit resistance			μQ	≤ 150	--	≤ 150
14	Rated pressure o f gas (relative pressure at 20° C)			M P a	0.02		
15	Annual leakage rate			Year	≤ 0.01%		
16	Insulating gas			/	N2		
17	Degree of protection	Compartment(IP code)		/	IP2XC		
		Gas tank(IP code)		/	IP67		
		Enclosure(IP code)		/	IP41		
		Enclosure(IK code)		/	Ik10		
18	IAC classification			/	A FLR 20 kA/1 s		

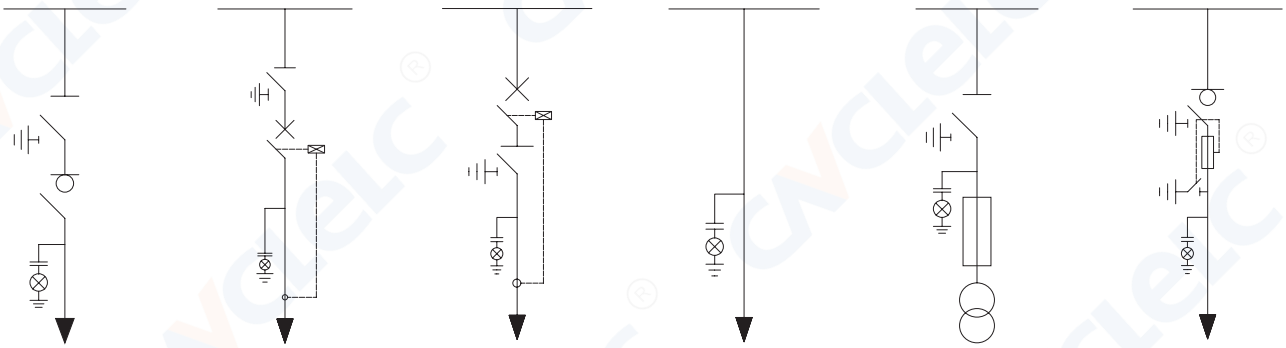
(1) Determined by the current rating of the fuse-link
(2) Limited by high voltage fuse-links

CLH-12

Series Eco-Friendly Gas Insulated RMU

Typical primary scheme

C - LBS unit	V-VCB unit (lower disconnector)	V-VCB unit (lower disconnector)	D- bus connection unit	PT unit	F-LBS-fuse combinations



Note: The basic units can be combined to form a shared enclosure scheme, allowing for a maximum of 4 units in one enclosure, meeting customers'personalized customization needs. For more detailed solutions, please inquire with our company's technical support.

Outline Dimension

Type		Width (W)	Height (H)	Depth (D)
C	top extension	420mm	1950mm	850mm
	side extension	420mm	2000mm	850mm
V	top extension	420mm	1950mm	850mm
	side extension	420mm	2000mm	850mm
PT	top extension	600mm	1950mm	850mm
	side extension	600mm	2000mm	850mm
D	top extension	420mm	1950mm	850mm
	side extension	420mm	2000mm	850mm

ZBW-12/0.4(F.R)

Outdoor medium voltage prefabricated substation (European)

Overview

ZBW-12/0.4(F.R) Outdoor pre-installed substation (European), is a high-voltage switchgear distribution transformer and low-voltage distribution device, according to a certain wiring scheme arranged into one of the factory prefabricated indoor and outdoor compact distribution equipment, that is, high-voltage power, transformer, low-voltage distribution and other functions organically combined together. Installed in a moisture-proof, rust-proof, dust-proof, rat-proof, fire-proof, anti-theft, spacer, fully enclosed, movable steel structure or non-metal box, mechatronics fully closed operation;

Widely used in urban power grid transformation, residential areas, high-rise buildings, industrial and mining, hotels, shopping malls, airports, railways, oil fields, docks, highways and temporary electricity facilities and other indoor and outdoor places.

ZBW-12/0.4(F.R)

Outdoor medium voltage prefabricated substation (European)

Model meaning

ZBW	□	-	12/0.4	-	□
↓	↓		↓		↓
Pre-installed substation	Design sequence number		Rated voltage (high/low voltage)		Transformer capacity

Environmental conditions of use

- Altitude does not exceed 2000m;
- Ambient temperature: -25℃ ~+40℃ ;
- Relative humidity: at 25℃ , the daily average is not more than 95%, the monthly average is not more than 90%;
- Installation site: no fire, explosion danger, conductive dust, chemical corrosive gas and violent vibration of the place, if beyond the above conditions, users can negotiate with our company.

Function and characteristics

- High-voltage switchgear, distribution transformer, low-voltage switchgear power metering equipment and reactive power compensation device according to a certain scheme combination, complete sets of strong;
- Perfect high and low pressure protection, safe and reliable operation, simple maintenance;
- Small footprint, less investment, short production cycle, easy to move;
- Flexible wiring scheme;
- Unique structure: unique honeycomb structure double layer (composite board) shell is strong, heat insulation and heat dissipation ventilation, beautiful, high protection level, shell materials are stainless steel alloy, aluminum alloy, cold rolled plate, color steel plate optional;
- Various types: universal type, villa type, compact and other styles;
- High voltage ring network cabinet can be equipped with network automation terminal (FTU) to realize the reliable detection of short circuit and single-phase grounding fault, with "four remote" function, easy to upgrade the distribution network automation.

Transformer

Intelligent integrated substation selection of low loss, oil immersed, fully sealed S9, S10, S11 series transformers, can also choose resin insulation or NOMEX paper insulation environmentally friendly dry transformer, the bottom can be equipped with a car, the transformer can be convenient access.

High pressure side

Intelligent integrated substation high voltage generally adopts load switch-fuse combination electrical protection, fuse one phase of the fuse fuse, three-phase linkage trip, load switch has pressure type, vacuum, sulfur hexafluoride and other types of optional, can be equipped with electric operating mechanism, automation upgrade; Fuse is high voltage current limiting fuse, with impactor, reliable operation, large breaking capacity, the main technical parameters are shown in the following table. For transformers above 800kVA, ZN12, ZN28,VS1 and other vacuum circuit breakers can be used for protection.

Low pressure side

Low voltage side main switch adopts universal or intelligent circuit breaker, selective protection; The new type of plastic-case switch is selected as the outlet switch, which has small volume and short fly-arc, and can reach up to 30 circuits. Intelligent automatic tracking reactive power compensation device, there are contactor and contactless two switching modes for users to choose.

ZBW-12/0.4(F.R)

Outdoor medium voltage prefabricated substation (European)

Enforce standards

This product meets the following standards:

GB/T17467-1998 "High voltage/Low voltage pre-installed substation"

DL/T537-93 "6-35kV box-type substation ordering Technical Conditions"

Load switch technical parameters

Item	Units	FKN12-12 load switch	FZN12-12 Vacuum load switch
Rated voltage	kV	10	
Maximum operating voltage	kV	12	
Rated frequency	Hz	50	
Rated current	A	630	
Rated breaking load current	A	630	
Heat stable current	kA/S	20/2	20/4
Dynamic stable current	kA	50	50
Short-circuit closing current (peak)	kA	50	50
Full load breaking times	time	20	10000
Mechanical life	time	2000	10000
1min power frequency withstand voltage (phase to phase and ground)	kV	42	42
Lightning impulse voltage (relative and to ground)	kV	75	75

Technical parameters of high voltage fuse

Model number		Rated voltage (kV)	Breaking current(A)	Breaking current(kA)	Rated current of melt(A)
British model	Domestic model				
SDL※J	XRNT-12	12	40	31.5	6.3, 10,16,20,25,31.5, 40
SFL※J	XRNT-12	12	100	31.5	50,63,71,80,100
SKL※J	XRNT-12	12	125	31.5	125

* Note: Determined by whether an impactor is installed, N means no firing pin and A means there is a firing pin.

Model number	Release form	Rated current of the release A	On-off capacity kA (AC380V)
DW15-630	Thermo-electromagnetic or electronic type	315,400,630	40
DW15-1000	Thermo-electromagnetic or electronic type	630,800,1000	50
DW15-1600	Thermo-electromagnetic or electronic type	1600	50
DW15-2500	Thermo-electromagnetic or electronic type	1600,2000,2500	60
CW1-2000	intelligent	630,800,1000,1250,1600,2000	65 (80)
CW1-3200	intelligent	2000,2500,3200	100

Note: (80) polymer fracture type.

ZBW-12/0.4(F.R)

Outdoor medium voltage prefabricated substation (European)

Primary plan drawing

The substation primary scheme is shown in the attached drawing.

Example diagram of a typical scheme

See the attached figure for an example of a typical scheme.

Foundation and floor plan

The basic drawing of substation is referred to the attached drawing. The layout of substation is shown in the attached drawing, and users can choose according to their needs.

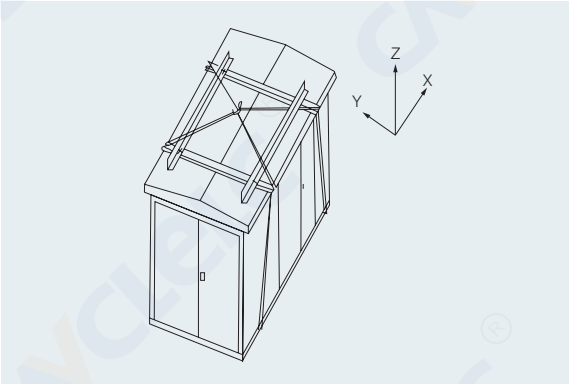


FIG. 3 Product lifting diagram

Installation, use and maintenance

In addition to the requirements of the power department in terms of installation, acceptance, handover test, operation and maintenance, intelligent integrated substation should pay attention to the following matters:

● When the user receives the goods, it should be carefully checked according to the relevant regulations. For the products that are not installed immediately, they should be stored in the appropriate place according to the normal conditions of use.

● The product should be lifted at the bottom of the special spreader, as shown in Figure 3.

● The product is placed horizontally on a pre-made basis, and then the gap between the product base and the foundation is sealed with cement slurry to prevent rain from entering the cable room, and the high and low voltage cables are accessed through the bottom sealing plate of the high and low pressure chambers.

● The product should be reliably grounded after installation; The two main ground terminals on the channel steel of the power station base, the neutral point of the transformer and the shell, and the pile head under the arrester should be grounded respectively by the installation department. All grounding devices should share a set of grounding devices, the grounding resistance should be less than 4 ohms;

● After the installation or maintenance of the product, the following items should be inspected and tested before operation:

○ Whether the substation is clean;

○ Whether the operating mechanism is flexible;

○ Whether the main electrical appliances are flexible and reliable;

○ Whether the electrical auxiliary contact is reliable and accurate;

○ Whether the meter and relay operation are accurate;

○ Whether the ratio and wiring polarity of the instrument and transformer are correct;

○ Whether all electrical installation nuts are tightened, whether the installation is firm and reliable;

○ Whether the bus is well connected, its support insulator, whether the clamp is installed reliably;

○ Whether the setting value of the electrical appliance meets the requirements and whether the melt core specification of the fuse is correct:

○ Whether the contacts of the main circuit and auxiliary circuit meet the requirements of the electrical schematic diagram.

● Maintenance

○ All components in the product are maintained according to their respective technical requirements:

○ If the selected transformer is oil-immersed, the oil sample analysis should be checked at least once a year according to the regulations;

○ High voltage side switchgear in operation, after 20 times with load or 2000 times without load opening and closing operation, should check the contact condition and loss degree of arc extinguishing device, found abnormal should be repaired or replaced in time.

○ Low-voltage switchgear automatic trip, should check and analyze the cause of the trip, after troubleshooting, can be put into operation again;

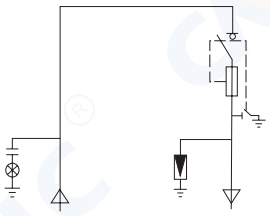
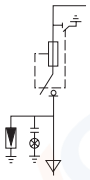
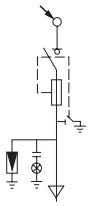
○ The arrester should be carried out a preventive test every year before the thunderstorm season;

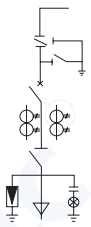
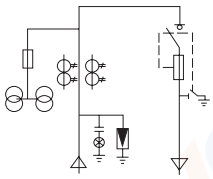
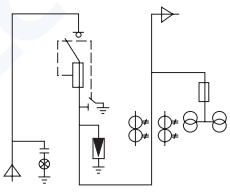
Note: Packing list, certificate of qualification, installation instruction manual, electrical wiring diagram, instructions of the main components and equipment used in this product, key operation tools and spare parts provided in accordance with the agreement are attached.

ZBW-12/0.4(F.R)

Outdoor medium voltage prefabricated substation (European)

Technical solution legend

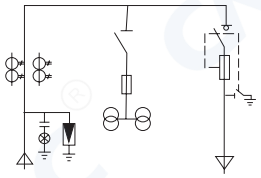
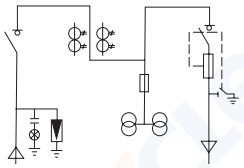
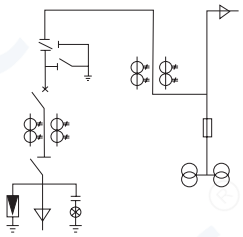
Scheme number	01	02	03
Main circuit scheme diagram			
Use	Terminal type cable inlet/primary outlet	Terminal type (backward) incoming line	Terminal type overhead line
Cabinet type	HXGN-12	HXGN-12	HXGN-12
Major electrical component: Vacuum circuit breaker VS1, ZN28			
Major electrical component: Load switch FN, FZN, FLN	1	1	1
Major electrical component: Disconnecting switch GN			
Major electrical component: Fuse XRNT	3	3	3
Major electrical component: Fuse RN2			
Major electrical component: Lightning arrester HY5W	3	3	3
Major electrical component: Live display GSN	1	1	1
Major electrical component: The current transformer			
Major electrical component: Voltage transformer JDZ			

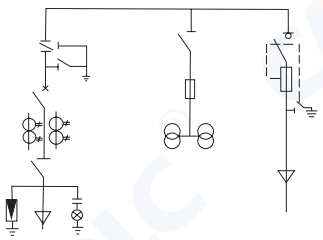
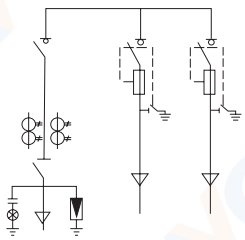
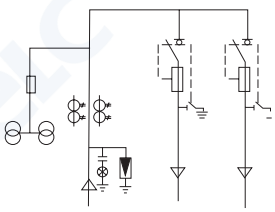
Scheme number	04	04	06
Main circuit scheme diagram			
Use	Terminal type vacuum circuit breaker incoming line	Terminal type inlet metering \ primary outlet	Terminal type cable inlet line \ primary outlet line \ metering
Cabinet type	XGN66-12	HXGN-12	HXGN-12
Major electrical component: Vacuum circuit breaker VS1, ZN28	1		
Major electrical component: Load switch FN, FZN, FLN		1	1
Major electrical component: Disconnecting switch GN	2		
Major electrical component: Fuse XRNT		3	3
Major electrical component: Fuse RN2		3	3
Major electrical component: Lightning arrester HY5W	3	3	3
Major electrical component: Live display GSN	1	1	1
Major electrical component: The current transformer	2	2	2
Major electrical component: Voltage transformer JDZ		2	2

ZBW-12/0.4(F.R)

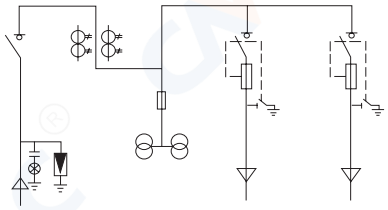
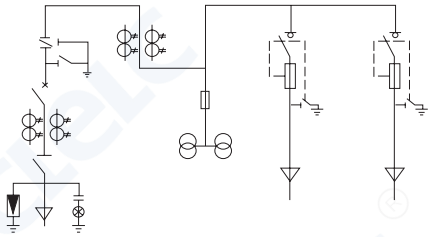
Outdoor medium voltage prefabricated substation (European)

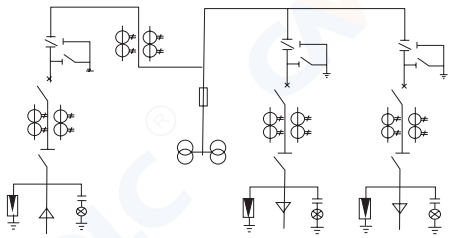
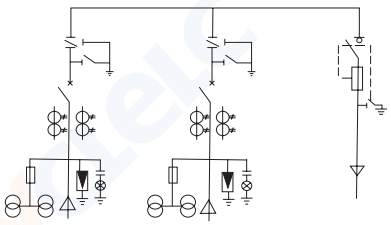
Technical solution legend

Scheme number		07	08	09
Main circuit scheme diagram				
Use		Terminal type inlet metering \ PT \ primary outlet	Terminal type primary line \ metering \ primary line	Terminal type circuit breaker inlet/ metering
Cabinet type		HXGN-12	HXGN-12	XGN66-12
Major electrical component	Vacuum circuit breaker VS1, ZN28			1
	Load switch FN, FZN, FLN	1	2	
	Disconnecting switch GN	1		2
	Fuse XRNT	3	3	3
	Fuse RN2	3	3	3
	Lightning arrester HY5W	3	3	3
	Live display GSN	1	1	1
	The current transformer	2	2	4
	Voltage transformer JDZ	2	2	2

Scheme number		10	11	12
Main circuit scheme diagram				
Use		Terminal type circuit breaker inlet line \ PT \ primary outlet line	Terminal type primary entry line \ double exit line	Terminal type inlet metering \ double outlet line
Cabinet type		XGN66-12 HXGN-12	HXGN-12	HXGN-12
Major electrical component	Vacuum circuit breaker VS1, ZN28	1		
	Load switch FN, FZN, FLN	1	3	2
	Disconnecting switch GN	3	1	
	Fuse XRNT	3	6	6
	Fuse RN2	3		3
	Lightning arrester HY5W	3	3	3
	Live display GSN	1	1	1
	The current transformer	2	2	2
	Voltage transformer JDZ	2		2

Technical solution legend

Scheme number		13	14
Main circuit scheme diagram			
Use		Terminal type primary entry line \ metering \ double exit line	Terminal type circuit breaker inlet line \ metering \ primary outlet line
Cabinet type		HXGN-12	XGN66-12 HXGN-12
Major electrical component	Vacuum circuit breaker VS1, ZN28		1
	Load switch FN, FZN, FLN	3	2
	Disconnecting switch GN		2
	Fuse XRNT	6	6
	Fuse RN2	3	3
	Lightning arrester HY5W	3	3
	Live display GSN	1	1
	The current transformer	2	4
	Voltage transformer JDZ	2	2

Scheme number		15	16
Main circuit scheme diagram			
Use		Terminal type circuit breaker incoming line \ metering \ two circuit breaker outgoing line	Terminal type two circuit breaker inlet line \ primary outlet line
Cabinet type		XGN66-12	XGN66-12 HXGN-12
Major electrical component	Vacuum circuit breaker VS1, ZN28	3	2
	Load switch FN, FZN, FLN		1
	Disconnecting switch GN	6	2
	Fuse XRNT		3
	Fuse RN2	3	6
	Lightning arrester HY5W	9	6
	Live display GSN	3	2
	The current transformer	8	4
	Voltage transformer JDZ	2	4

Note: Optional measurement and control protection unit can be installed to realize distribution network automation.

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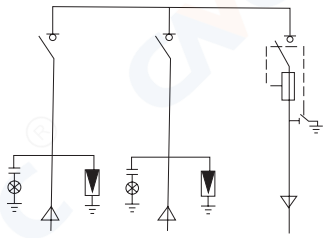
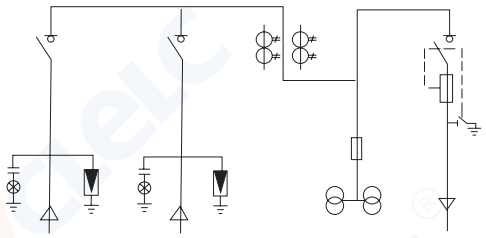
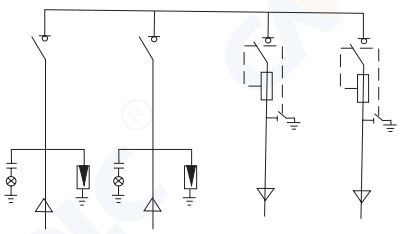
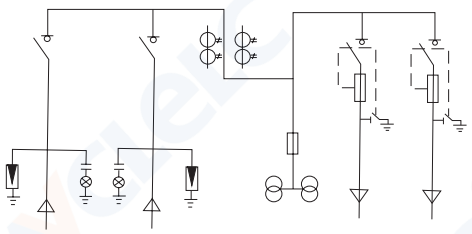
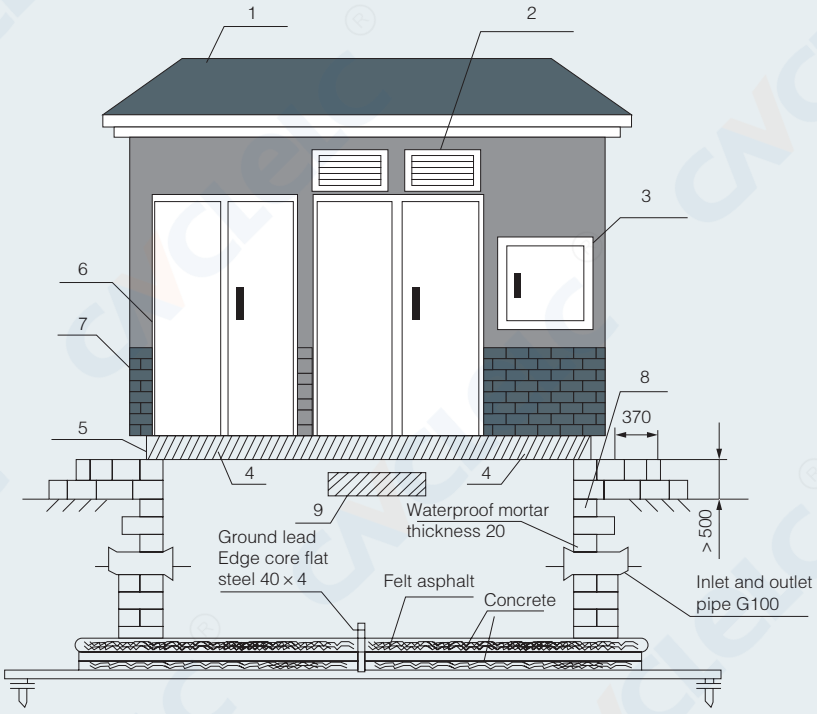
Outdoor medium voltage prefabricated substation (European)

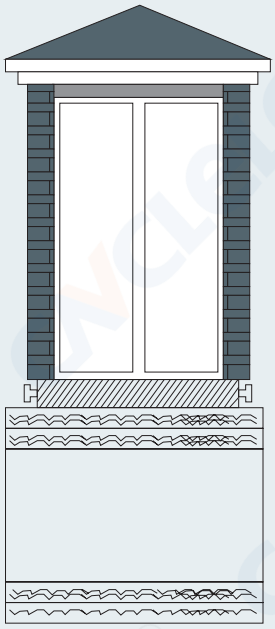
Technical solution legend

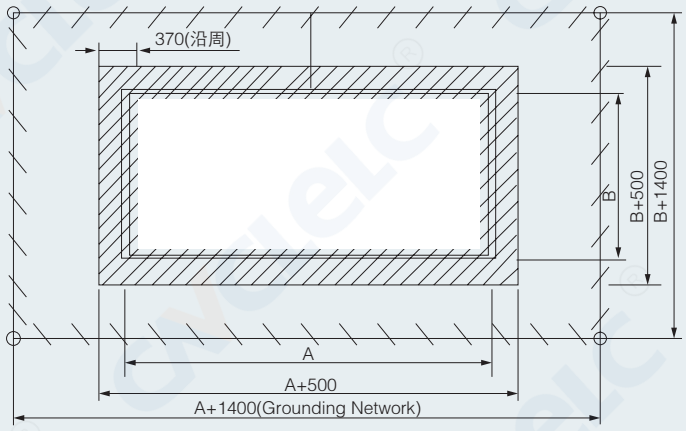
Scheme number		17	18
Main circuit scheme diagram			
Use		Loop type double entry line \ primary exit line	Ring mesh type double entry line \ metering \ primary exit line
Cabinet type		HXGN-12	HXGN-12
Major electrical component	Vacuum circuit breaker VS1, ZN28		
	Load switch FN, FZN, FLN	3	3
	Disconnecting switch GN		
	Fuse XRNT	3	3
	Fuse RN2		3
	Lightning arrester HY5W	6	6
	Live display GSN	2	2
	The current transformer		2
	Voltage transformer JDZ		2

Scheme number		19	20
Main circuit scheme diagram			
Use		Loop type two return line \ two return line	Loop type two return line \ metering \ two return line
Cabinet type		HXGN-12	HXGN-12
Major electrical component	Vacuum circuit breaker VS1, ZN28		
	Load switch FN, FZN, FLN	4	4
	Disconnecting switch GN		
	Fuse XRNT	6	6
	Fuse RN2		3
	Lightning arrester HY5W	6	6
	Live display GSN	2	2
	The current transformer		2
	Voltage transformer JDZ		2

Installation dimension drawing







Note: A and B are the outline dimensions of the substation base

1. Roof
2. Blinds
3, external metering box
4. Lift the ring
5, steel groove bottom frame
6. Doors
7, brick, brick wall surface
8. Concrete foundation
9. Base vent

ZBW-12/0.4(F.R)

Outdoor medium voltage prefabricated substation (European)

Substation structure drawing

Substation high voltage chamber

Substation transformer room

Substation low voltage chamber

ZBW-12/0.4(F.R)

Outdoor medium voltage prefabricated substation (European)

Some product outline examples

ZBW-12/0.4(F.R)

Outdoor medium voltage prefabricated substation (European)

Some product outline examples

ZBW-12

Pre-installed Compact Substation
(American type)

Overview

ZBW series preassembled box-type substation (commonly known as American box-type transformer), its structure is "product" font structure, transformer and high and low voltage equipment are closely connected as one, among which, three sides of the transformer exposed to the air, good heat dissipation conditions, and can be separated from the high and low voltage equipment housing, easy maintenance.

The 813 series oil-immersed transformer with chip type oil tank, no oil cushion, fully enclosed, high and low pressure bushing, tap changer, oil level indicator, pressure release valve, oil release valve, etc. are installed on the end plate of the high-pressure chamber body, the position is reasonable, easy to observe and operate. The high-pressure chamber and low-pressure chamber are separated by steel plates. The high-pressure chamber and low-pressure chamber transformers are relatively independent and maintain a complete box as a whole, with compact structure, small volume and light weight. The power distribution switchgear is installed on the high and low voltage sides.

ZBW-12

Pre-installed Compact Substation (American type)

Model meaning

ZBW	□	-	□	-	□	/	□
↓	↓		↓		↓		↓
Pre-installed substation	Performance level code		High voltage connection scheme		Rated capacity of transformer		Voltage level

Environmental conditions of use

● Cooling condition: air self-cooling

● Use environment:

The outdoor ambient temperature is not higher than 40℃ , not lower than -45℃ , the altitude is not more than 1000m, the monthly average temperature is not more than 30℃ , the annual average temperature is not more than 20℃ ; At 25℃ , the relative humidity of the air does not exceed 95%, and the monthly average does not exceed 90%;

○ Horizontal acceleration is not more than 0.3g, vertical acceleration is not more than 0.15g;

○ The installation environment should be free from obvious pollution, no explosive, corrosive gas and dust, and the installation site should be free from violent vibration and impact, requiring the installation on a cement platform or other flat and solid platform.

Note: In case of any other violation of this technical regulation, the user shall negotiate with the Company

Product characteristics

● Small size, compact structure, easy installation:

● Can be used for ring network, can also be used for terminal, reliable protection of personal safety

● Low loss, low noise, superior performance;

● The box adopts anti-theft structure;

● Low temperature rise, strong overload capacity.

Enforce standards

This product meets the following standards:

GB/T17467-1998 "High voltage/Low voltage pre-installed substation"

DL/T537-93 "6-35kV box-type substation ordering Technical Conditions"

ZBW-12

Pre-installed Compact Substation (American type)

Main technical parameters

Serial number	Item	Units	Technical parameter
1	Rated voltage	KV	10/0.4(High/low pressure)
2	Maximum operating voltage	KV	12(High pressure side)
3	Rated frequency	Hz	50
4	Rated capacity	KVA	150-1600.
5	1min power frequency withstand voltage	KV	35
6	Lightning impulse voltage	KV	75
7	Cooling mode		Oil immersed in self-cooling
8	High voltage backup fuse breaking current	KA	50
9	Breaking current of plug-in fuse	KA	2.5
10	Ambient temperature	℃	- 35 ~ + 40
11	Coil allows temperature rise	k	65
12	No load voltage regulation		±5% or ±2 x 2.5%
13	Noise level	db	50
14	Class of protection	KV	IP43

Transformer

Selected new S9 series transformer body, low loss, good overload capacity, strong short-circuit resistance, all fasteners are protected. The S11 series ring jointless core transformer with better performance can also be selected.

Capacity KVA	Voltage KV		Join group label	No-load current %			No load loss W			Impedance voltage %	Load loss
	High tension	Low pressure		S9	S10	S11	S9	S10	S11		
160	10±5% 或 2×2.5%	0.4	Dyn11 Y.yno	1.4	1.4	0.2	400	320	255	4.0	2200
200				1.3	1.3	0.2	480	380	305		2600
250				1.2	1.2	0.2	560	450	360		3050
315				1.1	1.1	0.2	670	530	425		3650
400				1.0	1.0	0.15	800	650	505		4300
500				1.0	1.0	0.15	960	750	605		5100
630				0.9	0.9	0.15	1200	910	755		6200
800				0.8	0.8	0.15	1400	1080	980		7500
1000				0.7	0.7	-	1700	1260	-	4.5	10300
1250				0.6	0.6	-	1950	-	-		12000

Fuse

The full range of protection is provided by the backup protection fuse and the plug-in fuse in series on the high voltage side of the American box, the principle is simple, economical and reliable; Backup protection fuse is oil-immersed high voltage current limiting fuse, breaking capacity is large, only in the transformer internal fault action plug-in fuse equipped with double sensitive fuse, can provide current and temperature double protection, after the double sensitive fuse is blown, can be easily replaced in the field.

Load switch

Load switch is oil-immersed, three-phase linkage switch, spring operating mechanism; It can be operated with load, and its closing speed has nothing to do with the operating force. There are two stations, four stations T type, four T position V type, etc., to choose from.

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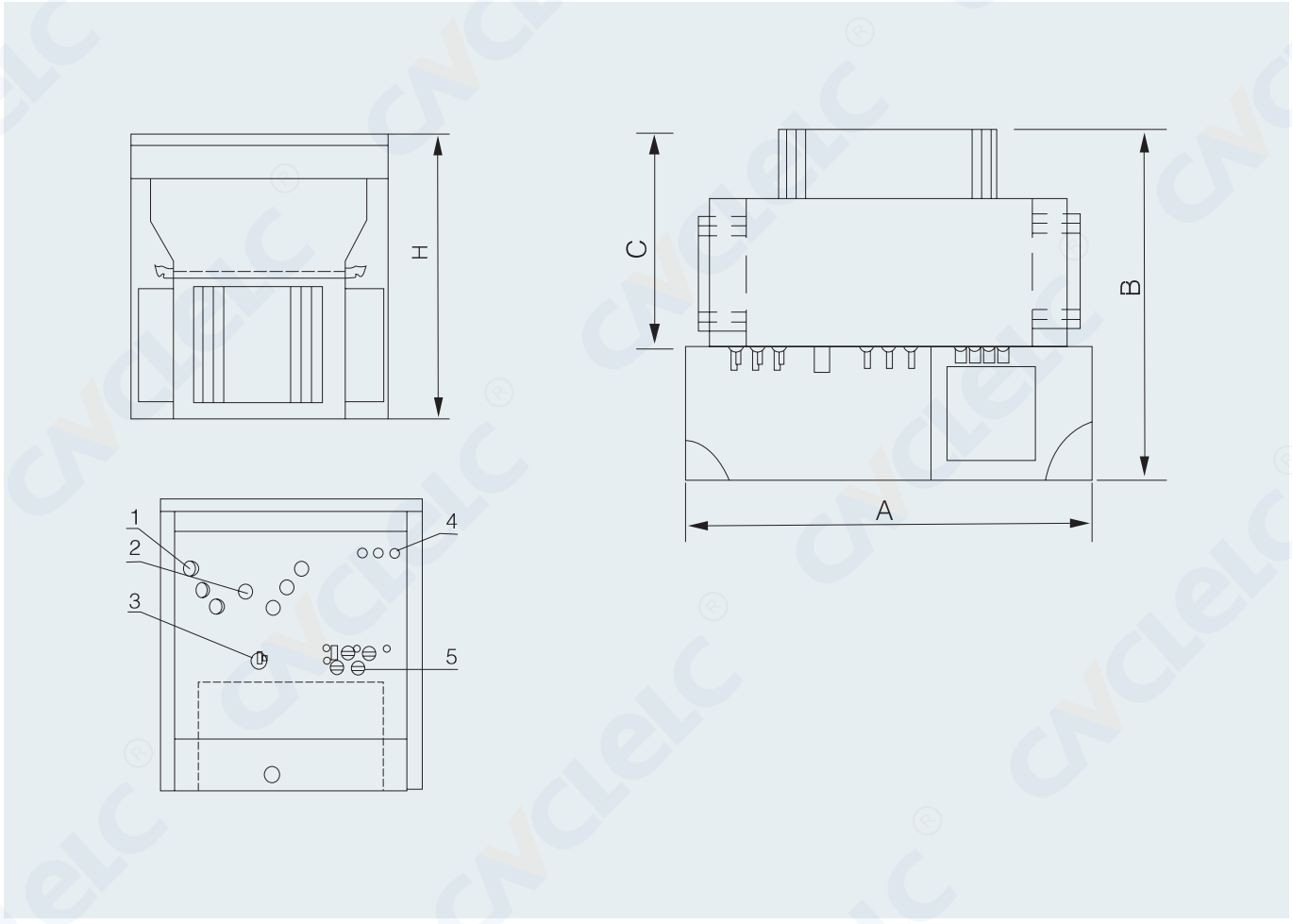
Pre-installed Compact Substation (American type)

Item \ Name		Units	315A	630A
Rated voltage		KV	12	12
Maximum current		A	315	630
Rated frequency		Hz	50	50
Rated short-circuit closing current		kA	31.5	50
Rated short-time withstand current		kA	12.5	50
Rated short endurance time		S	2	2
Mechanical life		次	2000	2000
Lightning impulse test	Phase to phase	KV	75	75
	Isolation fracture		85	85
1min power frequency withstand voltage	Phase to phase	KA	42	42
	Isolation fracture		48	48
Rated peak withstand current		KV	31.5	50

Outline mounting dimension(mm)



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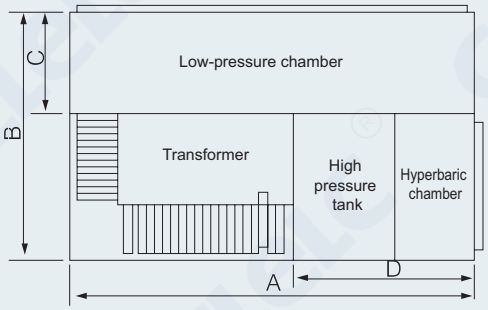
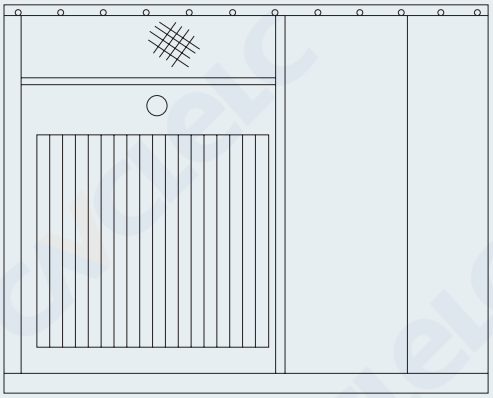
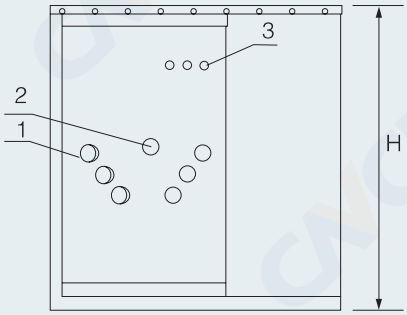
Pre-installed Compact Substation (American type)







Capacity	A	B	C	H	Weight KG
200kVA and below	1830	1420	820	1850	小于 2800
250-400kVA	1830	1450	850	1980	3000-3300
500-630kVA	1830	1480	880	2070	3600-3950
800kVA	2200	1700	950	2170	4500

Note: The above is the standard size for reference.

Capacity	A	B	C	H	Weight KG
315kVA	2560	1600	600	1000	3050
400kVA	2560	1600	600	1000	3270
500kVA	2560	1600	600	1000	3400
630kVA	2560	1600	600	1000	3900
800kVA	2760	1600	800	1000	4200
1000kVA	2760	1950	800	1000	4800
1250kVA	2910	1950	800	1000	5400
1600kVA	2200	1700	950	2170	4500

Note: The above is the standard size for reference.

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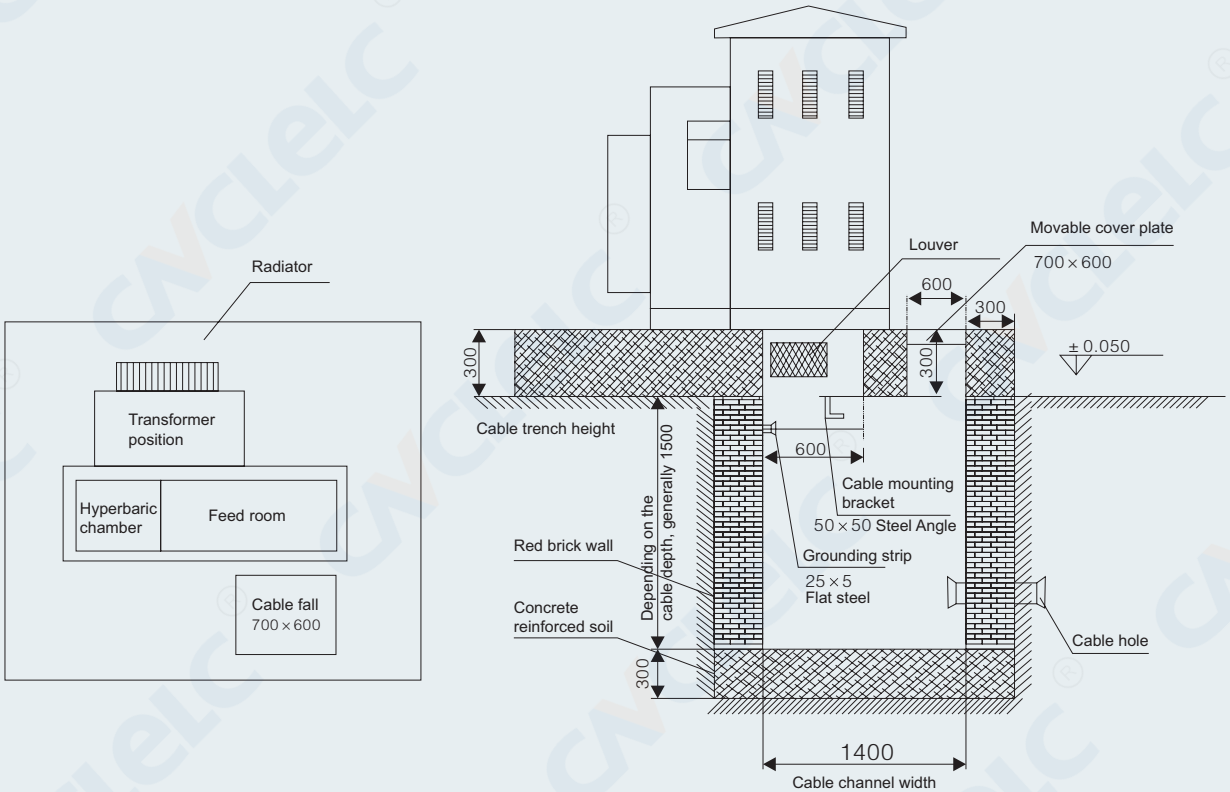
Pre-installed Compact Substation (American type)

Mounting dimension(mm)



Technical requirement

- The surface of the concrete base should be flat, and after the installation of the combined substation, the base should be sealed with cement around;
- The shape of the ground bar and cable fixing bracket can be determined according to the actual situation;
- Cable fixing frame and ground bar should be embedded;
- The position of the inlet and outlet cable holes depends on the specific situation;
- There must be a gap of not less than 1.5m on the front of the switch after installation of the combination transformer to facilitate operation;
- The grounding net can be made of 12-plated round steel or 30×4 galvanized flat steel, and the grounding wire resistance should meet the requirements of the power department.

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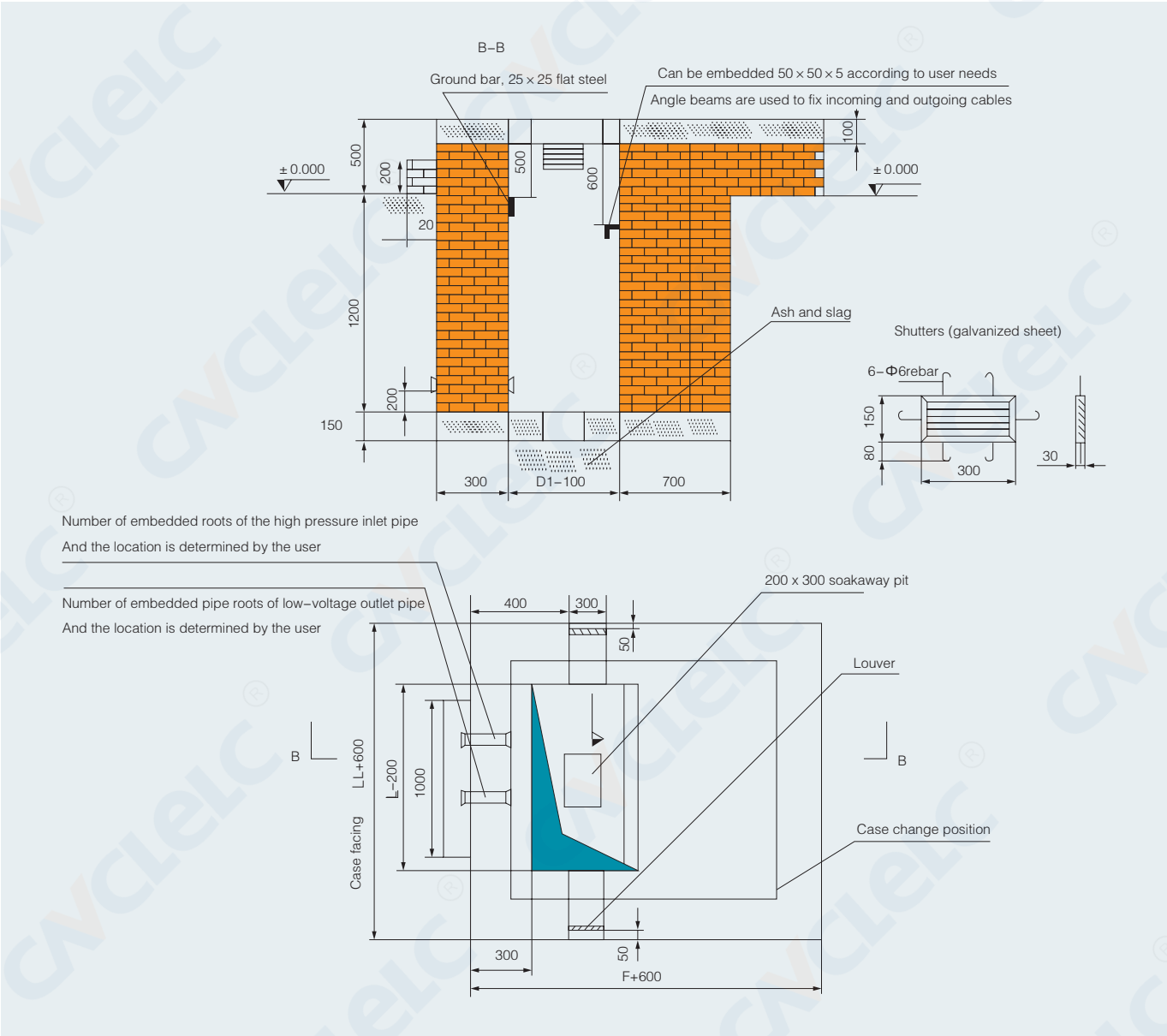
Pre-installed Compact Substation (American type)

Foundation drawing



- Standard type, enhanced type, basic construction requirements.
- The basic endurance is more than 100kPa.
- The foundation is located at a higher elevation, drained outwards on all sides, and constructed with red brick cement mortar. The inner and outer walls shall be coated with 1:2 cement mortar 20mm thick and mixed with 3% waterproofing agent.
- The bottom of the cable room should be slightly inclined to the side of the collection pipe to avoid water accumulation.
- 150×300 steel plate mesh (10×20) diamond-shaped eyes are welded on the inside side of the louver window frame, and the welding bar claws are embedded in the wall.
- Foundation construction shall comply with the relevant provisions of JGJ/T16-92 "Code for Electrical Design of Civil Construction".
- The practice of grounding trunk and grounding pole is still done as usual. After the grounding trunk is drawn from the cable trench, it can be arranged around the ring network cabinet, or the grounding pole can be extended from one side. Grounding resistance ≤ 40Ω.
- The dimensions in the figure are recommended values.
- In order to facilitate the user to enter the line, the cable can be set in three or four directions according to the actual situation on the site.

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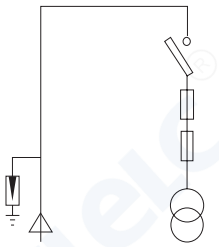
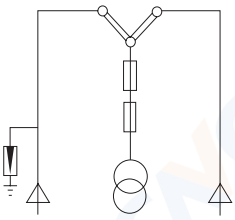
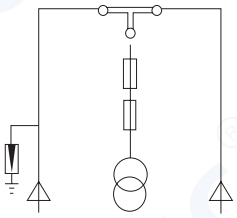
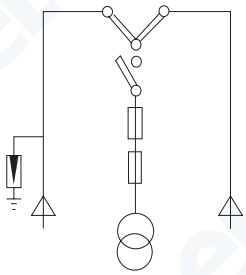
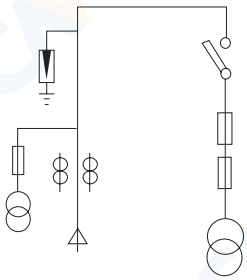
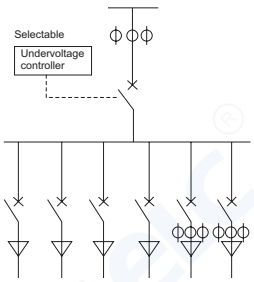
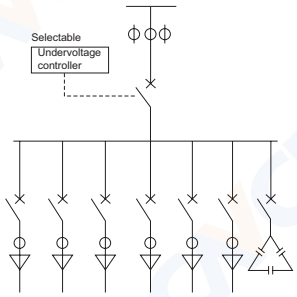
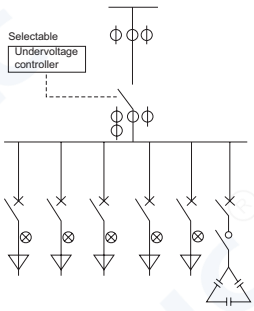
Pre-installed Compact Substation (American type)

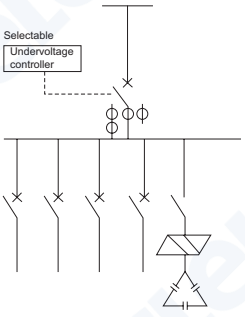
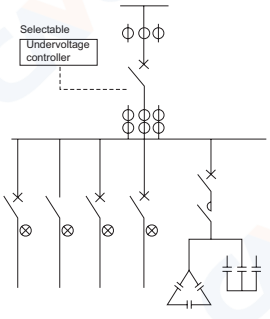
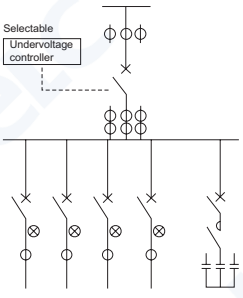
High-pressure typical scheme

Scheme number	H-01	H-02	H-03
	10kV power supply I	10kV power supply I 10kV power supply II	10kV power supply I 10kV power supply II
Single line diagram of main loop			
Type	Terminal type with two-position load switch.	The ring network type is changed, and the four-position "V" type load switch is adopted.	The ring network type is changed, and the four-position "T" type load is opened close.
Switch selection	Single power supply, suitable for end users.	Ring network or dual power supply can be realized, but when the transformer is disconnected, the high-voltage power supply I and high-voltage power supply II are disconnected at the same time; Applicable ring network current 315A, 630A.	It can realize the ring network or dual power supply, but when the transformer is disconnected, the high-voltage power supply I and high-voltage power supply II are not connected to each other. Applicable ring network current 315A,630A.

Scheme number	H-04	H-05	
Single line diagram of main loop			
Type	The terminal type uses a four-position "V" type and a two-station load switch.	Terminal type with high voltage metering function.	
Switch selection	The scope of application can realize the ring network or dual power supply, is the most perfect ring network scheme, the selection of ring network current 315A, 630A.	Suitable for users requiring high voltage metering	

Low pressure typical scheme

Scheme number	L01	L02	L03
Single line diagram of main loop			
Type			
Switch selection	Main switch, total metering (active and reactive power), two branch active power metering, 63-1250A, optional undervoltage controller, suitable for all capacities.	Main switch, total metering (active, reactive power), outlet 63-1250A, optional undervoltage controller, suitable for all capacities.	Main switch, total metering (active, reactive power), output line 63-1250A reactive power compensation 30-360kVar, optional undervoltage controller, suitable for all capacities.

Scheme number	L04	L05	L06
Single line diagram of main loop			
Type			
Switch selection	Main switch, total metering (active, reactive power) line 63-1250A, optional undervoltage controller, switching device use intelligent composite switch and capacitive contactless switch. Applicable to all capacities.	Main switch, total measurement (active, reactive power), outlet 63-1250A, optional undervoltage controller, compensation for total complement, sub complement. Applicable to all capacities.	Main switch, total measurement (active, reactive power), out of 63-1250A reactive power compensation 30-360kVar, optional undervoltage controller, compensation for compensating. Applicable to all capacities.

ZBW-12

Pre-installed Compact Substation (American type)

01

02

04

03

05

06

ZBW-12

Pre-installed Compact Substation (American type)

07

08

10

09

11

12

DFW-12

Outdoor cable distribution box

Overview

European cable split-box is widely used in power distribution network in recent years in the cable engineering equipment, its main characteristics are two-way door, the use of wall bushing as a connection busbar, with a small length, clear cable arrangement, three-core cable does not need large span cross and other significant advantages. The cable connector used conforms to DIN47636 standard. Generally use rated current 630A bolted bolted connection type cable joint.

DFW-12

Outdoor cable distribution box

Model meaning

DFW	□	-	□	□
↓	↓		↓	↓
Cable distribution box	Voltage level		Circuit number (Total number of incoming and outgoing lines in a phase)	A indicates a lightning arrester The default value is none

Conditions of use

- Ambient temperature: maximum temperature: +40℃ , minimum temperature -30℃ ;
- Wind speed: equivalent 34m/s(not more than 700Pa);
- Humidity: the average daily relative humidity is not more than 95%, the average monthly relative humidity is not more than 95%;
- Shockproof: horizontal acceleration is not more than 0.4m/s2, vertical acceleration is not more than 0.15m/s2 installation site inclination: not more than 3° ;
- Installation environment: The surrounding air is not significantly polluted by corrosive, flammable gas, water vapor, etc., and there is no violent vibration at the installation site.

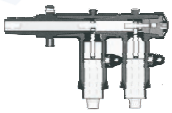
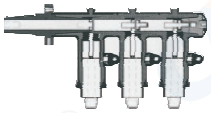
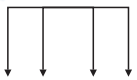
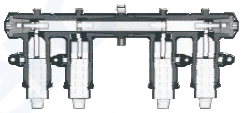
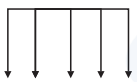
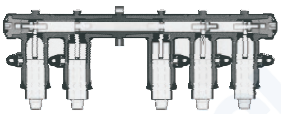
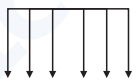
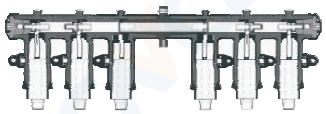
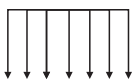
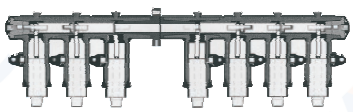
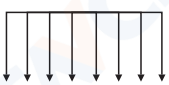
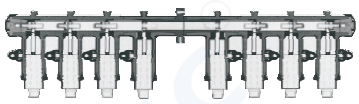
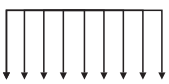
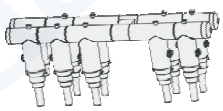
Main technical parameters

Name	Argument
Rated voltage	12kV
Rated current	630A
Dynamic stable current	50kA/0.3s
Thermally stable current	20kA/3s
1min power frequency withstand voltage	42kV
15 min DC withstand voltage	52kV
Lightning impulse withstand voltage	105kV
Case protection class	IP33

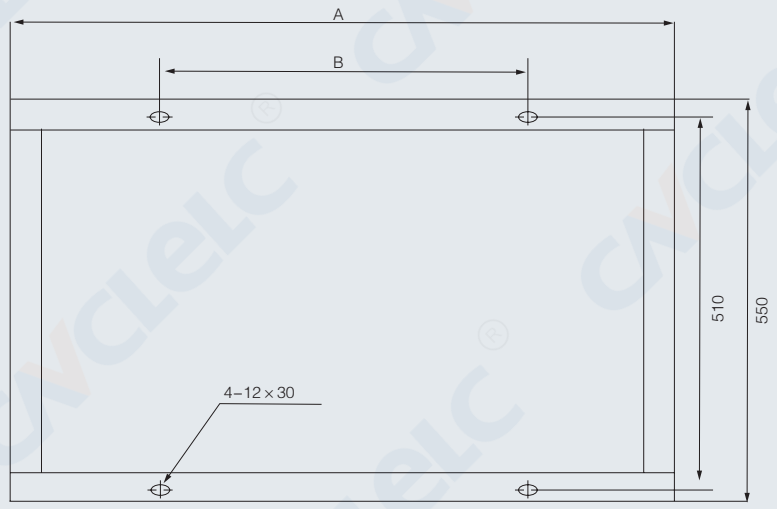
DFW-12

Outdoor cable distribution box

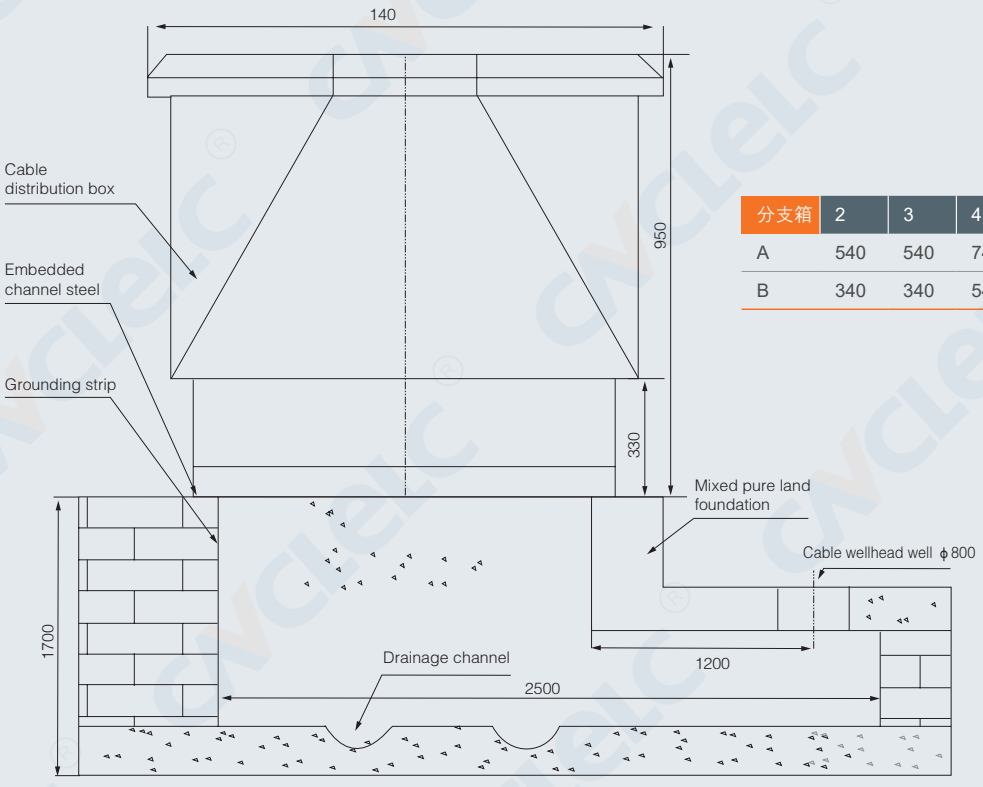
Typical connection scheme

Specification and model	Connection scheme	Internal arrangement	Overall dimensions (mm)
DFW12-2			520×540×950
DFW12-3			520×640×950
DFW12-4			520×740×950
DFW12-5			520×840×950
DFW12-6			520×940×950
DFW12-7			520×1040×950
DFW12-8			680×940×1100
DFW12-9			680×840×1100

European cable distribution box foundation drawing



Foundation installation dimensions



分支箱	2	3	4	5	6	7
A	540	540	740	840	940	1040
B	340	340	540	640	740	840

Foundation plan

XGW-12

Compact Switchgear Station

Overview

The primary and secondary fusion ring cage is an intelligent complete set of equipment introduced in response to the latest national grid standard "Technical Standard for primary and secondary complete sets of equipment for Power distribution", which integrates electromagnetic voltage, current transformer, energy metering module, high-speed fault transient filter and other advanced technologies. It consists of loop in loop out unit, feeder unit, bus equipment (PT) unit, centralized DTU and connecting cable. It can collect active power, reactive power, power factor, frequency, zero sequence current and zero sequence voltage, with line loss measurement, electric energy measurement functions, as well as line voltage identification, voltage over limit, load over limit alarm sending, short circuit fault detection and processing. The single-phase grounding fault detection and handling function supports the transmission of short-circuit or grounding fault events to meet the automation requirements of the distribution network.

XGW-12

Compact Switchgear Station

Model meaning

X	G	W	-	12	-	□
↓	↓	↓		↓		↓
Box-type	Stationary	Outdoors		Rated voltage (V)		Rated current (A)

Conditions of use

- Altitude: 1000m and below;
- Ambient temperature: -10 ° C~ +40° C;
- Relative humidity: daily average is not more than 95%, monthly average is not more than 90%;
- Place of use: there should be no conductive dust and corrosive, flammable and explosive dangerous goods that are harmful to metal and insulation;

Main technical parameters

Item	Units	Argument
Rated voltage	kV	12
Rated current	A	630
Rated power frequency 1min withstand voltage (relative)	kV	42
Peak rated lightning impulse withstand voltage	kV	75
Rated short-circuit withstand current and duration	kA/s	25/4
Rated peak withstand current	kA	63
Class of protection		IP43

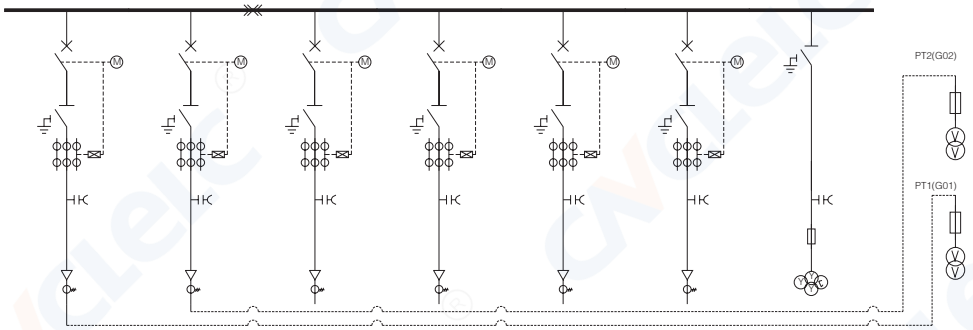
Main feature

- On the basis of the traditional DTU function, the metering level distribution line loss collection function is added, the judgment and location function of small current grounding fault is optimized, and the sampling frequency is increased, so that the fault waveform is closer to the real waveform.
- To meet the requirements of feeder automation, the controller takes line voltage as the criterion, realizes local fault processing through delayed closing and substation protection, does not need batteries, does not rely on communication and main station, and can achieve complete feeder automation function on the spot;
- Clear distribution network automation system function distribution, easy to operate;
- The use of frequent operation load switches/circuit breakers to meet the requirements of distribution network automation and economic operation;
- Built-in isolation fracture and vacuum interrupter series asynchronous linkage, switching ability is strong, high safety;
- Three-phase common box layout, porcelain sheath cable casting line, full sealing mechanism, military-grade aviation plug, the whole full sealing technology to ensure strong weather resistance, good condensation resistance, 15 years maintenance-free;

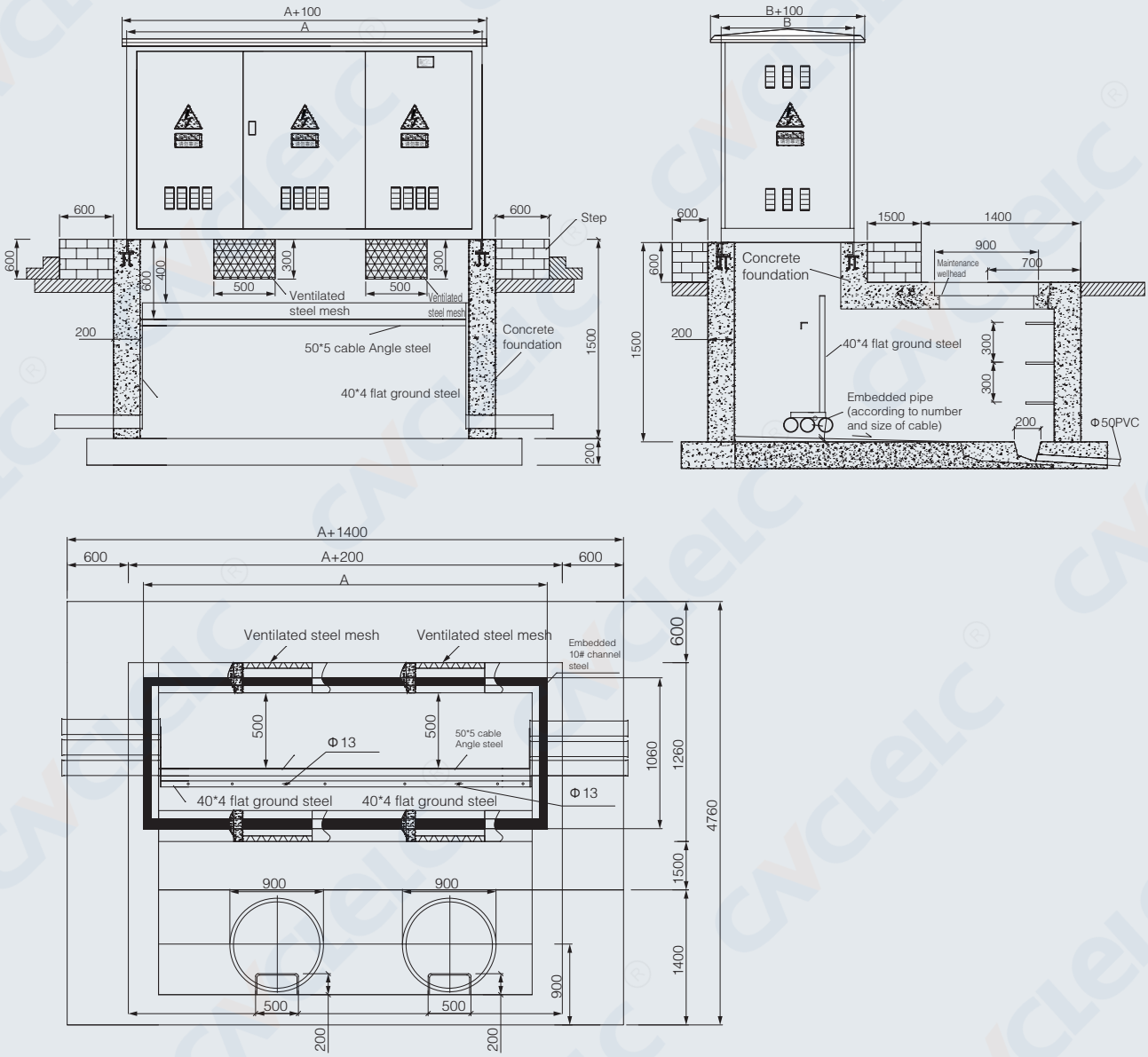
XGW-12

Compact Switchgear Station

Typical scheme of XGW-12 series primary and secondary fusion ring cage

Ring cage	V	V	V	V	V	V	Gpt	PT	Dc panel
External dimension (W * D * H)	380*770* (1500+500)	380*770* (1500+500)	380*770* (1500+500)	380*770* (1500+500)	380*770* (1500+500)	380*770* (1500+500)	380*770* (1500+500)	520*820* (1500+500)	600*600* 1600
Ring cage number:	G01	G02	G03	G04	G05	G06	G07	G08	G09
High voltage single line diagram									Dc panel spacing
use	Inlet and outlet cable cabinet	Inlet and outlet cable cabinet	Inlet and outlet cable cabinet	Inlet and outlet cable cabinet	Inlet and outlet cable cabinet	Inlet and outlet cable cabinet	Bus PT cabinet	Enter the PT cabinet	
Circuit breaker HB ZN □ -12/630	1	1	1	1	1	1			
Isolation switch HB GL-12/630	1	1	1	1	1	1	1		
Load switch HB FLN □ -12/630									
Ground switch	1	1	1	1	1	1	1		
Operating mechanism	DC48V	DC48V	DC48V	DC48V	DC48V	DC48V	Manual operation		
Busbar connector			12kV/630A						
Insulating plug									
Barometer with contact									
Intelligent dehumidifier	LXK-LN01 A piece	LXK-LN01 A piece	LXK-LN01 1 piece	LXK-LN01 1 piece	LXK-LN01 1 piece	LXK-LN01 1 piece	LXK-LN01 1 piece	LXK-LN01 1 piece	
Live display	GSN-Q DC48V	GSN-Q DC48V	GSN-T	GSN-T	GSN-T	GSN-T	GSN-T		
Electromagnetic lock								DSNIII-F-Y DC48V 2 piece	
Ground and short circuit fault indicator									
Integrated current transformer	Measurement 500/5A 0.5 10VA protection 600/5A 10P20 10VA1 station								
Through-core current transformer									
Zero sequence current transformer	150/5A 10P10 5VA 1piece	150/5A 10P10 5VA 1piece	150/5A 10P10 5VA 1piece	150/5A 10P10 5VA 1piece	150/5A 10P10 5VA 1piece	150/5A 10P10 5VA 1piece			
amperemeter									
Intelligent instrument	HB-101 1piece	HB-101 1piece	HB-101 1piece	HB-101 1piece	HB-101 1piece	HB-101 1piece	HB-101 1piece	HB-101 2piece	
Relay unit	HB300 DC48V	HB300 DC48V	HB300 DC48V	HB300 DC48V	HB300 DC48V	HB300 DC48V			
Intelligent communication management machine								Communication management machine (with encryption module) 1 set	
Dc power supply									DC48V/65AH
Voltage transformer							10/ √ 3/0.1/ √ 3 0.1/ √ 3/0.1/ √ 3/0.2/ 0.5/3P 30/30/50VA 1sets	10/0.1/0.22kV 0.5/3P 30/1000VA 2 sets	
High voltage fuse							1A 3 branches	1A 6 branches	
voltmeter									
Voltage change-over switch									
PT insulation monitoring device									
Lightning arrester									
Front cable connector	Specifications to be determined						CB35mm^2 1 set		
Rear plug the cable connector	CC35mm^2 1 set	CC35mm^2 1 set							
PT elbow head							3×35mm^2 1 set	3×35mm^2 2 set	
Remark	Conventional protection, voltage and current type								

Typical scheme of XGW-12 series primary and secondary fusion ring cage



01

HIGH AND LOW VOLTAGE SWITCHGEAR SERIES

MNS

Low Voltage Switchgear and
Motor Control Center

Overview

The MNS low pressure drawout switchgear is a factory assembled (FBA) modular cabinet with standard modules. This series of low-voltage drawout switchgear is suitable for power plants, substations, petrochemical industry, metallurgical steel rolling, transportation energy, light industry textile and other factories and mining enterprises, residential areas, high-rise buildings and other places, as AC 50-60HZ, rated working voltage AC 660V and below the power system of the power distribution standby power conversion, distribution and control.

Model meaning

M	N	S
↓	↓	↓
Modular, modular	New type	System

Conditions of use

Ambient air: the temperature is not higher than +40 ° C, not lower than -5 ° C, and the average temperature within 24 hours is not higher than +35 ° C.

● Atmospheric conditions: The air is clean, the relative humidity does not exceed 50% at the maximum temperature of +40 ° C, and a higher relative humidity is allowed at lower temperatures, such as 90% at +20 ° C, but temperature changes should be taken into account, and condensation may occur occasionally.

● Altitude does not exceed 2000m.

● If the above conditions of use cannot be met, it shall be resolved by negotiation between the user and the manufacturer.

● When the device is used in offshore oil drilling platforms and nuclear power plants, a separate technical agreement shall be signed.

Main feature

● Compact design: it can accommodate more functional units in a smaller space.

● Strong structure versatility, flexible assembly. The C profile with 25mm modulus can meet the requirements of various structural forms, protection levels and use environment.

● Standard module design: can be composed of protection, operation, conversion, control, adjustment, measurement, indication and other standard units, users can choose to assemble according to needs. More than 200 assembly parts can be used to assemble the cabinet structure of different schemes and to form a fixed partition or drawer unit.

● Safety: A large number of high-strength flame-retardant engineering plastic components are used to effectively enhance protection and safety performance.

● High technical performance: the main parameters reach the contemporary international level.

● Compression site: high degree of tritization, can greatly compress the storage and transportation of prefabricated sites.

● Easy assembly: no special complex tools are required.

Switch cabinet type

● Power distribution cabinet (PC): Emax, MT, 3WN, AH, ME series circuit breakers can be used.

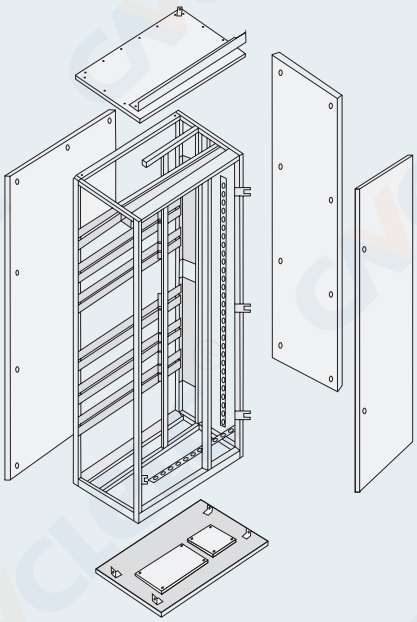
Motor control center cabinet (MCC): assembled by large and small drawers, the main switch of each circuit adopts high break plastic-case circuit breaker or rotary load switch with fuse.

Automatic power factor compensation cabinet (with manual, automatic and remote power factor compensation devices)

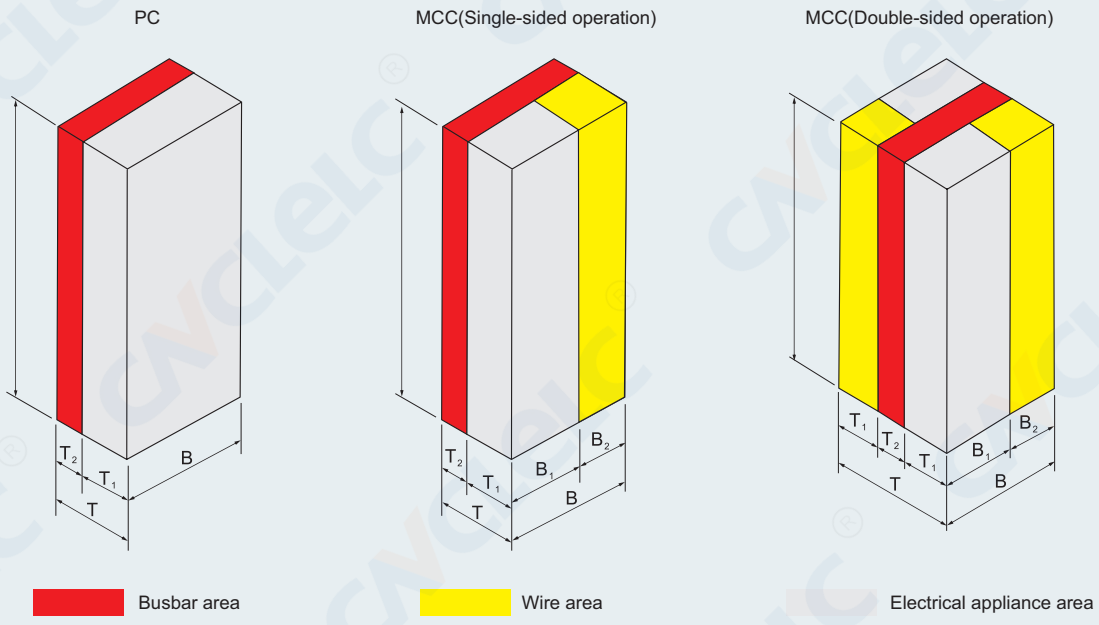
Basic technical parameters

Item	Argument
Rated insulation voltage	660V(1000)V
Rated operating voltage	380V, 660V
Maximum working current of main bus	5000A
Rated withstand current of main bus	100kA/1s
Rated peak withstand current of main bus	220 ka / 0.1 s
Maximum operating current of the distribution bus (vertical bus)	1000A
Distribution bus (vertical bus) peak current: standard type, enhanced type	105 Ka (Max.)/0.1s, 1 76kA(Max.)/0.1s

Cabinet frame structure composed of C-shaped profiles



Cabinet diagram



Drawer type

There are five standard sizes, all based on 8E(200mm) height:

8E/4: Assemble 4 drawer units in 8E height space.

8E/2: Assemble 2 drawer units in 8E height space.

8E: Assemble 1 drawer unit in 8E height space.

16E: Assemble 1 drawer unit in a 16E(400mm) height space.

24E: Assemble 1 drawer unit in 24E(600mm) height space.

The five drawer units are available as a single assembly in a cabinet or as a hybrid assembly. Maximum number of drawer units to be accommodated in a cabinet as a single assembly.

Item	Argument				
Drawer type	8E/4	8E/2	8E	16E	24E
Maximum number of units to accommodate	36	18	9	4	3

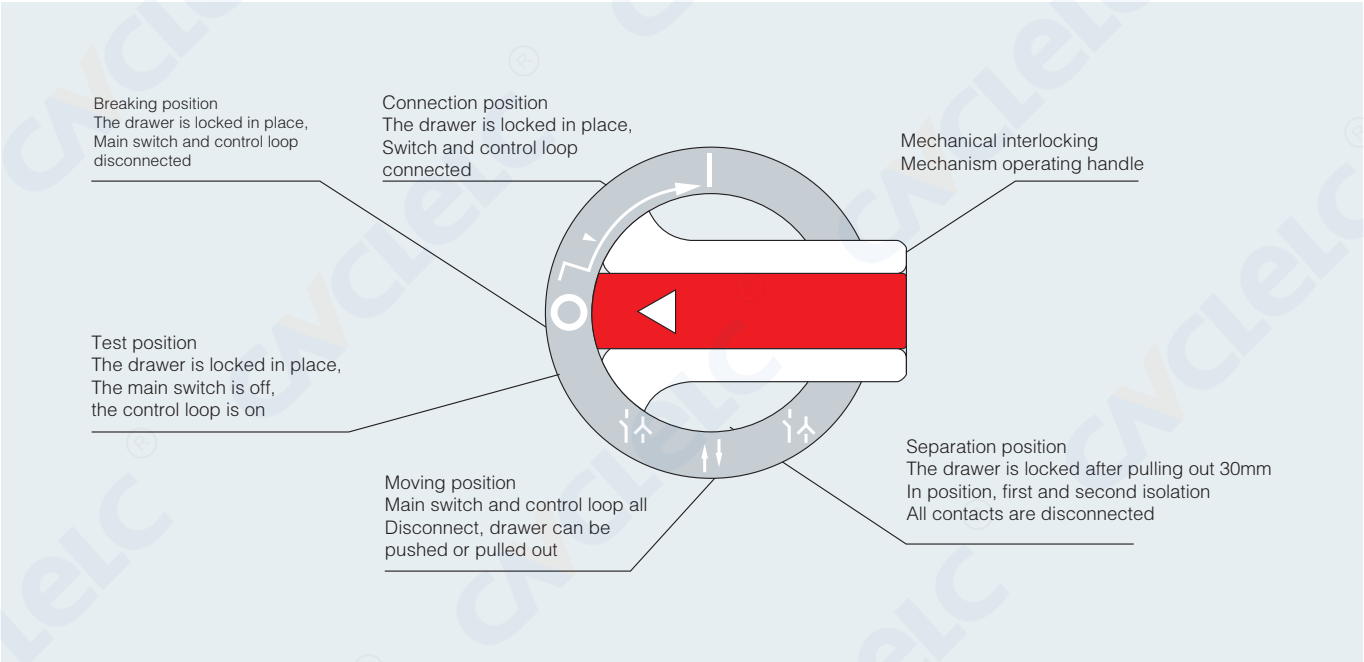
Electrical and mechanical interlocking of drawers

The drawer unit has a reliable mechanical interlocking position, controlled by an operating handle, with clearly accurate closing, test, extraction and isolation positions. The function of the operating mechanism is shown in the figure. In order to enhance safety precautions, the padlock can be added after the operation handle is positioned, and up to three locks can be added, see the picture on the left.

After the drawer unit is in place, it must operate the skylight function and its position in strict accordance with the figure, otherwise it is easy to damage the structural parts, please pay attention to it when using.

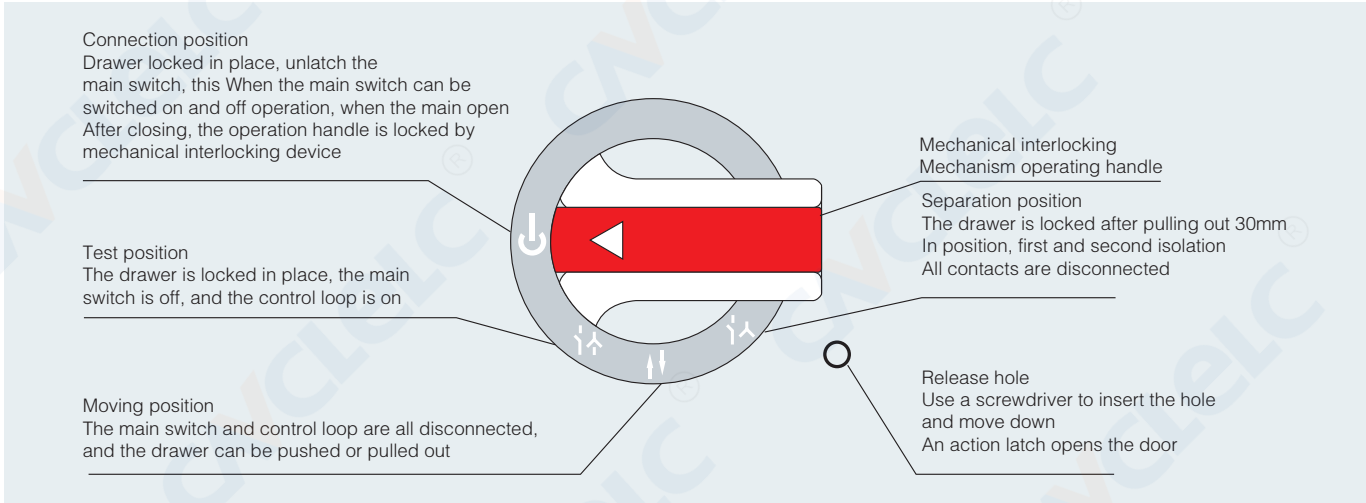
Operation switch function diagram

8E/4 and 8E operation switch function



Operation switch function diagram

8E, 16E, 24E, operation switch function



The permutation and combination of primary solutions

The total high charge of the functional unit compartment is 72E.

In the same device, the general arrangement of functional units is that small functional units are on the top and large functional units are on the bottom.

8E/4 drawers are made up of 4 to form an 8-day mounting unit, 8E/2 drawers are made up of 2 to form an 8E mounting unit, or 2 8E/4 drawers and 1 8E/2 drawer are made up of an 8E mounting unit.

The current transformer drawn in the scheme is the maximum number of installations in this scheme (in schemes 01 to 19,21 to 39, a current transformer can be added for reactive power compensation loop). In actual use, it can be reduced or not installed according to the needs of the system.

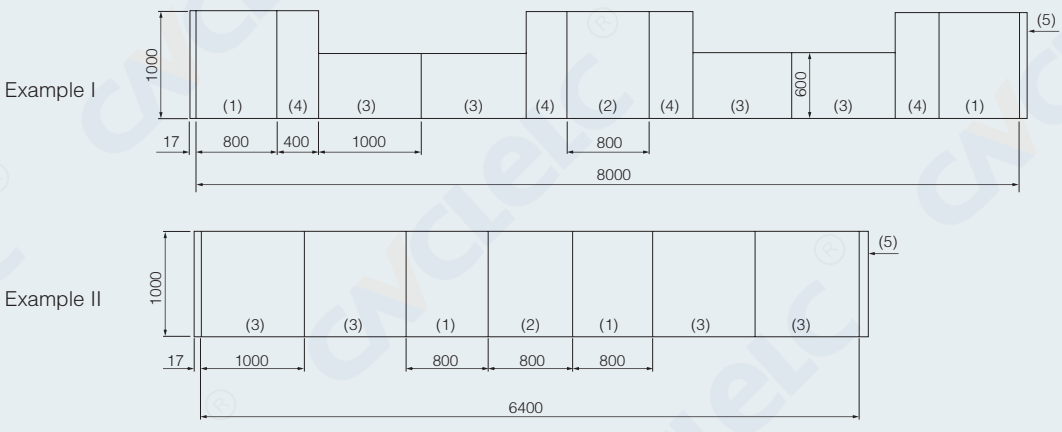
The depth of the device is 600mm (MCC single-sided operating cabinet) and 1000mm (PC and MCC double-sided operating cabinet), and it is recommended that the PC and MCC be arranged separately. When a split function board is used, a hybrid PC and MCC can be assembled in the same cabinet.

When PC and MCC two devices are arranged next to each other, then:

When an MCC double-sided cabinet (or a 600-depth MCC single-sided cabinet) is arranged adjacent to a PC cabinet, a conversion cabinet (its width is 400mm) must be added between the two cabinets, as shown in Figure 1.

When the single-side MCC is deepened to 1000mm, the conversion cabinet can be added without, as shown in Figure 2 below.

Combination mode diagram



Installation, use, maintenance

1. Refer to installation diagram and bus bridge installation diagram for installation.

2. When the device arrives at the destination, first check whether the packing box is complete. If the device is not installed immediately, it should be stored in a dry and clean place.

3. The device is recommended to be mounted away from the wall or against the wall. The installation base plane should be flat, the horizontal error of the base channel steel should be 1/1000, and the total length deviation should be 3mm.

4. It is recommended to use class 8.8 and tension gaskets for bolt fixing of all conductive parts. The recommended tightening torque values are shown in the following table:

5.MCC solution accessories supply the cable head sheath and a certain number of copper connectors for the secondary circuit. (In order to adapt to the cold pressing processing of copper joints, multi-core flexible wires are recommended for secondary cables).

6. After connecting the cable, the bottom of the device should be closed to prevent small animals from climbing into the cabinet and causing short circuit accidents.

7. After installation or adjustment, the following checks and tests should be carried out before the device is put into operation:

(1) Check whether the electrical equipment and control wiring installed in the device meet the requirements of the factory drawings.

(2) Manually operate a variety of switches, should operate flexible, no abnormal and clamping phenomenon.

(3) Check whether the action of the mechanical interlocking mechanism and the electrical interlocking device is correct and reliable, and should meet the requirements of the system.

(5) Check whether the insulation resistance of the main circuit and control loop meets the specified requirements.

(6) Check whether the electrical equipment installed in the device is in good contact and whether it conforms to the technical components of the electrical appliance itself.

(7). Check whether there is foreign matter inside the device and whether the mounting screws of each component are loose.

8. Extraction MCC operation instructions:

(1) After the bottom of the drawer is correctly entered into the guide, it can be pushed into the cabinet, otherwise it will damage the drawer or pull out and other adverse phenomena.

(2). The symbols and functions on the 8E/4 and 8E/2 drawer panel are shown in the 8E/4 and 8E operating switch function diagram, which is represented by the arrow from the breaking position "O" to the working position "I" : First push the handle inward and then rotate the handle from "O" to "I". There is no need to push the handle when returning, just turn the handle T towards "O". After letting go, the handle automatically pops out.

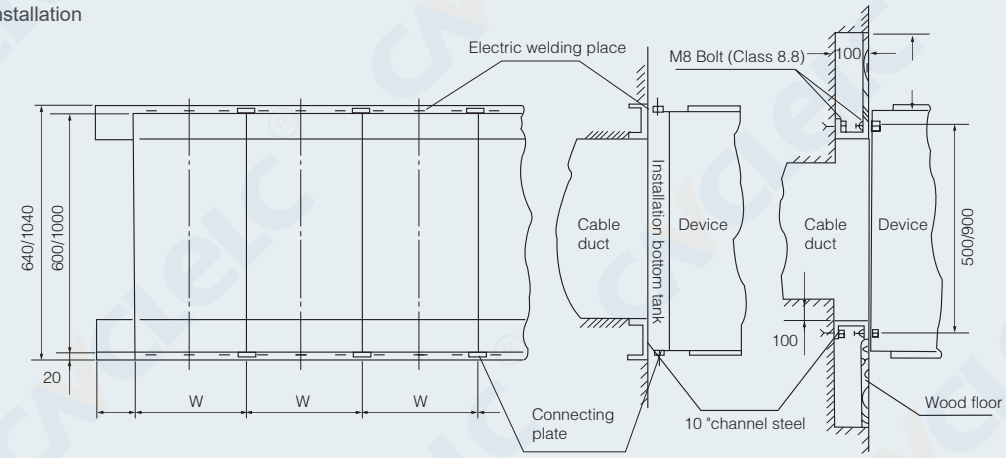
(3). The symbol mark and function on the 8E-24E drawer panel are shown in the operating switch function diagram. When the handle reaches the working position, the mechanism lifts the mechanical lock on the main switch, and then the main switch can be closed and opened.

There is a small plastic cover on the lower right corner of the door that meets the sign, which is the unlocking mechanism of the door. The operation process is as follows: when the drawer is in the working position, if you want to open the door, pull out the small cover first, and then move the lock down with a screwdriver to insert the hole to open the door. After opening the door, be sure to cover the small plastic cover, otherwise the original protection level will be destroyed.

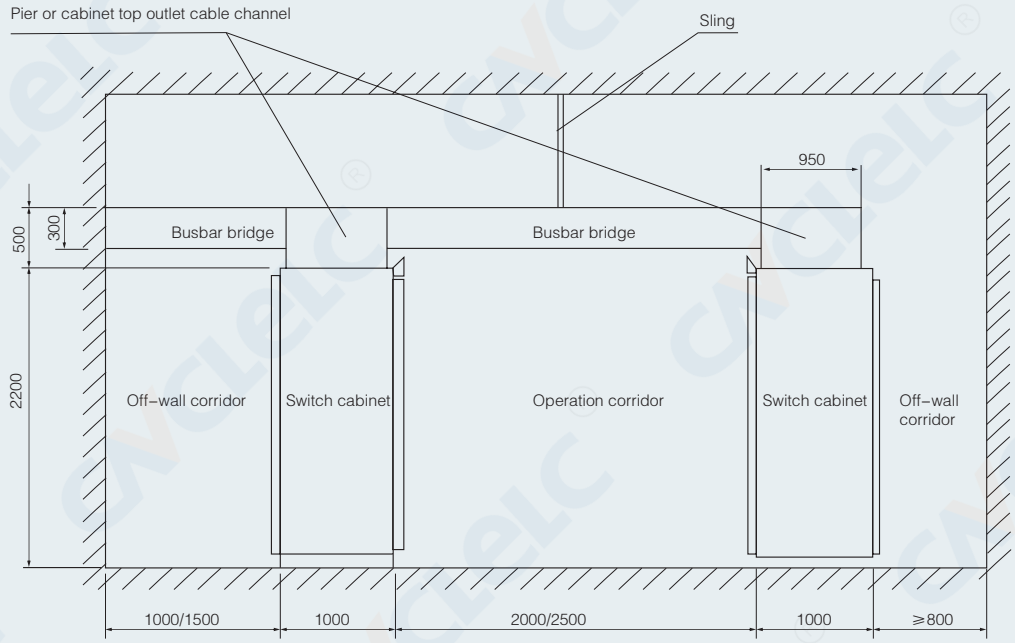
Bolt specification	Tightening moment
M6	9.5
M8	25
M10	40
M12	80
M16	20

Installation diagram

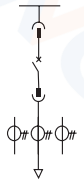
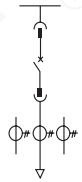
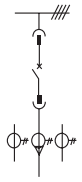
Solution 1 Welding installation
Solution 2 Bolt installation

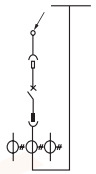
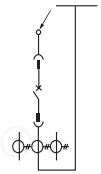
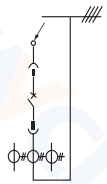


Bus bridge installation diagram

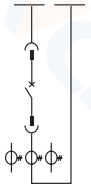
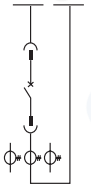
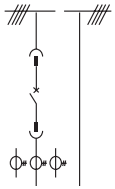


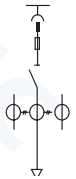
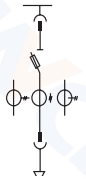
Primary loop scheme diagram

Scheme number	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20
Primary scheme																				
Cabinet width (mm)	400	600	800	1000	600	800	1000	600	800	1000	600	800	1000	600	800	1000	600	800	100	
The equipment room is high	72E	72E	72E	72E	72E	72E	72E	72E			72E			72E			72E			
Maximum operating current (A)	1500	1500	2300	3150	1500	3200	4000	1600	3200	4000	2000	3200	4000	2000	3000	3600	1500	3200	4000	
Main equipment	ME1605 F1-1600 M16 BHG-60 II	Me630~ ME637~ ME1605 BHG-100	Me2000~ ME2505 ME2505 BHG-100	Me3200~ ME3205 BHG-120 II	AH-6B~ AH-16B BHG-100	AH- 20CH~ AH30CH BHG-100	AH-40C BHG-120 II	M08~ M16 BHG-1000	M20~ M32 BHG-100	M40~ BHG-120 II	F1-1250 to F1- 2000 BHG-100	F2-2000 to F-3200 BHG-100	F5-4000 BHG-120	F1-1250 toF1-2000 4P Switch BHG-100	F2-2000 F2-3000 F3-3200 4P Switch	F4-3200 F4-3600 4P Switch BHG-120 II	AH6B AH16B 4P Switch BHG-60II	M28 M32 4P Switch BHG-100	M40 4P 开关 BHG-120 II	
Use	Incoming or outgoing cables																			

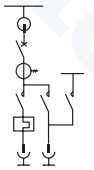
Scheme number	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Primary scheme																				
Cabinet width (mm)	600 400	800	1000	600 400	800	1000	600	800	1000		600	800	1000	600	800	1000	600	800	1000	
The equipment room is high	72E			72E			72E				72E			72E			72E			
Maximum operating current (A)	1500	2300	3150	1500	3000	4000	1600	3200	4000		2000	3200	4000	2000	3200	3600		3200	4000	
Main equipment	ME630~ ME-1605 M16 BHG-60 II	ME2000~ Me2505 BHG-100	ME3000~ ~3250 BHG-120	AH6B~ AH-16B BHG-100	AH-20CH AH-30CH BHG-120 II	AH-40CH BHG-120 II	M08~ M16 BHG.100	M20~ M32 BHG-120 II	M40 BHG-120 II		F1-1250 to F1-2000 BHG-100	F2-2000 to F4-3200 BHG-100	F5-4000 BHG-120	F1-1250 to F1-2000 4P Switch BHG-100	F2-2000 F2-3000 F3-3200 4P Switch	F4-3200 F4-3600 4P Switch BHG-120		M08 to M32 4P Switch BHG-120 II	M10 4P Switch BHG-120	
Use	Specify incoming and outgoing lines																			

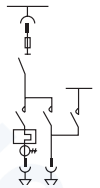
Primary loop scheme diagram

Scheme number	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Primary scheme																					
Cabinet width (mm)	600	800	1000	600	800	1000	600	800	1000		600	800	1000	600	800	100	600	800	1000	
The equipment room is high	72E			72E			72E				72E			72E			72E			
Maximum operating current (A)	1500	2300	3150	1600	3200	4000	1600	3200	400		1600	3200	4000	1600	300	3600		3200	4000	
Main equipment	ME630~ ME1605 BHG-100	ME2000~ ME2505 BHG-100	ME3200~ ME3205 BHG-100	AH-6B AH-16B BHG-100	AH-20CH to AH30CH BHG-100	AH-40C BHG-120	M08 to M32 BHG-120II	M20 to M16 BHG-100	M40 BHG-120II		F1-1250 toF1-2000 BHG-100	F2-2000 toF4-3200 BHG-100	F5-4000 BHG-120	F1-1250 F1-1600 4P Switch BHG-100	F2-2000 F2-3000 4P Switch BHG-120	F4-3200 F4-3600 4P Switch BHG-100		M28 to M32 4P Switch BHG-120II	M40 4P Switch BHG-120	
Use	Busbar										Busbar									

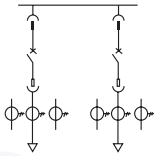
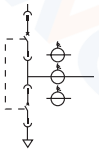
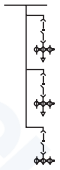
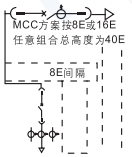
Scheme number	61	62	63	64	65	66	67	68	69	70	71	72	73	74
Primary scheme														
Cabinet width (mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
The equipment room is high	8E/4	8E/2	8E	16E	24E	8E/4	8E/2	8E	16E	24E	8E	16E	8E	8E
Maximum operating current (A)	30	50	100	300	600	30	50	200	300	500	100	300	100	200
Main equipment	S503-LV10 -40 / NC100L- BHG-30	S503-LV10 -GV63 / NC100L- BHG-30	TG30B TG100B BHG -30	TG225B TG400B BHG -40	TG600B BHG -40	NT-00 KG 60B / Hh17	NT-00 KG60B / HH17 BHG-30	NT-OO-1 SMP60-1 BHG-40	NT-2 SMP-2 BH-40	NT-3 SMP-3 BH-60	QSA-63 QSA-125 BHG-40	QSA-250 QSA-400 BHG-60	DCHR1-00 125A BHG-40	DCHR1-1 250A BHG-40
Use	Feeder					Feeder								

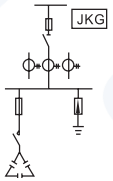
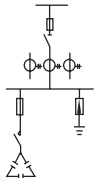
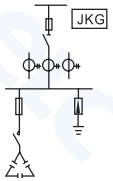
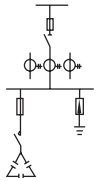
Primary loop scheme diagram

Scheme number	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94
Primary scheme																				
Cabinet width (mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	
The equipment room is high	16E	16E	8E/4	8E/2	8E/4	8E/2	8E/4	8E/2	8E	16E	24E	8E/2	8E	16E	24E	8E/2	8E	16E	24E	
Maximum operating current (A)	300	500	7.5	15	7.5	15	7.5	15	45	75	160	15	37	65	110	7.5	15	55	110	
Main equipment	DCHR1-2 400A BHG-60	DCHR1-630A BHG-60	S503 B16-B25 BHG-30	S503 B37-B45 BHG-30	NC100L B16-B25 BHG-30	NC100L B37-B45 BHG-30	S503 / NC100L B16-B25 T25-TSA45 BHG-30	S503 / NC100L B37-B45 T25-TSA45 BHG-30	TG-100B B65-B105 T105 BHG-40	TG-225B B65-B105 T107~250 BHG-40	TG-400 B65-45 T16-TSA45 BHG-30	S503 B65-45 T16-TSA45 BHG-30	TG-100B B65-85 T05 BHG-30	TG-225B B105-170 T105-170 BHG30	TG-400B B250 T250 BHG-40	S503 B16 T16 BHG-30	TG-100B B37 TSA45 BHG-30	TG-225B B45-85 T105 BHG-30	TG-225 B105-170 T170 BHG-40	
Use	Feeder		Irreversible				Irreversible					Reversible				Y/ △				

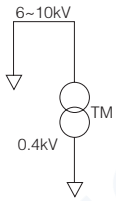
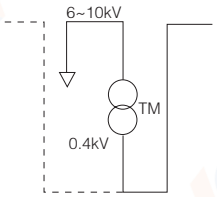
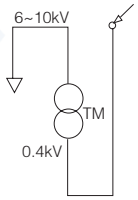
Scheme number	95	96	97	98	99	100	101	102	103	104	105	106	107
Primary scheme													
Cabinet width (mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
The equipment room is high	8E/4	8E/2	16E	24E	24E	8E/2	8E	24E	24E	8E/2	8E	16E	16E
Maximum operating current (A)	7.5	22	55	110	160	15	30	65	100	7.5	15	55	90
Main equipment	NT-00 KG64B B16 T16 / BHG30	NT-00 KG64B B25~45 T25~45 / HH17 BHG30	QSA-250 B65~170 T105~170 BHG-40	QSA-400 B65~250 T105~250 BHG-40	QSA-400 B250~370 T250~370 BHG-40	NT-00 KG64B B16~45 T16~45 / HH17 BHG30	QSA-125 B65~85 T105 BHG-30	QSA-250 B105~170 T105~170 BHG-40	NT-2 B250 T250 BHG-40	NT-00 B16 T16 BHG-40	QSA-125 B25~45 TSA45 BHG-30	QSA-160 B45~B85 T105 BHG-40	QSA-400 B105~170 T105~170 BHG-40
Use	Irreversible					ReversibleReversible				Y/ △			

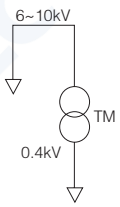
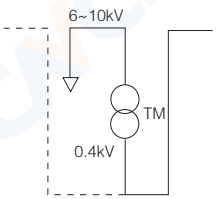
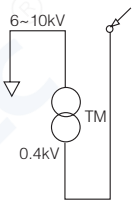
Primary loop scheme diagram

Scheme number	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123
Primary scheme																
Cabinet width (mm)	1000			1000		1000			1000	400	600	400	600	600	800	600
The equipment room is high	72E			72E		72E			32E PC Interval 8E 32E MCC	72E		72E		72E	72E	16E
Maximum operating current (A)	1600×2	1600×2	1600×2	1600×2	1600×2	630×3	630×3	630×3	630	2500	4000A	2000	4000A			
Main equipment	ME630~ ME1605 (3P-4P) BHG-80	M08~ M10 (3P-4P) BHG-80	$F_1$1250 to $F_1$1600 (3P-4P) BHG-80	M08-1600 (3P-4P) BHG-80	$F_1$1250 to $F_1$1600 (3P-4P) BHG-80	AH630 BHG-80	M08 BHG-80	$F_1$1250 BHG-80	AH630 / M08 / $F_1$1250 BHG-80	Press height 8E / M08mcc Scheme selection assembly	BHG-100BHG-120 Or user own			DS862-2 DX962-2 DT862-2 (Max. 8 PCS)	DS862-2 DX962-2 DT862-2 (Max. 12 PCS)	DT862-3 PCS
Use	Incoming or outgoing cables								Feed	Measure		Busbar		Measure		

Scheme number	124	125	126	127	128	129	130	131
Primary scheme								
Cabinet width (mm)	600	800	600	800	600+200	600+400	600+200	600+400
The equipment room is high	72E		72E		72E			
Maximum operating current (A)	(8×16)128	(12×16)192	(8×16)128	(12×16)192	(8×16)128	(16×16)256	(8×16)128	(16×16)256
Main equipment	QSA-400 NT / RT20 B30C BHG-40 BCMJ3 (10~16kVAR)		QSA-400 NT 或 RT20 B30C BCMJ3 (10~16kVAR)		DCHR1-2 NT / RT20 B30C BHG-40 BCMJ3 (10~16kVAR)	DCHR1-3 NT / RT20 B30C BHG-40 BCMJ3 (10~16kVAR)	DCHR1-2 NT / RT20 B30C BCMJ3 (10~16)BHG-40	DCHR1-2 NT / RT20 B30C BCMJ3 (10~16)BHG-40
Use	Automatic control compensation cabinet		Compensating tank		Automatic control compensation cabinet		Compensating tank	

Primary loop scheme diagram

Scheme number	132	133	134	135	136	137	138	139	140	141	142	143
Primary scheme												
Use	Cable in, cable out				Cable down, bus side out				The cable goes down and the bus goes up			
Plant capacity (kVA)	200~500	630~800	1000~1600	2000~2500	200~500	630~800	1000~1600	2000~2500	200~500	630~800	1000~1600	2000~2500
Overall dimension (H×D×W)	2200×1800 ×1200	2200×2200 ×1400	2400×2400 ×1600	2600×2600 ×1600	2200×1800 ×1200	2200×2200 ×1400	2400×2400 ×16001	2600×2600 ×1600	2200×1800 ×1200	2200×2200 ×1400	2400×2400 1600	2600×2600 ×1600
Main equipment Electric power change Depressor)	SCB-200/10 SCB-250/10 SCB-315/10 SCB-400/10 SCB-500/10	SCB-630/10 SCB-800/10	SCB-1000/10 SCB-1250/10 SCB-1600/10	SCB-2000/10 SCB-2500/10	SCB-200/10 SCB-250/10 SCB-300/10 SCB-400/10 SCB-500/10	SCB-630/10 SCB-800/10	SCB-1000/10 SCB-1250/10 SCB-1600/10	SCB-2000/10 SCB-2500/10	SCB-200/10 SCB-250/10 SCB-300/10 SCB-400/10 SCB-500/10	SCB-630/10 SCB-800/10	SCB-1000/10 SCB-1250/10 SCB-1600/10	SCB-2000/10 SCB-2500/10

Scheme number	144	145	146	147	148	149	150	151	152	153	154	155
Primary scheme												
Use	Bus side in, cable under the exit				Bus side out, side out				Bus side out, top out			
Plant capacity (kVA)	200~500	630~800	1000~1600	2000~2500	200~500	630~800	1000~1600	2000~2500	200~500	630~800	1000~1600	2000~2500
Overall dimension (H×D×W)	2200×1800 ×1200	2200×2200 ×1400	2400×2400 ×1600	2600×2600 ×1600	2200×1800 ×1200	2200×2200 ×1400	2400×2400 ×1600	2600×2600 ×1600	2200×1800 ×1200	2200×2200 ×1400	2400×2400 1600	2600×2600 ×1600
Main equipment (Power transformer)	SCB-200/10 SCB-250/10 SCB-315/10 SCB-400/10 SCB-500/10	SCB-630/10 SCB-800/10	SCB-1000/10 SCB-1250/10 SCB-1600/10	SCB-2000/10 SCB-2500/10	SCB-200/10 SCB-250/10 SCB-300/10 SCB-400/10 SCB-500/10	SCB-630/10 SCB-800/10	SCB-1000/10 SCB-1250/10 SCB-1600/10	SCB-2000/10 SCB-2500/10	SCB-200/10 SCB-250/10 SCB-300/10 SCB-400/10 SCB-500/10	SCB-630/10 SCB-800/10	SCB-1000/10 SCB-1250/10 SCB-1600/10	SCB-2000/10 SCB-2500/10

Instructions:

1. Transformer and inlet and outlet line can be selected according to needs;
2. When there is a load regulating device, the overall size should be relaxed by 500mm or deepened by 400mm, and the manufacturer should negotiate specifically;
3. Product description and legend for reference, with the passage of time, may continue to modify, without prior notice, please contact our company.

GCS

Low Voltage Switchgear and Motor Control Center

Overview

GCS low-voltage draw-out switchgear is suitable for power plant, petroleum, chemical, metallurgy, textile, high-rise building and other industries of power distribution system. In large power plants, petrochemical systems and other places with high degree of automation and requiring computer interface, as a three-phase AC frequency of 50(60)Hz, The rated operating voltage is 380V(400V), (660V), and the rated current is 4000A and below in the power distribution system, motor centralized control, reactive power compensation for the use of low-voltage power distribution devices.

Model meaning

G	C	S	-	□	-	□
↓	↓	↓		↓		↓
Enclosed switchgear	Drawout type	Electrical system		Auxiliary circuit scheme number		Main circuit scheme number

Performance index

The design of the device meets the following criteria

IEC439-1 Low-voltage switchgear and control equipment

GB7251 Low voltage switchgear

ZBK360001 Low voltage withdrawable switchgear

Primary structure

● The main frame is made of 8MF open section steel, and the two sides of the section steel have installation holes with modules of 20mm and 100mm and Φ9.2mm respectively, making the internal installation flexible and convenient;

● The main frame assembly form is designed in two ways, full assembly structure and part (side frame and beam) welded structure, for users to choose;

● Each function room of the device is isolated from each other, and its compartment is divided into function unit room, bus bar room and cable room. The function of each chamber is relatively independent;

● The ice flat main bus line is arranged in a flat mode behind the cabinet to enhance the ability of the bus to resist electric power, which is the basic measure to make the main circuit of the device have high short-circuit strength;

● The design of the cable compartment makes it very convenient for the cable to enter and exit.

● Size of universal cabinet (see table below)

Item	Argument									
High	2200									
Wide	400		600		800			1000		
Deep	800	1000	800	1000	600	800	1000	600	800	1000

Basic parameter

Item		Argument	
Main circuit rated voltage (V)		AC 380(400), (660)	
Auxiliary circuit rated voltage (V)		AC 220、380(400)	DC 110/220
Rated frequency (Hz)		50(60)	
Rated insulation voltage (V)		660(1000)	
Rated current (A)	Horizontal bus, Vertical bus (MCC)	≤ 4000、1000	
Bus rated short-time withstand current (kA/1s)		50,80	
Bus rated peak withstand current (kA/0.1s)		105,176	
Power frequency test voltage (V/1min)	Main circuit, auxiliary circuit	2500、1760	
Bus bar	Three-phase four-wire system, three-phase five-wire system	A，B，C，PEN、A，B，C，PE，N	
Class of protection		IP30，IP40	

Functional unit

● The module of drawer height is 160mm. Divided into 1/2 unit, 1 unit, 3/2 unit, 2 unit, 3 unit, five size series. Unit circuit rated current 400A and below;

● The drawer changes only in the height size, and its width and depth dimensions remain unchanged. The drawers of the same functional unit have good interchangeability;

● Each MCC cabinet can be installed with a maximum of 11 one-unit drawers or 22 1/2 unit drawers. One of the drawers above adopts a multi-functional rear plate;

● Drawer inlet and outlet line according to the current size using different number of pieces of the same specification chip structure plug-in;

● The switch between the 1/2 unit drawer and the cable room adopts the back plate structure ZJ-2 type switch;

● The switch between the unit drawer and the cable room adopts the same size rod type or tube type structure ZJ-1 adapter according to the current classification;

● Drawer unit with mechanical interlocking device.

Major electrical component

The selection principle of the main electrical components is based on the introduction of technology, which can be a series of mass production in China and meet the requirements of high performance of the device;

● Power supply and feeder unit circuit breaker main choose AH series. Other more advanced M series produced by Schneider and F series produced by ABB can also be selected. AH circuit breaker has the characteristics of good performance, compact structure, light weight and strong series. The price is relatively low, the maintenance is easy to use, and the performance indicators can meet the requirements of the device;

● The drawer unit (motor control unit, part of the feed unit) circuit breakers mainly choose CM1, TG, TM30 series of plastic-case circuit breakers, and some of them choose NZM-100A series produced by MOELLER company. These switches have the characteristics of good performance, compact structure, short arc or no arc and high technical and economic index, which can meet the requirements of the device.

● Isolation switch and fuse type isolation switch choose Q series. The series has high reliability, strong breaking ability, and can realize mechanical interlocking;

● Fuse main selection NT series;

● AC contactor selected B series, LC1-D series.

Device characteristics

● Improve the heat capacity of the adapter, and greatly reduce the additional temperature rise caused by the temperature rise of the adapter to the connector, cable head and partition;

● The separation between functional units and compartments is clear and reliable, and the failure of a certain unit does not affect the work of other units, so that the failure is limited to the minimum range;

● Bus bar flat arrangement makes the device dynamic and thermal stability is good, can withstand 80/176kA short circuit current impact;

● The number of circuits of MCC cabinet is as high as 22 times, fully considering the needs of large single capacity power generation, petrochemical system and other industries automated electric door (machine) group;

● The connection between the device and the external cable is completed in the cable compartment, and the cable can be up and down. The current transformer is installed in the cable compartment to facilitate installation and maintenance;

● The same power distribution system can match the current limiting reactor to limit the short circuit current, stabilize the bus voltage at a certain value, and partially reduce the requirements for short circuit strength of components;

The drawer unit has a sufficient number of secondary connectors (32 pairs for 1 unit and above, 20 pairs for 1/2 unit) to meet the requirements of the number of contact points of the computer interface and automatic control loop.

Auxiliary circuit

The design of the auxiliary circuit diagram conforms to the relevant design technical regulations such as "Technical Regulations for the Design of Power Consumption in thermal power Plants". Suitable for power plants, substations of low-voltage plant (office) power system and factories and mining enterprises, high-rise buildings in the low-voltage distribution system.

The auxiliary circuit scheme is designed according to the main circuit scheme, which is divided into power supply line, feed line (PC) and motor feed line (MCC).

Installation and use

After the product arrives at the receiving place, it should first check whether the packaging is complete and intact. If any problem is found, the relevant departments of the contract should be notified in time to make business records, jointly analyze the reasons, and prepare visa and post-processing. For products that are not installed immediately, they should be placed in appropriate places and kept properly according to the normal conditions of use and the requirements of the temporary storage regulations of electrical equipment.

● The installation of the product shall be carried out according to the installation diagram (see the attached drawing). The basic channel steel and bolts are provided by the customer. When the main busbar is connected, if the surface is uneven due to transportation and storage reasons, it should be smooth and then connected tightly;

● When the device is installed alone or in a row, its verticality and the deviation of the cabinet surface unevenness and the gap between the cabinets shall comply with the following table.

Serial number	Item		Tolerance (mm)
1	Perpendicularity		3.3
2	Levelness	Top of two adjacent cabinets, top of a row of cabinets	2、5
3	Unevenness	Adjacent two cabinet tops, a row of cabinet tops	1、5
4	Spacing joint		2

● Inspection and inspection of products after installation and before operation

○ Check whether the cabinet paint or other covering materials (such as spray plastic) are damaged, and whether the cabinet is dry and clean;

○ Whether the operating mechanism of electrical components is flexible, there should be no jammed or excessive operating force;

○ Whether the main and auxiliary contacts of major electrical appliances are reliable and accurate;

○ Drawer or pull-out mechanism should be flexible, lightweight, no blocking and collision phenomenon;

○ The center line of the dynamic and static contacts of the drawer or draw-out structure should be consistent, and the contact should be close. The insertion depth of the main and auxiliary contacts should meet the requirements. The mechanical or electrical interlocking device should operate correctly, and the lock or release should be reliable;

○ Drawers of the same size should be easily interchangeable, without jamming and collision;

○ The grounding contact between the drawer and the cabinet should be in close contact. When the drawer is pushed in, the grounding contact of the drawer is contacted first than the main contact. When the grounding contact is pulled out, the grounding contact is disconnected after the main contact.

○ The calibration of the instrument, the ratio and polarity of the transformer should be correct;

○ Fuse core specifications should meet the requirements of engineering design;

○ The rating and setting of the protection should be correct and the operation is reliable;

○ Insulation resistance measured by 1000V megohm meter shall not be less than 1MΩ;

○ Each bus should be properly connected, and the insulation support, mounting parts and other accessories should be firmly and reliably installed.

● Use precautions

○ The device is a low-voltage distribution cabinet without wall installation, positive operation, and double-side maintenance. Only qualified professionals can enter or open the maintenance channels and doors of cabinets for operation, inspection and maintenance.

○ Air circuit breaker, plastic-case circuit breaker after many parts, especially after short circuit, will make the contact local burn and produce carbon substances, so that the contact resistance increases, should be maintained and repaired according to the circuit breaker operating instructions.

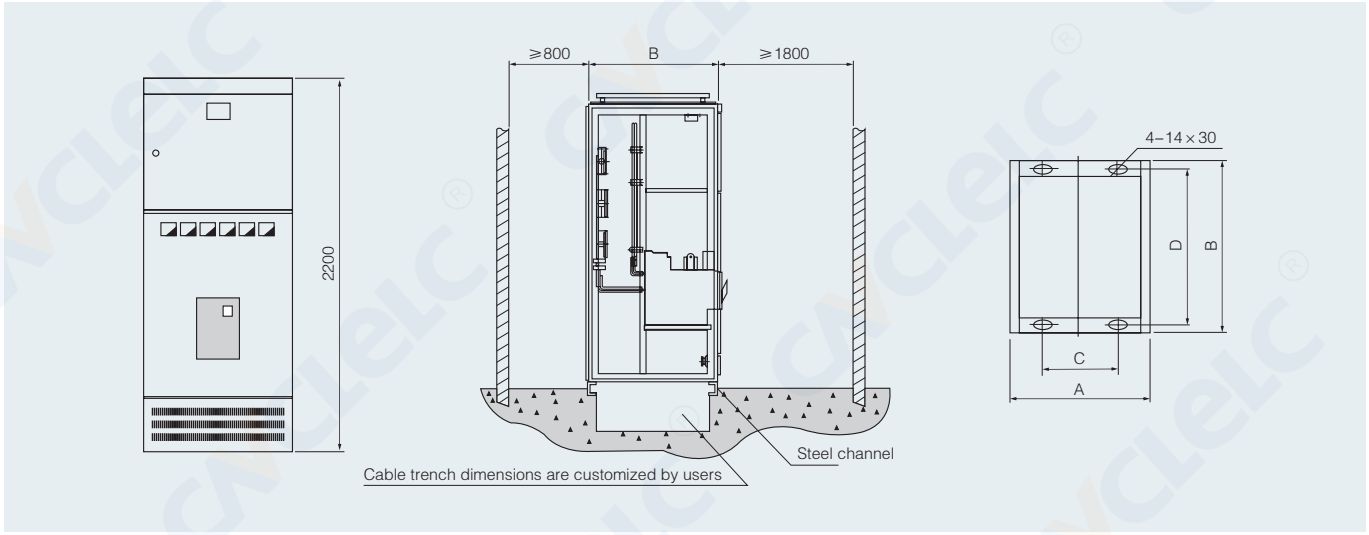
○ After installation and maintenance, it is necessary to strictly check the isolation between the compartments and the functional units to ensure the good functional separation of the device and prevent the expansion of faults.

Product package

The manufacturer shall provide the following documents and attachments when supplying:

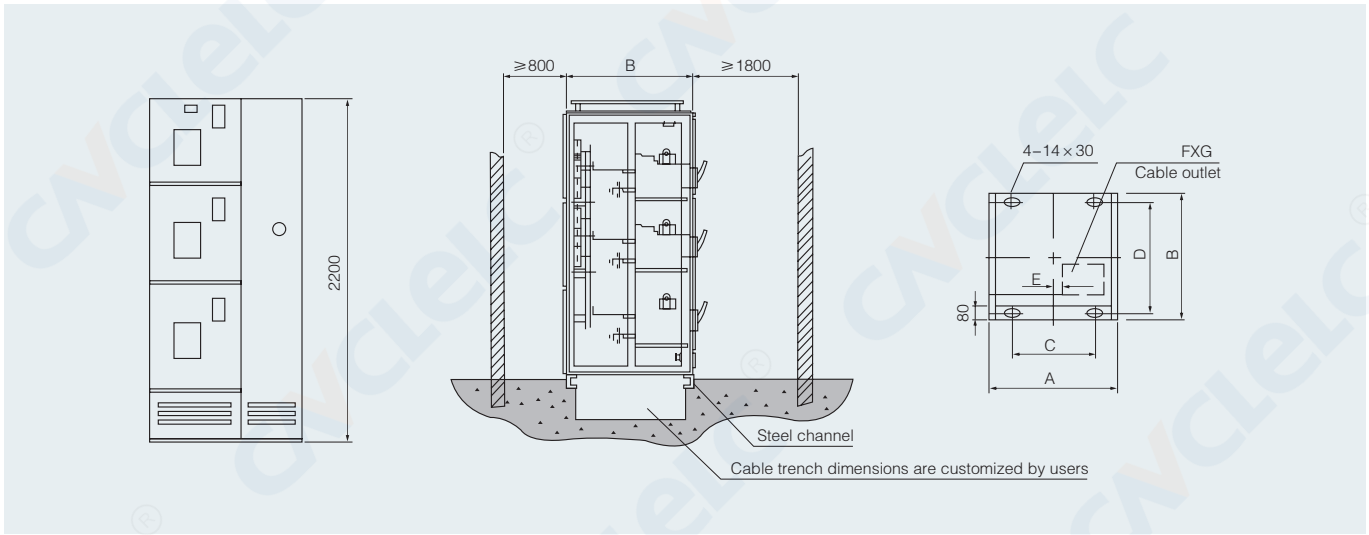
● Device list
● Product certificate
● Instruction manual
● Factory test report
● Electrical drawings
● Cabinet door key, operating handle and spare parts stipulated in the contract
● Installation and use instructions for the main components

Installation diagram



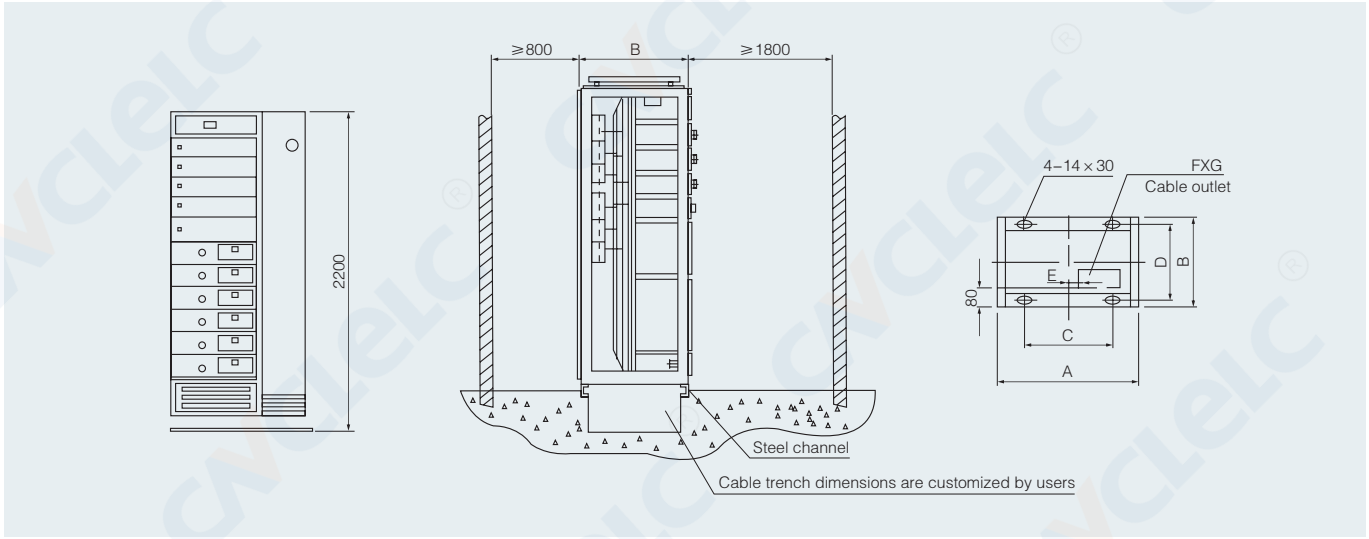
Common cabinet code	A	B	C	D	E	Remark
GCS-TG1010-4	1000	1000	850	956	60	400×400
GCS-TG0810-4	800	1000	650	956	160	200×400
GCS-TG0808-4	800	800	850	756	60	400×400
GCS-TG0608-4	600	800	450	756	160	200×400

PC cabinet installation diagram



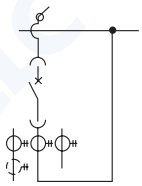
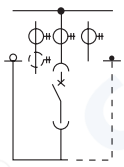
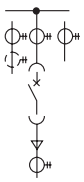
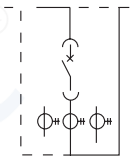
Common cabinet code	A	B	C	D	E	Remark
GCS-TG1010-2	1000	1000	850	956	60	400×400
GCS-TG0810-2	800	1000	650	956	160	200×400
GCS-TG1008-2	1000	800	850	756	60	400×400
GCS-TG0808-2	600	800	650	756	160	200×400

MCC cabinet installation diagram

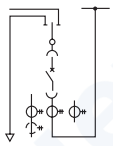
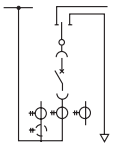


Common cabinet code	A	B	C	D	E	FXG
GCS-TG1006-1	1000	600	850	556	60	400×350
GCS-TG0806-1	800	600	650	556	160	200×350

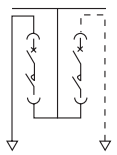
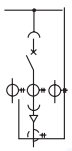
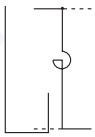
GCS type main circuit scheme

Scheme number	01							02							03							04						
Main circuit scheme																												
Model	A	B	C	D	E	F	G	A	B	C	D	E	F	G	A	B	C	D	E	F	G	A	B	C	D	E	F	G
Short/instantaneous Withstand Current (kA)	80/176							80/176														80/176						
	50/105							50/105							50/105							50/105						
					30/63							30/63						30/63									30/63		
Rated current (A)	4000	3150	2500	2000	1600	1000	630	4000	3150	2500	2000	1600	1000	630	2500	2000	1600	1000	630			4000	3150	2500	2000	1600	1000	630
Main circuit electrical equipment selection AH-40C	1							1														1						
AH-30CH		1							1														1					
AH-25C			1							1					1									1				
AH-20C				1							1					1									1			
AH-16B					1							1					1									1		
AH-10B						1							1					1									1	
AH-6B							1							1					1									1
SDL-□																(1)	(1)	(1)	(1)									
SDL-□ □/5	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)									
W mm	800(1000)				600			800(1000)				600			800		600					1000		800				
D mm	1000		800					1000		800					800							1000		800				
Occupies cabin heightmm																												
Use	Receiving power							Receiving power							Receiving power							Contact						

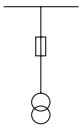
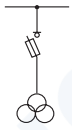
GCS type main circuit scheme

Scheme number	05	06	07	08
Main circuit scheme				
Model		A B C	A B C D E F G	A B C D E F G
Short/instantaneous Withstand Current (kA)		50/105	50/105	50/105
		30/63	30/63	30/63
Rated current (A)		1600 1000 630	1000 630	1000 630
Main circuit electrical equipment selection AH-16B		1	1	1
AH-10B		1	1	1
AH-6B		1	1	1
QPS-1000			1	1
QPS-630				
SDL- □		(1) (1) (1)		
SDH- □ □ /5		1(3) 1(3) 1(3)	3(4) 3(4)	3(4) 3(4)
W mm	400(600)	1000	1000	1000
D mm	800(1000)	800(1000)	800	800
Occupies cabin height mm		640		
Use	Busbar switching	Feed	Dual power manual switch	Dual power manual switch

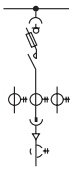
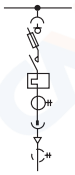
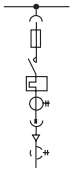
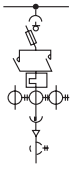
Note: 1.AH is the main circuit breaker, other more advanced performance or imported F, MT series circuit breakers can also be selected. 2.01, 02/04 solution If PE+N cable needs to enter the power cabinet, the size of the cabinet pipe in brackets. 3.SDL and SDH are special current transformers for BGCS cabinets

Scheme number	09	10	11	12
Main circuit scheme				
Model	A B	A B C D	A B C	
Short/instantaneous Withstand Current (kA)	50/105	50/105	50/105	
	30/63	30/63	30/63	
Rated current (A)	400 250	630 400 250 160	400 200 100	600
Main circuit electrical equipment selection QSA-630				
QSA-400				
QSA-250				
QSA-160				
Current limiting reactor 600A 0.0084 Ω / Φ				3
B370,LR1,CJ35	1			
B250,LR1,CJ35	1			
TG400BD,CM1-400L,TM30	1		1	
TG225BD,CM1-225L,TM30			1	
TG100BD,CM1-100L,TM30			1	
SDL- □		(1) (1) (1) (1)	(1) (1) (1)	
SDH- □ □ /5		1(3) 1(3) 1(3) 1(3)	1(3) 1 1	
W mm	800(1000)	1000	800(1000)	600
D mm	600	800(1000)	800	800
Occupies cabin height mm	480×2	480 320	240(160)	
Use	Dual power switching	Feed	Feed	Current limiting reactor

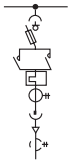
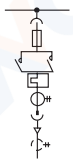
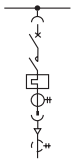
GCS type main circuit scheme

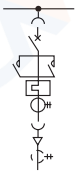
Scheme number	13	14	15	
Main circuit scheme				
Model				
Rated current (A)				
Main circuit electrical equipment selection: QSA-63		1	1	
Main circuit electrical equipment selection: NT00- □	3			
Main circuit electrical equipment selection:				
Main circuit electrical equipment selection:				
Main circuit electrical equipment selection: JDG-0.5 380/100	2	2		
Main circuit electrical equipment selection: JSGW-0.5				
Main circuit electrical equipment selection: SDH- □ □ /5			1	
W mm	(Installed in the receiving cabinet without spacing or connected to the branch bus in the 05 scheme transfer cabinet)			
D mm				
Occupies cabin height mm				
Use	Voltage transformer	Voltage transformer	Voltage transformer	

Note: The feeder scheme can be equipped with zero sequence protection, and the zero sequence current transformer is installed in the cable compartment

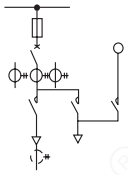
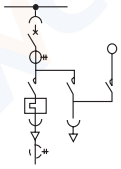
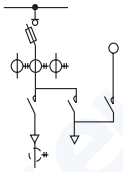
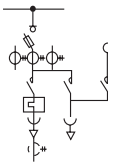
Scheme number	16	17	18	19
Main circuit scheme				
Model	A B C	A B		A B C
Maximum compensation (kW)	100 75 75	35 75	7.5	100 75 55
Main circuit electrical equipment selection: QSA-250	1			1
Main circuit electrical equipment selection: QSA-160	1			1
Main circuit electrical equipment selection: QSA-125	1	1		1
Main circuit electrical equipment selection: HH17-63		1		
Main circuit electrical equipment selection: NT00- □			3	
Main circuit electrical equipment selection: B250,LC1,CJ35	1			2
Main circuit electrical equipment selection: B170-105,LC1,CJ35	1 1			2 2
Main circuit electrical equipment selection: B85 或 LC1-D80		1		
Main circuit electrical equipment selection: B45 或 LC1-D32		1		
Main circuit electrical equipment selection: B16 或 LC1-D18			1	
Main circuit electrical equipment selection: T85,LR1		1		
Main circuit electrical equipment selection: TSA45,LR1		1		
Main circuit electrical equipment selection: T16,LR1	1 1 1		1	1 1 1
Main circuit electrical equipment selection: SDL- □	(1) (1) (1)	(1) (1)	(1)	(1) (1) (1)
Main circuit electrical equipment selection: SDH- □ □ /5	3 3 3	1 1	1	3 3 3
W mm	800(1000)	800(1000)	800/2(1000/2)	800(1000)
D mm	600	600	600	600
Occupies cabin height mm	480	640	160	480
Use	Electric motor (irreversible)	Electric motor (irreversible)	Electric motor (irreversible)	Electric motor (irreversible)

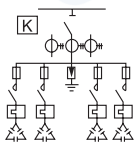
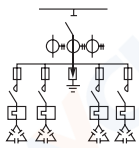
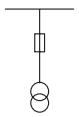
GCS type main circuit scheme

Scheme number	20	21	22	23
Main circuit scheme				
Model	A B		A B C	A B C
Maximum compensation (kW)	37 15	7.5	100 75 55	37 15 7.5
Main circuit electrical equipment selection: QSA-250	1			
Main circuit electrical equipment selection: HH17-63	1			
Main circuit electrical equipment selection: NT00- □		3		
Main circuit electrical equipment selection: CM1-400LTG-400BD,TM30			1	
Main circuit electrical equipment selection: CM1-225M,TM30			1 1	
Main circuit electrical equipment selection: CM1-100M,TG-100BD,TM30				1 1
Main circuit electrical equipment selection: NZMS4,TM30				1
Main circuit electrical equipment selection: B250,LC1,CJ35			1	
Main circuit electrical equipment selection: B170-105,LC1,CJ35			1 1	
Main circuit electrical equipment selection: B85 / LC1-D80	2			1
Main circuit electrical equipment selection: B45 / LC1-D32	2			1
Main circuit electrical equipment selection: B16 / LC1-D18		2		1
Main circuit electrical equipment selection: T85,LR1	1			1
Main circuit electrical equipment selection: TSA45,LR1	1			1
Main circuit electrical equipment selection: T16,LR1		1	1 1 1	1
Main circuit electrical equipment selection: SDL- □	(1) (1)	(1)	(1) (1) (1)	
Main circuit electrical equipment selection: SDH- □ □ /5	1 1	1	3 3 3	
W mm	800(1000)	800/2(1000/2)	800(1000)	800(1000) 800/2(1000/2)
D mm	600	600	600	600 600
Occupies cabin height mm	480	160	480 320	480 160
Use	Motor (reversible)	Motor (reversible)	Electric motor (irreversible)	Electric motor (irreversible)

Scheme number	24	25		
Main circuit scheme				
Model	A B C	A B C		
Short/instantaneous Withstand Current (kA)	50/105 30/63	50/105 30/63		
Maximum compensation (kW)	100 75 55	37 15 7.5		
Main circuit electrical equipment selection: CM1-400LTG-400BD,TM30	1			
Main circuit electrical equipment selection: CM1-225M,TM30	1			
Main circuit electrical equipment selection: CM1-100M,TG-100BD,TM30		1 1		
Main circuit electrical equipment selection: NZMS4,TM30		1		
Main circuit electrical equipment selection: B250,LC1,CJ35	2			
Main circuit electrical equipment selection: B170-105,LC1,CJ35	2			
Main circuit electrical equipment selection: B85 / LC1-D80		2		
Main circuit electrical equipment selection: B45 / LC1-D32		2		
Main circuit electrical equipment selection: B16 / LC1-D18		2		
Main circuit electrical equipment selection: T85,LR1		1		
Main circuit electrical equipment selection: TSA45,LR1		1		
Main circuit electrical equipment selection: T16,LR1	1 1 1	1		
Main circuit electrical equipment selection: SDL- □	(1) (1) (1)	(1) (1) (1)		
Main circuit electrical equipment selection: SDH- □ □ /5	3 3 3	1 1 1		
W mm	800(1000)	800(1000) 800/2 1000/2		
D mm	600	600		
Occupies cabin height mm	480 320	240 160		
Use	Motor (reversible)	Motor (reversible)		

GCS type main circuit scheme

Scheme number	26	27	28	29
Main circuit scheme				
Model	A B	A B	A B	A B
Short/instantaneous Withstand Current (kA)	50/105 30/63	50/105 30/63	50/105 30/63	50/105 30/63
Maximum compensation (kW)	160 90	37 15	160 90	37 15
Main circuit electrical equipment selection QSA-400~250			1 1	
QSA-125				1
HH17-63				1
NT3- □	3 3			
TG-400BD,TM30	1			
CM1-225M,TM30	1			
CM1-100M,TG-100BD,TM30				
B370+B250,LC1,CJ35	2+1		2+1	
B370+B170,LC1,CJ35	2+1		2+1	
B85 / LC1-D80		3		3
B45 / LC1-D32		3		3
T85,LR1		1		1
TSA45,LR1		1		1
T16,LR1	1 1		1 1	
SDL- □	(1) (1)	(1) (1)	(1) (1)	(1) (1)
SDH- □ □ /5	3 3	1 1	3 3	1 1
W mm	1000	800(1000)	800(1000)	800(1000)
D mm	800(1000)	600	600	600
Occupies cabin height mm	1120 960	320	800	320
Use	Y- △ Start	Y- △ Start	Y- △ Start	Y- △ Start

Scheme number		30	31	32
Main circuit scheme				
Model		A B C	A B C	
Maximum compensation (kW)		160 128 96	160 128 96	
Main circuit electrical equipment selection QA-400		1 1 1	1 1 1	
am-32		30 24 18	30 24 18	
QSA-125				
NT00- □				3
JBK3-400				1
B30C		10 8 6	10 8 6	
T45,LR1		10 8 6	10 8 6	
BCMJ-0.4-16-3		10 8 6	10 8 6	
SDH- □ □ /5		3 3 3	3 3	
W mm		1000 800	1000 800	
D mm		800(1000)	800(1000)	
Occupies cabin height mm				
Use		Reactive power compensation (main cabinet)	Reactive power compensation (main cabinet)	Common power source

S13/S20/S22

10KV、20KV
Oil-immersed transformer

Overview

S13/S20/S22 series fully sealed oil-immersed transformers are suitable for power systems with AC 50Hz and rated working voltage of 20kV and below, as the power distribution of petroleum, metallurgy, chemical, textile, light industry and other enterprises and places with heavy dust transformer.

S13/S20/S22

10KV、20KV Oil-immersed transformer

Model meaning

S	□	-	M	□	/	□
↓	↓		↓	↓		↓
Three phase	Design sequence number		Complete seal	Capacity (kVA)		High pressure side Voltage level

Transformer product standard

GB1094.1-1996 GB 1094.2-1996 JB/T10088-2004

GB1094.3-2003 GB 1094.5-2003 GB/T10237-1988

GB/T6451-1999 GB/T 7595-1987 JB/T3837-1998

Conditions of use

- Ambient temperature: Maximum +40° C, Minimum -25° C (outdoor type) / -5° C (indoor type).
- Altitude: Installation site altitude should not exceed 1000 meters.
- Relative humidity: Daily average ≤ 95%, Monthly average ≤ 90%.
- Seismic intensity: Not exceeding 8 degrees.
- Installation environment: No fire, explosion hazards, severe pollution, chemical corrosion, or intense vibrations.
- Cooling method: ONAN (Oil Natural Air Natural) or ONAF (Oil Natural Air Forced).
- Frequency: Rated frequency 50Hz or 60Hz.
- Rated voltage: Should match the system voltage level, typically 6kV, 10kV, 20kV, 35kV, etc.

Characteristics Of The Product

- Core:Core is made of high permeability grain oriented cold-rolled silicon steel. The core of the new core, miter joints convolution type iron core, its legs of circular cross section multi-step, the yoke and the core of constant section.

- Winding:Windings corrugated oil passage, not dipping process, tightening belt lashing; concentric coil windings are: high voltage winding has a corresponding tap tap voltage requirements, lead to a tap on the switch, the switch is mounted on the cover, and the need to cut After the power supply before converting voltage tap.

- Security devices:30~2000kVA transformer equipped with a pressure release valve; Can be installed with alarm and trip relays gas terminals according to user needs;

- Oil temperature measurement device:Headers transformers are equipped with a glass thermometer, tube socket located on the top of the tank, inserted into the oil 120±10mm; 1000~2000kVA transformer type equipped with outdoor thermometer signal;

- Transformer tank: The transformer tank is made up of corrugated walls. The surface is dust-sprayed and the paint film is firm. The corrugated fins not only have a cooling function, but also have a "breathing" function. The elasticity of the corrugated fins can compensate for the change in the volume of the transformer oil caused by the temperature rise and fall. Therefore, the fully sealed transformer has no oil storage cabinet, which reduces the overall height of the transformer;

- The transformer is vacuum-filled during packaging, completely removing the moisture in the transformer, and the transformer oil is not in contact with the air. Effectively prevent oxygen and moisture from intruding into the transformer, resulting in a decrease in the insulation performance of the transformer and the possibility of aging of the transformer oil, so the oil sample test is performed irregularly;

S13/S20/S22

10KV、20KV Oil-immersed transformer

S13-M type 6~10kV oil-immersed distribution transformer

Rated capacity (kVA)	Voltage combinationand tap range			Vector group symbol	No-load loss(W)	Load loss (W)	No-load current (%)	Short circuit impedance (%)
	High pressure (kV)	High pressure tap range (%)	Low pressure (kV)					
30	6 6.3 6.6 10 10.5 11	±5 ±2×2.5%	0.4	Dyn11 Yzn11 Yyn0	80	630/600	1.8	4
50					100	910/870	1.6	4
63					110	1090/1040	1.6	4
80					130	1310/1250	1.5	4
100					150	1580/1500	1.4	4
125					170	1890/1800	1.4	4
160					200	2310/2200	1.3	4
200					240	2730/2600	1.2	4
250					290	3200/3050	1.2	4
315					340	3830/3650	1.1	4
400					410	4520/4300	1.1	4
500					480	5410/5150	1.0	4
630					570	6200	0.9	4.5
800				Dyn11 Yyn0	700	7500	0.8	4.5
1000					830	10300	0.8	4.5
1250					970	12000	0.7	4.5
1600					1170	14500	0.6	4.5

S13-M type 20kV oil-immersed distribution transformer

Rated capacity (kVA)	Voltage combinationand tap range			Vector group symbol	No-load loss(W)	Load loss (W)	No-load current (%)	Short circuit impedance (%)
	High pressure (kV)	High pressure tap range (%)	Low pressure (kV)					
50	20 22 24	±5 ±2×2.5%	0.4	Dyn11 Yyn0	170	1270/1210	2.00	6.5
100					230	2120/2020	1.80	6.5
125					270	2500/2380	1.70	6.5
160					290	2970/2830	1.60	6.5
200					340	3500/3330	1.50	6.5
250					410	4160/3960	1.40	6.5
315					490	5010/4770	1.40	6.5
400					580	6050/5760	1.30	6.5
500					690	7280/6930	1.20	6.5
630					830	8280	1.10	6.5
800					980	9900	1.00	6.5
1000					1150	12150	1.00	6.5
1250					1410	14670	0.90	6.5
1600					1700	17550	0.80	6.5

Note: 1. The load loss above the slash line in the table applies to the Dyn11 connection group, and the load loss value below the slash line applies to the Yyn0 connection group.
2, other capacity of the product performance parameters, determined by the user and the manufacturer.

S20M oil becomes level 2 energy efficient

Rated capacity (kVA)	No-load loss (W)	Load loss (W)	No-load current (%)	Dimensions (mm)
30	70	505	1.5%	770*415*860
50	90	730	1.3%	820*565*910
80	115	1050	1.2%	860*600*950
100	135	1265	1.1%	880*630*970
125	150	1510	1.1%	890*670*1030
160	180	1850	1%	920*690*1050
200	215	2185	1%	940*685*1070
250	260	2560	0.9%	965*710*1100
315	305	3065	0.9%	1165*725*1140
400	370	3615	0.8%	1195*745*1170
500	430	4330	0.8%	1195*750*1220
630	510	4960	0.6%	1285*830*1250
800	630	6000	0.6%	1390*915*1280
1000	745	8240	0.6%	1600*1130*1290
1250	870	9600	0.5%	1625*1125*1350
1600	1050	11600	0.5%	1700*1175*1430
2000	1225	14640	0.4%	1860*1325*1470
2500	1440	14840	0.4%	1860*1235*1630

S22M oil to Level 1 energy efficiency

Rated capacity (kVA)	No-load loss (W)	Load loss (W)	No-load current (%)	Dimensions (mm)
30	65	455	1.5%	815*430*860
50	80	655	1.3%	860*460*930
80	105	945	1.2%	910*625*970
100	120	1140	1.1%	940*645*1010
125	135	1360	1.1%	950*660*1080
160	160	1665	1.0%	965*680*1110
200	190	1970	1.0%	995*695*1130
250	230	2300	0.9%	1015*715*1150
315	270	2760	0.9%	1185*725*1180
400	330	3250	0.8%	1250*785*1210
500	385	3900	0.8%	1270*810*1280
630	460	4460	0.6%	1325*855*1310
800	560	5400	0.6%	1355*870*1330
1000	665	7415	0.6%	1460*970*1350
1250	780	8640	0.5%	1535*1005*1390
1600	940	10440	0.5%	1610*1060*1500
2000	1085	13180	0.4%	1740*1165*1550
2500	1280	13360	0.4%	1830*1155*1730

35KV

Oil-immersed transformer

Overview

This series of products are more advanced in design and have been greatly improved in material, structure and technology. High and low pressure clamps are made of steel strip or upper beam and side beam, forming a strong frame structure to enhance the clamping force of iron core and its resistance to transportation impact. Strong short circuit resistance, beautiful appearance, reliable operation, low loss, low noise, reach the advanced level of similar products abroad.

35KV

Oil-immersed transformer

Model meaning

S	□	□	□	-	□	/	□
↓	↓	↓	↓		↓		↓
Three-Phase	"F" is no code for air cooling	No excitation voltage regulation no code "Z" is load regulation	Performance Level Code-Name		Rated Capacity (kVA)		Voltage Grade (kV)

Execution standard

GB 1094.1~2	《General Provisions Of Power Transformers》
	《Temperature Length Of Oil-Immersed Transformer》
GB 1094.3	《Insulation Level, Insulation Test And External Insulation Air Gap》
GB 1094.5	《Capacity Of Electrical Transformers To Withstand Short Circuits》
GB/T 6451	《Technical Parameters And Requirements Of Oil-Immersed Power Transformer》
GB/T 15164	《Load Guide For Oil-Immersed Power Transformers》
GB2536	《Transformer Oil》

Conditions of use

- Ambient Temperature: Maximum +40° C, Minimum -25° C (outdoor) / -5° C (indoor).
- Altitude: Not exceeding 1000 meters above sea level.
- Relative Humidity: Daily average ≤ 95%, Monthly average ≤ 90%.
- Seismic Intensity: Not exceeding 8 degrees.
- Installation Environment: Free from fire, explosion hazards, severe pollution, chemical corrosion, or violent vibration.
- Cooling Method: ONAN (Oil Natural Air Natural) or ONAF (Oil Natural Air Forced).
- Rated Frequency: 50Hz or 60Hz.
- System Voltage Level: Rated voltage 35kV, matching system requirements.

Product Features of 35kV Oil-Immersed Transformer

Feature	Description
High Efficiency	The transformer adopts low-loss silicon steel sheets and optimized design to achieve low no-load loss and low load loss.
Excellent Insulation Performance	High-quality insulating materials and advanced vacuum drying and oil-filling processes ensure reliable insulation.
Strong Overload Capacity	The transformer is designed to withstand short-term overloads and has strong thermal stability.
Low Noise	Optimized magnetic circuit design and quality materials reduce operational noise effectively.
Long Service Life	High mechanical strength, strong resistance to mechanical impact and environmental adaptability, ensuring long-term stable operation.

S13 35kV Oil immersed power transformer

Rated capacity (kVA)	Voltage combinationand tap range			Vector group symbol	No-load loss(W)	Load loss (W)	No-load current (%)	Short circuit impedance (%)
	High pressure (kV)	High pressure tap range (%)	Low pressure (kV)					
50	35 38.5	±5% ±2×2.5%	0.4	Dyn11 Yyn0	130	1200/1140	1.30	6.5
100					185	2010/1910	1.10	6.5
125					215	2370/2260	1.10	6.5
160					225	2820/2680	1.00	6.5
200					270	3320/3160	1.00	6.5
250					320	3950/3760	0.95	6.5
315					385	4750/4530	0.95	6.5
400					465	5740/5470	0.85	6.5
500					545	6910/6580	0.85	6.5
630					665	7860	0.65	6.5
800					785	9400	0.65	6.5
1000					920	11500	0.65	6.5
1250					1120	13900	0.60	6.5
1600					1350	16600	0.60	6.5

Note:

1, according to the requirements of high voltage transformer tap range for ±2×2.5%.

2, other capacity product performance parameters, determined by the user in consultation with the manufacturer.

SZ11 35kV On-load tap change oil immersed power transformer

Rated capacity (kVA)	Voltage combination and tap range			Vector group symbol	No-load loss(W)	Load loss (W)	No-load current (%)	Short circuit impedance (%)
	High pressure (kV)	High pressure tap range (%)	Low pressure (kV)					
2000	35	±3×2.5	6.3 10.5	Yd11	2300	19240	0.80	6.5
2500					2720	20640	0.80	6.5
3150	35~38.5	±3×2.5	6.3 10.5		3230	24710	0.72	7.0
4000					3870	29160	0.72	7.0
5000					4640	34200	0.68	7.0
6300					5630	36770	0.68	7.5
8000				Ynd11	7870	40610	0.60	7.5
10000					9280	48050	0.60	8.0
12500	35~38.5	±3×2.5	6.3 6.6 10.5 11		10940	56860	0.56	8.0
16000					13170	70320	0.54	8.0
20000					15570	82780	0.54	8.0

SC(B) 13/14/18

Resin-insulated dry transformer

Overview

10kV grade SC(B)13/14/18 epoxy resin cast dry-type transformer, which can be used as a replacement product for oil-immersed distribution transformers. It is the best-performing product among all types of dry-type transformers, especially suitable for urban areas. Power grids, high-rise buildings, business centers, theaters, hospitals, hotels, tunnels, subways, stations, docks, airports, underground power stations, test rooms, combined substations and other important places.

SC(B) 13/14/18

Resin-insulated dry transformer

Model meaning

S	C	(B)	□	-	□	/	□
↓	↓	↓	↓		↓		↓
Three Phase	Resin insulation	Low-voltage foil winding	Performance Level Code-Name		Rated capacity (kVA)		Voltage grade (kV)

Characteristics of the product

The 10kV SC(B)13/14/18 power transformers produced by our factory are dry type transformers with low-noise and low-loss resin wound coil with product type certificate. Due to advanced design, high quality materials, scientific formulation, strict process and high standard of testing, the products have the following characteristics:

● The high voltage winding of copper wire, low voltage winding wound of copper wire or copper foil, glass fiber mat is filled with wrapping, vacuum packing of the epoxy used without casting, curing to form a solid cylindrical overall, mechanical high strength, partial discharge of small, high reliability.

● Antiflaming. anti-explosion will not pollute the environment. Glass fibre Coil winding coil such with self-extinguishing properties. and will not produce electric arc for short-circuit, does not produce toxic or harmful gases in high temperature condition.

● The coil does not absorb moisture, core clamps have a speaal corrosion protection layer, 100% relative humidity and other harsh environment. Interrupt driving need not remove tide treatment.

● Short circuit resistant and high level oflightning impulse.

● The resin inside and outside the coil is thin, heat dispersion is good. Cooling air is used air cool in nature (AN). For any degree of protection transformer, equip with air-cooled system (AF), in order to improve overload capacity of short-term, and ensure safe operation.

● Lower consumption, energy-saving. Running for a savings, can be maintenance-free.

● Small volume, light weight, small area, lower installation costs, not need to consider oil tank, rire protection andbackup power, stand-by UPS.

● Because there was no fire and explosion danger, installed in the load center can be distributed and fully close to the power point, thus reduang the line low cost and save the expensive facilities costs.

SC (B) 13 Dry type transformer

Type	Rated Capacity (kVA)	Voltage combinations and tap range			Connection group symbol	No-load loss (W)	Load loss 75℃ (W)	No-load current (%)	Short-circuit impedance (%)
		High pressure (kV)	High pressure tap range (%)	Low pressure (kV)					
SC(B)13-30	30	10 6.3 6	±5% ±2×2.5 / ×2.5 $^{+3}_{-1}$	0.4	Yyn0 / Dyn11	135	640	2.0	4.0
SC(B)13-50	50					195	900	2.0	
SC(B)13-80	80					265	1240	1.5	
SC(B)13-100	100					290	1410	1.5	
SC(B)13-125	125					340	1660	1.3	
SC(B)13-160	160					385	1910	1.3	
SC(B)13-200	200					445	2270	1.1	
SC(B)13-250	250					515	2480	1.1	
SC(B)13-315	315					635	3120	1.0	
SC(B)13-400	400					705	3590	1.0	
SC(B)13-500	500					835	4390	1.0	
SC(B)13-630	630					965	5290	0.85	
SC(B)13-630	630					935	5360	0.85	6.0
SC(B)13-800	800					1090	6260	0.85	
SC(B)13-1000	100					1270	7310	0.85	
SC(B)13-1250	1250					1500	8720	0.85	
SC(B)13-1600	1600					1760	10500	0.85	
SC(B)13-2000	2000					2190	13000	0.7	
SC(B)13-2500	2500					2590	15400	0.7	

SCB14 dry change level 2 energy efficiency

Rated Capacity (kVA)	No-load loss (W)	Load loss (W)	No-load current (%)	Short-circuit impedance (%)
30	130	640	2.0%	700*360*675
50	180	900	2.0%	770*460*710
80	250	1240	1.5%	770*460*770
100	270	1415	1.3%	790*460*730
125	320	1665	1.3%	870*460*845
160	365	1915	1.1%	860*460*805
200	420	2275	1.1%	940*920*806
250	490	2485	1.0%	960*920*906
315	600	3125	1.0%	980*970*906
400	665	3590	1.0%	1010*970*936
500	790	4390	1.0%	1030*970*956
630	885	5360	0.9%	1220*1120*906
800	1035	6265	0.9%	1270*1170*946
1000	1205	7315	0.9%	1300*117*1016
1250	1420	8720	0.9%	1370*1220*1051
1600	1665	10555	0.9%	1450*1270*1161
2000	2075	13005	0.7%	1470*1270*1295
2500	2450	15445	0.7%	1450*1320*1336

SCB18 dry change level 1 energy efficiency

Rated Capacity (kVA)	No-load loss (W)	Load loss (W)	No-load current (%)	Short-circuit impedance (%)
30	130	640	2.0%	700*360*675
50	185	900	2.0%	770*460*710
80	250	1240	1.5%	770*460*770
100	270	1415	1.3%	790*460*730
125	320	1665	1.3%	870*460*845
160	365	1915	1.1%	860*460*805
200	420	2275	1.1%	940*920*806
250	490	2485	1.0%	960*920*856
315	510	3125	1.0%	980*970*906
400	570	3590	1.0%	1010*970*936
500	670	4390	1.0%	1030*970*956
630	750	5365	0.9%	1220*1120*906
800	875	6265	0.9%	1270*1170*946
1000	1020	7315	0.9%	1300*1170*1016
1250	1205	8720	0.9%	1370*1220*1051
1600	1415	10555	0.9%	1450*1270*1161
2000	1760	13005	0.7%	1475*1270*1295
2500	2080	15445	0.7%	1450*1320*1356

ZN63A(VS1)-12

Indoor High Voltage
Vacuum Circuit Breaker

Overview

VS1-12 type indoor high-voltage vacuum circuit breaker, a three-phase AC 50Hz rated voltage of 12kV power system indoor switching equipment, as the power grid equipment, industrial and mining enterprises power equipment protection and control unit. Suitable for frequent operation at rated operating current, or multi-alternating short-circuit current.

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

ZN63A(VS1)-12

Indoor High Voltage Vacuum Circuit Breaker

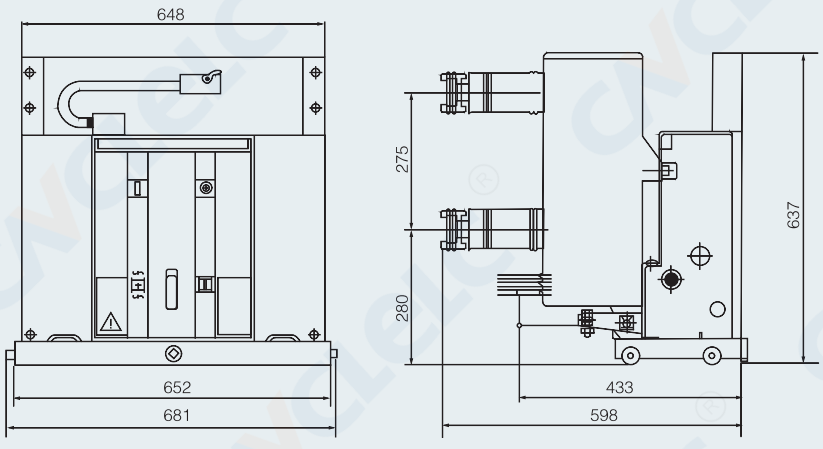
Model meaning

VS	1	-	12	/	□	-	□
↓	↓		↓		↓		↓
Indoor high voltage vacuum circuit breaker	Product design serial number		Rated voltage (kV)		Rated current (A)		Rated short circuit breaking current (kA)

Main technical parameters

Item		Units	Argument		
Rated voltage		kV	12		
Rated insulation level	Peak rated lightning impulse withstand voltage	kV	75		
	1min power frequency withstand voltage		42		
Rated short-circuit breaking current		kA	20/25	31.5	40
Rated current		A	630 1250	630、1250 1600、2000 2500、3150	1250、 1600、2000 2500、3150
Rated thermal stable current (RMS)		kA	20/25	31.5	40
Rated dynamic stable current (peak)			63	80	100
Rated short circuit closing current (peak)			63	80	100
Rated short circuit breaking current breaking times		Number of times	50		
Secondary circuit power frequency withstand voltage (Imin)s		V	2000		
Rated operating sequence			O-0.3-CO-180s-CO		
			O-180s-CO-180s-CO		
Rated thermal stability time		s	4		
Rated single/back-to-back capacitor bank breaking current		A	630/400 800/400(40kA)		
Mechanical life		Number of times	10000		

External mounting dimension (mm)



Rated current (A)	630	1250	1600
Rated short circuit breaking current (A)	20/25	25/31.5	31.5

FZRN25-12D/T200-31.5

Indoor AC High Voltage Vacuum
Load Break Switch with Fuse

Overview

FZN25, FZRN25 plateau type vacuum load switch and combination electrical appliances, suitable for three-phase AC 50Hz ring network or terminal power supply and industrial electrical equipment, for load control and short circuit protection, load switch switching load, closed loop current, no-load transformer and cable charging current, combination electrical appliances can be broken up to any current rated short current, Direct acting isolation fracture and vacuum interrupter linkage are adopted. It has manual and electric functions.

FZN25, FZRN25 plateau type vacuum load switch and combined electrical appliances have high temperature resistant, strong insulation, and flame retardant transparent glass cover between the static contact and the moving guide torch, effectively ensuring the safe operation of equipment and personal safety. The load switch and ground switch are equipped with reliable mechanical interlocking, which not only ensures safety but also facilitates maintenance.

FZRN25-12D/T200-31.5

Indoor AC High Voltage Vacuum Load Break Switch with Fuse

Structural characteristics

The switch has a real sense of double fracture design, the overall installation than ZFN21 and other types of vacuum series switch has simple design, convenient installation, simple and efficient debugging, small size, low cost characteristics, to avoid other types of switch accessories, installation complex lock, debugging is not easy, has great cost-effective advantages. The switch can come with sensors and displays, which can save considerable material and manufacturing costs for users such as complete sets of companies, and has great market promotion value.

The switch with sensor and display series products are used in cable branch boxes, which can effectively save space and greatly reduce the volume of outdoor boxes. Greatly reduce the production cost.

Product characteristics

- Double fracture design in the true sense
- Small size, low cost
- Easy to operate
- High mechanical life
- Can come with sensor and display
- Low requirements on the environment
- Wall-hanging operation is optional
- Suitable for plateau products within 1000, 800m

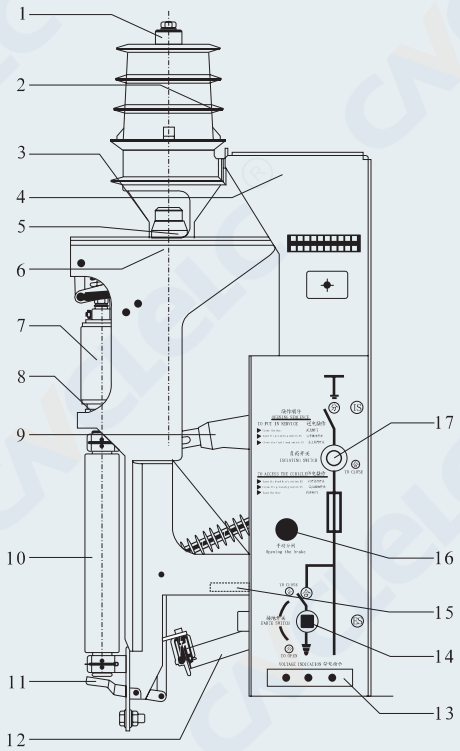
Main technical parameters

Item		Units	Argument	
			FZN25-15D{T630-20	FZRN25-15D/T200-31.5
Rated voltage		KV	15	15
Rated frequency		Hz	50	50
Rated current		A	630	200
Rated insulation level	1 min power frequency withstand voltage	KV	Interrupter fracture 30; To the ground, phase 45; Isolation fracture 48	
	Lightning impulse withstand voltage	KV	To the ground, phase 75; Isolation fracture 85	
Rated dynamic stability current (peak)		KA	50	-
4S heat stable current		KA	20	-
Rated active load current		A	630	-
Rated closed loop current		A	630	-
Rated cable charging breaking current		A	10	-
Disconnect no-load transformer capacity		KVA	1250	-
Rated short-circuit breaking current		KA	-	31.5
Rated transfer current, rated transfer current		A	-	3150
Type of fuse			-	SDLAJ-12 SFLAJ-12
The impactor outputs energy		J	-	2-5 (Medium)
Rated short-circuit closing current		KA		50
Rated dynamic and stable current of the ground switch		KA		50
Ground switch 2S heat stable current		KA		20
Rated voltage of auxiliary loop		V		220, 100
Mechanical life		time		10000

FZRN25-12D/T200-31.5

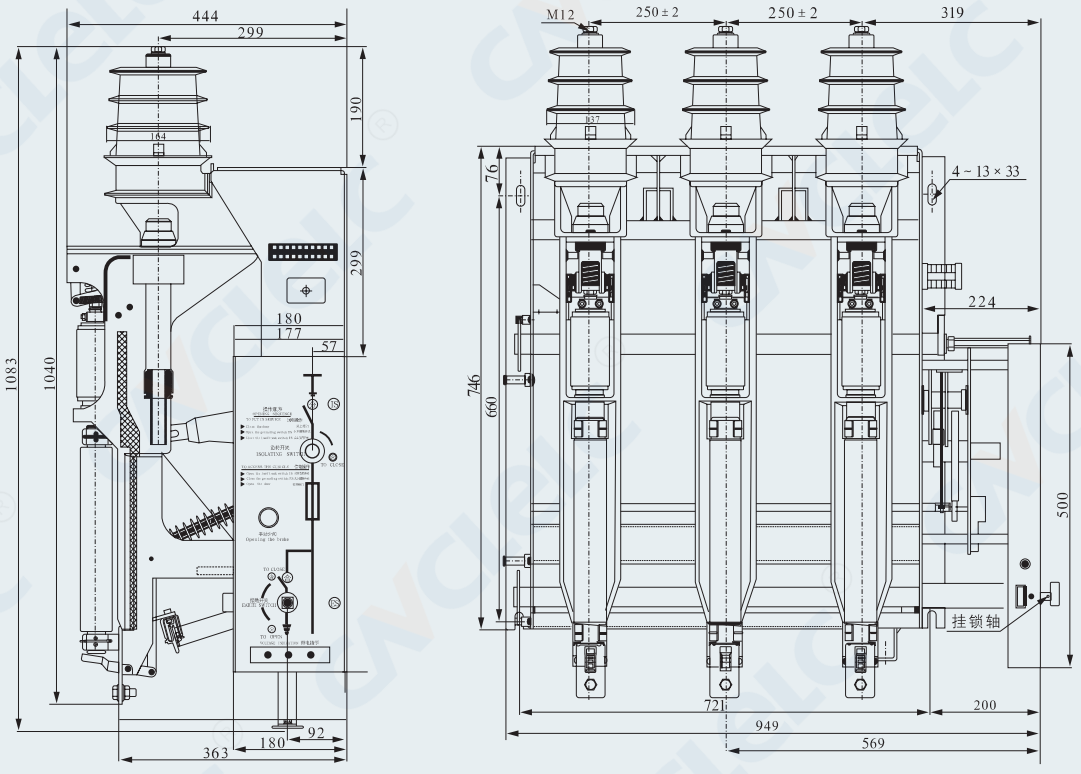
Indoor AC High Voltage Vacuum Load Break Switch with Fuse

Product structure diagram



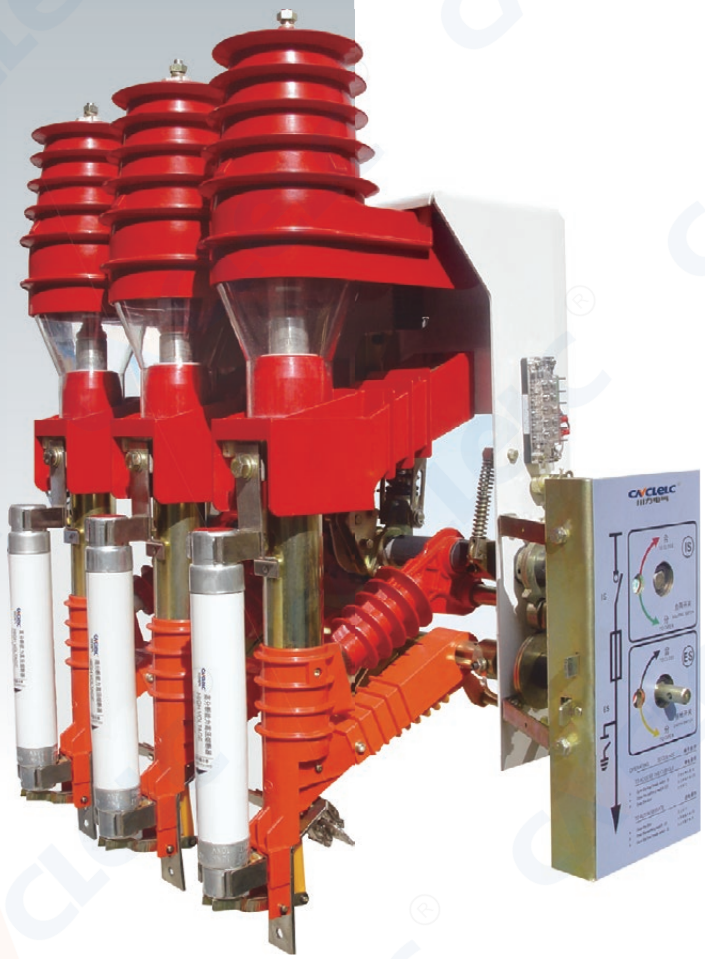
1. Isolation switch upper contact seat
2. Insulating support frame
3. Clear glass cover
4. Metal frame
5. Isolation switch guide torch
6. Isolation switch lower contact seat
7. Vacuum interrupter
8. Vacuum isolation chamber lower outlet seat
9. Vacuum load switch drive part
10. fuse
11. Trip part
12. Ground switch
13. Live indicator
14. Ground switch operation hole
15. Cabinet door lock pin
16. Manual switch button
17. Energy storage and closing operation holes

Dimensions and mounting dimensions (mm)



FN12-12D/T630-20
FN12-12DR/T125-31.5

Indoor AC High Voltage Load
Break Switch with Fuse



Overview

FN12-12 and FN12-12RD combined electrical appliances are three-phase high-voltage switchgear with rated voltage of 12KV and rated frequency of 50Hz, which are used for switching load current, closed-loop current no-load transformer and cable charging current, closing short-circuit current, and load switch equipped with ground switch, which can withstand short-circuit current. It is mainly used in urban distribution power stations and industrial electrical equipment for three-phase ring network or terminal power supply. For responsible control and short circuit protection purposes.

FN12-12D/T630-20 / FN12-12DR/T125-31.5

Indoor AC High Voltage Load Break Switch with Fuse

Model meaning

F	N	12	-	12	D	/	630	-	20	-	□
↓	↓	↓		↓	↓		↓		↓		↓
Ac high voltage load switch	Indoor	Design sequence number		Rated voltage (KV)	Ground switch		Rated active load current (A)		Rated heat stable current (kA)		Mechanical form: S hand exercise; D motor

F	N	12	-	12	(R)	D	/	125	-	31.5	-	□
↓	↓	↓		↓	↓	↓		↓		↓		↓
Ac high voltage load switch-fuse combination appliance	Indoor	Design sequence number		Rated voltage (KV)	With a fuse	Ground switch		Rated active load current (A)		Rated heat stable current (kA)		Mechanical form: S hand exercise; D motor

Main technical parameters

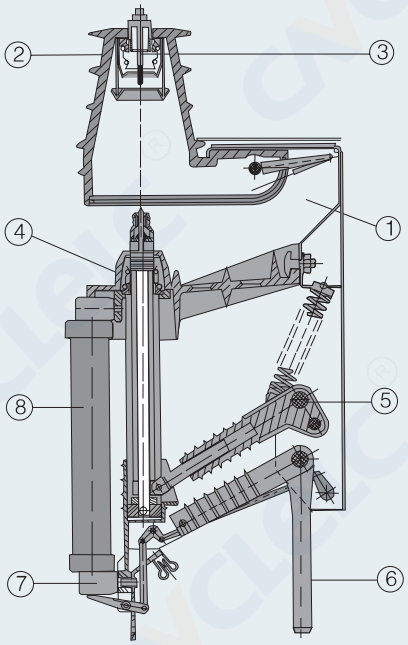
Item	Units	FN 12-120/630	FN12-12RD/125-31.5
Rated voltage	KV	12	12
Rated frequency	Hz	50	50
Rated current	A	630	100
Lightning impulse withstand voltage	KV	Ground and interphase 75, isolation fracture 85	
1 min power frequency withstand voltage	kV	Ground and interphase 42, isolation fracture 48	
Rated heat stable current	kA	20(4S)	
Rated dynamic stable current	KA	50	
Rated closing current (peak)	kA	50	
Rated short-circuit breaking current	kA		31.5
Rated transfer current	kA		1 5
Disconnect no-load transformer capacity	kVA	1250	1250
Rated cable charging current	A	10	10
Rated active load current breaking times	time	10000	10000
Impactor trigger load switch opening time	s		< 0.06
Ground switch heat stabilized current	KA	20 (28)	
Ground switch dynamic stable current	KA	50	
Operating power supply		110、220	110、220

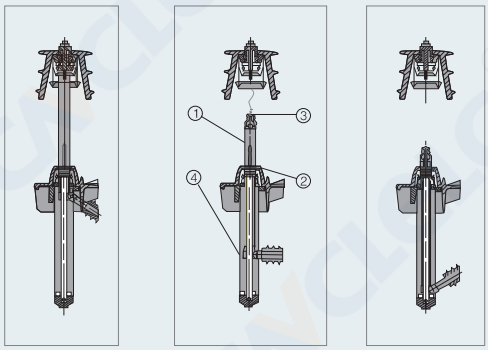
FN12-12D/T630-20 / FN12-12DR/T125-31.5

Indoor AC High Voltage Load Break Switch with Fuse

Product structure diagram

(1) Framework
(2) Upper insulated bell jar
(3) arc rod
(4) Lower insulation sleeve
(5) Main axis
(6) Ground knife
(7) Fuse frame
(8) Fuse

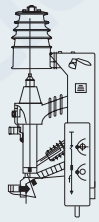


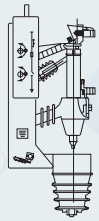


(1) Moving contact (cylinder)
(2) Fix the piston
(3) Nozzle
(4) Fixed support

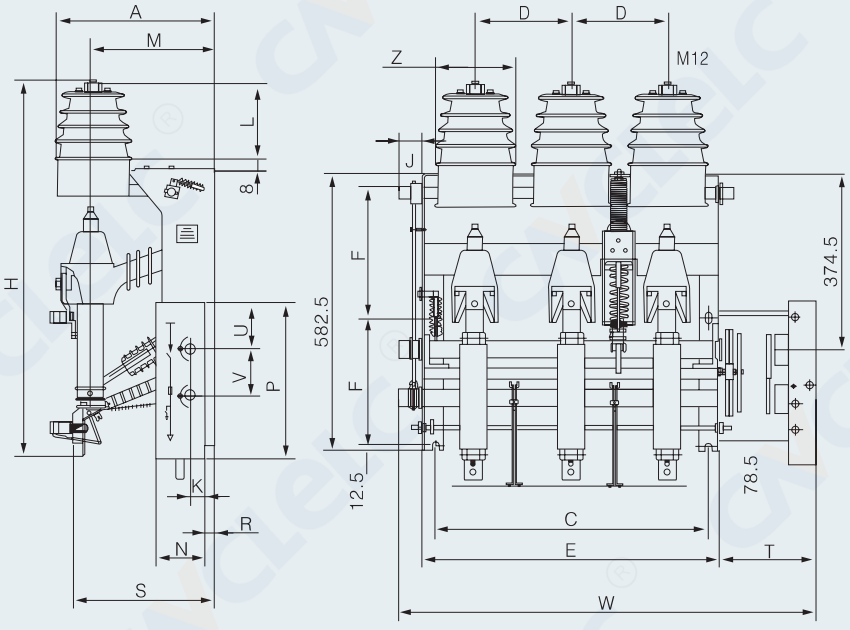
Dimensions and mounting dimensions (mm)

FN12-12RD side mounting operation on the right





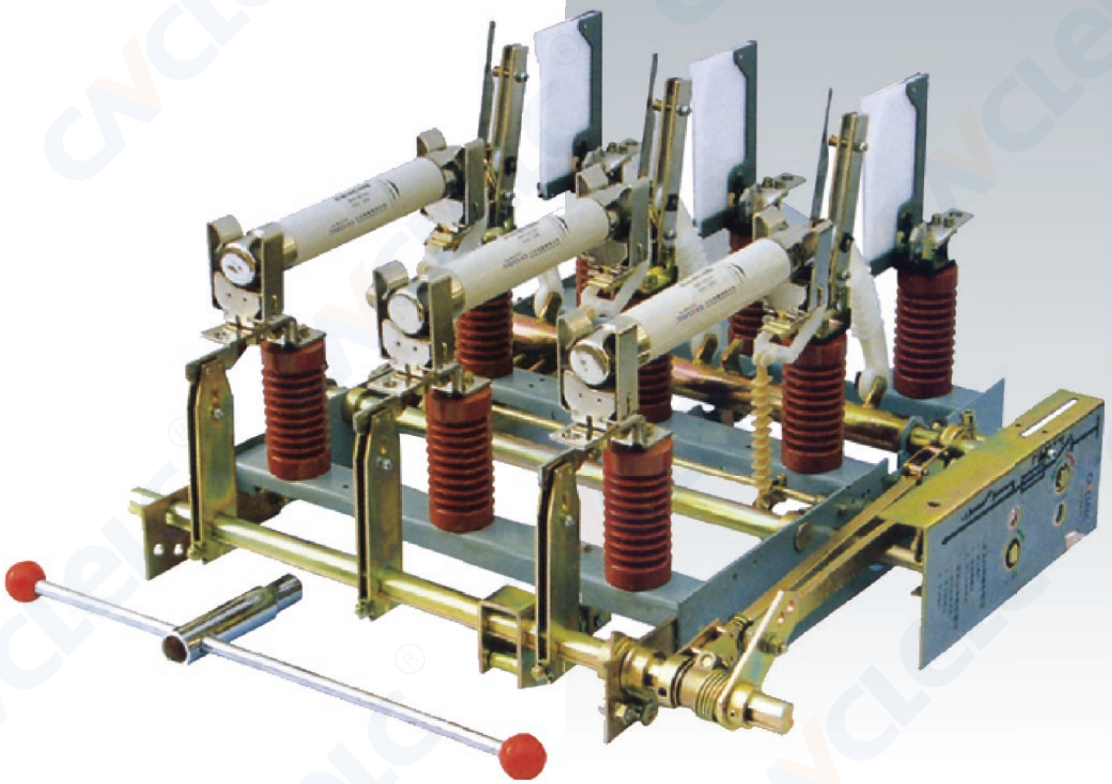
Side flip right operation



Model	A	H	C	D	E	F	K	J	L	M	N	P	R	S	T	U	V	W	Z	Weight
FN12-12RD	376	945	600	210	648	270	67	50	170	287	165	357	11	335	170	99	105	590	180	70KG

FN7-12DR

Indoor AC High Voltage Load Break Switch with Fuse



Overview

FN7-12RD type AC high-voltage load switch is a new type of gas production type indoor high-voltage load switch, which is suitable for the three-phase AC power system with AC 50Hz and rated voltage 12KV, and is used for breaking load current and closing short-circuit current.

FN7-12DR

Indoor AC High Voltage Load Break Switch with Fuse

Main technical parameters

Rated voltage (KV RMS)		12	
Insulation level	Power frequency 50Hz withstand voltage 1min(KV. Effective value)	Phase to phase 42	Isolation fracture 48
	Lightning impulse withstand voltage (KV. Peak)	Phase to phase 75	Isolation fracture 85
Rated current (A)		400	630
Rated thermal stable current (KV. Effective value 4S)		12.5	20
Rated dynamic stable current (KV. Value)		31.5	50
Rated short circuit closing current (KA. Peak)		31.5	50

Installation and use

Normal use conditions:

Ambient air temperature: Upper limit: +40℃ ; Lower limit: 10℃ in general area, -25℃ in high cold area

Altitude: The sea level is 1000m and below

Relative humidity: daily average less than 95%, monthly average less than 90%

The surrounding air should not be significantly polluted by corrosive or flammable gases and water vapor

No frequent violent vibration

Main specification

Name	Model	DS	DK	L	R	RA	F
		The ground switch is at the incoming end	The ground switch is at the outgoing end	Interlocking device	Fuse	Knock out fuse	Electric brake opening device
Load switch	FN7-12	-	-	-	-	-	-
	FN7-12DSL	△	-	△	-	-	-
	FN7-12DXL	-	△	△			
	FN7-12R	-	-	-	△	-	-
	FN7-12DSLR	△	-	△	△	-	-
	FN7-12DXLR	-	△	△	△	-	-
	FN7-12RAF	-	-	-	-	△	△
	FN7-2DSLRAF	△	-	-	-	△	△
	FN7-2DXLRAF	-	△		-	△	△

Dimensions and mounting dimensions (mm)

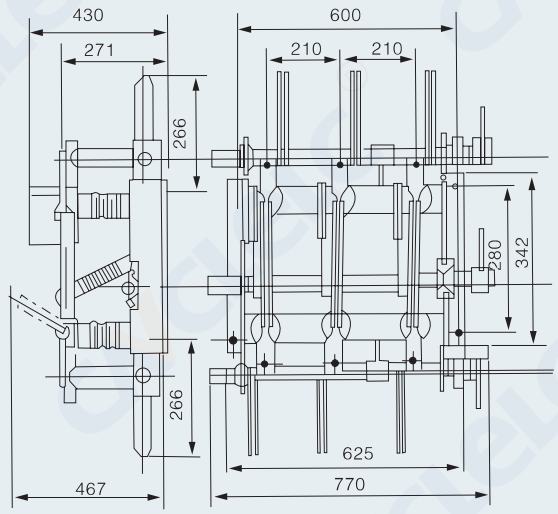


Figure 1: No trip "line" load switch

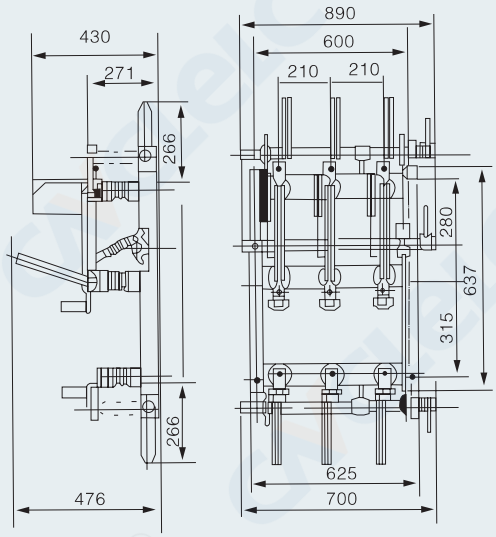


Figure 2: "Transformer protection" load switch without trip

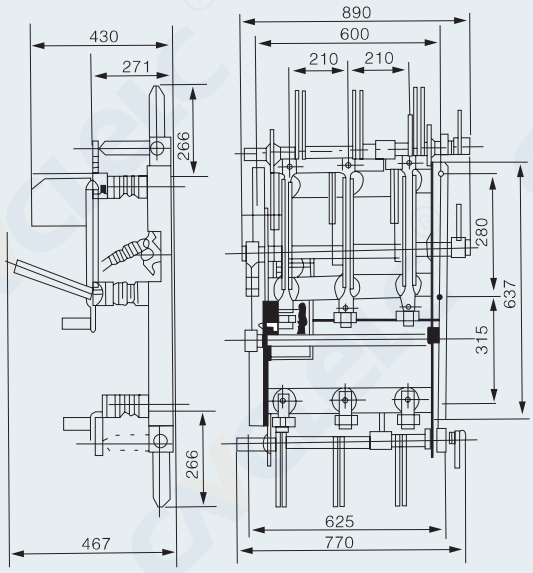


Figure 3: The trip device hits the load switch

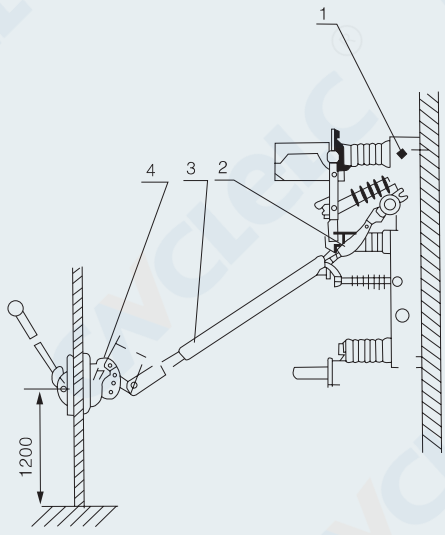


Figure 4: Installation diagram of CS6 operating mechanism

Dimensions and mounting dimensions (mm)

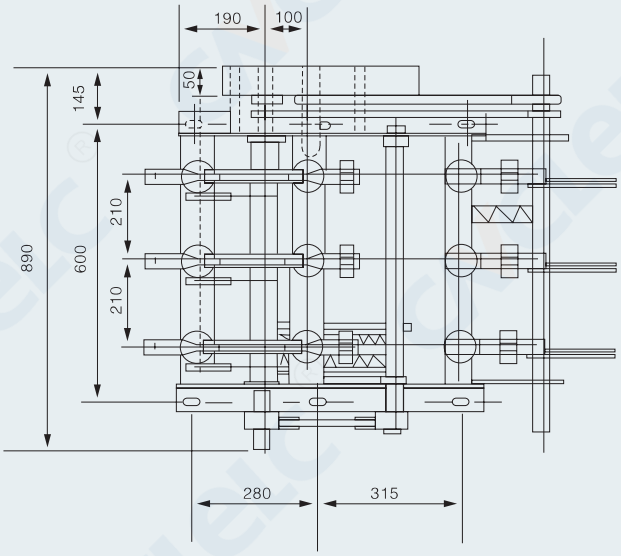


Figure 5: Installation dimension diagram of FN7-12DXRAC combined load switch

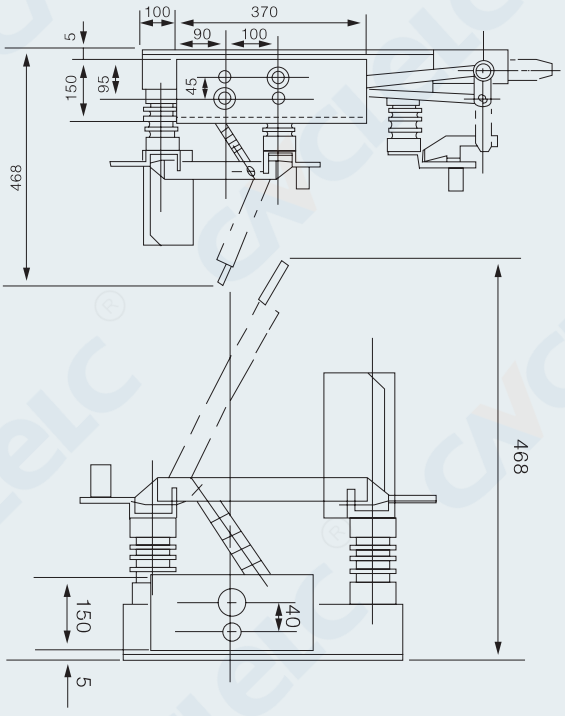
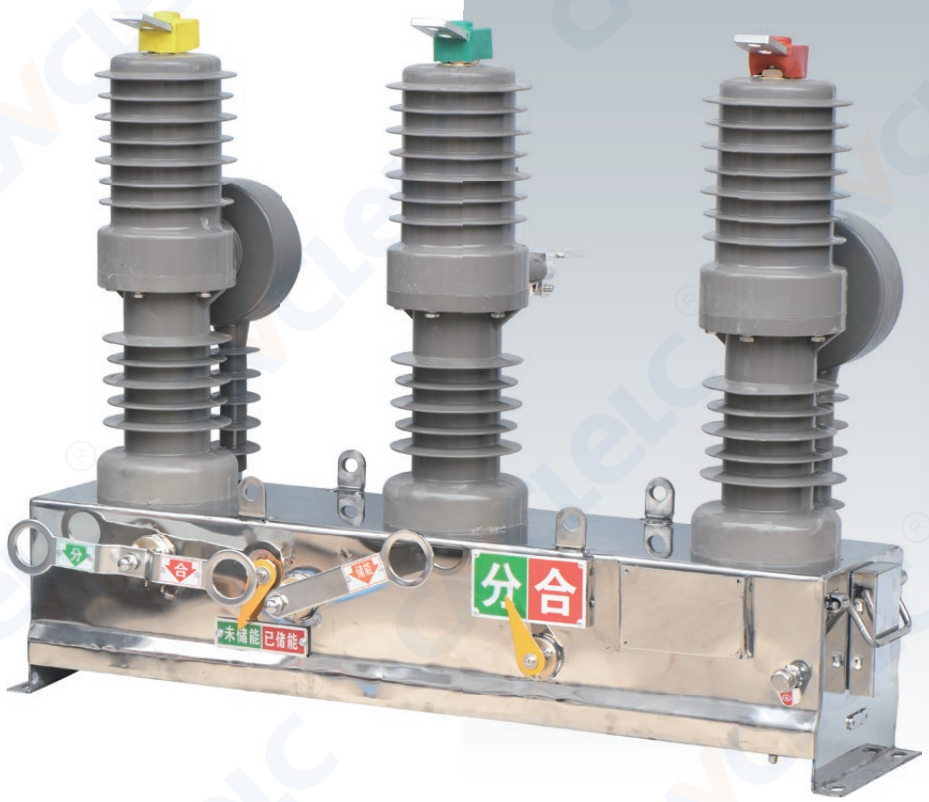


Figure 6: Installation dimensions of the FN7-12C

ZW32-12

Outdoor Vacuum Circuit Breaker



Overview

ZW32-12 outdoor vacuum circuit breaker (hereinafter referred to as circuit breaker) is an outdoor distribution equipment with rated voltage of 12kV and three-phase AC of 50Hz. It is mainly used to break and close the load current, overload current and short circuit current in the power system. It is suitable for protection and control in power distribution systems of substations and industrial and mining enterprises, and places where rural power grids are frequently operated.

The circuit breaker has the characteristics of small volume, light weight, anti-condensation, maintenance-free, etc., and can adapt to harsh climatic conditions and dirty environment.

ZW32-12

Outdoor Vacuum Circuit Breaker

Model meaning

ZW	32	-	12	/	T	630	-	20	G	-	□
↓	↓		↓		↓	↓		↓	↓		↓
Outdoor Vacuum Circuit Breaker	Design sequence number		Rated voltage (kV)		Ammunition handling mechanism	Rated current (A)		Rated short circuit breaking current (kA)	Tape isolation		S hand exercise D electric exercise

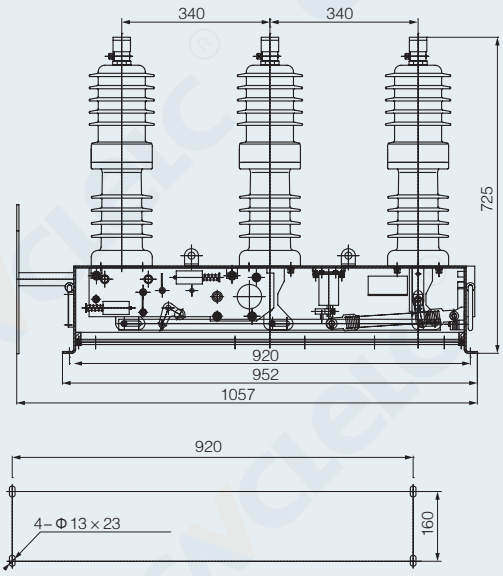
Meet the standard

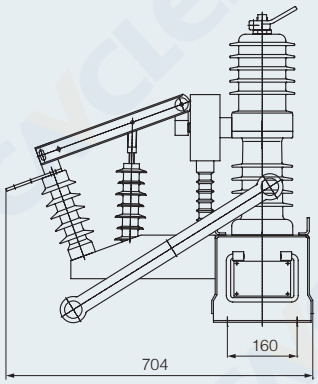
- GB1984 AC High Voltage Circuit Breaker;
- GB11022 "Common Technical Requirements for High Voltage Switchgear and Control Equipment Standards";
- GB31.1-6 "High voltage transmission and transformation equipment insulation cooperation";
- GB763 "Heating of AC high voltage electrical appliances during long-term work";
- GB2706 "AC high voltage electrical equipment dynamic, thermal stability test method";
- GB3309 "Mechanical Test of High voltage Switchgear at normal temperature";
- DL/T593 "High voltage switchgear joint order technical conditions".

Main technical parameters

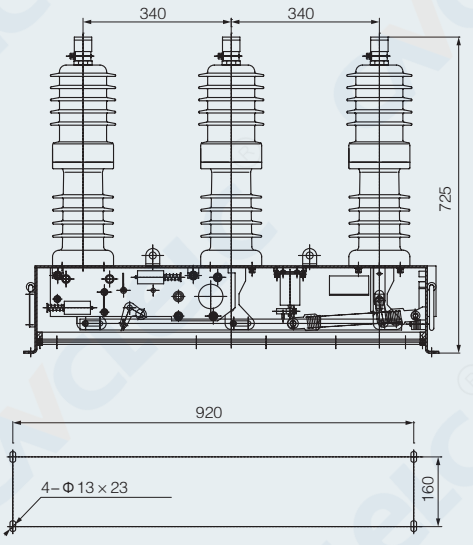
Item	Units	Argument
Rated voltage	kV	twelve
Rated frequency	Hz	50
Rated current	A	630
Rated short-circuit breaking current	kA	20
Rated peak withstand current (peak)	kA	50
Rated short-time withstand current	kA	20
Rated short circuit closing current (peak)	kA	50
Mechanical life	time	10000
Rated short circuit breaking current breaking times	time	30
Power frequency withstand voltage (1min) : (wet)(dry) phase to phase, ground/fracture	kV	42/48
Lightning impulse withstand voltage (peak) phase to phase, ground/fracture	kV	75/85
Secondary circuit 1min power frequency voltage	kV	2

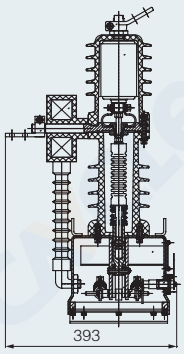
Dimensions and mounting dimensions (mm)





ZW32–12G tape isolation





ZW32–12 does not have isolation

ZW □ - 40.5

Outdoor Vacuum Circuit Breaker

Overview

ZW □ -40.5 series outdoor high voltage intelligent vacuum circuit breaker (hereinafter referred to as "circuit breaker") is used in the three-phase power system with AC 50Hz and rated voltage 35KV, as the division and combination of load current, overload current and short circuit current. The circuit breaker can be configured with the coincidence controller to recognize the current characteristics and realize multiple automatic reclosing, and the PT is used as the power supply to become an intelligent circuit breaker with voltage and current signal output and control. The power supply provided by electronic PT can complete the three-stage compound protection of overcurrent delay, inrush current delay and short circuit quick break.

ZW □ - 40.5

Outdoor Vacuum Circuit Breaker

Model meaning

Z	W	□	-	40.5	/	1250	-	25
↓	↓	↓		↓		↓		↓
Vacuum Circuit Breaker	Outdoors	Design sequence number		Rated voltage (KV)		Rated current (A)		Rated short circuit breaking current (KA)

Environmental conditions of use

- Ambient temperature: not higher than +40℃ , not lower than -40℃ ;
- Air relative humidity: the daily average is not more than 95%, the monthly average is not more than 90%;
- The altitude does not exceed 2000 meters;
- Wind pressure does not exceed 700Pa(equivalent to 34m/s wind speed);
- Seismic intensity does not exceed 8;
- No fire, explosion, serious pollution, chemical corrosion and violent vibration places.

Functional characteristics

- ZW □ - 40.5 vacuum circuit breaker can be equipped with a spring operating mechanism, with the opening and closing of load current, overload current and short circuit current and other basic functions, circuit breaker can be equipped with lightning arrester, lightning arrester can be installed according to user requirements on any side of the inlet and outlet line; The circuit breaker can be equipped with inrush current controller, so that it has the function of avoiding inrush current and overflow rate. The circuit breaker can be equipped with 2 to 3 measuring or measuring transformers, and can be equipped with a recloser controller to form a recloser intelligent circuit breaker.
- The basic type and the coincidence controller are suitable for the occasion of easy access to power, the PT type and the coincidence controller are suitable for the occasion of no power supply, the intelligent circuit breaker is suitable for the radiation type power supply and the ring network power supply system, to help the system eliminate instantaneous faults, automatically restore power supply, and also isolate permanent faults to realize the automation of the distribution network. The circuit breaker has the function of reclosing 1 to 3 times, and the parameters of the reclosing device can be adjusted.
- The intelligent circuit breaker has the functions of inrush current control, overcurrent protection and short-circuit quick break protection, and the parameters can be adjusted continuously. The intelligent circuit breaker has the function of small current grounding protection, and the parameters can be continuously adjusted; The intelligent circuit breaker can realize both wired remote control and wireless remote control under the pole.
- It can be equipped with a voltage transformer, which can take power from the high voltage side of the line and provide 220V, 110V, 100V voltage to itself or other control equipment as required; The circuit breaker (small hydropower type) can be used for line voltage monitoring, when the overvoltage or undervoltage, the controller automatically disconnect the circuit breaker, can be widely used in small hydropower branch and the main grid grid branch, to achieve network monitoring and automatic fault isolation; The circuit breaker (metering type) can output voltage and current signals with 0.2 level accuracy, which is an ideal choice for rural power substation, off-site scatter switch and simple metering switch.
- It can be equipped with electronic PT, take electricity from CT to charge the battery, and can carry out multiple energy storage and on-off operation in the state of no-voltage, and can provide the working voltage of external equipment; With the closing inrush current control, overcurrent protection and short-circuit quick break three-stage composite protection function, the protection parameters can be continuously adjusted by the user; It can realize wired remote control and wireless remote control under the pole.

ZW □ - 40.5

Outdoor Vacuum Circuit Breaker

The main technical parameters of circuit breaker

Item	Units	Argument
Rated voltage	KV	40.5
Rated current	A	630/1250/1 600
Rated frequency	Hz	50/60
Power frequency withstand voltage 1min (wet) (dry)	KV	80/95
Lightning impulse withstand current (peak)	KV	185
Rated short-circuit breaking current	KA	25
Rated short circuit closing current (peak)	KA	80
Rated peak withstand current	KA	80
48 Short-time withstand current	KA	31.5
Rated operating cycle		Opening - 01s - Closing opening -3s - closing Switching - 6s-switching - switching -60s recovery
The number of times the rated short circuit current is broken	time	30
Mechanical life	time	20000
Intelligent mechanism controls the voltage	V	DC220
Secondary circuit 1min power frequency voltage	KV	2

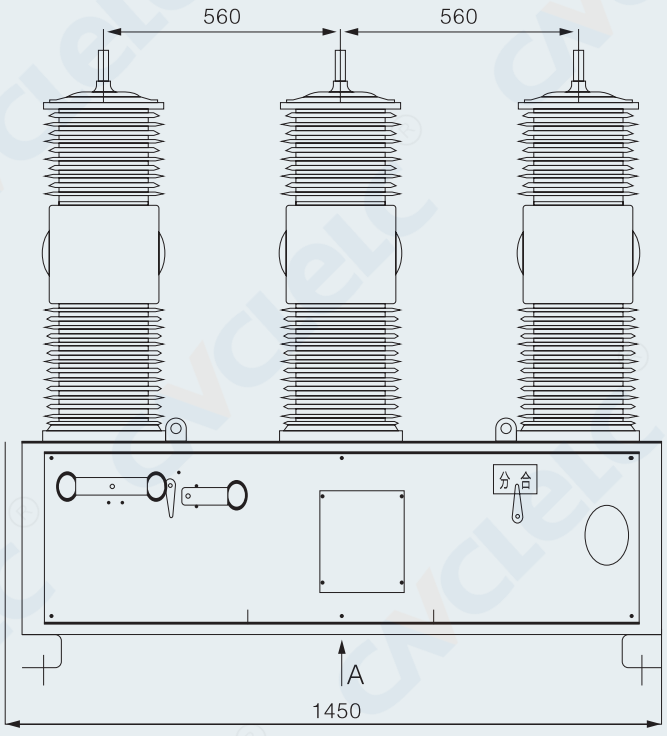
The main mechanical parameters of circuit breaker

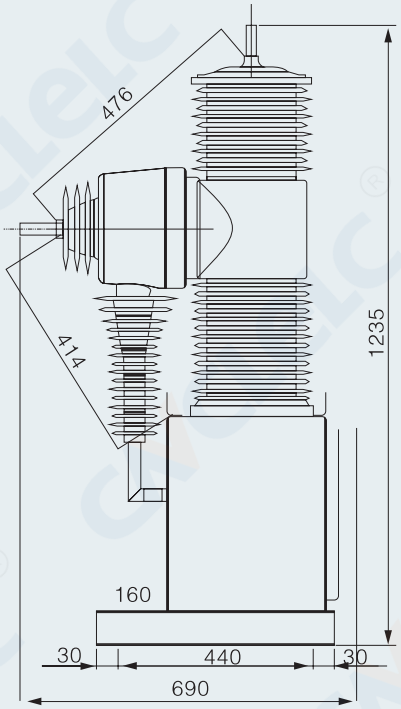
Item	Units	Argument
Contact opening distance	mm	16±1
Contact overtravel	mm	4±0.5
Opening speed	m/s	14~18
Closing speed	m/s	04~08
Contact closing bounce time	ms	≤ 5
Interphase center distance	mm	460±2
Three phase switching is different	ms	2
Resistance of each phase conducting loop	μ Ω	<120
Closing time	ms	25~45
Opening time	ms	20~45
represent	kg	295
	KV	2

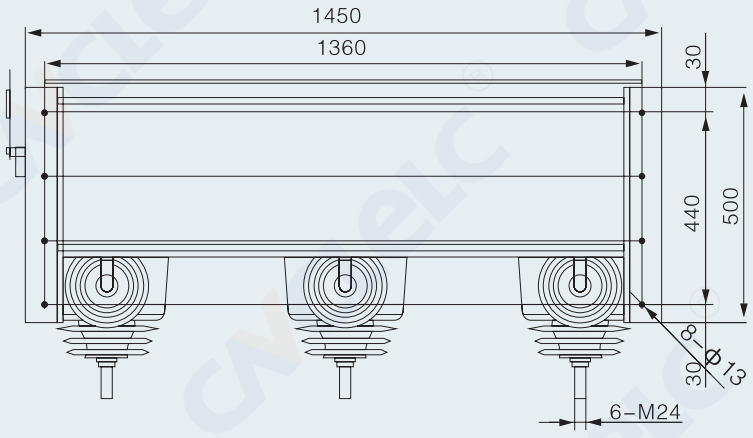
ZW □ - 40.5

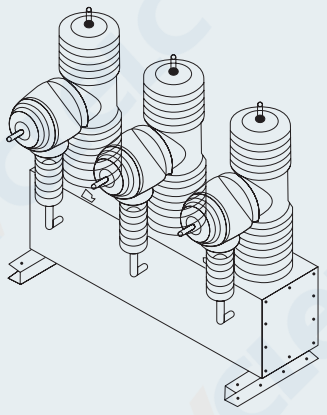
Outdoor Vacuum Circuit Breaker

Dimensions and mounting dimensions (mm)

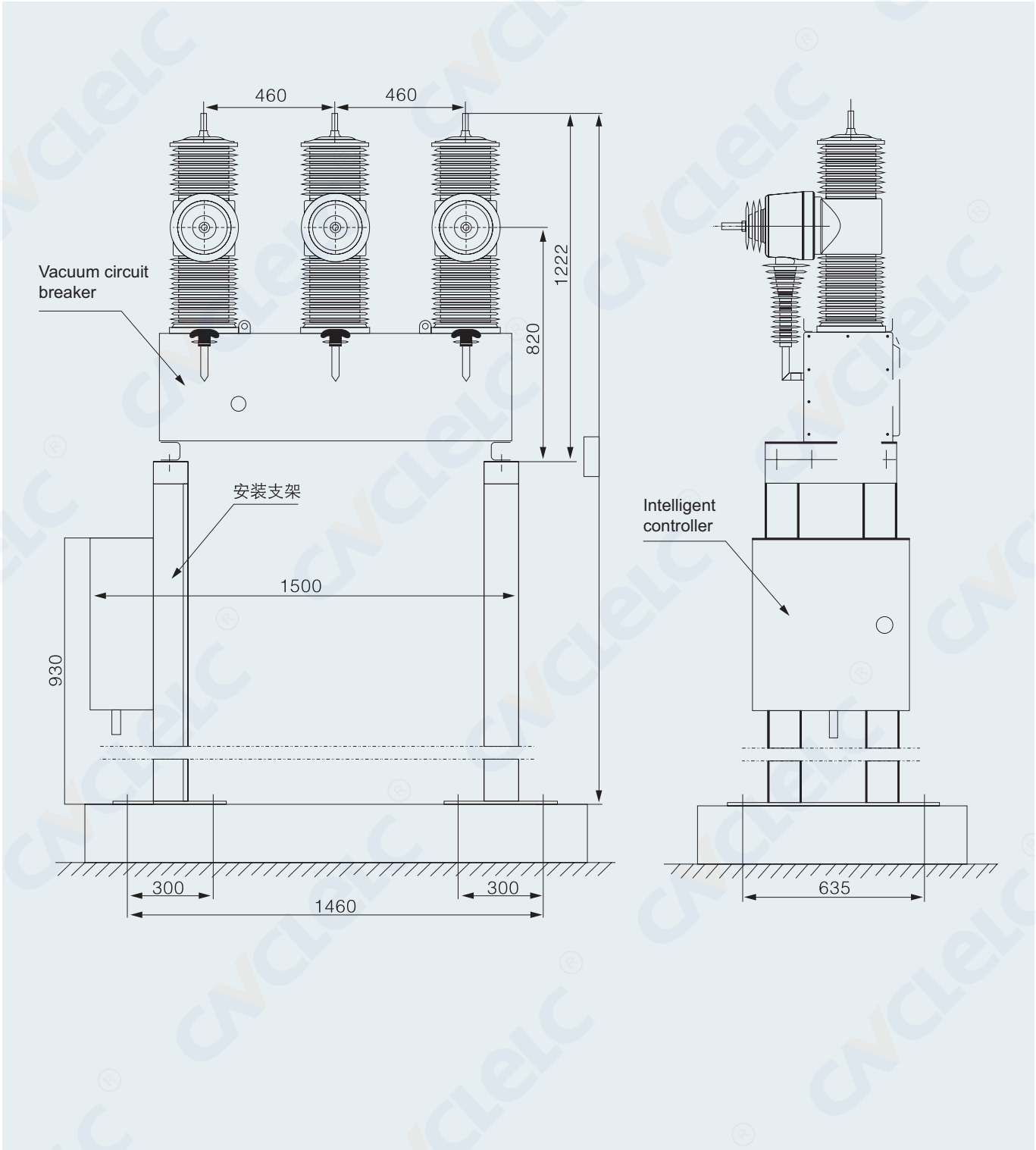






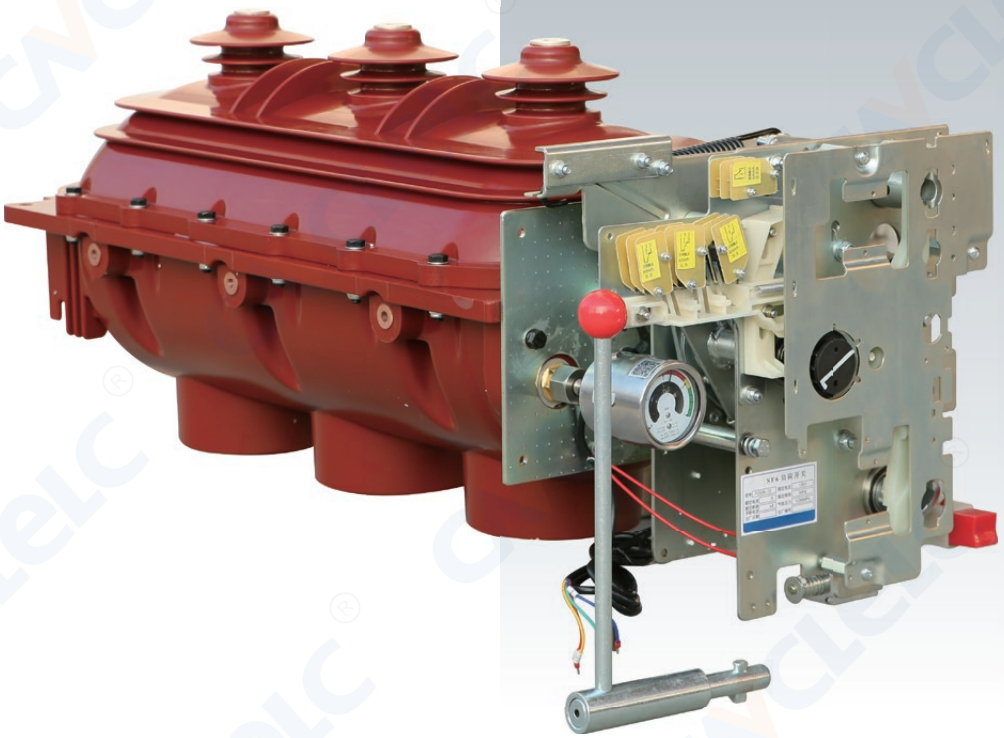


Dimensions and mounting dimensions (mm)



FLN36-12D FLRN36-12D

Medium Voltage Switches SF6 Gas Insulated Load Break Switch



Overview

FLN36-12D/FL(R)N36-12D series indoor high pressure sulfur hexafluoride load switch is a medium voltage switch equipment developed by our company with reference to international new technology and according to the relevant standards of China's power system. Its performance indicators are in line with IEC420, 694, 129 and the national standard GB3804-2004 "3.6kV-0.5kV high voltage AC load switch", GB1985-2004 "High voltage AC isolation switch and ground switch", GB/T11022-1999 "High voltage switchgear and control equipment standard common technical requirements", are the main switching components of the ring network cabinet.

The load switch is a multi-functional medium voltage switchgear that integrates gate, opening and grounding. It is filled with 0.05MPa SF6 gas in a fully sealed epoxy resin shell with reinforced structure, and achieves the above three functions with fewer parts, ensuring product quality and improving reliability. Maintenance-free, safe operation for more than 20 years under normal conditions.

FLN36-12D/FLRN36-12D

Medium Voltage Switches SF6 Gas Insulated Load Break Switch

Model meaning

F	L	N	36	-	12	D	/	T	630	-	12
Load switch	Sulfur hexafluoride	Indoor	Design sequence number		Rated voltage (KV)	With ground switch (without D)		Spring operating mechanism	Rated current (A)		Rated short-time withstand current (kA)

F	L	R	N	36	-	12	D	/	T	125	-	31.5
Load switch	Sulfur hexafluoride	Fuse	Indoor	Design sequence number		Rated voltage (KV)	With ground switch (without D)		Spring operating mechanism	Rated current (A)		Rated short-time withstand current (kA)

Environmental conditions of use

- Altitude: 1000m and below
- Ambient temperature: -15℃ ~ +40℃
- Relative humidity: the daily average is less than 1000 95%, the monthly average is not more than 90%
- The surrounding air is not significantly contaminated by smoke, dust, corrosive or combustible gases, water vapor or salt spray
- No frequent violent vibration

Main use

FLN36-12D/T630-20 indoor AC high voltage six krypton sulfur load switch and FLRN36-12 D/T125-31.5 indoor AC high voltage six 氪 sulfur load switch-fuse combination, suitable for three-phase AC 50Hz ring network or terminal power supply power station and industrial electrical equipment, As a 10Kv power system load control line protection.

The load switch divides the load current, closed-loop current, no-load transformer and cable charging current; The combined electric appliance can break any current to the rated short-time breaking current, which is suitable for ring network units, box-type substations and other electrical equipment, especially for urban residential distribution, small secondary substations, opening and closing offices, industrial and mining enterprises, large shopping malls, airports, railway hospitals, sports venues, etc.

Basic functions and features

- The load switch adopts double break, rotary moving contact structure, with the following three operating states: closing; Opening the brake; Be grounded.
- SF6 gas is used as arc extinguishing and insulating medium, the main circuit is sealed in the upper and lower shell cast by epoxy resin, and the electrical conductivity is not affected by the external environment.
- Good safety performance if the internal arc occurs, there is a structural weakness inside the shell, it will be blown open, and then the arc relief valve above the cabinet will be opened to guide the overpressure air to the outside of the cabinet to ensure the safety inspection of the switch cabinet.
- The load switch set gate, opening gate and grounding switch are located in one body, which is packaged in the SF6 gas epoxy resin shell. The three positions are interlocked, compact structure, high safety and reliability.
- Small size, light weight, maintenance-free, easy to operate and safe.

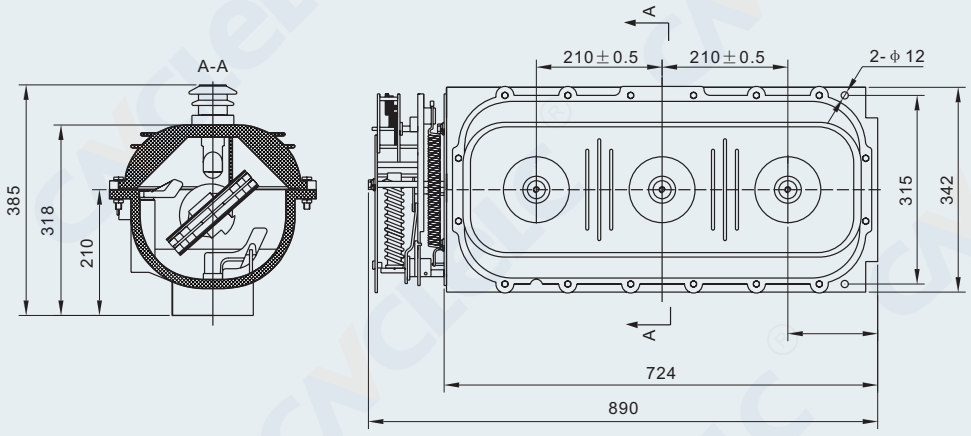
FLN36-12D/FLRN36-12D

Medium Voltage Switches SF6 Gas Insulated Load Break Switch

Main technical parameters

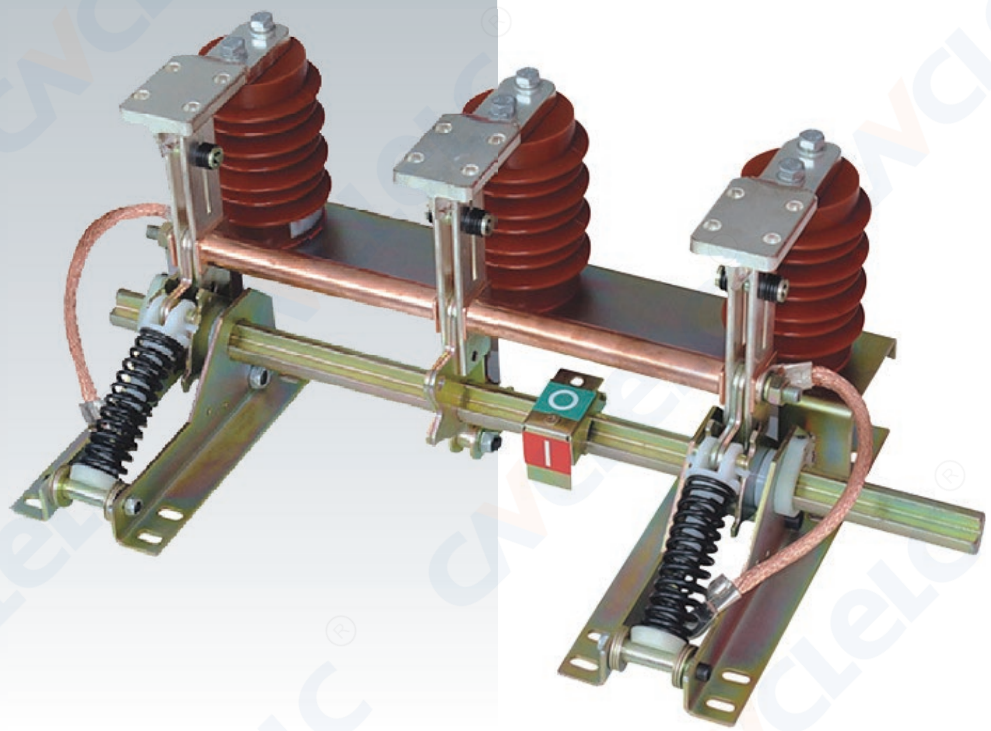
Name		Units	Argument
Rated voltage		kV	12
Rated frequency		Hz	50
Rated current		A	630
Rated peak withstand current		kA	50
4s rated short-time withstand current		kA	20
Rated closing current		kA	50
Rated breaking current	Active load breaking current	A	630
	Closed-loop breaking current	A	630
	Cable charging breaking current	A	10
Power frequency withstand voltage 1min phase, ground/fracture		kV	42/48
Lightning impulse withstand voltage phase to phase, ground/fracture		kV	75/85
Sf6 gas relative pressure (20℃ gauge pressure)		MPa	≤ 0.04
Rated operating voltage (electric)		V	AC220、DC220
Rated voltage of shunt trip		V	AC220、DC220
Average opening speed		m/s	3.5±1.5
Average closing speed		m/s	3.5±1.5
Three phase switching synchronization		ms	≤ 3
Main loop resistance		μΩ	≤ 120
Manual operation is most in torque		N.m	≤ 160
Interphase center distance		mm	210±0.5

Dimensions and mounting dimensions (mm)



JN4-12

Indoor high voltage ground switch



Overview

JN4-12(G) indoor high voltage ground switch is the main component for 12KV indoor AC metal pin removable metal closed switchgear and other high voltage switchgear, can also be used alone. As a grounding protection in 12KV and below AC 50Hz power system, it has the ability to close short circuit current, reasonable structure, small size, flexible operation, easy to install and adjust.

JN4-12

Indoor high voltage ground switch

Model meaning

J	N	4	-	12	G	/	□	-	□
↓	↓	↓		↓	↓		↓		↓
Ground switch	Indoor installation	Design sequence number		Rated voltage	Plateau type		Rated short-time withstand current		Center distance between electrodes

Environmental conditions of use

- Altitude: 1000-3000m;
- Ambient air temperature: upper limit +40℃ ; Lower limit -25℃ ;
- Earthquake intensity: not more than 8 degrees;
- There is no fire, explosion danger, serious dust, chemical corrosion and violent vibration.

Main technical parameters

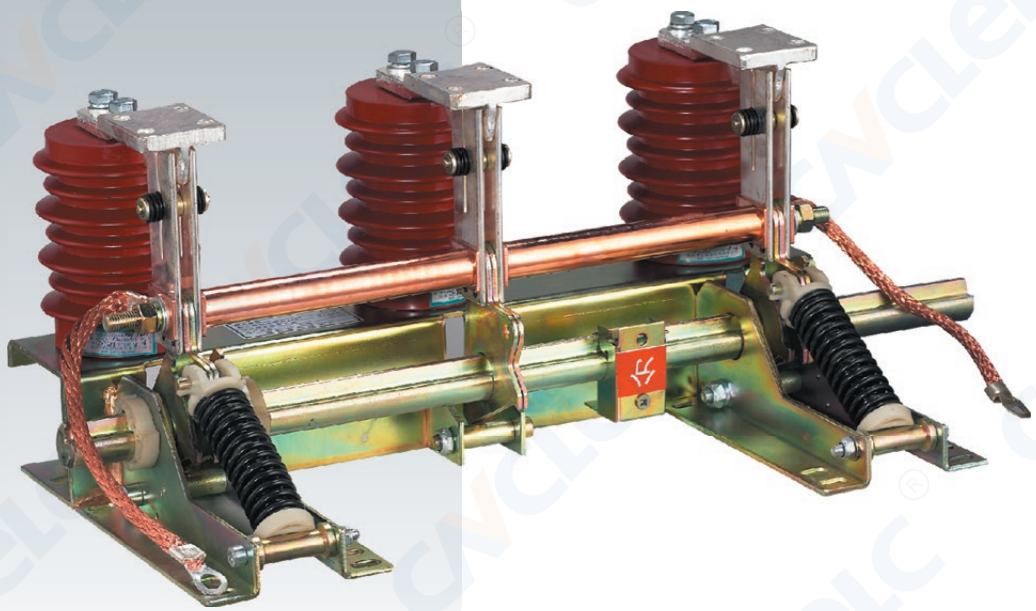
Item		Units	Argument
Rated current		kA	twelve
Rated short-time withstand current		KA	20
Rated short endurance time		s	4
Rated peak withstand current		kA	50
Rated short-circuit closing current		kA	50
Center distance between electrodes		mm	210; 230; 250
Rated insulation level	1min power frequency withstand voltage	kV	42
	Lightning impulse voltage	kV	75

Type specification

Model	A	B	C
JN4-12G/20-210	752	210	628
JN4-12G/20-230	792	230	668
JN4-12G/20-250	832	250	708

JN15-12

Indoor high voltage ground switch



Overview

JN15-12/31.5-80 series indoor high voltage grounding switch performance in line with GB1985-2004 "AC high voltage isolation switch and grounding switch" and IEC129 requirements, suitable for 12kV and below AC 50Hz power system, can be used with various types of high voltage switchgear. It can also be used as ground protection for high voltage electrical equipment maintenance. This type of switch can be used with a live display device.

JN15-12

Indoor high voltage ground switch

Model meaning

J	N	15	-	12	/	31.5	-	□
↓	↓	↓		↓		↓		↓
Ground switch	Indoor installation	Design sequence number		Rated voltage (kV)		Rated short-time withstand current (KA)		Interphase distance

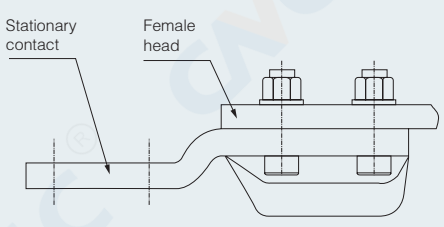
Environmental conditions of use

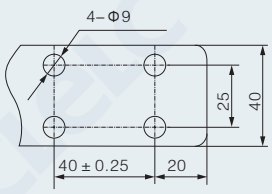
- Ambient air temperature: upper limit +40℃ , lower limit -10℃ ;
- Sea level: no more than 1000 meters;
- Humidity conditions: the average daily relative humidity is not more than 95%, the average monthly relative humidity is not more than 90%;
- Seismic sequence: no more than 8 degrees;
- Pollution level: Class II.

Main technical parameters

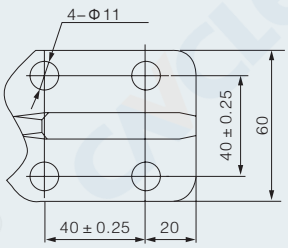
Item		Unis	Argument	
Rated voltage		Kv	12	
Rated short-time withstand current (heat stable)		KA	31.5	
Rated short circuit holding time		S	4	
Rated short-circuit closing current		KA	80	
Rated peak withstand current (dynamic stability)		KA	80	
Rated insulation level	Rated short-time power frequency withstand voltage	kV	Relative to each other	42
	Rated lightning impulse withstand voltage	kV	Relative to each other	75
Mechanical life		time	2000	

Copper bar terminal diagram





Note: Only used for interphase distance below 180mm

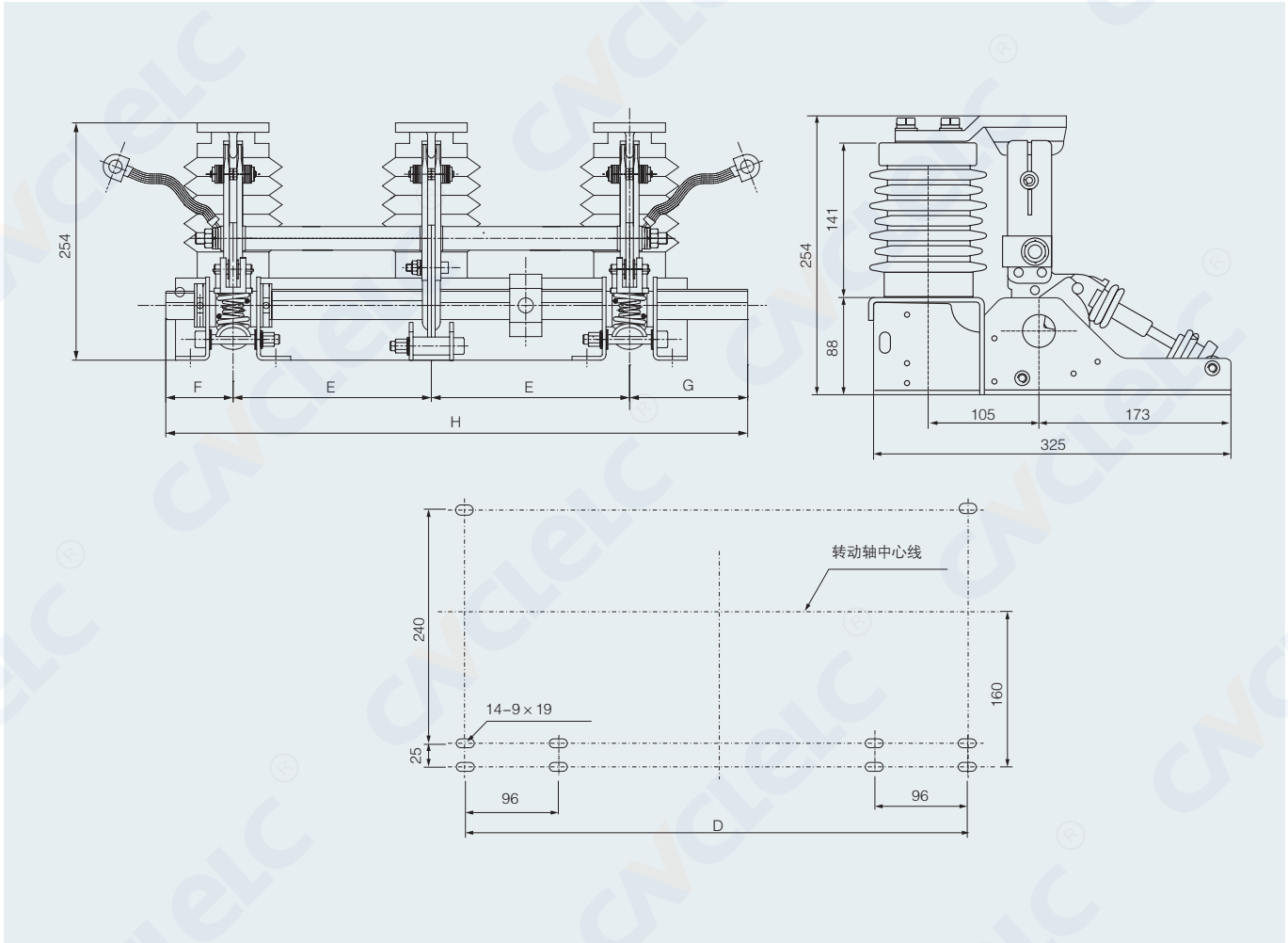


Note: Only used for interphase distance above 180mm

JN15-12

Indoor high voltage ground switch

Dimensions and mounting dimensions (mm)



Model	E	F	G	H	D
JN15-12/31.5-150	150	75	165	535	396
JN15-12/31.5-165	165	75	160	565	426
JN15-12/31.5-210	210	75	160	655	516
JN15-12/31.5-250	250	75	160	735	596
JN15-12/31.5-275	275	75	185	810	646

CLW-800H

Microcomputer protection measure and control device

Overview

The microcomputer protection and control device is suitable for the protection and control of spacing units of various voltage levels below 10kV, with perfect protection, measurement, control and communication monitoring functions, providing a complete solution for the protection and control of substations, power plants, high and low voltage distribution and plant power system, which can effectively guarantee the safe and stable operation of high and low voltage power grids and plant power systems. It can be combined with other protection and automation equipment to form an automation system through the communication interface. All baskets can be installed in a centralized panel, or can be installed locally in high and low voltage switchgear.

CLW-800H

Microcomputer protection measure and control device

Main technical parameters

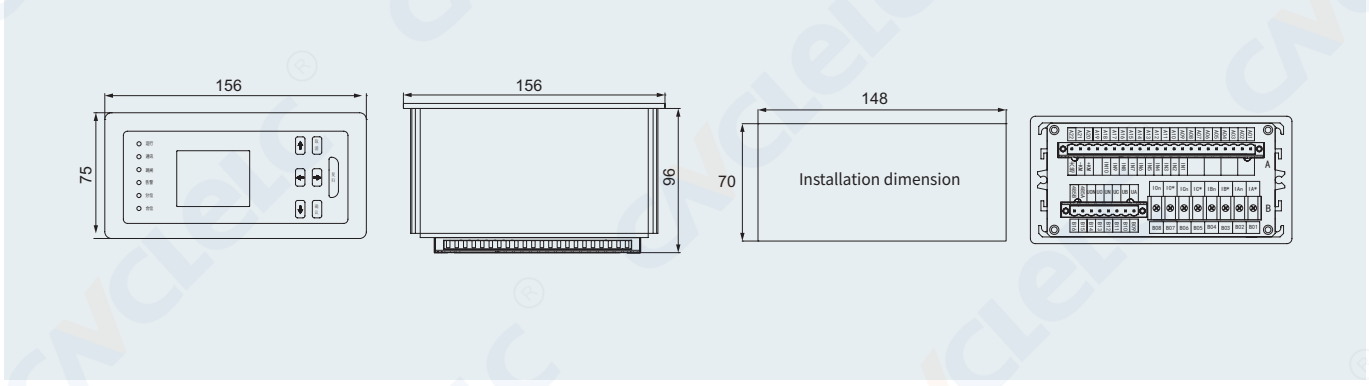
- AC voltage: 100V(line voltage or VV connection)
- Rated frequency: 50Hz
- Power consumption: DC circuit is not more than 5W, AC circuit is not more than 0.5VA
- Accurate measurement range: phase current 0.1In~20In; Zero sequence current 0.1A~6.25A; Voltage 5V~150V
- Measurement accuracy: current <1%, voltage <1%
- Protection action time: at a fixed value of 1.5 times, the natural action time of all protection is not more than 35ms
- Open loop: DC 24V, 5mA(provided inside the device)
- Open contact: sustainable DC220V, 5A current (pure resistive load)

Conditions of use

- Normal operating temperature: Within the range of -10℃ ~55℃ , the variation caused by the operating value due to temperature change is not greater than ±1%
- Relative humidity: 45%~90%
- Atmospheric pressure: 80~110kpa

Dimensions and mounting dimensions (mm)

Horizontal model



Vertical model