

Ring Main Unit



1、 Product description

Fully insulated ring network cabinet series products, compact structure, high flood resistance, small size, light weight, maintenance-free, fully insulated. The protection level of the bellows reaches IP67, and it is not affected by condensation, frost, salt spray, pollution, corrosion, ultraviolet rays and other substances. Various main wirings are realized by combining different modules to form a loop switch system; Expansion; fully shielded cable entry and exit lines.

- SSU-12 series SF6 gas insulated ring network cabinet, the gas tank is made of high-quality 2.5mm thick stainless steel shell. The plates are formed by laser cutting and automatically welded by advanced welding manipulators to ensure the airtightness of the air box. The air box is filled with SF6 gas and is vacuumed synchronously for leak detection.
- SSG-12 solid insulated ring network cabinet is a smart cloud device with environmentally friendly materials, economical price and convenient operation. All conductive parts in the switch are sealed or sealed in solid insulating materials, and the adjacent cabinets are insulated by solid the busbar is connected, and the secondary circuit adopts integrated control technology and supports data transmission function.
- SSR-12 environment-friendly gas insulated ring network cabinet is a kind of environment-friendly, fully insulated, fully airtight, economical price and convenient operation Digital ring network cabinet. The air box is insulated mainly by dry air, the main switch adopts vacuum arc extinguishing, the isolating switch adopts a three-station structure, and the adjacent cabinets are connected by solid insulating busbars. The secondary circuit adopts integrated control technology and supports data transmission function.

2、 Application sites

Our fully insulated intelligent ring network cabinets cover SF6 gas insulated series, solid insulated series and environmental protection gas insulated series. After research and development, design and manufacture, we are fully equipped with the production capacity of standardized ring network cabinets and have obtained relevant third-party test reports.

At present, they are widely used in distribution systems with high power supply reliability requirements, such as urban commercial centers, industrial concentrated areas, airports, electrified railroads and high-speed highways.

3、 operating environment



Altitude

≤4000m (Please specify when the equipment operates at an altitude above 1000m so that the inflation pressure and the strength of the air chamber can be adjusted during manufacture).



Ambient temperature

Maximum temperature: +50° C;
Minimum temperature: -40° C;
The average temperature in 24h does not exceed 35°C.



Ambient Humidity

24h relative humidity not exceeding 95% on average;
The monthly relative humidity does not exceed 90% on



Application Environment

Suitable for highland, coastal, alpine and high filth areas; Seismic intensity: 9 degrees.

4、Executive standard

No.	Standard No.	standard name
1	IEC 62271-1	High voltage switchgear and control gear, Part 1: Common specification,
2	IEC 62271-200	High voltage switchgear and control gear – Part 200: AC Metal-enclosed switchgear and control gear for rated voltages above 1kV and upto and including 52kV
3	TEC 62271-100	High-voltage switchgear and control gear - Part 100: High Voltage Alternating Current Circuit Breakers
4	TEC 62271-102	High voltage switchgear and control gear, Part 102: Alternating current disconnectors and earthing switches
5	TEC 62271-103	High-voltage switchgear and control gear - Part 103: Switches for rated voltages above 1 kV up to and including 52 kV
6	TEC 60255	Measuring relays and protection equipment
7	TEC 61243-5	Voltage Detecting Systems (VDS)
8	TEC 62271-206	High-voltage switchgear and control gear - Part 206: Voltage presence indicating systems for rated voltages above 1 kV and up to and including 52 kV

No.	Standard No.	standard name
1	GB/T 3906-2020	3.6kV~40.5kV AC metal-enclosed switchgear and control equipment
2	GB/T 11022-2011	Common technical requirements for high voltage switchgear and control gear standards
3	GB/T 3804-2017	3.6kV~40.5kV high voltage AC load switch
4	GB/T 1984-2014	High voltage AC circuit breaker
5	GB/T 1985-2014	High Voltage AC Disconnectors and Earthing Switches
6	GB 3309-1989	Mechanical test of high voltage switchgear at room temperature
7	GB/T 13540-2009	Seismic Requirements for High Voltage Switchgear and Controlgear
8	GB/T 13384-2008	General technical requirements for packaging of mechanical and electrical products
9	GB/T 13385-2008	Packaging Drawing Requirements
10	GB/T 191-2008	Packaging, storage and transportation icons
11	GB/T 311.1-2012	Insulation coordination – Part 1 Definitions, principles and rules

5、SSU-12 Series SF6 Gas Insulated Ring Network Switchgear



SSU-12 Series SF6 Gas Insulated Ring Network Cabinet Overview

- The gas tank of SSU-12 series SF6 gas insulated ring network cabinet adopts high - quality 2.5mm thick stainless-steel shell. The plate is formed by laser cutting and automatically welded by an advanced welding robot to ensure the airtightness of the air box.
- The gas tank is filled with SF6 gas through synchronous vacuum leak detection, and the switch activities such as load switch, grounding switch, fuse insulating cylinder, etc.
- Components and bus bars are sealed in a stainless-steel air box, with compact structure, strong flood resistance, small size, light weight, maintenance-free, and full insulation.
- The protection level of the air box reaches IP67, and it is not affected by condensation, frost, salt spray, pollution, corrosion, ultraviolet rays and other substances.
- Various main wirings are realized by combining different modules to form a circuit switch system; the busbar
- Connector is used to realize the arbitrary expansion of the cabinet body; fully shielded cable inlet and outlet lines.

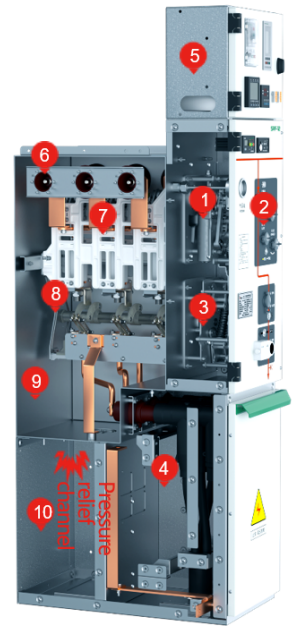
5.1、Arrangement in the circuit breaker unit cabinet

Major component arrangement

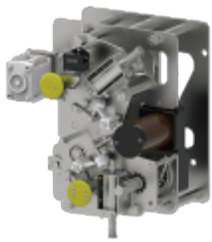
- ① Main switch mechanism ② Operation Panel ③ isolation agency
- ④ Cable Warehouse ⑤ Secondary control box ⑥ Busbar connection sleeves

Cable Warehouse

- The cable compartment can only be opened if the feeder has been isolated or grounded.
- The bushing conforms to DIN EN 50181, M16 bolted, and the lightning arrester can be attached to the rear of the T-cable head.
- The one-piece CT is located on the side of the casing, making it easy to install cables and is not affected by external forces.
- The height of the casing installation to the ground is greater than 650mm.



5.2、Circuit breaker units - core components



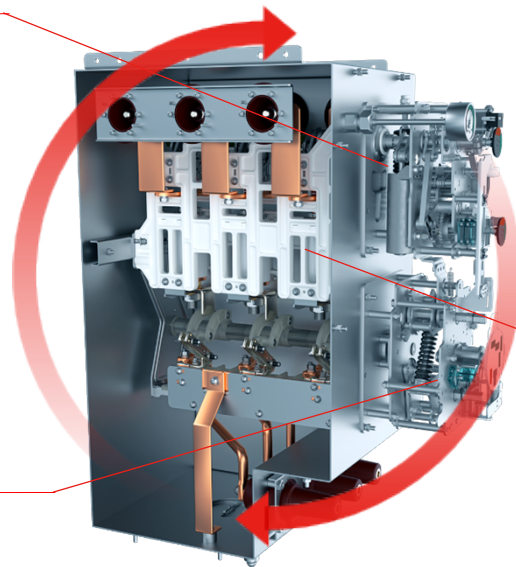
Breaker mechanism

The precision transmission mechanism with reclosing function adopts V-shaped key connection, and the shaft system support of the transmission system adopts a large number of rolling bearing design schemes, which are flexible in rotation and high in transmission efficiency, thus ensuring the mechanical life of the product for more than 10,000 times. Can be installed and maintained at any time.



Isolation mechanism

Single spring double operating shaft design, built-in reliable closing, opening, grounding limit interlocking device, to ensure that closing and opening without obvious overshoot phenomenon. The mechanical life of the product is more than 10,000 times, and the electrical components are designed in front, which can be installed and maintained at any time.



Arc extinguishing devices and disconnect switches

The cam structure of the closing and dividing device, over travel and full travel are accurate in size and have strong production compatibility. Insulation side plate adopts SMC molding process, with precise size and high insulation strength.

The isolation switch is designed with three stations for closing, dividing and grounding,

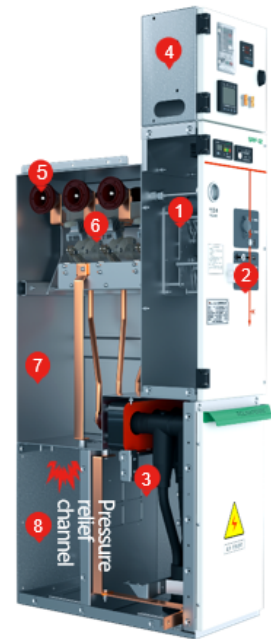
5.3、 Arrangement in the load switch unit cabinet

Main component arrangement

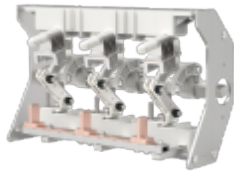
- | | |
|------------------------------|---|
| 1. Load switch mechanism | 2. Operation Panel |
| 3. Cable Warehouse | 4. Secondary control box |
| 5. Busbar connection sleeves | 6. Three-position load switch |
| 7. Fully enclosed box | 8. Internal pressure relief device of the box |

Cable Warehouse

- The cable compartment can only be opened if the feeder has been isolated or grounded.
- The bushing conforms to DIN EN 50181, M16 bolted, and the lightning Arrester can be attached to the rear of the T-cable head.
- Integrated CT is located on the side of the casing for easy cable installation and is not affected by external forces.
- The height of the casing installation to the ground is greater than 650mm.

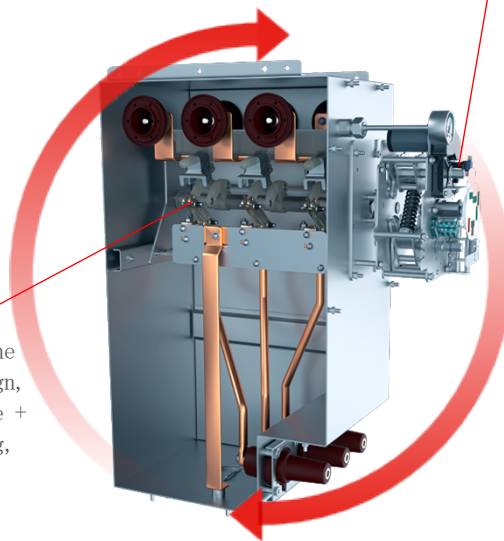


5.4、 Load Switch Units - Core Components



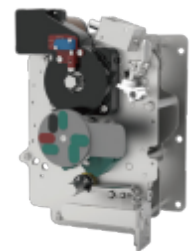
Three-position load switch

The closing, opening and grounding of the load switch adopt a three-position design, which is safe and reliable. Rotary blade + arc extinguishing grid arc extinguishing, with good insulation performance and breaking performance.



Load switch mechanism

Single spring double operation axis design, built-in reliable closing, breaking, grounding limit interlocking device, to ensure that the closing and breaking without obvious overshoot phenomenon. The mechanical life of the product is more than 10,000 times, and the front design of electrical components can be retrofitted and maintained at any time.



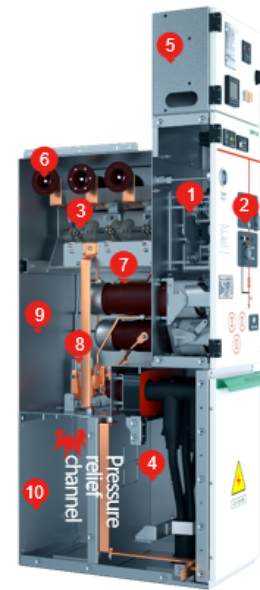
5.5、Arrangement in the cabinet of the combined electrical unit

Main component arrangement

- | | | |
|----------------------------------|---------------------------|-------------------------------|
| 1. Combined electrical mechanism | 2. Operation Panel | 3. Three-position load switch |
| 4. Cable Warehouse | 5. Secondary control box | 6. Busbar connection sleeves |
| 7. Fuse cartridge | 8. Lower grounding switch | 9. Fully enclosed box |

Cable Warehouse

- The cable compartment can only be opened if the feeder has been isolated or grounded.
- The bushing conforms to DIN EN 50181, M16 bolted, and the lightning arrester can be attached to the rear of the T-cable head.
- Integrated CT is located on the side of the casing for easy cable installation and is not affected by external forces.
- The height of the casing installation to the ground is greater than 650mm.



5.6、 Combined electrical units – core components

Three-position load switch

The closing, opening and grounding of the load switch adopt a three-position design, which is safe and reliable. Rotary blade + arc extinguishing grid arc extinguishing, with good insulation performance and breaking performance.

Combined electrical mechanism

The combined electrical mechanism with quick opening (tripping) function adopts the design of double springs and double operating shafts, and built-in reliable closing, opening, and grounding limit interlocking devices to ensure that there is no obvious overshoot phenomenon in closing and opening. The mechanical life of the product is more than 10,000 times, and the electrical components are designed in front, which can be installed and maintained at any time.

Lower ground switch

When the fuse is blown, the lower ground can effectively eliminate the residual charge on the transformer side and ensure personal safety when replacing the fuse.

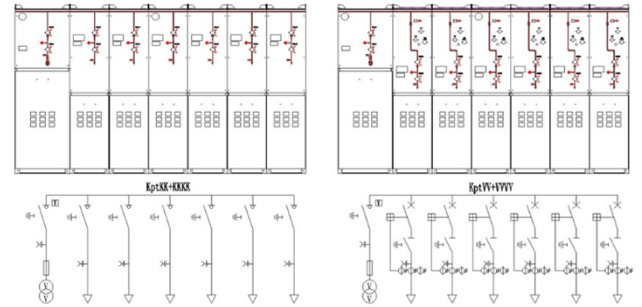
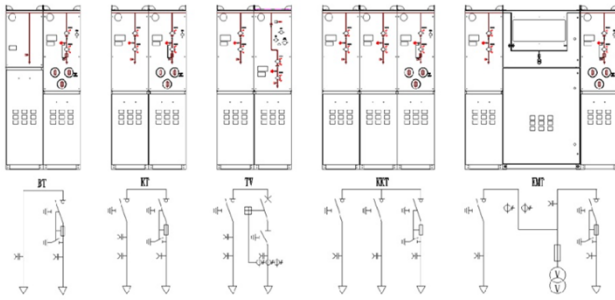
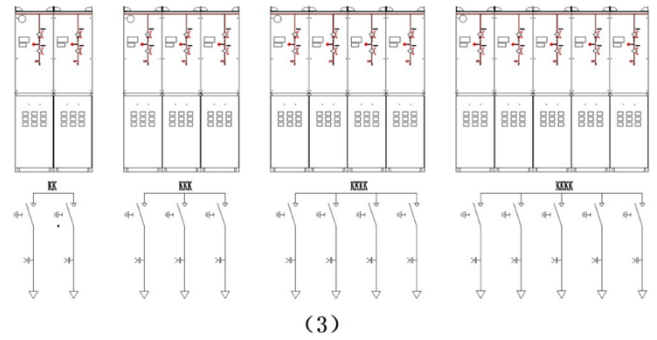
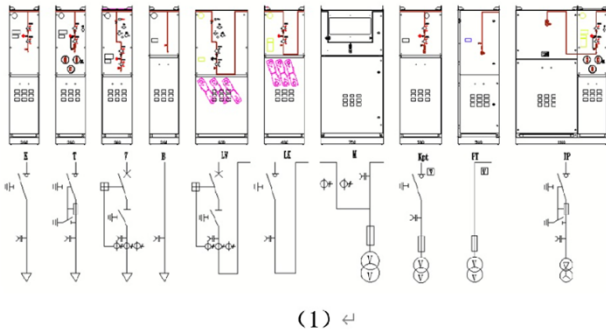
Fuse cartridge

The three-phase fuse cylinders are arranged in an inverted structure, and are completely sealed with the gas box surface by a sealing ring, which can ensure that the switch operation will not be affected by the external environment. When the fuse of any one phase is blown, the striker triggers, and the quick release mechanism trips quickly to open the load switch, so as to ensure that the transformer will not have the risk of phase loss operation.

5.7、 Operating parameters

Item	Explanation	Unit	Module K	Module T	Module V	
			Load Switch	load switch Fuse Combination Appliance	Circuit Breaker	
Rated Voltage		Ur KV	12	12	12	
Rated Current		Ir A	630	≤125 <small>Note 1)</small>	630	
Rated Frequency		Fr Hz	50/60	50/60	50/60	
Temperature rise test			1.1Ir	125A	1.1Ir	
Insulation Level						
Industrial Frequency 50Hz/Min	Phase-to-phase	Ud	KV rms	42	42	42
	phase-to-earth					
	Across the interrupter	Ud	KV rms	48	48	48
Across isolating distance						
Lightning Impulse Withstand	Phase-to-phase	Up	KV peak	75	75	75
	Phase-to-earth					
	Across the interrupter	Up	KV peak	85	85	85
	Across isolating distance					
Cubicle Internal Arc Withstand	IAC level			AFLR	AFLR	AFLR
	Burning arc/time		KA/s	20/1	20/0.5	20/1
Note 1) Depends on the high						
Rated Short-Circuit Breaking Current		Isc	KA	-	31.5	20
Rated Short-Circuit Closing Current		Isc	KA peak	-	80	50
Short-Time Withstand Current		Ik	KA rms	20/4s	-	20/4s
Peak Withstand Current		Ip	KA	50	-	50
Closed-loop breaking current			A	630	-	-
Rated active load breaking current			A	630	-	-
5% Rated active load breaking current			A	31.5	-	-
Cable charge breaking current			A	10	-	-
Protection level	Shell				IP4X	
	Gas tank				IP67	
Mechanical Endurance	Circuit Breaker		Freq	-	-	10000
	Load switch		Freq	5000	5000	5000 isolating switch
	Earth switch		Freq	5000	5000	5000
SF6 gas pressure/gauge pressure at 20°C			MPa		0.13	
Operation order Duty Cycle					O-t1-CO-t2-CO	

5.8、Single Line diagram



6、SSG-12 Solid Insulated Ring Network Switchgear



SSG-12 solid-insulated ring-grid cabinets are not like SF6 switches where the air pressure gradually decreases at low temperatures, leading to insulation failure throughout the process..



SSG-12 eliminates the greenhouse gas SF6, and all materials used are non-toxic and environmentally friendly.



SSG-12 Solid Insulated Ring Network Cabinet Overview

- SSG-12 solid insulated ring network cabinet is a smart cloud device with environmentally friendly materials, economical price and convenient operation.
- All conductive parts in the switch are solidified or sealed in solid insulating material.
- The main switch adopts vacuum arc extinguishing, and the isolating switch adopts a three-station structure.
- The adjacent cabinets are connected by solid insulated busbars.
- The secondary circuit adopts integrated control technology and supports data transmission function.

6.1、 Arrangement inside the cabinet

Parallel cabinet mode

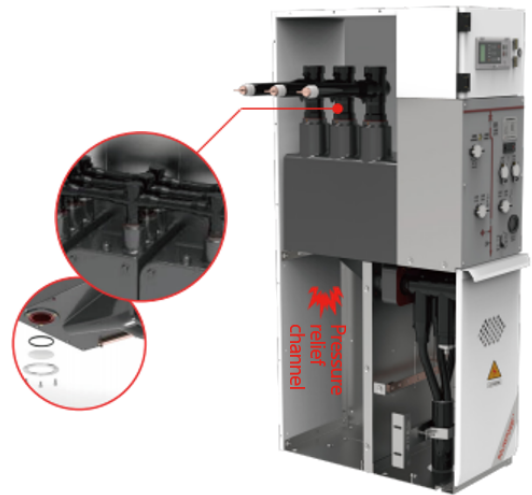
Adopting fully insulated, fully enclosed standard European-style top expansion busbar system, easy to install and low cost.

Cable Warehouse

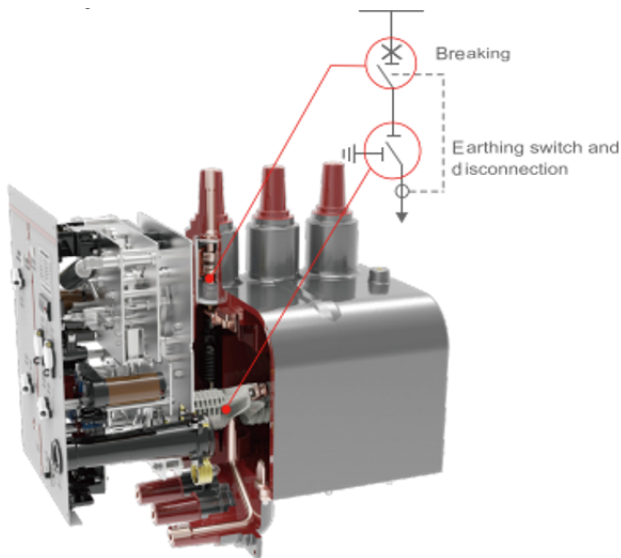
- Open the cable compartment only if the feeder is isolated or grounded
- Bushings according to DIN EN 50181, M16 screw connection.
- Lightning arrester can be attached to the back of the T-cable head.
- The one-piece CT is located on the side of the casing, making it easy to install cables and is not affected by external forces.
- The height from the casing installation place to the ground is greater than 650mm.

Pressure relief channel

If an internal arc fault occurs, the special pressure relief device installed in the lower part of the body will automatically start to relieve pressure.



6.2、 Primary circuit



Circuit Breaker

- The high-voltage circuit adopts the pressure equalization shielding technology, and is sealed or sealed in the epoxy resin shell at one time.
- Vacuum arc extinguishing with sinusoidal curve mechanism, strong arc extinguishing ability, labor-saving closing and opening operation.
- The shaft system support of the transmission system adopts a large number of needle bearings, which is flexible in rotation and high in transmission efficiency.
- Rectangular contact spring is used, the force value is stable, and the mechanical and electrical life of the product is long.

Isolation switch

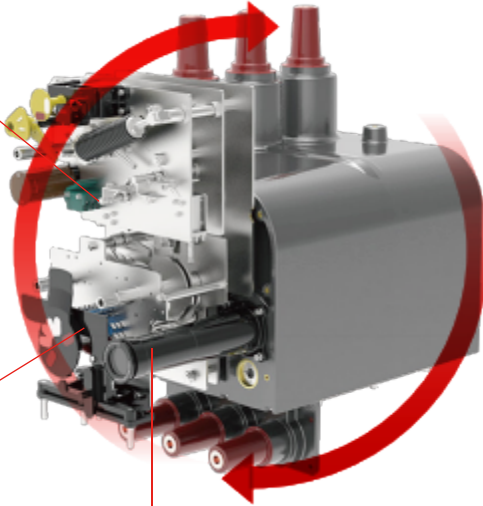
- The isolating switch adopts a three-position design to prevent misoperation.
- High-performance disc springs ensure the stability of contact pressure, and the contact design facilitates the closing shape, thus ensuring the reliability of the ground closing .

6.3、 operating mechanism



Isolation institution

The precision transmission mechanism with reclosing function adopts spline connection, needle roller bearing and high-performance oil buffer design, so as to ensure the mechanical life of the product for more than 10,000 times.



Electric operation design

Both the circuit breaker mechanism and the three-position isolation mechanism can be loaded with an electric operation scheme, and all electrical components are installed in front of the mechanism, which can be added and maintained at any time.



Three-station isolation mechanism and wide-angle lens

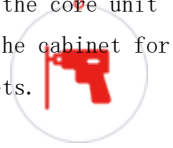
The three-position isolating mechanism with quick closing function is designed with a single spring and two independent operating shafts, and has a wide-angle lens for observing the isolating fracture, so as to avoid misoperation.



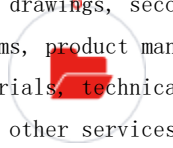
6.4、 Solid Insulated Switches



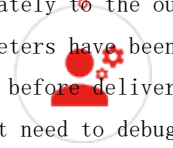
The customer only needs to install the core unit module in the cabinet for complete sets.



Our company provides customers with a full range of cabinet drawings, secondary schematic diagrams, product manuals, promotional materials, technical consultation and other services for free.



The core unit module can be sold separately to the outside world. All parameters have been adjusted in place before delivery, so customers do not need to debug again.



7、SSG-12Pro Solid Insulated Ring Network Switchgear



The SSG-12Pro solid insulation ring main unit will not have the risk of insulation failure like the SF6 switch, where the air pressure gradually decreases at low temperature.



The greenhouse effect gas SF6 is canceled, and all materials are non-toxic and harmless environmental protection materials.



SSG-12Pro Solid Insulated Ring Main Unit Overview

- SSG-12Pro adopts a three-phase split design, and its external dimensions meet the requirements of the national grid standard, and the outer surface of the insulator adopts a metallization coating process.
- SSG-12Pro is a new future-oriented switchgear with features such as self-diagnosis, maintenance-free, low temperature resistance, miniaturization, flexible splicing, and environmental protection.
- All conductive parts inside the switch are sealed in solid insulating material.
- The main switch adopts vacuum arc extinguishing, and the isolating switch adopts a three-station structure.
- The adjacent cabinets are connected by solid insulated busbars.
- The secondary circuit adopts integrated control technology and supports data transmission function.

7.1、 Arrangement inside the cabinet

Parallel cabinet mode

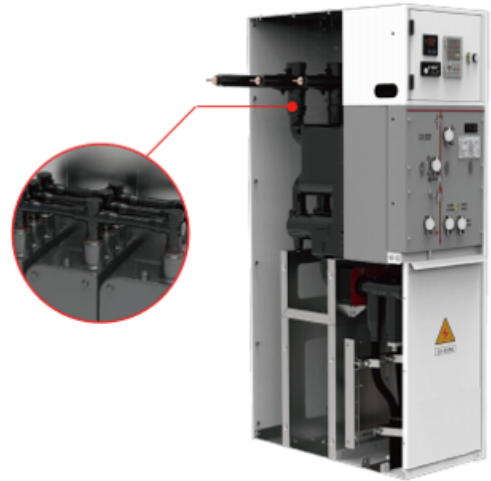
Fully insulated, fully enclosed top expansion busbar system is used for easy installation.

Cable Warehouse

- Open the cable compartment only if the feeder is isolated or grounded
- Bushings according to DIN EN 50181, M16 screw connection.
- Lightning arrester can be attached to the back of the T-cable head.
- The one-piece CT is located on the side of the casing, making it easy to install cables and is not affected by external forces.
- The height from the casing installation place to the ground is greater than 650mm.

Pressure relief channel

If an internal arc fault occurs, the special pressure relief device installed in the lower part of the body will automatically start to relieve pressure.



7.2、 primary circuit



Fully sealed operating mechanism

The circuit breaker adopts a precision transmission mechanism with reclosing function, and the output track of the isolation mechanism is sinusoidal to ensure that the closing and opening positions are accurate. The mechanism room and the main circuit adopt a fully sealed design, and the secondary control circuit connection adopts a sealed plug structure. The switch can be immersed in water for more than 96 hours, completely avoiding mechanism corrosion caused by external water vapor or pollution, failures such as refusal to open and close, and malfunction of the control circuit, resulting in skipping trips and eventually causing large-scale power outages.

Isolation switch

The isolating switch adopts the direct acting type and is equipped with a spring finger contact structure, which has small contact resistance, low temperature rise and large carrying capacity, ensuring that any switch can meet the short-term withstand current of 25kA /4 seconds.

Insulation and sealing design

The phases adopt an independent compartment structure to avoid explosion accidents caused by short circuits between phases. The primary conductor adopts a circular or spherical structure and is equipped with high-voltage shielding outside. The surface of the insulator is coated with metal and grounded reliably to ensure uniform distribution of high-voltage electric fields and ensure that external pollution will not be a problem for the insulation system.

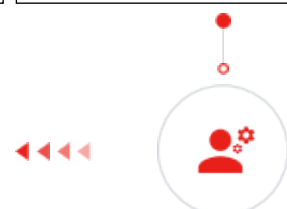
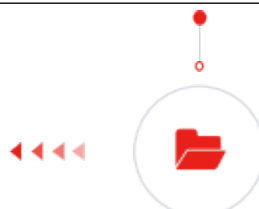
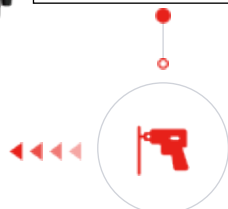
7.3、 Solid Insulated Switches



The customer only needs to package the core unit modules in the cabinet.

We provide customers with a full range of cabinet drawings, secondary schematic drawings, product manuals, promotional materials, technical consultation and other services free of charge.

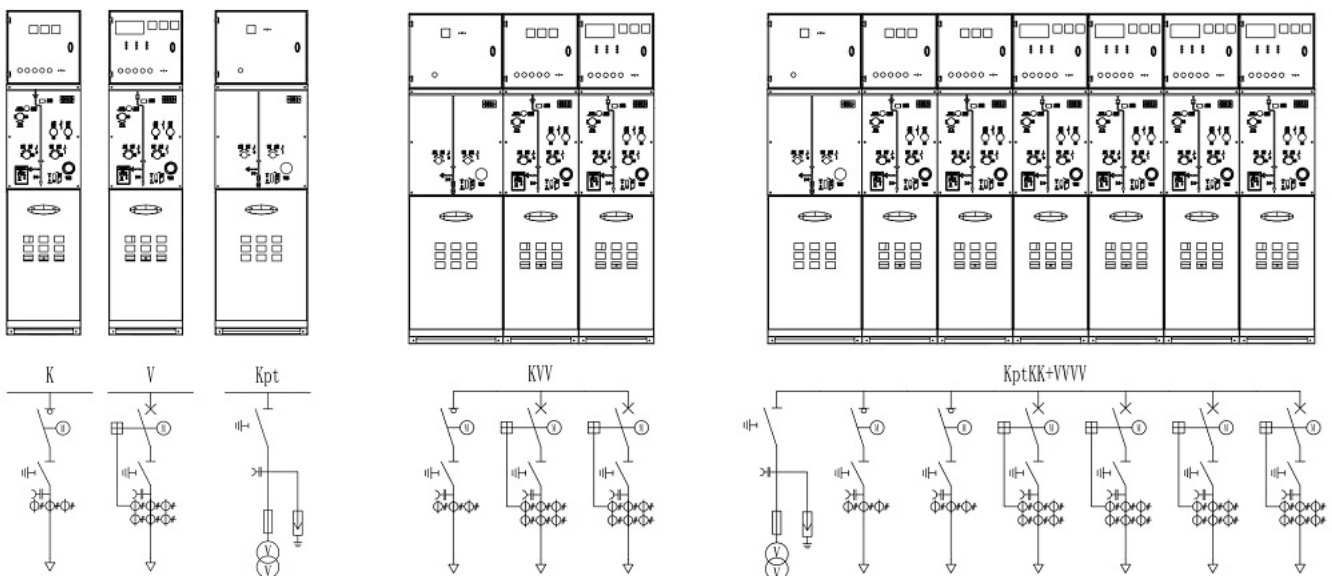
The core unit module can be sold separately to the public, and all parameters have been adjusted in place before leaving the factory, so customers do not need to debug again.



7.4、Operating parameters

Item	Explanation	Unit	Module K	Module V	
			Load Switch	Circuit Breaker	
Rated Voltage		Ur KV	12	12	
Rated Current		Ir A	630	630	
Rated Frequency		Fr Hz	50/60	50/60	
Temperature rise test			1.1Ir	1.1Ir	
Insulation Level					
Industrial Frequency 50Hz/Min	Phase-to-phase	Ud	KV rms	42	42
	phase-to-earth				
	Across the interrupter	Ud	KV rms	48	48
	Across isolating distance				
Lightning Impulse Withstand	Phase-to-phase	Up	KV peak	75	75
	Phase-to-earth				
	Across the interrupter	Up	KV peak	85	85
	Across isolating distance				
Cubicle Internal Arc Withstand	IAC level			AFLR	AFLR
	Burning arc/time		KA/s	20/0.5	20/0.5
Breaking capacity					
Rated Short-Circuit Breaking Current		Isc	KA	-	20
Rated Short-Circuit Closing Current		Isc	KA peak	50	50
Short-Time Withstand Current		I _k	KA rms	20/4s	20/4s
Peak Withstand Current		I _p	KA	50	50
Protection level	Shell				IP3X
Mechanical Endurance	Circuit Breaker/Load switch		Freq	5000	10000
	Isolating switch		Freq	3000	5000
	Earth switch		Freq	3000	2000

7.5、Single Line diagram



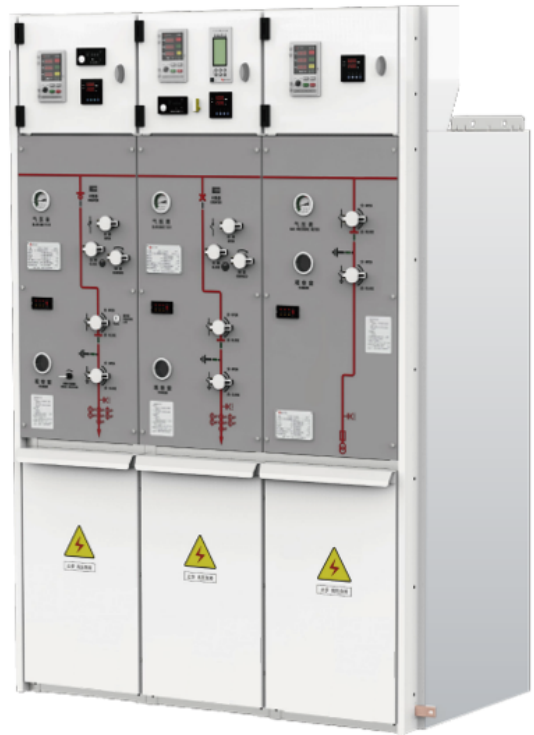
8、SSR-12 Environmentally Friendly Gas Insulated Ring Network Switchgear



The SSR-12 environmentally friendly gas-insulated ring panel does not run the risk of insulation failure as SF6 switches do when the air pressure gradually decreases at low temperatures.



The greenhouse effect gas SF6 is canceled, and all materials are non-toxic and harmless environmental protection materials.



SSR-12 Environmental Gas Insulated Ring Network Cabinet

- SSR-12 environmental protection gas insulated ring network cabinet is a digital ring network cabinet with environmental protection materials, full insulation, full airtight, economical price and convenient operation.
- All the conductive parts in the switch are installed in a sealed stainless steel gas box, and the dry air is used as the insulating body in the gas box; the main switch adopts vacuum arc extinguishing, and the isolating switch adopts a three-station structure.
- The adjacent cabinets are connected by solid insulated busbars.
- The secondary circuit adopts integrated control technology and supports data transmission function.。

8.2、 Cabinet structure

Top and bottom isolated symmetrical design

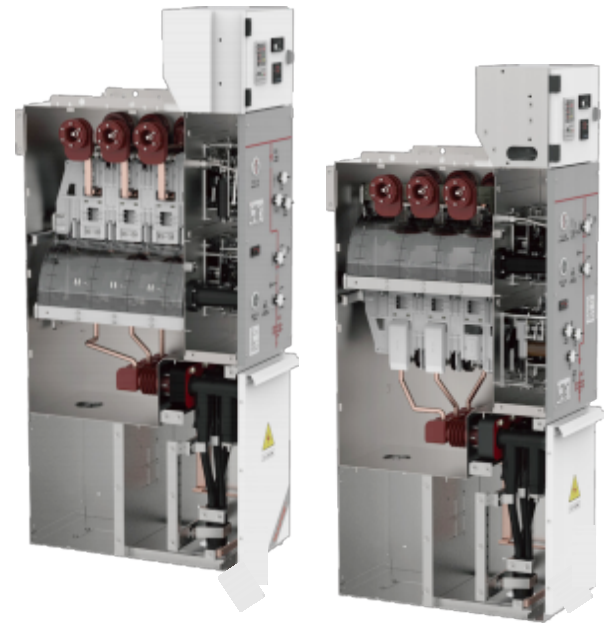
The upper isolation and the lower isolation adopt a symmetrical design scheme, and all parts required for the operating mechanism and switch are common, which shortens the manufacturing cycle and facilitates quality management. Adjacent cabinets are connected by side expansion/top expansion.

Cable Warehouse

- The cable compartment can only be opened if the feeder has been isolated or grounded.
- The bushing complies with DIN EN 50181, M16 bolt connection.
- The lightning arrester can be attached to the back of the T-cable head.
- The one-piece CT is located on the side of the bushing for Easy installation of the cable and is not affected by external forces.
- The height from the casing installation to the ground is Greater than 650 mm.

Pressure relief channel

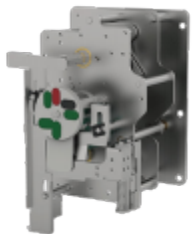
If an internal arc fault occurs, the special pressure relief device installed in the lower part of the cabinet will automatically open for pressure relief.



Lower isolation scheme

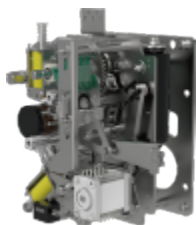
Upper Isolation Scheme

8.2、 Circuit breaker unit - core component (upper isolation)



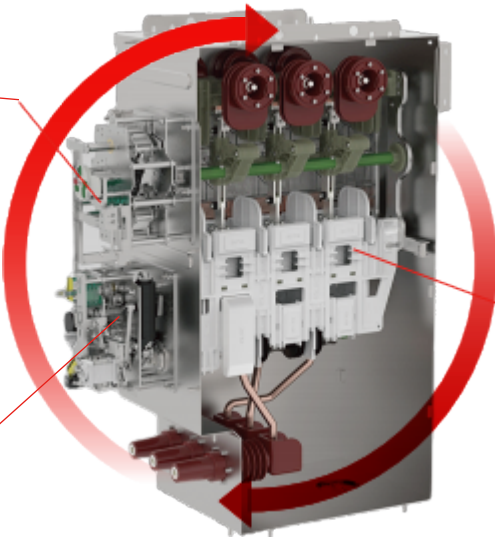
Isolation mechanism

Single spring double operation shaft design, built-in reliable closing, opening, grounding limit interlocking device, to ensure that there is no obvious overshoot phenomenon of closing and opening. The mechanical life of the product is more than 10,000 times, and the electrical components are designed in front, which can be installed and maintained at any time.



Breaker mechanism

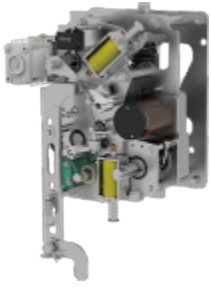
The precision transmission mechanism with reclosing function adopts V-shaped key connection, and the shaft system support of the transmission system adopts a large number of rolling bearing design schemes, which are flexible in rotation and high in transmission efficiency, thus ensuring the mechanical life of the product for more than 10,000 times. Can be installed and maintained at any time.



Arc extinguishing device and isolating switch

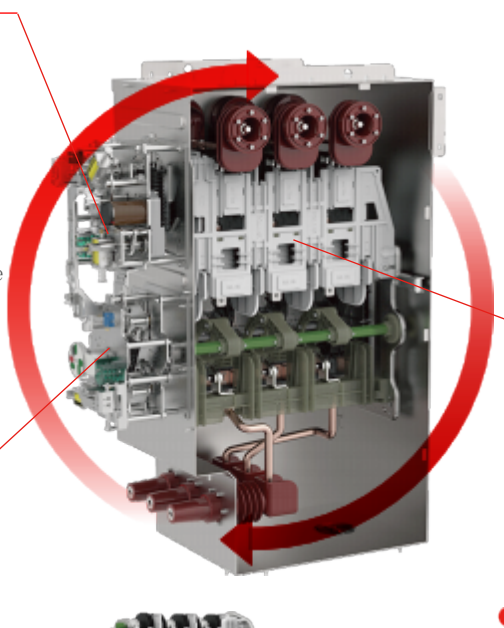
Adopting cam structure of closing and dividing device, with precise size of over travel and full travel, and strong production compatibility. Insulation side plate adopts SMC molding process, with precise size and high insulation strength. The isolation switch adopts three-position design for closing, dividing and grounding, which is safe and reliable.

8.3、Circuit breaker unit - core



Breaker mechanism

The precision transmission mechanism with reclosing function adopts V-shaped key connection, and the shaft system support of the transmission system adopts a large number of rolling bearing design schemes, which are flexible in rotation and high in transmission efficiency, thus ensuring the mechanical life of the product for more than 10,000 times. Can be installed and maintained at any time.



Isolation mechanism

Single spring double operation axis design, built-in reliable closing, breaking, grounding limit interlocking device, to ensure that the closing and breaking without obvious overshoot phenomenon. The mechanical life of the product is more than 10,000 times, and the front design of the electrical components can be retrofitted and maintained at any time.



Arc extinguishing devices and

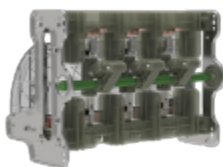
The closing and opening device with cam structure has precise over-travel and full-stroke dimensions, and strong production versatility. The insulating side plate adopts SMC molding process, with precise size and high insulation strength. The closing, opening and grounding of the isolating switch adopt a three-position design, which is safe and reliable.

8.4、Isolation switch core components



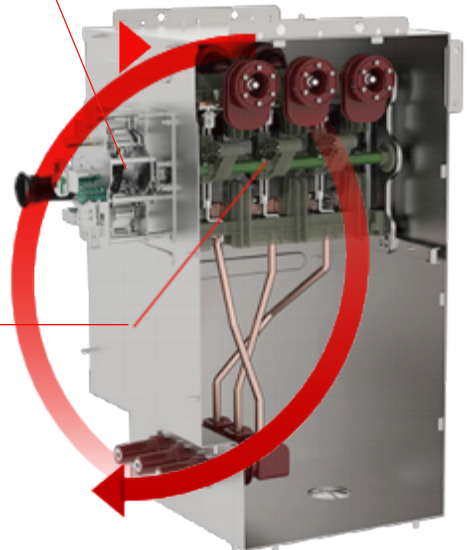
Three-station isolation mechanism

Single spring double operation axis design, built-in reliable closing, breaking, grounding limit interlocking device, to ensure that the closing no obvious overshoot phenomenon. Product mechanical life More than 10,000 times, electrical components front design, can be added and maintained at any time. The front design of electrical components can be retrofitted and maintained at any time.



Three-station isolation mechanism

The isolating switch adopts a three-position design to prevent misoperation. The high-performance disc spring ensures the stability of the contact pressure and is conducive to the design of the contact shape of the closing shape, thereby ensuring the reliability of the grounding and closing.

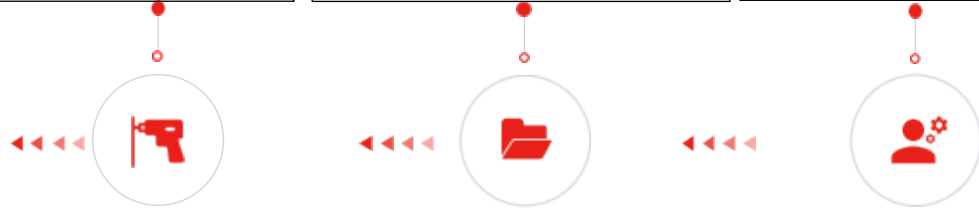




The customer only needs to install the core unit module in the cabinet as a set.

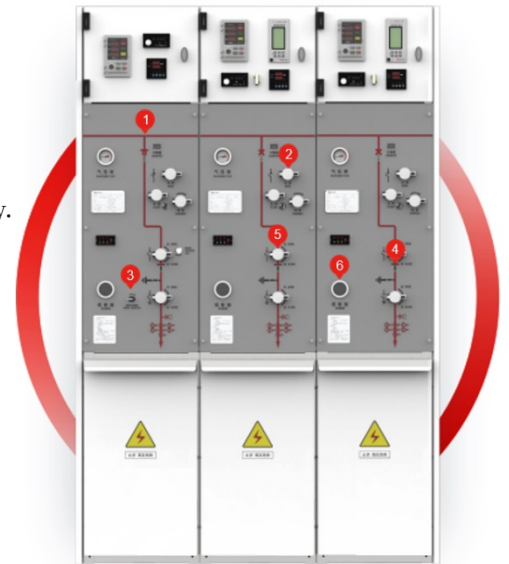
We provide customers with a full range of free cabinet drawings, secondary schematic drawings, product manuals, promotional materials, technical advice and other services.

The core unit module can be sold separately to the public, and all parameters have been adjusted in place before leaving the factory, so customers do not need to debug again.



8.5、User-friendly human-machine interface

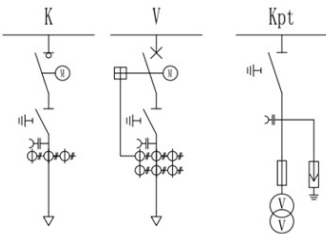
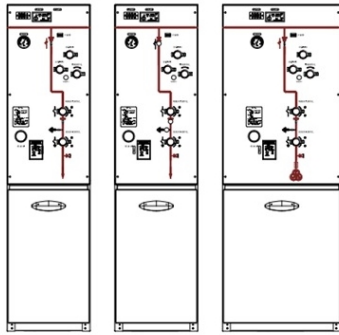
- ① The analog busbar is clear and easy to operate.
- ② The main switch is made of alloy button, easy to operate and avoid aging.
- ③ The grounding switch is equipped with a "voltage blocking device" to prevent the grounding switch from being closed by mistake with electricity.
- ④ The isolation and grounding switches have two separate operation holes to avoid mis operation.
- ⑤ Operation hole with anti-mis operation cover and pad lockable.
- ⑥ Wide angle lens with its own illumination system for easy observation of the isolation break.



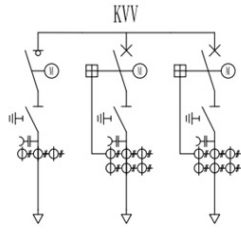
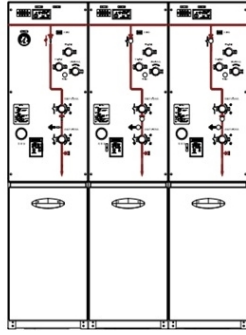
8.6、 Operating parameters

Item	Explanation	Unit	Module K	Module V	
			Load Switch	Circuit Breaker	
Rated Voltage		Ur KV	12	12	
Rated Current		Ir A	630	630	
Rated Frequency		Fr Hz	50/60	50/60	
Temperature rise test			1.1Ir	1.1Ir	
Insulation Level					
Industrial Frequency 50Hz/Min	Phase-to-phase	Ud	KV	42	42
	phase-to-earth		rms		
	Across the interrupter	Ud	KV	48	48
	Across isolating distance		rms		
Lightning Impulse Withstand	Phase-to-phase	Up	KV	75	75
	Phase-to-earth		peak		
	Across the interrupter	Up	KV	85	85
	Across isolating distance		peak		
Cubicle Internal Arc Withstand	IAC level		AFLR	AFLR	
	Burning arc/time		KA/s	20/0.5	20/1
<i>Note 1) Depends on the high voltage fuse</i>					
Breaking capacity					
Rated Short-Circuit Breaking Current		Isc KA	-	20	
Rated Short-Circuit Closing Current		Isc KA	50	50	
Short-Time Withstand Current		Ik KA	20/4s	20/4s	
Peak Withstand Current		Ip KA	50	50	
Protection level	Shell			IP41	
	Gas tank			IP67	
Mechanical Endurance	Circuit Breaker/Load switch		Freq	10000	10000
	Disconnect switch		Freq	3000	3000
	Earth switch		Freq	3000	3000
SF6 gas pressure/gauge pressure at 20°C			MPa	0.13	
order of operation Duty Cycle				O-t1-CO-t2-CO	

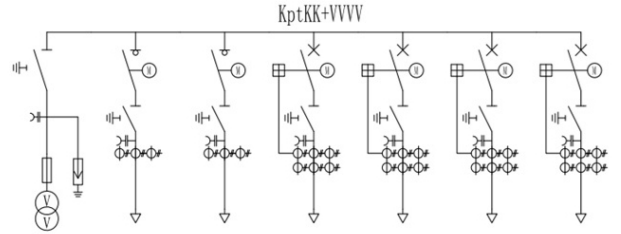
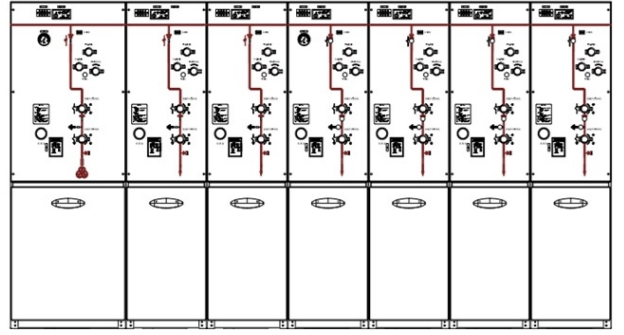
8.7、Single Line diagram



(plan 1)



(plan2)



(plan3)

9、Security Control



Door handle lock with key



Indoor electromagnetic lock



Remote and local control

10、 Transport & Storage

Transport and Handling

Weight of standard SSU-12 series unit approx. 230 kg These weights do not take into account additional accessories.

The SSU-12 series is equipped with a lifting ring and can also be moved with a fork lift shovel.

Unpacking and Inspection

Check the following items after opening the box: Before opening the box, the user should check whether the packaging of the Ring Main Unit sand the transportation process is damaged or even damaged Ring Main Unit, open the box should be carried out in a dry place not subject to rain; when unpacking, pay attention to the protection of products to avoid damage.



1. Random file:

- ① Product certificate
- ② Factory test report
- ③ Installation and Operation Guide
- ④ Primary System Diagram
- ⑤ Secondary schematic
- ⑥ Packing list

2. Operation handle 1 only

3. Check whether the accessories are consistent with the packing list, and make on-site records.

4. For the mechanical part to carry out functional tests. Any defects and omissions must be declared immediately to the supplier.

5. Confirm the appearance, components have no damage, the product has no accumulation of water, condensation, mixed with foreign objects and other phenomena.

6. Whether the specifications and control voltage etc. indicated on the nameplate are consistent with the specified contents. If there is an error, you can contact our company.

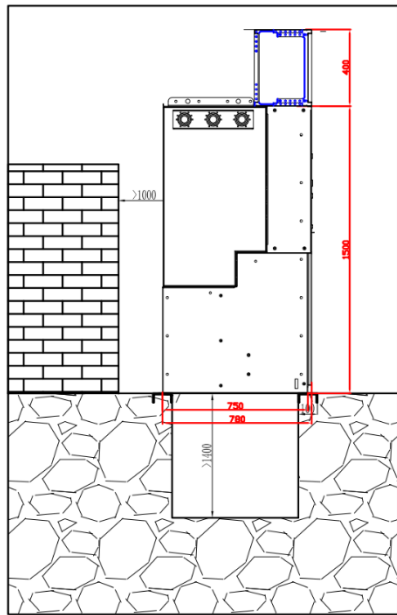
7. Please confirm the specifications of the product and the environmental conditions of use before use.

8. whether the screws are loose, the main circuit part of the fastening is reliable.

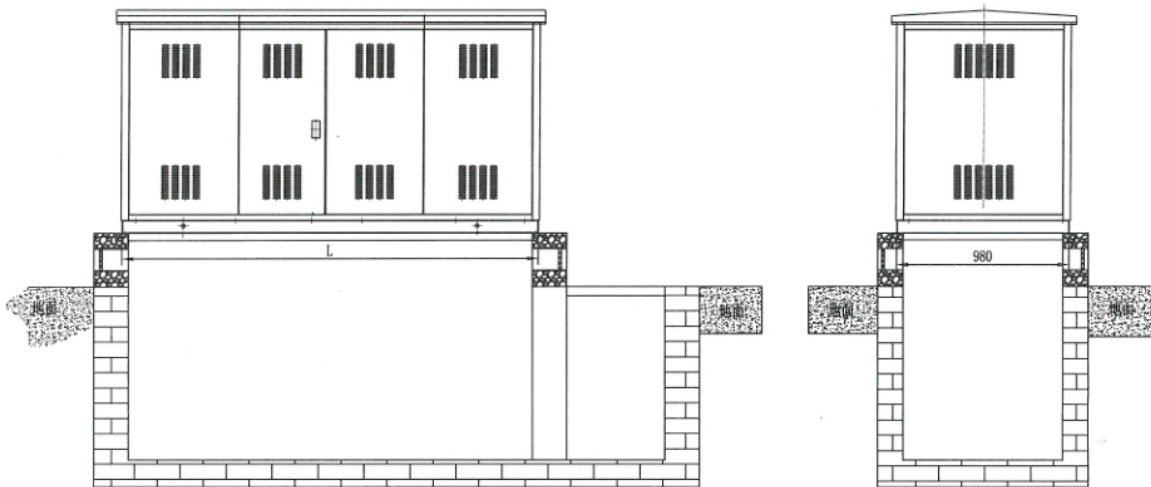
9. Do not use this product outside the specified conditions of use. To prevent malfunction and cause accidental disaster.

11、 Equipment Installation

Indoor Installation Basics



Outdoor Installation Basics



12、 Product third-party test report

All of our products are tested and certified by national experimental institutions





中国认可
国际互认
检测
TESTING
CNASL2550



机检电 (2019) 46号

No.20190866A

检 验 报 告

Test Report

试品型号: SS□V-12(Z)/T630-20
 试品名称: 箱式交流金属封闭开关设备(SF₆ 环网柜)
 委托单位: 七星电气股份有限公司
 制造单位: 七星电气股份有限公司
 检验类别: 型式试验



机械工业高压输配电设备质量检测中心
 Machinery Industry High-voltage Transmission and Distribution
 Equipment Quality Inspection & Testing Center
 上海电气输配电试验中心有限公司
 Shanghai Electric Power Transmission & Distribution Testing Centre Co.,Ltd.

SETC MIQC	Validated items and parameters	No.20190866A	Page 3 Total 81 pages
NO.	Inspection items	Inspection parameters	
1	Insulation test	a. industrial frequency voltage test, phase to phase and ground 42kV 1min, Circuit breaker break, isolation break 48kV 1min b. 1.2/50us lightning surge voltage test, phase to phase and ground 78kV (peak value) Breaker break, isolation break 85kV (peak value) c. Local discharge test, local discharge ≤ 20pC at a test voltage of 1.1 Ur d. auxiliary and control circuit test, frequency voltage 2kV 1min e. as a status check voltage test, the working frequency voltage 48kV 1min, lightning impulse 85kV (peak value)	
2	Measurement of circuit resistance	Main circuit ≤ 200μΩ, auxiliary contact ≤ 10	
3	Temperature rise test	Main circuit 630Ax1.1-693A, auxiliary and control equipment temperature rise test	
4	interlock	Interlock between circuit breaker, three-position isolating/grounding switch and cabinet door	
5	Sealing test	Annual air leakage rate ≤ 0.01%	
6	Protection level test	Tested product enclosure IP4X, compartment IP2X	
7	Inflatable compartment pressure withstand test	According to the standard requirements for the test	
8	Short-time withstand current and peak withstand current test	a. Main circuit 20KA 4s 50KA (peak value) b. Grounding circuit 17.4KA 4s 43.5KA (peak value)	
9	Verification of closing and opening capacity	a. Test method T100s: 12kV 20KA 50KA (peak value) ○ 0.2s CO 180s CO b. Test formula T100s: 12kV 20KA DC component 52% O 3 times	
10	Internal arc test	IAC-AFLR class, Cable room 20KA 50KA (peak) 0.5s Switch room 20KA 50KA (peak) 0.5s	

Note. 1. The tested product has completed the on-site prototype inspection in the tested product manufacturing unit in accordance with the provisions of the "12 kV Ring Main Unit (Box) Standardized Design and Customization Plan (2019 Edition)" formulated by the State Grid Corporation of China, and the on-site prototype inspection is carried out the date is November 27, 2019.
 2. The test was carried out with reference to the requirements in the "12kV Standardized Customized Ring Main Unit (Box) Grid Connection Professional Inspection Plan" issued by the State Grid Corporation of China.

Prepared by: 成宇 Date: 2019-12-26	Review:  Date: 2019
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13、 Our Factory View

