



## Contact US

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-RMU (sf6 free)(5)-

**Product Catalog**

DSJ Electrical Co.,Ltd





## About DSJ

### Building Power, Building Trust: **42 Years of Excellence**

Founded in 1983, DSJ has established itself as a leading force in China's electrical distribution industry, with 42 years of expertise in both medium-voltage and low-voltage electrical products.

As an outstanding enterprise, DSJ boasts independent research, development, production, and sales capabilities, ensuring that we can meet customers' needs with the fastest delivery and the highest level of customization. Our workforce consists of over 300 employees, including 50 senior management professionals, 30 experienced engineers, 8 senior designers, and 5 senior technicians.

We specialize in the manufacturing of distribution, circuit protection, and photovoltaic products that exceed both national and international quality standards. Over the past 40 years, DSJ has provided high-quality, safe electrical products to public facilities, large enterprises, and residential sectors worldwide, with one of the lowest return rates in the industry.

As a well-recognized Chinese brand, DSJ is dedicated to upholding our brand integrity. We adhere to the core philosophy of "Quality First, Customer Priority, and Integrity at the Core," striving to bring premium Chinese power equipment and exceptional service capabilities to customers worldwide.

#### Core Ideology

**Quality First**

**Customer Priority**

**Integrity at the Core**

 **40+**  
Years of Excellence

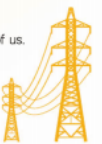
Established in 1983, DSJ has delivered trusted solutions for over four decades, solidifying its position as a pioneer in electrical equipment.

 **15,000+**  
Square Meters of Facility

Strong manufacturing capabilities, with the capacity to produce 8,000 units per month.

 **\$108**  
Million in Revenue

The continuous growth in sales volume demonstrates the market's recognition of us.



# Factory Introduction



DSJ is a financially robust company with a registered capital of **7.84 million USD** and a facility spanning more than **15,000 square meters**.

Our production capabilities are supported by **30 units** of intelligent product testing and debugging equipment, **50 machine tools**, and **6 automated production lines**.

DSJ is also home to four innovation laboratories, holding more than **60 national invention patents**.

**Crafting Quality Electrical Products for Over 40 Years**



# Honors and Certifications

• We are holding more than 60 national invention patents

## Invention Patent



## Utility Model Patent



• We have been awarded numerous prestigious national-level honors



## 1. Introduction

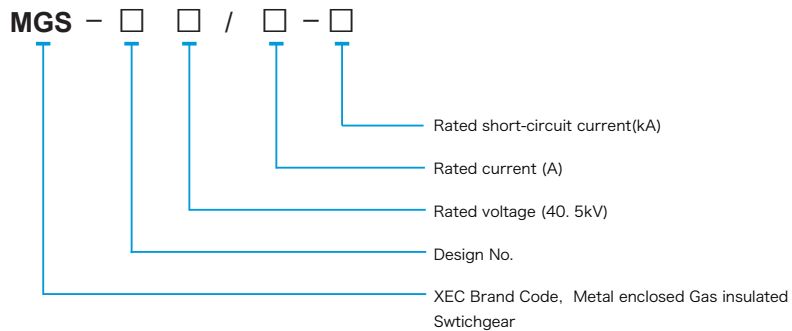
The internal adopts low pressure SF6 gas as insulating medium, and circuit breaker, disconnector, earthing switch as the primary unit parts. All live parts are placed in sealed stainless steel housing without being affected by external environment and climate influence to ensure the product can be operated in basement, plateau, frozen soil, coastal areas, under high-altitude, high-salt mist, moisture harsh environments and meet the requirements of new-energy, basement, railway and power-shortage urban distribution project. In addition, the product is high-reliability, free-maintenance, adoptability, and less-land.

The product is a indoor complete set composed of three-phase AC, double bus, and bus section, And it is mainly used in power plant, medium and small power station, substation, high-buildings, mining enterprise, subway and electrified railway distribution systems, to achieve the control, acceptance, distribution, protection and measurement.

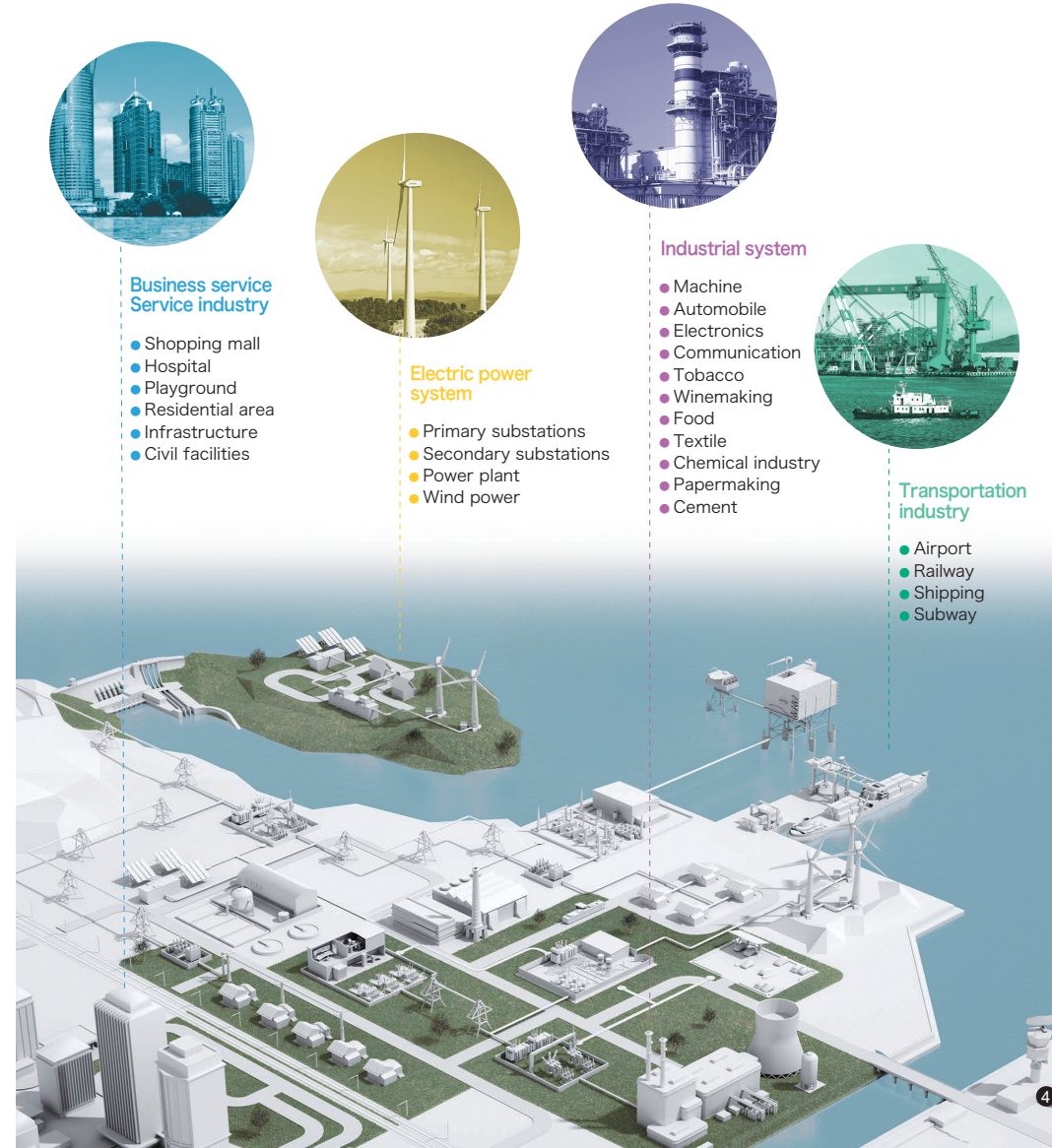
## Execution Standard

- IEC 62271-200:2003 (MOD)  
<AC metal-enclosed switchgear and control gear for rated voltages above 1kV and up to and including 52kV>
- EC 62271-100:2001 (MOD)  
<High voltage AC circuit breakers>
- IEC 60420:1990 (eqv)  
<High-voltage alternating current switch-fuse combinations>
- IEC 62271-1 (MOD)  
<Common specification high-voltage switchgear and control gear standards>

## 2. Model and meaning



## 3. Main Applications



## 4. Product Technology

MGS series SF6 insulated RMU is designed by adopting various advanced development tools and design means. The 3D engineering product design software is used to analyze the stress field, thermal field, electric field and dynamically simulate its motion through dynamic analysis system which can fully verifies the reliability of product design.

The design of MGS series SF6 insulated RMU fully considers the actual situation of installation, operation and maintenance with simple local operation, understandable operation procedure, safe and reliable performance of mechanical and electrical interlocks.



### 4.1 Safety and Reliability

- On-line monitoring technology for various kinds of switchgears can perform real-time testing of insulation status, mechanical characteristics, intelligent device operating conditions and power supply status of equipment. And the establishment of expert diagnosis system can realize self-diagnosis function of the equipment. All these can lay technical foundation for the life cycle management of distribution network switch device.

- The integration design of secondary function for primary equipment not only provides simple wiring but also reduces costs. At the same time, the new sensing technology is applied to realize the primary and secondary fusion design and automation functions of switchgears such as the state on-line detection, electric operation etc. While designing the switchgear, the reliability and practicality of the fusion are fully considered.

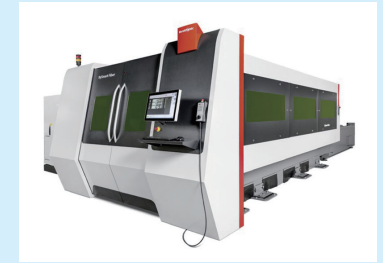
- Laser welding technology is used to prevent the escape of insulating gas and prevent moisture intrusion. The GIS meets the requirements of the national standard for airtight pressure systems.

- The air-tightness is verified at the manufacturing stage by an inflation leak detector integrated on each of the casings. It can meet insulation requirements of the system even for zero gauge pressure.

- The electrical components installed in the cabinet are connected to the cable or busbar through the bushing. The required operating power is transferred from the outside to the inside of the GIS which is achieved by the double seals.

- In order to check the presence of voltage, a capacitor chip is cast into the bushing. A socket is mounted on the panel of the cabinet and a voltage measuring device can be used to check for voltage.

- The gas chamber has a pressure relief device. When an internal arc fault occurs, the air pressure of the chamber rises with the generation of the arc, the pressure release device installed at the bottom of the gas chamber acts to release the pressure and exhaust gas to ensure the safety of the operating personnel.



Laser cutting



Gas tank welding



Robot seal welding

## 4.2 Technical Features

### Completely sealed structure, highly adaptable to environment

The primary live part is completely sealed in the gas tank filled with 0.04Mpa SF<sub>6</sub>. The current in and out parts are connected by the contactable cable connector. All the charged parts are fully sealed and insulated. Therefore, the product can be in safe operation under harsh environmental conditions such as plateau, strong wind or sand, high salt spray, severe pollution and severe humidity etc.

### Small size, flexible extension

With the modular design, each unit has a flexible combinations in one tank and gas tank can be freely extended on the left or right side and can be disassembled separately which can meet the complex and diverse distribution design schemes of users to the utmost.

### Advanced design methods

The computer 3D simulation technology is used to perform the simulation analysis of electric field, magnetic field and mechanism motion to ensure the accuracy of the technical parameters.

### Advanced welding and sealing technology

The stainless steel plate of the gas tank is cut by laser and welded by ABB welding robot to ensure the dimensional accuracy and welding quality of the plate. The isobaric vacuum and ammonia leak detection technology are used to ensure the tightness. The annual leak rate of the measured SF<sub>6</sub> is less than 0.1%.

### Advanced cleaning technology

The gas tank adopts ultrasonic cleaning technology. The product assembly is carried out in a clean room to ensure that the moisture content of the SF<sub>6</sub> is below 150 ppc which is better than the national standard.

### Intelligent online monitoring and protection

The switchgear can be connected through the communication network and automation system to realize telemetering, remote signaling and remote control functions. It can also achieve functions of fault isolation, recovery and network reconstruction for the distribution network.

### Friendly user interface, excellent five-prevention design

The switchgear can be operated manually or electrically with simple and reliable operation. The overall structure has an excellent five-prevention interlocking design.

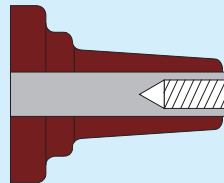


The grounding switch must be locked in the close position or be sure that an insulating plug is installed on the cable connection bushing before connecting the cable.

Note



Vacuum nitrogen leak tester



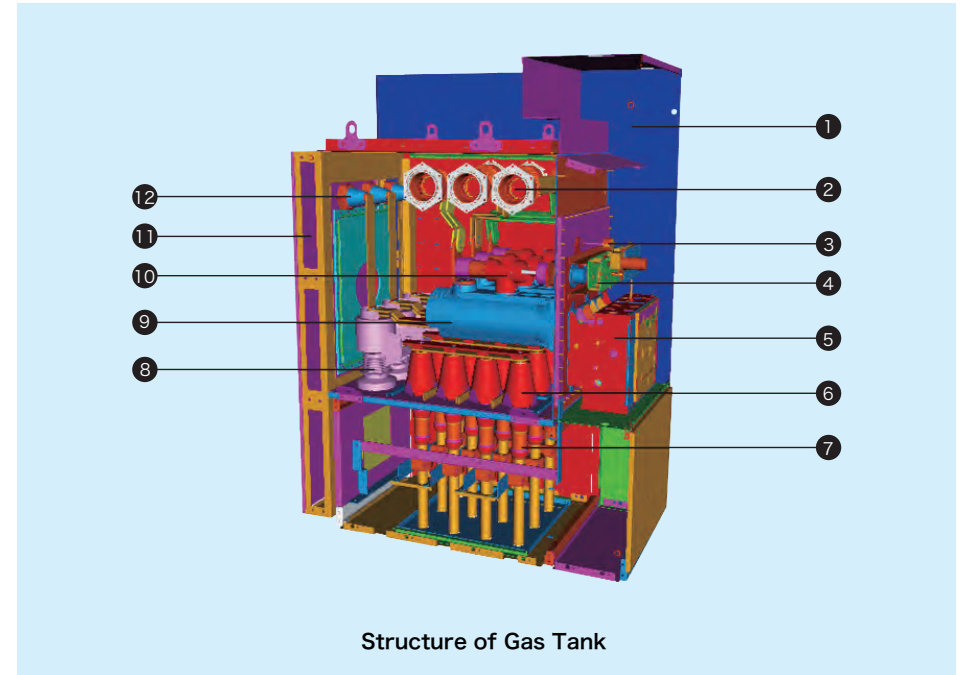
Interface C (bolt type 400 series)



Cable connection

## 4.3 Product Structure

The product adopts a modular assembly structure by six independent functional modules(compartment) which are cabinet foundation, integrated inflatable unit protection and control unit, operating mechanism room, cable room, pressure relief channel etc. and it is easy assembly.



Structure of Gas Tank

- |   |                                  |
|---|----------------------------------|
| 1 Secondary instrument room                 | 7 Inner cone plug cable terminal |
| 2 Bus connection                            | 8 Combined sensor                |
| 3 Gas density indicator                     | 9 Circuit breaker                |
| 4 Three-position switch operating mechanism | 10 Three-position switch         |
| 5 Circuit breaker operating mechanism       | 11 Pressure relief channel       |
| 6 Inner cone type cable socket              | 12 Voltage test terminal         |

### Cabinet

The cabinet is assembled by 2mm bending aluminum-zinc plate which can support the main gas tank and protect the operating mechanism and external components of the switchgear. On the front panel of the cabinet, it has scheme simulation diagram, switch status indication, operation hole etc.

### Load switch / grounding switch

The load switch is divided into two-position (closed-open) and three-position (closed-open-ground).

Grounding switch: The linkage operation between grounding switch and load switch can be achieved. And it's equipped with mechanical interlock to ensure safe operation.

Vacuum circuit breaker, disconnecter: The circuit breaker scheme has V scheme and CB scheme. V scheme is an integrated structure of disconnecter and circuit breaker. The circuit breaker is installed on the busbar side. CB scheme is an independent unit which has vacuum breaker and its operating mechanism. The circuit breaker is installed on the cable side.



### Gas tank

The gas tank is welded with 3mm AUS304 stainless steel plate by welding robot. In tank, there are primary live parts of the switchgear. The isobaric vacuum and Helium leak detection technology are used to ensure product tightness. A density meter or relay is installed on the cabinet to observe the gas pressure inside the tank. It's also equipped with an explosion-proof membrane. The membrane will rupture and release faulty gas to minimize the loss in case of internal arc fault.

### Fuse

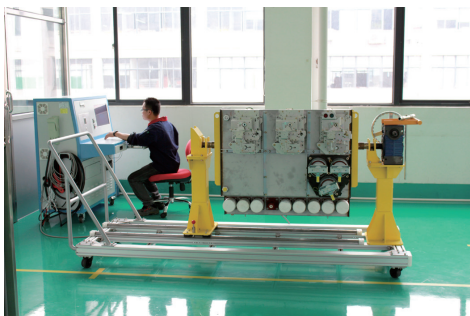
In the F cabinet, the fuse is firstly mounted on the fuse holder, and then inserted into the fuse insulation unit. The fuse insulation unit arranged in the form of triangle shape is installed in and well sealed to the gas tank. When the fuse holder is inserted into the insulation unit, the insulation unit is isolated from the outside which can protect it from external pollution. Any phase fuse can cause the trigger of firing pin which can drive quick linkage mechanism to open the load switch.

## 4.4 Features of Product Structure

- The isolating switch and grounding switch are combined into a three position switch to replace single switch which greatly reduces space and interlocking work.
- Three phase or single phase current transformers are used to replace ordinary cast insulated current transformers which withstands high-priced electrical loads.
- Excellent SF6 insulation, all-weather product
- All main circuits are in a sealed gas chamber with fully enclosed structure design which eliminates the influence of environmental factors and does not require maintenance and repair work for each switch element.
- It's independent of the external environment with fully sealed design. Even in extreme environments, the cabinet can't be deformed.
- Fully insulated, fully enclosed modular design, strong interchangeability of gas chamber and mechanism
- Miniaturization: The width of the cabinet is small by optimizing the electric field, using optimal insulating materials, miniaturized vacuum interrupters and longitudinal structure design.
- Energy saving and environmental protection: shortest path design and low energy consumption.
- Fully fixed structure, no moving parts, high reliability
- The cabinet is welded to a completely airtight structure which eliminates the influence of environmental factors.
- There is no phase-to-phase short-circuit explosion hazard by adopting split-phase insulation structure with active prevention of internal arc.
- Flexible combination and convenient splicing, and there's no need to process gas at the user site.
- Different application solutions are easy to be implemented with safe operation.
- Three-position switch has fast short-circuit closing capability to ensure the safety of operators and equipment.
- A variety of scheme combinations can be achieved through bus coupler.
- Fully shielded cable access lines
- Flexible connection of double cable and lightning arrester
- Pluggable fixed PT
- The built-in online monitoring sensor components can monitor the status indicators of key components online and provide sufficient analysis data for intelligence. Through comprehensive analysis of the data, the switch and product status can be provided to the user. Then it can be predictive scheduling or maintenance to avoid product accidents.
- The cable connection uses a fully insulated and shock-proof plug-in structure to replace the ordinary cable connector.



### 4.5 Advanced Manufacturing Process



Switch comprehensive performance test system



Fully automatic mechanical operation test equipment



Assembly line



Fully shielded partial discharge pressure test equipment



智能环保气体绝缘开关柜生产线  
EGS/MGS Assembly Line

## 4.6 Advanced Testing Equipment

XEC has international advanced testing equipments and strict quality control system to ensure that product quality is at the international advanced level.



Tensile testing machine



High and low temperature environmental test equipment



Salt spray experimental equipment



Power frequency withstand tester



Vacuum nitrogen leak test equipment



Mechanical property test bench



SF6 Dewpoint Tester



Circuit resistance tester

## 4.7 Application Advantages

- With modular design, each unit module can be in flexible combination and extension without any inflation and deflation which is easy for scheme combinations and the design of HV metering units. It has wide applications. For the incoming and outgoing cabinet of SF6 full insulated circuit breaker (vacuum or SF6 arc extinguishing) and load switch, bus coupler cabinet, metering cabinet, switch-fuse combined cabinet and TV cabinet (with switch or without switch), the compact combination scheme can be single unit, two units, three units, four units and so on. It provides a broad application prospect for SF6 fully insulated RMU or multi-circuit power distribution cabinet.

- With armored structure, there is a metal partition between the busbar compartment and the switch compartment, also between the switch compartment and the cable compartment. The protection degree of full insulated primary part is IP 67.

- With the three position load switch welded in a sealed stainless steel case filled with SF6 gas, it has good air tightness, little gas consumption and no leakage for 30 years can be guaranteed which meets the requirements of environmental protection. It's suitable for indoor or outdoor use in metal or non-metallic enclosures, and it also can be put to use in underground or semi-subterranean substations.

- With the use of corrosion-resistant metal in operation mechanism and the self-lubricating design of bearings in the rotating parts, the product is not affected by the environment, free of regular maintenance, convenient to connect with the outside world which makes it has the features of low operating energy, high reliability and longer service life.

- The extension bus is full insulated and shielded through using plug-in silicone rubber connector to ensure high reliability of conductivity and independence of surrounding environment. Convenient connection and expansion make it easier to upgrade for future user or substations.

- The cable terminal with silicone rubber to insulate is plugged in at the front which eliminates the disadvantages of inconvenient cable installation for the load switch cabinet due to its small size and narrow space. It can be removed, recovered quickly and easy to install during maintenance. During operation, with a new type of semiconductor material as a shielding layer, the outer surface is grounded and not affected by moisture, condensation, dust, pollution, etc. which has higher safety and maintenance free. It has diverse, novel, beautiful appearance and can be branched or paralleled. And with anti-flood function, it can run at 4.5m under water for a short time.

- In order to meet the requirements of distribution network automation and improving distribution reliability, the new multi-circuit power distribution cabinet can be equipped with electric mechanism, TV and distribution network control terminal unit as needed to have three remote functions. It can realize remote monitoring to the operation status and fault of main components, remote meter reading, remote operation, etc.

- Compact design and the use of three position rotary load switch can effectively reduce the number of parts and realize the five prevention of mechanical interlock. The vacuum circuit breaker is filled with SF6 insulation. The overall structure becomes more compact by utilizing the respective advantages of vacuum arc extinguishing and SF6 insulation. And current-limiting fuses are also developing in the direction of miniaturization, large capacity, high breaking capacity and rapid fuse. Taken together, they make the cabinet smaller and smaller.

- The friendly operation interface ensures the safety of operators and maintenance personnel. The primary line analog single-line diagram and analog display can display the internal state of the switch which makes operation simple, correct and safe.



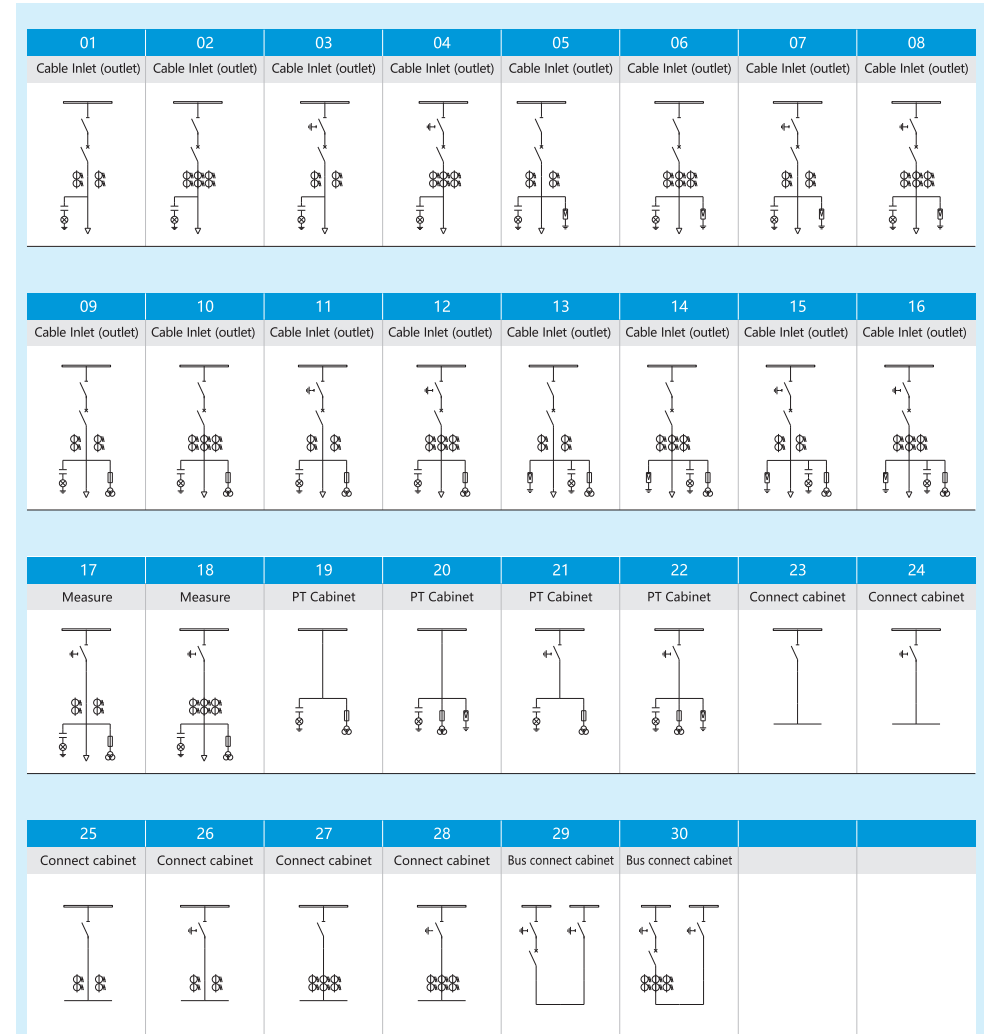
### 5. Main Technical Parameter

Item		Unit	Load Switch Unit
Rated voltage		kV	40.5
Rated frequency		Hz	50/60
Rated frequency		A	630/1250
Rated insulation level	Power frequency withstand voltage (interphase and relative to the ground)	kV	95
	Power frequency withstand voltage (between fracture surface)	kV	118
	Power frequency withstand voltage(control and auxiliary circuit)	kV	2
	Lighting impulse withstand voltage (nterphase and rlatve to the ground)	kV	185
	Lightning impulse withstand voltage (between fracture surface)	kV	215
Rated short-time withstand current	Main circuit	kA/s	20/4, 25/4, 31.5/4
	Earthing switch	kA/s	20/4, 25/4, 31.5/4
Rated peak withstand current	Main circuit	kA	50,63,80
	Earthing switch	kA	50,63,80
Rated Short Circuit breaking current		kA	20/4, 25/4, 31.5
Short circuit breaking times		time	30
Rated Short-Circuit making current		kA	50, 63, 80
Rated breaking current for single capacitor bank		A	630
Rated breaking current for back to back capacitor bank		A	400
Rated breaking cable charging current		A	50
Rated operation sequence			0-0.3s-C0-3min-CO
Mechanical life	Circuit breaker	time	10000
	Three-position switch (disconnecter /earthing switch)	time	3000
SF6 gas rated pressure(relative value of 20° C)	Rated inflation pressure	MPa	0.04
	Minimum function level pressure	MPa	0.02
Protection grade	Encloesd cabinet		IP67
	Switchgear housing		IP4X
SF6 gas annual relative leakage rate		%	≤0.01
Rated supply voltage of auxiliary circuit		V	AC350, AC220
Rated supply voltage of control circuit		V	DC110, DC220, AC220
Cabinet overall dimensions	Width		600-800
	Depth		1010-1710
	Height		1700-2300

Note: 1. The rated current of the fuse cabinet is limited by the fuse and it's not more than 125A.  
 2. It's limited to high voltage fuses.

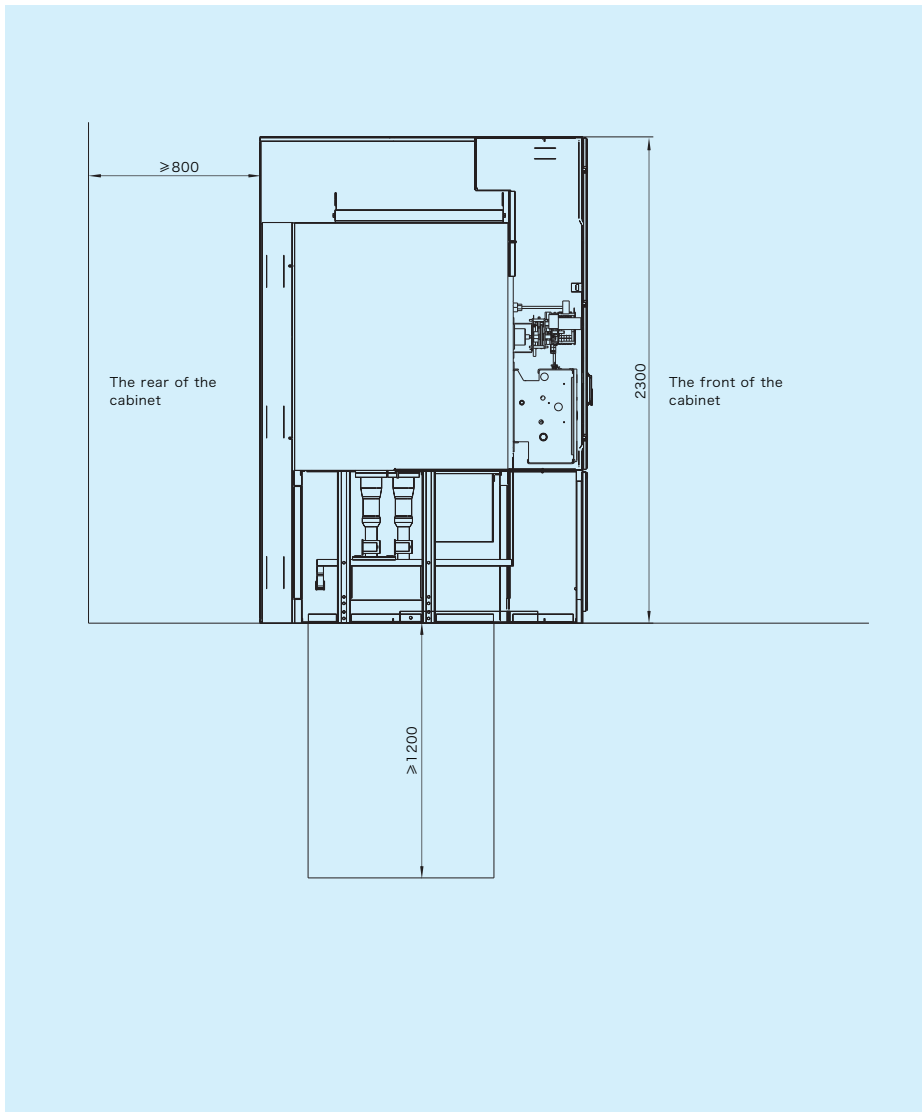
### 6. Primary Circuit scheme

(typical example)

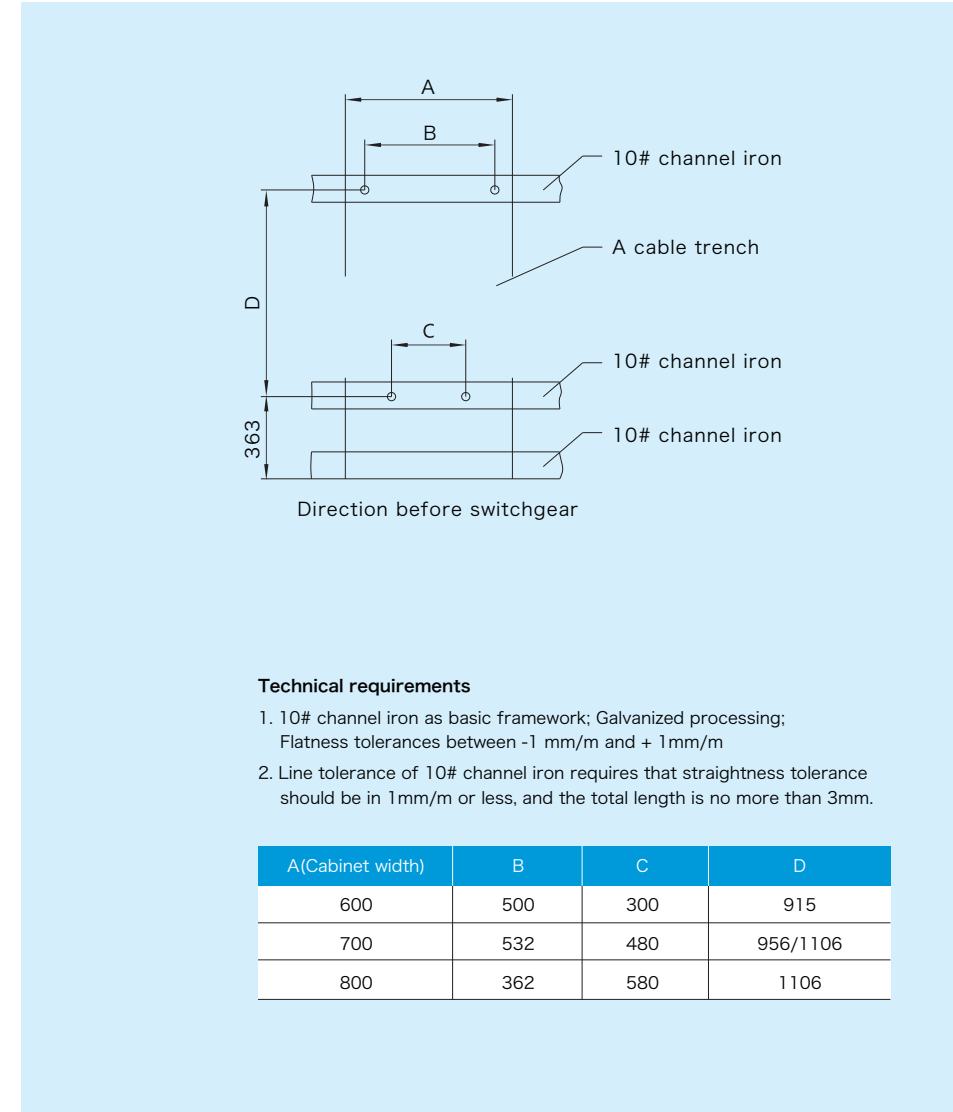


## 7. Overall dimensions and foundation reference drawing

### 7.1 Installation foundation size drawing



### 7.2 Cabinet foundation size drawing



## 8. Order Instructions

Please have the following information available when ordering goods.

- Product type and name\*
- Type and voltage of control power\*
- No. of selected schematic diagram\*
- Please provide outgoing type when required.
- Other requirements (electrical schemes)

Note: Items with a mark \* are required to provide.

## 9. Documents

- Packing list
- Qualification certificate
- Test report
- Operating instruction manual
- Accessories

## 10. Certificates

