

HXGN□-12

单元式交流金属封闭环网开关设备

Modular AC metal enclosed
Ring main unit

The HXGN-12 unit type AC metal enclosed ring main unit (hereinafter referred to as the ring network cabinet) is a new generation of high-voltage electrical products that we have successfully designed and developed in accordance with the requirements of domestic rural power and urban network renovation by introducing advanced foreign technology. All technical performance indicators are in compliance with the IEC62271-200:2003 and GB3906 standards. The cabinet is riveted after being processed by CNC machine tools, with a protection level of IP3x and reliable mechanical interlocking and anti misoperation functions. This product has significant features such as small volume, light weight, beautiful appearance, easy operation, long service life, high parameters, no pollution, and less maintenance.

The HXGN-12 type modular AC metal enclosed ring network switchgear is suitable for AC metal enclosed ring network switchgear and is used for receiving and distributing electrical energy in AC 50Hz and 12KV power networks. The main switch inside the cabinet is SF6 switch.



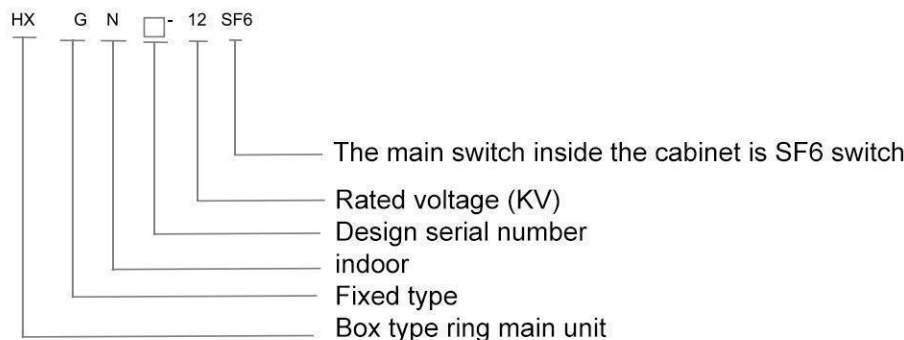
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○ 型号含义 Model meanings



○ 使用条件 Working conditions

- ◆ Environmental temperature: upper limit +40 °C, lower limit -25 °C;
- ◆ Altitude: The altitude does not exceed 2000m;
- ◆ Relative temperature: The daily average value shall not exceed 95%; Monthly average not exceeding 92%
- ◆ Surrounding environment: The surrounding air is not significantly polluted by corrosive gases, flammable gases, water vapor, etc.,
- ◆ There is no frequent violent vibration.

○ 技术参数 Technical parameters

Project	Unit	Parameters
Rated voltage	KV	12
Rated frequency	HZ	50
Rated current of main busbar/maximum rated current of fuse	A	630, 125
Rated short-term withstand current of main circuit and grounding circuit	KA/S	20, 3
Rated peak withstand current of main circuit and grounding circuit	KA	50
Rated short-circuit making current of main circuit and grounding circuit	KA	50
Number of full capacity interruptions of load switch	TIMES	100
Breaking current of fuse	KA	31.5, 40
Rated closed-loop breaking current	A	630
Rated transfer current	A	1600
Mechanical lifespan	TIMES	2000
1min power frequency withstand voltage (peak) relative to ground/isolated fracture	KV	42, 48
Lightning impulse withstand voltage (peak), phase to phase, ground/isolated break	KV	75, 85
1min power frequency withstand current of secondary circuit	KV	2
Protection level		IP3X

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科迅安电气
KEXUN'AN ELECTRIC

○ 结构特点 Structural characteristics

◆ Cabinet characteristics

✧ The ring main unit shell is formed by riveting 2mm thick aluminum zinc sheet (or cold-rolled sheet sprayed with plastic), and there are two pressure release holes at the back of the cabinet, one for the cable compartment and the other for the load switch/busbar compartment. This structure can maximize the reliability of personal installation and operation of equipment.

◆ Each compartment

✧ Busbar room: The busbar room is located at the top of the cabinet and connected to adjacent switchgear.

✧ The load switch is an independent unit filled with SF6 gas.

✧ Cable room: Approximately 75% of the space is used for cable connections, fuses, grounding switches, and installation of PT and CT.

✧ Mechanism Room and Interlocking: The room includes operating mechanisms and mechanism interlocks, as well as position indications, auxiliary contacts, trip coils, live displays, and interlocks.

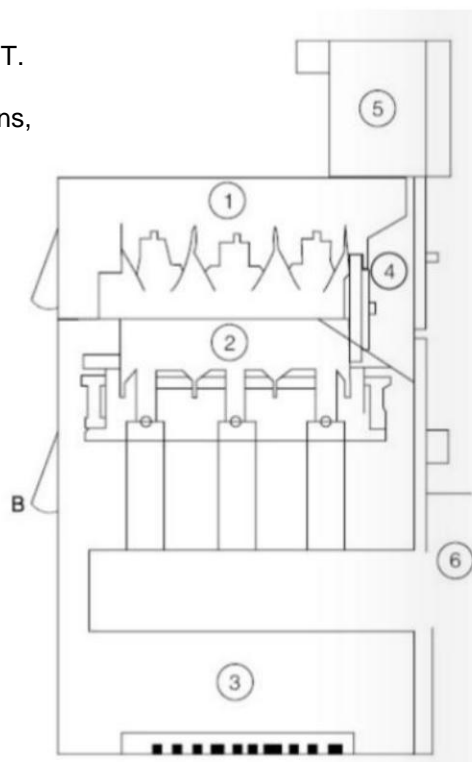
✧ Low voltage box: The low voltage box is located at the top of the cabinet and is optional. The small room is used to install special devices such as instruments/relays and motor units.

✧ Circuit breaker room: A circuit breaker (SF6 or vacuum) can be placed below the load switch.

◆ Pressure release:

✧ Pressure release above: The above is used to release the gas pressure generated during arc accidents inside the busbar and load switch room.

✧ The pressure release below is used to release the gas pressure generated during an arc accident inside the cable compartment.



○ 外形尺寸 Overall dimension

Project	Unit	Parameters
Circuit breaker cabinet width	mm	750
Other cabinet widths	mm	375、500
high	mm	1600、1850
deep	mm	980、900
Relay box high	mm	450

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基本组件 Technical parameters

SFL Technical parameters

Rated voltage	KV	12	17.5	24
Stamping pressure resistance	KV	75	95	125
1min power frequency withstand voltage	KV	28	38	50
Rated current	A	630	630	630
Closing capacity	KA	50	50	40
Thermal stable current	KA/S	20.3	-	-
Breaking capacity	A	1700	-	-
Maximum fuse	A	125	-	-
Polar distance	MM	210	210	210

VD4-STechnical data

Rated voltage	kv	12	17.5	24
Impulse withstand voltage	kv	75	95	125
Power frequency withstand voltage	kv	28	38	50
Rated current	A	630	630	630
Thermal stable current	KA/S	20.3		
Polar distance	mm	210	210	210

This switch has many advantages:

- ✧ The duration of the arc is short, and the insulation strength in the arc extinguishing chamber recovers quickly.
- ✧ Ensure safety and reliability even in the most demanding environments.
- ✧ Can disconnect low value inductive and capacitive currents.
- ✧ The operating mechanism is simple, can quickly open and close, and has a long mechanical life.
- ✧ Reduced the loss of contacts and arc extinguishing chambers, and also extended the electrical life.
- ✧ Allow for multiple operations, but with minimal maintenance workload.
- ✧ Lightweight structure, compact and stable.

Standard equipment

- Electric operation
- Manual operation
- Auxiliary contact (2 normally open and 2 normally closed)
- One shunt trip with position contact
- Shunt closing coil
- Other pressure control of a signal contact

Can be installed with various

- SS solid current relays
- PR511-PR512 flow controller
- Low pressure release device
- Strong Circle
- HAD120625
- HAD120520
- HAD170620
- HAD170616

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○ 基本组件 Base Component

Working voltage	Rated capacity of transformer							
	50	75	100	125	160	200	250	315
	Selection of fuses (nominal value in amperes)							
3	25	25	25	40	63	63	63	80
5	16	16	16	25	40	40	63	63
6	16	10	10	25	25	40	40	63
10	10	10	10	16	25	25	25	40
12	10	10	10	16	16	25	25	25
15	10	10	10	16	16	16	25	25
20	10	10	10	10	16	16	16	25
24	10	10	10	10	16	16	16	15

Working voltage	Rated capacity of transformer							
	400	500	630	800	1000	1250	1600	200
	Selection of fuses (nominal value in amperes)							
3	100	100	160					
5	63	80	100	100	160			
6	63	63	80	100	100	160		
10	40	63	63	63	80	100	100	
12	40	40	63	63	63	80	100	
15	25	40	40	63	63	63	100	
20	25	25	40	40	63	63	63	80
24	25	25	25	40	40	63	63	63

◆ SFL-12/24 switchgear

- ✧ The main components of SFL-12/24 switchgear are imported original parts. The switchgear is a dual port, three station, rotating moving contact, and uses SF6 gas as the arc extinguishing medium. The moving contact is placed in a die cast epoxy resin shell with a reinforced structure.
- ✧ Each switch is permanently sealed after being filled with SF6 gas at a pressure of 0.4 bars, and a helium detector can be used to detect any gas leakage. The switch is installed vertically and horizontally without limitation. A typical installation method in the ring main unit is to place a steel plate between the cable room and the busbar room and install it horizontally. This installation method isolates the busbar from the cable joints to meet the strictest safety requirements for operation and maintenance.
- ✧ If an internal arc occurs, there is a structural weakness at the back of the shell that will be pushed open, and then the arc valve on top of the cabinet will open and guide the overpressure airflow outside the cabinet.

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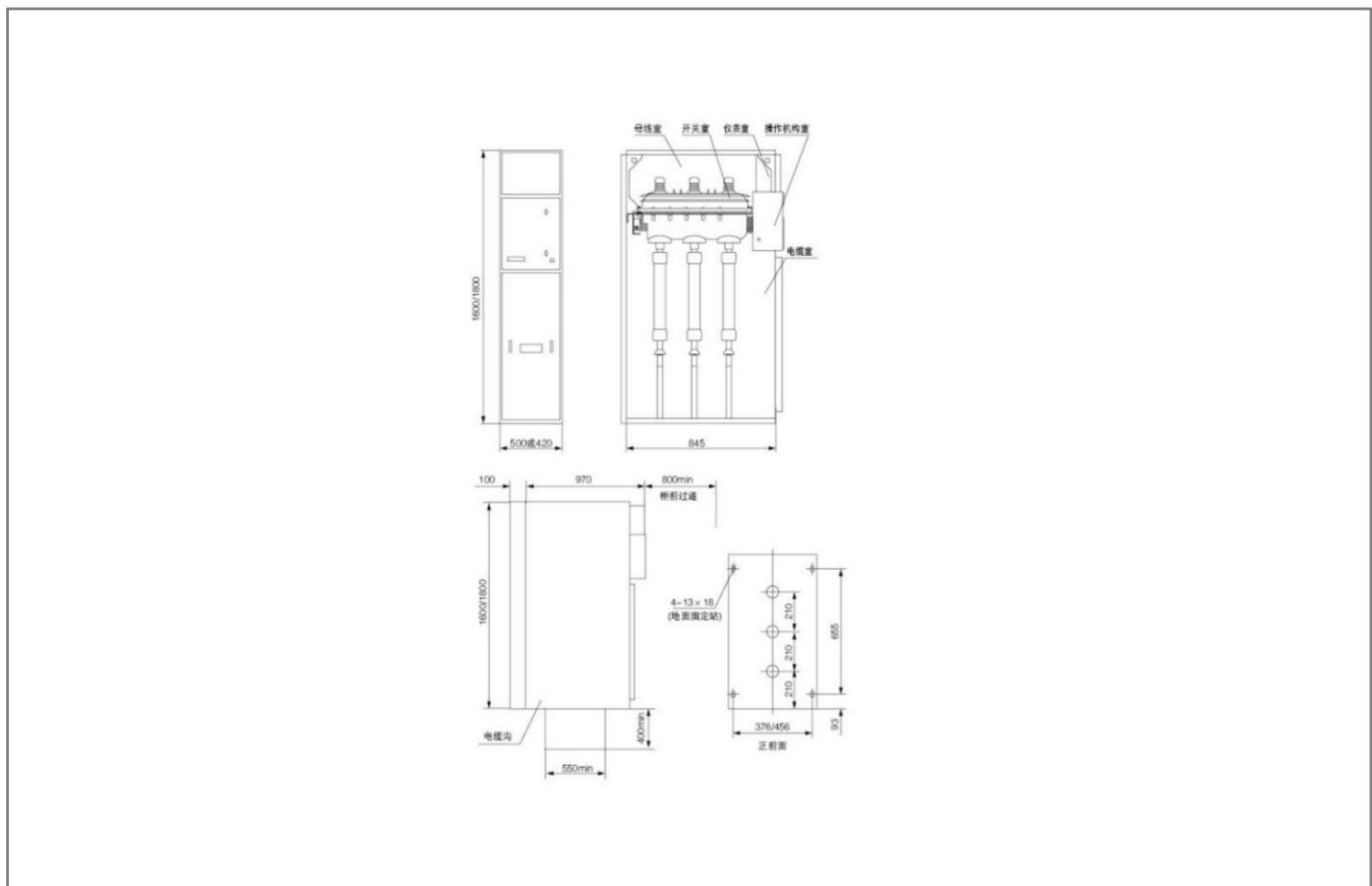
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操作 Operating

For switch equipment equipped with load switches, a dedicated operating handle is used to operate on the front of the switch equipment. There are two operating holes on the front of the operating mechanism, the upper part is the grounding switch operating hole, and the lower part is the load switch operating hole. When operating, the handle rotates clockwise to switch, and the closing direction rotates counterclockwise to switch opening direction. Electric opening and closing devices can also be strengthened for remote control operation. (Note: Sometimes the load switch does not come with a grounding switch, and the operating hole of the grounding switch is used to unlock the cabinet door.)

For switchgear with combined electrical appliances, except for the manual opening button of the load switch opening operation, the operation sequence is the same as above. The lower grounding switch installed in the combination electrical cabinet is connected and disconnected with the upper grounding switch through a connecting rod. Release the residual small current on the fuse holder when closing to improve safety when replacing the circuit breaker.

外形及安装尺寸 Outline and Installation Dimension



订货须知 Ordering Instructions

The following information is required when placing an order:

- ◆ Main circuit scheme number, main wiring system diagram, arrangement diagram, and layout plan;
- ◆ The model, specifications, and quantity of electrical components inside the switchgear;
- ◆ Name and quantity of spare parts;
- ◆ If there are special requirements, please consult with our company.

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○ Main electrogram scheme diagram

Plan number		01	01-1	01-2	01-3
Plan diagram					
Use to		Incoming and outgoing lines	Incoming and outgoing lines	Incoming and outgoing lines	Incoming and outgoing lines (right or left)
Main electrical components	Load switch FLN36-12D	1	1	1	1
	Fuses				
	Current transformer LZZJ2-12		1~3		
	High voltage Charging 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

Plan number		02	02-1	02-2	
Plan diagram					
Use to		Protective transformer	Protective transformer	Protective transformer	Protective transformer
Main electrical components	Composite FLN36-12D	1	1	1	
	Fuses	S□LAJ	S□LAJ	S□LAJ	
	Current transformer LZZJ2-12		1~3		
	High voltage Charging display device DXN6-T	1	1	1	
	Lightning arrester			HY5WZ	
	Ground switch	1	1	1	
宽*深*高 (mm)		500*845*1600/1800	500*845*1600/1800	500*845*1600/1800	

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○ 主电路图方案图 Main electrogram scheme diagram

Plan number		02	02-1	02-2	
Main electrical circuit diagram					
Main electrical components	Load switch FLN36-12D	1			1 (without grounding switch)
	Fuses	3 (voltage transformer) RN2-10/0.5			
	Current transformer LZZJ2-12	2-3			
	High voltage charging display device DXN6-T			1	
	Lightning arrester	HY5WZ			
Width * Depth * Height (mm)		500*845*1600/1800	420*845*1600/1800	420*845*1600/1800	

Plan number		02	02-1	02-2	
Main electrical circuit diagram					
Use to		Meterage			
Main electrical components	Fuse RN2-10/0.5	3			1 (without grounding switch)
	Current transformer LZZJ2-12	2			
	Voltage transformer JDZ-10	2			
Width * Depth * Height (mm)		500*845*1600/1800	420*845*1600/1800	420*845*1600/1800	

○ 联锁 Interlock

The switchgear has the following interlocks:

- ◆ When the load switch is in the closed position, the operation of the grounding switch is locked;
- ◆ When the grounding switch is in the closed position, the load switch operation is locked;
- ◆ Only when the grounding switch is closed, can the front door of the ring main unit be opened. In other cases, the front door is locked.