

# HYGN-□12 交流金属环网开关设备

AC metal ring main unit

Communication metal ring network switchgear (vacuum switch) (referred to as ring network cabinet) is a new type of high-voltage switchgear produced for the renovation and construction of urban power grids. In the power supply system, it is easy to use for breaking load current, short-circuit current, and making short-circuit current. This ring main unit is equipped with FZRN25 and FZRN21 vacuum load switches, with a spring operated mechanism that can be operated manually or electrically. The grounding switch and isolation knife are equipped with a manual operating mechanism. This ring main unit has strong completeness, small size, no combustion and explosion hazards, and also has reliable "five prevention" functions.

This ring main unit complies with the relevant provisions of GB3906 "3-35KV AC Metal Enclosed Switchgear" and IEC60420 "High Voltage AC Load Switch Fused Combination Electrical Appliances" standards.

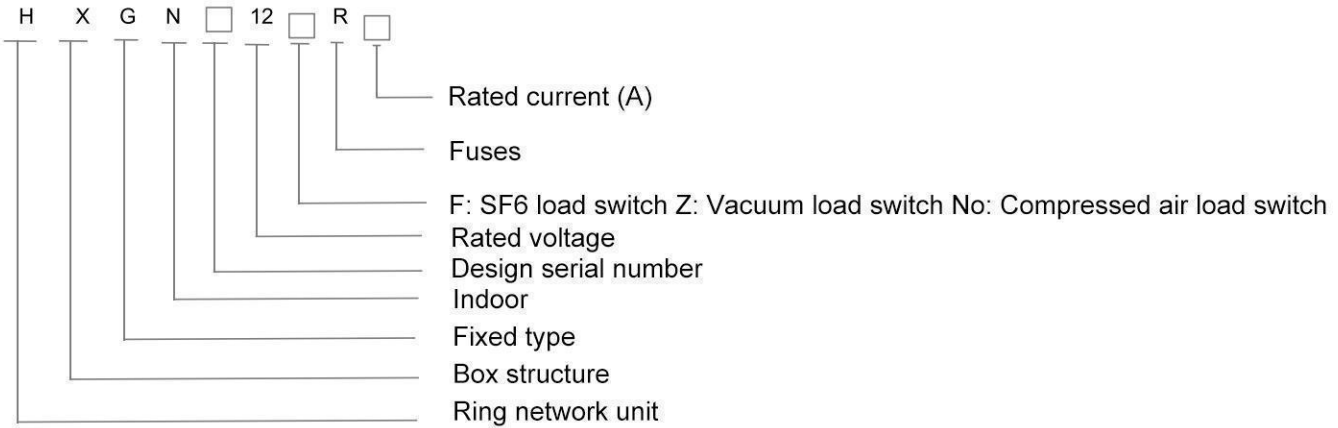


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## ○ 型号含义 Model meanings



## ○ 使用条件 Working conditions

- ◆ Surrounding air temperature: -15C~+40 °C;
- ◆ Altitude: 1000m and below;
- ◆ Humidity conditions: The daily average value shall not exceed 95%, and the daily average value of water vapor pressure shall not exceed 202KPa; The monthly average value shall not exceed 90%, and the monthly average value of water vapor pressure shall not exceed 1.8KPa;
- ◆ The earthquake intensity does not exceed level 8;
- ◆ Places without obvious pollution such as corrosive or flammable gases.

Note: When the normal usage conditions are exceeded, users can negotiate with our company.

## ○ 技术参数 Mathnical Parameters

Project		Unit		
Rated voltage		KV	12	
1min power frequency withstand voltage			To ground and between phases 42; Isolation fracture 48	
Lightning impulse voltage (peak)			To ground and between phases 75; Isolation fracture 85	
Rated frequency		HZ	50	
Stable current of the main busbar		A	630	
Load switch	Rated current		630	
	Electrical life under rated current	次	Not less than 100	
	Breaking the capacity of the no-load transformer	KAV	1250	
	Rated thermal stability current	KA/S	20/4; Grounding switch 20/2	
	Rated dynamic stable current	KA	50	
	Rated breaking making current		50	
	Fuse rated current	KV	100	
	Rated transfer current		1500	2000
	Rated breaking current	KA	315	
	Equipped with fuse model		S□LAJ-12 (XRNTS□-10)	

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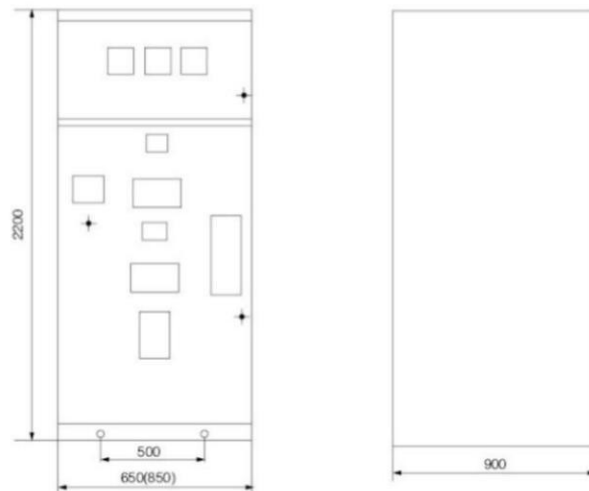


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KEXUN'AN ELECTRIC

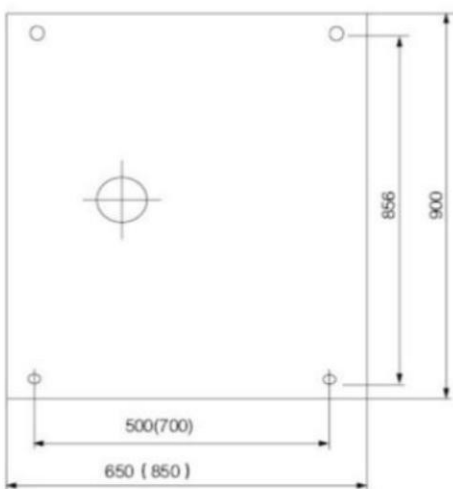
## ○ 技术参数 Technical parameters

Project	Unit	FKN12-12	FKN25-12
Mechanical lifespan	Times	2000	10000
1min power frequency endurance of auxiliary circuit	KV	2	
Working voltage of electric operating mechanism	V	AC 220V, 110V	
Protection level		IP2X	
External dimensions	min	650 (850) *900*2000 (2200)	

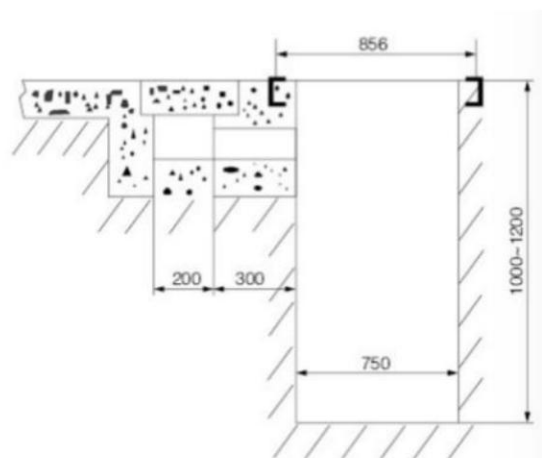
## ○ 外形及安装尺寸 (mm) Appearance and installation dimensions



Appearance dimensions



Installation dimensions



Basic construction drawings

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## ○ 使用与故障处理 Usage and troubleshooting

### ◆ Packaging, storage and transportation

- ◇ The ring main unit is packaged in a single wooden box when leaving the factory, and it is not allowed to tilt, invert, or vibrate violently during storage and transportation. When moving, it is not allowed to directly push or pull on the ground; When there is no lifting device, a cylinder can be placed under the sleeper of the packaging box to ensure its installation position on the slide.
- ◇ Prevent the cabinet from rain and moisture.
- ◇ The ring main unit should be placed in a well ventilated area that can prevent various toxic gases from entering. It is strictly prohibited to store it in the same warehouse with chemicals, acids, and bases.

### ◆ Acceptance

- ◇ Before opening the box, check the packaging for damage. When unpacking, pay attention to protecting the product, inspect the appearance of the cabinet, and check if all components inside the cabinet are damaged. Also, check if the accessories match the packing list.
- ◇ Check if the random files are secure.
  - 1.Product user manual and instruction manual for various components inside the cabinet.
  - 2.Factory test report;
  - 3.Product Qualification Certificate
  - 4.Packing list
  - 5.Secondary wiring diagram

## ○ 安装调试 Installation and commissioning

- ◆ When installing, first place the ring main unit on the installation foundation, arrange it neatly, adjust it, and then tighten it with fasteners.
- ◆ When installing the main busbar, open the busbar compartment for installation, and the contact surface connecting the busbar should be flat and free of dirt.
- ◆ The grounding of the ring main unit should be reliably grounded, and the circuit should be checked for grounding.
- ◆ During debugging, follow the user manual for the ring main unit and the instructions for each component inside the unit.
- ◆ After installation and debugging, perform 5 operations on each switch component and anti misoperation mechanism. If no abnormal phenomena are found, it is considered that the mechanical operation of the switch is correct.

## ○ 使用与故障处理 Usage and troubleshooting

### ◆ Check before sending power

- ◇ Before sending power to the ring main unit, comprehensively check the electrical performance, insulation level and wiring correctness of all components in the cabinet before putting it into operation. normal operating status
- ◇ During normal operation, regardless of the incoming cabinet or the outgoing cabinet, the load switch should be in the closed position, the grounding knife should be in the open position, and the cabinet should be closed and locked.

### ◆ Troubleshooting

- ◇ When troubleshooting occurs in the incoming line cabinet, you should first cut off the incoming line power supply, open the load switch, and check the live display on the cabinet to confirm that it is correct, then close the grounding knife and open the door for inspection.
- ◇ When troubleshooting occurs in the outlet cabinet, you should first segment the load switch in the cabinet, close the grounding knife, and open the front door for maintenance. At this time, the main busbar is in a live state.

## ○ 维护与检修 Maintenance and overhaul

### ◆ The ring main unit needs maintenance and repair in the following situations:

- ◇ After 5 years of operation, inspect the insulation level of the product
- ◇ After the load switch has been disconnected for 100 times, the main circuit resistance, power of the load switch,static contacts, and auxiliary contacts should be checked.
- ◆ Generally, maintenance and repair of the ring main unit should be carried out after the power outage.



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○ 电路方案图 Circuit scheme diagram

Plan number		01	02	03	04	05	06	07
Primary system diagram								
Use to		Cable outlet	Cable outlet	Cable outlet	Cable outlet	Cable outlet	Cable outlet	Cable outlet
Main electrical components	FN12-12D/630-20	1		1		1		1
	FN12-12D/T630-20		1		1		1	
	FN-12-12 (R) D/100-31.5 FNRZN15-12D/T100-31.5		3		3		3	
	S□LAJ-12							
	Busbar through wall sleeve							
	RN2-10							
	LZJC-10、LZX-100					2	2	2
	JDZ-10							
	HY5W-17/50			3	3			
	GSN-10、TDS-10	1	1	1	1	1	1	1

Plan number		08	09	10	11	12	13	14
Primary system diagram								
Use to		Cable outlet	Cable outlet	Cable outlet	connection	connection	Cable outlet	Cable outlet
Main electrical components	FN12-12D/630-20				1		1	
	FN12-12D/T630-20	1				1		1
	FN-12-12 (R) D/100-31.5 FNRZN15-12D/T100-31.5	3						3
	S□LAJ-12		3	3	3	3	3	3
	Busbar through wall sleeve							
	RN2-10							
	LZJC-10、LZX-100	2						
	JDZ-10							
	HY5W-17/50	3		3				
	GSN-10、TDS-10	1	1	1	1	1	1	1

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○ 电路方案图 Plan drawings

Plan number		15	16	17	18	19	20	21
Primary system diagram								
Use to		connection	connection	connection	connection	High voltage metering Cable outlet	High voltage metering Connection	High voltage metering
Main electrical components	FN12-12D/630-20 FN25-12D/T630-20			1				
	FN12-12 (R) D/100-31.5 FZRN15-12D/T100-31.5		1		1			
	S□LAJ-12		3	3	3			
	Busbar through wall sleeve	3	3		3	3		3
	RN2-10			2		3		3
	LZJC-10、LZX-100				2			2
	JDZ-10					2		2
	HY5W-17/50	3	3	3	3			
GSN-10、TDS-10			1					

Plan number		22	23	24	25	26	27	28
Primary system diagram								
Use to		connection	High voltage metering	High voltage metering Cable outlet	connection	High voltage metering Cable outlet	High voltage metering Cable outlet	connection
Main electrical components	FN12-12D/630-20 FN25-12D/T630-20		1	1		1		
	FN12-12 (R) D/100-31.5 FZRN15-12D/T100-31.5						1	1
	S□LAJ-12						3	3
	Busbar through wall sleeve	3			3			3
	RN2-10	3	3	3		3	3	
	LZJC-10、LZX-100	2						2
	JDZ-10	2	2	3		2	2	
	HY5W-17/50			2				
GSN-10、TDS-10			1					