HXGN □ – 12 Series AC Metal Enclosed Ring Main Unit Switchgear

1 Overview

HXGN □-12 AC metal enclosed ring main unit switchgear is a new high-voltage switchgear produced for the transformation and construction of urban power grids. It can also be used in power supply systems to power off load currents and short-circuit currents and to power on/off short-circuit currents, suitable for 10kV, 50Hz power distribution systems. The ring main unit is equipped with a vacuum load switch, and the operating mechanism is a spring mechanism that can be operated manually or electrically. The earthing switch and knife switch are equipped with manual operation mechanism. This ring main unit features with strong complete set, small size, no combustion and explosion hazard, and has "Five prevention" functions.

The product is widely used in urban power grid construction and transformation engineering, industrial and mining enterprises, high-rise buildings and public facilities. As a ring main unit power supply unit and terminal equipment, it is used for distribution and control of electric energy and for protection of electrical equipment. The product can also be installed in the prefabricated box substations.

Standards: comply with the relevant provisions of GB3906 "Alternating-current metal-enclosed switchgear for rated voltages above 3kV and up to and including 35kV", IEC60420 "High-voltage alternating current load switch fuse combinations".

2 Type Designation

H X G N □ – 12

- 12 — Rated voltage (kV)
- □ — Design code
- N — Indoors
- G — Fixed type
- X — Box type structure
- H — Ring main unit

3 Product Parameters

3.1 Technical parameters of switchgear equipment

Name		Unit	Parameter
Rated voltage		kV	12
Rated current	Load switchgear	A	630
	Combined electrical cabinet		125
Rated short circuit breaking current		A	630
Rated short time withstand current		kA	20
Rated peak withstand current		kA	50
Rated power frequency withstand voltage	Between phases, to earth / gap	kV	42/48
Lightning impulse withstand voltage	Between phases, to earth / gap	kV	75/85
Mechanical life		次	10000
Rated take-over current (composite apparatus)		A	3150
Operation method			Manual or electric
Protection grade		kV	IP2X
Outline dimensions (W * D * H)		Mm	650(850)*900*2000(2200)

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3.2 Technical parameters of load switch

Name	Unit	FN12-12 load switch	FZN25-12 vacuum load switch
Rated voltage	kV	12	
1min power frequency withstand voltage		To earth and between the phases 42; isolaiton gap 48	
Lightning impulse voltage (peak)		To earth and between the phases 75; isolaiton gap 85	
Rated frequency	Hz	50	
Rated current	A	630	
Opening non-load transformer capacity	kVA	1250	
Thermal stable current (effective value)	kA/s	Load switch 20/4; earthing switch 20/2	
Dynamic stable current	kA	50	50
Short circuit making current (peak)	kA	50	50
Mechanical life	次	2000	10000
Model of matched fuse		XRNT□-12，（SDLAJ-12）	

3.3 Technical parameters of high voltage fuse

Model	Rated voltage	Breaking current (A)	Rated short circuit breaking current (kA)	Rated current of fuse element (A)
XRNT□-12（SDLAJ-12）	kV	40	31.5	10、16、20、25、31.5、40
	kV	100	31.5	50、63、71、80、100
	kV	125	31.5	125
The principle of selecting the rated current of the current limiting fuse in the composite apparatus configuration is generally selected generally according to the rated current capacity on the high voltage side of the transformer IN=SN/UN/ √ 3*(1.5~2)				

4 Working Environment Conditions

4.1 The altitude does not exceed 1000m;

4.2 Ambient temperature: -15°C ~+40°C;

4.3 Relative humidity: The daily mean value is not greater than 95%, and the daily mean value of water vapor pressure does not exceed 2.2kPa; the monthly mean value is not greater than 90%, and the monthly mean value of water vapor pressure does not exceed 1.8kPa;

4.4 Earthquake intensity: 8°;

4.5 Installed at the site where there is no obvious pollutions such as corrosive or flammable gas; note: When the use environment conditions are different from the above application environment, please contact the manufacturer.

5 Product Features

5.1 There is FZN25-12D type load switch or FZRN25-12D type fuse-combination unit in the ring main unit. This component is equipped with a disconnector, a vacuum load switch, and an earthing switch, and the disconnector and earthing switch have obvious gap; the switch disconnector, vacuum load switch, earthing switch, and cabinet door have a perfect and reliable mechanical linkage and interlocking device to effectively prevent misoperation and to ensure safe operation and convenient maintenance.

5.2 The fuse-combination unit cabinet and fuse tube have a striker. In the case of short circuit, the striker hit the trip mechanism to realize quick ON/OFF operation to effectively protect electrical equipment.

5.3 With "Five prevention" locking function, the product can effectively protect the safety of operating equipment and operation and maintenance personnel. Power transmission operation: Only when the cabinet door is closed and locked, turn the earthing switch to the "ON" position, and then turn the load switch to the closed position; power outage operation: Only when the load switch is in the Isolation position, the earthing switch can be turned on; when the earthing switch is in the ON position, insert the insulation baffle in place to open the cabinet door. The vacuum arc extinguishing chamber and disconnector have a reliable interlock; the disconnector is linked with the earthing switch, and is interlocked with the cabinet door; the insulating baffle is interlocked with the cabinet door.

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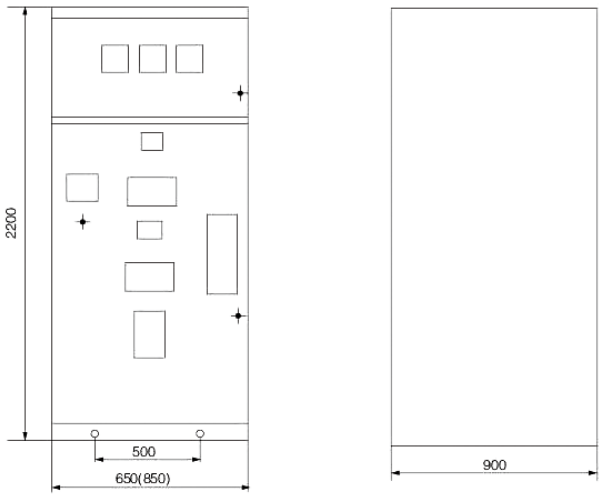
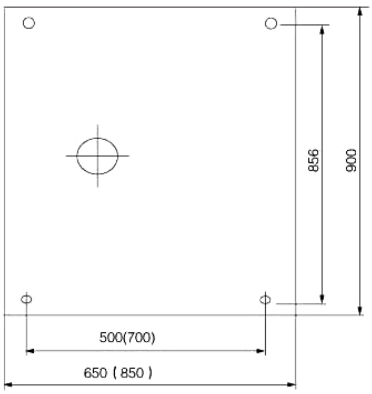
5.4 The power supply of the ring main unit is generally composed of three basic units with the inlet and outlet cabinet used as a ring main unit; when any line fails, it can be isolated, and the other unit can ensure that the user's transformer branch works to supply the power; the ring main unit of the power circuit is used for protection and isolation for convenient maintenance; furthermore, the ring main ring can be extended arbitrarily, and basic units can form multiple combination schemes according to the user requirements.

6 Outline Dimensions and Layout Plan

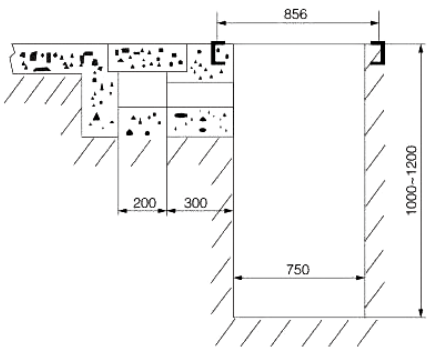
6.1 Outline dimensions



Outline dimensions



Installation dimensions



Foundation construction drawing

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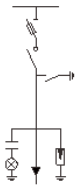
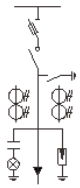
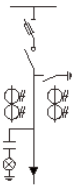
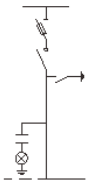
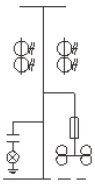
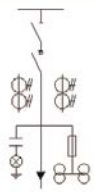
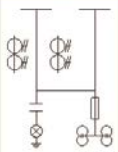
7 Primary Main Circuit Plan Diagram

Plan No.		01	02	03	04	05	06
Main circuit plan diagram							
Main electrical components	Vacuum load switch FZN25-12/T630-20	1					
	Fuse-combination unit FZRN25-12D/T125-31.5		1	1	1	1	
	Current transformer			2	2		
	Voltage transformer						2
	Fuse		3	3	3		
	Fuse						3
	Arrester YH5WS-17/50	3	3	3			
	Live display	Q	T	T	T	Q	Q
Purpose		Cable inlet and outlet	Cable outlet	Cable outlet	Cable outlet	Contact	Metering + Contact

Plan No.		07	08	09	10	11	12
Main circuit plan diagram							
Main electrical components	Vacuum load switch FZN25-12/1630-20	1	1	GN□-12		1	
	Fuse-combination unit FZRN 25-12D/T125-31.5						1
	Current transformer	2			2		
	Voltage transformer	2	2	2	2		
	Fuse						3
	Fuse	3	3	3	3		
	Arrester YH5WS-17/50		3	3		3	
	Live display	T	T	Q	Q	T	T
Purpose		Cable inlet and outlet	Cable outlet + PT	PT	Metering	Overhead inlet and cable outlet	Overhead inlet and cable outlet

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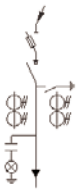
Plan No.		13	14	15	16	17	18
Main circuit plan diagram							
Main electrical components	Vacuum load switch FZN25-12/1630-20						
	Fuse-combination unit FZRN 25-12D/T125-31.5	1	1	1	1		
	Current transformer	2	2		2		
	Voltage transformer						
	Fuse	3	3		3		
	Fuse						
	Arrester YH5WS-17/50		3		3		
	Live display	T	T	T	T		
Purpose		Overhead inlet and cable outlet	Overhead inlet and cable outlet	Overload inlet + Contact	Overload inlet + Contact		

8 Ordering Notice

Please provide the following information when ordering:

8.1 Main circuit plan, number or main circuit combination layout;

8.2 Electrical principle of auxiliary circuit and control circuit voltage;

8.3 Switchgear floor plan;

8.4 If non-standard main circuit and line scheme are required, the company can be entrusted for design and production;

8.5 For special requirements, please contact our company for customization.