

-
European and
American box
transformer substation

-
HV/LV complete set



YBW 35KV

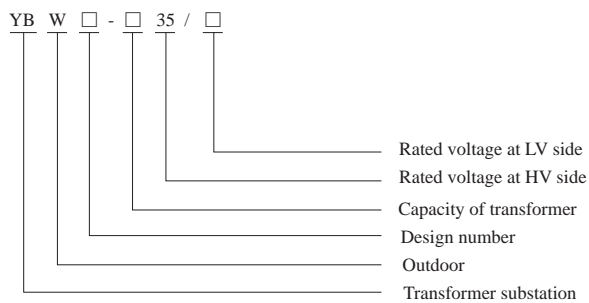
Combined type transtormer substation

General



Combined type transformer substation is a kind of complete set product integrating voltage switch equipment and transformer with LV distribution equipment. It is usually applied to civic architectures, residential districts, mid-size and small-size factories, mine and oil fields, used as tran-sformation and distribution equipment, with characteristics of strong completeness, compact structure, high reliability, low on-site workload, short installation period, movability, etc. In addition, its color and exterior can be changed appropriately to adapt to the surroundings and beautify the environment, it really is the ideal successor of current urban and rural civil engineering transformer substation, and also is a new type complete set equipment for urban network construction and reformation.

Product type and meaning



Environmental condition

1. Altitude: $\leq 1000\text{m}$;
2. Ambient temperature: $+40^{\circ}\text{C} - 25^{\circ}\text{C}$;
3. Relative humidity: Daily average $\leq 95\%$, monthly average $\leq 90\%$;
4. Abnormal severe vibration or impact;
5. Environment for installation: Indoors, no fire or explosion danger, no corrosive gas or dust, no sharp impact.

Note: Please negotiate with us if your product is used beyond the range of above conditions.

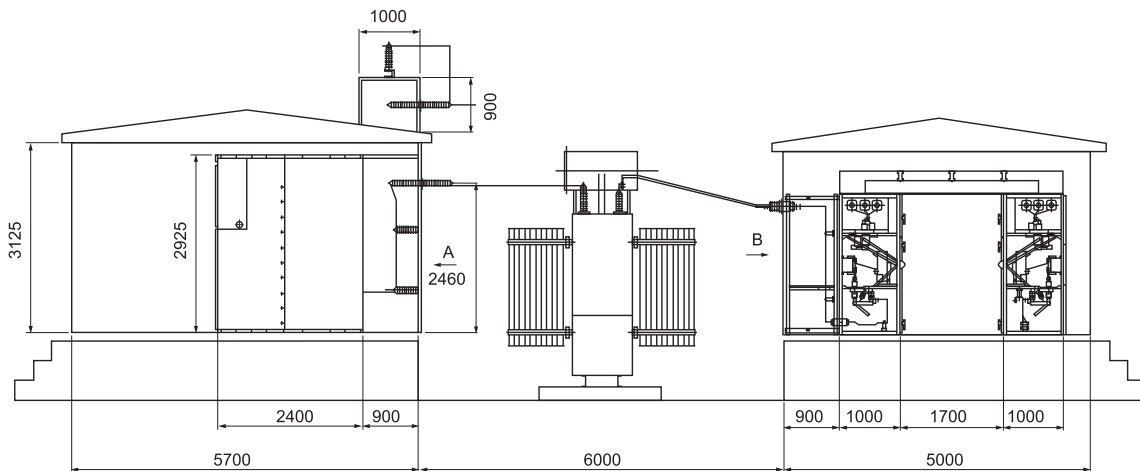
YBW 35KV

Combined type transtormer substation

Structure character

- 1、 This transformer substation is made up of HV swich compartment, LV switch compartment, relay protection compartment and transformer compartment. Enclosures of HV switch compartment, LV switch compartment and relay protection compartment can be made of aluminum alloy plate, steel plate of composite plate. Aluminum alloy plate is anodic oxidation treated to strengthen its corrosion stability. Steel plate and steel structured parts are all phosphating treated, and the composite plate is featured with vivid appearance, heat insulation and fire retardation. The transformer compartment is arranged with safeguard protecting net but not enclosed enclosure, which not only gua-rantees better thermal diffusivity, but also is able to insure person and equipment against accident.
 - 2、 HV switch compartment The HV switch compartment can be mounted with JYNI-35, KYNI0-35 switchgear or 35KV load switch. Aerial cable type is available for mounting 35KV inlet and outlet wire.
 - 3、 LV switch compartment
 - a. When it is 10KV at LV side, the LV switch compartment can be mounted with XGN2-10, KZNI-12 and KYNI-12 swichgear, HXGNII-10F, HXGN26-10(F) Ring main unit
 - b. When it is 0.4KV at LV side, the LV switch compartment (no preparation of LV switchgear in consideration of space saving) can be mounted with DW15T series, ME series, M series and F series frame type circuit breaker as well as DZ20 series, CM series, H series and S series molded case air circuit breaker.
 - 4、 Power-off protection compartment The power-off protection compartment is mounted with AC panel, DC panel, signal panel, protection pandel, motion control panel (RTU), carrier wave machine panel or optical fiber termination set.
- Note: This transformer substation can adopt general relay protection, also microcomputer-based integretd automatic control system is available on request.
- 5、 Refer to the diagram for plan layout and vertical plane layout of transformer substation of 35KV.

Refer to the diagram for plan layout and vertical plane layout



YBW 35KV

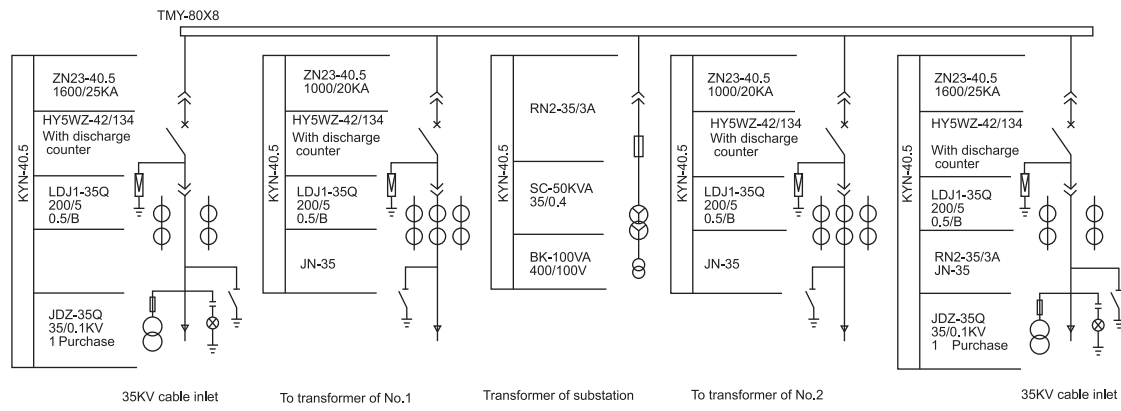
Combined type transtormer substation

Technical parameters

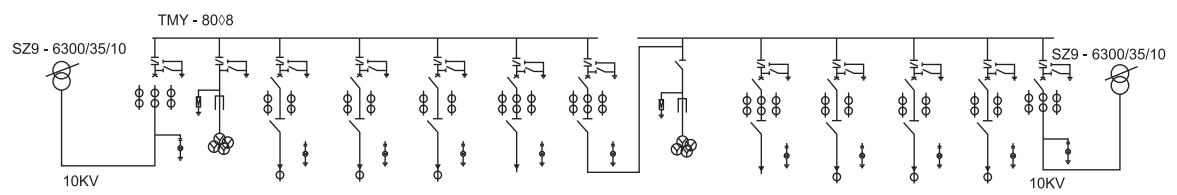
Main technical parameters of transformer

Model	Raled voltage	Rated capacity	Change (KV/KV)
SZ7	35	400-20000	35/10, 35/6.3, 35/0.4
SZ9	35	400-20000	35/10, 35/6.3, 35/0.4

Typical primary connecton diagram



Primary single line diagram of 35KV side

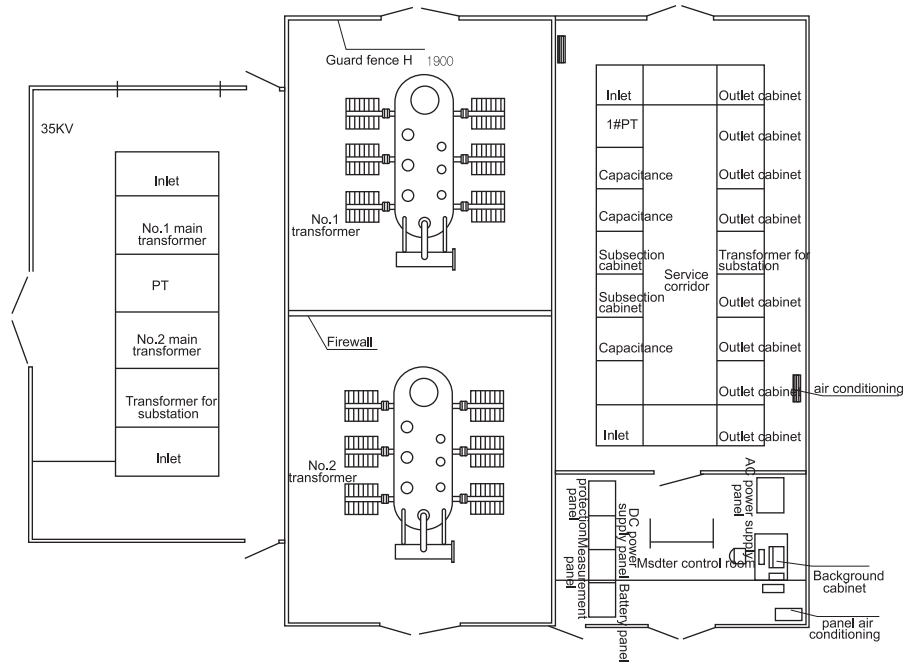


Application	1# Inlet wire	1#PT	1# Outlet	2# Inlet wire	3# Standby	# Capacity	Section	2#PT	Capacity	4#Outlet	5# Outlet	6# Backup	2# Inlet wire
Cabinet type	XGN66	XGN66	XGN66	XGN66	XGN66	XGN66	XGN66	XGN66	XGN66	XGN66	XGN66	XGN66	XGN66
Isolating switch	1000A	630A	630A	630A	630A	630A	1000A	630A	630A	630A	630A	630A	1000A
GN30D-10, GN19-10C			630A	630A	630A	630A	1000A		630A	630A	630A	630A	
VS1-12	1250		630/	630/	630/	630/	1250/		630/	630/	630/	630/	1250/
Breakr	/31.5KA-1		20kA 1	20kA 1	20kA 1	20kA 1	31.5kA 1		20kA 1	20kA 1	20kA 1	20kA 1	31.5kA 1
LZZBJ-10	400/5,		400/5,200/5	300/5, 100/5	300/5, 100/5	100/5 0.2/	300/5, 100/5		100/5,	400/5,200	200/5,100	200/5,100	400/5,200
Current transformer	200/5,0.2		0.2	0.2	0.2	5	0.2		0.2 5	0.2	0.2	0.2	0.2
JDZ1-10			$10/\sqrt{3}:0.1\sqrt{3}$						$10/\sqrt{3}:0.1\sqrt{3}$				
Voltage transformer			$:0.1\sqrt{3}:0.1\sqrt{3}$						$:0.1\sqrt{3}:0.1\sqrt{3}$				
RN2-10			3						3				
Fuse													
HY5WZ-12.7/50			3						3				
Lightning arrester	1		1						1				
GSN-10				1	1	1	1			1	1	1	1
Electrification display			1							1	1	1	1
LJ-100				1	1					1	1	1	1
Zero sequence transformer			1						1				
Microcomputer protection device	Be mounled on protection scofoon of main transformer			1	1	1	1			1	1	1	Be mounled on protection scofoon of main transformer

YBW 35KV

Combined type transformer substation

Layout plan



Mounting

- 1、 This type of combined type transformer substation only requires reinforced concrete foundation outdoors.
- 2、 Transformer compartment, 35KV switch compartment, 10KV or 0.4KV switch compartment are all individual output units, and are assembled on site; Inlet and outlet of power supply .
- 3、 Inlet and outlet of power supply have overhead and cable two modes for selecting, please select according to requirements and give clear indication when placing the order.

Transportation and storage

When the combined type transformer substation is moved away from the factory, it should be divided into several parts for transportation, if it has been equipped with SF6 circuit breaker, please discharge it to zero gauge pressure first.
This product should be stored in draughty areas free from corrosive gas.

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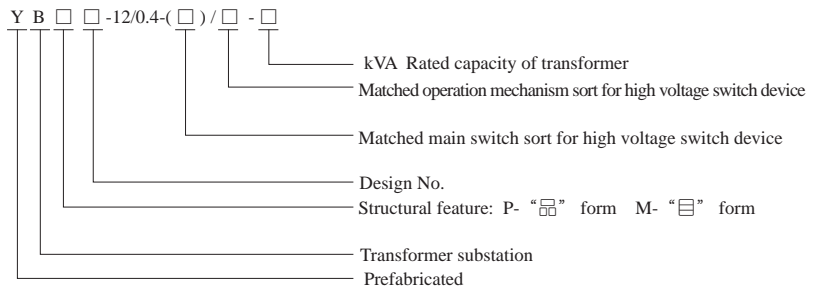
Intelligent prefabricated transformer substation

General



Intelligent box substation of series YB, the newest product developed independently by our Company, integrates the advantages of American box substation, European box substation and home box substation, which adopts environment protection and new material, new technology and advanced components as well as high-voltage automation technology, and among them, the high voltage side (12KV) can meet the demand of power department for power distribution automation, and the low voltage side (0.4KV) can meet the demand of intelligent community property management, and the upper monitor which is located in the central station or the property management department can be used for four-remote (remote measurement, remote communication, remote adjustment, remote control) system management. When several intelligent box substations connect into "hand-in-hand" ring network and supply power, they, combined with autonomous software, can accomplish the functions of automatic location, fault clearance, load shifting and network reconfiguration at the fault section, so that the recovery of power transmission is guaranteed in one minute. This series of intelligent box substation is one optimized combination of complete intelligent power supply and distribution integrated device consisting of high voltage unit, power transformer, low voltage unit, metering unit and intelligent system, etc. It has the characteristics of multi-functions, wide application, safe and reliable operation, beautiful outline, as well as convenient installation, little land occupation, little maintenance, low cost, quick effect and long service life. It can be used as power transformation and distribution equipment in the following departments and places, such as urban architecture, residential areas, municipal facilities, factories, mines, roads, wharves and oil fields, as well as construction in need of temporary power supply.

Product type and meaning



Main technical parameters

Item	Unit	High voltage electrical equipment	Transformer	Low voltage electrical equipment
Rated voltage	kV	7.2, 12	6/0.4, 10/0.4	0.4
Rated capacity	kVA		"目" type: 200~1250 "品" type: 50~400	
Rated current	A	200~630		100~3000
Rated breaking current	A	Load switch 400~630A		
	kA	Combined electrical equipment is dependent on fuse		15~63
Rated short time withstand current	kA(xs)	20 × (2)	200~400kVA	15 × 1
		(12.5 × 4)	400kVA	30 × 1
Rated peak withstand current	kA	31.5, 50	200~400kVA	30
			400kVA	63
Rated closing current	kA	31.5, 50		
Line frequency withstand voltage	kV	Phase to earth and phase similar 32,40	Oil immersion: 35/5min	≤ 300V ± 2kV
		Isolated fracture 34,48	Dry type: 28/5min	300,600V ± 2.5kV
Thunderstroke impact	kV	Phase to earth and phase similar 60,75	75	
		Isolated fracture 75,85	75	
Noise level	dB		Oil immersion: <55	
			Dry type: <65	
Protection grade			IP23D	
Outline dimension		Choose different outline dimension according to the capacity and mode of selected transformer.		

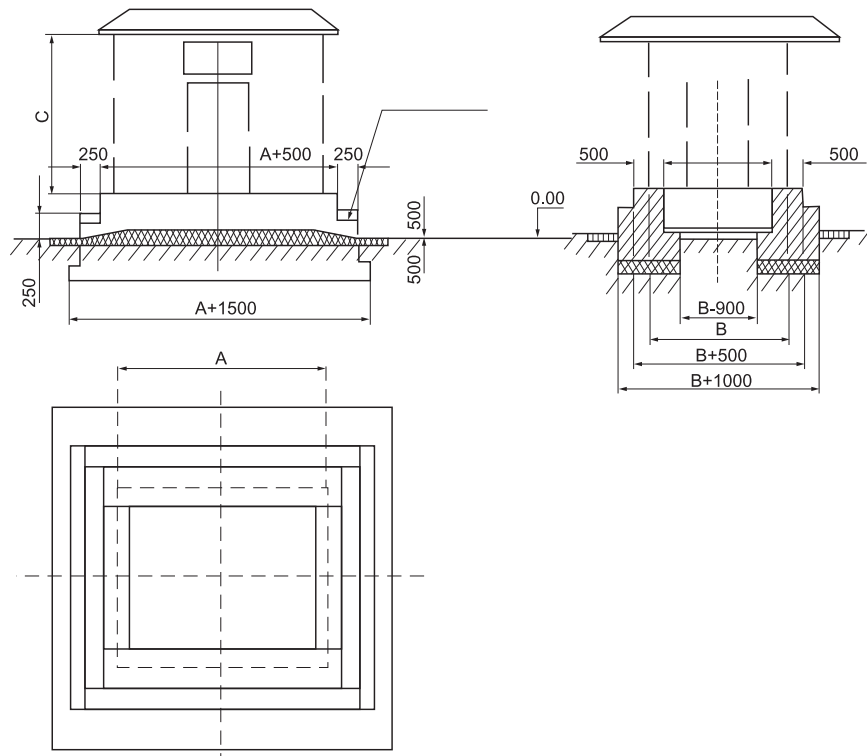
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Intelligent prefabricated transformer substation

Common outline dimension

No.	Box type	(mm) Outline dimension	Structure form	Operation mode
1	Flat top type	3000 × 1600 × 2200	≡-shaped	Single-sided outdoor operation
		3200 × 2200 × 2500	≡-shaped	Single-sided outdoor operation
		3700 × 2300 × 2500	≡-shaped	Single-sided outdoor operation
		4000 × 2500 × 2500	≡-shaped	Single-sided outdoor operation
		4300 × 2500 × 2500	≡-shaped	Double-sided corridor operation
		4700 × 2500 × 2500	≡-shaped	Double-sided corridor operation
		5300 × 2500 × 2500	≡-shaped	Double-sided corridor operation
		6300 × 2500 × 2700	≡-shaped	Double-sided corridor operation
		8000 × 2500 × 2700	≡-shaped	Double-sided corridor operation
2	Fastigium type	3200 × 2200 × 2500	≡-shaped	Single-sided outdoor operation
		3200 × 2500 × 2500	≡-shaped	Single-sided outdoor operation
		3600 × 2300 × 2500	≡-shaped	Single-sided outdoor operation
		4300 × 2300 × 2500	≡-shaped	Double-sided corridor operation
		4500 × 2300 × 2500	≡-shaped	Double-sided corridor operation
3	Slanted-top type	3500 × 2000 × 2500	≡-shaped	Single-sided outdoor operation
4	Half-open type	2800 × 1800 × 2500	≡-shaped	Single-sided outdoor operation

Installation base diagram



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Intelligent prefabricated transformer substation

Common scheme of high-voltage main circuit

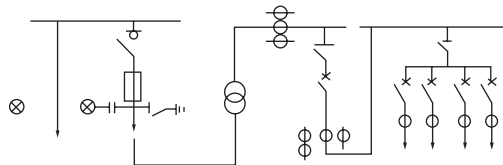
Scheme No	01	02	03	04	05	06	07
Line diagram							
Purpose	Cable incoming and outgoing	Cable incoming and outgoing	Cable incoming and outgoing	Cable incoming and outgoing	Incoming and outgoing line of dual power supply	Left(right) interconnection, outgoing line	High voltage metering

Common scheme of low-voltage main circuit

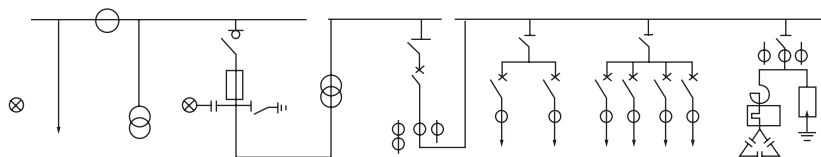
Scheme No	01	02	03	04	05	06	07
Line diagram							
Purpose	Electrification	Electrification	Feeding	Feeding	Reactive compensation	Electrification -metering	Low-voltage metering

Example of typical system scheme

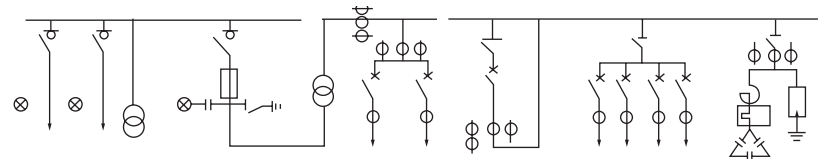
Cable incoming and outgoing, terminal power supply, low voltage metering



Cable incoming and outgoing, terminal power supply, high voltage metering, low voltage corridor diagram, low voltage capacitance compensation



Cable incoming and outgoing, ring network power supply, low voltage metering, low voltage corridor diagram, low voltage capacitance compensation



YB6

Intelligent integrated transformer substation

General

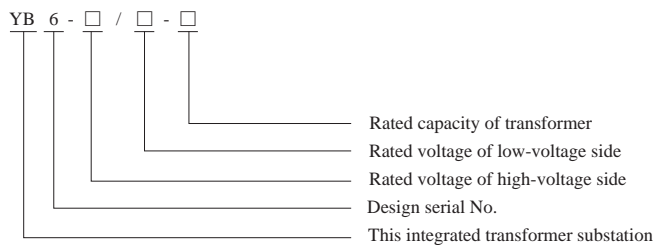


This intelligent integrated transformer substation is a nationalized type American box substation. As an important power supply unit in the cable distribution network, it is an integrated prefabricated product of high voltage control, protection, power transformation and power distribution, which is widely used in the urban and rural distribution network.

The high voltage load switch and high voltage fuse are put into the transformer oil, so this product has two structure forms of one box and divided box with the transformer body. The oil box is of full-sealed structure with oil temperature indicator, oil level gauge, pressure gauge, pressure relief valve and oil drain valve to monitor the operation condition of the transformer.

This kind of products has three types of power supply modes - ring network type, terminal type and power type. In order to make the product meet the actual demands of the power grid in China better, Yuebian Company promotes plug-pull dry type fuse and the fusing of the fuse wire has no effect to the performance of transformer oil. According to the complicated degree of low voltage outgoing demands, this product has three types of enclosure - standard type, reinforced type and integrated type, as a result, the clients and design agents have more choices.

Product type and meaning



Environmental condition

1. Ambient temperature: maximum +40°C , minimum-30°C ;
2. Altitude: $\leq 1000\text{m}$
3. Wind speed: About 34m/s ($\leq 700\text{Pa}$);
4. Humidity: Average daily relative humidity $\leq 95\%$
Average monthly relative humidity $\leq 90\%$
5. Shake-roof: Level acceleration $\leq 0.4\text{m/s}^2$; vertical acceleration $\leq 0.15\text{m/s}^2$;
6. Gradient of installation position: $\leq 3^\circ$.
7. Installing environment: ambient air has not been obviously polluted by corrosive or flammable gas, and there is no strong feeling of shock.
8. Please negotiate with the company when the purchased product is beyond above stipulated conditions.

YB6

Intelligent integrated transformer substation

Rated parameter of product

Rated voltage	10kV/0.4kV
Rated voltage of high-voltage side	10kV
Max. voltage of high-voltage side	12kV
Rated voltage of low-voltage side	0.4kV
Rated frequency	50Hz
Thermal stability capacity of high-voltage switchgear	20kA/2S
Rated short-circuit breaking capacity of low-voltage main circuit switch	35kA
Rated short-circuit breaking capacity of low-voltage branch circuit switch	35kA
Transferred current of high-voltage load switch	>1500A
Noise level	<50dB
Protective class of case	IP3X Not less than IP3X

Insulation level

Rated voltage	10			0.4
	Transformer	Switch to earth and interphase	Switch isolating inter-fracture	
Power frequency withstand voltage	35	42	48	2.5
Peak impulse withstand value	75	75	85	-

Structure character

The framework structure of the box enclosure is made of channel steel and angle steel with higher mechanical strength. the enclosure is made of aluminum alloy plate with smooth surface, beautiful outline and better anticorrosion performance. the base of the box body is 300~600mm higher than the ground. All the doors of the box enclosure are open to outside, and the opening angle is larger than 90° and is set with location device, handles, secret door, as well as built-in locks which have the functions of rain protection, anti-blockage and rust protection. the box bodies are of the full-sealed theft-proof structure. to assure the operation under the normal ambient air temperature, the temperature of all the electrical equipment can't exceed the maximum allowable temperature, and the box body has enough natural ventilation openings and heat insulation measures. the box body of the prefabricated substation is designed with special grounding conductor, on which there are more than 2 fixed connecting terminals connected to the grounding network and on which there are obvious grounding marks. the grounding terminal is the copper bolt, the diameter of which is not less than 12mm. the grounding conductor is made from copper strip, the current density of which is not higher than 200A/mm² and the cross section of which is not less than 30mm². and it is guaranteed that there is no overheat and there is no bad effect to the safety of the surrounding objects when the maximum short circuit current passes. the dynamic and thermal stability current that the special grounding conductor endures must be combined with the grounding mode of high voltage power distribution device.

YB6

Intelligent integrated transformer substation

Performance parameter of transformer

For 10KV prefabricated substation performance level of S9, S10, S11 series oil-immersed transformer

No	Rated capacity	Rated voltage		Voltage tapping range	Connection group mark	No-load current		(W)Loss					Impedance voltage (%)	Noise (dB)	Temperature rise							
		High-voltage	low-voltage			No-load			On-load													
						S9	S10/S11	S9	S10	S11	S9	S10/S11										
1	30	6	0.4 (0.69)	± 5 (± 2 × 2.5)	Yyn0 Dyn11	2.2	2.0	130			600		4	55	Oil temperature of top layer coil 65°							
2	50					2.0	1.8	170			870											
3	63					1.9	1.5	200			1040											
4	80					1.7	1.2	250			1250											
5	100					1.6	1.1	290			1500											
6	125					1.5	1.0	340	270	1800												
7	160					1.4	1.0	400	310	2200												
8	200					1.4	0.8	480	375	2600												
9	250					6.3	0.4 (0.69)	± 5 (± 2 × 2.5)	Yyn0 Dyn11	1.2	0.8	560				455	400	3050	3000	4.5	55	Oil temperature of top layer coil 65°
10	315					10				1.1	0.7	670				540	475	3650	3600			
11	400					1.0				0.7	800	650				570	4300	4200				
12	500					1.0				0.6	960	775				680	5100	5000				
13	630					0.9				0.6	1200	920				800	6200	6000				
14	800					0.8				0.6	1400	1120				980	7500	7400				
15	1000					0.7				0.5	1700	1320				1150	10300	9860				
16	1250					0.6				0.5	1950	1560				1360	12800	12000				
17	1600					0.6				0.5	2400	1880				1640	14500	14000				

- a. The high-voltage tapping range can be designed to $\pm 2 \times 2.5\%$ according to customer's requirement.
- b. The low voltage of transformer can be designed to 0.69kV according to customer's requirement.

Performance parameter of load switch

Rated current (A)	Rated voltage (kV)	Impulse withstand voltage (kV)	Power frequency withstand voltage (1min.kV)	Rated short-time withstand current (kA/s)	Short-circuit making current (kA)	Rated peak withstand current (kA)	Number of load operation (kA)	Number of mechanical operation
315	12	75	42	12.5/2	31.5	31.5	100	2000
630	12	75	42	16/4	40	40	100	3000

Schematic diagram of main circuit

No	01	02	03	04
System scheme				
FYN-12 Charge switch	For terminal use 315A/630A	Ring network power supply 315A/630A	High voltage metering 315A/630A	Dual power supply 315A/630A

- a. The rated values of plug-in type fuse and backup current limiting fuse are subject to transformer's capacity by manufacturer.
- b. High-voltage charged indicator or fault indicator can be extra installed for incoming line.
- c. High-voltage metering device can be extra installed according to requirement.

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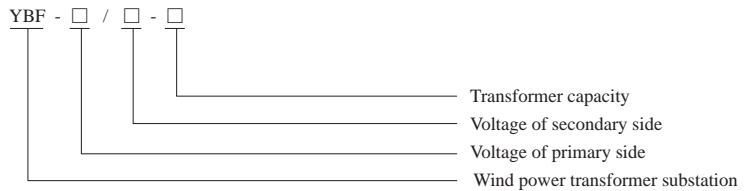
Wind power transformer substation

General



The wind power transformer substation is a special transformer equipment used to boost the voltage generated by wind-driven generating sets to 35KV or 10KV, and outputs by being connected to the power grid, it is developed by our company especially designed for wind power station by responding to the market demand of wind electric power generation, it is a supported product of wind generator system integrating reliability, safety and serviceability with economical efficiency.

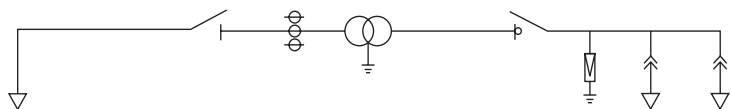
Product type and meaning



Structure character

- 1、 The inner configurations are of high reliability, servi-ceability and economical efficiency. HV side is equipped with load switch and fuse to protect the transformer reliably, and the LV side is equipped with imported SOCOMEC isolating switch and high breaking capacity fuse as well as one substation-used transformer of 2KVA; the main circuit scheme is simple and economical;
- 2、 HV load switch and HV fuse are set in full-enclosed transformer oil tank, and making use of transformer oil as insulating medium. We adopt full-insulated silicon rubber cable joint for HV outlet end, so that to realize full operating condition, full insulated, full enclosed and free of maintenance, it can be operated in harsh environment for 20 years at least.
- 3、 Adopt imported high burning point oil as insulating and cooling medium, it is unnecessary to filter or change the oil during service life. In addition, we adopt imported beads of high performance as sealing member, which has the same service life with that of equipment.
- 4、 The outer door of box adopts particular labyrinth sealing mode, equipped with joint strip of high elasticity and long service life. There is dustproof facilities arrange at ventilation holes, which can protect the wind power transformer substation from blow sand, rain or snow effectively, degree of protection is IP44.

Primary system diagram



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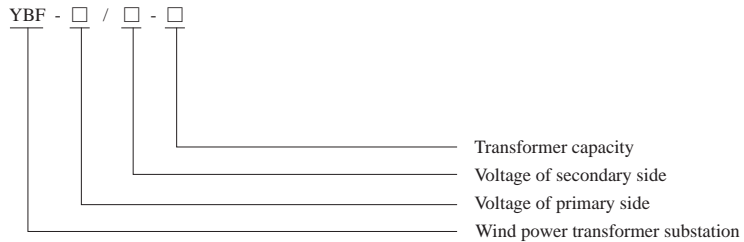
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YBG

Landscape European type substation

General



Landscape European type substation is a combined type transformer substation integrating high-voltage electrical equipment and transformer with low-voltage electrical equipment, is featured with complete set, small volume, compact structure, safe and reliable running, convenient maintenance, mobility, appearance design of European building style, etc. The design and construction period are sharply shortened, the capital cost is greatly reduced. The products are widely applied to residential districts, industrial parks, commercial centers, urban & rural buildings, mid and small-size factories, mine and oil fields, can also be used as movable type temporary power supplies for construction sites.

Main technical parameters

Item	HV electrical equipment	Transformer	LV electrical equipment
Rated voltage (KV)	7.2, 12	6/0.4, 10/0.4	0.4
Rated capacity (KVA)		50~1250	
Rated current (A)	200~6300		100~3000
Rated breaking current (KA)	Switch-fuse combination 0.4~0.63		15~63
Rated frequency (Hz)	50	50	50
Short-time withstand current (KA)	2s 12.5 4s		1s 30s
Peak withstand current (KA)	31.5, 50		30~63
Rated making current (KA)	31.5, 50		
Power frequency withstand voltage (KV)	Phase-to-ground and phase-to-phase 30, 4 Isolating distance 34, 48	Oil immersed: 35(1min) Dry type: 28(1min)	2KV when it is \leq 300V 2.5KV when it is 300, 600V
Lightning impulse (KV)	Phase-to-ground and phase-to-phase 60, 75 Isolating distance 75, 85		
Noise level (dB)		Oil immersed: <55 Dry type: <65	
Outline dimension (mm)	Determine the outline dimension according to the capacity and form of transformer		

YBT

Solar box-type substation



Technical background

The clean energy provided by the solar photovoltaic power is the new energy that is concerned and extensively used by the mobile communication at the era of 3G and 4G. As the particularity of the power supply requirements of the mobile communication base station, the solar light source becomes one of the preferred energy for the power supply of the mobile communication base station. Along with the continuous development and progress of science and technology, the solar photovoltaic electric power industry has grown into the leading industry of new energy, and been extensively promoted and applied in the communication field. The project is the third generation intelligent device system generated through the deepened research and development based on the high-tech achievement project in 2002 Power-Supply Device System Project for Solar Mobile Communication Unattended Base Station, which is developed, promoted and applied by Ministry of Information Industry. The project has become the best solution for the third generation power supply device of mobile communication.

Functional characteristics

Intelligent base station equipment system of the solar mobile communication box-type substation (hereinafter referred to as solar box-type substation) integrates such devices as solar photovoltaic power generation equipment, internet transmission equipment, switch power supply electrical equipment of the substation of 12KV below, BTS transceiver equipment, optical cable transmission equipment, computer protection monitoring equipment, multimedia DC switch power supply equipment, lightning grounding equipment, fire fighting security inspection equipment, lighting and air conditioning devices, etc. in the totally enclosed metal box of thermal insulation, radiation protection, waterproof and moisture proof, so as to combine into an intelligent mobile communication special base station room. The solar-cell panel square matrix with area of 30m² is installed on the top of the box and iron tower of the base station, the power generation efficiency of the solar-cell panel is 6KWh. A mobile communication photovoltaic power station is made up of the above devices, and the box bodies of the box-type substations are combined into a complete mobile communication base station room. Wind power generation equipments of more than 6KW are installed in the mountain pass region, river shoal and gorge region and famous mountain tourist attractions with the wind resources, to form a wind-solar hybrid new energy power grid. Therefore, the solar box-type substation is not only a photovoltaic power generation station with 6KWh-10KWh power generating capacity and a wind-solar hybrid new energy power station, but also a mobile communication base station with the capacity of more than 8 carrier frequency, it is a new generation intelligent mobile communication equipment system with the wholly integrated system and photovoltaic telecommunication integration, energy saving and environmental protection.

Solar box-type substation is featured with unique design, attractive appearance, compact structure, energy saving and environmental protection, convenient installation and maintenance, strong box, security and guard against theft. Product can be integrated, pre-assembled and produced in the factory, it is the best equipment for the construction engineering of the mobile communication base station, with strong practicability, extensive promotion and application, it is the best implementation program for the mobile communication industry to accomplish the national energy saving and emission reduction targets.

-
HV/LV
complete set

-
European and
American box
transformer substation



KYN28A-12(GZS1)

Armored withdrawable AC metal-enclosed switchgear

General



This equipment is indoor metal armoring with drawables switchgear (hereafter refer to as switchgear. 3.6-12 kilovolt three phase AC 50Hz single bus bar and the single bus bar subsection system's complete electricity distribution equipment is used in the power plant, small and medium-sized generator power transmission, industry and mining business power distribution as well as electrical industry system's second transformer substation's electric take-over , power transmission and large-scale high pressure motor starting and so on. The purpose is to control, protect and monitor. This switch equipment is up to the standard of IEC298、 GB3906 and can prevent the charge from pushing and pulling the breaker, from opening and closing the breaker, from insulation with electricity by mistaken, from earthed switch closing the breaker ,from opening the switch's interlock when it with electricity mistakenly. It can not only use with VSI vacuum circuit-breaker, but with ABB Corporation's VD4 vacuum circuit-breaker. It is indeed a kind of power distribution equipment with superior performance.

Environmental condition

1. Normal condition

a. Surrounding air temperature:-10°C ~ +40°C

b. Altitude : 1000M

c. Relative environment humidity: The daily relative humidity average is not higher than 95%, the monthly relative humidity average is not than higher 90%

d. Earthquake : The intensity does not exceed 8 degree.

e. The surrounding air without corrosive or flammable gas or water vapour.

f. Without a lot of dirtiness and regular fierce vibration, under the severe condition, the intensity meets the first kind requirement.

2. special working conditions * When it is used beyond the normal environmental condition stipulated in the GB3906, the user should consult with the manufacture.

Main technical parameters

Item	Unit	Data	
		Equipped with breaker	
		ZN63A-12(VS1)	VD4
Rated voltage	kV	12	12
Imin working frequency endurable voltage	kV	42	42
Shock endurable rated voltage	kV	75	75
Rate requeency f	Hz	50	50
Rated current	A	630, 1250, 1600, 2000, 2500, 3150, 4000, 5000	
Branch bus bar rated current	A	630, 1250, 1600, 2000, 2500, 3150, 4000, 5000	
Rated short time endurable current(virtual value)	kA	16, 20, 25, 31.5, 40, 50	16, 20, 25, 31.5, 40, 50
Rated peak endurable voltage	kA	40, 50, 63, 80, 100, 125	40, 50, 63, 80, 100, 125
Rated short-circuit duration	s	4	
Protection degree			
Quality	kg	700~1200	700~1200

KYN28A-12(GZS1)

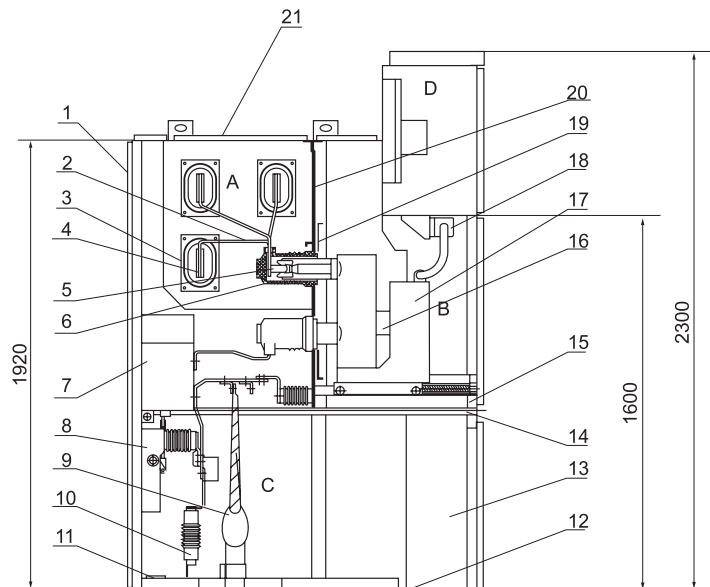
Armored withdrawable AC metal-enclosed switchgear

The brief introduction of the structure

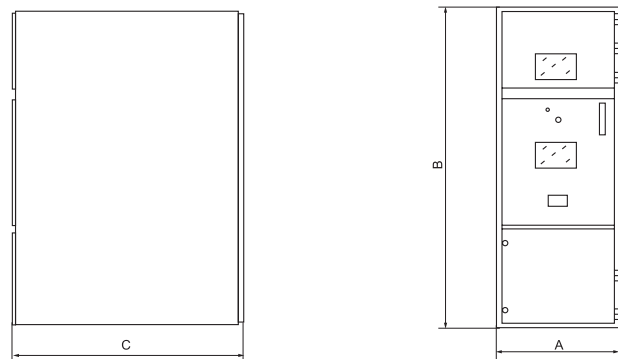
The switch equipment is designed according to GB3906-91 metal armoring seal switch equipment. The rectifier body is made up of the cabinet body and draw-out parts (namely handcart) placed in the middle. See charter 1. The cabinet divides into four separate rooms, the outer covering protection grade is IP4X, when each small room and the circuit breaker is opened, the protection grade is IP2X. It can suspend the inlet, outlet line, cable's inlet, outlet line and other function plan. After arranged and combined, it can become each kind of plan form of the power distribution equipment. This switch equipment may be installed and maintained from the frontage, therefore it may compose the dual arrangement back to back and be installed against the wall, improving the switch equipment's security and flexibility and making full use of the occupying area.

Structural diagram of switchgear

- A、 the bus bar room
- B、 the circuit breaker handcart room
- C、 the cable room
- D、 the relay instrument room
- 1、 cover
- 2、 branch small bus bar
- 3、 bus bar pipe
- 4、 main bus bar
- 5、 static contact installation
- 6、 contact box
- 7、 current mutual induction
- 8、 earthed switch
- 9、 cable
- 10、 arrester
- 11、 earthed main bus bar
- 12、 mother board
- 13、 control the small bus bar
- 14、 earthed switch operating mechanism
- 15、 draw-out horizontal clapboard
- 16、 heat installation
- 17、 circuit breaker handcart
- 18、 twice connector
- 19、 clapboard (valve)
- 20、 loading and unloading clapboard
- 21、 decompression channel



Outline dimension of switch cabinet



KYN28A-12(GZS1)

Armored withdrawable AC metal-enclosed switchgear

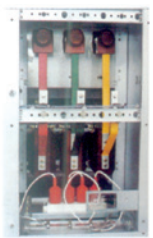
Outline dimension of switch cabinet



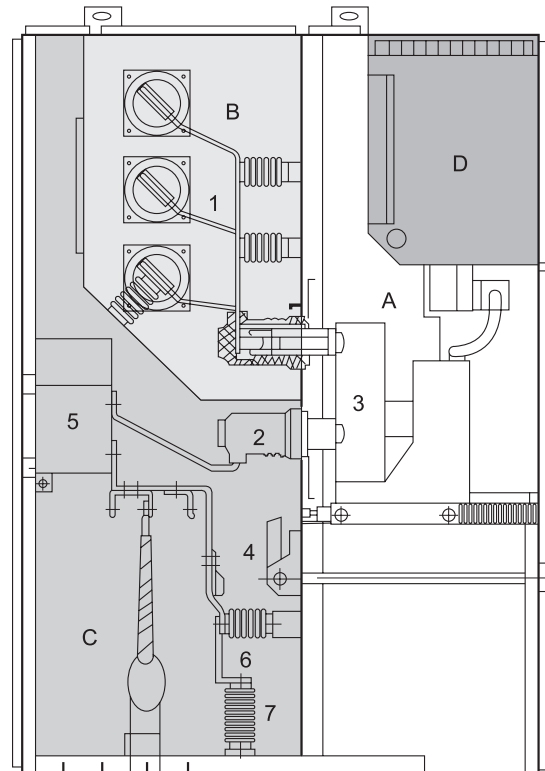
A Handcar



B Bus chamber



C Cable chamber



A Handcar

The framework of handcart is made of steel sheet through the procession of CNC machine tool and rivet welding. According to the application, the handcarts can be divided into circuit breaker handcart, voltage transformer handcart, isolating handcart and metering handcart, etc. The handcarts of the same specification can be exchanged conveniently. In the cabinet, the handcart has isolating position, testing position and operating position, each of which is designed with a location device to assure that the handcart can't move easily at the above-mentioned positions, while the interlock must be unlocked to move the handcart.

B Bus chamber

The bus is led from one switch cabinet to another one and fixed with static contact box through branch bus. The flat branch bus is connected through the bolt to the static contact box and main bus, not needing any other line clamps or insulators. When there is special demand of the clients or the project, the connecting bolt on the bus bar can be encapsulated with insulation and end cap. When the bus crosses the baffle of the switch cabinet, fix it with bus bushing, so that, if there is any internal fault arc, it can prevent the fault spreading to another cabinet and can guarantee the mechanical strength of the bus.

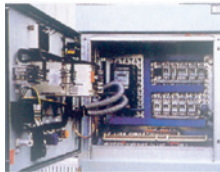
C Cable chamber

Inside the cable chamber, the current transformer, grounding switch, arrester and cable can be installed, and on the bottom is designed slotted removable aluminum sheet to assure the convenient site construction.

KYN28A-12(GZS1)

Armored withdrawable AC metal-enclosed switchgear

Outline dimension of switch cabinet



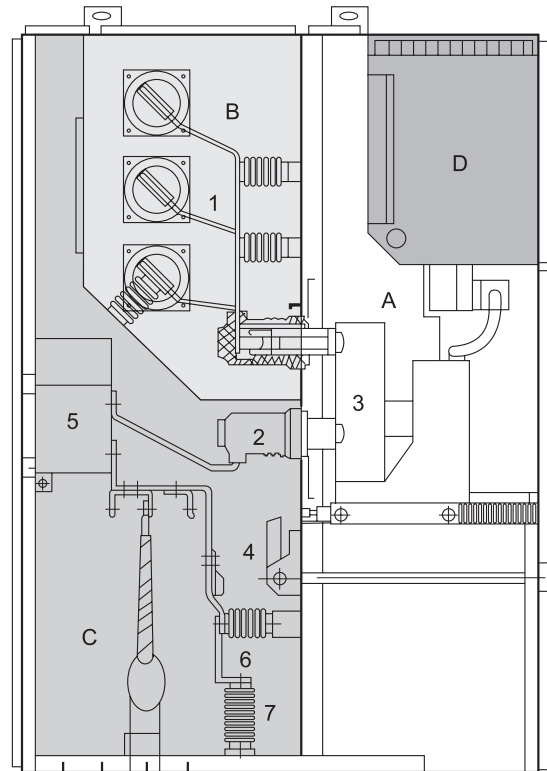
D Relay instrument chambe



Pressure releasing device



Latching device



D Relay instrument chamber

Relay instrument chamber is used to install all kinds of components, such as relays, instruments, signal indicator and operating switch, etc. In addition, it's available to add a small bus chamber on the top of the instrument chamber according to the demand of the clients, and set 16 lines to control the small bus.

Pressure releasing device

On the handcart chamber, bus chamber and cable chamber is installed pressure releasing device. When there is internal fault arc in the breaker, main bus or inside the cable chamber, and with the appearance of electric arc, the internal pressure in the switch cabinet rises. After it rises to a certain pressure, the pressure releasing metal sheet of the top device will be opened automatically, and the pressure and the gas are released to guarantee the safety of the operator and the switch cabinet.

Latching device

Latching device is used to connect the central exit and cabinet body, and the lifting device is also designed to make it more convenient to open the central exit. When the central exit stays closed, the connecting strength with the cabinet body is the best and the capability against the internal arcing fault effectively is strengthened.

XGN2-12

Box fixed type metal-enclosed switchgear

General



XGN2-12 box fixed type metal-enclosed switchgear (switch cabinet for short) is used to receive and distribute electrical energy in 3.6, 7.2, 12KV three phase AC 50Hz system , specially in the frequent operation occasion . Its bus bar system is single bus bar and it can derive single bus bar with branch and double bus bar structure. This switch cabinet conforms to the requirement of national standard GB3906-91 “3-35KV AC Metal Seal Switch equipment” and the international standard IEC298, and has the function of “five prevention” . This switch cabinet’ s main switch is composed of ZN28A-12 Yu or the ZN22-12 series vacuum circuit-breaker, the CD17A spring operating mechanism and the CT19B spring operating mechanism, the GN30-12 rotary isolator and the GN22-10 big electric current isolator series product.

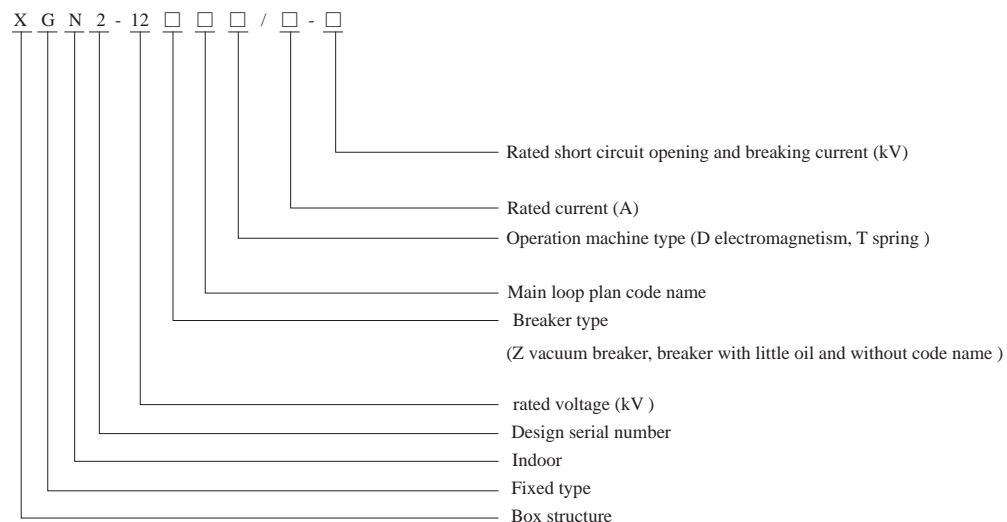
Environmental condition

1. Ambient temperature:-25℃ ~ +40℃ ;
2. Altitude is not higher than 1000M;
3. Relative environment humidity:
The daily relative humidity average is not higher than 95%;
The monthly relative humidity average is not than higher 90%;
4. The earthquake's intensity does not exceed 8 degree.
5. Without fire, the danger of explosion, chemical corrosion and fierce vibration place and the pollution grade not beyond 3 level.

XGN2-12

Box fixed type metal-enclosed switchgear

Product type and meaning



Main technical parameters

Switch cabinet's main technical parameters

Item	Unit	VS1
Rated voltage	kV	3.6, 7.2, 12
Rated current	A	630,1250,1600,2000,3150
Rated short circuit opening current	kA	16,20,31.5,40
Rated short circuit breaking current (peak value)	kA	40,50,80,100
Rated short circuit stable moving current (peak value)	kA	40,50,80,100
Rated heat stable heating current	kA	16,20,31.5,40
Rated heat stable heating time	s	4
Protection grade		IP2X
Structure type		Single bus bar disjunction and single bus bar with branches
Operation mode		electromagnetic, spring and energy storage type
The external dimension width × deep × is high	mm	1100 × 1200 × 2650 (common type)
Weight	kg	1000

XGN2-12

Box fixed type metal-enclosed switchgear

Structural features

XGN2-12 switch cabinet is the metal-enclosed box structure, its cabinet frame is welded together by the angle iron, the cabinet inside is divided into breaker room, bus bar room, cable room, relays room and so on. Rooms are separated by armor plate.

1 The circuit breaker room is located below in front of the cabinet body. It is connected by the tension bar and the drive mechanism. Line terminal above the breaker connects with isolated switch. Line terminal below the breaker connects with the current mutual inductance which connects isolated switch's line terminal. The circuit breaker room also is equipped with the pressure release channel, if internal electric arc it occurs, the gas passable exhaust channel released the pressure through exhaust channel.

2 Bus bar room is behind, upside cabinet body. In order to reduce the cabinet body altitude, bus bar room shows itself like the word “品” supported by the 7350N anti- curved intensity porcelain insulator. Bus bar connects with upside insulated switch's line terminal. Bus bar room in neighboring two cabinets can be isolable.

3 The cable room is behind and below the cabinet body. The supporting Insulator inside the cable room may be equipped with the voltage monitor device. The electric cable fixes on the support. When the main line is used to connect, this room is connecting cable room. The relay room is upside and in front of the cabinet body. The installing panel inside the cable room can install each kind of the relay. There are terminal supporters inside. The door of the cable room can be installed indication instrument, the signal part and other twice parts. The top can be installed twice small bus bar.

4 Circuit breaker's drive mechanism is installed face and left side of the breaker. Above it is isolated switch's operation and the interlocking mechanism. The switch cabinet is the two-sided maintenance. The front is twice component checking and repairing relay room and breaker, maintaining the drive mechanism, interlocking mechanism and transmission parts; the back is repairing the main bus bar and cable terminal. There is head lamp inside the breaker. The downside of front door is equipped with bus bar connected by copper paralleling with cabinet. The section is $4 \times 40\text{mm}$.

5 Mechanical interlocking: In order to prevent the load from turning on and off the isolated switch and the circuit breaker by mistake, prevent from isolating with charge and earthed switch with charge and turning on the knife switch. The switch cabinet uses the corresponding mechanical interlocking. The mechanical interlocking movement principle as follows:

(1) power-cut operation (operation - examination)

The switch cabinet is in the working position, namely the upside and downside isolated switch, the circuit breaker are at turn-on condition, the front and back door has been locked and at electriferous condition, at this time, the small handle was in the working position. First, turn the breaker off, insert the small handle into downside isolated operation hole, then pull to the isolated turn-off position from down to up. Then take the handle down, insert the handle into upside isolated operation hole, pull to the isolated turn-off position from up to down. Then take the handle down and insert it into switch hole, push from down to up to make the switch turn off. At this time, pull the small handle to the “examination and repair condition. Then open the front door first, then open the back door, the power cut operation finish, the examiner maintain and repair the breaker and the cable room.

(2) Power transmission operation (examination repair - movement)

If examination repair operation has finished, the power transmission is needed, its operation procedure as follows: Close the back door, after the key is taken out, close the front door, pull the small handle from “the examination repair” position to disjunction and closedown” position, at this time the front door is locked, the circuit breaker cannot be turned on. Insert the operation handle to the earthed switch operational hole, push the upside isolator to the turn on position from down to up, take the operation handle out and insert into the downside isolating operational hole, pull the downside isolator to the turn-on operation from down to up and take the operational handle out, pull the small handle to the operation position, at this time, turn the breaker on.

6 Product's external dimensions and the structure chart (see chart 1, chart 2, chart 3)

XGN2-12

Box fixed type metal-enclosed switchgear

Diagram 1 Outline size and structure of XGN2-12 type

1. Main body structure
2. door's earthed line
3. Secondary electric cable installment
4. Back door interconnection assembly
5. Head lamp
6. Support insulator
7. Aerial wire assembly
8. Bus bar room assembly
9. Relay room assembly
10. Front door's component assembly
11. The isolated switch drive assembly with earth knife
12. Operation interlocking mechanism
13. Downside isolated switch drive assembly
14. Current mutual inductance assembly
15. The vacuum circuit-breaker drive assembly
16. Earthed bus bar assembly

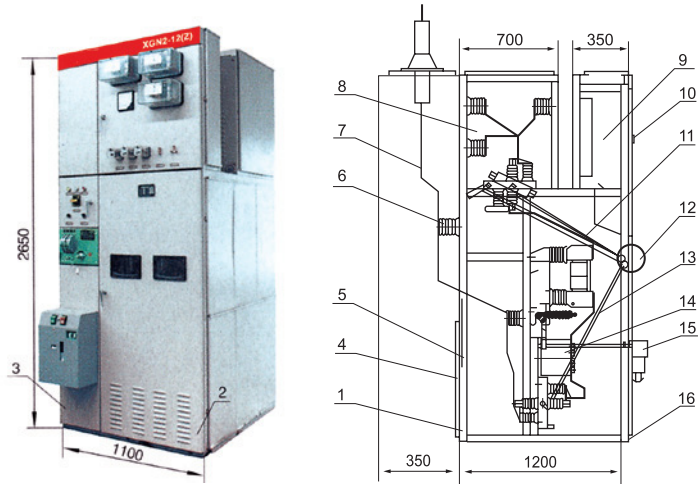


Diagram 2 Outline structure of XGN2-12 heavy current cabinet (equipped with ZN28A series vacuum circuit breaker)

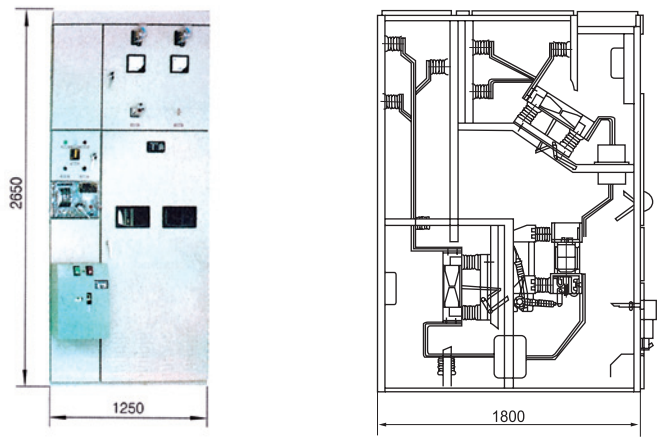
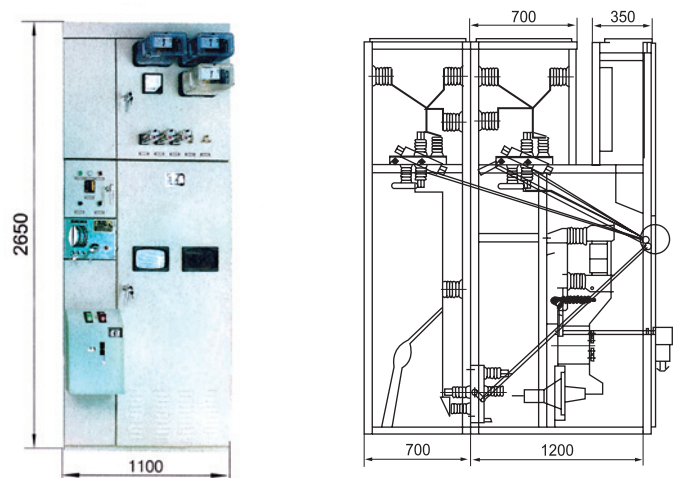


Diagram 3 Outline structure of XGN2-12 bypass cable outgoing cabinet



XGN2-12

Box fixed type metal-enclosed switchgear

Diagram 4 Mounting size of XGN2-12 type

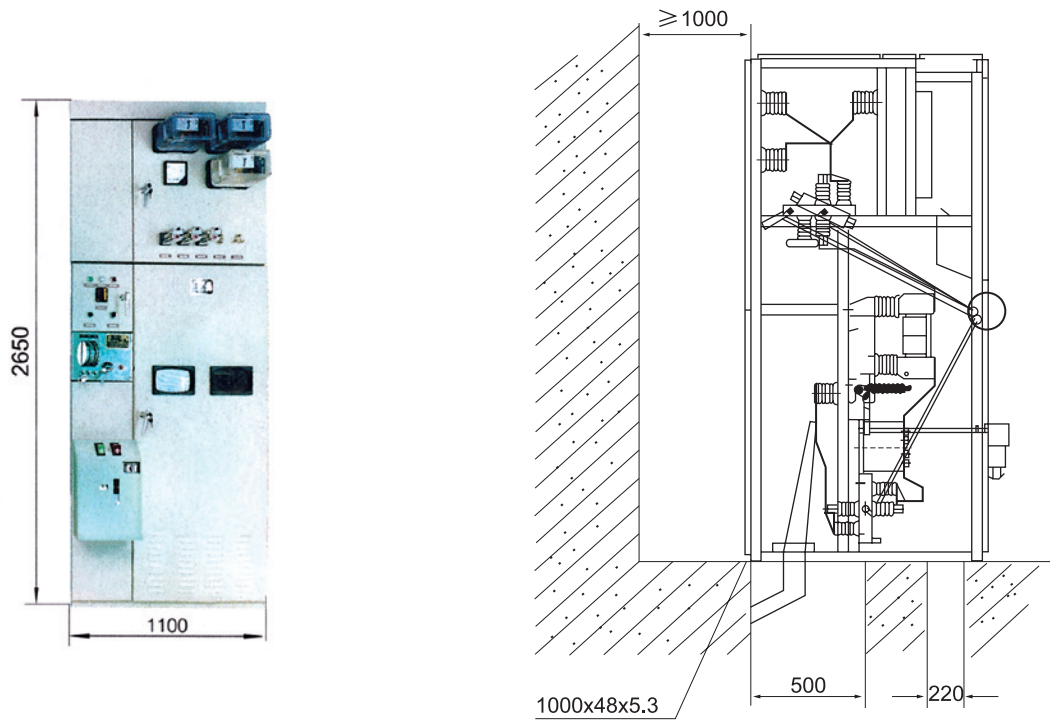
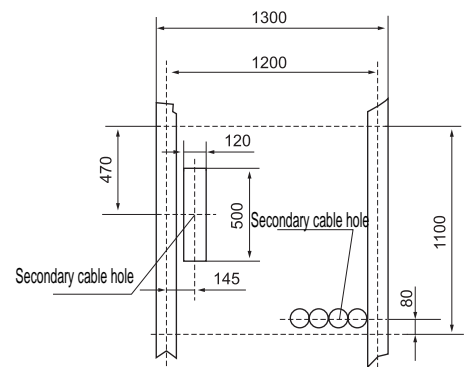


Diagram 5 Mounting size of XGN2-12 type



XGN2-12

Box fixed type metal-enclosed switchgear

Primary circuit diagram, scheme combination example

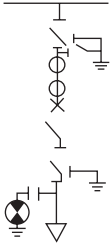
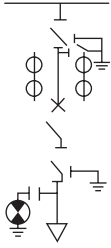
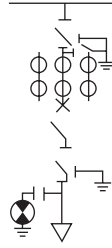
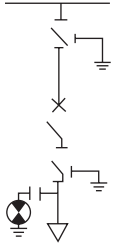
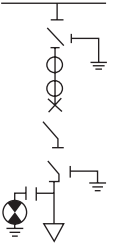
38	44	50	29	52	29	29	53	46	30
630-1000A	630-1000A	630-1000A	630-1000A	630-1000A	630-1000A	630-1000A	630-1000A	630-1000A	630-1000A
Aerial incoming line, metering	Aerial incoming line, metering	Aerial incoming line with arrester	Cable incoming band	Bus interconnection					

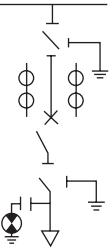
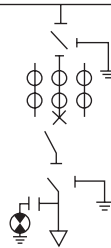

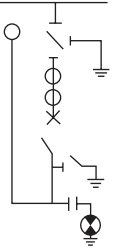
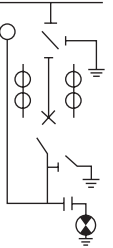
Primary circuit scheme

Main circuit scheme number	01	02	03	04	05	
Main wire connection diagram						
Main electrical appliance	GN □ -10 Rotary isolating switch	1	1	1	1	2
	LZZJ-10 Current transformer		1	2	3	
	Vacuum circuit breaker	1	1	1	1	1
	CD ¹⁰ ₁₇ / CT ⁸ ₁₉ Operating mechanism	1	1	1	1	1
	JN □ -1 Grounding switch	1	1	1	1	
	Charged displaying device	1	1	1	1	1
	Max. working current (A)	600;3000				
Remark	Cable outgoing					

XGN2-12

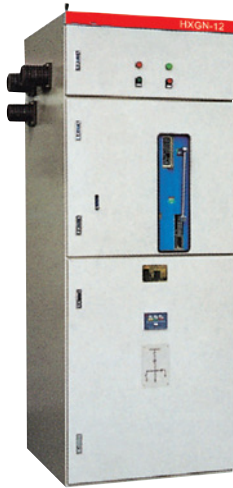
Box fixed type metal-enclosed switchgear

Main circuit scheme number		06	07	08	09	10
Main wire connection diagram						
Main electrical appliance	GN □ -10D Rotary isolating switch	1	1	1		
	LZZJ-10 Current transformer	1	2	3		1
	Vacuum circuit breaker	1	1	1	1	1
	CD ₁₇ ¹⁰ / CT ₁₉ ⁸ Operating mechanism	1	1	1	1	1
	GN □ -10 Rotary isolating switch	1	1	1	2	2
	JN □ -1 Grounding switch	1	1	1	1	1
	Charged displaying device	1	1	1	1	1
Max. working current (A)	600;3000					
Remark	Cable ingoing/outgoing					

Main circuit scheme number		11	12	13	14	15
Main wire connection diagram						
Main electrical appliance	GN □ -10D Rotary isolating switch					
	LZZJ-10 Current transformer	2	3		1	2
	Vacuum circuit breaker	1	1	1	1	1
	CD ₁₇ ¹⁰ / CT ₁₉ ⁸ Operating mechanism	1	1	1	1	1
	GN □ -10 Rotary isolating switch	2	2	1	1	1
	JN □ -1 Grounding switch			1	1	1
	Charged displaying device	1	1	1	1	1
Max. working current (A)	630;3000					
Remark	Cable ingoing/outgoing		Aerial outgoing line			

HXGN □ -12(SF₆)

Unit type AC metal-enclosed ring main unit



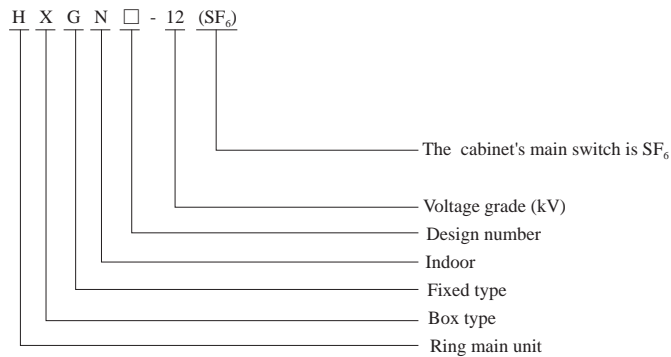
General

HXGN □ -12(SF₆) Unit type AC metal-enclosed ring main unit(hereafter refer to as ring net cabinet) is a new generation of high-pressure electric appliance product designed and developed independently by our own company according to the requirement of the domestic agricultural electricity and the city net transformation after introduction of overseas advanced technology. Each technical performance index completely reaches the IEC298 and GB3906 standard.

The loop-net cabinet's main switch, the operating mechanism and the components is made of the ABB Corporation original piece or the SFL-12/24 switch equipment imported overseas and assembled at home. We can also install the ABB Corporation original piece of HAD/US type SF according to the request of users. The circuit breaker or the VD4-Svacuum circuit-breaker divide into two kinds: be operated manually and electrically according to the operating mode.

The cabinet body is riveted after processed by numerical control machine tool with reliable mechanical interlocking and the misoperating-prevention function. The protection grade reaches IP3X. This product has the remarkable characteristics such as the small volume, light weight, artistic appearance, simple operation, long life, high parameter with no pollution and little maintenance.

Product type and meaning



Environmental condition

1. The altitude should not exceed 2000m.
2. Surrounding air temperature: -25℃ ~+40℃
3. Relative temperature: the daily average value is not higher than 95%, the the monthly average value is not higher than 90%
4. Surrounding air without caustic gas or ignitable gas, steam and other obvious pollution
5. Without fierce vibration

HXGN □ -12(SF₆)

Unit type AC metal-enclosed ring main unit

Application

HXGN □ -12 (SF₆) unit type exchange metal ring- net switching equipment, is suitable to exchange 50Hz, 12K, searving as device of receiving and distribution of electrical energy.

Main technical parameters

Item	Unit	Parameters
Rated voltage	kV	12
Rated frequency	Hz	50
Main bus bar rated current fuse breaker maximum rated current	A	630/125
Main loop, earthed loop short time endurable rated current	kA/s	20/3
Main loop, earthed loop maximum endurable rated current	kA	50
Main loop, earthed loop short circuit on-and off rated current	kA	50
the opening number of the load switch with full capacity	Time	100
The fused breaker opening the current	kA	31.5, 40
Rated closed loop opening current	A	630
Rated shift current	A	1600
Machine'sife 1min	Time	2000
1min line frequency resistance (peak value) recurrence, to the earth/isolation fracture	kV	42/48
The lighting shock resistance (peak value) recurrence, to the earth/isolation fracture	kV	75/85
1min Secondary loop 1min line frequency voltage resistance	kV	2
Protection grade	IP3X	

Structure character and operating principle

The outline structure of the product is referred to as diagram 1 and diagram 2; the installation dimension is referred to as diagram3. This ring network type cabinet makes air as the insulating medium, mainly assembled with ZFN □ -10/630 type vacuum load switch. And there are two cabinet schemes - incoming cabinet and outgoing cabinet.

1. Incoming cabinet scheme

There is a ZFN □ -10/630 type vacuum load switch on the main circuit inside the cabinet with isolating knife, and grounding knife conditionally. The three of them are all installed in one machine stand and there are interlocks among them, so that it is realized to connect the operation of three working stations of bus, isolation and grounding. Inside the cabinet the components such as CT, PY are available.

2.Outgoing cabinet scheme

ZFN □ -10/630 type vacuum load switch, fuse with striker (used as isolating switch) and grounding knife on the main circuit inside the cabinet, and the three working stations operation can be realized. Inside the cabinet the components such as CT/PT and ZNO arrester are available, so the metering cabinet can be omitted. Inside the incoming cabinet and outgoing cabinet, there is insulating protecting baffle interlocked with grounding switch. And inside the cabinets, the mechanical interlocks are adopted between each switch and baffle as well as the cabinet door with the requirement of "five-prevention" and IP2X of the protection degree of the cabinet enclosure.

HXGN □ -12(SF₆)

Unit type AC metal-enclosed ring main unit

Handling, installing, debugging and fuse replacing

1. Handling

Before handling, undertake check before opening the cabinet according to the regulations. When the cabinet is handling delivered, it's a must to operate according to the operation marking demands. Handle with care and without shake.

2. Installing

After opening the cabinet, check whether the cabinet body and the components inside are good, whether they work normally, and whether they are moistened. Only after definite confirmation can the installation be undertaken.

3. Debugging

It's necessary to have a debugging according to the following steps if the components inside the cabinet don't meet the technical requirements or the interlocks don't locate well:

(1) For the load switch, grounding switch or isolating switch, you can make them meet the technical demands by adjusting the drag rod length, changing the angle and position of drag rod and operating rod.

(2) If there is any interlock that doesn't locate well, you can make it locate by fine adjusting relevant operating rod length to change the position of interlock hole.

4. Fuse replacing

It must operate strictly according to the sequence of power off. First, turn off the load switch, turn on the fuse to the isolating position and then turn on the grounding switch. Only after plugging the insulating protecting baffle can the cabinet door be opened and can the fuse be replaced.

Operation and fault treatment

1. Operation

Please operate strictly according to the following steps, otherwise some damage may be caused.

(1) Operating sequence of load switch

a. Switch-on: When the load switch stays on, plug the operating handle into the operating hole of the load switch and turn it clockwise (about 180°) to make it stay on.

b. Switch-off: When the load switch stays on, manually operate the tripping button or the tripping electromagnet to make the load switch stay off. For the load switch with fuse striker, after the fuse is fused, the striker can make the load switch stay off.

(2) Operating sequence of power off

a. Turn off the load switch to unlock the interlock between the isolating and grounding switches.

b. Plug the operating handle into the operating hole of the isolating and grounding switches and turn it clockwise (about 90°) to open the isolating knife.

c. Turn again clockwise (about 90°) to turn off the grounding switch rapidly.

d. Plug the insulating baffle to unlock the door interlock.

e. Open the door and maintain.

(3) Operating sequence of power transmission

a. Close the cabinet door.

b. Extract the insulating baffle and lock the cabinet door.

c. Plug the operating handle into the operating hole of the isolating and grounding switches and turn it anticlockwise (about 90°) to turn off the grounding switch.

d. Operate the load switch and turn it on to transmit the power.

2. Fault treatment

During the operation of the ring network type cabinet, if there is any fault, such as loose fasteners, bad lubrication of mechanical parts and reduced vacuum degree in the vacuum interrupter, etc. After the power off, check and remove the faults by fastening, adding lubricant and adding withstand voltage, etc.

HXGN □ -12(SF₆)

Unit type AC metal-enclosed ring main unit

Maintenance and repair

1. After the cabinet is open, check all of the insulation pieces and disassemble the damp ones, put them into 70-80°C drying box, and take out for debugging again after 48 hours drying.

2. If the product is damp or rusty during the storage, please clean it at once and protect it well.

3. Maintenance and repair should be done to ring network cabinet during operation.

(1). Vacuum extent of vacuum arc-extinguishing room

(2). Contact abrasion degree

(3). Whether the fastening pieces are loose or not;

(4). Mechanical electric parameter such as open travel, over travel.

(5). Whether the running is flexible or not;

(6). Whether the interlock is reliable or not;

(7). Whether all of the parts are clean, especially for insulation fittings.

4. Do overall examination and debugging to ring network cabinet in following conditions:

(1). Routine examination and cleaning for every

(2). After every 2000 times operation of load switch

Storage

Ring network cabinet should be stored in the dry and ventilated warehouse with temperature of -30°C ~+40°C .

Appending files

1. Certificate of quality
2. Installation and operation instruction
3. Packing list
4. Appending accessories list
5. Secondary connection diagram

Ring network cabinet installation

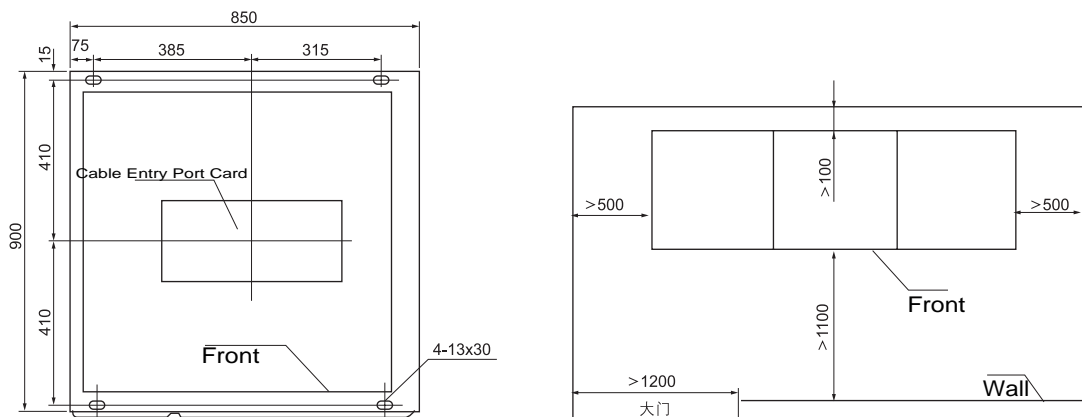


Diagram 1

HXGN □ -12(SF₆)

Unit type AC metal-enclosed ring main unit

Composite electrical appliance cabinet

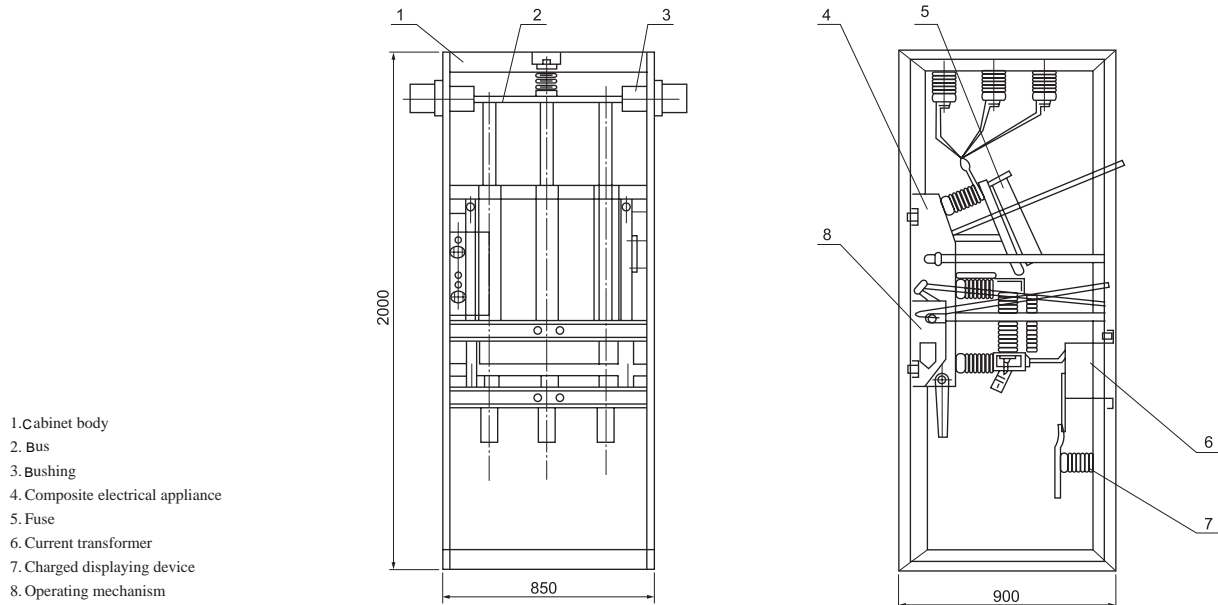


Diagram 2

Load switch cabinet

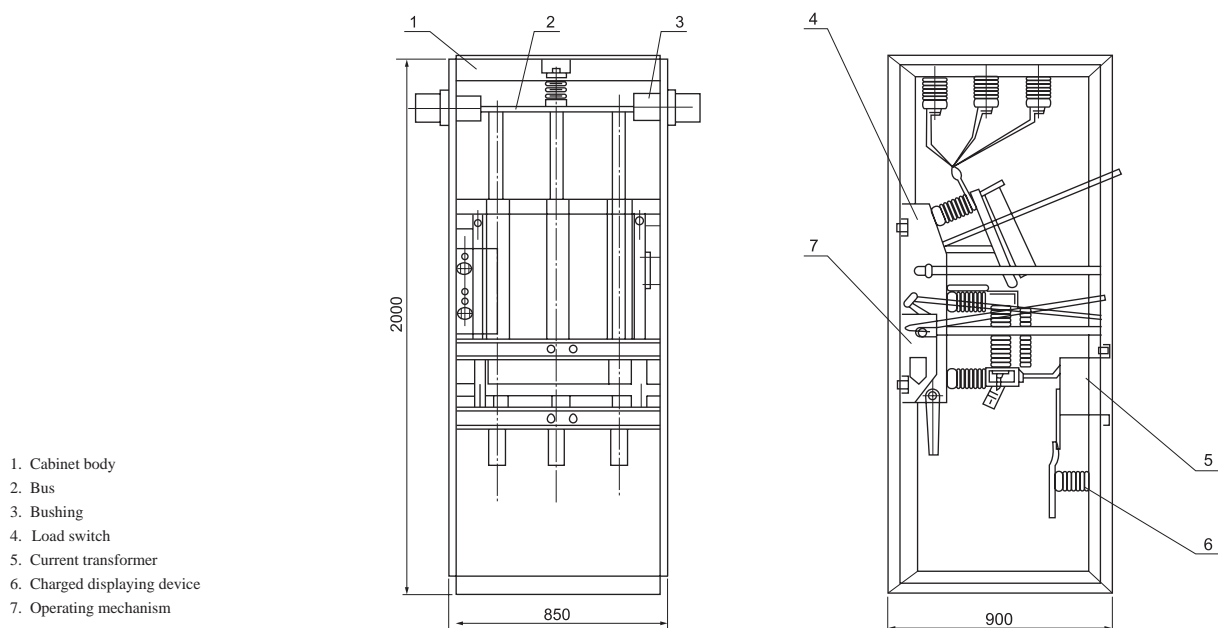
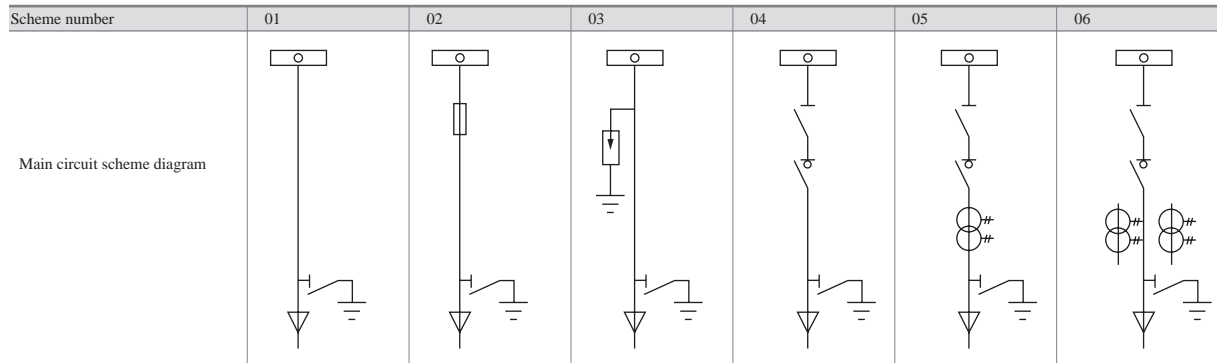


Diagram 3

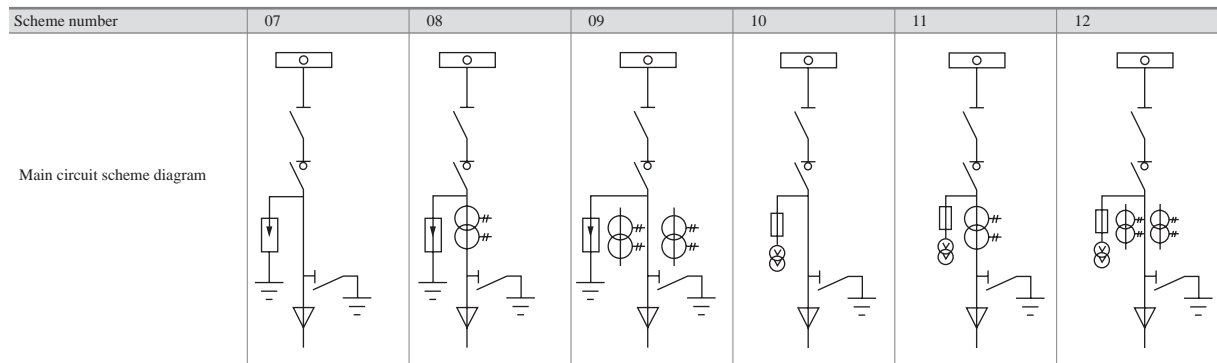
HXGN □ -12(SF₆)

Unit type AC metal-enclosed ring main unit

Demonstration of composite scheme



Purpose	Cable incoming or outgoing						
Primary element	ZFN-10 Load switch				1	1	1
	Isolating switch				1	1	1
	Grounding switch	1	1	1	1	1	1
	SFL-J Fuse		3				
	RN2 Fuse						
	Current transformer					1	2
	JDZ-10 Voltage transformer						
	Y5W Arrester			3			



Purpose	Cable incoming or outgoing						
Primary element	ZFN-10 Load switch	1	1	1	1	1	1
	Isolating switch	1	1	1	1	1	1
	Grounding switch	1	1	1	1	1	1
	SFL-J Fuse						
	RN2 Fuse				3	3	3
	Current transformer		1	2		1	2
	JDZ-10 Voltage transformer				2	2	2
	Y5W Arrester	3	3	3			

HXGN □ -12(SF₆)

Unit type AC metal-enclosed ring main unit

Scheme number	13	14	15	16	17	18
Main circuit scheme diagram						
Purpose	Cable incoming or outgoing					
Primary element	ZFN-10 Load switch	1	1	1	1	
	Isolating switch	1	1	1	1	
	Grounding switch	1	1	1	1	1
	SFL-J Fuse		3	3	3	
	RN2 Fuse	3				3
	Current transformer	2		1	2	2
	JDZ-10 Voltage transformer	2				2
	Y5W Arrester					

Scheme number	19	20	21	22	23	24
Main circuit scheme diagram						
Purpose	Cable incoming or outgoing					
Primary element	ZFN-10 Load switch	1	1	1	1	1
	Isolating switch	1	1	1	1	1
	Grounding switch	1	1	1	1	1
	SFL-J Fuse				3	3
	RN2 Fuse					
	Current transformer		1	2		1
	JDZ-10 Voltage transformer					
	Y5W Arrester					

HXGN □ -12(SF₆)

Unit type AC metal-enclosed ring main unit

Scheme number	25	26	27	28	29	30
Main circuit scheme diagram						
Purpose	Interconnection		Metering interconnection		Aerial incoming line interconnection	
Primary element	ZFN-10 Load switch	1	1			1
	Isolating switch	1	1			1
	Grounding switch	1	1			1
	SFL-J Fuse		3			3
	RN2 Fuse			3	3	
	LZZEJ Current transformer			2	2	
	JDZ-10 Voltage transformer			2	2	
	Y5W Arrester					

Scheme number	31	32	33	34	35	36	
Main circuit scheme diagram							
Purpose	Aerial incoming line interconnection	Metering	Voltage transformer		Voltage transformer	Arrester	
Primary element	ZFN-10 Load switch		1	1	1	1	
	Isolating switch		1	1	1	1	
	Grounding switch						
	SFL-J Fuse						
	RN2 Fuse	3	3	3	3	3	
	LZZEJ Current transformer	2	2				
	JDZ-10 Voltage transformer	2	2	2	JDZJ-10 3 Pcs	2	JDZJ-10 3 Pcs
	Y5W Arrester					3	3

HXGN □ -12(SF₆)

Unit type AC metal-enclosed ring main unit

Scheme number	37	38	39	40	41	42
Main circuit scheme diagram						
Purpose	Cable incoming or outgoing					
Primary element	ZFN-10 Load switch			1	1	1
	Isolating switch			1	1	1
	Grounding switch					
	SFL-J Fuse		3			
	RN2 Fuse					
	LZZEJ Current transformer				1	2
	JDZ-10 Voltage transformer					
Y5W Arrester			3			

Scheme number	43	44	45	46	47	48	
Main circuit scheme diagram							
Purpose	Cable incoming or outgoing						
Primary element	ZFN-10 Load switch	1	1	1	1	1	
	Isolating switch	1	1	1	1	1	
	Grounding switch						
	SFL-J Fuse						
	RN2 Fuse				3	3	3
	LZZEJ Current transformer		1	2		1	2
	JDZ-10 Voltage transformer				2	2	2
Y5 W Arrester	3	3	3				

GG-1A(FZ)-12Z

Intelligent HV switchgear cabinet



Application

GG-1A (FZ) the -12Z intellectual and fixed type high-voltage switch cabinet is suitable for inputting and outputting electricity and control and protection of the large-scale electromotor in electrical network transformer substation、 mining business, the wharf, the oil field, the railway station, the residential district and other high pressure transformer substations where adopting the single bus bar and the single bus bar subsection as the main wiring way on the 3.6~12KV voltage degree Because this company have transformed “five prevention”, “without oil” , and “the intelligence” on the switch cabinet on the basis of the original GG-1A switch cabinet, making it possible to transform and promote the old style transformer substation.

Main technical parameters

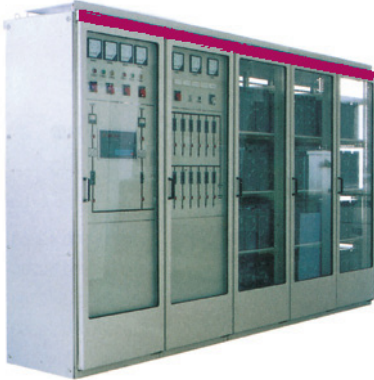
Item	Unit	Parameters
Rated voltage	kV	3.6, 7.2, 12
Rated current	A	630, 1000, 1250
Rated short circuit opening current	kA/4S	20, 25, 31.5
Rated short circuit breaking current (peak value)	kA	50, 63, 80
Line frequency endurable voltage (same, to the earth/fracture)	kV/1min	42/48
Light shocking yendurable voltage (same, to the earth/fracture)	kV	75/85
Twice line frequency endurable voltage	kV/1min	2
Rated operation order		0-0.3S-C0-180S-C0

Structural feature

GG-1A (FZ) the -12Z intellectual fixed type high-voltage switch cabinet is starting type structure, the basic skeleton is curved and welded by the angle steel and the steel plate .In general, The switch cabinet is composed of the main cabinet and fence cabinet. The main cabinet is partially divided by the bus bar's partition board into two sections. The upside is the bus bar and the isolator switch, the earthed switch, the middle is the circuit breaker, the mutual inductor, the bottom is electric cable outing room. The frontage on the left is the relay room, lower part is the terminal room. This cabinet has the perfect function of “five prevention”

GZ2

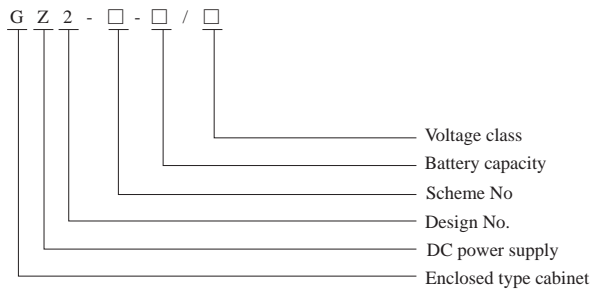
Power supply cabinet



Application

GZ2 series DC power supply cabinets (microcomputer controlled) are widely applied to large/middle and small scale power plants and transformer substations, used as DC power supply for HV switch making/breaking, relaying, automatic control, emergency lighting and light/sound signal in normal condition or emergency state; also can be applied to fields like metallurgy, railway, mine, petrochemical, posts and telecommunications, communication, medical health, bank, hotel, high-rise, computer network, etc; the microcomputer controlled DC power supply cabinets are useful for power plants, transformer substations and other industries that require unmanned control and remote centralized monitoring. The product is in accordance with JB/T5777.4-2000 General specification and safety requirements for DC power supply equipment of power projects.

Product type and meaning



Model	Description	Spec.	Range of application
GZ2-30-□/□	Single battery, single-busbar section, two pieces of double-line output charging floating charger, no voltage reducing circuit	10	Power plant or large-scale transformer substation
GZ2-31-□/□	Single battery, single-busbar, two pieces of double-line output charging floating charger, no voltage reducing circuit	10	Power plant or large-scale transformer substation
GZ2-32-□/□	Single battery, double-busbar section, two pieces of double-line output charging floating charger	20	Transformer substation and middle/small-scale power plant
GZ2-33-□/□	Single battery, double-busbar, two pieces of double-line output charging floating charger	20	Transformer substation and middle/small-scale power plant
GZ2-34-□/□	Single battery, double-busbar section, two pieces of three-line output charging floating charger	20	Transformer substation and middle/small-scale power plant
GZ2-35-□/□	Single battery, double-busbar, two pieces of three-line output charging floating charger	20	Transformer substation and middle/small-scale power plant
GZ2-40-□/□	Double battery, single-busbar section, two pieces of double-line output charging floating charger, no voltage reducing circuit	10	Key power plant or large-scale transformer substation
GZ2-41-□/□	Double battery double busbar two pieces of double line output charging floating charger	12	Transformer substation and middle/small-scale power plant
GZ2-42-□/□	Single battery, double-busbar section, three pieces of two-line output charging floating charger	10	Key power plant or large-scale transformer substation
GZ2-43-□/□	Double battery, double-busbar, two pieces of three-line output charging floating charger	12	Transformer substation and middle/small-scale power plant

GZ2

Power supply cabinet

Environmental condition

1. Altitude: 2000m and below (if exceed 2000m, please contact us)
 2. Ambient temperature: $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$.
 3. Relative humidity: not over 90% . ($20 \pm 5^{\circ}\text{C}$) .
- Note: Please contact us for special conditions.

Main technical parameter

- 1、 Input mains voltage, three-phase AC $380\text{V} \pm 10\%$, $50\text{Hz} \pm 5\%$ 。
- 2、 Output DC voltage rated value: 48V; 110V; 220V
- 3、 Output DC current rated value: 5A, 8A, 10A, 15A, 20A, 30A, 40A, 50A。
- 4、 Rated capacity of storage battery: 10Ah, 20Ah, 38Ah, 40Ah, 50Ah。
- 5、 Voltage regulating range
- 6、 Output DC current regulating range: 0~100% of rated value.
- 7、 Voltage stabilizing accuracy: $< \pm 1\%$ 。
- 8、 Current stabilizing accuracy: $< \pm 1\%$ 。
- 9、 Ripple ratio: $< 1\%$ 。
- 10、 Noise of complete machine: $< 55\text{dB}$ 。
- 11、 Temperature rise of main transformer: $< 70^{\circ}\text{C}$ 。
- 12、 Working mode: **continuous working**
- 13、 Efficiency $> 90\%$ 。
- 14、 Degree of protection: IP20-IP30。

Item			
Rated value of output DC voltage	48V	110V	220V
Regulating range of float charge voltage	43~57	99~130	198~260
Regulating range of average charge voltage	54~62	125~140	198~286
Regulating range of main charge voltage	43~70	99~162	187~310

Main functions

- 1.Complete specifications: This series of products possesses more than ten models with hundreds of specifications, for satisfying DC power supply demand of large/middle/small scale power plants, transformer substation and other industries.
- 2.Reliable operation: AC double-circuit input automatic switching. The product is equipped with two float charging devices that are reserved for each other, with convenient system switching.
- 3.Stable operation: The product has fine anti-interference ability, high current/voltage stabilizing accuracy, low ripple ratio.
- 4.Long service life of battery: The product is able to charge and float charge the storage battery according to the charging curve of storage battery strictly, free from over-charging or under-charging. The microcomputer controlled type also has battery cyclic detection function.
- 5.Multiple protections: The product is able to track and detect every working point, with combined software and hardware protection. The insulation monitoring device will monitor the insulation condition of busbar at all hours.
- 6.Motion communication: The microcomputer controlled DC power supply cabinet is able to communicate with upper supervising computer, and realize centralized monitoring and unmanned control.

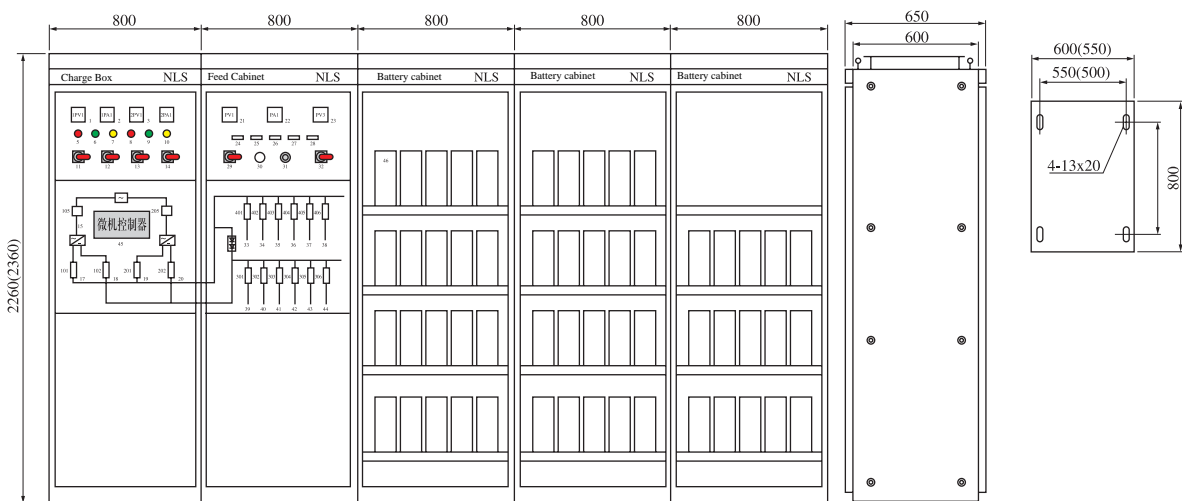
GZ2

Power supply cabinet

Main specifications (maintenance-free lead-acid battery)

No.	Rated capacity of storage battery	Output voltage of storage battery	KM. rated current (A)	Bus combining impulse current (A)	Quantity of cabinet face
GZ2-20/220	20	220	5	60	2
GZ2-38/220	38	220	5	100	2
GZ2-50/220	50	220	8	120	2
GZ2-65/220	65	220	10	120	2
GZ2-100/220	100	220	10	240	2~3
GZ2-150/220	150	220	15	480	3~4
GZ2-200/220	200	220	20	480	3~4
GZ2-300/220	300	220	30	600	4~5
GZ2-20/110	20	220	5	600	2
GZ2-38/110	38	220	5	100	2
GZ2-50/110	50	220	8	120	2
GZ2-65/110	65	220	10	120	2
GZ2-100/110	100	220	10	240	2
GZ2-150/110	150	220	15	480	3~4
GZ2-200/110	200	220	20	480	3~4
GZ2-300/110	300	220	30	600	3~4

Interior structure



GZ3

Power supply cabinet



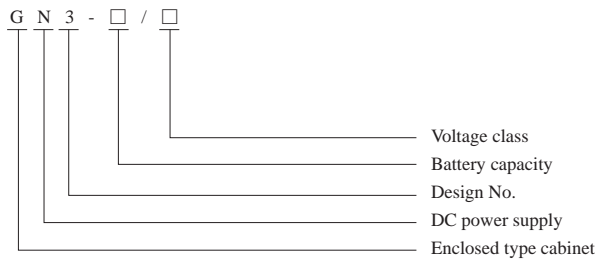
Application

GZ3(GZG) series DC power supply cabinets (intelligent high frequency switch type) are suitable for the DC power supply systems of electric equipment and relay protection device in power plants and transformer substations, used as power supply device for controlling, signal, communication, protection as well as DC emergency lighting and power sets.

The product adopts high frequency switch type rectifying device, is featured with small volume, light quality, superior technical index, modular design, N+1 warm back-up mode, convenient “four remote”, etc. The product proceeds intelligent management to the charging condition of storage battery and working state of DC power supply cabinet, so that to guarantee service life of storage battery. It is equipped with central controller, with remote control function, improves reliability and automation level of DC system.

The product is in accordance with JB/T5777.4-2000 General specification and safety requirements for DC power supply equipment of power projects.

Product type and meaning



Environmental conditions

1. Ambient temperature: $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$, mean monthly temperature not higher than 35°C ;
2. Altitude: 2000m and below;
3. Relative humidity: not exceed 90% (at 25°C), the equipment should be free from condensation during running;
4. The installation site should be free of severe shock or impact, the surrounding medium should be free of explosion hazard or gas or conductive dust that would erode metal and destroy insulation, also should be free from strong magnetic field interference.

Main technical parameters

Item	Unit	Parameters
AC rated input voltage, three-phase four-wire system	V	$380 \pm 15\%$ ($50\text{Hz} \pm 2\text{Hz}$)
DC rated output voltage	V	48, 110, 220
Output DC rated current	A	1~200
Rated capacity of storage battery	Ah	20~1000
Voltage stabilizing accuracy		$< \pm 0.5\%$
Current stabilizing accuracy		$< \pm 0.5\%$
Ripple ratio		$\pm 0.1\%$
Efficiency		$\geq 90\%$
Noise	dB	$< 55(\text{A 级})$
Degree of protection		IP30
Outline size	mm	2260×800×600, 2260×1000×600, 2360×800×550

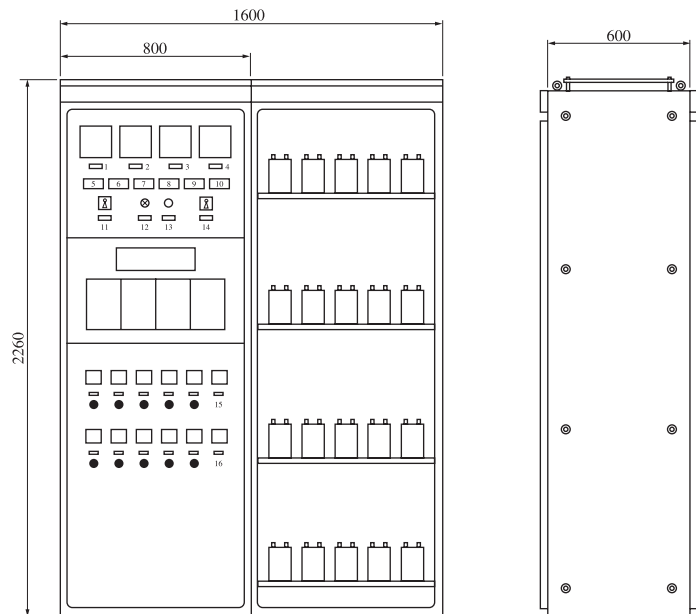
GZ3

Power supply cabinet

Structural feature

1. Cabinet body is combined structured
2. The charging/float charging device adopts multi high frequency rectification modules connected in parallel, N+1 back-up, automatic current sharing.
3. Perfect monitoring function, high intellectualized, large screen liquid crystal display in Chinese, light and sound alarm, or adopting touch screen. Full intelligent design, DC feeding to each system component like AC distribution and rectification module and realize full-parameter local and remote monitoring and control; main monitoring content covers start/stop of module, charging mode, output voltage regulation, setting of output current limiting point, double-circuit AC automatic switching, automatic management of battery, etc.
4. The monitoring system is equipped with standard RS-232 or RS485 interface, link up the networks of upper computer, realize "four remote" function.
5. Carry out automatic management and automatic maintenance to the storage battery: real-time monitor the terminal voltage of storage battery, charge and discharge current, control average float charging automatically and average charging, regular maintenances, etc.
6. Function of temperature compensation is available at request.
7. In any case, when the network islanding or when the AC power supply comes across power loss, the storage battery is able to supply power to the control bus without interruption, it guarantees power-off protection and guarantees control and operating power supply for automatic device and HV switch.

Interior structure



MNS

LV withdrawable switchgear



General

MNS LV withdrawable switchgear (hereinafter referred to as device) is manufactured by standard module through consulting MNS series low voltage switch cabinet of Switzerland ABB Company, and synthetically improved. The device is applicable to the system with AC 50Hz, rated working voltage 660V and below, used as control device for various power generation, transmission, distribution, power transfer and power consumption device. It is widely used in low voltage distribution system of various mining enterprise, tall building and hotel, municipal construction etc. Besides the general land use, after special disposal, it also can be used for marine petrol drill taken platform and nuclear power station.

The device accords with international standard IEC439-1 and national standard GB7251.1.

Characteristics

1. Compact design: Contain more function units with less space.
2. Strong versatility for structure, flexible assembly. C type bar section of 25mm modulus can meet the demands of various structure and type, protection grade and operating environment.
3. Adopt standard module design, can be combined into protection, operation, transfer, control, regulation, measurement, indication etc such standard units. User can choose assembly according to requirement at will. Cabinet structure and drawer unit can be formed with more than 200 components.
4. Fine security: Adopt high strength antflaming type engineering plastic pack in large quantity to effectively enhance the protective safety performance.
5. High technical performance: Main parameters reach the advanced level at home.

Main technical parameters

Rated working voltage (V)	Rated insulation voltage (V)	Rated working current (A)		Virtual value (IS)/peak value (kA) of rated short time withstand current (kA)		Protection grade of shell IP30, IP40
		Horizontal bus bar	Vertical bus bar	Horizontal bus bar	Vertical bus bar	Outline dimension H × W × D
380, 660	660, 1000	630-5000	800-2000	50-100/ 105-250	60/130 -150	2200 × 600(800,1000) × 800(1000)

Rated working current of vertical bus bar:

Draw-out type MCC with single side or double sides operation: 800A. MCC with 1000mm depth and single operation: 800~2000A.

MNS

LV withdrawable switchgear

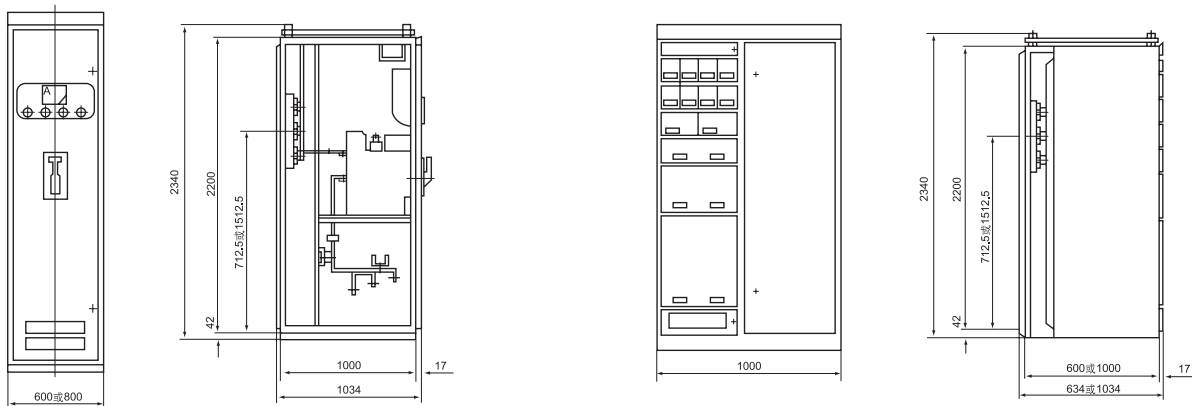
Conditions for normal operating environment

1. Ambient air temperature: $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$ and the average temperature should not exceed $+35^{\circ}\text{C}$ in 24h.
2. Air condition: With clean air. Relative humidity should not exceed 50% at $+40^{\circ}\text{C}$. Higher relative humidity is allowed at lower temperature. Ex. 90% at $+20^{\circ}\text{C}$. But in view of the temperature change, it is possible that moderate dews will produce casually.
3. Altitude above sea level should not exceed 2000M.
4. The device is suitable to the transportation and store with following temperature: $-25^{\circ}\text{C} \sim +55^{\circ}\text{C}$, in short time (within 24h) it reaches $+70^{\circ}\text{C}$. Under the limiting temperature, device should not suffer damage that can't recover, and it can works normally under normal conditions.
5. If the above operating conditions not meet user's demand. Consult with manufactory.
6. Technical agreement should be signed additionally if the device is used for marine petrol drill taken platform and nuclear power station.

Structure characteristics

The basic cabinet of device is combined assembly structure. Basic structural pieces of cabinet is zinc plated, connected and firmed into basic bracket through self tapping locking screw or 8.8 grade square corner screw. According to the change demand of project, additionally add corresponding gate, closing board, baffle plate, installation support and the components of bus bar, function units, to assemble a complete set of device. Perform modulus to interior component and compartment size (Modulus unit $e=25\text{mm}$).

Interior structure



PC cabinet

Draw-out type MCC cabinet (Single side operation)

MNS

LV withdrawable switchgear

Primary circuit scheme diagram

Scheme number	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	
Primary scheme																					
Cabinet width (mm)	400	600	800	1000	600	800	1000	600	800	1000	600	800	1000	600	800	1000	600	800	1000		
Equipment chamber height	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E		
Max. working current (A)	1500	1500	2300	3150	1500	3200	4000	1600	3200	4000	2000	3200	4000	2000	3000	3600	1500	3200	4000		
Main equipment	ME1605	ME630~ ME1600	ME2000~ ME2505	ME3200~ ME3205	ME2000~ ME2505	ME3200~ ME3205	AH-40C BHG-120II	M08~ M16	M20~ M32	M40 BHG-120II	F1-1250 -F1-2000	F2-2000 -F4-3200	F5-4000 BHG-120	F1-1250 -F1-2000	F2-2000 F3-3200	F4-3200 F4-3600	AH6B AH16B	M28 M32	M40 M32	M40 M32	
Purpose	Cable incoming or outgoing																				
Primary scheme																					
Cabinet width (mm)	400/600	800	1000	400/600	800	1000	600	800	1000	4000	600	800	1000	600	800	1000	600	800	1000		
Equipment chamber height	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E	72E		
Max. working current (A)	1500	2300	3150	1500	3000	4000	1600	3200	4000	2000	2000	3200	4000	2000	3200	3600	1500	3200	4000		
Main equipment	ME630~ ME1605	ME2000~ ME2505	ME3200~ ME3205	AH20CH~ AH30CH	AH20CH~ AH30CH	AH40CH~ BHG-120II	M08~ M16	M20~ M32	M40 BHG-120II	F1-1250 -F1-2000	F2-2000 -F4-3200	F5-4000 BHG-120	F1-1250 -F1-2000	F2-2000 F3-3200	F4-3200 F4-3600	AH6B AH16B	M28 M32	M40 M32	M40 M32	M40 M32	
Purpose	Incoming/outgoing line of cabinet top																				

MNS

LV withdrawable switchgear

Scheme number	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Primary scheme																				
Cabinet width (mm)	600	800	1000	600	800	1000	600	800	1000	600	800	1000	600	800	1000	600	800	1000		
Equipment chamber height	72E																			
Max. working current (A)	1500	2300	3150	1600	3200	4000	1600	3200	4000	1600	3200	4000	1600	3000	3600	3200	4000			
Main equipment	ME630- ME1605 BHG-100	ME2000- ME2505 BHG-100	ME3200- ME3205 BHG-120	AH-6B- AH-16B BHG-100	AH-20CH- AH-30CH BHG-100	AH-40C BHG-120H BHG-100	M08- M32 BHG-120	M20- M16 BHG-100	M40 BHG-120H	F1-1250 -F1-2000 BHG-100	F2-2000 -F4-3200 BHG-100	F1-1250 -F1-1600 4 Level Switch BHG-100	F5-4000 BHG-120	F1-1250 -F1-1600 4 Level Switch BHG-100	F2-2000- F2-3000 4 Level Switch BHG-120	F4-3200 F4-3600 4 Level Switch BHG-120		M28 to M32 4 Level Switch BHG-120H	M40 4 Level Switch BHG-120	
Purpose	Bus connection																			
Scheme number	61	62	63	64	65	66	67	68	69	70	71	72	73	74						
Primary scheme																				
Cabinet width (mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000						
Equipment chamber height	8E/4	8E/2	8E	16E	24E	8E/4	8E/2	8E	16E	24E	8E	16E	8E	8E						
Max. working current (A)	30	50	100	300	600	30	50	200	300	500	100	300	100	200						
Main equipment	S503-LV10-40 *UNC100L- BHG-30	S503-LV10- GV63 *UNC100L- BHG-30	TG300B TG1000B BHG-30	TG225B TG400B BHG-40	TG600B BHG-40	NT-00 KG64B *UHH17	NT-00 KG60B *U HH17 BHG-30	NT-00-1 SMP60-1 BHG-40	NT-2 SMP-2 BH-40	NT-3 SMP-3 BH-60	QSA-63 QSA-125 BHG-40	QSA-250 QSA-400 BHG-60	QSA-250 QSA-400 BHG-40	DCHR1-00 125A BHG-40	DCHR1-1 250A BHG-40					
Purpose	Feed line																			

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LV withdrawable switchgear

Scheme number	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94
Primary scheme																				
Cabinet width (mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Equipment chamber height	16E	16E	8E/4	8E/2	8E/4	8E/2	8E/4	8E/2	8E	16E	24E	8E/2	8E	16E	24E	8E/2	8E	16E	24E	24E
Max. working current (A)	300	500	7.5	15	7.5	15	7.5	15	45	75	160	15	37	65	110	7.5	15	55	110	110
Main equipment	DCHR1-2 400A BHG-60	DCHR1- 630A BHG-60	S503 B16-B25 BHG-30	S503 B37-B45 BHG-30	NC100L B16-B25 BHG-30	NC100L B37-B45 BHG-30	S503 or NC100L B16-B25 BHG-30	S503 or NC100L B37-B45 T25-TSA45 BHG-30	TG-100B B65-B105 T105 BHG-40	TG-225B B65-B105 T107-250 BHG-40	TG-400 EH370 BHG-40	S503 B16-45 T16-TSA45 BHG-30	TG-100B B65-85 T105 BHG-40	TG-225B B105-170 T250 BHG-40	TG-400B B250 T250 BHG-40	S503 B16 T16 BHG-30	TG-100B B37 TSA45 BHG-30	TG-225B B45-85 T105 BHG-40	TG225 B105-170 T170 BHG-40	TG225 B105-170 T170 BHG-40
Purpose	Feed line	Irreversible	Irreversible	Irreversible	Irreversible	Irreversible	Irreversible	Irreversible	Irreversible	Irreversible	Irreversible	Reversible	Reversible	Reversible	Reversible	Reversible	Reversible	Reversible	Reversible	Reversible

Scheme number	95	96	97	98	99	100	101	102	103	104	105	106	107
Primary scheme													
Cabinet width (mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Equipment chamber height	8E/4	8E/2	16E	24E	24E	8E/2	8E	24E	24E	24E	8E/2	16E	16E
Max. working current (A)	22	22	55	110	160	15	30	65	100	100	7.5	55	90
Main equipment	NT-00 KG64B B16 T16 or HH17 BHG30	NT-00 KG64B B25-45 T25-45 or HH17 BHG30	QSA-250 B65-170 T105-170 BHG-40	QSA-400 B170-250 T170-250 BHG-40	QSA-400 B250-370 T250-370 BHG-40	NT-00 KG64B B16-45 T16-45 or HH17 BHG30	QSA-125 B65-85 T105 BHG-30	QSA-250 B105-170 T105-170 BHG-40	NT-2 B250 T250 BHG-40	1000	8E/2	16E	16E
Purpose	Irreversible	Irreversible	Irreversible	Irreversible	Irreversible	Reversible	Reversible	Reversible	Reversible	Reversible	Reversible	Reversible	Reversible

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LV withdrawable switchgear

Scheme number	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	
Primary scheme																	
Cabinet width (mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	400	400	600	600	800	600	
Equipment chamber height	72E	72E	72E	72E	72E	72E	72E	72E	32E PC	72E	72E	72E	72E	72E	7E	16E	
Max. working current (A)	1600 × 2	1600 × 2	1600 × 2	1600 × 2	1600 × 2	630 × 3	630 × 3	630 × 3	630	2500	4000	2000	4000	12 pcs	12 pcs		
Main equipment	ME630~ME1605 (3P~4P)	M08~M10 (3P~4P)	F,1250~F,1600 (3P~4P)	M08~M1600 (3P~4P)	F,1250~F,1600 (3P~4P)	AH630 BHG-80	M08 BHG-80	F,1250 BHG-80	AH630 or M08 or F,1250 BHG-80	BHG-100 BHG-120 or prepared by customer	Height 8E or 165Emcc	DS862-2 DX962-2 DT862-2 (Max Install 12 pcs)	DS862-2 DX962-2 DT862-2 (Max Install 12 pcs)	DS862-2 DX962-2 DT862-2 (Max Install 12 pcs)	DS862-2 DX962-2 DT862-2 (Max Install 12 pcs)	DT862-3 pcs	
Purpose	Cable incoming or outgoing										Metering		Bus connection				

Scheme number	124	125	126	127	128	129	130	131
Primary scheme								
Cabinet width (mm)	600	800	600	800	600+200	600+400	600+200	600+400
Equipment chamber height	72E	72E	72E	72E	72E	72E	72E	72E
Max. working current (A)	(8 × 16)128	(12 × 16)192	(8 × 16)128	(12 × 16)192	(8 × 16)128	(16 × 16)256	(8 × 16)128	(16 × 16)256
Main equipment	QSA-400 NT or RT20 B30C BHG-40 BCMJ3 (10~16KVAR)	QSA-400 NT or RT20 B30C BCMJ3 (10~16KVAR)	QSA-400 NT or RT20 B30C BCMJ3 (10~16KVAR)	QSA-400 NT or RT20 B30C BCMJ3 (10~16KVAR)	DCHR1-2 B30C BHG-40 BCMJ3(10~16KVAR)	DCHR1-3 N or RT20 B30C BHG-40 BCMJ3(10~16KVAR)	DCHR5-2 NT or RT20 B30C BCMJ3(10~16) BHG-40	DCHR1-3 N or RT20 B30C BCMJ3(10~16) BHG-40
Purpose	automatic control compensation cabinet	Compensation cabinet	Compensation cabinet	Compensation cabinet	automatic control compensation cabinet	Compensation cabinet	Compensation cabinet	Compensation cabinet

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LV withdrawable switchgear

Scheme number	132	133	134	135	136	137	138	139	140	141	142	143
Primary scheme												
Device capacitance (KVA)	200-500	630-800	1000-1600	2000-2500	200-500	630-800	1000-1600	2000-2500	200-500	630-800	1000-1600	2000-2500
<small>(Outline dimensions: height x depth x width)</small>	2200 x 1800 x 1200	2200 x 2200 x 1400	2400 x 2400 x 1600	2600 x 2600 x 1600	2200 x 1800 x 1200	2200 x 2200 x 1400	2400 x 2400 x 1600	2600 x 2600 x 1600	2200 x 1800 x 1200	2200 x 2200 x 1400	2400 x 2400 x 1600	2600 x 2600 x 1600
Main equipment	SCB-200/10 SCB-250/10	SCB-630/10 SCB-800/10	SCB-1000/10 SCB-1250/10 SCB-1600/10	SCB-2000/10 SCB-2500/10	SCB-200/10 SCB-250/10 SCB-300/10 SCB-400/10 SCB-500/10	SCB-630/10 SCB-800/10	SCB-1000/10 SCB-1250/10 SCB-1600/10	SCB-2000/10 SCB-2500/10	SCB-200/10 SCB-250/10 SCB-300/10 SCB-400/10 SCB-500/10	SCB-630/10 SCB-800/10	SCB-1000/10 SCB-1250/10 SCB-1600/10	SCB-2000/10 SCB-2500/10
Electric power transformer	SCB-31.5/10 SCB-400/10 SCB-500/10											
Purpose	Cable lower incoming, lower outgoing											
	Cable lower incoming, bus side outgoing											
	Cable lower incoming, busbar upper outgoing											
Scheme number	144	145	146	147	148	149	150	151	152	153	154	155
Primary scheme												
Device capacitance (KVA)	200-500	630-800	1000-1600	2000-2500	200-500	630-800	1000-1600	2000-2500	200-500	630-800	1000-1600	2000-2500
<small>(Outline dimensions: height x depth x width)</small>	2200 x 1800 x 1200	2200 x 2200 x 1400	2400 x 2400 x 1600	2600 x 2600 x 1600	2200 x 1800 x 1200	2200 x 2200 x 1400	2400 x 2400 x 1600	2600 x 2600 x 1600	2200 x 1800 x 1200	2200 x 2200 x 1400	2400 x 2400 x 1600	2600 x 2600 x 1600
Main equipment	SCB-200/10 SCB-250/10	SCB-630/10 SCB-800/10	SCB-1000/10 SCB-1250/10 SCB-1600/10	SCB-2000/10 SCB-2500/10	SCB-200/10 SCB-250/10 SCB-300/10 SCB-400/10 SCB-500/10	SCB-630/10 SCB-800/10	SCB-1000/10 SCB-1250/10 SCB-1600/10	SCB-2000/10 SCB-2500/10	SCB-200/10 SCB-250/10 SCB-300/10 SCB-400/10 SCB-500/10	SCB-630/10 SCB-800/10	SCB-1000/10 SCB-1250/10 SCB-1600/10	SCB-2000/10 SCB-2500/10
Electric power transformer	SCB-31.5/10 SCB-400/10 SCB-500/10											
Purpose	busbar side incoming, cable lower outgoing											
	side outgoing, side outgoing											
	Bus side incoming, upper outgoing											

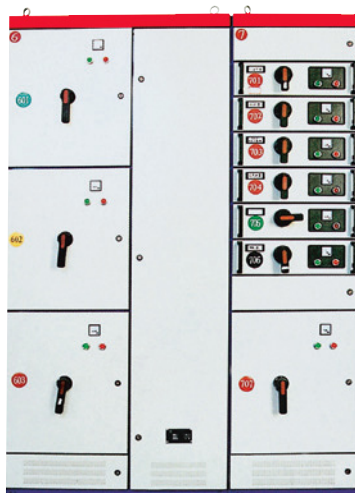
Instruction:

1. The transformer and its outgoing and incoming line can be chosen according to requirement.
2. When on-load voltage tapping is installed, the width of outline dimension should be widened by 500mm or deepened by 400mm, please negotiate with factory for details.
3. The instruction and diagram reference will be updated successively as the times goes by, and we will not notice separately, so please contact our company.

GCS

LV withdrawable switchgear

General



GCS LV withdrawable switchgear (hereinafter referred to as device) is developed according to the requirements from industry competent department, numerous electric users and design unit by original state mechanical department, united design group of power department. It conforms to national conditions and with higher technical performance index, and adapts the demands for power market development and able to compete with available imported products. The device passed the authentication jointly presided by two departments in July 1996 in Shanghai. It obtains the recognition and affirmation from manufacturing unit and power consumer construction.

The device is applicable to the distribution system of power station, petroleum, chemical engineering, metallurgy, weaving and tall building industries etc. In the places with high automaticity and need computer to joint, such as large-scale power station and petrochemical industry system etc, it is the low voltage complete distribution device used in the generating and power supply system with three-phase AC50(60)Hz, rated working voltage 380V, rated current 4000A and below for distribution, motor central control and reactive power compensation. The device accords with standards IEC439-1 and GB7251.1.

Characteristics

1. Main framework adopts 8MF bar steel. Both sides of bar steel is installed with $\phi 9.2$ mm mounting hole with modulus 20mm and 100mm. Inner installation is flexible and easy.
2. Two types of assembly form design for main framework, full assembly structure and partial (side frame and cross rail) welding structure for user's selection.
3. Each function compartment of device is separated mutually. The compartments are divided into function unit compartment, bus bar compartment and cable compartment. Each one has relative independent function.
4. Horizontal bus bar adopts cabinet back level placed array pattern for enhancing the capacity of resisting electrodynamic force for bus bar. It is the basic measure for obtaining high short circuit strength capacity for main circuit.
5. Cable compartment design makes cable outlet and inlet up and down convenient.

Main technical parameters

Rated voltage of main circuit (V)		Rated short time withstand current of bus bar (kA/1s)	50, 80
AC	380(400), (660)	Rated peak withstand current of bus bar (kA/0.1s)	105, 176
Rated voltage of auxiliary circuit (V)		Line frequency test voltage (V/1min)	
AC	220, 380(400)	Main circuit	2500
DC	110, 220	Auxiliary circuit	1760
Rated frequency (Hz)	50(60)	Bus bar	
Rated insulation voltage (V)	660(1000)	Three-phase four-wire system	A.B.C.N
Rated current (A)		Three-phase five-wire system	A.B.C.PE.N
Horizontal bus bar	≤ 4000	Protection grade	IP30, IP40
(MCC) Vertical bus bar	1000		

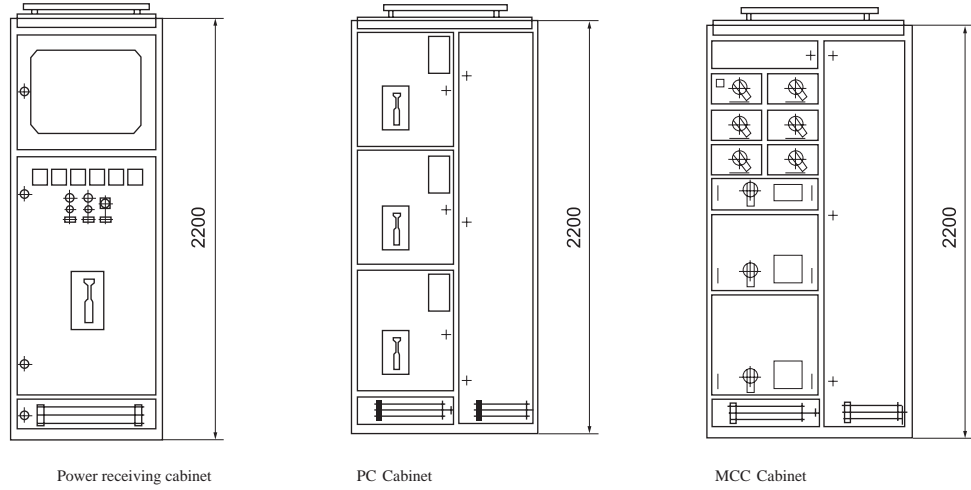
Conditions for normal operating environment

1. Ambient air temperature: $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$ and the average temperature should not exceed $+35^{\circ}\text{C}$ in 24h.
2. Relative humidity should not exceed 50% at max temperature. Higher relative humidity is allowed at lower temperature. Ex. 90% at $+20^{\circ}\text{C}$. But in view of the temperature change, it is possible that moderate dews will produce casually.
3. Altitude above sea level should not exceed 2000M.
4. Installation gradient not exceed 5° .
5. Indoor without dust, corrosive gas and rain water attack.

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LV withdrawable switchgear

Interior structure



H	2200											
W	400			600			800			1000		
D	800	1000	800	1000	600	800	1000	600	800	1000		

Primary wire scheme diagram

Main circuit scheme	01	02	03	04																			
Line diagram																							
Purpose	Electrification (upper incoming line)			Electrification (lower incoming line)			Electrification (lower incoming line)			Interconnection													
Standardization serial No	A B C D E F G			A B C D E F G			A B C D E F G			A B C D E F G													
Short time withstand current / instantaneous withstand current	80/176			80/176			80/176			80/176													
	50/105			50/105			50/105			50/105													
Rated current (A)	4000 3150 2500 2000 1600 1000 630			4000 3150 2500 2000 1600 1000 630			2500 2000 1600 1000 630			4000 3150 2500 2000 1600 1000 630													
Main electrical appliance	30/63			30/63			30/63			30/63													
	AH-40C	1					1					1											
	AH-30CH		1					1						1									
	AH-25C			1					1						1								
	AH-20C				1					1						1							
	AH-16B					1					1					1							
	AH-10B						1					1					1						
	AH-6B							1					1					1					
SDL- □														(1)	(1)	(1)	(1)	(1)					
SDH- □□ /5	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)					
Cabinet width mm	800(1000)		600		800(1000)		600		800		600		1000		800								
Cabinet depth mm	1000		800		1000		800		800				1000		800								
Occupied cabinet height mm																							

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LV withdrawable switchgear

Main circuit scheme	05	06	07	08	
Line diagram					
Purpose	Bus adaptation	Feeding	Manual switch-over of dual power supply	Manual switch-over of dual power supply	
Specification serial No		A B C	A B	A B C D E F G	
Short time withstand current / instantaneous withstand current (kA)		50/105 30/63	50/105 30/63	50/105 30/63	
Rated current (A)		1600 1000 630	1000 630	1000 630	
Main electrical appliances	AH-16B	1		1	
	AH-10B		1	1	1
	AH-6B		1	1	1
	QPS-1000			1	1
	QPS-630				
	SDL- □		(1) (1) (1)		
	SDH- □□ /5		1(3) 1(3) 1(3)	3(4) 3(4)	3(4) 3(4)
Cabinet width mm	400(600)	1000	1000	1000	
Cabinet depth mm	800(1000)	800(1000)	800	800	
Occupied cabinet height mm		640			

- AH is master circuit breaker, it can also choose imported F, MT series or circuit breaker with more advanced performance.
- 01, 02, 04 scheme, e.g.: When the PE+N needs to enter power cabinet, the width size adopts the one in the bracket.
- SDL and SDH are special current transformers for BGCS cabinet.

Main circuit scheme	09	10	11	12	
Line diagram					
Purpose	Manual switch-over of dual power supply	Feeding	Feeding	Current limiting reactor	
Specification serial No	A B	A B C D	A B C	C	
Short time withstand current / instantaneous withstand current (kA)	50/105 30/63	50/105 30/63	50/105 30/63		
Rated current (A)	400 250	630 400 250 160	400 200 100	600	
Main electrical appliances	QSA-630	1			
	QSA-400		1		
	QSA-250		1		
	QSA-160		1		
	600A 0.0084Q				3
	B370,LR1,CJ35	1			
	B250,LR1,CJ35		1		
	TG400BD,CM1-400M,TM30	1	1	1	
	TG225BD,CM1-225M,TM30			1	
	TG100BD,CM1-100M,TM30			1	
SDL- □		(1) (1) (1) (1)	(1) (1) (1)		
SDH- □□ /5		1(3) 1(3) 1(3) 1(3)	1(3) 1 1		
Cabinet width mm	800(1000)	1000	800(1000)	600	
Cabinet depth mm	600	800(1000)	600	800	
Occupied cabinet height mm	480 × 2	480 320	240(160)		

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LV withdrawable switchgear

Main circuit scheme	13	14	15	
Line diagram				
Purpose	Voltage transformers		Voltage transformers	
Specification serial No				
Rated current (A)				
Main electrical appliance	QSA-63		1	1
	NT00- □	3		
	JDG-0.5 380/100	2	2	
	JSGW-0.5			1
	SDH □□ /5-			
Cabinet width mm				
Cabinet depth mm				
Occupied cabinet height mm				

Remark: feed line scheme can be equipped with zero-phase sequence protection with zero-phase sequence current transformer installed in cable chamber.

Main circuit scheme	16	17	18	19
Line diagram				
Purpose	Motor (irreversible)			Motor (irreversible)
Specification serial No	A	B	C	A
Max. control power (kW)	100	75	55	7.5
Main electrical appliance	QSA-250	1		
	QSA-160		1	
	QSA-125			1
	HH17-63			
	NT00- □			
	B250,LC1,CJ35	1		
	B170-105, LC1,CJ35	1	1	
	B85 or LC1-D80			
	B45 or LC1-D32			
	B16 or LC1-D18			
	T85, LR1			
	TSA45, LR1			
	T16, LR1	1	1	1
SDL- □	(1)	(1)	(1)	
SDH- □□ /5	3	3	3	
Cabinet width mm	800(1000)			800(1000)
Cabinet depth mm	600			600
Occupied cabinet height mm	480			480

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LV withdrawable switchgear

Main circuit scheme	20	21	22	23	
Line diagram					
Purpose	Motor (irreversible)			Motor (irreversible)	
Specification serial No	A B		A B C	A B C	
Max. control power (kW)	37 15		100 75 55	37 15 7.5	
Main electrical appliance	QSA-125	1			
	HH17-63	1			
	NT00- □		3		
	CM1-400LTG-400BD, TM30			1	
	CM1-225M, TM30			1 1	
	CM1-100M, TG-100BD, TM30				1 1
	NZMS4, TM30				1
	B250, LC1, CJ35			1	
	B170-105, LC1, CJ35			1 1	
	B85 or LC1-D80	2			1
	B45 or LC1-D32	2			1
	B16 or LC1-D18		2		1
	T85, LR1	1			1
TSA45, LR1	1			1	
T16, LR1		1	1 1 1	1	
SDL- □	(1) (1)	(1)	(1) (1) (1)		
SDH- □□ /5	1 1	1	3 3 3		
Cabinet width mm	800(1000)		800(1000)		800(1000) 800/2(1000/2)
Cabinet depth mm	600		600		600 600
Occupied cabinet height mm	480		480 320		240 160

Main circuit scheme	24	25		
Line diagram				
Purpose	Motor (irreversible)		Motor (irreversible)	
Specification serial No	A B C		A B C	
Short time withstand current / instantaneous withstand current (kA)	50/105		50/105	
	30/63		30/63	
Rated current (A)	100 75 55		37 15 7.5	
Main electrical appliance	CM1-400LTG-400BD, TM30	1		
	CM1-225M, TM30	1		
	CM1-100M, TG-100BD, TM30		1 1	
	NZMS4, TM30			1
	B250, LC1, CJ35	2		
	B170-105, LC1, CJ35		2	
	B85 or LC1-D80		2	
	B45 or LC1-D32		2	
	B16 or LC1-D18		2	
	T85, LR1		1	
	TSA45, LR1		1	
	T16, LR1	1 1 1		1
	SDL- □	(1) (1) (1)	(1)	(1) (1) (1)
SDH- □□ /5	3 3 3	1	1 1 1	
Cabinet width mm	800(1000)		800(1000) 800/2	
Cabinet depth mm	600		600 1000/2	
Occupied cabinet height mm	480 320		240 160	

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LV withdrawable switchgear

Main circuit scheme	26	27	28	29
Line diagram				
Purpose	Y- Δ Start	Y- Δ Start	Y- Δ Start	Y- Δ 启动 Start
Specification serial No	A B	A B	A B	A B
Short time withstand current / instantaneous withstand current (kA)	50/105 30/63	50/105 30/63	50/105 30/63	50/105 30/63
Max. control power (kW)	160 90	37 15	160 90	37 15
Main electrical appliances	QSA-400~250			1 1
	QSA-125			1
	HH17-63			1
	NT3- □	3 3		
	TG-400BD, TM30	1		
	CM1-225M, TG-225BD, TM30	1		
	CM1-100M, TG-100BD, TM30		1 1	
	B370+B250, LC1, CJ35	2+1		2+1
	B250+B170, LC1, CJ35	2+1		2+1
	B85 or LC1-D80		3	
	B45 or LC1-D80		3	
	T85, LR1		1	
	TSA45, LR1		1	
T16, LR1	1 1		1 1	
SDL- □	(1) (1)	(1) (1)	(1) (1)	
SDH- □□ / 5	3 3	1 1	3 3	
Cabinet width mm	1000	800(1000)	800(1000)	800(1000)
Cabinet depth mm	800(1000)	600	600	600
Occupied cabinet height mm	1120 960	320	800	320

Main circuit scheme	Max. control power (kW)	30	31	32
Line diagram				
Purpose		Reactive compensation(master cabinet)	Reactive compensation(master cabinet)	Common power supply
Specification serial No		A B C	A B C	
Max. compensation capacitance		160 128 96	160 128 96	
Main electrical appliances	QA-400	1 1 1	1 1 1	
	am-32	30 24 18	30 24 18	
	NT00- □			
	JBK3-400			
	B30C	10 8 6	10 8 6	
	T45, LR1	10 8 6	10 8 6	
	BCMJ-0.4-16-3	10 8 6	10 8 6	
SDH- □□ / 5	3 3 3	3 3 3		
Cabinet width mm		1000 800	1000 800	
Cabinet depth mm		800(1000)	800(1000)	
Occupied cabinet height mm				

GCK(L)

LV withdrawable switchgear cabinet



General

GCK(L) LV withdrawable switchgear cabinet is applicable to the low voltage distribution system with AC50Hz, rated working voltage 380V. It contains power center (PC) and motor control center (MCC) functions. Each technical parameter all reaches national standards. With characteristics of advanced structure, beautiful appearance, high electric performance, high protection grade, reliable and safe and easy to maintain. It is the ideal distribution device for low voltage power supply system in metallurgy, petroleum, chemical, power, machinery and light weaving industries etc.

The product accords with standards IEC-439, GB7251.1.

Characteristics

1. GCK(L)1 and GCJ1 are assemble type combined structure. The basic skeleton is assembled by adopting special bar steel.
2. Cabinet skeleton, component dimension and starter size change according to basic modulus $E=25\text{mm}$.
3. In MCC project, parts in cabinet are divided into five zones (compartment): horizontal bus bar zone, vertical bus bar zone, function unit zone, cable compartment, and neutral earthing bus bar zone. Each zone is separated mutually for circuit's normal running and effectively preventing fault expansion.
4. As all structures of framework are connected and firmed by bolts, so it avoids the welding distortion and stress, and upgrades the precision.
5. Strong general performance, well applicability and high standardization degree for components.
6. Draw-out and insert of function unit (drawer) is lever operation, which is easy and reliable with rolling bearing.

Conditions for normal operating environment

1. Altitude above sea level should not exceed 2000M.
2. Ambient air temperature: $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$ and the average temperature should not exceed $+35^{\circ}\text{C}$ in 24h.
3. Air condition: With clean air. Relative humidity should not exceed 50% at $+40^{\circ}\text{C}$. Higher relative humidity is allowed at lower temperature. Ex. 90% at $+20^{\circ}\text{C}$.
4. Places without fire, explosive danger, serious pollution, chemical corrosion and fierce vibration.
5. Installation gradient not exceed 5° .
6. Control center is suitable to the transportation and store with following temperature $:-25^{\circ}\text{C} \sim +55^{\circ}\text{C}$, in short time (within 24h) it should not exceed $+70^{\circ}\text{C}$.

GCK(L)

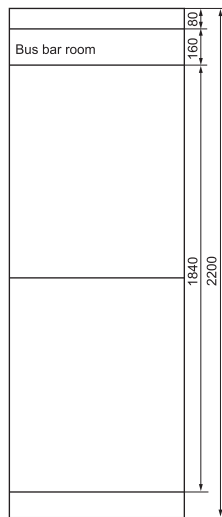
LV withdrawable switchgear cabinet

Main technical parameter

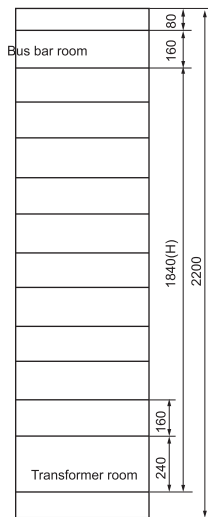
Protection grade	IP40, IP30
Rated working voltage	AC 380(V)
Frequency	50Hz
Rated insulation voltage	660V
Working conditions	
Environment	Indoors
Altitude	≤ 2000m
Ambient temperature	-5°C ~+40°C
The min temperature under store and transportation	-30°C
Relative humidity	≤ 90%
Capacity of control motor (kW)	0.4~155

(A) Rated current (A)	
Horizontal bus bar	1600, 2000, 3150
Vertical bus bar	630, 800
Contact connector of main circuit	200, 400
Supply circuit	1600
Max current	PC cabinet 630
Power receiving circuit	MCC cabinet 1000, 1600, 2000, 2500, 3150
Rated short time withstand current (kA)	
Virtual value	50, 80
Peak value	105, 176
Line frequency withstand voltage(V/1min)	2500

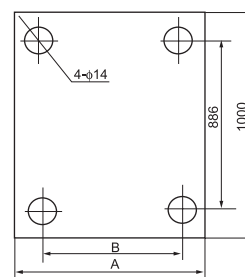
Interior structure



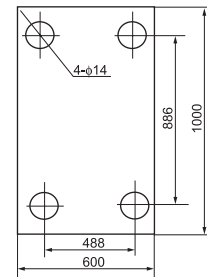
Inlet, bus bar cabinet



Inlet, bus bar cabinet



Inlet, bus bar cabinet



Inlet, bus bar cabinet

PC cabinet	2200 × 600(800, 1000) × 1000
MCC cabinet	2200 × 600 × 1000
Height of drawer	160, 240, 320, 400, 480, 560, 640
Power receiving or feeding	600, 486
Power receiving or bus bar connection	800, 686
Power receiving or bus bar connection	1000, 886

Note: "H" of combined function unit of outlet cabinet is 1600. If not using public power, it will achieve 1840.

GGD

AC LV fixed type switchgear



General

GGD AC LV fixed type switchgear is applicable to the distribution system with AC 50Hz, rated working voltage 380V, rated current to 3150A below in power station, substation, plant enterprise etc., used for power transfer, distribution and control for power, lighting and distribution devices. The product has characteristics of high breaking capacity, fine dynamic and thermal stability, flexible electric project, convenient combination, better serial practicability, novel structure and high protection grade etc. It accords with the standards IEC439 "Low voltage complete switch device and control device" and GB7251.1 "Low voltage complete switch device" etc.

Characteristics

1. The body of GGD AC LV fixed type switchgear adopts universal cabinet type. Framework is assembled with 8MF cold bending bar steel through part welding. Framework components and special mating elements are matched by bar steel pointed manufactory for ensuring the precision and quality of cabinet. Components of universal cabinet is designed according to module principle, and with 20 modulus mounting hole and high universal coefficient.
2. Completely in view of the heat rejection during cabinet running. Heat rejection slots of different quantities are installed in upper and underside both ends of cabinet.
3. According to the requirements on mold design for modern industry products, adopting the method of golden mean ratio to design cabinet outline and parting dimensions of each part, to make the whole cabinet beautiful and decent.
4. Cabinet gate is connected with framework with rotation axis type movable hinge. With convenient installation and disassembly. One mount type rubber strip is set in edge fold of gate. Filler rod between gate and framework has certain compression stroke when closing the gate. It can prevent gate from impacting cabinet directly and also advance the protection grade for gate.
5. Connect the meter gate set with electrical components with framework by multistrand soft copper wire. Connect the mounting pieces inside the cabinet with framework by knurled screws. The whole cabinet constructs complete earthing protective circuit.
6. Top cover of cabinet can be disassembled if necessary for convenience to the assembly and adjustment for main bus bar at site. Four squares of cabinet are set with slinger for hoisting and shipping.
7. Protection grade of cabinet: IP30. User can choose within IP20~IP40 according to environmental requirements.

GGD

AC LV fixed type switchgear

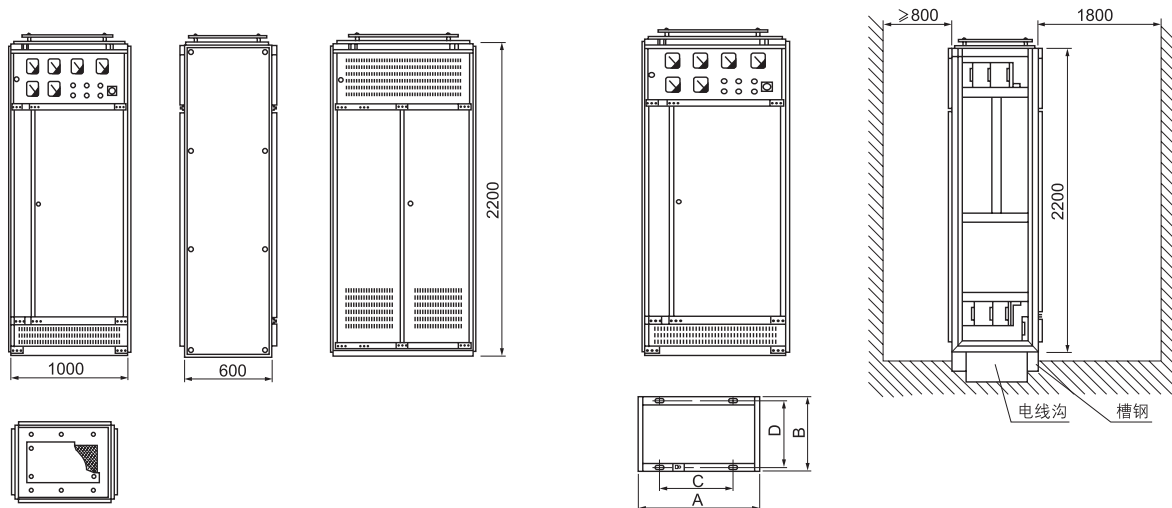
Main technical parameter

Type	Rated voltage (V)	Rated current (A)	Rated short circuit breaking current (kA)	Rated short time withstand current (kA)	Rated peak withstand current (kA)
GGD1	380	1000 600(630) 400	15	15(1S)	30
GGD2	380	1500 1600 1000	30	30(1S)	63
GGD3	380	3150 (2500) 2000	50	50(1S)	105

Conditions for normal operating environment

1. Ambient air temperature: $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$ and the average temperature should not exceed $+35^{\circ}\text{C}$ in 24h.
2. Install and use indoors. Altitude above sea level for operation site should not exceed 2000M.
3. Relative humidity should not exceed 50% at max temperature $+40^{\circ}\text{C}$. Higher relative humidity is allowed at lower temperature. Ex. 90% at $+20^{\circ}\text{C}$. But in view of the temperature change, it is possible that moderate dews will produce casually.
4. Installation gradient not exceed 5° .
5. Install in the places without fierce vibration and shock and the sites insufficient to erode the electrical components.
6. Any specific requirement, consult with manufactory.

Interior structure



Product code	A	B	C	D
GGD06	600	600	450	556
GGD06A	600	800	450	756
GGD08	800	600	650	556
GGD08A	800	800	650	756
GGD10A	1000	600	850	556
GGD10A	1000	800	850	756
GGD12	1200	800	1050	756

GGD

AC LV fixed type switchgear

Demonstration of composite scheme

Scheme number	01			02			03			04			05			06		
Main circuit scheme diagram																		
Purpose	Electrification			Electrification			Electrification			Electrification			Electrification Feeding			Electrification		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Model specification																		
HD13BX-1000/31				1			1			1			1					
HD13BX-600/31					1			1			1			1				
HD13BX-400/31						1			1			1			1	2	2	2
DW15-1000/3[]													1					
DW15-630/3[]														1				
DW15-400/3[]															1			
CJ20-400/3																	2	
CJ20-250/3																		
CJ20-160/3																		2
LMZ1-0.66[]/5										1	1	1	3	3	3	2		
LMZ3-0.66[]/5																	2	2
LMZ1-0.66[]/5																		
Cabinet width	600	600	600	1000	800	800	1000	800	800	600	600	600	800	800	800	800	800	800
Cabinet depth	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600

Scheme number	07			08			09			10			11			12		
Main circuit scheme diagram																		
Purpose	Electrification Interconnection			Electrification Interconnection			Electrification Interconnection			Electrification Interconnection			Electrification Interconnection					
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
Model specification																		
HD13BX-1000/31	1			1			1			1			2			2		
HD13BX-600/31		1			1			1			1			2			2	
HD13BX-400/31			1			1			1			1			2			2
DW15-1000/3[]				1			1			1			1			1		
DW15-630/3[]					1			1			1			1			1	
DW15-400/3[]									1			1			1			1
LMZ3-0.66[]/5				3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)	3(4)
(LMZ1-0.66[]/5)																		
Cabinet width	600	600	600	800	800	800	1000	800	800	1000	800	800	1000	800	800	1000	800	800
Cabinet depth	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600

XL-21

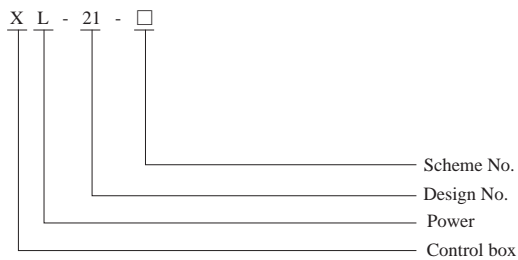
Type power distribution cabinet



General

XL-21 Type low voltage power distribution cabinet is applicable to power station and industrial and mining enterprise, used for power distribution in three-phase four-wire or three-phase five-wire system with AC 500V and below. It is installed indoors and near the wall. Repair before shield. Shell is bent with steel plate. Knife switch operation handle is installed to the upside of right column of cabinet front, can be used for switching power. Choose different types and circuit breakers with different current grades according to user's specific requirements.

Product type and meaning



Main technical parameters

Item	Unit	Parameters
Rated working voltage	V	AC380, AC660
Rated frequency	Hz	50/60
Rated short time withstand current (1s)	kA	50
Rated peak withstand current	kA	105
Dielectric strength	V/1min	2500
Rated insulation voltage	V	660
Protection grade		IP30/IP40
Outline dimension (W × D × H)	mm	600(800, 1000) × 350(400, 600) × 1600(1800)

MGB

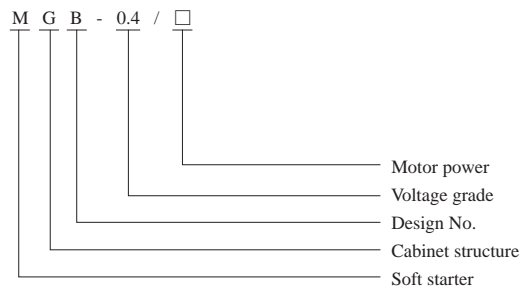
Soft start cabinet for motor

General



MGB digital soft starter is the high and new technology product designed and manufactured by our company for users. It has features of simple structure, easy operation, secure and reliable, complete functions, small starting current, small, energy-saving and long-life. It overcomes the defects brought by traditional Y- Δ start, self-coupling transformer start and resistance step-down start, such as high impulse current and impulse from torque. It is the ideal changing generation product for traditional starter by overcoming the defects of big, complex circuits, high power consumption and high maintenance rate etc.

Product type and meaning



Main technical parameters

Type	Power (kW)	Rated current (A)	Outline dimension (mm)						Weight (Kg)
			A	B	C	D	E	F	
MGB-15~30	15,17,22,30	32,37,54,75	1000	500	350	35	250	440	
MGB-37~75	37,45,55,75	86,97,130,155	1400	600	430	35	345	390	
MGB-90	90	180	1600	660	530	35	440	500	90
MGB-110	110	220	1600	660	530	35	440	500	90
MGB-132	132	260	1600	660	530	35	440	500	120
MGB-160	160	318	1600	660	530	35	440	500	120
MGB-225	225	460	1600	660	530	35	440	500	145
MGB-250	250	490	1800	660	530	35	500	450	145
MGB-320	320	630	1800	660	530	35	500	450	170
MGB-400	400	790	2000	800	600	35	400	610	200
MGB-500	500	980	2000	800	600	35	400	610	200
MGB-600	600	1100	2000	800	600	35	400	610	200
MGB-810	810	1400	2000	800	600	35	400	610	200

DFW8-12/630 SF6

Cable branch box with SF6 load switch



Applicable range

DFW8-12/630 series cable branch box with load switch adopts SF6 gas-insulated three-position load switch, with external American/European-style full-insulation cable joint, the inlet and outlet wires of switch are led out from the sleeve. Suitable for underground distribution system of 3-12kv, it is the ideal equipment for renovation of urban power grid, not only retains the advantages of traditional branch boxes, but also possesses some merits of ring main units.

Main technical parameters

Rated voltage (kV)	Rated current (A)	Rated frequency (Hz)	Rated short circuit breaking current (kA)	Rated short time withstand current (kA)	(kA) Rated peak withstand current
12	630	50	50	25(1s)	50



Operation mechanism	Rated transfer current A	1min power frequency withstand voltage kV	Lightning impulse withstand voltage kV	Mechanical life (times)	BAR Standard charged pressure of SF6 gas (20°C)	Annual leakage ratio of SF6 gas
AC/DC220V, AC/DC110V, DC48V, DC24V	1800	42 48	95 110	2000 次	0.4	≤ 0.1

DFW8-12/630 Common scheme No.



No.	01	02	03	04	05	06
Connection scheme						
No.	07	08	09	10	11	12
Connection scheme						
No.	13	14	15	16	17	18
Connection scheme						
No.	19	20	21	22	23	24
Connection scheme						
No.	25	26	27	28	29	
Connection scheme						

DFW2-12/630

Touchable cable branch box (European style)

Structural feature



1. Silicon rubber prefabricated connector structure, full insulation, full seal;
2. With functions of proofing the dust, wetness, water and corrosion, it is suitable for indoor and outdoor various environment;
3. Strong extendability, the inlet and outlet wires from 2 circuits to 8 circuits can be combined flexibly to meet various requirements for connection;
4. Maintenance free, small volume, compact structure, convenient installation, nice appearance;
5. Unique stress cone structure, integrated with silicon rubber structure can control the stress of electric field at the cutting of cable external shield.
6. The product has two selections: non-touchable CJB and touchable CJK.



Main technical parameters

Rated voltage (kV)	Long term highest working voltage (kV)	Rated current (A)	Rated dynamic current(peak value) kA	Rated frequency (Hz)	Rated thermal Current (kA)	Power frequency withstand voltage (kV)	Lightning impulse withstand voltage (kV)
10	15	630	50	20/25	50	45	150

Contact resistance	Working temperature of conductor °C	Partial discharge PC/kV	Dampness test kV/h	Applicable cable type	Applicable cable sectional area mm ²	Applicable environment temperature °C	Applicable altitude m
≤ 40μΩ	≤ 95°C	≤ 10PC/13kV	11kV/100	XLPE	25~400mm ²	-40°C ~50°C	≤ 3000m

DFW2-12/630 Common scheme No.



No.	01	02	03	04	05	06
Wiring Schemes						
No.	01	02	03	04	05	
Wiring Schemes						

DFW2-12/630 Touchable cable branch box



High voltage charged display