Our goal is the sea of stars!

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Giantele®

GGD

Low Voltage Fixed Switchgear



www.giant-electric.com

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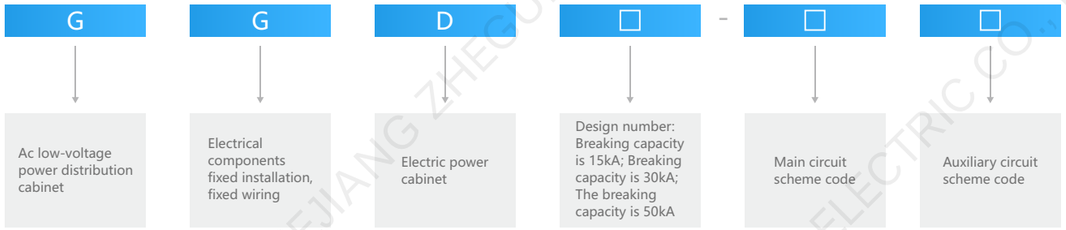
Product introduction

GGD type AC low-voltage distribution cabinet is suitable for power plants, substations, factories and mining enterprises and other power users of AC 50Hz, rated working voltage 380V, rated working current to 3150A distribution system, as a power. Electrical energy conversion, distribution and control of lighting and distribution equipment.

GGD type AC low-voltage power distribution cabinet is a new type of low-voltage power distribution cabinet designed according to the requirements of the department of Energy supervisor and the majority of power users and design departments, in line with the principles of safety, economy, reasonable and reliable. The product has the characteristics of high breaking capacity, good dynamic and thermal stability, flexible electrical scheme, convenient combination, series, practicability, novel structure, high protection level, and can be used as the replacement of low-voltage switchgear. GGD type AC low-voltage distribution cabinet conforms to IEC439 "Low-voltage switchgear and control equipment" GB7251 "Low-voltage switchgear" and other standards.



Model meaning



Environmental condition

- The ambient air temperature shall not be higher than +40 ° C, not lower than -5 ° C, and the average temperature within 24 hours shall not be higher than +35 ° C;
- For indoor installation and use, the altitude of the use place shall not exceed 2000m;
- The relative humidity of the surrounding air should not exceed 50% at the maximum temperature of +40℃, and a larger relative humidity should be allowed at a lower temperature (such as 90% at +20℃), considering that the effect of condensation may occur occasionally due to changes in temperature;
- The inclination between the equipment and the vertical plane shall not exceed 5°;
- The equipment should be installed in a place without violent vibration and impact, and not enough to corrode the electrical components;
- Users have special requirements can be negotiated with the manufacturer to solve.

Technical parameter

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

Main circuit scheme

GGD cabinet main circuit design 129 schemes, a total of 298 specifications (excluding the auxiliary circuit function changes and control voltage changes derived from the scheme and specifications);

Among them:

GGD1 type 49 schemes 123 specifications;

GGD2 53 schemes 107 specifications;

GGD3 type 27 schemes 68 specifications;

The main circuit scheme is selected and compiled after soliciting the opinions of the majority of design and use departments, which increases the scheme required by the power plant. Rated current up to 3150A, suitable for 2000kVA and below distribution transformer selection. In addition, GGJ1 and GGJ2 capacitor compensation cabinets are designed to meet the needs of reactive power compensation. There are 4 main circuit schemes and 12 specifications in total.

Auxiliary circuit scheme

The design of the auxiliary circuit is divided into two parts: power supply scheme and power plant scheme. GGD cabinet has enough space to install secondary components. At the same time, NLS has also developed a special LMZ3D type current transformer to meet the needs of power plants and special users with relay protection.

Main busbar

Considering the price ratio and the feasibility of replacing copper with aluminum, single aluminum bar bus can be used when the rated current is 1500A and below, and double copper bar bus can be used when the rated current is greater than 1500A. The manufacturer will manufacture a prototype according to this regulation and pass the type test. The manufacturer can also change the aluminum busbar to the copper busbar with the same load capacity according to the requirements of the user.

Electrical component selection

GGD cabinet mainly uses the domestic has been able to mass production of the more advanced electrical components, but also according to the principle of economy, reasonable, in full consideration of the feasibility of the premise of retaining part of the available old products such as DZ1OD.1DZ20, do not choose the eliminated products.

HD13BX and HS13BX rotary operating knife switch is a special component designed for the unique structure of GGD cabinet. It changes the operation mode of the mechanism and retains the advantages of the old product. It is a utility model electrical component. If the design department chooses new electrical components with better performance and more advanced technology according to the needs of users, the GGD cabinet will generally not cause difficulties in manufacturing and installation due to its good installation flexibility.

In order to further improve the dynamic stability of the main circuit,GGD cabinet special ZMJ combined bus clamp and insulation support. Bus clamp by high strength, high flame retardant type PPO alloy material thermoplastic molding, high insulation strength, good self-extinguishing ability, unique structure, just adjust the building block can be easily combined into a single bus clamp or double bus clamp, insulation support is sleeve molding structure, low cost, high strength, to solve the old product creepage distance is not enough defects.

Structural characteristics

GGD type AC low-voltage power distribution cabinet adopts the form of general cabinet, the frame is made of 8MF cold-formed steel by partial welding assembly, and the frame parts and special supporting parts are supplied by the section steel fixed point production factory to ensure the accuracy and quality of the cabinet. The components of the general cabinet are designed according to the module principle and have 20 mold mounting holes. The high general coefficient can enable the factory to achieve pre-production, which not only shortens the production cycle, but also improves the work efficiency.

GGD cabinet design fully takes into account the heat dissipation problem in the operation of the cabinet. There are different number of heat dissipation slots at both ends of the cabinet. When the electrical components in the cabinet are heated, the hot air rises and is discharged through the upper slot, and the cold air is constantly supplemented by the lower slot into the cabinet, so that the sealed cabinet forms a natural ventilation channel from the bottom up to achieve the purpose of heat dissipation.

GGD cabinet in accordance with the requirements of modern industrial product design, the golden section ratio method is used to design the shape of the cabinet and the partition size of each part, so that the whole cabinet is beautiful and elegant.

Giantele®

Structural characteristics

The cabinet door is connected to the frame with a rotating shaft movable hinge, easy to install and disassemble, and there is a mountain rubber and plastic strip embedded in the hem of the door. When closing the door, the strip between the door and the frame has a certain compression stroke, which can prevent the door from directly colliding with the cabinet, and also improve the protection level of the door.

The instrument door equipped with electrical components is connected to the frame with multiple strands of soft copper wire, and the installation parts in the cabinet are connected to the frame with knurled screws. The whole cabinet constitutes a complete grounding protection system.

The top paint of the cabinet is made of polyester orange baking paint, which has strong adhesion and good texture. The whole cabinet is in matte tone, avoiding glare effect and creating a more comfortable visual environment for the staff on duty.

The top cover of the cabinet can be removed when needed to facilitate the assembly and adjustment of the main bus line on site. The four corners of the cabinet top are equipped with hanging rings for lifting and loading.

The protection level of the cabinet is IP30, and the user can also choose between IP20 and IP40 according to the requirements of the use environment.

Installation and use

After the product arrives at the receiving pile point, it should first check whether the packaging is complete and intact, and notify the relevant departments in time to find the cause. For products that are not immediately installed, they should be placed in an appropriate place according to the provisions of normal conditions of use.

Product installation

The installation of the product shall be carried out in accordance with the installation diagram (see attached figure 2). The base channel steel and bolts shall be prepared by the user. When the main busbar is installed in a row of tinning, the bonding surface shall be repaired and smoothed, coated with neutral Vaseline or other measures shall be taken, and then reinforced with bolts.

The following items should be checked and tested before the product is installed and put into operation

- Check whether the cabinet surface paint has fallen off, and whether the cabinet is dry and clean;
- Whether the operating mechanism of the electrical components is flexible, and there should be no stuck or excessive operating force;
- Whether the main and auxiliary contacts of the main electrical appliances are reliable and accurate;
- Whether the ratio and polarity between the instrument indication and the transformer are correct;
- Whether the bus bar is well connected, and whether the insulation support parts, mounting parts and accessories are firmly and reliably installed;
- Whether the auxiliary contact meets the requirements, whether the core specification of the fuse is correct, whether the setting value of the relay meets the design requirements, and whether the operation is reliable and accurate;
- Whether the contact of the circuit meets the requirements of the electrical schematic diagram;
- Whether the protection circuit system meets the requirements;
- The insulation resistance measured with a 500 volt megohm meter shall not be less than 1 megohm.

Precautions for use

This product is not installed on the wall, single side (front) operation, double-sided door maintenance of low-voltage distribution cabinet. The maintenance channel and cabinet door of the product must be entered or opened by qualified professionals for operation, inspection and maintenance.

The air circuit breaker, after many times of closing and splitting, will cause local burns of the main contact and produce carbon substances, so that the contact resistance increases, and the air circuit breaker should be regularly maintained and repaired according to its operating instructions.

The manufacturer shall provide the following documents and attachments when supplying:

- Packing list
- Product certificate
- Instruction manual
- Delivery test report
- About electrical drawings
- Cabinet door keys, handling handles and spare parts specified in the contract.



○ Shape and size (mm)

Outline diagram

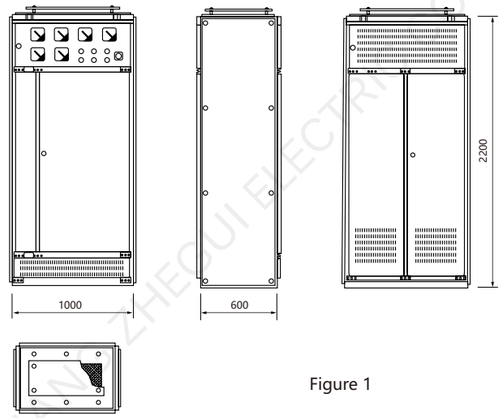


Figure 1

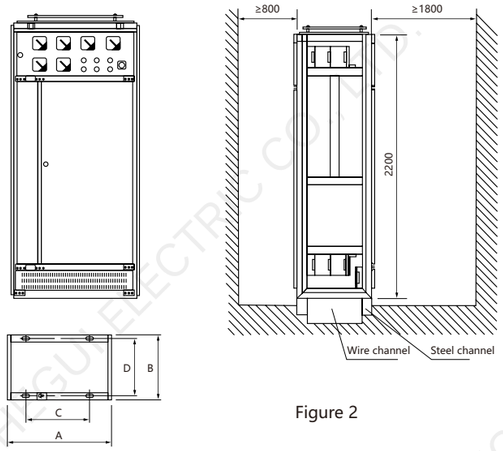


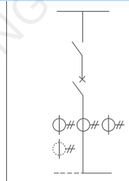
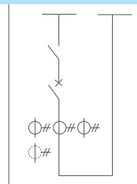
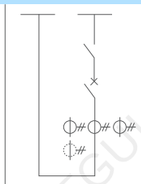
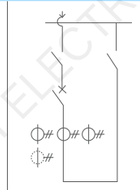
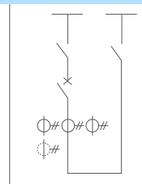
Figure 2

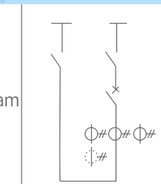
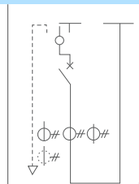
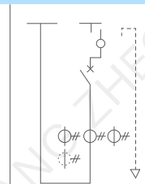
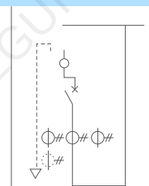
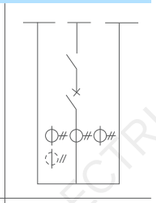
Installation diagram

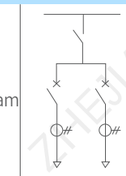
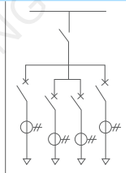
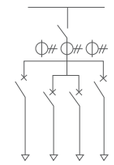
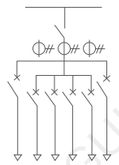
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GGD06A	600	800	450	756
GGD08	800	600	650	556
GGD08A	800	800	650	756
GGD10	1000	600	850	556
GGD10A	1000	800	850	756
GGD12	1200	800	1050	756

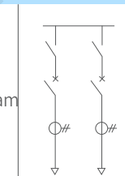
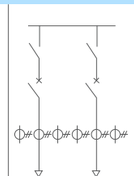
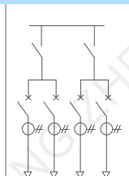
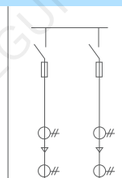
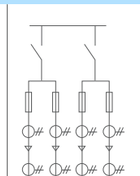
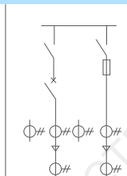
○ GGD1 main circuit scheme

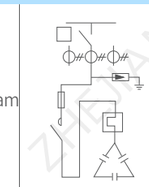
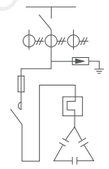
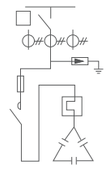
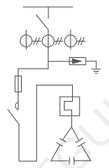
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Major electrical component	Type specification	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
	HD13BX−1000/31				1			1			1			1					
	HD13BX−600/31					1			1			1			1				
	HD13BX−400/31						1			1			1			1	2	2	2
	GTW1−1000/3 1000A													1					
	GTW1−1000/3 630A														1				
	GTW1−1000/3 400A															1			
	CJ20−400/3																2		
	CJ20−250/3																	2	
	CJ20−160/3																		2
	BH−0.66□/5										1	1	1	3	3	3	2	2	2
width		600	600	600	1000	800	800	1000	800	800	600	600	600	800	800	800	800	800	800
Depth		600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Remark																			

Scheme number		07			08			09			10			11			12		
Main circuit scheme diagram																			
use		electrify	contact		electrify	contact		electrify	contact		electrify	contact		electrify			electrify	contact	
Major electrical component	Type specification	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
	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
	GTW1−1000/3 1000A				1			1			1			1			1		
	GTW1−1000/3 630A					1			1			1			1			1	
	GTW1−1000/3 400A						1			1			1			1			1
	BH−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)
width		600	600	600	800	800	800	1000	800	800	1000	800	800	1000	800	800	1000	800	800
Depth		600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Remark																			

Scheme number		13			14			15			16			17			18		
Main circuit scheme diagram																			
use		electrify	contact		electrify	standby		electrify	standby		electrify	standby					electrify		
Major electrical component	Type specification	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
	HD13BX−1000/31	2																	
	HD13BX−600/31		2																
	HD13BX−400/31			2															
	HS13BX−1000/31(41)				1			1			1								
	HS13BX−1000/31(41)					1			1			1							
	HS13BX−1000/31(41)						1			1			1						
	GTW1−1000/3 1000A	1			1			1			1								
	GTW1−1000/3 630A		1			1			1			1							
	GTW1−1000/3 400A			1			1			1			1						
	BH−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)
width		600	600	600	1000	800	800	1000	800	800	600	600	600	800	800	800	800	800	800
Depth		600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Remark																			

Scheme number		19			20			21			22			23			24		
Main circuit scheme diagram																			
use		feed			feed			feed			feed								
Major electrical component	Type specification	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
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	HD13BX−600/31		1								1								
	HD13BX−400/31					1			1										
	HD13BX−200/31			1															
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Depth		600	600	600	600	600		600	600		600								
Remark																			

Scheme number		25			26			27			28			29			30		
Main circuit scheme diagram																			
use		feed						feed			feed			feed			feed		
Major electrical component	Type specification	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
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	HD13BX−400/31	2			2				2			2			2			2	
	HD13BX−200/31		2		2								2			2			
	GTW1−1000/3 630A																1		
	GTW1−1000/3 400A																	1	
	GTM1−250/3P	2			2			4											
	GTM1−125/3P		2			2			4										
	RTO−□										6	6	6	12	12	12			
	BH−0.66[ ]/5	2	2		6	6		4	4		2	2	2	4	4	4	4	4	
	LJ−□										2	2	2	4	4	4	2	2	
width		800	600		800	600		800	800		800	800	800	800	800	800	800	800	
Depth		600	600		600	600		600	600		600	600	600	600	600	600	600	600	
Remark																			

Scheme number		GGJ1-01			GGJ1-02			GGJ2-01			GGJ2-02								
Main circuit scheme diagram																			
use		Reactive power compensation			Reactive power compensation			Reactive power compensation			Reactive power compensation								
Major electrical component	Type specification	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
	HD13BX-1000/31							1	1	1	1	1	1						
	HD13BX-400/31	1	1	1	1	1	1												
	BH-0.66□/5	3	3	3	3	3	3	3	3	3	3	3	3						
	AM3-32	30	24	18	30	24	18	30	24	18	30	24	18						
	FYS-0.22	3	3	3	3	3	3	3	3	3	3	3	3						
	CJ19-32/□	10	8	6	10	8	6	10	8	6	10	8	6						
	JR36-63/32□	10	8	6	10	8	6	10	8	6	10	8	6						
	JKL5C-□	1	1	1				1	1	1									
	BSMJ0.4-16-3	10	8	6	10	8	6	10	8	6	10	8	6						
width		1000	800	800	1000	800	800	1000	800	800	1000	800	800						
Depth		600	600	600	600	600	600	600	600	600	600	600	600						
Remark																			