

GGD

低压成套开关柜

GGD Low Voltage Whole Set Switchgear



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概述 General

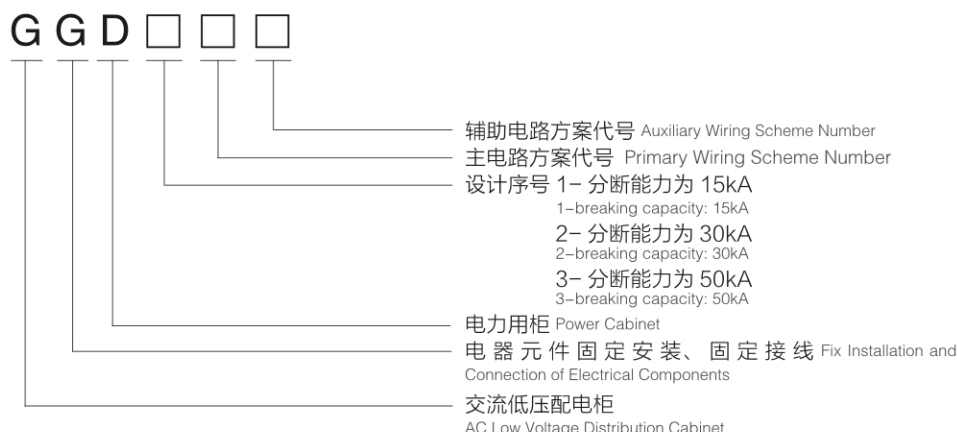
GGD 型交流低压配电柜适用于发电厂、变电站、工矿企业等电力用户的交流 50Hz，额定工作电压 380V，额定工作电流 3150A 的配电系统，做为动力、照明及配电设备的电能转换、分配与控制之用。产品具有分断能力高、动热稳定性好、电气方案灵活、组合方便、实用性强、结构新颖、防护等级高等特点。可作为低压成套开关设备的更新换代产品使用。

GGD 型交流低压配电柜符合 IEC439《低压成套开关设备和控制设备》GB7251《低压成套开关设备》等标准。

GGD AC low voltage distribution cabinet is suitable for power plant, transformer substation, and industrial and mining enterprises etc., used in distribution system of AC 50Hz, rated working voltage: 380V, rated working current: 3150A for powering, lighting and transferring, distributing and controlling the distribution devices. High breaking capacity, good moving and heat stability, flexible scheme, convenient assembly, strong utility, new structure and high protection degree are the advantages of GGD. It can be used as the replacement equipment for low voltage whole set switchgear.

GGD AC low voltage distribution cabinet meets the following standards: IEC439-1 "Low Voltage Whole Set Switching and Controlling Equipment" and GB7251.1-2013 "Low Voltage Switchgear".

型号含义 Type Designation



正常使用条件 Working Conditions

- ◆ 周围空气温度不高于 +40℃，不低于 -5℃。24h 以内的平均温度不得高于 +35℃。
Ambient temperature: -5~+40℃ and the average temperature in 24h must below 35℃
- ◆ 户内安装使用，使用地点的海拔高度不得超过 2000m。
Altitude: ≤ 2000m (indoor type)
- ◆ 周围空气相对湿度在最高温度为 +40℃ 时不超过 50%，在较低温度时允许有较大的相对湿度。（例如 +20℃ 时为 90%）应考虑到由于温度变化可能会偶然产生凝露的影响。
Humidity: ≤ 50% at the highest ambient temperature +40℃, lower temperature with higher humidity, such as ≤ 90% at 20℃, mild condensation occasionally happens for the variations of the temperature.
- ◆ 设备安装时与垂直面的倾斜度不超过 5°。
The inclination to the vertical plane is not more than 5°.
- ◆ 设备应安装在无剧烈震动和冲击的地方，以及不足以使电器元件受到腐蚀的场所。
It is applicable in the place without violent vibration and impulsion and corrosive pollution.
- ◆ 用户有特殊要求时与制造厂协商解决。
Other special requirements need to be discussed when ordering.

基本电气参数 Specifications

型号 Item	额定电压 (V) Rated Voltage (V)	额定电流 (A) Rated Current (A)	额定短路 开断电流 (kA) Rated Short-circuit Breaking Current (kA)	额定短时 耐受电流 (1S)(kA) Rated Short-time Withstand Current (1s) (kA)	额定峰值 耐受电流 (kA) Rated Peak Withstand Current (kA)
GGD1	380	A 1000	15	15	30
		B 600(630)			
		C 400			
GGD2	380	A 1500(1600)	30	30	63
		B 1000			
		C 600			
GGD3	380	A 3200	50	50	105
		B 2500			
		C 2000			

◆主电路方案

GGD 柜的主电路设计了 129 个方案，共 298 个规格（不包括辅助电路的功能变化及控制电压的变化而派生的方案和规格）。其中 GGD1 型 49 个方案 123 个规格，GGD2 型 53 个方案 107 个规格，GGD3 型 27 个方案 68 个规格。

主电路方案是征求了广大设计使用部门的意见选编的，增加了发电厂需要的方案。额定电流增加到 3200A，适合 2000kVA 及以下的配电变压器选用。此外，为适应无功补偿的需要设计了 GGJ1、GGJ2 电容补偿柜，其主电路 4 个方案，共 12 个规格。

◆Primary Wiring Scheme

There are 129 sets and 298 regulations of the main circuit scheme of GGD cabinet (not including the derived ones by changing the auxiliary circuit control and protection). GGD1: 49 sets and 123 regulations, GGD2: 53 sets and 107 regulations, GGD3: 27 sets and 68 regulations.

Primary wiring scheme is selected from the opinions of the departments of design and use and add the schemes for power plants. Rated current is up to 3200A to cater to the distribution transformer with 2000kVA and below. In addition, to cater to the need of reactive compensation, GGJ1 and GGJ2 capacity compensation cabinet (4 sets and 12 regulations) are designed.

◆辅助电路方案

辅助电路的设计分供用电方案和发电厂方案两部分，GGD 柜内有足够的空间安装二次元件。

◆Auxiliary Wiring Scheme

There are two parts of the auxiliary wiring scheme: power supply scheme and power plant scheme. GGD cabinet has enough space for installing secondary components.

◆电器元件选择

GGD 柜主要采用国内已能批量生产的较先进的电器元件，如 ME、DW15、DW17、DW45、CM1、NM1 等，同时也根据经济、合理的原则，在充分考虑可行性的前提下保留了部分可用的老产品如 DZ2 等。不选用已淘汰的产品。

HD13BX 和 HS13BX 型旋转操作式刀开关为满足 GGD 柜独特结构的需要而设计的专用元件，它改变了机构的操作方式，保留了老产品的优点，是一种实用新型的电器元件。

如设计部门根据用户需要，选用性能更优良、技术更先进的新型电器元件时，因 GGD 柜具有良好的安装灵活性，一般不会因更新电器元件造成制造和安装方面的困难。

为进一步提高主电路的动稳定能力，配用 GGD 柜专用的 ZMJ 型组合型组合式母线夹和绝缘支撑件。母线夹由高强度、高阻燃型热塑成型，绝缘强度高、自熄性能好、结构独特，只需调整积木式间块即可方便地组合成单母线夹或双母线夹，绝缘支撑时套筒式模压结构，成本低、强度高，解决了老产品爬电距离不够的缺陷。

◆Electrical Components Selection

GGD cabinet adopts advanced electric components which can be volume produced domestically, such as ME, DW15, DW17, DW45, CM1, NM1 etc. Meanwhile, the old types such as DZ2 are still reserved for economical and practical consideration. Obsolete products are not chosen.

HD13BX and HS13BX types rotating operating switch are exclusively designed for the special structure of GGD cabinet. They are new types of electric components reserved advantages of the old types and with new operation mechanism.

Due to the excellent flexibility of GGD cabinet, there is no trouble for manufacturing and installing of updated electric components with better performance and technology according to the users' needs.

ZMJ type combined busbar clamp and isolating support parts are equipped in GGD cabinet for further improving the moving stability of the main circuit. The combined busbar clamp is composed of high strength and flame retardant synthetic material for moulding with high dielectric strength, good self-extinguishing capability, and unique structure which can become single busbar clamp or double busbar clamp by adjusting the gap with building block type

结构简介 Structure Introduction

- ◆ GGD 型交流低压配电柜的柜体采用通用柜的型式，构架用 8MF 冷弯型钢局部焊接组装而成，构架零件及专用配套零件由型钢定点生产厂配套供货，以保证柜体的精度和质量。

通用柜的零部件按模块原理设计，并有 20 模的安装孔。通用系数高，可以使工厂实现预生产，既缩短了生产制造周期，也提高了工作效率。

GGD type AC low voltage distribution cabinet adopts general cabinet types. The frame is made of 8MF cold forming sectional steel by partially welding. Frame accessories and exclusively matched accessories are supplied by pointed structural steel plant to guarantee the accuracy and quality of the cabinet. Accessories of the general cabinet are moulding designed and there are 20 moulding installation holes. So the general coefficient is high enough to let the company to pre-produce, then the period of manufacturing shortens and the working efficiency improves.

- ◆ GGD 柜设计时充分考虑到柜体运行中的散热问题。在柜体上下两端均有不同数量的散热槽孔，当柜内电器元件发热后，热量上升，通过上端槽孔排出，而冷风不断地由下端槽孔补充进柜，使密封的柜体自下而上形成一个自然风道，达到散热的目的。

The design of the GGD cabinet takes full consideration of cooling during its operation, so there are a lot of cooling holes at top of and at bottom of the cabinet. When the electric components inside the cabinet heats, the temperature rises and it can be released through the upper cooling holes. Then the cold wind can be sucked into the cabinet through the lower cooling holes. Such natural air system in the sealed cabinet achieves the purpose of cooling.

- ◆ GGD 柜按照现代工业产品造型设计的要求，采用黄金分割比的方法设计柜体外形和各部分的分割尺寸，使整柜美观大方，面目一新。

GGD cabinet is modeling designed according to the requirements of modern industrial products which adopt the method of golden section to design the cabinet outline and inner parts to make the whole set new elegant appearance.

- ◆ 柜门用转轴活动铰链与构架相连，安装拆卸方便，门的折边处均嵌有一根山型橡塑条，关门时门与框之间的嵌条有一定压缩行程，能防止门与柜体直接碰撞，也提高了门的防护等级。

Cabinet door is connected to the frame by revolving hinge for convenient installation. There is a mountain shape plastic bar at the edgefold of the door, so there is a certain compression stroke between door and frame when the door is closing to prevent direct impact and improve the protection degree of the door.

- ◆ 装有电器元件的仪表门用多股软铜线与柜架连接，柜内的安装件与柜架间用滚花螺钉连接，整柜构成完整的接地保护电路。

The instrument door, equipped with electric components connects to the frame by soft copper wire. The installation parts connect to the frame by knurled screw. The whole set has complete grounding circuit.

- ◆ 柜体表面采用喷塑，附着力强，质感好，整柜呈亚光色调，避免了眩目效应，给值班人员创造了较舒适的视觉环境。

The surface of the cabinet is coated with strong adhesion, good texture and muted tone powder, which avoid dazzling and make a comfortable visual environment for the staff on duty.

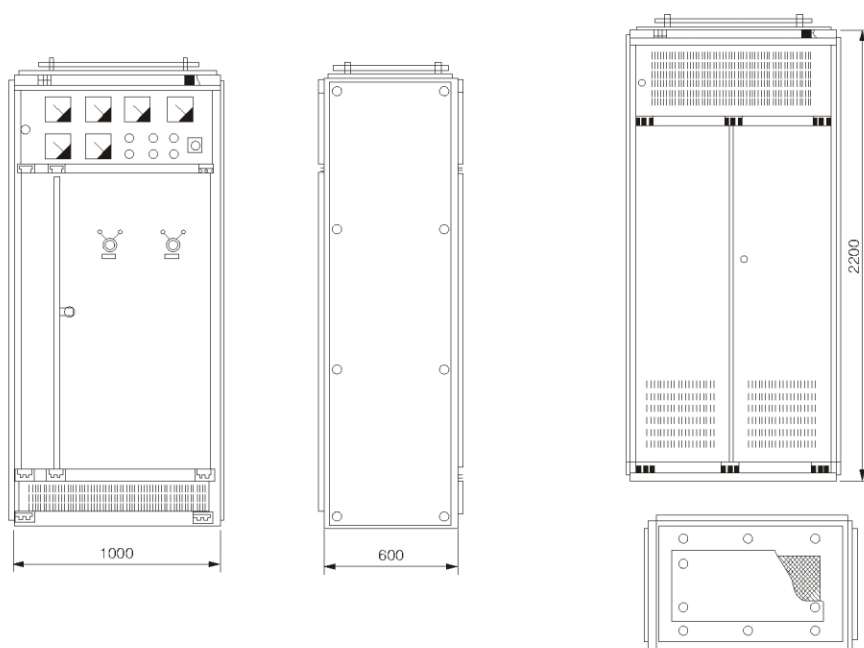
- ◆ 柜体的顶盖在需要时可拆除，便于现场主母线的装配和调整，柜顶的四角装有吊环，用于起吊和装运。

The cover of the roof is removable for site installation and adjustment of main busbar. The flying rings at the four corners at the top of cabinet are for craning, loading and transporting.

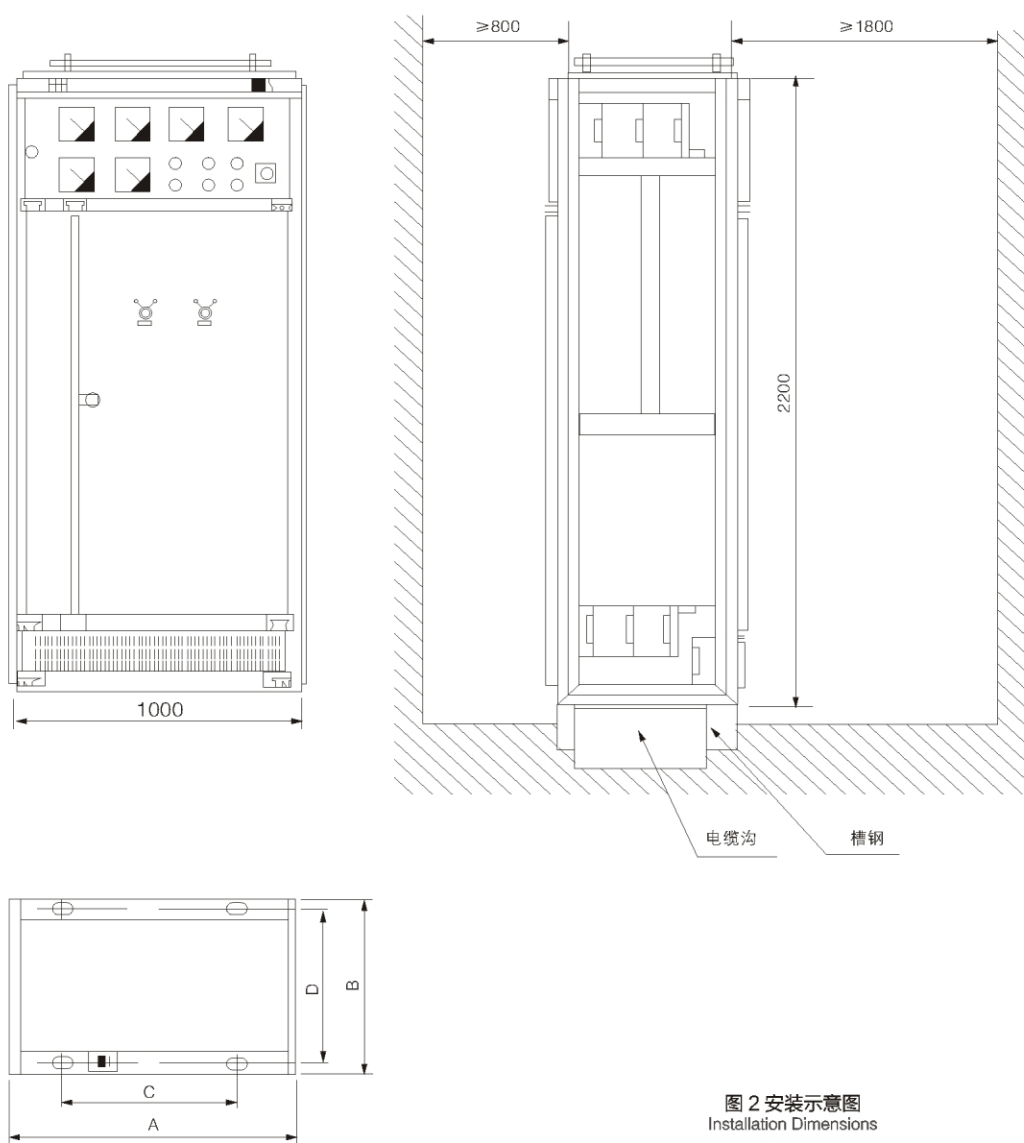
- ◆ 柜体的防护等级为 IP30，用户也可根据使用环境的要求在 IP20~IP30 之间选择。

The protection degree of the cabinet is IP30 and it also can be chosen from IP20 to IP30 according to the requirement of the users.

外形及安装尺寸示意图 Outline Overall and Installation Dimensions



外形及安装尺寸示意图 Outline Overall and Installation Dimensions



产品代号 Product Number	A	B	C	D
GGD	600	600	450	556
GGD	600	800	450	756
GGD	800	600	650	556
GGD	800	800	650	756
GGD	1000	600	850	556
GGD	1000	800	850	756
GGD	1200	600	1050	556
GGD	1200	800	1050	756