GIANT ELECTRIC



Indoor ac Metal-Enclosed Switchgear

GCS

Zhejiang Zhegui Electric Co.,Ltd



前言 Introduction

HGCS1型低压抽出式开关柜(以下简称装置)是电力工业部、机械工业部以促进我国低压配电行业的技术进步,加速低压配电成套开关设备的更新换代,保护和弘扬我国民族工业为宗旨,于一九九五年委托森源电气有限公司组织两部HGCS1型低压抽出式开关柜联合设计组(以下简称两部联设组)完成设计和研制,目前在全国范围内已得到初步肯定和选用,为便于广大设计、使用单位应用,特撰写本说明书。

The HGCS1 low voltage draw-out switchgear (hereinafter referred to as the device) was researched, designed and produced by the joint design group of Senyuan Electric Co. Ltd which was authorized by former Ministry of Electricity Industry and Ministry of Machinery Industry in 1995, aiming at promoting technological progress of China's low voltage distribution industry, accelerating to upgrade the low-voltage complete switching equipment , protecting and promoting our national industry ,at present, the device is used throughout the country and is well-received by users. The instruction is compiled in order to facilitate the designers and users.

适用范围 Scope of application

装置适用于发电厂、变电所、石油化工部门、厂矿企业、高层建筑等低压配电系统的动力、配电和电动机控制中心、电容补偿等的电能转换、分配与控制用。

在大单机容量的发电厂、大规模石化等行业的低压动力控制中心和电动机控制中心等电力使用场合时能满足与计算机接口的特殊需要。

装置是根据电力部主管上级、广大电力用户及设计部门的要求，为满足不断发展的电力市场对增容、计算机接口的特殊需要。

装置是根据电力部主管上级、广大电力用户及设计部门的要求，为满足不断发展的电力市场对增容、计算机接口、动力集中控制、方便安装维修、缩短事故处理时间等需要，本着安全、经济、合理、可靠的原则设计的新型低压抽出式开关柜，产品具有分断、接通能力高、动热稳定性好、电气方案灵活、组合方便、系列性实用性强、结构新颖、防护等级高等特点，可以做为低压抽出式开关柜的换代产品使用。

装置符合IEC439-1《低压成套开关设备和控制设备》、GB7251《低压成套开关设备》、JB/T9661-1999《低压抽出式成套开关设备》等标准。

The device is used in power conversion, distribution and control of power distribution and motor control centers, capacitor compensation of LV power distribution system of power plants, substations, petrochemical departments, factories and mines, high-rise building .

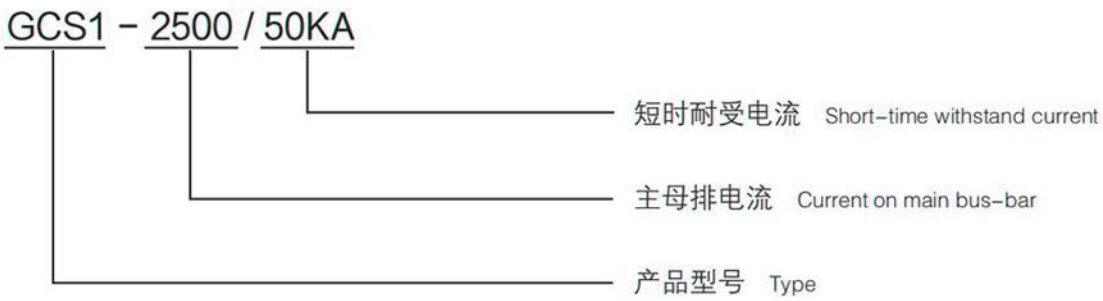
The device, when used in low-voltage power control center and the motor control center of the large capacity power plant, large-scale petrochemical industries, can meet the special need to interface with the computers.

The device, depending on the requirements of users and design departments, can meet the special requirements to increase power capacity and interface with the computers.

The new type draw-out switchgear, designed depending on the principle of being safe, economic, reasonable and reliable, has such features as high breaking and making capacity, good dynamic thermal stability, flexible electric solutions, easy combination, strong practicality, novel structures and high degree of protection and is the latest updated product.

The device is in conformity with the standards of IEC439-1 "LV Complete Set of Switchgears and Control-gears", GB7251 "LV Complete Set of Switchgears", JB/T9661-1999 "LV Complete Set of Withdrawable Switchgears" and so on.

产品型号及含义 Product types and meanings



50HZ，用于接受和分配电能的单母线分段系统的输配电控制 装置。主要用于发电厂、中小型发电机送电、

使用条件 Service conditions

※ 周围空气温度不高于+40℃，不低于-5℃，24小时内平均温度不得高于+35℃，超过时，需根据实际情况降容运行。

※ 户内使用，使用地点的海拔高度不得超过2000m。（如超过2000m，设备要相应降容运行）

※ 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，如+20℃时为90%，应考虑到由于温度的变化可能会偶然产生凝露的影响。

※ 装置安装时与垂直面的倾斜度不超过5%，且整组柜列相对平整（符合GBJ232-82标准）。

※ 装置应安装在无剧烈震动和冲击以及不足以使电器元件受到不应有的腐蚀的场所。

※ 用户有特殊要求时，可以与制造厂协商解决。

※ Ambient air temperature from -5℃ to +40℃, the average temperature in 24 hours shall not be higher than +35℃, derating operation is needed depending on actual situations if surpassing time limit.

※ Indoor use, the height above sea level shall not be over 2000mm(otherwise, the equipment shall be derated in operation.

※ Ambient air humidity shall be relatively 50% at +40℃, there shall be higher relative humidity at lower temperature, for example, ambient air humidity shall be 90% at +20℃. Condensation shall be taken into consideration because of changes of temperatures.

※ The gradient of the vertical plane shall not be over 5% when installing the equipment, and the combined cabinets shall be relatively smooth (in conformity with GBJ232-82).

※ The equipment shall be installed in such locations where there is no violent vibration, impact or corrosion.

※ Please contact manufacturer if there are special requirements.

电气性能 Electric performance

基本电气参数 Basic electric parameters

额定绝缘电压 Rated insulating voltage		交流AC 660(1000)V
额定工作电压 Rated working voltage	主电路 Main circuit	交流AC 380(660)V
	辅助电路 Auxiliary circuit	交流AC 380、220V
		直流DC 220、110V
额定频率 Rated frequency		50(60)HZ
水平母线额定电流 Rated current of horizontal bus		≤4000A
垂直母线额定电流 Rated current of vertical bus		1000A
额定峰值耐受电流(0.1s) Rated peak withstand current(0.1s)		105、176KA
额定短时耐受电流(Is) Rated short-time withstand current(Is)withstand current(0.1s)		50、80KA

鉴于本样本中所涉及的标准、材料、技术要求、电气线路以及安装尺寸随着时间的推移都在不断地改进与发展，因此本公司保留修改的权利。

Our company reserves the right for modification since standards, materials, technical requirements and installing dimensions concerned in this specification will improve and develop as time goes on.

主电路方案 Main circuit solution

装置主电路方案共32组118个规格，不包括由于辅助电路的控制与保护的变化而派生的方案和规格。

主电路方案是征求了广大设计、制造、试验和使用部门的意见而选编的，包括的发电、供用电和其它电力用户的需要，额定工作电流为4000A，适合2500KVA及以下的配电变压器选用。

此外，为适应供用电提高功率因数的需要而设计了电容补偿柜；考虑综合投资的需要而设计了电抗器柜。

The main circuit solutions of the devices have 32 groups 118 specifications, the derived solutions and specifications due to changes of control and protection of auxiliary circuits are not included.

The main circuit solutions, suitable for power distribution transformers with rated current 4000A , up to 2500KVA, are compiled depending suggestions of designers, manufacturers and users.

Besides, capacitive compensation cabinet was designed for the needs of raising power factor and reactor cabinet was designed for the needs of comprehensive investment.

辅助电路方案 Auxiliary circuit solution

HGCS1辅助电路图分交流操作和直流操作部分。

直流操作部分的辅助电路方案，主要用于发电厂变电站的低压厂(所)用系统；适用于200MW及以下和300MW及以上容量机组低压厂用系统，工作(备用)电源进线，电源馈线和电动机馈线的一般控制方式。

交流操作部分的辅助方案主要用于厂矿企业及高层建筑的变电所的低压系统，适用于双电源进线操作控制的组合方案。

直流控制电源为直流220V或110V，交流控制电源为交流380V或220V，由抽屉单元组成的成套柜220V控制电源引自本柜内专设控制变压器供电的公用控制电源，公用控制电源采用不接地方控制变压器，留有24V电源供需要使用弱电信号灯时采用。

The auxiliary circuit diagram is divided into AC operation and DC operation.

The auxiliary circuit solution of DC operation is mainly used for LV auxiliary power system of power stations and sub-stations; suitable for LV auxiliary power system of up to 200MW and above 300MW units, ordinary control method of service (stand-by) incoming lines, power source feeders and motor feeders.

The auxiliary circuit solution of AC operation is mainly used for the LV system of substations of factories and mines and high-rise buildings, suitable for the combination schemes of double power incoming operation control.

DC control power source is of 220V or 110V, D C control power source is of 380V or 220V, the 220V control power source of complete set of cabinets composed of drawer units is from public power source supplied by the control transformer mounted in the cabinet, public power source will control the transformer without grounding, and 24V power source is left for weak current indicating lamps.

母线 Bus

为提高母线动热稳定能力和改善接触面的温升，装置全部采用TMY-T2系列硬铜排，铜排的连接部分必须搪锡，推荐采用全长搪锡，也可选用全长镀银铜母线。

In order to increase dynamic thermal stability of buses and improve temperature rise of contact surface, the device all adopts TMY-T2 series hard copper bars, the connecting part of the copper-bar shall be tin coated, it is recommended that all-length tin-coating be used or all-length silver coated copper buses be used.

※ 水平母线 Horizontal bus

水平母线置于柜后部母线隔室内，3150A及以上为上下双层布置，2500A及以下为单层布置，每相由4条或2条母排组成，大大提高了母线的短路强度。

The horizontal bus is arranged in the bus compartment, buses with 3150A and above shall be double-layer arranged and with up to 2500A shall be single-layer arranged. Each phase is composed of 4 or 2 bus-bars, which greatly increase the short-circuit strength of the buses.

装置水平母线铜排选用如下表：The horizontal buses are as follows:

额定电流(A)rated current	铜排规格specifications of copper-bars
630 1250	2(50×5)
1600	2(60×6)
2000	2(60×10)
2500	2(80×10)
3150	2×2(60×6)
4000	2×2(60×10)

※ 垂直母线 Vertical bus

用于抽屉柜的垂直平线采用“L”形硬铜搪锡母线。

L型母线规格(mm)：

bus specification of L type(mm)：

(高×厚)+(底×厚)

(height×thickness)+(bottom×thickness)

(50×5)+(30×5)

额定电流/Rated current：1000A

※ 中性接地母线 Neutral grounding bus

采用硬铜排 Adopting hard copper-bar

贯通水平中性接地线(PEN)或接地+中性线(PE+N)规格如表：

The specifications of through horizontal neutral grounding (PEN) or grounding + neutral(PE+N)as in the table:

相导线截面积(mm^2) cross section of phase conductor (mm^2)	适用PE(N)线截面(mm^2) applicable PE(N) cross section(mm^2)
500-720	40×5
1200	60×6
>1200	60×10

*装置内垂直PEN线或PE+N线的规格全部选用40×5 *the PEN or PE+N shall use 40×5

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电器元件选择 Choice of electrical components

装置主要选用技术性能指标先进，采用引进技术国内已能批量生产的电器元件。

The electrical components chosen shall be advanced in technical performance, and shall be produced domestically in mass with imported technologies.

※ 主断路器：630A及以上的电源进线及馈线断路器，主选RMW1系列，也可以用DW45系列，MT/M/MW系列、E系列、F系列、AE系列、3WE或ME系列。

※ 630A以下的馈线和电动机控制用断路器，主要选用RMM1系列、CM1系列，塑壳断路器也可以选用NS系列、S系列塑壳断路器。

※ 交流接触器，主要选用B系列、LC1系列、3TB系列的接触器以及与之配套的热继电器、联锁机构。

※ 电流互感器全部采用森源电气有限公司与杭州建德电器厂、泰兴互感器厂、新市互感器厂联合开发的由森源电气公司监制的SDH系列、SDL系列、SDL1系列、BH系列。

※ 熔断器选用高分断能力的Q系列刀熔和NT00系列。

※ 为提高主电路的动稳定能力，设计了HGCS1系列专用的CMJ型组合式母线夹和绝缘支撑件，采用高强度、阻燃型的合成材料热塑成型，绝缘强度高，自熄性能好，结构独特，只需调正积木式间块即可适用不同规格的母线。

※ 为降低功能单元的间隔板、接插件、电缆头的温升，设计了HGCS1柜专有的转接件，与同类产品比较转接件热容量增大，温升降低。

※ 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HGCS1系列柜具有良好的通用性，不会因更新电器元件，造成制造和安装方面的困难。

※ The first choice for power source incoming and feeder circuit breakers with 630A and above shall be RMW1 series, others such as DW45, MT/M/MW,E,F,AE,3WE or ME series may be replaced.

※ The first choice for power source incoming and feeder circuit breakers with up to 630A shall be RMW1 , CM1series, the moulded case circuit breaker may choose NS, S series.

※ AC contactors shall choose B, LC1, 3TB series and associated thermal relays and interlocking mechanisms shall also be chosen.

※ The current transformers shall choose SDH, SDL, SDL1, BH series which were jointly developed by Senyuan Electrical Co., Ltd, Hangzhou Jiande Electric Appliance Factory, Taixin Transformer Factory, Xinshi Transformer Factory and were manufactured under supervision of Senyuan Electrical Co., Ltd.

※ The fuses shall choose Q and NT00 series with high breaking capacity.

※ The CMJ type combined bus clamps and insulating supports are designed especially for HGCS1 in order to increase dynamic stability of the main circuit, the bus clamps and insulating supports were made of fire-retardant synthetic materials of high strength and formed by thermoplastics, which are of high insulating strength , good self-extinguishing performance with unique structures.

※ In order to reduce the temperature rise of connectors, cable heads and separating plates, special adapters are designed for HGCS1 cabinets, compared with the same kind adapters, this one increases heat capacity and reduces temperature rise .

※ The HGCS1 series cabinets have good universality and are easy for replacing electric components.

结构特点 GENERAL

※ 装置的主构架采用8MF型钢，构架采用拼装的部分焊接两种结构形式。
主构架上均有安装模敷孔E=20mm。

※ 装置各功能室严格分开，其隔室主要分为功能单元室、母线室、电缆室，各单元的功能作用相对独立。

※ 装置没有采用将水平主母线置于柜顶的传统设计，使电缆室上下均有出线通道，解决了老产品无法上出线的难题。

※ 装置柜体的尺寸系列如下表：

※ The main structural frames adopts 8MF section steel, the structural frames can be assembled or welded.
There are modular holes in structural frames E=20mm.

※ Each function compartment is fully separated. The compartments are: function unit compartment, bus compartment, cable compartment, the function of each compartment is relatively independent.

※ The horizontal bus was not arranged on top, which makes the cable compartment have both upper and lower outgoing, which solved the problem of no way of upper outgoing.

※ The dimensions of the cabinets are as follows:

高 Height(mm)	宽 Width(mm)	深 Depth(mm)
2200	400	800
		1000
	600	800
		1000
	800	600
		800
		1000
	1000	600
		800
		1000

功能单元 Function unit

※ 一个抽屉为一个独立功能单元。

※ 抽屉分为二分之一单元、一单元、二单元、三单元等尺寸系列，回路的额定电流在400A及以下。
一个单元抽屉的尺寸为：160(高)×560(宽)×407(深)，二分之一单元抽屉的宽为280，二单元、三单元仅以高度做二倍、三倍的变化，其余尺寸均同一单元。

※ A drawer is an independent function unit.

※ The drawer is divided such sizes as 1/2 unit, 1 unit , 2 unit and 3 unit, the rated current of the circuit is up to 400A.
The size of a unit drawer is 160(H)×560(W)×407(D), the width of the 1/2 unit is 280,

※ The drawers of function units are convenient for inter-

※ 功能单元的抽屉可以方便的实现互换。

※ 装置的每柜内可以配置11个一单元的抽屉或22个二分之一单元的抽屉。

※ 抽屉进出线根据回路电流大小采用不同片数的同一规格片式接插件，一般一片接插件≤200A。

※ 二分之一抽屉与电缆室的转接，采用背板式结构的转接件。
单元抽屉与电缆室的转接采用棒式结构的转接件。

※ 抽屉面板有合、断、试验、抽出等位置的明显标志，抽屉设有机械联锁装置。

※ 馈线柜和电动机控制柜设有专用的电缆隔室，功能单元室与电缆隔室内电缆的连接通过转接件或转接铜排实现，既提高了电缆的使用可靠性，又极大的方便了用户对电缆的安装与维修。电缆隔室有二个宽度尺寸(240mm和440mm)可供选用，视电缆数量，截面和用户对安装维修方便的要求而定。

※ 装置的功能单元辅助接点对数一单元及以上的对32对，1/2单元的为20对，能满足自动化用户和与计算机接口的需要。

※ 考虑到干式变压器使用的普通性安全性和油浸变压器的经济性，装置既可以方便地与干式变压器组成一个组列，也可以与油浸变压器电压母线方便连接。

※ 以抽屉为主体，同时具有抽出式和固定式，可以混合组合，任意选用。

※ 装置按三相五线制和三相四线制设计，设计部门和用户可以方便地选用PE+N或PEN方式。

※ 柜体的防护等级为IP30、IP40，可以按用户需要选用。

changing.

※ Each cabinet can be arranged eleven 1 unit drawers or twenty-two 1/2 unit drawers.

※ The drawer outgoing and incoming adopt contactors of the same specification with different pieces depending on the current in the circuit, generally, a piece contactor ≤200A.

※ The change-over of 1/2 drawer with the cable compartment adopts the adaptor with panel type structure.
The change-over of unit drawer with the cable compartment adopts the adaptor with stick structure.

※ There are obvious markings of breaking, closing, testing , drawing out and etc on the panel, the drawer has mechanical interlocking device.

※ The feeder cabinet and the motor control cabinet have special cable compartments, the connection of cables in function unit compartment with cable compartment is by adaptor or copper-bar, which not only increases reliability, but also is convenient for installing and maintaining cables. Two width dimensions (240mm and 440mm) of the cable compartment may be chosen depending on quantities , cross sections of cables , installing and maintaining requirements.

※ Auxiliary contacts of the function unit can meet the requirements of automation users and computer interface.

※ The device can be both connected with dry-type transformers and oil-immersed transformers.

※ The device has withdrawable type and fixed type, which can be combined.

※ The device is designed for 3-phase, 5-wire and 3-phase, 4-wire, PE+N or PEN can be chosen.

※ The protection degree is IP30,IP40, which depends on user's requirements.

安装与使用 Installing and use

产品到达收货地点后，首先应当检查包装是否完整无损，发现问题应及时通知合同有关部门做好商务记录，共同分析原因，做好签证和善后处理。

对于不立即安装的产品，应根据正常使用条件或电气设备暂保管规程要求置于适当的场所，妥善保管。

First examine whether the packing is in good shape when the goods arrive, inform the related department immediately in case of damages.

The products which are not immediately installed shall be stored in suitable location based on normal use conditions and keeping regulations of electric equipment.

产品安装 Installation

产品的安装应按安装示意图进行(见附图)，基础槽钢和采用螺栓固定方式时的螺栓由用户自备，主母线连接时，如表面因运输，保管等原因有不平整时应加平整后再连接紧固。

The installation of the products shall be in accordance with installation diagram (see attached diagram), the bolts used for fixing foundation U-steel shall be prepared by the user. The main bus shall be leveled before connecting.

HGCS1系列柜单独或成列安装时，其垂直度以及柜面不平度和柜间接缝的偏差应符合下表规定：

when the cabinet(s) are installed, the verticality, roughness and seam between cabinets shall conform following:

项次/No.	项目/Item	允差/Allowable error (mm)
1	垂直度(柜高2200mm时) verticality (when the cabinet height is 2200mm)	3.3
2	水平度 Levelness 相邻=柜顶部 Adjacent =top of cabinet 成列柜顶部 Top of rows of cabinets	2 5
3	不平度 Roughness 相邻二柜边 Adjacent 2 cabinets 成列柜面 Faces of rows of cabinets	1 5
4	柜间接缝 Seam between cabinets	2

产品安装后投运前的检查与试验

Examinations and tests after installation and before putting into operation

※ 检查柜面漆或其它覆盖材料(如喷塑)有否损坏,柜内是否干燥清洁。

※ 电器元件的操作机构是否灵活,不应有卡涩或操作力过大现象。

※ 主要电器的主辅触头的通断是否可靠、准确。

※ 抽屉或抽出式结构抽拉应灵活、轻便、无卡阻和碰撞现象。

※ 抽屉或抽出式结构的动、静触头的中心线应一致,触头接触应紧密,主、辅触头的插入深度应符合要求,机构联锁或电气联锁装置应动作正确,闭锁或解除均应可靠。

※ 相同尺寸的抽屉,应能方便的互换,无卡阻和碰撞现象。

※ 抽屉与柜体的接地触头应接触紧密,当抽屉推入时,抽屉的接地触头应比主触头先接触,拉出时程序相反。

※ 仪表的刻度整定、互感器的比及极性应正确无误。

※ 熔断器的熔芯规格应符合工程设计的要求。

※ 继电保护的定值及整定应正确、动作可靠。

※ 用1000兆欧表测量绝缘电阻值不得低于1MΩ。

※ 各母线的连接应良好,绝缘支撑件、安装件及其它附件安装应牢固可靠。

※ Check whether there is damage on surface paint or praying plastics, whether the internal is dry and clean.

※ Whether the operation mechanism is flexible.

※ Whether the main and auxiliary contacts are reliable and correct.

※ Whether the drawers or the withdrawable structures are flexible or light.

※ The centre line of the moving and fixed contacts of drawers or the withdrawable structures shall be identical, the plug depth of both main and auxiliary contacts shall conform requirements, the actions of mechanism or electric interlocking device shall be correct.

※ The drawers of the same size shall be interchanged conveniently.

※ The contact of the drawer with the grounding contact of the cabinet body shall be tight, when the drawer is pushed in, the grounding contact of the drawer shall contact earlier than the main contact, and vise versa.

※ The scale settings of the instruments, the ratio and the poles of the transformers shall be correct .

※ The specification of fuse core shall conform with the requirements of engineering design.

※ The definite value and settings of protective relay shall be correct, the actions shall be reliable.

※ The insulating resistance value measured by a 1000 megger shall be not lower than 1MΩ .

※ The connections of buses shall be good, the installations of insulating supports and other accessories shall be form and reliable.

使用注意事项 Precautions

※ HGCS1系列柜为不靠墙安装，正面操作，双面维修的低压配电柜，柜的维修通道及柜门，必须是考核合格的专业人员方可进入或开启进行操作、检查和维修。

※ 空气断路器、塑壳断路器经过多次分、合，特别是经过短路分、合后，会使触头局部烧伤和产生碳类物质，使接触电阻增大，应按断路器使用说明书进行维护和检修。

※ 经过安装和维修后，必须严格检查各隔室之间、功能单元之间的隔离状况确已恢复，以确保本装置良好的功能分隔性，防止出现故障扩大。

※ 采用旋转隔离开关或塑壳断路器时，操作手柄与小室门具有联锁装置，因此一般开关分断后方能开门，而合闸状态时必须用工具解锁开门。

※ HGCS1 series cabinets , not installed against wall, can be operated from the front and repaired double-faced, only professional can enter the maintenance passage-way and open the door.

※ The contacts , after many times of breaking and closing, especially after short-circuit breaking and closing, will locally get burned and carbon materials will be produced, which will enlarge resistance, they shall be maintained and repaired based on circuit breaker instructions.

※ After the cabinets are installed, the separation between each separated compartment, between each function unit shall be strictly examined to prevent a fault from enlarging.

※ When rotary isolation switches or moulded case circuit breakers are used, there is an interlocking device between the operation handle and the compartment door, so the door can only be opened only after the switch is breaking, but when in closing state, the door shall be opened after it is unlocked by a tool.

产品的成套性 Completeness of products

制造厂供货时应提供下列文件及附件

※ 装箱清单
※ 产品合格证
※ 使用说明书
※ 出厂试验报告
※ 有关电气图纸
※ 柜门钥匙、操作手柄及合同规定的备品配件
※ 主要元器件的安装使用说明书

Manufacturer shall provide following documents and auxiliaries

※ Packing list
※ Compliance certificates
※ Operation manual
※ Ex-factory testing reports
※ Related electrical drawings
※ Keys to the cabinet, operation handle and spar parts stipulated in contract
※ Installing and operation manual of main components

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订货需知 Ordering information

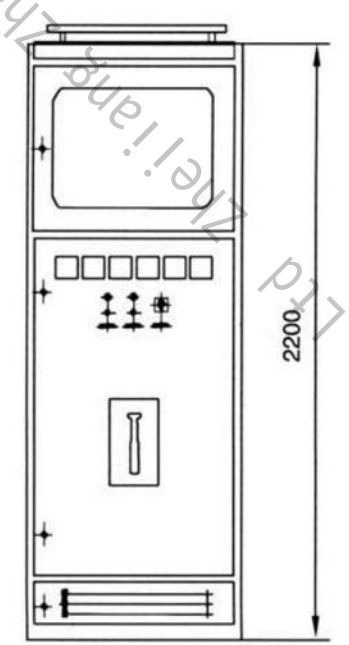
※ 产品的主电路方案号
※ 主电路系统组合顺序图及进出线方式
※ 辅助电路电气原理图
※ 柜内元器件清单(包括规格型号、数量)
※ 电路中电压、电流、时间等整定参数
※ 柜体表面处理及颜色
※ 与产品正常使用不符的其它特殊要求

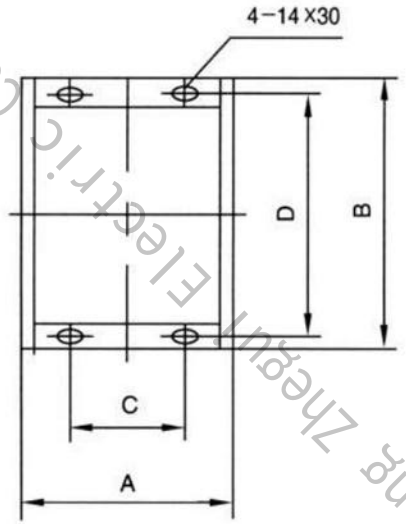
※ Solution number of main circuit
※ Combination sequence diagram of main circuit system and methods of incoming and outgoing
※ Electric schematic diagram of auxiliary circuits
※ Components list in cabinet(including specifications and quantities)
※ Setting parameters of voltage, current, time and so on in circuits
※ Surface treatment and colors of the cabinet surface
※ Other special requirements which are not in conformity with normal use

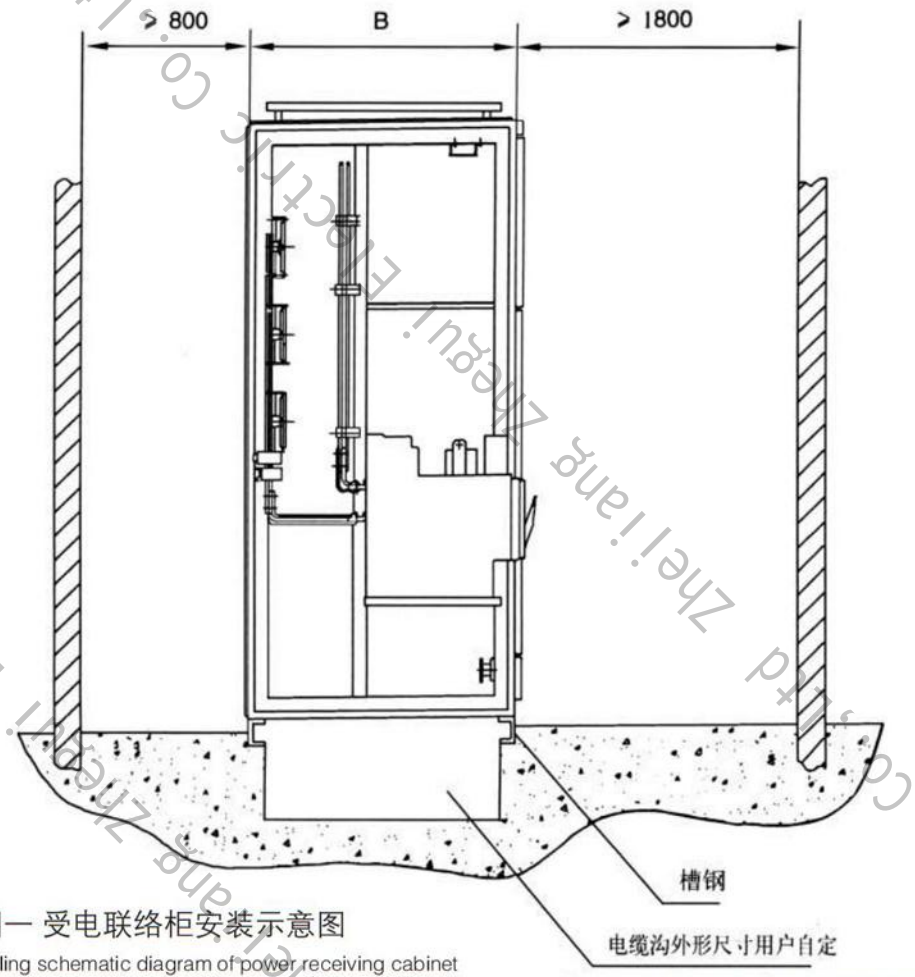
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HGCS1 型系列柜主电路方案（见附件）

Main circuit solution of HGCS1 series (see attachment)







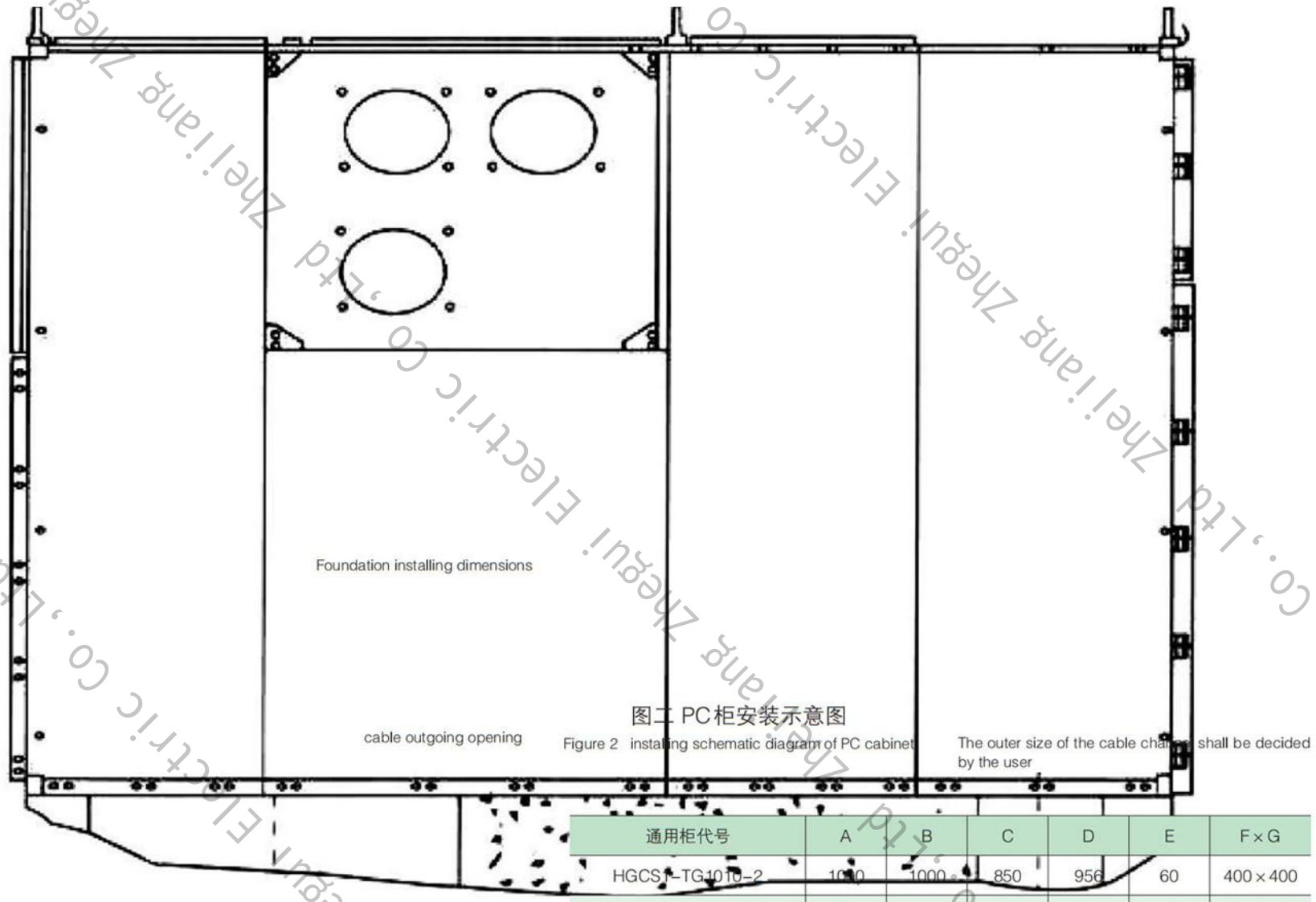
图一 受电联络柜安装示意图

Figure 1 installing schematic diagram of power receiving cabinet

The outer size of the cable channel shall be decided by the user

通用柜代号	A	B	C	D	备注
HGCS1-TG1010-4	1000	1000	850	956	联络柜 Tie cabinet
HGCS1-TG0810-4	800	1000	650	956	受电柜 Power receiving cabinet
HGCS1-TG0808-4	800	800	650	756	受电柜 Power receiving cabinet
HGCS1-TG0608-4	600	800	450	756	受电柜 Power receiving cabinet

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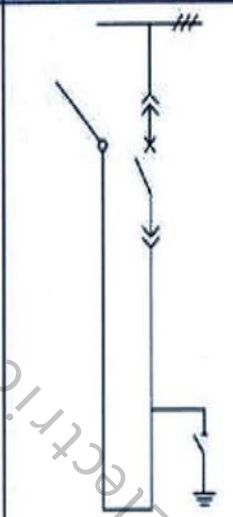
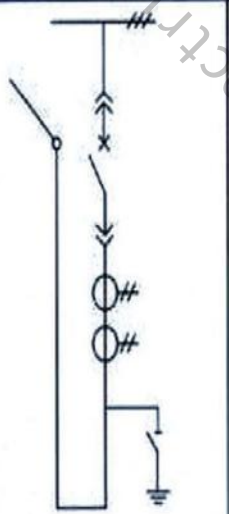
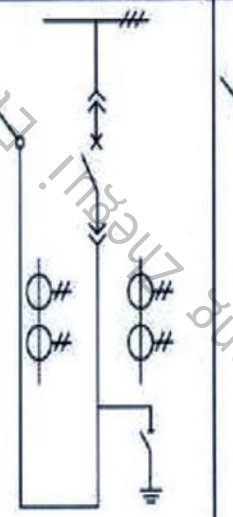
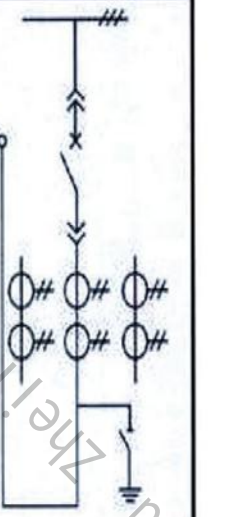


图二 PC柜安装示意图

Figure 2 installing schematic diagram of PC cabinet

通用柜代号	A	B	C	D	E	F×G
HGCS1-TG1010-2	1000	1000	850	956	60	400×400
HGCS1-TG0810-2	800	1000	650	756	160	200×400
HGCS1-TG1010-2	1000	800	850	756	60	400×400
HGCS1-TG0810-2	800	800	650	756	160	200×400

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方案编号		01	02	03	04
一次线路图					
主要元件	额定电流	1250.2000			
	断路器 ZN85-40.5	1	1	1	1
	电流互感器 LZZBJ9-35A		1	2	3
	接地开关 JN-40.5/31.5	1	1	1	1
用途		架空出线	架空出线	架空出线	架空出线

Foundation installing dimensions

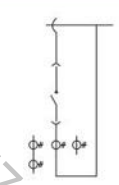
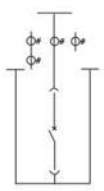
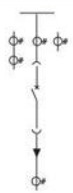
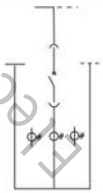
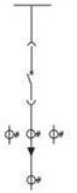
cable outgoing opening

The outer size of the cable channel shall be decided by the user

图三 MCC柜安装示意图

Figure 3 installing schematic diagram of MCC cabinet

通用柜代号	A	B	C	D	E	F×G
HGCS1-TG1006-1	1000	600	850	556	60	400×350
HGCS1-TG0806-1	800	600	850	556	160	200×350

主电路方案 main circuit solution	主电路方案 main circuit solution	01							02							03							04							05							06						
	单线图 single-line diagram																																										
用 途 usage		受电(上进线) power receiving(upper incoming)							受电(下侧进线) power receiving(lower incoming)							受电(电缆进线) power receiving(cable incoming)							联 络 tie							母线转接 bus adapting							馈 电 feed						
规格序号No. of spec.		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							A	B	C				
框架电流(A)frame current		630	1000	1600	2000	2500	3200	4000	630	1000	1600	2000	2500	3200	4000	630	1000	1600	2000	2500			630	1000	1600	2000	2500	3200	4000							630	1000	1600				
主电路电气设备选择 choice of main circuit electrical equipment	RMW1(框架等级Ⅰ)frame grade Ⅰ	1							1							1							1													1						
	RMW1(框架等级Ⅰ)frame grade Ⅰ		1							1							1							1														1					
	RMW1(框架等级Ⅰ)frame grade Ⅰ			1							1							1								1													1				
	RMW1(框架等级Ⅰ)frame grade Ⅰ				1							1							1								1																
	RMW1(框架等级Ⅱ)frame grade Ⅱ				1							1							1								1																
	RMW1(框架等级Ⅱ)frame grade Ⅱ					1							1							1								1																
	RMW1(框架等级Ⅱ)frame grade Ⅱ						1							1															1															
	RMW1(框架等级Ⅱ)frame grade Ⅱ							1							1															1														
	RMW1(框架等级Ⅲ)frame grade Ⅲ							1							1															1														
	BH-□□/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)	3(4)			3	3	3	3	3	3	3							1(3)	1(3)	1(3)				
柜宽(mm)cabinet width		600			800				600			800				600			800				800					1000		400(600)						1000						
柜深(mm)cabinet depth		800					1000		800					1000		800					1000		800					1000		800(1000)						800(1000)						
占小室高度(mm)height in compartment																																				640	640	640				
二次方案号No. of secondary solution																																										

备注：1、本方案典型图选用上海人民电器厂的RMW1系列为主断路器，也可选用ABB Megamax F、Emax、HSW1、M(MT、MW)、ME(DW)、CW1等断路器代替。

2、馈电方案可以加装零序保护，零序电流互感器转入电缆隔室。

3、04方案2500A以下时在本柜内翻排，可以右翻或左翻，不需要05方案转换。

Note:1、RMW1 series from Shanghai Renmin Electric Appliance Factory are chosen as main circuit breakers, others such as ABB Megamax F、Emax、HSW1、M(MT、MW)、ME(DW)、CW1 may also be chosen.

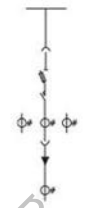
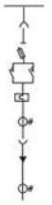
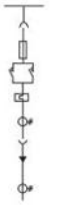
2、zero-sequence protection may be installed for feed solution, zero-sequence current transformer shall be changed into the cable compartment.

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| 主电路方案 main circuit solution | | |

主电路方案 main circuit solution							
主电路方案 main circuit solution	主电路方案 main circuit solution	13	14	15			
	单线图 single-line diagram						
用途 usage		电压互感器 voltage transformer	电压互感器 voltage transformer	电压互感器 voltage transformer			
规格序号 No. of spec.							
框架电流(A) frame current							
主电路电气设备选择 choice of main circuit electrical equipment							
	QSA-630						
	QSA-400						
	QSA-250						
	QSA-160						
	QSA-63		3	3			
	NT00-□□	3					
	RMM1-400H						
	RMM1-250H						
	RMM1-100H						
	JDG-0.5 380/100	2	2				
	JSDG-0.5 380/100			1			
	BH-□□/5						
	柜宽(mm) cabinet width	(不占间隔，装在受电柜内或05方案转接柜内，接在分支母线上) the interval is not occupied, installed in power receiving cabinet or 05 solution change-over cabinet, connect with branch bus					
	柜深(mm) cabinet depth						
	占小室高度(mm) height in compartment						
	二次方案号 No. of secondary solution						

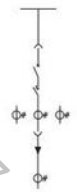
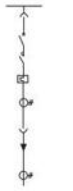
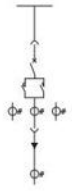
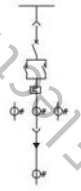
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主电路方案 main circuit solution	主电路方案 main circuit solution	16	17	18	19	20	21
	单线图 single-line diagram						
用途 usage		电动机(不可逆) motor(irreversible)	电动机(不可逆) motor(irreversible)	电动机(不可逆) motor(irreversible)	电动机(可逆) motor(reversible)	电动机(可逆) motor(reversible)	电动机(可逆) motor(reversible)
规格序号No. of spec.		A B C	A B	A	A B C		A
最大控制电机功率max. control motor power(KW)		100 75 75	37 15	7.5	100 75 75	37 15	7.5
主电路电气设备选择 choice of main circuit electrical equipment	QSA-250	1			1		
	QSA-160	1			1		
	QSA-125	1	1		1	1	
	HH17-63	1			1		
	NT00-□□	3					3
	B250	1					
	B170~105	1 1			2		
	B75	2 2			2	2	
	B45	2			2		
	B16	1 1 1		1			2
	T85	1	1			1	
	TSA45	1			1		
	T16	1		1	1 1 1		1
	柜宽(mm)cabinet width	3 3 3	1 1	1	3 3 3	1 1	1
	柜深(mm)cabinet depth	800(1000)	800(1000)	800/2 1000/2	800(1000)	800(1000)	800/2 1000/2
	占小室高度(mm)height in compartment	600	600	600	600	600	600
	二次方案号No. of secondary solution	480	320	160	480	320	160
	柜宽(mm)cabinet width						

备注：1.B系列接触器为首选，还可以选用LC1、3TB、CJ20、EB、A、CJX4等系列产品。

Note:1、B series contactors shall be the first choice, others such as LC1、3TB、CJ20、EB、A、CJX4 may be chosen.

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主电路方案 main circuit solution		22							23							24							25							26							27						
主电路方案 main circuit solution	单线图 single-line diagram																																										
用 途 usage		电动机(不可逆) motor(irreversible)							电动机(不可逆) motor(irreversible)							电动机(可逆) motor(reversible)							电动机(可逆) motor(reversible)																				
规格序号No. of spec.		A	B	C					A	B	C					A	B	C					A	B	C																	
最大控制电机功率max. control motor power(KW)		100	75	75					37	15	7.5					100	75	55					37	15	1.5																	
主电路电气设备选择 choice of main circuit electrical equipment	RMM1-400H	1														1																										
	RMM1-225H		1	1													1	1						1	1	1																	
	RMM1-100H								1	1	1																																
	QSA-125																																										
	HH17-63																																										
	B250	1														2																										
	B170-B105		1	1													2	2																								
	B85								1															2																		
	B45									1						1									2																	
	B16										1															2																
	T85								1															1																		
	TSA45									1						1									1																	
	T16	1	1	1							1															1																
	BH-□□/5	3	3	3					1	1	1					3	3	3					1	1	1																	
	柜宽(mm)cabinet width	800(1000)							800(1000)		800/2 1000/2					800/2 1000/2							800(1000)		800/2 1000/2																	
	柜深(mm)cabinet depth	600							600							600							600																		
	占小室高度(mm)height in compartment	480	320						240		160					480	320						240		160																	
	二次方案号No. of secondary solution																																									

备注：1、塑壳断路器选用上海人民电器厂的RMM1系列，还可以选用CM1、NS、S、JXM2、ABS、HM、HSM1、DZ系列替代。
2、B系列接触器为首选，还可以选用LC1、3TB、CJ20、EB、A、CJX4等系列产品。

Note:1、The RMM1 series moulded case circuit breakers from Shanghai Renmin Electric Appliance Factory are chosen, others such as CM1、NS、S、JXM2、ABS、HM、HSM1、DZ series can be replaced.
2、B series contactors shall be the first choice, others such as LC1、3TB、CJ20、EB、A、CJX4 may be chosen.

Zhejiang Zhegui Electric Co., Ltd

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| 主电路方案 main circuit solution | | |

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