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计算机中心 CAD CENTER

模具加工中心 CAM CENTER

贴片中心 SMT CENTER

常熟开关制造有限公司（原常熟开关厂）是专业研发、制造高低压电器元件和成套开关设备的企业。公司坚持“为顾客创造价值，为员工创造机会，为社会创造效益”的发展原则，依托博士后科研工作站的建设为企业发展奠定坚实的技术基础和人才基础；以技术中心和电器产品试验检测站的建立提高新产品开发能力和手段；以先进生产设备改造传统工艺生产模式，实现制造过程柔性自动化；进一步健全营销和服务网络，以全方位服务奉献真诚，创造新业绩。

公司技术中心通过CAD/CAM/CAE系统设计开发了新一代断路器--CM1系列和CW1 系列。其中CM1系列具有目前国内同类产品中体积最小、通断能力最大，抗振动、抗倾斜、短飞弧、隔离功能等特点，能满足1E级核电用要求和船舶使用要求，达到国际九十年代先进水平。产品先后被评为“国家级新产品”、“国家重点新产品”、“江苏省高新技术产品”、“江苏省优秀专利产品”；被国家质量技术监督局列入“121”计划，属国家重点保护的名优产品。现已发展有：CM1系列塑壳式断路器、CM1L系列带剩余电流保护塑壳断路器、CM1E系列电子式塑壳断路器、CM1Z系列智能型可通信塑壳断路器。CW1系列智能型万能式断路器具有结构合理、体积小、短路分断能力高、零飞弧等特点，同时带有通信接口，可与计算机联网，适应了电网容量不断增大、低压配电和控制系统趋向自动化的形势，满足了当前国内配电行业对智能化电器元件的需求，被评为“国家级新产品”和“国家重点新产品”。2003年公司这两大主打产品被授予“中国名牌”称号。

公司新产品还包括CW2系列智能型万能式断路器、CM2系列塑料外壳式断路器、CW1G系列隔离开关、CA1系列自动转换开关、CAP1系列自动转换开关、CR1系列电动机软起动器、CR2系列智能型电动机软起动器、CD1系列电动机保护器、CV1-12（VS1）户内高压真空断路器、 CV1-40.5（ZN85A）户内高压真空断路器，CE1系列智能型电力仪表、与日本富士电机合资生产的SC-E、N系列交流接触器、TK-E、N系列热过载继电器等。同时，公司研制、生产的各类高低压成套开关设备均列入全国城乡电网改造第二批、第三批名单目录，已多次选用于秦山核电厂、宝钢、马钢、南京扬子石化、唐山港主变电所、北京国际俱乐部、北京中南海等国家重点工程。本公司主要产品均通过了中国质量认证中心认证，获得“3C”证书，其中CM1系列产品已通过“CE”认证。

公司通过多年发展，已成为拥有总资产6.5亿元，员工1550人，共有中高级职称130多人，占地面积达20多万平方米的中型企业。公司先后被评为“国家重点高新技术企业”、“中国机械工业管理进步示范企业”、“全国机械工业核心竞争力100强企业”、“江苏省知识产权重点保护单位”，“江苏省质量先进单位”。二〇〇五年公司通过了质量/环境/职业健康安全管理体系认证。

日月经天、江河行地，展新气象，再添辉煌。公司本着“诚实、重质、守信”的经营理念真诚欢迎新老朋友惠顾，共同抒写新的华彩篇章。

Changshu Switchgear Mfg. Co., Ltd. (Former Changshu Switchgear Plant) mainly develops and produces high and low voltage electric apparatuses and complete sets of switchgear equipment. The company sticks to the principle of Creating Value for Customer, Creating Opportunity for Staff, Creating Profit for Society. Taking the opportunity of setting up postdoctoral station, the company has accumulated strong power on technology and talent. With setting up of technology centre and test and inspection centre of electric apparatus, new product development is sped up and enhanced. By introducing advanced production equipment, the company has set up flexible manufacturing system to replace the traditional production equipment and techniques. At the same time the company has rebuilt its sales and service network and provided more circumspect and sincere service to customers.

CM1 Series Moulded Case Circuit Breaker and CW1 Series Intelligent Universal Circuit Breaker are the products of new generation and developed by the company taking use of the CAD/CAM/CAE system. The CM1 breaker has the most compact size and the highest breaking capacity comparing with other domestic products of the same kind, collects such advantages such as shock protection, slant protection, short arc-over distance and isolation function. It meets the strict demands put forward in nuclear power industry and also suits for ship mounting. It was ratified the State New Product, the Key State New Product, Jiangsu High-tech. Product, Jiangsu Excellent Patent Product and listed in “121” catalogue, becoming a famous and excellent product enjoying protection from the state government. Now a large product family based on CM1 series breaker has taken shape, which includes CM1 Series Moulded Case Circuit Breaker, CM1L Series MCCB with Residual Current Protection, CM1E Series Electronic MCCB, CM1Z Series Intelligent Communicative MCCB. For CW1 Series Intelligent Universal Circuit Breaker, it features of rational structure, compact size, high short circuit breaking capacity, zero arc-over distance etc. With the communication interface it equipped, communication function will be achieved. So it meets the special demand for the intelligent electric apparatus used in present domestic power distribution industry, can be used in automatic control system and the large current electirc system. The breaker was ratified the State New Product, the Key State New Product. In 2003, both CM1 Series MCCB and CW1 Series ACB were awarded China Top Brand product.

Other new products have been launched including CW2 Series Intelligent Universal circuit Breaker, CM2 Series Moulded Case Circuit Breaker, CW1G Series Isolation Switch, CA1 Series Automatic Transfer Switch. CAP1 Series Automatic Transform Switch, SC-E、N Series A.C. Contactor and TK-E、N Series Thermal Overload Relay are the new products made by the joint venture company with Fuji Elctric Co. of Japan. On the other hand, all high and low voltage complete sets of switchgear equipment had been listed in the second and third batches of categories which used in transformation of the urban and suburb electric grids. They have been used in many key national projects for many times such as Qingshan Nuclear Power Plant, Bao Steel Plant, Ma-an-shan Steel Plant, Nanjing Yangtze Petrochemical Co.,the main substation of Tangshan Port, Beijing International Club, Beijing Zhong-nan-hai etc. The main products made by the company have obtained “3C” certificates issued by China Quality Centre, for CM1 series products, they have even obtained CE certificates.

Due to many years’ progress, the company has become a medium size enterprise having a total assets of 650 million yuan RMB, total staffs of 1550, among whom more than 130 got intermediate and serior technical titles, covering a total area of 200,000 square metres. The company has been awarded many honors successively such as the Key State High-tech. Enterprise, Pilot Enterprise on Management Progress of China Machinery Industry, One of the Top Hundred Competitive Enterprise of the State Machinery Industry, the Major Unit Enjoying Govermental Protection on Intellectual Property in Jiangsu and Jiangsu Model Unit on Quality Control. In 2005 it passed the quality /environment/occupational health and safety management system.

Sun and Moon electric apparatuses are everlasting as the sun and moon. Following the principle of Honesty, Quality and Creditability, the company welcomes all friends to pay a visit.

概 述 OUTLINE

GLL型低压成套开关设备(以下简称装置)，是根据国内外同类柜型技术水平及结构特点，由本公司自行设计和研制，经型式试验(TTA)和国家强制性产品认证(CCC)的组装式开关柜。装置充分考虑了广大电力用户及设计部门的要求，能满足不断发展的电力行业对增容、动力集中控制、方便安装维修、缩短事故处理时间等需要，电气方案灵活、组合方便、结构新颖，是国内低压固定分隔柜的更新产品，同时可与本公司生产的GCK型低压成套开关设备联拼，混合使用。

装置适用于发电厂、变电所、石油化工、冶金、厂矿企业、高层建筑等低压配电系统中，作为动力配电和电动机控制中心、电容补偿等电能转换、分配与控制用。

符合标准：

GB7251.1《低压成套开关设备和控制设备 第一部分：型式试验和部分型式试验的成套设备》

JB/T5877《低压固定封闭式成套开关设备》

Model GLL Low Voltage Complete Sets of Switchgear Equipment (hereinafter abbreviated as the Equipment), a assembled switchgear which has passed TTA Test and obtained CCC certificate of CQC, is developed by our company . Considering the requirements of users and design departments, the Equipment could satisfy the demands of growing electric utility industry, such as capacity increase, power control, convenient installation and maintenance, to shorten the time of accident management, etc. It has flexible wiring schemes, convenient combination, new constructure, it is the new product of internal Low Voltage Fixed and Separate Complete Sets of Switchgear Equipment, and can be combined with GCK Low Voltage Complete Sets of Switchgear Equipment, and used together.

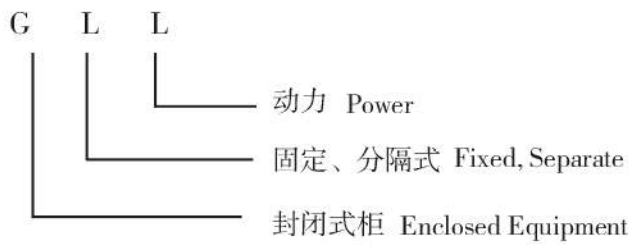
The Equipment can be used for power transform, distributing and control in many places, such as power plant, transformer substation, petrochemistry industry, metallurgy, mining and high building, as a power distribution and motor control center, or capacity compensation, etc.

Comply with the standards of:

GB7251.1《 Low Voltage Complete Sets of Switchgear Equipment and Control Equipment First Part: Complete Sets of Switchgear Equipment of TTA test and part TTA test》.

JB/T5877《 Low Voltage Fixed and Enclosed Complete Sets of Switchgear Equipment 》.

型 号 及 含 义 TYPE AND MEANING



正常工作条件 NORMAL OPERATION CONDITION

- 用于户内安装。
- 周围空气温度不高于+40℃，不低于-5℃，并且24h内其平均温度不高于+35℃。
- 空气清洁，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高的相对湿度。如+20℃时相对湿度为90%，但应考虑到由于温度的变化，有可能会偶然产生适度的凝露。
- 海拔不超过2000m。
- 污染等级为3。
- 运输和储存过程中的温度为-25℃～+55℃，在短时间内(不超过24h)可达+70℃。
- 用户有特殊要求时，可与制造厂协商解决。

- Indoors.
- Ambient temperature: -5℃~+40℃, and the average in 24 hours is below +35℃.
- Air conditions: clear, relative humidity can not exceed 50% at the maximum ambient temperature of +40℃, but higher relative humidity at the low temperature, for example, 90% at 20℃, occasionally, a few of dews is permitted while temperature changes.
- Elevation≤2000m.
- Pollution protection: 3 grade.
- Temperature of transportion and storage is -25℃~+55℃, and can reach +70℃ in short time (not exceed 24 hours).
- If the customer has special requirements, it could be arranged a solution by manufacturer and user.

主要技术参数 MAIN TECHNICAL PARAMETERS

表1 Table 1

额定工作电压 Ue V Rated Working Voltage		400	
额定绝缘电压 Ui V Rated Insulation Voltage		690	
额定工作电流In A Rated Current	水平母线 Horizontal Busbar	630～1600	1600～4000
	垂直母线 Vertical Busbar	1000、1250	1600
额定短时耐受电流Icw(1s)kA Rated Short-time Endurance Current	水平母线 Horizontal Busbar	50	80
	垂直母线 Vertical Busbar	50	
额定峰值耐受电流Ipk kA Rated Peak Endurance Current	水平母线 Horizontal Busbar	105	176
	垂直母线 Vertical Busbar	105	
外壳防护等级 Protection Grade of Enclosure		IP30	

结构特点 STRUCTURE FEATURE

● 柜架采用E=25mm间隔模数的C字型材及自制模数化零部件通过自攻锁紧螺钉和高强度六角螺栓紧固连接而成，该种结构免除了焊接变形和应力，且零部件通用性高，使得柜架组装灵活方便、速度快捷、精度高。

● 整个柜体采用固定分隔式结构。内部各功能单元所安装的断路器采用抽屉式或插入式结构，维修或更换断路器快捷方便，并能形成明显的断开点。

● 柜体分为功能单元小室、水平母线小室、电缆小室，各小室之间采用镀锌钢板制成隔件或挡板进行相互隔离，各小室的作用相对独立，限制了事故影响范围。

● 骨架及内部结构件表面都进行镀锌钝化处理或采用敷铝锌钢板，保证接地连续性。柜门、顶盖、后门、护板等外观可见部件均采用环氧粉末静电喷涂，涂层均匀美观耐腐蚀。

● 受电柜的外形结构示意见图一，大电流馈电柜的外形结构示意见图二。装置的外形尺寸见表2。

● 装置为柜前操作，柜后出线，柜前柜后维护型，其水平母线均安装于柜的顶部，可从柜顶进行母排的现场安装与连接，安装与维护简单、方便。垂直母线位于柜体中部，并用由阻燃塑料注塑成型的带透明观察窗的母线罩进行隔离。母线系统带电部分的防护等级达到IP2X，有效防止电弧引起的放电和防止人体接触。

● MCC柜分为两种结构形式：一种为上下分隔结构，简称横分隔MCC柜（见图三），其功能单元小室的高度分为200、400、600三种，每柜最多可装9个200的小室。另一种为左右分隔结构，简称竖分隔MCC柜（见图四），其功能单元小室的高度分为450、600、900三种，每柜最多可装8个400×450的小室。两种分隔形式的功能单元之间均有带通风孔的镀锌金属板相隔离。用户可参考主电路方案选择对应的小室。

● The framework is tightly connected up by C-profiled bar with E=25mm modulus hole and the self-manufacture modular components through self-lock bolt and high strengen hexagon head tap bolt. This structure avoids the jointing transfiguration, moreover, the parts are highly all-purpose so as to make the combination flexible and convenient, swift, and high precision.

● The cubicle is adopted the fixed and separate structure. The breakers in every function unit are used draw-out or insert structure, it makes the maintenance and replacing quick and convenient, and can make a obvious breakpoint.

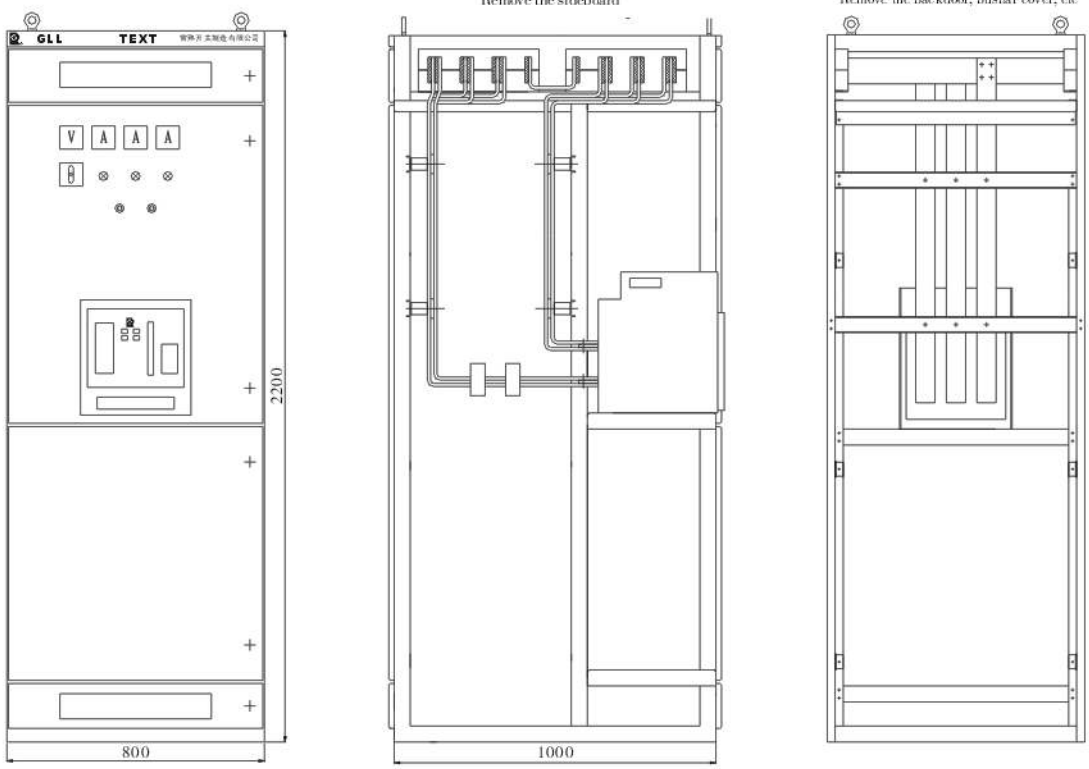
● The cubicle is divided into function unit compartment, horizontal busbar compartment and cable compartment by clapboard or baffle which is made of galvanized armor plate, and the function of the compartments is independent from each other to limit the area of accident.

● The surface of the framework and interior structure components are treated with the galvanization and passivation or adopted the armor plate coated with aluminum and zinc, it ensures the continuity of ground. The outside components, such as the door, coping, back door and protecting board, are adopted the epoxy powder static spray painting, and the coat is even, beautiful and antirust.

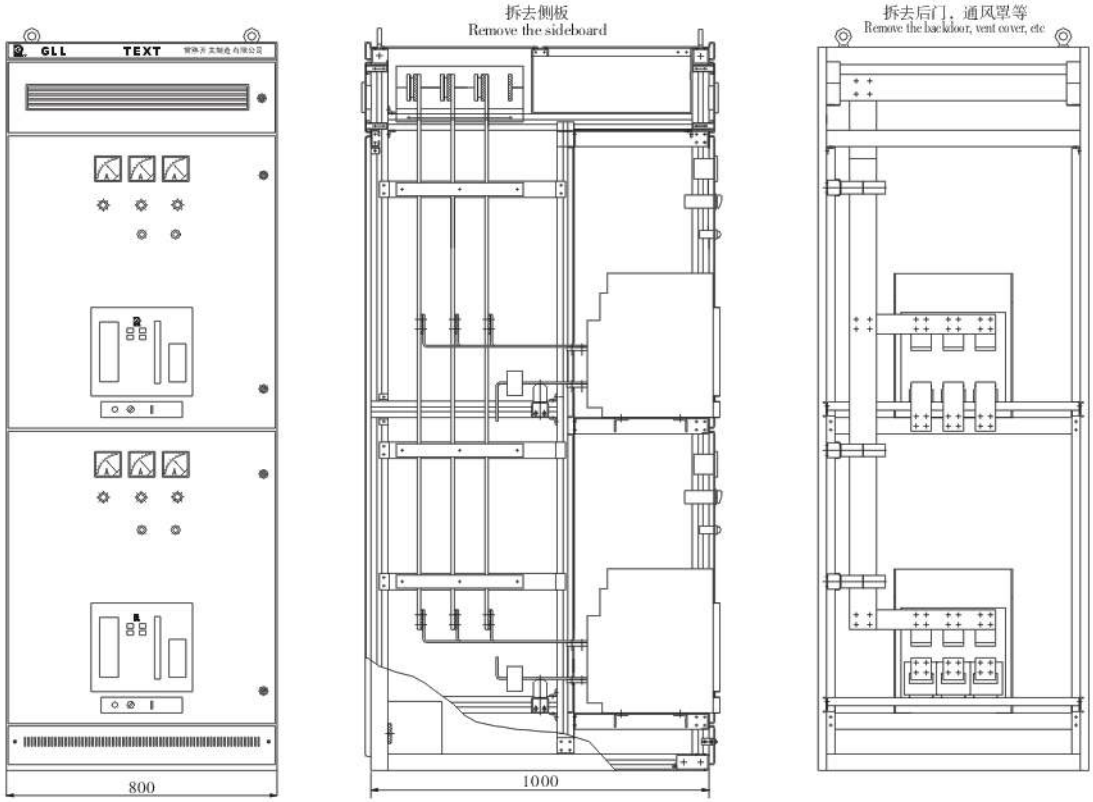
● The shape structure of Power Getting Switchgear is shown in Fig.1, the shape structure of large current of Large Current Feeder Switchgear is shown in Fig.2. The size of Equipment is shown in Table 2.

● The Equipment is operated in the front of cubicle, wire outgoing behind the cubicle, and maintenance at front and rear of the cubicle. The horizontal busbars are installed on the top of the cubicle, and can be installed and connected on the spot from the top of the cubicle, the installation and maintenance is easy and convenience. The vertical busbars are in the middle of the cubicle and isolated by the enclosed busbar covers with transparent observational windows which are moled out of flame retardant plastic. The protection grade of the electriferous parts of busbar system is IP2X, it avoids the discharge that arise from electric arc and prevents the body from contact.

● There are two structures of MCC Switchgear: one is top and bottom separate structure, Horizontal Separate MCC Switchgear in short (see Fig.3), there have three kinds of height of the function units: 200, 400, 600, and it can install 9 compartments in every cubicle at most. The other one is left and right separate structure, Vertical Separate MCC Switchgear in short (see Fig.4), there have three kinds of height of the function units: 450, 600, 900, and it can install 8 compartments of 400 × 450 size in every cubicle at most. In both kinds of separate cubicles, there have galvanized armor plate with air vents between every two function units to separate each other. The customers may choose corresponding compartments according to the main circuit scheme.



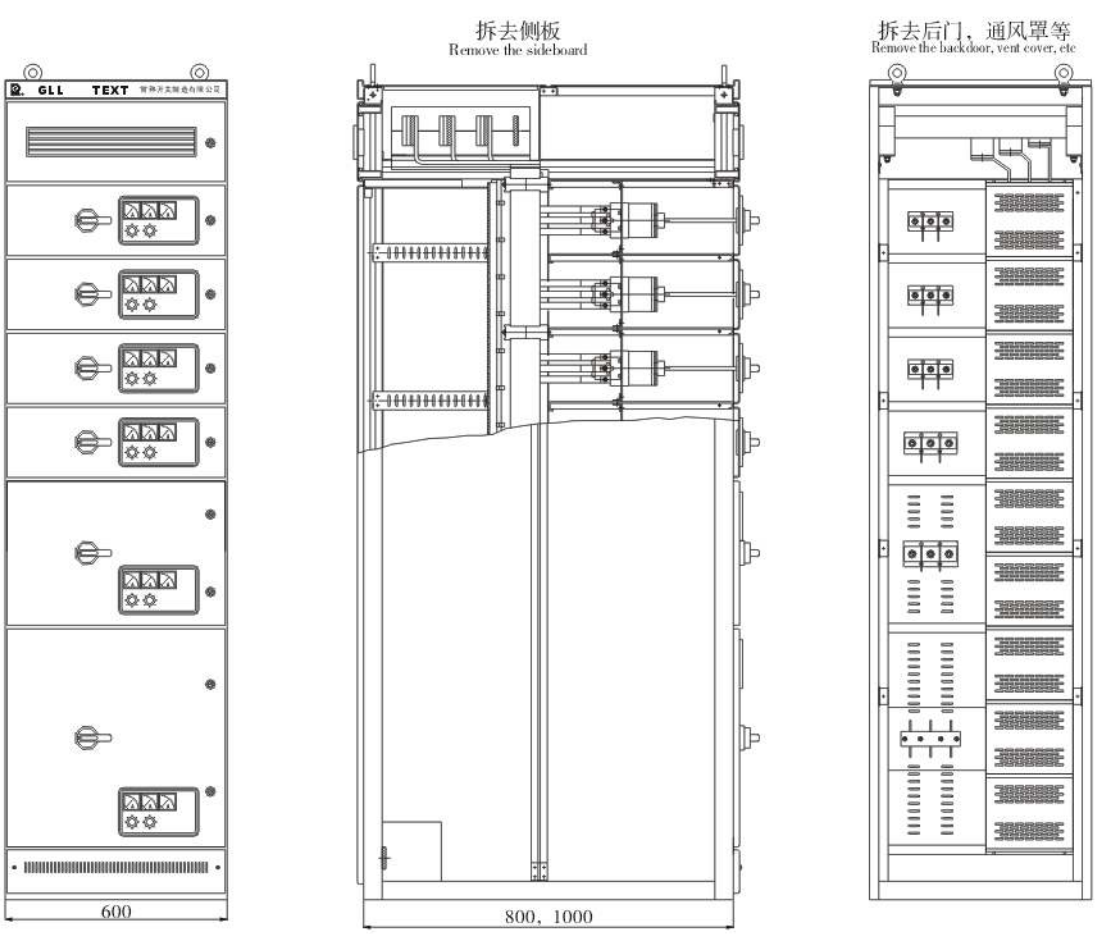
图一 受电柜
Fig.1 Power Supply Switchgear



图二 PC柜(馈电柜)
Fig.2 Feeder Switchgear

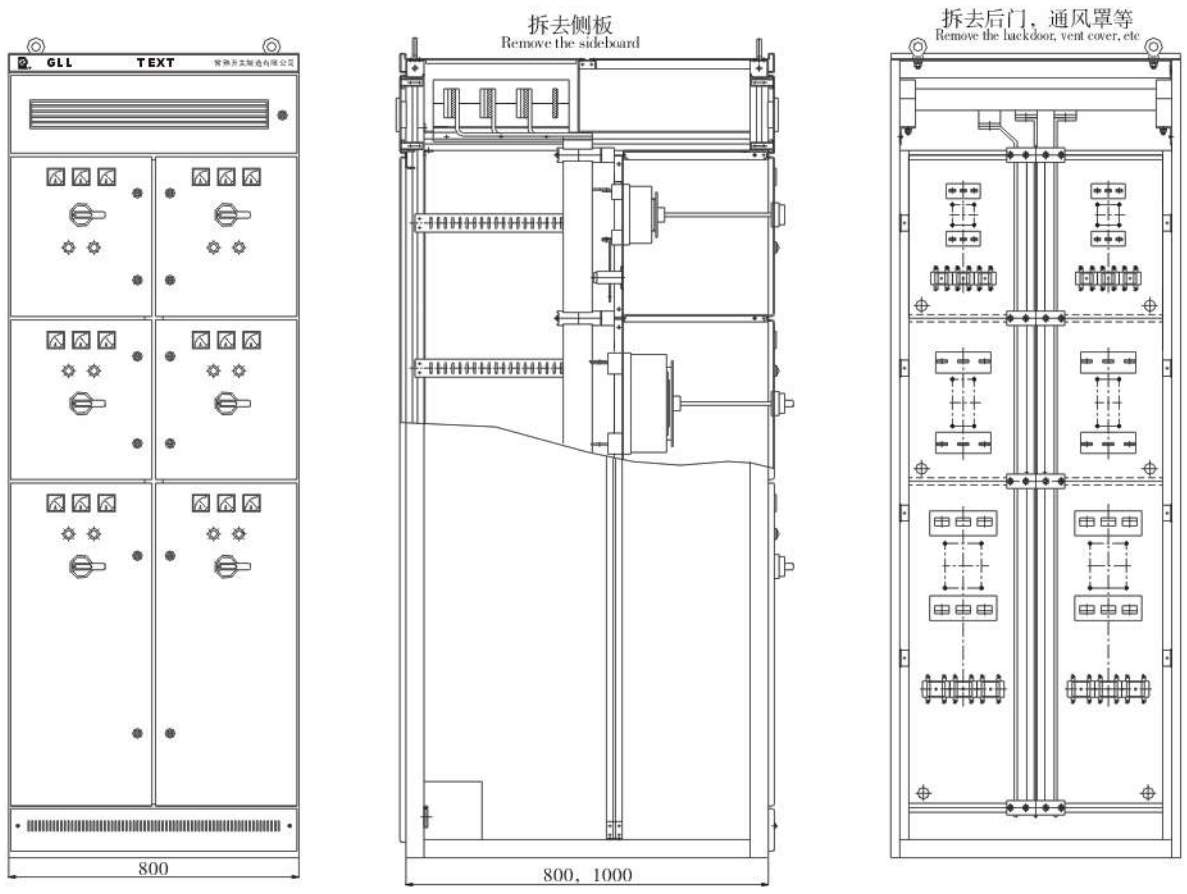
表2 Table 2 单位为毫米

高 Height	宽 Width	深 Depth	用 途 Use	备 注 Remark
2200	400	800、1000	母线转接柜 Busbar Transfer Switchgear	功能单元隔室总高度为1800mm Total height of function unit is 1800mm
	600、800、1000、1200		受电柜、母联柜、电容柜、PC柜 Power Getting Switchgear、Junction Switchgear Capacitance Switchgear PC Switchgear	
	600		横分隔MCC柜 Horizontal Separate MCC Switchgear	
	800		竖分隔MCC柜 Vertical Separate MCC Switchgear	



图三 横分隔MCC柜
Fig.3 Horizontal Separate MCC Switchgear

结构特点 STRUCTURE FEATURE



图四 竖分隔MCC柜
Fig.4 Vertical Separate MCC Switchgear

运输与安装 TRANSPORTATION AND INSTALLATION

● 运输

柜体可单台出厂也可联拼组合出厂。如用户不提要求，则按单台包装出厂。如采用组合出厂，柜宽最长不超过3m。

装置吊运过程中，钢丝绳顶角不得大于120o，吊运应平稳，避免强烈的振动、摇晃和冲击。

● 安装

根据用户要求，可提供安装底架，既保障了装置运输过程中不致变形，也方便用户的工程安装。

● Transportation

The cubicle can be delivered in single package or combination. If the user doesn't require, it adopts single package. If it adopts combination, the width of the cubicle isn't more than 3m.

In course of swinging the Equipment, the top angle of steel wire isn't more than 120° , the swing must be steady, and avoid strongly shake, wobble and impulsion.

● Installation

The bottom border can be provided according to the requirement of users, it avoids the cubicles out of shape in the course of transportation, and makes the installation convenient.

Check if the package is complete after the Equipment arrived at destination. If there have any

运输

柜体可单台出厂也可联拼组合出厂。如用户不提要求，则按单台包装出厂。如采用组合出厂，柜宽最长不超过3m。

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安装

根据用户要求，可提供安装底架，既保障了装置运输过程中不致变形，也方便用户的工程安装。

装置到达收货地点后，首先应检查包装是否完整无损，发现问题应及时通知合同有关方做好商务记录，共同分析原因，作好鉴证和善后处理工作。

不立即安装的装置，应根据正常使用条件和《电气设备暂保管规程》要求置于适当场所保管。

装置安装时应根据系统图核实排列位置，逐一固定，接好母线和进出线。当装置超过10面时，应尽可能从中间向两边安装，以减少积累误差。

装置为离墙安装，安装基础平面要求平整，

Transportation

The cubicle can be delivered in single package or combination. If the user doesn't require, it adopts single package. If it adopts combination, the width of the cubicle isn't more than 3m.

In course of swinging the Equipment, the top angle of steel wire isn't more than 120° , the swing must be steady, and avoid strongly shake, wobble and impulsion.

Installation

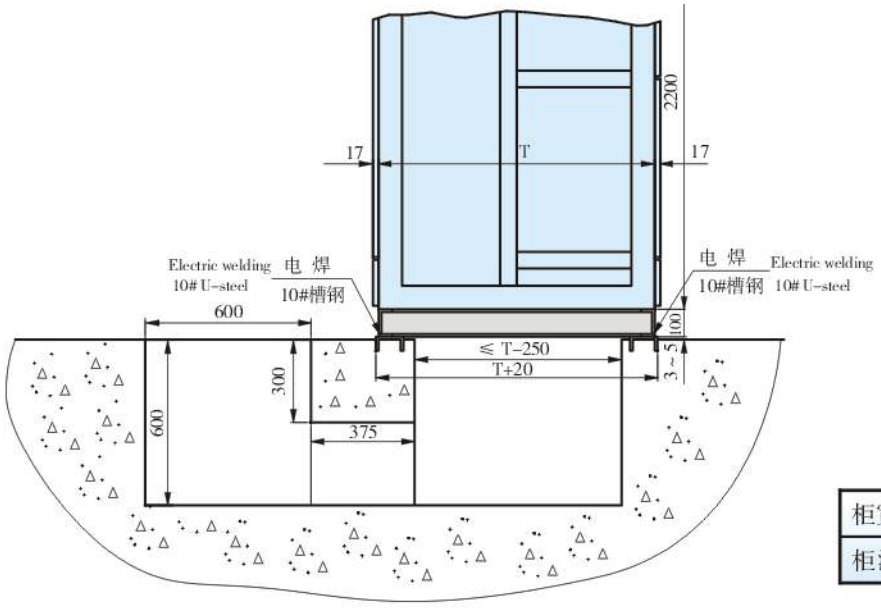
The bottom border can be provided according to the requirement of users, it avoids the cubicles out of shape in the course of transportation, and makes the installation convenient.

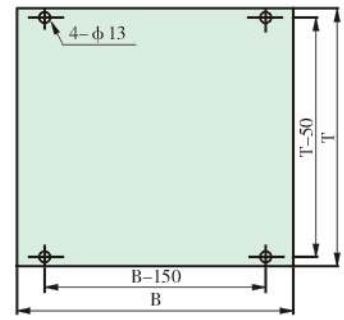
Check if the package is complete after the Equipment arrived at destination. If there have any problems, please notice all parties of the contract in time and make records, analyze reasons, make verification of a contract and handle the remain problems.

If the Equipments aren't installed at once, it should be stored at the proper place according to the normal operation condition and"Temporary Storage Rules of Electrical Equipment".

It must check the arrangement according to the system scheme before installation first, then, fix one by one, and join the busbars and wires up. When the quantity of the Equipment is over 10, it should be installed from the middle to the sides to reduce the accumulated error.

The Equipment is installed off the wall, the basal



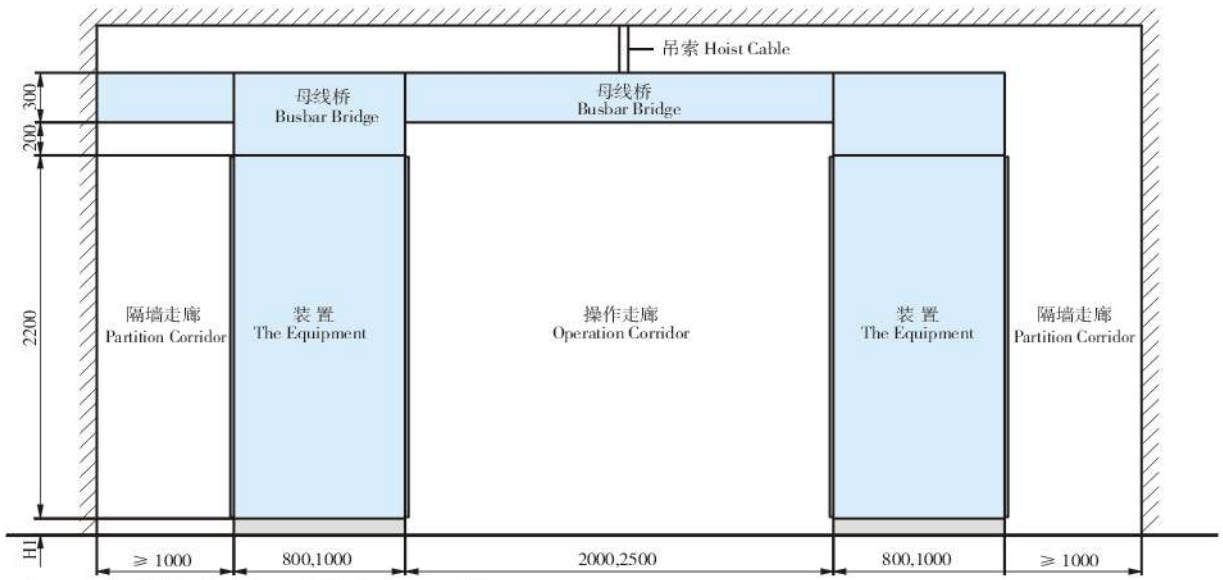


柜宽B Width	400、600、800、1000、1200
柜深T Depth	800、1000

图五 基础示意图

Fig.5 Scheme of Foundation

运 输 与 安 装 TRANSPORTATION AND INSTALLATION



注:H1为底脚槽钢的高度尺寸,推荐采用10#槽钢。
Note: H1 is the size of footing U-steel, It is commended the 10# U-steel.

图六 安装示意图
Fig.6 Scheme of Installation

使 用 USE

当装置运抵目的地后，首先检查包装箱是否完整；若装置不立即安装，应存放在干燥清洁之处。

接好电缆后，装置底部应封闭，以防止小动物爬入柜内造成短路事故。

装置在安装或调整后，在投入运行前，需进行下列各种检查和试验：

检查装置内安装的电器设备和控制接线是否符合工厂的图纸要求。

检查所安装的电器设备接触是否良好，是否符合本身的技术条件。

检查机械联锁机构、电气联锁装置的动作是否正确可靠，应符合系统的要求。

检查主回路和辅助回路的绝缘电阻是否符合规定要求。

用手动操作各种开关，应操动灵活，无异常和卡轧现象。

检查装置内部有无异物及零部件的安装螺钉是否有松动现象。

抽出式、插入式断路器通电前的检查：

检查抽出式、插入式部件是否可靠地固定于各自的联接位置上。

凡带有失压脱扣器的断路器，在未接通电源时不能操作，否则将会损坏机构。

为加强安全防范，操作手柄或联锁机构应加上挂锁。

Check if the package is complete after the Equipment arrived at destination; if the Equipment isn't installed at once, it must be stored in a dry and clean place.

After joining the cables up, the bottom of the Equipment must be closed to prevent little animal from coming in which can result in short circuit.

After installation or adjustment and before run, the Equipment need to be examined and tested as below:

Examine if the electric devices and control circuits in the Equipment are satisfied the requirment of the blueprint.

Examine if the electric devices in the Equipment is well connected and up to its technical conditions.

Examine if the action of the mechanical interlock and electric interlock devices is correct and reliable and satisfied the requirment of the system.

Examine if the insulating resistance of the main circuit and auxiliary circuit is satisfied the requirment.

Operating all kinds of switchers manually should be flexible and not have the abnormity and getting stuck.

Examine if there have abnormal things in the Equipment and if the installation bolt of the components is loosening.

Examination before electrification of the draw-out type and insert type breaker:

Examine if the draw-out and insert components is fixed on each connecting position reliably.

Any breakers with under-voltage release can not be operated before switching on, or else damage the machine.

Strengthen the safety, and there should add a lock on the handle or interlock machine.

维　护　MAINTENANCE

装置的维护应由专业人员实施，并按有关规章制度做好日常运行记录和保养，例行检查内容：

- 检查单元内部连接导线是否牢靠，应无松动而导致发热现象；
- 检查断路器相间隔板有否灰尘；
- 检查电气性能和动作是否符合要求；
- 检查各种测量仪表的零位是否准确；

每年还应进行一次设备维修和电气绝缘性能检查。

The maintenance of the Equipment should be executed by professional, and it should make the daily operation record and maintenance according to the relevant bylaw. The content of routine examination:

- Examine if the connecting wires in the unit are reliable and not loosening, or else result in radiating heat.
- Examine if there have dust on the interphase clapboards of the breaker.
- Examine if the electric performance and action characteristic are satisfied the requirment.
- Examine if the zero of all kinds of measuring instruments is correct.

It should make an annual maintenance and electric insulation performance examination.

装 置 成 套 性　ENCLOSED PACKAGE

供货时提供下列文件及附件：

a) 装箱清单；

b) 产品合格证；

c) 主要元器件使用说明书；

d) 出厂检验记录；

e) 有关电气图纸；

f) 柜门钥匙、操作手柄及合同规定的备品备件。

The following documents and accessiries should be handed over with the switchgear:

a.Container loading list;

b.Certificate of quality;

c.Illustrations of main components;

d.Delivery test report;

e.Relevant electrical blueprint;

f.Panel key, operating handle and spare parts and accessories stipulated in the contract.

订 货 须 知　ORDERING NOTICE

a) 主电路方案及单线系统图；

b) 辅助电路电气原理图；

c) 装置的排列组合图和配电室的平面布置图；

d) 水平母线的规格；

e) 装置内元器件的规格及数量；

f) 柜体颜色；

g) 与产品正常使用不符的其它特殊要求。

a.The scheme of main circuit and single wire systematic diagram;

b.Assistant circuit electric principle diagram;

c.Array scheme of equipment and disposal plan of distribution room;

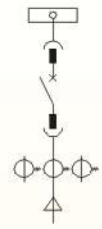
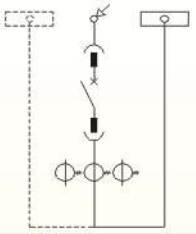
d.The specifications of horizontal busbar;

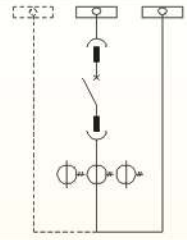
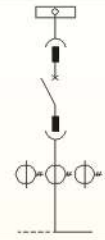
e.The specifications and quantities of the components in the Equipment;

f.The colour of the cubicle;

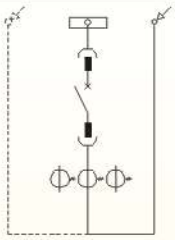
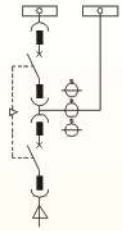
g.Other special requirments that is not up to the normal use of the production.

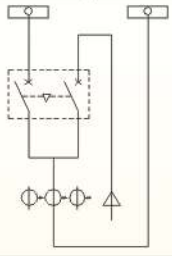
一次方案图 WIRING SCHEME OF THE PRIMARY CIRCUIT

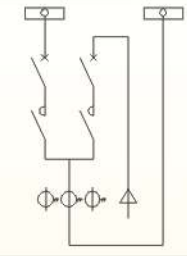
方案编号 Scheme No.			01				02				03		04
			A	B	C	D	A	B	C	D	A	B	
一次方案 Wiring Scheme of the primary circuit													
用途 Use			底部受电 Power Supply at bottom				顶部受电 Power Supply on top				顶部受电 Power Supply on top		母线转接 Expanded Switchgear
最大变压器容量 kVA Maximal Transformer Capacity			1000	1600	2000	2500	1000	1250	1600	2000	2000	2500	
断路器额定工作电流 A Rated Working Current of circuit breakers			1600	2500	3200	4000	1600	2000	2500	3200	3200	4000	
主要元件 Main components	断路器壳架等级 Framework Current Grade of circuit breaker	CW2	1600	2500	4000	6300	1600	2000	3500	4000	4000	6300	
		CW1	2000	3200	4000	5000	2000	2000	3200	4000	4000	5000	
	电流互感器 BH-0.66 Mutual inductor		2000/5	3000/5	4000/5	5000/5	2000/5	2500/5	3000/5	4000/5	4000/5	5000/5	
占用高度 mm Height			900	1800			900	1800			1800		1800
柜宽 mm Width	CW2-3P		600	600	800	1000	600	600		1000	800	1000	400
	CW2-4P					1200		800				1200	
	CW1-3P		600	600	800	1000	600	800	800	1000	800	1000	
	CW1-4P			800	1000		800		1000		1000		
备注 Remark											与方案4组合 In combination with scheme 4.		

方案编号 Scheme No.			05				06		07					
			A	B	C	D	A	B	A	B	C	D	E	F
一次方案 Wiring Scheme of the primary circuit														
用途 Use			联络 Junction				联络 Junction		馈电 Feeder					
最大断路器额定工作电流 A Maximal Rated Working Current of circuit breakers			1600	2000	2500	3200	3200	4000	630	1000	1600	2000	2500	3200
主要元件 Main components	断路器壳架等级 Framework Current Grade of circuit breaker	CW2	1600	2000	2500	4000	4000	6300	1600	1600	1600	2000	2500	4000
		CW1	2000	2000	3200	4000	4000	5000	2000	2000	2000	2000	3200	4000
	电流互感器 BH-0.66 Mutual inductor		2000/5	2500/5	3000/5	4000/5	4000/5	5000/5	750/5	1200/5	2000/5	2500/5	3000/5	4000/5
占用高度 mm Height			900	1800			1800		600	800	900	1800	1800	
柜宽 mm Width	CW2-3P		600	600		800	800	1000	800	800	600	600	800	800
	CW2-4P			800		1000		1200						
	CW1-3P		600	800		1000	800	1000	800	800	600	600	800	800
	CW1-4P		800	1000		1200	1000							1000
备注 Remark							与方案4组合 In combination with scheme 4.		7A方案可装三台主开关，7B方案可装两台主开关 It could be installed three main switches in scheme 7A, it could be installed two main switches in scheme 7B.					

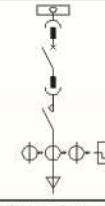
一次方案图 WIRING SCHEME OF THE PRIMARY CIRCUIT

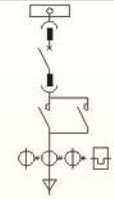
方案编号 Scheme No.			08			09		
			A	B	C	A	B	C
一次方案 Wiring Scheme of the primary circuit								
用途 Use			馈电（上出线） Feeder (Wire outgoing on top)			双电源切换 Switching of double Power Supply		
最大断路器额定工作电流 A Maximal Rated Working Current of circuit breakers			1600	2000	2500	1600	2000	2500
主要元件 Main components	断路器壳架等级 Framework Current Grade of circuit breaker	CW2	1600	2000	2500	1600	2000	2500
		CW1	2000	2000	3200	2000	2000	3200
	电流互感器BH-0.66 Mutual inductor		2000/5	2500/5	3000/5	2000/5	2500/5	3000/5
占用高度mm Height			1800			1800		
柜宽mm Width	CW2-3P		600	600	800	600	800	
	CW2-4P			800				
	CW1-3P		600	800	800	600	800	800
	CW1-4P		800		1000	800		1000
备注Remark						两台断路器可选取不同的规格 Different specifications coule be chosen for two pieces of circuit breakers		

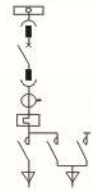
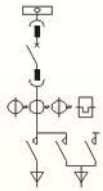
方案编号 Scheme No.			10			
			A	B	C	D
一次方案 Wiring Scheme of the primary circuit						
用途 Use			双电源切换Switching of double Power Supply			
最大额定工作电流A Maximal Rated Working Current			100	225	630	800
降容后额定工作电流 A Rated Working Current after capacity reducing			90	202	567	720
主要元件 Main components	转换开关壳架等级CA1 Framework Current Grade of switch		100	225	630	800
	电流互感器BH-0.66 Mutual inductor		150/5	300/5	800/5	1000/5
占用高度mm Height			400(450)	600	900	1800
柜宽mm Width	CA1-3P		600(800)		800	800
	CA1-4P					1000
备注Remark			1.括号内为竖分隔功能单元尺寸，功能单元占用整个柜宽。 2.断路器降容系数0.9。 1. It is the size of function unit of vertical separate cubicle in bracket, the width of function unit is equal to that of the cubicle. 2.Capacith-reducing Factor of Circuit breaker is 0.9.			

方案编号 Scheme No.			11				
			A	B	C	D	E
一次方案 Wiring Scheme of the primary circuit							
用途 Use			双电源切换Switching of double Power Supply				
最大额定工作电流A Maximal Rated Working Current			63	125	220	400	800
降容后额定工作电流 A Rated Working Current after capacity reducing			56	112	202	360	720
主要元件 Main components	断路器壳架等级 Framework Current Grade of circuit breaker	CM1-□/3P	63	160	225	400	800
		CM2-□/3P	125	125	225	400	
	接触器 SC-□-C Contactor		E3PN5	E6PN5	N10M8	N12M8	N16M8
	电流互感器BH-0.66 Mutual inductor		75/5	150/5	300/5	500/5	1000/5
占用高度mm Height			600	800	1000	1800	1800
柜宽mm Width			600				800
备 注 Remark			断路器降容系数0.9 Capacith-reducing Factor of Circuit breaker is 0.9				

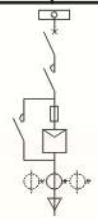
方案编号 Scheme No.			12			13		
			A	B	C	A	B	C
一次方案 Wiring Scheme of the primary circuit								
用途 Use			馈 电 Feeder			馈 电 Feeder		
最大额定工作电流 A Maximal Rated Working Current			225	400	630	225	400	630
降容后额定工作电流 A Rated Working Current after capacity reducing			202	360	567	202	360	567
主要元件 Main compenents	断路器壳架等级 Framework Current Grade of circuit breaker	CM2	225	400	630	225	400	630
		CM1	225	400	630	225	400	630
	电流互感器BH-0.66 Mutual inductor		250/5	400/5	750/5	-	-	-
占用高度 mm Height	横分隔 Horizontal Separate	CM1-3P	200	400		200	400	
		CM1-4P						
		CM2-3P						
	竖分隔 Vertical Separate	CM1-3P	450	450		450	450	
		CM1-4P						
		CM2-3P		450			450	
柜宽mm Width			600(800)			600(800)		
备注 Remark			1.括号里尺寸为竖分隔柜宽。2.断路器降容系数0.9。 1.It is the width of vertical separate cubicle in bracket. 2.Capacith-reducing Factor of Circuit breaker is 0.9.					

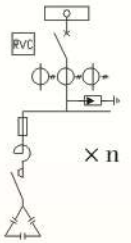
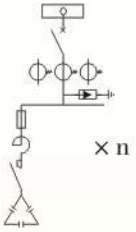
方案编号 Scheme No.			14		15		
			A	B	A	B	C
一次方案 Wiring Scheme of the primary circuit							
用途 Use			直接起动 Direct Starting		直接起动 Direct Starting		
最大电机额定功率kW Maximal Rated Power of Motor			22	55	55	90	160
最大电机额定电流A Maximal Rated Current of Motor			43	105	105	170	300
断路器额定电流A Rated Working Currentof circuit breakers		CM1	63	140	140	225	400
		CM2	63	140	140	225	400
主要元件 Main compenents	断路器壳架等级 Framework Current Grade of circuit breaker	CM1	63	225	225	225	400
		CM2	125	225	225	225	400
	接触器SC-□-C Contactor		E2SPN5	E5PM8	E5PM8	N8M8	N12M8
	热继电器TK-□-C Thermal Relay		E2PH	E5PN	E5PN	E02HJ	E02HJ
	电流互感器BH-0.66 Mutual inductor		75/5	150/5	150/5	250/5	400/5
占用高度mm Height	横分隔 Horizontal Separate		200	400	400	400	600
	竖分隔 Vertical Separate		450	600	600	900	1800
柜宽mm Width			600(800)		600(800)		
备注 Remark			1.协调配合类型2，2.断路器选用电磁(瞬时)脱扣器型，电动机保护用，3.括号里尺寸为竖分隔柜宽。 1. 2: Co-ordination and cooperation type2 2.The circuit breaker will be equipped with electromagnetic (instantaneous) release, for motor protection. 3.It is the width of vertical separate cubicle in bracket.				

方案编号 Scheme No.		16		17	
		A	B	A	B
一次方案 Wiring Scheme of the primary circuit					
用途 Use		可逆运行 Reversible Running		可逆运行 Reversible Running	
最大电机额定功率kW Maximal Rated Power of Motor		22	55	55	90
最大电机额定电流A Maximal Rated Current of Motor		43	105	105	170
断路器额定电流A Rated Working Current of circuit breakers	CM1	63	140	140	225
	CM2	63	140	140	225
主要元件 Main components 断路器壳架等级 Framework Current Grade of circuit breaker	CM1	100	225	225	225
	CM2	125	225	225	225
接触器SC-□-C Contactor		E2SPN5	E5PM8	E5PM8	N8M8
热继电器TK-□-C Thermal Relay		E2PH	E5PHI	E02HJ	E02HJ
电流互感器BH-0.66 Mutual inductor		75/5	150/5	150/5	250/5
占用高度mm Height 横分隔 Horizontal Separate		200	400	400	600
竖分隔 Vertical Separate		450	900	900	
柜宽mm Width		600(800)		600(800)	
备注Remark		1.协调配合类型2，2.断路器选用电磁(瞬时)脱扣器型，电动机保护用，3.括号里尺寸为竖分隔柜宽。1.Co-ordination and cooperation type2 2.The circuit breaker will be equipped with electromagnetic (instantaneous) release, for motor protection. 3.It is the width of vertical separate cubicle in bracket.			

方案编号 Scheme No.		18		19		
		A	B	A	B	C
一次方案 Wiring Scheme of the primary circuit						
用途 Use		星三角起动 Wye-delta starting		星三角起动 Wye-delta starting		
最大电机额定功率kW Maximal Rated Power of Motor		37	75	37	75	315
最大电机额定电流A Maximal Rated Current of Motor		72	140	72	140	560
电机相电流 A Phase Current of Motor		41.6	80.9	41.6	80.9	323.4
断路器额定电流A Rated Working Current of circuit breakers	CM1	100	180	100	180	700
	CM2	100	180	100	180	
主要元件 Main components 断路器壳架等级 Framework Current Grade of circuit breaker	CM1	100	225	100	225	800
	CM2	125	225	125	225	
接触器SC-□-C Contactor		E2SPN5	E5PM8	E2SPN5	E5PM8	N12M8
热继电器TK-□-C Thermal Relay		E3PHR	E6HP	E02HJ	E02HJ	E02HJ
电流互感器BH-0.66 Mutual inductor		100/5	200/5	100/5	200/5	750/5
占用高度mm Height 横分隔 Horizontal Separate		400	600	400	600	1800
竖分隔 Vertical Separate		600	900	600	900	1800
柜宽mm Width		600(800)		600(800)		
备注Remark		1.协调配合类型2，2.断路器选用电磁(瞬时)脱扣器型，电动机保护用，3.括号里尺寸为竖分隔柜宽。1.Co-ordination and cooperation type2 2.The circuit breaker will be equipped with electromagnetic (instantaneous) release, for motor protection. 3.It is the width of vertical separate cubicle in bracket.				

一次方案图 WIRING SCHEME OF THE PRIMARY CIRCUIT

方案编号 Scheme No.		20		21		
		A	B	A	B	C
一次方案 Wiring Scheme of the primary circuit						
用途 Use		软起动，带旁路 Soft starting, with shunt		变频控制 Frequency conversion control		
最大电机额定功率kW Maximal Rated Power of Motor		55	250	5.5	15	110
最大电机额定电流A Maximal Rated Current of Motor		105	420	12	30	210
断路器额定电流A Rated Working Current of circuit breakers	CM1	140	500	16	40	315
	CM2	140	500	16	40	315
主要元件 Main components 断路器壳架等级 Framework Current Grade of circuit breaker	CM1	225	630	63	63	400
	CM2	225	630	125	125	400
主要元件 Main components 接触器SC-□-C Contactor		E5PM8	N14M8			
主要元件 Main components 熔断器RST Fuse		3-400/300A	11-1500/1500A			
主要元件 Main components 软起动器CR1，CR2 Soft starter		105	450			
主要元件 Main components 变频器ACS800-01-□-3 Transducer				0009	0020	0120
主要元件 Main components 电流互感器BH-0.66 Mutual inductor		150/5	500/5	-	50/5	300/5
占用高度mm Height		900	1800	900		1800
柜宽mm Width		600		600		
备 注 Remark		20A方案可装2个55kW及以下回路 Two circuits in 55kW and below can be installed in scheme 20A.		1.对轻度过载应用和重载应用应降低等级使用，详见ACS800产品样本。 2.21A方案可装2个15kW及以下回路。 1.In case of the conditions of light overload and heaby overload, the rating should be reduced. For details, please refer to ACS800 Product Manual 2.Two circuits in 15kW and below can be installed in scheme 21A.		
		断路器选用电磁(瞬时)脱扣器型，电动机保护用。 The circuit breaker will be equipped with electromagnetic (instantaneous) release, for motor protection.				

方案编号 Scheme No.		22												23											
		A	B	C	D	E	F	G	H	I	J	K	L	A	B	C	D	E	F	G	H	I	J	K	L
一次方案 Wiring Scheme of the primary circuit																									
用途 Use		电容自动补偿 Capacity Automatic Compensation												电容联动补偿 Capacity Gang Compensation											
补偿路数 n Number of Compensation Circuits		6	8	10	12	6	8	10	12	6	8	10	12	6	8	10	12	6	8	10	12	6	8	10	12
补偿容量 kvar, Compensation capacity		96	128	160	192	120	160	200	240	180	240	300	360	96	128	160	192	120	160	200	240	180	240	300	360
断路器额定电流A Rated Working Current of circuit breakers		180	225	315	400	225	315	400	500	350	500	630	700	180	225	315	400	225	315	400	500	350	500	630	700
主要元件 Main components	CM1-225	1	1			1								1	1			1							
	CM1-400			1	1		1	1		1						1	1		1	1		1			
	CM1-630								1		1	1									1		1	1	
	CM1-800												1												1
	RT16-00/40 3P	6	8	10	12									6	8	10	12								
	RT16-00/50 3P					6	8	10	12									6	8	10	12				
	RT16-00/80 3P									6	8	10	12									6	8	10	12
	XD1-16	6	8	10	12									6	8	10	12								
	XD1-20					6	8	10	12									6	8	10	12				
	XD1-30									6	8	10	12									6	8	10	12
	SC-E1PN5-C	6	8	10	12									6	8	10	12								
	SC-E2PN5-C					6	8	10	12									6	8	10	12				
	SC-E3PN5-C									6	8	10	12									6	8	10	12
	BCMJ3-0.415-16-3	6	8	10	12									6	8	10	12								
	BCMJ3-0.415-20-3					6	8	10	12									6	8	10	12				
	BCMJ5-0.415-30-3									6	8	10	12									6	8	10	12
占用高度mm Height		1800												1800											
柜宽mm Width		600		800		600		800	1000	600	800		1000	600		800		600		800	1000	600	800		1000
备 注Remark		1.断路器选用电磁(瞬时)脱扣器型。 2.CM1断路器可用同规格CM2断路器代替。 3.断路器配手动操作机构。 4.加装散热风机。 1.The circuit breaker will be equipped with electromagnetic (instantaneous) release 2.CM1 Circuit Breaker can be replaced by the same specificative CM2 Circuit Breaker 3.Equiped with hand-driven Operating Mechanism of Circuit Breaker 4.Added Radiating Fan																							