

GCK

低压抽出式开关柜

GCK Low Voltage Withdrawable Type Switchgear



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概述 General

GCK 低压抽出式开关柜广泛适用于发电厂、冶金轧钢、石油化工、轻工纺织、港口码头、大楼宾馆等场所作为交流三相四线或五线制、电压 380V、660V，频率为 50Hz、额定电流为 5000A 及以下的供电系统中的配电和电动机集中控制之用。

GCK 是经过全面型式试验，并获得 CCC 认证，是组装而成的高级型低压开关柜设计符合下列标准：国家标准 GB7251.1-2013《低压成套开关设备》国际标准 IEC60439.1《低压成套开关设备和控制设备》

GCK low voltage withdrawable type switchgear is widely used in power plant and metallurgical, petroleum, chemical, textile industries and port and high-rise buildings and hotels. GCK (three phases and four or five lines; voltage: 380V, 660V; frequency: 50Hz; rated current: 5000A and below) can be used as the power distribution and motor centralized control in power generating and supplying system

GCK passed all the tests and gained CCC certificate. The advanced design of GCK meets the following standards: GB7251.1-2013 "Low Voltage Switchgear" and IEC439-1 "Low Voltage Whole Set Switching and Controlling Equipment" .

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℃，在 24 小时内平均温度不高于 +35℃。
Ambient temperature: -5~+40℃ and the average temperature in 24h must below 35℃ .
- ◆ 相对湿度在最高温度 +40℃时不超过 50%，在较低温度时允许有较高的相对湿度，如 +20℃时为 90%。
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.
- ◆ 空气清洁，无腐蚀性及爆炸性气体，无导电及能破坏绝缘的尘埃。
It is applicable in the place with clean air and without corrosive and explosive gases and without the non-conductive and de-isolation dusts.
- ◆ 无显著摇动和冲击振动的场合，垂直安装，倾斜度不应大于 5 度。
The inclination to the vertical plane is not more than 5° and the switchgear should be operated in the conditions without obvious shaking and violet vibration..
- ◆ 海拔高度不超过 2000 米。
Altitude: ≤ 2000m
- ◆ 开关柜适用于以下温度运输和储存：-25℃至 +55℃，在短时间（不超过 24 小时）不超过 +70℃。
Temperature for Transferring and Storing: -25~+55℃ and short-term temperature in 24h must below 70℃ .
- ◆ 用户对上述条件不能满足时应与制造厂协商。
Other special requirements need to be discussed when ordering.

主要技术参数 Specifications

- ◆ 额定绝缘电压 660V/1000V
Rated Insulation Voltage 660V/1000V
- ◆ 额定工作电压 400V/660V
Rated Working Voltage 400V/660V
- ◆ 辅助电路额定工作电压：交流 380V、220V，直流 110V、220V
Rated Working Voltage of Auxiliary Circuit: AC 380V, 220V, DC 110V, 220V
- ◆ 母 线 额 定 电 流：1000A、1250A、1600A、2000A、2500A、3200A、4000A、5000A
Rated Current of Busbar: 1000A, 1250A, 1600A, 2000A, 2500A, 3200A, 4000A, 5000A
- ◆ 母线额定短时耐受电流：50kA、80kA(有效值)1 秒
Rated Short-time Withstand Current of Busbar (Valid Value in 1s): 50kA, 80kA
- ◆ 母线额定峰值耐受电流：105kA/0.1s、140kA/0.1s、176kA/0.1s
Rated Peak Withstand Current of Busbar (0.1s): 105kA, 140kA, 176kA
- ◆ 分支母线额定电流：630A、1000A、1250A、1600A
Rated Current of Branch Busbar: 630A, 1000A, 1250A, 1600A
- ◆ 分支母线额定短时耐受电流：30kA、50kA(有效值)1 秒
Rated Short-time Withstand Current of Branch Busbar (Valid Value in 1s): 30kA, 50kA
- ◆ 分支母线额定峰值耐受电流：63kA、105kA/0.1s
Rated Peak Withstand Current of Branch Busbar (0.1s): 63kA, 105kA
- ◆ 外壳防护等级：IP30、IP40
Protection Degree of Shell: IP30, IP40
- ◆ 母线设置：三相四线制、三相五线制
Busbar Arrangement: three phases and four lines, three phases and five lines
- ◆ 操作方式：就地、远方、自动
Operating Mode: local, remote, automatic

开关柜的分类 Cabinet Types

- ◆ 受电柜
Power Receiving Cabinet
- ◆ 母线联络柜
Busbar Connecting Cabinet
- ◆ 馈电柜
Feeder Cabinet
- ◆ 电动机控制柜
Motor Control Cabinet
- ◆ 电源切换柜
Power Transfer Cabinet

结构特点 Structure Features

- ◆ GCK 的基本框架为组合装配式结构，框架的全部结构件都经过镀锌，喷塑处理，通过螺钉紧固互相连接成基本框架，在按需要加上门，档板、隔板、抽屉、安装支架以及母线和电器组件等零件，组装成一台完整的控制中心柜，本柜结构有下列特点：
The basic frame structure of GCK is assembly type. All the parts of the frame have been processed through zinc plating and powder coating and connected through screws and bolts. The complete control center includes door, slide board, clapboard, drawer, installation frame, busbar and electric components. The structure features of GCK are as follows:
- ◆ 柜架 Frame
The frame is assembled by C type material. And the matched components are provided by the company to make sure the accuracy and quality of the frame.
- ◆ 零部件的成型尺寸，开孔尺寸，设备间隔实行模数化（模数 E=20mm，下同）。
The dimensions of components, holes and intervals are modulated (module E=20mm, the same below)
- ◆ 内部结构件采用镀锌处理。
Inner structures are processed through zinc plating.
- ◆ 柜体顶盖为可拆卸式，柜顶的四角装有吊环，用于起吊和装运。
The cover of the roof is removable. The flying rings at the four corners at the top of cabinet are for craning, loading and transporting.
- ◆ 框架分成母线室、功能单元室、电缆室三个相互隔离区间，可防止事故扩散。
The frame is separated into three independent compartments: busbar compartment, function unit compartment and cable compartment to prevent accident to spread.

结构特点 Structure Features

功能单元 (抽屉部分)

抽屉单元高度模数为 200mm, 分为 1/2 单元、1 单元、1.5 单元、2 单元、3 单元五个尺寸系列。单元回路额定电流 630A 及以下。

Function Unit (Drawer)

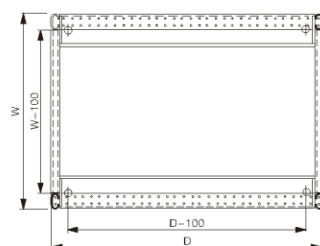
The height module of drawer unit is 200mm. There are five series of function unit: 0.5 unit, 1 unit, 1.5 units, 2 units and 3 units. The rated current of the unit circuit is 630A and below.

- ◆ 每台 MCC 柜最多能安装 9 个 1 单元的抽屉或 18 个 1/2 单元的抽屉。
Each MCC cabinet can be installed with 9 of 1 unit drawer and 18 of 0.5 unit drawer at most.
- ◆ 操作机构与抽屉进行机械连锁, 主开关在合闸位置时, 抽屉不能抽出。
Operating mechanism and the drawer are interlocked. When the switch is in closing position, the drawer can not be drawn out.
- ◆ 抽屉的操作机构可用一把挂锁锁定在合闸或分闸位置, 可安全地进行电器设备的维修。
The lock of operation mechanism can lock the drawer in breaking or closing position for safety maintenance.
- ◆ 功能单元背面具有主电路进出线插头、辅助电路二次插头。
The plugs of main circuit inlet and outlet lines and auxiliary circuit secondary lines are at the back of the function unit.
- ◆ 功能单元隔室采用金属隔板隔开。
Function unit is separated by metal plate.
- ◆ 抽屉单元采用旋转式推进机构, 具有三位置功能, 操作简单可靠。
The drawer unit uses rotating feed mechanism and has three functional positions for easy and reliable operations.
- ◆ GCK 抽屉推进机构采用螺旋轨迹沿定位件运动方式, 实现功能单元推进抽出, 在功能单元推进和抽出过程中, 实现三位置显示和机械联锁并配有微动开关, 试验位置时可进行电气联锁。
The draw-in and draw-out function are achieved through the positioning movement in helical track. During the processes of draw-in and draw-out, the three functional positions are indicated and mechanical interlocking works. The drawer is equipped with microswitch. The electrical interlocking happens when it is in test position.

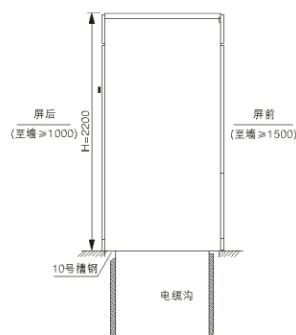
外形尺寸与安装 Outline Overall and Installation Dimensions

名称 Item	宽 (W) Width	深 (D) Depth	高 (H) Height
抽屉 Drawer Cabinet	600	800、1000	2200
进线柜 Cable-in Cabinet	600、800、1000	800、1000	2200
电容柜 Capacity Cabinet	600、800、1000	800、1000	2200

安装尺寸图 Installation Dimensions



附图一
Picture 1



附图二
Picture 2

安装 GCS 系列开关柜属非靠墙垂直安装, 其后面为柜体的出线电缆沟, 为便于维护, 后面距墙通常为 1000-1200mm, 正面距离安装见图 2。
GCS series cabinet can not be installed against the wall; because at the back of the cabinet is the outlet cable duct. The back of the cabinet is normally installed 1000-1200mm away from the wall for convenient maintenance. The installation for the front of the cabinet sees picture 2.