GSA1系列自动转换开关

GSA1 Series Automatic Transfer Switching Equipment

——配电电器产品名录 2013

安全 智能 环保

CE UL CCC TÜV CB RoHS

ISO9001 ISO14001 OHSAS18001

>> 用途 APPLICATION

△ GSA1系列自动转换开关适用于额定工作电压AC400V、频率50Hz、额定电流从10A~800A的双电源供电系统（常用电源和备用电源或常用电源和发电电源)中,因一路电源发生异常而进行电源之间的自动切换，以保证其供电的连续性和可靠性。该装置具有欠压、过压、缺相、过载和短路保护功能。广泛应用于医院、商场、银行、化工、冶金和高层建筑等重要的用电场所。

GSA1 series automatic transfer switching equipment is used to shift from the abnormal power supply to in case of one line of abnormal power supply (normal power supply and standby power supply or normal power supply and the generating power supply), both of which have the rated operational voltage of AC400V, 50Hz,rated current of 10A to 800A , So that reliablity and continuous are ensured . this switch with undervoltage , overvoltage phaes missing,overload and short circuit protection . this swith often used in hospitals、shopping malls、banks、chemical industry、 metallurgy ,building other importanr sites electricity.

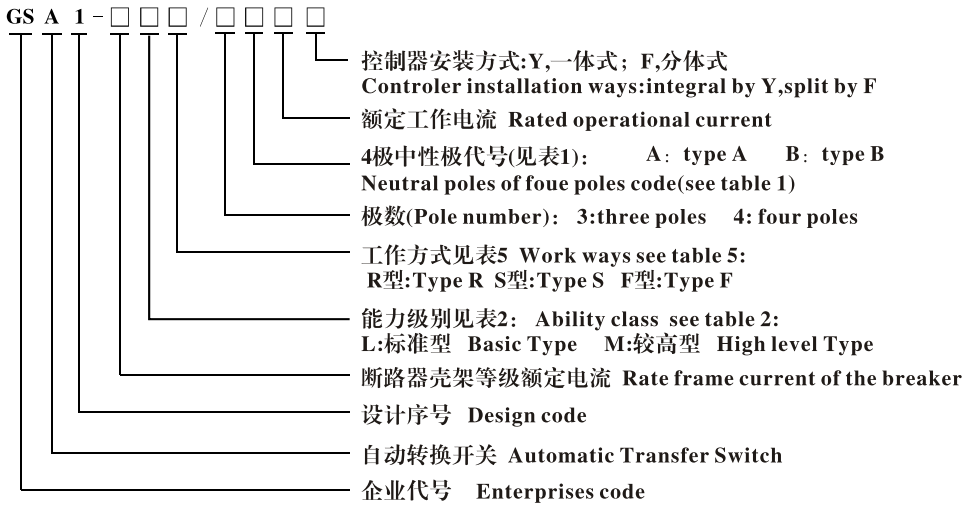
△ 本装置执行 GB/T14048.11–2002《自动转换关电器》标准。

This swith performs the standard of GB/T 14048.11–2002《Automatic tansfer switching equipment》.

△ 本装置使用类别为AC–33iB,级别为CB级。

Tha category of utilisation and class of this this switch are AC–33iB and CB.

>> 型号及含义 TYPE AND MEANING



注：四极产品没有L、M的标志

表(table)1

四极中性极代号 Neutral poles of foue poles code	功能说明 Function explanation
A型 type A	N极始终接通，不与其它三极一起分合 N–poles has been connected all along
B型 type B	N极与其它三极一起分合 N – poles could act with other three poles

表(table)2

能力级别 Ability class	功能说明 Function explanation
L型 Basic Type	配L型塑壳断路器 Equip MCCB of L-type
M型 High level Type	配M型塑壳断路器 Equip MCCB of M-type

>> 使用范围 USE SCOPE

△ 周围空气温度为－5℃~＋40℃，且24小时的平均值不得超过＋35℃；相对湿度在＋40℃时不超过50%，最湿月平均最低温度不＋25℃，且该月平均最大相对湿度不超过90%，对因温度变化发生在产品表面上的凝露应采取措施处理；

The ambient temperature is－5℃ ~ ＋40℃ and the average value within 24hours isn't above +35℃ The relative hunidity ofthe air isn't avobe 50% at the max , temperature of +40℃, average temperature isn't avobe +25℃ at the max,hunidity, and the average relative hunidity isn't avobe 90%, Dew on swith due to temperature alteration should be removed.

△ 安装时海拔不得超过2000m； The elevation isn tabove 2000m.

△ 污染等级为3级。Pollution protection:Grade 3 .

>> 主要特点 CHARACTERISTICS OF PEODUCT

△ 液晶显示:可显示铭牌页面、参数设定页面、运行页面、故障记忆等页面，每个页面显示一个不同的功能，通过显示屏和按键可以实现人机对话。

LCD displays: Nameplate pages can be shown、setting parameters pages、running pages、memory pages and so on , each page shows a different function , man and machine can be achieved to dialogue on display and buttons.

△ 密码锁定：凡与设定有关的参数均有密码保护。如需要修改参数，必须将密码设置正确后才能进行修改。

Password settiing: setting parameters have password-protected,if changes of parameters that must be set the correct password after amendment.

△ 参数设定：欠电压值、过压电值、转换动作时间（t1-t6)可自由设定。

Setting parameters: under-voltage volue 、over-voltage value、conversion time (t1-t6)for action can be set free.

△ 三合一工作方式：将R型、S型、F型集成于一台控制器中，用户可在现场根据实际需要选择控制器的工作方式。

Three unite one of the way : type R、type S、type F work in an integrated controller, use- rs may choose work mode of controller at scene.

△ 故障报警：当常用电源或备用电源出现欠压、过压、缺相、短路和过载故障时,对应的信号灯闪烁报警。

Error alarm: when normal power and standby power appear undervoltage、 overvoltage、 phase missing、short-circuit and overload failure, corresponding lights alarm flashing.

△ 故障记忆功能：可记忆上次从出现的故障电源（常用电源或备用电源）、故障类型（过压、欠压、缺相、失压）和故障电压的最高值和最低值。

Error memory function: it can memory last power error(normal power or standby power)、 fault type (overvoltage 、undervoltage、 lost voltage、 lacking phase),error max voltage value and min voltage value.

△ 双断功能：在发生火灾或其它紧急情况下，可同时断开常用和备用电源,使两个电源均无法向电路供电。
Dual-off function：intthe eventof a fire or other emergency situations, normal power supply and standby power supply switch off，two power unable to operate.

△ 过载和短路保护功能：见表3。 Overload and short-circuit protection：see table 3.

表(table)3

脱扣器整定电流（A）Release setting current (A)	热动型脱扣器约定脱扣时间(环境温度40±2oC) Thermodynamic release(ambint 40±2℃)		电磁脱扣器动作电流（A）Electromagnetic release action current(A)
	配电型 For power distribu tion		
	1.05In(冷态) 1.05In (cold state)	1.3In(热态) 1.3In (heat state)	
	不动作时间(h) not acting Time(h)	动作时间(h) acting time (h)	配电型 For power distribution
10≤In≤63	≥1	<1	10In±20%
63<In≤800	≥2	<2	

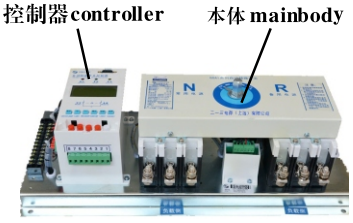
>> 结构说明 STRUUCTURE EXPLAINATION

△ GSA1自动转换开关是由本体和控制器两大部分组成的自动切换装置系统，本体由两台带有电机操作机构的同壳架GSM1断路器、机械联锁机构及附件组成，所有的元件安装在一块金属板上。控制器有一体式（见图1）和分体式（见图2）两种。
GSA1 automatic switch is the automatic switching devices that consists of tha main body and the controller，the main body consists of two sets of GSM1 breakers with the same frame cuurrent and equipped with motordriven device，mechanical interlock and appendixes, All the components are installed on a metal plate, The controller has two type : integral (see picture1)， split(see picture2).

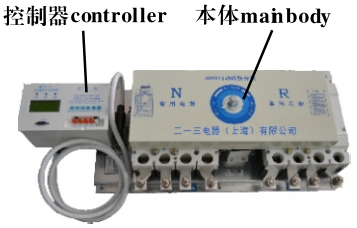
△ GSA1按结构可分为一体和分体式两种类型。一体式的本体和控制器安装在一块底板上，外形见图3。分体式的控制器和本体各自独立，本体安装在电柜中，控制器安装在柜门上，二者之间用专业电缆线联接，外形见图4。
GSA1 can be divided into integral type and split type，tha main body and the controller are installed on the floor for integral type, shape see picture 3.tha main body and the controller are independence for the split type，the main body can be mounted in the cabinet,the controller is mounted on panel door, cable is used to link the main body with the controller. Phase see picture 4.

图1 一体式控制器
integral controller

图(picture)2 分体式控制器
split controller



图(picture)3一体式自动转换开关
integral automatic switch



图(picture)4 分体式自动转换开关
split automatic switch

表(table)4

型 号 Type	极数 Pole	执行断路器 The mounting breakers	额定极限短路分断能力 额定运行短路分断能力 Icu/Ics(KA) Limiting short-circuit breaing ability Operation short-circuit breaking ability Icu/Ics(KA)		额定工作电流(A) Rated working current(A)	额定工作电压(Un) Rated working voltage (Un)	额定绝缘电压(Ui) Rated insulation voltage (Ui)	额定频率(Hz) frequency (Hz)	机械寿命(次) Mechanica life (number)	欠压(V) under voltage(v)	过压(V) over voltage (v)	缺相 Lost phase	失压(V) Lost voltage(V)	电气寿命(次) Electronic life (number)
			400V	690V										
GSA1-63L	3P	GSA1-63L/3	25/18	/	10、16、20 25、32、40 50、63	400V	500V	50HZ	5000	欠压值可现场调整(1-220V)，级差IV under voltage value can be adjusted at the scene (1-220V). grading is one	过压值可现场调整(220-999V)，级差IV over voltage value can be adjusted at the scene (220-999V). grading is one	有一相小于66V a phase is less than 66V	有三相全部小于66V all three phase are less than 66V	5000
GSA1-63M		GSA1-63M/3	50/35	/										
GSA1-63	4P	GSA1-63/4												
GSA1-100L	3P	GSA1-100L/3	35/22	/	10、16、20 25、32、40 50、63、80 100		800V							
GSA1-100M		GSA1-100M/3	50/35	25/18										
GSA1-100	4P	GSA1-100/4												
GSA1-225L	3P	GSA1-225L/3	35/22	/	100、125 140、160 180、200 225									
GSA1-225M		GSA1-225M/3	50/35	25/18										
GSA1-225	4P	GSA1-225/4												
GSA1-400L	3P	GSA1-400L/3	50/35	/	225、250 315、350 400				3000					
GSA1-400M		GSA1-400M/3	65/42	25/18										
GSA1-400	4P	GSA1-400/4												
GSA1-630L	3P	GSA1-630L/3	50/35	/	400、500 630				2500					
GSA1-630M		GSA1-630M/3	65/42	25/18										
GSA1-630	4P	GSA1-630/4												
GSA1-800L	3P	GSA1-800L/3	50/35	10/5	630、700 800									
GSA1-800M		GSA1-800M/3	65/42	25/18										
GSA1-800	4P	GSA1-800/4												

> > 控制方式和运行模式 CONTROL TYPE AND OPERATION MODE

■ 控制方式和运行模式见表5 Control ways and operation mode see table 5

表(table)5

控制方式 Control ways	控制功能 Control function	适用场合 Applicability	运行模式 Operation mode
R型 Type R	常用-备用间自投自复 Automatic transfer and restoration between normal and stand by power supply	电网和电网 Electric barbed wire and electric barbed wire	自动运行模式 Automatic operation mode
			常用电源运行模式 Normal power supply operation mode
			备用电源运行模式 Standby power supply operation mode
			断/扣运行模式 Breaking/hook operation mode
S型 Type S	常用-备用间自投不自复 Automatic transfer without restoration between normal and standby powe supply	电网和电网 Electric barbed wire and electric barbed wire	自动运行模式 Automatic operation mode
			常用电源运行模式 Normal power supply operation mode
			备用电源运行模式 Standby power supply operation mode
			断/扣运行模式 Breaking/hook operation mode
F型 Type F	常用-发电电源间自投自复 Automatic tran sfer and resto ration between normal and generator supply	电网和发电机 Electric barbed wire and generator	自动运行模式 Automatic operation mode
			常用电源运行模式 Normal power supply operation mode
			备用电源运行模式 Standby power supply operation mode
			断/扣运行模式 Breaking/hook operation mode

■ R型 、S型、F型的常用电源运行模式：按下“常用电源”键，如常用电源已接通，系统不予另行操作，如备用电源已接通，系统强制备用电源断路器立即断开，常用电源断路器延时接通，常用电源供电，如常用电源随后出现异常，常用电源将延时断开。

Normal power operating modes for type R、type S、 type F: Press "normal key" , as normal power has connected, the system not operating separately,as standby power has connected,the system immediately disconnect standby breaker. Normal breaker close after delay time, if normal power opeared malf-unction,normal power will be disconnected after delay time.

■ R型、S型、F型的备用电源运行模式：按下“备用电源”键，如备用电源已接通，系统不予另行操作，如常用电源已接通，系统强制常用电源断路器立即断开，备用电源断路器延时闭合，备用电源供电，如备用电源随后出现异常，备用电源将延时断开。

Standby power operating modes for type R、type S、 type F: Press "standby key" , as standby power has connected, the system not operating separately,as normal standby power has connected,the system immediately disconnect normal breaker. standby breaker close after delay time ,the standby power starts operating,if standby power opeared malfunction,standby power will be disconnected after delay time.

■ R型、S型、F型的断/扣运行模式：按下“断/扣”键，无论哪一路电源供电，常用、备用断路器都立即断开（如已闭合），停止向下一级供电。

Open and hook modes for type R、type S、 type F: Press "open and hook key" , operation of normal power or standby power anyhow, normal breaker and standby breaker immediately will disconnect(as has been closinged), stop operation of lower power supply.

■ R型、S型、F型的脱扣：当常用电源断路器或备用电源断路器因过载脱扣后，控制器脱扣信号灯亮，蜂鸣器鸣叫报警，此时液晶显示页面不显示故障，仅显示在运行页。当出现脱扣后，必须先查明脱扣原因并排除故障，然后按控制器的“断/扣”键，这时自动转换开关方可正常工作。

Reletase of type R、type S、 type F: When normal breaker or standby breaker overload release,release light is lit ,the buzzer alarm calls, this LED diaplay page of operation without fault page, when has release it must first identify the reasons and troubleshooting, then press "open/hook" key of controller , automaticall transfer switch can work properly.

△ t1：转换断开延时时间（1－999秒，用户可调,出厂时整定再1秒）

t1: Delay time before power supply switching off while switching operation(1–999S,Adjusted by users, time is set one second before factory price)

△ t2：转换接通延时时间（1－999秒，用户可调，出厂时整定在3秒）

T2: Delay time before power supply switching on while switching operation(1–999S,Adjusted by users, time is set three second before factory price)

△ t3：返回断开延时时间（1－999秒，用户可调，出厂时整定在1秒）

t3: Delay time before power supply switching off while restorating operation(1–999S,Adjusted by users, time is set one second before factory price)

△ t4：返回接通延时时间（1－999秒，用户可调，出厂时整定在3秒)

t4: Delay time before power supply switching on while restorating operation(1–999S,Adjusted by users,time is set three second before factory price)

△ T5：卸载延时时间（1－999秒，用户可调，出厂时整定在3秒）

t5: Delay time before giving out of the command of unload(1–999S,Adjusted by users time is set three second before factory price)

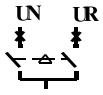
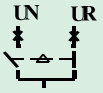
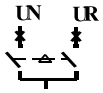
△ t6：发电延时时间（1－999秒，用户可调，出厂时整定在3秒）

T6: Delay time before giving out of the command of power generation (1–999S,Adjusted by users,time is set three second before factore price)

■ R型自动运行模式控制逻辑功能(见表6)

Control logic function of Automatic operation mode for type R（see table 6）

表(table)6

常用电源（UN）Normal power supply	备用电源(UR) standby power supply	工作状态 working state	说明 explanation
正常 Normal	正常 Normal		常用电源供电，常用电源和备用电源信号灯稳定点亮。Operation of the nomal power supply,lights of normal power supply and standby power supply lit stability.
异常 Anomaly	正常 Normal		常用电源切除,动作时间t1,常用电源信号灯闪烁报警。Nomal power supply will be switch off and the action time is t1， lights of normal power supply flashing alarm.
异常 Anomaly	正常 Normal		备用电源投入供电,动作时间t2，常用电源信号灯闪烁报警。Standby power supply starts operation,the action time is t2，lights of normal power supply flashing alarm.
恢复正常 Restores normal	正常 Normal		备用电源闭切除,动作时间t3，常用电源和备用电源的信号灯稳定点亮。Standby power supply will be switch off and the action time is t3，lights of normal power supply and standby powersupply lit stability.
恢复 正常 Restores normal	正常 Normal		常用电源投入供电,动作时间t4,常用电源和备用电源的信号灯稳定点亮。Normal power supply starts operation,the action time is t4, lights of normal power supply and stand by power supply lit stability.

■ S型自动运行模式控制逻辑功能(见表7)

Control logic function of Automatic operation mode for type S（see table 7）

表(table)7

常用电源(U N) Normal power supply	备用电源(UR) standby power supply	工作状态 working state	说明 explanation
正常 Normal	正常 Normal		常用电源供电，常用电源和备用电源信号灯稳定点亮。Operation of the nomal power supply,lights of normal power supply and standby power supply lit stability.
异常 Anomaly	正常 Normal		常用电源切除,动作时间t1,常用电源信号灯闪烁报警。Nomal power supply will be switch off and the action time is t1， lights of normal power supply flashing alarm.
异常 Anomaly	正常 Normal		备用电源投入供电,动作时间t2，常用电源信号灯闪烁报警。Standby power supply starts operation,the action time is t2，lights of normal power supply flashing alarm.
恢复正常 Restores normal	正常 Normal		备用电源继续供电，常用电源和备用电源的信号灯稳定点亮。Standby power supply still working,lights of normal power supply and standby power supply lit stability.
正常 Normal	异常 Anomaly		备用电源切除,动作时间t3,常用电源的信号灯稳定点亮,备用信号灯闪烁报警。Standby power supply switching off ,the action time is t3, light of normal power supply light of standby power power supply light of standby power
正常 Normal	异常 Anomaly		常用电源供电,动作时间t4,常用电源的信号常用电源供电,动作时间t4,常用电源的信号Normal power supply starts operating ,the action time is t4, light of normal power supply lit stability. light of standby power supply flashing alarm.
正常 Normal	正常 Normal		常用电源继续供电，常用电源和备用电源的信号灯稳定点亮。Normal power supply still working,lights of normal power supply and standby power supply lit stability.

■ F型自动运行模式控制逻辑功能(见表8)

Control logic function of Automatic operation mode for type F（see table 8）

表(table)8

常用电源(U N) Normal power supply	备用电源(UR) standby power supply	工作状态 working state	说明 explanation
正常 Normal	未发电 Not generation		常用电源供电，常用电源信号灯稳定点亮。 Operation of the nomal power supply,light of normal power supply lit stability.
异常 Anomaly	未发电 Not generation		常用电源继续供电,发电机启动信号发出，动作时间t6，常用电源信号灯闪烁报警。 Nomal power supply still work,The command to start the generator is given out, the action time is t6，light of normal power supply flashing alarm.
异常 Anomaly	正常 Normal		常用电源继续供电,卸载信号发出，动作时间t5，常用电源信号灯闪烁报警。 Nomal power supply still work,the action time is t5，light of normal power supply flashing alarm.
异常 Anomaly	正常 Normal		常用电源切除，动作时间t1，发电电源的信号灯稳定点亮，常用电源信号灯闪烁报警。 The normal power supply is switched off,the action time is t1, light of the gen-erating power supply lit stability. Light of normal power supply flashing alarm.
异常 Anomaly	正常 Normal		发电电源供电，动作时间t2，发电电源的信号灯稳定点亮，常用电源信号灯闪烁报警。 The generating power supply starts operating,the action time is t2, light of the generating power supply lit stability.li ght of normal power supply flashing alarm.
恢复正常 Restores normal	正常 Normal		发电机电源切除,动作时间t3,再延时t5后，恢复所卸负载，常用电源的信号灯稳定点亮。 The generating power supply is switch off, the action time is t3, after delay t5, recovery dumping load, the normal power supply Lit stability.
正常 Normal	发电机停机 The genera-ting stop running		常用电源供电，动作延时t4，常用电源的信号灯稳定点亮。再延时3min后，发电机停机信号发出，发电机停机。 Normal power supply starts operating,the action time is t4,light of normal power supply lit stability. after delay 3min, the command to stop the generation is give out,the generation stop running.

t1_t6见注1 t1_t6 See note 1

>> 控制器操作说明 EXPLAN OF CONTROLLER OPERATION

GSA1控制器采用液晶显示方式，通过“换页”键切换显示页面，每一页为一个不同功能面，由键盘和显示屏实现人机对话，操作简单，结构清晰。

GSA1 LED controller display pages througt an exchange of page ,each page features adefferent pages from the keyboard and csreen to achieve human-machine dialogue , simple and clear structure.

■ 控制器的符号介绍(见表9) sign introduced of controller（see table 9）

表(table)9

序号 Order	符号 Sign	意义 Meaning
1	Ui	额定绝缘电压 Rated insulation voltage
2	Un	额定工作电压 Rated working voltage
3	In	额定工作电流 Rated working current
4	N	常用电源 Normal power supply
5	R	备用电源 Standby power supply
6	U11,U12,U13	常用电源A相、B相、C相相电压值 The phase voltage value of A phase,B phase,Cphase of normal power supply

7	U21,U22,U23	备用电源A相、B相、C相相电压值 The phase voltage value of A phase,B phase,Cphase of standby power supply
8	UH	过电压值 Over-voltage value
9	UL	欠电压值 Under-voltage value
10	QX	缺相 Lost phase
11	SY	失压 Lost-voltage
12	GY	过压 Over-voltage
13	QY	欠压 Under-voltage
14	t1-t6	见注1 See note1

■ 铭牌页 Nameplate pages

△ 液晶显示屏显示自动转换开关的铭牌参数，包括额定绝缘电压、额定工作电压、额定工作电流和产品型号。

LED screen display automatic switch plate and parameters,including ra ted insulation voltage, rated working voltage, rated working current and product type

LABEL-标牌

Ui = *** V 额定绝缘电压 Un = ***V 额定工作电压

In = ***A 额定工作电流

GSA1 – ***/*** 产品型号

■ 运行参数显示页面 Run parameters pages

△ 在该页面显示两路电源的A相、B相、C相电压参数。

It will show phase voltage value of all phase of the two ways of power supply.

运行 RUN

U11 = *** V 常用电源A相相电压值 U21 = ***V 备用电源A相相电压值

U12 = *** V 常用电源B相相电压值 U22 = *** V 备用电源B相相电压值

U13 = *** V 常用电源C相相电压值 U23 = *** V 备用电源C相相电压值

■ 故障记忆显示页面： Error search page:

△ 可记忆上次从出现的故障电源（常用电源或备用电源）、故障类型（过压、欠压、缺相、失压）和故障电压的最高值和最低值。

It can memory last power failure(normai power supply or standby power supply)、fault type (overvoltage、 undervoltage、 lost voltage、lacking phase) ,fauit max voltage and min voltage .

RROR SEARCH TYPE *** 故障记忆

故障类型 ***（QX 缺相、SY 失压、 GY 过压、QY 欠压）

POWER *** 故障电源 PHASE *** 故障电压相

Uxx= *** V 故障相最低电压值(V) Uyy= *** V 故障相最高电压值(V)

设定页 Setting page

△ 用“+”、“–”键改变密码值，使其密码（密码值均为“213”）相等后，即可进行其它项目设定。用“确认”键将光标移到对应的项目上，然后用“+”或“–”键改变其值，完成设定后，按下“确认”键即可，设定完成后返回到运行页面，如不进行任何操作，一分钟后将自动返回到运行页面。

Password value can be changed by “+” key and “–”,it will can set other projects after password value (password value is 213) equiva– lent setting value, use “confirm” key and move the cursor to the corresponding project , and then use “+” and “–” keys to change its value and complete setting, then press the"confirm" key, perss returnning key can return to running page.if don't any operation , it will return to running page ofter a minute.

SET LICENSE *** 设定 密码

Ul = *** V 欠电压设定值 Uh = *** V 过电压设定值

T1 = *** S 转换断开延时(s) t2 = *** S 转换接通延时(s)

T3 = *** S 返回断开延时(s) t4 = *** S 返回接通延时(s)

T5 = *** S 卸载延时(s) t6 = *** S 发电延时(s)

试验页 Test page

△ 该页为产品设计员测试专用，用户无法进行操作。

The page for product designer for test, users will not be able to operate.

编程功能页 Function programming page

△ 在该页面内可以对一些功能进行选择编程。

The pages can used for function programming choices.

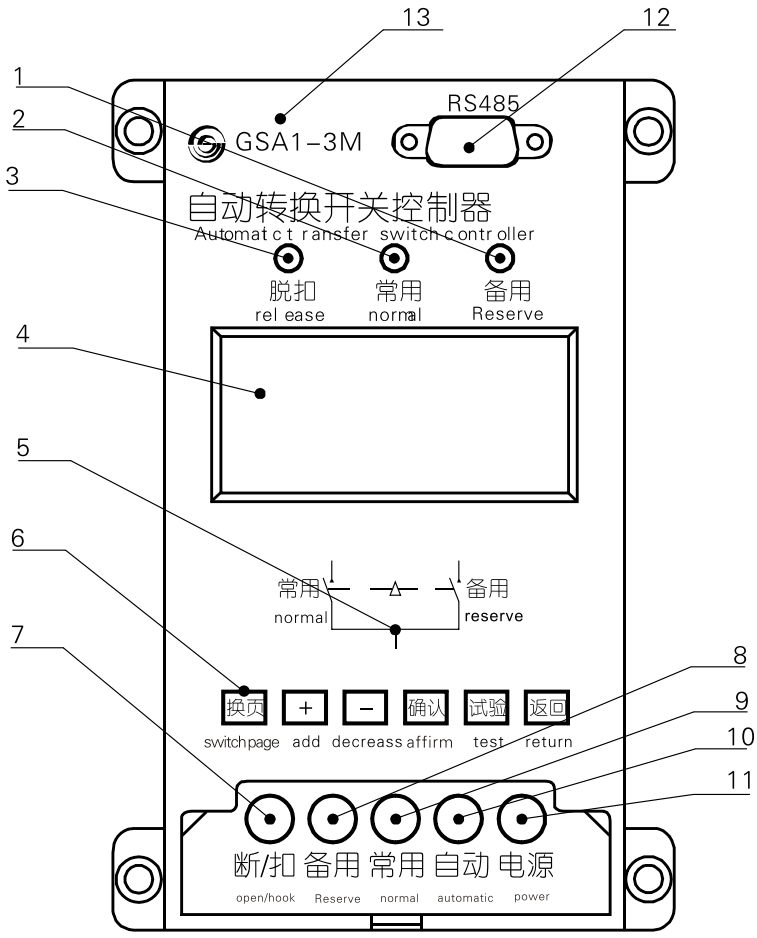
FUN LICENSE *** 功能页 密码 ***

MODEL *** 控制器类型 BEEP *** 蜂鸣器

NORMAL POWER OFF 常用电源 此页为设计员测试专用，用户不能修改

RESERV POWER OFF 备用电源 此页为设计员测试专用，用户不能修改

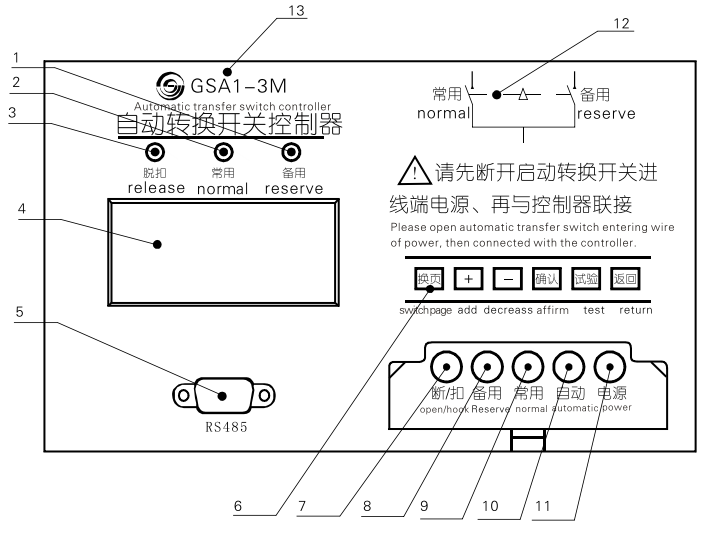
GSA1一体式控制器面板(见图5）panel of GSA1 integral controller(see picture 5)



图(picture)5

1.备用电源信号灯
Normal power signal light
2.常用电源信号灯
Standby power signal light
3.脱扣信号灯
Release signal light
4.液晶显示屏
LED screen
5.自动转换开关标识
Identification of automatic switch
6.功能键
Function keys
7.断/扣运行按键
Open/hook operation keys
8.备用电源运行按键
Normal power operation keys
9.常用电源运行按键
Standby power operation keys
10.自动运行按键
Automatic operation keys
11.控制器电源按键
Controller power keys
12.自动转换开关型号： GSA1−3M
Automatic transfer switch type: GSA1−3M

GSA1−3M 分体式控制器面板(见图6) Panel of GSA1 split controller（see picture 6)

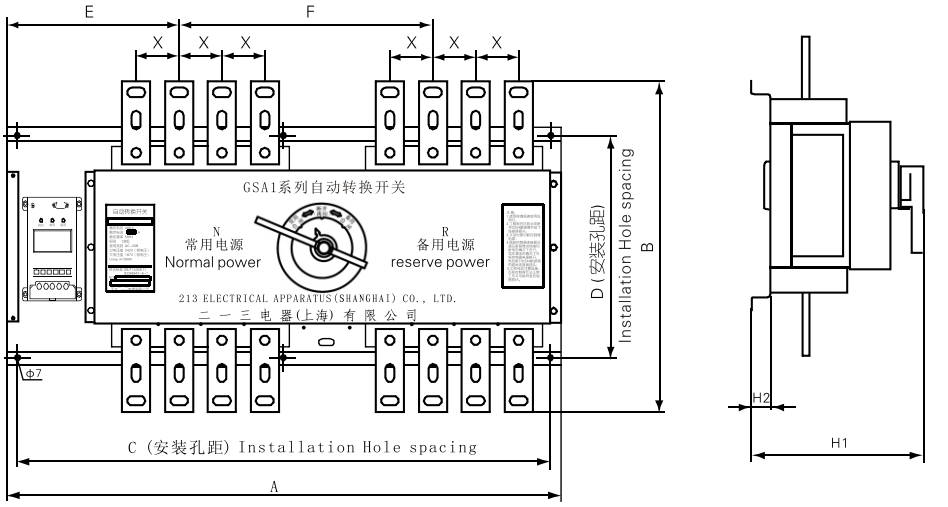


图(picture)6

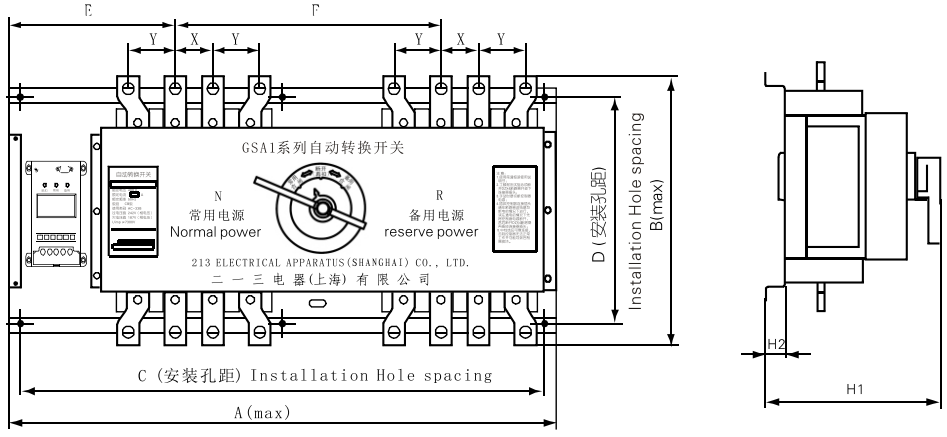
1.备用电源信号灯 Standby power signal light
2.常用电源信号灯 Normal power signal light
3.脱扣信号灯 Release signal light
4.液晶显示屏 LED screen
5.功能键 Function keys
6.断/扣运行按键 Open/look keys
7.备用电源运行按键 Standby power operation keys
8.常用电源运行按键 Normal power operation keys
9.自动运行按键 Automatic operation keys
10.控制器电源按键 Controller power keys
11.自动转换开关标识
Identification of automatic switch
12.自动转换开关型号： GSA1−3M
Automatic transfer switch type: GSA1−3M

一体式外形及尺寸见图7与表10

Integral Outline and mounting dimensions see picture 7 diagram table 10



GSA1-63~225 GSA1-800



GSA1-400~630

图(picture)7

表 table 10

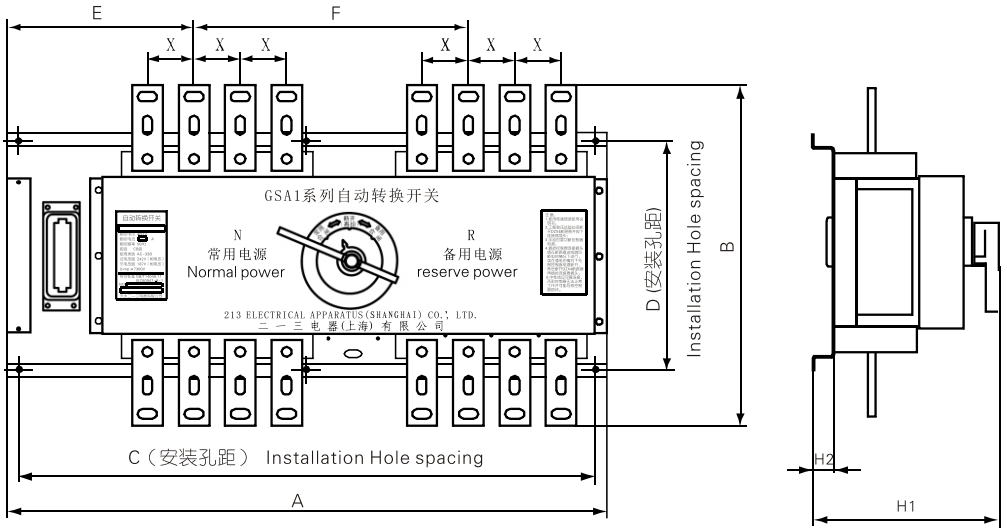
规格 standards / 尺寸 size			A	B	C	D	H1 L型 type L	H1 M型 type M	H2	X	E	F	Y
GSA1-63	3P	L、M	500	246	470	228	150	150	28	30	237	193	
	4P	M											
GSA1-100	3P	L、M	500	246	470	228	150	150	28	30	237	193	
	4P	M											
GSA1-225	3P	L、M	551	246	521	228	180	180	28	35	250	220	
	4P	M											
GSA1-400	3P	L、M	700	340	670	288	<200	<200	28	48	273	306	60
	4P	M											
GSA1-630	3P	L、M	800	362	770	300	<220	<220	28	58	293	369	68
	4P	M											
GSA1-800	3P	L、M	897	445	867	300	<230	<230	28	70	312	430	
	4P	M											

注2：B为断路器本体附加接线排后的总宽度

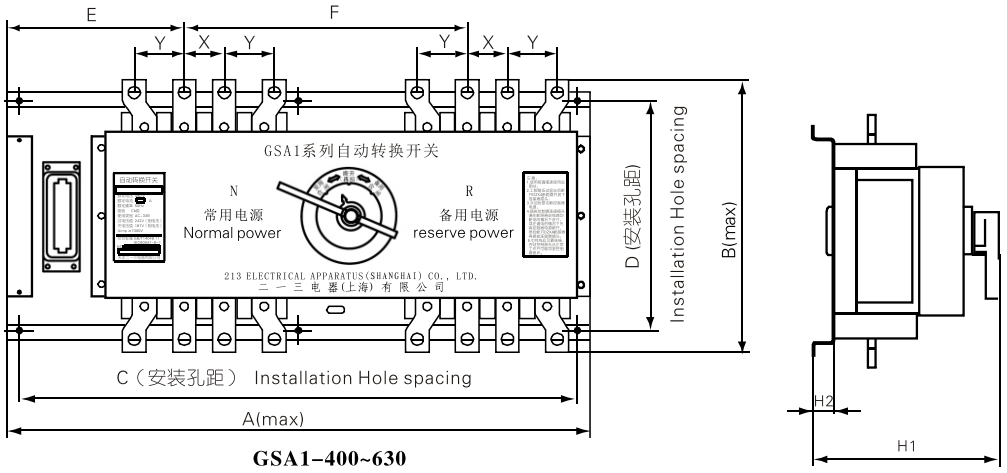
Note 2: B is the total width of additional wiring row of breaker

分体式外形及尺寸见图8与表11

Split Outline and mounting dimensions see picture 8 diagram table11



GSA1-63~225 GSA1-800



GSA1-400~630

图(picture)8

表(table)11

规格 standards / 尺寸 size			A	B	C	D	H1 L型 type L	H1 M型 type M	H2	X	E	F	Y
GSA1-63	3P	L、M	430	246	400	228	150	150	28	30	152	193	
	4P	M											
GSA1-100	3P	L、M	430	246	400	228	150	150	28	30	152	193	
	4P	M											
GSA1-225	3P	L、M	480	246	450	228	184	184	28	35	177	220	
	4P	M											
GSA1-400	3P	L、M	635	340	605	288	<200	<200	28	48	204	306	60
	4P	M											
GSA1-630	3P	L、M	730	362	700	300	<220	<220	28	58	220	369	68
	4P	M											
GSA1-800	3P	L、M	822	445	792	300	<230	<230	28	70	237	430	
	4P	M											

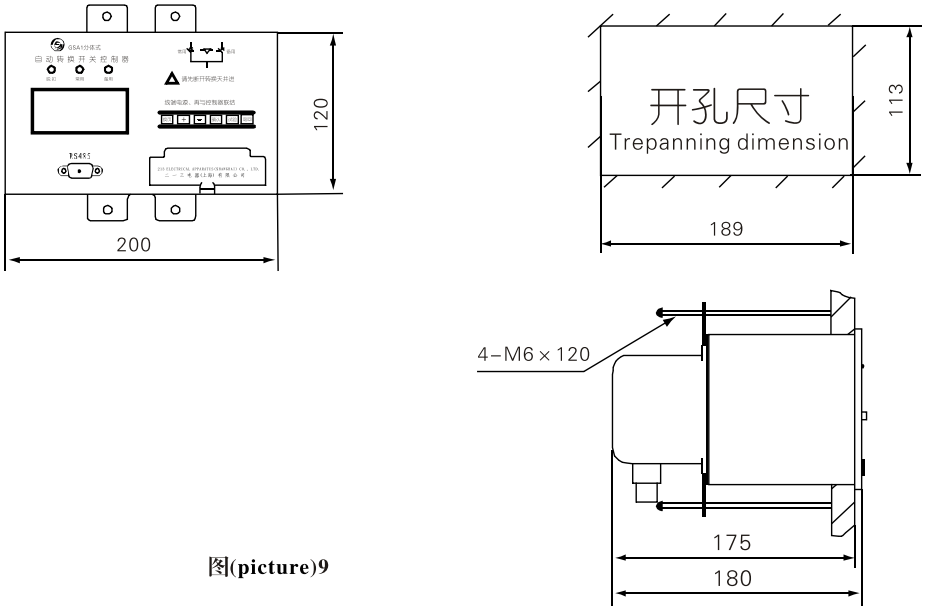
注3：B为断路器本体附加接线排后的总宽度 Note 3: B is the total width of additional wiring row of breaker

注4：分体式自动转换开关本体与控制器间的专用连接电缆长度最长为2.0米（正常为1.5米）。

Note 4: cable of 2 meters(1.5 meters mormal) at max length is used to link the split automatic switch main body with the controller.

分体式控制器外形及安装尺寸见图9

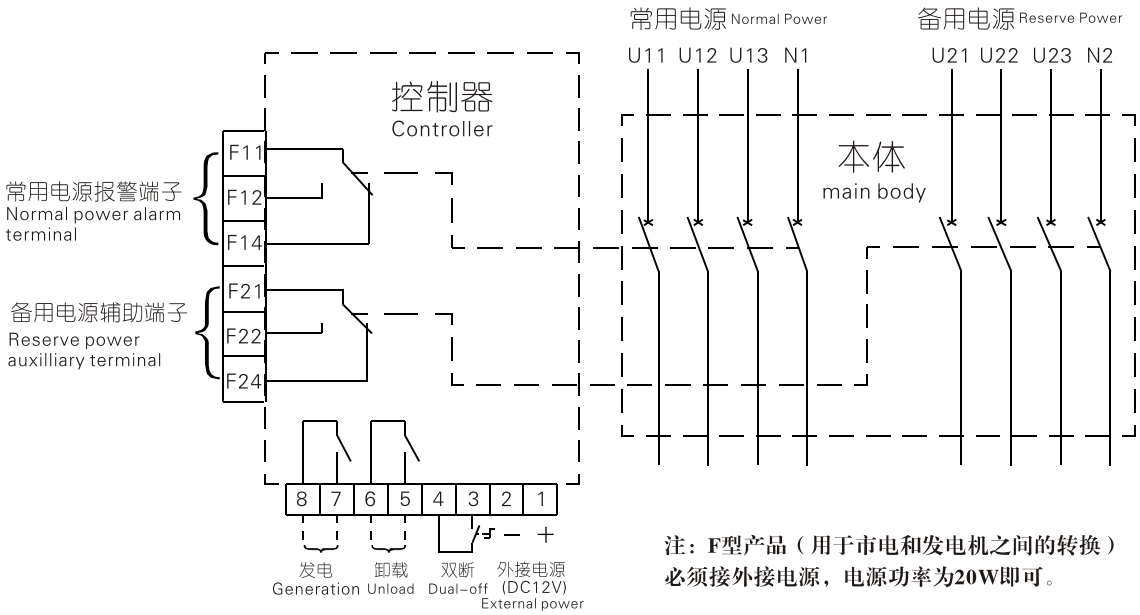
Split controller Outline and mounting dimensions see picture 9



图(picture)9

一体式二次回路接线图见图10

Wiring diagarm of the second circuit equipped for integrated see picture 10

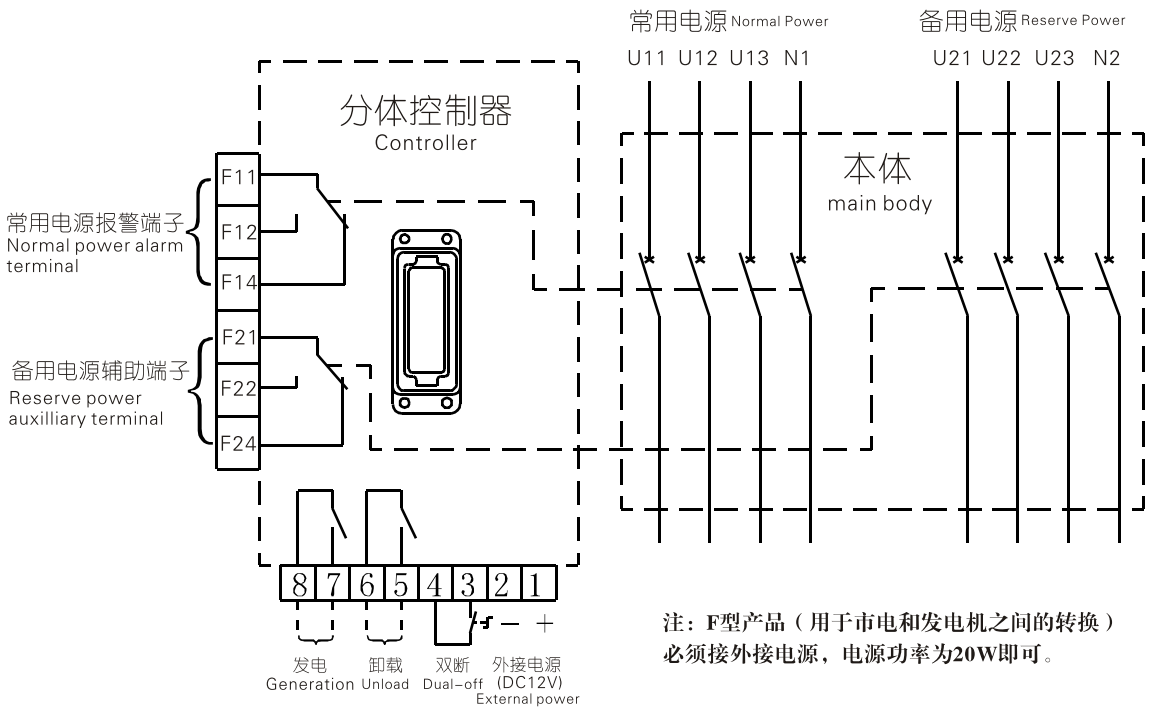


注：F型产品（用于市电和发电机之间的转换）必须接外接电源，电源功率为20W即可。

图(picture)10

分体式二次回路接线图见图11

Wiring diagarm of the second circuit equipped for split see picture 11



注：F型产品（用于市电和发电机之间的转换）必须接外接电源，电源功率为20W即可。

图(picture)11

分体式控制器和本体联接电缆线见图12

Cable connection for fplit controller and the main boby see picture12

电缆线
Cable plug wire

图(picture)12

主回路联接导线及其横截面积见表12

Wires connected to the main loop and area of conductor plane see table 12

表(table)12

额定电流(A) Rated current (A)	10	16 20	25	32	40 50	63	80	100	125 140	160	180、200 225	250	315 350	400
导线截面积(mm) Area of conductor plane (mm)	1.5	2.5	4	6	10	16	25	35	50	70	95	120	185	240

表(table)13

接额定电流(A) Rated current (A)	电 缆 Cable		铜 排 Copper rank	
	数 量 Quantity	截面积 (mm^2) Area of conductor plane (mm)	数 量 Quantity	尺寸mm×mm Size mm×mm
500	2	150	2	30×5
630	2	185	2	40×5
700	2	240	2	50×5
800	2	240	2	50×5

■ 导线的拧紧力矩见表14
Moment of tightening force of conductor see table 14

表(table)14

转换开关型号 Transfer switch type	螺栓规格 Bolt specification	力矩（N×m） Moment of force（N×m）
GSA1-63L、M	M5	8.8～10.8
GSA1-100L、M	M8	8.8～10.8
GSA1-225L、M	M8	8.8～10.8
GSA1-400L、M	M10	17.7～22.6
GSA1-630L、M	M12	31.4～39.2
GSA1-800L、M	M12	31.4～39.2

■ 安装注意事项 Installation attention note

△ 转换开关应垂直安装；Transfer switch must install plumb;

△ 接入两台断路器的电源相序必须一致，两路电源的各自的N极不能接错； Phase sequence of the two breakers should be same, pay attention to the two different neutral lines of the two breakers;

△ 保护接地应可靠，以确保使用安全；
To ensure safely, grounding should be in good condition;

△ 对于分体式，控制器和本体电缆线要连接好；
Cable is good used to link the main boby with the controller for split switch;

△ 对于F型，控制器1、2端子要接外接 电源(DC12V)；
It must connect external power supply (DC12V) with 1、2 terminals for type F controller;

△ 对于三极产品，中性线N必须接入。
Three poles product, N-poles must link up.

>> 订货规范 ORDERING NOTICE

GSA1 – 630 M R / 4 A 500 Y
① ② ③ ④ ⑤ ⑥ ⑦

①-- 断路器壳架等级额定电流：63A、100A、225A、400A、630A、800A 6种

Rate frame current of the breaker:63A、100A、225A、400A、630A、800A

②-- 能力级别：L、M、H型（见表2）

Ability class： type L、 type M、 type H（ see table 2）

③-- 控制方式：有R型、S型、F型（见表5）

Control ways: type R、type S、type F(see table 5)

④-- 极数：分3极和4极二种 Pole number： three poles and four poles

⑤-- 4极开关中性极代号:A型和B型（见表1）

Neutral poles of foue poles : A type and B type (see table 1)

⑥-- 断路器额定工作电流 Rated operational current

⑦-- 控制器安装方式：有一体式和分体式两种(一体式用Y表示，分体式用F表示)

Controller installation ways: have integral and split(integral by Y and split by F)