



CW 2 系列 智能型万能式断路器

CW2 SERIES INTELLIGENT AIR CIRCUIT BREAKER

CV系列

CW系列

CM系列

CB系列

CK系列

CR系列

CA系列

CJR系列

CJD系列

CD系列

CH系列

CE系列

- 全智能
ALL CASE INTELLIGENCE
- 高分断
HIGH BREAKING CAPACITY
- 零飞弧
ZERO ARCING-OVER DISTANCE
- 带隔离
ISOLATION FUNCTION

2015年版

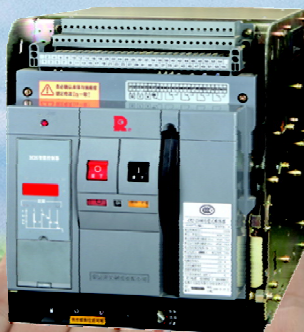
常熟开关制造有限公司
(原常熟开关厂)

CHANGSHU SWITCHGEAR MFG. CO.,LTD.
(FORMER CHANGSHU SWITCHGEAR PLANT)



优秀特色

- 具备满足风电等新能源领域应用的能力（低温至 -40°C 、湿热带TH型），配备AC1000V的断路器，可用于冶金、化工等场合
- 获得国际认可的CB证书
- 高性能、体积小、保护完善可靠、带隔离功能，CW2-1600宽度仅248mm而 $I_{cs}=I_{cu}=50\text{kA}$
- 额定运行短路分断能力 I_{cs} =额定极限短路分断能力 I_{cu} ，提高运行可靠性
额定极限短路分断能力 I_{cu} ：400V：50kA ~ 120kA；690V：40kA ~ 85kA；1000V：36kA ~ 50kA
额定运行短路分断能力 I_{cs} ：400V：50kA ~ 120kA；690V：25kA ~ 85kA；1000V：36kA ~ 50kA
额定短时耐受电流 I_{ew} ：400V：42kA ~ 100kA；690V：25kA ~ 85kA；1000V：36kA ~ 50kA
- 智能保护功能丰富、监测功能齐全，可配功率测量、电量监测的智能控制器
- 安全使用、性能优越：面板具有直观的合闸准备就绪指示，抽屉式具有“连接”、“试验”、“分离”三位置指示和锁定装置（专利技术）
- 主回路接线端子连接方便，可实现水平连接、垂直连接、混合连接
- 可选区域选择性联锁功能，确保各级保护的完全选择性
- 基于Modbus-RTU协议的通信断路器，通过本公司的CN1DP适配器、CN1EG以太网适配器可应用于Modbus、Profibus、Devicenet、CAN总线和以太网通信网络，方便用户进行多种协议的应用管理
- 通过配置FDM3短消息通知模块，可实现断路器故障脱扣或报警信息无线监视
- 可配FWB1温度报警模块，实现连接点在线超温报警
- 光伏并网：带光伏并网专用欠电压脱扣器的CW2断路器满足国家电网公司Q/GDW1972、Q/GDW1973标准，实现检有压合闸功能



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常熟开关制造有限公司按国家标准 GB14048.2 要求, 推出新一代的智能型万能式断路器 CW2 系列。该系列产品设计人性化, 使用简便, 具有全智能、高分断、零飞弧、带隔离等特点, 塑造了新一代断路器的全新形象。CW2 系列智能型万能式断路器 (以下简称断路器) 适用于交流 50Hz/60Hz, 额定工作电压 400V、690V, 额定电流 6300A 及以下的配电网络中, 用来分配电能和保护线路及设备免受过载、短路、欠电压和接地故障等的危害。断路器采用具有精确选择性保护和多功能的智能控制器, 特别适用于需要提高供电可靠性, 避免不必要停电的配电网络中。

额定电流 1000A 及以下的断路器, 亦可用在交流 50Hz/60Hz、400V 网络中作为电动机的过载、短路、欠电压和接地故障保护, 在正常条件下还可作为电动机的不频繁起动之用。

- 断路器具有三极和四极;
- 具有抽屉式和固定式;
- 可倒进线连接;
- 多种智能控制器, 提供不同的保护功能;
- 具有隔离功能, 符号为 “”;
- 使用类别 B;
- 可提供低温至 -40℃ 断路器;
- 作为特殊需求, 可提供额定工作电压 AC1000V 断路器 (不适用于 1000V IT 系统), 具体规格参见 P99-P103;
- 可提供无过电流保护要求的断路器, 符合 GB14048.2 附录 L CBI 分类 Y 级, 具体规格参见 P106-P109。
- 断路器符合以下标准:
 - IEC60947-1 及 GB14048.1-2006 总则
 - IEC60947-2 及 GB14048.2-2008 断路器
 - IEC60947-4-1 及 GB14048.4 机电式接触器和电动机起动器
- 断路器获国家强制性产品认证 “CCC” 标志。

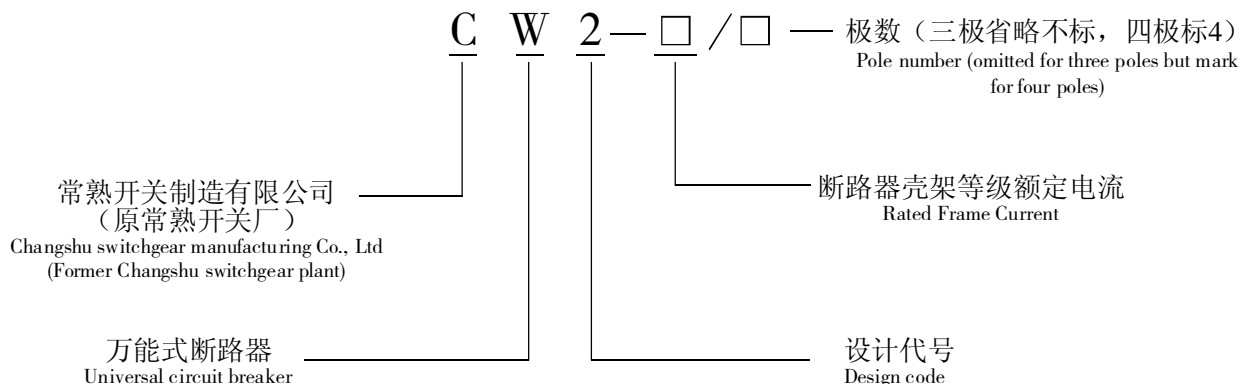
By the requirements of National Standard GB14048.2 Changshu Switchgear Manufacturing Co., LTD (Former Changshu Switchgear Plant) has developed a new generation of Intelligent Universal Circuit Breakers (ACB): CW2 Series, which are characteristic of ergonomic design, convenient usage, all-case intelligence, high-breaking capacity, zero arcing distance and isolation functions etc. and which has shaped the brand-new image of the new generation. CW2 Series Intelligent Universal Circuit Breakers (hereafter simply referred to as circuit breakers) take the role of distributing power and protecting wires and equipments from being damaged by overload, short circuit, under-voltage and ground-fault etc. in the power-distribution circuit of AC50Hz/60Hz, rated working voltage 400V or 690V, rated working current 6300A or below. The circuit breakers particularly suits for the power-distribution circuit that the reliability of power supply should be increased as needed and the dispensable power failure should be avoided.

The circuit breakers, with rated working current 1000A or below, can also be used for the protection of motor's overload, short circuit, under-voltage and ground-fault in the network of AC50Hz/60Hz and 400V, and can take the role of infrequent motor starting-up in regular situations.

- Three or four poles
- Draw-out or fixed type
- Can be mounted in the adverse direction
- Various intelligent controllers offer various functions
- The circuit breaker has disconnecting function and its corresponding symbol is shown as “”
- Utilization category B
- Can be provided breaker of temperature down to -40℃
- Can provide AC1000V circuit breaker (don't suit for 1000V IT system), seeing P99-P103.
- Can provide circuit-breakers not fulfilling the requirements for overcurrent protection, compliance with GB14048.2 annex L class Y of CBI classification, seeing P106-P109.
- The circuit breakers comply with the demands of the following standards:
 - IEC60947-1 and GB14048.1-2006 General rules
 - IEC60947-2 and GB14048.2-2008 Circuit Breakers
 - IEC60947-4-1 and GB14048.4 Electro-mechanical contactor and motor starter
- The circuit breakers have obtained the CCC mark of CQC.



型号含义 TYPE AND ITS MEANING



正常工作条件和安装条件 REGULAR WORKING CONDITIONS AND MOUNTING CONDITIONS

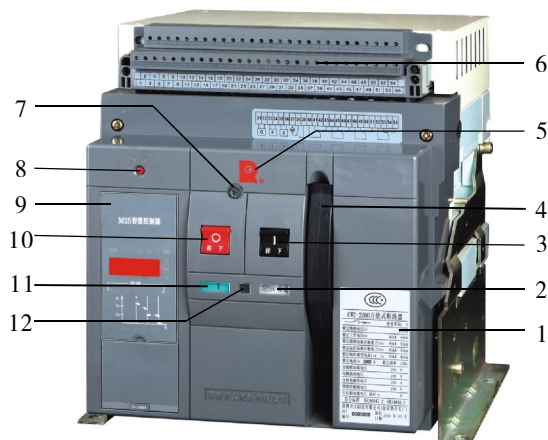
- 周围空气温度 $-5^{\circ}\text{C}\sim+40^{\circ}\text{C}$ ；
- 安装地点的海拔不超过2000m；
- 空气的相对湿度在最高温度为 $+40^{\circ}\text{C}$ 时不超过50%，在较低温度下可以有较高的相对湿度，例如 20°C 时达90%，对由于温度变化偶尔产生的凝露应采取特殊的措施；
- 污染等级为3级；
- 断路器主电路安装类别为IV，其余辅助电路、控制电路安装类别为III；
- 断路器适用于电磁环境A；
- 湿热带型（TH型）断路器通过GB/T2423.4、GB/T2423.18试验要求，能耐受潮湿空气、盐雾、油雾、霉菌的影响；
- 断路器安装的垂直倾斜度不超过 5° ；
- 断路器应安装在无爆炸危险和无导电尘埃、无足以腐蚀金属和破坏绝缘的地方；
- 断路器安装在柜体小室内，且加装门框，防护等级达IP40；
- 可运行条件：
断路器通过GB/T 2423.1和GB/T2423.2的试验要求，周围空气温度可低至 -25°C 、高至 $+70^{\circ}\text{C}$ （超过 $+40^{\circ}\text{C}$ 降容使用，详见本样本中的断路器功耗及降容系数）；
海拔超过2000m降容使用，详见本样本中的高海拔降容；
- 储存条件：周围空气温度为 $-40^{\circ}\text{C}\sim+70^{\circ}\text{C}$ 。

- Ambient temperature: $-5^{\circ}\text{C}\sim+40^{\circ}\text{C}$ ；
- Elevation $\leq 2000\text{m}$ ；
- Relative humidity: not exceed 50% at the maximum ambient temperature of $+40^{\circ}\text{C}$, but higher relative humidity at the lower temperature, for example, 90% at 20°C . Special measures should be taken considering the dews on product surface due to temperature change；
- Pollution protection: 3 grade；
- Installing categories: IV for the main circuit； III for other auxiliary and control circuits；
- The breaker is suitable in electromagnetic environment A；
- Damp heat type (TH) breakers are tested by GB/T2423.4、GB/T2423.18,can bear the influence of moisture in the air of salt fog and oil fog or mould.
- The vertical gradient isn't more than 5° ；
- There must be not any explosive medium, and there must be not any gas which would corrode metal or any conducting dust which would destroy the insulation；
- The circuit breaker should be installed in the compartment of switchgear cabinet and doorframe should be fixed additionally. Protection grade up to Ip40.
- Service condition:
The breakers are tested by GB/T 2423.1 and GB/T2423.2,ambient temperature lower -25°C ,higher $+70^{\circ}\text{C}$ (temperature over $+40^{\circ}\text{C}$,the breakers are used by reducing capacity;please seeing “ power consumption and capacity lowering coefficient”) ；
Elevation over 2000m,the breakers are used by reducing capacity,please seeing “ capacity-reducing for high-elevation ”.
- Storage condition:ambient temperature $-40^{\circ}\text{C}\sim+70^{\circ}\text{C}$.



断路器结构简介 *SYNOF OF STRECTURE*

● 固定式 Fixed



说 明:

- 1 铭牌
- 2 贮能释能指示
- 3 合闸按钮
- 4 手动贮能手柄
- 5 商标
- 6 二次回路接线端子
- 7 断路器“分闸”锁定装置
- 8 脱扣指示和复位按钮
- 9 智能控制器
- 10 分闸按钮
- 11 合闸“I”、分闸“O”指示
- 12 合闸准备就绪时指示“OK”
- 13 抽屉式断路器“分离”、“试验”、“连接”三位置“解锁按钮”
- 14 抽屉式断路器“分离”位置安全挂锁装置
- 15 抽屉式断路器摇杆工作孔
- 16 抽屉式断路器摇杆存放孔
- 17 抽屉式断路器“分离”、“试验”、“连接”三位置指示

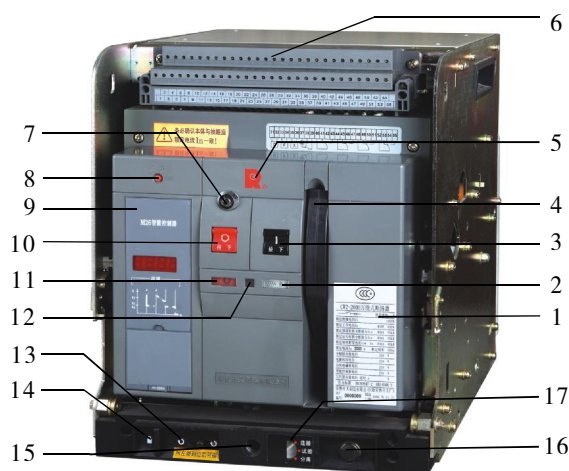
Illustrations:

- 1 Data plate
- 2 Indications of energy-storage and energy-release
- 3 Switching-on button
- 4 Manual energy-storage handle
- 5 Brand
- 6 Terminals of secondary circuit (fixed)
- 7 “Switching-off” lock mechanism
- 8 Release indication and resetting button
- 9 Intelligent controller
- 10 Switching-off button
- 11 Indications of switching-on (“I”) and switching-off (“O”)
- 12 Indication of ready-for-switching-on (“OK”)
- 13 “Unlock button” of the three positions (“separated”, “test” and “connected”) for draw-out circuit breakers
- 14 Safety padlock mechanism as the draw-out circuit breaker indicates the position of “separated”
- 15 Rocker operating hole of the draw-out circuit breaker
- 16 Rocker storage hole of the draw-out circuit breaker
- 17 Indications of the three positions (“separated”, “test” and “connected”) of the draw-out circuit breaker



断路器结构简介 SYNOPSIS OF STRUCTURE

● 抽屉式 Draw-out



注:

- 1 “分离”：指示主回路与二次回路均为隔离状态；
“试验”：指示主回路为隔离状态，二次回路为连接状态；
“连接”：指示主回路与二次回路均为连接状态。
- 2 当断路器本体被摇至“分离”或“试验”或“连接”位置时即可被自动锁定（摇杆不可再摇动），可通过向左拨动“解锁按钮”解锁。

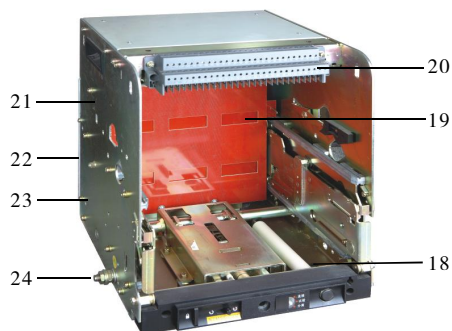
Note:

- 1 "Separated": indicates that main circuit and secondary circuit are both in isolation.
"Test": indicates that main circuit is in isolation and secondary circuit is in connection.
"Connected": indicates that main circuit and secondary circuit are both in connection.
- 2 The circuit breaker can be automatically locked (rocker can not be turned at this point) when its main part is at the position of "separated", "test" or "connected" by tuning the rocker, and can be unlocked by pushing "unlock button" to the left side.

● 抽屉式断路器的抽屉座 Draw-out socket of draw-out circuit breaks

抽屉式断路器的抽屉座具有隔离主回路母排的挡板，当断路器抽出时起安全保护作用。

The draw-out socket has the back plate for isolating the copper bar of the main circuit, which take the role of safety protection when the circuit breaker is drew out.



说明:

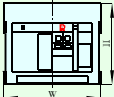
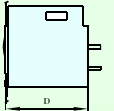
- 18 安装孔
- 19 安全挡板
- 20 二次回路接线端子
- 21 侧板
- 22 主回路母排
- 23 抽屉座底架
- 24 抽屉座接地点

Illustrations:

- 18 Installation hole
- 19 Safety back plat
- 20 Wiring terminals of secondary circuit
- 21 Side plate
- 22 Copper bar of the main circuit
- 23 Draw-out socket
- 24 Earthing point at draw-out socket



主要技术指标 MAIN TECHNICAL INDEX

型 号 Type				CW2-1600					
壳架等级额定电流Inm (A) Rated frame current				1600					
额定电流In (A) Rated working current				200、400、630、800、1000、1250、1600					
额定工作电压Ue (V) Rated working voltage				AC50Hz/60Hz,400、 690					
额定绝缘电压Ui (V) Rated insulation voltage				1000					
额定冲击耐受电压Uimp (kV) Rated impulse withstand voltage				12					
工频耐受电压U (V) 1min Working frequency withstand voltage				3500					
极数 Pole number				3、 4					
N极额定电 流IN (A) Rated current of N pole				100%In					
额定极限短路分断能力Icu(kA)(有效值) Limiting rated short circuit breaking capacity (effective value)		AC400V		50					
		AC690V		40					
额定运行短路分断能力Ics(kA) (有效值) Operating /Rated short circuit breaking capacity (effective value)		AC400V		50					
		AC690V		25					
额定短路接通能力Icm(kA) (峰值) Rated short time connecting capacity (peak value)		AC400V		105					
		AC690V		84					
额定短时耐受电流 (0.5s) Icw(kA) (有效值) Rated short time withstand current (effective value)		AC400V		42					
		AC690V		25					
全分断时间 (无附加延时) (ms) Full-breaking time (without additional delay)				25~30					
闭合时间 (ms) Closing time				最大70 70 at maximum					
智能控制器 Intelligent controller		L25型 Type L25		○					
		M25/MY25型 Type M25/MY25		○					
		M26/MY26型 Type M26/MY26		○					
		H26/HY26型 Type H26/HY26		○					
		P25型 Type P25		○					
		P26型 Type P26		○					
电气寿命* (次 times) Electrical durability		AC400V		In=200A~630A: 15000					
				In=800A~1250A: 9000					
				In=1600A: 6500					
		AC690V		In=200A~630A: 15000					
				In=800A~1250A: 5000					
				In=1600A: 3000					
机械寿命* (次 times) Mechanical durability		免维护 Non-maintanance		15000					
		有维护 Maintenance		30000					
外形尺寸 Outline dimensions  		宽×高×深 W×H×D (mm) Width × heigh × depth		W × H × D					
		抽屉式 Draw-out		水平连接 Horiz-ontal		3P 后置 Back set	248	351.5	297
						4P 后置 Back set	318	351.5	297
				垂直连接 Vertical		3P 后置 Back set	248	351.5	297
						4P 后置 Back set	318	351.5	297
		固定式 Fixed		水平连接 Horiz-ontal		3P 后置 Back set	254	320	197
						4P 后置 Back set	324	320	197
				垂直连接 Vertical		3P 后置 Back set	254	320	197
						4P 后置 Back set	324	320	197

注: In=200A、400A、630A、800A、1000A断路器具有电动机保护型, 其Ue=400V。

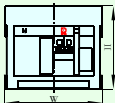
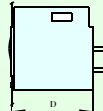
Note: Motor protection type of the circuit breakers, whose rated current (In) is equal to 200A、400A、630A、800A or 1000A and rated working voltage (Ue) is equal to 400V, will be available.

*注: 根据GB14048.1-2006,术语“寿命”表示电器在修理或更换部件前能完成的操作循环次数的概率。

*Note: for GB14048.1-2006, the term "durability" expresses the expectancy of the number of operating cycles which can be performed by the equipment before repair or replacement of parts



主要技术指标 MAIN TECHNICAL INDEX

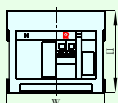
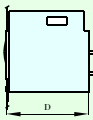
型 号 Type				CW2-2000			CW2-2500						
壳架等级额定电流Inm (A) Rated frame current				2000			2500						
额定电流In (A) Rated working current				630、800、1000、1250、1600、2000			1250、1600、2000、2500						
额定工作电压Ue (V) Rated working voltage				AC50Hz/60Hz,400、690									
额定绝缘电压Ui (V) Rated insulation voltage				1000									
额定冲击耐受电压Uimp (kV) Rated impulse withstand voltage				12									
工频耐受电压U (V) 1min Working frequency withstand voltage				3500									
极数 Pole number				3、4									
N极额定电流IN (A) Rated current of N pole				100%In									
额定极限短路分断能力Icu(kA)(有效值) Limiting rated short circuit breaking capacity (effective value)		AC400V		80			85						
		AC690V		50			50						
额定运行短路分断能力Ics(kA)(有效值) Operating /Rated short circuit breaking capacity (effective value)		AC400V		80			85						
		AC690V		50			50						
额定短路接通能力Icm(kA) (峰值) Rated short time connecting capacity (peak value)		AC400V		176			187						
		AC690V		105			105						
额定短时耐受电流 (1s) Icw(kA) (有效值) Rated short time withstand current (effective value)		AC400V		60			65						
		AC690V		40			50						
全分断时间 (无附加延时) (ms) Full-breaking time (without additional delay)				25~30									
闭合时间 (ms) Closing time				最大70 70 at maximum									
智能控制器 Intelligent controller		L25型 Type L25		○									
		M25/MY25型 Type M25/MY25		○									
		M26/MY26型 Type M26/MY26		○									
		H26/HY26型 Type H26/HY26		○									
		P25型 Type P25		○									
		P26型 Type P26		○									
电气寿命 (次 times) Electrical durability		AC400V		In=630A~1000A: 15000			In=1250A: 12500						
				In=1250A~1600A: 10000			In=1600A~2000A: 10000						
				In=2000A: 8000			In=2500A: 8000						
		AC690V		In=630A~1000A: 10000			In=1250A: 12500						
				In=1250A~1600A: 6500			In=1600A~2000A: 7000						
				In=2000A: 5000			In=2500A: 5000						
机械寿命 (次 times) Mechanical durability		免维护 Non-maintanance		15000			15000						
		有维护 Maintenance		30000			30000						
外形尺寸 Outline dimensions  		宽×高×深 W×H×D (mm) Width × heigh × depth			W × H × D								
		抽屉式 Draw-out		水平连接 Horiz-ontal		3P 后置 Back set		347	438	390	347	438	390
						4P 后置 Back set		442	438	390	442	438	390
				垂直连接 Vertical		3P 后置 Back set		347	438	390	347	438	390
						4P 后置 Back set		442	438	390	442	438	390
		固定式 Fixed		水平连接 Horiz-ontal		3P 后置 Back set		362	395	290	362	395	290
						4P 后置 Back set		457	395	290	457	395	290
				垂直连接 Vertical		3P 后置 Back set		362	395	290			
						4P 后置 Back set		457	395	290			

注: In=630A、800A、1000A断路器具有电动机保护型, 其Ue=400V。

Note: Motor protection type of the circuit breakers, whose rated current (In) is equal to 630A、800A or 1000A and Rated working voltage (Ue) is equal to 400V, will be available.



主要技术指标 MAIN TECHNICAL INDEX

型 号 Type					CW2-4000						CW2-6300					
壳架等级额定电流Inm (A) Rated frame current					4000						6300					
额定电流In (A)		Rated working current			2000	2500	2900	3200	3600	4000	4000	5000	6300			
额定工作电压Ue (V) Rated working voltage					AC50Hz/60Hz,400、690											
额定绝缘电压Ui (V) Rated insulation voltage					1000											
额定冲击耐受电压Uimp (kV) Rated impulse withstand voltage					12											
工频耐受电压U (V) Imin Working frequency withstand voltage					3500											
极数 Pole number					3、4											
N极额定电流IN (A) Rated current of N pole					100%In											
额定极限短路分断能力Icu(kA)(有效值) Limiting rated short circuit breaking capacity (effective value)		AC400V			100						120					
		AC690V			75						85					
额定运行短路分断能力Ics(kA) (有效值) Operating /Rated short circuit breaking capacity (effective value)		AC400V			100						120					
		AC690V			75						85					
额定短路接通能力Icm(kA) (峰值) Rated short time connecting capacity (peak value)		AC400V			220						264					
		AC690V			165						187					
额定短时耐受电流 (1s) Icw(kA) (有效值) Rated short time withstand current (effective value)		AC400V			85						100					
		AC690V			75						85					
全分断时间 (无附加延时) (ms) Full-breaking time (without additional delay)					25~30											
闭合时间 (ms) Closing time					最大70 70 at maximum											
智能控制器 Intelligent controller		L25型 Type L25			○											
		M25/MY25型 Type M25/MY25			○											
		M26/MY26型 Type M26/MY26			○											
		H26/HY26型 Type H26/HY26			○											
		P25型 Type P25			○											
		P26型 Type P26			○											
电气寿命 (次)times Electrical durability		AC400V			In=2000A~2900A: 8000						In=4000A: 5000					
					In=3200A~3600A: 5000						In=5000A: 3000					
					In=4000A: 4000						In=6300A: 1500					
		AC690V			In=2000A~2900A: 4000						In=4000A: 2500					
					In=3200A~3600A: 2500						In=5000A: 1500					
					In=4000A: 2000						In=6300A: 800					
机械寿命 (次)times Mechanical durability		免维护 Non-maintanance			10000						5000					
		有维护 Maintenance			20000						10000					
外形尺寸 Outline dimensions  		宽×高×深 W×H×D (mm)				W × H × D				W × H × D						
		抽屉式 Draw-out		水平连接 Horizontal		3P	后置 Back set	401		438		395		767	475.5	395
						4P	后置 Back set	514		438		395		993	475.5	395
				垂直连接 Vertical		3P	后置 Back set	401		438		395		767	475.5	395
						4P	后置 Back set	514		438		395		993	475.5	395
		固定式 Fixed		水平连接 Horizontal		3P	后置 Back set	414		395		290		782	395	290
						4P	后置 Back set	527		395		290		1008	395	290

注: CW2-6300, In=6300A, 抽屉式断路器供应连接方式为垂直连接。

Note: CW2-6300 circuit breakers of the draw-out type with rated current (In) of 6300A can be installed vertically.



(一) 智能控制器的选择 Selecting the intelligent controller

智能控制器分为以下九种: The intelligent controller can be classified into nine types:

● L25型, 具有过载长延时、短路短延时、短路瞬时三段保护功能, 电流光柱格显示, 拨盘设定。

● Type L25, With such performances as: three-level protection of overload long-time delay, short circuit short-time delay and instantaneous short circuit, light columnar indication of current, and setting the value by knob.

● M25型, 具有过载长延时、短路短延时、短路瞬时三段保护功能, 电流LED数字显示, 参数连续设定, 并可选择电压显示等功能。

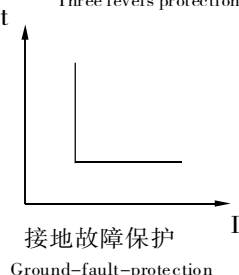
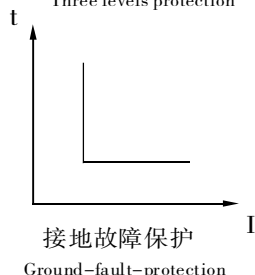
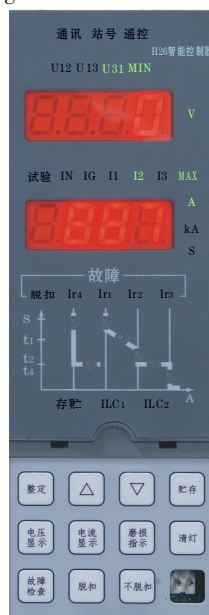
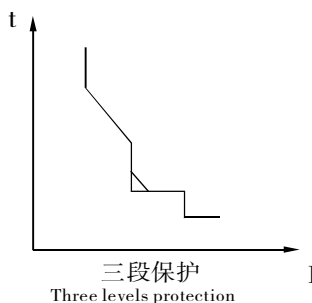
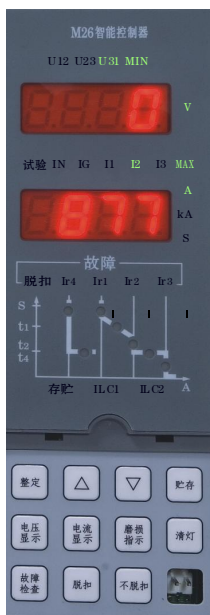
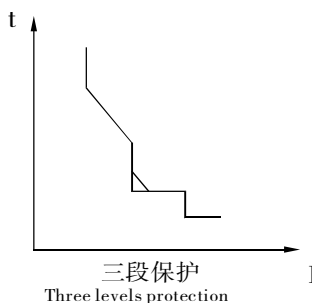
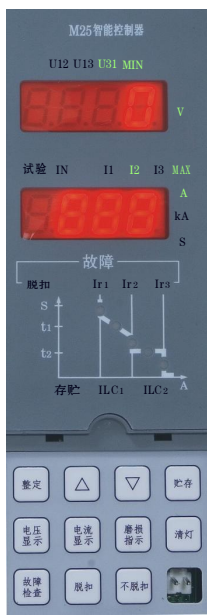
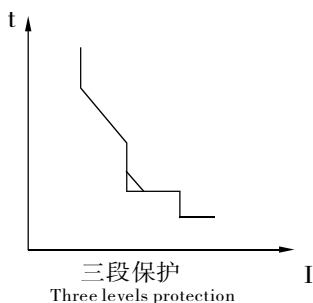
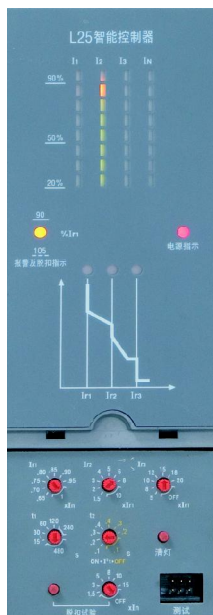
● Type M25, With such performances as: three-level protection of overload long-time delay, short circuit short-time delay and instantaneous short circuit, LED digital indication of current, and consecutive parameter-setting. And if necessary, it has voltage indication function.

● M26型, 除了具有M25所有功能外, 增加了接地故障保护功能, 并可选电压显示等功能。

● Type M26, adds ground-fault protection except the function of M25 and if necessary, it has voltage indication function.

● H26型, 具有过载长延时、短路短延时、短路瞬时三段保护功能及接地故障保护功能, 并具有通信功能, 电流, 电压LED数字显示, 参数连续设定。

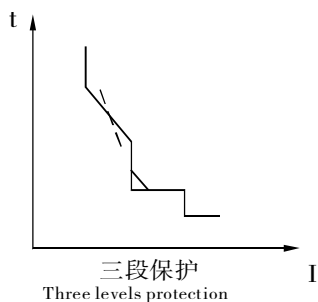
● Type H26, With such performances as: three-level protection of overload long-time delay, short circuit short-time delay and instantaneous short circuit, ground-fault protection, communicative, LED digital indication of current and voltage, and consecutive parameter-setting.





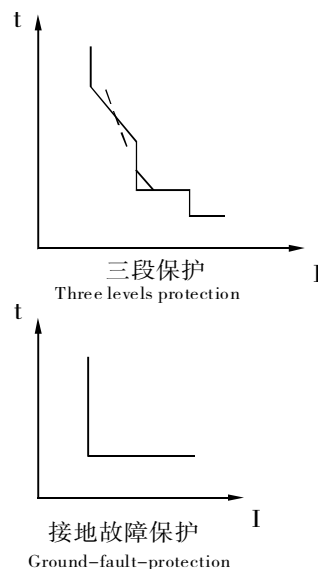
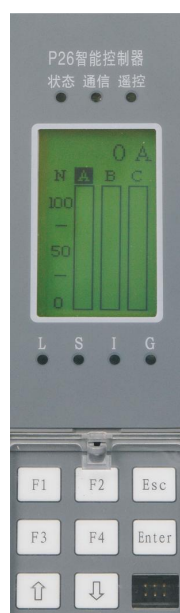
● P25型，具有过载长延时、短路短延时、短路瞬时三段保护功能，过载长延时特性可提供多曲线匹配保护，并具有电流、电压、功率、功率因数、频率、电能等测量功能，参数菜单式连续设定，液晶（LCD）显示，根据需要还可选择谐波分析功能、电流不平衡报警及通信功能。

● Type P25, With such performances as: three-level protection of overload long-time delay, short circuit short-time delay and instantaneous short circuit, (the characteristic of overload long-time delay can provide multicurve protection matching); measurement function of current, voltage, power, power-factor, frequency, electric quantity etc., LCD indication and consecutive parameter-setting. If necessary, it has harmonic analysis function, alarm of current-imbalance and communication function.



● P26型，除了具有P25所有功能外，增加了接地故障保护功能。

● Type P26 adds ground-fault protection except the function of P25.





● MY25型，具有过载长延时、短路短延时、短路瞬时三段保护功能，电流LCD数字显示，参数连续设定，并可选择电压、功率显示等功能。

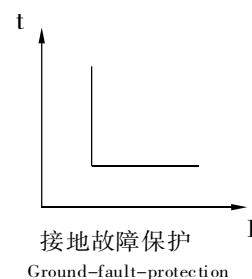
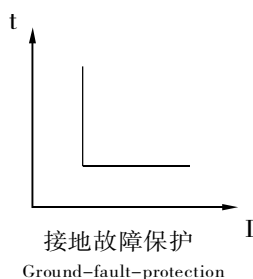
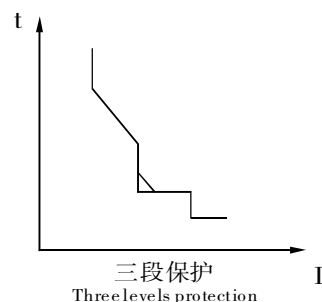
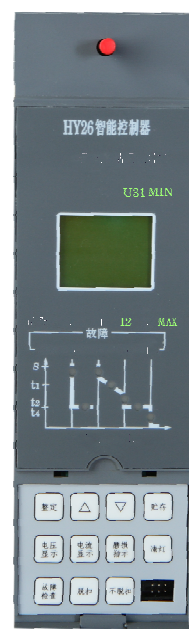
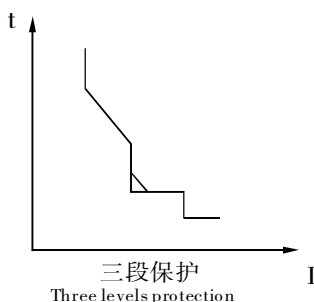
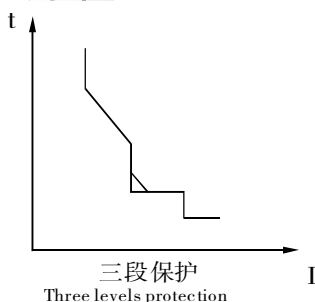
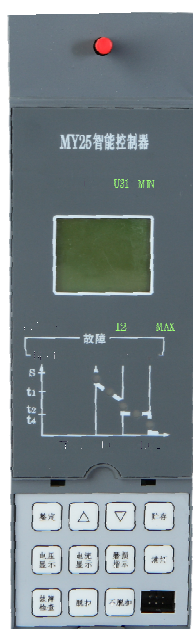
● Type MY25, With such performances as: three-level protection of overload long-time delay, short circuit short-time delay and instantaneous short circuit, LCD digital indication of current, and consecutive parameter-setting. And if necessary, it has voltage indication function.

● MY26型，除了具有M25所有功能外，增加了接地故障保护功能，并可选电压、功率显示等功能。

● Type My26, adds ground-fault protection except the function of M25 and if necessary, it has voltage indication function.

● HY26型，具有过载长延时、短路短延时、短路瞬时三段保护功能及接地故障保护功能，并具有通信功能，电流，电压LCD数字显示和可选功率显示，参数连续设定。

● Type HY26, With such performances as: three-level protection of overload long-time delay, short circuit short-time delay and instantaneous short circuit, ground-fault protection, communicative, LCD digital indication of current and voltage, and consecutive parameter-setting.





(二) 智能控制器功能一览表 Function Table of Intelligent Controller

功能名称 The name of intelligent controller			L25型 Type L25	M25型 Type M25	MY25型 Type MY25	M26型 Type M26	MY26型 Type MY26	H26型 Type H26	HY26型 Type HY26	P25型 Type P25	P26型 Type P26
过电流保护（长延时、短延时、瞬时） Over-current protection (long-time delay, short-time delay, instantaneous)			√	√	√	√	√	√	√	√	√
接地故障保护 Ground fault protection			—	—	—	√	√	√	√	—	√
负载监控功能 Load monitoring function			—	○	○	○	○	○	○	○	○
电流显示 Current indication	光柱格显示 Light columnar indication		√	—	—	—	—	—	—	—	—
	数字显示 Digital indication of voltage	LED	—	√	—	√	—	√	—	—	—
		LCD	—	—	√	—	√	—	√	√	√
电压数字显示 Digital indication of voltage	LED		—	○	—	○	—	√	—	—	—
	LCD		—	—	○	—	○	—	√	√	√
功率 Power			—	—	○	—	○	—	○	√	√
电能、功率因数、频率显示 electric quantity、power-factor、frequency indication			—	—	—	—	—	—	—	√	√
报警功能 Alarm function	预报警 Pre-alarm		√	—	—	—	—	—	—	—	—
	过载报警 Overload alarm		√	√	√	√	√	√	√	√	√
试验功能 Test Function			√	√	√	√	√	√	√	√	√
触头磨损指示 Contact Wearing indication			—	√	√	√	√	√	√	√	√
自诊断功能 Self-diagnosis Function			—	√	√	√	√	√	√	√	√
MCR功能 MCR function			√	√	√	√	√	√	√	√	√
故障记忆功能 Fault-memory function			—	√	√	√	√	√	√	√	√
电流不平衡显示 Current-imbalance indication			—	—	—	—	—	—	—	○	○
热模拟功能 Thermo-analogue function			√	√	√	√	√	√	√	√	√
谐波分析功能 Harmonic analysis function			—	—	—	—	—	—	—	○	○
ZSI功能 ZSI function			—	○	○	○	○	○	○	○	○
通信功能 Communication function			—	—	—	—	—	√	√	○	○
注： √表示基本功能 ○表示选择功能 —表示无此功能 Note: Represents fundamental functions Represents selective functions Represent no such functions											



(三) 智能控制器功能 Functions of intelligent controller

● 过电流保护功能

过电流保护由相线过电流保护和中性线(N线)过电流保护(四极断路器及三极断路器带外接中性线电流互感器具有中性线过电流保护)组成,相线过电流保护的电流、时间参数一般由制造厂按用户订货要求整定(用户自己也可自行整定);中性线过电流保护的电流、时间参数按比例自动跟踪相线整定值,具体分以下两种情况:

● 三极断路器+外接中性线电流互感器

● 对L25、M25/MY25、M26/MY26、H26/HY26型智能控制器,中性线整定电流用户在订货时须确定保护参数,有50% I_n 或100% I_n 两种。

● 对P25、P26型智能控制器,中性线整定电流用户可由菜单设定四种方式:关闭(OFF)、50% I_n 、100% I_n 、200% I_n 。200% I_n 中性线保护(如3次谐波含量高的情况下)时,配电系统的中性线截面应为2倍相线截面。但对CW2-6300三极断路器,无200% I_n 中性线保护。

● 四极断路器

● 对L25、M25/MY25、M26/MY26、H26/HY26型智能控制器,中性线整定电流用户在订货时也必须确定保护参数,有50% I_n 或100% I_n 两种。

● 对P25、P26型智能控制器,中性线整定电流用户可由菜单设定三种方式:关闭(OFF)、50% I_n 、100% I_n 。

● 过载保护

● 过载长延时反时限保护,整定电流 I_n 可调;

● 过载长延时延时时间 t 可调;

● P25、P26型智能控制器的过载长延时特性,多曲线可调,分别有通用型(I^2t)、非常反时限型(I_t)、高压熔丝配合型(I^4t),以满足上下级过载保护选择性的匹配需要。

对于L25型、M25/MY25型、M26/MY26型、H26/HY26型过载长延时特性功能按通用型 I^2t 曲线动作,电流 I_n 、时间 t 可调。

● 短路短延时保护(可关断-OFF)

● 短路短延时反时限保护(I^2t ON),整定电流 I_{r2} 可调;

● 短路短延时定时限保护(I^2t OFF),整定电流 I_{r2} 可调;

● 短路短延时延时时间 t 可调。

● 短路瞬时保护

● 短路瞬时(可关断-OFF)整定电流 I_{r3} 可调。

● Over-current protection

The over-current protection is composed of phase and neutral line protection (Four pole breaker and three pole breaker with current transformer linking externally to neutral N) from over-current. The parameters of current and time of phase line over-current protection can be set by the company in terms of the requirements of users (can be set by customers themselves); the parameters of current and time of neutral line over-current protection can be set by tracking the phase lines automatically in proportion, all these mainly divided into the following two situations:

● Three pole breaker current mutual with the neutral connected externally

● To type L25、M25/MY25、M26/MY26、H26/HY26 intelligent controller, when ordering the goods the neutral line setting current customers should have to confirm the protecting data, it has two type of 50% I_n and 100% I_n .

● To type P25、P26 intelligent controller, the customers can setup into four types from menu: turn off、50% I_n 、100% I_n 、200% I_n . When 200% I_n neutral line protecting (if it has a high triple frequency harmonic), the neutral line cross-section should be double leg of a circuit cross-section in the electrical power distribution system. But to CW2-6300 three circuit breaker, there is no neutral line protecting.

● Four pole breaker

● To type L25、M25/MY25、M26/MY26、H26/HY26 intelligent controller, the customers should have to confirm the protecting data, it has two types of 50% I_n and 100% I_n .

● To type P25、P26 intelligent controller, the customers can setup into three types from menu: turn off、50% I_n 、100% I_n .

● Overload protection

● Inverse long-time delay overload protection, and its setting current I_r can be adjusted.

● The delay time t_i of overload long-time delay can be adjusted.

● The long-time delay overload characteristic of the type P25、P26, the curves can be adjusted. There have common type (I^2t)、uncommon inverse-time type (I_t)、high-voltage fuse concert type (I^4t) can be adjusted, which can matching higher-up and lower-lever's overload protection' needs.

The long-time delay overload characteristic of the type L25、M25/MY25、M26/MY26、H26/HY26, its running according to the common type (I^2t) curves, current I_{r1} 、time t_i can be adjusted.

● Short-time short circuit protection (can be OFF)

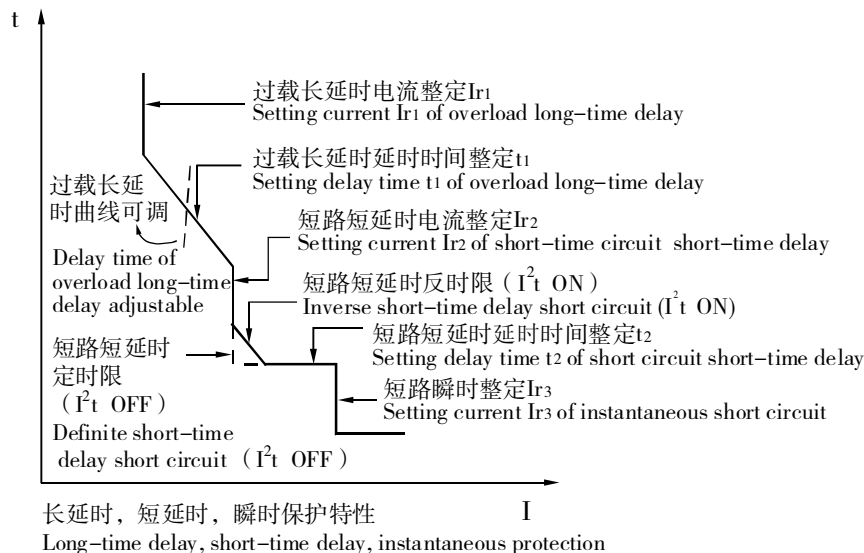
● Inverse short-time delay short circuit protection (I^2t ON), and its setting current I_{r2} can be adjusted.

● Definite short-time delay short circuit protection (I^2t OFF), and its setting current I_{r2} can be adjusted.

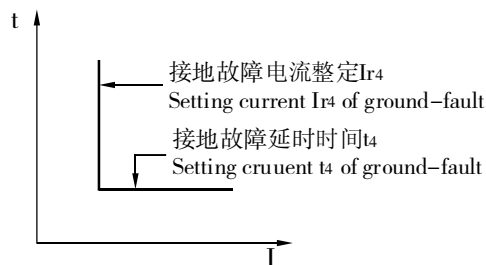
● The delay time t_2 of short circuit short-time delay can be adjusted.

● Instantaneous short circuit protection

● The setting current I_{r3} of instantaneous short circuit (can be OFF) can be adjusted.

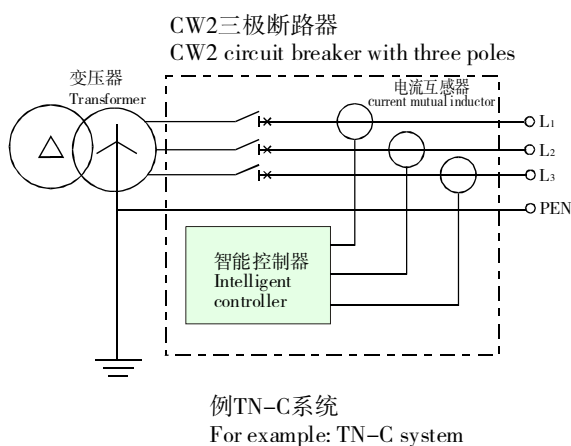


- 接地故障保护 (可关断—OFF)
Ground-fault protection (can be off)



- 接地故障定时限保护, 整定电流 I_{r4} 可调;
- 延时时间 t_4 可调;
- OFF 后只报警, 不分开。

- Definite ground-fault protection, and its setting current I_{r4} can be adjusted
- Delay time t_4 can be adjusted
- Alarm but not break after being off



- 接地故障保护方式

- TN-C、TN-C-S、TN-S 配电系统中选用 CW2

三极断路器未接外中性线 N 电流互感器

- 接地故障保护信号只取三相电流的矢量和
- 保护特性为定时限保护

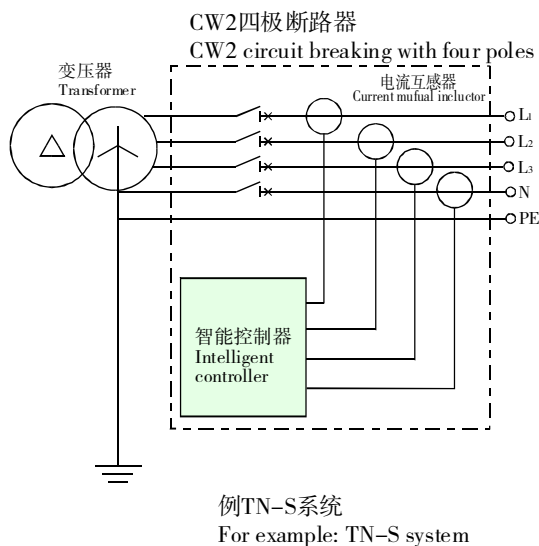
- Protection ways of ground-fault

- CW2 circuit breakers are used in the power distribution system of TN-C、TN-C-S、and TN-S without additional current mutual inductor of neutral line N

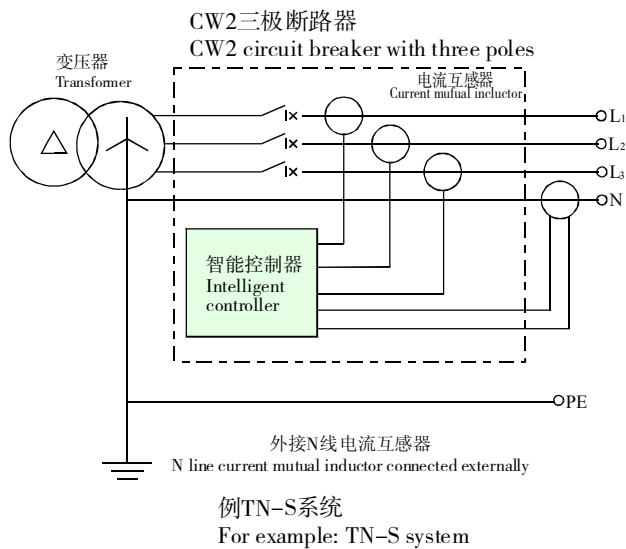
- The signal of ground-fault protection stems from the vector sum of three phases of current
- Characteristic of definite protection



- TN-S配电系统中选用CW2四极断路器
- 接地故障保护信号取三相电流及N相电流矢量和
- 保护特性为定时限保护
- CW2 circuit breakers with four poles are used in the power distribution system of TN-S
- The signal of ground fault protection stems from the vector sum of three phases of current and N phase current
- Characteristic of definite protection



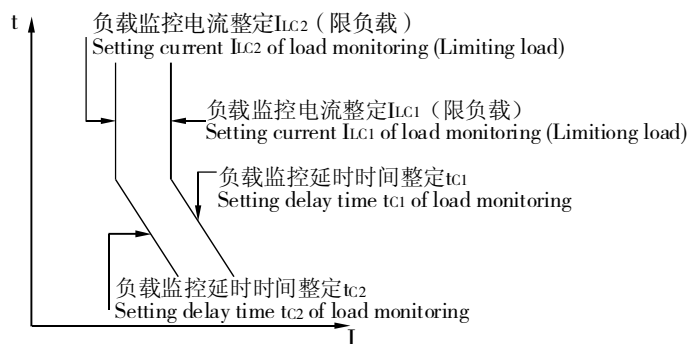
- TN-S配电系统中选用CW2三极断路器
- 外接中性线N电流互感器作接地故障保护用（接6号、7号二次回路接线端子），互感器安装地点距离断路器最大为2米。
- 接地故障保护信号取三相电流及N相电流的矢量和
- 保护特性为定时限保护
- CW2 circuit breakers with three poles are used in the power distribution system of TN-S
- N line current mutual inductor connected externally, which is installed 2 meters at maximum from the circuit breaker, takes the role of ground-fault protection (in connection with No.6 and No.7 wiring terminals of secondary circuit)
- The signal of ground-fault protection stems from the vector sum of three phases of current and N phase current
- Characteristic of definite protection



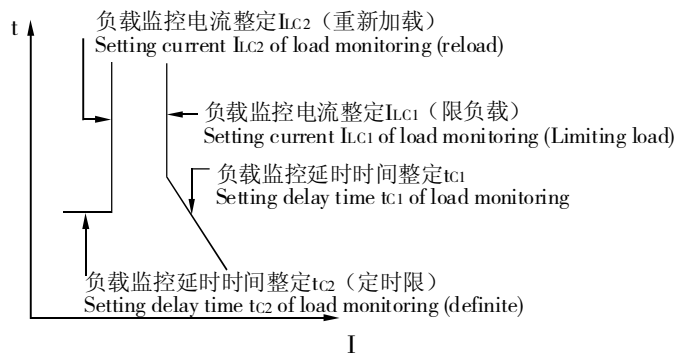
注：图中电流互感器为有效值采样。
Note: current transformer in diagrams is r.m.s. responsive.



- 负载监控功能 Load monitoring function
- 用于监控下级不重要负载，保证主系统供电；
- 负载监控有两种方式可选，用户任选其一。负载监控电流整定值为 I_{LC1} 及 I_{LC2} ，一般取 $I_{LC1} \geq I_{LC2}$ 。
- 负载监控反时限特性与过载长延时动作特性相同，即曲线平行。
- To monitor the subordinate unimportant load so as to ensure power supply of main system
- There are two patterns of load monitoring from which users can choose one at random. The setting value of load-monitoring current are I_{LC1} and I_{LC2} , normally I_{LC1} is larger than or equal to I_{LC2}
- Inverse characteristic of load-monitoring is the same of inverse long-time delay overload characteristic.



两种负载极限整定值的动作特性
Acting characteristic of two kinds of ultimate setting load



一种负载极限，一种重新加载整定值的动作特性
Acting characteristic of ultimate setting value of load and reload

- 与 I_{LC1} 、 I_{LC2} 相对应的负载监控信号(1)、(2)分别通过断路器二次回路接线端子13、14和15、16输出接点信号，信号发出时同时由智能控制器的发光二极管指示。(控制器负载监控信号输出接点闭合0.5s后断开，接点容量AC230V5A)

● 方式一:可控制两路下级负载,当主电路运行电流先后超过 I_{LC1} 、 I_{LC2} 时,分别延时 t_{C1} 、 t_{C2} 后发出接点信号,控制器指令分断两路受控负荷,恢复受控负荷供电需手动控制。

● Pattern 1: Two circuits of subordinate load can be controlled. When the operating current of the main circuit rises over the setting value of I_{LC1} and I_{LC2} , contact signal will be sent out after time durations of t_{C1} and t_{C2} respectively. Then this two circuits with monitored load are broken off by receiving the instructions from the intelligent controller. Recovery requires human intervention.

● 方式二:只控制一路下级负载,当主电路运行电流超过 I_{LC1} 时,延时 t_{C1} 后发出接点信号,控制器指令分断此路负载。如果分断此路负载后,主电路运行电流低于 I_{LC2} 且持续时间 t_{C2} 后,控制器可再发出信号,指令接通已分断负载(重新加载),恢复该负载供电。

● Pattern 2: Only one circuit with subordinate load can be controlled. When the operating current of the main circuit rises over the setting value of I_{LC1} , contact signal will be sent out after time duration of t_{C1} , and the this circuit is broken off by receiving the instructions from the intelligent controller. If the operating current of the main circuit decreases lower than the setting value of I_{LC2} after this circuit is broken off, the signal will be sent out again after time duration of t_{C2} for the open loading circuit to be closed (reloaded) and so the power supply of this circuit is restored.

● Load monitoring signals"(1)" and "(2)" corresponding to I_{LC1} and I_{LC2} respectively are transmitted into contact signals via the wiring terminals 13, 14 and 15, 16 of the secondary circuit. There will be LED indication at the time when signals are transmitted. (The load monitoring signals from the intelligent controller will be cut off in half second after the signal of contact closing is transmitted, and the capacity of contact is AC230V5A)



智能控制器 INTELLIGENT CONTROLLER

- 显示和测量功能 Indication and measurement function
- P25、P26型智能控制器 Intelligent of P25 and P26

项目 Item		显示方式 Display usage	具体内容 Content	显示和测量范围 Indication and measurement range	准确度 Accuracy	
电 流 Current		LCD 显示 LCD indication	I ₁ 、I ₂ 、I ₃ 、I _N （中性极 Neutral）	(0.2I _N ~ 1.2I _N) A	± 1.5%	
			I ₁ 、I ₂ 、I ₃ 、I _N （中性极 Neutral）、			
			I _c （接地 Grounding）	0.1I _N ~ 2000A	± 2.5%	
电 压 Voltage			线电压U ₁₂ 、U ₂₃ 、U ₃₁ 相电压U _{1N} 、U _{2N} 、U _{3N} Line voltage U ₁₂ 、U ₂₃ 、U ₃₁ Phase voltage U _{1N} 、U _{2N} 、U _{3N}	30V ~ 1000V	± 0.5%	
功 率 Power			三相有功功率P Three-phase active power	-120MW ~ +120MW	± 2.5%	
			三相无功功率Q Three-phase reactive power	-120Mvar ~ +120Mvar		
			三相视在功率S Three-phase apparent power	-120MVA ~ +120MVA		
功率因数 Power-factor			功率因数PF Power-factor	-1.00 ~ +1.00	± 2.5%	
电 能 Electric quantity			三相有功电能E.P Three-phase active electric quantity	-10 ¹⁰ GWh ~ +10 ¹⁰ GWh	± 2.5%	
			三相无功电能E.Q Three-phase reactive electric quantity	-10 ¹⁰ Gvarh ~ +10 ¹⁰ Gvarh		
			三相视在电能E.S Three-phase apparent electric quantity	-10 ¹⁰ GVAh ~ +10 ¹⁰ GVAh		
频 率 Frequency			f	45 ~ 65Hz	± 0.1Hz	
谐波电参量（选项） Harmonic electric quantity	基波电流 Fundamental current		I ₁₋₁ 、I ₂₋₁ 、I ₃₋₁ 、I _{N-1}	(0.2I _N ~ 1.2I _N) A	± 1.5%	
	基波线电压 Fundamental line voltage		U ₁₂₋₁ 、U ₂₃₋₁ 、U ₃₁₋₁	30V ~ 690V	± 0.5%	
	基波相电压 Fundamental phase voltage		U _{1N-1} 、U _{2N-1} 、U _{3N-1}			
	基波功率 Fundamental power		P _f	-120MW ~ +120MW	± 2.5%	
			Q _f	-120Mvar ~ +120Mvar		
			S _f	-120MVA ~ +120MVA		
	谐波含有率 Harmonic ratio		电 流 HR _{Ih} Current	0 ~ 1000%	± 5%	
			电 压 HR _{Uh} Voltage			
	谐波总畸变率 Total harmonic distortion		电 流 THD _i 、thd _i Current			
			电 压 THD _u 、thd _u Voltage			

- L25、M25/MY25、M26/MY26、H26/HY26型智能控制器 Intelligent of L25、M25/MY25、M26/MY26 and H26/HY26

项目 Item	智能控制器类型 Type of controller	显示方式 Display usage	具体内容 Content	显示和准确度测量范围 Indication and accuracy measurement range	准确度 Accuracy
电流 Current	L25型 Type L25	光柱显示 Light columnar indication	I ₁ 、I ₂ 、I ₃ 、I _N (中性极 Neutral)	(0.2I _n ~ 1.2I _n) A	± 5%
	M25/MY25型 Type M25/MY25	LED/LCD显示 LED/LCD indication	I ₁ 、I ₂ 、I ₃ 、I _N (中性极 Neutral)、I _{max}		
	M26/MY26、H26/HY26型 Type M26/MY26、H26/HY26		I ₁ 、I ₂ 、I ₃ 、I _N (中性极 Neutral)、I _c (接地 Grounding)、I _{max}		
电压 Voltage	M25/MY25、M26/MY26型为选项、H26/HY26型为必备 Type M25/MY25、M26/MY26 is optional、Type H26/HY26 is basic function	LED/LCD显示 LED/LCD indication	U ₁₂ 、U ₂₃ 、U ₃₁ 、U _{min}	U _e ≤ 690V : 30V ~ 690V	± 3%
				U _e = 1000V : 125V ~ 1000V	
功率 Power	MY25、MY26、HY26型 Type MY25、MY26、HY26	LCD显示 Indication	三相有功功率P Three-phase active power	-9999kW ~ +9999kW	± 5%
			三相无功功率Q Three-phase reactive power	-9999kvar ~ +9999kvar	
			三相视在功率S Three-phase apparent power	-9999kVA ~ +9999kVA	



● 报警及指示功能 Alarm and prompt function

过电流故障报警 Over-current alarm	L25型 Type L25	面板上相应发光 二极管亮 Corresponding LED on the panel will be "ON"	过载或脱扣后“报警及脱扣指示”灯亮（各为黄色或红色） Alarm and release indication lights will be on after the circuit breaker's being overloaded or released (yellow or red)
	M25/MY25型 Type M25/MY25		过载长延时、短路短延时、短路瞬时脱扣后相应报警指示灯亮 After the circuit breaker's being released by long-time delay overload, short-time delay short circuit and instantaneous short circuit, indication lights of corresponding alarm will be on.
	M26/MY26、 H26/HY26型 Type M25/MY26、 H26/HY26		过载长延时、短路短延时、短路瞬时、接地故障脱扣后相应报警指示灯亮 After the circuit breaker's being released by long-time delay overload, short-time delay short circuit, instantaneous short circuit and ground-fault, indication lights of corresponding alarm will be on.
	P25型 Type P25		过载长延时、短路短延时、短路瞬时脱扣后相应指示灯闪烁 After the circuit breaker's being released by long-time delay overload, short-time delay short circuit and instantaneous short circuit, indication lights of corresponding alarm will be on.
	P26型 Type P26		过载长延时、短路短延时、短路瞬时、接地故障脱扣后相应指示灯闪烁 After the circuit breaker's being released by long-time delay overload, short-time delay short circuit and instantaneous short circuit, indication lights of corresponding alarm will be on.
故障类型指示 Fault indication	L25型 Type L25	面板上相应发光 二极管亮 Corresponding LED on the panel will be "ON"	过载长延时、短路短延时、短路瞬时脱扣后相应故障类型指示灯亮 After the circuit breaker's being released by long-time delay overload, short-time short circuit and instantaneous short circuit, indication lights of corresponding fault type will be on.
	M25/MY25型 Type M25/MY25		过载长延时、短路短延时、短路瞬时脱扣后相应故障类型指示灯亮 After the circuit breaker's being released by long-time delay overload, short-time short circuit and instantaneous short circuit, indication lights of corresponding fault type will be on.
	M26/MY26、 H26/HY26型 Type M26/MY26、 H26/HY26		过载长延时、短路短延时、短路瞬时、接地故障脱扣后相应故障类型指示灯亮 After the circuit breaker's being released by long-time delay overload, short-time delay short circuit, instantaneous short circuit, instantaneous short circuit and ground-fault, indication lights of corresponding fault type will be on.
	P25型 Type P25		过载长延时、短路短延时、短路瞬时脱扣后相应故障类型指示灯亮 After the circuit breaker's being released by long-time delay overload, short-time delay short circuit and instantaneous short circuit, indication lights of corresponding alarm will be on.
	P26型 Type P26		过载长延时、短路短延时、短路瞬时、接地故障脱扣后相应故障类型指示灯亮 After the circuit breaker's being released by long-time delay overload, short-time delay short circuit and instantaneous short circuit, indication lights of corresponding alarm will be on.
故障相、故障电流、 时间显示 Indication of faulty phase, current and time	M25、M26、H26型 type M25、M26、H26	LED显示 Indication	显示最近一次故障相/分断故障电流值、分断时间 Indication of faulty phase, breaking value of fault current and breaking time
	MY25、MY26、HY26型 Type M26/MY26、H26/HY26	LCD显示 Indication	
	P25、P26型 Type P25、P26	LCD显示 Indication	可显示最近10次故障类别及发生时间，故障相、分断故障电流值、分断时间 It can indicate the latest ten times fault categories and occurrence time, faulty phase, breaking value of fault current and breaking time.

● 试验功能 Test function

面板按键 或菜单操作 Panel button or menu operates	L25、M25/MY25、M26/MY26、 H26/HY26、P25、P26型 Type L25、M25/MY25、 M26/MY26、H26/HY26、P25、P26	脱扣 Release	检验智能控制器的时间/电流特性及断路器执行机构的完好情况 Inspection of T-I characteristic of the intelligent controller and he conditions of operating mechanism
	M25/MY25、M26/MY26、 H26/HY26、P25、P26型 Type M25/MY25、M26/MY26、 H26/HY26、P25、P26	不脱扣 Non-release	检验智能型控制器的时间/电流特性 Inspection of T-I characteristic of the intelligent controller



- 触头磨损指示功能（M25/MY25、M26/MY26、H26/HY26、P25、P26型配置）

智能控制器具有触头磨损指示功能，即按“磨损指示”键，可显示断路器主触头当量磨损次数占断路器电气寿命次数的百分比数值。

- 自诊断功能（M25/MY25、M26/MY26、H26/HY26、P25、P26型配置）

当智能控制器微处理器发生故障或微处理器周围环境温度超过 $80^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ，能立即发出报警信号。

- M C R 功能

断路器在合闸过程中或控制器在通电初始时，遇到短路短延时故障能立即转为瞬时分闸。

- 故障记忆功能（M25/MY25、M26/MY26、H26/HY26、P25、P26型配置）

断路器遇故障分断后，智能控制器能显示出故障类别、故障相及故障电流值、分断动作时间值。

- 电流不平衡显示（P25、P26型选项）

当三相电流不平衡度大于整定值（20%–80%可调），智能控制器发出信号并显示。

- 谐波分析功能（P25、P26型选项）

选择谐波分析功能的P25、P26型智能控制器能测量基波电流、基波线电压、基波相电压、基波功率及3–31次各次奇次谐波电流含有率（HRI_h）、谐波电压含有率（HRU_h）、谐波电流总畸变率[THDi、thdi]、谐波电压总畸变率[THDu、thdu]。

- 谐波含有率（HR）

周期性交流量中含有的第h次谐波分量的方均根值与基波分量的方均根值之比（用百分数表示）。

- 第h次谐波电流含有率以HRI_h表示。

$$\text{HRI}_h = \frac{I_h}{I_{1-1}} \times 100\%$$

注：式中I_h为A相第h次谐波电流（方均根值）；

- Contact wearing indication (for M25/MY25、M26/MY26、H26/HY26、P25 and P26)

The intelligent controller has the function of contact wearing indication. Accordingly, the percentage of the equivalent to wearing times of main contact to electrical life-span times of the circuit breaker can be indicated by pushing the button of "wearing indication".

- Self-diagnosis function (for M25/MY25、M26/MY26、H26/HY26、P25 and P26)

When the microprocessor of the intelligent controller breaks down or the ambient temperature of the microprocessor rises over $80^{\circ}\text{C} \pm 5^{\circ}\text{C}$, alarm signals can be sent out immediately.

- MCR function

When the circuit breaker is on or the controller is initially electrified, the circuit breaker would trip instantly if short-time short circuit fault occurred.

- Fault-memory function (for M25/MY25、M26/MY26、H26/HY26、P25 and P26)

The types and phases of fault, value of faulty current and breaking time would be indicated on the intelligent controller if the circuit breaker broke off as a result of faults.

- Current disequilibrium display (selective function for P25 and P26)

The intelligent controller can sent out and display, when the three phases current disequilibrium level reached the setting value (20%–80%).

- Harmonic analysis function (selective function for P25 and P26)

P25 or P26 intelligent controller with harmonic analysis function can measure fundamental current、fundamental line voltage、fundamental phase voltage、fundamental power、odd harmonic current ratio (HRI_h) from the third to thirty-first、harmonic voltage ratio (HRU_h)、total harmonic distortion of current (THDi、thdi) and total harmonic distortion of voltage (THDu、thdu).

- Harmonic ratio (HR)

The ratio of RMS of hth harmonic component in the periodical alternating quantum to RMS of fundamental component (express by percent).

- Harmonic current ratio of hth expresses HRI_h.

$$\text{HRI}_h = \frac{I_h}{I_{1-1}} \times 100\%$$

Note: I_h—harmonic current of hth of phase A (RMS)

Harmonic voltage ratio of hth expresses HRU_h.



- 第h次谐波电压含有率以 HRU_h 表示。

$$HRU_h = \frac{U_h}{U_{12-1}} \times 100\%$$

注：式中 U_h 为A-B相间第h次谐波线电压。

- 总谐波畸变率（THD、thd）

- 周期性交流量中的谐波含量与其基波分量的方均根值之比（THD）用百分数表示。

$$THD_i = \frac{\sqrt{\sum_{h=2}^{\infty} I_h^2}}{I_{1-1}} \times 100\%$$

$$THD_u = \frac{\sqrt{\sum_{h=2}^{\infty} U_h^2}}{U_{12-1}} \times 100\%$$

注：式中 I_h 为A相第h次谐波电流（方均根值）；
 U_h 为A-B相间第h次谐波线电压（方均根值）。

- 周期性交流量中的谐波含量与该周期性交流量的方均根值之比（thd）（用百分数表示）。

$$thd_i = \frac{\sqrt{\sum_{h=2}^{\infty} I_h^2}}{I_1} \times 100\%$$

$$thd_u = \frac{\sqrt{\sum_{h=2}^{\infty} U_h^2}}{U_{12}} \times 100\%$$

注：式中 I_h 为A相第h次谐波电流（方均根值）；
 U_h 为A-B相间第h次谐波线电压（方均根值）。

- Harmonic current ratio of hth expresses HRI_h .

$$HRU_h = \frac{U_h}{U_{12-1}} \times 100\%$$

Note U_h —harmonic line voltage of hth between phase A and B.

- Total harmonic distortion (THD、thd)

- The ratio of harmonic content in the periodical alternating quantum to RMS of fundamental component (THD)(express by percent).

$$THD_i = \frac{\sqrt{\sum_{h=2}^{\infty} I_h^2}}{I_{1-1}} \times 100\%$$

$$THD_u = \frac{\sqrt{\sum_{h=2}^{\infty} U_h^2}}{U_{12-1}} \times 100\%$$

Note: I_h —harmonic current of hth of phase A (RMS)
 U_h —harmonic line voltage of hth between phase A and B (RMS)

- The ratio of harmonic component in the periodical alternating quantum to RMS of periodical alternating quantum (thd) (express by percent).

$$thd_i = \frac{\sqrt{\sum_{h=2}^{\infty} I_h^2}}{I_1} \times 100\%$$

$$thd_u = \frac{\sqrt{\sum_{h=2}^{\infty} U_h^2}}{U_{12}} \times 100\%$$

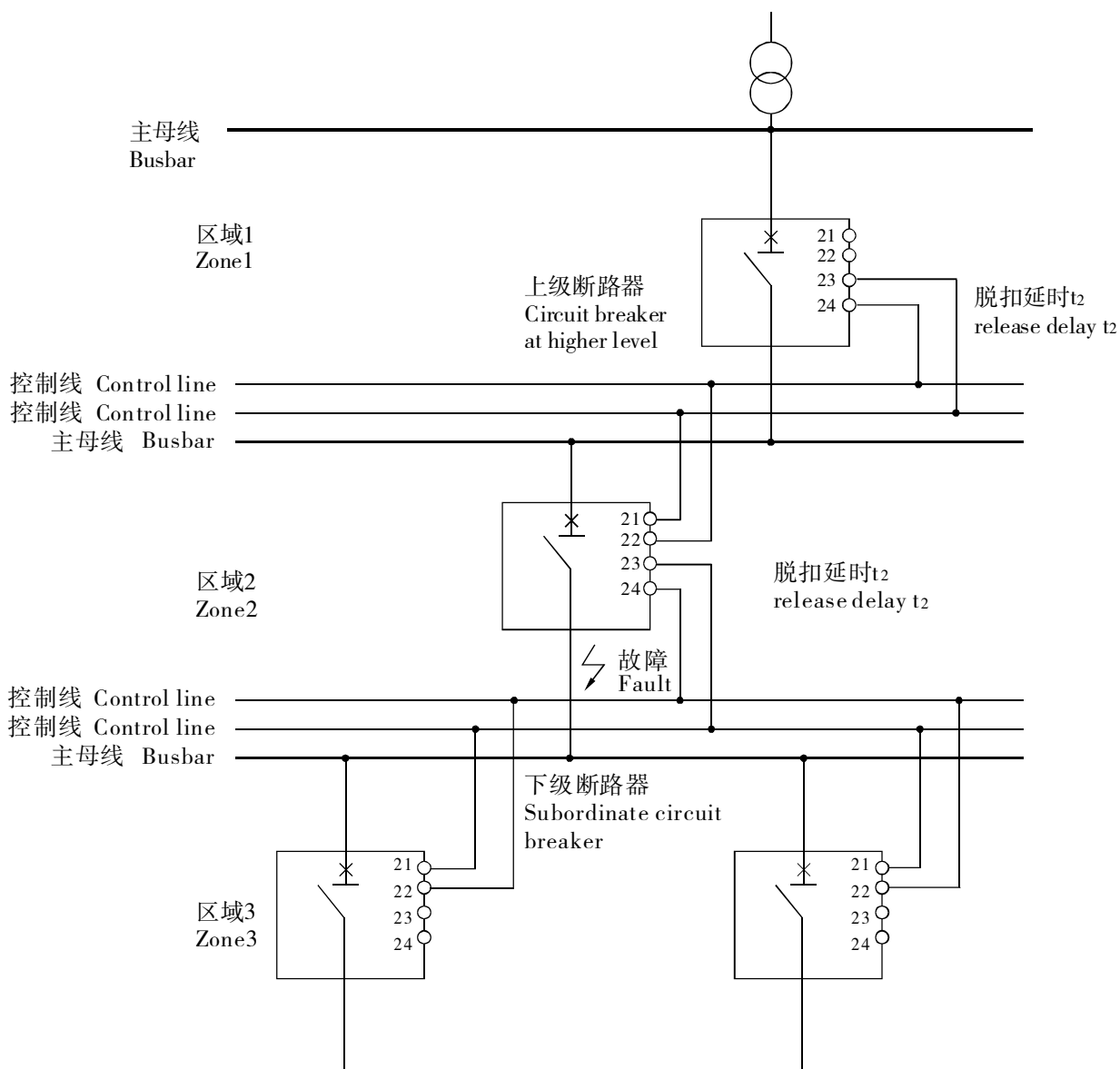
Note: I_h —harmonic current of hth of phase A (RMS)
 U_h —harmonic line voltage of hth between phase A and B (RMS)



● 区域选择性联锁 Zone selective interlock

区域选择性联锁（ZSI功能）（M25/MY25、M26/MY26、H26/HY26、P25、P26 型配置，选项）

Zone selective interlock (ZSI function) (for M25/MY25、M26/MY26、H26/HY26、P25 and P26, optional)



注：21，22，23，24为断路器二次回路接线端子。

Note: 21,22,23,24 serve as the wiring terminals of secondary circuit.



当多台CW2断路器上下连接在一起时，选择区域选择性联锁（ZSI）功能可确保断路器上下级完全选择性保护，这样减少了故障动作范围，并缩短了断路器的分断时间。此功能适用于断路器短路短延时（ I_t^2 OFF）和接地故障保护。

如上图所示，控制线可联锁多个断路器。

检测到故障的智能控制器（区域2）送一个信号给上级断路器（区域1）并检查下级断路器（区域3）到达的信号。如果有下级断路器送过来的信号，断路器将在脱扣延时期保持合闸。如果下级没有送过来信号，断路器将瞬时断开，不管脱扣保护是否有延时。

注：末级23，24应短接。

When pieces of circuit breakers are linked together up and down, zone selective interlock (ZSI) can ensure fully-selective protection of circuit breakers at higher or lower level so as to reduce the range of action by fault and the breaking time of circuit breakers. This function serves for short-time delay short circuit (I_t^2 OFF) and ground-fault protection of circuit breakers.

As the sketch shown above, control lines can interlock with pieces of circuit breakers.

After detecting the fault, the intelligent controller (zone 2) will send out a signal to circuit breakers (zone 1) at higher level and check whether the signal of circuit breakers (zone 3) at lower level arrives. If circuit breakers at lower level send out a signal, the circuit breaker will be on at the time duration of release delay; if circuit breakers at lower level don't send out a signal, the circuit breaker will break off instantly no matter whether the release has the protection of delay.

Note: The end 23 and 24 should be short-circuited.



(四) 特性参数及曲线 Characteristic parameters and curve

● 特性参数 Characteristic parameters

● 过载长延时反时限动作特性 Characteristic of inverse long-time delay overload

注：过载长延时反时限动作以 $1.5I_r$ 的动作时间 t_i 为基准。

Note: Acting of inverse long-time delay overload is based on acting time t_i of $1.5 I_r$

● 通用 I^2t 长延时反时限动作特性

● Characteristic of inverse long-time delay general I^2t

整定电流 I_{r1} 调整范围 Adjustment range of the setting current I_{r1}		L25型 Type L25		(0.65 ~ 1) I_n 按每级5% I_n 递变调整 Adjust successively with 5 percent in for each step				
		M25/MY25、M26/MY26、H26/HY26、P25、P26型 Type M25/MY25、M26/MY26、H26/HY26、P25、P26		(0.4 ~ 1) I_n 按每级10A递变调整 Adjust successively with 10A for each step				
动作时间公差 $\pm 15\%$ Tolerance of acting time	电流 Current	动作时间 Acting time						
	1.05 I_{r1}	2小时内不动作 Not acting						
	1.3 I_{r1}	$\leq 1h$ 动作 Acting						
	1.5 I_{r1}	整定时间 $t_1(s)$ Setting time	15	30	60	120	240	480
	2.0 I_{r1}	动作时间 $T_1(s)$ Acting time	8.4	16.9	33.7	67.5	135	270
	6.0 I_{r1}	动作时间 $T_1(s)$ Acting time	0.94	1.88	3.75	7.5	15	30
	7.2 I_{r1}	动作时间 $T_1(s)$ Acting time	0.65	1.30	2.60	5.20	10	21
	脱扣级别 * Release rate		—	—	10A	10	20	30
热模拟功能Thermo-analogue function			$\leq 10min$ (断电可清除) (Can be cleared out in case of power failure)					

*注：脱扣级别对应于电动机保护型断路器。

*Note: Release rate corresponding to the circuit breakers with motor protection.

● 非常反时限 I_t 动作特性

● Characteristic of inverse time delay special I_t

整定电流 I_{r1} 调整范围 Adjustment range of the setting current I_{r1}		P25、P26型 Type P25、P26			(0.4 ~ 1) I_n 按每级10A递变调整 Adjust successively with 10A for each step			
动作时间公差 $\pm 15\%$ Tolerance of acting time	电流 Current	动作时间 Acting time						
	1.05 I_{r1}	2小时内不动作 Not acting						
	1.3 I_{r1}	$\leq 1h$ 动作 Acting						
	1.5 I_{r1}	整定时间 $t_1(s)$ Setting time	10	15	30	60	90	120
	2.0 I_{r1}	动作时间 $T_1(s)$ Acting time	5	7.5	15	30	45	60
	6.0 I_{r1}	动作时间 $T_1(s)$ Acting time	1	1.5	3	6	9	12
	7.2 I_{r1}	动作时间 $T_1(s)$ Acting time	0.81	1.21	2.42	4.84	7.26	9.68
	脱扣级别 * Release rate		—	—	10A	10	20	30
热模拟功能Thermo-analogue function			$\leq 10min$ (断电可清除) (Can be cleared out in case of power failure)					

*注：脱扣级别对应于电动机保护型断路器。

*Note: Release rate corresponding to the circuit breakers with motor protection.



- 高压熔丝 I^4 配合动作特性
- Interoperation characteristic of high-voltage fuse I^4

整定电流Ir1调整范围 Adjustment range of the setting current Ir1		P25、P26型 Type P25、P26			(0.4 ~ 1)In 按每级10A递变调整 Adjust successively with 10A for each step			
动作时间允差 ± 15% Tolerance of acting time	电流 Current	动作时间 Acting time						
	1.05Ir1	2小时内不动作 Not acting						
	1.3Ir1	≤1h 动作 Acting						
	1.5Ir1	整定时间 t1(s) Setting time	60	120	240	480	960	1440
	2.0Ir1	动作时间 T1(s) Acting time	16.25	32.5	65	130	260	390
	6.0Ir1	动作时间 T1(s) Acting time	*	*	0.75	1.51	3.01	4.52
	7.2 Ir1	动作时间 T1(s) Acting time	*	*	*	0.73	1.45	2.18
热模拟功能Thermo-analogue function			≤10min(断电可清除) (Can be cleared out in case of power failure)					

*注：动作时间 $T_1 \leq t_2$ 时，按短延时整定时间 t_2 动作。

*Note: When acting time T_1 is no more than t_2 , the acting time is short-time delay setting time t_2 .

- 短路短延时动作特性(可OFF)

在低倍数电流时为反时限特性；当过载电流大于8 I_{r1} 时自动转换为定时限特性。短延时 I^2 特性可“OFF”，此时呈定时限特性。

- Acting characteristic of short-time delay short circuit (can be OFF)

Inverse acting characteristics in ow-mutiplred current; To switch into definite acting characteristic automatically when the over-current is above 8 I_{r1} ; definite acting characteristic manifests when short delay acting characteristic I^2 can be "OFF".

整定电流 I_{r2} 调整范围 Adjustment range of the setting current I_{r2}		L25型 Type L25	(1.5 ~ 10) I_{r1} +OFF按1.5、2、3、4、5、6、8、10倍 I_{r1} 递变调整 (1.5 ~ 10) I_{r1} +OFF Adjust successively with 1.5、2、3、4、5、6、8、10 time of I_{r1}					
		M25/MY25、M26/MY26、H26/HY26、P25、P26型 Type M25/MY25、M26/MY26、H26/HY26、P25、P26	(0.4 ~ 15) I_n +OFF 按每级20A递变调整 (0.4 ~ 15) I_n +OFF Adjust successively with 20A for each step					
电流允差 $\pm 10\%$ Tolerance of current $\pm 10\%$	电流 Current	动作时间 Acting time						
	$I \geq I_{r2}$, $I \leq 8I_{r1}$	反时限 Inverse	$T_2=(8I_{r1})^2 t_2/I^2$					
动作时间允差 $\pm 15\%$ Tolerance of current $\pm 15\%$	$I \geq I_{r2}$, $I > 8I_{r1}$ 或 $I \geq I_{r2}$, $I \leq 8I_{r1}$ 反时限OFF时 $I \geq I_{r2}$, $I > 8I_{r1}$ or $I \geq I_{r2}$, $I \leq 8I_{r1}$ Be OFF for inverse	定时限 Definite	整定时间 t_2 (s) Setting line	0.1	0.2	0.3	0.4	
	可返回时间 (s) Returnable time		0.06	0.14	0.23	0.35		
热模拟功能 Thermo-analogue function		$\leq 5min$ (断电可清除) (Can be cleared out)						



● 短路瞬时动作特性（可OFF）Acting characteristic of instantaneous short circuit (can be OFF)

整定电流 I_{r3} 调整范围 Adjustment range of the setting current I_{r3} 电流允差 $\pm 15\%$ Tolerance of current $\pm 15\%$	L25型 Type l25	(3 ~ 15) I_{r1} (CW2系列) 按3、4、5、8、10、12、15倍 I_{r1} 递变调整 (3 ~ 15) I_{r1} (CW2 series) Adjust successively with 3、4、5、8、10、12、15 and 15 time of I_{r1}
	M25/MY25、M26/MY26、 H26/HY26、P25、P26型 Type M25/MY25、M26/MY26、 H26/HY26、P25、P26	1.6kA ~ 35kA(CW2-1600)+OFF 2kA ~ 50kA(CW2-2000)+OFF 2.5kA ~ 50kA(CW2-2500)+OFF 4kA ~ 65kA(CW2-4000)+OFF 6.3kA ~ 80kA(CW2-6300)+OFF 按每级100A递变调整 Adjust successively with 100A for each step

● 接地故障动作特性（M26/MY26、H26/HY26、P26型配置，并可OFF）

Acting characteristic of ground-fault (only for M26/MY26、H26/HY26 and P26 controllers, this fuction can be OFF)

整定电流 I_{r4} 调整范围 Adjustment range of the setting current I_{r4}	CW2-1600	CW2-2000、CW2-2500		CW2-4000		CW2-6300	
	0.4 $I_n \sim 0.8I_n$ 或 1000A(取小者) 0.4 $I_n \sim 0.8I_n$ or 1000A (To chose the smaller)	0.2 I_n 或160A(取大者) $\sim$ 0.8 I_n 或1200A (取小者) 0.2 I_n or 160A (To choose the larger) 0.8 I_n or 1200A (To choose the smaller)		0.2 $I_n \sim 0.6I_n$ 或 1600A (取小者) 0.2 $I_n \sim 0.6I_n$ or 1600A (To choose the small)		0.2 $I_n \sim 0.5I_n$ 或 2000A (取小者) 0.2 $I_n \sim 0.5I_n$ or 2000A (To choose the small)	
	按每级10A递变调整 Adjust successively with 10A for each step						
电流允差 $\pm 10\%$ Tolerance of current $\pm 10\%$ 动作时间允差 $\pm 15\%$ Tolerance of current $\pm 15\%$	动作时间 Acting time						
	定时限 Definite	整定时间 t_4 (s) Setting time t_4 (s)	0.1	0.2	0.3	0.4	
		可返回时间 (s) Returnable time	0.06	0.14	0.23	0.35	

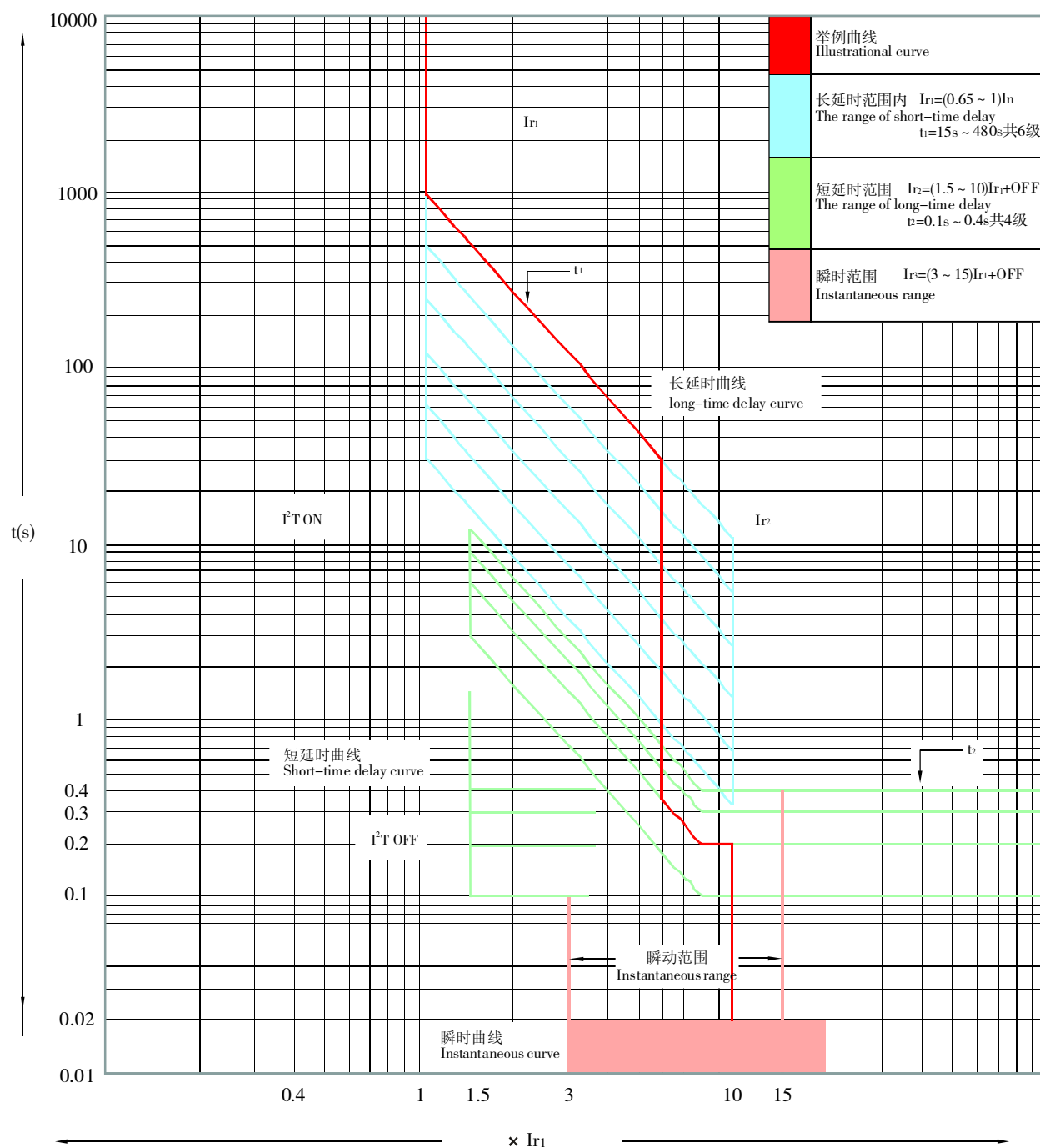
● 负载监控动作特性（M25/MY25、M26/MY26、H26/HY26、P25、P26型配置，选项）

Acting characteristic of load-monitoring (optional for type M25/MY25、M26/MY26、H26/HY26、P25 and P26 controllers)

方式一 Pattern one	整定电流 I_{LC1} 、 I_{LC2} 调整范围 电流允差 $\pm 10\%$ Adjustment range of the setting current I_{LC1} 、 I_{LC2} Tolerance of current $\pm 10\%$	(0.2 ~ 1.0) I_n 按每级20A递变调整 (0.2 ~ 1.0) I_n Adjust successively with 20A for each step
	延时特性 Delary characteristic	反时限特性（自动跟踪 t_1 ）： $t_{c1}=0.5t_1$ ， $t_{c2}=0.25t_1$ Inverse characteristic (automatic tracking T_1) : $t_{c1}=0.5t_1$ ， $t_{c2}=0.25t_1$
方式二 Pattern two	整定电流 I_{LC1} 、 I_{LC2} 调整范围 电流允差 $\pm 10\%$ Adjustment range of the setting current I_{LC1} 、 I_{LC2} Tolerance of current $\pm 10\%$	(0.2 ~ 1.0) I_n 按每级20A递变调整 (0.2 ~ 1.0) I_n Adjust successively with 20A for each step
	延时特性 Delay characteristic	反时限特性（自动跟踪 t_1 ）： $t_{c1}=0.5t_1$ Inverse characteristic (automatic tracing T_1) : $t_{c1}=0.5t_1$
		定时限特性： $t_{c2}=60s$ Definite characteristic: $t_{c2}=60s$

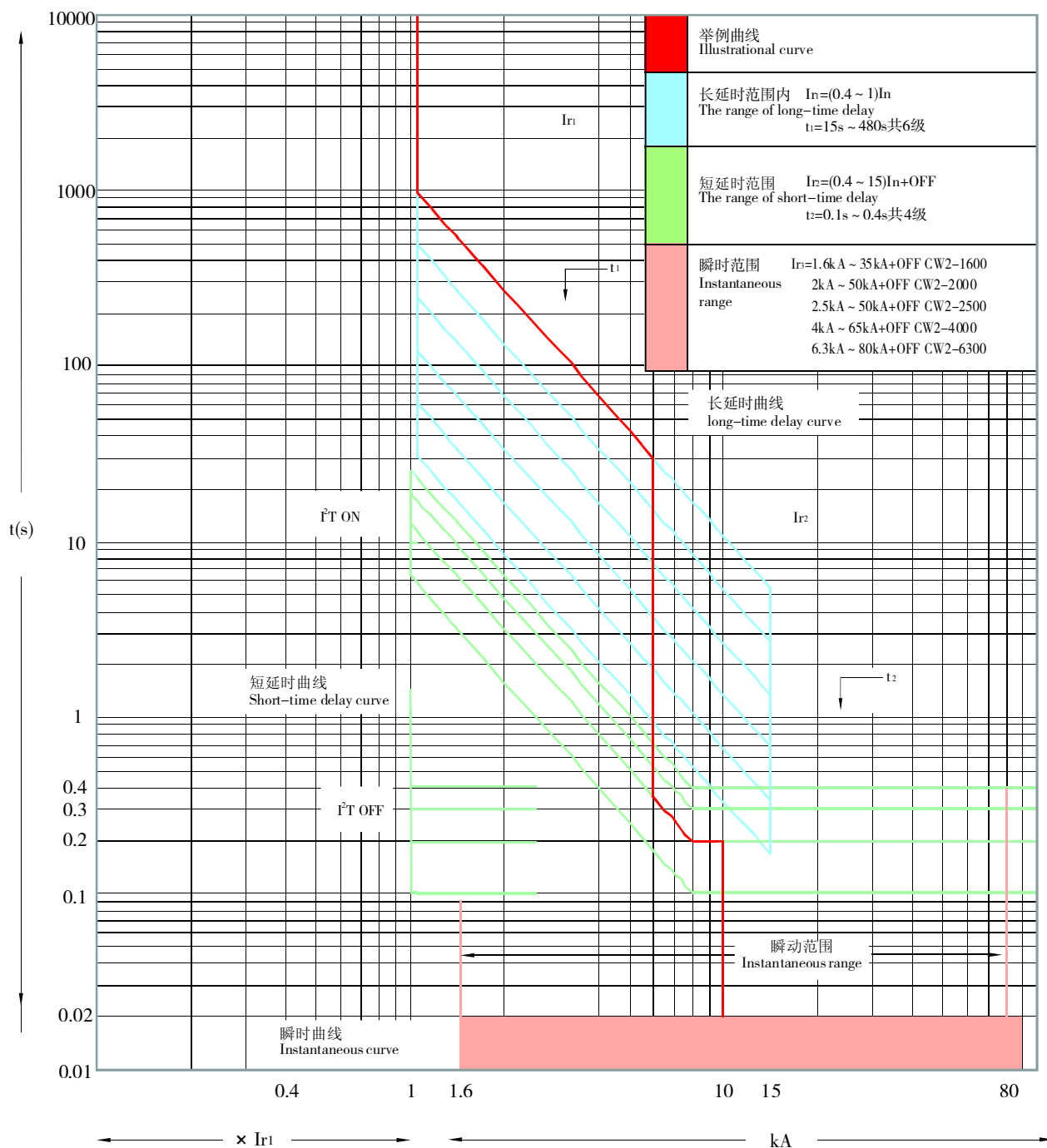


- 通用 I^2t 特性曲线 Characteristic curve of general I^2t
- L25型智能控制器时间/电流特性曲线, CW2-1600 ~ CW2-6300
T/I (time / current) curve of type L25 intelligent controllers



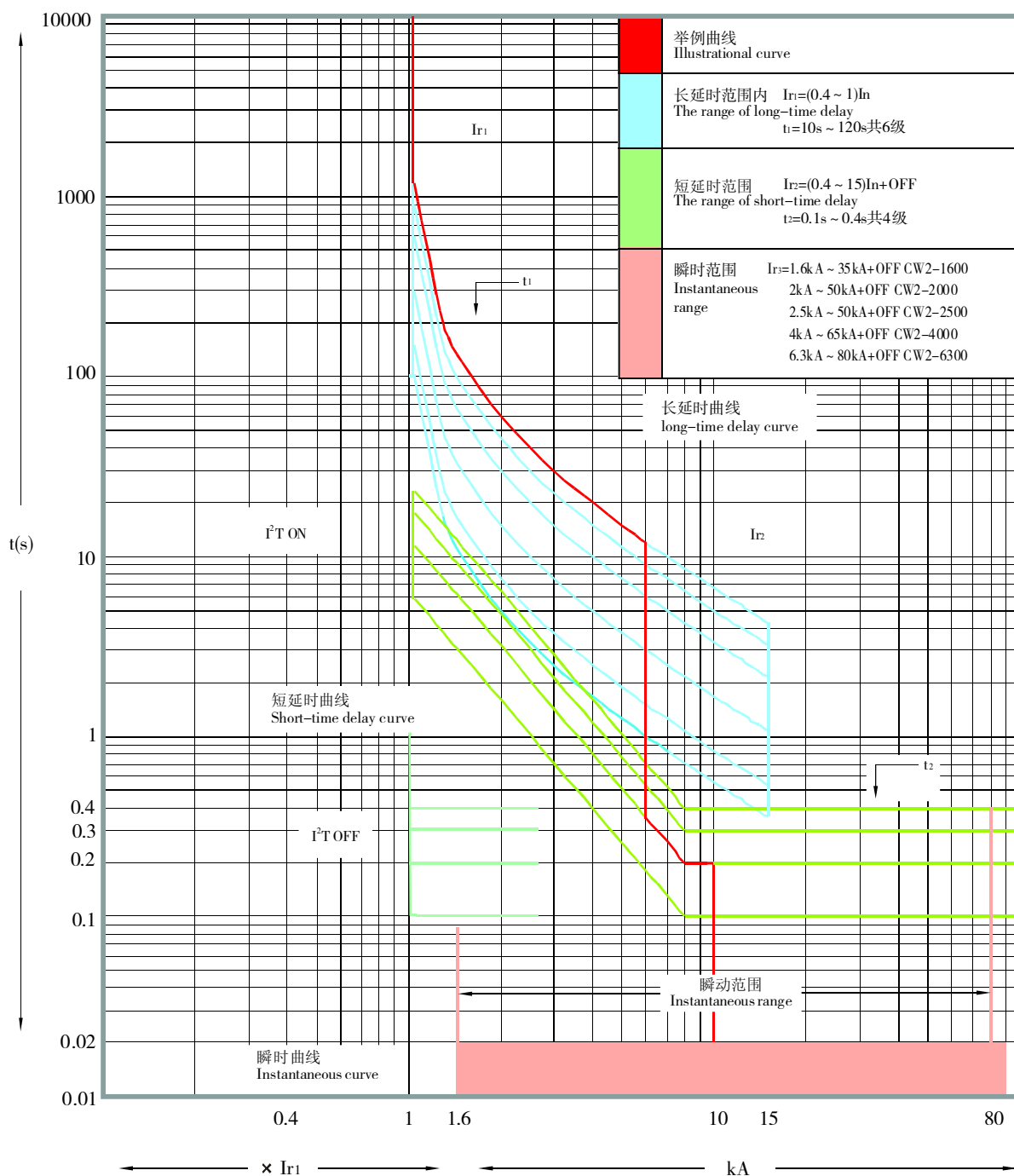


- M25/MY25、M26/MY26、H26/HY26、P25、P26型智能控制器时间/电流特性曲线，CW2-1600 ~ CW2-6300
T/I (time / current) curve of type M25/MY25、M26/MY26、H26/HY26、P25 and P26 intelligent controllers

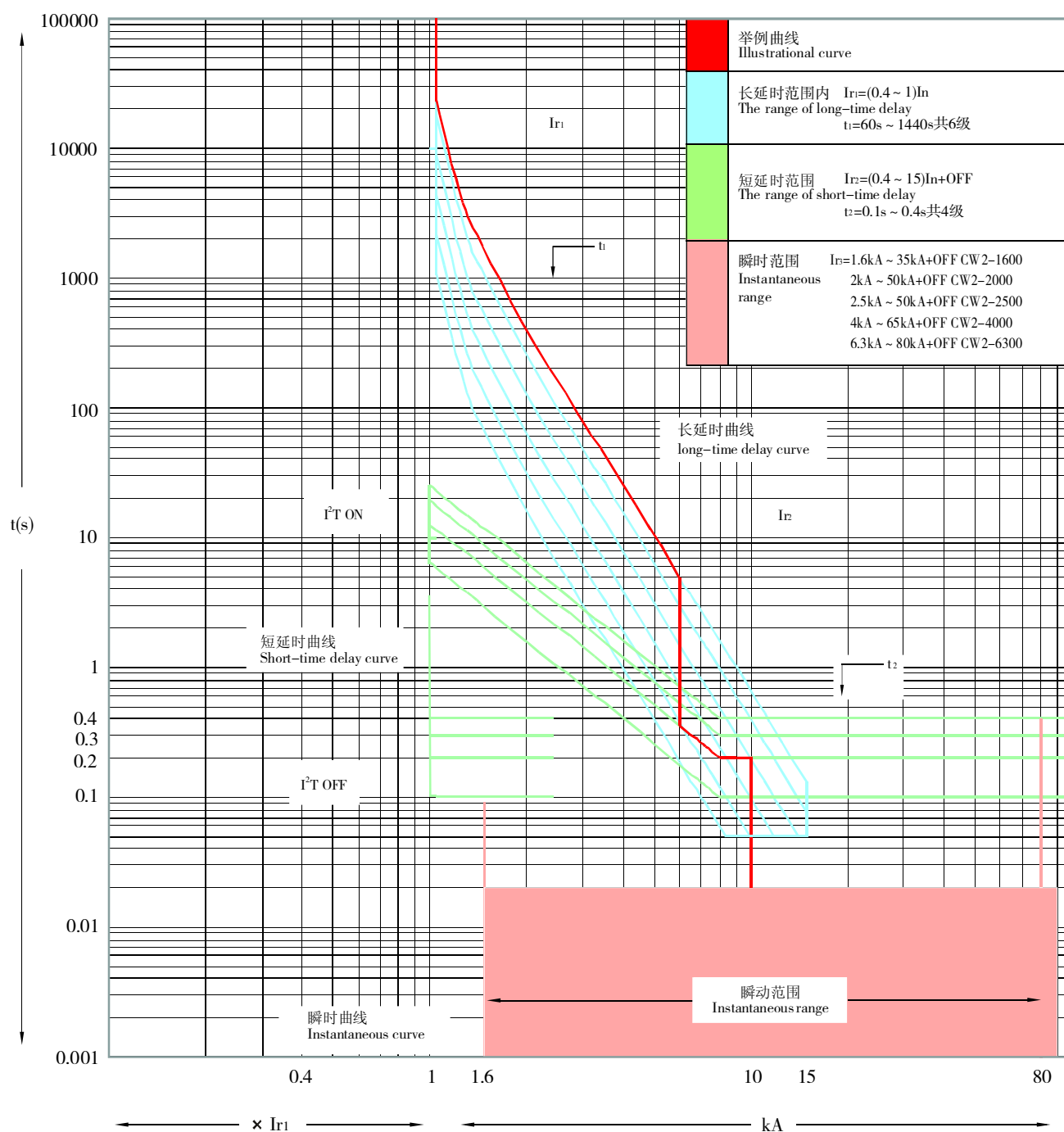




- 非常反时限 I_t 特性曲线 Characteristic curve of inverse time delay special I_t
- P25、P26型智能控制器时间/电流特性曲线，CW2-1600 ~ CW2-6300
T/I (time / current) curve of type P25 and P26 intelligent controllers

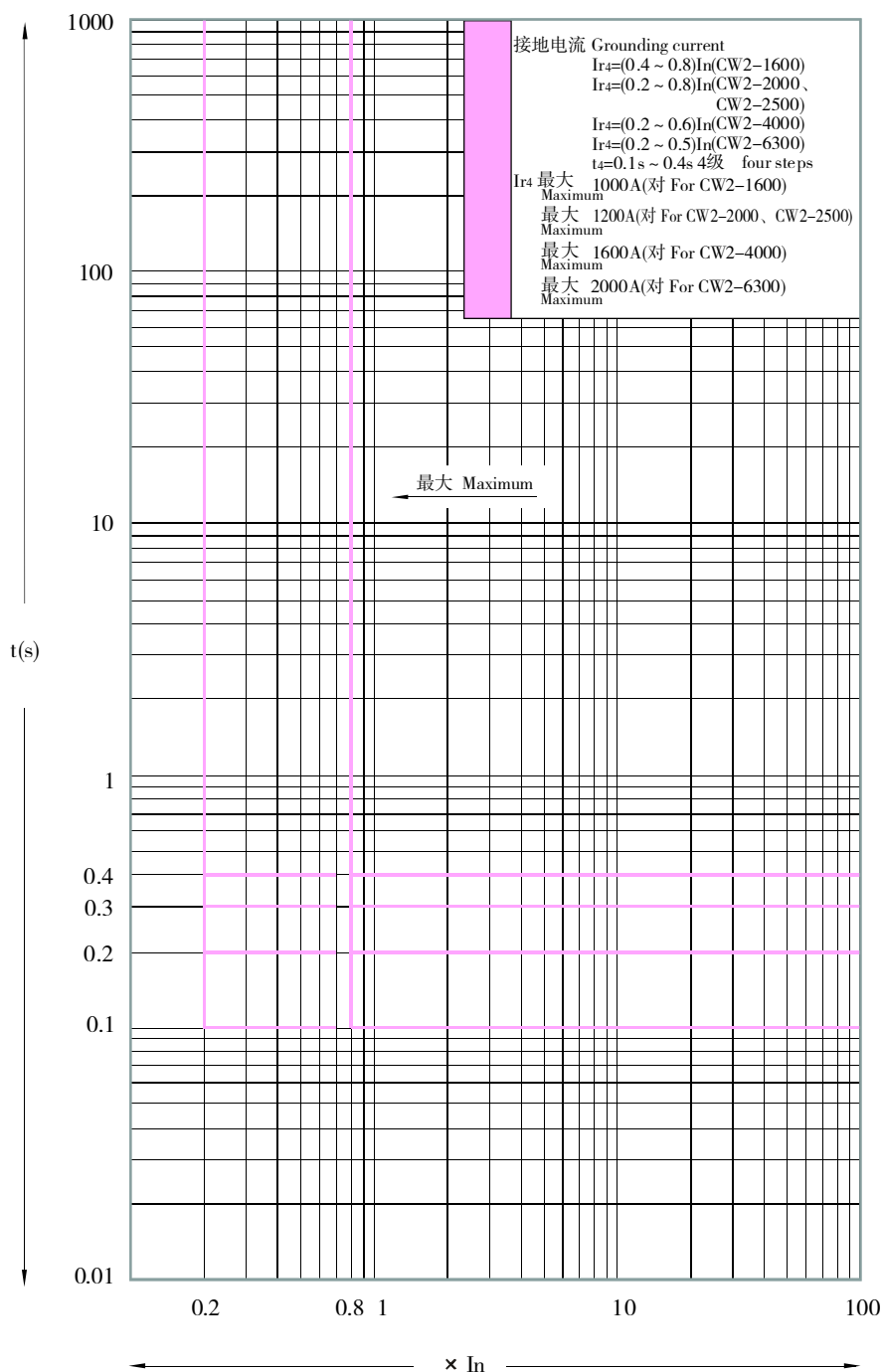


- 高压熔丝配合 I^2t 特性曲线 Characteristic curve of high-voltage fuse I^2t
- P25、P26型智能控制器时间/电流特性曲线，CW2-1600 ~ CW2-6300
T/I (time / current) curve of type P25 and P26 intelligent controllers



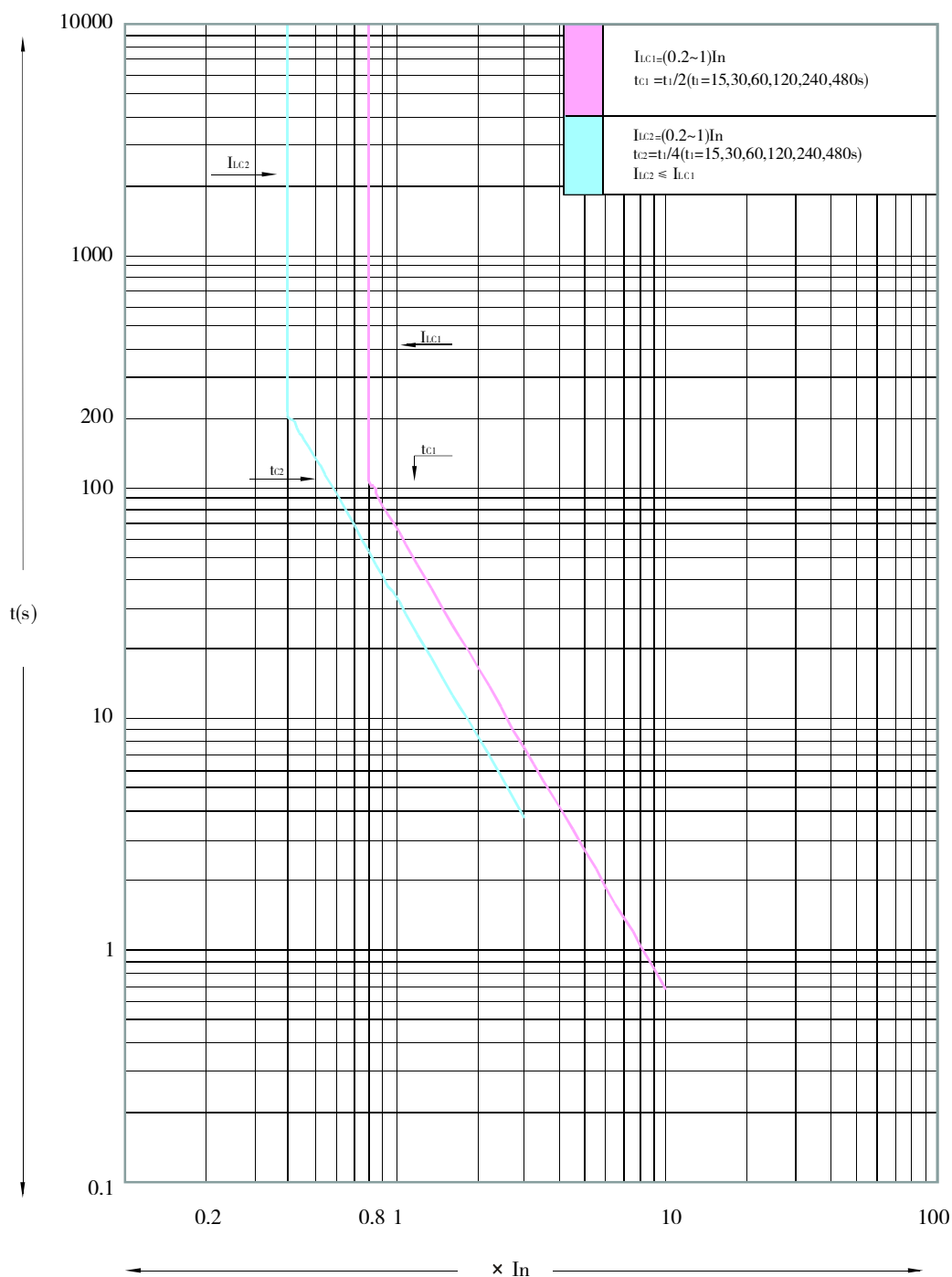


- M26/MY26、H26/HY26、P26型智能控制器接地故障保护时间/电流特性曲线
T/I (time / current) curve of type M26/MY26、H26/HY26 and P26 intelligent controllers for ground-fault protection



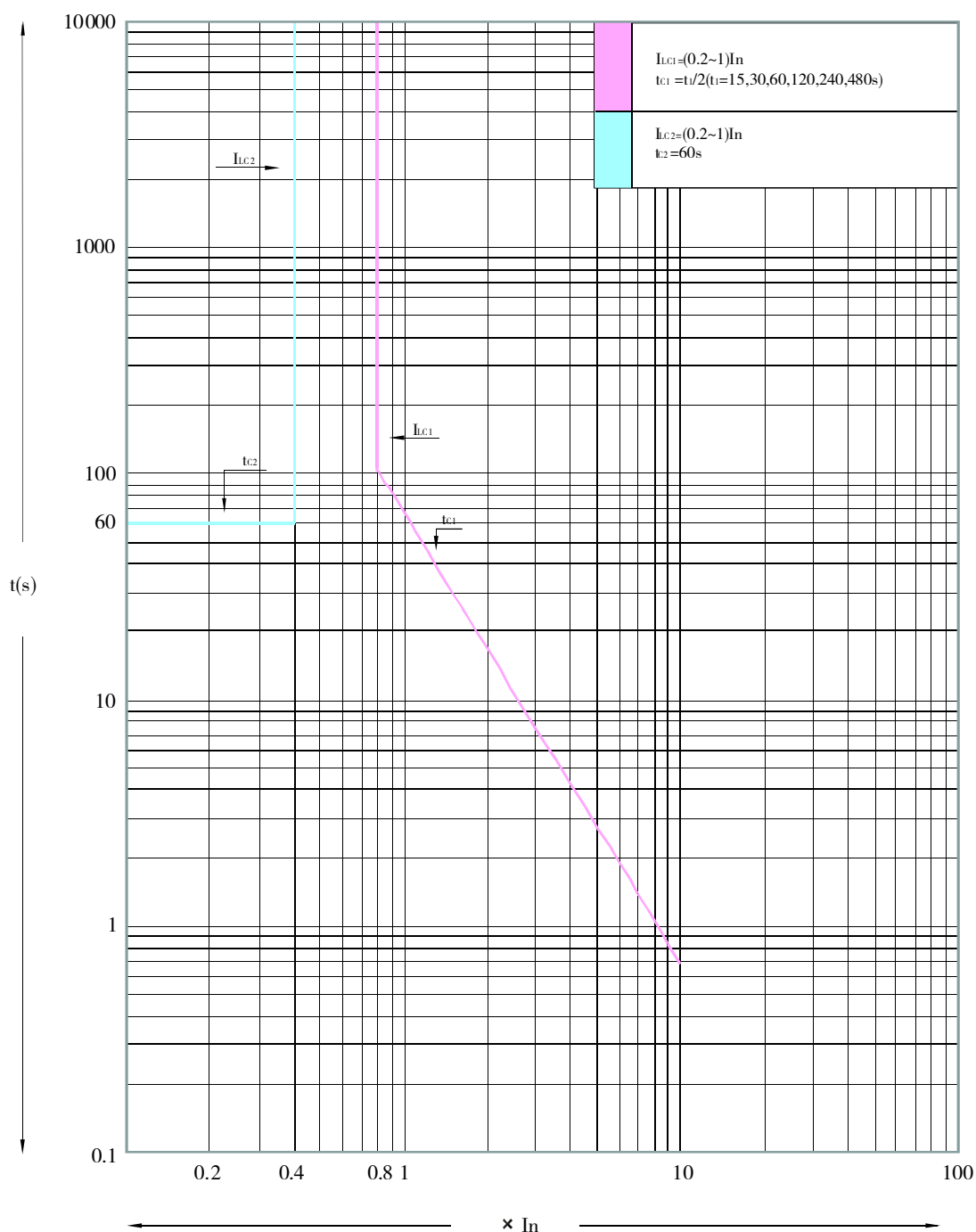


- M25/MY25、M26/MY26、H26/HY26、P25、P26型智能控制器负载监控方式一时间/电流特性曲线
T/I (time / current) curve of type M25/MY25、M26/MY26、H26/HY26、P25 and P26 intelligent controllers for load-monitoring pattern one.



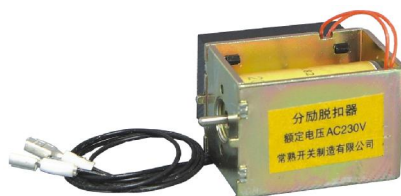


- M25/MY25、M26/MY26、H26/HY26、P25、P26型智能控制器负载监控方式二时间/电流特性曲线
T/I (time / current) curve of type M25/MY25、M26/MY26、H26/HY26、P25 and P26 intelligent controllers for load-monitoring pattern two.





CW2-1600



CW2-2000及以上
CW2-2000 and above

- 标配附件
Normally-deployed accessories
- 分励脱扣器
Shunt release
- 可远距离操纵使断路器断开
To break the circuit breaker by remote control

● 特性 Characteristics

型号 Type	FFT/W216	FFT/W220											
配用断路器 Fitting breaker	CW2-1600	CW2-2000/2500/4000/6300											
额定控制电源电压Us(V) Rated voltage of control power supply	<table><tr><td>AC400</td><td>AC230</td><td>DC220</td><td>DC110</td></tr><tr><td>0.7</td><td>1.3</td><td>1.3</td><td>2.4</td></tr></table>					AC400	AC230	DC220	DC110	0.7	1.3	1.3	2.4
AC400	AC230	DC220	DC110										
0.7	1.3	1.3	2.4										
瞬时电流(A) Instantaneous current													
动作电压(V) Operating voltage	(0.7~1.1)Us												
分断时间(ms) Breaking time	不大于30 No more than 30												



CW2-1600



CW2-2000及以上
CW2-2000 and above

- 合闸电磁铁
After the circuit breaker ends up its energy storage, the closing electromagnet will make the energy storing spring to release its energy instantly, then to close the circuit breaker quickly.

● Electromagnet

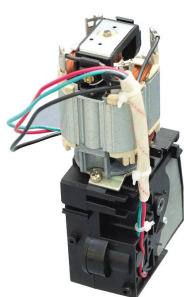
- 特性 Characteristics

型号 Type	FHD/W216	FHD/W220											
配用断路器 Fitting breaker	CW2-1600	CW2-2000/2500/4000/6300											
额定控制电源电压Us(V) Rated voltage of control power supply	<table><tr><td>AC400</td><td>AC230</td><td>DC220</td><td>DC110</td></tr><tr><td>0.7</td><td>1.3</td><td>1.3</td><td>2.4</td></tr></table>					AC400	AC230	DC220	DC110	0.7	1.3	1.3	2.4
AC400	AC230	DC220	DC110										
0.7	1.3	1.3	2.4										
瞬时电流(A) Instantaneous current													
动作电压(V) Operating voltage	(0.85~1.1)Us												
合闸时间(ms) Closing time	不大于70 No more than 70												



附件 ACCESSORIES

- 电动操作机构
- 断路器具有电动机贮能及自动再贮能功能；
- 断路器亦可手动贮能。



CW2-1600



CW2-2000及以上
CW2-2000 and above

- Motor driven operating mechanism
- The circuit breaker has the functions of motor-driven energy storage and automatic energy-restoring
- The energy storage can also be done manually.
- 特性 Characteristic

型号 Type	FDC/W216	FDC/W220	FDC/W240
配用断路器 Fitting breaker	CW2-1600	CW2-2000/2500	CW2-4000/6300
额定控制电源电压Us(V) Rated voltage of control power supply	AC400/AC230/DC220/DC110		
动作电压(V) Operating voltage	(0.85~1.1)Us		
功耗(V A/W) Power consumption	192		
储能时间(s) Charging time	不大于5 No more than 5		

- 辅助开关
额定值



CW2-1600

- Auxiliary switch
Rated value



CW2-2000及以上
CW2-2000 and above

- 特性 Characteristic

型号 Type	FFC/W2164Z	FFC/W2204Z	FFC/W21644	FFC/W22044	FFC/W22062	FFC/W22026
型式 Specification	4组转换触头 4 groups of changeover contacts		4常开4常闭 4 pieces of normally- opened contacts (NO) and 4 pieces of normally-closed contacts(NC)		6常开2常闭 6 pieces of normally- opened contacts(NÓ) and 2 pieces of normally-closed contacts(NC)	2常开6常闭 2 pieces of normally- opened contacts(NÓ) and 6 pieces of normally-closed contacts(NC)
配用断路器 Fitting breaker	CW2-1600	CW2-2000/2500/ 4000/6300	CW2-1600	CW2-2000/2500/ 4000/6300	CW2-2000/2500/4000/6300	CW2-2000/2500/4000/6300
额定工作电压 (V) Rated operational voltage	AC400 AC230 DC220 DC110 300 300 60 60					
额定控制容量 (VA/W) Rated capacity						
约定发热电流Ith (A) Conventional thermal current	6					
注：辅助开关标准型式为4组转换触头，特殊型式为4常开4常闭、6常开2常闭、2常开6常闭。 Note: For the normal type of auxiliary switch, there are four pairs of change-over contacts. For the special type of auxiliary contacts, they are of 4NO(normal open) 4NC(normal close), 6N02NC, 2N06NC.						



附件 ACCESSORIES

- 抽屉式断路器“分离”位置安全挂锁装置
- 抽屉式断路器处于“分离”位置时，可拔出锁杆来锁定，锁定后断路器将无法摇至“试验”或“连接”位置。
- 挂锁用户自备，锁杆直径 $\phi 4\text{mm} - \phi 8\text{mm}$ 。



“分离”位置安全挂锁装置
Safety padlock mechanism at the position of “separated”

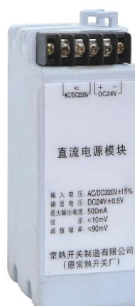
- 电气选择附件 Choice of accessories
- 专用电源模块
- CW2-1600断路器智能控制器电源电压为AC230V、400V时，通过该电源模块转换成DC24V电源提供给控制器。

注意：输入至CW2-1600二次回路端子1、2电压必须为DC24V。

- 此模块卡装于成套柜内35mm标准导轨上。



- DC24V电源模块
- CW2-1600断路器智能控制器电源电压为DC24V，通过该电源模块DC24V转DC24V电源提供给控制器。
- 此模块卡装于成套柜内35mm标准导轨上。



- Safety padlock mechanism at the position of “separated”
- When the draw-out circuit breaker indicates the position of “separated”, the locking stick can be locked with padlock after being pulled out so that the rocker of the circuit breaker can not be turned to the position of “test” or “connected”.
- The padlock would be prepared by users, and its rod diameter should be in between $\phi 4\text{mm}$ to $\phi 8\text{mm}$.

Special power module

- When the power voltage of CW2-1600 circuit breaker's intelligent control is AC230 or AC400V, it can be transformed into DC24 by this power module for power module for power supply of the intelligent controller.

Note: The input of voltage to 1 and 2 terminals of the secondary circuit must be DC24V.

- This module is installed by getting stuck into the standard slideway with 35mm in width inside the switchgear cabinet.

型号 Type	配用断路器 Fitting breaker	输入电压(V) Input voltage
FDY/W216	CW2-1600	AC400 / 230

DC24V power module

- When the power voltage of CW2-1600 circuit breaker's intelligent control is DC24V, it can be transformed into DC24V by this power module for power module for power supply of the intelligent controller.

- This module is installed by getting stuck into the standard slideway with 35mm in width inside the switchgear cabinet.

型号 Type	配用断路器 Fitting breaker	输入电压(V) Input voltage
FDY/W2T	CW2-1600	DC24

直流电源模块

当智能控制器外接二次回路电源为直流220V、110V时,须通过该模块转换成直流24V电源提供给智能控制器。

DC power supply module

When power supply of the secondary circuit is DC220V、110V, it should be transformed into DC24V by this module for power supply of the intelligent controller.

型号 Type	配用断路器 Fitting breaker
FDY/WT	CW2-1600 / 2000 / 2500 / 4000 / 6300



● 电压转换模块 Voltage changover module

当具有电压显示功能（M25/MY25型、M26/MY26型可选，H26/HY26型、P25型、P26型标配）并且输入电压大于AC400V时需配备此模块，模块输入端A、B、C、N接至主回路，输出端A'、B'、C'、N'接断路器二次接线端子17、18、19、20。

When there has voltage display function(selected for M25/MY25、M26/MY26, standard set for H26/HY26、P25、P26)and the input voltage is higher than AC400V, there should have this module; the module input terminals A、B、C、N connect to the main circuit and the output terminal A'、B'、C'、N' connect to the circuit breaker's secondary circuit connection terminals 17、18、19、20.

型号 Type	配用断路器 Fitting breaker
FDZ/WT	CW2-1600 / 2000 / 2500 / 4000 / 6300



CW2-1600

● 欠电压脱扣器

欠电压脱扣器由脱扣器线圈和控制单元组成，并按动作时间分为瞬时动作和延时动作两种；

● AC230V、400V欠电压延时脱扣器延时时间常规分0.5s、1s、2s、3s四种，3s以上直至9s作特殊规格处理，由用户与工厂协商解决，延时准确度0.5s时 $\pm 30\%$ ，其他时间准确度 $\pm 10\%$ ；

● 光伏并网专用AC220V、380V欠电压脱扣器（FQTPV）满足国家电网公司Q/GDW1972《分布式光伏并网专用低压断路器技术规范》和Q/GDW1973《分布式光伏并网专用低压断路器检测规程》标准，延时时间为0~10s用户可调（出厂默认设定值为3s），其步长为1s，当延时时间为0s时动作时间小于0.2s，其他延时时间时的动作时间准确度为 $+20\%$ 。

CW2-1600欠电压延时脱扣器需外装延时模块，模块卡装于35mm标准导轨上。模块输入端接至主电路，输出端接至断路器二次回路31、32接线端子。



CW2-1600欠电压
延时脱扣器延时模块
Under-voltage time delay
release time delay module

● Under-voltage release

● The under-voltage release consists of release coil and control unit, and is divided to action or time delay action for action time.

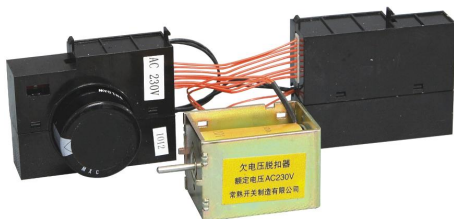
● There are four specifications of time delay for AC230V、400V the under-voltage time delay release: 0.5s, 1s, 2s and 3s. Users should consult with the manufacturer in the light of their order about special time-delay specifications as from 3s and above up to 9s. The time delay accuracy is $\pm 30\%$ for 0.5s, other time delay accuracy is $\pm 10\%$.

● The special AC220V、380V under-voltage releases of grid-connected PV system is complied with the state Grid corporation standards: Q/GDW1972《specification for low-voltage circuit-breaker for distributed grid-connected PV system》and Q/GDW1973《test code for low-voltage circuit-breaker for distributed grid-connected PV system》.the delay time of release is 0~10s for user adjusting and step is 1s. the action time is less than 0.2s when delay time is 0s, and the other delay time accuracy is $\pm 20\%$.

● The Under-voltage release of CW2-1600 must be combined with the time-delay module which is installed by getting stuck into the standard slideway with 35mm in width. The module input terminals connect with main circuit, the output terminals connect with terminal 31, 32 of the breaker.



附件 ACCESSORIES



CW2-2000及以上
CW2-2000 and above

注：在雷雨多发地区或在供电电源电压不稳定的电网中，推荐使用带延时的欠电压脱扣器，可防止由于短时的电压降低而使断路器脱扣。延时时间一般为0.5s、1s、2s、3s，可供用户选择。

Note: In the electrified networks where thunder and rain often happens or whose power supply is not stable, under-voltage release with time delay is highly recommended to protect the circuit breaker from releasing due to transient voltage-lowering. Generally, delay time, which is selective by users, is 0.5s, 1s, 2s and 3s.

● 特性 Characteristics

型号 Type	FQT/W216	FQT/W216 +FQY/W2163	FQT/W216 +FQY/W2169	FQT/W220	FQT/W220 +FQY/W2203	FQT/W220 +FQY/W2209
配用断路器 Fitting breaker	CW2-1600			CW2-2000/2500/4000/6300		
延时时间(s) Delay time	瞬时 Instantaneous	0.5/1/2/3	0.5/4/5/9	瞬时 Instantaneous	0.5/1/2/3	0.5/4/5/9
额定工作电压 U_e (V) Rated working voltage	AC400 / AC230					
动作电压(V) Operating voltage	$(0.35 \sim 0.7)U_e$					
可靠合闸电压(V) Reliable closing voltage	$(0.85 \sim 1.1)U_e$					
可靠不能合闸电压(V) Reliable impossible voltage	$\leq 0.35U_e$					
功耗(VA) Power consumption	12					

型号 Type	FQTPV/W216	FQTPV/W216+ FQYPV/W21610	FQTPV/W220	FQTPV/W220+ FQYPV/W22010
配用断路器 Fitting breaker	CW2-1600		CW2-2000/2500/4000/6300	
延时时间(s) Delay time	瞬时 Instantaneous	0~10	瞬时 Instantaneous	0~10
额定工作电压 U_e (V) Rated working voltage	AC380 / AC220			
动作电压(V) Operating voltage	$(0.2 \sim 0.7)U_e$			
可靠合闸电压(V) Reliable closing voltage	$(0.85 \sim 1.1)U_e$			
可靠不能合闸电压(V) Reliable impossible voltage	$\leq 0.2U_e$			
功耗(VA) Power consumption	12			

● 抽屉座位置电气指示装置

● 抽屉式断路器本体与抽屉座分别处于“分离”、“试验”、“连接”三个位置时，三个位置电气指示装置可分别输出对应此三位置时电气状态信号，装置安装于抽屉座内。

● Electrical mechanism for the indication of draw-out socket's position

● When the main body of the draw-out circuit breaker and the draw-out socket are at the position of “separated”, “test” and “connected” respectively, three electrical mechanisms for the indication of draw-out socket's location can output the electrical signals corresponding with three positions above respectively. These mechanisms are installed inside the draw-out socket.

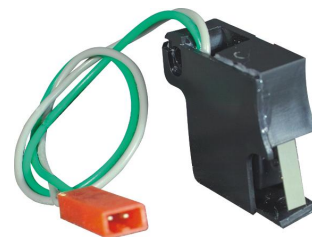
● 特性 Characteristics

型号 Type	FWZ/W216	FWZ/W220	FWZ/W240
配用断路器 Fitting breaker	CW2-1600	CW2-2000/2500	CW2-4000/6300
额定工作电压 U_e (V) Rated working voltage	AC 230		
约定发热电流 I_{th} (A) Conventional thermal current	10		
额定工作电流 I_e (A) Rated working current	1.5		



附件 ACCESSORIES

- 合闸准备就绪电气指示模块
- 断路器合闸准备就绪电气指示模块，指示断路器可以准备合闸。
- Electrical module for indication of ready-for-switching-on
- This electrical module indicates that the circuit breaker is ready for switching-on.



- 特性 Characteristics

型号 Type	FHM/W216	FHM/W220
配用断路器 Fitting breaker	CW2-1600	CW2-2000/2500/4000/6300
额定工作电压U _e (V) Rated working voltage	AC 230	
约定发热电流I _{th} (A) Conventional thermal current	10	
额定工作电流I _e (A) Rated working current	1.5	

- 外接中性线N电流互感器
- TN-S配电系统中与三极断路器一起使用，安装于中性线N上，安装点距离最大2m。
- Current mutual inductor with neutral line N connected externally
- This current mutual inductor, which is used together with circuit breakers with three poles in the power distribution system of TN-S, installed in the neutral line N with 2m at maximum far from the installation point.

型号 Type	配用断路器 Fitting breaker
FDH-60	CW2-1600
FDH-80	CW2-2000 / 2500
FDH-120	CW2-4000 / 6300
FDH-260	

- 通信选择附件
- 抽屉座通信模块组件
- 抽屉座通信模块组件由断路器外部的抽屉座通信模块和内部的抽屉座通信部件两部分组成。抽屉座通信部件安装于抽屉座内，提供抽屉式断路器本体与抽屉座处于“分离”、“试验”、“连接”三位置状态通信信号；抽屉座通信模块卡装于成套柜内35mm标准导轨上，提供读写断路器地址功能，显示断路器本体与抽屉座三位置状态指示等。两部分用软导线联结。



- Choice of communication accessories
- Components of draw-out socket communication module
- The components of draw-out socket communication module consists of the draw-out socket communication module outside of the circuit breaker and the draw-out socket communication parts inside of the circuit breaker. The draw-out socket communication parts are installed inside of the draw-out socket to provide the status signals of such three positions as “separated”, “test” and “connected” of the main body of the draw-out circuit breaker and the draw-out socket. The draw-out socket communication module, which can provide the function of reading the address of the circuit breaker and display the status indication of the main body and three positions of the draw-out socket etc, is installed by getting stuck into the standard slideway with 35mm in width inside the switchgear cabinet. The two parts of the draw-out socket communication module are connected with soft conducting lines.

型号 Type	配用断路器 Fitting breaker
FCT/W2	CW2-1600 / 2000 / 2500 / 4000 / 6300



附件 ACCESSORIES

● 合闸准备就绪信号

通过上位机可获得指示断路器可以准备合闸状态信息。

● Ready-for-switching-on signal

You can achieve the information through the up-lever device that the circuit breaker is ready for switching-on.

型号 Type	配用断路器 Fitting breaker
FHX/W216	CW2-1600
FHX/W220	CW2-2000 / 2500 / 4000 / 6300

● 欠电压信号

通过上位机可获得断路器欠电压跳闸状态信息。

● Under-voltage signal

You can achieve the information through the up-lever device that the circuit breaker is tripping operation under-voltage.

型号 Type	配用断路器 Fitting breaker
FQX/W2	CW2-1600 / 2000 / 2500 / 4000 / 6300

● 故障脱扣信号

通过上位机可获得断路器由于线路或设备过载、短路或接地保护跳闸状态信息。

● Fault-trip signal

You can achieve the information through the up-lever device that the circuit breaker is tripping operation because of over loading short circuit or earth protection of the connection and devices.

型号 Type	配用断路器 Fitting breaker
FGT/W216	CW2-1600
FGT/W220	CW2-2000 / 2500 / 4000 / 6300

● 机械选择附件

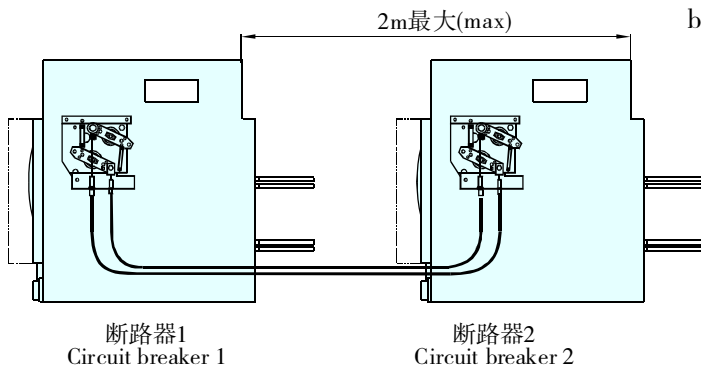
● 两台平放断路器的钢缆联锁或两台叠装断路器的联杆联锁

(两台断路器联杆联锁的型式及底板开孔尺寸参见三台断路器的型式及开孔尺寸)

● Choice of mechanical accessories

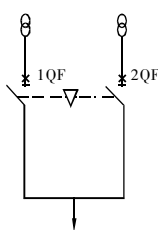
● Two sets of circuit breakers put horizontally and interlocked with steel cable or stacked and interlocked with connecting rods

(the style of interlock between two sets of circuit breakers with connecting rods and aperture dimensions of their bases see the counterpart of three sets of circuit breakers)



电路图

Wiring diagram



可能的运行方式

Possible operation pattern

1QF	2QF
0	0
0	1
1	0

注：钢缆联锁的钢缆长度常规为2.5m，也可提供1.5m钢缆，但用户订货时需注明。

Note: Normally 2.5m steel cable of interlock is provided, either 1.5m is but an indication is needed when marking order.

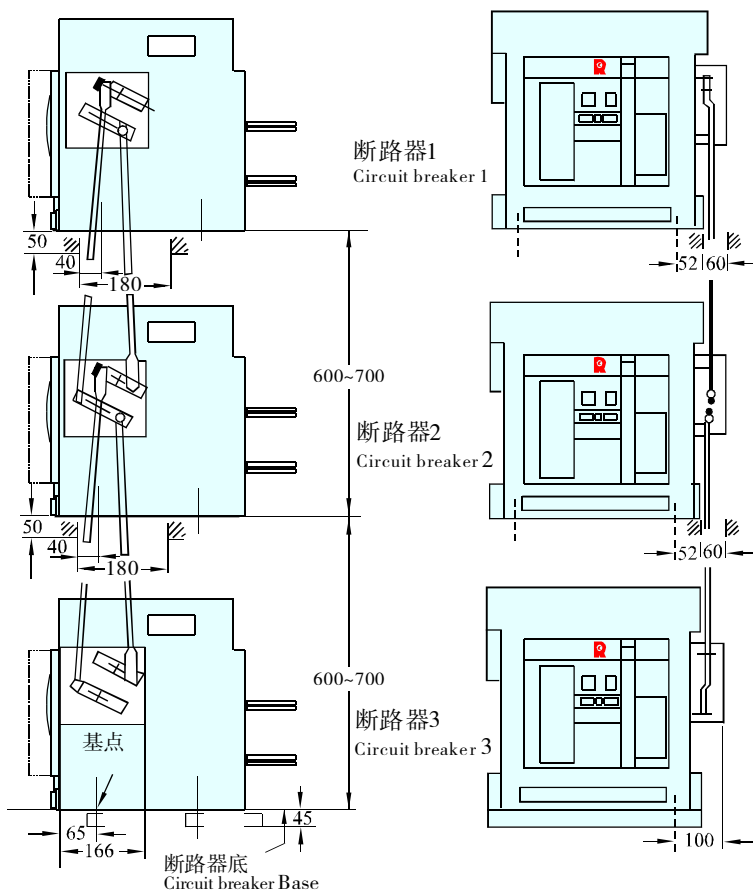


● 三台叠装断路器的联杆联锁或三台平放断路器的钢缆联锁

Three sets of circuit breakers stacked and interlocked with connecting rods or three sets of circuit breakers put horizontally and interlocked with steel cable

● CW2-2000~6300抽屉式联杆联锁

Stacked and interlocked of draw-out breaker



电路图

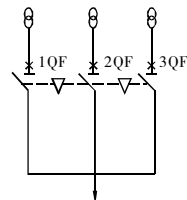
可能的运行方式

Wiring diagram

Possible operation pattern

方式一：三个电源只能合一台断路器

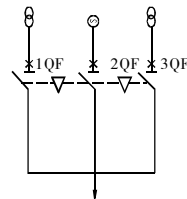
Pattern one: three sets of power supply can only close one sets of circuit breaker



1QF	2QF	3QF
0	0	0
1	0	0
0	1	0
0	0	1

方式二：二个常用电源+一个备用电源

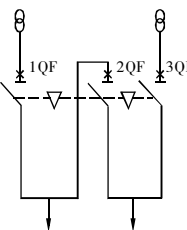
Pattern two: two sets of common power supply plus one sets of standby power supply



1QF	2QF	3QF
0	0	0
1	0	0
0	1	0
1	0	1
0	0	1

方式三：二个电源一个分段

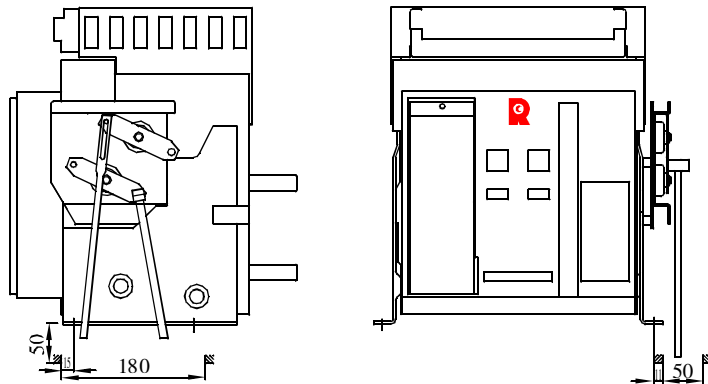
Pattern three: two sets of power supply plus a piece of coupling busbar



1QF	2QF	3QF
0	0	0
1	0	0
0	1	0
0	0	1
1	1	0
0	1	1
1	0	1

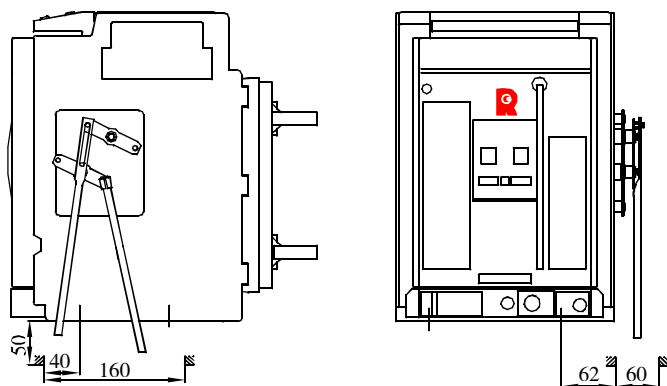
● CW2-2000~6300固定式联杆联锁（上下安装板间距参考抽屉式）

Fixed stacked and interlocked(distance from up to down,please seeing draw-out)

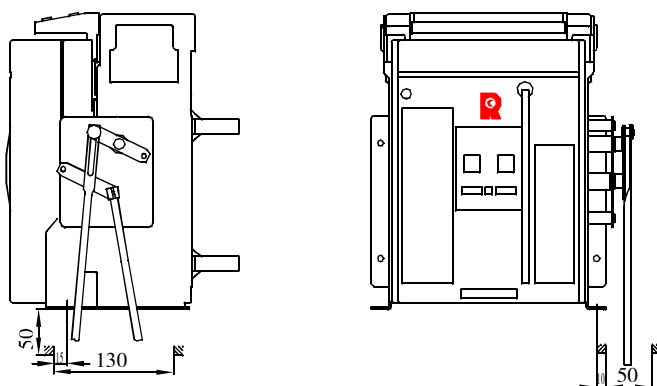




- 两台CW2-1600抽屉式联杆联锁（上下安装板间距参考CW2-2000~6300抽屉式）
Draw-out breaker of two CW2-1600 stacked and interlocked(distance from up to down,please seeing draw-out of CW2-2000~6300)



- 两台CW2-1600固定式联杆联锁（上下安装板间距参考CW2-2000~6300抽屉式）
Fixed breaker of two CW2-1600 stacked and interlocked(distance from up to down,please seeing draw-out of CW2-2000~6300)



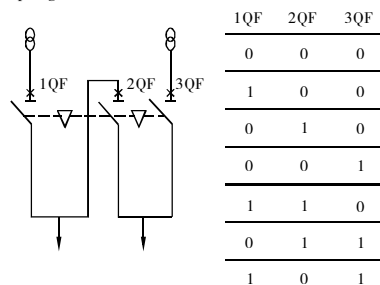
- 钢缆联锁 Stel cable interlocked

三台断路器钢缆联锁的型式，参见两台断路器的型式，间距最大2m。

The style of interlock of three circuit breakers see the style of interlock between two sets of circuit breakers. The maximal distance of two circuit breakers is 2m.

电路图 可能的运行方式
Wiring diagram Possible operation patten

方式三：二个电源一个分段
Pattern three: Two sets of power supply plus a ipece of coupling busbar





附件 ACCESSORIES

● 特性 Characteristics

型号 Type	联锁型式 Configuration	配用断路器 Fitting breaker
FLS/WG2	2台钢缆联锁 2 sets of circuit breakers steel lock interlock	CW2-1600/2000/2500/4000/6300
FLS/WL2	2台联杆联锁 2 sets of circuit breakers link rod interlock	
FLS/WG3	3台钢缆联锁 3 sets of circuit breakers steel lock interlock	CW2-2000/2500/4000/6300
FLS/WL31	3台联杆联锁方式一 3 sets of circuit breakers link rod interlock type 1	
FLS/WL32	3台联杆联锁方式二 3 sets of circuit breakers link rod interlock type 2	
FLS/WL33	3台联杆联锁方式三 3 sets of circuit breakers link rod interlock type 3	



“分闸”锁定装置
“Break” lock mechanism

● “分闸”锁定装置

● “分闸”锁定装置可将断路器的断开按钮锁定在按下位置上,此时,断路器将不能闭合。

● 用户选装后,工厂提供锁和钥匙。

● 一台断路器配一把锁和一把钥匙;

● 二台断路器配二把相同的锁和一把钥匙;

● 三台断路器配三把相同的锁和二把钥匙。

● “Break” lock mechanism

● “Break” lock mechanism can lock the “OFF” button of the circuit breaker on the pressed position. As a result, the circuit breaker can not be switched on.

● After this lock mechanism was chosen by users, the manufacturer would provide lock and key.

● One set of circuit breaker is outfitted with one lock and one key.

● Two sets of circuit breakers are outfitted with two same locks and one key.

● Three sets of circuit breakers are outfitted with three same locks and two keys.

型号 Type	型式 Configuration	配用断路器 Fitting breaker
FFS/W11	1锁1钥匙 One lock and one key	CW2-1600/2000/2500/4000/6300
FFS/W21	2锁1钥匙 Two lock and one key	
FFS/W32	3锁2钥匙 Three lock and two key	



● 按钮锁定装置

● 加装按钮锁定装置可防止误操作合闸或分闸按钮。

● 挂锁用户自备, 锁杆直径不大于 $\phi 4\text{mm}$ 。

● “Button” locking device

● When installed “Button” locking device, it can prevented somebody from operating button of switching-on or switching off by mistake.

● Padlock should be provided by users themselves, and its rod should be no larger than $\phi 4\text{mm}$.



附件 ACCESSORIES

型号 Type	配用断路器 Fitting breaker
FAN/216	CW2-1600
FAN/220	CW2-2000 / 2500 / 4000 / 6300



- 计数器
- 计数器累计断路器机械操作的次数，用户一目了然。
- Counter
- The counter can count mechanical operation times accumulatively, which makes users be clear at a glance.

型号 Type	配用断路器 Fitting breaker
FJS/216	CW2-1600
FJS/220	CW2-2000 / 2500 / 4000 / 6300



- 相间隔板
- 相间隔板加强母排间绝缘，为断路器选择件，用户需要时可配置。
- Separator plate between phases
- Separator plates between phases which strengthen insulation between bus-bars are optional and will be equipped as needed by users.

型号 Type	配用断路器 Fitting breaker	安装方式 The method of installation	数量 (块) amount
FXG/W2163C	CW2-1600 三极 three poles	抽屉式 withdrawable	2
FXG/W1203C	CW2-2000/2500/4000 三极 three poles		
FXG/W2633C	CW2-6300 三极 three poles		
FXG/W2164C	CW2-1600 四极 four poles		3
FXG/W1204C	CW2-2000/2500 四极 four poles		
FXG/W2404C	CW2-4000 四极 four poles		
FXG/W2634C	CW2-6300 四极 four poles	固定式 fixed	2
FXG/W2163G	CW2-1600 三极 three poles		
FXG/W1203G	CW2-2000/2500 三极 three poles		
FXG/W2403G	CW2-4000/6300 三极 three poles		3
FXG/W2164G	CW2-1600 四极 four poles		
FXG/W1204G	CW2-2000/2500 四极 four poles		
FXG/W2404G	CW2-4000/6300 四极 four poles		



断路器功耗及降容系数 POWER CONSUMPTION AND CAPACITY LOWERING COEFFICIENT

- 功耗(环境温度+40℃)
功耗是在断路器通以壳架电流 I_{nm} 情况下测量的总的损耗。

- Power consumption (Environment temperature +40℃)

Power consumption is the overall consumption measured under with the circuit breaker is electrified with current below frame current.

型 号 Type	三极/四极功 耗 (W) three poles/fuor poles	
	固定式 Fixed type	抽屉式 Draw-out type
CW2-1600	152	408
CW2-2000	203.6	382.8
CW2-2500	356.8	823.4
CW2-4000	648.96	897.6
CW2-6300	1050.1	1200.2

- 降容系数

下表表示断路器在所处周围工作环境温度且满足GB14048.2中约定发热条件下持续承载电流的能力。

- Capacity lower coefficient

The following table shows continual current-loading capacity of circuit breakers at different ambient environment temperature and under the conditions of the satisfaction of conventional heating in GB14048.2

周围工作环境温度 Ambient Environment temperature		+40℃	+45℃	+50℃	+55℃	+60℃
持续承载电流能力 Continual current- loading capacity	$I_{nm}=1600A$	$1I_{nm}$	$0.99I_{nm}$	$0.96I_{nm}$	$0.90I_{nm}$	$0.87I_{nm}$
	$I_{nm}=2000A$	$1I_{nm}$	$0.97I_{nm}$	$0.91I_{nm}$	$0.87I_{nm}$	$0.82I_{nm}$
	$I_{nm}=2500A$	$1I_{nm}$	$0.96I_{nm}$	$0.90I_{nm}$	$0.86I_{nm}$	$0.80I_{nm}$
	$I_{nm}=4000A$	$1I_{nm}$	$0.95I_{nm}$	$0.89I_{nm}$	$0.85I_{nm}$	$0.78I_{nm}$
	$I_{nm}=6300A$	$1I_{nm}$	$0.93I_{nm}$	$0.87I_{nm}$	$0.82I_{nm}$	$0.75I_{nm}$

注：超过+60℃的降容系数，请咨询本公司。

Note: capacity lower coefficient of breaker when temperature over +60℃, please call us.



高海拔降容 CAPACITY-REDUCING FOR HIGH-ELEVATION

海拔超过适用工作环境的2000m，断路器电气性能可参照下表修正：

If elevation exceeds work environment 2000m, electric property of circuit breaker can correct according to following table:

海拔 (m) elevation	2000	3000	4000	4500	5000
工频耐压(V) Power-frequency withstand voltage	3500	3500	3000	2500	2200
最大额定工作电压 (V) Max rated operational voltage	690	690	690	690	560
工作电流修正系数 Correction factor of operational current	1	0.93	0.88	0.85	0.82

注：CW2-1600安装处海拔 $\leq 2000m$ 。

Note: elevation for CW2-1600 $\leq 2000m$.



抽屉式断路器主回路接线铜排规格参考表

REFERENCE TABLE OF MAIN CIRCUIT WIRING
COPPER BAR FOR DRAW-OUT CIRCUIT BREAKERS

壳架等级额定电流Inm(A) Rated frame current	额定电流In(A) Rated current	铜排规格 Specifications of copper bars	
		根数 Number	尺寸 (mm × mm) Size
1600	200	1	20 × 5
	400	1	50 × 5
	630	2	40 × 5
	800	2	50 × 5
	1000	3	40 × 5
	1250	4	40 × 5
	1600	2	50 × 10
2000	630	2	50 × 5
	800	2	60 × 5
	1000	2	60 × 5
	1250	3	60 × 5
	1600	2	60 × 10
	2000	3	60 × 10
2500	1250	3	60 × 5
	1600	2	60 × 10
	2000	3	60 × 10
	2500	4	60 × 10
4000	2000	3	100 × 5
	2500	4	100 × 5
	2900	3	100 × 10
	3200	4	100 × 10
	3600	4	100 × 10
	4000	5	100 × 10
6300	4000	5	100 × 10
	5000	6	100 × 10
	6300	8	100 × 10

表中规格为断路器处于周围环境温度最高40℃，敞开安装且满足GB14048.2中约定发热条件。

The specifications of copper bars in the above table are introduced under which the circuit breakers by open installation are at maximum ambient environment temperature of 40℃ and satisfy conventional heating in GB14048.2.



自动电源转换系统 AUTOMATIC POWER SUPPLY SWITCH SYSTEM

自动电源转换系统可以实现两路AC400V电源之间或两进线一母联AC400V电源之间的转换，确保用户可靠供电。自动电源转换系统由自动转换控制器和转接器及控制电缆（厂方已提供）组成，同时可与机械联锁配合使用。当实现手动并联转换时，则不应机械联锁。自动转换控制器安装于开关柜门板上，转接器安装于开关柜安装板上，控制器至转接器/转接器至断路器电缆长度标准配置为：两路电源转换1.8 m /1.8 m，两进线一母联2 m /1.8m（超过标准配置电缆长度用户订货时应注明）。

Automatic power supply switch system guarantees reliable power supply for users by providing AC400V two lines or two incoming one bus couple of power supply alternatively. It consists automatic transfer controller, switching unit and cables (already prepared by the manufacture). The system may be used together with the mechanical interlock. But mechanical interlock can't be used when manual in parallel transfer is used. the switching unit is mounted on the mounting plate of switchboard while the controller is mounted on the panel door of the switchboard. the cable standard length of controller to switching unit and switching unit to breaker is 1.8m/1.8m for tow supply transfer or 2m/1.8m for two incoming one bus couple (user should make special order when they require for the length mor than standard).

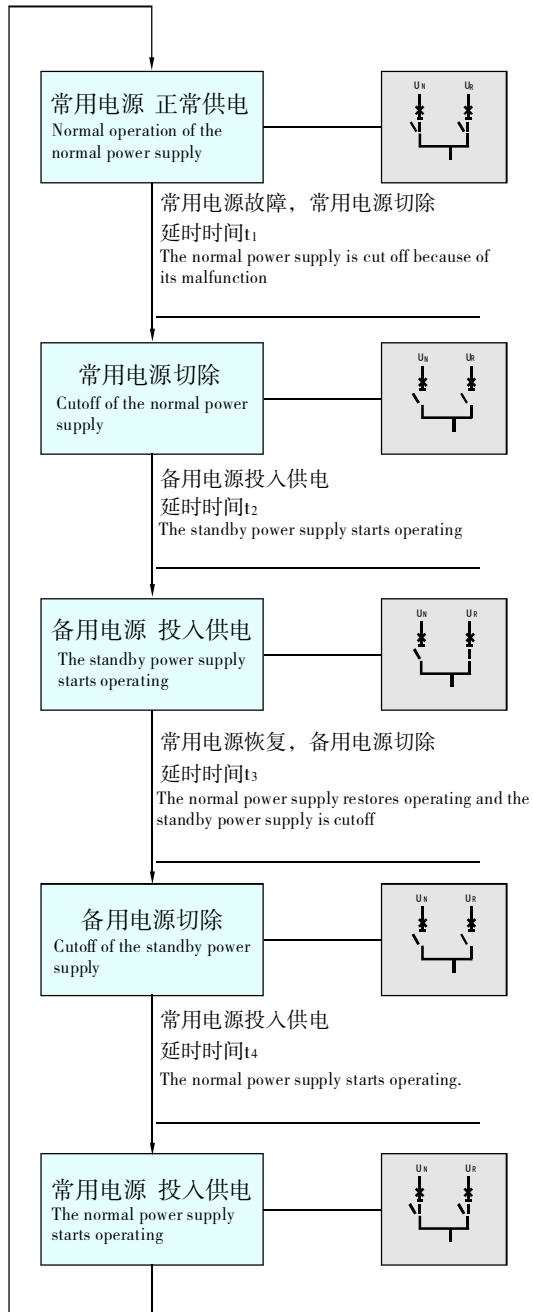
● FZZ两路电源转换 FZZ two supply transfer

▲ 功能汇总 function summary

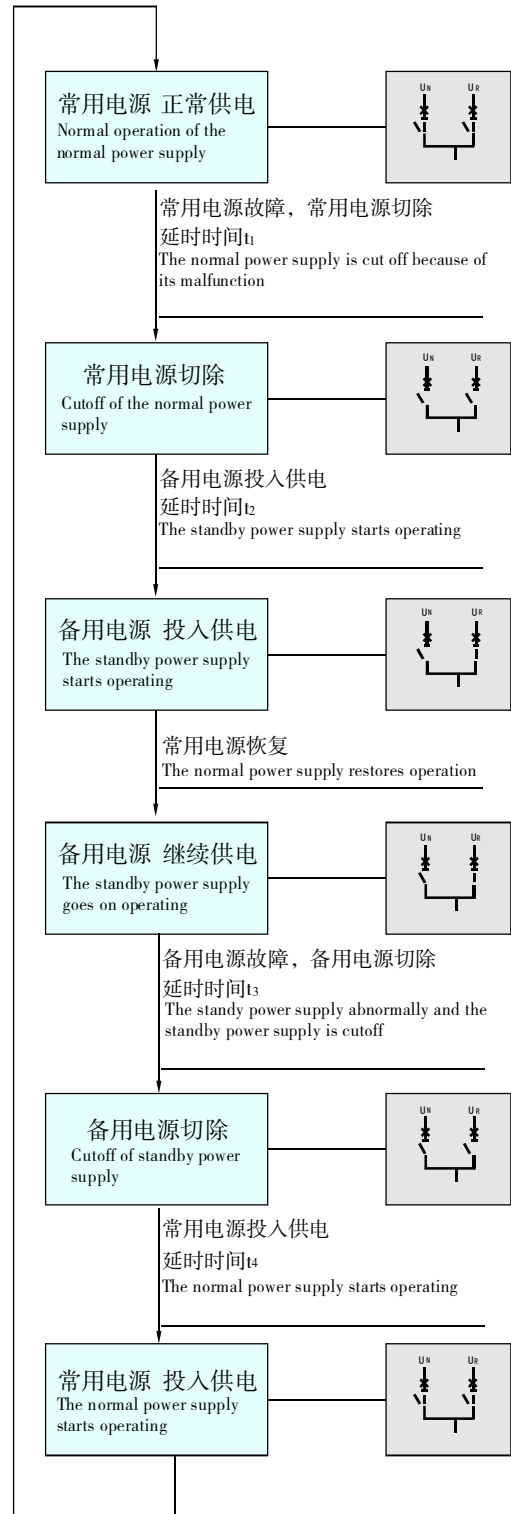
自动转换控制器型号 Automatic transfer controller type	电子型R、S、F Electronic	智能型ZR、ZS、ZF intelligent 智能可通信ZTR、ZTS、ZTF intelligent communicative																								
自动转换控制器示意 Automatic transfer controller indication																										
转接器示意 Adapter indication																										
监测 Monitor	对常用电源各相电压、备用（或发电）电源A相电压进行检测，若被检测相发生过电压、欠电压、失压则动作 Check the phase voltage of normal power supply and standby (or generator) power supply																									
自动转换 Automatic transfer	R、ZR、ZTR：常用备用电源间的自投自复 Automatic charge and automatic recovery between normal power supply and standby power supply S、ZS、ZTS：常用备用电源间的自投不自复（互为备用） Automatic charge and not automatic recovery between normal power supply and standby power supply (alterater each other) F、ZF、ZTF：常用发电电源间的自投自复 Automatic charge and automatic recovery between normal power supply and generator																									
强制转换 Forced transfer	强制常用、强制备用、强制断开 Forced to normal, forced to standby, forced to disconnected																									
复位操作 Reset operation	按钮复位 Reset button																									
试验功能 Test function	由强制转换功能实现 Implemented by forced transfer function																									
手动转换 Manual transfer	手动常用、手动备用、手动断开 Manual to normal, manual to standby, manual disconnect																									
发电控制 Generating control	F、ZF、ZTF有此功能 Only for F、ZF、ZTF type																									
负荷卸载 Load uninstall	F有此功能 Only for F type																									
显示方式 Display mode	LED指示：常备用电源状态，常备用断路器合、分及脱扣状态，操作模式 LED indicator: condition of normal/standby power supply, close, open or tripped condition and operating mode of normal/standby	(1) LCD指示：常备用电源状态，常备用断路器合、分状态及脱扣状态，参数设定，动作记录 LCD indication: condition of normal/standby power supply, close, open and tripped condition parameter setting, history of normal/standby (2) LED指示：常备用断路器合、分状态，操作模式 LED indication: close, open condition, operating mode of normal/standby breaker																								
设置方式 Setting mode	旋钮操作，可进行工作模式、延时时间等的设置 Set the working mode, delay time and others by knob	按键操作，全中文菜单引导，可进行工作模式、欠压动作值、延时时间、通信参数等的设置 All chinese menu guide, set the working mode, undervoltage operation value, delay time communication parameter and others by keyboard																								
参数设定 Parameter setting	欠压：75% Us 过压：115% Us 失压：30% Us Under voltage: 75% Us Overvoltage: 115% Us Voltage loss: 30% Us	欠压：(75%~85%) Us用户可调 过压：115% Us 失压：30% Us Under voltage: (75%~85%) User adjustable Overvoltage: 115% Us Voltage loss: 30% Us																								
	<table border="1"> <thead> <tr> <th>控制型号 Control type</th><th>R、ZR、ZTR、S、ZS、ZTS</th><th>F、ZF、ZTF</th></tr> </thead> <tbody> <tr> <td>延时时间 (s) Delay time</td><td></td><td></td></tr> <tr> <td>转换断开 延时时间1 Transfer disconnection</td><td>0.5~64</td><td>0.5~64</td></tr> <tr> <td>转换接通 延时时间2 Transfer closing</td><td>0.5</td><td>0.5~64</td></tr> <tr> <td>返回断开 延时时间3 Return disconnection</td><td>0.5~64</td><td>0.5~240</td></tr> <tr> <td>返回接通 延时时间4 Return closing</td><td>0.5</td><td>0.5~64</td></tr> <tr> <td>发电指令 延时时间5 Generating indication</td><td></td><td>1~180</td></tr> <tr> <td>发电停机指令 延时时间6 Generating stop indication</td><td></td><td>32~600</td></tr> </tbody> </table>		控制型号 Control type	R、ZR、ZTR、S、ZS、ZTS	F、ZF、ZTF	延时时间 (s) Delay time			转换断开 延时时间1 Transfer disconnection	0.5~64	0.5~64	转换接通 延时时间2 Transfer closing	0.5	0.5~64	返回断开 延时时间3 Return disconnection	0.5~64	0.5~240	返回接通 延时时间4 Return closing	0.5	0.5~64	发电指令 延时时间5 Generating indication		1~180	发电停机指令 延时时间6 Generating stop indication		32~600
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通信功能 Communication	实现遥调、遥测、遥控、通信。RS485 通信接口，Modbus-RTU协议。 Tele-control, tele-measurement, tele-adjustment, tele-detection, RS485 communication interface, Modbus-RTU protocol																									



▲R、ZR、ZTR型--常用-备用间的自投自复
Automatic charge and automatic recovery between
normal and standby supply



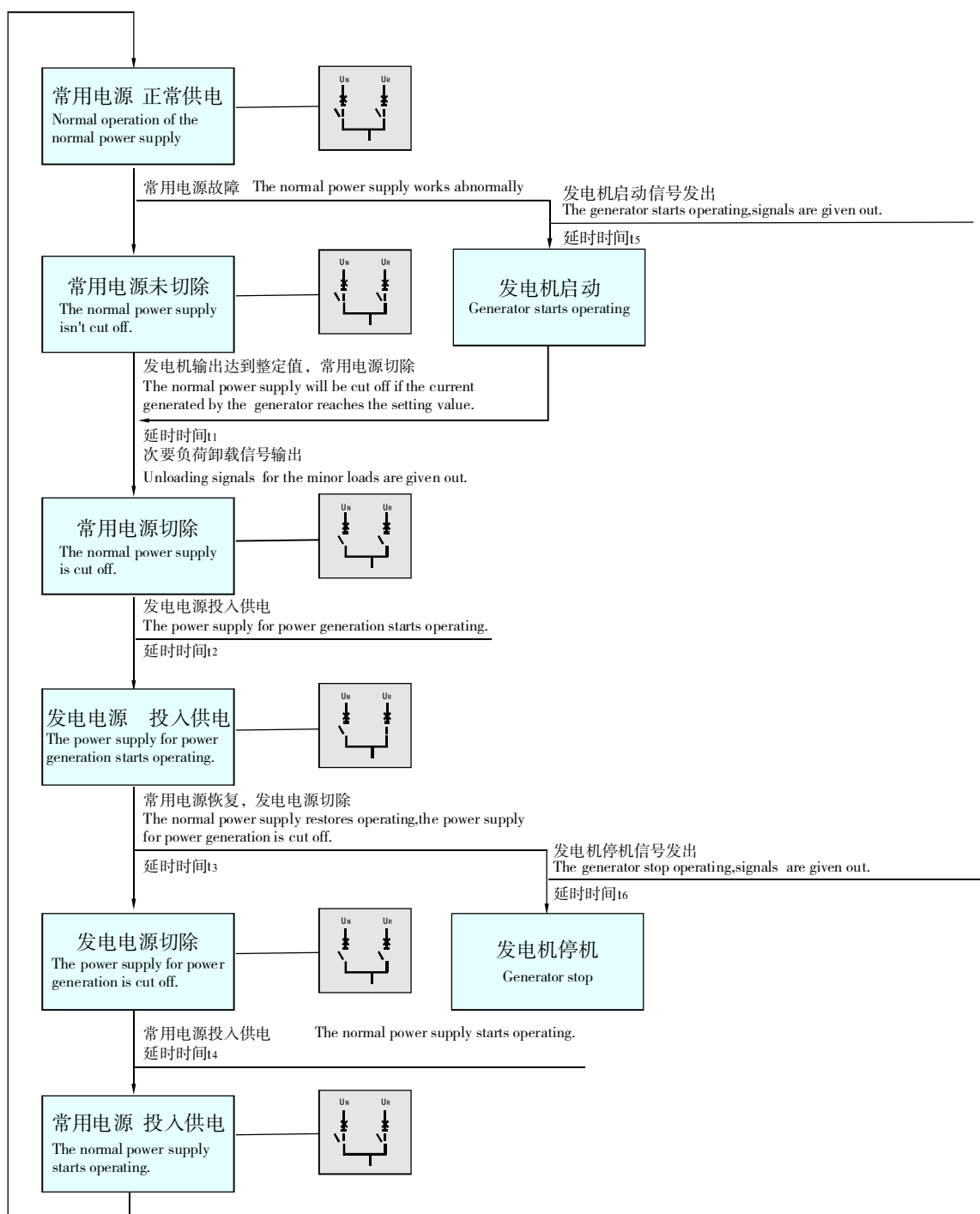
▲S、ZS、ZTS型--常用-备用间的自投不自复
Automatic charge and not automatic recover between
normal and standby supply





▲F、ZF、ZTF型--常用-发电电源间的自投自复

Automatic charge and automatic recovery between normal and generator supply



注：常用-发电型必须为控制器提供一个稳定、不间断的直流电源，直流电源电压对F型控制器为DC12V，对ZF、ZTF型控制器为DC24V，其容量不小于6W。当此直流电源缺失时，系统具有R型（自投自复型）的全部功能。

For the switch system used for normal power supply to power generation supply system, the controller should be supplied with a reliable and consecutive power supply of D.C. 12V (F type) or D.C. 24V (ZF、ZTF type) and power capacity no less than 6W. If the D.C. supply is cut off, the switch system will have the function of automatic switch and restoration (type R).



自动电源转换系统 AUTOMATIC POWER SUPPLY SWITCH SYSTEM

● FLZ两进线一母联电源转换 FLZ two incoming line one bus couple supply transfer

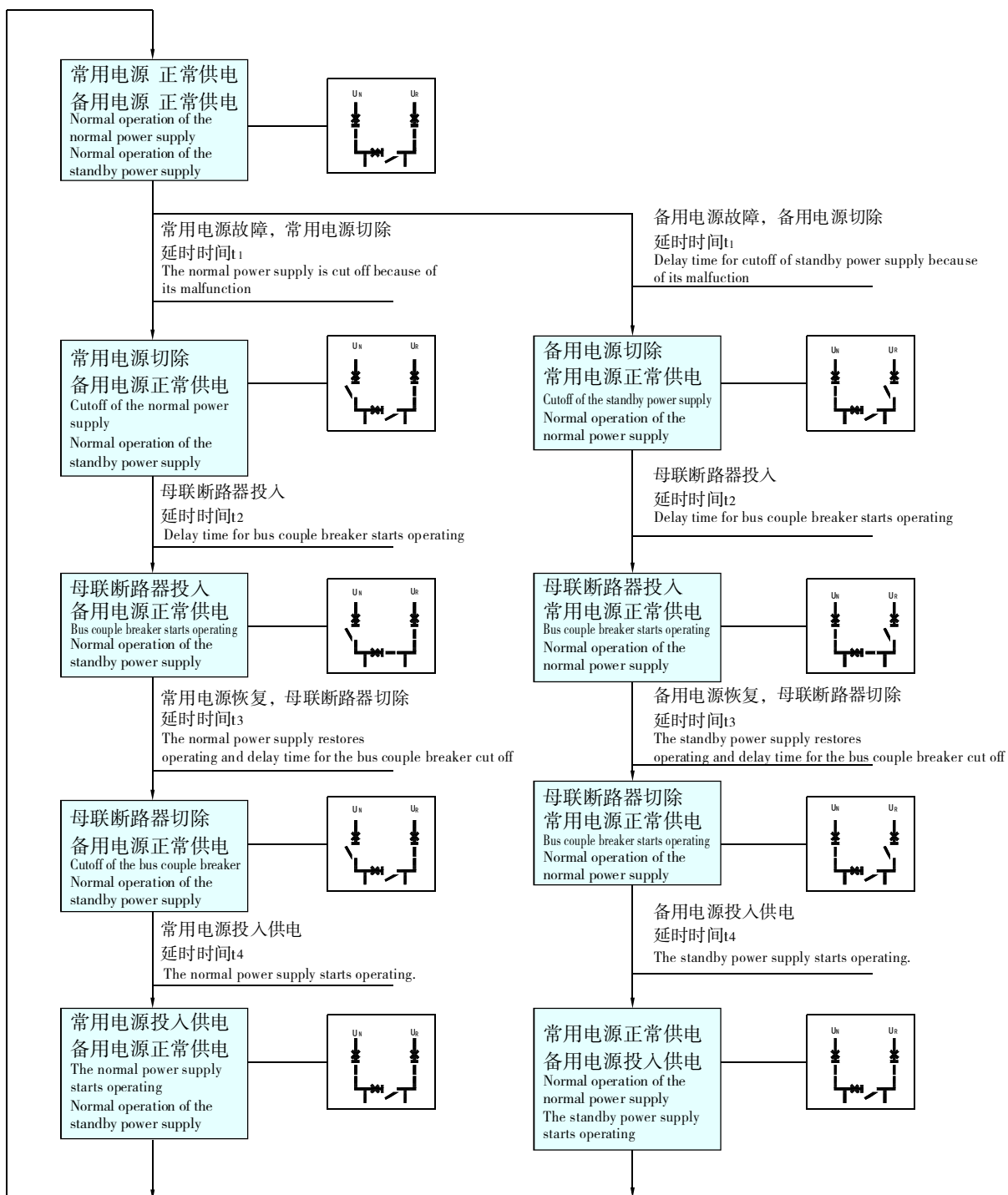
▲ 功能汇总 Function summary

自动转换控制器型号 Automatic transfer controller type	智能型WTT3 Intelligent		智能型带并联转换WTB3 Intelligent with parallel																												
自动转换控制器示意 Automatic transfer controller indication																															
转换器示意 Adapter indication																															
监测 Monitor	对常、备用电源各相电压进行检测,若被检测相发生过电压、欠电压、失压则动作 Check the each phase voltage of normal,standby power supply.if there is overvoltage、undervoltage、voltage loss in the checker phase、transfer will operation		对常、备用电源各相电压进行检测,若被检测相发生过电压、欠电压、失压则动作;具有常、备用电源频率、电压差、频率差和相位差检测 Check the each phase voltage of normal,standby power supply.if there is overvoltage、undervoltage、voltage loss in the checker phase、transfer will operation.this type can check frequency,voltage difference,frequency difference and phase difference of normal																												
自动转换 Automatic transfer	可设定自投自复或自投不自复 Automatic charge and automatic rovery or automatic charge and not automatic recovery																														
强制转换 Forced transfer	强制任意一路合,强制任意两路合,强制断开 Any one load can be forced to close,any two loads can be forced to close,forced to disconnected																														
手动并联转换 Manual parallel transfer	—		✓																												
复位操作 Reset operation	按钮复位 Reset button																														
试验功能 Test function	由强制转换功能实现 Implemented by forced transfer function																														
手动转换 Manual transfer	手动任意一路合,手动任意两路合,手动断开 Any one load can be closed manually,any two loads can be colsed manually,disconnect manually																														
显示方式 Display mode	(1) LCD指示:常备用电源状态,常备用断路器合、分状态及脱扣状态,参数设定,动作记录 LCD indication:condition of normal/standby power supply ,close、 open and tripped condition, parameter setting history of (2) LED指示:常备用电源状态,常备用断路器合、分及脱扣状态 LED indicator: condition of normal/standby power supply,close open or tripped condition and operating mode of normal/standby breaker		(1) LCD指示:常备用电源状态,常备用断路器合、分状态及脱扣状态,参数设定,动作记录 LCD indication:condition of normal/standby power supply ,close、 open and tripped condition, parameter setting history of (2) LED指示:常备用电源状态,常备用电源电压差、频率差、相位差状态,常备用断路器合、分及脱扣状态 LED indication:close,open condition,operating mode of normal/standby breaker.condition: voltage difference, frequency difference, phase difference of normal/standby power supply																												
设置方式 Setting mode	按键操作、全中文菜单引导,可进行工作模式、欠压动作值、延时时间、通信参数等的设置 All chinese menu guide、 set the working mode、 undervoltage operation value、 delay time communication parameter and others by keyboard																														
参数设定 Parameter setting	欠压: (70%~90%) Us用户可调; 过压: (105%~120%) Us用户可调; 失压: 30%Us, 步长: 5% under voltage: (70%~90%) Us user adjustable; over voltage: (105%~120%) Us user adjustable; voltage loss: 30%Us; step: 5%																														
	<table><tr><td rowspan="4">延时时间 (s) Delay time</td><td>电源断开延时时间1 Disconnection of power supply</td><td>0.1~100</td><td rowspan="4">步长0.1s Time step (≤10s时), 1s (>10s时)</td></tr><tr><td>母联断路器接通延时时间2 Closing of bus couple breaker</td><td>0.1~100</td></tr><tr><td>母联断路器断开延时时间3 Disconnection of bus couple breaker</td><td>0.1~100</td></tr><tr><td>电源闭合延时时间4 Closing of power supply</td><td>0.1~100</td></tr></table>		延时时间 (s) Delay time	电源断开延时时间1 Disconnection of power supply	0.1~100	步长0.1s Time step (≤10s时), 1s (>10s时)	母联断路器接通延时时间2 Closing of bus couple breaker	0.1~100	母联断路器断开延时时间3 Disconnection of bus couple breaker	0.1~100	电源闭合延时时间4 Closing of power supply	0.1~100	<table><tr><td rowspan="3">并联转换条件 Parallel transfer condition</td><td>并联转换电压差ΔU (V) Voltage difference</td><td>(0.02~0.12)Ue, 步长: 1V</td></tr><tr><td>并联转换频率差Δf (Hz) Frequency difference</td><td>0.1~1, 步长: 0.1Hz</td></tr><tr><td>并联转换相位差Δδ (°) Phase difference</td><td>5~20, 步长: 1</td></tr><tr><td rowspan="4">延时时间 (s) Delay time</td><td>电源断开延时时间1 Disconnection of power supply</td><td>0.1~100</td><td rowspan="4">步长0.1s Time step (≤10s时), 1s (>10s时)</td></tr><tr><td>母联断路器接通延时时间2 Closing of bus couple breaker</td><td>0.1~100</td></tr><tr><td>母联断路器断开延时时间3 Disconnection of bus couple breaker</td><td>0.1~100</td></tr><tr><td>电源闭合延时时间4 Closing of power supply</td><td>0.1~100</td></tr></table>		并联转换条件 Parallel transfer condition	并联转换电压差ΔU (V) Voltage difference	(0.02~0.12)Ue, 步长: 1V	并联转换频率差Δf (Hz) Frequency difference	0.1~1, 步长: 0.1Hz	并联转换相位差Δδ (°) Phase difference	5~20, 步长: 1	延时时间 (s) Delay time	电源断开延时时间1 Disconnection of power supply	0.1~100	步长0.1s Time step (≤10s时), 1s (>10s时)	母联断路器接通延时时间2 Closing of bus couple breaker	0.1~100	母联断路器断开延时时间3 Disconnection of bus couple breaker	0.1~100	电源闭合延时时间4 Closing of power supply	0.1~100
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	电源闭合延时时间4 Closing of power supply	0.1~100																													
通信功能 Communication	实现遥调、遥测、遥控、通信。RS485通信接口, Modbus-RTU协议。 Tele-control,tele-communication,tele-adjustment,tele-detection, RS485 communication interface, Modbus-RTU protocol																														



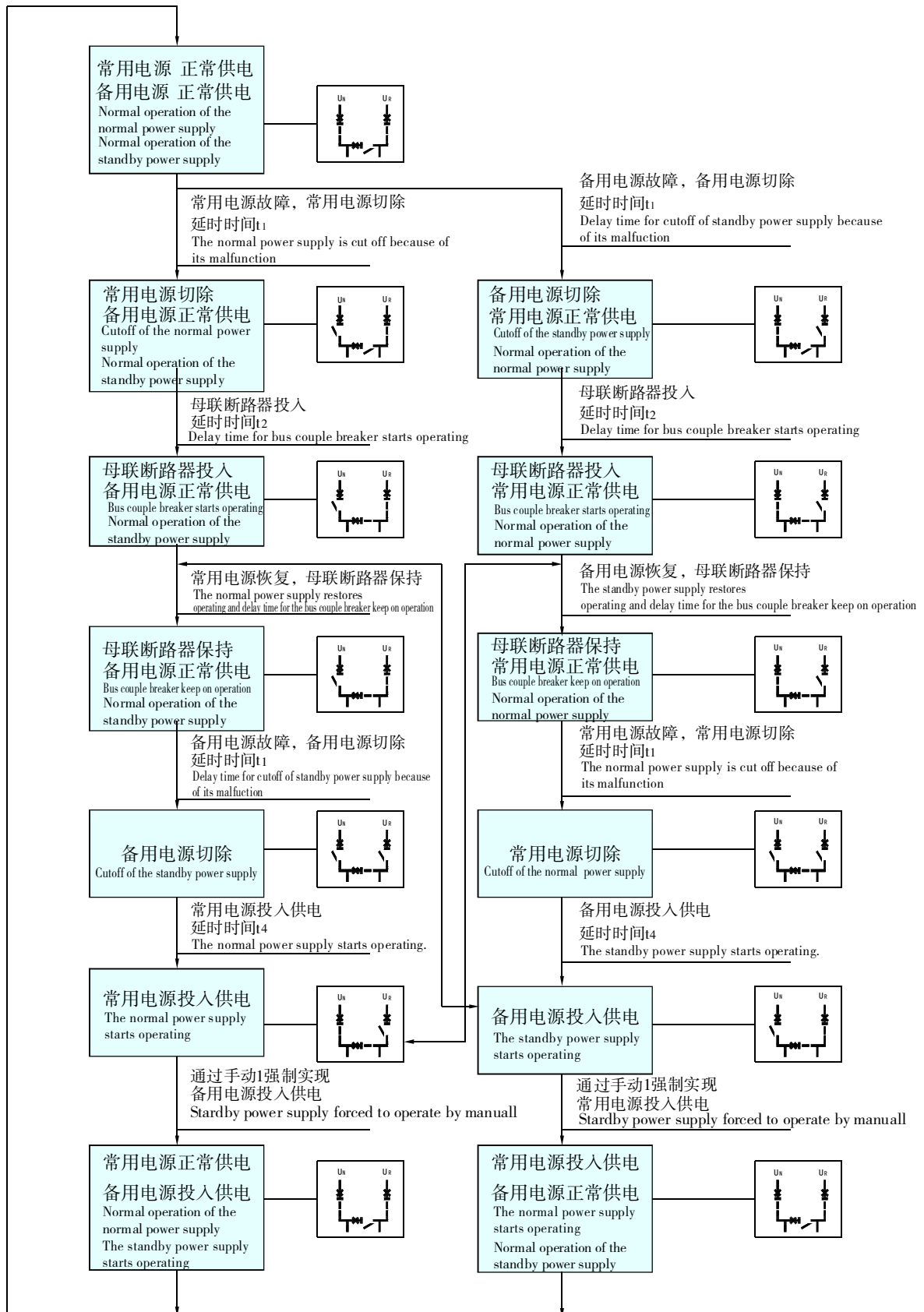
▲WTT3、WTB3型--常用-备用间的自投自复

Automatic charge and automatic recovery between normal and standby supply





▲ WTT3、WTB3型--常用-备用间的自投不自复 Automatic charge and not automatic recover between normal and standby supply





▲WTB3手动并联转换 WTB3 manual parallel transfer

WTB3控制器手动模式为并联转换切换，即动作方式为断路器先合后分，断路器同时闭合时间 < 0.5s。并联模式可设定为“最佳”和“常规”两种模式，“最佳”是指控制器检测到常备用电源相序、电压差、频率差满足条件的前提下自动搜索接近于同相角的时刻进行并联合闸，以最大限度的降低合环电流；“常规”是指控制器检测到常备用电源相序、电压差、频率差满足条件的前提下检测到相角差满足设定的阈值即进行并联合闸。

WTB3 controller's manual mode uses parallel conversion switchover, that is, circuit breaker's operation method is "first make, then break", meaning that the circuit breaker's making time is less than 0.5s. Parallel mode can be set with in "optimization" means when the controller detects the phase order voltage difference and frequency different. the preconditions, it automatically searches the time which approaches in phase angle and it operates parallel making to maximumly reduce loop current; "Normal" means when the controller detects the phase order, voltage difference and frequency difference of backup power meet the conditions and phase angle difference meets setting, it operates parallel making.

●特性 Characteristics

型 号 Type	自动转换控制器型号 Automatic controller type	配用断路器 Fitting breaker
FZZ两路电源转换 Two lines supply transfer	R、ZR、ZTR	CW2-1600/2000/2500/4000/6300 两台 (可配其它CW系列断路器)
	S、ZS、ZTS	
	F、ZF、ZTF	
FLZ两进线一母联电源转换 Two incoming one bus couple	WTT3	CW2-1600/2000/2500/4000/6300 三台 (可配其它CW系列断路器)
	WTB3	

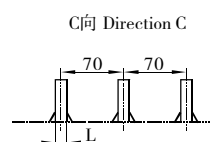
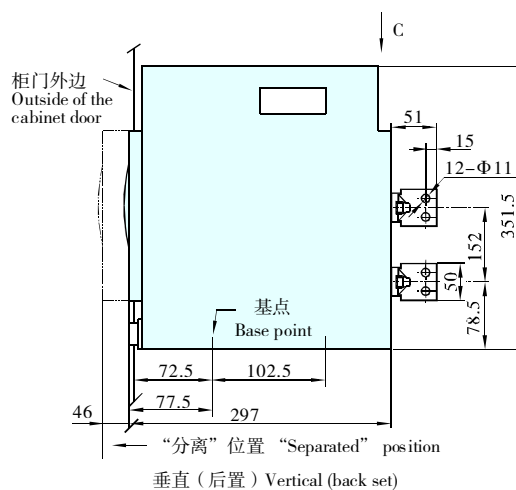
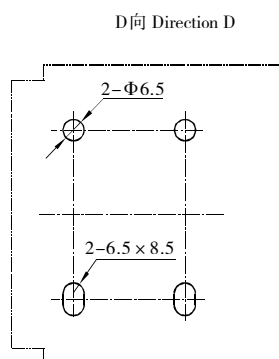
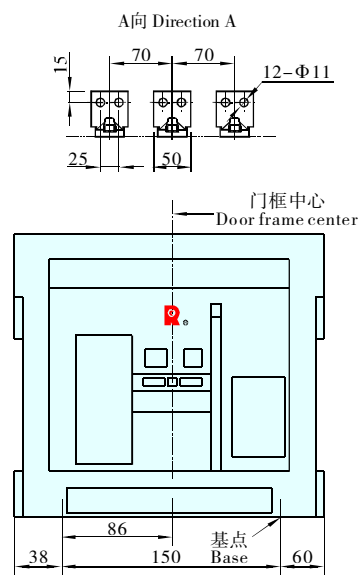
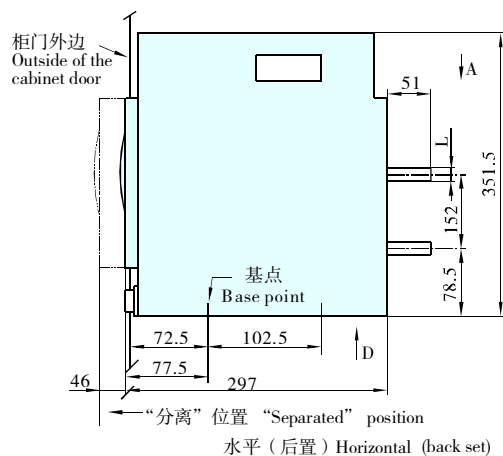


断路器外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

● CW2-1600三极智能型万能式断路器（抽屉式）

CW2-1600 Intelligent Universal Circuit Breaker with three poles (draw-out type)

电流规格 Current specifications	L (mm)
800 A, 1000 A, 1250 A, 1600 A	15
200 A, 400 A, 630 A	10



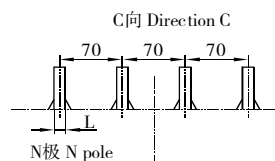
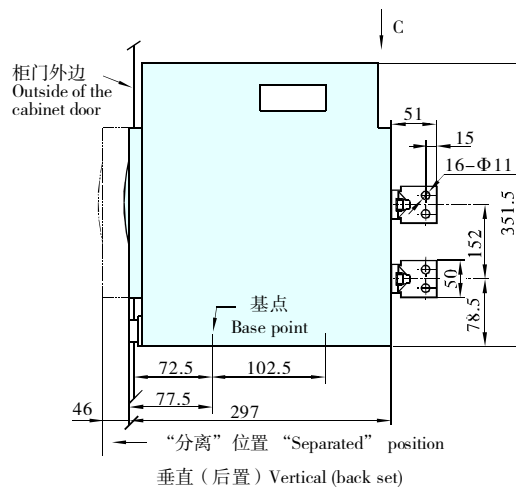
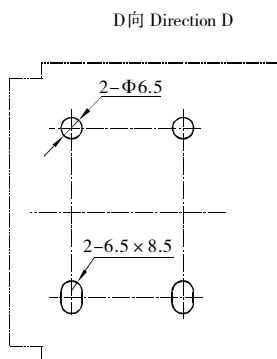
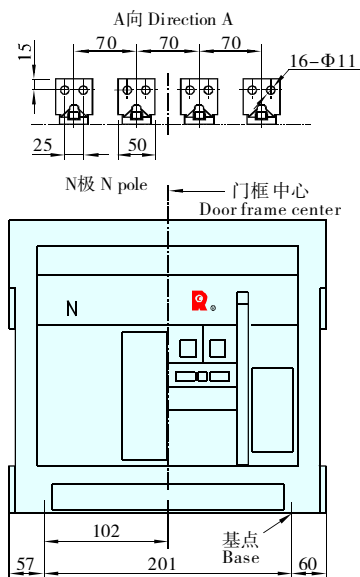
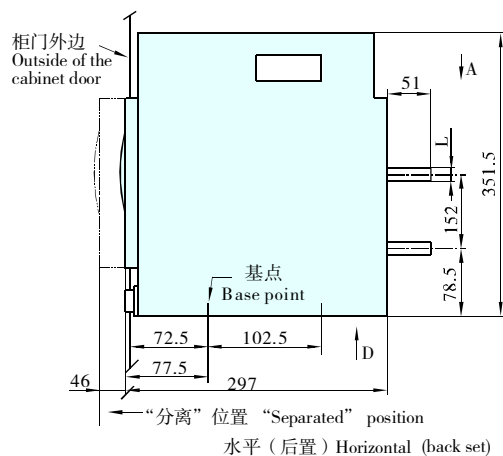


断路器外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

● CW2-1600四极智能型万能式断路器（抽屉式）

CW2-1600 Intelligent Universal Circuit Breaker with four poles (draw-out type)

电流规格 Current specifications	L (mm)
800 A, 1000 A, 1250 A, 1600 A	15
200 A, 400 A, 630 A	10

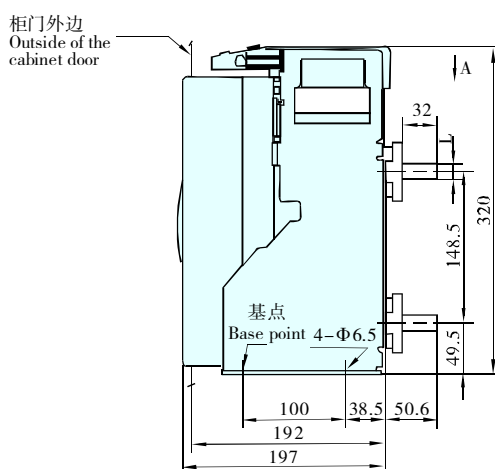
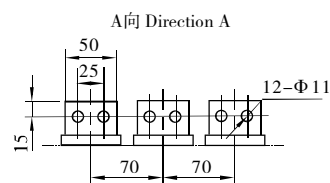




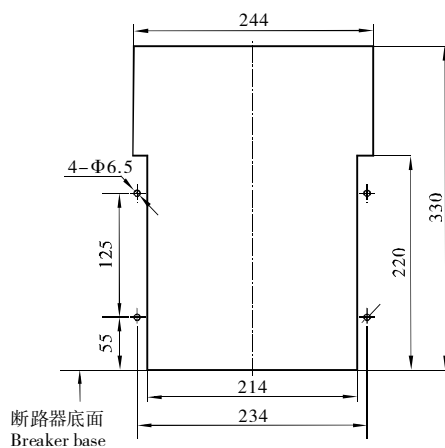
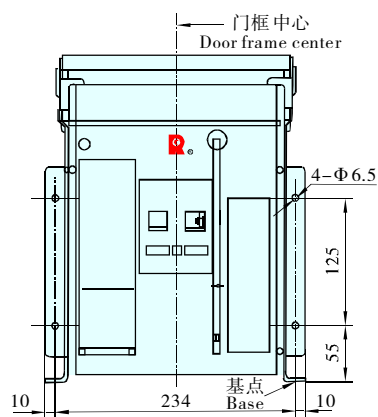
断路器外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

- CW2-1600三极智能型万能式断路器（固定式）**
 CW2-1600 Intelligent Universal Circuit Breaker with three poles (fixed type)

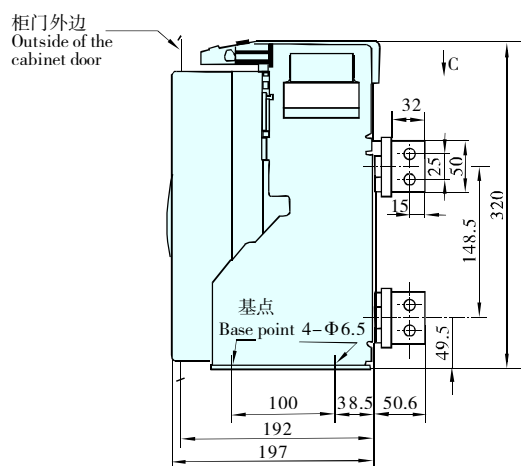
电流规格 Current specifications	L (mm)
800 A, 1000 A, 1250 A, 1600 A	15
200 A, 400 A, 630 A	10



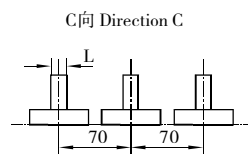
水平（后）Horizontal (back set)



壁挂式安装时后板开孔尺寸
Aperture dimensions of the back plate
at the time of hanging type installation



垂直（后）Vertical (back set)



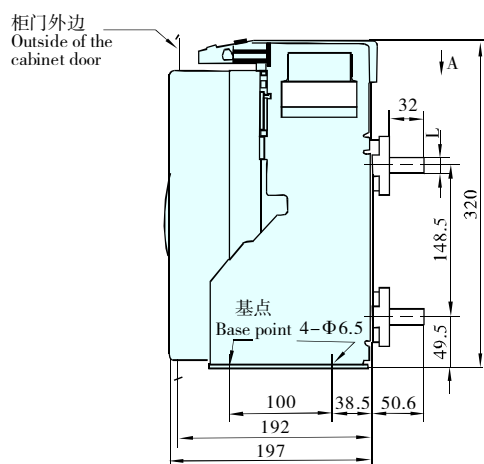


断路器外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

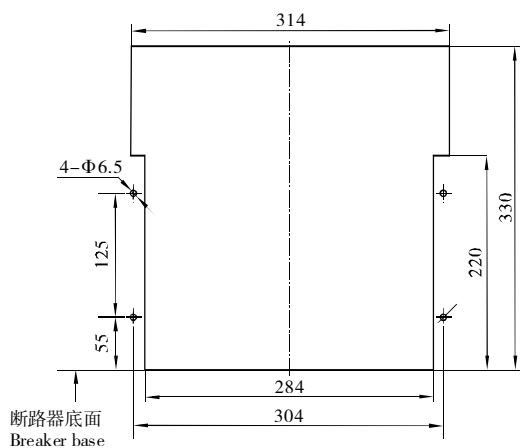
● CW2-1600四极智能型万能式断路器（固定式）

CW2-1600 Intelligent Universal Circuit Breaker with four poles (fixed type)

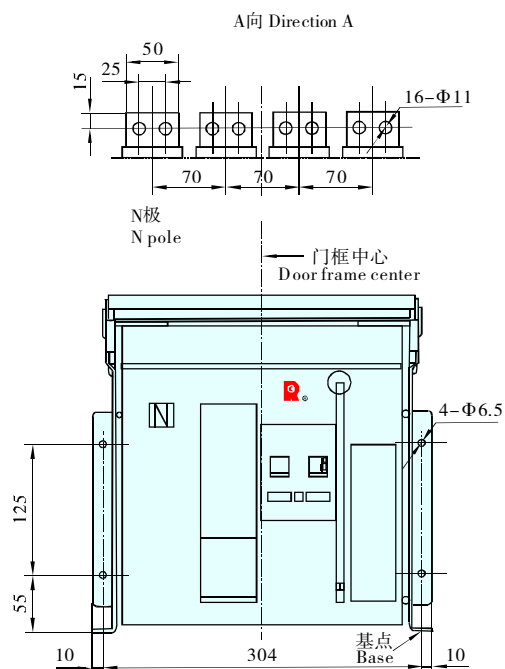
电流规格 Current specifications	L (mm)
800 A, 1000 A, 1250 A, 1600 A	15
200 A, 400 A, 630 A	10



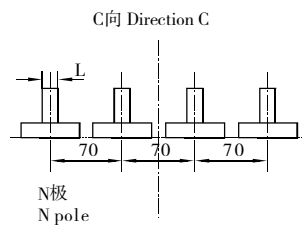
水平（后置）Horizontal (back set)



壁挂式安装时后板开孔尺寸
Aperture dimensions of the back plate
at the time of hanging type installation



垂直（后置）Vertical (back set)



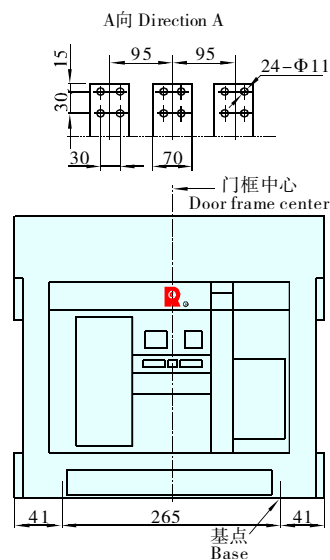
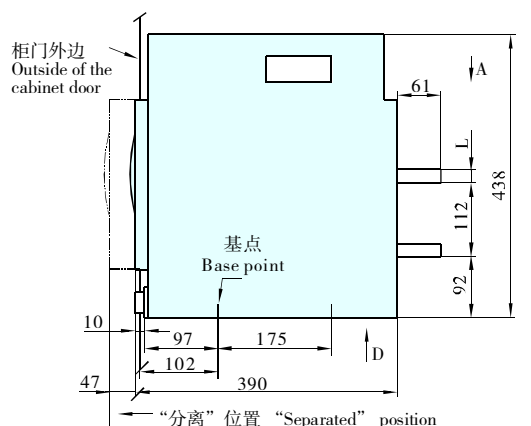


断路器外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

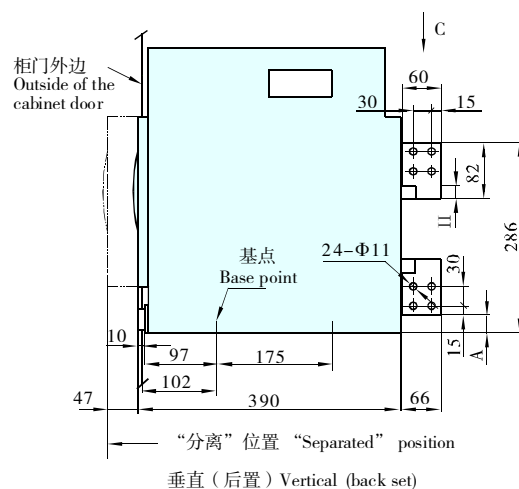
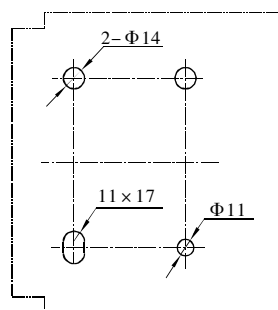
CW2-2000三极智能型万能式断路器（抽屉式）

CW2-2000 Intelligent Universal Circuit Breaker with three poles (draw-out type)

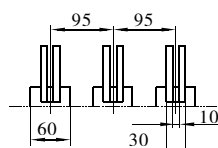
电流规格 Current specifications	L (mm)	H (mm)	A (mm)
2000A	20	20	30
630A, 800A 1000A, 1250A 1600A	15	15	25



D向 Direction D



C向 Direction C

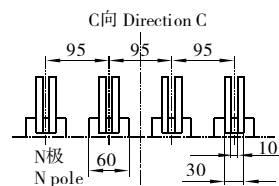
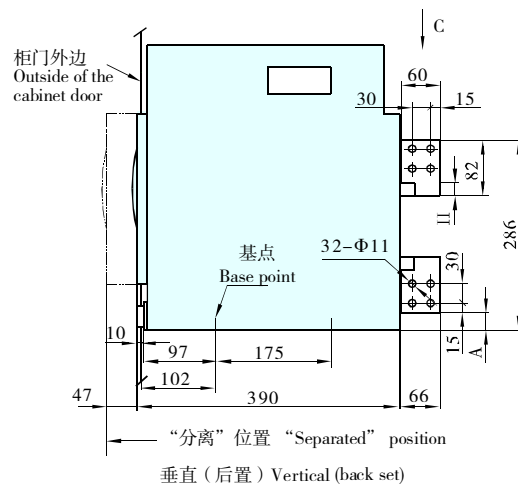
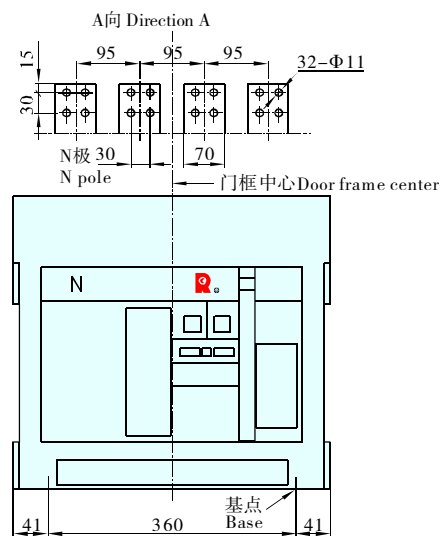
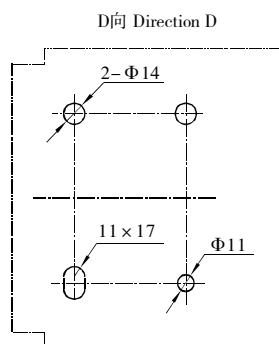
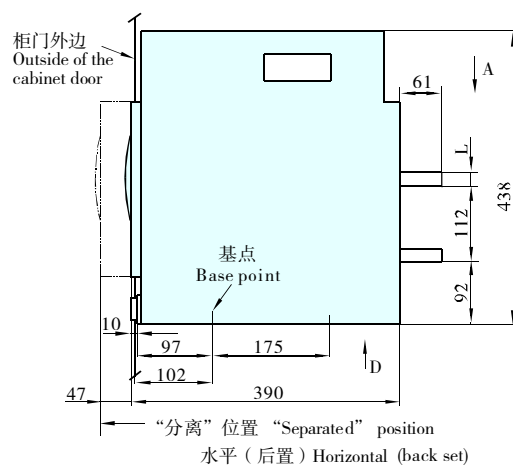




断路器外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

- CW2-2000四极智能型万能式断路器（抽屉式）
CW2-2000 Intelligent Universal Circuit Breaker with four poles (draw-out type)

电流规格 Current specifications	L (mm)	H (mm)	A (mm)
2000A	20	20	30
630A, 800A 1000A, 1250A 1600A	15	15	25

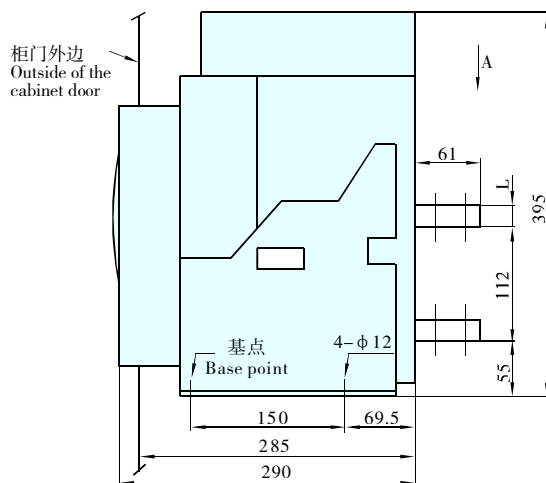




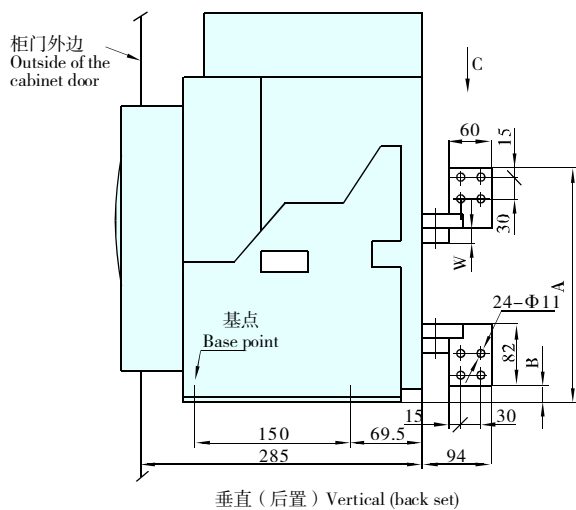
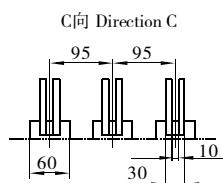
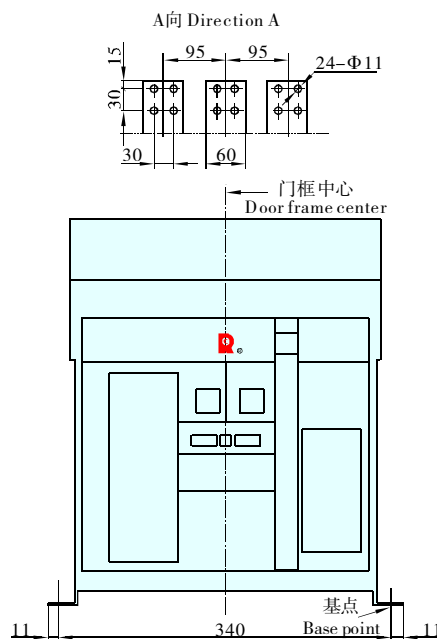
断路器外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

- CW2-2000三极智能型万能式断路器（固定式）
CW2-2000 Intelligent Universal Circuit Breaker with three poles (fixed type)

电流规格 Current specifications	L (mm)	A (mm)	W (mm)	B (mm)
2000A	20	269	20	13
630A, 800A 1000A, 1250A 1600A	15	264	15	3



水平（后置）Horizontal (back set)



垂直（后置）Vertical (back set)

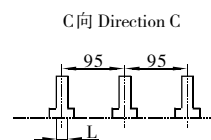
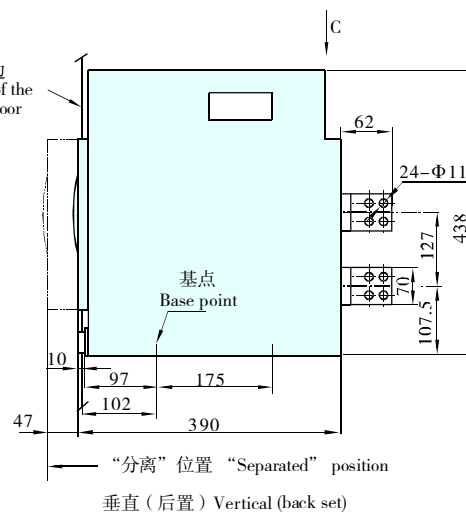
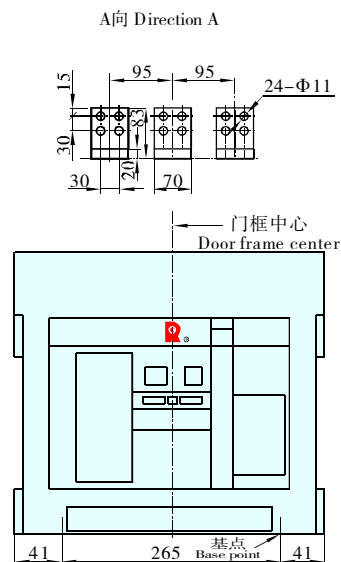
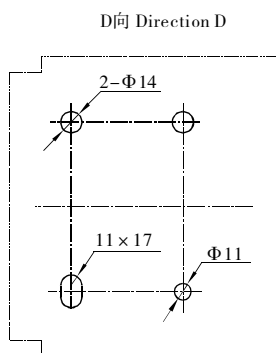
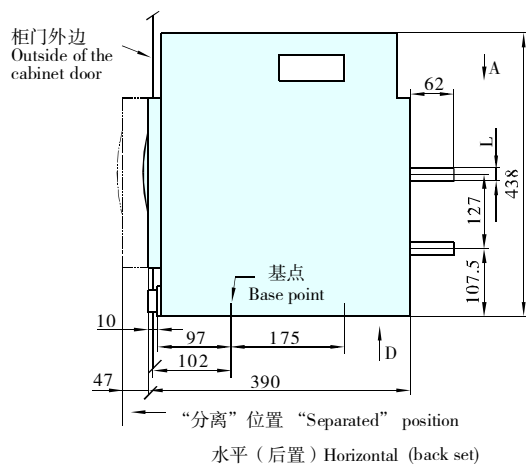


断路器外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

● CW2-2500三极智能型万能式断路器（抽屉式）

CW2-2500 Intelligent Universal Circuit Breaker with three poles (draw-out type)

电流规格 Current specifications	L (mm)
2000A, 2500A	20
1250A, 1600A	15

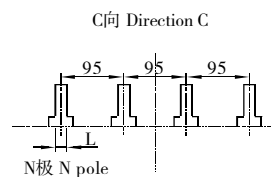
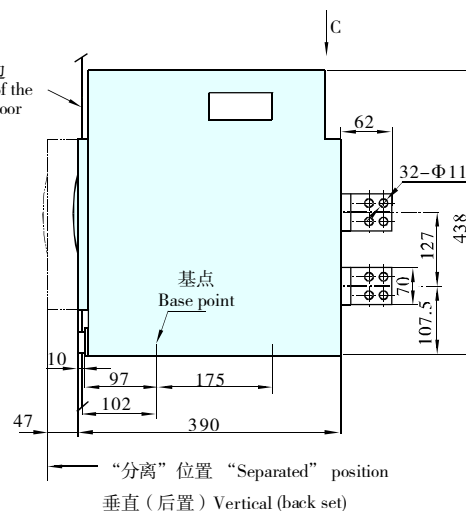
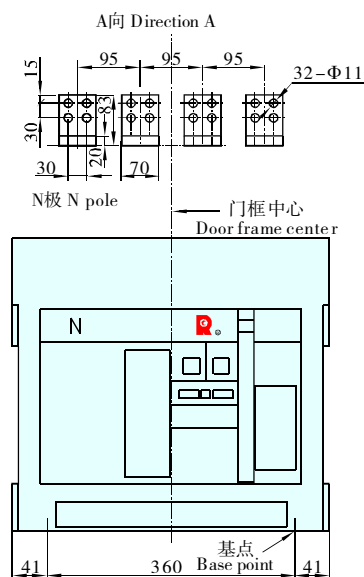
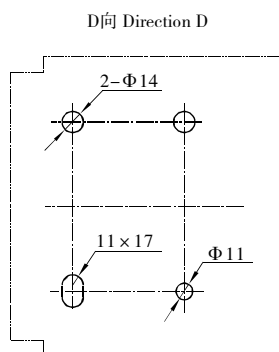
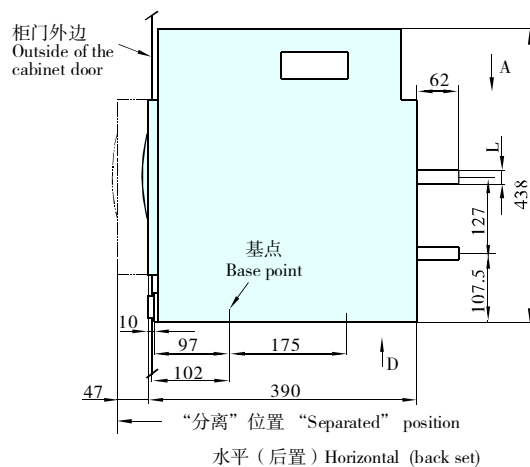




断路器外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

- CW2-2500四极智能型万能式断路器（抽屉式）
CW2-2500 Intelligent Universal Circuit Breaker with four poles (draw-out type)

电流规格 Current specifications	L (mm)
2000A, 2500A	20
1250A, 1600A	15



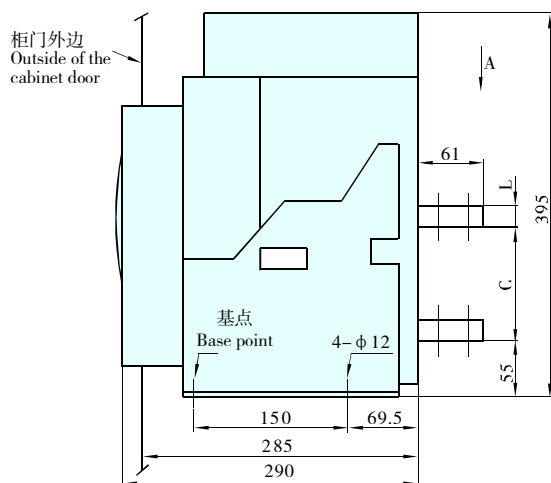


断路器外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

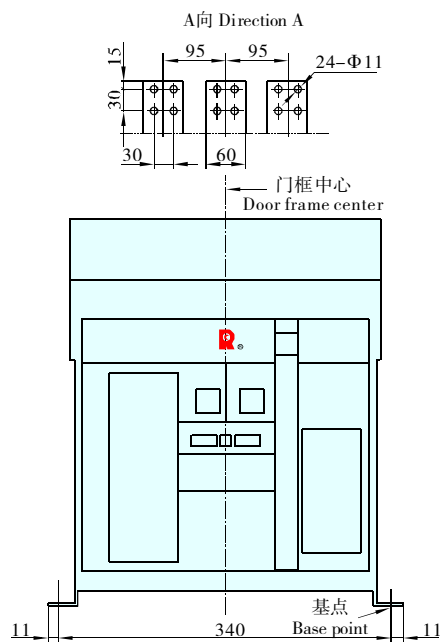
● CW2-2500三极智能型万能式断路器（固定式）

CW2-2500 Intelligent Universal Circuit Breaker with three poles (fixed type)

电流规格 Current specifications	L (mm)	C (mm)
2000A, 2500A	20	132
1250A, 1600A	15	134.5



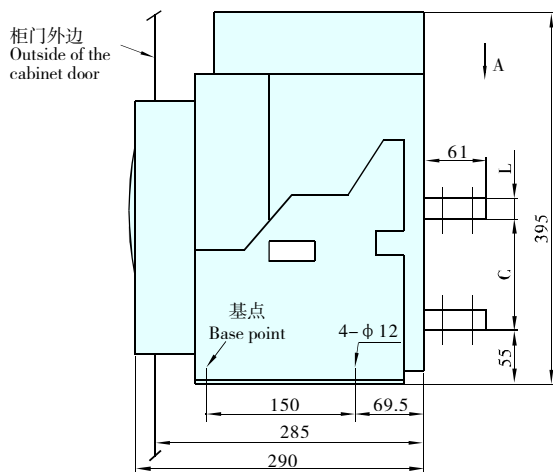
水平（后置）Horizontal (back set)



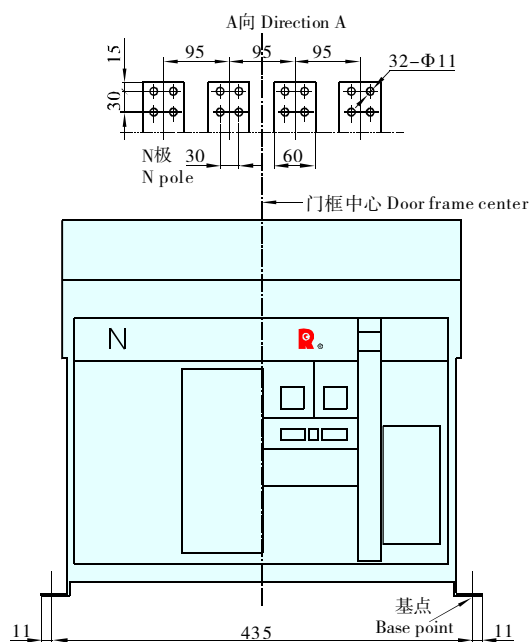
● CW2-2500四极智能型万能式断路器（固定式）

CW2-2500 Intelligent Universal Circuit Breaker with four poles (fixed type)

电流规格 Current specifications	L (mm)	C (mm)
2000A, 2500A	20	132
1250A, 1600A	15	134.5



水平（后置）Horizontal (back set)

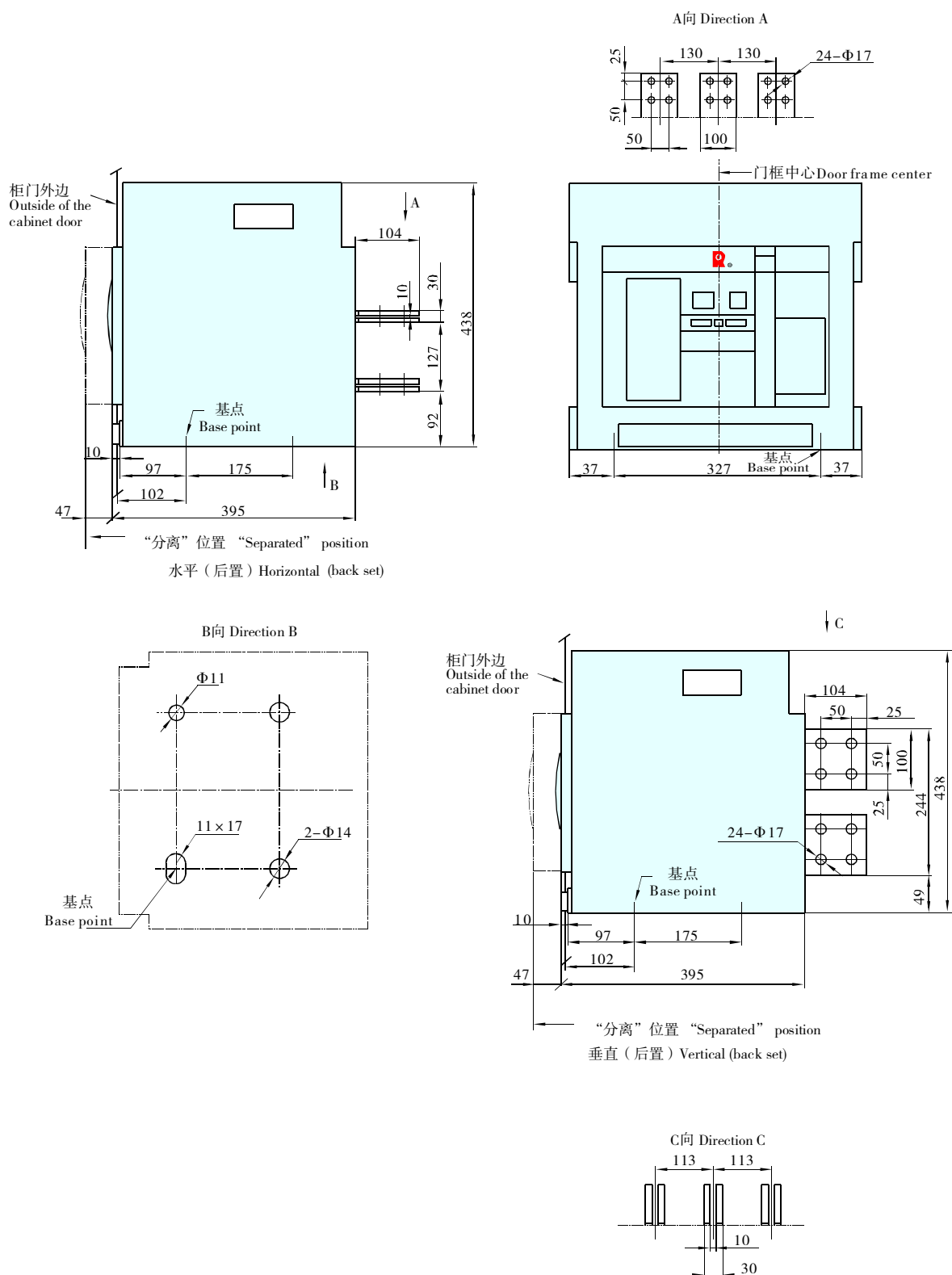




断路器外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

● CW2-4000三极智能型万能式断路器（抽屉式）

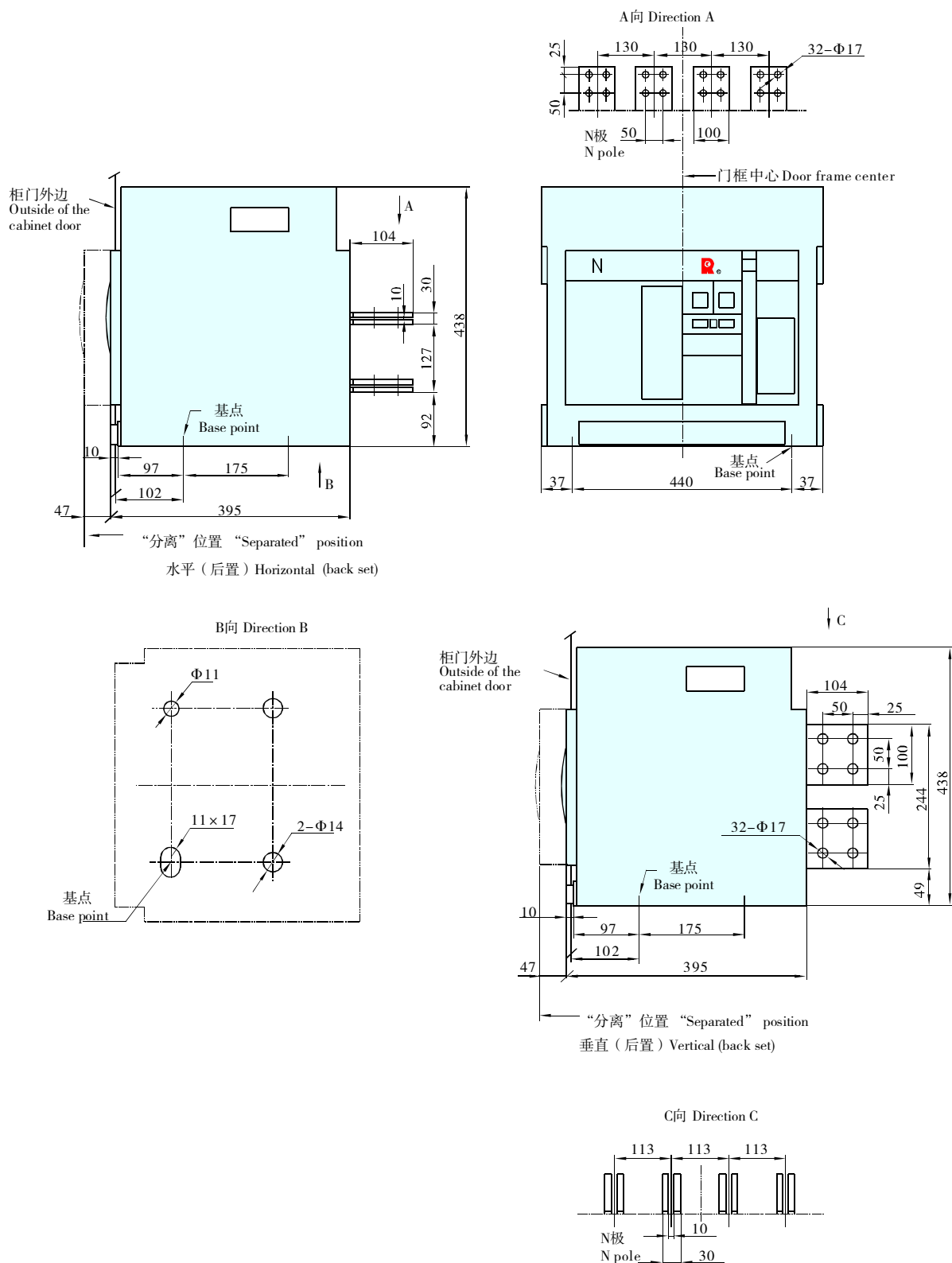
CW2-4000 Intelligent Universal Circuit Breaker with three poles (draw-out type)





断路器外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

- CW2-4000四极智能型万能式断路器（抽屉式）
CW2-4000 Intelligent Universal Circuit Breaker with four poles (draw-out type)

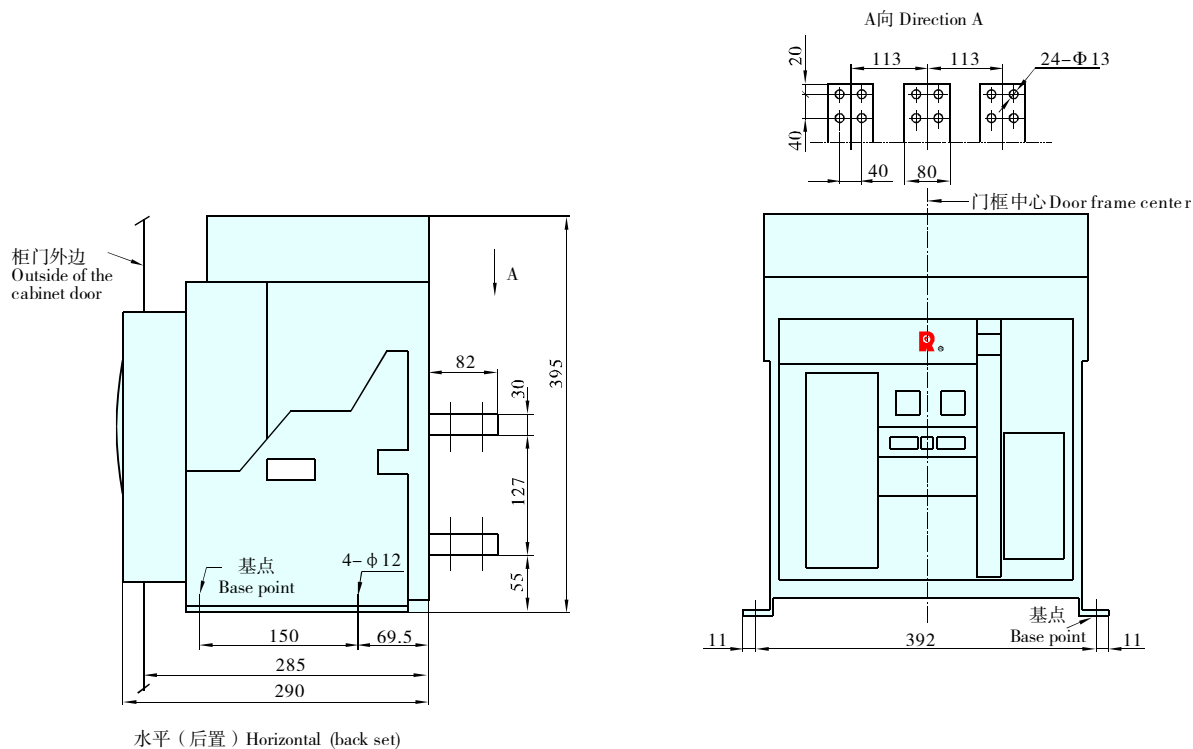




断路器外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

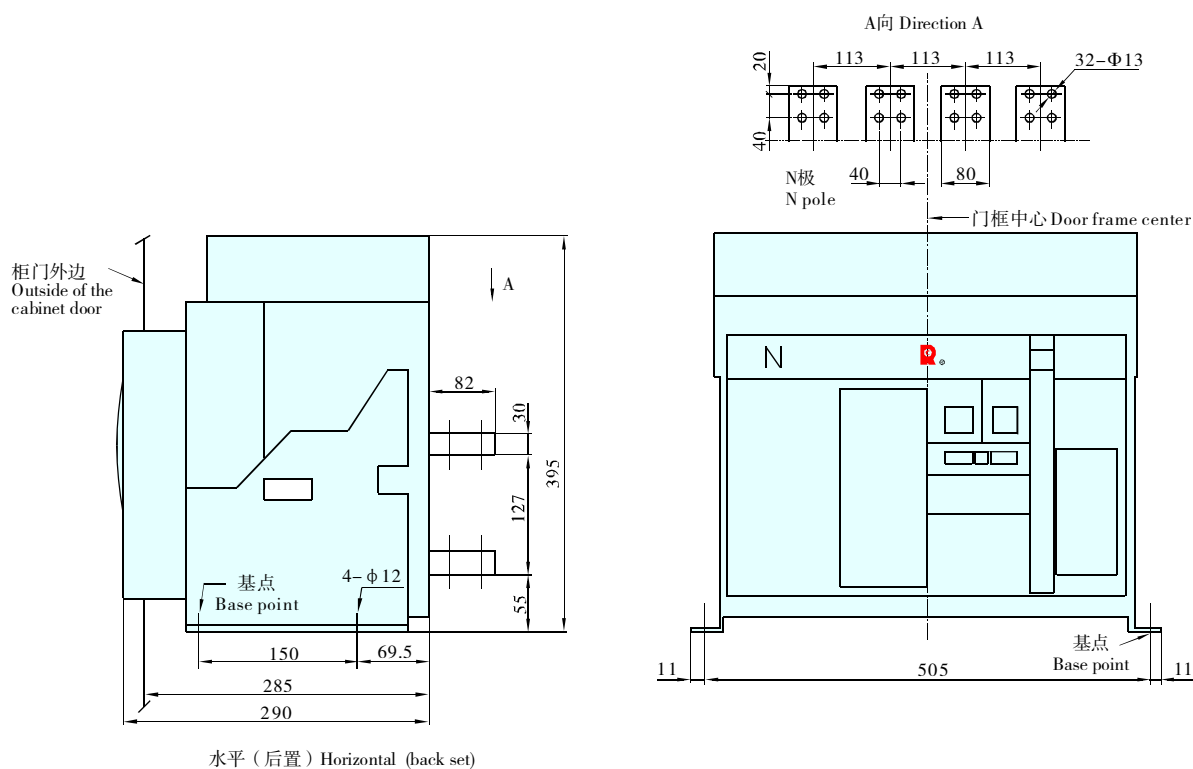
- CW2-4000三极智能型万能式断路器（固定式）

CW2-4000 Intelligent Universal Circuit Breaker with three poles (fixed type)



- CW2-4000四极智能型万能式断路器（固定式）

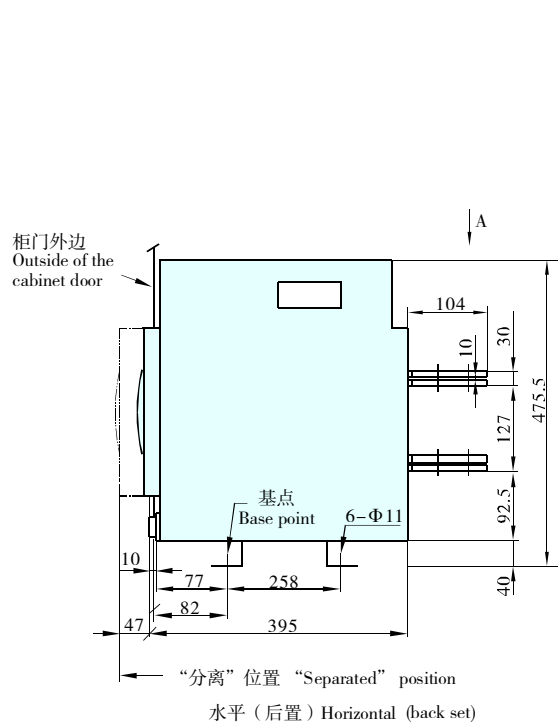
CW2-4000 Intelligent Universal Circuit Breaker with four poles (fixed type)



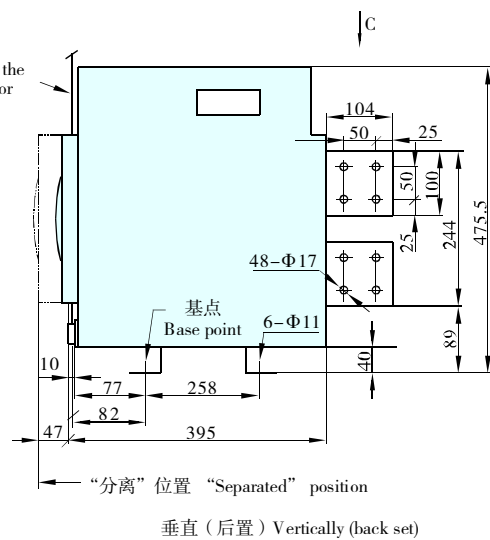
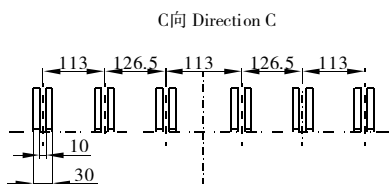
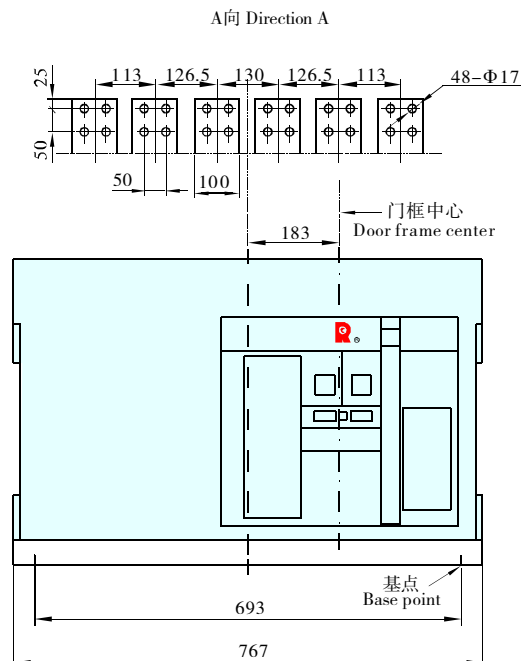


断路器外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

- CW2-6300三极智能型万能式断路器（抽屉式）
CW2-6300 Intelligent Universal Circuit Breaker with three poles (draw-out type)



电流规格：In=4000A、5000A
Current specifications

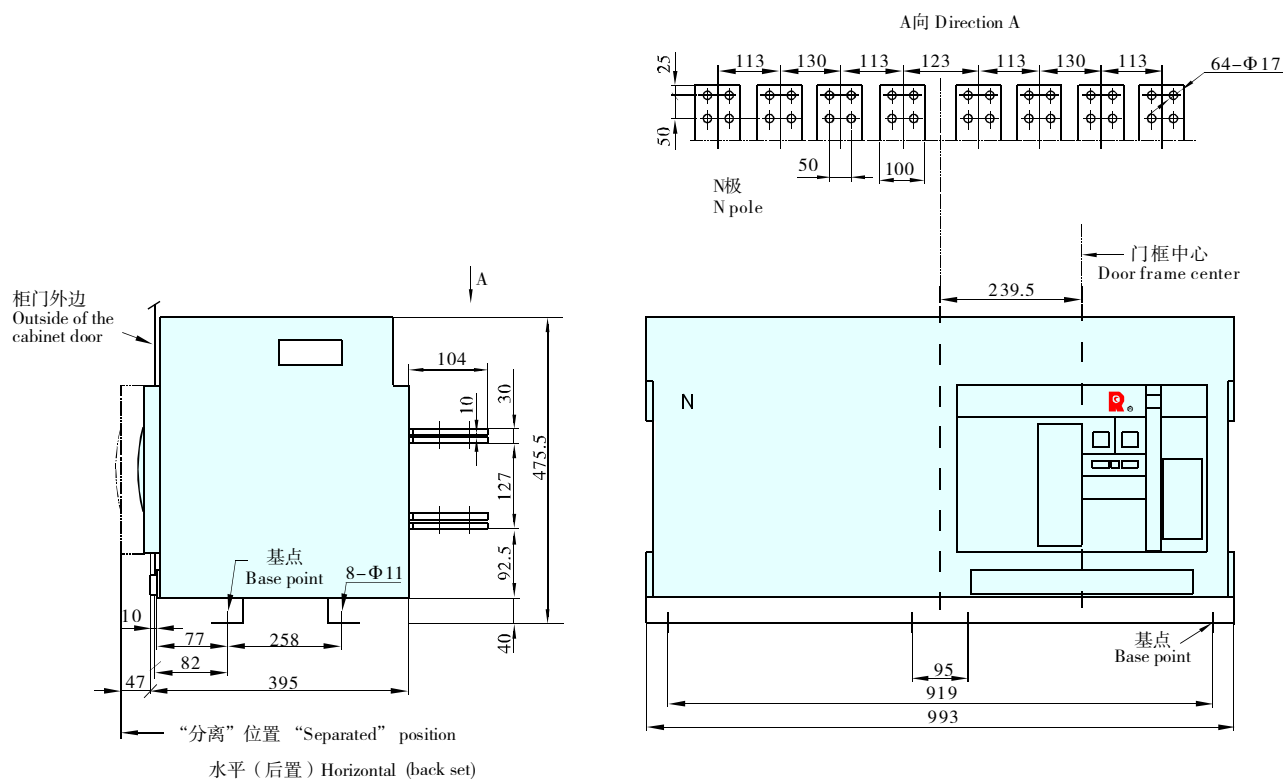


电流规格：In=4000A、5000A、6300A
Current specifications

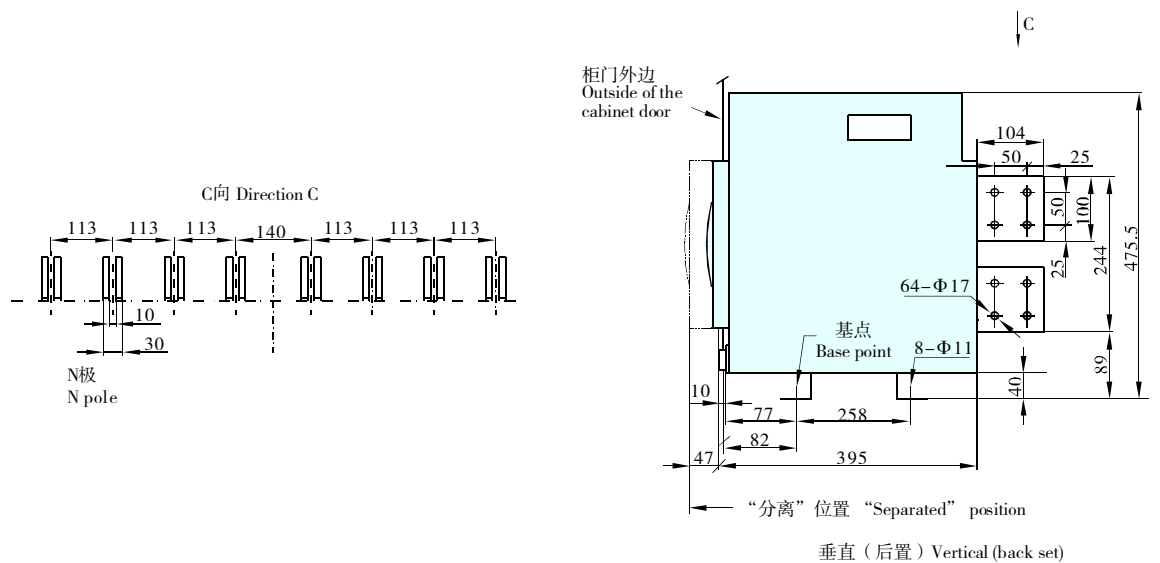


断路器外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

- CW2-6300四极智能型万能式断路器（抽屉式）
CW2-6300 Intelligent Universal Circuit Breaker with four poles (draw-out type)



电流规格: $I_n=4000A$ 、 $5000A$
Current specifications

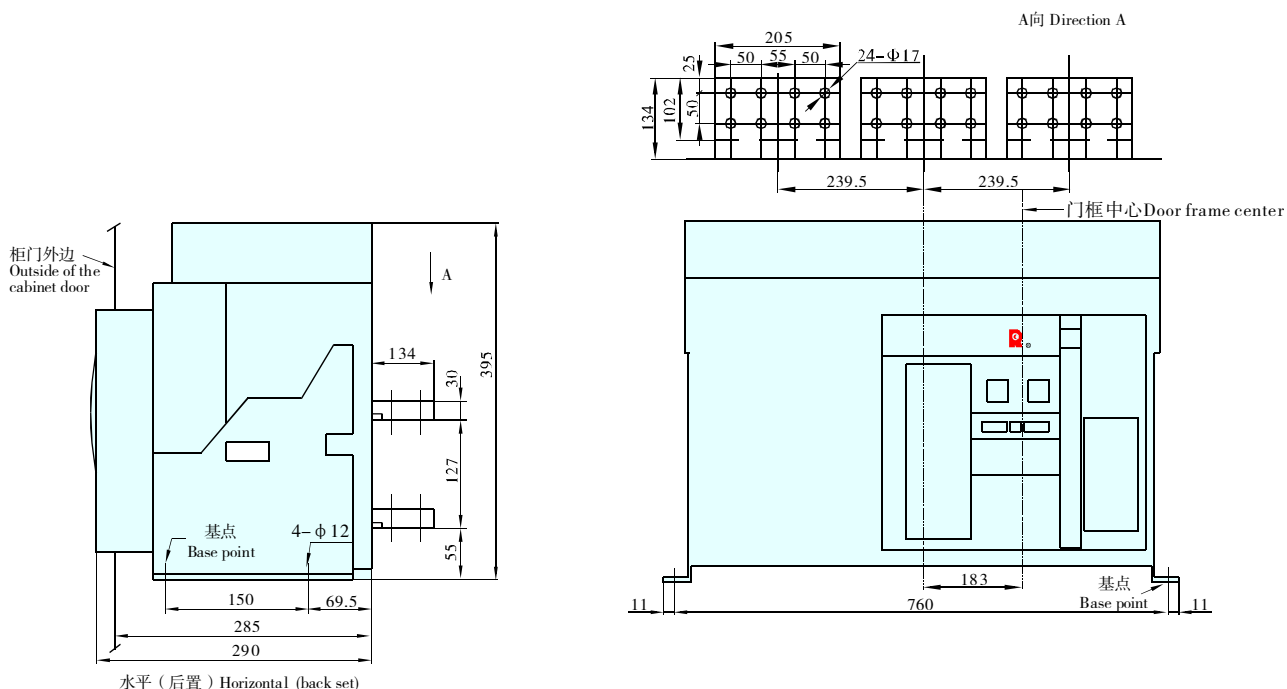


电流规格: $I_n=4000A$ 、 $5000A$ 、 $6300A$
Current specifications

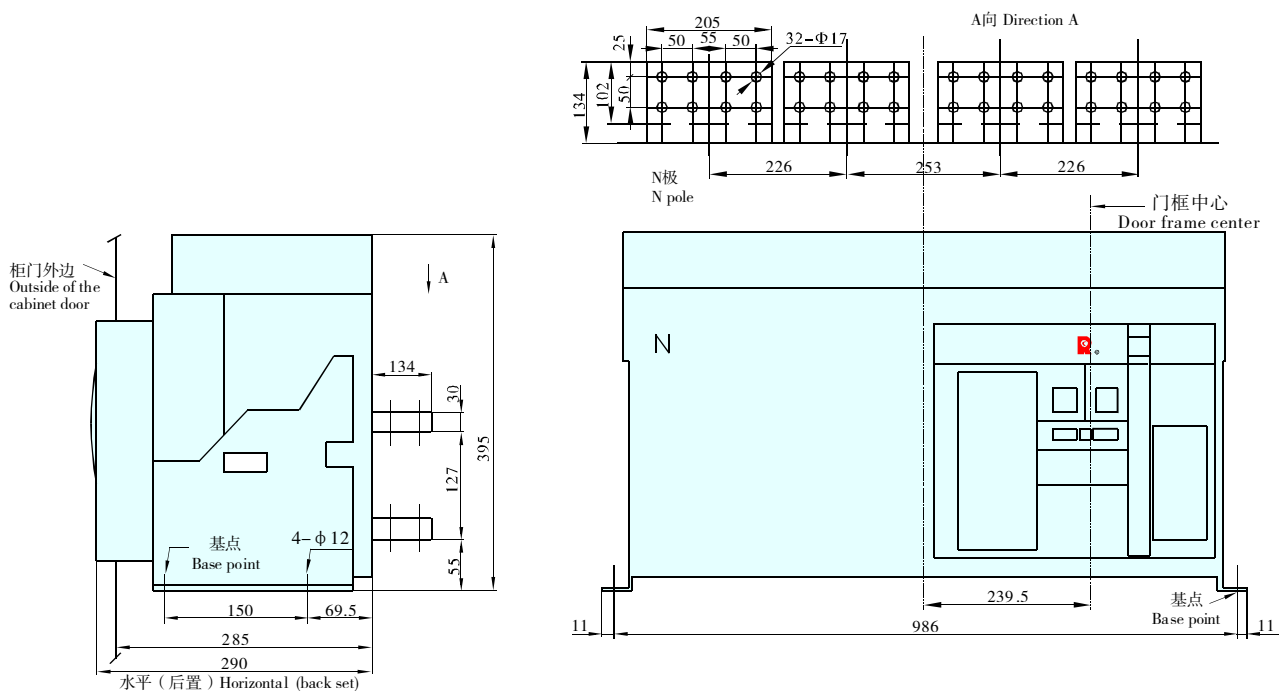


断路器外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

- CW2-6300三极智能型万能式断路器（固定式）
CW2-6300 Intelligent Universal Circuit Breaker with three poles (fixed type)



- CW2-6300四极智能型万能式断路器（固定式）
CW2-6300 Intelligent Universal Circuit Breaker with four poles (fixed type)





断路器门框开孔尺寸 APERTURE DIMENSIONS OF THE DOOR FRAME

● CW2-1600门框开孔尺寸 Aperture Dimension of CW2-1600 door frame

CW2-1600三极智能型万能式断路器（抽屉式）

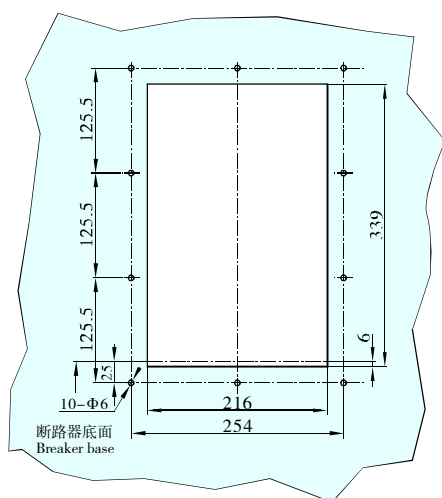
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为227mm

CW2-1600 Intelligent Universal Circuit Breakers with three poles (draw-out)

The drawing of aperture dimensions for mounting cover of door frame

Distance from the panel center of the circuit breaker to the right hinge of cabinet door should be at least 227mm



CW2-1600四极智能型万能式断路器（抽屉式）

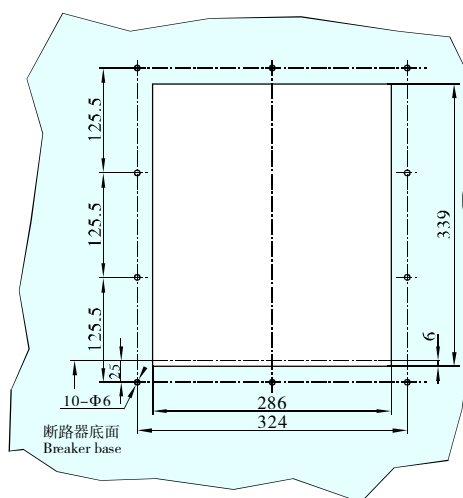
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为262mm

CW2-1600 Intelligent Universal Circuit Breakers with four poles (draw-out)

The drawing of aperture dimensions for mounting front cover of door frame

Distance from the panel center of the Circuit Breaker to the right hinge of cabinet door should be at least 262mm



CW2-1600三极智能型万能式断路器（固定式）

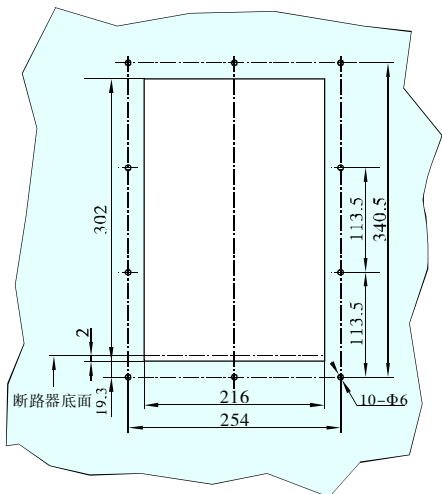
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为227mm

CW2-1600 Intelligent Universal Circuit Breakers with three poles (fixed type)

The drawing of aperture dimensions for mounting cover of door frame

Distance from the panel center of the circuit breaker to the right hinge of cabinet door should be at least 227mm



CW2-1600四极智能型万能式断路器（固定式）

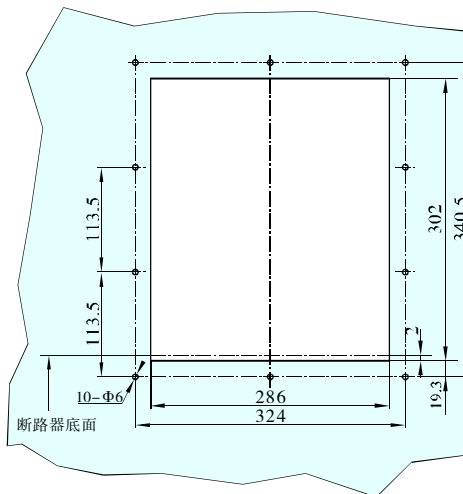
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为262mm

CW2-1600 Intelligent Universal Circuit Breakers with four poles (fixed type)

The drawing of aperture dimensions for mounting front cover of door frame

Distance from the panel center of the Circuit Breaker to the right hinge of cabinet door should be at least 262mm





断路器门框开孔尺寸 APERTURE DIMENSIONS OF THE DOOR FRAME

● CW2-2000门框开孔尺寸 Aperture Dimension of CW2-2000 door frame

CW2-2000三极智能型万能式断路器（抽屉式）

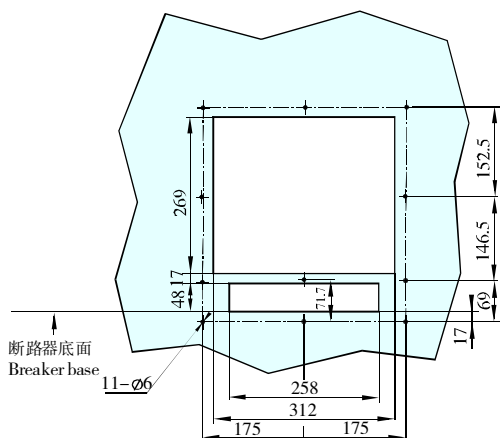
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为256mm

CW2-2000 Intelligent Universal Circuit Breakers with three poles (draw-out)

The drawing of Aperture Dimensions for mounting front cover of cabubet door

Distance from the panel center of the circuit breaker to the right hinge of cabinet door should be at least 256mm



CW2-2000四极智能型万能式断路器（抽屉式）

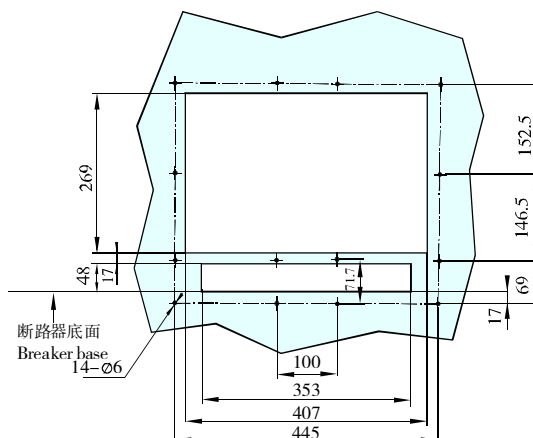
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为303.5mm

CW2-2000 Intelligent Universal Circuit Breakers with four poles (draw-out)

The drawing of Aperture Dimensions for mounting front cover of cabinut door

Distance from the panel center of the circuit breaker to the right hinge of cabinet door should be at least 303.5mm



CW2-2000三极智能型万能式断路器（固定式）

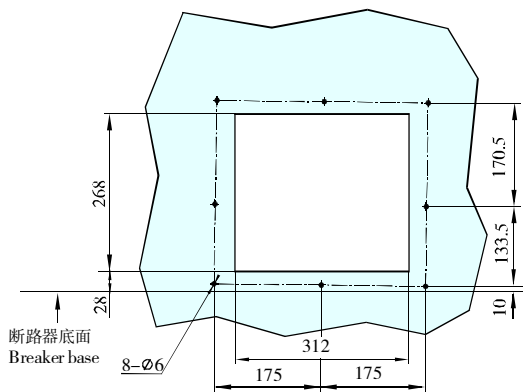
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为256mm

CW2-2000 Intelligent Universal Circuit Breakers with three poles (fixed)

The drawing of Aperture Dimensions for mounting front cover of cabubet door

Distance from the panel center of the circuit breaker to the right hinge of cabinet door should be at least 256mm



CW2-2000四极智能型万能式断路器（固定式）

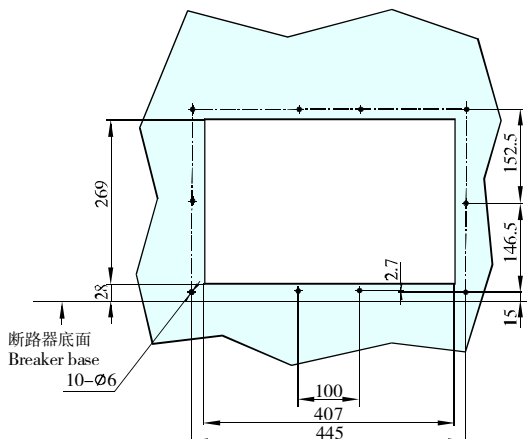
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为303.5mm

CW2-2000 Intelligent Universal Circuit Breakers with four poles (fixed)

The drawing of Aperture Dimensions for mounting front cover of cabinut door

Distance from the panel center of the circuit breaker to the right hinge of cabinet door should be at least 303.5mm





断路器门框开孔尺寸 APERTURE DIMENSIONS OF THE DOOR FRAME

● CW2-2500门框开孔尺寸 Aperture Dimension of CW2-2500 door frame

CW2-2500三极智能型万能式断路器（抽屉式）

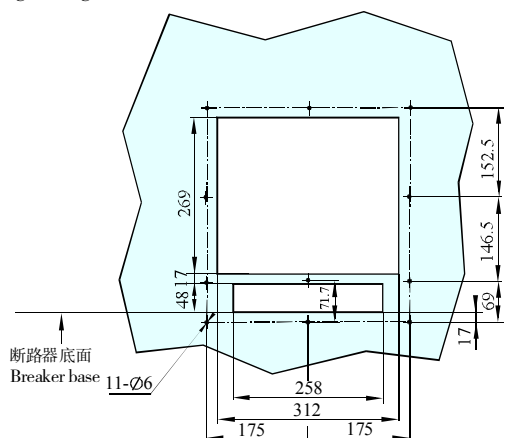
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为256mm

CW2-2500 Intelligent Universal Circuit Breakers with three poles (draw-out)

The drawing of Aperture Dimensions for mounting cover of door frame

Distance from the panel center of the circuit breaker to the right hinge of cabinet door should be at least 256mm



CW2-2500四极智能型万能式断路器（抽屉式）

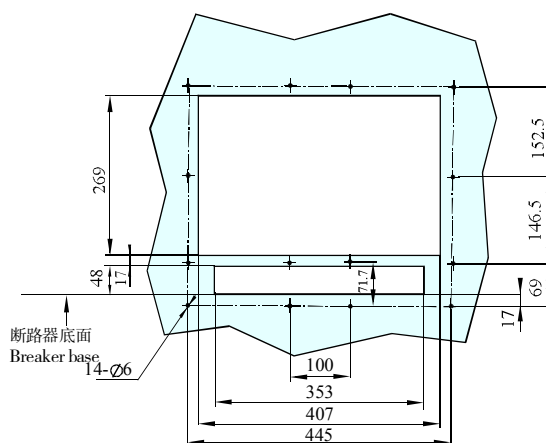
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为303.5mm

CW2-2500 Intelligent Universal Circuit Breakers with four poles (draw-out)

The drawing of Aperture Dimensions for mounting cover of door frame

Distance from the panel center of the circuit breaker to the right hinge of cabinet door should be at least 303.5mm



CW2-2500三极智能型万能式断路器（固定式）

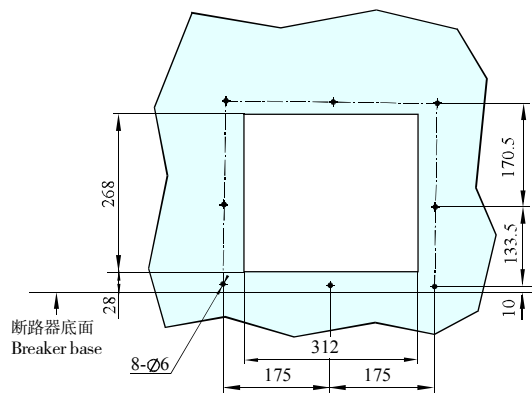
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为256mm

CW2-2500 Intelligent Universal Circuit Breakers with three poles (fixed)

The drawing of Aperture Dimensions for mounting cover of door frame

Distance from the panel center of the circuit breaker to the right hinge of cabinet door should be at least 256mm



CW2-2500四极智能型万能式断路器（固定式）

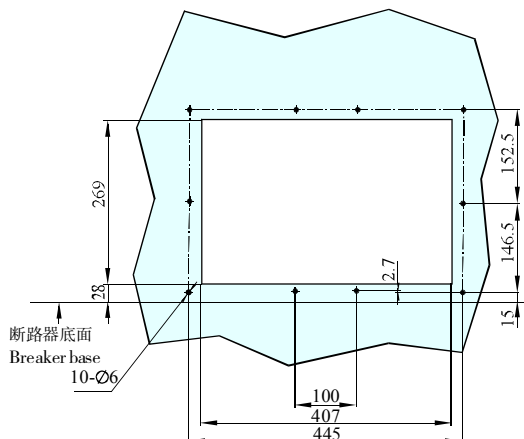
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为303.5mm

CW2-2500 Intelligent Universal Circuit Breakers with four poles (fixed)

The drawing of Aperture Dimensions for mounting cover of door frame

Distance from the panel center of the circuit breaker to the right hinge of cabinet door should be at least 303.5mm





断路器门框开孔尺寸 APERTURE DIMENSIONS OF THE DOOR FRAME

● CW2-4000门框开孔尺寸 Aperture Dimension of CW2-4000 door frame

CW2-4000三极智能型万能式断路器（抽屉式）

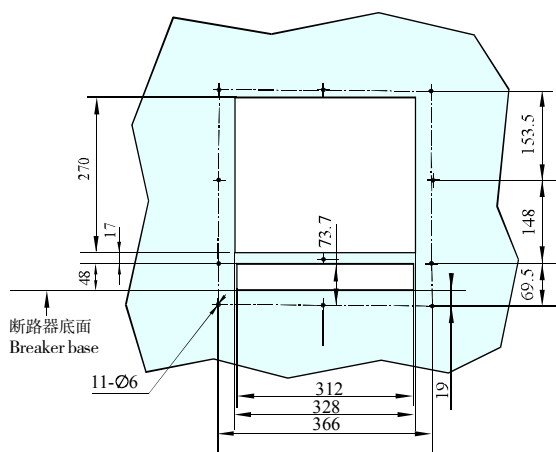
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为264mm

CW2-4000 Intelligent Universal Circuit Breakers with three poles (draw-out)

The drawing of Aperture Dimensions for mounting cover of door frame

Distance from the panel center of the circuit breaker to the right hinge of cabinet door should be at least 264mm



CW2-4000三极智能型万能式断路器（固定式）

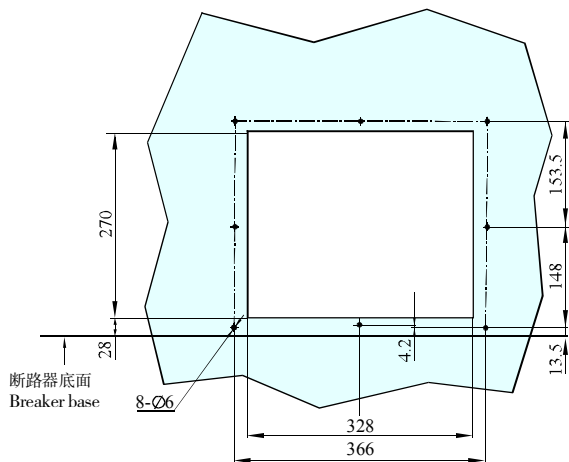
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为264mm

CW2-4000 Intelligent Universal Circuit Breakers with three poles (fixed)

The drawing of Aperture Dimensions for mounting cover of door frame

Distance from the panel center of the circuit breaker to the right hinge of cabinet door should be at least 264mm



CW2-4000四极智能型万能式断路器（抽屉式）

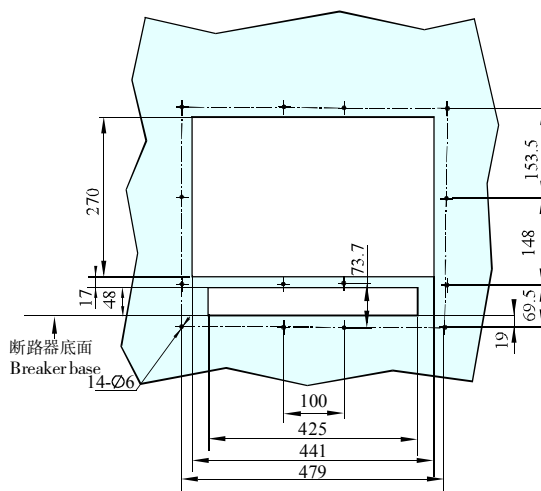
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为320.5mm

CW2-4000 Intelligent Universal Circuit Breakers with four poles (draw-out)

The drawing of Aperture Dimensions for mounting cover of door frame

Distance from the panel center of the circuit breaker to the right hinge of cabinet door should be at least 320.5mm



CW2-4000四极智能型万能式断路器（固定式）

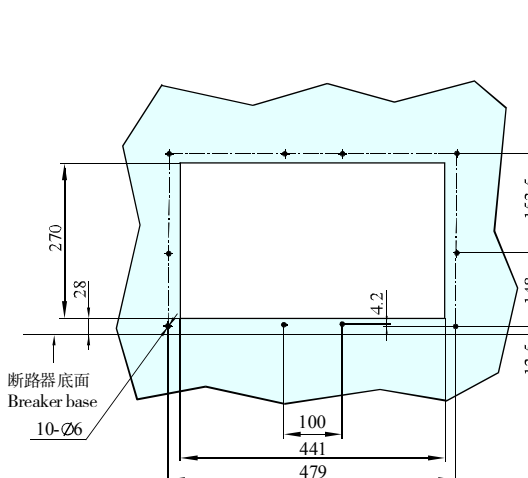
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为320.5mm

CW2-4000 Intelligent Universal Circuit Breakers with four poles (fixed)

The drawing of Aperture Dimensions for mounting cover of door frame

Distance from the panel center of the circuit breaker to the right hinge of cabinet door should be at least 320.5mm





断路器门框开孔尺寸 APERTURE DIMENSIONS OF THE DOOR FRAME

● CW2-6300门框开孔尺寸 Aperture Dimension of CW2-6300 door frame

CW2-6300三极智能型万能式断路器(抽屉式)

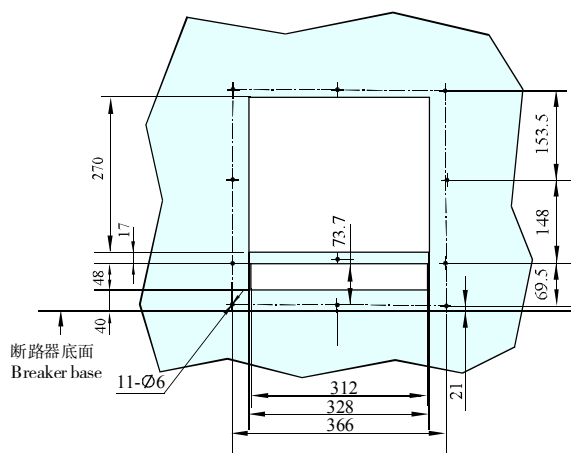
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为264mm

CW2-6300 Intelligent Universal Circuit Breakers with three poles (draw-out)

The drawing of Aperture Dimensions for mounting cover of door frame

Distance from the panel center of the circuit breaker to the right hinge of cabinet door should be at least 264mm



CW2-6300三极智能型万能式断路器(固定式)

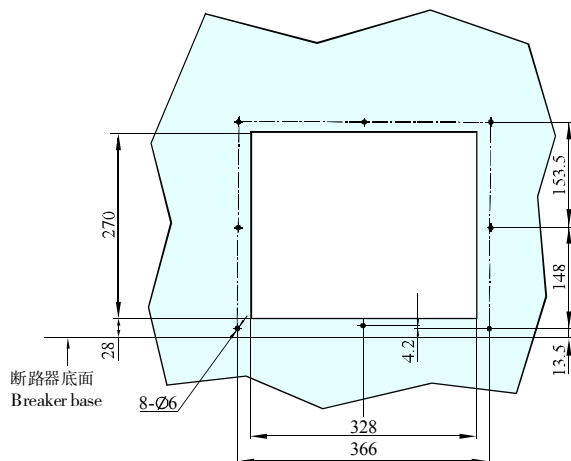
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为264mm

CW2-6300 Intelligent Universal Circuit Breakers with three poles (fixed)

The drawing of Aperture Dimensions for mounting cover of door frame

Distance from the panel center of the circuit breaker to the right hinge of cabinet door should be at least 264mm



CW2-6300四极智能型万能式断路器(抽屉式)

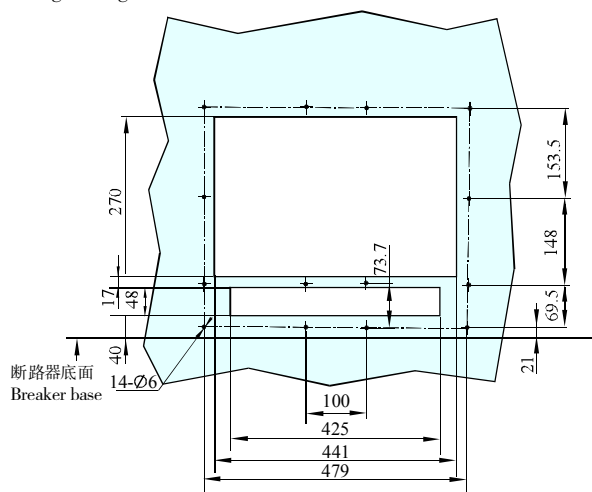
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为320.5mm

CW2-6300 Intelligent Universal Circuit Breakers with four poles (draw-out)

The drawing of Aperture Dimensions for mounting cover of door frame

Distance from the panel center of the circuit breaker to the right hinge of cabinet door should be at least 320.5mm



CW2-6300四极智能型万能式断路器(固定式)

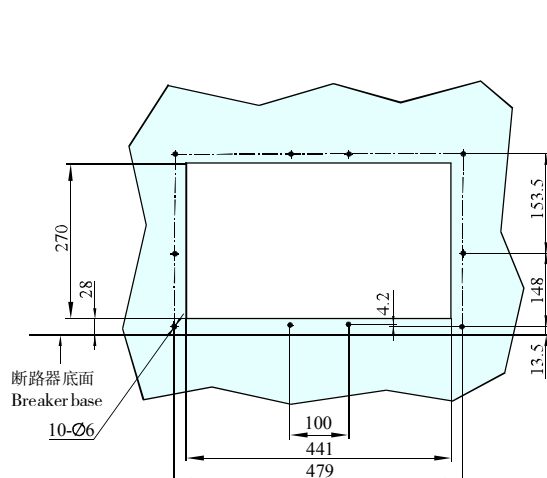
安装门框前盖开孔图

控制面板中心离柜门右铰链最小距离为320.5mm

CW2-6300 Intelligent Universal Circuit Breakers with four poles (fixed)

The drawing of Aperture Dimensions for mounting cover of door frame

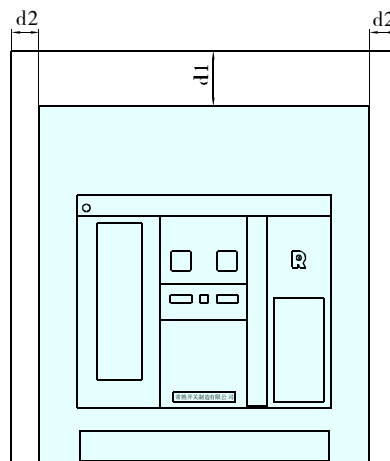
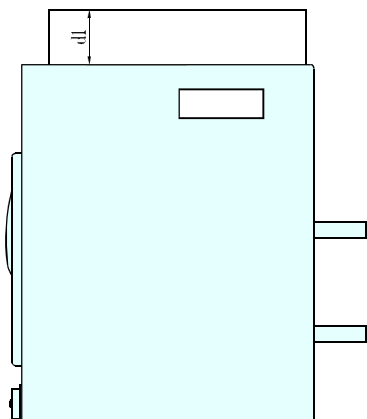
Distance from the panel center of the circuit breaker to the right hinge of cabinet door should be at least 320.5mm





断路器安装安全间隙 MOUNTING SAFETY CLEARANCE

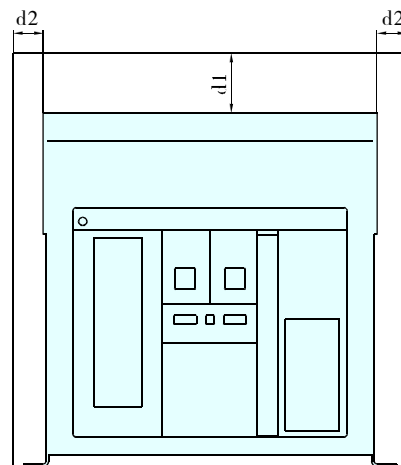
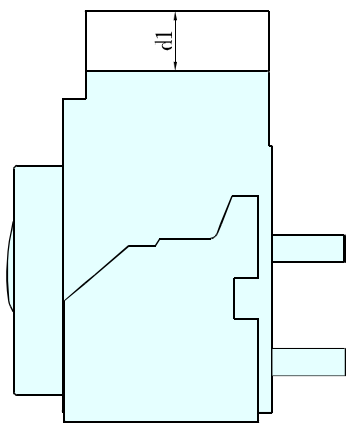
● 抽屉式断路器 Draw-out breaker



断路器与柜壁或带电部件最小距离
Minimn distance between breaker with switchboard wall or live part.

	柜壁 Switchboard wall	带电部分 Live part
d1 (注note)(mm)	0	60
d2(mm)	0	60

● 固定式断路器 Fixed breaker



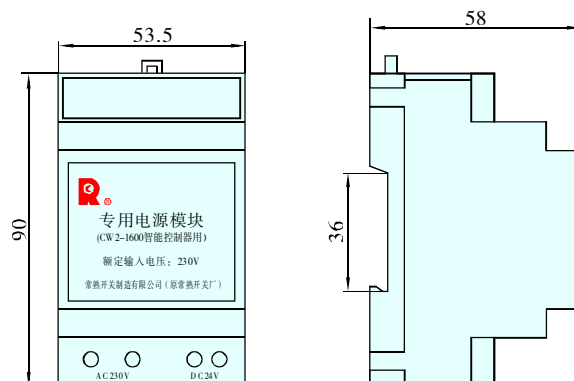
断路器与柜壁或带电部件最小距离
Minimn distance between breaker with switchboard wall or live part.

	柜壁 Switchboard wall	带电部分 Live part
d1 (注note)(mm)	0	60
d2(mm)	0	60

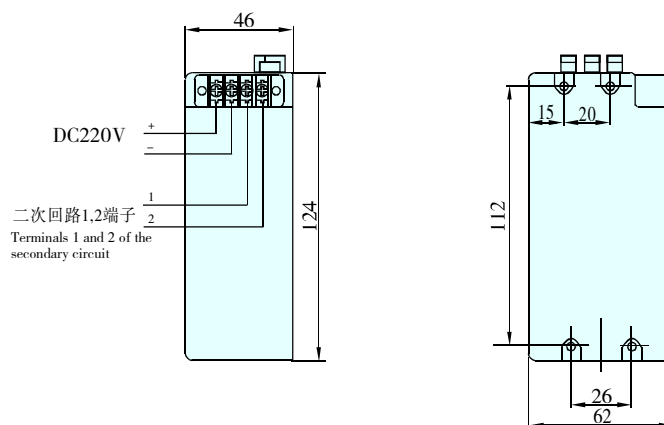
注：安全间隙要考虑两次回路的走线。
Note:secondary circuit wiring must be considered for safety clearance.



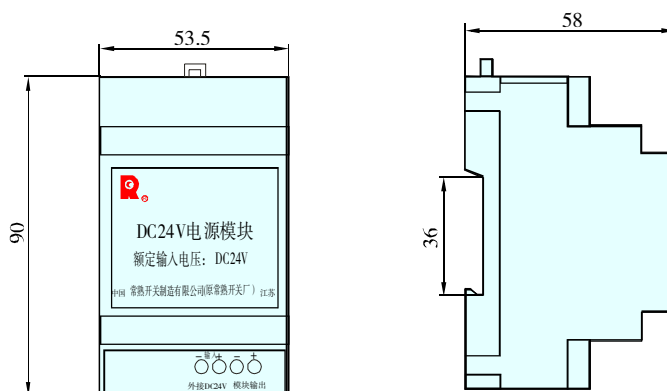
● 专用电源模块 Special power module



● 直流电源模块 DC power supply module



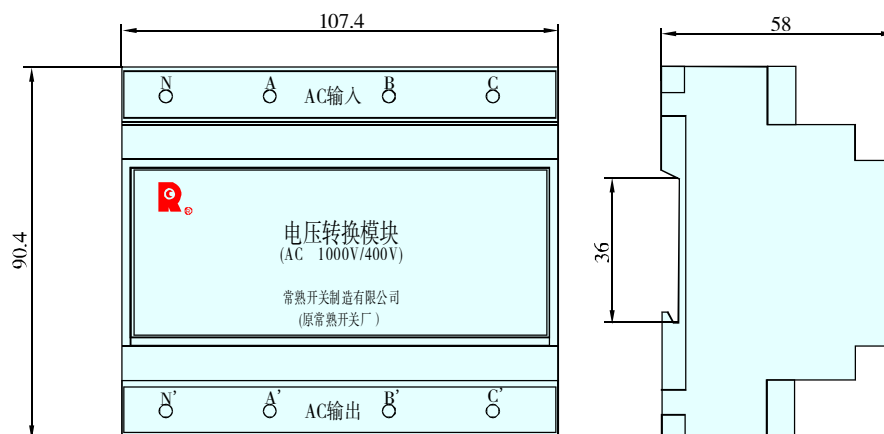
● DC24V电源模块 DC24V power module



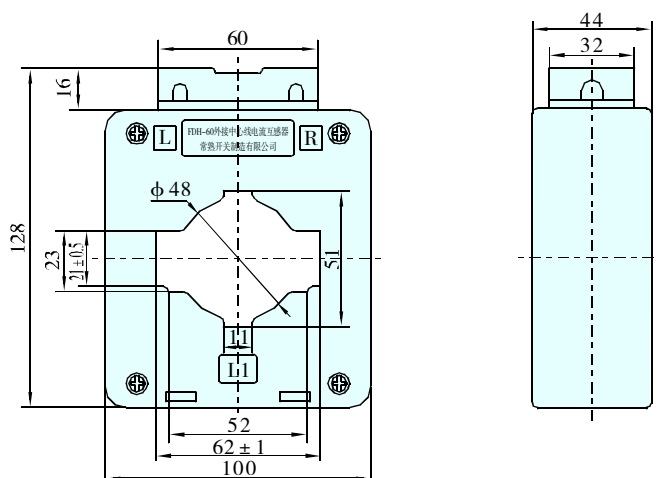


附件外形尺寸和安装尺寸 OUTLINE AND MOUNTING DIMENSIONS OF ACCESSORIES

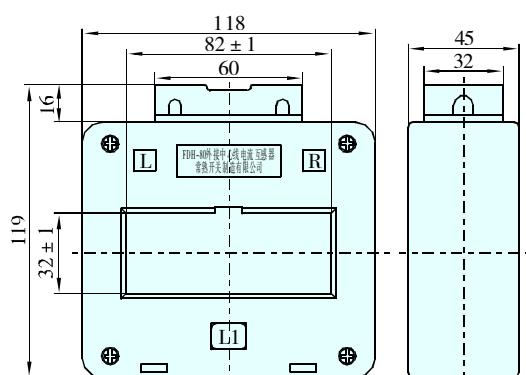
● 电压转换模块 Voltage changover module



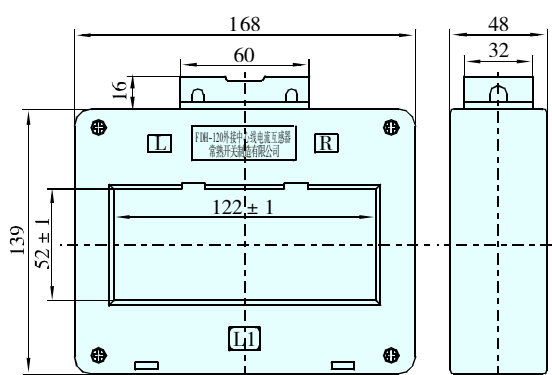
● 外接中性线互感器 Neutral transformer external connected



FDH-60
配CW2-1600 三极 For three poles



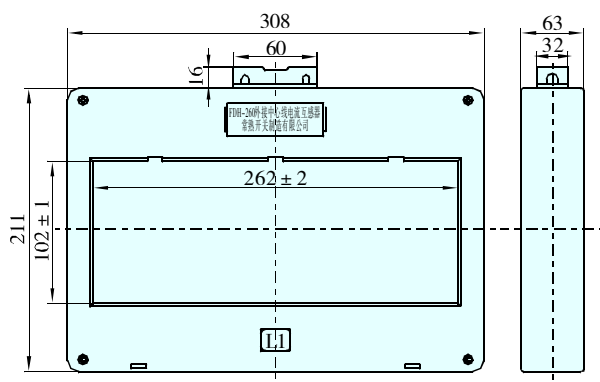
FDH-80
配CW2-2000/2500 三极 For three poles



FDH-120
配CW2-4000/6300 三极 For three poles



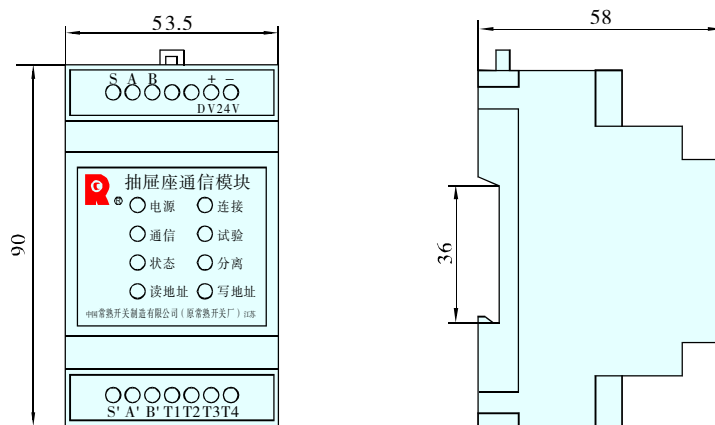
附件外形尺寸和安装尺寸 OUTLINE AND MOUNTING DIMENSIONS OF ACCESSORIES



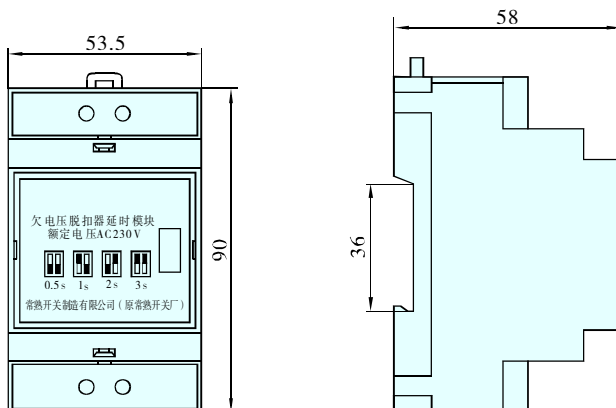
FDH-260
配CW2-4000/6300 三极 For three poles

注：当断路器为CW2-4000/6300三极时，用户可根据N极母线大小选择中性极互感器FDH-120或FDH-260。

● 抽屉座通信模块 Draw-out socket communication module



● CW2-1600断路器欠电压脱扣器延时模块 Delay module of under-voltage release of CW2-1600 breaker





自动电源转换系统外形尺寸及安装尺寸

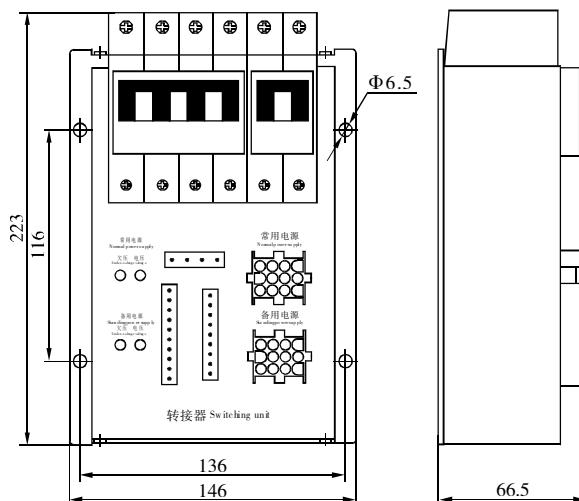
OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS
OF AUTOMATIC POWER SUPPLY SWITCH SYSTEM

● FZZ两路电源转换

FZZ two supply transfer

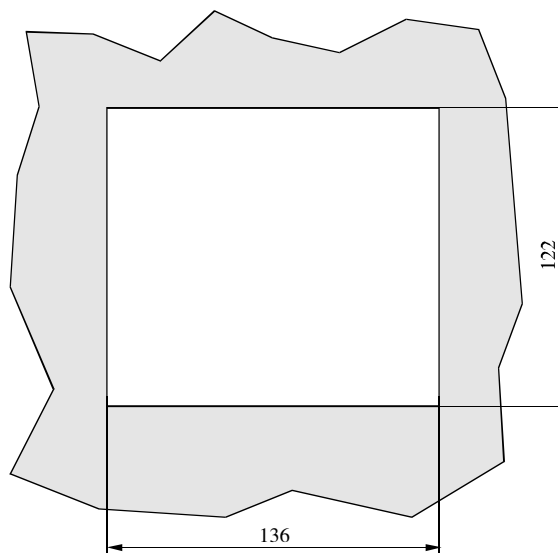
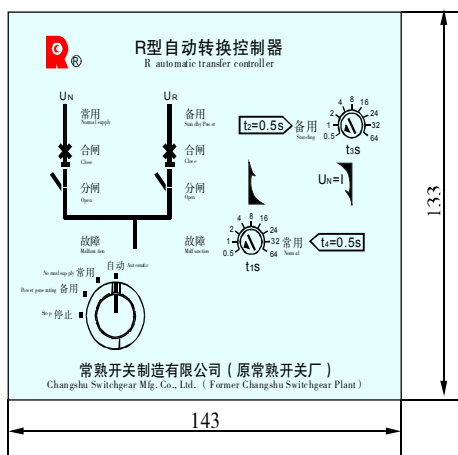
● 转接器

The switching unit



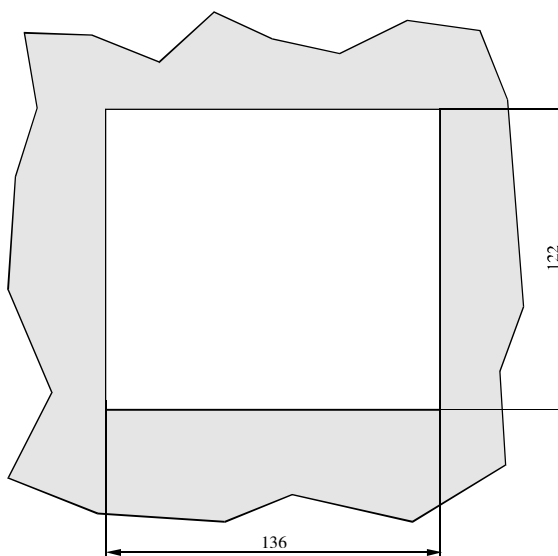
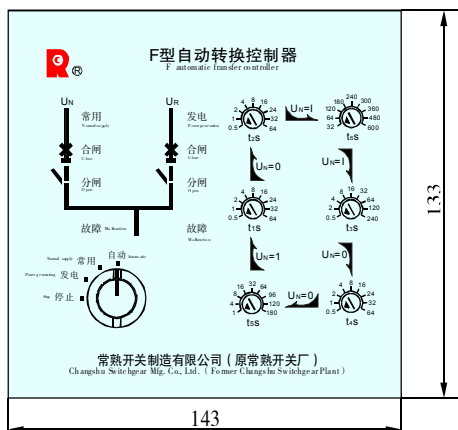
● R、S型自动转换控制器

Type R and S Automatic transfer controller



● F型自动转换控制器

Type F automatic transfer controller



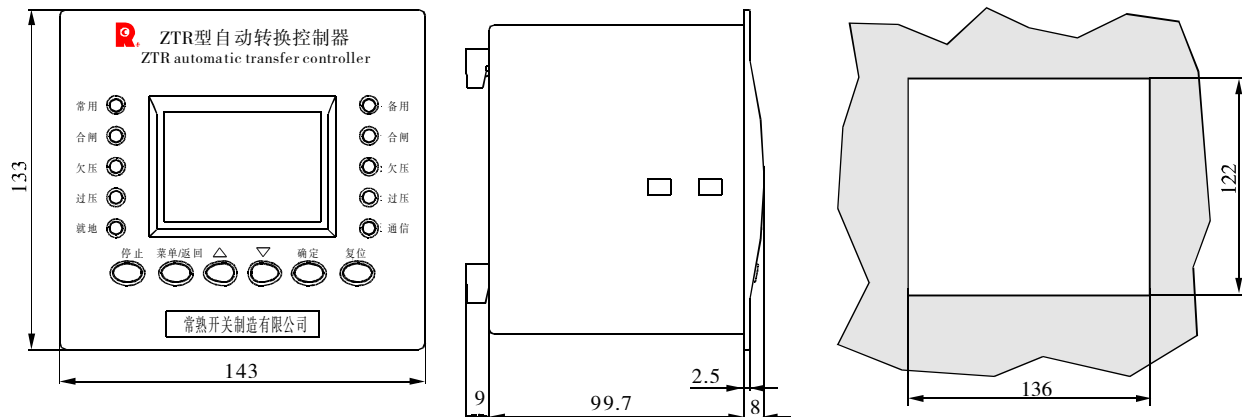


自动电源转换系统外形尺寸及安装尺寸

OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS
OF AUTOMATIC POWER SUPPLY SWITCH SYSTEM

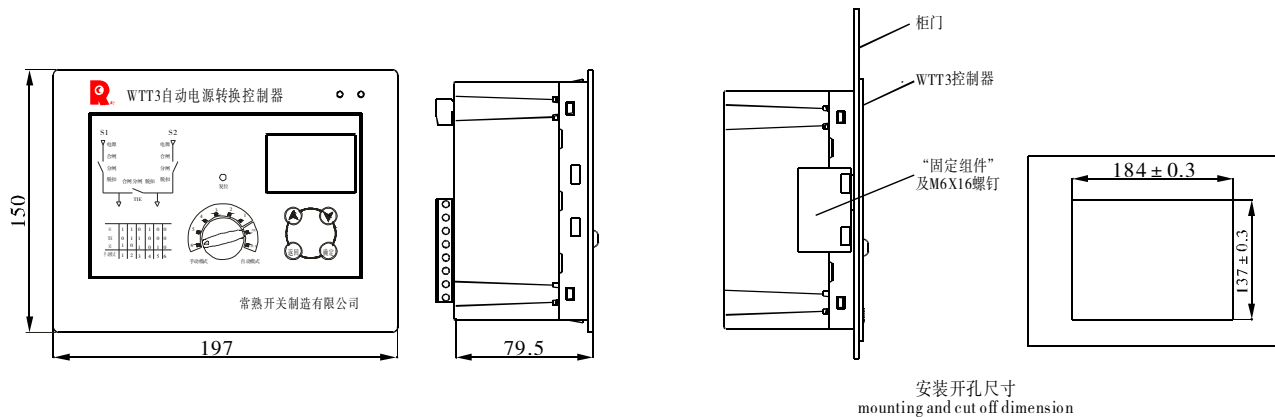
● ZR、ZS、ZF、ZTR、ZTS、ZTF自动转换控制器

Type ZR,ZS,ZF,ZTR,ZTS,ZTF automatic transfer controller

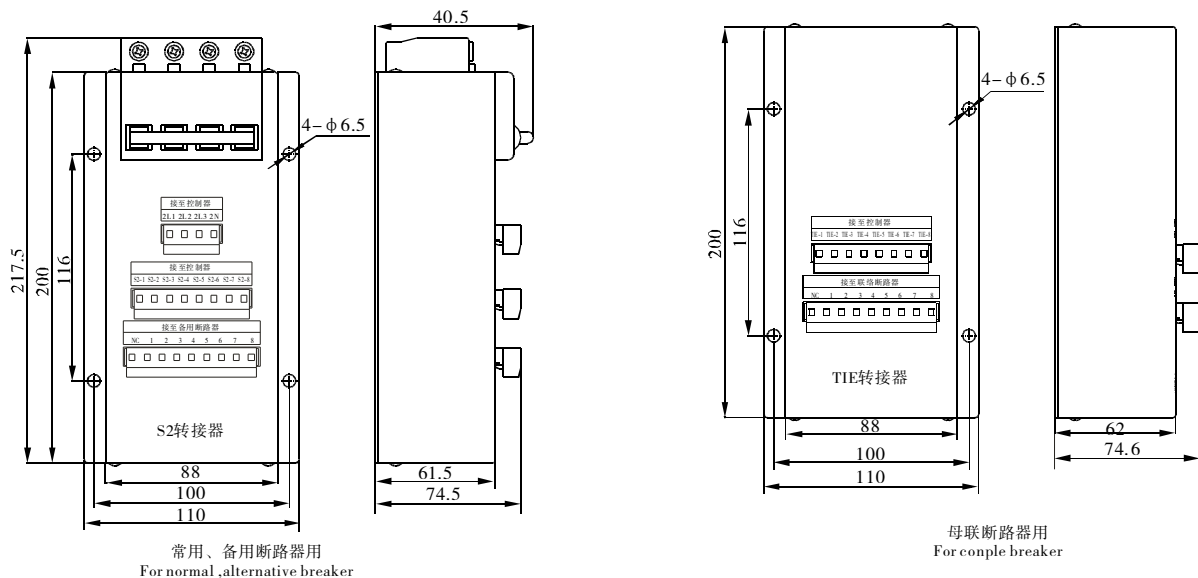


● 两进线一母联电源转换 FLZ two incoming one bus couple supply transfer

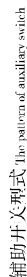
● WTT3/WTB3自动转换控制器 WTT3/WTB3 automatic transfer controller



● 转接器 Adapter



equipped with type L25, M25/MY25, M26/MY26, P25 and P26 intelligent controllers



主：最一部分は田口に接続。另外処理部元、分動原扣器、分動照扣器、合正申渡等種は由三不戸应分別落不同申源。Writing in the dashed line is given by users themselves. Power supply is different for different rated voltage of controller, Q, P, X etc.

特别注意：辅助电源电压为AC230V、400V时，需通过CW2-1600智能控制器专用电源模块转换成DC24V接入1、2端子；DC110V、220V时需通过直流电源模块转换成DC24V接入1、2端子。辅助电源电压为DC24V时，需通过DC24V电源模块由DC24V转DC24V接入1、2端子。

Special Note: When the voltage of auxiliary power supply is AC220V or AC400V, power supply module of CW2-1600 intelligent should be transformed into DC24V in connection with terminals of 1 and 2.

When the voltage of power supply is DC110V or DC220V, DC power supply module should be transformed into DC24V in connection with terminals of 1 and 2.

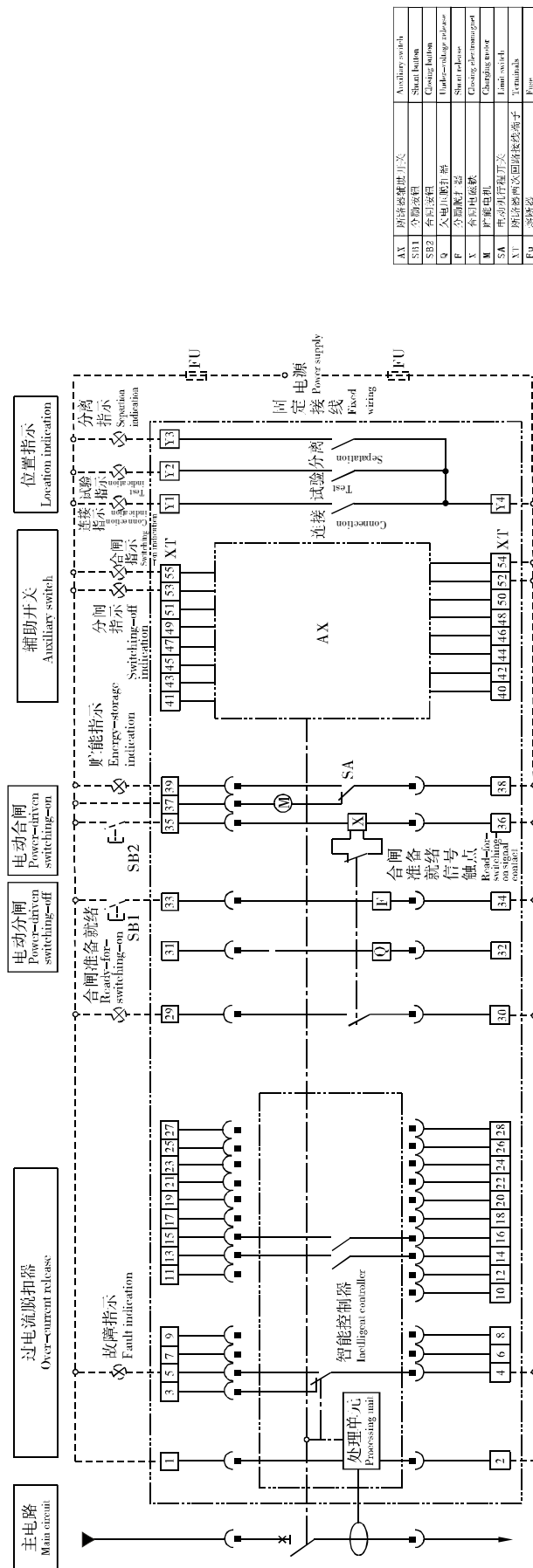
When the voltage of auxiliary power supply is DC24V, DC24V power supply module should be transformed into DC24V in connection with terminals of 1 and 2.

[illegible]

CW2-2000 ~ 6300断路器二次回路接线图 L25、M25/MY25、M26/MY26、P25、P26 型智能控制器
Wiring diagram of the secondary circuit of CW2-2000~6300 circuit breakers equipped with type L25,M25/MY25,M26/MY26,P25 and P26 intelligent controllers



断路器二次回路接线图 WIRING DIAGRAM OF SECONDARY CIRCUIT



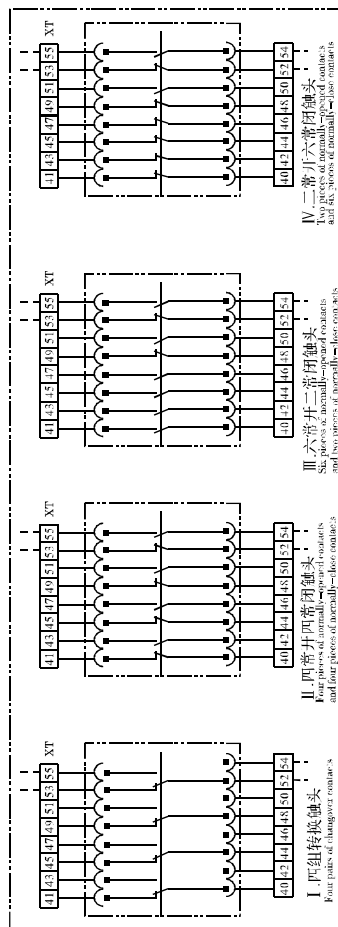
注：虚线部分为用户自接，户处注书“L”，欠电压脱扣器、分励脱扣器、合励脱扣器、电动机开关等应分别能不同电源。

Wiring in the dashed line is due to users themselves. Lower supply is different for different rated voltage of controller, Q, L, N, etc.

下表1、2为必备附件的规格、接线、O为选装附件的规格、接线、—为无该附件。

In the following table, O: standard configuration, O: optional configuration, —: none.

端子号	功能	备注	备注
1, 2	电源控制电源	Power supply for controller	Power supply for controller
3, 4, 5	过电压指示 (AC250V 1A)	Three-phase over-voltage indicator (AC250V 1A)	Three-phase over-voltage indicator (AC250V 1A)
6, 7	欠电压指示 (AC250V 1A)	Under-voltage indicator (AC250V 1A)	Under-voltage indicator (AC250V 1A)
13, 14	故障指示 (AC250V 1A)	Output of fault monitoring circuit 1	Output of fault monitoring circuit 1
15, 16	故障指示 (AC250V 1A)	Output of fault monitoring circuit 2	Output of fault monitoring circuit 2
17, 18, 19, 20	故障指示 (AC250V 1A)	Voltage detector (V) in phase A, B or phase C, D or phase N	Voltage detector (V) in phase A, B or phase C, D or phase N
21, 22	ZS信号输入	ZS signal input	ZS signal input
23, 24	合闸信号输入	Signal output of the self-closing circuit	Signal output of the self-closing circuit
25, 26	分闸信号输入	Signal output of the self-opening circuit	Signal output of the self-opening circuit
31, 32	欠电压指示 (AC250V 1A)	Under-voltage indicator (AC250V 1A)	Under-voltage indicator (AC250V 1A)
33, 34	分励脱扣器	Connect with shunt release	Connect with shunt release
35, 36	合励脱扣器	Connect with closing electromagnet	Connect with closing electromagnet
37, 38, 39	合闸/分闸按钮	合闸/分闸按钮 (手动/自动)	合闸/分闸按钮 (手动/自动)
40~45	位置指示 (AC250V 1A)	位置指示 (AC250V 1A)	位置指示 (AC250V 1A)
Y1, Y2	故障指示 (AC250V 1A)	故障指示 (AC250V 1A)	故障指示 (AC250V 1A)
Y3, Y4	故障指示 (AC250V 1A)	故障指示 (AC250V 1A)	故障指示 (AC250V 1A)



特别注意：辅助电源电压为DC110V、220V时需通过直流电源模块转换成DC24V接入1、2端子。

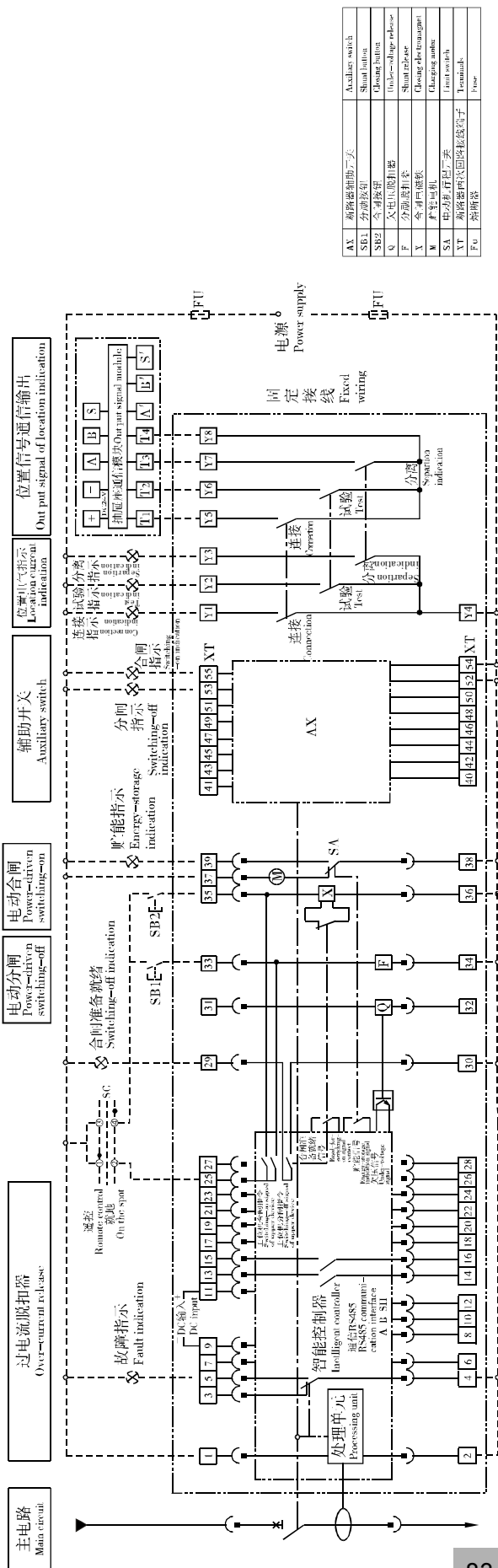
Special Note: When the voltage of power supply is DC110V or DC220V, DC power supply module should be transformed into DC24V in connection with terminals of 1 and 2.



WIRING DIAGRAM OF SECONDARY CIRCUIT

Wiring diagram of the secondary circuit of CW2-2000~6300 circuit breakers

equipped with type H26/HY26, P25 and P26 communicate intelligent controllers



注：虚线部分由用户连接。若处理单元、欠电压脱扣器、分励脱扣器、合闸电磁铁等额定电压不同应分别接不同电源。

Wiring in the dashed line is done by users themselves. Power supply is different for different rated voltage of controller, Q, FX etc

下表中, ✓为必备附件的功能接线; ○为选择附件的功能接线。

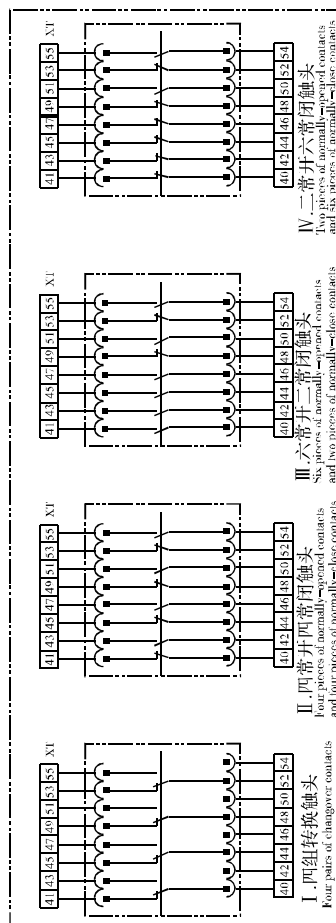
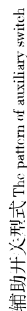
In the following table, $\checkmark$: standard configuration, $\bigcirc$: optional configurations, $\times$: none.

[illegible]

注：通信附件含闸准备就绪信号、欠电压信号、故障脱扣信号可洗。

特别注意：辅助电源电压为DC110V、220V时需通过直流电源模块转换成DC24V接入1、2端子。

Special Note: When the voltage of power supply is DC110V or DC220V, DC power supply module should be transformed into DC24V in connection with terminals of 1 and 2.



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常用-备用自动电源转换系统电气线路图 (R、S型自动转换控制器)

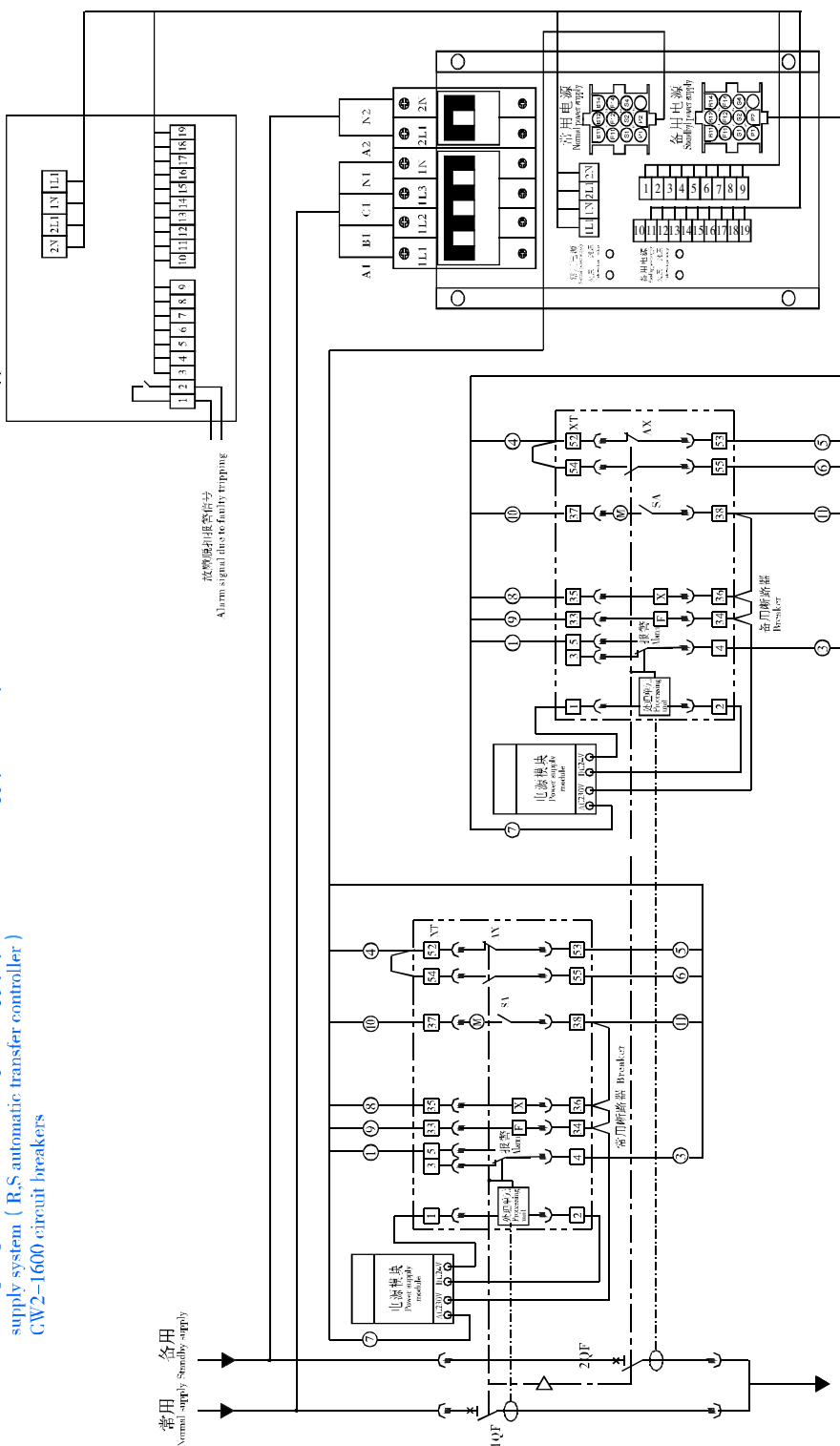
CW2-1600断路器

Wiring diagram of the automatic power supply system for normal supply to standby

supply system (R,S automatic transfer controller)

CW2-1600 circuit breakers

R型, S型自动转换控制器
Type: R and S automatic controllers



注: 1. 接线图指示为回路无电, 断路器断开并处于连接位置, 机构已储能。

2. 当采用自动电源转换系统供电时, 断路器智能控制器电压为DC24V, 分励脱扣器、合闸电磁铁、电动操作机构电压为AC230V。

Note: 1. As shown in the above diagram the breaker is open and connecting, it has been charged and there is no current in the loop.

2. When ATS is used DC24V voltage for intelligent controller, AC230V voltage for shunt release, closing magnet and automatic operation mechanism.

AX-断路器辅助开关

F-断路器分励脱扣器

X-断路器合闸电磁铁

M-断路器储能电机

SA-断路器储能电动机行程开关

XT-断路器二次回路接线端子

AX-Auxiliary switch

F-Shunt release

X-The electro-magnet to close the breaker

M-Charging motor

SA-Overtravel-limit switch for the charging motor of the breaker

XT-Terminals for the secondary circuit of the breaker



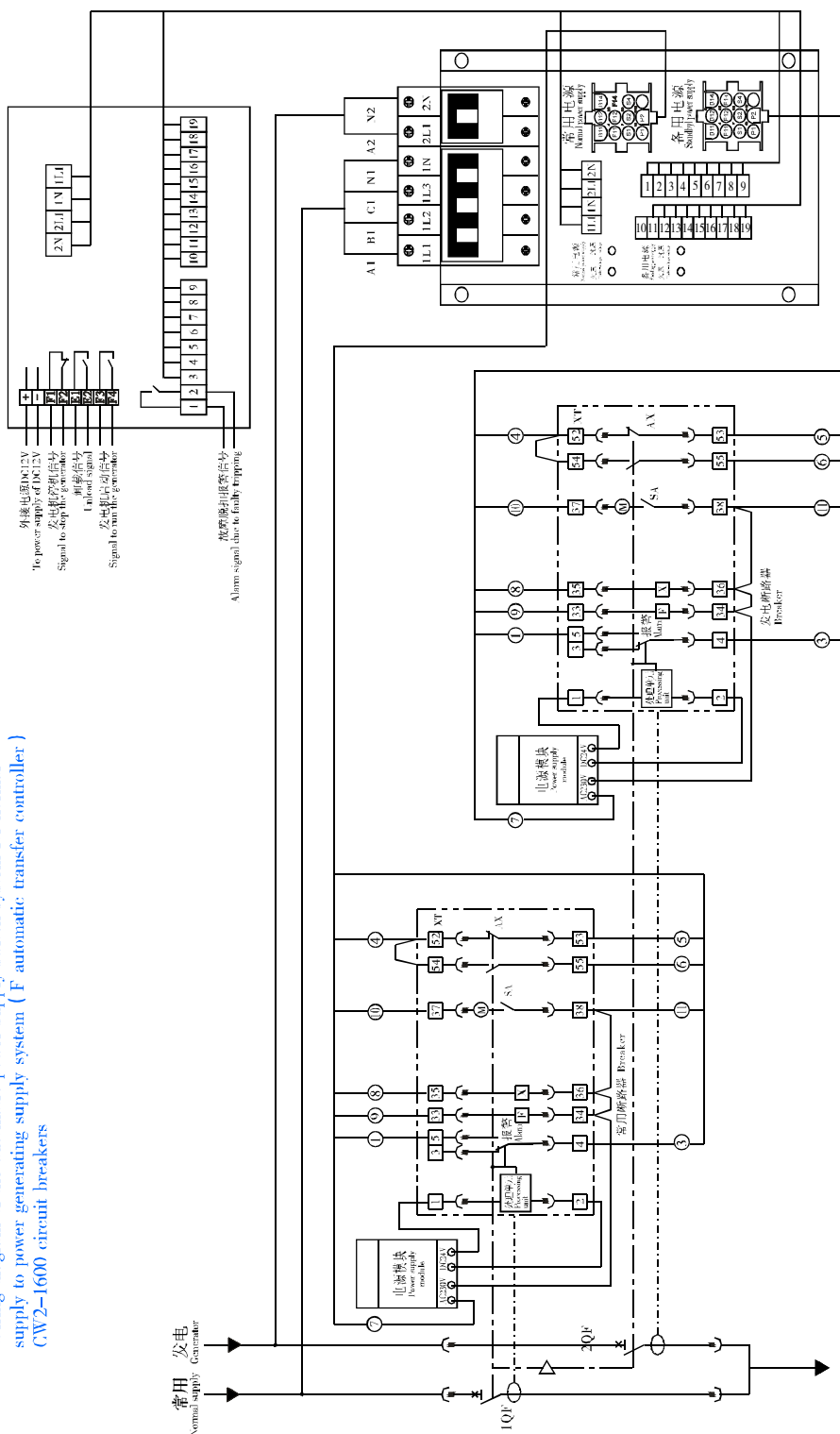
常用-发电自动电源转换系统电气线路图 (F型自动转换控制器)

CW2-1600 断路器

Wiring diagram of the automatic power supply switch system for normal supply to power generating supply system (F automatic transfer controller)

CW2-1600 circuit breakers

F型自动转换控制器
Type F automatic controllers



注: 1.接线图指示为回路无电, 断路器断开并处于连接位置, 机构已储能。

2.当采用自动电源转换系统供电时, 断路器智能控制器电压为DC24V, 分励脱扣器、合闸电磁铁、电动机操作机构电压为AC230V。

Note: 1.As shown in the above diagram the breaker is open and connecting it has been charged and there is no current in the loop.

2. When ATS is used DC24V voltage for intelligent controller, AC230V voltage for shunt release, closing magnet and automatic operation mechanism.

AX-断路器辅助开关

F-断路器分励脱扣器

X-断路器合闸电磁铁

M-断路器储能电机

SA-断路器储能电动机行程开关

XT-断路器二次回路接线端子

AX-Auxiliary switch

F-Shunt release

X-the electro-magnet to close the breaker

M-Charging motor

SA-Overtravel-limit switch for the charging motor of the breaker

XT- Terminals for the secondary circuit of the breaker



常用-发电自动电源转换系统电气线路图 (ZF型自动转换控制器)

CW2-1600断路器

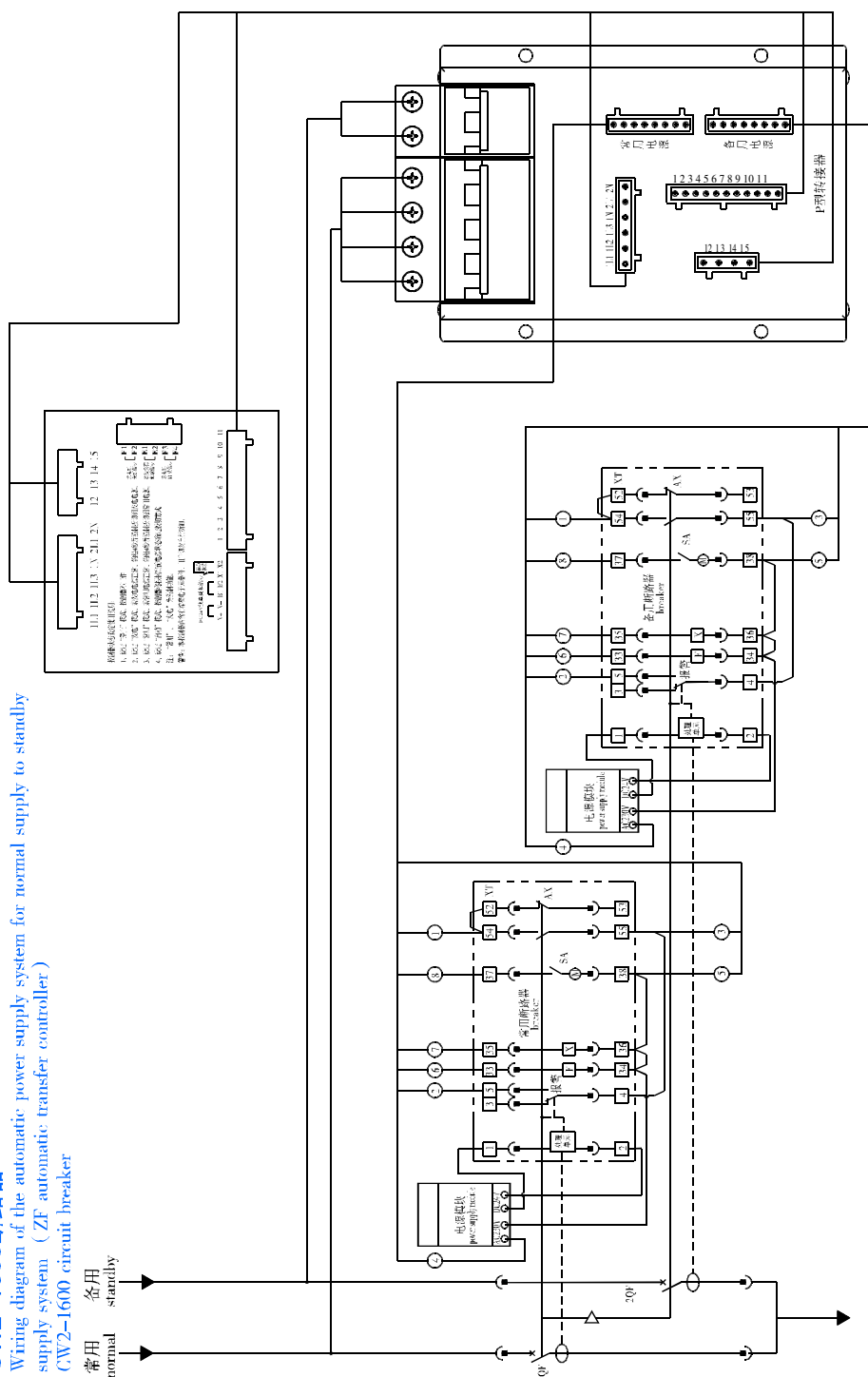
Wiring diagram of the automatic power supply system for normal supply to standby

supply system (ZF automatic transfer controller)

CW2-1600 circuit breaker

常用
normal

备用
standby



注: 1.接线图指示为回路无电, 断路器断开并处于连接位置, 机构已储能。

2.当采用自动电源转换系统供电时, 断路器智能控制器电压为DC24V, 分励脱扣器、合闸电磁铁、电动操作机构电压为AC230V。

Note: 1. As shown in the above diagram the breaker is open and connecting, it has been charged and there is no current in the loop.

2. When ATS is used for intelligent controller, AC230V voltage for shunt release, closing magnet and automatic operation mechanism.

- AX-断路器辅助开关
- F-断路器分励脱扣器
- X-断路器合闸电磁铁
- M-断路器储能电机
- SA-断路器储能电动机行程开关
- XT-断路器二次回路接线端子

- AX-Auxiliary switch
- F-Shunt release
- X-The electro-magnet to close the breaker
- M-Charging motor
- SA-Overtravel-limit switch for the charging motor of the breaker
- XT-Terminals for the secondary circuit of the breaker

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常用-备用自动电源转换系统电气线路图 (ZTF型自动转换控制器)

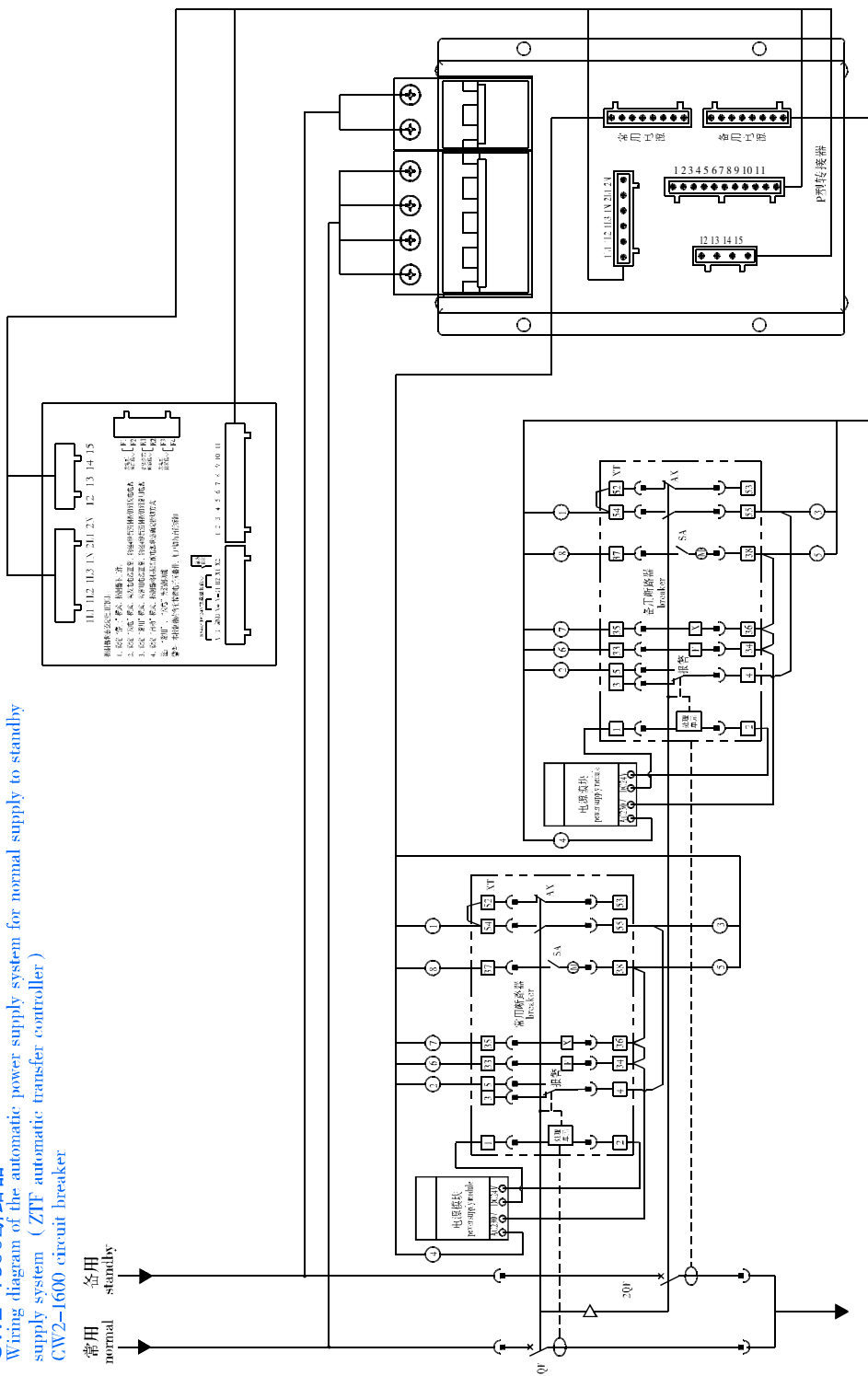
CW2-1600断路器

Wiring diagram of the automatic power supply system for normal supply to standby supply system (ZTF automatic transfer controller)

CW2-1600 circuit breaker

常用
normal

备用
standby



注: 1.接线图指示为回路无电, 断路器断开并处于连接位置, 机构已储能。

2.当采用自动电源转换系统供电时, 断路器智能控制器电压为DC24V, 分励脱扣器、合闸电磁铁、电动机机构电压为AC230V。

Note: 1.As shown in the above diagram the breaker is open and connecting, it has been charged and there is no current in the loop.

2.When ATS is used

AX-断路器辅助开关

F-断路器分励脱扣器

X-断路器合闸电磁铁

M-断路器储能电机

SA-断路器储能电动机行程开关

XT-断路器二次回路接线端子

AX-Auxiliary switch

F-Shunt release

X-The electro-magnet to close the breaker

M-Charging motor

SA-Overtravel-limit switch for the charging motor of the breaker

XT-Terminals for the secondary circuit of the breaker

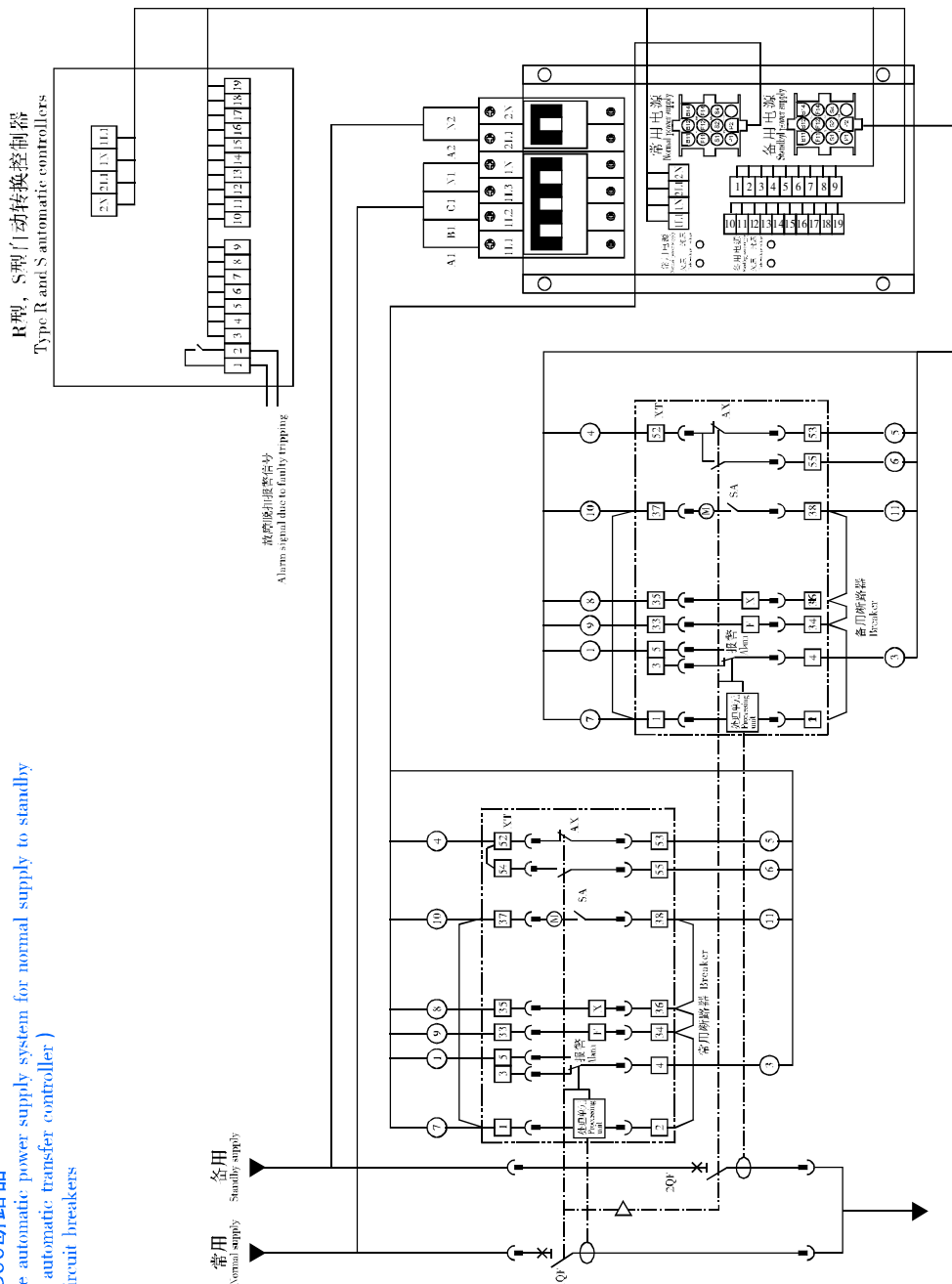


常用-备用自动电源转换系统电气线路图 (R、S型自动转换控制器)

CW2-2000 ~ 6300 断路器

Wiring diagram of the automatic power supply system for normal supply to standby supply system (R,S automatic transfer controller)

CW2-2000 ~ 6300 circuit breakers



注: 1. 接线图指示为回路无电, 断路器断开并处于连接位置, 机构已储能。

2. 当采用自动电源转换系统供电时, 断路器智能控制器、分励脱扣器、合闸电磁铁、电动机操作机构电压为AC230V。

Note: 1. As shown in the above diagram the breaker is open and connecting, it has been charged and there is no current in the loop.

2. When ATS is used all voltage ratings are AC230V for intelligent controller, shunt release, closing magnet and automatic operation mechanism.

AX-断路器辅助开关

F-断路器分励脱扣器

X-断路器合闸电磁铁

M-断路器储能电机

SA-断路器储能电动机行程开关

XT-断路器二次回路接线端子

AX-Auxiliary switch

F-Shunt release

X-The electro-magnet to close the breaker

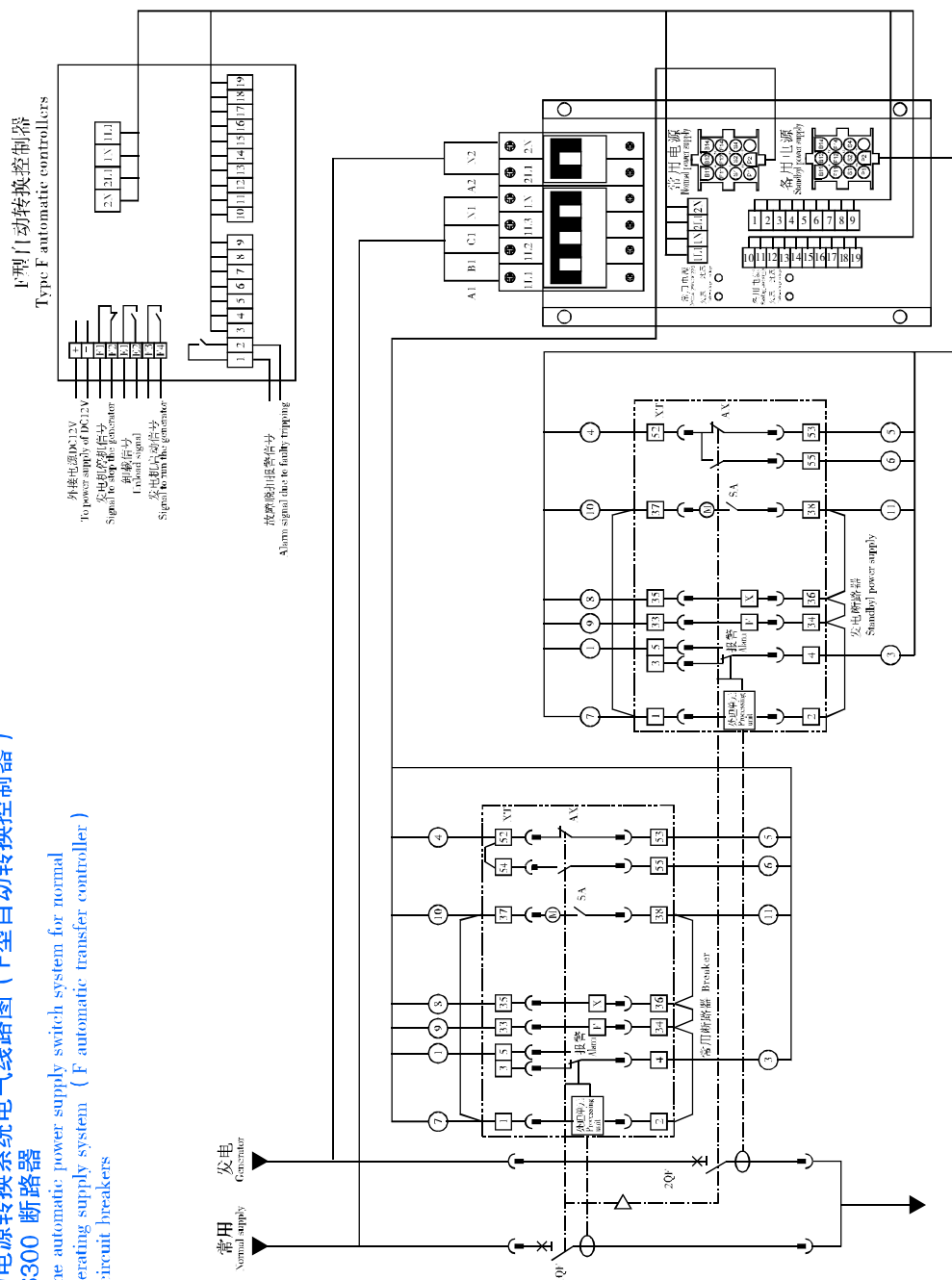
M-Charging motor

SA-Overtravel-limit switch for the charging motor of the breaker

XT-Terminals for the secondary circuit of the breaker



常用-发电自动电源转换系统电气线路图 (F型自动转换控制器)
CW2-2000 ~ 6300 断路器
Wiring diagram of the automatic power supply switch system for normal
supply to power generating supply system (F automatic transfer controller)
CW2-2000 ~ 6300 circuit breakers



注：1.接线图指示为回路无电，断路器断开并处于连接位置，机构已储能。
2.当采用自动电源转换系统供电时，断路器智能控制器、分励脱扣器、合闸电磁铁、电动机操作机构电压为AC230V。

Note: 1.As shown in the above diagram, the breaker is open and connecting, it has been charged and there is no current in the loop.
2. When AIS is used all voltage ratings are AC230V for intelligent controller, shunt magnet and automatic operation mechanism.

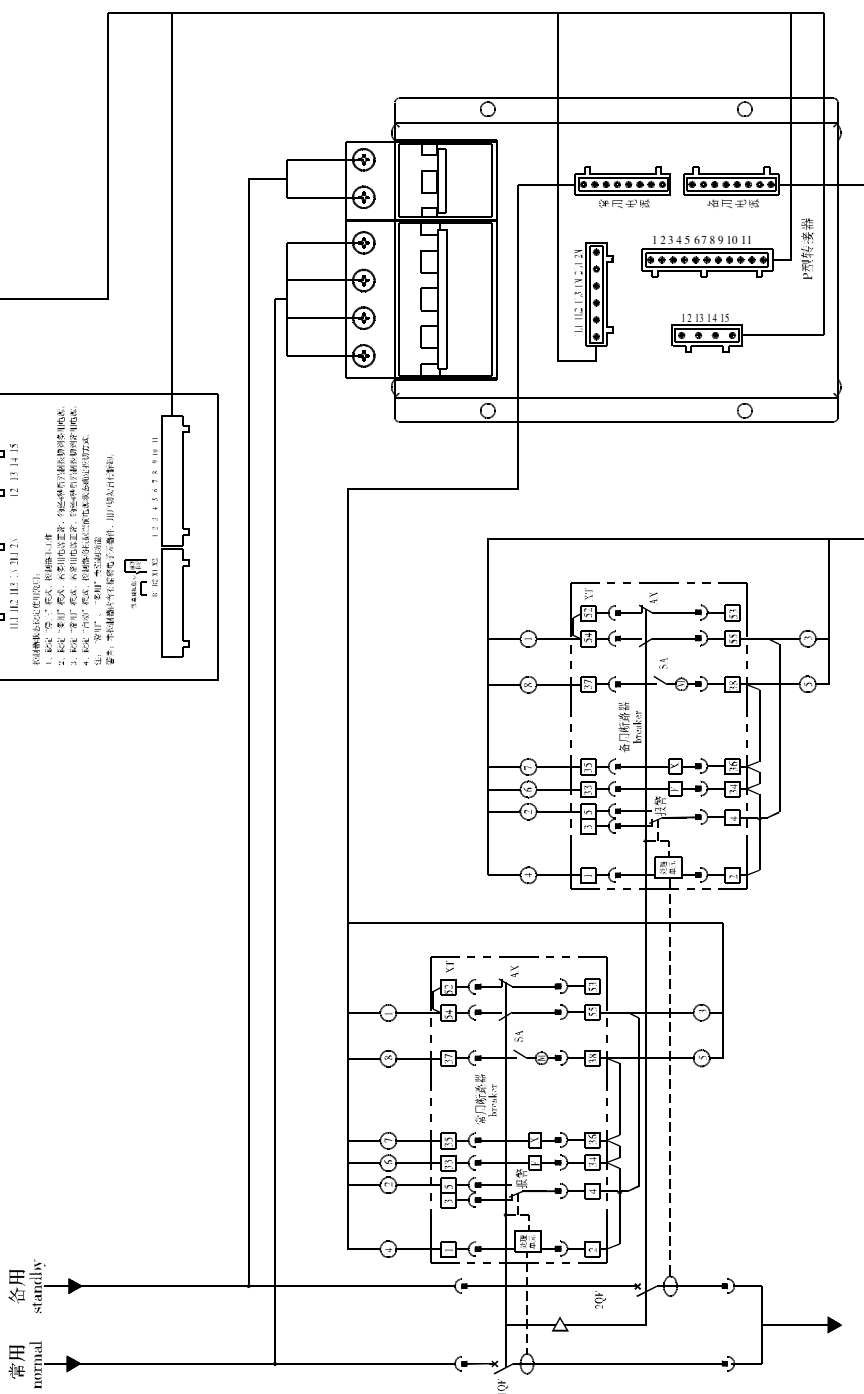
- AX-断路器辅助开关
- F-断路器分励脱扣器
- X-断路器合闸电磁铁
- M-断路器储能电机
- SA-断路器储能电动机行程开关
- XT-断路器二次回路接线端子
- AX-Auxiliary switch
- F-Shunt release
- X-The electro-magnet to close the breaker
- M-Charging motor
- SA-Overtravel-limit switch for the charging motor of the breaker
- XT-Terminals for the secondary circuit of the breaker



常用-备用自动电源转换系统电气线路图 (ZR型, ZS型自动转换控制器)
CW2-2000~CW2-6300断路器

Wiring diagram of the automatic power supply system for normal supply to standby
supply system (ZR/ZS automatic transfer controller)

CW2-2000~CW2-6300 circuit breaker



注: 1. 接线图指示为回路无电, 断路器断开并处于连接位置, 机构已储能。
2. 当采用自动电源转换系统供电时, 断路器智能控制器、分励脱扣器、合闸电磁铁、电动机磁铁、电动机行程开关、电动机二次回路接线端子。
Note: 1. As shown in the above diagram the breaker is open and connecting it has been charged and there is no current in the loop.
2. When AX is used all voltage are AC230V voltage for intelligent controller shunt release, closing magnet and automatic operation mechanism.

- AX-断路器辅助开关
- F-断路器分励脱扣器
- X-断路器合闸电磁铁
- M-断路器储能电机
- SA-断路器储能电动机行程开关
- XT-断路器二次回路接线端子
- AX-Auxiliary switch
- F-Shunt release
- X-The electro-magnet to close the breaker
- M-Charging motor
- SA-Overtravel-limit switch for the charging motor of the breaker
- XT-Terminals for the secondary circuit of the breaker



常用-备用自动电源转换系统电气线路图 (ZF型自动转换控制器)

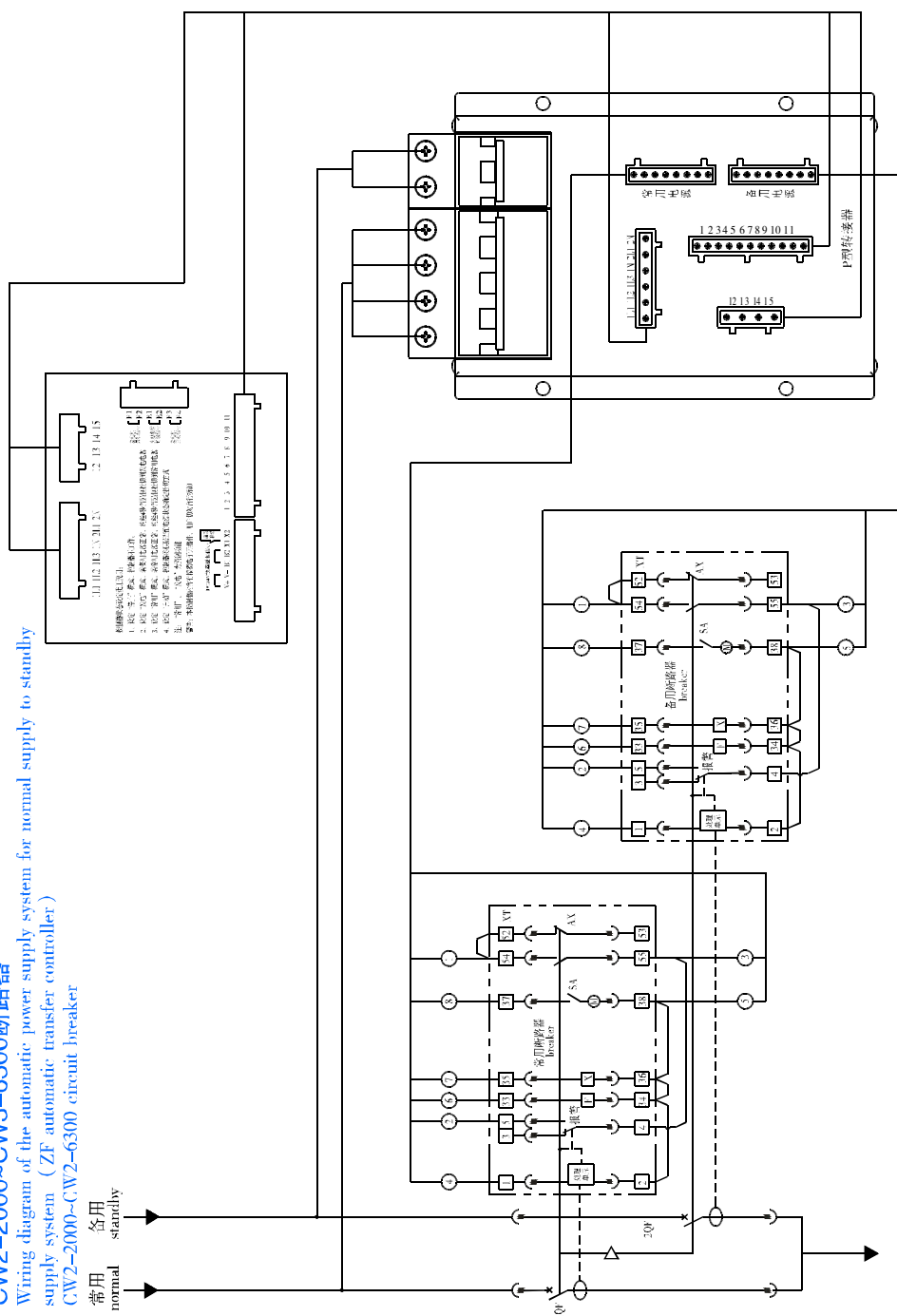
CW2-2000~CW3-6300断路器

Wiring diagram of the automatic power supply system for normal supply to standby supply system (ZF automatic transfer controller)

CW2-2000~CW2-6300 circuit breaker

常用
normal

备用
standby



注: 1.接线图指示为回路无电, 断路器断开并处于连接位置, 机构已储能。

2.当采用自动电源转换系统供电时, 断路器智能控制器, 分励脱扣器、合闸电磁铁、电动操作机构电压为AC230V。

Note: 1.As shown in the above diagram the breaker is open and connecting it has been charged and there is no current in the loop.

2. When ATS is used all voltage are AC230V voltage for intelligent controller shunt release, closing magnet and automatic operation mechanism.

AX-断路器辅助开关

AX-Auxiliary switch

F-断路器分励脱扣器

F-Shunt release

X-断路器合闸电磁铁

X-The electro-magnet to close the breaker

M-断路器储能电机

M-Charging motor

SA-断路器储能电动机行程开关

SA-Overtravel-limit switch for the charging motor of the breaker

XT-断路器二次回路接线端子

XT-Terminals for the secondary circuit of the breaker

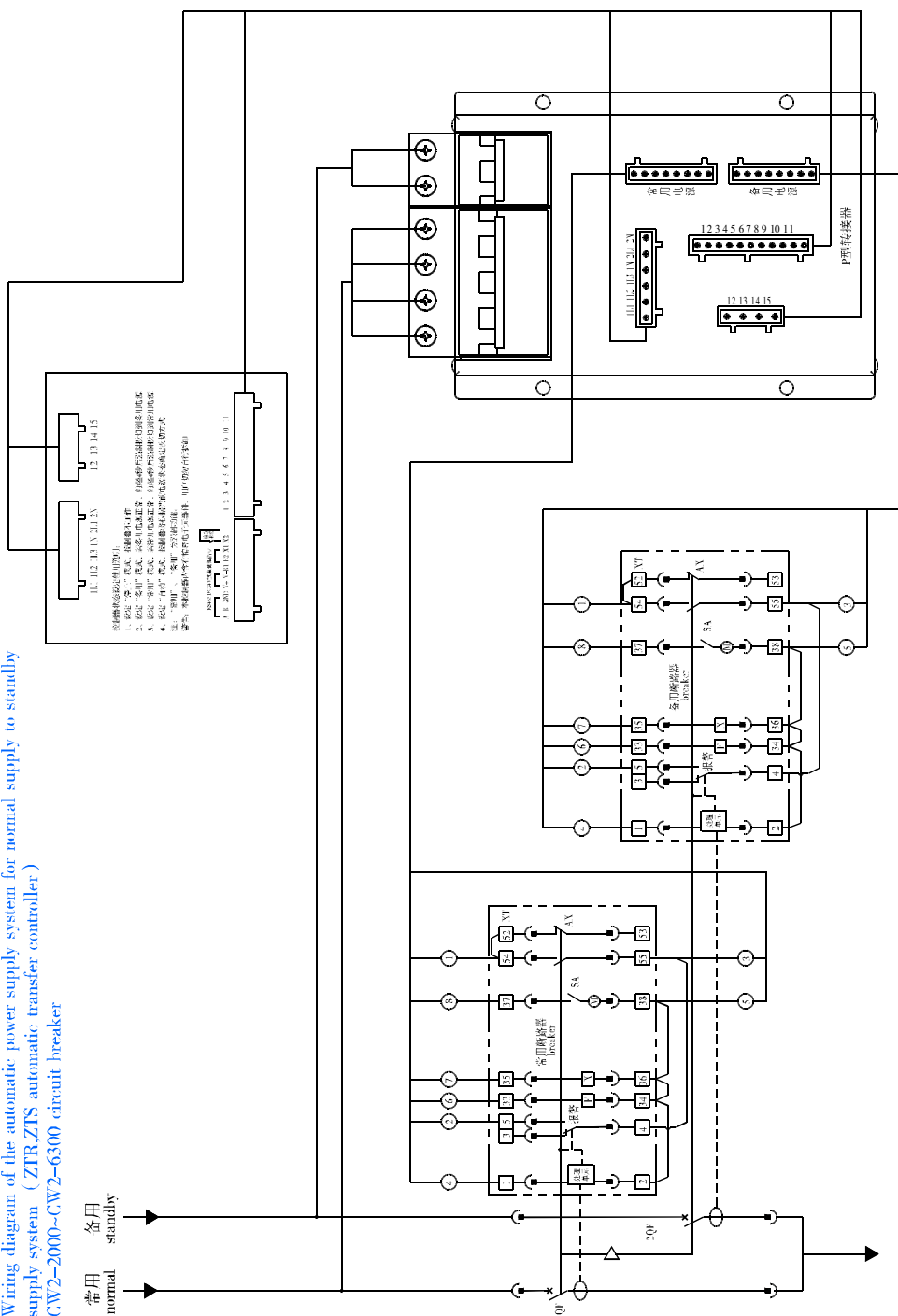


常用-备用自动电源转换系统电气线路图 (ZTR型, ZTS型自动转换控制器)

CW2-2000~CW2-6300断路器

Wiring diagram of the automatic power supply system for normal supply to standby supply system (ZTR,ZTS automatic transfer controller)

CW2-2000~CW2-6300 circuit breaker



注: 1.接线图指示为回路无电, 断路器断开并处于连接位置, 机构已储能。

2.当采用自动电源转换系统供电时, 断路器智能控制器、分励脱扣器、合闸电磁铁、电动操作机构电压为AC230V。

Note: 1.As shown in the above diagram the breaker is open and connecting, it has been charged and there is no current in the loop.

2. When ATS is used all voltage are AC230V voltage for intelligent controller shunt release, closing magnet and automatic operation mechanism.

AX-断路器辅助开关

F-断路器分励脱扣器

X-断路器合闸电磁铁

M-断路器储能电机

SA-断路器智能电动机行程开关

XT-断路器二次回路接线端子

AX-Auxiliary switch

F-Shunt release

X-The electro-magnet to close the breaker

M-Charging motor

SA-Overtravel-limit switch for the charging motor of the breaker

XT-Terminals for the secondary circuit of the breaker



常用-备用自动电源转换系统电气线路图 (ZTF型自动转换控制器)

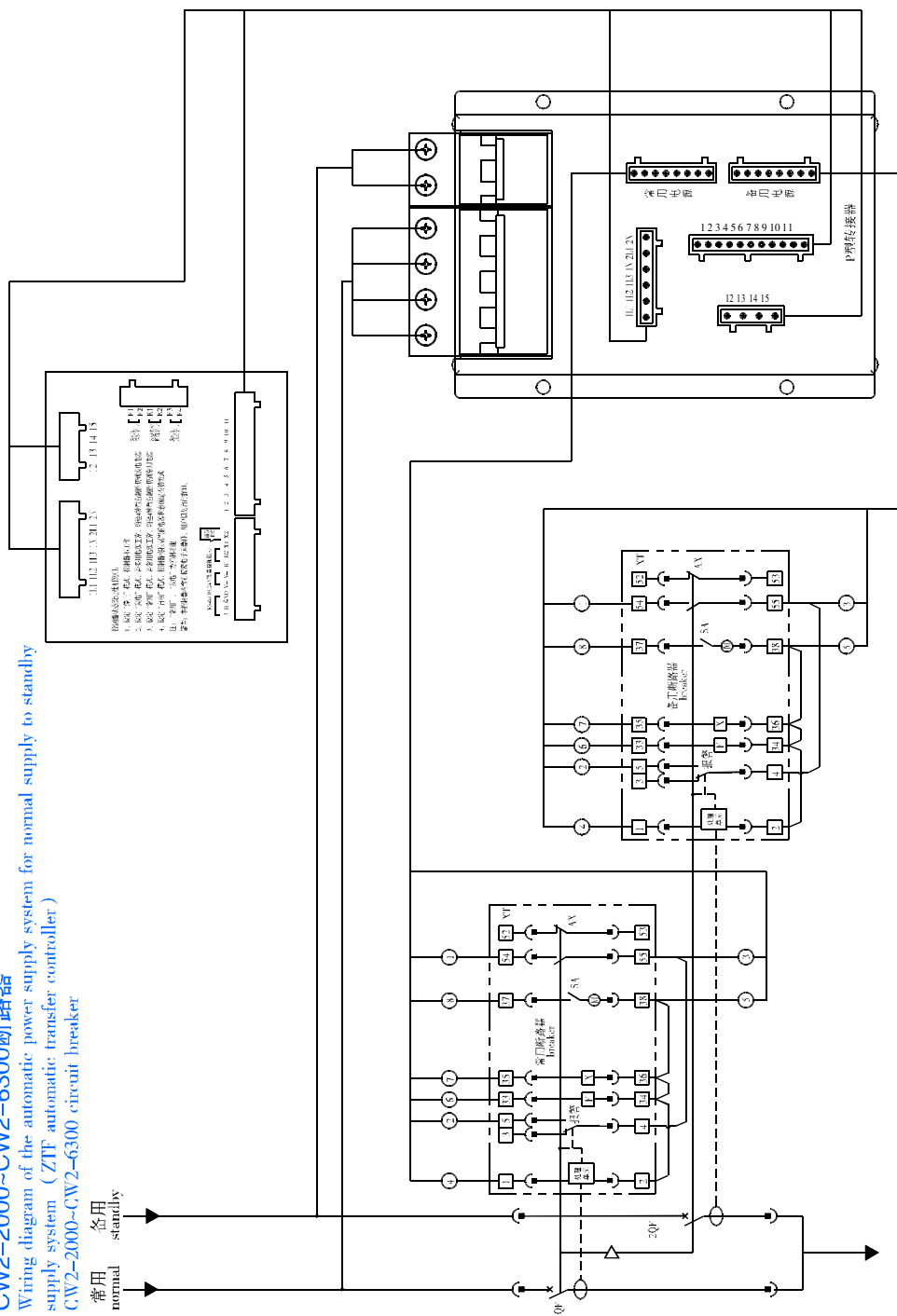
CW2-2000~CW2-6300断路器

Wiring diagram of the automatic power supply system for normal supply to standby

supply system (ZTF automatic transfer controller)

CW2-2000~CW2-6300 circuit breaker

常用 备用
normal standby



注: 1.接线图指示为回路无电, 断路器断开并处于连接位置, 机构已储能。

2.当采用自动电源转换系统供电时, 断路器智能控制器、分励脱扣器、合闸电磁铁、电动操作机构电压为AC230V。

Note: 1. As shown in the above diagram the breaker is open and connecting, it has been charged and there is no current in the loop.

2. When ATS is used all voltage are AC230V voltage for intelligent controller shut release, closing magnet and automatic operation mechanism.

AX-断路器辅助开关

F-断路器分励脱扣器

X-断路器合闸电磁铁

M-断路器储能电机

SA-断路器储能电动机行程开关

XT-断路器二次回路接线端子

AX- Auxiliary switch

F- Shunt release

X- The electro-magnet to close the breaker

M- Charging motor

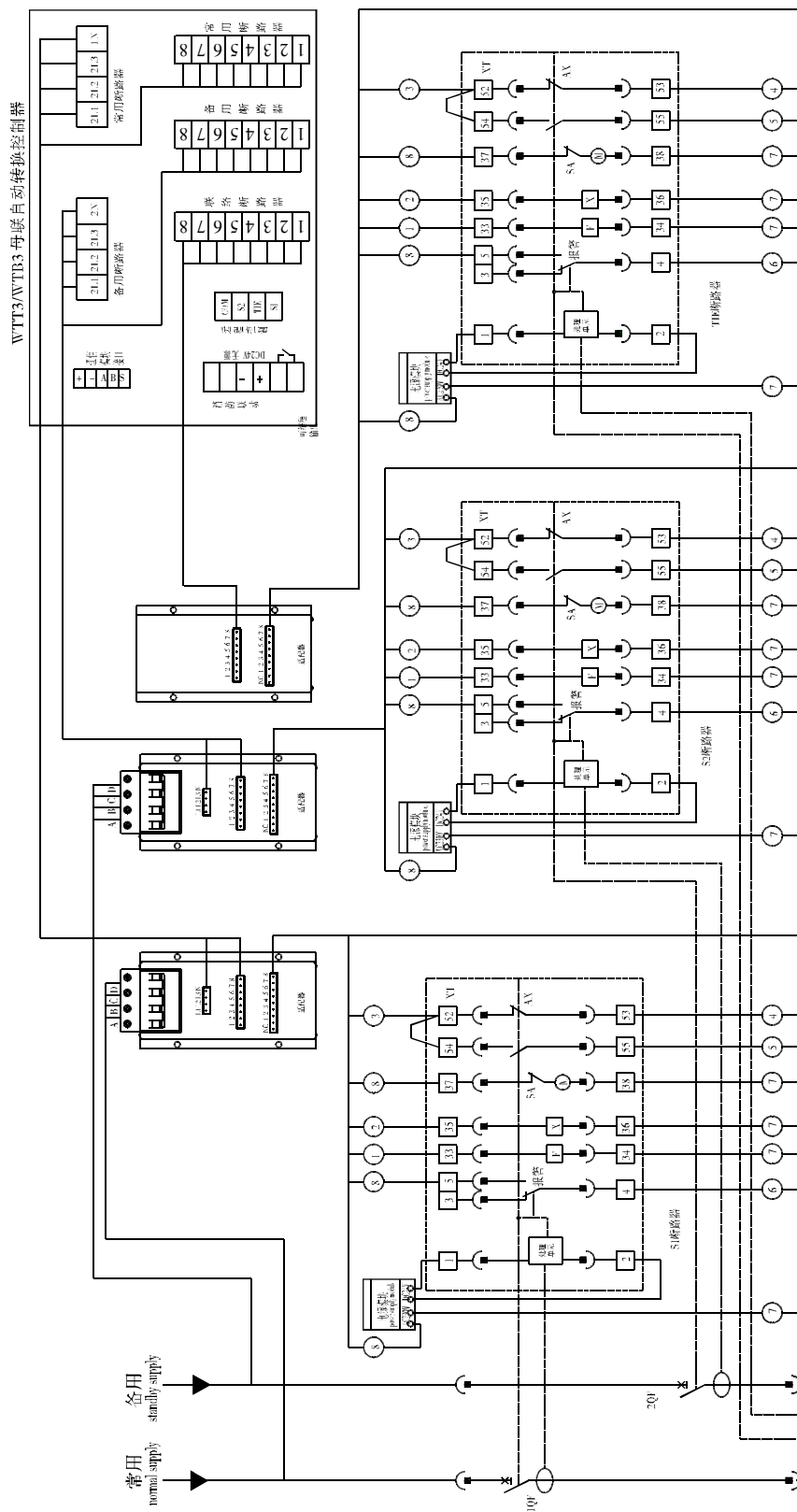
SA- Overtravel-limit switch for the charging motor of the breaker

XT- Terminals for the secondary circuit of the breaker



两进线-母联自动电源转换系统电气线路图
CW2-1600断路器

Wiring diagram of the automatic power supply system for two incoming one couple



注: 1.接线图指示为回路无电, 断路器断开并处于连接位置, 机构已储能。
2.当采用自动电源转换系统供电时, 断路器智能控制器电压为DC24V, 分励脱扣器、合闸电磁铁、电动操作机构电压为AC230V。
Note: 1. As shown in the above diagram the breaker is open and connecting, it has been charged and there is no current in the loop.
2. When ATS is used DC24V voltage for intelligent controller, AC230V voltage for shunt release, closing magnet and automatic operation mechanism.

- AX-断路器辅助开关
- F-断路器分励脱扣器
- X-断路器合闸电磁铁
- M-断路器储能电机
- SA-断路器储能电动机行程开关
- XT-断路器二次回路接线端子
- AX-Auxiliary switch
- F-Shunt release
- X-The electro-magnet to close the breaker
- M-Charging motor
- SA-Overtravel-limit switch for the charging motor of the breaker
- XT-Terminals for the secondary circuit of the breaker

Wiring diagram of the automatic power supply system for two incoming one couple
CW2-2000-6300 circuit breaker





本公司结合开发智能电器、成套设备和控制系统的经验，推出了三位一体的Riyea-PowerNet配电监控系统，满足了智能电网对用户端系统智能控制的要求。这套系统以高性能的可通信智能配电元件为基础，将现场的低压配电系统和计算机网络紧密结合，集遥测、遥信、遥控、遥调等功能于一体，是传统配电系统的理想升级。

监控系统除支持本公司所有的可通信元件外，也支持各种不同厂商的具有标准协议的可通信元件，支持包括Modbus、Modbus TCP、Profibus-DP、DeviceNet等各种标准通信总线，还提供简单配电、网络型配电、无线型配电、混合型配电系统等各种连接方式，是功能强大、开放灵活的监控系统。用户可根据实际需要建立适合自己的完善的监控系统，实现远程掌控整个配电系统的运行情况。

监控系统主要包括可靠的系统控制软件、丰富的通信网络和高性能的各类可通信配电元件：系统控制软件实现系统管理功能；通信网络提供现场智能元件和上位监控主机间的连接，进行数据传输，协议的转换；可通信配电元件负责采集现场信息和现场控制，通过通信接口提供给监控系统进行远程管理。

● 断路器通信功能

可通信型CW2智能型万能式断路器采用标准Modbus-RTU协议，通过RS485接口与上位机连接，用户可实现对断路器远距离的遥控、遥信、遥调、遥测功能。

可通信数据：

遥测：实时电流、电压、基波电流、基波电压、功率、功率因数、电能、频率、谐波电流电压含有率、谐波电流电压总畸变率数据。

遥信：报警、故障脱扣、欠电压、断路器本体位置、合闸准备就绪、分合闸位置等断路器状态数据。

遥控：远程分合断路器。

遥调：远程保护参数读取和修改。

通信参数：

波特率 19200 bps（支持 1200、2400、4800、9600、38400bps）。

通信地址：1~247。

帧格式：1位起始位，8位数据，2位停止位，偶校验（支持无校验、奇校验）。

网络特性：

通信线路为双绞屏蔽线。

一条线路可同时连接32台可通信断路器。

最大接线距离1200米，可通过加装中继器延长通信距离。

On the experience of developing intelligent equipment, complete equipment and control system, we release the Trinity Riyea-PowerNet power distribution monitoring system to fulfill the requirements of intelligent electrified wire netting on the intelligent control of user's terminal system. This system, on the basis of high-performance communicative intelligent power distribution component, deeply combine the power distribution system on-the-spot with the computer network and has the function of tele-detection, tele-communication, tele-control and tele-adjustment. It is a fantastic upgrade of conventional power distribution system.

The monitoring system not only supports all kinds of communicative components of our company, but also supports every kind of communicative components made by different manufacturers according to the standard protocol. It supports Modbus, Modbus TCP, Profibus-DP, DeviceNet and every kind of standard communication buses. Thus, it provides simple power distribution, mixed type power distribution and every kind of connection ways. It is a functionally strong, open and flexible monitoring system. Users can build their own complete monitoring system fits to themselves according to the need in practice to achieve mastering the whole power distribution's operation condition remotely.

The monitoring system mainly includes reliable systematic control software, complete communication network and all kinds of communicative power distribution component of high performance; the system control software to achieve system management function; the communication network to provide the connection between the intelligent component on-the-spot and the up-position monitoring host, to perform data transmission and the transformation of the protocol; the communicative power distribution component to handle the gathering of the information on-the-spot, the control on-the-spot and the remote management provided to the monitoring system through the communication interface.

● Communication function of breaker

Communicative CW2 intelligent universal communicative circuit breaker adopts standard Modbus-RTU protocol. Through the connection of the RS485 interface and the upper machine, the function of tele-control, tele-communication, tele-adjustment and tele-detection to the circuit breaker can be achieved.

Communication data:

Remote detection: real-time current, voltage, fundamental current, fundamental voltage, power, power factor, electric energy, harmonic current or voltage ratio and total distortion of current or voltage.

Remote communication: state data of circuit breakers such as alarm, fault, under-voltage, main body position of breaker, ready-for-closing, the position of closing and opening etc.

Remote control: long-distance operation if closing and opening.

Remote adjustment: long-distance fetching and modification of the setting values of breaker.

Communication parameter:

Band rate 19200bps (in favor of 1200, 2400, 4800, 9600, 38400bps).

Communication address: 1 ~ 247.

Byte format: first bit as start bit, eighth bit as data bit, second bit as stop bit, even check (in favour of non-check, odd check).

Network characteristic:

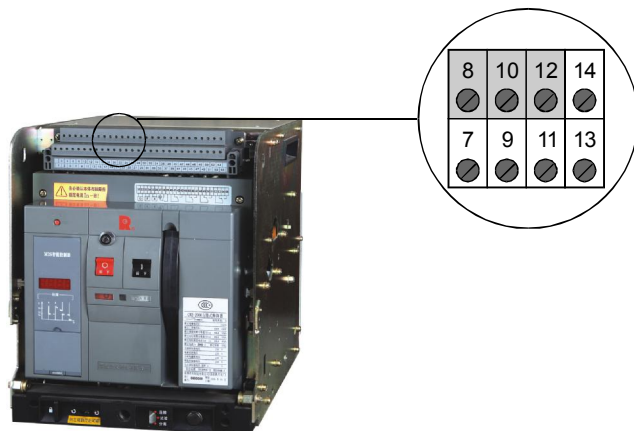
Twisted-pair shielded cables serve as communication lines.

One line can link up 32 pieces of communicative breakers at the same time.

Wiring distance is 1200m at maximum but the distance of communication can be extended by equipping with repeaters additionally.

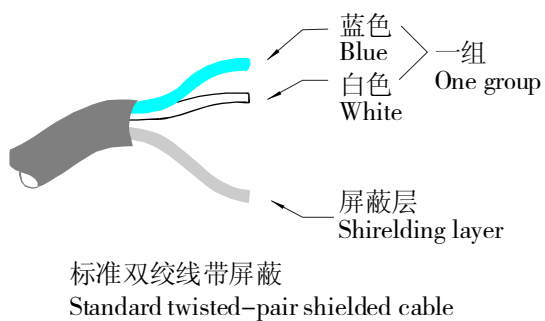


通信接线端子 Wiring terminals for communication



端子 Terminals	信号 Signal	功能 Function
8	DATA+(A+)	接收/发送数据+ Receive/transmit date+
10	DATA-(B-)	接收/发送数据- Receive/transmit date-
12	GND	接通信线屏蔽层 Connecting shielded lager of communication line

通信电缆连接 Communication cable connected



颜色/color		信号signal	功能 Function
蓝色blue		DATA+	接收/发送数据+ Receive/transmit data
白色white		DATA-	接收/发送数据- Receive/transmit data
通信线屏蔽层 Shielding layer		GND	接地 Grounding

如上图中使用通信电缆中的一组双绞线作为485通信线，屏蔽层用于接地。用户实际所使用的可能会有所差异，如双绞线颜色。用户可根据实际情况自行定义，但应事先明确每一通信电缆线的信号定义情况。

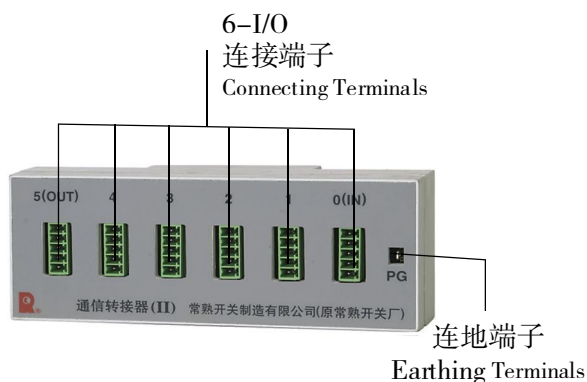
注意：通信电缆请使用带屏蔽的型号，在柜内走线时尽量远离强电线路。

As the above diagram shows,a group of twisted-pair lines in the standard communication cable is employed as the communication line of 485 and the sheilding lager is grounded.The actual pratice should be possibly different such as the application of the colour of the twisted-pair line.Users could define the ways of cable's usage by themselves but the definition of the signal of each line in the cable shoule be made clear in advacance.

Note:please use the type of communication cable with the shielding lager and approach to circuits with strongelectricity should be advoided as far as possible when wiring in the cabinet.



● 通信连接扩展 Communication connection eottend



注：可多次扩展，但一条线路不应连接超过32台设备。

Note: can be expanded by several times, but one piece of circuit can not connect with 32 sets of devices at most.

通信转接器可以提高用户现场接线的效率和可靠性，它具有以下特点：

6个RS485通信接口，最多可扩展5个可通信设备

多个通信转接器可互联进行扩展（参见注）

配有通信线接地端子

可直接安装在标准35mm导轨上

The Communication Adapter can largely improve the efficiency and reliability of wiring on site by customers, which embraces the characteristics of :

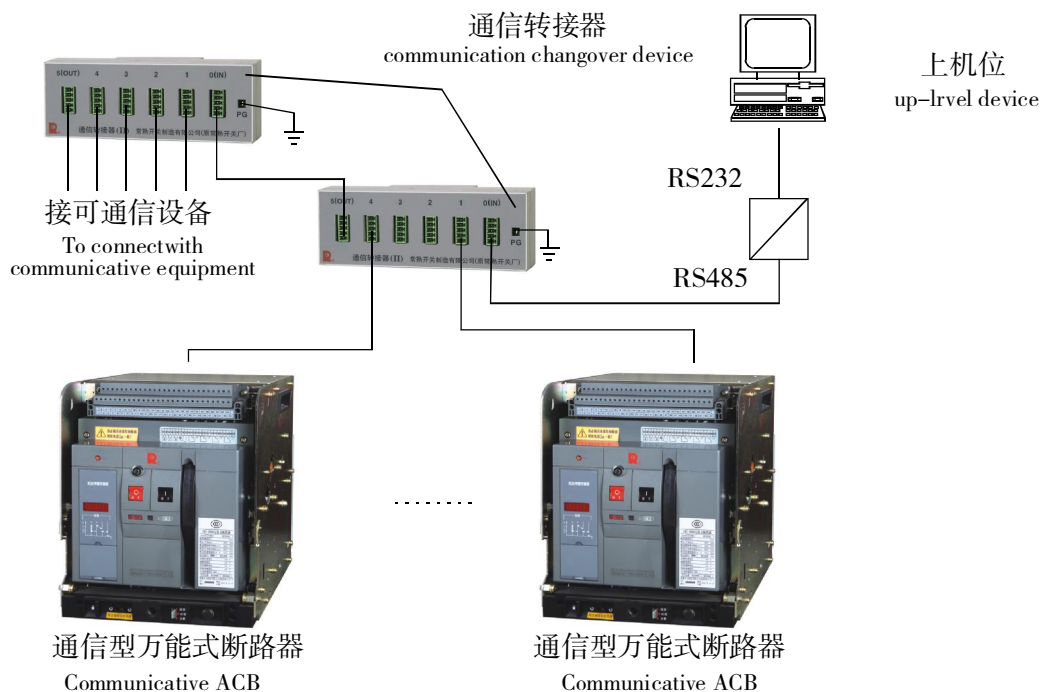
Six pieces of RS485 Communication Interfaces, can join together with 5 sets of Communicative Devices at most

Several Communication Adapters can realize the expansions by their networking (Refer to Note)

Equipped with earthing terminals of communication line

Can be installed directly on the standard slideway in 35mm width

连接示意图 Connection figured diagram





● 网络通信

我公司还提供多种通信适配器实现对Profibus-DP、DeviceNet、CAN及以太网ModBus /TCP协议的支持，为用户提供了丰富的解决方案。

用户也可使用FCX3智能配电监控器，同我公司的可通信断路器进行连接，实现远程对断路器各项参数显示、监控、配置、历史数据保存等。同时我们还率先推出通信断路器的无线监视功能，通过配置FDM3短消息通知模块可实现断路器故障脱扣或报警的远程信息监视。

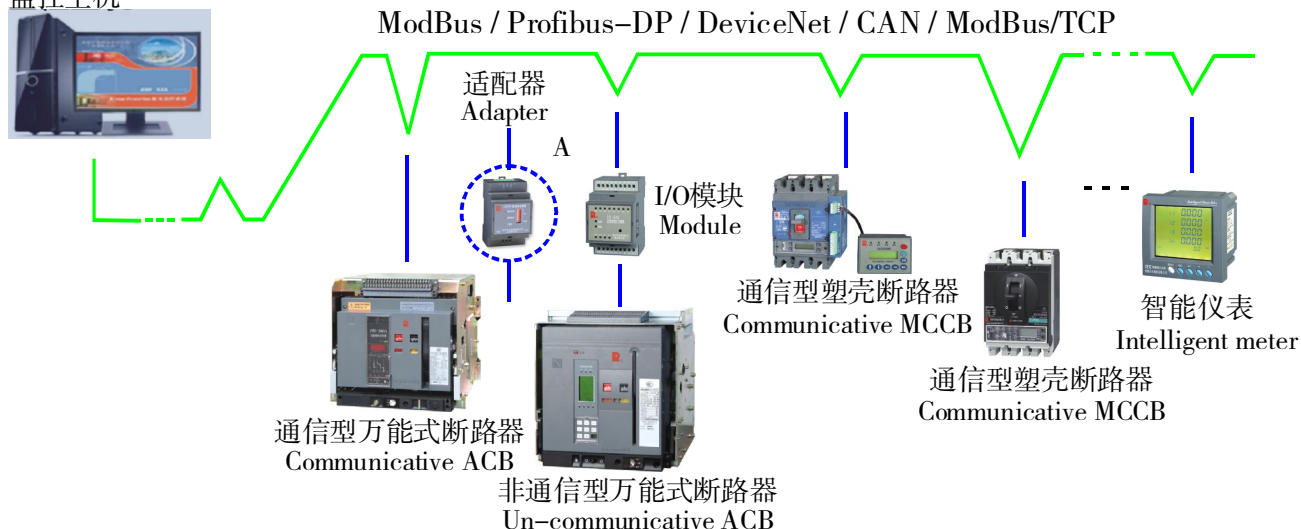
用户还可通过CI1系列远程智能I/O模块连接非通信型断路器，实现远程监测断路器合分闸状态、故障状态等重要信息。

Our company also offers several kinds of communication adapters to achieve the support of Profibus-DP, DeviceNet, CAN and Ethernet ModBus/TCP protocol and to supply the customers with lots of solutions.

The users can also connect FCX3 intelligent power distribution monitor with our company's communicative circuit breaker to achieve the display, monitor, configuration and the previous data's maintenance of the circuit breaker's parameter remotely. At the same time, we also promote the radio monitoring function of the communication circuit breaker. By the configuration of the short message informing module, we can achieve the information's remote monitoring of the circuit breaker's failure release or alarm.

The users can connect the uncommunicative circuit breaker through CI1 series remote intelligent I/O module to achieve remotely monitoring the circuit breaker's, switching-on or -off state, failure state and other important information.

Monitoring main computer
监控主机



注A：本公司通信元件采用标准的ModBus-RTU协议，可直接接入ModBus总线，当使用其它协议时采用相应的通信适配器转接。

NoteA: The communicative components of my company adopts standard ModBus-RTU protocol, may be connected ModBus field bus. If adopting other protocol, using communicative adapters changeover.



● 通信适配器 Communication adaptor



CN1DP-MD



CN1DP-MP



CN1DP-MC



CN1EG/10

CN1DP-MD、CN1DP-MP、CN1DP-MC 和 CN1EG/10为四款具有通信转换功能的适配器，与本公司具有标准ModBus-RTU协议接口的通信型智能产品连接，实现不同协议的转换，使通信型智能产品能在DeviceNet、Profibus-DP、CAN现场总线上或以太网TCP/IP网络上实现遥信、遥调、遥控及遥测功能。

CN1DP-MD通信适配器实现从ModBus-RTU协议向DeviceNet协议的转换；

CN1DP-MP通信适配器实现从ModBus-RTU协议向Profibus-DP协议的转换；

CN1DP-MC通信适配器实现从ModBus-RTU协议向CAN总线协议的转换；

CN1EG/10以太网适配器实现ModBus协议在串行链路和以太网TCP/IP网络间进行数据传输；

CN1DP-MD、CN1DP-MP只支持单台设备通信，CN1EG/10、CN1DP-MC最多可支持32台设备通信。

CN1DP-MD,CN1DP-MP,CN1DP-MC and CN1EG/10 are four types of adapters which have the function of communicative transformation.They can be connected to our company's communicative intelligent products which have the standard ModBus-RTU protocol interface to achieve the transformation of different protocols,and further to make the communicative intelligent product achieve tele-communication,tele-adjustment tele-control and tele-detection unction on DeviceNet,Profibus-DP,CAN field bus or Ethernet TCP/IP network.

CN1DP-MD Communicative adaptor achieves the transformation from ModBus-RTU protocol to DeviceNet protocol;

CN1DP-MP communicative adaptor achieves the transformation from ModBus-RTU protocol to Profibus-DP protocol.

CN1DP-MC communicative adaptor achieves the transformation from ModBus-RTU protocol to CAN bus protocol

CN1EG/10 Ethernet adaptor make ModBus protocol transmit data between the serial chain circuit and the Ethernet TCP/IP network.

CN1DP-MD、CN1DP-MP can only support single equipment communication, CN1EG/10、CN1DP-MC can support 32 equipment's communication at most.



- 短消息通知模块
short message alarm module



FDM3短消息通知模块采用标准RS485通信方式直接连接一台或多至16台可通信断路器，当断路器发生预先设置的事件时，通过GSM网络发送短消息到一部或多至10部手机提示用户及时处置，预设的事件可以是各种故障脱扣和电力参数异常报警。用户可通过我公司提供的计算机配置软件对短消息通知模块进行配置，包括通信参数、手机号码、设备名称、报警类型等，运行时无需计算机。

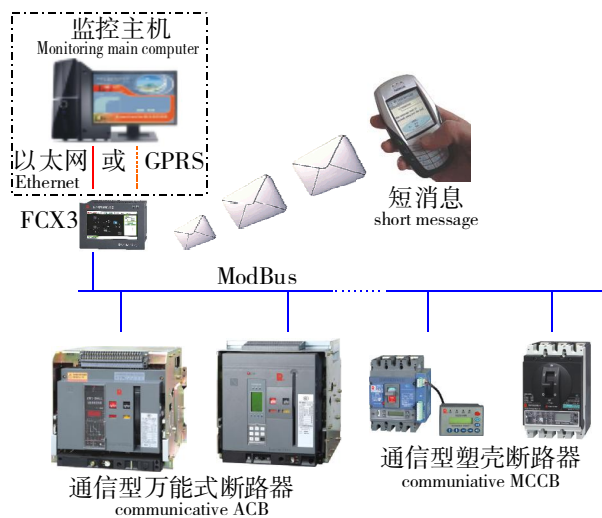
FDM3 short message informing module adopts the standard RS485 communication method to connect one or at most 16 communicative circuit breaker directly. When the circuit breaker encounter an incident previously set, the module sends short message to one or at most ten mobile phones through GSM network to cue the users to handle in time. The previously set incident can be all kinds of failure release and electric parameter abnormal alarm. The users can configure the short message informing module with the computer configuration software offered by our company, including communication parameter, mobile phone number, equipment name, alarm type and so on. When working, no need of computer.

- 智能配电监控器
intelligent power distribution monitor



FCX3智能配电监控器是我公司为用户提供的采用彩色图形化显示、触摸式操作的简洁实用的配电监控产品，它采用标准ModBus-RTU协议，通过RS485接口与我公司可通信断路器连接，方便实现“四遥”功能。

Every FCX3 intelligent power distribution monitor can connect to at most 16 communicative circuit breaker at the same time. We can build power distribution monitoring system without computer configuration. At the same time, we can achieve short message informing or GPRS wireless function through expanding the module.



每台FCX3智能配电监控器可同时连接最多16台可通信断路器，无需配置计算机即可组建配电监控系统，同时还可通过扩展模块实现短信通知或GPRS无线功能。

FCX3智能配电监控器还内置WEB服务器，方便用户通过局域网或以太网实现远程访问。用户在远程计算机可以监测通信型断路器的各项数据，如：设备状态、测量数据、整定数据、事件记录、历史数据等。

Every FCX3 intelligent power distribution monitor can connect to at most 16 communicative circuit breaker at the same time. We can build power distribution monitoring system without computer configuration. At the same time, we can achieve short message informing or GPRS wireless function through expanding the module.

FCX3 intelligent power distribution monitor also integrate WEB server, ModBus/TCP function. The monitoring main machine also can be connected to monitor through Ethernet interface to achieve remote monitoring such as: state of equipment, measurement data, setting data, event records, history data etc.



● 远程智能I/O模块



CI1系列远程智能I/O模块是一种简洁实用可靠的可通信监控模块，通过标准RS485接口、ModBus-RTU协议可实现系统的遥信、遥控及遥测功能。用户使用非通信型断路器时，可以通过该模块实现对相应配电回路的监测。用户能远程监测该回路电流、断路器合分闸状态、故障状态等重要的信息。

CI1-SCM423具有4路共端开关量输入、2路继电器输出、3路5A电流输入。用户通过它并且配合断路器的输入输出及线路中的标准电流互感器，能知道馈电线路的3相电流和4路开关量（如：开关合分闸状态，故障状态等）。

CI1-S12具有12路共端开关量输入。用户通过它可以了解到最多12台断路器的合分闸状态，或者6台断路器的合分闸状态、故障状态。

CI1-C8具有4组8路继电器输出，可以控制4台断路器的合分闸。

CI1-SC64具有6路开关量输入和4路继电器输出，可以在控制断路器的同时，对其重要状态进行监测。

CI1 series remote intelligent I/O module is a convenient, practical and reliable communication monitoring module. It can achieve the system's telecommunication, tele-control and tele-detection function through standard RS485 interface, ModBus-RTU protocol. When the users use the uncommunication circuit breaker, the monitoring of respective distributing circuit can be achieved by the module. The users can monitor the current of the circuit, the switching -on or -off state, failure state and other important information remotely.

CI1-SCM423 has four-circuit co-terminal switching times output, two-circuit 5A current input. The users can be informed of the feeder's three-phase current and four-circuit switching times (for example: switching -on and -off state, failure state and so on) through CI1-SM423 and with the help of circuit breaker's input, output and standard current mutual inductor in the circuit.

CI1-S12 has twelve-circuit co-terminal switching times input. The users can know the switching -on or -off state of at most twelve circuit breakers or six circuit breakers' switching -on or -off state, failure state by it.

CI1-C8 has four groups of eight-circuit relay output and it can control the switching -on or -off of four circuit breakers.

CI1-SC64 has six-circuit switching times input and four relay output. It not only controls the circuit breaker, but also monitors circuit breaker's state at the same time.



●FWB1温度报警模块 Temperature alarm module

FWB1温度报警模块采用FRG热传感器直接安装在连接点位置在线检测温度，最多监测6路连接位置温度(热传感器连接至温度报警模块背面的输入端子分别为1T、2T、3T、4T、5T、6T)。当监测到连接点温度超过动作温度时，温度报警模块指示灯点亮发出相应报警指示，并且内置的继电器二路输出触头闭合（二路输出端子分别为13、14，23、24），可发出远方报警信号或使断路器跳闸；当监测到连接点温度降至复位温度时，温度报警模块指示灯熄灭并且二路输出触头断开。温度报警模块连接至热传感器的线长为1.5米。

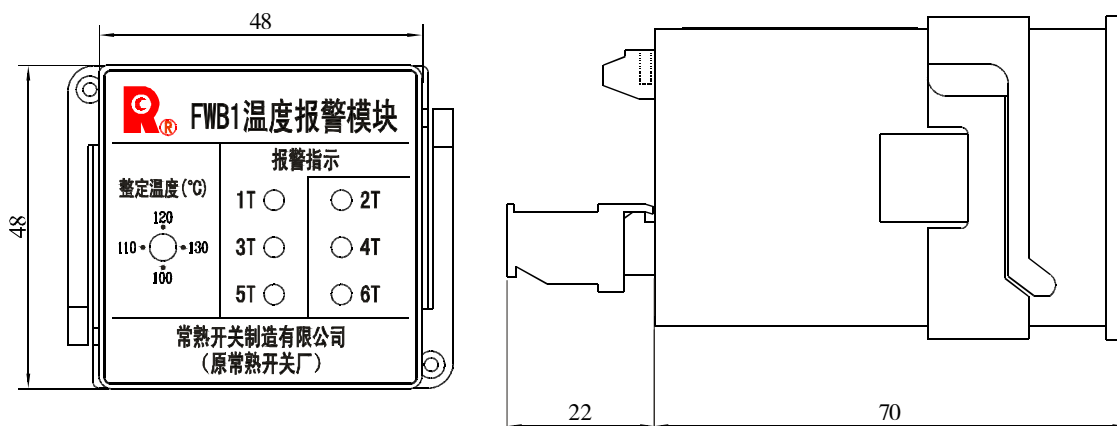
FWB1 temperature alarm module adopts online temperature detection that the FRG heat sensor directly mounted on the connection position. It can detect at most six points connection position (the input terminals on the back of the temperature alarm module, which the heat sensor is connected to, are 1T、2T、3T、4T、5T、6T respectively). When detecting the temperature of the connection points is higher than action temperature, the temperature alarm module's directive lights are on and alarming, at that time, the inbuilt relay's 2nd output contact will make (the 2nd output terminals are 13、14, 23、24 respectively); when detecting the connection temperature dropping to resetting temperature, the temperature alarm module's directive lights are off and the 2nd output contact will break. The connection wire between the temperature alarm module and the heat sensor is of 1.5m length.

测温范围 temperature detection range	0~150℃
动作温度To action temperature	100/110/120/130℃
复位温度Tr resetting temperature	To-5℃
精度 precision	±5℃
传感器绝缘耐压 sensor insulation withstand voltage	AC3500V/1min
测温点数 temperature detection points	最多6路 6 points at most
工作电源 operatiing current	AC230V，范围range195~253V
输出触头容量 output contace capacity	3A/AC250V，3 A/DC24V
工作温度 operating temperature	-20℃~+70℃

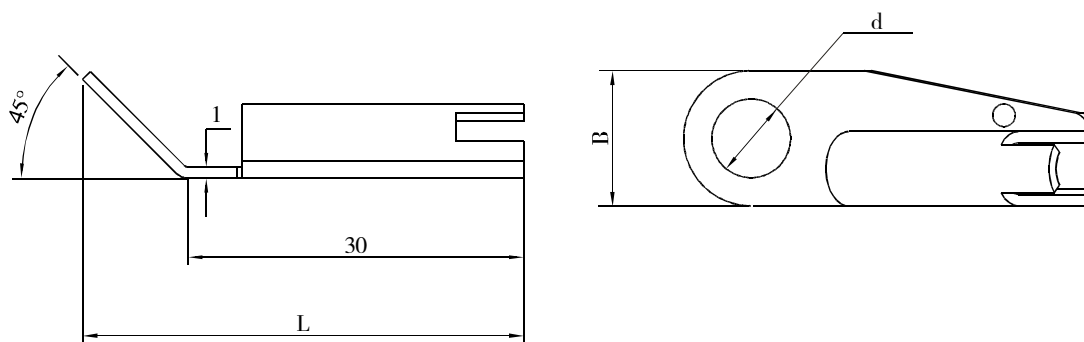


FWB1温度报警模块 TEMPERATURE ALARM MODULE

- FWB1温度报警模块+FRG热传感器 FWB1 temperature alarm module+FRG heat sensor



FWB1温度报警模块
Temperature alarm module



FRG热传感器
Hest sensor

热传感器型号 heat sensor type	B (mm)	L (mm)	d (mm)
FRG-7	12	40	φ7
FRG-9	14	41	φ9
FRG-11	16	42	φ11
FRG-13	18	44	φ13
FRG-17	22	47	φ17



断路器订货规范

(一) 用户务必确认对本产品技术资料已有详细了解, 并应根据断路器将来使用的场合, 按“订货规范”表订货。

(二) 如用户订货时对智能控制器保护参数不作要求, 本公司将按“智能控制器出厂整定值”表配置。

断路器订货规范

(请在□填上数字, □打√)

用户单位			订货台数			订货日期		
型 号	CW2- □ / □ (极数、三极可不标)			额定电压	□ AC400V □ AC690V*			
用 途	□ 陆用 □ 湿热带型 (TH型)			额定电流	In= □ A			
连 接	固定式 □ 水平 (后置) □ 垂直 (后置) 抽屉式 □ 水平 (后置) □ 垂直 (后置)							
智能 控 制 器	类型选择	□ L25型	□ M25型 (LED显示)	□ M26型 (LED显示)	□ H26型 (LED显示)	□ P26型	□ P25型	
	基本功能	过载长延时保护 Ir1 □ ti □		短路短延时保护 Ir2 □ t2 □		短路瞬时保护 Ir3 □		
		接地故障保护 Ir4 □ t4 □						
		过载长延时保护曲线			过载长延时保护曲线			
		通用反时限 (I^2t)			□ 通用反时限 (I^2t) □ 非常反时限 (I_t) □ 高压熔丝型 (I^4t)			
		□ 50%In □ 100%In (N线整定电流选择)			□ OFF □ 50%In □ 100%In □ 200%In (200% In为三极断路器+外接中性线互感器且CW2-6300无)			
	选择功能	□ 电压显示功能						
□ ZSI功能		□ 负载监控功能: □ 方式一 □ 方式二						
□ 功率表功能 (仅MY25、MY26、HY26可选)		□ 通信功能 □ 谐波表 □ 电流不平衡显示						
智能控制器 电压	CW2-2000及以上		□ AC230V □ AC400V		□ DC220V □ DC110V (需选配直流电源模块)			
	CW2-1600	□ DC24V (需选配DC24V电源模块)		□ AC230V □ AC400V (需必选专用电源模块)				
标 配 附 件	FFT分励脱扣器	□ AC230V	□ AC400V	□ DC220V	□ DC110V			
	FHD合闸电磁铁	□ AC230V	□ AC400V	□ DC220V	□ DC110V			
	FDC电动操作机构	□ AC230V	□ AC400V	□ DC220V	□ DC110V			
	FFC辅助开关	标准型式		□ 4组转换触头				
		特殊型式		□ 4常开4常闭	□ 6常开2常闭	□ 2常开6常闭		
选 择 附 件	□ FQT欠电压脱扣器	□ AC230V □ AC400V			光伏专用型 □ AC220V □ AC380V			
		□ 欠电压瞬时脱扣器			□ 欠电压瞬时脱扣器			
		□ 欠电压延时脱扣器 □ 0.5s □ 1s □ 2s □ 3s			□ 欠电压0~10s延时脱扣器 (出厂默认设定值3s)			
	□ FFS“分闸” 锁定装置	一台断路器			□ 一锁一钥匙			
		二台断路器			□ 二锁一钥匙			
		三台断路器			□ 三锁二钥匙			
	□ FLS机械联锁	二台断路器			□ 钢缆联锁 □ 联杆联锁			
		三台断路器			□ 钢缆联锁方式三 □ 联杆联锁方式一 □ 联杆联锁方式二 □ 联杆联锁方式三			
	□ 外接中性线N电流互感器	□ FDH-60 □ FDH-80 □ FDH-120 □ FDH-260			□ FXC相间隔板			
	□ FWZ抽屉座位置电气指示装置				□ FAN按钮锁定装置			
	□ FHM合闸准备就绪电气指示模块				□ FJS计数器			
	通信功能选件	□ FCT抽屉座通信模块组件 □ FHX合闸准备就绪信号 □ FQX欠电压信号 □ FGT故障脱扣信号						
	□ FDY专用电源模块	□ AC230V □ AC400V						
	□ FDY/WT直流电源模块	□ DC220V □ DC110V			□ FDY/W2T DC24V电源模块			
	□ FZZ两路电源自动电源转换系统	电子型自动转换控制器			□ R型	□ S型	□ F型	
		智能型自动转换控制器			□ ZR型	□ ZS型	□ ZF型	
		智能可通信自动转换控制器			□ ZTR型	□ ZTS型	□ ZTF型	
□ FLZ两进线—母联自动电源转换系统	智能型自动转换控制器			□ WTT3型		□ 通信		
智能型带并联转换自动转换控制器			□ WTB3型					
备注								

注1: 所有电源模块电压均为输入电压, 输出均为DC24V, 用户应根据自己提供的电源电压选择相应的电源模块。

注2: 工作电压大于AC400V需电压显示功能时, 请配接配置的电压转换模块, 并准确按400V侧输出接至相应接线图的端子上。

注3: 可提供CW2-1600、2000、2500、4000、6300低温至-40℃断路器。

*注: CW2-1600、6300用于AC690V IT 配电系统时, 请与公司联系。



断路器订货规范

下列内容为均可供货的项目，需要时请在□打√

母线连接方式	固定式 ☐ 上水平下垂直（后置） ☐ 下水平上垂直（后置）	注：固定式上水平下垂直（后置） 仅供I _{nm} =1600、2000 断路器
	抽屉式 ☐ 上水平下垂直（后置） ☐ 下水平上垂直（后置）	
特殊形式长期工作型 FFT分励脱扣器	☐ AC230V ☐ AC400V ☐ DC220V ☐ DC110V	
FFC辅助开关	☐ 5常开5常闭 ☐ 6常开6常闭 ☐ 6组转换触头	
FQT欠电压脱扣器	☐ AC230V ☐ AC400V	
	☐ 欠电压延时脱扣器 ☐ 4s ☐ 5s ☐ 9s	
FFS“分闸”锁定装置	一台断路器 ☐ 二锁（二相同锁） ☐ 二锁（二不同锁）	
注：对智能控制器、分励脱扣器、合闸电磁铁和电动操作机构的控制电源电压为AC110V、200V等规格等级要求，请咨询本公司。		



ORDER FORM OF BREAKER

1. Users should make sure of their detailed acquaintance of the products' technological materials and make order by the "ordering notice" in terms of future applicable situations of the circuit breakers.

2. The company would configure by "Factory" s setting values of the intelligent release" if users had no requirements of protection parameters when making order.

Order form of breaker

(Please fill numbers in or mark ☒ in ☐)

Name			Order amount			Order data			
Type	CW2- ☐ / ☐			Rated voltage	☐ AC400V ☐ AC690V*				
Usage	☐ On Land ☐ Humid tropical (TH)			Rated current	In= A				
Connection	Fixed ☐ Horizontal (back set) ☐ Vertical (back set)								
	Draw-out ☐ Horizontal (backset) ☐ Vertical (back set)								
Intelligent controller	Type selection	☐ Type L25	☐ Type M25 (LED)	☐ Type M26 (LED)	☐ Type H26	☐ Type P26	☐ Type P25		
	Basic function	Long-time delay overload protection			Short-time delay short circuit protection		Instantaneous short circuit protection		
		Ir1 t1			Ir2 t2		Ir3		
		Ground-fault protection			Ir4 t4				
		Long-time delay overload protection			Long-time delay overload protection				
		General inverse time delay (I^2t)			☐ General inverse time delay (I^2t) ☐ Special inverse time delay (It) ☐ High-voltage fuse type (I^1t)				
	Selective function	☐ 50%In ☐ 100%In (Select setting current of N line)			☐ OFF ☐ 50%In ☐ 100%In ☐ 200%In (200% In for three-pole breaker + neutral line transformer CW2-6300 except)				
		Contact wearing indication			Fault memory		Self-diagnosis		
		☐ Indication of voltage			☐ ZSI function ☐ Load-monitoring function: ☐ Pattern one ☐ Pattern two				
	Voltage of the intelligent controller	CW2-2000 and above			☐ AC230V ☐ AC400V		☐ DC220V		
CW2-1600		☐ DC24V Need be selectively equipped with DC24V power supply module		☐ AC230V ☐ AC400V Need be selectively equipped power supply module		☐ DC110V Need be selectively equipped with DC power supply module			
Normally-deployed accessories	FFT Shunt release	☐ AC230V ☐ AC400V		☐ DC110V		☐ DC220V			
	FHD Switching-on electromagnet	☐ AC230V ☐ AC400V		☐ DC110V		☐ DC220V			
	FDC Power-driven operation mechanism	☐ AC230V ☐ AC400V		☐ DC110V		☐ DC220V			
	FFC Auxiliary switch	Standard pattern ☐ Four groups of changeover contacts							
Choice of accessories	☐ FQT Under-voltage release		☐ AC230V ☐ AC400V		☐ DC110V ☐ DC220V				
	☐ FFS "Switching-off" lock mechanism		☐ Under-voltage instantaneous release		☐ Under-voltage time delay release ☐ 0.5s ☐ 1s ☐ 2s ☐ 3s				
	☐ FLS Mechanical interlock		One sets of circuit breakers		One lock and one key				
			Two sets of circuit breakers		Two lock and one key				
			Three sets of circuit breakers		Three lock and two key				
			Two sets of circuit breakers		Steel lock interlock ☐ Link rod interlock				
			☐ Steel lock interlock ☐ Pattern one of rod interlock ☐ Pattern two of rod interlock ☐ Pattern three of rod interlock						
	☐ Current mutual inductor with the neutral line N connected externally		☐ FDH-60 ☐ FDH-80 ☐ FDH-120 ☐ FDH-260		☐ FXG Isolation plate between phases				
	☐ FWZ Electrical indication mechanism of draw-out socket position				☐ FAN "Button" locking device				
	☐ FHM Electrical module for indication of ready-for switching on				☐ FJS Counter				
	Communication function choice of accessories		☐ FCT Components of draw-out socket communication module		☐ FHX Signal of ready-for-switching on		☐ FQX Signal of under-voltage ☐ FCT Signal of fault release		
	☐ FDY Special supply module		☐ AC230V ☐ AC400V						
	☐ FDY/WT DC power supply module		☐ DC220V ☐ DC110V		☐ FDY/W2T DC24V power supply module				
	☐ FZZ two supply automatic power supply switch system		Electronic automatic switch controller ☐ R type ☐ S type ☐ F type						
			Intelligent automatic switch controller ☐ ZR type ☐ ZS type ☐ ZF type						
			Intelligent communicative automatic switch controller ☐ ZTR type ☐ ZTS type ☐ ZTF type						
	☐ FLZ two incoming one couple automatic power supply switch		Intelligent automatic switch controller ☐ WTT3 type ☐ WTB3 type		☐ communication				
	Note								

Note1: The voltage of all supply modules is input voltage, its output voltage is DC24V, user may select module by providing voltage.

Note2: When there has voltage display function and the input voltage is higher than AC400V, there should have this module

Note3: CW2-1600, 2000, 2500, 4000 breakers can be provided temperature down to -40°C.

*Note: When order the IT power distribution system breakers of CW2-1600, 6300 used in AC690V, please call us.



ORDER FORM OF BREAKER

Items may be provided under table, please signing ✓ in ☐

Bar connecting type	Fixed ☐ Upper horizontal-down vertical(back) ☐ Down horizontal-upper vertical(back)	To fixed breaker upper horizontal-down vertical (back) is only for Inm=1600、2000
	Draw-out ☐ Upper horizontal-down vertical(back) ☐ Down horizontal-upper vertical(back)	
FFT Special type shunt release for longtime working	☐ AC230V ☐ AC400V ☐ DC220V ☐ DC110V	
FFC Auxiliary switch	☐ 5NO5NC ☐ 6NO6NC ☐ Six pairs of chang over contacts	
FQT Under voltage release	☐ AC230V ☐ AC400V	
	☐ Under voltage time delay release ☐ 4s ☐ 5s ☐ 9s	
FFS Off lock device	One breaker ☐ Two lockes(two same lockes) ☐ Two lockes(two different lockes)	
Note: when order control supply voltage of AC110V or 200V and so on for intelligent controller、shunt release、 closing magnet and motor driven mechanism,please call us.		



智能控制器出厂整定值

Factory's setting values of intelligent controller

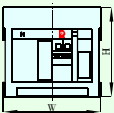
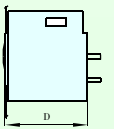
过载长延时 Overload long-time delay	电流整定值 I_{r1} Setting values of current	I_n			
	延时时间整定值 t_1 Setting values of delay time	480s			
	P25、P26长延时特性 Overload long-time delay of P25 and P26	$I^2 t$			
短路短延时 Short circuit short-time delay	电流整定值 I_{r2} Setting values of current	$6I_{r1}$			
	延时时间整定值 t_2 Setting values of delay time	0.2s			
短路瞬时电流整定值 I_{r3} Setting values of short circuit instantaneous current		$15I_n$ (对 $I_n \leq 1000A$) $15I_n$ (for $I_n \leq 1000A$) $12I_n$ (对 $I_n = 1250A, 1600A$) $12I_n$ (for $I_n = 1250A, 1600A$) $10I_n$ (对 $I_n \geq 2000A$) $10I_n$ (for $I_n \geq 2000A$)			
接地故障 (L25、M25/MY25、P25型无) Ground-fault (Not for L25、M25/MY25、P25)	电流整定值 I_{r4} Setting values of current	CW2-1600	CW2-2000 CW2-2500	CW2-4000	CW2-6300
		$0.8I_n$ 或1000A (取小者) To select the minimum	$0.8I_n$ 或1200A (取小者) To select the minimum	$0.6I_n$ 或1600A (取小者) To select the minimum	2000A
	延时时间整定值 t_4 Setting values of delay time	0.4s			
负载监控 (L25型无, M25/MY25、M26/MY26、H26HY26、P25、P26型为可选项) Load-monitoring(Not for type L25, optional for type M25/MY25, M26/MY26, H26/HY26, P25 and P26)	监控电流 I_{LC1} Monitoring current	I_n			
	监控电流 I_{LC2} Monitoring current	I_n			



CW2系列断路器AC1000V产品主要技术指标及说明

CW2 SERIES CIRCUIT BREAKER AC1000V PRODUCT PRIMARY TECHNICAL INDICATORS AND INSTRUCTION

● 主要技术指标 Primary technical indicators

型 号 Type				CW2-2000			CW2-4000			
壳架等级额定电流Inm（A）Rated frame current				2000			4000			
额定电流In（A）Rated working current				630、800、1000、1250、1600、2000			2000、2500、2900、3200、3600、4000			
额定工作电压Ue（V）Rated working voltage				AC50Hz/60Hz, 1000						
额定绝缘电压Ui（V）Rated insulation voltage				1000						
额定冲击耐受电压Uimp（kV） Rated impulse withstand voltage				12						
工频耐受电压U（V）1min Working frequency withstand voltage				3500						
极数 Pole number				3、4						
N极额定电流In（A）Rated current of N pole				100%In						
额定极限短路分断能力Icu(kA)(有效值) Limiting rated short circuit breaking capacity (effective value)				36			50			
额定运行短路分断能力Ics(kA) (有效值) Operating /Rated short circuit breaking capacity (effective value)				36			50			
额定短路接通能力Icm(kA)（峰值） Rated short time connecting capacity (peak value)				75.6			105			
额定短时耐受电流Icw(kA) (有效值) Rated short time withstand current (effective value)				36/1s			50/1s			
全分断时间（无附加延时）（ms） Full-breaking time (without additional delay)				25~30						
闭合时间（ms）Closing time				最大70 70 at maximum						
智能控制器 Intelligent controller		M25/MY25型 Type M25/MY25		○						
		M26/MY26型 Type M26/MY26		○						
		H26/HY26型 Type H26/HY26		○						
操作性能 Operational performance	电气寿命 Electrical life			1000			500			
	机械寿命 Mechanical life	免维护 Non-maintanance			5000			2000		
		有维护 Maintenance			10000			4000		
外形尺寸 Outline dimensions  		宽×高×深 W×H×D (mm) Width ×height ×depth			W × H × D			W × H × D		
		抽屉式 Draw-out	水平连接 Horizontal	3P 后置 Back set	347	438	390	401	438	395
				4P 后置 Back set	442	438	390	514	438	395
			垂直连接 Vertical	3P 后置 Back set	347	438	390	401	438	395
				4P 后置 Back set	442	438	390	514	438	395
		固定式 Fixed	水平连接 Horizontal	3P 后置 Back set	362	395	290	414	395	290
				4P 后置 Back set	457	395	290	527	395	290
			垂直连接 Vertical	3P 后置 Back set	362	395	290			
				4P 后置 Back set	457	395	290			



- 应用说明

- AC1000V断路器为特殊型断路器（不适用IT系统），主要用于矿山、化工厂等场合。
- AC1000VCW2断路器配备的智能控制器型号仅为M25/MY25、M26/MY26、H26/HY26型六种规格。具体订货按CW2系列断路器AC1000V产品订货规范。
- 当订购电压显示功能时，相应配置电压转换模块(标配)，模块输入端接至主回路，输出端接至相应的断路器电压输入二次端子17、18、19、20（见P35）。

- Application Note:

- AC1000V circuit breaker is special-breaker(don't suit for IT system), mainly for the mining, chemical plants and so on.
- The intelligent controllers matched for AC1000V CW2 circuit breaker are only M25/MY25、M26/MY26 and H26/HY26 six types. Making order please according to CW2 series circuit breaker AC1000V products order norms.
- When ordering voltage display function, the corresponding distribution of voltage converting modules (Standard), the module input terminals connect to the main circuit, the output terminals connect to corresponding circuit breaker voltage input second terminals 17、18、19 and 20 (see page P35).



CW2系列断路器AC1000V产品主要技术指标及说明

CW2 SERIES CIRCUIT BREAKER AC1000V PRODUCT PRIMARY TECHNICAL INDICATORS AND INSTRUCTION

CW2系列断路器AC1000V订货规范

(请在 ☐ 填上数字, ☐ 打√)

用户单位			订货台数			订货日期			
型 号	CW2- ☐ / ☐ (极数、三极可不标)			额定电压	☐ AC1000V				
用 途	☐ 陆用 ☐ 湿热带型 (TH型)			额定电流	In= ☐ A				
连 接	固定式 ☐ 水平 (后置) ☐ 垂直 (后置)								
	抽屉式 ☐ 水平 (后置) ☐ 垂直 (后置)								
智能 控 制 器	类型选择	☐ M25型 (LED显示)		☐ M26型 (LED显示)		☐ H26型 (LED显示)			
		☐ MY25型 (LCD显示)		☐ MY26型 (LCD显示)		☐ HY26型 (LCD显示)			
	基本功能	过载长延时保护 Ir1 ☐ t1 ☐		短路短延时保护 Ir2 ☐ t2 ☐		短路瞬时保护 Ir3 ☐			
				接地故障保护 Ir4 ☐ t4 ☐					
		☐ 50%In ☐ 100%In (N线整定电流选择)							
	选择功能	☐ 电压显示功能							
		☐ ZSI功能		☐ 负载监控功能: ☐ 方式一 ☐ 方式二					
		☐ 功率表功能 (仅MY25、MY26、HY26可选)							
智能控制器电压	☐ AC230V ☐ AC400V			☐ DC220V ☐ DC110V (需选配直流电源模块)					
标 配 附 件	FFT分励脱扣器	☐ AC230V ☐ AC400V		☐ DC220V ☐ DC110V					
	FHD合闸电磁铁	☐ AC230V ☐ AC400V		☐ DC220V ☐ DC110V					
	FDC电动操作机构	☐ AC230V ☐ AC400V		☐ DC220V ☐ DC110V					
	FFC辅助开关	标准型式 ☐ 4组转换触头							
		特殊型式 ☐ 4常开4常闭 ☐ 6常开2常闭 ☐ 2常开6常闭							
选 择 附 件	☐ FQT欠电压脱扣器	☐ AC230V ☐ AC400V		光伏专用型 ☐ AC220V ☐ AC380V					
		☐ 欠电压瞬时脱扣器		☐ 欠电压瞬时脱扣器					
		☐ 欠电压延时脱扣器 ☐ 0.5s ☐ 1s ☐ 2s ☐ 3s		☐ 欠电压0~10s延时脱扣器 (出厂默认设定值3s)					
	☐ FFS“分闸”锁定装置	一台断路器 ☐ 一锁一钥匙							
		二台断路器 ☐ 二锁一钥匙							
		三台断路器 ☐ 三锁二钥匙							
	☐ FLS机械联锁	二台断路器 ☐ 钢缆联锁 ☐ 联杆联锁							
		三台断路器 ☐ 钢缆联锁方式三 ☐ 联杆联锁方式一 ☐ 联杆联锁方式二 ☐ 联杆联锁方式三							
	☐ 外接中性线N 电流互感器 ☐ FDH-80 ☐ FDH-120 ☐ FDH-260		☐ FXG相间隔板						
	☐ FWZ抽屉座位置电气指示装置		☐ FAN按钮锁定装置						
	☐ FHM合闸准备就绪电气指示模块		☐ FJS计数器						
	通信功能选件	☐ FCT抽屉座通信模块组件 ☐ FHX合闸准备就绪信号 ☐ FQX欠电压信号 ☐ FGT故障脱扣信号							
	☐ FDY/WT直流电源模块 ☐ DC220V ☐ DC110V								
	☐ FZZ两路电源自动电源转换系统	电子型自动转换控制器 ☐ R型 ☐ S型 ☐ F型							
		智能型自动转换控制器 ☐ ZR型 ☐ ZS型 ☐ ZF型							
☐ FLZ两进线一母联自动电源转换系统	智能可通信自动转换控制器 ☐ ZTR型 ☐ ZTS型 ☐ ZTF型								
	智能型自动转换控制器 ☐ WTT3型		智能型带并联转换自动转换控制器 ☐ WTB3型		☐ 通信				
备注									

注1: 对电压显示, 请配接配置的电压转换模块, 并准确按400V侧输出接至相应接线图的端子上。

注2: 可提供CW2-2000、4000低温至-40℃断路器。



CW2系列断路器AC1000V产品主要技术指标及说明

CW2 SERIES CIRCUIT BREAKER AC1000V PRODUCT PRIMARY TECHNICAL INDICATORS AND INSTRUCTION

Order notice of CW2 series circuit breaker AC1000V product

(Please fill numbers in or mark ☒ in ☐)

Name			Order amount		Order data	
Type	CW2- /		Rated voltage	☐ AC1000V		
Usage	☐ On Land ☐ Humid tropical (TH)		Rated current	In= A		
Connection	Fixed	☐ Horizontal (back set)		☐ Vertical (back set)		
	Draw-out	☐ Horizontal (back set)		☐ Vertical (back set)		
Intelligent controller	Type selection	☐ Type M25 (LED) ☐ Type MY25 (LCD)	☐ Type M26 (LED) ☐ Type MY26 (LCD)	☐ Type H26 (LED) ☐ Type HY26 (LCD)		
	Basic function	Long-time delay overload protection		Short-time delay short circuit protection		Instantaneous short circuit protection
		Ir1 t1		Ir2 t2		Ir3
						Ground-fault protection Ir4 t4
		Long-time delay overload protection		Long-time delay overload protection		
	☐ 50%In ☐ 100%In		(Select setting current of N line)			
	Selective function	☐ Indication of voltage				
☐ ZSI function		☐ Load-monitoring function:		☐ Pattern one ☐ Pattern two		
☐ Wattmeter function (for MY25, MY26, HY26)						
Voltage of the intelligent controller	☐ AC230V ☐ AC400V		☐ DC220V ☐ DC110V Need be selectively equipped with DC power supply module			
Normally-deployed accessories	FFT Shunt release	☐ AC230V	☐ AC400V	☐ DC110V	☐ DC220V	
	FHD Switching-on electromagnet	☐ AC230V	☐ AC400V	☐ DC110V	☐ DC220V	
	FDC Power-driven operation mechanism	☐ AC230V	☐ AC400V	☐ DC110V	☐ DC220V	
	FFC Auxiliary switch	Standard pattern ☐ Four groups of changeover contacts				
Exceptional pattern ☐ Four pieces of normally-opened contacts (NO) and four pieces of normally-closed contacts (NC) ☐ Six pieces of normally-opened contacts (NO) and two pieces of normally-closed contacts (NC) ☐ Six pieces of normally-opened contacts (NO) and two pieces of normally-closed contacts (NC)						
Choice of accessories	☐ FQT Under-voltage release	☐ AC230V ☐ AC400V				
		☐ Under-voltage instantaneous release	☐ Under-voltage time delay release		☐ 0.5s ☐ 1s ☐ 2s ☐ 3s	
	☐ FFS "Switching-off" lock mechanism	One sets of circuit breakers		☐ One lock and one key		
		Two sets of circuit breakers		☐ Two lock and one key		
		Three sets of circuit breakers		☐ Three lock and two key		
	☐ FLS Mechanical interlock	Two sets of circuit breakers		☐ Steel lock interlock		☐ Link rod interlock
		☐ Steel lock interlock	☐ Pattern one of rod interlock	☐ Pattern two of rod interlock	☐ Pattern three of rod interlock	
	☐ Current mutual inductor with the neutral line N connected externally	☐ FDH-80	☐ FDH-120	☐ FDH-260	☐ FXG Isolation plate between phases	
	☐ FWZ Electrical indication mechanism of draw-out socket position				☐ FAN "Button" locking device	
	☐ FHM Electrical module for indication of ready-for switching on				☐ FJS Counter	
	Communication function choice of accessories	☐ FCT Components of draw-out socket communication module ☐ FXH Signal of ready-for-switching on ☐ FXQ Signal of under-voltage ☐ FGT Signal of fault release				
	☐ FDY/WT DC power supply module	☐ DC220V		☐ DC110V		
☐ FZZ Automatic power supply switch system	Automatic switch controller		☐ R type	☐ S type	☐ F type	

Note1: When there has voltage display function and the input voltage is higher than AC400V, there should have this module

Note2: CW2-2000, 4000 breakers can be provided temperature down to -40℃.



CW2系列断路器AC1000V产品出厂整定值

Factory's setting values of CW2 series circuit breaker AC1000V product

项目 Item	特性参数 Characteristic values	整定值范围 Setting range	出厂整定值 Factory's setting values
过载长延时 Overload long-time delay	电流整定值 I_{r1} (A) Setting values of current	$(0.4 \sim 1) I_n$	I_n
	延时时间整定值 t_i (s) Setting values of delay time	15、30、60、120、240、480	480
短路短延时 Short circuit short-time delay	电流整定值 I_{r2} (A) Setting values of current	$(0.4 \sim 8) I_n$	$6I_{r1}$
	延时时间整定值 t_2 (s) Setting values of delay time	0.1、0.2、0.3、0.4 反时限或定时限 Inverse or definite	0.2
短路瞬时电流整定值 I_{r3} (kA) Setting values of short circuit instantaneous current		CW2-2000:2 ~ 25 CW2-4000:4 ~ 40	$15I_n$ (对for $I_n \leq 1000A$) $12I_n$ (for $I_n = 1250A, 1600A$) $8I_n$ (对for $I_n > 2000A$)
接地故障 (M25/MY25无) Ground-fault(Not for M25/MY25)	电流整定值 I_{r4} (A) Setting values of current	CW2-2000:0.2 I_n 或160A (取大者) ~ 0.8 I_n 或1200A (取小者) CW2-4000:0.2 I_n ~ 0.6 I_n 或1600A (取小者)	CW2-2000:0.8 I_n 或1200A (取小者) CW2-4000:0.6 I_n 或1600A (取小者)
	延时时间整定值 t_4 (s) Setting values of delay time	0.1、0.2、0.3、0.4	0.4
负载监控 (为可选项) Load-monitoring (optional)	监控电流 I_{LC1} (A) Monitoring current	$(0.2 \sim 1) I_n$	I_n
	监控电流 I_{LC2} (A) Monitoring current	$(0.2 \sim 1) I_n$	I_n



通信可选元件及温度报警模块订货规范

通信可选元件订货规范

用户单位		订货日期	
产品型号		订货数	
通信转接器（Ⅱ）			
CN1通信适配器	CN1DP-MD		
	CN1DP-MP		
	CN1DP-MC		
	CN1EG/10		
FDM3短消息通知模块			
FCX3智能配电监控器	本体		
	可选模块: 短消息扩展模块		
CI1远程智能I/O模块	CI1-SCM423		
	CI1-S12		
	CI1-C8		
	CI1-SC64		

温度报警模块订货规范

用户单位		订货日期	
型号	订货数		
FWB1温度报警模块			
热传感器	FRG-7		
	FRG-9		
	FRG-11		
	FRG-13		
	FRG-17		



Order form of Communication Component

User		order date	
product type		order amount	
Communication changover device			
CN1 communicative adapter	CN1DP-MD		
	CN1DP-MP		
	CN1DP-MC		
	CN1EG/10		
FDM3 message notify module			
FCX3 intelligent distribution monitor	Main body		
	Selecting module : short message extend module		
CI1 remote intelligent I/O module	CI1-SCM423		
	CI1-S12		
	CI1-C8		
	CI1-SC64		

Order Form of Temperature Alarm module

User		order date	
product type		order amount	
FWB1 temperature alarm module			
hest sensor	FRG-7		
	FRG-9		
	FRG-11		
	FRG-13		
	FRG-17		



CW2系列无过电流保护断路器

CW2 SERIES BREAKERS NOT FULFILLING THE REQUIREMENTS FOR OVERCURRENT PROTECTION

本公司可提供不带智能控制器的断路器，符合GB14048.2附录L的CBI-Y要求，断路器无过电流保护功能，其主要技术指标、二次回路接线图、订货规范分别如下。

Can provide breakers without intelligent controllers ,compliance with GB14048.2 annex L CBI-Y demands.The breakers are not fulfilling the requirements for overcurrent protection.Main technical index,wiring diagram of secondary circuit and order form,please seeing follow.

● 主要技术指标

Main technical index

型号 Type		CW2-1600	CW2-2000	CW2-2500	CW2-4000	CW2-6300
壳架等级额定电流Inm(A) Rated frame current		1600	2000	2500	4000	6300
额定电流In(A) Rated working current		200,400,630,800, 1000,1250,1600	630,800,1000, 1250,1600,2000	1250,1600,2000, 2500	2000,2500,2900, 3200,3600,4000	4000,5000,6300
额定工作电压Ue(V) Rated working voltage		AC50Hz/60Hz,400、690				
额定绝缘电压Ui(V) Rated insulation voltage		1000				
额定冲击耐受电压Uimp(kV) Rated impulse withstand voltage		12				
工频耐受电压U(V)1min Working frequency withstand voltage		3500				
极数 Pole number		3,4				
N极额定电流IN(A) Rated current of N pole		100%In				
额定限制短路电流 Icc(kA)(有效值) Rated conditional short circuit current (effective value)	AC400V	42	60	65	85	100
	AC690V	25	40	50	75	85

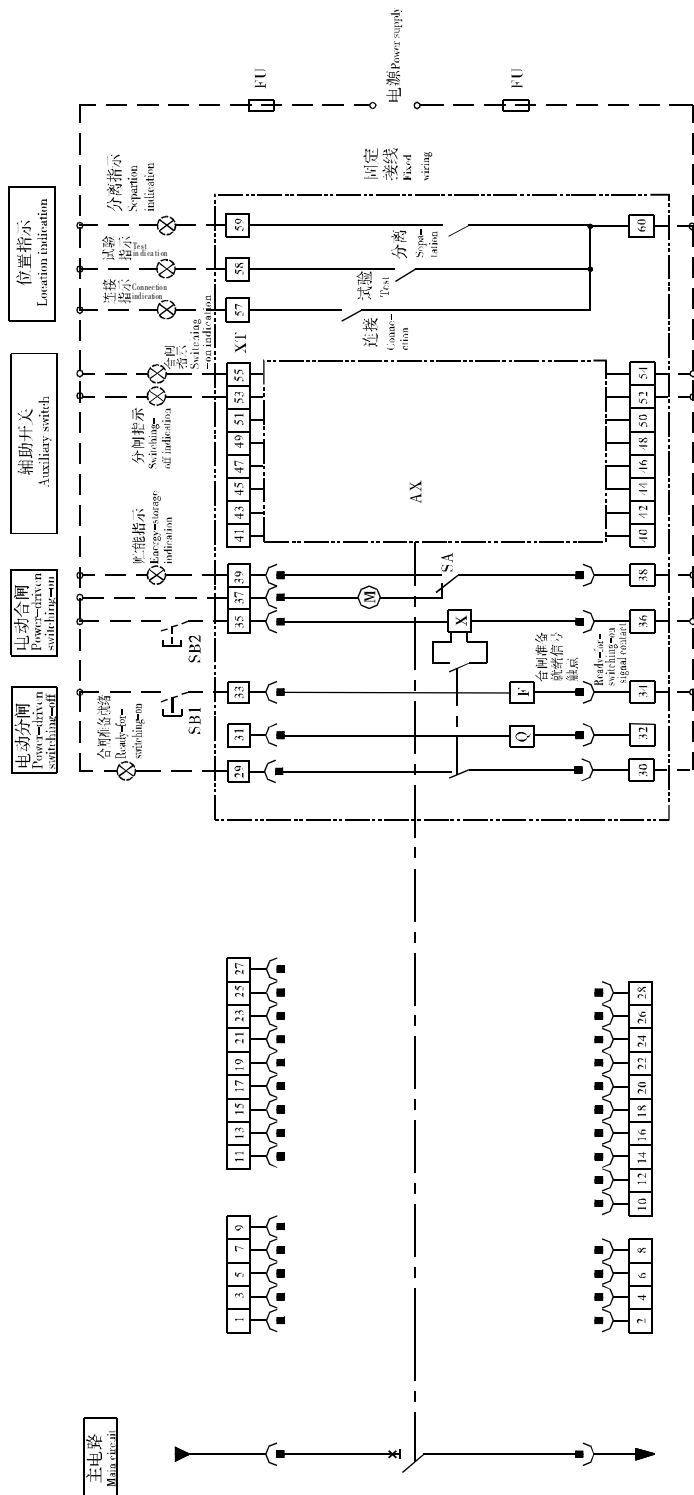


CW2系列无过电流保护断路器

CW2 SERIES BREAKERS NOT FULFILLING THE REQUIREMENTS FOR OVERCURRENT PROTECTION

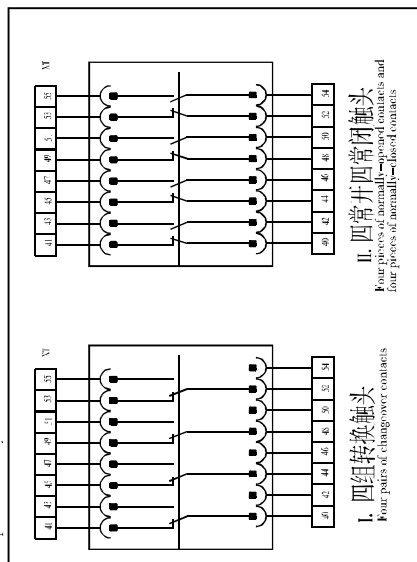
● 二次回路接线图 Wiring diagram of secondary circuit

CW2-1600无过电流保护断路器二次回路接线图
Wiring diagram of secondary circuit of CW2-1600 not fulfilling the requirements for overcurrent protection



注：储能指示由用户自接。若欠电压脱扣器、分闸脱扣器、合闸脱扣器等端子电压不同应分别接不同电源。Wiring in the dashed line is done by users themselves. Power supply is different for different used voltage of controller, Q, F.X etc.
下表中，√为必备附件的功能接线；○为选择附件的功能接线。 In the following table, √: standard configuration, ○: optional configuration, : none.

辅助开关型式 The pattern of auxiliary switch



端子号 Terminal	功能 Function	功能线 Function wiring
25-30	合闸准备就绪电压指示	Signal output of interlocking switch system
31, 32	欠电压脱扣器 (应接至下回路1)	Connect with under-voltage release
33, 34	分闸脱扣器	Connect with shunt release
35, 36	合闸脱扣器	Connect with closing electromagnet
37, 38, 39	电动机(机械)储能, 37, 38可作储能电源 (自动储能功能), 也可作储能电源 (手动储能功能)	Connect with Motor-driven operating mechanism (Automatic energy storage function), or connect with Motor-driven operating mechanism (Manual energy storage function)
40-55	断路器“储能”、“闭锁”、“分闸”、“合闸”指示	Auxiliary switch
57, 60	断路器“储能”、“闭锁”、“分闸”、“合闸”指示 (AC250V 1A)	“Green” position indication (AC250V 1A)
58, 60	断路器“储能”、“闭锁”、“分闸”、“合闸”指示 (AC250V 1A)	“Yes” position indication (AC250V 1A)
59, 60	断路器“储能”、“闭锁”、“分闸”、“合闸”指示 (AC250V 1A)	“Squashed” position indication (AC250V 1A)

AX	断路器辅助开关	Auxiliary switch
SB1	分闸按钮	Shunt button
SB2	合闸按钮	Closing button
Q	欠电压脱扣器	Under-voltage release
F	分闸脱扣器	Shunt release
N	合闸脱扣器	Closing electromagnet
M	电动机	Driving motor
SA	电动机行程开关	Limit switch
XT	断路器辅助回路接线端子	Terminals
Fu	熔断器	Fuse

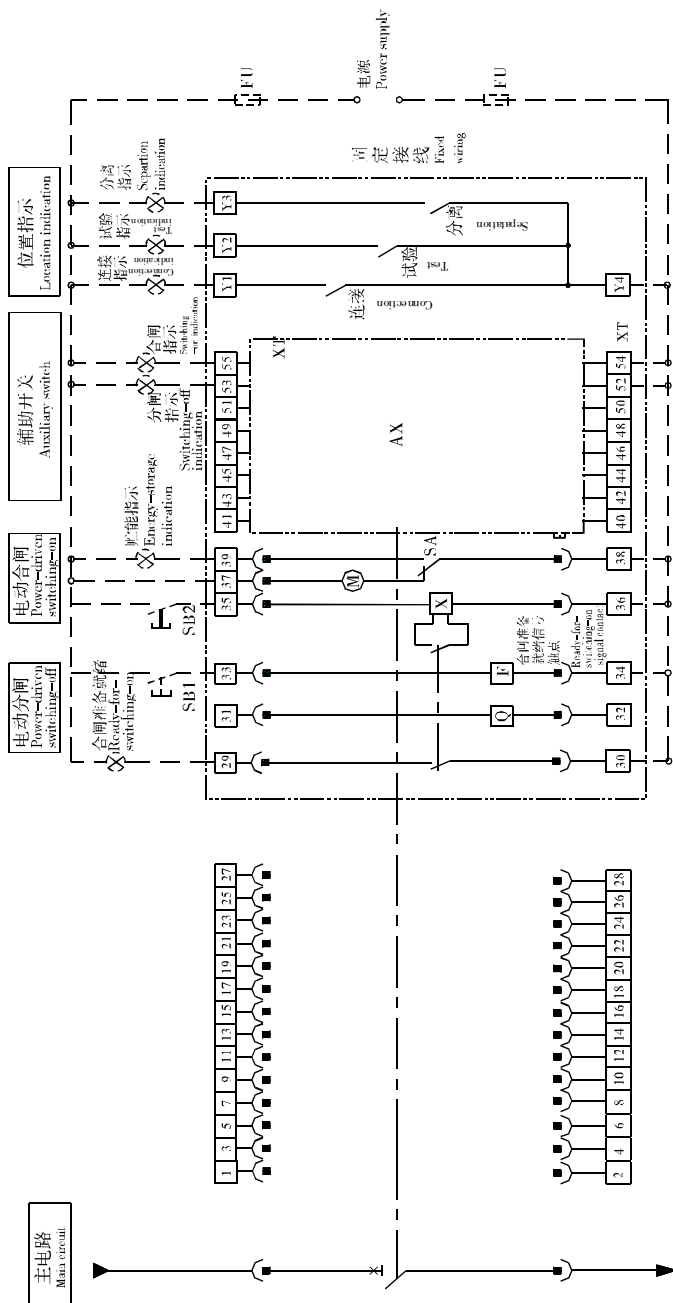


CW2系列无过电流保护断路器

CW2 SERIES BREAKERS NOT FULFILLING THE REQUIREMENTS FOR OVERCURRENT PROTECTION

CW2-2000 ~ 6300无过电流保护断路器二次回路接线图

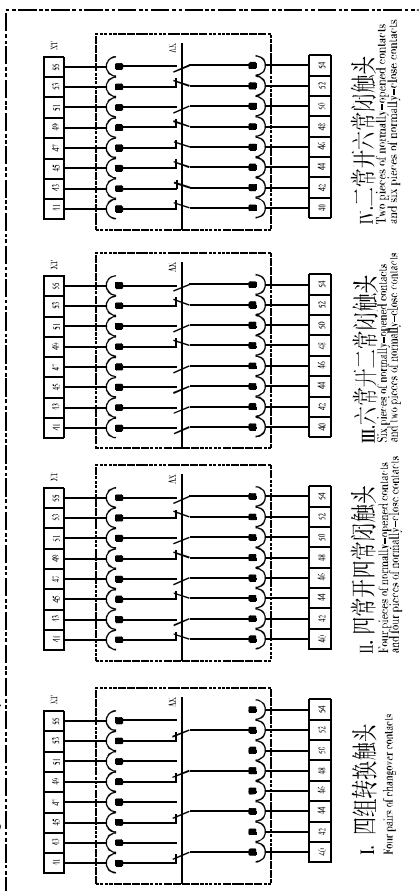
Wiring diagram of secondary circuit of CW 2-2000~6300 not fulfilling the requirements for overcurrent protection.



注：虚线部分由用户自接。若欠电压脱扣器、合闸电磁铁等需定电压不同应分别接不同电源。Wiring in the dashed line is done by users themselves. Power supply is different for different rated voltage of controller, Q, FX etc.
下表中，√为必要附件的功能接线；○为选装附件的功能接线。 In the following table, √: standard configuration, ○: optional configuration, : none.

辅助开关型式

The pattern of auxiliary switch



端子号 Terminal	功能 Function	标配/选装 Function wiring
29, 30	合闸准备就绪电气闭锁	Signal output of ready-for-closing-on
31, 32	欠电压脱扣器 (应接在上回路中)	Connect with under-voltage release
33, 34	合闸脱扣器	Connect with shut release
35, 36	分闸脱扣器	Connect with closing de-energized
37, 38, 39	手动电动机闭锁, 37, 38为后接接电源 (手动闭锁闭锁), 也可中接常开接后接电源 (手动闭锁闭锁)	Connect with Make driven operating mechanism. Power supply directly connected to the operating mechanism (manually locked open) function simultaneously (rated energy release) with 37, 38.
40~55	辅助开关接线端子	Auxiliary switch
Y1, Y4	闭锁触头 "连接" 位置指示 (AC250V 1A)	"Connect" position indication (AC250V 1A)
Y2, Y4	闭锁触头 "试验" 位置指示 (AC250V 1A)	"Test" position indication (AC250V 1A)
Y3, Y4	闭锁触头 "分离" 位置指示 (AC250V 1A)	"Separate" position indication (AC250V 1A)

AX	断路辅助开关	Auxiliary switch
SB1	分闸按钮	Shut button
SB2	合闸按钮	Closing button
Q	欠电压脱扣器	Under-voltage release
F	分励脱扣器	Shunt release
X	合闸电磁铁	Closing electromagnet
M	电动机	Closing motor
SA	电动执行机构	Limit switch
X1	断路器和/或断路器接线端子	Terminals
Yn	断路器	Breaker



CW2系列无过电流保护断路器

CW2 SERIES BREAKERS NOT FULFILLING THE REQUIREMENTS FOR OVERCURRENT PROTECTION

● 订货规范

无过电流保护断路器订货规范 (请在□内填上数字, □打√)

用户单位		订货台数		订货日期	
型号		CW2- □ / □ (极数、三极可不标) / CBI		额定电压	□ AC400V □ AC690V
用途		□ 陆用 □ 湿热带型 (TH型)		额定电流	In=□ A
连接		固定式 □ 水平 (后置) □ 垂直 (后置)			
		抽屉式 □ 水平 (后置) □ 垂直 (后置)			
标配附件	FFT分励脱扣器	□ AC230V □ AC400V □ DC220V □ DC110V			
	FHD合闸电磁铁	□ AC230V □ AC400V □ DC220V □ DC110V			
	FDC电动操作机构	□ AC230V □ AC400V □ DC220V □ DC110V			
	FPC辅助开关	标准型式 □ 4组转换触头 特殊型式 □ 4常开4常闭 □ 6常开2常闭 □ 2常开6常闭			
选择附件	□ FQT欠电压脱扣器	□ AC230V □ AC400V			
		□ 欠电压瞬时脱扣器			
		□ 欠电压延时脱扣器 □ 0.5s □ 1s □ 2s □ 3s			
	□ FFS“分闸”锁定装置	一台断路器 □ 一锁一钥匙			
		二台断路器 □ 二锁一钥匙			
		三台断路器 □ 三锁二钥匙			
	□ FLS机械连锁	二台断路器 □ 钢缆连锁 □ 联杆连锁			
		三台断路器 □ 钢缆连锁 □ 联杆连锁方式一 □ 联杆连锁方式二 □ 联杆连锁方式三			
	□ FXG相间隔板		□ FAN按钮锁定装置		
	□ FWZ抽屉座位置电气指示装置		□ FJS计数器		
□ FHM合闸准备就绪电气指示模块					

Order form of breakers not fulfilling the requirement for overcurrent protection

(Please fill numbers in □ or mark√ in □)

Name	Order amount		Order data	
Type	CW2- □ / □ (poles, omit for three poles) / CBI		Rated voltage	□ AC400V AC690V
Usage	□ On Land □ Humid tropical (TH)		Rated current	In=□ A
Connection	Fixed	□ Horizontal (back set) □ Vertical (back set)		
	Draw-out	□ Horizontal (back set) □ Vertical (back set)		
Normally-deployed accessories	FFT Shunt release	□ AC230V □ AC400V □ DC110V □ DC220V		
	FHD Switching-on electromagnet	□ AC230V □ AC400V □ DC110V □ DC220V		
	FDC Power-driven operation mechanism	□ AC230V □ AC400V □ DC110V □ DC220V		
	FPC Auxiliary switch	Standard pattern □ Four groups of changeover contacts Exceptional pattern □ Four pieces of normally-opened contacts (NO) and four pieces of normally-closed contacts (NC) □ Six pieces of normally-opened contacts (NO) and two pieces of normally-closed contacts (NC) □ Six pieces of normally-opened contacts (NO) and two pieces of normally-closed contacts (NC)		
Choice of accessories	□ FQT Under-voltage release	□ AC230V □ AC400V		
		□ Under-voltage instantaneous release		
		□ Under-voltage time delay release □ 0.5s □ 1s □ 2s □ 3s		
	□ FFS "Switching-off" lock mechanism	One sets of circuit breakers		□ One lock and one key
		Two sets of circuit breakers		□ Two lock and one key
		Three sets of circuit breakers		□ Three lock and two key
	□ FLS Mechanical interlock	Two sets of circuit breakers		□ Steel lock interlock □ Link rod interlock
		□ Steel lock interlock □ Pattern one of rod interlock □ Pattern two of rod interlock □ Pattern three of rod interlock		
	□ FXG Isolation plate between phases			□ FAN "Button" locking device
	□ FWZ Electrical indication mechanism of draw-out socket position			□ FJS Counter
□ FHM Electrical module for indication of ready-for switching on				

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常熟开关制造有限公司(原常熟开关厂)

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