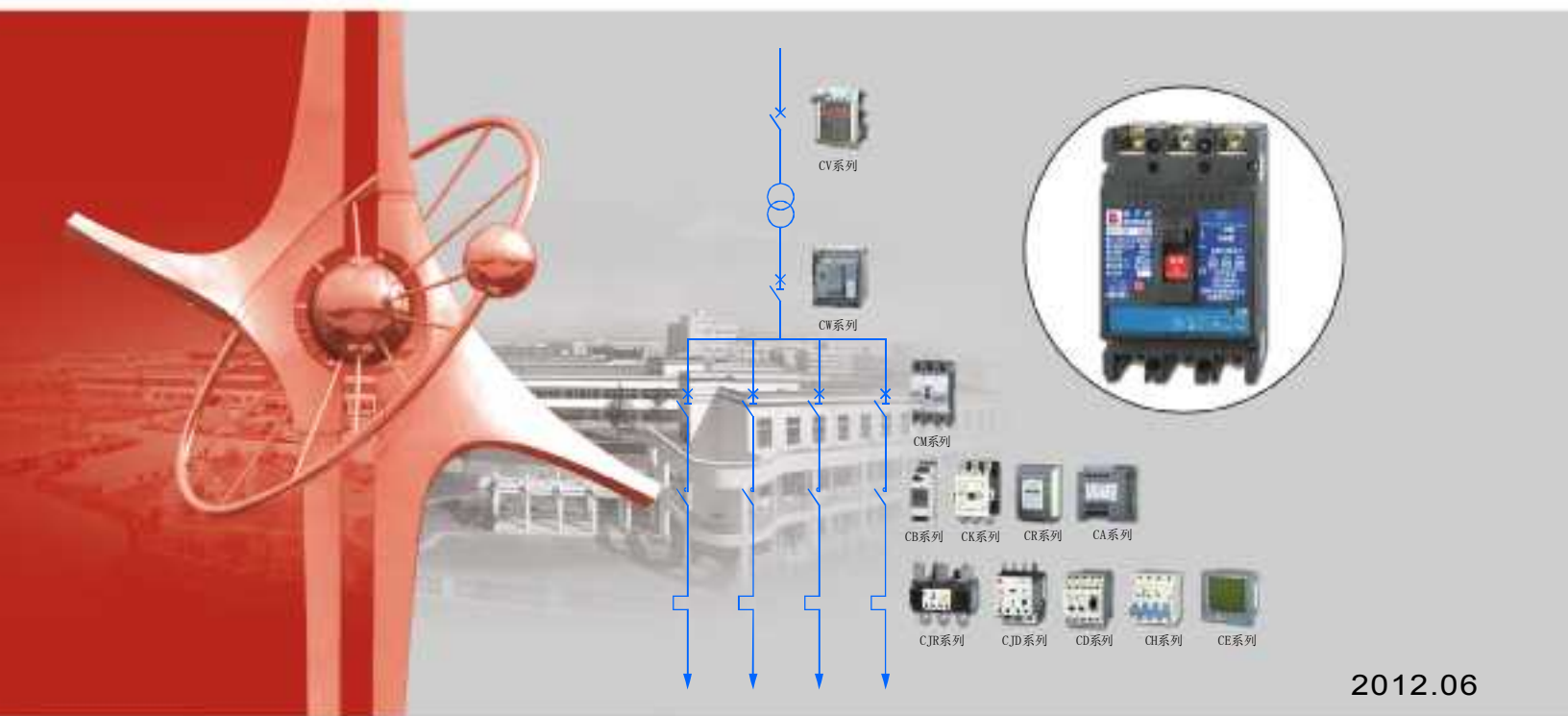




中国驰名商标

CM 1E 系列 电子式塑壳断路器

CM1E SERIES ELECTRONIC MCCB



2012.06

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)



国家认定企业技术中心
National Enterprise Technology Center



国家火炬计划重点高新技术企业证书
State Torch Plan Key High-tech Enterprise Certificate



国家科学技术进步奖证书
National Awards for Science and Technology Certificate



中国驰名商标
China Well-known Trademark



质量管理体系认证证书
Quality Management System Certificate



环境管理体系认证证书
Environmental Management System Certificate



国家创新型试点企业
National Innovative Pilot Enterprise



职业健康安全管理体系认证证书
Occupational Health And Safety Management System Certificate



测量管理体系认证证书
Certificate Of Conformity For Measurement Management Systems




博士后科研工作站
Postdoctoral Programme

公司简介

Introduction


常熟开关制造有限公司是国有资产参股的电器制造企业、“国家重点高新技术企业”，占地约300亩，员工1685人。主要生产中低压电器元件、工控产品、太阳能光伏逆变器、成套装置等，可以为您提供“智能配电系统三位一体完整的解决方案”。

公司建有博士后科研工作站、省级企业技术中心和江苏省电器控制工程中心，具有一支以博士、硕士、本科生为主的多层次研发队伍，工程技术人员占企业员工总数的50%左右。公司拥有先进的模具制造、零部件自动化生产、断路器装配自动检测流水线等一大批先进的制造和试验检测设备；实施以ERP管理为重点的信息化、网络化管理；完善质量/环境/职业健康安全体系，确保为用户提供优质、安全、可靠的产品。公司“”商标被国家工商行政管理总局认定为中国驰名商标，CM系列塑料外壳式断路器、CW系列智能型万能式断路器曾双双被评为中国名牌产品。

Changshu Switchgear Mfg. Co., Ltd. (Former Changshu Switchgear Plant), an enterprise with state-owned equity, covered an area of 200,000 m², with 1685 staffs, is a "National Key New High-tech Enterprise" and mainly produces HV and LV electrical components, industry control products, solar photovoltaic inverters and complete sets of equipment etc, all of which could provide trinity and complete solutions for intelligent power distribution system.

Post - doctoral scientific research station, Province Enterprise Technique Center and Jiangsu Province Electrical Apparatus Control Engineering Research Center have been established and a multi-level professional technique team has been formed consisting of PHD candidates, postgraduates and university graduates. Engineers and technicians have covered 50% of all staffs.

Advanced mould manufacturing equipments, automation producing equipments for spare parts, assembling and inspecting lines for breakers and test equipments have been brought in. Meanwhile, information and network management, taking ERP management as the focal point, has been applied and quality environmental systems (ISO9001/ISO14001/OHSMS18001) have also been established and perfected to ensure reliability and safety for customers.

The registered trademark  has been recognized as Famous Trademark of China by State Administration for Industry and Commerce of China. And CM Series Moulded Case Circuit Breaker and CW Series Intelligent Air Circuit Breaker are both China Top Brand products.





常熟开关制造有限公司
为您提供电气系统完整的解决方案

高压真空断路器



CV1-12系列
高压真空断路器



CV2-12系列
高压真空断路器



CV1-24系列
高压真空断路器



CV1-40.5系列
高压真空断路器

智能型万能式断路器



CW1系列
智能型万能式断路器



CW2系列
智能型万能式断路器



CW3系列
智能型万能式断路器



CW3V系列
智能型真空万能式断路器

塑料外壳式断路器



CM1系列
塑料外壳式断路器



CM1e系列
电子式塑壳断路器



CM1z系列
智能型断路器



CM1L系列
带剩余电流保护塑壳断路器



CM1EL系列
带剩余电流保护
电子可调式断路器



CM2系列
塑料外壳式断路器



CM2Z系列
智能型塑壳断路器



CM2L系列
带剩余电流保护塑壳断路器



CM3系列
塑料外壳式断路器



CM5系列
塑料外壳式断路器



CM5Z系列
塑料外壳式断路器

自动转换开关



CA1系列自动
转换开关(CB级)



CAP1系列自动
转换开关(PC级)



CAP2系列自动
转换开关(PC级)

接触器和过载继电器



CK3系列接触器



CJR3系列
热过载继电器



CJD3系列
电子过载继电器

剩余电流动作继电器



CLJ3 剩余电流
动作继电器



常熟开关制造有限公司
为您提供电气系统完整的解决方案

电动机软起动器



CR1系列
电动机软起动器



CR2系列
电动机软起动器

电动机保护器



CD1系列
电动机保护器



CD4系列
智能马达保护器

控制和保护电器



CB1系列
控制和保护开关电器(CPS)

变频调速



CF1系列
通用变频器

光伏发电用产品



CS1G系列三相并网型
光伏发电逆变器



CW3G系列
隔离开关(AC, DC)



CM3DC系列
塑料外壳式断路器

小型断路器



CH系列小型断路器

电力质量和系统自动化器件



CE1系列
智能型电力仪表



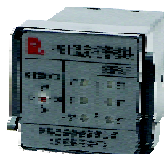
CI1系列
远程智能I/O模块



CN1DP-MP
CN1DP-MD
CN1DP-MC
通信适配器
CN1EG以太网
适配器



FDM3
短消息通知模块



FWB1温度报警模块

电气火灾探测



CSJ1系列剩余电流式电气
火灾监控探测器(独立式)
CMSJ2系列剩余电流式电气
火灾监控探测器(非独立式)
CSX1电气火灾监控设备

智能化通信低压配电网网络监控系列



● Ri year-PowerNet配电监控系统



● FCX3智能配电监控器



优秀特色

- 满足风电等新能源领域应用的能力（低温至-40℃、湿热带TH型）
- 获得国际认可的CB证书
- 具有体积小、分断高、带隔离等特点

额定极限短路分断能力： I_{cu} ：400V：50kA ~ 100kA；690V：20kA ~ 30kA

额定运行短路分断能力： I_{cs} ：400V：35kA ~ 65kA；690V：10kA ~ 20kA

额定短时耐受电流 I_{cw} （1s）：400V：5kA ~ 15kA

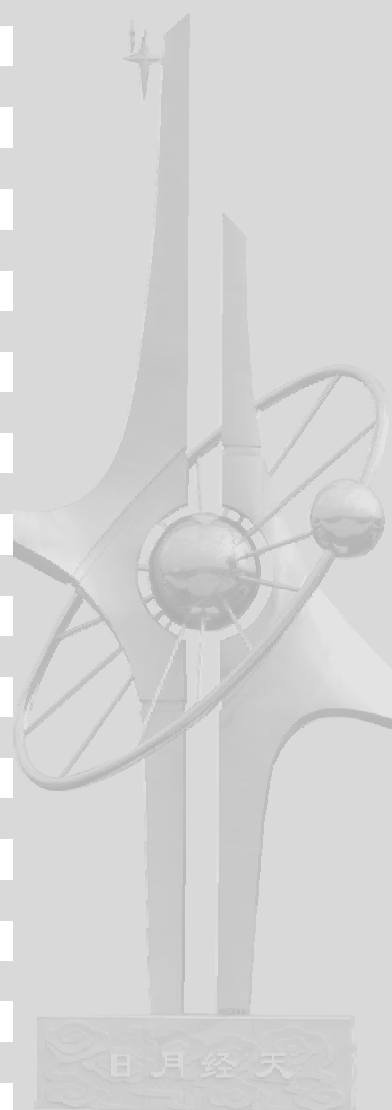
- 基于微处理器技术的电子可调脱扣器，具有精确的三段保护功能
- 短路保护具有后备保护，由后备磁脱扣实现快速脱扣，限制了短路电流，并确保断路器可靠分断
- 提供手持式专用测试器，方便用户对断路器的参数进行检测
- 可配FWB1温度报警模块，实现连接点在线超温报警



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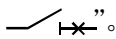




概述 GENERAL

CM1E系列电子式塑壳断路器（以下简称断路器），是本公司采用先进的CAD/CAM/CAE设计、制造技术，研制、开发的新型断路器之一。其额定绝缘电压为800V，适用于交流50Hz/60Hz，额定工作电压至690V，额定电流至1250A的电路中作不频繁转换及电动机保护之用。断路器具有过载长延时反时限、短路短延时反时限、短路短延时时时限、短路瞬时和欠电压保护功能，能保护线路和电源设备不受损坏，并提供低温至-40℃断路器。

断路器按照其额定极限短路分断能力（Icu）的高低，分为M型（较高分断型）、H型（高分断型）二类。该断路器具有体积小、分断高、飞弧短、抗振动等特点。

- 断路器可垂直安装（即竖装），亦可水平安装（即横装）。
- 断路器不可倒进线，即只能1、3、5接电源线，2、4、6接负载线。
- 断路器适用于隔离，符号表示为“”。
- 断路器符合下列标准：

IEC60947-1及GB14048.1-2006 低压开关设备和控制设备 总则

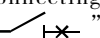
IEC60947-2及GB14048.2-2008 低压开关设备和控制设备 断路器及附录F带电子过电流保护断路器的附加试验

IEC60947-4-1及GB14048.4 低压开关设备和控制设备 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。

CM1E series electronic MCCB (hereafter referred to as simply breakers) are one of the new type breakers which have been developed by the company using CAD/CAM/CAE international advanced design and manufacturing technology. The rated insulation voltage of the breakers is 800V. In the circuit of AC50Hz/60Hz, rated operational voltage 690V and rated current up to 1250A, the breakers take the role of infrequent change-over switching and infrequent motor start-up. The breakers have overload long-time-delay inverse, short-circuit short-time-delay inverse, short-circuit short-time-delay definite, short-circuit instantaneous and under-voltage protection functions so as to prevent the circuit and supply devies from damage, The breaker can be provided for temperature down to -40℃.

The breakers, according to the rated ultimate short-circuit breaking capacity (Icu), are classified two kinds of types M(second high breaking type) and H(high breaking type). The breakers are of the following characteristics: compact size, high breaking capacity, short arc-over distance and shakeproof, etc.

- The breakers could be installed vertically (upright) or horizontally (transverse).
- The breakers could not be wired adversely 1、3 and 5 can only be connected with supply line, 2、4 and 6 can only be connected with load line.
- The breakers have disconnecting function, its corresponding symbol is shown as “”
- The breakers comply with the demands of the following standards:

IEC 600947-1 and GB14048.1-2006 Low-voltage switchgear and controlgear General rules

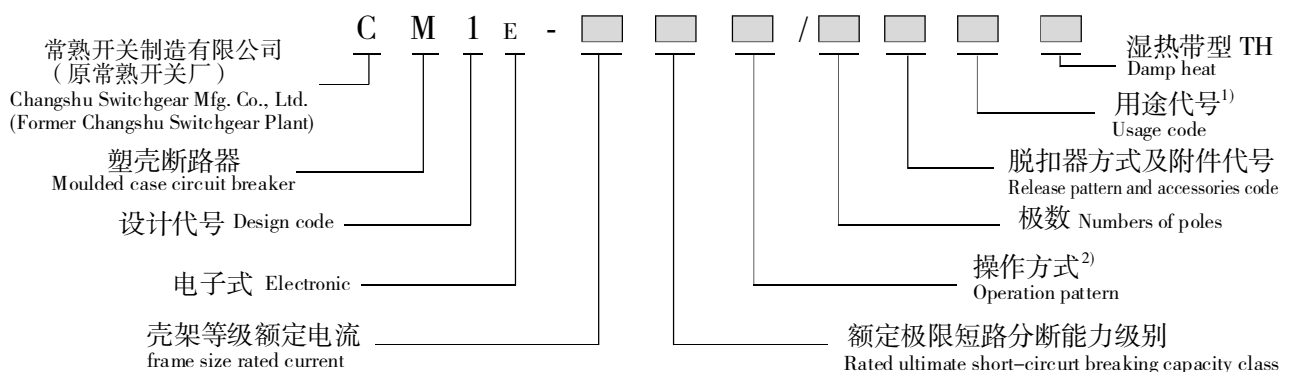
IEC 600947-2 and GB 14048.2-2008 Low-voltage switchgear and controlgear Circuit-breakers and appendix F additional tests for circuit-breakers with electronic over-current protection.

IEC60947-4-1 and GB14048.4 Low-voltage switchgear and controlgear Electromechanical contactors and motor starters.

- The breakers have obtained the “CCC” mark of CQC.



型号及含义 TYPE AND ITS MEANING



注：1) 配电型无代号，电动机型用2表示。

2) 直接操作无代号；电动机操作用P表示；转动手柄操作用Z表示。

Note: 1) usage code for distribution MCCB is without code, usage code for motor protection is 2.

2) No code for operation directly; P for motor operator; Z for rotary handle operator.



型号及含义 TYPE AND ITS MEANING

- 四极产品中性极（N极）的型式为：N极过电流保护电流、时间参数100%自动跟踪相线整定值，且N极与其它三极一起合分（N极先合后分）；

- 按额定电流分：CM1E-100有32、63、100A，CM1E-225为225A；CM1E-250为250A；CM1E-400为400A；CM1E-630为630A；CM1E-800为800A；CM1E-1250为800、1000、1250A；

- 接线方式分为板前接线、板后接线、插入式板前接线、插入式板后接线、抽出式接线五种；

- 按断路器是否带附件分带附件和不带附件两种。附件分内部附件和外部附件：内部附件有分励脱扣器、欠电压脱扣器、辅助触头、报警触头四种；外部附件有手动操作机构、电动机操作机构、手持式CM1E专用测试器、FWB1温度报警模块。

- The pattern of neutral (N) for four poles breaker: protective current and time of over-current in N pole, are 100% automatic tracking phase line, and N pole combines with other three poles (closing first and opening last)

- Classification according to rated current CM1E-100 has 32、63、100A, CM1E-225 has 225A, CM1E-250 has 250A, CM1E-400 has 400A, CM1E-630 has 630A, CM1E-800 has 800A, CM1E-1250 has 800、1000、1250A;

- The connected mode has five: front connected, rear connected, plug in front connected, plug-in rear connected and draw-out connected.

- In accordance with breaker whether with accessories: with accessories and without accessories accessories dividing internal/external, internal accessories: shunt release, under-voltage release, auxiliary contact and alarm contact; external accessories: rotary handle operator, motor operator and CM1E tester、temperature alarm module.



正常使用条件和安装条件

NORMAL SERVICE AND MOUNTING CONDITIONS

- 断路器可在周围空气温度为-5℃ ~ +40℃条件下运行；

- 安装地点的海拔不超过2000mm；

- 安装地点的空气相对湿度在最高温度为+40℃时不超过50%，在较低温度下可以有较高的相对湿度，例如20℃时达90%。对由于温度变化偶尔产生的凝露应采取特殊措施；

- 污染等级为3级；

- 断路器主电路安装类别为Ⅲ，其余辅助电路、控制电路安装类别为Ⅱ；

- 断路器适用于电磁环境A；

- 湿热带型（TH型）断路器能耐受潮湿空气、盐雾、油雾、霉菌的影响；

- 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；

- 断路器应安装在没有雨雪侵袭的地方。

- Ambient air temperature: -5℃ ~ +40℃;

- The altitude of the site of installation does not exceed 2000;

- The relative humidity of the air does not exceed 50% at a maximum temperature of +40℃. Higher relative humidities may be permitted at lower temperature, e.g. 90% at +20℃. Special measures may be necessary in cases of occasional condensation due to variations in temperature;

- Pollution degree 3;

- Installing category: Ⅲ for main circuit, Ⅱ for other auxiliary and control circuits;

- Be suitable in electromagnetic environment A;

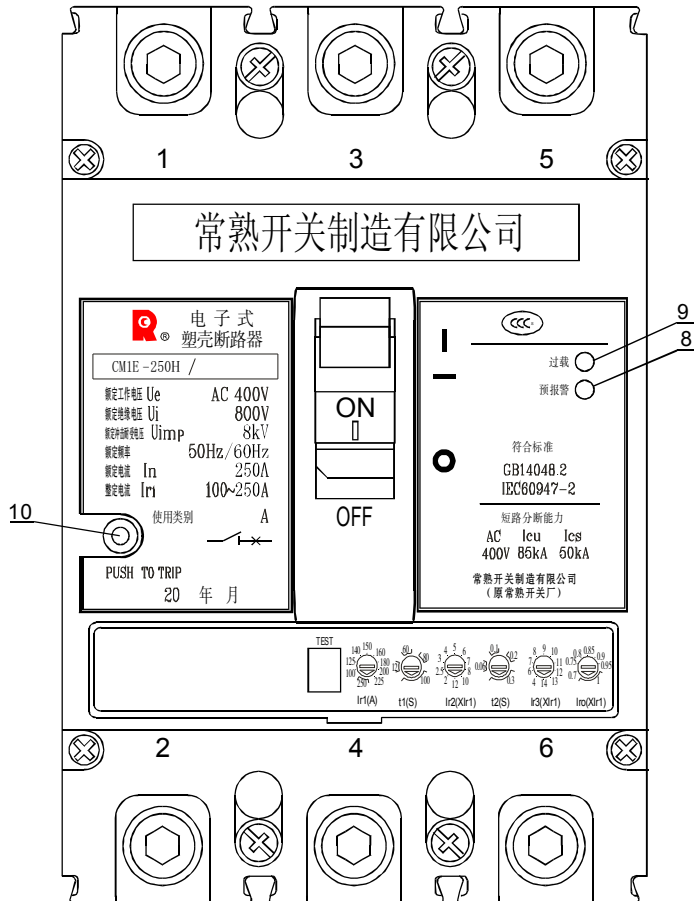
- Damp heat breaker can be able to bear the influence of damp air or salt mist and oil mist or mould;

- There must be not any explosive dangerous and not any conducting dust, there must be not any gas which would corrode metal and destroy insulation;

- The place would not be invaded by rain and snow.

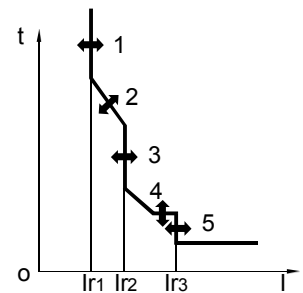
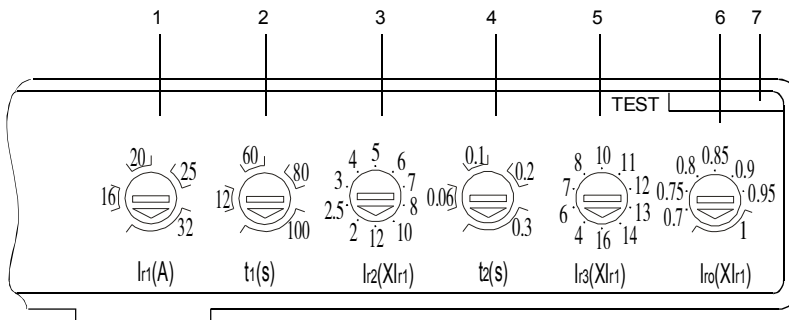


- 断路器正面指示
Breaker front direction



CM1E-100, In=32A电子式脱扣器
CM1E-100, In=32A electronic release

电子式脱扣器保护特性曲线
Protective characteristic curve of electronic release

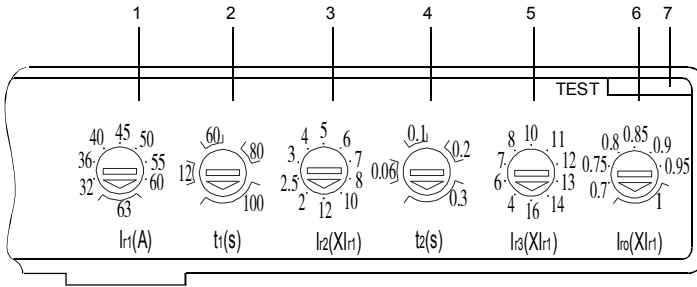




结构简介 STRUCTURE INTRODUCTION

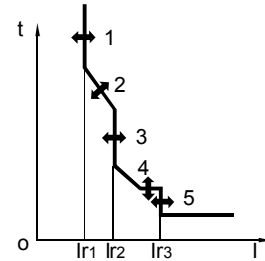
CM1E-100, In=63A电子式脱扣器

CM1E-100, In=63A electronic release



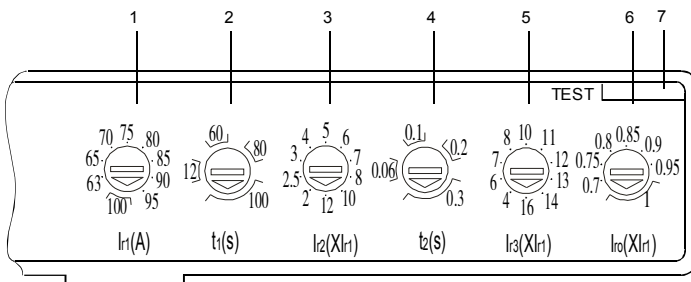
电子式脱扣器保护特性曲线

Protective characteristic curve of electronic release



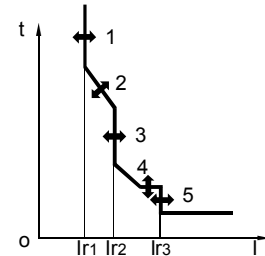
CM1E-100, In=100A电子式脱扣器

CM1E-100, In=100A electronic release



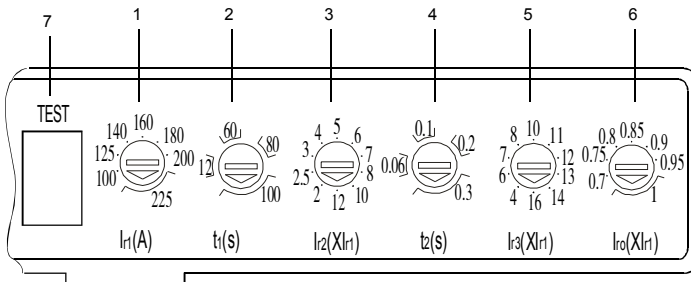
电子式脱扣器保护特性曲线

Protective characteristic curve of electronic release



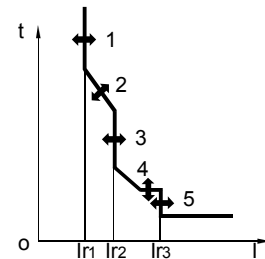
CM1E-225, In=225A电子式脱扣器

CM1E-225, In=225A electronic release



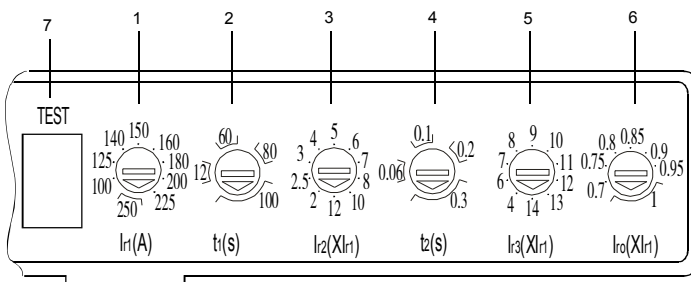
电子式脱扣器保护特性曲线

Protective characteristic curve of electronic release



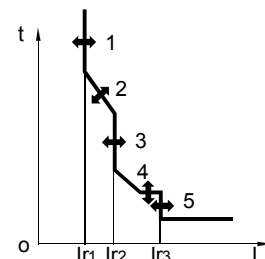
CM1E-250, In=250A电子式脱扣器

CM1E-250, In=250A electronic release



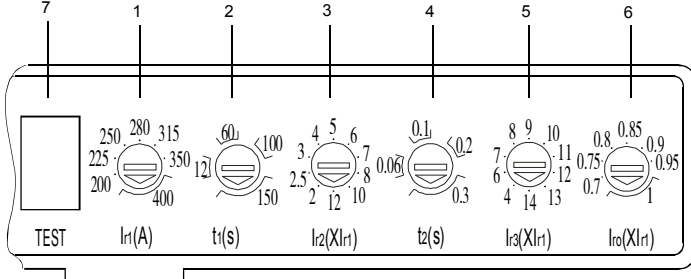
电子式脱扣器保护特性曲线

Protective characteristic curve of electronic release



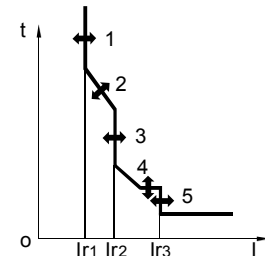
CM1E-400, In=400A电子式脱扣器

CM1E-400, In=400A electronic release



电子式脱扣器保护特性曲线

Protective characteristic curve of electronic release

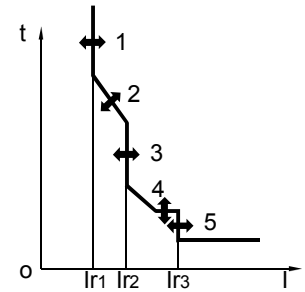
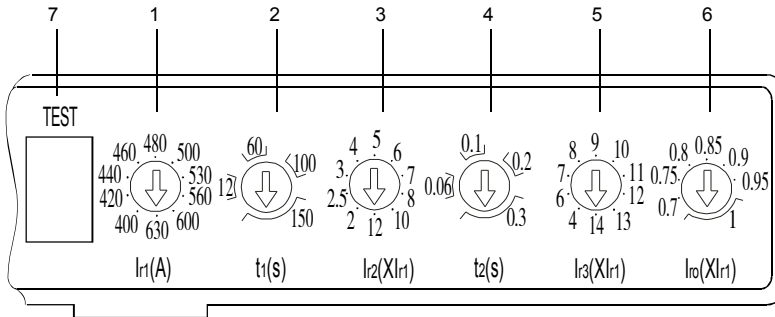




结构简介 STRUCTURE INTRODUCTION

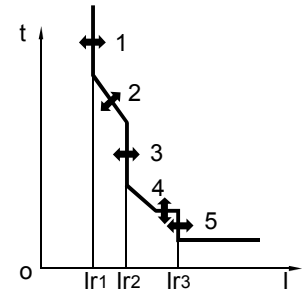
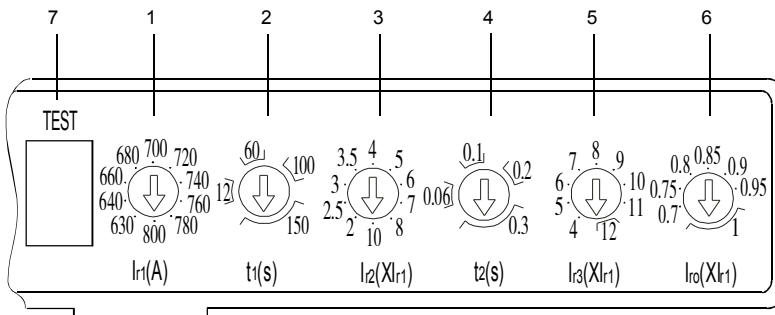
CM1E-630, In=630A 电子式脱扣器
CM1E-630, In=630A electronic release

电子式脱扣器保护特性曲线
Protective characteristic curve of electronic release



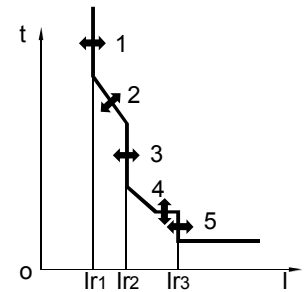
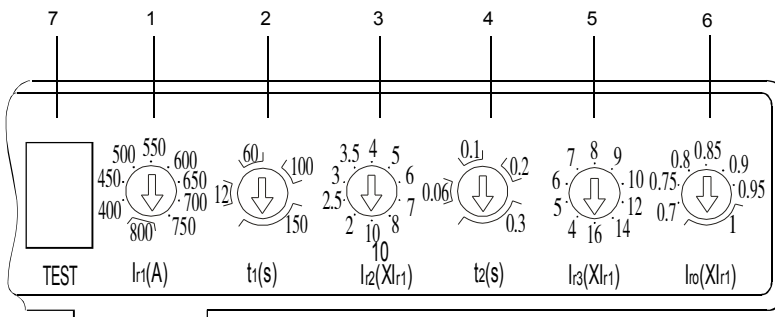
CM1E-800, In=800A 电子式脱扣器
CM1E-800, In=800A electronic release

电子式脱扣器保护特性曲线
Protective characteristic curve of electronic release



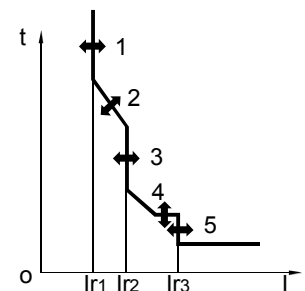
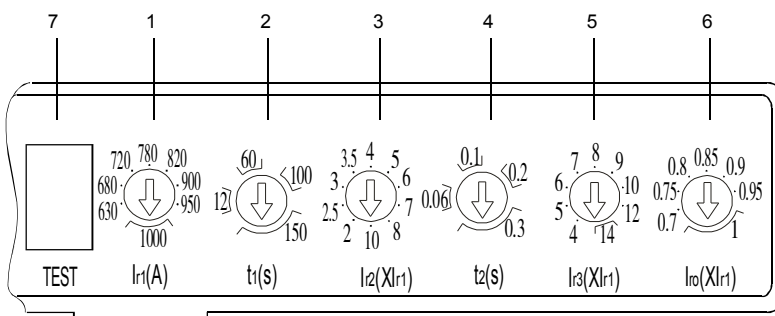
CM1E-1250, In=800A 电子式脱扣器
CM1E-1250, In=800A electronic release

电子式脱扣器保护特性曲线
Protective characteristic curve of electronic release



CM1E-1250, In=1000A 电子式脱扣器
CM1E-1250, In=1000A electronic release

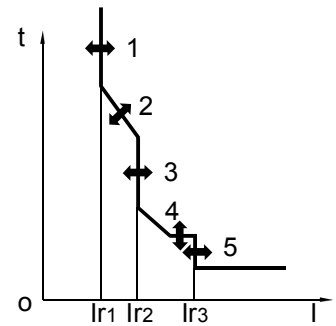
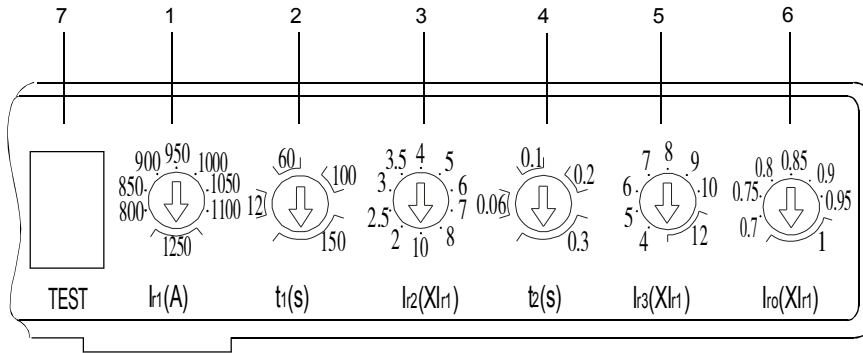
电子式脱扣器保护特性曲线
Protective characteristic curve of electronic release





CM1E-1250, In=1250A电子式脱扣器
CM1E-1250, In=1250A electronic release

电子式脱扣器保护特性曲线
Protective characteristic curve of electronic release



保护:

- 1-过载长延时动作电流 I_{r1} 调整, 根据断路器不同的额定电流, 可从4档到10档进行调整;
- 2-长延时动作时间 t_1 调整, 可进行4档调整;
- 3-短路短延时动作电流 I_{r2} 调整, 可进行10档调整;
- 4-短延时动作时间 t_2 调整, 可进行4档调整;
- 5-短路瞬时动作电流 I_{r3} 调整, 可进行8档、9档或10档调整;
- 6-预报警动作电流 I_{r0} 调整, 可进行7档调整。

Protection

- 1-For the adjustment of overload long-time delay operating current I_{r1} , according to different rated current this knob can be adjusted from 4 steps to 10 steps;
- 2-For the adjustment of long-time operating time t_1 , this knob can be adjusted 4 steps;
- 3-For the adjustment of short-circuit short-time delay operating current I_{r2} , this knob can be adjusted 10 steps;
- 4-For the adjustment of short-time operating time t_2 , this knob can be adjusted 4 steps;
- 5-For the adjustment of short-circuit instantaneous operating current I_{r3} , this knob can be adjusted 8 steps, 9 steps or 10 steps;
- 6-For the adjustment of pre-alarm operating current I_{r0} , this knob can be adjusted 7 steps.

其它功能:

- 7-测试端, 用于检测电子脱扣器当前整定值;
- 8-预报警指示;
- 9-过载指示;
- 10-脱扣按钮。

Other functions

- 7-Test terminal for the testing of present setting values of electronic release;
- 8-Pre-alarm indication;
- 9-Over-load indication;
- 10-Tripping button



主要技术性能指标 MAIN TECHNICAL PERFORMANCE INDEX

- 断路器主要技术性能指标见表一 The technical performance index see following table 1 please
表一 Table 1

型号 Type	CM1E-100			CM1E-225		CM1E-250		CM1E-400					
壳架等级额定电流Inm(A) Frame size rated current	100			225		250		400					
额定电流In(A) Rated current	32	63	100	225		250		400					
过载长延时整定电流Ir1 (A) Overload long-time-delay setting current	16,20,25, 32	32,36,40, 45,50,55, 60,63	63,65,70, 75,80,85, 90,95,100	100,125,140, 160,180,200,225		100,125,140,150, 160,180,200,225,250		200,225,250, 280,315,350,400					
额定工作电压Ue (V) Rated operational voltage	400, 690												
额定绝缘电压Ui (V) Rated insulation voltage	800												
额定冲击耐受电压Uimp (V) Rated impulse withstand voltage	8000												
极数 Numbers of poles	3		4	3		4	3		4				
分断能力级别 Breaking capacity class	M	H		M	H		M	H					
额定极限短路分断能力Icu(kA) Rated ultimate short-circuit breaking capacity	AC400V	50	85	50	50	85	50	50	85	50	65	100	65
	AC690V	20			20			20			20		
额定运行短路分断能力Ics(kA) Rated service short-circuit breaking capacity	AC400V	35	50	35	35	50	35	35	50	35	42	65	42
	AC690V	10			10			10			15		
额定短时耐受电流Icw(kA)/1s Rated short-time withstand current										5			
使用类别 Utilization category	A			A		A		B					
飞弧距离 (mm) Arc-over distance	≥ 50(0)**									≥ 100(0)**			
电气寿命* (次 times) Electrical durability	8000			8000		8000		7500					
机械寿命* (次 times) Mechanical durability	免维护 Without maintenance		20000		20000		20000		10000				
	有维护 Maintenance		40000		40000		40000		20000				
外形尺寸 (mm) Outline dimension		W	92	122	107	142	107	142	150	198			
		L	150		165		165		257				
		H	92		90		90		106.5				
板前接线 Front connected	○			○		○		○					
板后接线 Rear connected	○			○		○		○					
插入式接线 Plug-in connected	○			○		○		○					
抽出式接线 Draw-out connected								○					
欠电压脱扣器 Under-voltage release	○			○		○		○					
分励脱扣器 Shunt release	○			○		○		○					
辅助触头 Auxiliary contact	○			○		○		○					
报警触头 Alarm contact	○			○		○		○					
电动机操作机构 Motor operator	○			○		○		○					
手动操作机构 Rotary handle operator	○			○		○		○					
CM1E专用测试器 CM1E tester	○			○		○		○					

*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

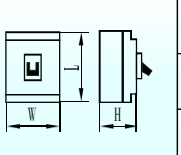
**注: CM1E-100、225、250、400分别选装高为6mm、7.5mm、7.5mm、9.3mm的零飞弧罩, 实现零飞弧。

**note: can be zero arcing by installing arc cover of 6mm、7.5mm、7.5mm、9.3mm for CM1E-100、225、250、400.



主要技术性能指标 MAIN TECHNICAL PERFORMANCE INDEX

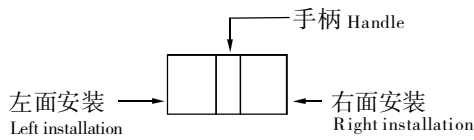
续表一 Table 1

型号 Type	CM1E-630		CM1E-800		CM1E-1250		
壳架等级额定电流Inm(A) Frame size rated current	630		800		1250		
额定电流In (A) Rated current	630		800		800	1000	1250
过载长延时整定电流Ir1 (A) Overload long-time-delay setting current	400,420,440,460, 480,500, 530,560,600,630		630,640,660,680,700,720, 740,760,780,800		400,450,500, 550,600,650, 700,750,800	630,680,720, 780,820,900, 950,1000	800,850,900, 950,1000, 1050,1100, 1250
额定工作电压Ue (V) Rated operational voltage	400, 690				400		
额定绝缘电压Ui (V) Rated insulation voltage	800						
额定冲击耐受电压Uimp (V) Rated impulse withstand voltage	8000						
极数 numbers of Poles	3		4	3		4	3
分断能力级别 Breaking capacity class	M	H		M	H		
额定极限短路分断能力Icu(kA) Rated ultimate short-circuit breaking capacity	AC400V	65	100	65	75	100	75
	AC690V	20			30		
额定运行短路分断能力Ics(kA) Rated service short-circuit breaking capacity	AC400V	42	65	42	50	65	50
	AC690V	15			20		
额定短时耐受电流Icw(kA)/1s Rated short-time withstand current	8		10		15		
使用类别 Utilization category	B		B		B		
飞弧距离 (mm) Arc-over distance	≥ 100						
电气寿命 (次 times) Electrical durability	7500		7500		500		
机械寿命 (次 times) Mechanical durability	免维护 Without maintenance		10000		10000		3000
	有维护 Maintenance		20000		20000		6000
外形尺寸 (mm) Outline dimension		W	210	280	210	280	210
		L	280		280		340
		H	115.5		115.5		138.5
板前接线 front connected	○		○		○		
板后接线 Rear connected	○		○		○		
插入式接线 Plug-in connected	○		○		○		
抽出式接线 Draw-out connected	○		○		○		
欠电压脱扣器 Under-voltage release	○		○		○		
分励脱扣器 Shunt release	○		○		○		
辅助触头 Auxiliary contact	○		○		○		
报警触头 Alarm contact	○		○		○		
电动机操作机构 Motor operator	○		○		○		
手动操作机构 Rotary handle operator	○		○		○		
CM1E专用测试器 CM1E tester	○		○		○		



● 脱扣器方式及内部附件代号见表二

Release pattern and internal accessories code see following Table 2 please



- 报警触头 Alarm contact
- 辅助触头 Auxiliary contact
- 分励脱扣器 Shunt release
- 欠电压脱扣器 Under voltage release
- 引线方向 Lead direction

表二 Table 2

脱扣器方式及内部附件代号 Release pattern and accessories code	附件名称 Accessories name	型号 Type		CM1E-400		CM1E-630 CM1E-800	CM1E-1250
		极数及N极形式 Poles numbers and N-pole type		3极 Three poles	4极 Four poles	3极 4极 Three poles Four poles	3极 Three poles
308	报警触头 Alarm contact	3极	4极	3极	4极	3极 4极	3极
310	分励脱扣器 Shunt release	3极	4极	3极	4极	3极 4极	3极
320	辅助触头 Auxiliary contact	3极	4极	3极	4极	3极 4极	3极
330	欠电压脱扣器 Undervoltage release	3极	4极	3极	4极	3极 4极	3极
340	分励脱扣器 辅助触头 Shunt release, auxiliary contact	3极	4极	3极	4极	3极 4极	3极
350	分励脱扣器 欠电压脱扣器 Shunt release, undervoltage release	3极	4极	3极	4极	3极 4极	3极
360	二组辅助触头 Two auxiliary contact	3极	4极	3极	4极	3极 4极	3极
370	辅助触头 欠电压脱扣器 Auxiliary contact, undervoltage release	3极	4极	3极	4极	3极 4极	3极
318	分励脱扣器 报警触头 Shunt release, alarm contact	3极	4极	3极	4极	3极 4极	3极
328	辅助触头 报警触头 Auxiliary contact, alarm contact	3极	4极	3极	4极	3极 4极	3极
338	欠电压脱扣器 报警触头 Undervoltage release, alarm contact	3极	4极	3极	4极	3极 4极	3极
348	分励脱扣器 辅助触头 报警触头 Shunt release, auxiliary contact, alarm contact	3极	4极	3极	4极	3极 4极	3极
368	二组辅助触头 报警触头 Two auxiliary contact, alarm contact	3极	4极	3极	4极	3极 4极	3极
378	辅助触头 欠电压脱扣器 报警触头 Auxiliary contact, undervoltage release, alarm contact	3极	4极	3极	4极	3极 4极	3极

注: 1. 脱扣器方式及内部附件代号首位数字3表示具有三段保护的电子式脱扣器; 后两位数字表示内部附件代号, 无附件则用00表示;
 2. CM1E-400中328规格, CM1E-630、800及1250中348规格, CM1E-1250中378规格辅助触头为一对触头(即一常开, 一常闭), CM1E-400、630、800及1250中368规格辅助触头为三对触头(即三常开, 三常闭); 其余规格辅助触头数量按第27页表中配置。
 3. CM1E-100、225、250中320规格辅助触头可提供二对触头(即二常开、二常闭), 但须在订货时注明。
 Note: 1. Release pattern and accessories code's first number 3 is provided with three class protective electronic release, the last two numbers are provided with internal accessories code, without accessories is provided 00.
 2. For CM1E-400 codes 328, CM1E-630、800、1250 codes 348, CM1E-1250 codes 378 have one pair of auxiliary contact (a normally open and a normally close) for CM1E-400、630、800、1250 codes 368 have three pair of auxiliary contacts (three normally open and three normally close). The amount of auxiliary contacts in terms specifications is disposed according to the diagram on page 27.
 3. For CM1E-100、225、250, two pair of auxiliary contacts (two normally open and two normally close) are provided, note when making order.



功率损耗 POWER LOSS

- 功率损耗见表三
Power loss see following table 3

表三 Table 3

型号 Type	通电电流 (A) With current	三极/四极总功率损耗(W) The total power loss of three/four poles			
		板前接线 front connected	板后接线 Rear connected	插入式接线 Plug-in connected	抽出式接线 Draw-out connected
CM1E-100	100	12	12	12.2	-
CM1E-225	225	41	41	41.2	-
CM1E-250	250	50.6	50.6	50.8	-
CM1E-400	400	52.8	52.8	53.1	72.9
CM1E-630	630	71.4	71.4	71.7	91.5
CM1E-800	800	115.2	115.2	115.5	135.5
CM1E-1250	1250	140.6			138.9 ($I_{r1}=1100A$)



高海拔降容 ALTITUDE DERATING

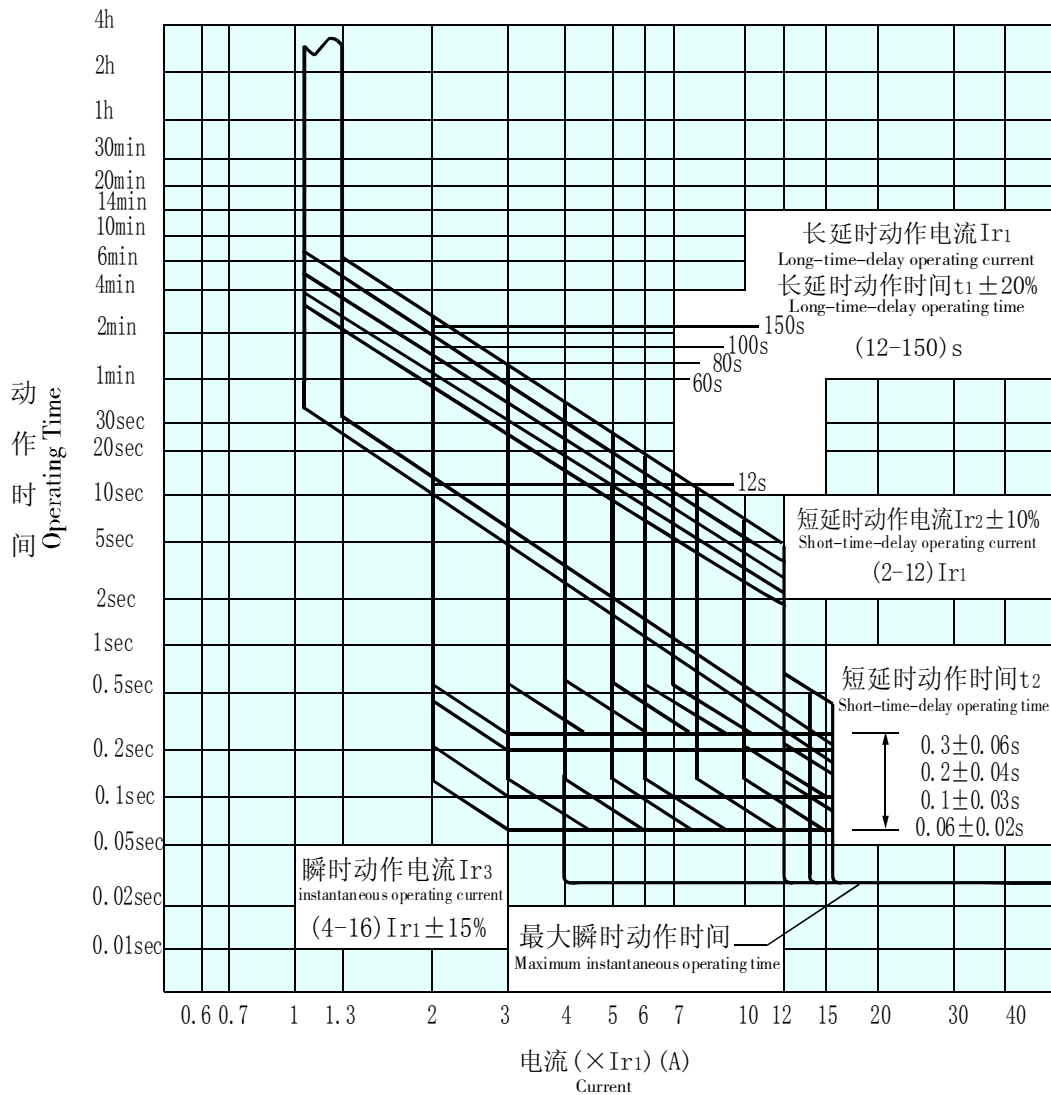
- 海拔超过正常使用条件和安装条件的2000m，断路器电气性能可参照下表修正；
Altitude of service conditions more than application of 2000m, electrical performance of breaker can be corrected by reference to following table:

海拔 (m) Altitude	2000	3000	4000	5000
工频耐压 (V) Power-frequency withstand voltage	3000	2500	2000	1800
工作电流修正系数 Operational current correction coefficient	1	0.94	0.88	0.83



断路器内装按有效值采样的电流传感器。断路器具有过载长延时反时限、短路短延时反时限、短路短延时定时限、短路瞬时动作等保护功能，可由用户自行设定组成所需的保护特性；中性线过电流保护电流、时间参数100%自动跟踪相线整定值。脱扣器特性见下图。

The breaker for which the current sensing means are stated to be r.m.s. responsive. it has overload long-time-delay inverse, short-circuit short-time-delay inverse, short-circuit short-time-delay definite, short-circuit instantaneous protection functions, can be set up protection characteristic by the users; neutral over current protective current and time parameter are 100% automatic tracking phase setting value release characteristic see the following diagram.





- 长延时过电流保护反时限动作特性见表四
Long-time-delay over current inverse protective operating characteristic see table 4

表四 Table 4

电 流 Current		动 作 时 间 Operating time								
配 电 用 Distribution	1.05I _{r1}	2小时内不动作 Non-operating withing two hours								
	1.3I _{r1}	≤1h动作 Operating								
	2I _{r1}	整定时间t ₁ (s) Setting time	I _{nm} =100、225、250A				I _{nm} =400、630、800、1250A			
12			60	80	100	12	60	100	150	
电 动 机 保 护 用 Motor protection	1.05I _{r1}	2小时内不动作 Non-operating withing two hours								
	1.2I _{r1}	≤1h动作 Operating								
	1.5I _{r1}	动作时间T ₁ (s) Operating time	I _{nm} =100、225、250A				I _{nm} =400、630A			
			21.3	107	142	178	21.3	107	178	267
	2I _{r1}	整定时间t ₁ (s) Setting time	12	60	80	100	12	60	100	150
	7.2I _{r1}	动作时间T ₁ (s) Operating time	0.93	4.63	6.17	7.72	0.93	4.63	7.72	11.6
脱扣级别 Trip class		—	10A	10	20	—	10	20	30	
注：1.动作时间符合 I ² T ₁ =(2I _{r1}) ² t ₁ (1.2I _{r1} ≤I<I _{r2})； Note: 1.operating time in line with I ² T ₁ =(2I _{r1}) ² t ₁ (1.2I _{r1} ≤I<I _{r2})； 2.动作时间允差为 ± 20%； 2.operating time tolerance: ± 20%； 3.可返回时间不小于动作时间的70%。 3.Returnable time not less than 70% operating time.										

- 短延时过电流保护特性见表五
Short-time delay over-current protection characteristic see table 5

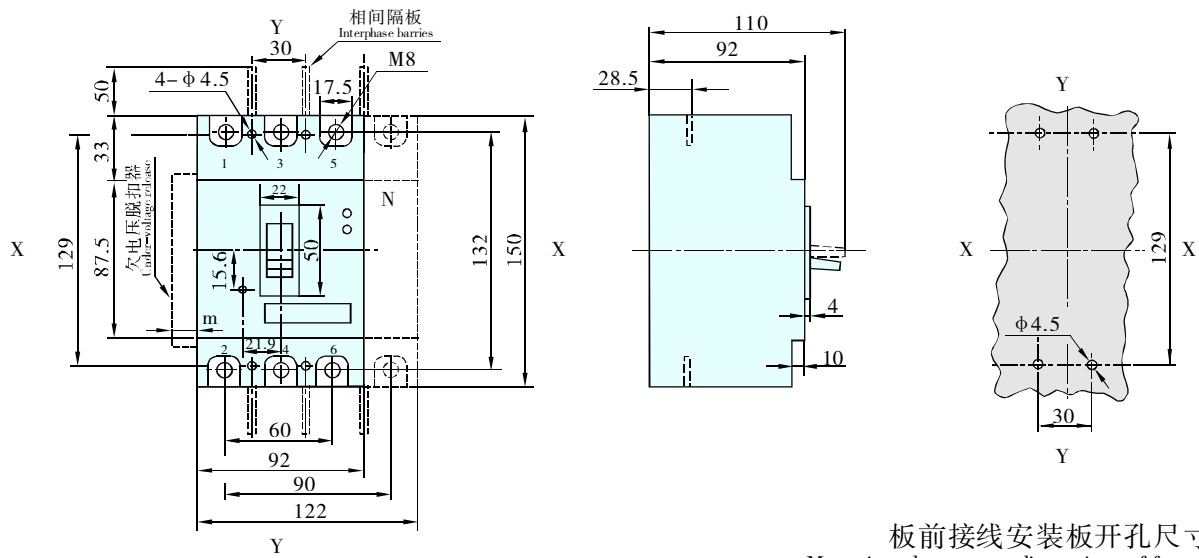
表五 Table 5

电 流 Current		动 作 时 间 Operating time				
I _{r2} ≤I<1.5I _{r2}		反时限 Inverse		I ² T ₂ =(1.5I _{r2}) ² t ₂		
1.5I _{r2} ≤I<I _{r3}	定 时 限 Definite	整定时间t ₂ (s) Setting time	0.06	0.1	0.2	0.3
		允差(s) Tolerance	± 0.02	± 0.03	± 0.04	± 0.06
		可返回时间(s) Returnable time			0.14	0.21
注：反时限动作时间允差 ± 20%。 Note: Inverse operating time tolerance ± 20%.						



外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

- CM1E-100板前接线（三极、四极） Front connected (three/four poles)
X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker

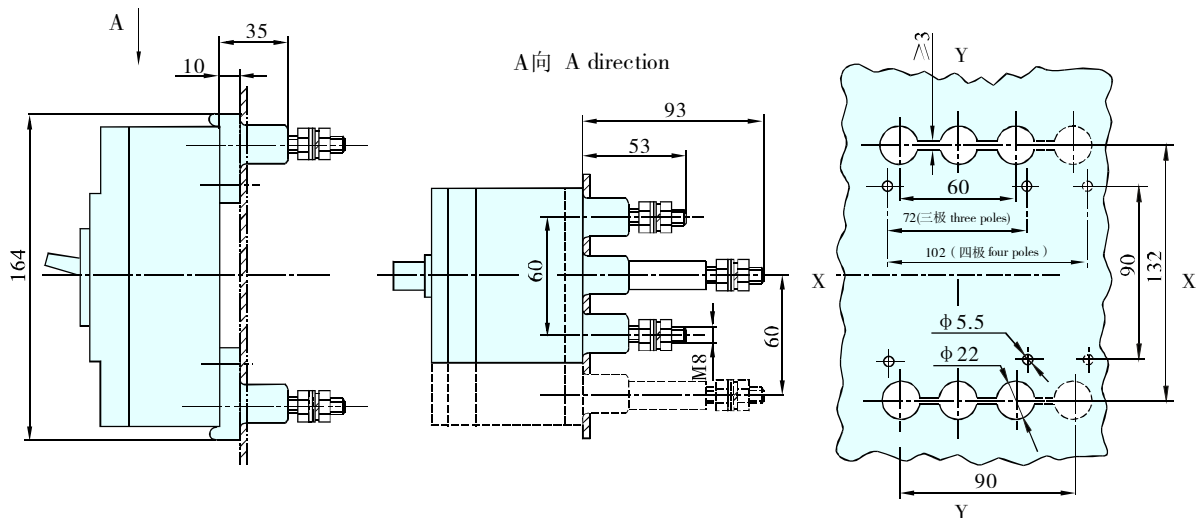


板前接线安装板开孔尺寸
Mounting plate cutout dimensions of front connected

欠电压脱扣器厚度:
The thickness of under-voltage release
C型 m=21
Type C

- CM1E-100板后接线（三极、四极） Rear connected (three/four poles)

X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker



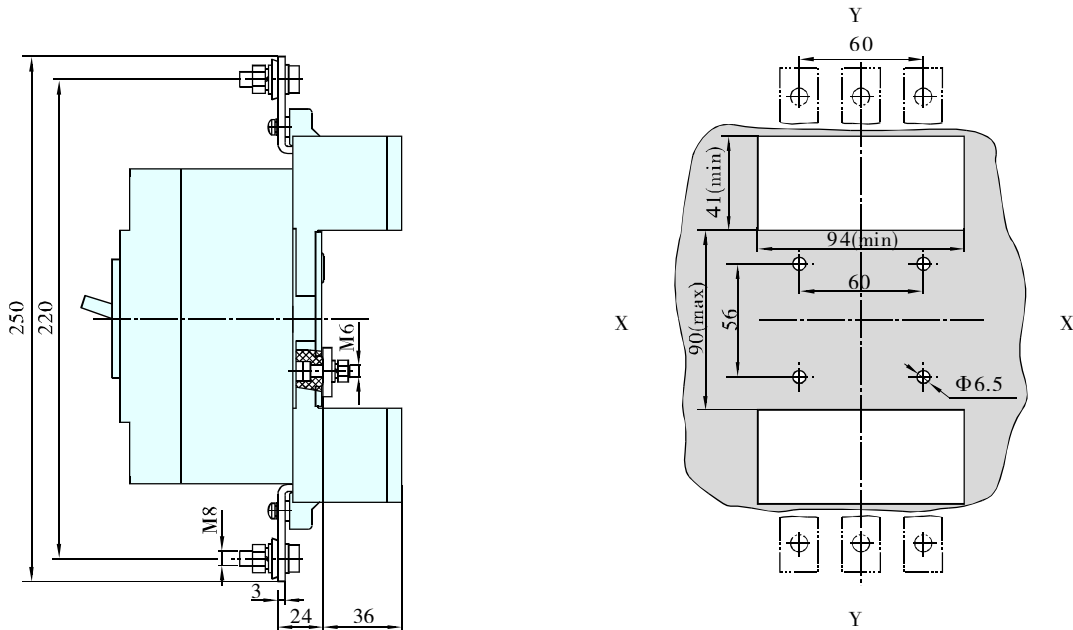
板后接线安装板开孔尺寸
Mounting plate cutout dimensions of rear connected



外形尺寸及安装尺寸 *OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS*

CM1E-100插入式板前接线(三极) Plug-in front connected (three/four poles)

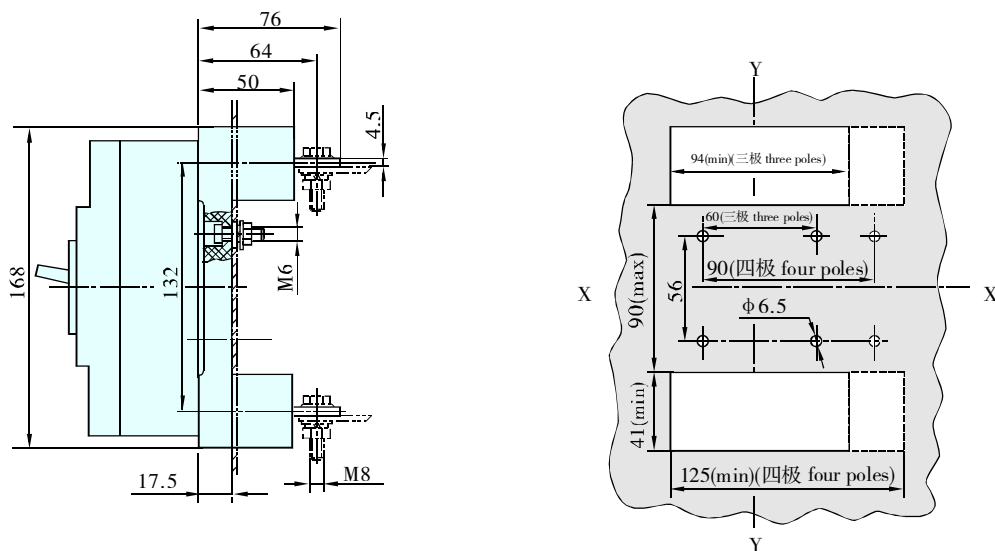
X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker



插入式板前接线安装板开孔尺寸
Mounting plate cutout dimensions of plug-in front connected

CM1E-100插入式板后接线(三极、四极) Plug-in rear connected (three/four poles)

X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker



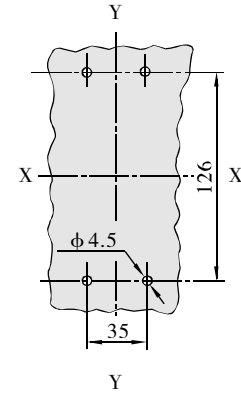
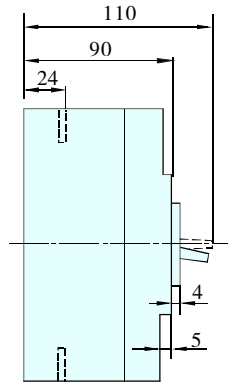
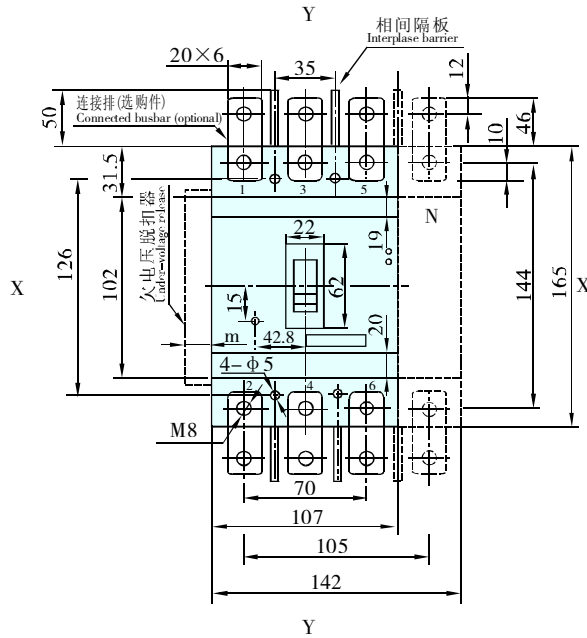
插入式板后接线安装板开孔尺寸
Mounting plate cutout dimension of plug-in rear connected



外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

CM1E-225板前接线（三极、四极） Front connected (three/four poles)

X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker



板前接线安装板开孔尺寸
Mounting plate cutout dimensions of front connected

欠电压脱扣器厚度:

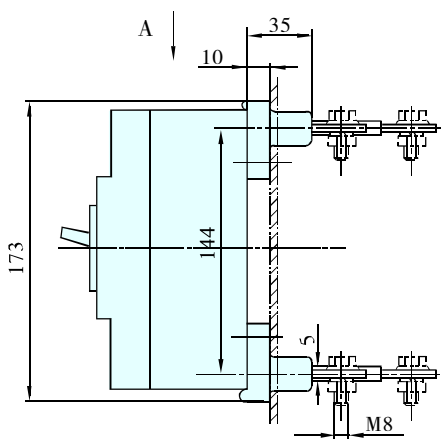
The thickness of under-voltage release

C型 m=21

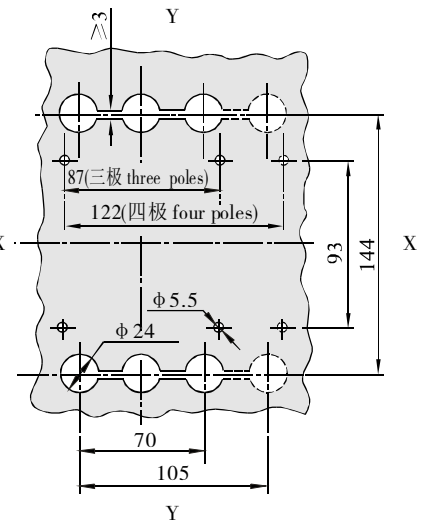
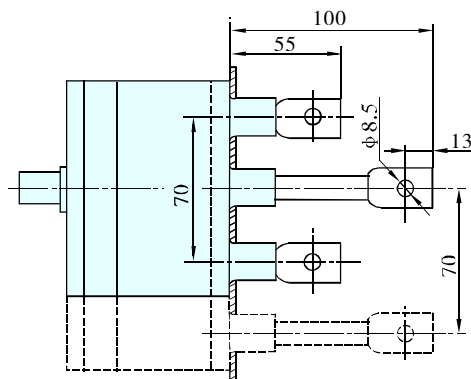
Type C

CM1E-225板后接线（三极、四极） Rear connected (three/four poles)

X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker



A向 A direction



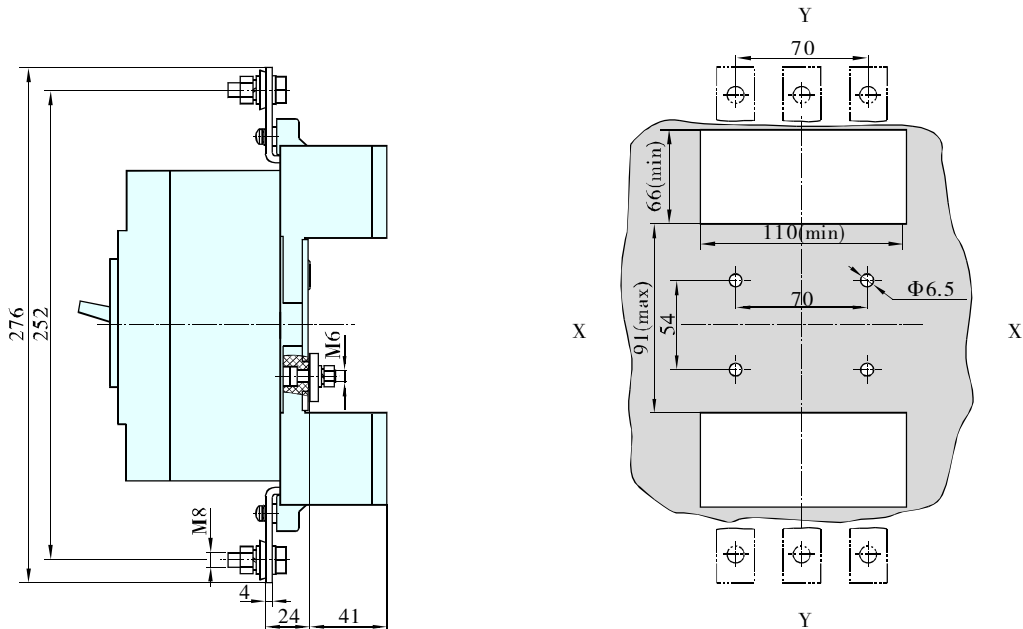
板后接线安装板开孔尺寸
Mounting plate cutout dimensions of rear connected



外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

CM1E-225插入式板前接线（三极） Plug-in front connected (three poles)

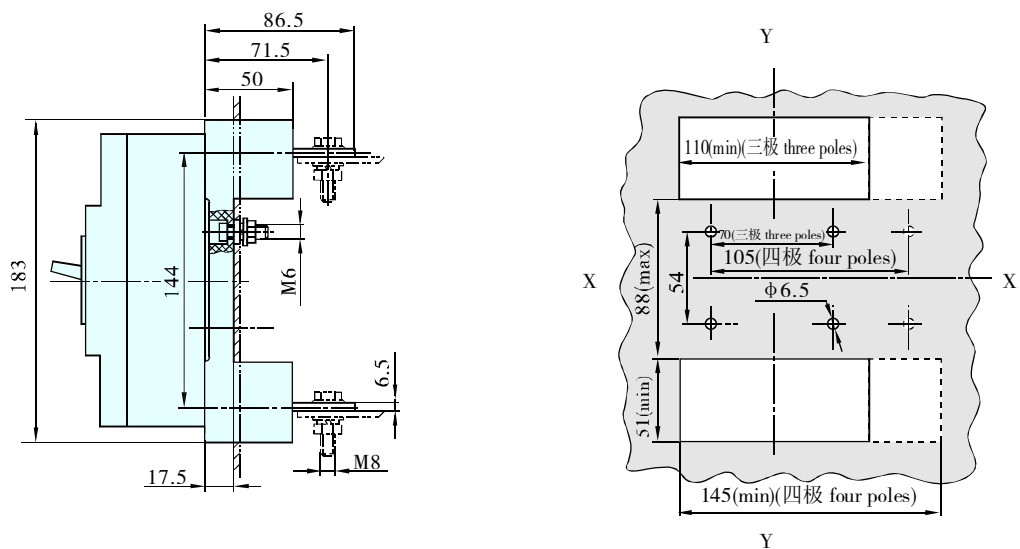
X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker



插入式板前接线安装板开孔尺寸
Mounting plate cutout dimensions of plug-in front connected

CM1E-225插入式板后接线（三极、四极） Plug-in rear connected (three/four poles)

X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker

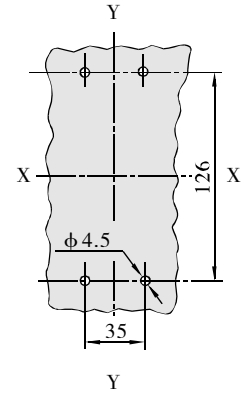
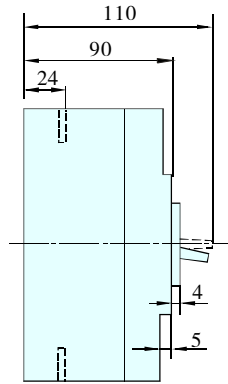
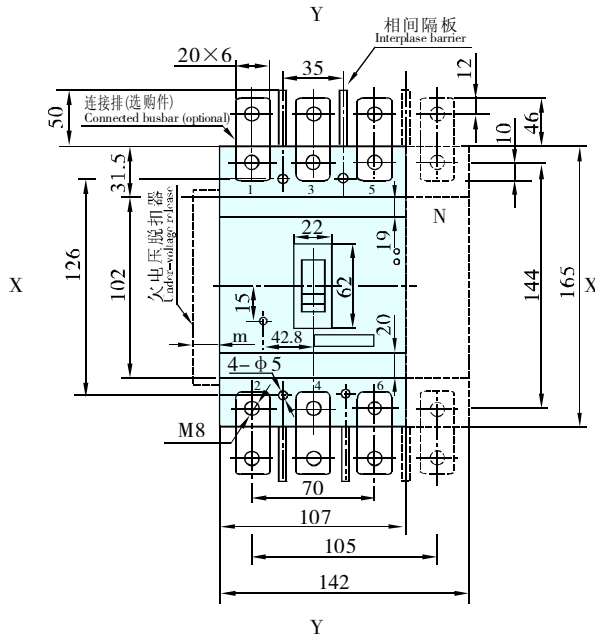


插入式板后接线安装板开孔尺寸
Mounting plate cutout dimension of plug-in rear connected



外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

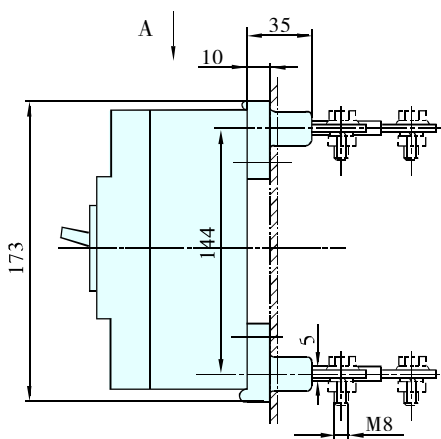
CM1E-250板前接线（三极、四极） Front connected (three/four poles)
 X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker



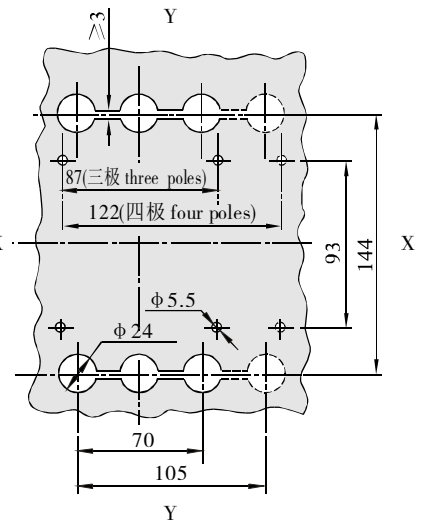
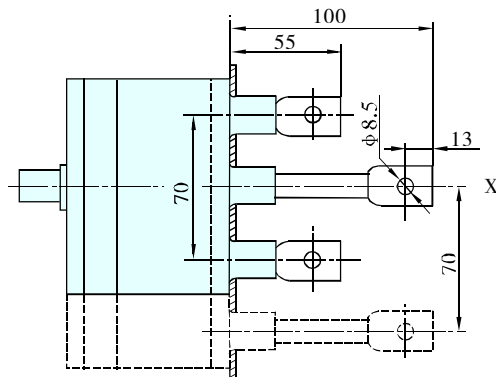
板前接线安装板开孔尺寸
 Mounting plate cutout dimensions of front connected

欠电压脱扣器厚度:
 The thickness of under-voltage release
 C型 m=21
 Type C

CM1E-250板后接线（三极、四极） Rear connected (three/four poles)
 X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker



A向 A direction



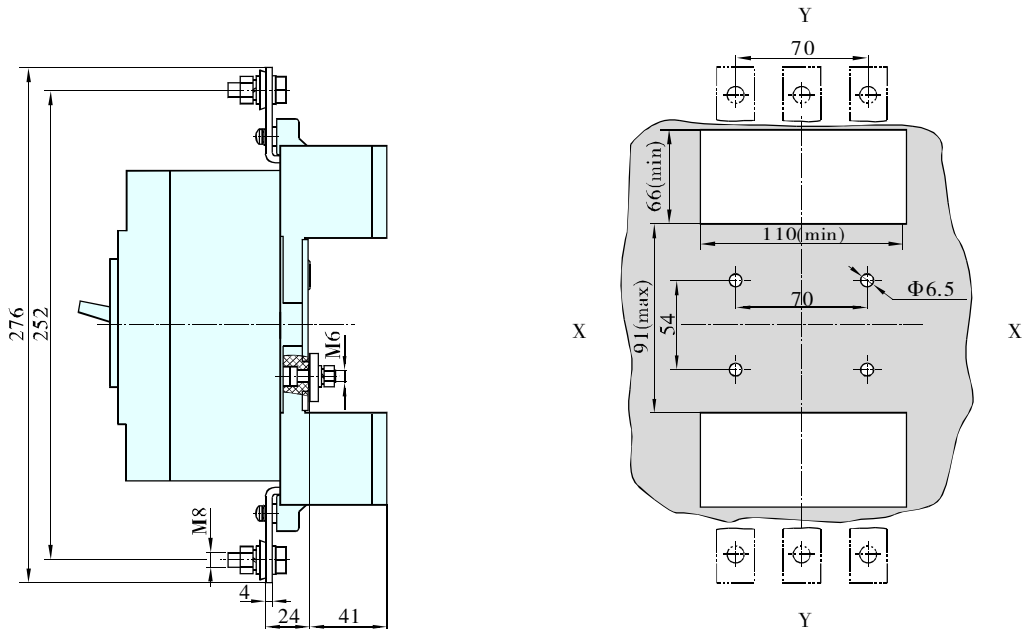
板后接线安装板开孔尺寸
 Mounting plate cutout dimensions of rear connected



外形尺寸及安装尺寸 *OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS*

CM1E-250插入式板前接线（三极） Plug-in front connected (three poles)

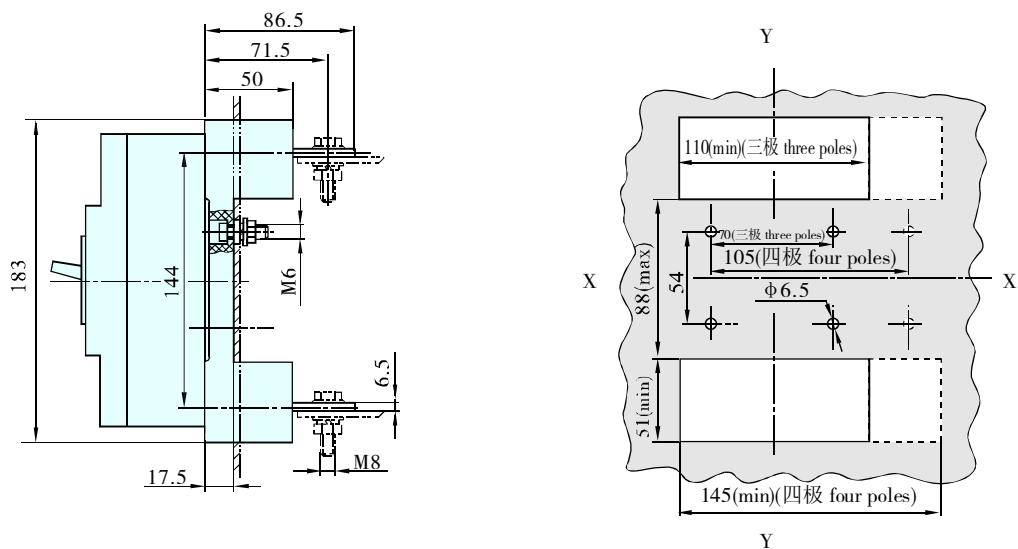
X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker



插入式板前接线安装板开孔尺寸
Mounting plate cutout dimensions of plug-in front connected

CM1E-250插入式板后接线（三极、四极） Plug-in rear connected (three/four poles)

X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker

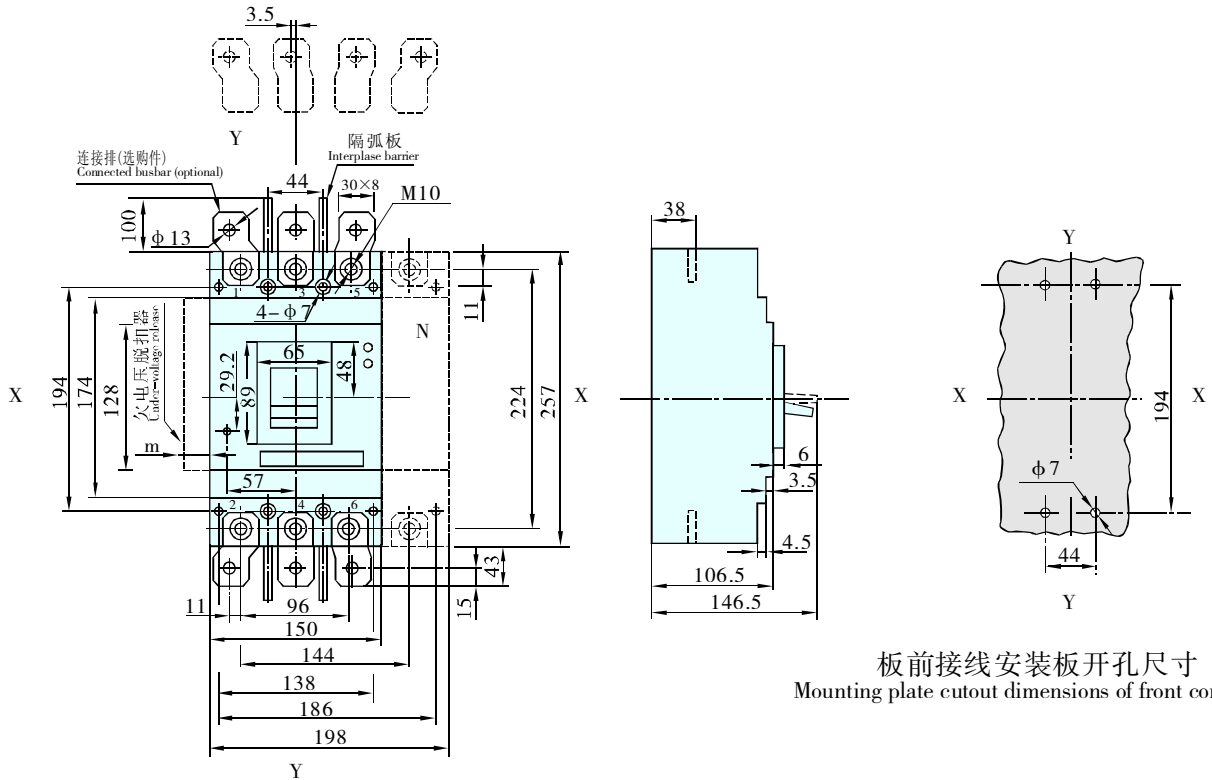


插入式板后接线安装板开孔尺寸
Mounting plate cutout dimension of plug-in rear connected



外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

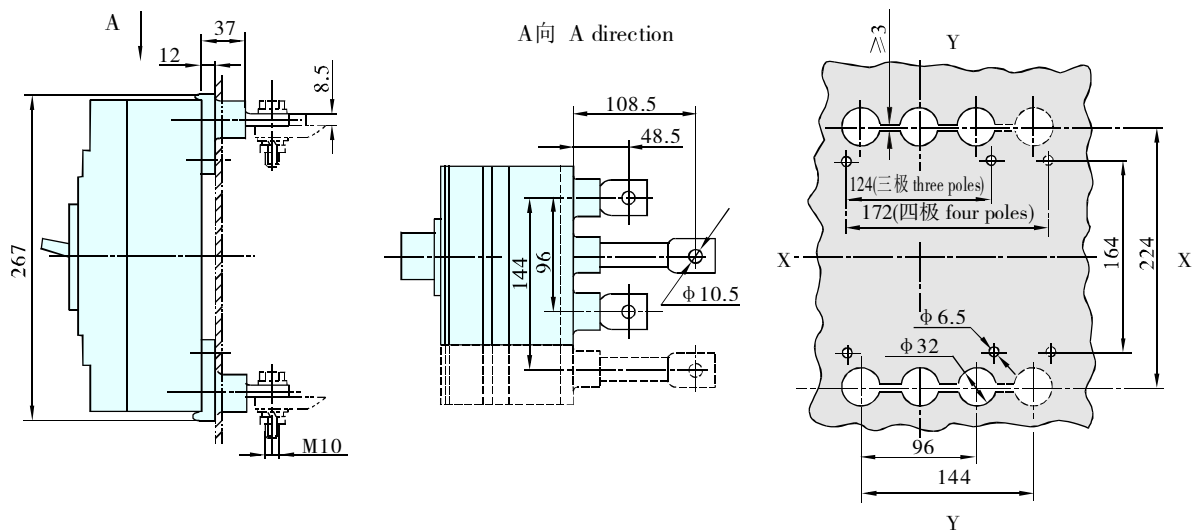
CM1E-400板前接线（三极、四极） Front connected(three/four poles)
X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker



板前接线安装板开孔尺寸
Mounting plate cutout dimensions of front connected

欠电压脱扣器厚度:
The thickness of under-voltage release
C型 m=21
Type C

CM1E-400板后接线（三极、四极） Rear connected(three/four poles)
X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker



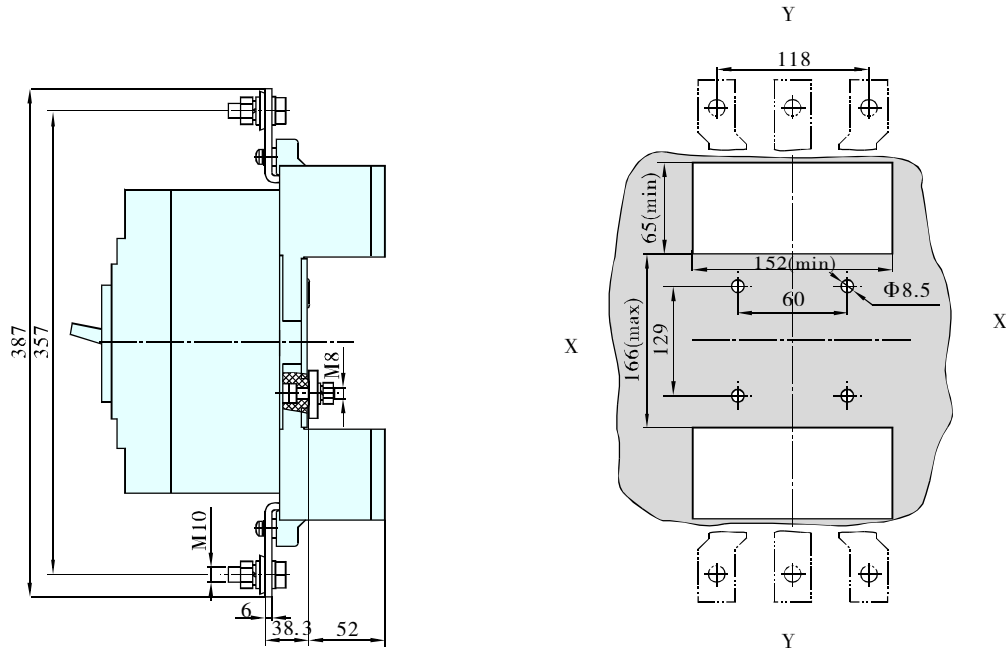
板后接线安装板开孔尺寸
Mounting plate cutout dimensions of rear connected



外形尺寸及安装尺寸 *OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS*

CM1E-400插入式板前接线 (三极) Plug-in front connected (three poles)

X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker

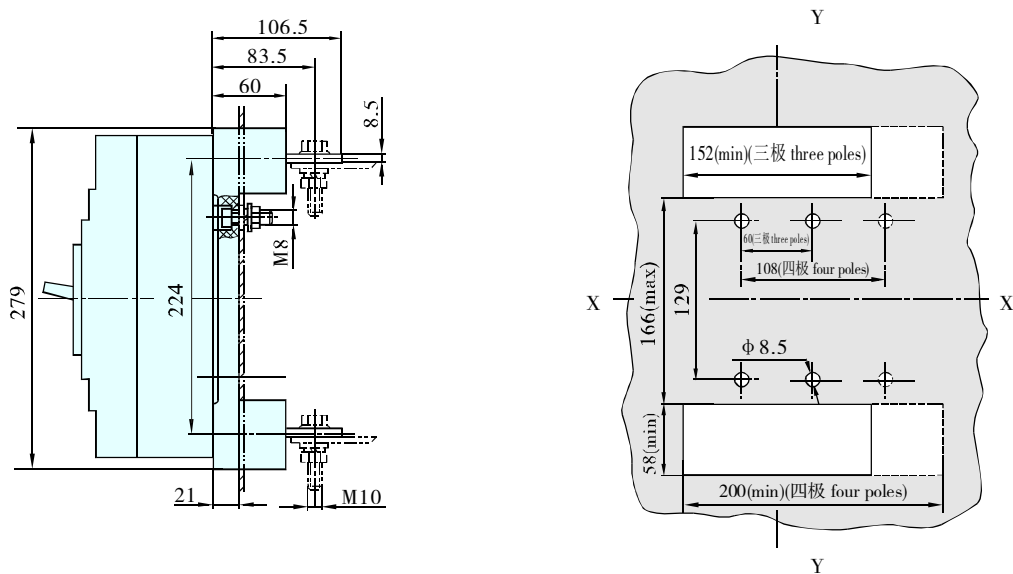


插入式板前接线安装板开孔尺寸

Mounting plate cutout dimensions of plug-in rear connected

CM1E-400插入式板后接线 (三极、四极) Plug-in rear connected (three/four poles)

X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker



插入式板后接线安装板开孔尺寸

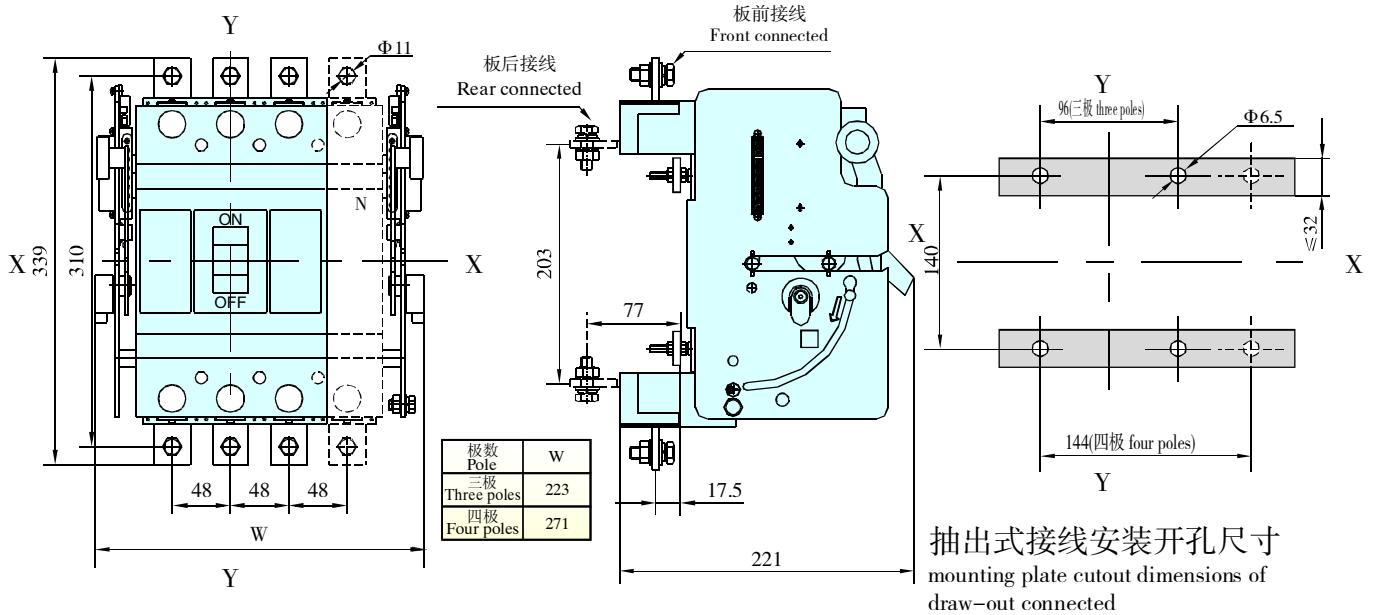
Mounting plate cutout dimension of plug-in rear connected



外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

CM1E-400抽出式接线 (三极、四极) Draw-out connected (three/four poles)

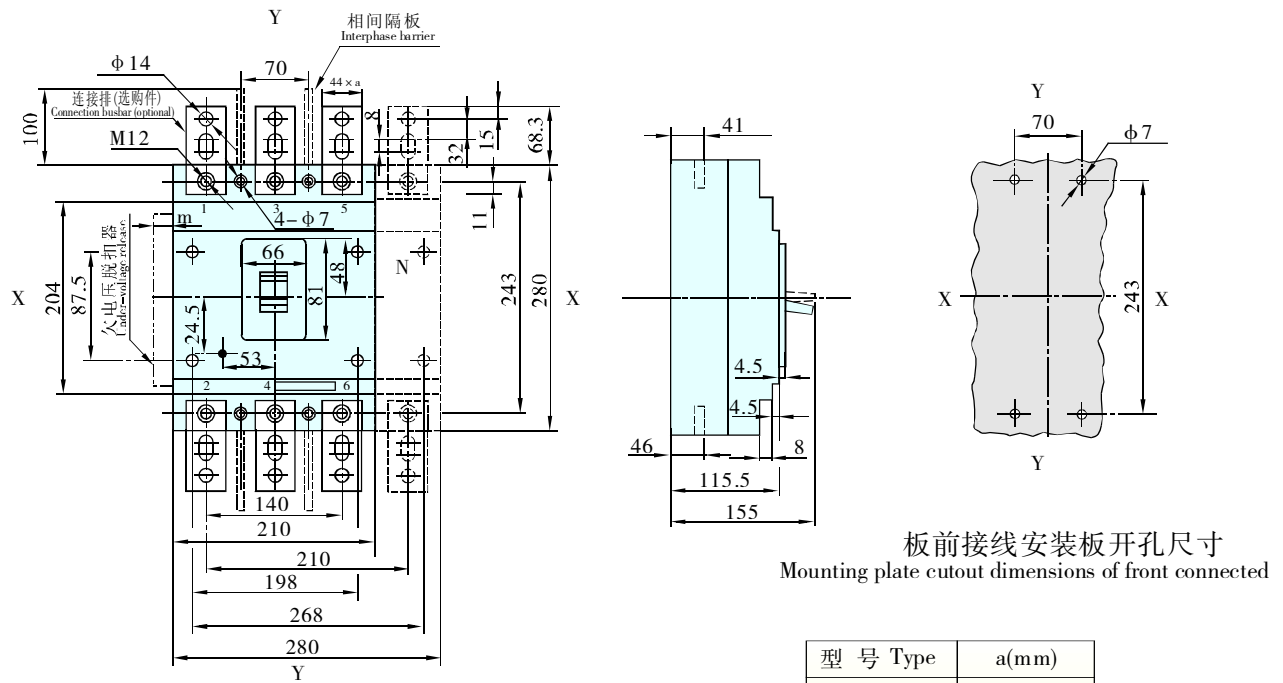
X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker



CM1E-630板前接线 (三极、四极) Front connected(three/four poles)

CM1E-800板前接线 (三极、四极) Front connected(three/four poles)

X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker



欠电压脱扣器厚度: The thickness of under-voltage release
C型 m=0 Type C

型号 Type	a(mm)
CM1E-630	7
CM1E-800	10

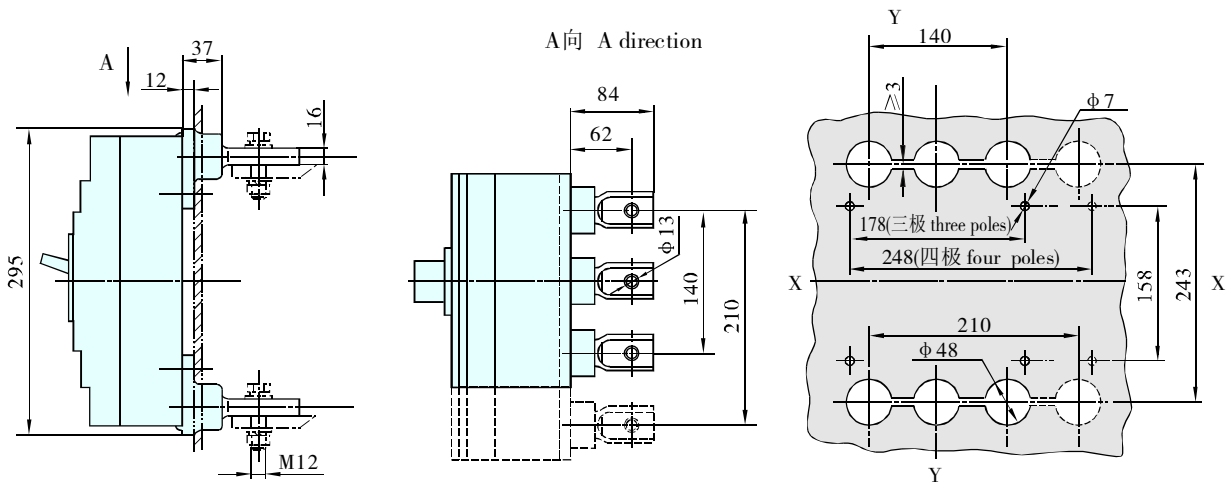


外形尺寸及安装尺寸 *OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS*

CM1E-630板后接线(三极、四极) Rear connected(three/four poles)

CM1E-800板后接线(三极、四极) Rear connected(three/four poles)

X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker

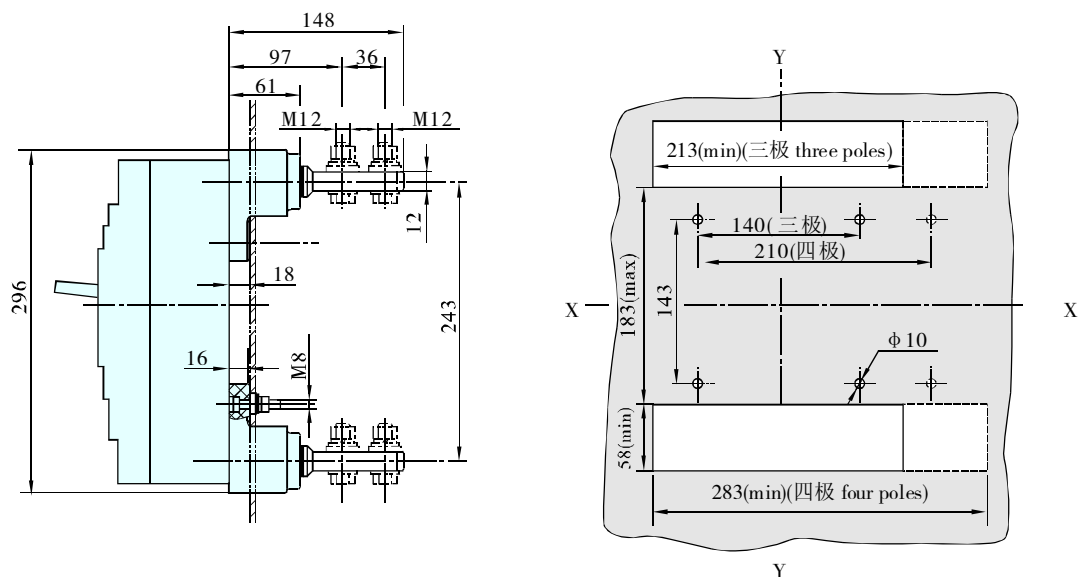


板后接线安装板开孔尺寸
Mounting plate cutout dimensions of rear connected

CM1E-630插入式板后接线(三极、四极) Plug-in rear connected(three/four poles)

CM1E-800插入式板后接线(三极、四极) Plug-in rear connected(three/four poles)

X-X、Y-Y为三极断路器中心 X-X、Y-Y center for three poles breaker



插入式板后接线安装板开孔尺寸
Mounting plate cutout dimension of plug-in rear connected



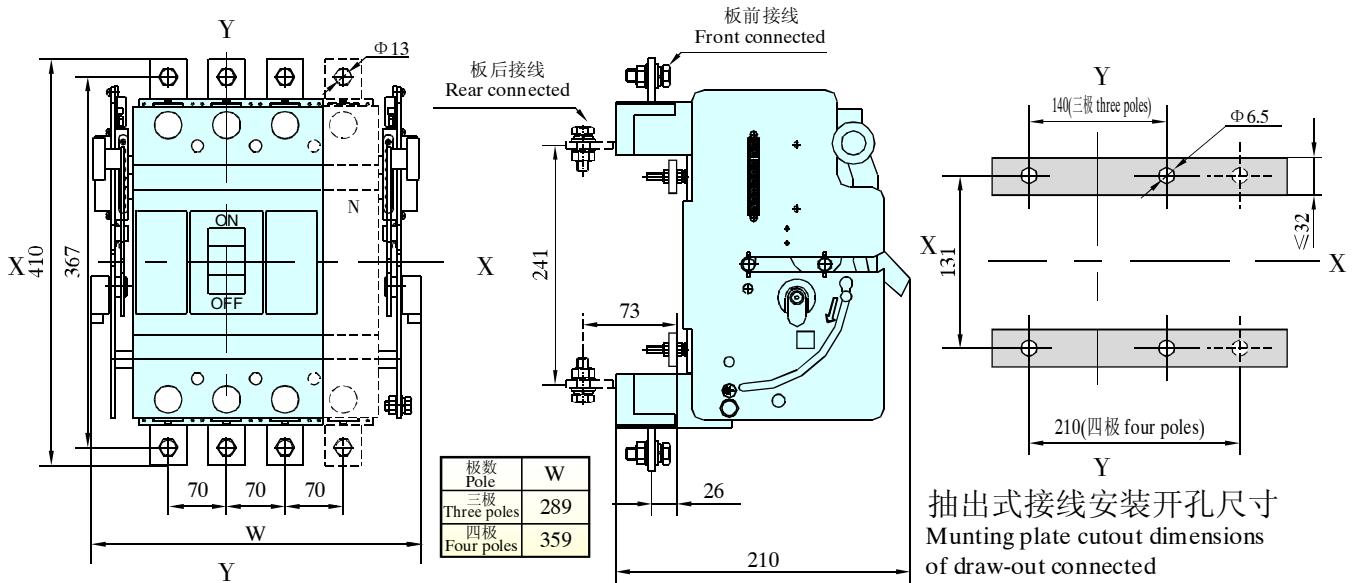
外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

CM1E-630抽出式接线（三极、四极）draw-out connected（three /four poles）

CM1E-800抽出式接线（三极、四极）draw-out connected（three/four poles）

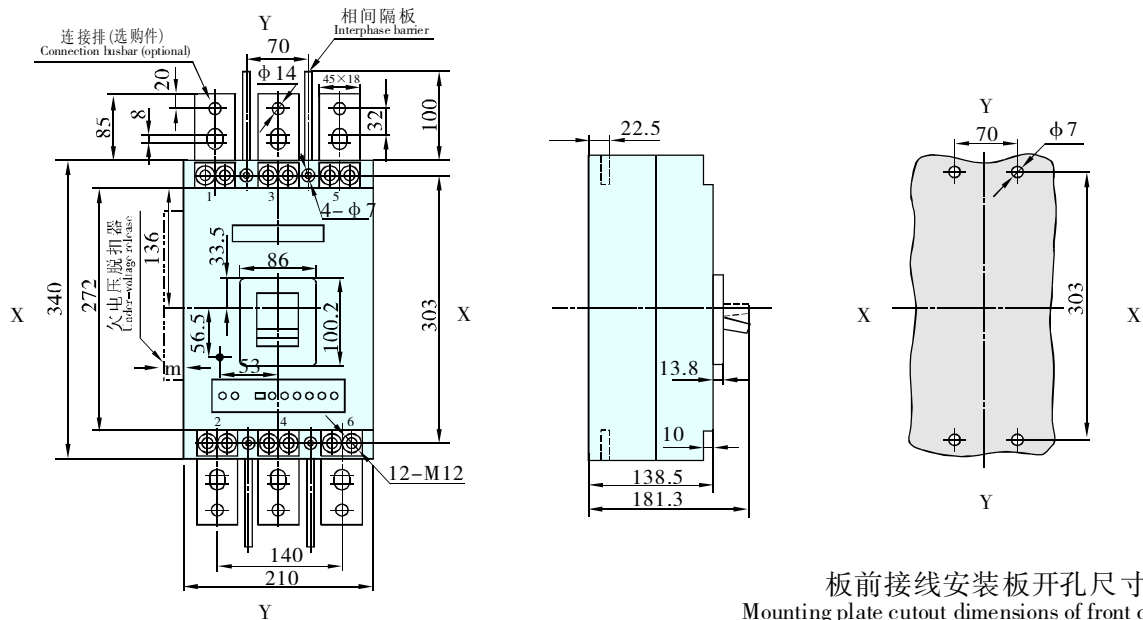
X-X、Y-Y为三极断路器中心

X-X-Y-Y center for three poles breaker



CM1E-1250板前接线（三极）Front connected (three poles)

X-X、Y-Y为断路器中心 X-X、Y-Y center for three poles breaker



欠电压脱扣器厚度: The width of under-voltage release

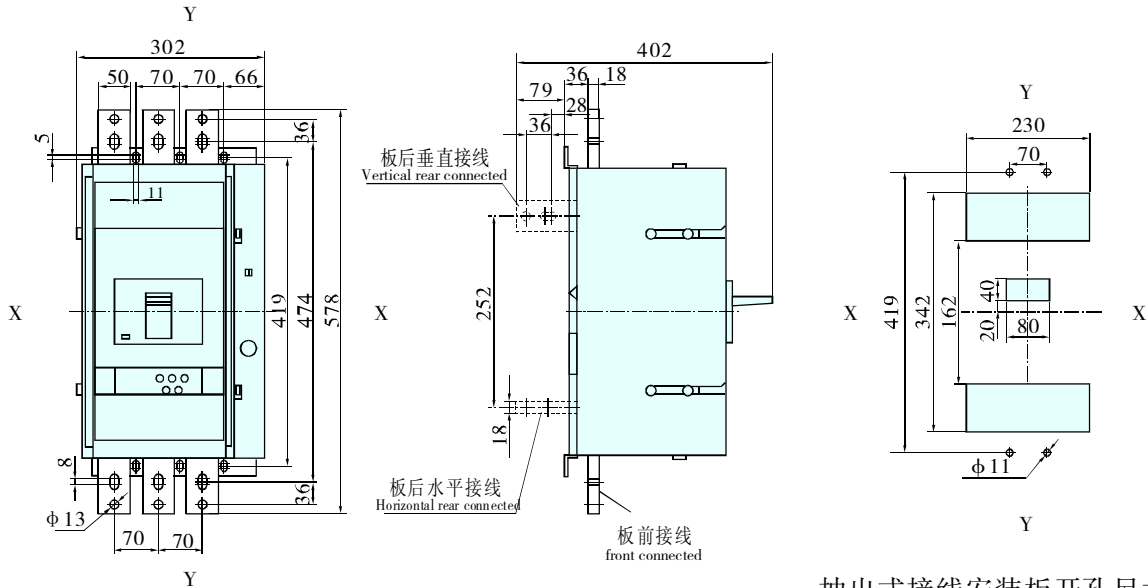
C型 m=21

Type C



外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

CM1E-1250抽出式接线（三极）Draw-out connected(three poles)
X-X、Y-Y为断路器中心 X-X、Y-Y center for three poles breaker

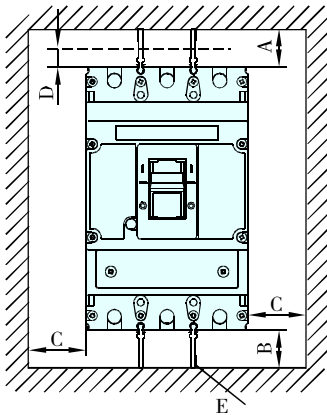


注：CM1E-1250中的In=1250A暂不供抽出式。
Note: In=1250A of the CM1E-1250 hasn't draw-out type

抽出式接线安装板开孔尺寸
Mounting plate cutout dimensions of draw-out connected



断路器安装安全间隙 MOUNTING SAFETY CLEARANCE



- A: 到导电回路（包括无遮挡物或有接地金属）
- B: 断路器端子到底墙
- C: 断路器侧部到侧墙（包括无遮挡物或有接地金属）
- D: 到非导电部件

注：E为相间隔板，必须安装。

- A: To conductive circuit (including without shelter or with earthed metals)
- B: The terminals of the circuit breaker to the bottom wall
- C: The side case of the circuit (breaker to the side wall (including without shelter or with earthed metals)
- D: To non-conductive units

Note: E, the interphase barrier, should be installed.

单位: mm
Measurement

型号 Type	A		B	C	D
	不需零飞弧罩 without zero arcing cover	带零飞弧罩 with zero arcing cover			
CM1E-100	50	25	25	25	25
CM1E-225	50	25	25	25	25
CM1E-250	50	25	25	25	25
CM1E-400	100	25	25	25	25
CM1E-630、800	100	—	25	25	25
CM1E-1250	100	—	25	25	25

注：CM1E-100、225、250、400必须安装相间隔板或零飞弧罩，可选择。
Note: The interphase barriers or zero arcing covers should be installed, may be selected.



1、断路器的内部附件 Internal accessories

根据用户需要断路器附件可直接导线引出（导线长度为50cm，有特殊要求订货时说明），或加装接线端子排（加装接线端子排，用户订货时注明）。

Accessories in accordance with users can directly be leaded by wire(wire length is 50cm, special demand when ordering) or terminal block to installed(the installation of terminal block, users specify when ordering).

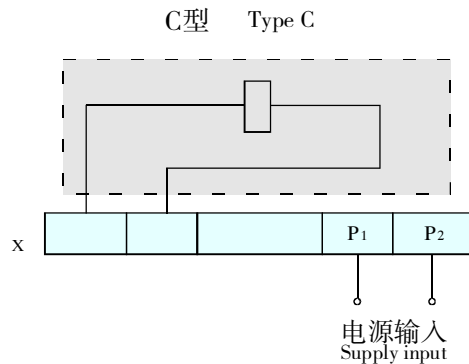
● 欠电压脱扣器，符号○ Under-voltage release

C型欠电压脱扣器额定控制电源电压 U_s : AC50Hz/60Hz 230V、400V。

外挂欠电压模块接线图(虚框内为断路器内部附件)

Rated control supply voltage of under-voltage U_s : AC50Hz/60Hz 230V、400V.

External under-voltage module wiring diagram show below(inside virtual is internal accessory)



欠电压脱扣器型号 Under-voltage release type	配用断路器 Fitting breaker	安装位置 Mounting position	欠电压脱扣器功率(VA) under voltage release power	
			AC230V	AC400V
QTCM1L-100Z	CM1E-100 三极、四极 three/ four poles	左面 left	2.6	3.3
QTCM1E-225Z	CM1E-225 三极、四极 three/ four poles	左面 left	3.8	3.3
QTCM1E-225Z	CM1E-250 三极、四极 three/ four poles	左面 left	3.8	3.3
QTCM1L-400Z	CM1E-400 三极、四极 three/ four poles	左面 left	3.7	2.7
QTCM1L-630Z	CM1E-630 三极、四极 three/ four poles	左面 left	2.5	2.8
QTCM1-800Z	CM1E-800 三极、四极 three/ four poles	左面 left	2.5	2.8
QTCM1E-1250Z	CM1E-1250 三极 three poles	左面 left	2.5	2.8

在额定控制电源电压的35%~70%时，欠电压脱扣器应可靠使断路器脱扣；

在额定控制电源电压的85%~110%时，欠电压脱扣器应保证断路器能合闸；

在额定控制电源电压低于35%时，欠电压脱扣器应防止断路器合闸。

At rated control supply voltage of 35%~70%, under-voltage release should be reliable to trip breaker.

At rated control supply voltage of 85%~110%, under-voltage release should be able to close breaker.

At rated control supply voltage less than 35% under-voltage should prevent breaker from closing.



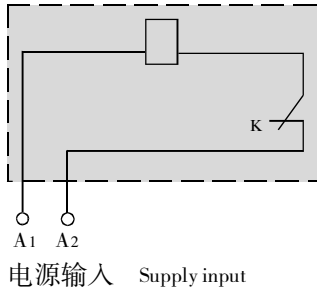
敬告：欠电压脱扣器必须先通电，断路器才能再扣及合闸。否则将损坏断路器！

Caution: under-voltage release must be electricity, circuit breaker can be closed, otherwise will damage circuit breaker!



● 分励脱扣器，符号 ● Shunt release

接线图(虚框内为断路器内部附件) Wiring diagram(inside virtual is internal accessory)



K: 分励脱扣器内部与线圈串联的微动开关为常闭触头, 当断路器分闸后, 该触头自行断开, 合闸时闭合

K:shunt release coil in series with in the micro-switch for the normally closed contact,when circuit breaker opening,the contact to dis connect,when breaker closing the switch connected

电压规格: AC50Hz/60Hz 230V、400V;DC220V、24V

在额定控制电源电压的70~110%之间时, 分励脱扣器应可靠使断路器脱扣。

Rated control supply voltage of 70%~110%,shunt release should be reliable to trip circuit breaker.

分励脱扣器型号 Shunt release type	配用断路器 Fitting breaker	安装位置 Mounting position
FTCM1L-100Z	CM1E-100 三极、四极 three/four poles	左面left
FTCM1L-225Z	CM1E-225、250三极、四极 three/four poles	左面left
FTCM1-400Z	CM1E-400 三极、四极 three/four poles	左面left
FTCM1L-630Y	CM1E-630 三极、四极 three/four poles	右面 right
FTCM1-800Y	CM1E-800 三极、四极 three/four poles	右面 right
FTCM1E-1250Y	CM1E-1250 三极three poles	右面 right

注: 当额定控制电源电压为DC24V时, 有两种解决方案:
方案1: 采用DC24V分励脱扣器, 但应满足如下条件: 铜导线最大长度(两根导线中每根长度)须满足右表条件, 脱扣器接线端处的电源功率须满足最小50W要求。

方案2: 采用DC24V中间继电器控制AC230V或AC400V分励脱扣器, 中间继电器触点容量不小于1A。

额定控制电源电压Us(DC24V) Rated control supply voltage	导线截面积 Conductor cross-section	
	1.5mm ²	2.5mm ²
100%Us	150m	250m
85%Us	100m	160m

Note: While selecting DC24V rated control supply voltage, selecting two solution.

Solution1: Selecting DC24V shunt release, but satisfying below condition:the maximum length of copper wire(two wires in the length of each) shall meet right table condition, supply power of shunt release terminal must meet minimum 50W.


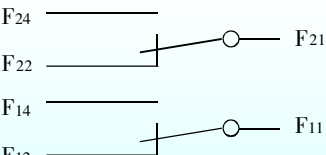
Solution2: Selecting DC24V auxiliary relay to control AC230V or AC400V shunt release,contact current capacity is 1 A.




● 报警触头，符号 □ Alarm contact

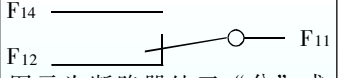
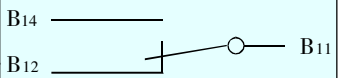
报警触头型号 alarm contact type	配用断路器 Fitting breaker	安装位置 Mounting position	状态 status
BCCM1L-100Z	CM1E-100 三极、四极 three/four poles	左面 left	 <p>图示为断路器处于“分”或“合”时的状态， The status of the breaker in “off” or “on”; 当断路器处于“脱扣”时，图示状态转换。 If breaker is “tripped”, the status is changovered.</p>
BCCM1L-225Z	CM1E-225、250 三极、四极 three/four poles	左面 left	
BCCM1-400Z	CM1E-400 三极、四极 three/four poles	左面 left	
BCCM1L-630Z	CM1E-630 三极、四极 three/four poles	左面 left	
BCCM1-800Z	CM1E-800 三极、四极 three/four poles	左面 left	
BCCM1E-1250Z	CM1E-1250三极 three poles	左面 left	
BCCM1E-1250Y		右面 left	

● 辅助触头，符号 ■ Auxiliary contact

辅助触头型号 Auxiliary contact type	配用断路器 Fitting breaker	安装位置 Mounting position	状态 status
FCCM1L-100Z	CM1E-100 三极、四极 three/four poles	左面 left	 <p>图示为断路器处于“分”或“脱扣”时的状态，当断路器处于“合”时，图示状态转换。 The status of breaker is “off” or “tripped”, if breaker is “on”, the status is changovered.</p>
FCCM1L-225Z	CM1E-225、250 三极、四极 three/four poles	左面 left	
FCCM1L-100ZS	CM1E-100 三极、四极 three/four poles	左面 left	 <p>图示为断路器处于“分”或“脱扣”时的状态，当断路器处于“合”时，图示状态转换。 The status of breaker is “off” or “tripped”, if breaker is “on”, the status is changovered.</p>
FCCM1L-225ZS	CM1E-225、250 三极、四极 three/four poles	左面 left	
FCCM1-400ZS	CM1E-400 三极、四极 three/four poles	左面 left	
FCCM1L-630ZS	CM1E-630 三极、四极 three/four poles	左面 left	
FCCM1-800ZS	CM1E-800 三极、四极 three/four poles	左面 left	
FCCM1E-1250ZS	CM1E-1250 三极 three poles	左面 left	



● 辅助触头+报警触头，符号  Auxiliary and alarm contacts

辅助触头+报警触头型号 Auxiliary+and alarm contact type	配用断路器 Fitting breaker	安装位置 Mounting position	状态 status
FBCM1L -100Z	CM1E -100 三极、四极 three/four poles	左面 left	 <p>图示为断路器处于“分”或“脱扣”时的状态，当断路器处于“合”时，图示状态转换。The status of breaker is “off” or “tripped”, if breaker is “on”, the status is changovered.</p>
FBCM1L -225Z	CM1E -225、250 三极、四极 three/four poles	左面 left	
FBCM1-400Z	CM1E -400 三极、四极 three/four poles	左面 left	
FBCM1L -630Z	CM1E -630 三极、四极 three/four poles	左面 left	 <p>图示为断路器处于“分”或“合”时的状态， The status of the breaker in “off” or “on”， 当断路器处于“脱扣”时，图示状态转换。 If breaker is “tripped”，the status is changovered.</p>
FBCM1-800Z	CM1E -800 三极、四极 three/four poles	左面 left	
FBCM1E -1250Z	CM1E -1250 三极 three poles	左面 left	
FBCM1E -1250Y		右面 right	

● 辅助触头、报警触头额定工作电流 Rated operationed current of auxiliary contact and alarm contact

分类 Categories	壳架等级额定电流 I_{nm} (A) Frame size rated current	约定发热电流 I_{th} (A) Conventional thermal current	额定工作电流 I_e (A) Rated operational current	
			AC400V	DC220V
辅助触头 Auxilairy contact	$I_{nm} \leq 250$	3	0.3	0.15
报警触头 Alarm contact	$I_{nm} \geq 400$	3	0.4	0.15



2、断路器的外部附件 External accessories of breaker

- CM1E专用测试器（用户订货需注明）

为方便用户对断路器各整定参数进行确认，本公司可提供CM1E专用测试器（内装一节9V碱性电池，用户自备），测试器通过电子式脱扣器上的“TEST”插口与断路器本体相连。

CM1E tester(Please mark out in making order)

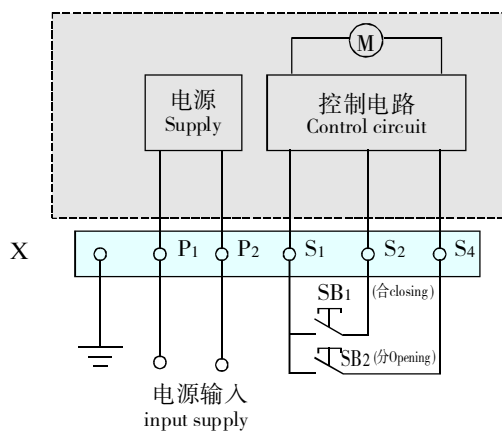
For the users' convenience to make sure of the breaker's setting parameters, we can supply CM1E tester (inner fixed one 9V alkaline cell, prepared by users), connecting with the breaker's main body by "TEST" face of the electric release.



- DCCM1E 电动操作机构 Motor operator

电动操作机构接线图见下图(虚框内为电动操作机构内部接线图)

Wiring diagram of motor operator see the figure below (inside virtual is motor operator internal wiring diagram)



配CM1E-100、225、250、400、630、800

电动操作机构接线图

CM1E-100、225、250、400、630、800

motor operator wiring diagram

电源输入电压规格：AC50Hz/60Hz110V、230V

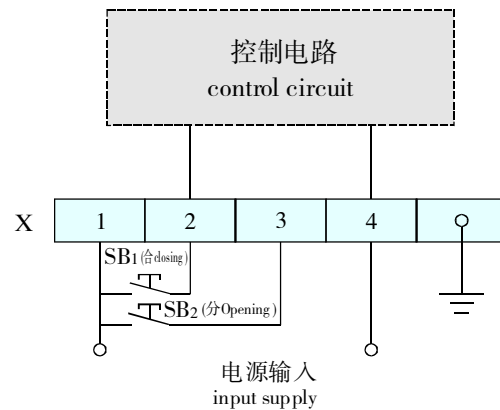
supply voltage input DC24V、110V、220V

符号说明：

SB1、SB2 操作按钮（用户自备）

X 接线端子排

P1、P2 为外接电源输入



配CM1E-1250电动操作机构接线图

CM1E-1250 motor operator wiring diagram

电源输入电压规格：AC50Hz/60Hz110V、230V、
supply voltage input 400V

description:

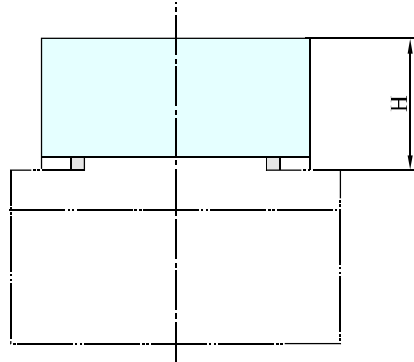
SB1、SB2 operating push button(user-owned)

X terminal block

P1、P2 for external supply



● 电动操作机构相关参数 Motor operator parameters



电动操作机构型号 Motor operator type	配用断路器 For circuit breaker	动作电流(A) Operating current	Motor power 电 动机功率(W)	寿命(次) Durability(times)	高度 Height(mm)
DCCM1E-100	CM1E-100 三、四极 three/four poles	≤ 0.5	14	20000	89.5
DCCM1E-225	CM1E-225 三、四极 three/four poles	≤ 0.5	14	20000	93
	CM1E-250 三、四极 three/four poles	≤ 0.5	14	20000	
DCCM1E-400	CM1E-400 三、四极 three/four poles	≤ 2	35	10000	142
DCCM1E-800	CM1E-630 三、四极 three/four poles	≤ 2	35	10000	146
	CM1E-800 三、四极 three/four poles	≤ 2	35	10000	
DCCM1E-1250	CM1E-1250 三极 three poles	≤ 7.5	200	3000	145

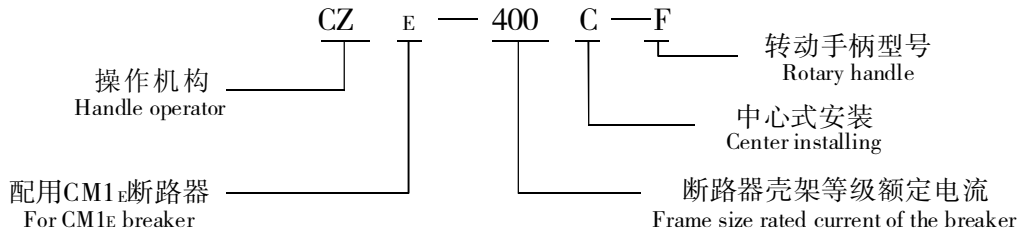
注：断路器脱扣跳闸后，电动操作机构必须先使断路器再扣，然后才能合闸。

Note: Breaker tripping, motor operator must re-trip breaker and then closing.



● CZ_E系列手动操作机构
rotary handle operator

● 型号含义:
Type and its meaning



特点:

该操作机构采用独特的设计和传动结构，通过转动手柄实现塑壳断路器的合闸、分闸和再扣。操作灵活、平稳，操作力小，安装方便，机构的整体性能和质量均优于其它同类产品。

用途:

本机构专用于CM1E系列塑壳断路器，通过转动手柄实现抽屉柜、配电柜、动力箱等在面板上操作的要求，并保证断路器处于合闸时柜体门板不能开启（即与门联锁）。

Feature:

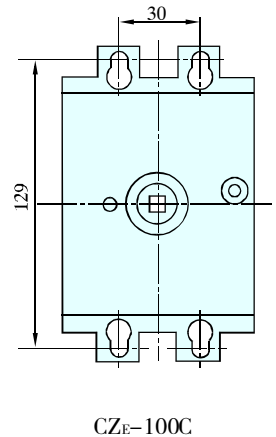
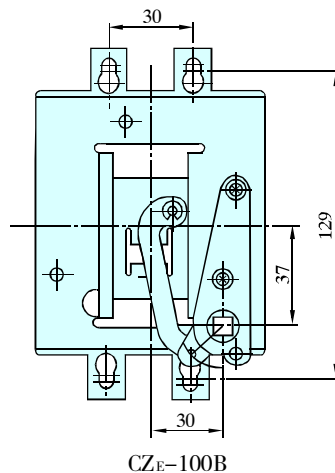
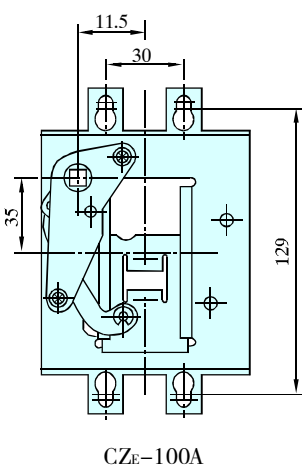
Features:
The operator adopt a unique struture design and transmission,through MCCB handle can make breaker close、open and re-trip.flexible operation, stable operation of power in small,easy to install,the institution's overall performance and quality are superior to other similar products.

Usage

Usege:
Rotary handle through the realization of a with drawable cabinets,distribution cabinets,power boxes,such as operation in the panel request. And to ensure that when breaker closing in the door cabinets can not be opened(that is with the door interlocking). Handle operator type,relevant dimensions and mounting dimensions of shaft with breaker center,see following diagram(upper diagram position is coming):

● 配CM1E-100三极、四极的操作机构

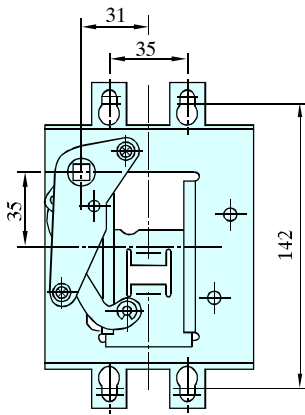
Handle operator of CM1E-100(three/four poles)



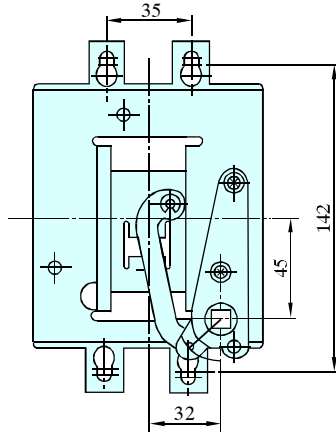


● 配CM1E-225、250三极、四极的操作机构

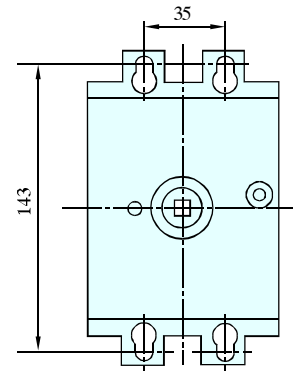
Handle operator of CM1E-225、250(three/four poles)



CZ-225A



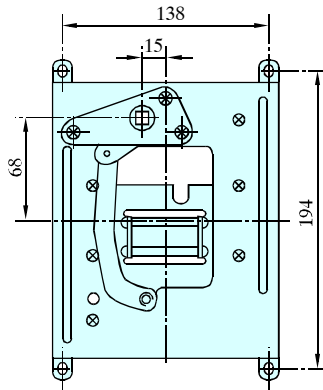
CZE-225B



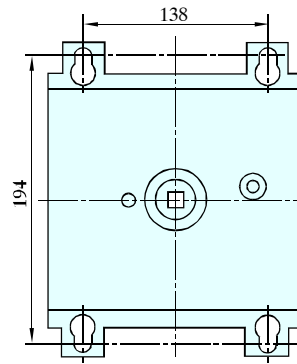
CZE-225C

● 配CM1E-400三极的操作机构

Handle operator of CM1E-400(three poles)



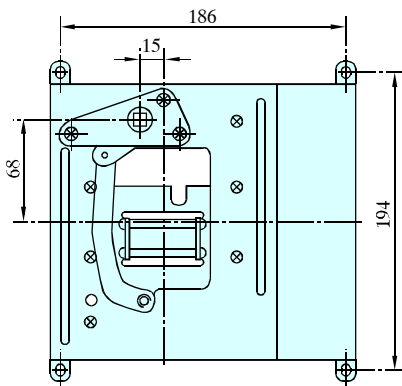
CZE-400A



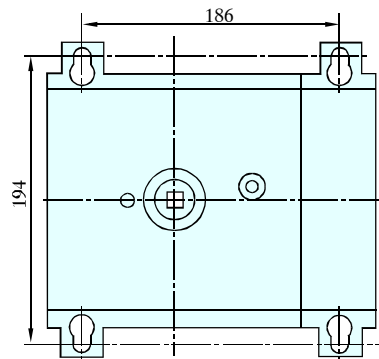
CZE-400C

● 配CM1E-400四极的操作机构

Handle operator of CM1E-400(four poles)



CZE-400B

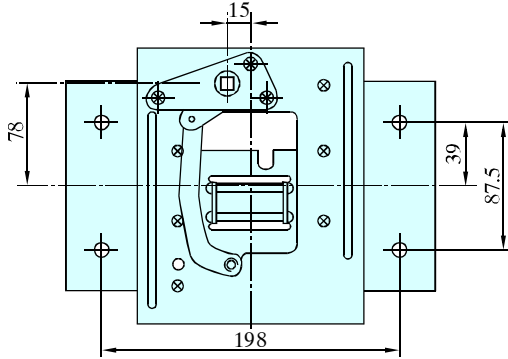


CZE-400D

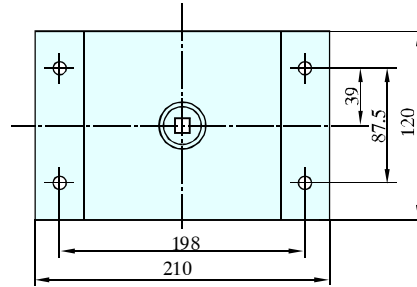


● 配CM1E-630三极的操作机构

Handle operator of CM1E-630(three poles)



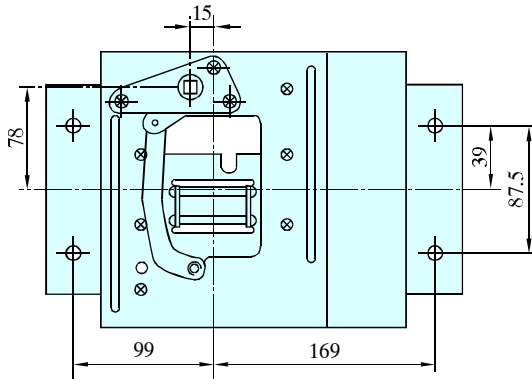
CZE-630A



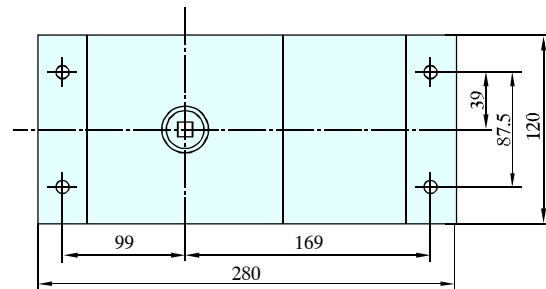
CZE-630C

● 配CM1E-630四极的操作机构

Handle operator of CM1E-630(four poles)



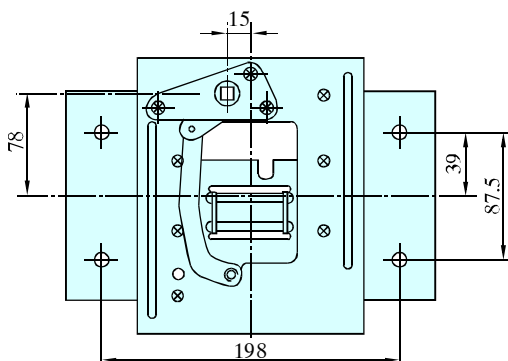
CZE-630B



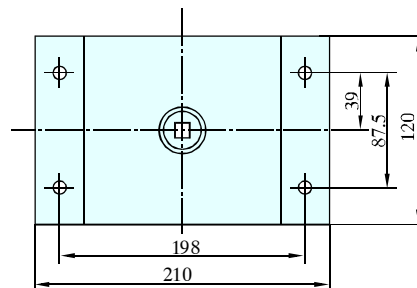
CZE-630D

● 配CM1E-800三极的操作机构

Handle operator of CM1E-800(three poles)



CZE-800A

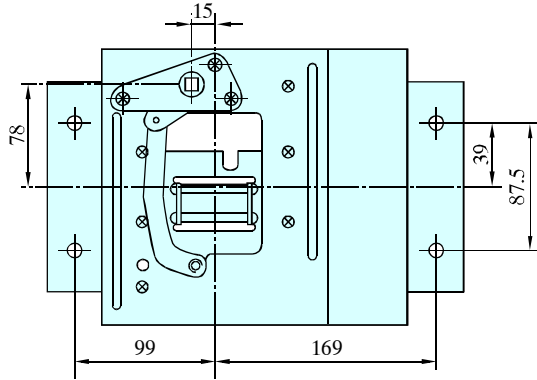


CZE-800C

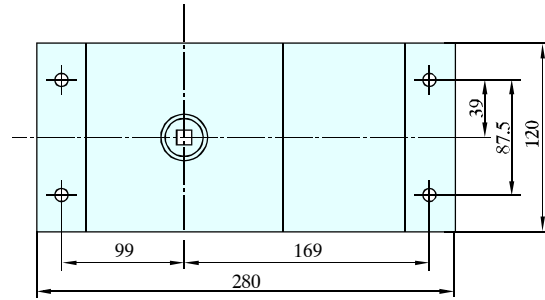


● 配CM1E-800四极的操作机构

Handle operator of CM1E-800(four poles)

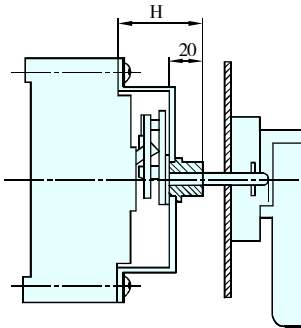


CZE-800B



CZE-800D

CZE系列操作机构高度
Height of the handle operator



操作机构型号type of handle operator	H (mm)
CZE-100A/CZE-100B/CZE-100C	45/45/49
CZE-225A/CZE-225B/CZE-225C	47/47/55
CZE-400A/CZE-400B/CZE-400C/CZE-400D	61/61/76/76
CZE-630A/CZE-630B/CZE-630C/CZE-630D	55/55/68/68
CZE-800A/CZE-800B/CZE-800C/CZE-800D	55/55/68/68



CZE操作机构可配用二种操作手柄：一种为“F”型方形手柄；另一种为“A”型圆形手柄，其门板开孔尺寸见下图。

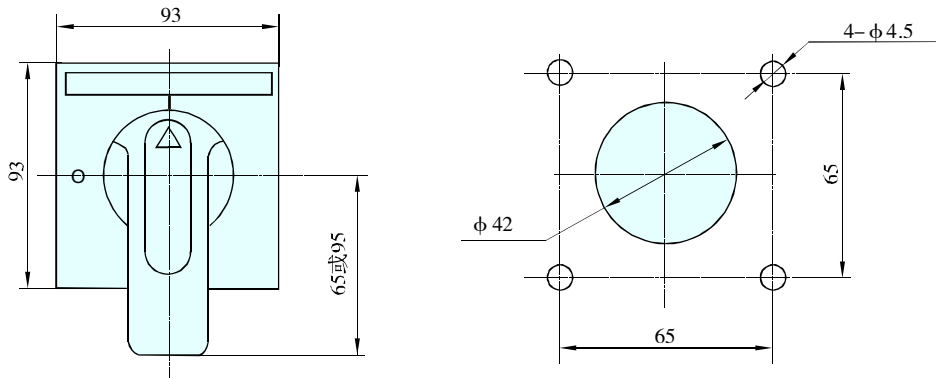
操作手柄特点：

1. 当断路器在合闸状态时，不能开启柜门；
2. 若操作手柄或机构在合闸状态时有故障，可通过操作手柄上的紧急解锁装置开启柜门；
3. 对应不同规格的机构，相配套的手柄，其门板开孔一致。

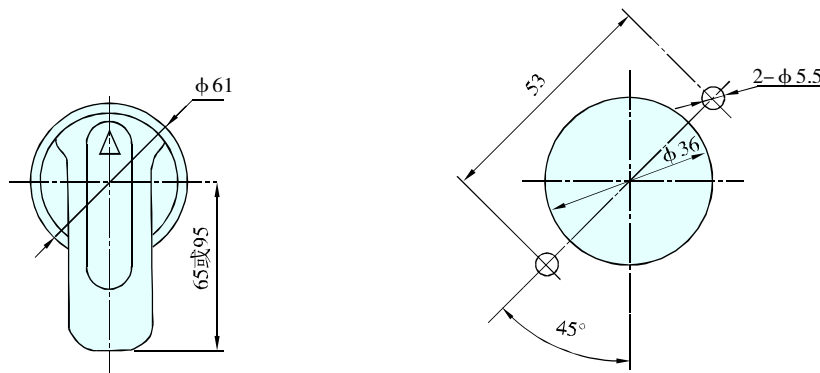
Handle operator can be operated with two kinds of handles: one for the "F" type; another for the "A" type, cutout door dimensions shown below.

Operating handle features:

1. When circuit breaker in the closing state, can not open the door;
2. Even if the handle or mechanism on the closing status in the fault, operating handle can unlock the device to open the emergency doors.
3. Correspond to different specifications of mechanism, matching handle, the door cutout the same.



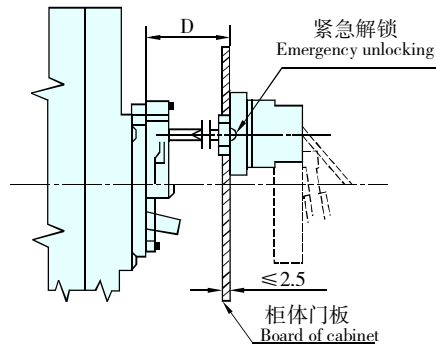
“A”型方形手柄外形及门板开孔尺寸（开孔中心离铰链距离不小于200mm）
A type circular outline and door cutout dimensions (cutout center distance from the hinge is not less than 200mm)



“A”型圆形手柄外形及门板开孔尺寸（开孔中心离铰链距离不小于200mm）
A type circular outline and door cutout dimensions (cutout center distance from the hinge is not less than 200mm)



内外部附件 INTERNAL/EXTERNAL ACCESSORIES



注：方轴长度D=150mm，长度大于150mm在订货时注明；

敬告用户： 手动操作机构，须向本公司配套订货保证质量。如用户自行购买，装配后发生的一切不良后果本公司不能负责。

Note: The shaft length of D = 150mm, length of more than 150mm when the time specified in the order.

Advice to users: handle operator should be placed in order with the company for complete set. If bought by yourselves, and harmful effects took place after mounted, the company would be not responsible for it.



不同额定电流的连接导线参考截面

CROSS-SECTION WIRING CONDUCTOR CORRESPONDING RATED CURRENT

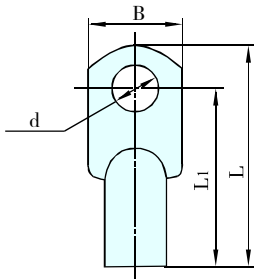
壳架等级额定电流 (A) Frame size rated current	额定电流 (A) Rated current	至少能连接的导线截面 (或铜排截面) (mm ²) Cross-section of the cable at least (cross-section of copper busbar)
100	32、63、100	6、16、35
225	225	95
250	250	120
400	400	240

壳架等级 额定电流 (A) Frame size rated current	额定电流 (A) Rated current	电 缆 Cable		铜 排 Copper busbar	
		截面积(mm ²) Cross-section	数量 Amount	尺寸size (mm × mm)	数量 Amount
630	630	185	2	40 × 5	2
800	800	240	2	50 × 5	2
1250	800	240	2	50 × 5	2
	1000	-	-	60 × 5	2
	1250	-	-	80 × 5	2

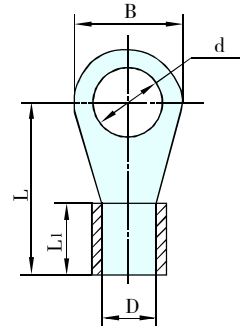
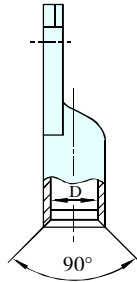


接线端子分JGC及JBC二种型号供用户选用

Two type of terminal are supplied: JGC and JBC



JGC型 Type JGC



JBC型 Type JBC

型号 Type	额定电流(A) Rated current	导线截面积(mm ²) Cross-section	端子型号 Terminal type	B	L	L1	D	d
CM1E-100	32	6	JBC6-8	15	24.5	10	φ 3.5	φ 8.2
	63	16	JGC16-8	12.5	41	33.5	φ 6	φ 8.2
	100	35	JGC35-8	15.5	52	44.5	φ 8	φ 8.2
CM1E-225	225	95	JGC95-8	22	66	57	φ 13	φ 8.2



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。

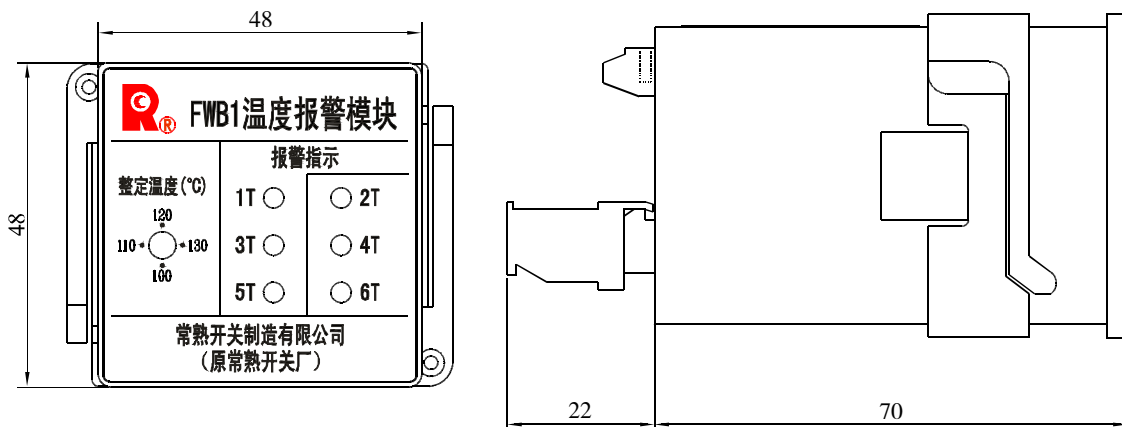
FWB1 temperature alarm module adopts online temperature detection that the FRG heat sensor directly mounted on the connection position. It can detect at most six points connection position (the input terminals on the back of the temperature alarm module, which the heat sensor is connected to, are 1T, 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.



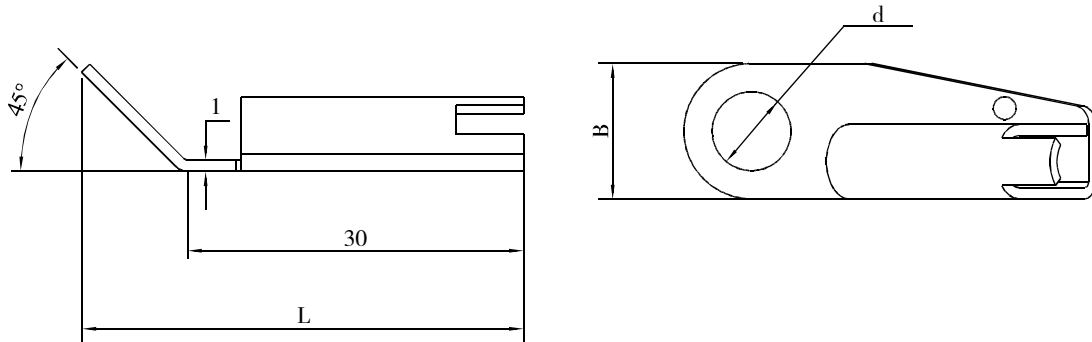
FWB1温度报警模块 TEMPERATURE ALARM MODULE

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, 3A/DC24V
工作温度 operating temperature	- 20℃~+70℃

- 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
Heat 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



订货须知 ORDERING NOTICE

- (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)如用户订货时对电子式脱扣器保护参数不作要求，本公司将按“电子式脱扣器出厂整定值”表配置。

Make sure the user of this product has a detailed understanding of technical information. And circuit breakers should be based on future use of the occasion, according to the order ordering specification table.

Orders such as user-electronic release protective parameters do not make a request, the company in accordance with the "electronic release factory's setting value".



订货规范 ORDERING FORM

(请在____内填上数字, □内打√)

(Please filled figures in ____, or sign √ in □)

用户单位 User units		订货总数 Order amount		订货日期 Order date			
规格 Specification	配电型 CM1E-_____/_____, Power distribution In=____A, 对CM1E-100、225、250、400、630、800、1250			接线方式 Connection	板前接线 front connected	<input type="checkbox"/>	
					板后接线 Rear connected	<input type="checkbox"/>	
	电动机保护型 CM1E-_____/_____, motor protection In=____A, 对CM1E-100、225、250、400、630				插入式板前接线 Plug-in front connected	<input type="checkbox"/>	
					插入式板后接线 Plug-in rear connected	<input type="checkbox"/>	
					抽出式接线 Draw-out connected	板前接线 Front connected	<input type="checkbox"/>
			板后垂直接线 Vertical rear connected	<input type="checkbox"/>			
			板后水平接线 Horizontal rear connected	<input type="checkbox"/>			
电子式脱扣器整定值 Electronic Release Setting Value	过载长延时动作电流 $I_{r1} = \text{_____} \text{ A}$ Overload long-time delay operating current			长延时动作时间 $t_1 = \text{_____} \text{ s}$ Long-time delay operating time			
	短路短延时动作电流 $I_{r2} = \text{_____} \times I_{r1}$ Short-circuit short-time delay operating current			短延时动作时间 $t_2 = \text{_____} \text{ s}$ Short-time delay operating time			
	短路瞬动动作电流 $I_{r3} = \text{_____} \times I_{r1}$ Short-circuit instantaneous operating current						
	预报警动作电流 $I_{r0} = \text{_____} \times I_{r1}$ Pre-alarm operating current						
附件 Accessories	欠电压脱扣器 (C型) Under-voltage release		AC400V <input type="checkbox"/> AC230V <input type="checkbox"/>				
	分励脱扣器 Shunt release		AC400V <input type="checkbox"/> AC230V <input type="checkbox"/> DC220V <input type="checkbox"/> DC24V <input type="checkbox"/>				
	电动操作机构 Motor operator		AC400V <input type="checkbox"/> AC230V <input type="checkbox"/> AC110V <input type="checkbox"/> DC220V <input type="checkbox"/> DC110V <input type="checkbox"/> DC24V <input type="checkbox"/>				
	手动操作机构 rotary handle operator		CZE-F <input type="checkbox"/> CZE-A <input type="checkbox"/>				
	CM1E专用测试器 <input type="checkbox"/> CM1E tester		内部附件接线端子排 <input type="checkbox"/> terminal of internal accessories				
	连接排 <input type="checkbox"/> Connected busbar		接线端子 <input type="checkbox"/> JBC <input type="checkbox"/> JGC <input type="checkbox"/> Terminal				
	零飞弧罩 <input type="checkbox"/> (仅CM1E-100、225、250、400具有) zero arcing (Only for CM1E-100、225、250、400)						
	FWB1温度报警模块 <input type="checkbox"/> + Temperature alarm module		热传感器型号Type	FRG-7	FRG-9	FRG-11	FRG-13
		数量 (只) Number					
备注 Note							

注: 可提供低温至-40℃断路器。
The breaker can be provided for temperature down to-40℃.



电子式脱扣器出厂整定值 electronic release factory's setting value

配电型断路器 Distribution breaker

过载长延时 Overload long-time delay	整定电流 I_{r1} Setting current	I_n	
	延时 t_1 Time-delay	60s	
短路短延时 Short-circuit short-time delay	整定电流 I_{r2} Setting current	$I_{nm}=100、225、250、$ 400、630、800	$8I_{r1}$
		$I_{nm}=1250$	$6I_{r1}$
	延时 t_2 Time-delay	0.3s	
短路瞬时 Short-circuit instantaneous	整定电流 I_{r3} Setting current	$I_{nm}=100、225、250、400、630$	$12I_{r1}$
		$I_{nm}=800$	$10I_{r1}$
		$I_{nm}=1250$	$8I_{r1}$
预报警 Pre-alarm		$0.9I_{r1}$	

电动机型断路器 motor protection breaker

过载长延时 Overload long-time delay	整定电流 I_{r1} Setting current	I_n	
	延时 t_1 Time-delay	100s	
短路短延时 Short-circuit short-time delay	整定电流 I_{r2} Setting current	$10I_{r1}$	
		延时 t_2 Time-delay	0.3s
短路瞬时 Short-circuit instantaneous	整定电流 I_{r3} Setting current	$I_{nm}=100、225、250、400、630$	$14I_{r1}$
预报警 Pre-alarm	整定电流 I_{r0} Setting current	$0.9I_{r1}$	

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2012.06

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