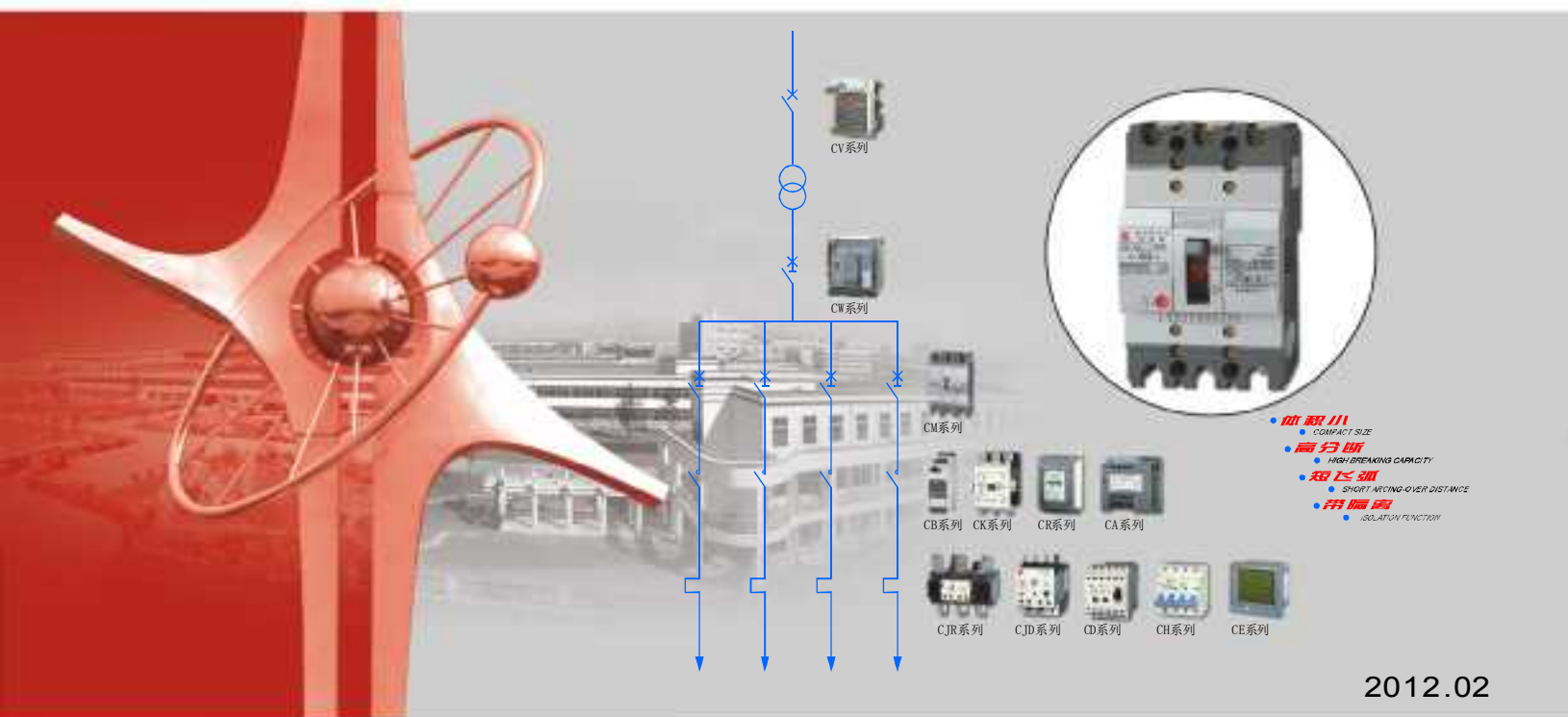


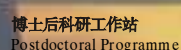
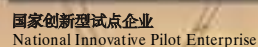
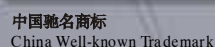
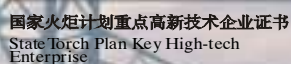
C M 3系列 塑料外壳式断路器 CM3DC系列

CM3 CM3DC SERIES MOULDED CASE CIRCUIT BREAKER



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)



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1500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45%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 300,000 m², with 1500 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 45% 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



CM5Z能量
监测型断路器

自动转换开关



CA1系列自动
转换开关 (CB级)



CA1B系列
小型化自动
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

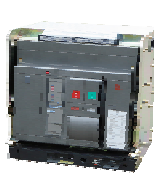


CF1系列
通用变频器

光伏发电用产品



CS1G系列三相并网
型光伏发电逆变器



CW3DC系列
直流万能式断路器



CW3G系列
隔离开关(AC, DC)



CM3DC系列
塑料外壳式断路器



CM5G系列
交直流隔离开关

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



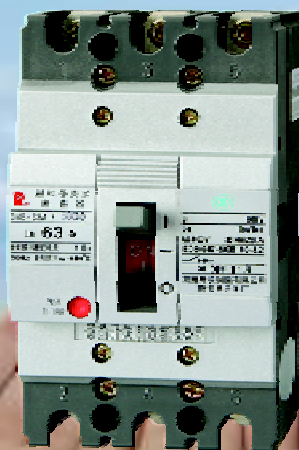
优秀特色

CM3断路器

- 具备TH型断路器，满足湿热带地区使用要求
- 获得国际认可的CB证书
- 热磁保护，体积减小，分断能力更高，倒进线不降容，绿色环保
额定极限短路分断能力： I_{cu} ：400V：35kA ~ 100kA；690V：20kA ~ 30kA
额定运行短路分断能力： I_{cs} ：400V：22kA ~ 75kA；690V：10kA ~ 20kA
- 继承CM1高可靠特色，外观人性化设计，附件盒装化设计
- 快速电弧驱动新技术确保高性能，CM3-63L/M、CM3-100C、CM3-250C深度仅为60mm，成为真正的“超薄型”断路器
- 可配FWB1温度报警模块，实现连接点在线超温报警
- CM3-100、250的L/M/H型，CM3-400、630C/L/M/H型，CM3-800L/M/H型及上述规格四极时中性极型式为A、B型断路器带独特的“过载报警不脱扣”功能，当线路过负荷时，安装了带有此功能的断路器不跳闸仅输出过负荷信号，保障供电连续性
- 和CM1系列断路器同规格互换

CM3DC直流断路器

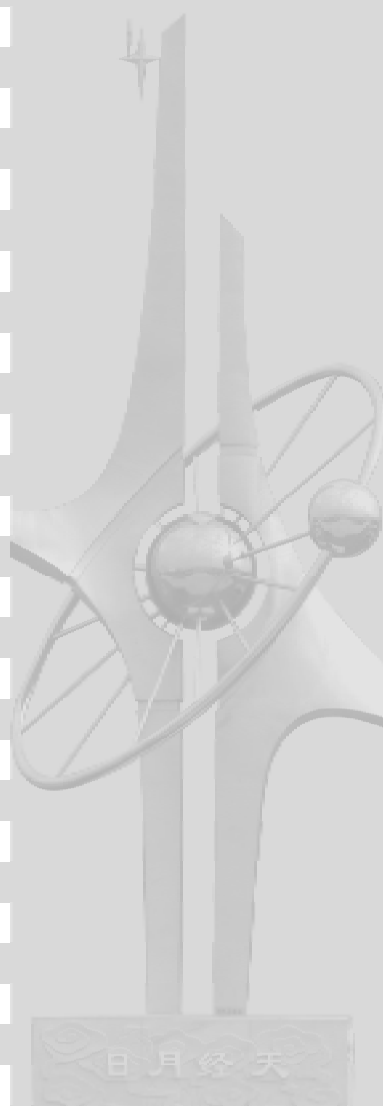
- 热磁保护，绿色环保
- 外形安装尺寸与CM1系列、CM3系列断路器同规格一样
- 可适用于直流不接地系统、负极接地系统和中心点接地系统
- 可应用于最大至DC1000V系统
- 额定运行短路分断能力 $I_{cs}=100\%$ 额定极限短路分断能力 $I_{cu}=100\%$ 额定短路接通能力 I_{cm} ，最大为65kA





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CM3系列塑料外壳式断路器（以下简称断路器），是本公司采用国际先进设计、制造技术研发、开发的新型断路器之一。其额定工作电压至AC50Hz/60Hz690V、额定绝缘电压800V、额定冲击耐受电压达到8kV、额定电流10A~800A。CM3系列断路器适用于配电和电动机保护场合，也适用于消防场合。断路器可具有过载报警不脱扣功能，当线路过负荷时，安装了带有此功能的断路器不跳闸仅输出过负荷信号，保障供电连续性，满足了GB50054第4.3.5条“突然断电比过负载造成的损失更大的线路，其过负载保护应作用于信号而不应作用于切断电路”要求。断路器具有过载、短路、欠电压保护等功能，能保护线路和电源设备不受损坏。

- 断路器按照其额定极限短路分断能力（ I_{cu} ）的高低，分为C型（基本型）、L型（标准型）、M型（较高分断型）、H型（高分断型）四类。该断路器具有体积小、分断高、飞弧短（加装零飞弧罩实现零飞弧）等特点。

- 断路器极限短路分断能力级别为C、L、M型可倒进线连接；M型使用于AC690V电压时及H型不可倒进线，即1、3、5接电源线，2、4、6接负载线。

- 产品外形美观，布局合理，可垂直安装（即竖装），亦可水平安装（即横装），是极为理想的电器产品。

- 断路器具有隔离功能，其相应的符号为



- 断路器符合下列标准：

IEC60947-1及GB 14048.1-2006 低压开关设备和控制设备 总则

IEC60947-2及GB 14048.2-2008 低压开关设备和控制设备 断路器

IEC60947-4-1及GB 14048.4 低压开关设备和控制设备 机电式接触器和电动机起动器

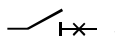
- 断路器获国家强制性产品认证“CCC”标志。

CM3 series MCCB(hereafter referred to as simply breakers)are one of the new type breakers which have been developed by the company using international advanced design and manufacturing technology.Its rated operational voltage to AC50Hz/60Hz690V, rated insulation voltage 800V, rated impulse withstand voltage 8kV, rated current 10A-800A. CM3 series breakers are used for power distribution and motor protection of occasions, but also to the fire occasions. The breakers with overload alarm non-tripping function, when line is overload, the breakers will don't trip, and only output overload signal, which can ensure the power supply continuity and meet the demands of article 4.3.5 of GB50054 "when loss of cutting electricity is larger than overload, line of overload protection is alarm but non-tripping". The breakers have overload, short-circuit and under voltage protection function, so as to protect the circuit and the supply equipment against damage.

- The breakers according to rated ultimate short-current breaking capacity(I_{cu}), would be classified four kinds types C(basic type), L(standard type), M(second high type), H(high type). The breakers are of following characteristics: compact size, high breaking capacity, short arc-over distance(zero arc distance by installing zero arc cover) and etc.

- The breakers ultimate short-circuit breaking capacity class for the C, L, M type can be connected into the outgoing line; M type used in voltage AC 690V and H-type can not be connected into line, that terminal 1、3、5 connecting into power line , 2、4、6 load line.

- The breaker's outline is beautiful and composition is reasonable, MCCB could be installed vertically (upright) or horizontally (transverse).

- The breakers have disconnection function and its corresponding symbol is shown as .

- The breakers comply with the demands of the following standards:

IEC60947-1 and GB14048.1-2006 Low-voltage switchgear and controlgear General rules

IEC60947-2 and GB14048.2-2008 Low-voltage switchgear and controlgear Circuit-breakers

IEC60947-4-1 and GB14048.4 Electromechanical contactors and motor starters

- The breakers have obtained the CCC mark of CQC.



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 $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$ 条件下运行（大于 $+40^{\circ}\text{C}$ 至 $+60^{\circ}\text{C}$ 降容使用见表4）；

● 安装地点的海拔不超过2000m(超过2000m时电气性能按表五修正)；

● 安装地点的空气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: $-5^{\circ}\text{C} \sim +40^{\circ}\text{C}$ (If the temperature is between $+40^{\circ}\text{C}$ and $+60^{\circ}\text{C}$, please see table 4);

● The altitude of the site of installation does not exceed 2000m (more than 2000m, electrical performance see table 5);

● The relative humidity of the air does not exceed 50% at a maximum temperature of $+40^{\circ}\text{C}$. Higher relative humidities may be permitted at lower temperature, e.g. 90% at $+20^{\circ}\text{C}$. 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;

● Warm damp 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;

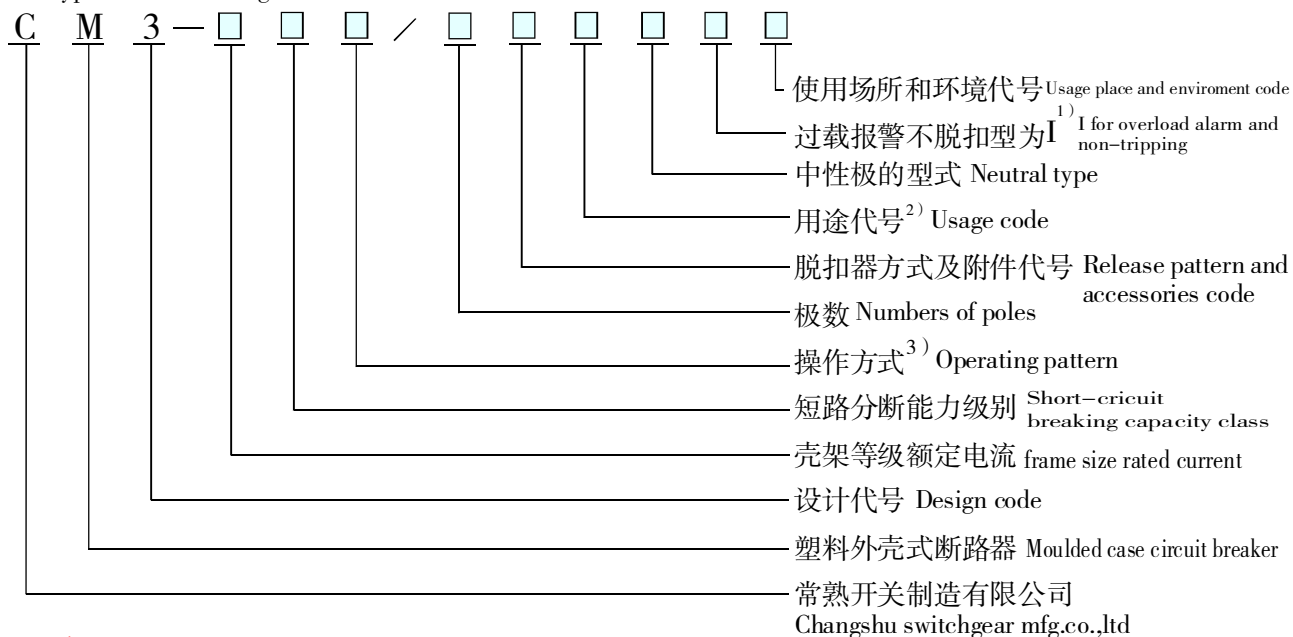
● The place would not be invaded by rain and snow.



断路器的分类

CLASSIFICATION OF CIRCUIT BREAKER

型号及其含义如下：
type and its meanings



注：

1) 订购过载报警不脱扣型，脱扣器方式仅有电磁脱扣器方式。

2) 配电用断路器无代号；保护电动机用断路器以2表示。

3) 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) Ordering overload alarm and non-tripping, the release only has electromagnetic.

2) Usage code for distribution MCCB is without code, usage code for motor protection is 2.

3) No code for operating directly; P for motor operation; Z for rotary handle operation.



断路器的分类 CLASSIFICATION OF CIRCUIT BREAKER

● 四级产品中性极（N极）的型式分四种：

A型：N极不安装过电流脱扣器，且N极始终接通，不与其它三极一起合分；

B型：N极不安装过电流脱扣器，且N极与其它三极一起合分（N极先合后分）；

C型：N极安装过电流脱扣器，且N极与其它三极一起合分（N极先合后分）；

D型：N极安装过电流脱扣器，且N极始终接通，不与其它三极一起合分。

注：建筑物内实施等电位联结的TN-C-S和TN-S系统，中性极型式推荐采用A型和D型。

● 按额定电流（A）分：CM3-63为10、16、20、25、32、40、50、63A八级；CM3-100为10、16、20、25、32、40、50、63、80、100A十级；CM3-250为100、125、140、160、180、200、225、250A八级，CM3-400为225、250、315、350、400A五级；CM3-630为400、500、630A三级，CM3-800为400、500、630、700、800A五级。

● 按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。

● 按过电流脱扣器型式分热动-电磁（复式）型、电磁（瞬时）型及电磁（瞬时）+过载报警不脱扣型三种。

● 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、辅助开关、报警开关四种，外部附件有手动操作机构、电动机操作机构、FWB1温度报警模块。

● The neutral pole (N pole) of four poles product has four types:

Type A: N pole over-current release does not installed, and N is always connected, and not combined with other three poles;

Type B: N pole overcurrent release does not installed and combined with other three poles. (closing first and opening last)

Type C: N pole over-current release is installed and combined with other three poles. (closing first and opening last)

Type D: N pole over-current release is installed and N is always connected, and not combined with other three poles.

Note: the building of equipotential bonding, such as TN-C-S and TN-S system, to recommend the use of neutral pole pattern A or D type.

● Classification according to rated current (A): CM3-63 has eight: 10、16、20、25、32、40、50、63, CM3-100 has ten: 10、16、20、25、32、40、50、63、80、100A, CM3-250 has eight: 100、125、140、160、180、200、225、250A, CM3-400 has five: 225、250、315、350、400A, CM3-630 has three: 400、500、630A, CM3-800 has five: 400、500、630、700、800A.

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

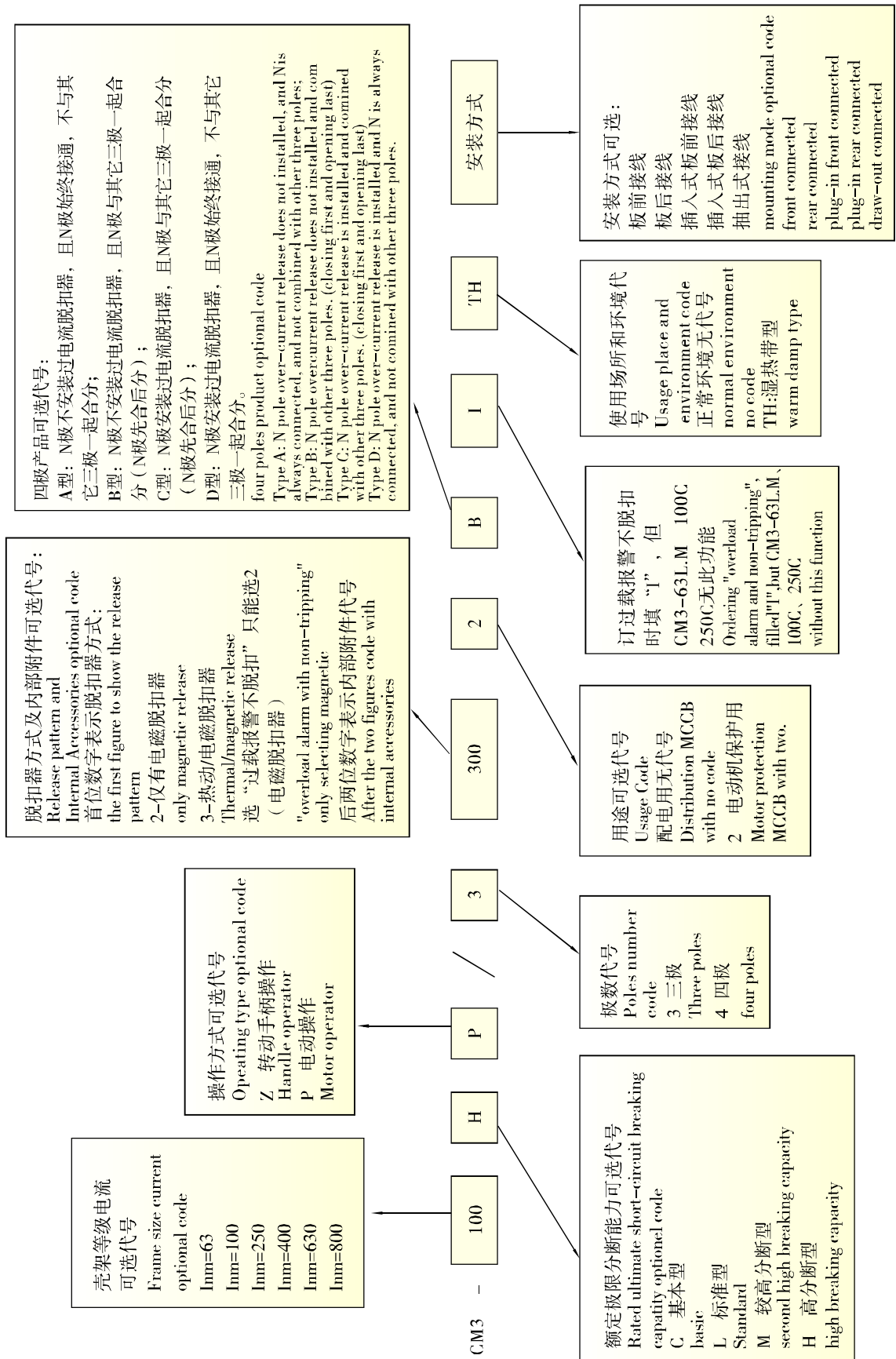
● Type of overcurrent release has thermal/magnetic(double)、magnetic(instantaneous) and magnetic(instantaneous) + overload alarm with non-tripping.

● In accordance with breaker whether with accessories: with accessories and without accessories, accessories dividing internal/external, internal accessories: shunt release, under voltage release, auxiliary switch and alarm switch, external accessories: rotary handle operator and motor operator, temperature alarm module.



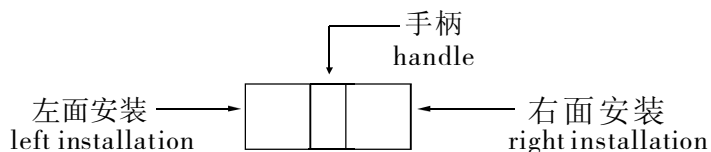
CM3系列塑壳断路器快速选用表

CM3 series MCCB Quick selection table





脱扣器方式及内部附件代号 RELEASE PATTERN AND INTERNAL ACCESSORIES CODE



- 报警开关 alarm switch
- 辅助开关 Auxiliary switch
- 分励脱扣器 shunt release
- 欠电压脱扣器 Under-voltage release
- 引线方向 lead direction

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		CM3-63	CM3-100	CM3-250	CM3-400	CM3-630	CM3-800
		极数和N极型式 number of pole and N type		3、4	3、4	3、4	3、4	3、4	3、4
208、308	报警开关 Alarm switch								
210、310	分励脱扣器 Shunt release								
220、320	辅助开关 Auxiliary switch								
230、330	欠电压脱扣器 Under-voltage release								
240、340	分励脱扣器 辅助开关 Shunt release Auxiliary switch								
250、350	分励脱扣器 欠电压脱扣器 Shunt release Under-voltage release								
260、360	二组辅助开关 Two auxiliary switch								
270、370	辅助开关 欠电压脱扣器 Auxiliary switch Under-voltage release								
218、318	分励脱扣器 报警开关 Shunt release Alarm switch								
228、328	辅助开关 报警触头 Auxiliary switch Alarm switch								
238、338	欠电压脱扣器 报警开关 Under-voltage release Alarm switch								
248、348	分励脱扣器 辅助开关 报警开关 Shunt release Auxiliary switch Alarm switch								
268、368	二组辅助开关 报警开关 Two auxiliary switch Alarm switch								
278、378	辅助开关 欠电压脱扣器 报警开关 Auxiliary switch Under-voltage release Alarm switch								

注:

- 1、000: 表示无热动或电磁脱扣器; 200: 表示仅有电磁脱扣器的断路器; 300: 表示带有热动-电磁脱扣器的断路器;
- 2、对CM3-100L.M.H、CM3-250L.M.H其中268、368规格中的辅助开关可供三对触头(即三常开,三常闭),但须在订货时注明;
- 3、对CM3-100L.M.H、CM3-250L.M.H其中220、320、240、340、270、370规格中辅助开关可供二对触头(即二常开,二常闭); 260、360可供三对触头(即三常开,三常闭)或四对触头(即四常开,四常闭),但须在订货时注明。

note:

- 1、000: breaker has not any thermo or electromagnetic release; 200: breaker only has magnetic release; 300: breaker has thermal magnetic release;
- 2、for CM3-100L.M.H、CM3-250L.M.H, code 268、368 can provide three pairs of auxiliary contacts (three normally open, three normally closed), note when making order;
- 3、for CM3-100L.M.H、CM3-250L.M.H, Code 220、320、240、340、270、370 can provide two pairs of auxiliary contacts (two normally opened, two normally closed); code 260、360 can provide three pairs of auxiliary (three normally open, three normally closed) or four pairs of auxiliary contacts (four normally open, four normally closed), note when making order.



保护特性 PROTECTION CHARACTERISTIC

断路器热动型脱扣器具有反时限特性；电磁脱扣器为瞬时动作，特性见表一（配电用）及表二（保护电动机用）。

Thermal release of breaker provides inverse time characteristic; while magnetic release provides instantaneous operation, two characteristic as show on table one (distribution) and table two (motor protection)

表一（配电用）
table 1(distribution)

断路器额定电流 (A) rated current of breaker	热动型脱扣器（环境温度+40℃） Thermal release (ambient temp+40℃)		电磁脱扣器动作电流 (A) operating current of magnetic release
	1.05In（冷态 Cold） 不动作时间（h） non-operating time	1.30In（热态 Thermal） 动作时间（h） operating time	
$10 \leq I_n \leq 63$	1小时内不动作 non-operating within one hour	≤ 1	$10I_n \pm 20\%$ *
$63 < I_n \leq 125$	2小时内不动作 non-operating within two hours	≤ 2	
$125 < I_n \leq 800$	2小时内不动作 non-operating within two hours	≤ 2	$5I_n \pm 20\%$ $10I_n \pm 20\%$

*注: CM3-63L.M、CM3-100C中10~25A电磁脱扣器动作电流值为 $300A \pm 20\%$ 。

*Note: 10~25A magnetic release operating current of CM3-63L.M and CM3-100C is $300A \pm 20\%$.

表二（保护电动机用）
Table 2 (motor protection)

断路器型号 Type of breaker	热动型脱扣器(环境温度+40℃) Thermal release(ambient temp+40℃)					电磁脱扣器 动作电流 (A) operating current of magnetic release
	1.0In (冷态 cold) 不动作时间 non-operating time	1.20In (热态 Thermal) 动作时间 operating time	1.50In (热态 Thermal) 动作时间 operating time	7.2In (冷态 cold) 动作时间 operating time	脱扣级别 trip class	
CM3-63L、M CM3-100C	2小时内 不动作 non-operating within two hours	$\leq 2h$	$\leq 2min$	$0.5s < T_p \leq 5s$	5	$12I_n \pm 20\%$ *
CM3-100L、M、H			$\leq 4min$	$4s < T_p \leq 10s$	10	
CM3-250C、L、M、H CM3-400C、L、M、H CM3-630C、L、M、H CM3-800 L、M、H			$\leq 8min$	$6s < T_p \leq 20s$	20	

*注: CM3-63L.M、CM3-100C中10~25A电磁脱扣器动作电流值为 $300A \pm 20\%$ 。

*Note: 10~25A magnetic release operating current of CM3-63L.M、CM3-100C is $300A \pm 20\%$.

注1: CM3-800中700A、800A电流规格不提供保护电动机用断路器。

Note1: Motor protective breaker of 700A and 800A rated current for CM3-800 is not supplied.

注2: CM3-100C中80A、100A电流规格不提供仅具有电磁脱扣器的保护电动机用断路器。

Note2: Motor protective breaker of 80A and 100A rated current only magnetic release for CM3-100C is not supplied.



功耗及降容系数 POWER LOSS AND DERATING COEFFICIENT

● 功率损耗见表三

power loss as shown on 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) Three/four poles power loss			
		板前/板后接线 Front/rear connected	插入式板前接线 Plug-in front connected	插入式板后接线 Plug-in rear connected	抽出式接线 Draw-out connected
CM3-63L、M	63	6.1	6.2	6.3	—
CM3-100C	100	15.3	15.4	15.5	—
CM3-100L、M、H	100	30	30.1	30.2	—
CM3-250C	250	39.4	39.5	39.6	—
CM3-250L、M、H	250	41.3	41.4	41.5	—
CM3-400C、L、M、H	400	48	48.1	48.2	68
CM3-630C、L、M、H	630	107.2	107.3	107.4	127.4
CM3-800L、M、H	800	96	—	73.7(In=700A)	93.7(In=700A)

● 环境温度变化的降容系数见表四

Derating coefficient of ambient temperature as shown on table 4.

表四 table 4

型号 type	+40℃	+45℃	+50℃	+55℃	+60℃
CM3-63	1In	0.94 In	0.88In	0.80 In	0.72 In
CM3-100	1In	0.95 In	0.89In	0.84 In	0.76 In
CM3-250	1In	0.96 In	0.91 In	0.87 In	0.82 In
CM3-400	1In	0.94In	0.87 In	0.81 In	0.73 In
CM3-630	1In	0.93 In	0.88In	0.83In	0.76 In
CM3-800	1In	0.88 In	0.83In	0.79In	0.76 In

注：以上降容系数均在通于壳架额定电流下测得。

Note: derating coefficient above are all achieved with frame size rated current.



高海拔降容 ALTITUDE DERATING

海拔超过适用工作环境的2000m，断路器电气性能可参照表五修正：

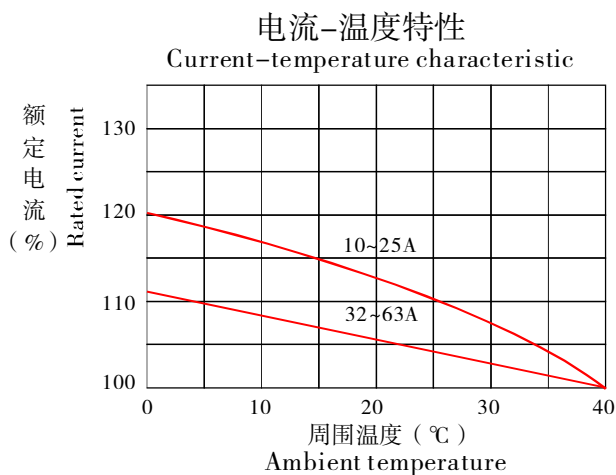
Altitude of service environment more than application of 2000m, electrical performance of breaker can be corrected by reference to following table5:

表五 table 5

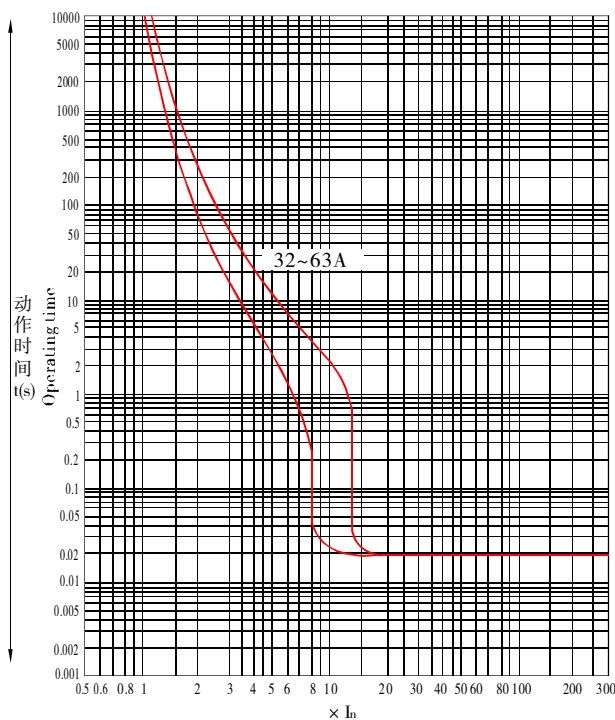
海拔 Altitude	2000m	3000m	4000m	5000m
工频耐压 power-frequency withstand voltage	3000	2500	2000	1800
工作电流修正系数 operational current correction coefficient	1	0.94	0.88	0.83



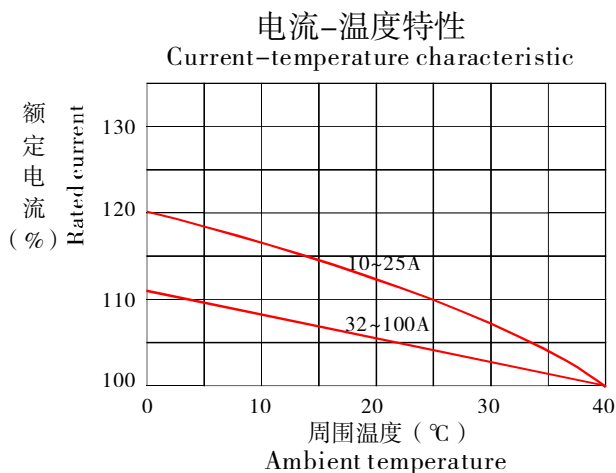
特性曲线是在冷态，三相负载下测得。
the characteristic curves are obtained in the cold state and three phases loading



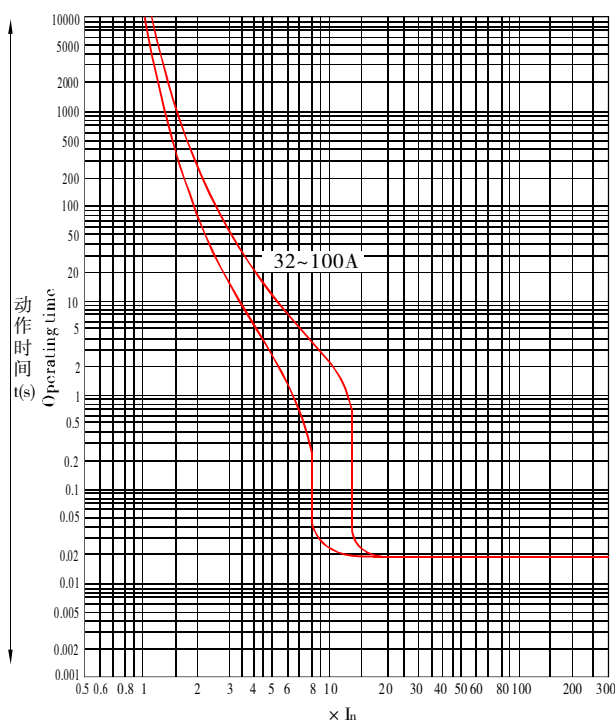
CM3-63L.M时间/电流特性曲线
Time/current characteristic curve



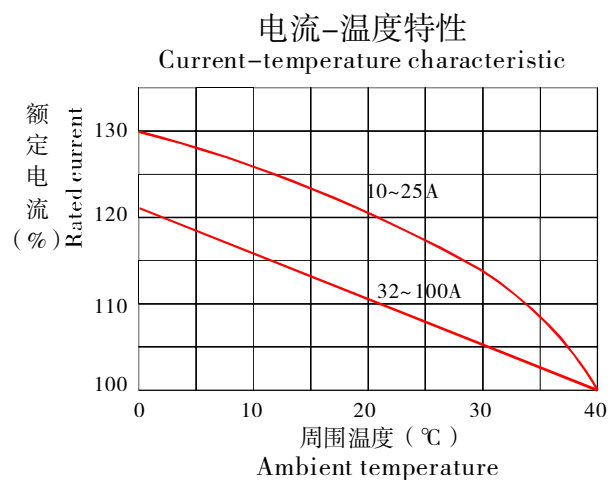
注：CM3-63L.M中10~25A瞬时动作电流为 $300A \pm 20\%$ 。
Note:10~25A instantaneous operating current of CM3-63L.M is $300A \pm 20\%$



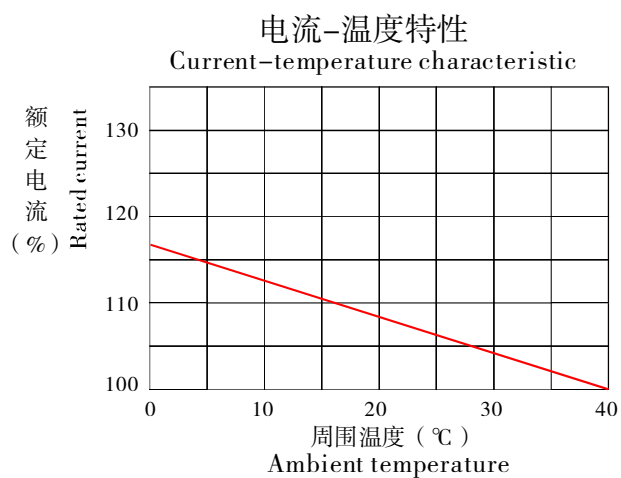
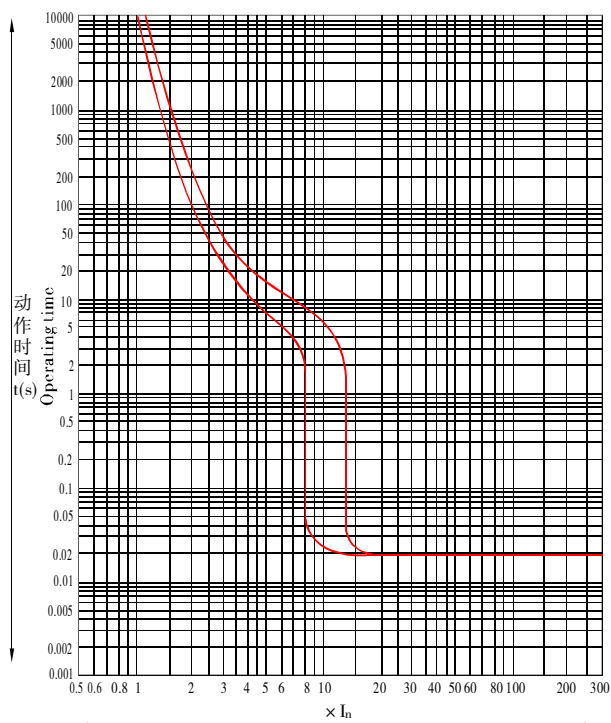
CM3-100C时间/电流特性曲线
Time/current characteristic curve



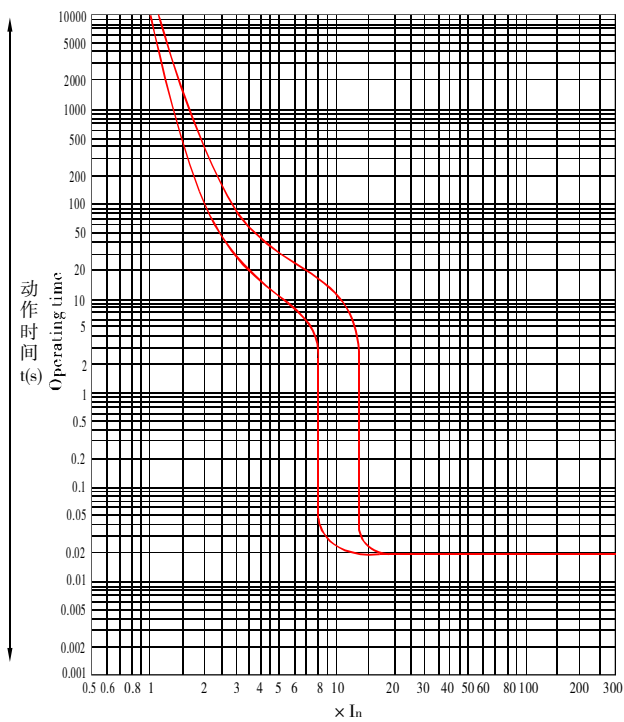
注：CM3-100C中10~25A瞬时动作电流为 $300A \pm 20\%$ 。
Note:10~25A instantaneous operating current of CM3-100C is $300A \pm 20\%$

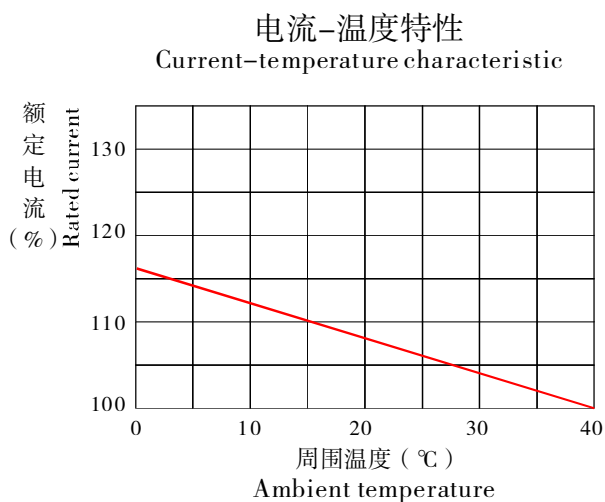


CM3-100L.M.H时间/电流特性曲线
Time/current characteristic curve

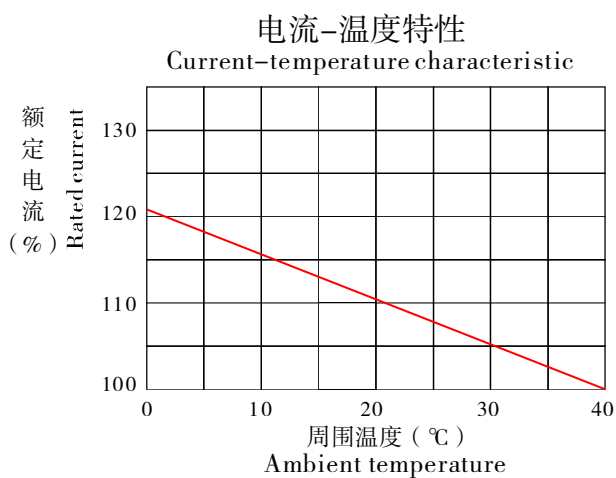
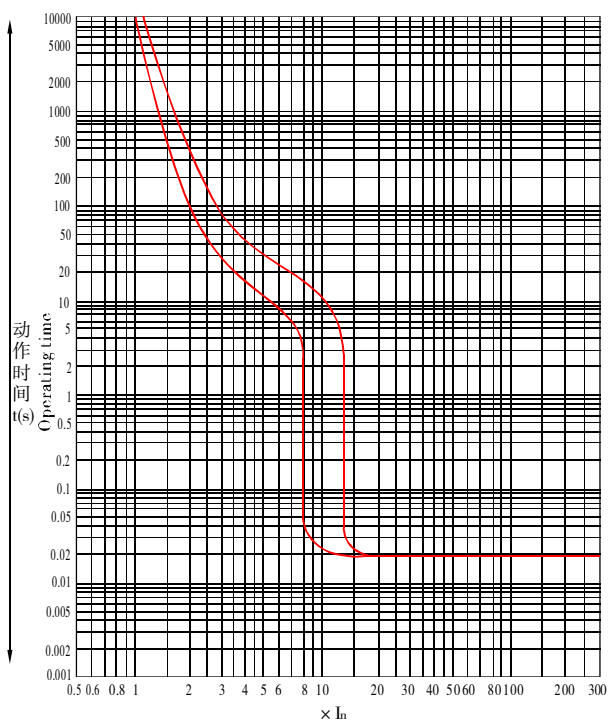


CM3-250C时间/电流特性曲线
Time/current characteristic curve

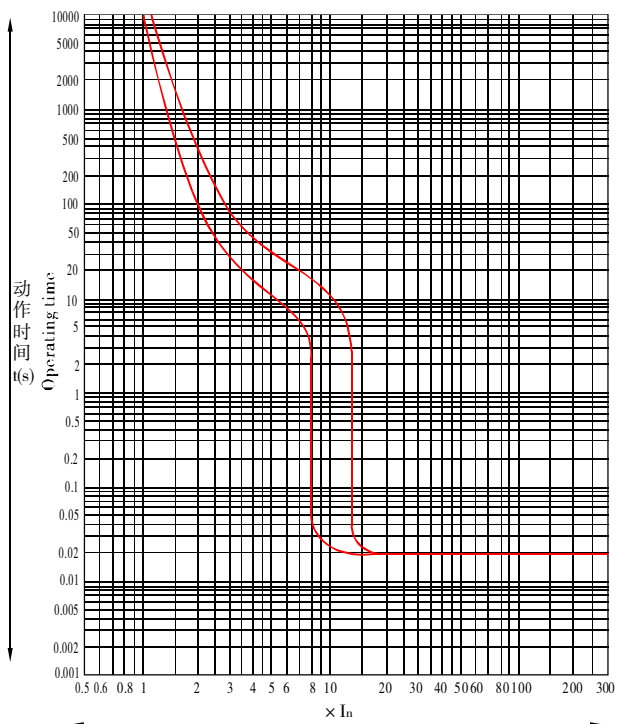


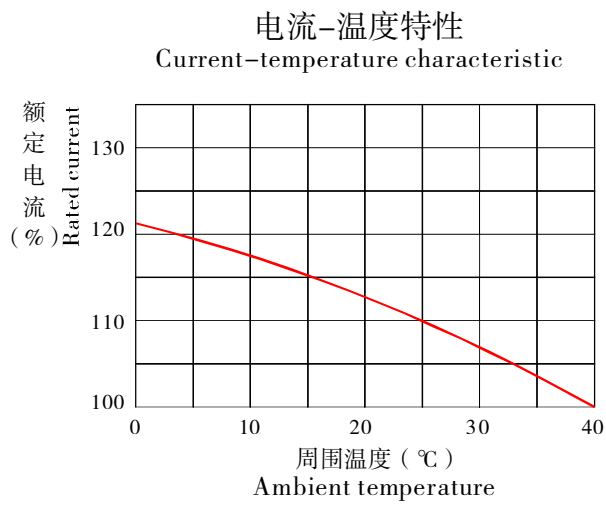


CM3-250L.M.H时间/电流特性曲线
Time/current characteristic curve

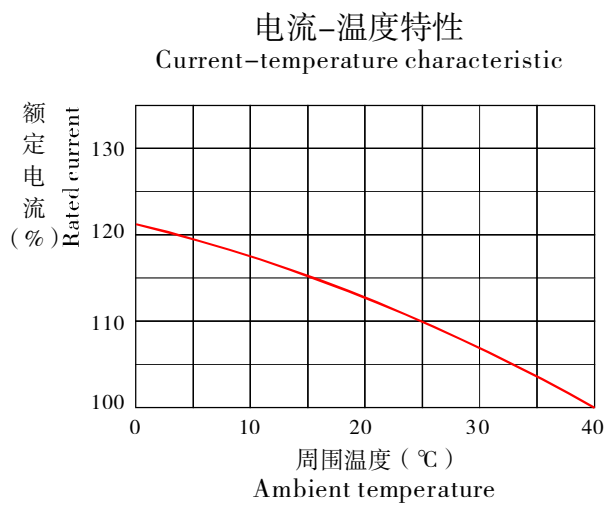
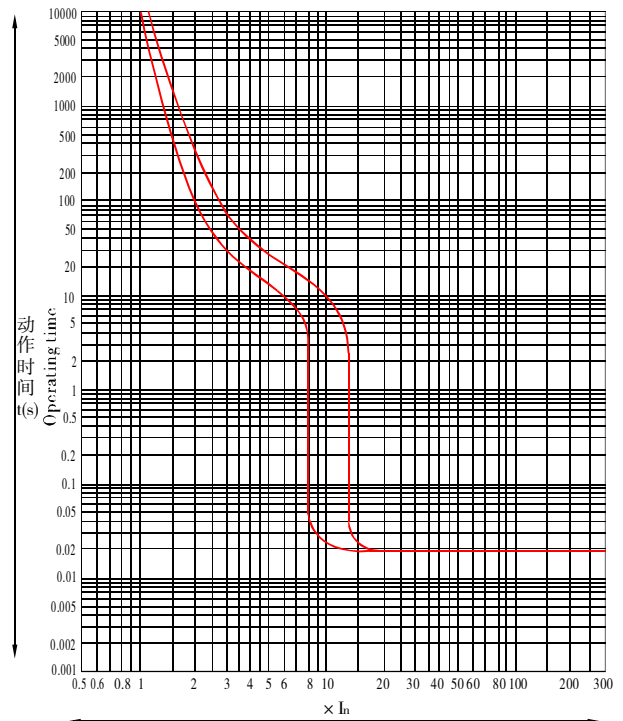


CM3-400C.L.M.H时间/电流特性曲线
Time/current characteristic curve

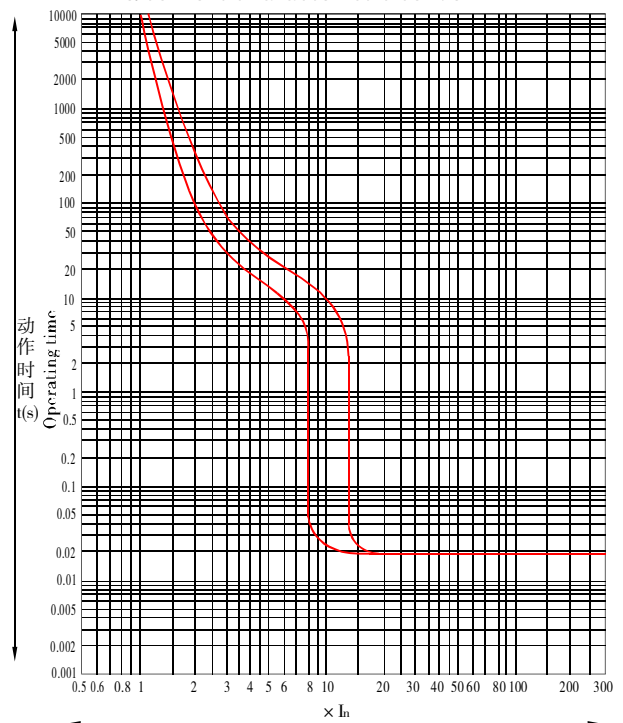




CM3-630C.L.M.H时间/电流特性曲线
Time/current characteristic curve



CM3-800L.M.H时间/电流特性曲线
Time/current characteristic curve





主要技术性能指标 MAIM TECHNICAL PERFORMANCE INDEX

表六 table 6.

壳架等级额定电流Inm (A) frame size rated current		63	
型 号 type designation		CM3-63L	CM3-63M
极 数 number of poles		3、4	3、4
额定电流In (A) rated current		10,16,20,25,32,40,50,63	
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	
额定工作电压Ue (V) rated operational voltage		AC400	AC400
飞弧距离 (mm) arcing distance		≥50 (0)*	
额定极限短路分断能力 Icu(kA) rated ultimate short-circuit breaking capacity	AC400V	35	50
额定运行短路分断能力 Ics(kA) rated service short-circuit breaking capacity	AC400V	35	35
使用类别 Utilization category		A	
电气寿命** (次 times) Electrical durability	AC400V	8000	
机械寿命** (次 times) Mechanical durability	免维护 without-maintenance	20000	
	有维护 maintenance	40000	
外形尺寸 outline dimensions	宽 (mm) Width	75/100 (三极/四极) (three/four poles)	
	长 (mm) Length	130	
	高 (mm) high	60	
分励脱扣器 shunt release		○	○
欠电压脱扣器 under-voltage release		○	○
辅助开关 auxiliary switch		○	○
报警开关 alarm switch		○	○
过载报警 (不脱扣) 开关 overload alarm(non-tripping)switch		—	—
电动操作机构 motor operator		○	○
手动操作机构 rotary handle operator		○	○

*注：选装高为4mm(CM3-63L.M)的零飞弧罩，实现零飞弧。

*Note: can be zero arc venting by installing zero arc venting cover of 4mm(CM3-63L.M)

**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.



主要技术性能指标 MAIM TECHNICAL PERFORMANCE INDEX

续表 (continue)

壳架等级额定电流Inm (A) frame size rated current		100			
型 号 type designation		CM3-100C	CM3-100L	CM3-100M	CM3-100H
极 数 number of poles		3、4	3、4	3、4	3、4
额定电流In (A) rated current		10,16,20,25,32,40,50,63,80,100			
额定绝缘电压Ui (V) rated insulation voltage		800			
额定冲击耐受电压Uimp (V) rated impluse withstand voltage		8000			
额定工作电压Ue (V) rated operational voltage		AC400	AC400	AC400 AC690	AC400
飞弧距离 (mm) arcing distance		≥ 50 (0)*			
额定极限短路 分断能力 Icu(kA) rated ultimate short-circuit breaking capacity	AC690V			20	
	AC400V	35	50	70	100
额定运行短路 分断能力 Ics(kA) rated service short-circuit breaking capacity	AC690V			10	
	AC400V	22	35	50	70
使用类别 Utilization category		A			
电气寿命 (次 times) electrical durability	AC400V	8000			
	AC690V			1500	
机械寿命 (次 times) Mechanical durability	免维护 without-maintenance	20000			
	有维护 maintenance	40000			
外形尺寸 outline dimensions	宽 (mm) Width	75/100 (三极/四极) (three/four poles)	92/122 (三极/四极) (three/four poles)		
	长 (mm) Length	130	150		
	高 (mm) high	60	83		
分励脱扣器 shunt release		○	○	○	○
欠电压脱扣器 under-voltage release		○	○	○	○
辅助开关 auxiliary switch		○	○	○	○
报警开关 alarm switch		○	○	○	○
过载报警 (不脱扣) 开关 overrood alarm(non-tripping)switch		—	○	○	○
电动操作机构 motor operator		○	○	○	○
手动操作机构 rotary handle operator		○	○	○	○

*注：选装高为4mm(CM3-100C)、6.2mm(CM3-100L.M.H)的零飞弧罩，实现零飞弧。

*Note: can be zero arcventing by installing zero arcventing cover of 4mm(CM3-100C)、6.2mm(CM3-100L.M.H).



主要技术性能指标 MAIM TECHNICAL PERFORMANCE INDEX

续表 (continue)

壳架等级额定电流Inm (A) frame size rated current		250			
型 号 type designation		CM3-250C	CM3-250L	CM3-250M	CM3-250H
极 数 number of poles		3	3、4	3、4	3、4
额定电流In (A) rated current		100、125、140、160、180、200、225、250			
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			
额定工作电压Ue (V) rated operational voltage		AC400	AC400	AC400 AC690	AC400
飞弧距离 (mm) arcing distance		≥ 50 (0)*			
额定极限短路 分断能力 Icu(kA) rated ultimate short-circuit breaking capacity	AC690V			20	
	AC400V	35	50	70	100
额定运行短路 分断能力 Ics(kA) rated service short-circuit breaking capacity	AC690V			10	
	AC400V	25	35	50	70
使用类别 Utilization category		A			
电气寿命 (次 times) electrical durability	AC400V	8000			
	AC690V			1000	
机械寿命 (次 times) Mechanical durability	免维护 without-maintenance	20000			
	有维护 maintenance	40000			
外形尺寸 outline dimensions	宽 (mm) Width	105	107/142 (三极/四极) (three/four poles)		
	长 (mm) Length	165	165		
	高 (mm) high	60	103		
分励脱扣器 shunt release		○	○	○	○
欠电压脱扣器 under-voltage release		○	○	○	○
辅助开关 auxiliary switch		○	○	○	○
报警开关 alarm switch		○	○	○	○
过载报警 (不脱扣) 开关 overload alarm(non-tripping)switch		—	○	○	○
电动操作机构 motor operator		○	○	○	○
手动操作机构 rotary handle operator		○	○	○	○

*注：选装高为8mm(CM3-250C)、7.5mm(CM3-250L.M.H)的零飞弧罩，实现零飞弧。

Note: can be zero arcing by installing arc cover of 8mm(CM3-250C)、7.5mm(CM3-250L.M.H).



主要技术性能指标 MAIM TECHNICAL PERFORMANCE INDEX

续表 (continue)

壳架等级额定电流Inm (A) frame size rated current		400			
型 号 type designation		CM3-400C	CM3-400L	CM3-400M	CM3-400H
极 数 number of poles		3	3、4	3、4	3、4
额定电流In (A) rated current		225、250、315、350、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			
额定工作电压Ue (V) rated operational voltage		AC400	AC400	AC400 AC690	AC400
飞弧距离 (mm) arcing distance		≥100(0)*			
额定极限短路 分断能力 Icu(kA) rated ultimate short-circuit breaking capacity	AC690V			20	
	AC400V	35	50	70	100
额定运行短路 分断能力 Ics(kA) rated service short-circuit breaking capacity	AC690V			15	
	AC400V	35	50	70	75
使用类别 Utilization category		A			
电气寿命 (次 times) electrical durability	AC400V	7500			
	AC690V			1000	
机械寿命 (次 times) Mechanical durability	免维护 without-maintenance	10000			
	有维护 maintenance	20000			
外形尺寸 outline dimensions	宽 (mm) width	150/198 (三极/四极) (three/four poles)			
	长 (mm) length	257			
	高 (mm) high	106.5			
分励脱扣器 shunt release		○	○	○	○
欠电压脱扣器 under-voltage release		○	○	○	○
辅助开关 auxiliary switch		○	○	○	○
报警开关 alarm switch		○	○	○	○
过载报警 (不脱扣) 开关 overload alarm(non-tripping)switch		○	○	○	○
电动操作机构 motor operator		○	○	○	○
手动操作机构 rotary handle operator		○	○	○	○

*注：选装高为9.3mm的零飞弧罩，实现零飞弧。

Note: can be zero arc venting by installing arc cover of 9.3mm.



续表 (continue)

壳架等级额定电流Inm (A) frame size rated current		630			
型 号 type designation		CM3-630C	CM3-630L	CM3-630M	CM3-630H
极 数 number of poles		3	3、4	3、4	3、4
额定电流In (A) rated current		400、500、630			
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			
额定工作电压Ue (V) rated operational voltage		AC400	AC400	AC400 AC690	AC400
飞弧距离 (mm) arcing distance		≥100(0)*			
额定极限短路 分断能力 Icu(kA) rated ultimate short-circuit breaking capacity	AC690V			20	
	AC400V	35	50	70	100
额定运行短路 分断能力 Ics(kA) rated service short-circuit breaking capacity	AC690V			15	
	AC400V	35	50	70	75
使用类别 Utilization category		A			
电气寿命 (次 times) electrical durability	AC400V	7500			
	AC690V			1000	
机械寿命 (次 times) Mechanical durability	免维护 without-maintenance	10000			
	有维护 maintenance	20000			
外形尺寸 outline dimensions	宽 (mm) Width	182/240 (三极/四极) (three/four poles)			
	长 (mm) Length	270			
	高 (mm) high	110			
分励脱扣器 shunt release		○	○	○	○
欠电压脱扣器 under-voltage release		○	○	○	○
辅助开关 auxiliary switch		○	○	○	○
报警开关 alarm switch		○	○	○	○
过载报警 (不脱扣) 开关 overload alarm(non-tripping)switch		○	○	○	○
电动操作机构 motor operator		○	○	○	○
手动操作机构 rotary handle operator		○	○	○	○

*注：选装高为9.3mm的零飞弧罩，实现零飞弧。
Note:can be zero acventing by installing arc cover of 9.3mm.



主要技术性能指标 MAIM TECHNICAL PERFORMANCE INDEX

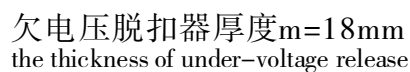
续表 (continue)

壳架等级额定电流Inm (A) frame size rated current		800		
型 号 type designation		CM3-800L	CM3-800M	CM3-800H
极 数 number of poles		3、4	3、4	3、4
额定电流In (A) rated current		400、500、630、700、800		
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		
额定工作电压Ue (V) rated operational voltage		AC400	AC400 AC690	AC400
飞弧距离 (mm) arcing distance		≥100(0)*		
额定极限短路 分断能力 Icu(kA) rated ultimate short-circuit breaking capacity	AC690V		30	
	AC400V	65	75	100
额定运行短路 分断能力 Ics(kA) rated service short-circuit breaking capacity	AC690V		20	
	AC400V	65	75	75
使用类别 Utilization category		A		
电气寿命 (次 times) electrical durability	AC400V	7500		
	AC690V		500	
机械寿命 (次 times) Mechanical durability	免维护 without-maintenance	10000		
	有维护 maintenance	20000		
外形尺寸 outline dimensions	宽 (mm) Width	210/280 (三极/四极) (three/four poles)		
	长 (mm) Length	280		
	高 (mm) high	113.7		
分励脱扣器 shunt release		○	○	○
欠电压脱扣器 under-voltage release		○	○	○
辅助开关 auxiliary switch		○	○	○
报警开关 alarm switch		○	○	○
过载报警 (不脱扣) 开关 overload alarm(non-tripping)switch		○	○	○
电动操作机构 motor operator		○	○	○
手动操作机构 rotary handle operator		○	○	○

*注：选装高为9.3mm的零飞弧罩，实现零飞弧。
Note: can be zero arcing by installing arc cover of 9.3mm.



X-X、Y-Y为三极断路器中心 as the center of three poles breaker



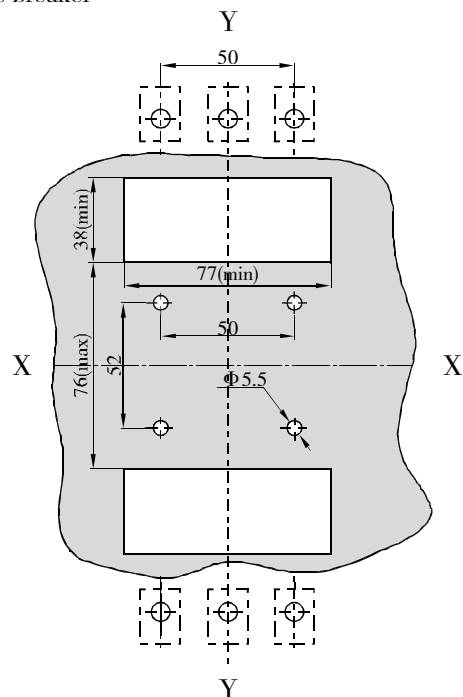
板前接线安装板开孔尺寸
Mounting plate cutout dimensions of front connected

X-X、Y-Y为三极断路器中心 as the center of three poles breaker



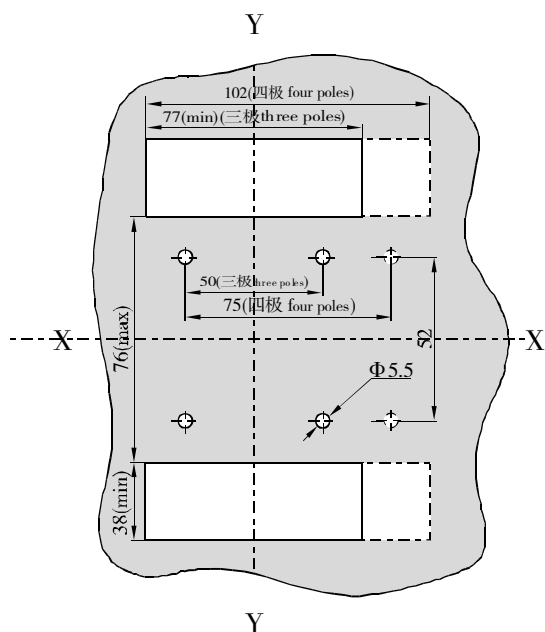


X-X、Y-Y为三极断路器中心, as the center of three poles breaker



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

X-X、Y-Y为三极断路器中心, as the center of three poles breaker

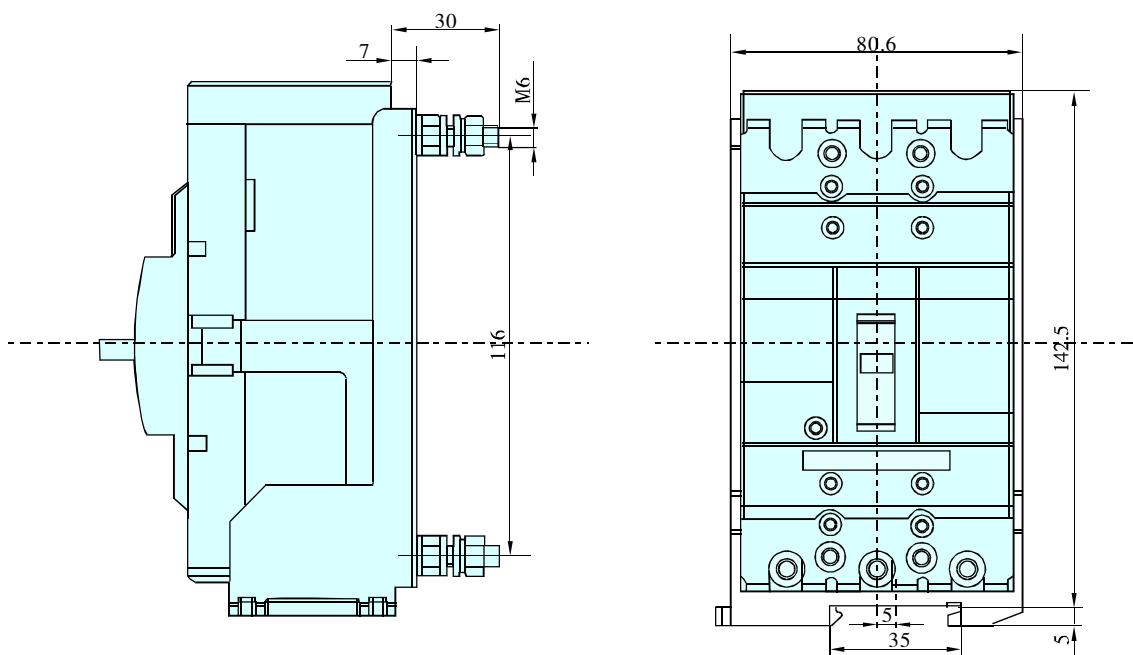


插入式板后接线安装板开孔尺寸
Mounting plate cutout dimensions of plug-in rear connected



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

- CM3-63 (L、M) MNS柜8E/2或8E/4板后接线 (导轨安装) (三极)
8E/2 rear connected of MNS assembly (guide rail installing) (three poles)

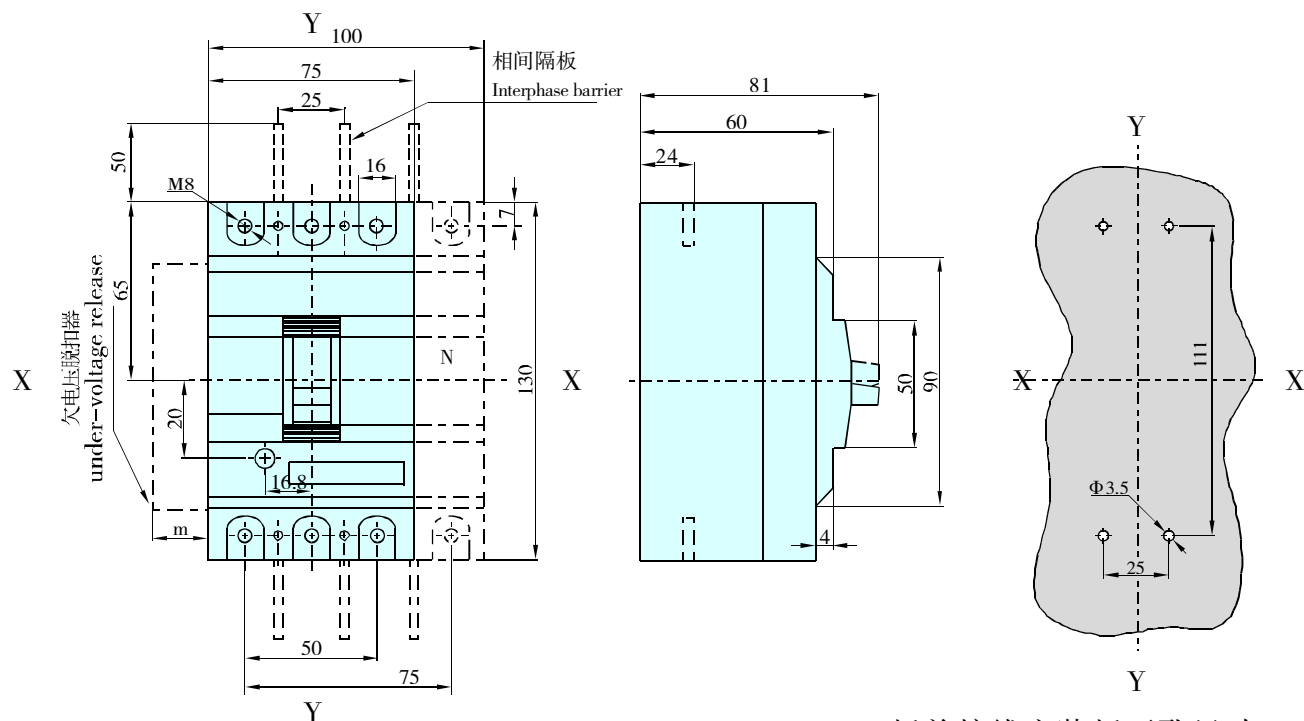




外形尺寸及安装尺寸 OUTLINE AND MOUNTING DIMENSIONS

● CM3-100C板前接线（三极、四极）front connected (three and four poles)

X-X、Y-Y为三极断路器中心 as the center of three poles breaker

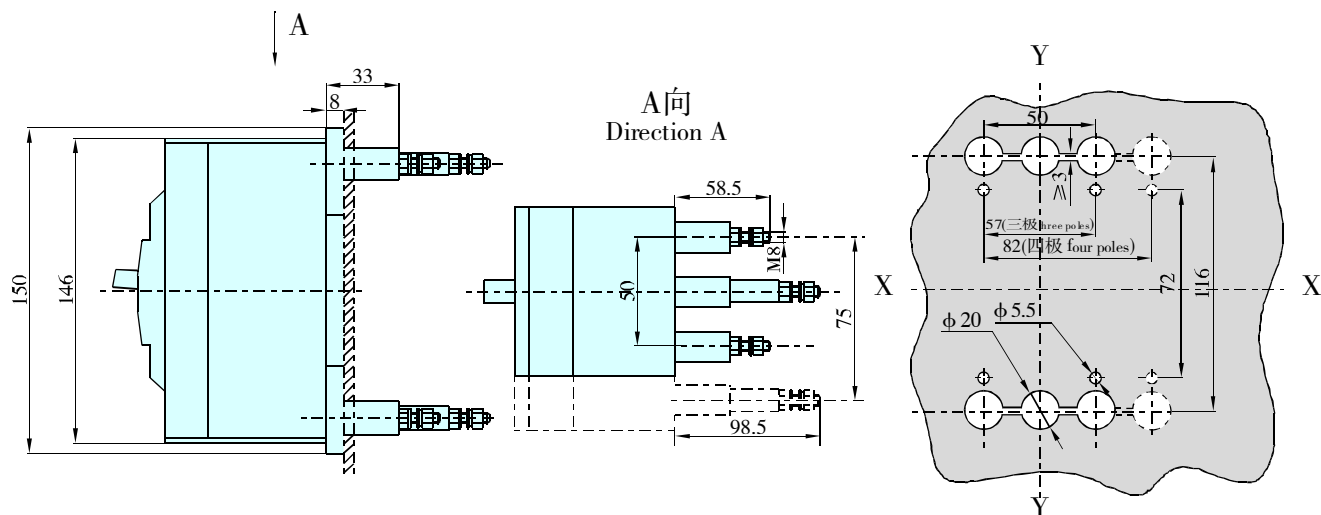


欠电压脱扣器厚度 $m=18\text{mm}$
the thickness of under-voltage release

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

● CM3-100C板后接线（三极、四极）Rear connected(three and four poles)

X-X、Y-Y为三极断路器中心 as the center of three poles breaker



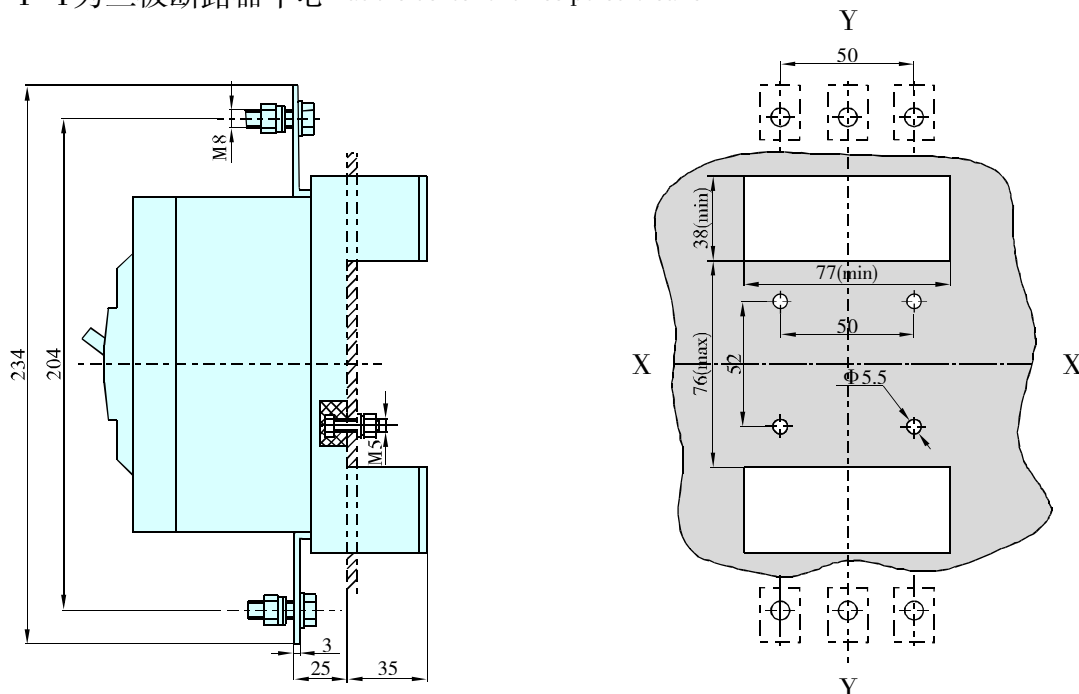
板后接线安装板开孔尺寸
Mounting plate cutout dimensions of rear connected



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

●CM3-100C插入式板前接线（三极） Plug-in front connected(three poles)

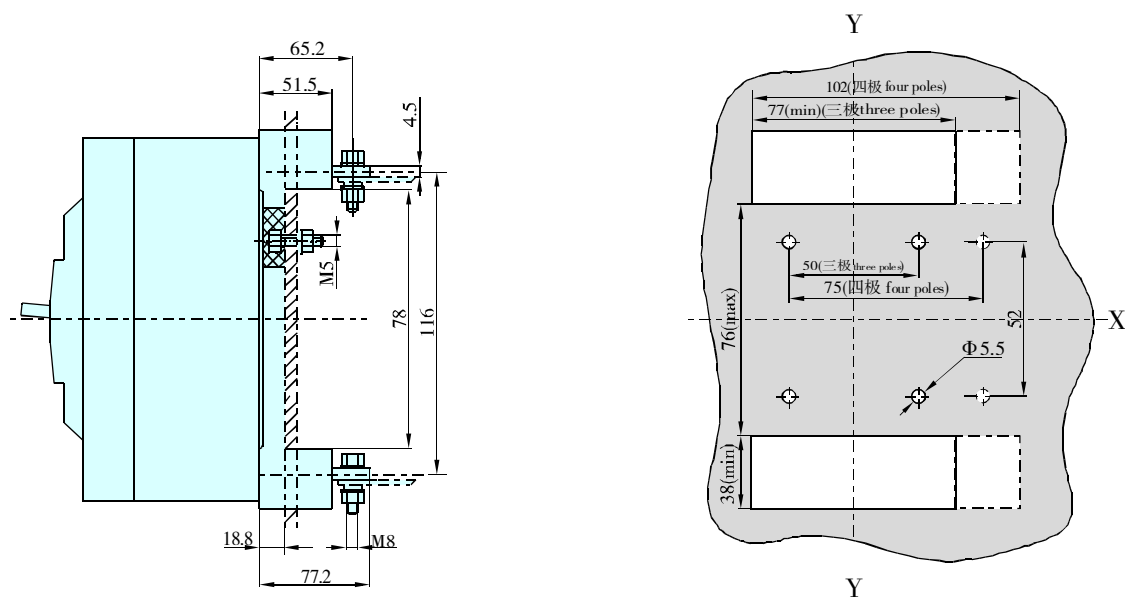
X-X、Y-Y为三极断路器中心 as the center of three poles breaker



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

●CM3-100C插入式板后接线（三极、四极） Plug-in rear connected(three and four poles)

X-X、Y-Y为三极断路器中心 as the center of three poles breaker

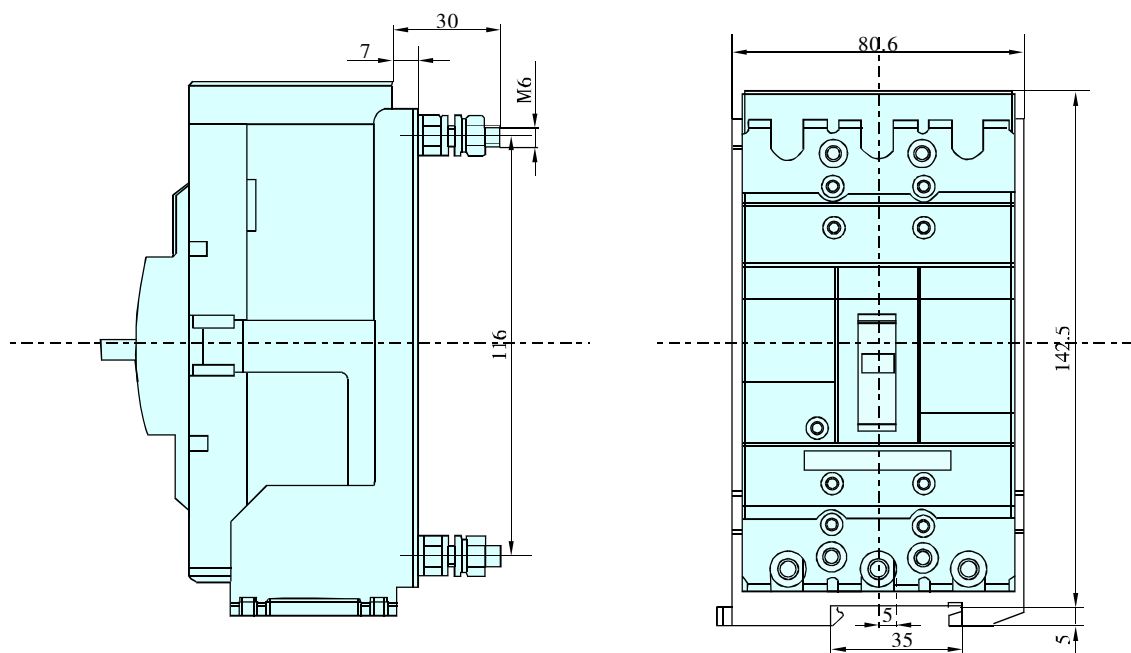


插入式板后接线安装板开孔尺寸
Mounting plate cutout dimensions of plug-in rear connected

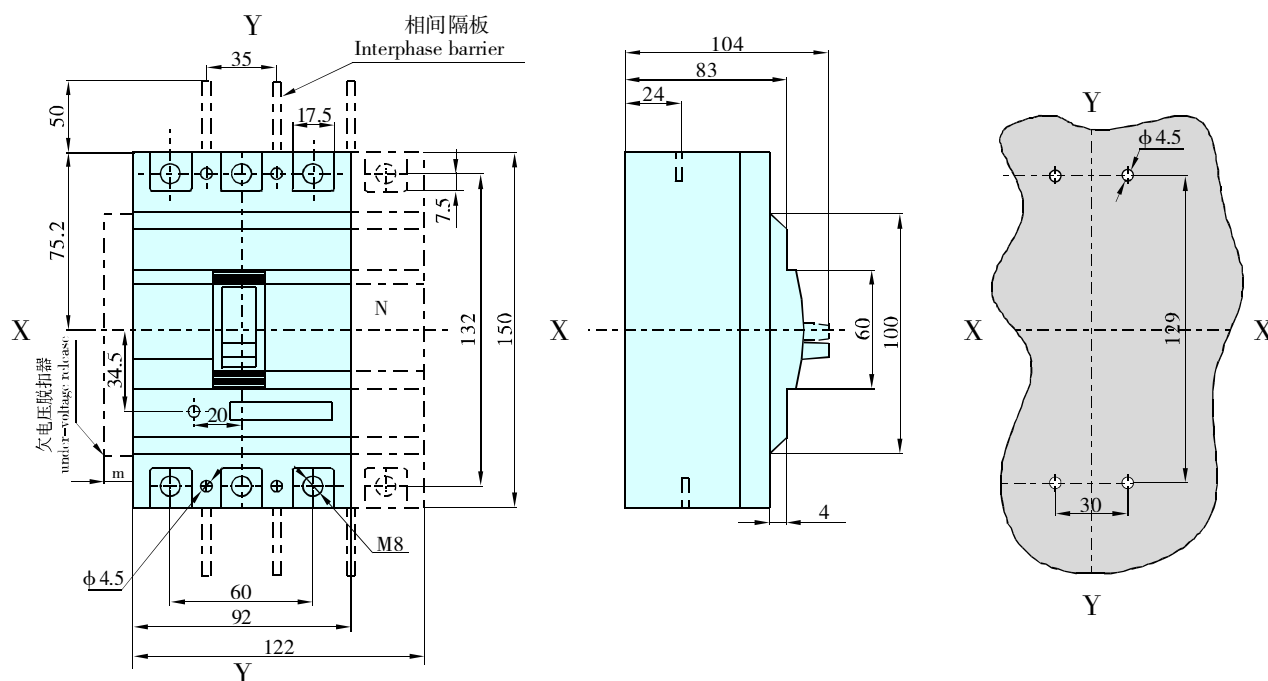


外形尺寸及安装尺寸 OUTLINE AND MOUNTING DIMENSIONS

- CM3-100C MNS柜8E/2板后接线（导轨安装）（三极）
8E/2 rear connected of MNS assembly (guide rail installing) (three poles)



- CM3-100(L、M、H)板前接线（三极、四极） Front connected (three and four poles)
X-X、Y-Y为三极断路器中心 as the center of three poles breaker



欠电压脱扣器厚度 $m=21\text{mm}$
the thickness of under-voltage release

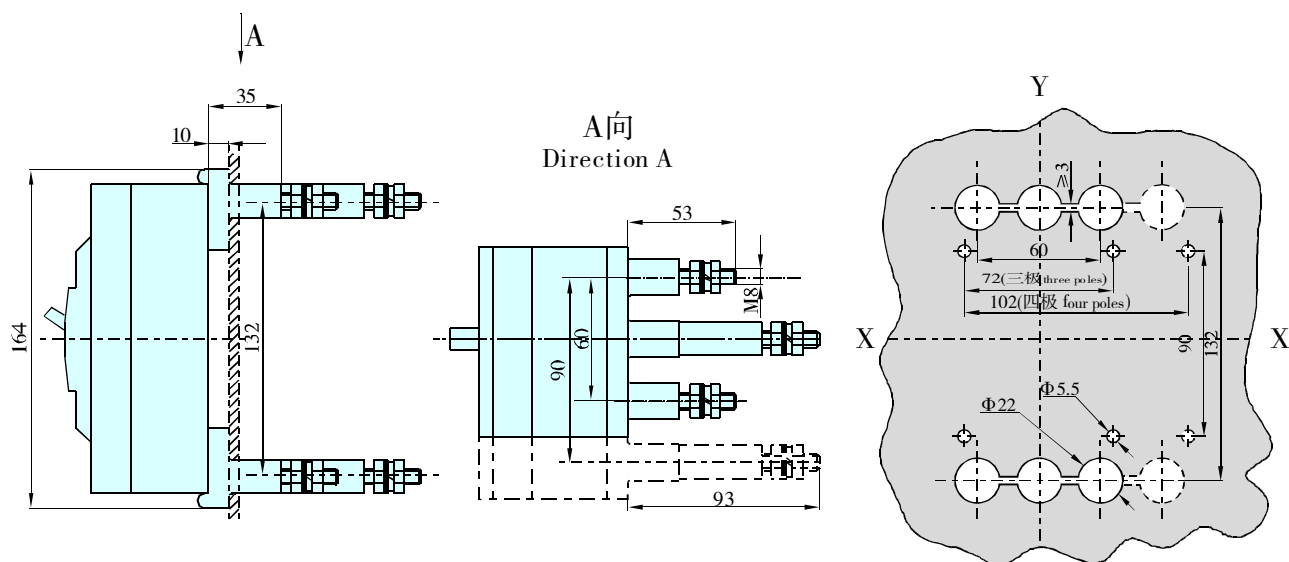
板前接线安装板开孔尺寸
Mounting plate cutout dimensions of front connected



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

● CM3-100(L、M、H) 板后接线 (三极、四极) Rear connected(three and four poles)

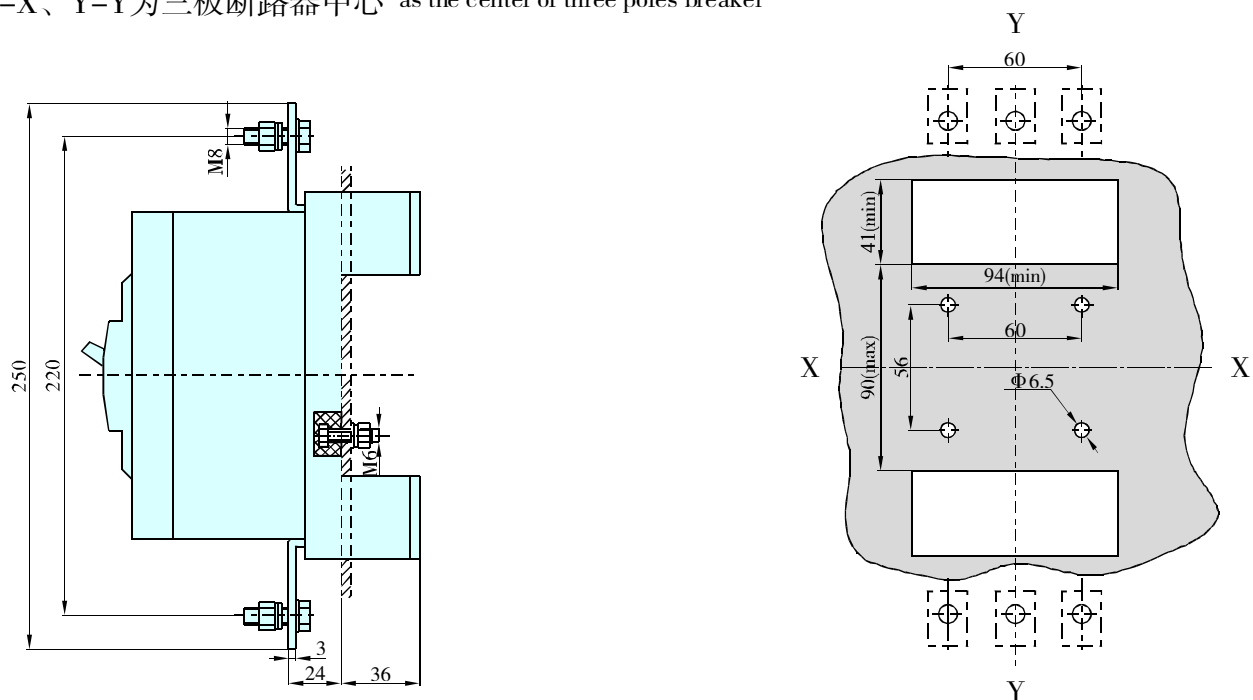
X-X、Y-Y为三极断路器中心 as the center of three poles breaker



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

● CM3-100(L、M、H) 插入式板前接线 (三极) Plug-in front connected(three poles)

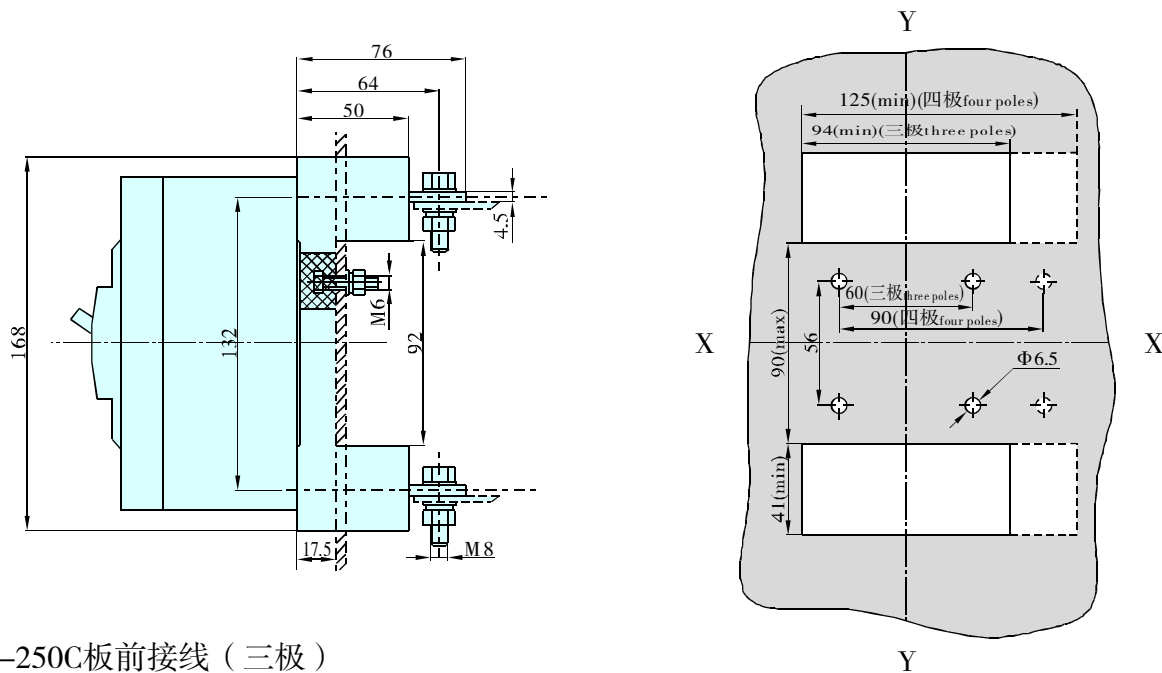
X-X、Y-Y为三极断路器中心 as the center of three poles breaker



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

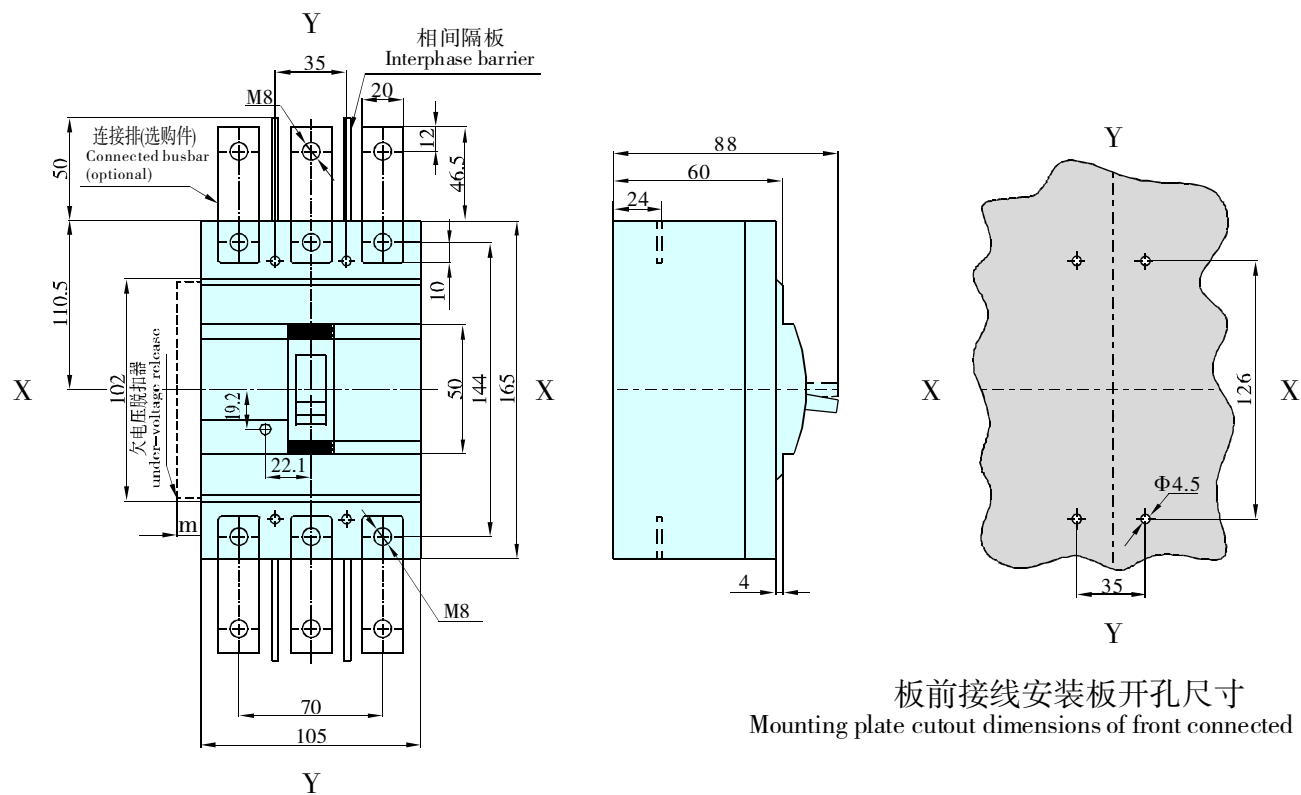


● CM3-100(L、M、H)插入式板后接线 (三极、四极) Plug-in rear connected(three and four poles)
X-X、Y-Y为三极断路器中心 as the center of three poles breaker



● CM3-250C板前接线（三极）
X-X、Y-Y为三极断路器中心
Front connected (three poles)
as the center of three poles breaker

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



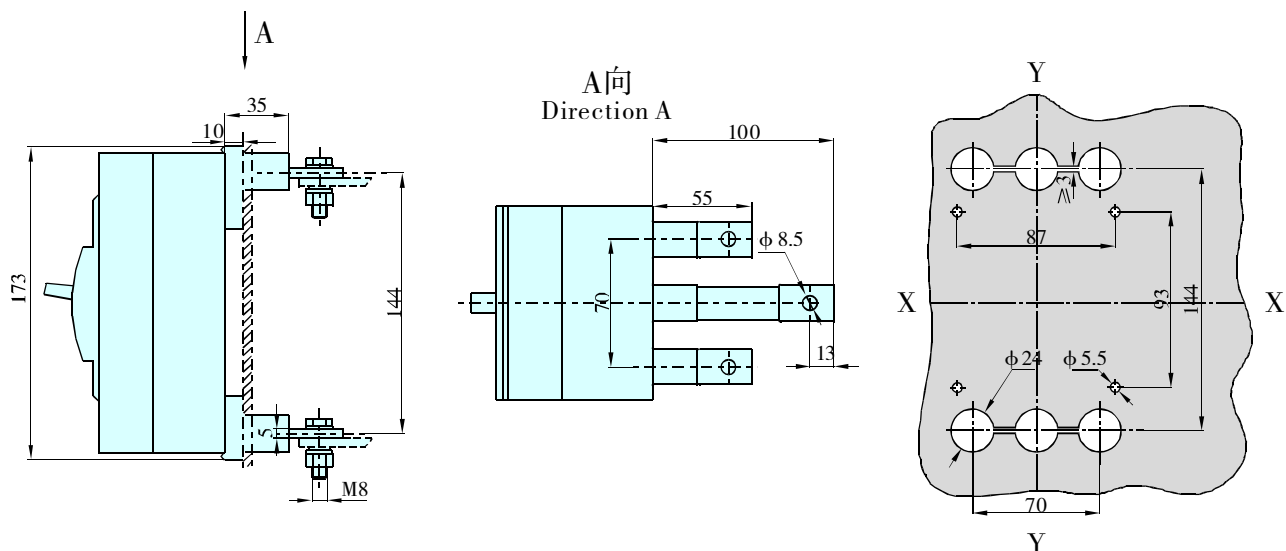
欠电压脱扣器厚度 $m=18\text{mm}$
the thickness of under-voltage release



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

● CM3-250 C 板后接线 (三极) Rear connected(three poles)

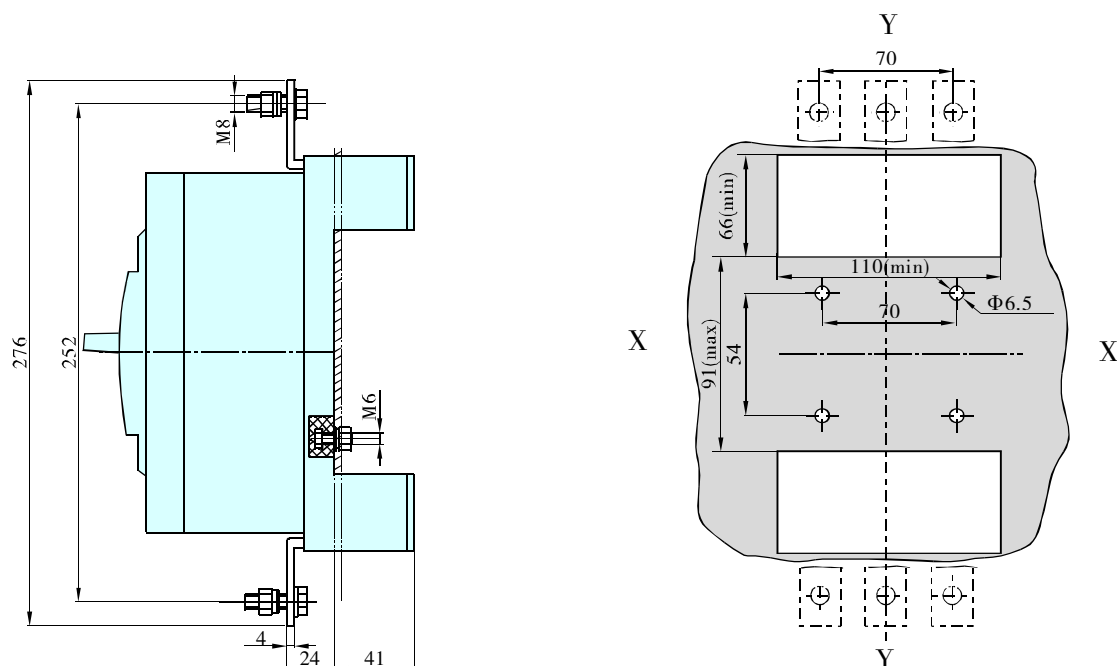
X-X、Y-Y为三极断路器中心 as the center of three poles breaker



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

● CM3-250 C 插入式板前接线 (三极) Plug-in front connected(three poles)

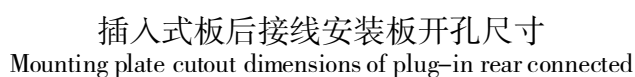
X-X、Y-Y为三极断路器中心 as the center of three poles breaker



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



X-X、Y-Y为三极断路器中心 as the center of three poles breaker



X-X、Y-Y为三极断路器中心, as the center of three poles breaker



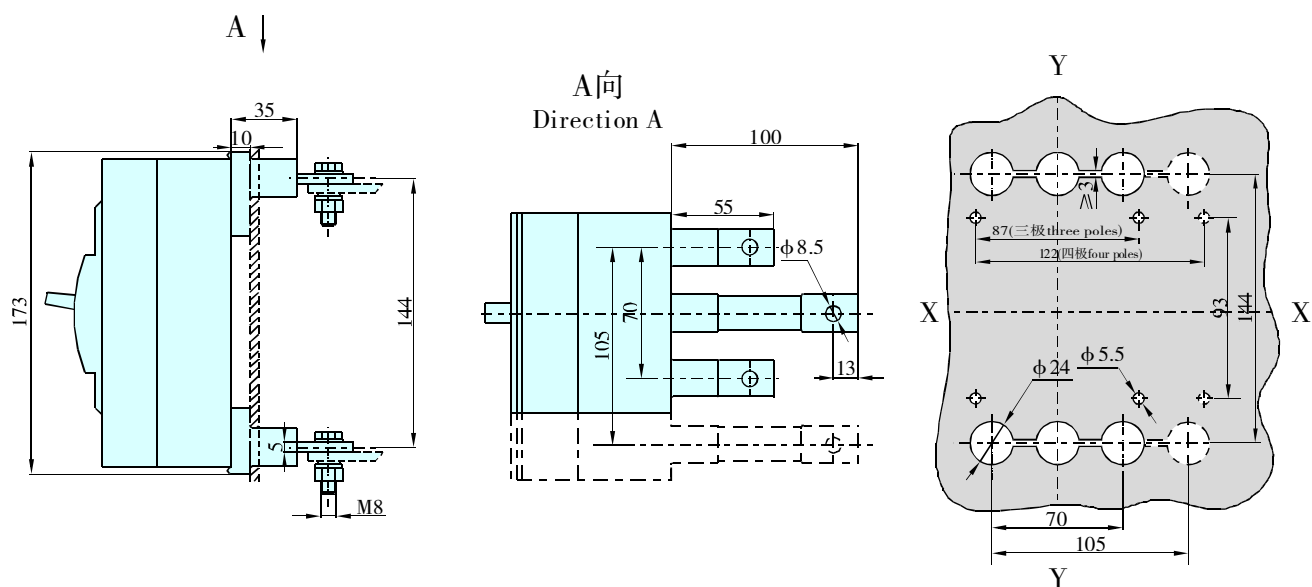
欠电压脱扣器厚度 $m=22\text{mm}$
the thickness of under-voltage release



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

● CM3-250 (L、M、H) 板后接线 (三极、四极) Rear connected (three and four poles)

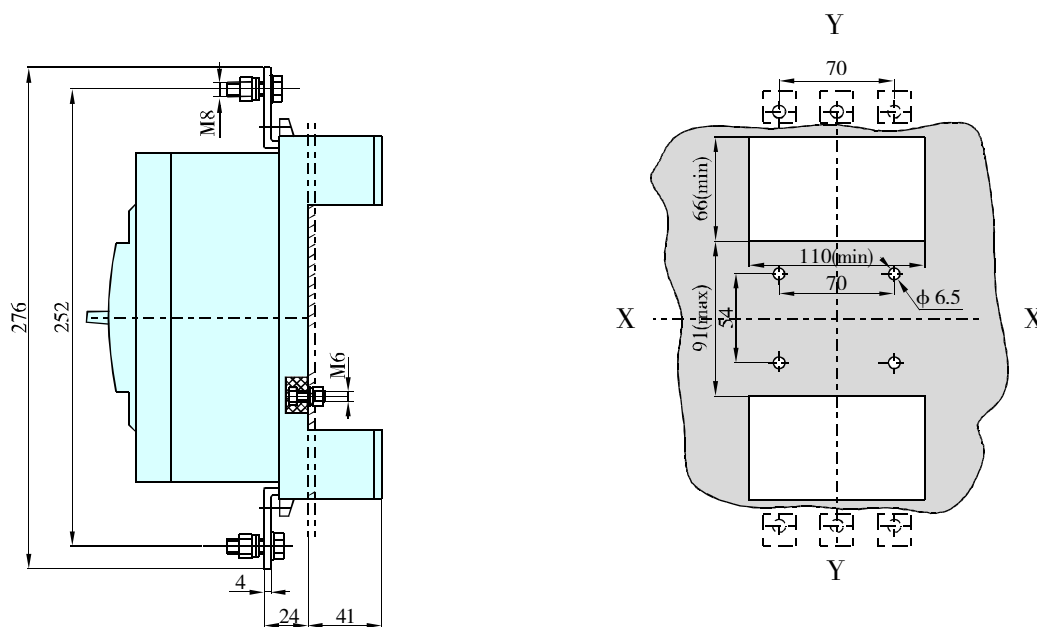
X-X、Y-Y为三极断路器中心 as the center of three poles breaker



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

● CM3-250 (L、M、H) 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 as the center of three poles breaker



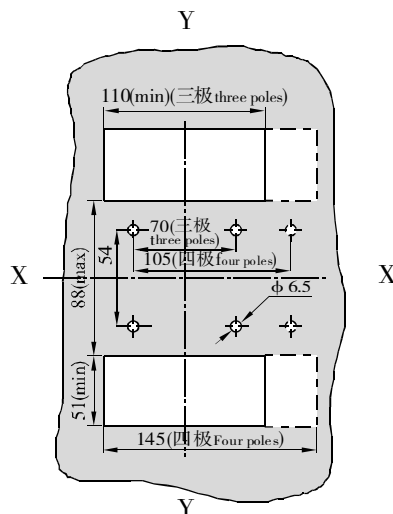
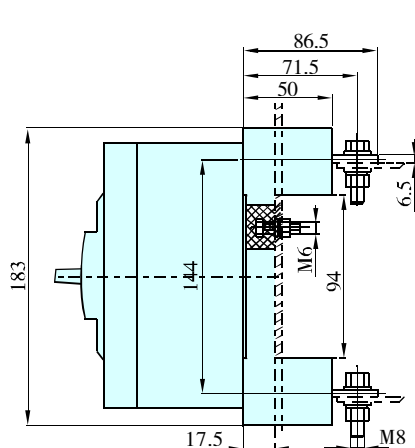
插入式板前接线安装板开孔尺寸
Mounting plate cutout dimensions of plug-in front connected



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

● CM3-250 (L、M、H) 插入式板后接线 (三极、四极) Plug-in rear connected (three and four poles)

X-X、Y-Y 为三极断路器中心 as the center of three poles breaker

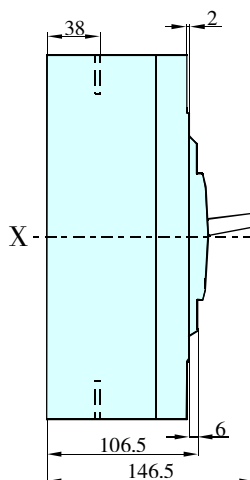
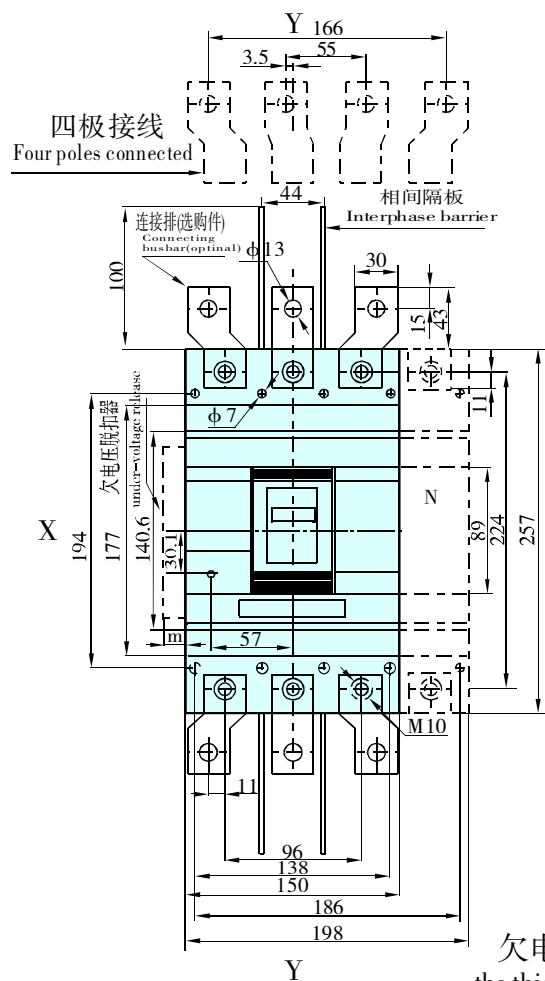


插入式板后接线安装板开孔尺寸

Mounting plate cutout dimensions of plug-in rear connected

● CM3-400 (C、L、M、H) 板前接线 (三极、四极) Front connected (three and four poles)

X-X、Y-Y 为三极断路器中心 as the center of three poles breaker



板前接线安装板开孔尺寸

Mounting plate cutout dimensions of front connected

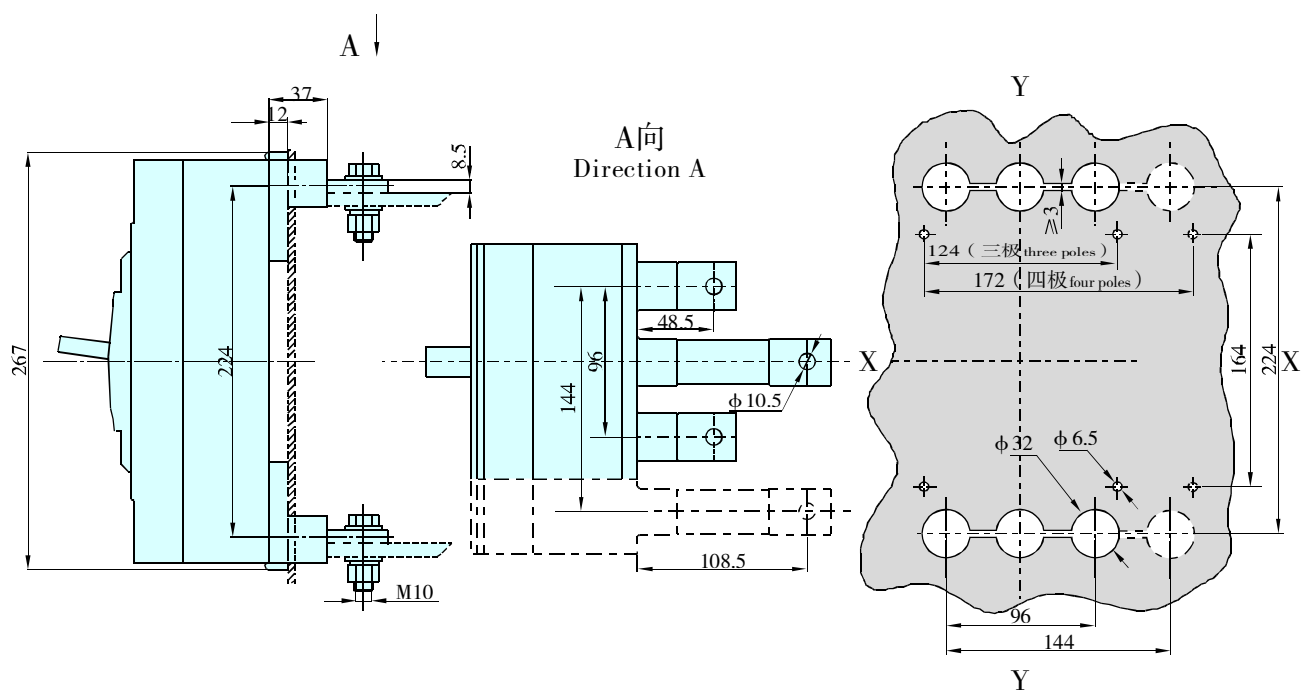
欠电压脱扣器厚度 $m=22\text{mm}$
the thickness of under-voltage release



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

● CM3-400 (C、L、M、H) 板后接线 (三极、四极) Rear connected(three and four poles)

X-X、Y-Y为三极断路器中心 as the center of three poles breaker

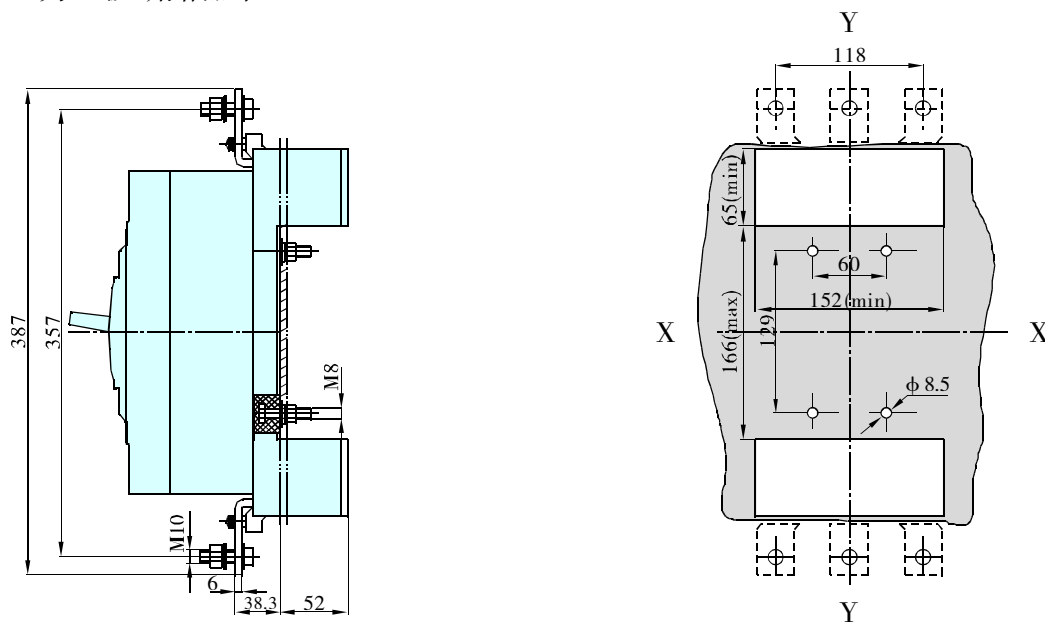


板后接线安装板开孔尺寸

Mounting plate cutout dimensions of rear connected

● CM3-400 (C、L、M、H) 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 as the center of three poles breaker

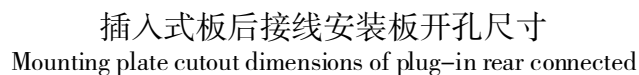


插入式板前接线安装板开孔尺寸

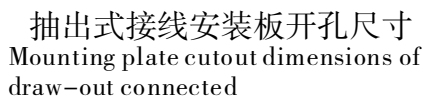
Mounting plate cutout dimensions of plug-in front connected



X-X、Y-Y为三极断路器中心 as the center of three poles breaker



X-X、Y-Y为三极断路器中心 as the center of three poles breaker

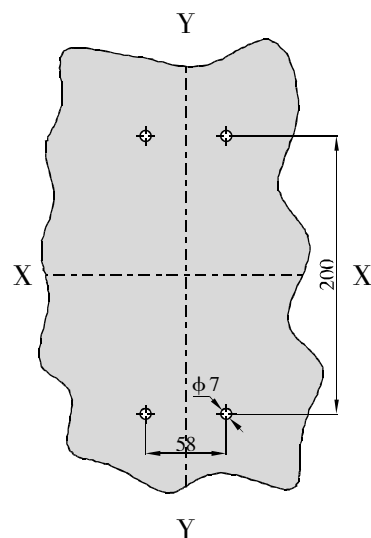
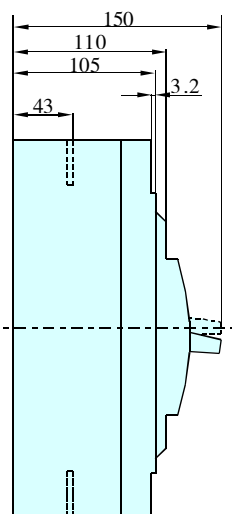
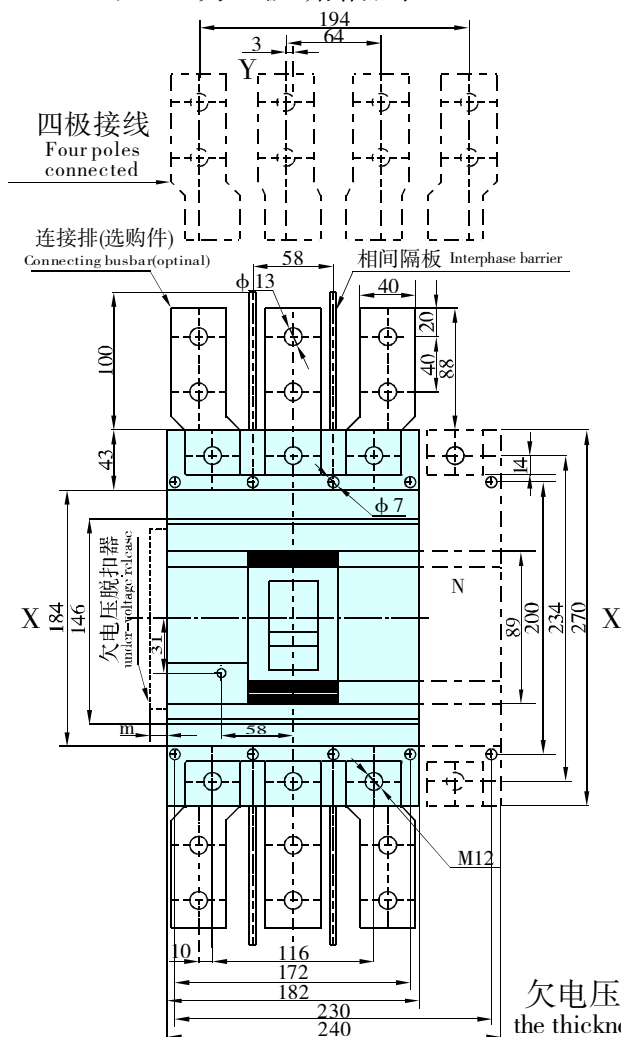




外形尺寸及安装尺寸 OUTLINE AND MOUNTING DIMENSIONS

●CM3-630(C、L、M、H)板前接线 (三极、四极) Front connected (three and four poles)

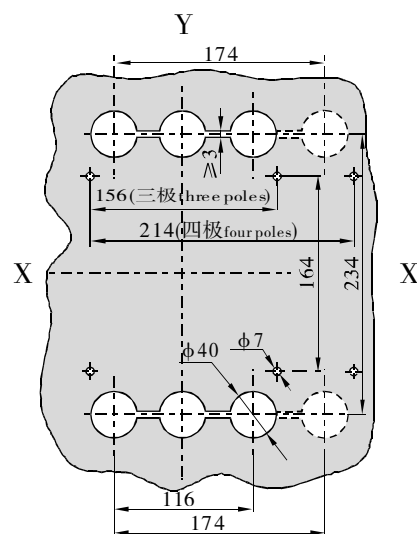
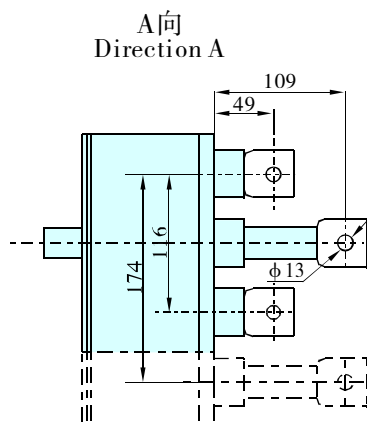
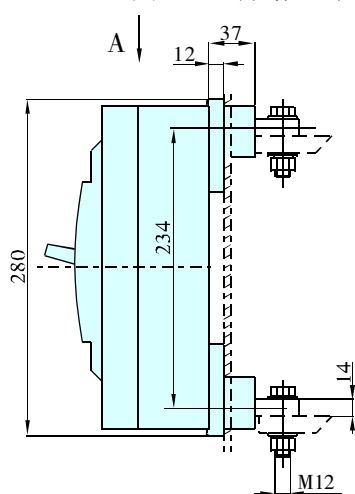
X-X、Y-Y为三极断路器中心 as the center of three poles breaker



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

●CM3-630(C、L、M、H)板后接线 (三极、四极) Rear connected(three and four poles)

X-X、Y-Y为三极断路器中心 as the center of three poles breaker



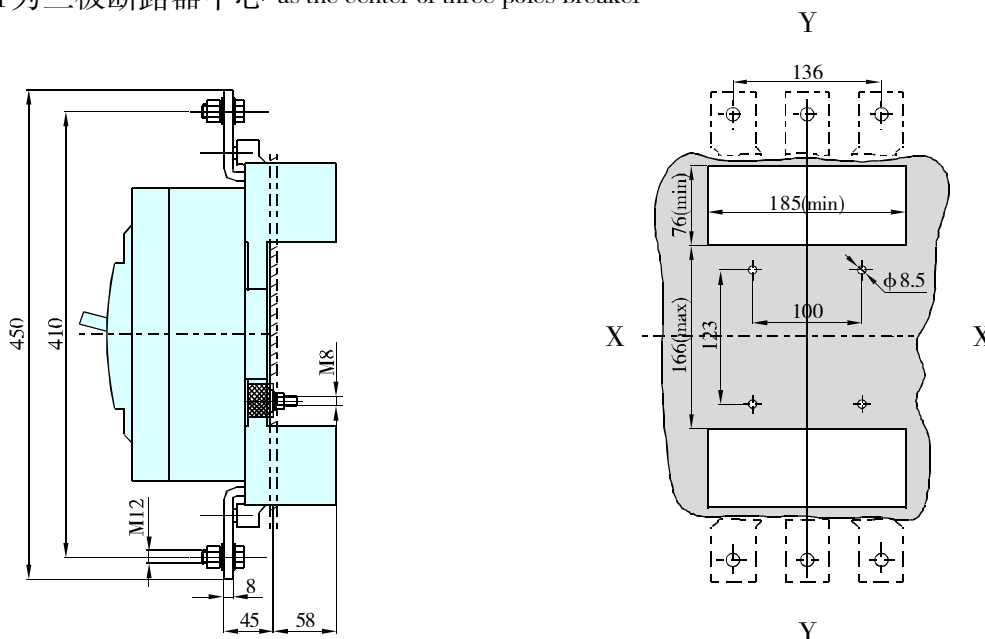
板后接线安装板开孔尺寸
Mounting plate cutout dimensions of rear connected



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

● CM3-630 (C、L、M、H)插入式板前接线 (三极) Plug-in front connected(three poles)

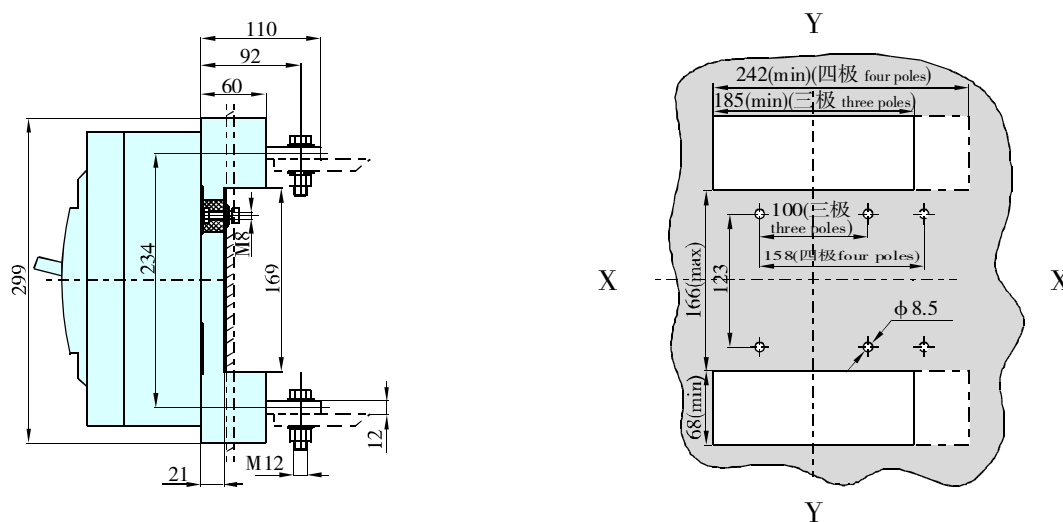
X-X、Y-Y为三极断路器中心 as the center of three poles breaker



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

● CM3-630 (C、L、M、H)插入式板后接线 (三极、四极) Plug-in rear connected(three poles)

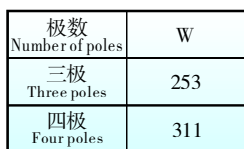
X-X、Y-Y为三极断路器中心 as the center of three poles breaker



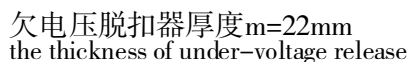
插入式板后接线安装板开孔尺寸
Mounting plate cutout dimensions of plug-in rear connected



X-X、Y-Y为三极断路器中心 as the center of three poles breaker



X-X、Y-Y为三极断路器中心 as the center of three poles breaker

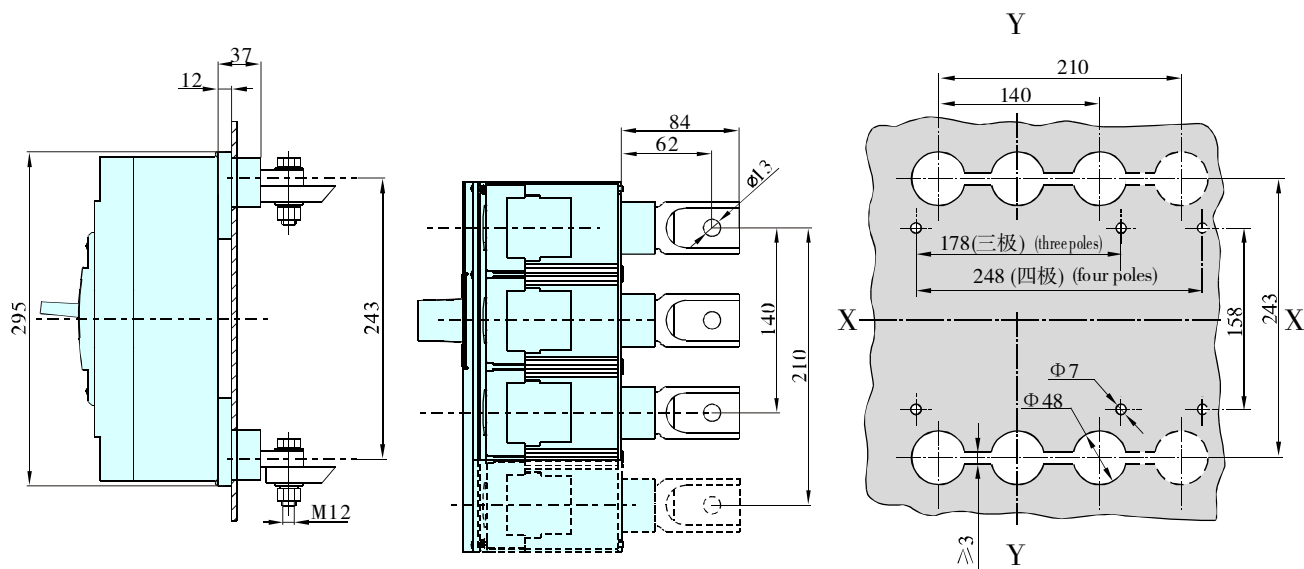




外形尺寸及安装尺寸 OUTLINE AND MOUNTING DIMENSIONS

●CM3-800 (L、M、H)板后接线（三极、四极） Rear connected(three and four poles)

X-X、Y-Y为三极断路器中心 as the center of three poles breaker

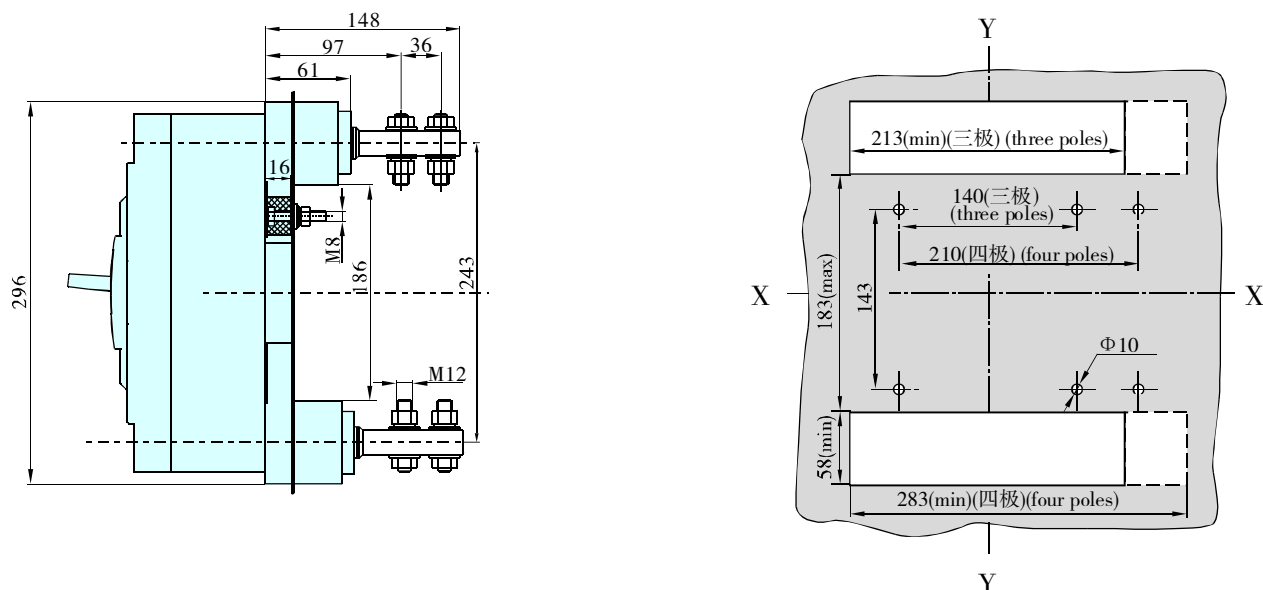


板后接线安装板开孔尺寸

Mounting plate cutout dimensions of rear connected

●CM3-800 (L、M、H)插入式板后接线（三极、四极） Plug-in rear connected(three and four poles)

X-X、Y-Y为三极断路器中心 as the center of three poles breaker



插入式板后接线安装板开孔尺寸

Mounting plate cutout dimensions of plug-in rear connected

注：CM3-800中800A电流规格暂不供插入式。

Note: the plug-in rear connected type breaker of 800A rated current for CM3-800 is not supplied presently.

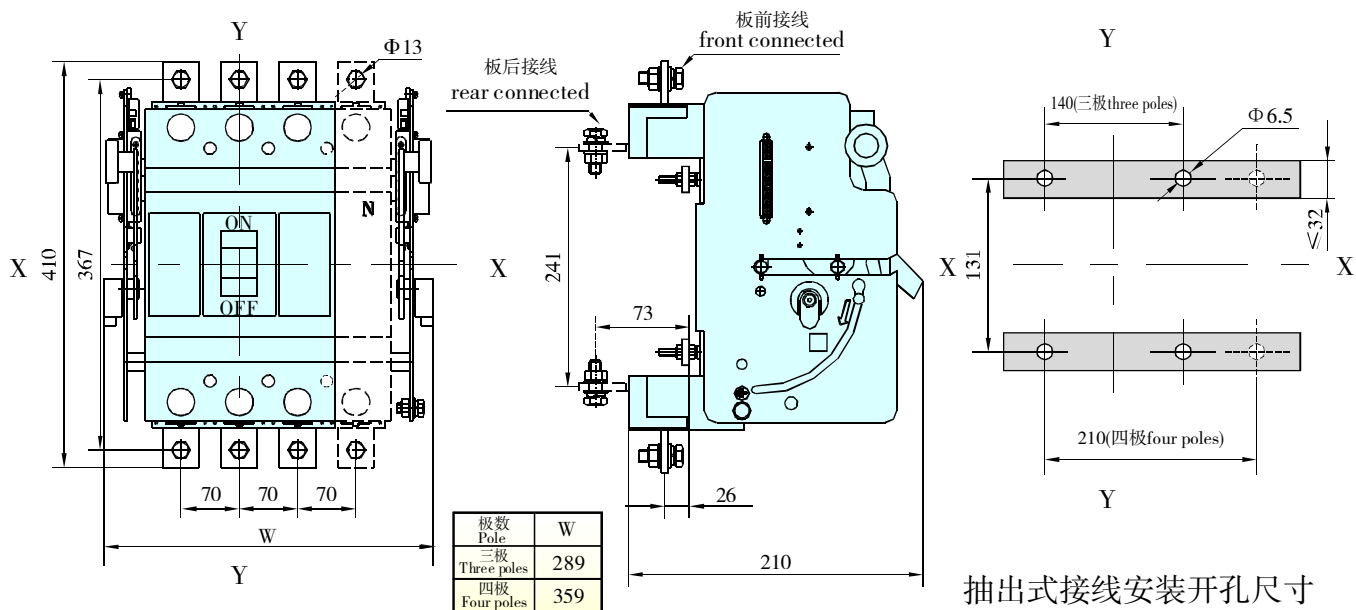


外形尺寸及安装尺寸 OUTLINE AND MOUNTING DIMENSIONS

●CM3-800 (L、M、H)抽出式接线（三极、四极）

draw-out connected(three and four poles)

X-X、Y-Y为三极断路器中心 as the center of three poles breaker

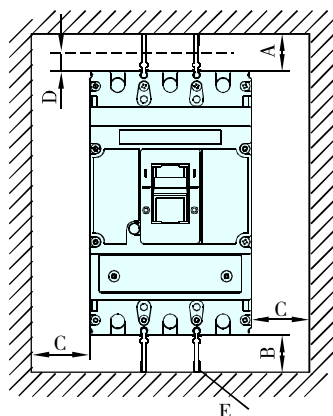


抽出式接线安装开孔尺寸

Mounting plate cutout dimensions of draw-out connected.

注：CM3-800中800A电流规格暂不提供抽出式。

Note: draw-out type breaker of 800A rated current for CM3-800 is not supplied presently.



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。必须安装相间隔板或零飞弧罩

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.the interphase barriers or zero arcventing covers should be installed

单位: mm
Measurement

型 号 Type	A		B	C	D
	不带零飞弧罩 Without zero arcventing cover	带零飞弧罩 With zero arcventing cover			
CM3-63	50	25	25	25	25
CM3-100	50	25	25	25	25
CM3-250	50	25	25	25	25
CM3-400	100	25	25	25	25
CM3-630	100	25	25	25	25
CM3-800	100	25	25	25	25



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).

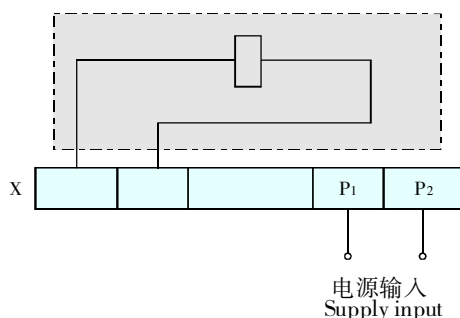
●FQT1 欠电压脱扣器，符号○Under-voltage release

欠电压脱扣器额定控制电源电压 U_e : AC50Hz/60Hz230V、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/60Hz230V、400V.

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



欠电压脱扣器功率表七

under-voltage release power see table 7

表七 Table 7

欠电压脱扣器型号 Under-voltage release type	配用断路器Fitting for breakers	安装位置 Mounting position	欠电压脱扣器功率 (VA) under-voltage release power	
			AC230V	AC400V
FQT1/CM3-63	CM3-63L、M 三极、四极 three/four poles	左面 left	8	8
FQT1/CM3-100C	CM3-100C 三极、四极 three/four poles	左面 left	8	8
FQT1/CM3-100Z	CM3-100L、M、H 三极、四极 three/four poles	左面 left	3	4
FQT1/CM3-250C	CM3-250C 三极 three poles	左面 left	8	8
FQT1/CM3-250Z	CM3-250L、M、H 三极、四极 three/four poles	左面 left	3	4
FQT1/CM3-400Z	CM3-400 C、L、M、H 三极、四极 three/four poles	左面 left	2.3	6
	CM3-630 C、L、M、H 三极、四极 three/four poles	左面 left	2.3	6
	CM3-800 L、M、H 三极、四极 three/four poles	左面 left	2.3	6

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。

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！

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.

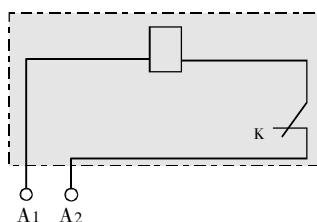
At rated control supply voltage less than 35% under-voltage should prevent breaker from closing.

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



● FFT1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.

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）须满足表八条件，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。

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 table eight 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.

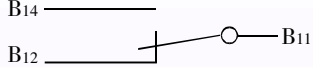
表八 Table 8 length of conductor

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

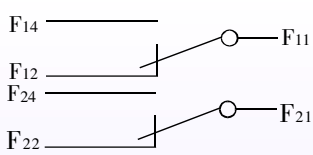
分励脱扣器型号 Shunt release type	配用断路器Fitting breaker	安装位置Mounting position
FFT1/CM3-63	CM3-63L、M 三极、四极 three/four poles	右面 right
FFT1/CM3-100C	CM3-100C 三极、四极 three/four poles	右面 right
FFT1/CM3-100Y	CM3-100L、M、H 三极、四极 three/four poles	右面 right
FFT1/CM3-250C	CM3-250C 三极 three poles	右面 right
FFT1/CM3-250Y	CM3-250L、M、H 三极、四极 three/four poles	右面 right
FFT1/CM3-400Y	CM3-400 C、L、M、H 三极、四极 three/four poles	右面 right
	CM3-630 C、L、M、H 三极、四极 three/four poles	右面 right
	CM3-800 L、M、H 三极、四极 three/four poles	右面 right



● FBC1报警开关, 符号□ Alarm switch

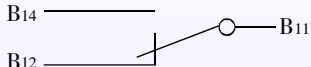
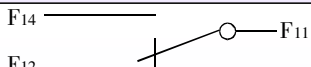
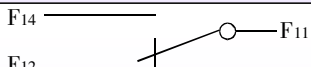
报警开关型号 Alarm switch type	配用断路器Fitting breaker	安装位置 Mounting position	状态 Status
FBC1/CM3-63	CM3-63L、M 三极、四极 three/four poles	左面或右面 left or right	 图示为断路器处于“分”或“合”时的状态， The status of the breaker in “off” or “on”， 当断路器处于“脱扣”时， 图示状态转换。 If breaker is “tripped”，the status is changovered.
FBC1/CM3-100C	CM3-100C 三极、四极 three/four poles	左面或右面 left or right	
FBC1/CM3-100Z	CM3-100L、M、H 三极、四极 three/four poles	左面 left	
FBC1/CM3-100Y		右面 right	
FBC1/CM3-250C	CM3-250C 三极 three poles	左面或右面 left or right	
FBC1/CM3-250Z	CM3-250L、M、H 三极、四极 three/four poles	左面 left	
FBC1/CM3-250Y		右面 right	
FBC1/CM3-400Z	CM3-400 C、L、M、H 三极、四极 three/four poles CM3-630 C、L、M、H 三极、四极 three/four poles CM3-800 L、M、H 三极、四极 three/four poles	左面 left	
FBC1/CM3-400Y	CM3-400 C、L、M、H 三极、四极 three/four poles CM3-630 C、L、M、H 三极、四极 three/four poles CM3-800 L、M、H 三极、四极 three/four poles	右面 right	

● FFC1辅助开关, 符号■ Auxiliary switch

辅助开关型号 Alarm switch type	配用断路器Fitting breaker	安装位置 Mounting position	状态 Status
FFC1/CM3-63	CM3-63L、M 三极、四极 three/four poles	左面或右面 left or right	 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.
FFC1/CM3-100C	CM3-100C 三极、四极 three/four poles	左面或右面 left or right	
FFC1/CM3-100Z	CM3-100L、M、H 三极、四极 three/four poles	左面 left	
FFC1/CM3-100Y		右面 right	
FFC1/CM3-250C	CM3-250C 三极 three poles	左面或右面 left or right	
FFC1/CM3-250Z	CM3-250L、M、H 三极、四极 three/four poles	左面 left	
FFC1/CM3-250Y		右面 right	
FFC1/CM3-100ZS	CM3-100L、M、H 三极、四极 three/four poles	左面 left	
FFC1/CM3-100YS		右面 right	
FFC1/CM3-250ZS	CM3-250L、M、H 三极、四极 three/four poles	左面 left	 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.
FFC1/CM3-250YS		右面 right	
FFC1/CM3-400Z	CM3-400 C、L、M、H 三极、四极 three/four poles CM3-630 C、L、M、H 三极、四极 three/four poles CM3-800 L、M、H 三极、四极 three/four poles	左面 left	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.
FFC1/CM3-400Y	CM3-400 C、L、M、H 三极、四极 three/four poles CM3-630 C、L、M、H 三极、四极 three/four poles CM3-800 L、M、H 三极、四极 three/four poles	右面 right	



● FFB1辅助开关+报警开关, 符号 Auxiliary and alarm switch

辅助开关+报警开关型号 Auxiliary and Alarm switch type	配用断路器Fitting breaker	安装位置 Mounting position	状态 Status
FFB1/CM3-63	CM3-63L、M 三极、四极 three/four poles	左面或右面 left or right	 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.
FFB1/CM3-100C	CM3-100C 三极、四极 Three/four poles	左面或右面 left or right	
FFB1/CM3-100Z	CM3-100L、M、H 三极、四极 three/four poles	左面 left	 图示为断路器处于“分”或“合”时的状态, 当断路器处于“脱扣”时, 图示状态转换。The status of the breaker in “off” or “on”, if breaker is “tripped”, the status is changovered.
FFB1/CM3-100Y		右面 right	
FFB1/CM3-250C	CM3-250C 三极 three poles	左面或右面 left or right	 图示为断路器处于“分”或“合”时的状态, 当断路器处于“脱扣”时, 图示状态转换。The status of the breaker in “off” or “on”, if breaker is “tripped”, the status is changovered.
FFB1/CM3-250Z	CM3-250L、M、H 三极、四极 three/four poles	左面 left	
FFB1/CM3-250Y		右面 right	
FFB1/CM3-400Z	CM3-400 C、L、M、H 三极、四极 three/four poles	左面 left	 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.
	CM3-630 C、L、M、H 三极、四极 three/four poles		
	CM3-800 L、M、H 三极、四极 three/four poles		
FFB1/CM3-400Y	CM3-400 C、L、M、H 三极、四极 three/four poles	右面 right	 图示为断路器处于“分”或“合”时的状态, 当断路器处于“脱扣”时, 图示状态转换。The status of the breaker in “off” or “on”, if breaker is “tripped”, the status is changovered.
	CM3-630 C、L、M、H 三极、四极 three/four poles		
	CM3-800 L、M、H 三极、四极 three/four poles		

● 过载报警（不脱扣）开关

Overload alarm(non-tripping)switch

CM3系列断路器能提供过载报警不脱扣功能, 其报警开关接线图如下:

CM3 series MCCB can provide function of overload alarm and non-tripping, the alarm switch diagram follow:

断路器处于非过载时 MCCB no overload	
断路器处于过载报警时 MCCB overload	RB11、RB12接通状态转为断开状态, RB11、RB12断开状态转为接通状态。 RB11andRB12contact from "close"to"open", RB11andRB12contact from "open"to"close".

注: 1.当过载报警时, 断路器不脱扣, 主回路不断开。

2.CM3-63L.M、CM3-100C、CM3-250C不具有过载报警不脱扣型。

Note:1.when overload alarm,MCCB no tripping, main circuit does not open.

2.CM3-63L.M、CM3-100C、CH3-250C have not function of overload alarm with non-tripping.



- 辅助开关、报警开关额定工作电流见表九 Rated operational current of auxiliary switch and alarm switch see following table 9 please

表九 Table 9

分类 Categories	壳架等级额定电流(A) Frame size rated current	约定发热电流Ith(A) Conventional thermal current	额定工作电流Ie(A) Rated operational current	
			AC400V	DC220V
辅助开关 Auxiliary switch 报警开关、 Alarm switch 过载报警（不脱扣）开关 Overload alarm(non-tripping)switch	$63 \leq I_{nm} \leq 630$	3	0.3	0.15
	$I_{nm}=800$	3	0.4	0.15

- 通电操作性能及相应的试验条件见表十
operational performance with current and the corresponding testing condition see table 10

表十 Table 10

使用 类别 Category	接通 marking			分断breaking			通电操 作循环 次数 Number of operating cycles with current	每分钟 操作循 环次数 Number of operating cycles per minute	通电 时间 With current time
	I/Ie	U/Ue	cos φ 或 T0.95	I/Ie	U/Ue	cos φ 或 T0.95			
AC-15	10	1	0.3	1	1	0.3	6050	6	≥0.05s
DC-13	1	1	6Pe	1	1	6Pe			≥T0.95

- 非正常条件下接通与分断能力见表十一
Non-normal conditions making and breaking capacity see following table 11 please

表十一 Table 11

使用 类别 Category	接通making			分断breaking			通电操 作循环 次数 Number of operating cycles with current	每分钟 操作循 环次数 Number of operating cycles per minute	通电 时间 With current time
	I/Ie	U/Ue	cos φ 或 T0.95	I/Ie	U/Ue	cos φ 或 T0.95			
AC-15	10	1.1	0.3	10	1.1	0.3	10	2	≥0.05s
DC-13	1.1	1.1	6Pe	1.1	1.1	6Pe			≥T0.95

注：上述二表

- 1) $T_{0.95}=6Pe$ 是经验公式，其中Pe以“瓦”单位，T0.95以毫秒为单位。
- 2) 操作频率和通电时间允许与断路器主电路的一致。

Note: the above two tables:

1. $T_{0.95}=6Pe$ is the experience formula, in which Pe with "w" as a unit, T0.95 in milliseconds.
2. operating frequency and time with current when are allowed the main breaker in line.

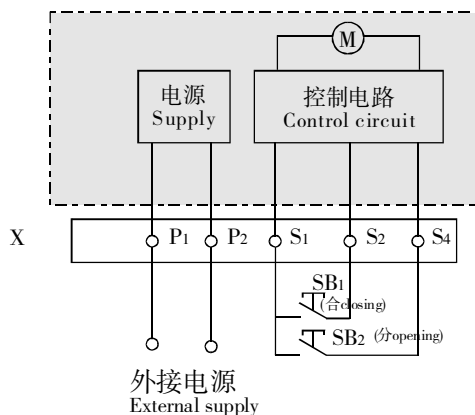


2、断路器的外部附件 External accessories of breaker

● 电动操作机构 Motor operator

FDC1电动操作机构(配用CM3系列)接线图见下图（虚框内为电动操作机构内接线图）

Wiring diagram of type FDC1 motor operator (fitting CM3 series) see the following drawing(inside virtual is motor operator internal wiring diagram)



符号说明:

Description:

SB1、SB2操作按钮（用户自备）
operating push buttons(user-owned)

X接线端子排 terminal block

P1、P2为外接电源 for external supply

电压规格: AC50Hz/60Hz 110V、230V、400V

Voltage DC24V、110V、220V
specifications

● 电动操作机构的动作电流、电机功率及寿命见表十二

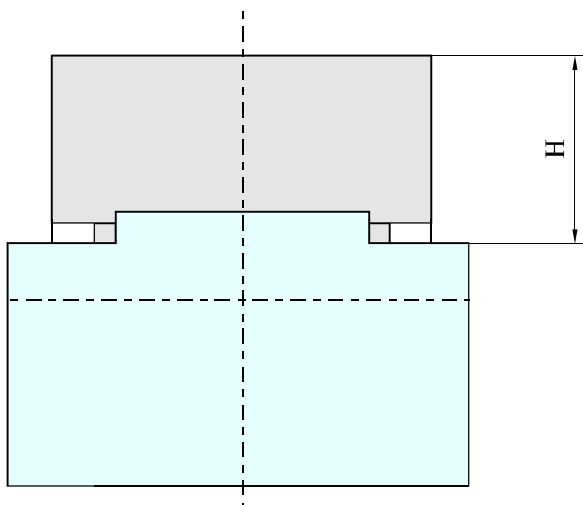
Operating current,motor power and durability of motor see following table 12 please.

表十二 Table 12

电动操作机构型号 Motor operator type	配用断路器 Fitting for breaker	动作电流(A) Operating current	电机功率(W) Motor Power	寿命(次数) Durability (times)
FDC1/CM3-63	CM3-63L、M 三极、四极 three/four poles	≤ 0.5	12.5	20000
FDC1/CM3-100C	CM3-100C 三极、四极 three/four poles	≤ 0.5	12.5	20000
FDC1/CM3-100	CM3-100L、M、H 三极、四极 three/four poles	≤ 0.5	12.5	20000
FDC1/CM3-250C	CM3-250C 三极 three poles	≤ 0.5	12.5	20000
FDC1/CM3-250	CM3-250L、M、H 三极、四极 three/four poles	≤ 0.5	12.5	20000
FDC1/CM3-400	CM3-400 C、L、M、H 三极、四极 three/four poles	≤ 3	38	10000
FDC1/CM3-630	CM3-630 C、L、M、H 三极、四极 three/four poles	≤ 3	38	10000
FDC1/CM3-800	CM3-800 L、M、H 三极、四极 three/four poles	≤ 3	38	10000

● 电动操作机构高度见表十三

Motor operator height see table 13





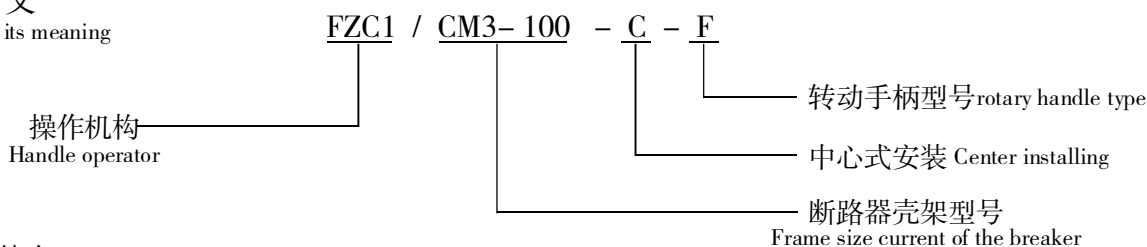
表十三 Table 13

电动操作机构型号 Motor operator type	FDC1/CM3 -63	FDC1/CM3 -100C	FDC1/CM3 -100	FDC1/CM3 -250C	FDC1/CM3 -250	FDC1/CM3 -400	FDC1/CM3 -630	FDC1/CM3 -800
高度H(mm) Height	94.5	94.5	93.5	100	95	151	152	152

● FZC1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机构，通过旋转手柄实现塑壳断路器的合闸、分闸和再扣。机构灵活、平稳、操作力小、安装方便，机构的整体性能和质量均优于其他同类产品。

用途:

本机构专用于CM3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)。

手操机构型号，方轴与断路器中心的相对尺寸及安装尺寸见下图（图上方为进线端）:

Features:

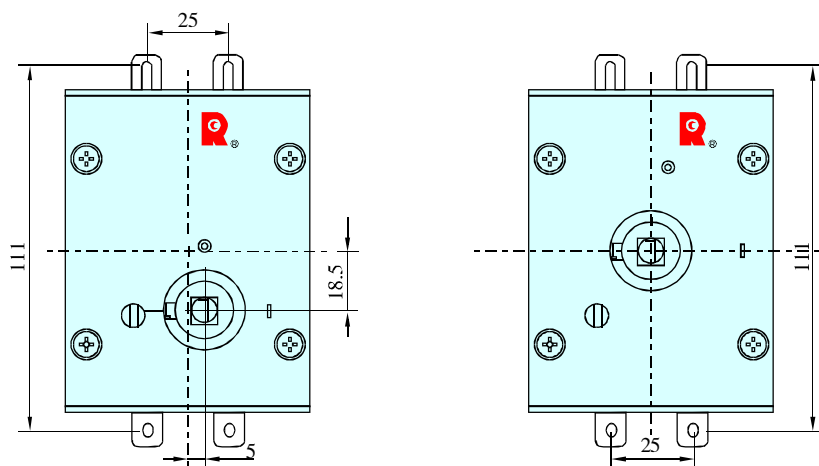
The operator adopt a unique struture design and transmission,through MCCB handle can make breaker close、open and re-trip.flexible operation, stable operation of power in small,easy to install,the institution's overall performance and quality are superior to other similar products.

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):

● 配用CM3-63L/M（三极、四极）断路器的操作机构 Handle operator of CM3-63L/M(three/four poles)

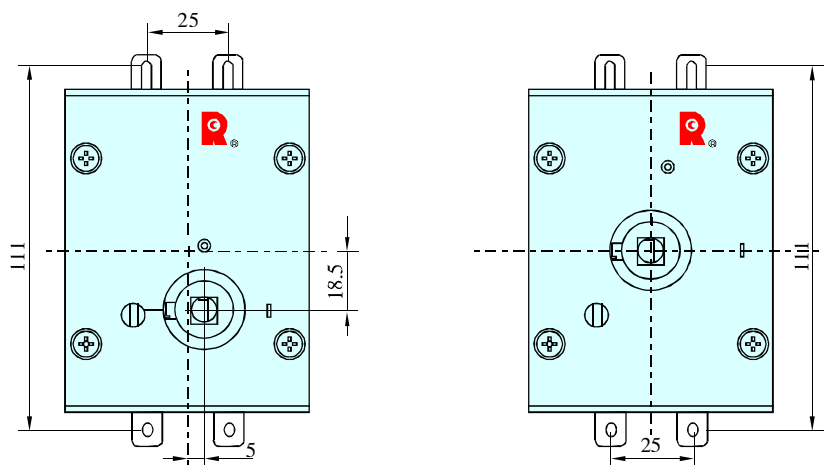


FZC1/CM3-63-B
(可与MNS柜8E/2或8E/4板后接线配用)
(could be used in MNS cabinet 8E/2 rear connected)

FZC1/CM3-63-C



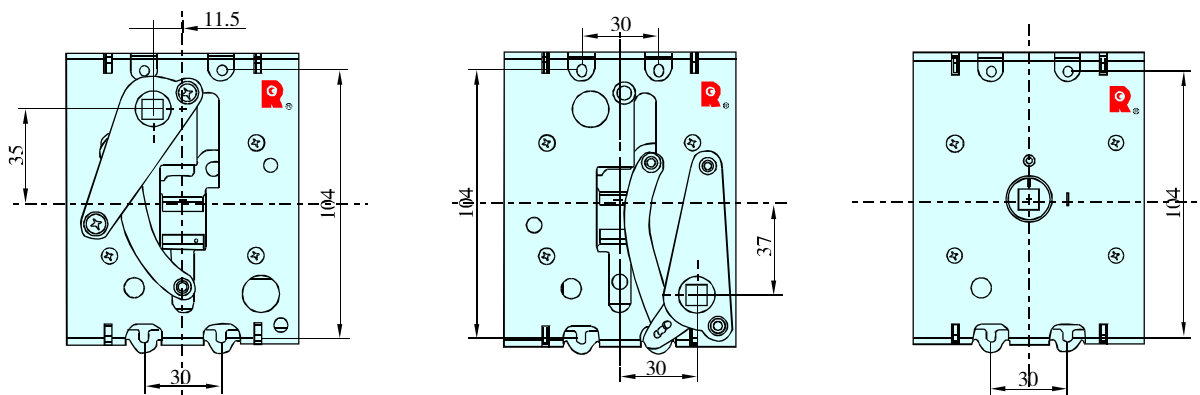
● 配用CM3-100C（三极、四极）断路器的操作机构 Hand operator of CM3-100C



FZC1/CM3-100C-B
(可与MNS柜8E/2板后接线配用)
(could be used in MNS cabinet 8E/2 rear connected)

FZC1/CM3-100C-C

● 配用CM3-100L/M/H（三极、四极）断路器的操作机构
Handle operator of CM3-100L/M/H(three/four poles)

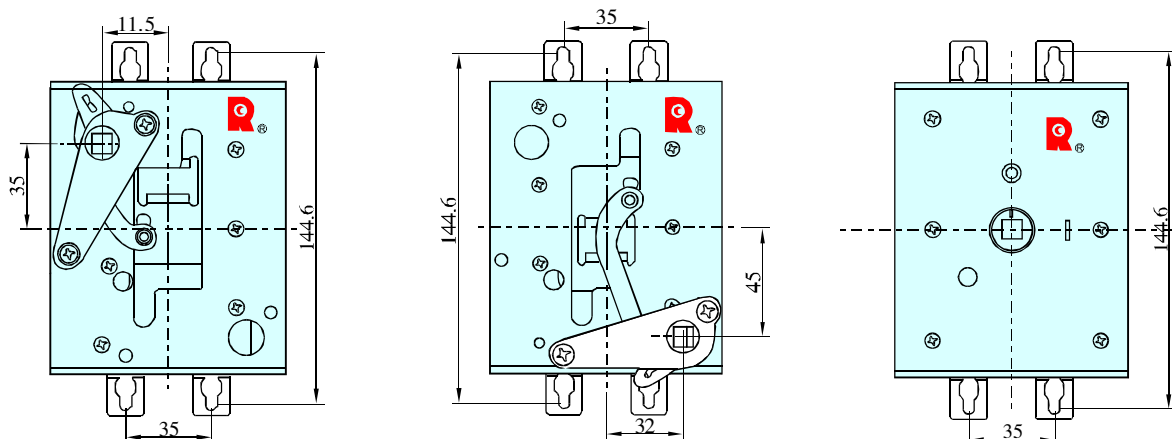


FZC1/CM3-100-A

FZC1/CM3-100-B

FZC1/CM3-100-C

● 配用CM3-250C（三极）断路器的操作机构
Handle operator of CM3-250C(three poles)



FZC1/CM3-250C-A

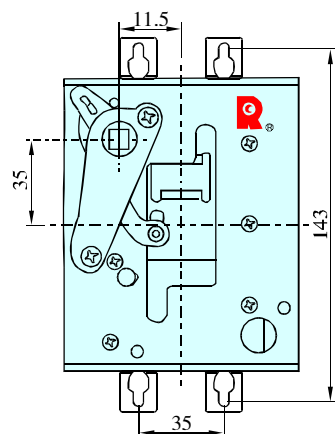
FZC1/CM3-250C-B

FZC1/CM3-250C-C

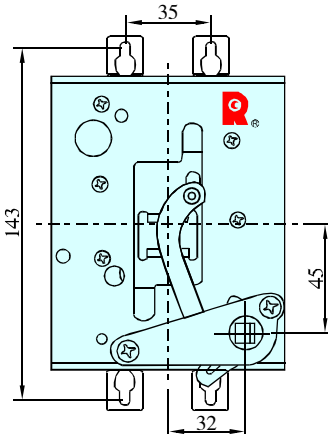


● 配用CM3-250L/M/H（三极、四极）断路器的操作机构

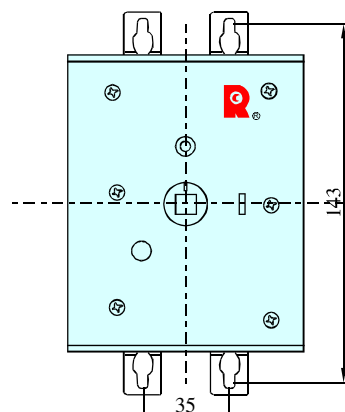
Handle operator of CM3-250L/M/H(three/four poles)



FZC1/CM3-250 -A

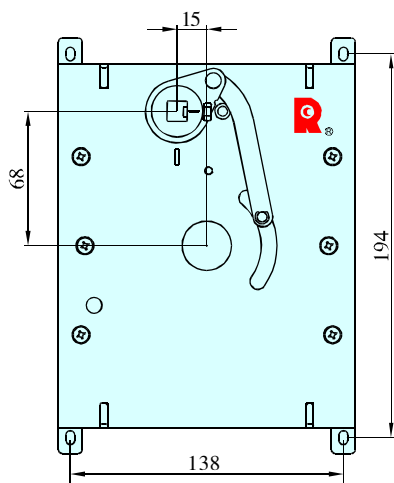


FZC1/CM3-250-B

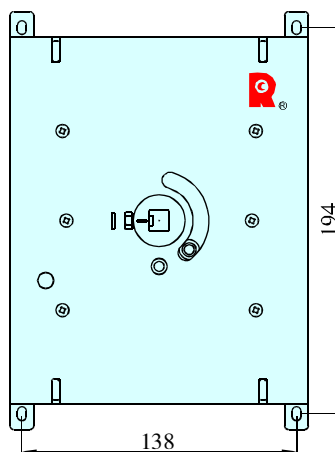


FZC1/CM3-250 -C

● 配用CM3-400三极断路器的操作机构 Handle operator of CM3-400three poles

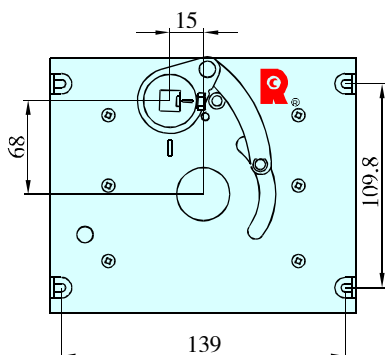


FZC1/CM3-400-A

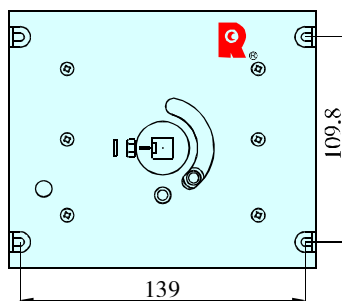


FZC1/CM3-400-C

● 配用CM3-400四极断路器的操作机构 Handle operator of CM3-400four poles



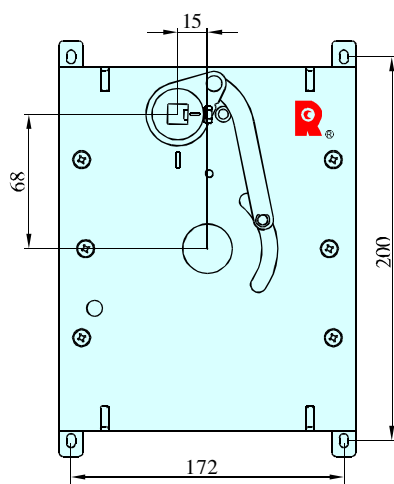
FZC1/CM3-400/4-A



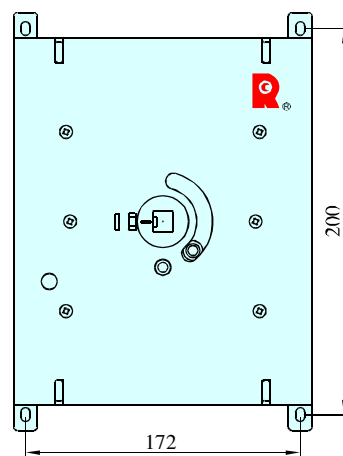
FZC1/CM3-400/4-C



● 配用CM3-630三极断路器的操作机构 Handle operator of CM3-630 three poles

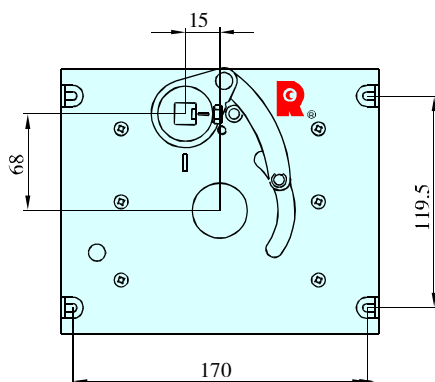


FZC1/CM3-630-A

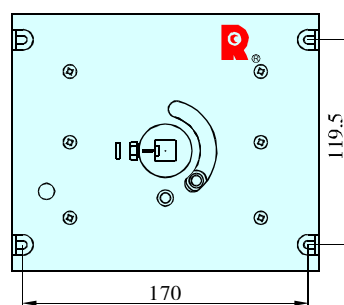


FZC1/CM3-630-C

● 配用CM3-630四极断路器的操作机构 Handle operator of CM3-630 four poles



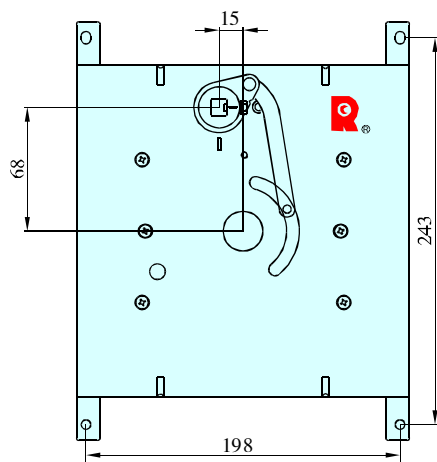
FZC1/CM3-630/4-A



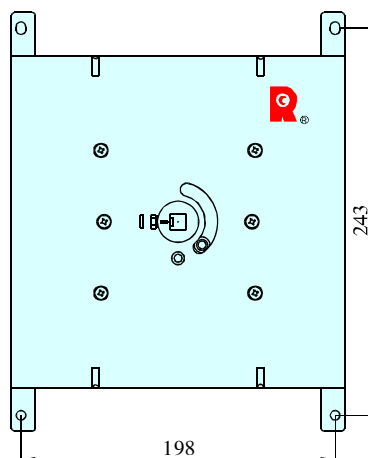
FZC1/CM3-630/4-C



● 配用CM3-800三极断路器的操作机构 Handle operator of CM3-800 three poles

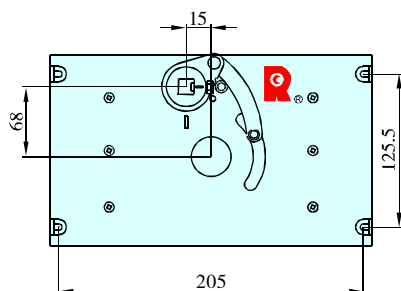


FZC1/CM3-800-A

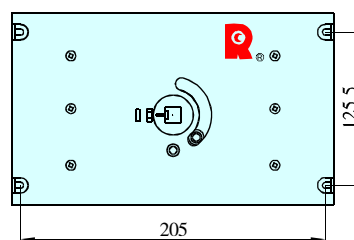


FZC1/CM3-800-C

● 配用CM3-800四极断路器的操作机构 Handle operator of CM3-800 four poles



FZC1/CM3-800/4-A

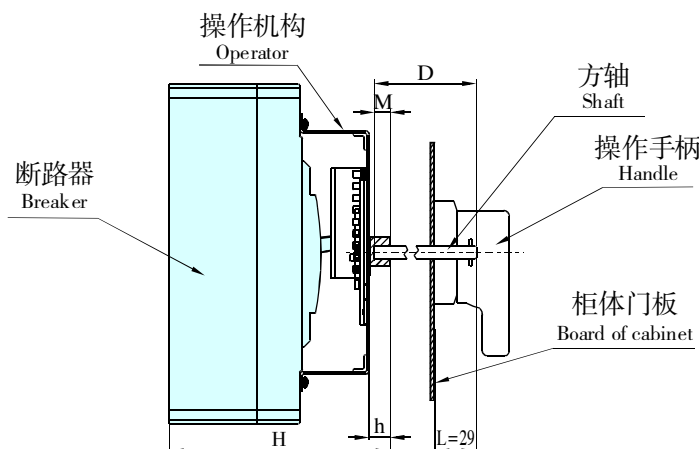


FZC1/CM3-800/4-C



● 安装FZC1手动操作机构示意图及尺寸

Schematic diagram and dimensions of installing FZC1 rotary handle operator



尺寸见表十四 Dimensions see following table 14 please.

表十四 Table 14

操作机构型号 Type of handle operator	H	h	M	D
FZC1/CM3-63-B、FZC1/CM3-63-C	107/107	16/16	18/18	150
FZC1/CM3-100C-B、FZC1/CM3-100C-C	107/107	16/16	18/18	
FZC1/CM3-100-A、FZC1/CM3-100-B、FZC1/CM3-100-C	120/120/133	16.5/16.5/16	16.5/16.5/13	
FZC1/CM3-250C-A、FZC1/CM3-250C-B、FZC1/CM3-250C-C	103/103/113	16.5/16.5/15	16.5/16.5/13	
FZC1/CM3-250-A、FZC1/CM3-250-B、FZC1/CM3-250-C	140.5/140.5/155.5	16.5/16.5/15	16.5/16.5/13	
FZC1/CM3-400-A、FZC1/CM3-400-C	182.5/176.5	22/16	15/15	
FZC1/CM3-400/4-A、FZC1/CM3-400/4-C	182.5/176.5	22/16	15/15	
FZC1/CM3-630-A、FZC1/CM3-630-C	187/181	22/16	15/15	
FZC1/CM3-630/4-A、FZC1/CM3-630/4-C	187/181	22/16	15/15	
FZC1/CM3-800-A、FZC1/CM3-800-C	188/182	22/16	15/15	
FZC1/CM3-800/4-A、FZC1/CM3-800/4-C	188/182	22/16	15/15	

注：方轴长度D=150，长度大于150mm在订货时注明。Note: The shaft length of D = 150mm, length of more than 150mm when the time specified in the order.

● FZC1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。

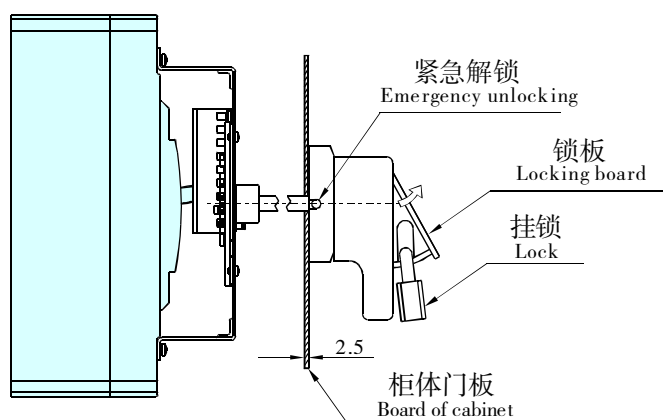
4. 在合闸或分闸状态，按压住操作手柄上红色锁板的白色“△”，锁板向外侧弹起，即可用挂锁（钩环直径5-8mm，用户自备）锁定使手柄不能转动（示意图P50）。

FZC1 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.

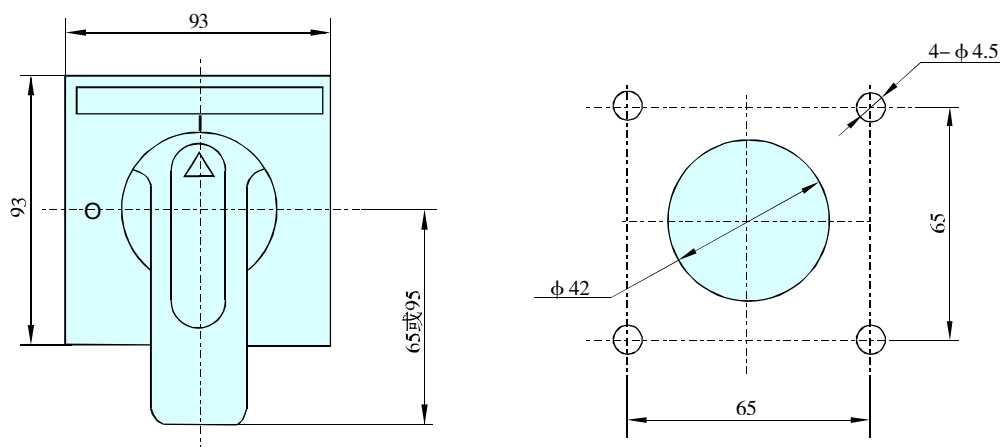
Operating handle features:

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.

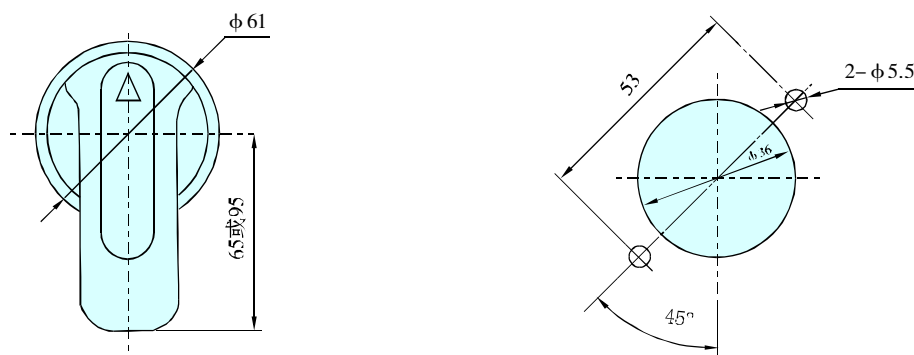
4. When open or closed, please press the white "△" of the red lock board on the operation handle. If the lock board upsprings outward, padlock (shackle's diameter is 5-8mm, users themselves prepare) can be used to lock that the handle cannot rotate (see page 50).



紧急解锁及挂锁示意图
schematic diagram of emergency unlocking and lock



“F” 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)
F type square handle 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)

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。

Advice to users: handle operator should be placed it 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 RETED CURRENT

● 不同额定电流的连接导线的参考截面见表十五

Cross-section of wire conductor corresponding rated current see table 15

表十五 Table 15

额定电流(A) Rated current	10	16 20	25	32	40 50	63	80	100	125 140	160	180 200 225	250	315 350	400
导线截面积 (mm ²) Cross-section	1.5	2.5	4	6	10	16	25	35	50	70	95	120	185	240

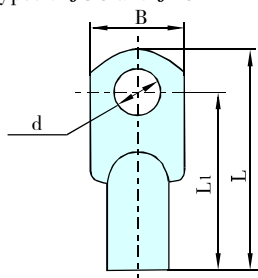
额定电流(A) Rated current	电缆 Cable		铜排 Copper busbar	
	截面积 (mm ²) cross-section	数量 amount	尺寸 size(mm×mm)	数量 amount
500	150	2	30×5	2
630	185	2	40×5	2
700、800	240	2	50×5	2



接线端子型号 TERMINAL TYPE

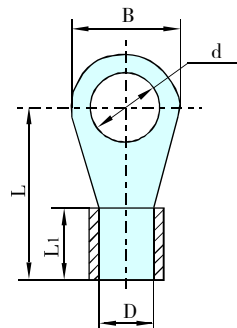
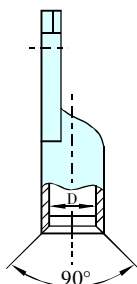
接线端子有JGC及JBC两种

Terminal are types of JGC and JBC



JGC型

JGC type



JBC型

JBC type

型号 Type	额定电流(A) Rated current	导线截面积(mm ²) Conductor cross-section	端子型号 Terminal type	B	L	L1	D	d
CM3-63	10、16、20	2.5	JBC2.5-8	15	24.5	8.5	φ 2.6	φ 8.2
	25	4	JBC4-8	13.4	20.4	9.2	φ 2.8	φ 8.2
	32	6	JBC6-8	15	24.5	10	φ 3.5	φ 8.2
	40、50	10	JBC10-8	15	24.5	11	φ 4.5	φ 8.2
	63	16	JGC16-8	12.5	41	33.5	φ 6	φ 8.2
CM3-100	10、16、20	2.5	JBC2.5-8	15	24.5	8.5	φ 2.6	φ 8.2
	25	4	JBC4-8	13.4	20.4	9.2	φ 2.8	φ 8.2
	32	6	JBC6-8	15	24.5	10	φ 3.5	φ 8.2
	40、50	10	JBC10-8	15	24.5	11	φ 4.5	φ 8.2
	63	16	JGC16-8	12.5	41	33.5	φ 6	φ 8.2
	80	25	JGC25-8	14	46	38.5	φ 7	φ 8.2
	100	35	JGC35-8	15.5	52	44.5	φ 8	φ 8.2
CM3-250	100	35	JGC35-8	15.5	45	44.5	φ 8	φ 8.2
	125、140	50	JGC50-8	17	54	45	φ 10	φ 8.2
	160	70	JGC70-8	21.6	61	52	φ 11	φ 8.2
	180、200、225	95	JGC95-8	22	66	57	φ 13	φ 8.2



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。



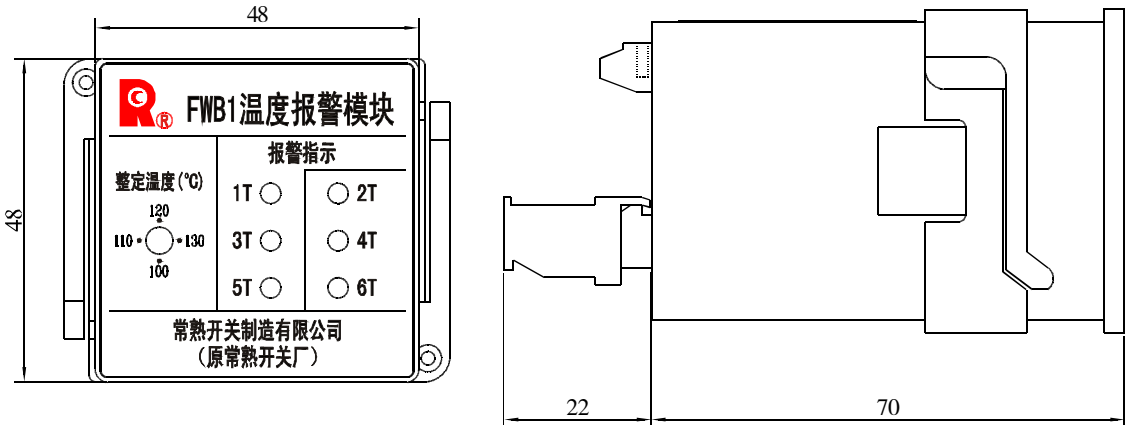
FWB1温度报警模块 TEMPERATURE ALARM MODULE

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

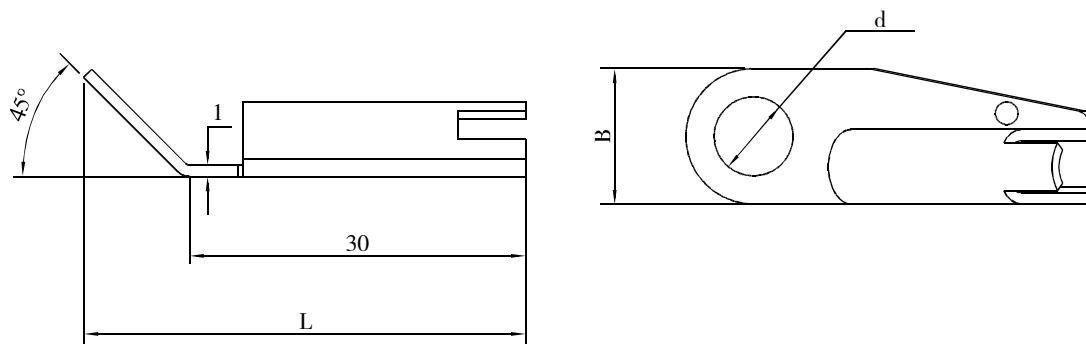
- FWB1温度报警模块+FRG热传感器 FWB1 temperature alarm module+FRG heat sensor



FWB1温度报警模块
Temperature alarm module



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	$\phi 7$
FRG-9	14	41	$\phi 9$
FRG-11	16	42	$\phi 11$
FRG-13	18	44	$\phi 13$
FRG-17	22	47	$\phi 17$



使用与维护 USE AND MAINTENANCE

断路器各种特性及附件由制造公司整定，在使用中不可随意调节。

断路器手柄可以处在三个位置，分别标示合闸、分闸、脱扣三种状态，当手柄处于脱扣位置时，应向后扳动手柄，使断路器再扣，然后合闸。

在用户遵守保管和使用条件下，从制造公司发货之日起，不超过18个月，断路器封印完好，产品如因制造质量问题而发生损坏或不能正常使用时，制造公司负责无偿更换和修理。

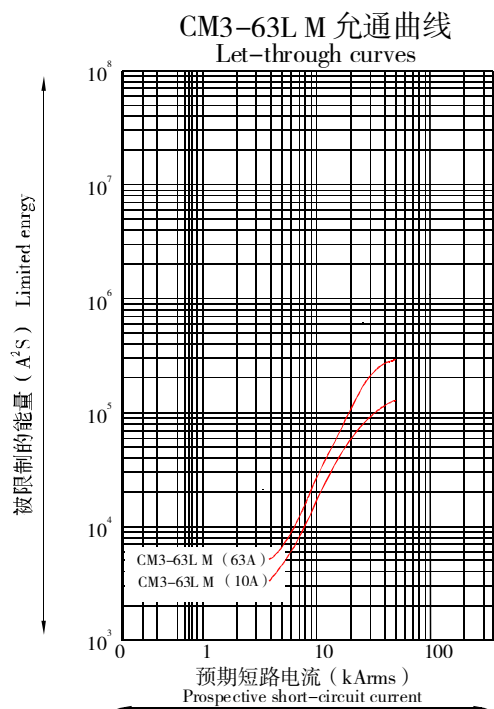
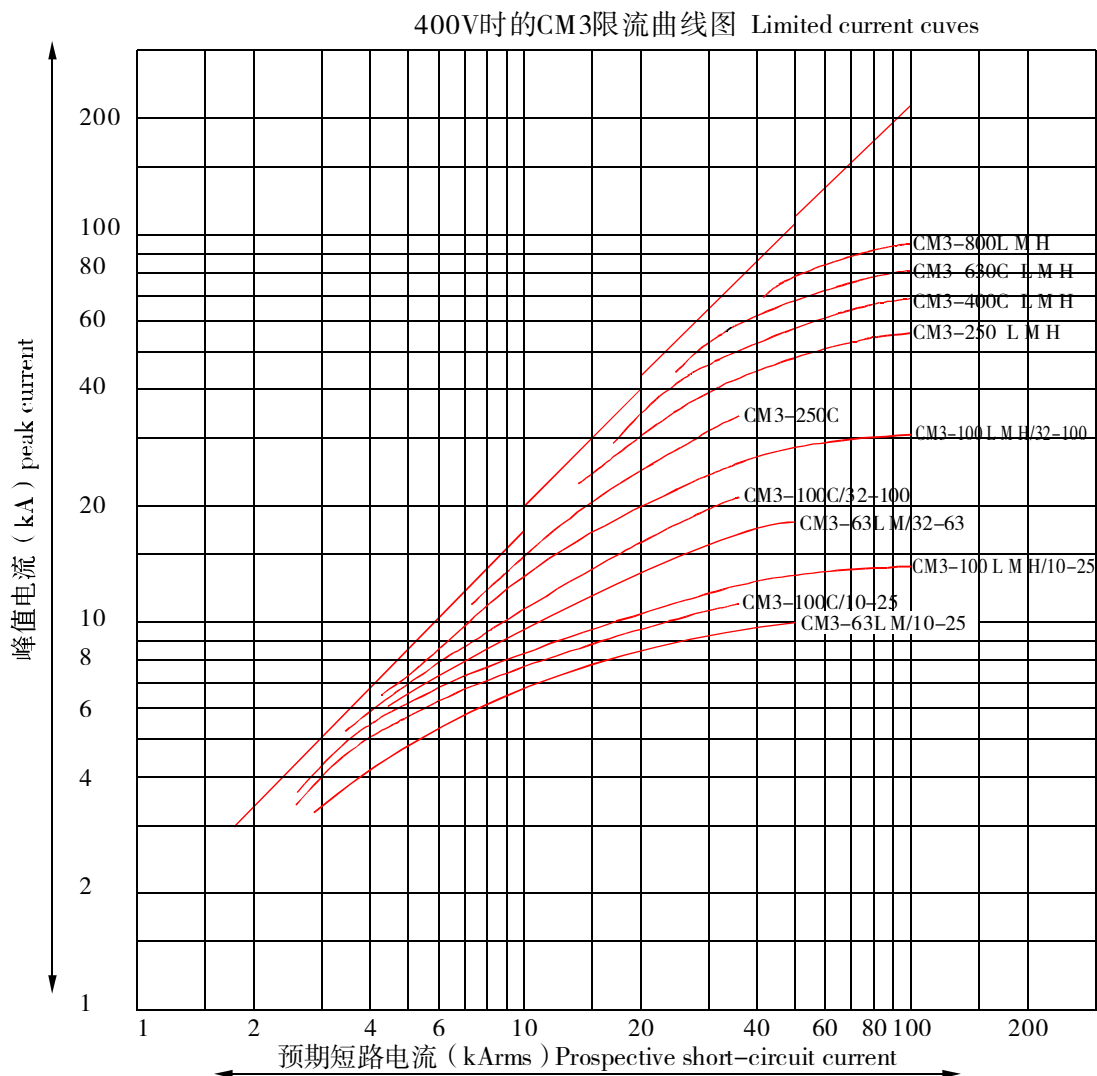
Characteristics of breaker by the factory setting, the user in use can not be adjusted;

Breaker handle at the three positions, respectively marked closing、opening、tripping three states, when the handle in tripping position, the handle should be pulled after and re-tripped then closing;

The user to comply with the custody and use of the right conditions, from the manufacturing company from the date of delivery, not more than 18 months, breaker seal intact, due to manufacturing quality products, such as damage or problems often can not use. Manufacturing Company is responsible for unpaid replacement and repair.



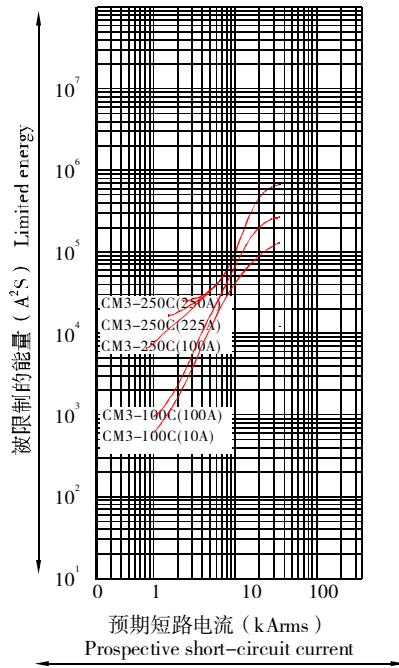
限流特性曲线 CURRENT-LIMITED CHARACTERISTIC CURVE



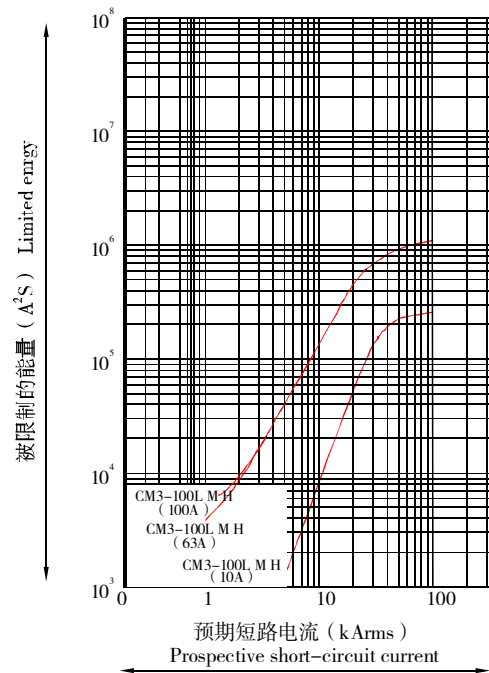


限流特性曲线 LIMITED CHARACTERISTIC CURVE

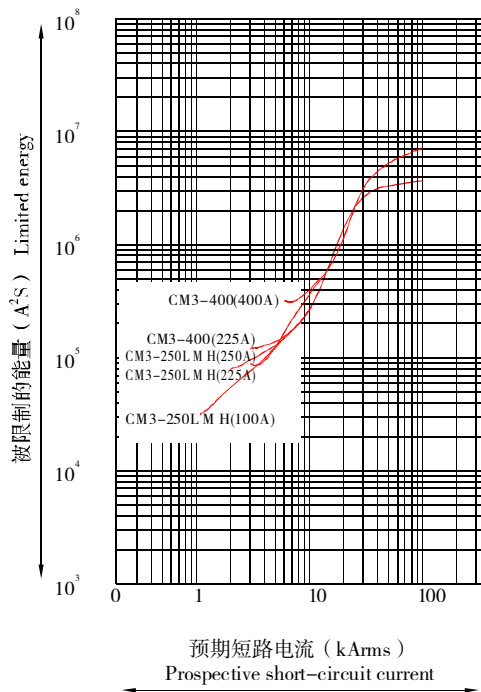
CM3-100C、CM3-250C允通曲线
Let-through curves



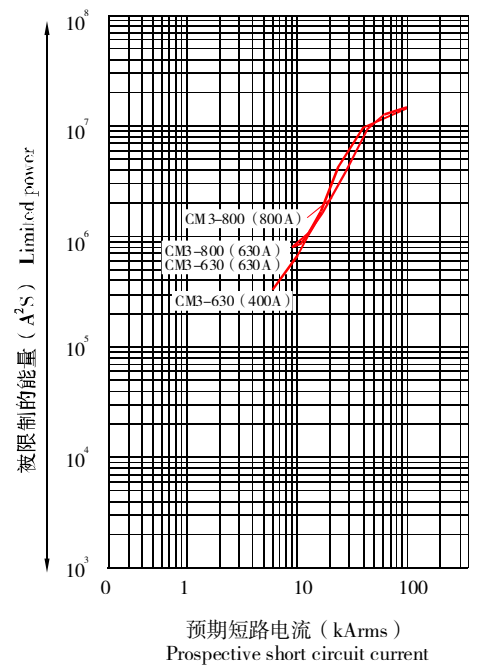
CM3-100L M H允通曲线
Let-through curves



CM3-250 L M H、CM3-400允通曲线
Let-through curves



CM3-630、CM3-800允通曲线
Let-through curves





订货规范 ORDERING FORM

(请在 ____ 内填上数字, □ 打√)

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

用户单位 User unit		订货总数 Order number		订货日期 Order date			
规格 Specification	配电型 Power distribution CM3—____ /____, In= ____ A, 10In* (10A≤In≤800A) 5In □ (140A≤In≤800A)						
	电动机保护型 motor protection CM3—____ /____ 2____, In= ____ A, 12In* (10A≤In≤630A)						
接线方式 Connected	板前接线 Front connected 板后接线 Rear connected 插入式板前接线 Plug-in front connected 插入式板后接线 Plug-in rear connected 抽出式板前接线 Draw-out front connected 抽出式板后接线 Draw-out rear connected						
附件 Accessories	欠电压脱扣器 Under Voltage Release AC400V□ AC230V□						
	分励脱扣器 Shunt Release AC400V□ AC230V□ DC220V□ DC24V□						
	电动操作机构 Motor operator AC400V□ AC230V□ AC110V□ DC220V□ DC110V□ DC24V□						
	手动操作机构 Rotary handle operator	操作机构 Handle operator	A□ B□ C□				
		转动手柄 Rotary handle	F□ A□				
	接线端子 Terminal JBC□ JGC□		零飞弧罩 □ Zero arcventing cover				
	连接排 □ Connection Busbar		内部附件接线端子排 □ Terminal of internal accessory				
	FWB1温度报警模块 □ 和 Temperature alarm module		热传感器型号Type 数量 (只) Number	FRG-7	FRG-9	FRG-11	FRG-13
备注 Note							

*注1: CM3-63L.M、CM3-100C中10~25A电磁脱扣器动作电流值为300A±20%。

*Note1:10~25A magnetic release operating current of CM3-63L.M and CM3-100C is 300A±20%.

*注2: CM3-100C中80A、100A电流规格不提供仅具有电磁脱扣器的保护电动机用断路器。

*Note2:Motor prtective breaker of 80A and 100A rated current only magnetic release for CM3-100C is not supplied.



CM3DC系列断路器应用于高达1000V直流系统

CM3DC series circuit breaker for up to 1000V d.c. system

一、快速选用方式

CM3DC - 250 P / 4 310 H

电源/负载接线方式可选代号 三极时, E、F型
supply/load connecting type 四极时, G、H、I型
脱扣器方式及内部附件代号 (参见P5)
release pattern and accessories code (see P5)
串联极数代号 3 三极 series poles code
4 四极
操作方式可选代号 手柄直接操作无代号
operating pattern Z: 手动操作机构
P: 电动操作机构
壳架等级额定电流可选代号 $I_{nm}=100、250、$
frame size rated current 400、630

注1: CM3DC订购不带过电流保护脱扣器时即成为仅有隔离功能的隔离电器产品。

注2: 可订购周围环境温度低至-25℃且高温至+70℃产品, 请垂询本公司。

注3: CM3DC动作特性见表一、降容系数及高海拔降容参见表四、表五。

二、主要技术性能指标 main technical performance index

壳架等级额定电流In frame size rated current		100		250		400		630	
型 号 type designation		CM3DC-100		CM3DC-250		CM3DC-400		CM3DC-630	
额定电流In (A) rated current		10,16,20, 25,32,40, 50,63,80, 100		16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 140, 160, 180, 200, 225, 250		225, 250, 315, 350, 400		400,500, 630	
极数 No.of poles		3	4	3	4	3	4	3	4
额定绝缘电压Ui (V) rated insulation voltage		1000							
额定冲击耐受电压Uimp (V) rated impulse withstand voltage		8000							
额定工作电压Ue (V) rated operational voltage		DC500 DC750	DC750 DC1000	DC500 DC750	DC750 DC1000	DC500 DC750	DC750 DC1000	DC500 DC750	DC750 DC1000
使用类别 utilization category		A							
隔离功能 isolation function		○							
飞弧距离 (mm) arcing distance		≥ 50				≥ 100			
额定短路接通能力Icm(kA) rated short-circuit making capacity		100%Icu							
额定极限短路分断能力Icu(kA) rated ultimate short-circuit breaking capacity	DC500V	15		65		65		65	
	DC750V	5	15	40	50	40	50	40	50
	DC1000V		5		40		40		40
额定运行短路分断能力Ics(kA) rated service short-circuit breaking capacity		100%Icu							
电气寿命(次times) electrical durability		5000		5000		1000		1000	
机械寿命(次times) mechanical durability	免维护 maintainance-free	10000		10000		5000		5000	
	有维护 with maintainance	20000		20000		10000		10000	
外形尺寸(mm) outline dimensions	宽 width	75	100	107	142	150	198	182	240
	长 length	130		165		257		270	
	高 high	60		103		106.5		110	
分励脱扣器 shunt release		AC230V、400V DC 24V~30V DC220V~250V							
欠电压脱扣器 under-voltage release		DC220~250V							
辅助开关 auxiliary switch		AC-15:AC400V/0.3A DC-13:DC250V/0.15A							
报警开关 alarm switch		AC-15:AC400V/0.3A DC-13:DC250V/0.15A							
电动操作机构 motor operator		AC110V、230V、400V DC24V~30V,DC110V~125V,DC220V~250V							
手动操作机构 rotary handle operator		○							
FWB1温度报警模块 temperature alarm module		○							



CM3DC系列断路器应用于高达1000V直流系统

CM3DC series circuit breaker for up to 1000V d.c.system

三、不同电压不同直流系统中断路器接线方式

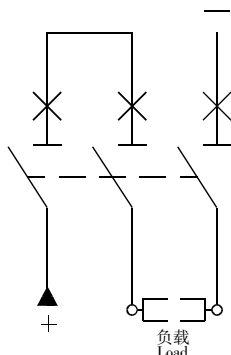
circuit breaker wiring manner in different voltage and different D.C system

CM3DC可实现下列接线方式，但为方便用户选用，典型方案三极采用E型接线方式、四极采用H型接线方式。

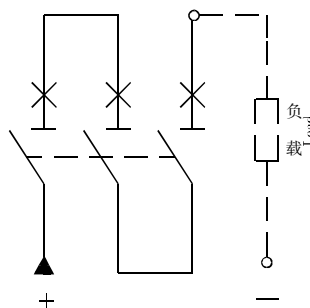
next connecting type may be provided for CM3DC, but for user selecting, E type connecting for three poles and H type connecting for four poles.

● 三极断路器 three poles circuit breaker

——E型接线方式
E type connection

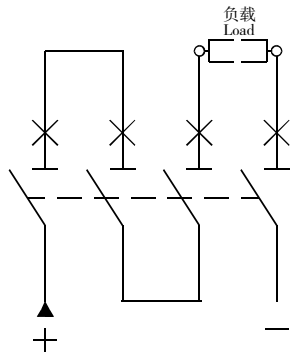


——F型接线方式
F type connection

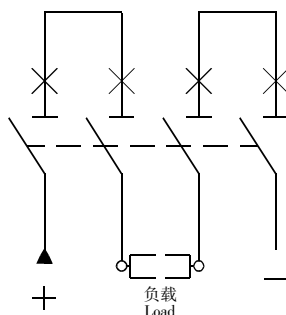


● 四极断路器 four poles circuit breaker

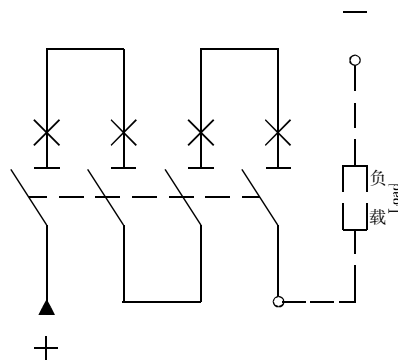
——G型接线方式
G type connection



——H型接线方式
H type connection



——I型接线方式
I type connection



CM3DC断路器适用的不同电源系统/负载接线方法

suitable different power system / load wiring manner for CM3DC circuit breaker

额定工作电压 rated operation voltage	电源/负载接线方式 power/load wiring manner						
	不接地系统 no grounding system		负极接地系统 negative point grounding system				中心点接地系统 core point grounding system
DC500V	E	-	E	F	-	-	-
DC750V	E	H	-	F	G	I	H
DC1000V	-	H	-	-	-	I	H



CM3DC系列断路器应用于高达1000V直流系统

CM3DC series circuit breaker for up to 1000V d.c.system

四、直流系统应用 utilization in d.c.system

在直流系统中选择断路器主要考虑以下方面：

- 额定工作电压，考虑分断的串联极数
- 额定电流，考虑负载功率
- 分断能力，考虑安装点最大短路电流
- 接地系统方式（如下所示）

in d.c. system , choosing a circuit breaker is in consideration of the followings :

- 1、 rated operation voltage , in consideration of breaking number of poles in series
- 2、 rated current,in consideration of load power
- 3、 breaking capacity , consideration of installation site highest short-circuit current
- 4、 manner of ground system (as followings)

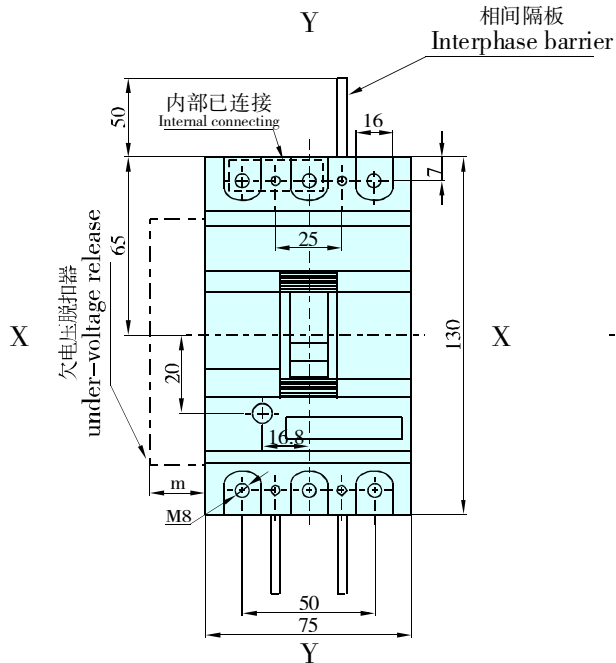
系统类型 system catelogy		接地系统 ground system		不接地系统 no grounding system
		负极接地 negative pole grounding	中心点接地 core point grounding	
各种故障类型 all of fault catelogy				
故障影响 fault effect	故障 I Fault	产生最大短路电流 producing the highest short-circuit current 接电源正极的触头分断 breaking the positive pole contact connected to power	U/2电压产生接近最大短路电流 U/2 voltage,producing the highest short-circuit current effect 接电源正极的触头分断 breaking the positive pole contact connected to power	无影响 no effect
	故障 II Fault	产生最大短路电流 producing the highest short-circuit current 但串联的触头都参与分断 but the contacts in series are all breaking	产生最大短路电流 producing the highest short-circuit current 但串联的触头都参与分断 but the contacts in series are all breaking	产生最大短路电流 producing the highest short-circuit current 但串联的触头都参与分断 but the contacts in series are all breaking
	故障 III Fault	无影响 no effect	与故障 I 相同,但只对 接电源负极的触头 the same as fault I ,but breaking the negative pole contact connected to power	无影响 no effect
最严重情况 the most serious condition		故障 I fault I	故障 I 和 III Fault I and fault III	故障 II Fault II
分断极情况 breaking pole condition		可在正极串联, 共同执行分断 can be in series on the positive pole , breaking both poles	对每极, 在U/2时执行 分断最大短路电流 with U/2 , use breaking highest short-circuit current to each pole	两极共同执行分断 breaking both poles



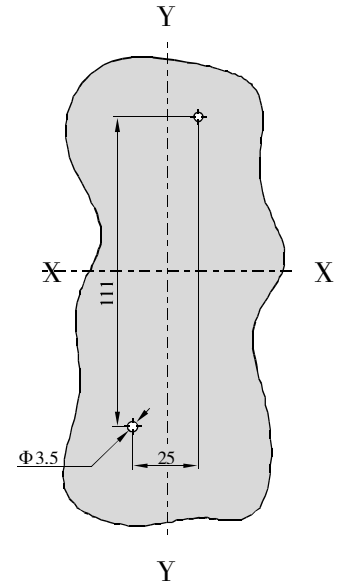
CM3DC系列断路器应用于高达1000V直流系统 CM3DC series circuit breaker for up to 1000V d.c. system

五、外形尺寸和安装尺寸 Outline installation dimensions

- 接线方式为E型的CM3DC-100三极（板前接线）CM3DC-100 three poles (front connected) of E type connecting.
X-X、Y-Y为三极断路器中心 as the center of three poles breaker

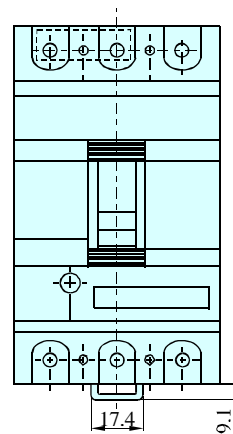
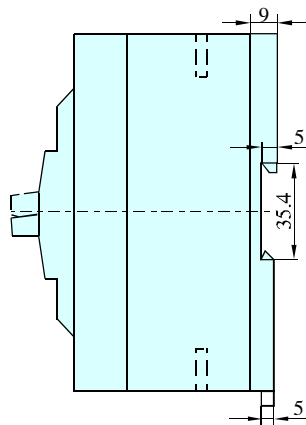


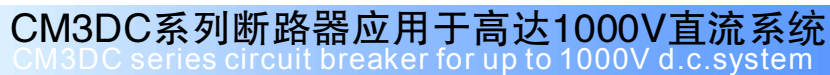
欠电压脱扣器厚度 $m=18\text{mm}$
the thickness of under-voltage release



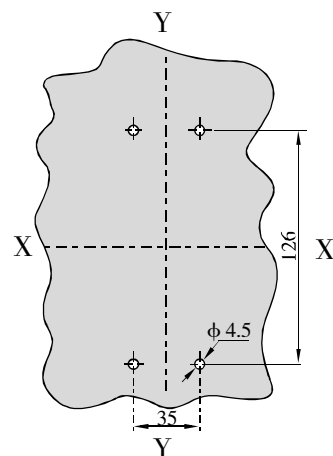
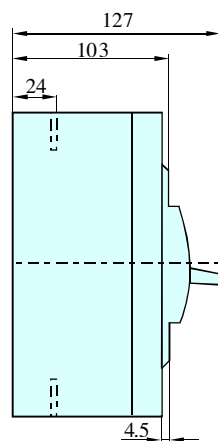
板前接线安装板开孔尺寸
Mounting plate cutout dimensions of front connected

- 接线方式为E型的CM3DC-100三极（板前接线导轨安装）
CM3DC-100 three poles (front connected and guide rail installing) of E type connecting.



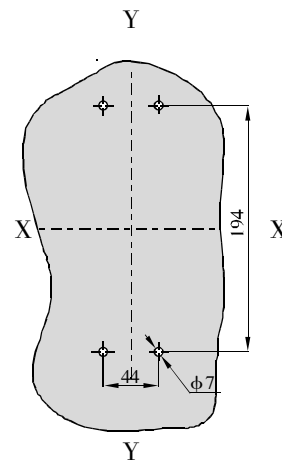
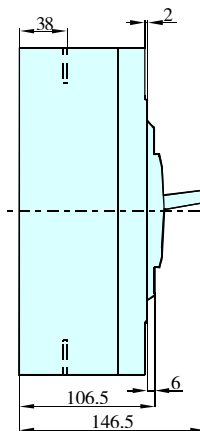


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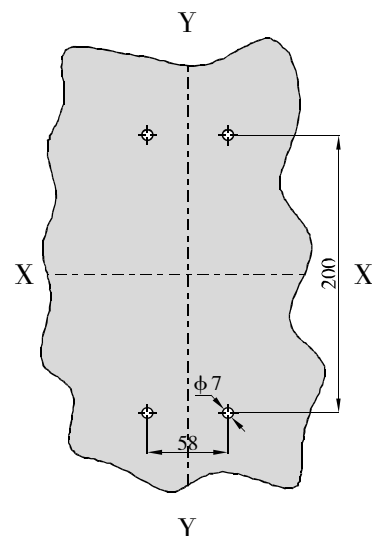
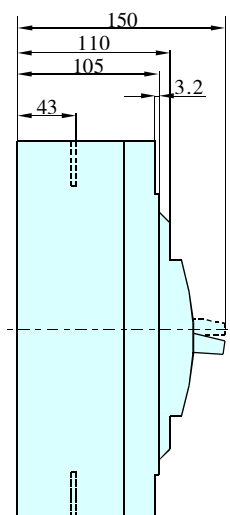
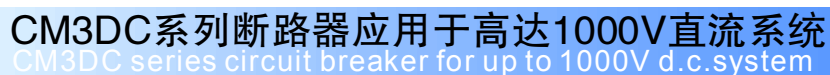


欠电压脱扣器厚度 $m=18\text{mm}$
the thickness of under-voltage release

-
- Technical drawing of the front view of a 10kV vacuum circuit breaker. The drawing shows a symmetrical assembly with a central moving contact and four fixed contacts. Key dimensions include a total width of 150mm, a total height of 257mm, and a central contact width of 44mm. Labels indicate "Internal connecting" and "Interphase barrier". A note mentions "连接排(选购件) Connecting busbar(optinal)".

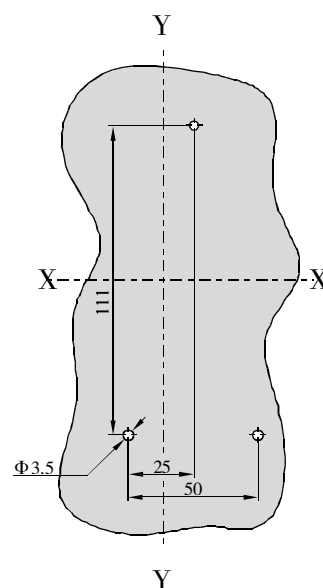
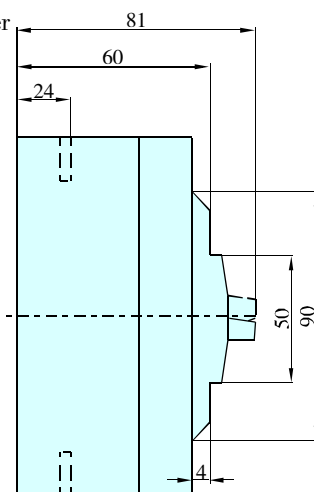


欠电压脱扣器厚度 $m=22\text{mm}$
the thickness of under-voltage release



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 $m=22\text{mm}$
the thickness of under-voltage release



欠电压脱扣器厚度 $m=18\text{mm}$
the thickness of under-voltage release

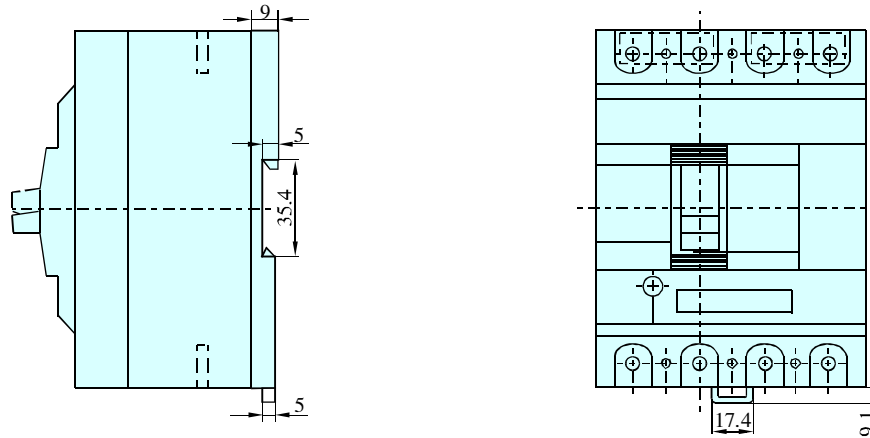
板前接线安装板开孔尺寸
Mounting plate cutout dimensions of front connected



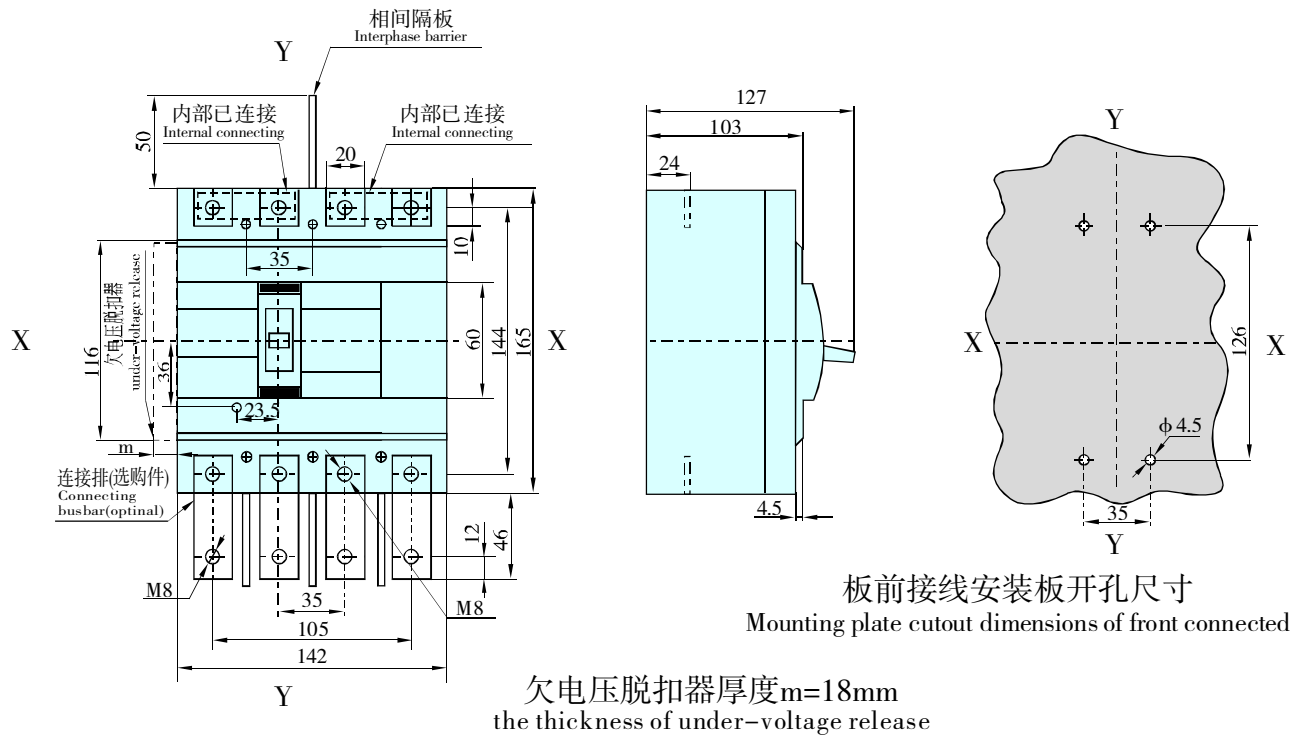
CM3DC系列断路器应用于高达1000V直流系统 CM3DC series circuit breaker for up to 1000V d.c. system

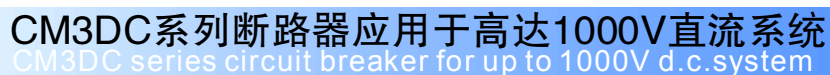
- 接线方式为H型的CM3DC-100四极（板前接线导轨安装）

CM3DC-100 four poles (front connected and guide rail installing) of H type connecting.

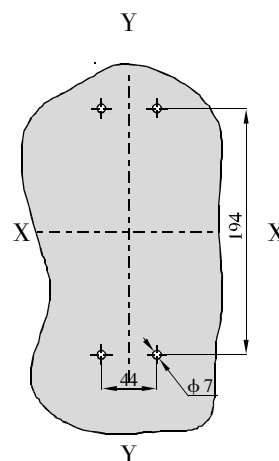
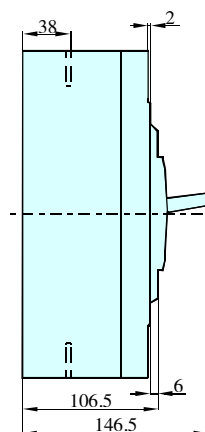


- 接线方式为H型的CM3DC-250四极（板前接线）CM3DC-250 four poles (front connected) of H type connecting.
X-X、Y-Y为三极断路器中心 as the center of three poles breaker





-
- Technical drawing of the front view of a 10kV vacuum circuit breaker (model 10K-10). The drawing shows a symmetrical assembly with a central contact area and four terminal blocks on the sides. Key dimensions include a total width of 198mm, a total height of 257mm, and a central contact width of 44mm. Labels indicate "Internal connecting" points and "Interphase barrier". A note mentions "连接排(选配件) Connecting busbar(optional)" with a diameter of 13mm. A mounting hole is specified as M10 with a 15mm diameter. The drawing is oriented with X and Y axes.

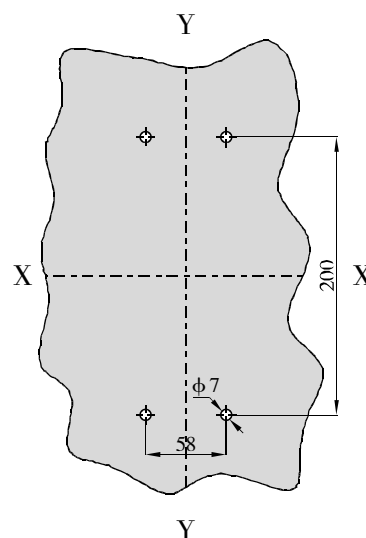
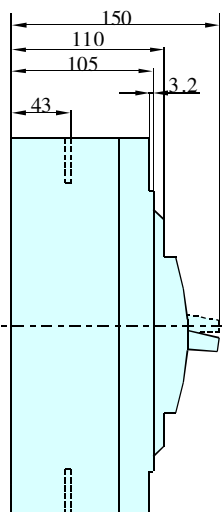
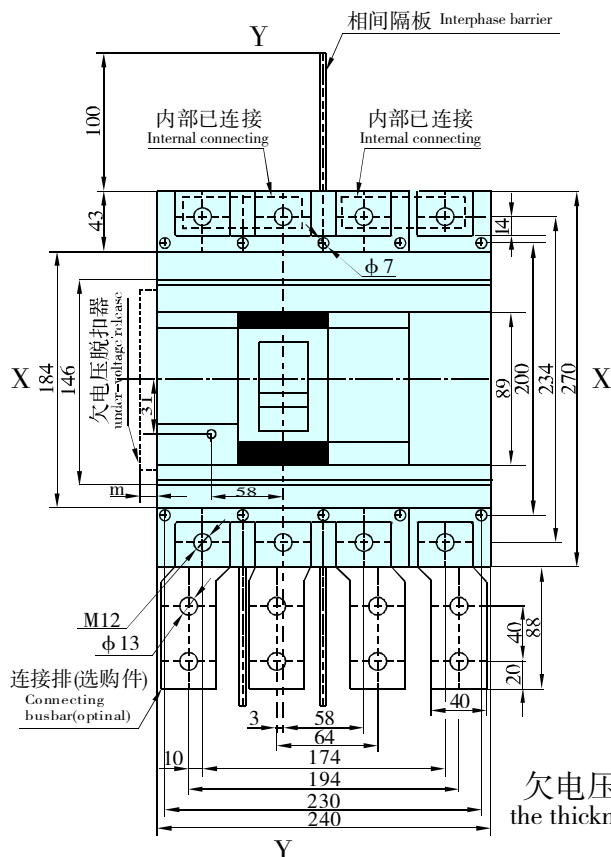


板前接线安装板开孔尺寸

Mounting plate cutout dimensions of front connected

欠电压脱扣器厚度 $m=22\text{mm}$
the thickness of under-voltage release

- 接线方式为H型的CM3DC-630四极（板前接线）CM3DC-630 four poles (front connected) of H type connecting.
X-X、Y-Y为三极断路器中心 as the center of 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 $m=22\text{mm}$
the thickness of under-voltage release



CM3DC系列断路器应用于高达1000V直流系统

CM3DC series circuit breaker for up to 1000V d.c. system

六、订货规范

ordering form

(请在___内填上数字, □打√)
(Please filled figures in___
or sign√ in □)

用户单位 User unit		订货总数 Order number		订货日期 Order date			
型号 Type	CM3DC—___ / ___						
额定电流 Rated current	In=___ A						
附件 Accessories	欠电压脱扣器 DC220V~DC250V Under Voltage Release						
	分励脱扣器 AC400V□ AC230V□ DC220V~DC250V□ DC24V~30V□ Shunt Release						
	电动操作机构 AC400V□ AC230V□ AC110V□ DC220V~250V□ DC110V~125V□ DC24V~30V□ Motor operator						
	手动操作 机构 Rotary handle operator	操作机构 Handle operator	A□ B□ C□				
		转动手柄 Rotary handle	F□ A□				
	接线端子 JBC□ JGC□ Terminal		导轨安装底座 (CM3DC-100) □ Base of guide rail installing				
	连接排 □ Connection Busbar		内部附件接线端子排 □ Terminal of internal accessory				
	FWB1温度报警模块 □ 和 Temperature alarm module		热传感器型号Type 数量 (只) Number	FRG-7	FRG-9	FRG-11	FRG-13
备 注 Note							

注: CM3DC-100中10~32A电磁脱扣器动作电流值为400A ± 20%。

Note: 10~32A magnetic release operating current of CM3DC-100 is 400A ± 20%.

全国一级经销商明细表

北京

北京欣凯通机电有限公司 010-66162644
北方森源电气有限公司 010-87581701

天津

天津市强强电器科技有限公司 022-83715527

上海

上海常开电器设备有限公司 021-56319090
上海企开电器设备有限公司 021-56319090
上海森昊电器有限公司 021-54791857
上海泰耀机电设备有限公司 021-57428230
上海三樱电气有限公司 021-56032616

重庆

重庆宏腾物资有限公司 023-68615538

福建

泉州市恒源电力设备有限公司 0595-22587087

浙江

杭州华森电器有限公司 0571-86947817
杭州天源机电设备有限公司 0571-87244850
乐清市新格电气有限公司 0577-61722717
宁波市江东腾辉电器有限公司 0574-87890910

安徽

合肥恒祥电气设备安装有限公司 0551-4668867

江苏

南京扬力电器有限公司 025-84605256
南京苏能动力工程设计有限公司 025-85283021
常州市中环电器有限公司 0519-88867161
镇江兆丰电器有限公司 0511-88320888
苏州市机电设备有限责任公司 0512-67202006
苏州苏新机电设备有限公司 0512-67571866
苏州市中信机电设备有限公司 0512-65225732
苏州明大机电有限公司 0512-65833162
无锡市法德兰电器成套公司 0510-82736734
盐城市科宇电气有限公司 0515-89800508
连云港市希门自动化电器设备有限公司 0518-85452767
徐州泛得电子有限公司 0516-83846977
南通正源电气有限公司 0513-85030391
扬州通润电气设备有限公司 0514-87856707
常熟市中通电力设备有限责任公司 0512-52853511
常熟市欧亚机电产品销售有限公司 0512-52221970
常熟市润源电气设备销售有限公司 0512-51580510

山东

淄博新能机电设备有限公司 0533-2186118
济南中机电亿万电器有限公司 0531-85869188
烟台信谊电气技术有限公司 0535-6105866
江苏华晟电器设备有限公司山东电气技术中心 0531-88950385

江西

江西佳创实业有限公司 0791-8317951

广东

广州市友朋电气设备有限公司 020-34528679
佛山市君鹏机电设备有限公司 0757-83811990
佛山市嘉合贸易有限公司 0757-83397660
东莞市运通泰电气科技有限公司 0769-22028877
深圳市华冠电器销售有限公司 0755-83928001
众业达电气股份有限公司(含子公司) 0754-88739922
汕头市新兴工业配套材料有限公司 0754-88681888

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长沙市康发电器有限公司 0731-84422858

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陕西新力源电气有限公司 029-88348089
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山西万里顺贸易有限公司 0351-6521630
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常熟开关 持续超越

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2012.02

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)

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