



CM 1 系列 塑料外壳式断路器

CM1 SERIES MOULDED CASE CIRCUIT BREAKER

- **体积小**
COMPACT SIZE
- **高分断**
HIGH BREAKING CAPACITY
- **超飞弧**
SHORTCIRCUIT OVER DISTANCE
- **零飞弧**
ZERO ARC FOLLOW

2011.08

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)



中国驰名商标
China Well-known Trademark



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



博士后科研工作站
Postdoctoral Programme



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



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



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



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

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

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



●Riyear-PowerNet配电监控系统



●FCX3智能配电监控器



优秀特色

- 通过了核工业条件（1E级）试验和船用条件的试验；具备TH型断路器，满足湿热带地区使用要求
- 通过了德国莱茵公司CE认证
- 获得国际认可的CB证书
- 高分断、高可靠、短飞弧、体积小、带隔离

额定极限短路分断能力 I_{cu} ：400V：25kA ~ 100kA；690V：20kA ~ 30kA

额定运行短路分断能力 I_{cs} ：400V：18kA ~ 65kA；690V：10kA ~ 20kA

- 可配FWB1温度报警模块，实现连接点在线超温报警



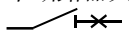
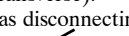


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适用范围

APPLICATION RANGE

- CM1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690V及以下，（CM1-63为400V），额定工作电流至800A的电路中作不频繁转换及电动机保护（CM1-800无电动机保护型）之用。断路器具有过载、短路和欠电压保护功能，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（部分规格零飞弧）、抗振动等特点，并通过了核工业条件（1E级）试验和船舶条件的试验，成为国产产品中唯一能用于核工业基地的产品，更是陆地及船舶使用的理想产品。
- 本断路器可垂直安装（即竖装），亦可水平安装（即横装）。
- 本断路器具有隔离功能，其相应的符号为：
- 本断路器产品执行下列标准：
IEC60947-1及GB 14048.1-2006 总则
IEC60947-2及GB 14048.2-2008 断路器
IEC60947-4-1及GB 14048.4 机电式接触器和电动机起动器
IEC60947-5-1及GB 14048.5 机电式控制电路电器
- 本断路器获国家强制性产品认证“CCC”标志和德国“TUV”（莱茵）公司“CE”认证。
- CMI series moulded case breakers (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. The rated insulation voltage of the breakers is 800V, suitable for turn-on or turn-off not frequently and starting a motor not frequently in the circuit of AC50Hz/60Hz, rated working voltage 690V or below (CM1-63 is 400V)- rated working current up to 800A (CM1-800 is motor protection-free). The breakers have overload, short-circuit and under voltage protection devices. so as to protect the circuit and the power equipment against damage.
- The breakers, according to the rated maximal value to short-circuit breaking ability (I_{cu}), would be classified four kinds types C (basic type), L (typical type), M (second high breaking type) and H (high breaking type). The breakers are of the following characteristics: compact size, high breaking ability, short arc-over distance (some of the "0" arc-over distance) and shakeproof. They also undergo the tests of nuclear industry conditions (1E grade) and ship conditions, and become the only product using in nuclear industry base among the same products made in the country, furture more become the ideal products applied on land or ships.
- The breakers could be installed vertically (upright) or horizontally (transverse).
- The breaker has disconnecting function, its corresponding symbol is shown as "".
- The breakers comply with the demands of the following standards: IEC60947-1 and GB 14048.1-2006 General rules IEC60947-2 and GB 14048.2-2008 circuit breakers IEC60947-4-1 and GB 14048.4 Electromechanical contactors and motor starters IEC60947-5-1 and GB 14048.5 Electrical equipments of electromechanical control circuit
- The breaker is permitted to use the CCC marking of CQC and CE marking issued by TUV Rheinland of Germany.



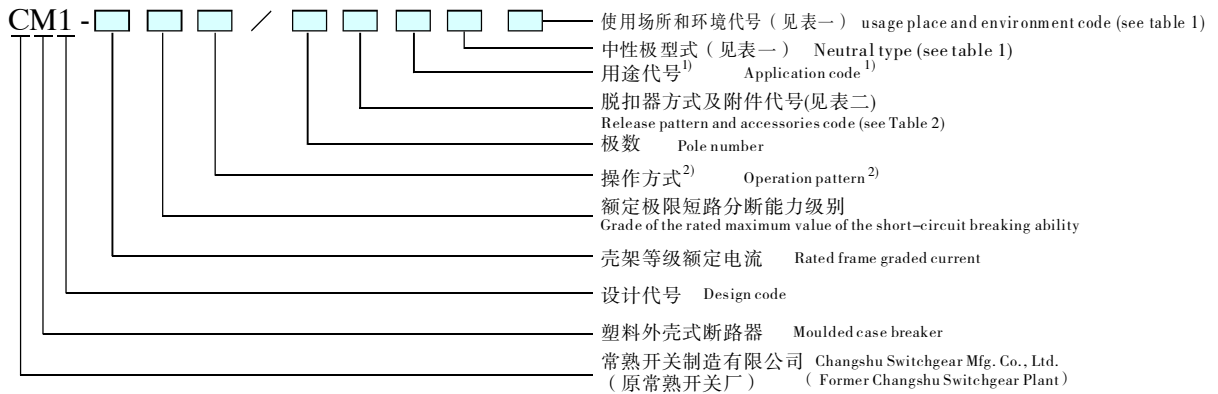
适用工作环境

APPLICATION ENVIRONMENT CONDITION

- 断路器可在周围空气温度为-5℃~+40℃条件下运行（大于+40℃至+60℃降容使用见表7）；
- 海拔2000m及以下；
- 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；
- 断路器主电路及欠电压脱扣器安装类别为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；
- 断路器能耐受潮湿空气、盐雾、油雾、霉菌、核工业环境的影响；
- 断路器安装的最大倾斜度为±22.5°；
- 断路器在受到船舶正常振动时能可靠工作；
- 断路器在受到地震情况下(4g)能可靠工作；
- 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 temperature: -5℃~+40℃ (If the temperature is between +40℃ and +60℃, please see table 7).
- Elevation ≤2000m.
- Relative humidity: not exceeding 50% at the maximum ambient temperature of +40℃. With lower temperature, higher humidity would be permitted, but the lowest average temperature in a month not exceeding +25℃ during the most moist month, and the maximum monthly average relative humidity not exceeding 90% in that month, and giving consideration to the dews on the goods surface, which would appear due to temperature change.
- Pollution protection: 3 grade.
- Installing categories: III for breakers' main circuits, coils of under voltage release and primary circuit of transformers; II for other auxiliary circuits and control circuit.
- Be suitable in electromagnetic environment A.
- Be able to bear the influence of moisture in the air or salt fog and oil fog or mould or nuclear industry environment.
- The gradient ≤ ±22.5°.
- Be working reliably under the condition of normal vibration on ship.
- Be working reliably when earthquake (4g) occurring.
- There must be not any explosive medium, and there must be not any gas which would corrode metal or any conducting dust which would destroy the insulation.
- The place would not be invaded by rain and snow.



型号及其含义如下: Type and its meaning:



注: 1) 配电用断路器无代号; 保护电动机用断路器以2表示。
 2) 直接操作无代号; 电动操作用P表示; 转动手柄操作用Z表示。

Note: 1) No code for current distribution, 2 means for motor protection.
 2) No code for operating directly with handle, P for power-driven and Z for turning handle manually.

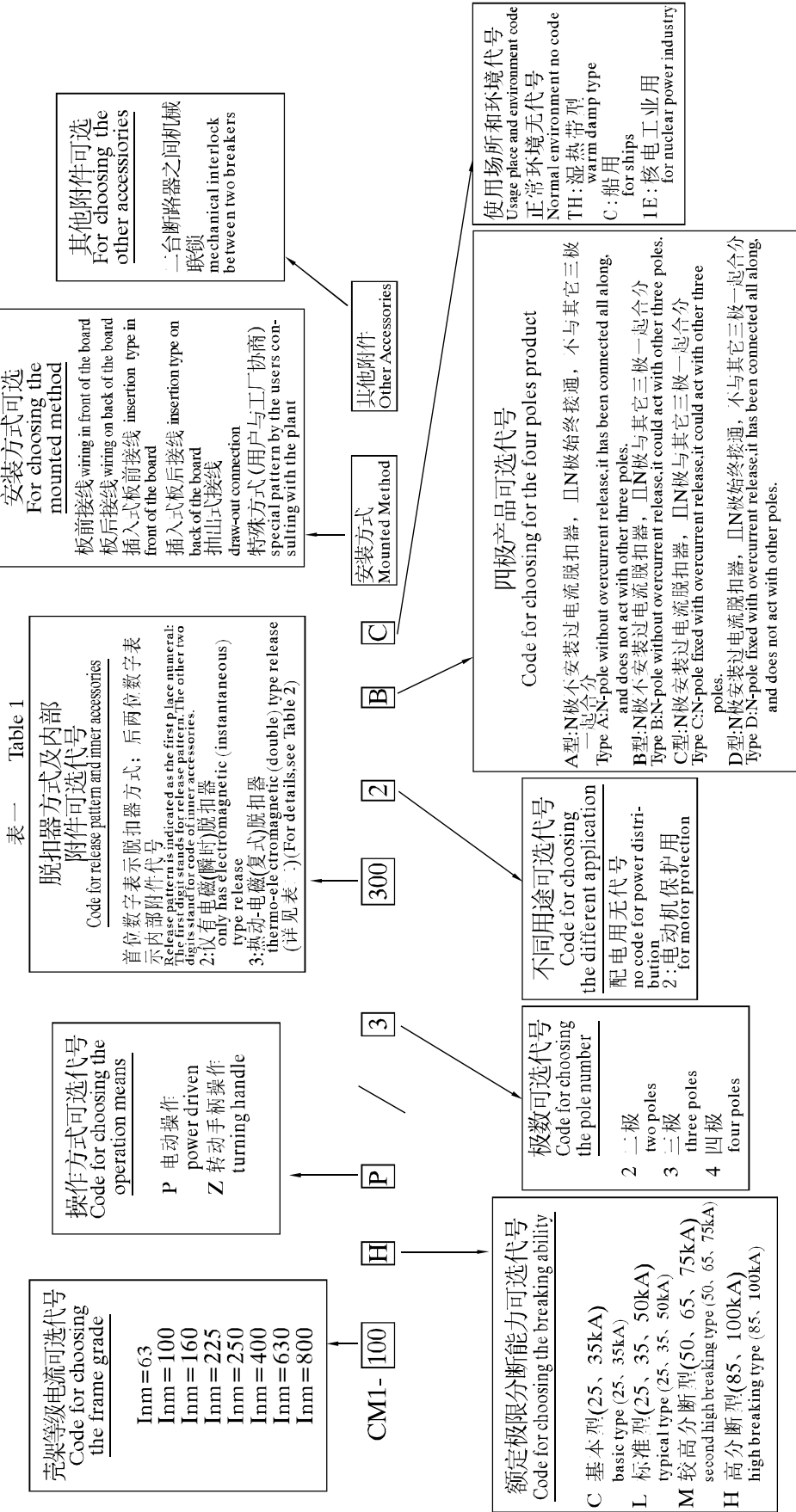
- 按产品极数分为二极(100A、160A、225A)、三极与四极。四极产品中中性极(N极)的型式分四种:
 A型: N极不安装过电流脱扣器, 且N极始终接通, 不与其它三极一起合分;
 B型: N极不安装过电流脱扣器, 且N极与其它三极一起合分(N极先合后分);
 C型: N极安装过电流脱扣器, 且N极与其它三极一起合分(N极先合后分);
 D型: N极安装过电流脱扣器, 且N极始终接通, 不与其它三极一起合分。
- 按额定电流(A)分: CM1-63为6、10、16、20、25、32、40、50、63A九级(6A规格无热过载保护); CM1-100为10、16、20、25、32、40、50、63、80、100A十级; CM1-160为100、125、140、160A四级; CM1-225为100、125、140、160、180、200、225A七级; CM1-250为180、200、225、250A四级; CM1-400为225、250、315、350、400A五级; CM1-630为400、500、630A三级; CM1-800为630、700、800A三级。
- 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)型两种。
- 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、电动操作机构、联锁机构及辅助装置的接线端子排、FWB1温度报警模块等。

- According to the pole number of product, it classifies two-poles (100A, 160A, 225A), three-and four-poles. The neutral pole (N-pole) of the four-poles products has four types:
 Type A: N-pole without over-current release unit, it has been connected all along, and does not act with other three poles to turn on or off.
 Type B: N-pole without overcurrent release unit, it could act with other three poles. (N-pole turns-on prior to turns-off.)
 Type C: N-pole fixed with over-current release unit, it could act with other three poles. (N-pole turns-on prior to turns-off.)
 Type D: N-pole fixed with over-current release unit, it has been connected all along, and does not act with other three poles to turn on or off.
- Classification according to rated current (A): CM1-63 has nine grades: 6、10、16、20、25、32、40、50、63A (6A without overload protection); CM1-100 has ten: 10、16、20、25、32、40、50、63、80、100A, CM1-160 has four: 100、125、140、160A, CM1-225 has seven: 100、125、140、160、180、200、225A, CM1-250 has four: 180、200、225、250A, CM1-400 has five: 225、250、315、350、400A, CM1-630 has three: 400、500、630A, and CM1-800 has three: 630、700、800A.
- The wiring method has five ways: wiring in front of the board, wiring on back of the board, insertion type in front of the board, insertion type on back of the board and draw-out connection.
- According to the over-current release pattern, it would be divided two types: thermo-electromagnetic (double) type and electro magnetic (instantaneous) type.
- According to the outfit, it also has two types: with or without outfit. The outfit include inner accessories and outside accessories:
 The inner accessories have shunt release, under-voltage release, auxiliary contact and alarm contacts four kinds.
 The outside accessories are turning handle operation mechanism, power-driven operation mechanism, interlocking mechanism and the connecting terminal busbar of auxiliary device, FWB1 temperature alarm module.



CM1系列塑壳断路器快速选用表
Table For Choosing Quickly The CM1 Series Moulded Case Circuit Breaker

快速选用表见表一
For choosing quickly, see following Table 1 please.



举例: 1. 如订CM1-100M三极, 电动机保护用, 额定电流为80A并带分励脱扣器、辅助触头, 板前接线要求两台带机械联锁机构。即为订CM1-100M/33402 In=80A, 板前接线2台机械联锁。

2. 如订CM1-225四极, 配电用, 额定电流为180A并带电动操作机构及分励脱扣器, N极安装过电流脱扣器, 且N极与其他三极一起合分形式, 板后接线10台。即为订CM1-225P/4310 C型, In=180A板后接线10台。

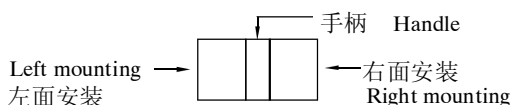
For example: (1) If place an order for CM1-100M, three poles, for motor protection, rated current 80A, with shunt release and auxiliary contact, wiring in front of the board, mechanical interlock between two breakers, it would be written-in "To order CM1-100M/33402, In=80A, wiring in front of the board, mechanical interlock between two breakers."

(2) If place an order for CM1-225, four poles, for power distribution, rated current 180A with power-driven operation mechanism and shunt release, N-pole fixed with overcurrent release and could act with other three-poles, wiring on back of the board, ten breakers, it would be written-in "To order CM1-225P/4310 C type, In=180A, wiring on back of the board, ten breakers."



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

脱扣器方式及内部附件代号见表二 Release pattern and 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

代号 Accessories code	附件名称 Accessories name	型号 Type		CM1-63 CM1-100		CM1-160 CM1-225 CM1-250		CM1-400		CM1-630		CM1-800	
		极数 Pole number		3	4	3	4	3	4	3	4	3	4
208、308	报警触头 Alarm contact			← □	← □	← □	← □	← □	← □	← □	← □	← □	← □
210、310	分励脱扣器 Shunt release			← ●	← ●	← ●	← ●	← ●	← ●	← ●	← ●	← ●	← ●
220、320	辅助触头 Auxiliary contact			← ■	← ■	← ■	← ■	← ■	← ■	← ■	← ■	← ■	← ■
230、330	欠电压脱扣器 Undervoltage release			← ○	← ○	← ○	← ○	← ○	← ○	← ○	← ○	← ○	← ○
240、340	分励脱扣器 辅助触头 Shunt release, auxiliary contact			← ● ■	← ● ■	← ● ■	← ● ■	← ● ■	← ● ■	← ● ■	← ● ■	← ● ■	← ● ■
250、350	分励脱扣器 欠电压脱扣器 Shunt release, undervoltage release			← ● ○	← ● ○	← ● ○	← ● ○	← ● ○	← ● ○	← ● ○	← ● ○	← ● ○	← ● ○
260、360	二组辅助触头 Two group of auxiliary contact			← ■ ■	← ■ ■	← ■ ■	← ■ ■	← ■ ■	← ■ ■	← ■ ■	← ■ ■	← ■ ■	← ■ ■
270、370	辅助触头 欠电压脱扣器 Auxiliary contact, undervoltage release			← ■ ○	← ■ ○	← ■ ○	← ■ ○	← ■ ○	← ■ ○	← ■ ○	← ■ ○	← ■ ○	← ■ ○
218、318	分励脱扣器 报警触头 Shunt release, alarm contact			← ● □	← ● □	← ● □	← ● □	← ● □	← ● □	← ● □	← ● □	← ● □	← ● □
228、328	辅助触头 报警触头 Auxiliary contact, alarm contact			← ■ □	← ■ □	← ■ □	← ■ □	← ■ □	← ■ □	← ■ □	← ■ □	← ■ □	← ■ □
238、338	欠电压脱扣器 报警触头 Undervoltage release, alarm contact			← ○ □	← ○ □	← ○ □	← ○ □	← ○ □	← ○ □	← ○ □	← ○ □	← ○ □	← ○ □
248、348	分励脱扣器 辅助触头 报警触头 Shunt release, auxiliary contact, alarm contact			← ● ■ □	← ● ■ □	← ● ■ □	← ● ■ □	← ● ■ □	← ● ■ □	← ● ■ □	← ● ■ □	← ● ■ □	← ● ■ □
268、368	二组辅助触头 报警触头 Two group of auxiliary contact, alarm contact			← ■ ■ □	← ■ ■ □	← ■ ■ □	← ■ ■ □	← ■ ■ □	← ■ ■ □	← ■ ■ □	← ■ ■ □	← ■ ■ □	← ■ ■ □
278、378	辅助触头 欠电压脱扣器 报警触头 Auxiliary contact, Undervoltage release, alarm contact			← ■ ○ □	← ■ ○ □	← ■ ○ □	← ■ ○ □	← ■ ○ □	← ■ ○ □	← ■ ○ □	← ■ ○ □	← ■ ○ □	← ■ ○ □

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CM1-100、160、225二极产品只有210、310、220、320、230、330; 对CM1-100、160、225、250四极断路器, N极为A型和D型
 时无260、360、268、368, 并且240、340分励脱扣器、辅助触头位置互换;
 3.对CM1-400、CM1-630及CM1-800其中248、348、278、378规格中辅助触头为一对触头(即一常开、一常闭), 268、368规格中的
 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P41表中配置。
 4.对CM1-63、CM1-100、CM1-160、CM1-225及CM1-250其中220、320、240、340、270、370规格中辅助触头可供二对触头(即二常
 开、二常闭), 260、360可供三对触头(即三常开、三常闭), 但订货时需注明。

Note: 1)000: breaker has not any thermo or electromagnetii release pattern 200: breaker only has electromagnetic release pattern 300: breaker has thermo-
 electromagnetic release pattern
 2)For CM1-100、160、225 two-poles type, has only following accessories code: 210、310、220、320、230、330; for CM1-100、160、225、250 four-poles
 breaker of N-pole types A&D, has no the following accessories code: 260、360、268、368, and position of shunt release、auxiliary contact is changovered
 for 240、340;
 3)For CM1-400、CM1-630 and CM1-800, codes 248、348、278、378 only have one pair of auxiliary contacts (a normal opened, a normal closed), but 268、
 368 have three pairs of auxiliary contacts. The amount of auxiliary contacts in terms of other specifications is disposed according to the diagrams on page 41.
 4)For CM1-63、CM1-100、CM1-160、CM1-225 and CM1-250, codes 220、320、240、340、270 and 370 can provide two pairs of auxiliary contacts (two
 normally-opened, two normally-closed), while codes 260 and 360 can provide three pairs of auxiliary contacts (three normally-opened, three normally-closed)
 Note when making order.



四极断路器中性极（N）设在产品右侧，C型、D型中N极脱扣器的额定电流见表三

The N-pole of four-poles breaker is sited at the right side of the product. The rated current of the N-pole release in type C & D see following Table 3 please.

表三 Table 3

壳架等级额定电流 Rated frame graded current(Inm) (A)	断路器额定电流 Rated current of breaker (In) (A)	断路器中性极（N） 额定电流 A Rated current of breaker's N-pole (A)
63	6	6
	10	10
	16	16
	20	20
	25	25
	32	32
	40	40
	50	50
100	63	63
	80	63
	100	63
	10	10
	16	16
	20	20
	25	25
	32	32
	40	40
	50	50
160	63	63
	80	63
	100	63
	100	100
225	125	100
	140	100
	160	100
	180	100
	200	100
	225	100
	225	125
250	180	100
	200	100
	225	125
	250	125
400	225	225
	250	225
	315	225
	350	250
	400	250
630	400	400
	500	400
	630	400
800	630	500
	700	500
	800	500

注：对CM1-160、225四极断路器，其中性极（N）的瞬时脱扣器（短路保护）均无5In规格。

Note: For CM1-160、225 four-poles breakers, the instantaneous release of N-pole (short-circuit protection) have no 5 In spec.



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，特性见表四(配电用)及表五(保护电动机用)。

The thermodynamic release of a circuit breaker provides the feature of inverse time-delay, while the magnetic release features of instantaneous operation as shown on table 4 (distribution circuit breaker) and table 5 (motor protection circuit breakers).

表四 (配电用) Table 4(For Power Distribution)

断路器额定电流 (A) Rated current of breaker (A)	热动型脱扣器(环境温度 陆用+40℃) 船用+45℃) Thermodynamic release (ambient temp. +40℃ for land) +45℃ for ships)		电磁脱扣器动作 电流 (A) Electromagnetic release action current (A)
	1.05In(冷态) 不动作时间(h) 1.05In(cold state) not acting time (h)	1.30In(热态) 动作时间(h) 1.30In(heat state) acting time (h)	
10 ≤ In ≤ 63	1小时内不动作 Not acting within one hour	≤ 1	10In ± 20%
63 < In ≤ 100	2小时内不动作 Not acting within two hours	≤ 2	
100 < In ≤ 800	2小时内不动作 Not acting within two hours	≤ 2	5In ± 20% 10In ± 20%

注：CM1-160及CM1-225中的100A、125A、140A规格中无5In电磁脱扣器

Note: There is no 5 In electromagnetic release in specification 100A, 125A, 140A of CM1-160 and CM1-225.

表五 (保护电动机用) Table 5(For Motor Protection)

断路器壳架 等级额定电流 (A) Rated frame graded current of breaker (A)	热动型脱扣器(环境温度 陆用+40℃) 船用+45℃) Thermodynamic Release (ambient temp. +40℃ for land) +45℃ for ships)					电磁脱扣器动作 电流 (A) Electromagnetic Release Action Current (A)
	1.0In(冷态) 不动作时间(h) 1.0In(cold state) not acting time (h)	1.20In(热态) 动作时间(h) 1.20In(heat state) acting time (h)	1.50In(热态) 动作时间 1.50In(heat state) acting time	7.2In(冷态) 动作时间 7.2In(cold state) acting time	脱扣级别 Release rating	
63、100、160、 225、250	2小时内不动作 Not acting within two hours	≤ 2	≤ 4min	4s < Tp ≤ 10s	10	12In ± 20%
400、630			≤ 8min	6s < Tp ≤ 20s	20	

注：CM1-800无电动机保护型

Note: Motor protection-free for CM1-800.



功耗及降容系数

POWER WASTAGE AND CAPACITY-REDUCING FACTOR

功率损耗见表六

Power consumption see following Table 6

表六 Table 6

型号 Type	通电电流 (A) Electromotion current (A)	三极/四极总功率损耗(W) The total power wastage of three poles (W)			
		板前、板后接线 Wiring in front or on back of the board	插入式板前接线 Insertion type in front of the board	插入式板后接线 Insertion type on back of the board	抽出式接线 Draw-out connection
CM1-63直热式(10~25A) Direct-heated (10~25A)	25	2.6	--	2.7	--
CM1-100直热式(10~25A) Direct-heated (10~25A)	25	1.7	1.7	1.8	--
CM1-63间热式(32~63A) Indirect-heated (32~63A)	63	16.7	--	16.8	--
CM1-100间热式(32~100A) Indirect-heated (32~100A)	100	27	27	27.2	--
CM1-160	160	26.8	26.8	27	--
CM1-225	225	33.4	33.4	33.6	--
CM1-250	250	41.3	41.3	41.5	--
CM1-400	400	48	48	48.2	68
CM1-630	630	107.2	107.2	107.4	127.2
CM1-800	800	96	--	73.7(In=700A)	93.7(In=700A)

环境温度变化的降容系数见表七

Capacity-reducing factor for ambient temperature change see following Table 7 please.

表七 Table 7

型号 Type	温度 Temp. 系数 Factor	+40℃ (船用+45℃) (for ship +45℃)	+45℃ (船用+50℃) (for ship +50℃)	+50℃ (船用+55℃) (for ship +55℃)	+55℃ (船用+60℃) (for ship +60℃)	+60℃ (船用+65℃) (for ship +65℃)
		降容系数 Capacity-reducing Factor	降容系数 Capacity-reducing Factor	降容系数 Capacity-reducing Factor	降容系数 Capacity-reducing Factor	降容系数 Capacity-reducing Factor
CM1-63		1In	0.94In	0.88In	0.80In	0.72In
CM1-100		1In	0.95In	0.89In	0.84In	0.76In
CM1-160		1In	0.97In	0.93In	0.90In	0.86In
CM1-225		1In	0.96In	0.91In	0.87In	0.82In
CM1-250		1In	0.96In	0.91In	0.87In	0.82In
CM1-400		1In	0.94In	0.87In	0.81In	0.73In
CM1-630		1In	0.93In	0.88In	0.83In	0.76In
CM1-800		1In	0.88In	0.83In	0.79In	0.76In

注：以上降容系数均在通于壳架额定电流下测得

Note: Above capacity-reducing factor are all achieved with rated frame current travelling through.



高海拔降容

CAPACITY-REDUCING FOR HIGH-ELEVATION

海拔超过适用工作环境的2000m，断路器电气性能可参照下表修正：

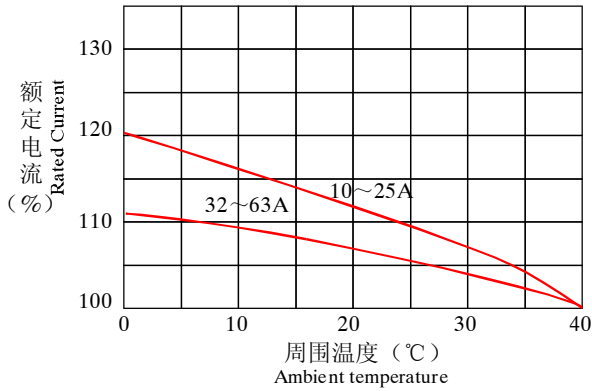
If elevation exceeds work environment 2000m, electric property of circuit breaker can correct according to following table:

海拔 (m) elevation	2000	3000	4000	5000
工频耐压(V) Power-frequency withstand voltage	3000	2500	2000	1800
工作电流修正系数 Correction factor of operational current	1	0.94	0.88	0.83

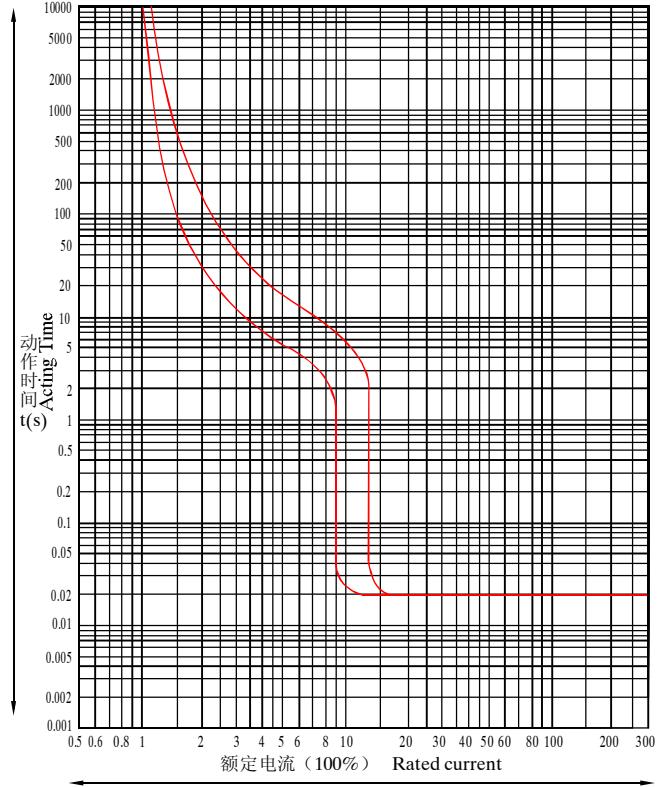


说明：特性曲线是在冷态，三相负载下测得。
Note: The characteristic curves are obtained in the cold state and 3-pole loading.

电流-温度特性
Current-Temperature Characteristic

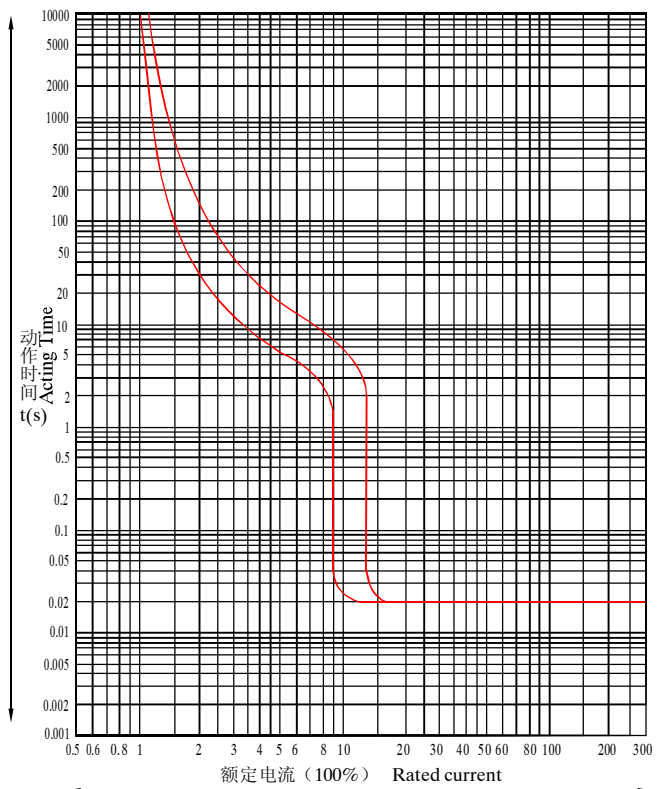
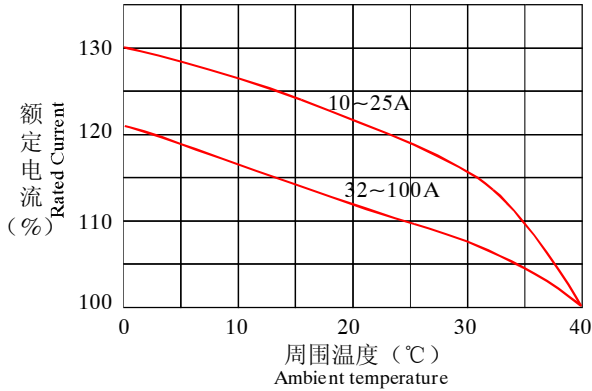


CM1-63 L、M时间/电流特性曲线
CM1-63 L、M Time/current Characteristic Curve



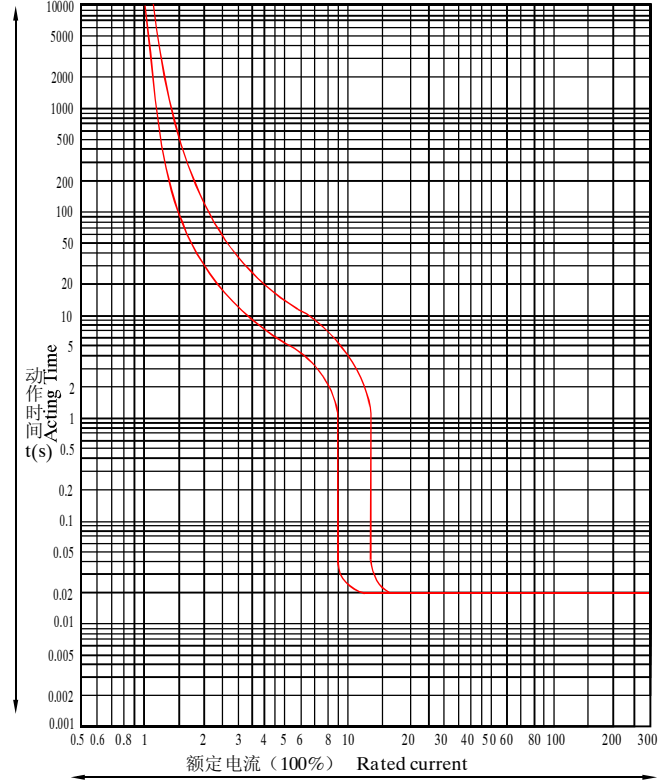
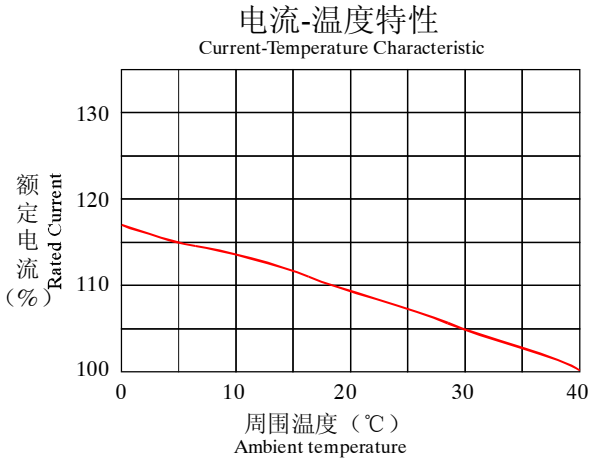
CM1-100C.L.M.H时间/电流特性曲线
CM1-100C、L、M、H Time/current Characteristic Curve

电流-温度特性
Current-Temperature Characteristic

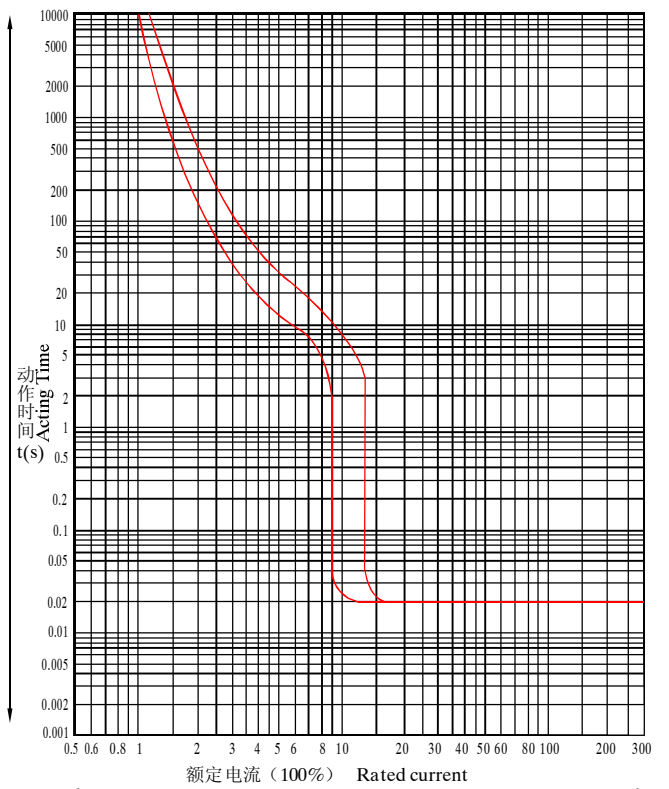
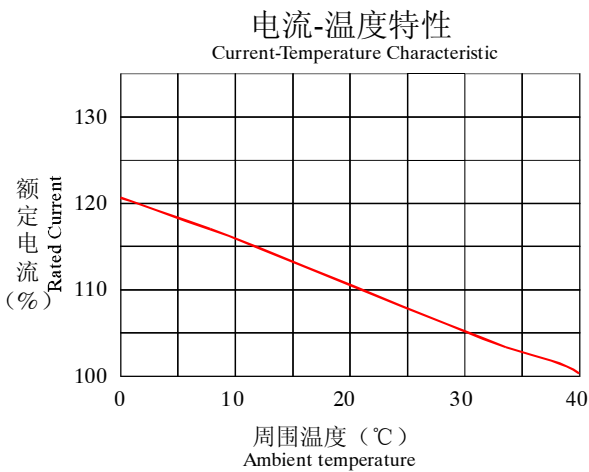




CM1-160、225C. L.M.H 时间/电流特性曲线
CM1-250 L.M.H
CM1-160、225C. L.M.H Time/current Characteristic Curve
CM1-250 L.M.H



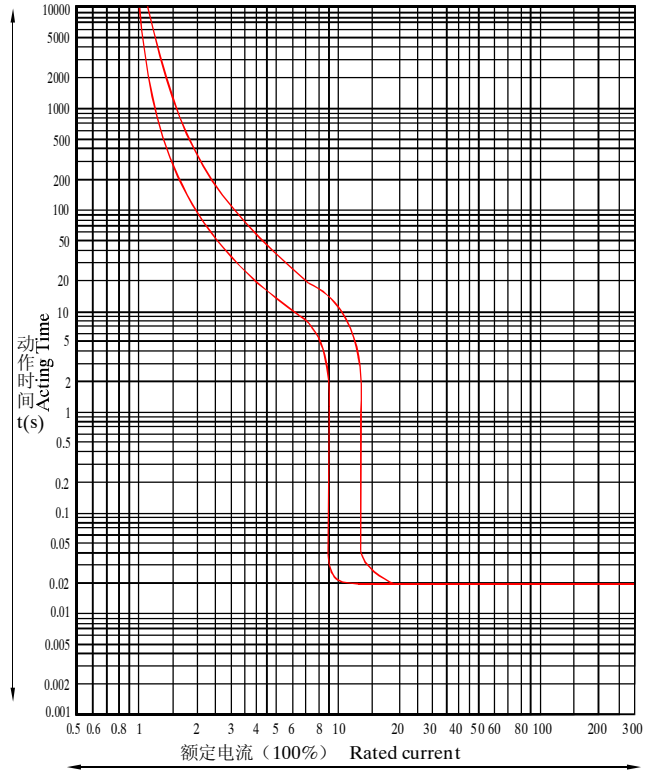
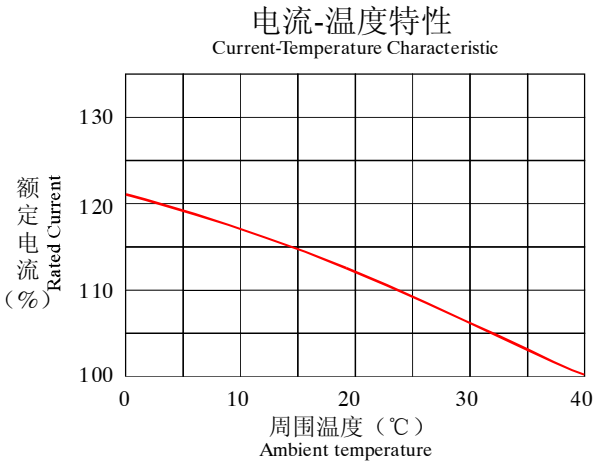
CM1-400C. L.M.H时间/电流特性曲线
CM1-400C、L、M、H Time/current Characteristic Curve





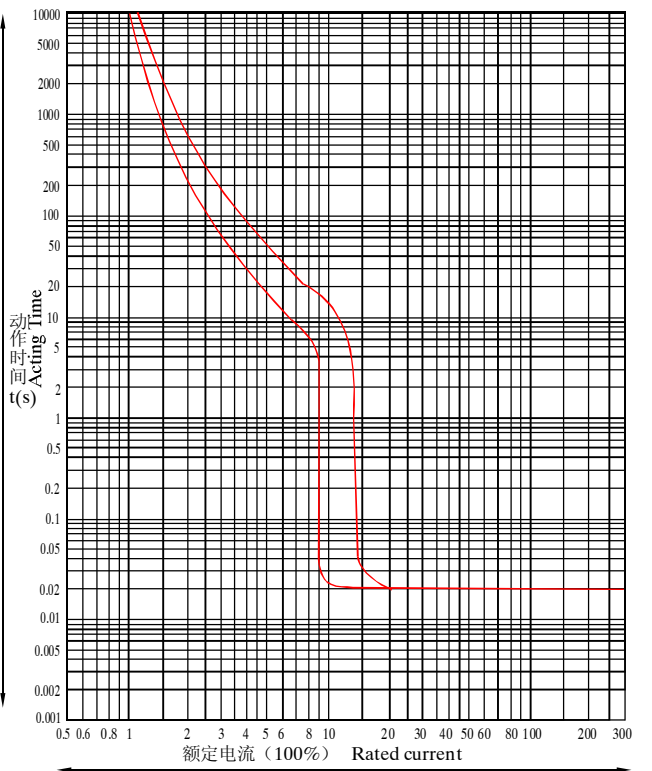
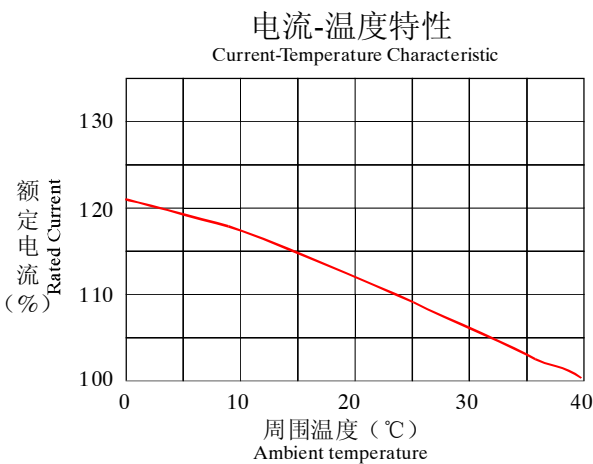
CM1-630C.L.M.H时间/电流特性曲线

CM1-630C、L、M、H Time/current Characteristic Curve



CM1-800M.H时间/电流特性曲线

CM1-800M、H Time/current Characteristic Curve



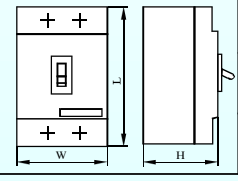




断路器主要技术性能指标 MAIN TECHNICAL PERFORMANCE PARAMETER OF THE BREAKER

技术性能指标见表八 The technical-performance index see following Table 8 please.

表八 Table 8

壳架电流Inm(A) Frame Current Inm (A)		63			100		
型号 Type		CM1-63L	CM1-63M	CM1-63	CM1-100	CM1-100C	
外形 Outline							
额定电流In(A) Rated Current In(A)		6 ^{***} 、10、16、20、25、32、40、50、63			10、16、20、25、32、40、50、63、80、100		
极数 Pole Number		3	3	4	2	3	
额定绝缘电压 Ui(V) Rated Insulation Voltage Ui(V)		AC800			AC800		
额定冲击耐受电压 Uimp(V) Rated impulse withstand Voltage Uimp(V)		8000			8000		
额定工作电压 Ue(V) Rated Working Voltage Ue(V)		AC400			DC250, AC400	AC400	
飞弧距离(mm) Arc-over Distance (mm)		0			≥50	0(≥50)*	
额定极限短路分断能力Icu(kA) Limiting short-circuit Breaking Ability	AC690V						
	AC400V	25	50		50	25	
	DC250V				20		
额定运行短路分断能力Ics(kA) Operating short-circuit Breaking Ability	AC690V						
	AC400V	18	35		35	18	
	DC250V				15		
使用类别Utilization category		A					
电气寿命**(次)times Electrical durability		8000					
机械寿命**(次)times Mechanical durability	免维护 Free maintenance	20000					
	有维护 Maintenance	40000					
外形尺寸 (mm) Outline Dimensions		W	78	78	103	65	92
		L	135	135		150	150
		H	73.5	81.5		86	68
分励脱扣器Shunt Release		○		○	○	○	
欠电压脱扣器Under-voltage Release		○		○	○	○	
辅助触头Auxiliary Contact		○		○	○	○	
报警触头Alarm Contact		○		○		○	
电动操作机构 Power-driven Mechanism		○		○		○	
手动操作机构 Turning Handle Mechanism		○		○		○	

表八中带“★”的型号可倒进线，其余不可倒进线，即只可以1，3，5接电源线，2，4，6接负载线。
The types marked “★” indicate adverse wiring of terminals is permitted. For others, adverse wiring is prohibited, in other words terminals “1”，“3” and “5” only connect to power supply, terminal “2”，“4” and “6” only connect to load.





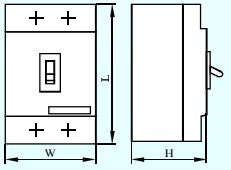
**注：根据GB14048.1-2006，术语“寿命”表示电器在修理或更换部件前能完成的操作循环次数的概率。

**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：CM1-63中6A无热过载保护。Note: without overload protection for 6A of CM1-63.



续表八 Table 8(continued)





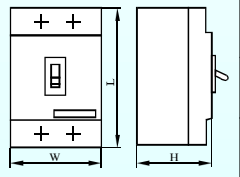
壳架电流Inm(A) Frame Current Inm (A)		100				160
型号 Type		CM1-100L	★CM1-100M	★CM1-100	CM1-100H	CM1-160C
外形 Outline						
额定电流In(A) Rated Current In(A)		10、16、20、25、32、40、50、63、80、100				100、125、140、160
极数 Pole Number		3	3	4	3	3
额定绝缘电压 Ui(V) Rated Insulation Voltage Ui(V)		AC800				
额定冲击耐受电压 Uimp(V) Rated impulse withstand Voltage Uimp(V)		8000				
额定工作电压 Ue(V) Rated Working Voltage Ue(V)		AC400	AC400 AC690	AC400		AC400
飞弧距离(mm) Arc-over Distance (mm)		0(≥50)*				≥50
额定极限短路分断能力Icu(kA) Limiting short-circuit Breaking Ability	AC690V		20			
	AC400V	35	50		85	25
额定运行短路分断能力Ics(kA) Operating short-circuit Breaking Ability	AC690V		10			
	AC400V	22	35		50	18
使用类别Utilization category		A				
电气寿命(次)times Electrical durability		8000				8000
机械寿命(次)times Mechanical durability	免维护 Free maintenance	20000				20000
	有维护 Maintenance	40000				40000
外形尺寸 (mm) Outline Dimensions		W	92	92	122	92
		L	150			165
		H	68			86
分励脱扣器Shunt Release		○		○		○
欠电压脱扣器Under-voltage Release		○		○		○
辅助触头Auxiliary Contact		○		○		○
报警触头Alarm Contact		○		○		○
电动操作机构 Power-driven Mechanism		○		○		○
手动操作机构 Turning Handle Mechanism		○		○		○

*注：三极CM1-100在AC400V时加装零飞弧罩实现零飞弧。

*Note: can be zero arcing by installing arc cover for three poles CM1-100 at AC400V.





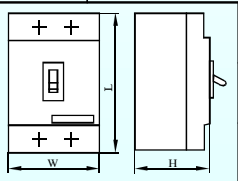


续表八 Table 8(continued)

壳架电流Inm(A) Frame Current Inm (A)		160				225	
型号 Type		CM1-160L	CM1-160M	CM1-160	CM1-160H	CM1- ¹⁶⁰ / ₂₂₅	
外形 Outline							
额定电流In(A) Rated Current In(A)		100、125、140、160				100、125、140、160、180、200、225	
极数 Pole Number		3	3	4	3	2	
额定绝缘电压 Ui(V) Rated Insulation Voltage Ui(V)		AC800					
额定冲击耐受电压 Uimp(V) Rated impulse withstand Voltage Uimp(V)		8000					
额定工作电压 Ue(V) Rated Working Voltage Ue(V)		AC400	AC400 AC690	AC400		DC250, AC400	
飞弧距离(mm) Arc-over Distance (mm)		≥50				≥50	
额定极限短路分断能力Icu(kA) Limiting short-circuit Breaking Ability	AC690V		20				
	AC400V	35	50		85	50	
	DC250V					20	
额定运行短路分断能力Ics(kA) Operating short-circuit Breaking Ability	AC690V		10				
	AC400V	25	35		50	35	
	DC250V					15	
使用类别 Utilization category		A					
电气寿命(次times) Electrical durability		8000					
机械寿命(次times) Mechanical durability	免维护 Free maintenance	20000					
	有维护 Maintenance	40000					
外形尺寸 (mm) Outline Dimensions		W	107	107	142	107	75
		L	165	165			165
		H	86	103			103
分励脱扣器 Shunt Release		○	○		○	○	
欠电压脱扣器 Under-voltage Release		○	○		○	○	
辅助触头 Auxiliary Contact		○	○		○	○	
报警触头 Alarm Contact		○	○		○		
电动操作机构 Power-driven Mechanism		○	○		○		
手动操作机构 Turning Handle Mechanism		○	○		○		





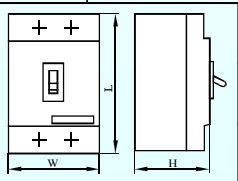


续表八 Table 8(continued)

壳架电流Inm(A) Frame Current Inm (A)		225				
型号 Type		CM1-225C	CM1-225L	★CM1-225M	★CM1-225	CM1-225H
外形 Outline						
额定电流In(A) Rated Current In(A)		100、125、140、160、180、200、225				
极数 Pole Number		3	3	3	4	3
额定绝缘电压 Ui(V) Rated Insulation Voltage Ui(V)		AC800				
额定冲击耐受电压 Uimp(V) Rated impulse withstand Voltage Uimp(V)		8000				
额定工作电压 Ue(V) Rated Working Voltage Ue(V)		AC400		AC400 AC690	AC400	
飞弧距离(mm) Arc-over Distance (mm)		≥50				
额定极限短路分断能力 Icu(kA) Limiting short-circuit Breaking Ability	AC690V			20		
	AC400V	25	35	50		85
额定运行短路分断能力 Ics(kA) Operating short-circuit Breaking Ability	AC690V			10		
	AC400V	18	25	35		50
使用类别 Utilization category		A				
电气寿命(次) times Electrical durability		8000				
机械寿命(次) times Mechanical durability	免维护 Free maintenance	20000				
	有维护 Maintenance	40000				
外形尺寸 (mm) Outline Dimensions		W	107	107	142	107
		L	165			
		H	86			103
分励脱扣器 Shunt Release		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
欠电压脱扣器 Under-voltage Release		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
辅助触头 Auxiliary Contact		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
报警触头 Alarm Contact		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
电动操作机构 Power-driven Mechanism		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
手动操作机构 Turning Handle Mechanism		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



续表八 Table 8(continued)

壳架电流Inm(A) Frame Current Inm (A)		250			
型号 Type		CM1-250L	CM1-250M	CM1-250	CM1-250H
外形 Outline					
额定电流In(A) Rated Current In(A)		180、200、225、250			
极数 Pole Number		3	3	4	3
额定绝缘电压 Ui(V) Rated Insulation Voltage Ui(V)		AC800			
额定冲击耐受电压 Uimp(V) Rated impulse withstand Voltage Uimp(V)		8000			
额定工作电压 Ue(V) Rated Working Voltage Ue(V)		AC400	AC400 AC690	AC400	AC400
飞弧距离(mm) Arc-over Distance (mm)		≥50			
额定极限短路分断能力Icu(kA) Limiting short-circuit Breaking Ability	AC690V		20		
	AC400V	50		65	100
额定运行短路分断能力Ics(kA) Operating short-circuit Breaking Ability	AC690V		10		
	AC400V	35		42	65
使用类别Utilization category		A			
电气寿命(次times) Electrical durability		8000			
机械寿命(次times) Mechanical durability	免维护 Free maintenance	20000			
	有维护 Maintenance	40000			
外形尺寸 (mm) Outline Dimensions		W		107	142
		L		165	
		H		103	
分励脱扣器Shunt Release		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
欠电压脱扣器Under-voltage Release		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
辅助触头Auxiliary Contact		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
报警触头Alarm Contact		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
电动操作机构 Power-driven Mechanism		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
手动操作机构 Turning Handle Mechanism		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



续表八 Table 8(continued)

壳架电流Inm(A) Frame Current Inm (A)		400					
型号 Type		CM1-400C	CM1-400L	★CM1-400M	★CM1-400	CM1-400H	
外形 Outline							
额定电流In(A) Rated Current In(A)		225、250、315、350、400					
极数Pole Number		3	3	3	4	3	
额定绝缘电压 Ui(V) Rated Insulation Voltage Ui(V)		AC800					
额定冲击耐受电压 Uimp(V) Rated impulse withstand Voltage Uimp(V)		8000					
额定工作电压 Ue(V) Rated Working Voltage Ue(V)		AC400		AC400 AC690	AC400		
飞弧距离(mm) Arc-over Distance (mm)		≥100					
额定极限短路分断能力Icu(kA) Limiting short-circuit Breaking Ability	AC690V			20			
	AC400V	35	50	65		100	
额定运行短路分断能力Ics(kA) Operating short-circuit Breaking Ability	AC690V			15			
	AC400V	25	35	42		65	
使用类别Utilization category		A					
电气寿命(次times) Electrical durability		7500					
机械寿命(次times) Mechanical durability	免维护 Free maintenance	10000					
	有维护 Maintenance	20000					
外形尺寸 (mm) Outline Dimensions		W			150	198	150
		L			257		
		H			106.5		
分励脱扣器Shunt Release		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
欠电压脱扣器Under-voltage Release		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
辅助触头Auxiliary Contact		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
报警触头Alarm Contact		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
电动操作机构 Power-driven Mechanism		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
手动操作机构 Turning Handle Mechanism		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	



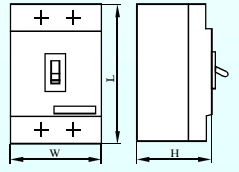


续表八 Table 8(continued)

壳架电流Inm(A) Frame Current Inm (A)		630					
型号 Type		CM1-630C	CM1-630L	★CM1-630M	★CM1-630	CM1-630H	
外形 Outline							
额定电流In(A) Rated Current In(A)		400、500、630					
极数 Pole Number		3	3	3	4	3	
额定绝缘电压 Ui(V) Rated Insulation Voltage Ui(V)		AC800					
额定冲击耐受电压 Uimp(V) Rated impulse withstand Voltage Uimp(V)		8000					
额定工作电压 Ue(V) Rated Working Voltage Ue(V)		AC400		AC400 AC690	AC400		
飞弧距离(mm) Arc-over Distance (mm)		≥ 100					
额定极限短路分断能力Icu(kA) Limiting short-circuit Breaking Ability	AC690V			20			
	AC400V	35	50	65		100	
额定运行短路分断能力Ics(kA) Operating short-circuit Breaking Ability	AC690V			15			
	AC400V	25	35	42		65	
使用类别Utilization category		A					
电气寿命(次times) Electrical durability		7500					
机械寿命(次times) Mechanical durability	免维护 Free maintenance	10000					
	有维护 Maintenance	20000					
外形尺寸 (mm) Outline Dimensions		W			182	240	182
		L			270		270
		H			110		110
分励脱扣器Shunt Release		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
欠电压脱扣器Under-voltage Release		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
辅助触头Auxiliary Contact		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
报警触头Alarm Contact		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
电动操作机构 Power-driven Mechanism		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
手动操作机构 Turning Handle Mechanism		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	



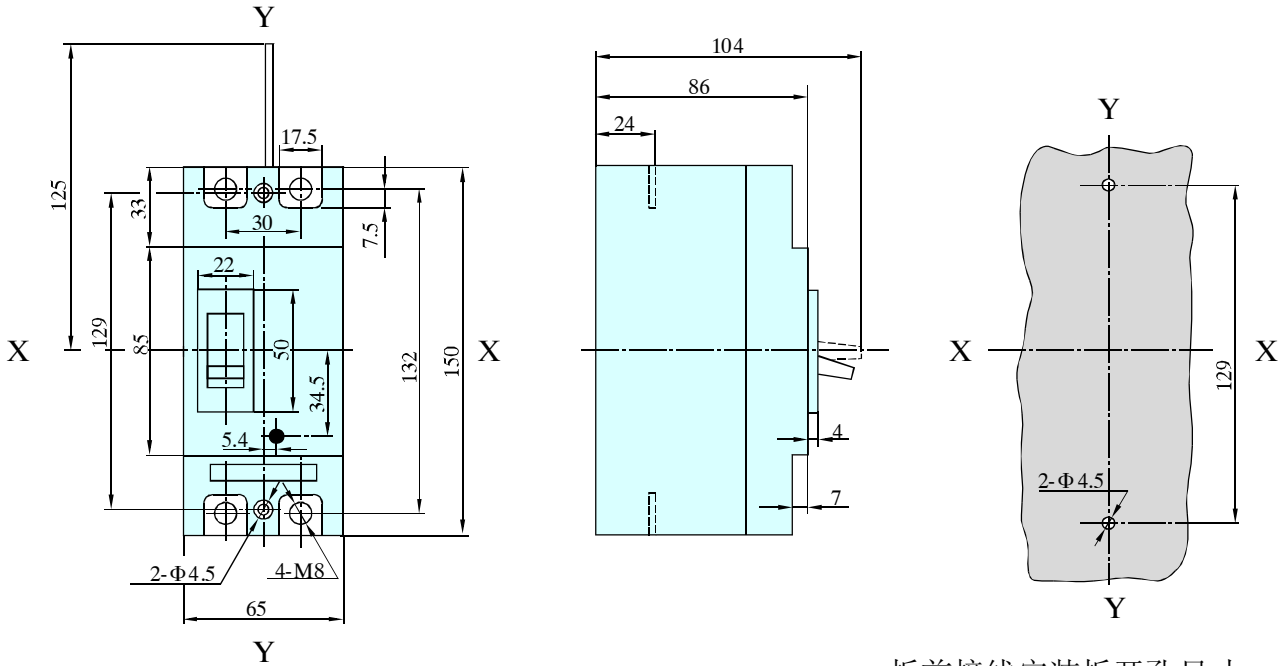
续表八 Table 8(continued)

壳架电流Inm(A) Frame Current Inm (A)		800			
型号 Type		★ CM1-800M	★ CM1-800	CM1-800H	
外形 Outline					
额定电流In(A) Rated Current In(A)		630、700、800			
极数 Pole Number		3	4	3	
额定绝缘电压 Ui(V) Rated Insulation Voltage Ui(V)		AC800			
额定冲击耐受电压 Uimp(V) Rated impulse withstand Voltage Uimp(V)		8000			
额定工作电压 Ue(V) Rated Working Voltage Ue(V)		AC400 AC690	AC400		
飞弧距离(mm) Arc-over Distance (mm)		≥ 100			
额定极限短路分断能力Icu(kA) Limiting short-circuit Breaking Ability	AC690V	30			
	AC400V	75		100	
额定运行短路分断能力Ics(kA) Operating short-circuit Breaking Ability	AC690V	20			
	AC400V	50		65	
使用类别Utilization category		A			
电气寿命(次)times Electrical durability		7500			
机械寿命(次)times Mechanical durability	免维护 Free maintenance	10000			
	有维护 Maintenance	20000			
外形尺寸 (mm) Outline Dimensions		W	210	280	210
		L	280	280	280
		H	115.5	115.5	115.5
分励脱扣器Shunt Release		○	○	○	
欠电压脱扣器Under-voltage Release		○	○	○	
辅助触头Auxiliary Contact		○	○	○	
报警触头Alarm Contact		○	○	○	
电动操作机构 Power-driven Mechanism		○	○	○	
手动操作机构 Turning Handle Mechanism		○	○	○	



CM1-100板前接线(二极) Wiring in front of the board (CM1-100,two poles)

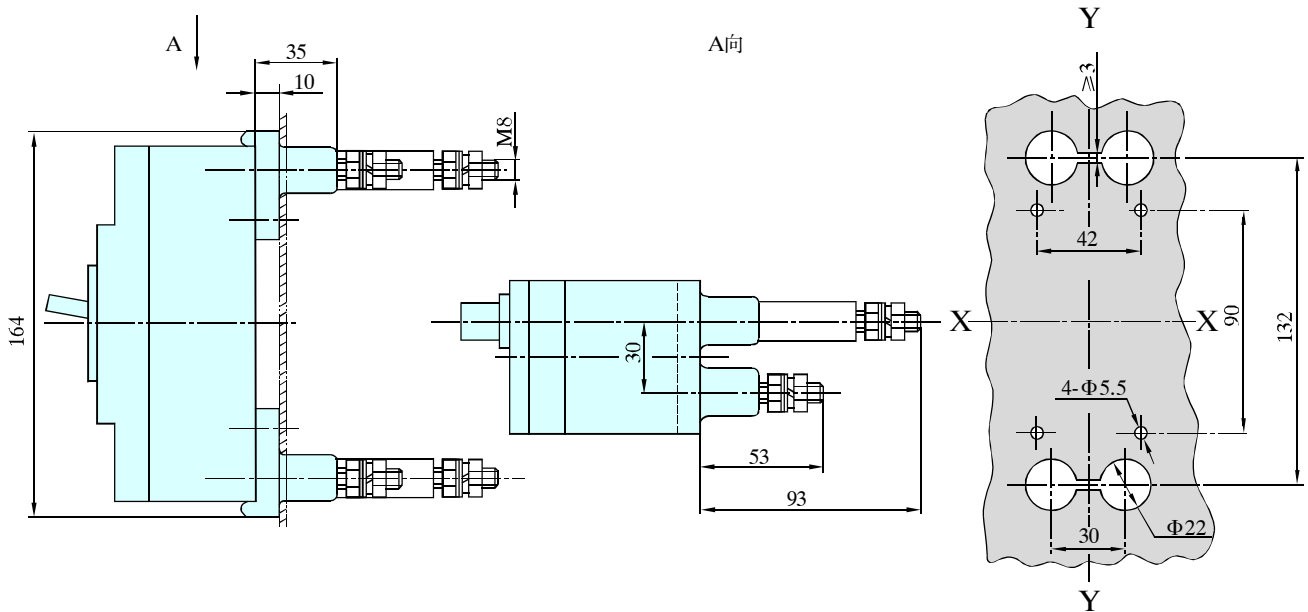
X-X、Y-Y为断路器中心 X-X,Y-Y as the center of the breaker



板前接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring in front of the board.

CM1-100板后接线(二极) Wiring on back of the board (CM1-100,two poles)

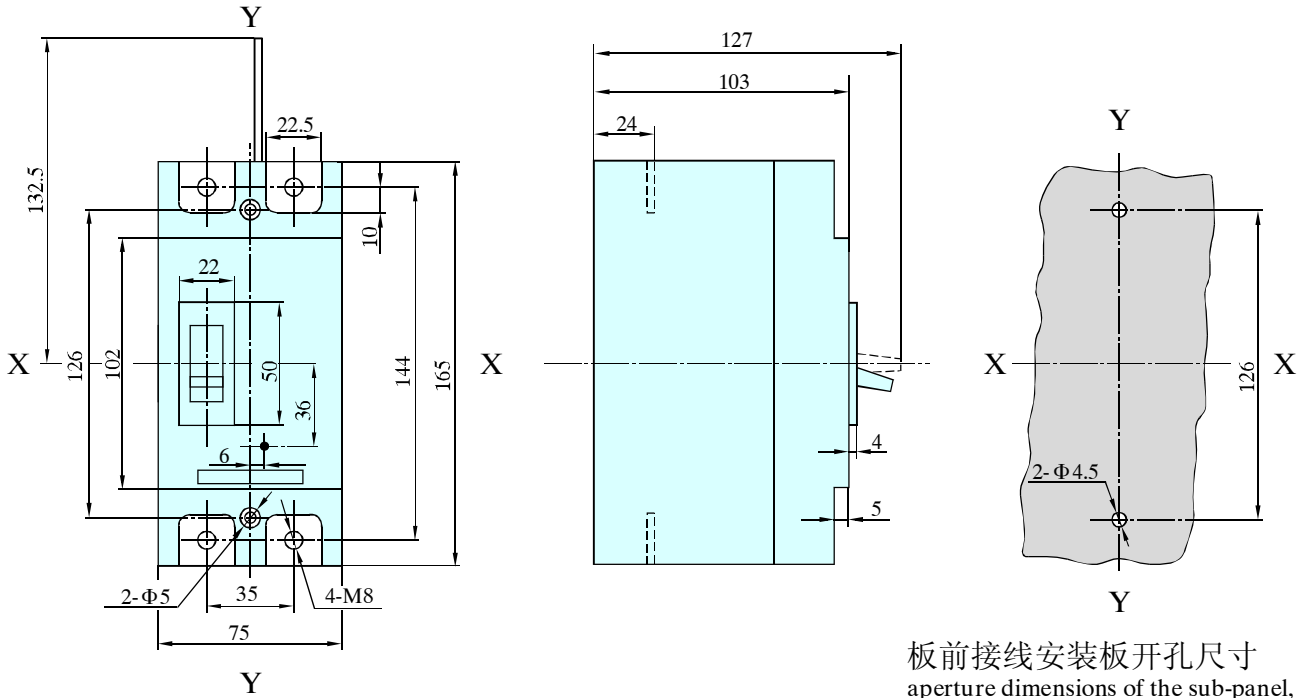
X-X、Y-Y为断路器中心 X-X,Y-Y as the center of the breaker



板后接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring on back of the board.

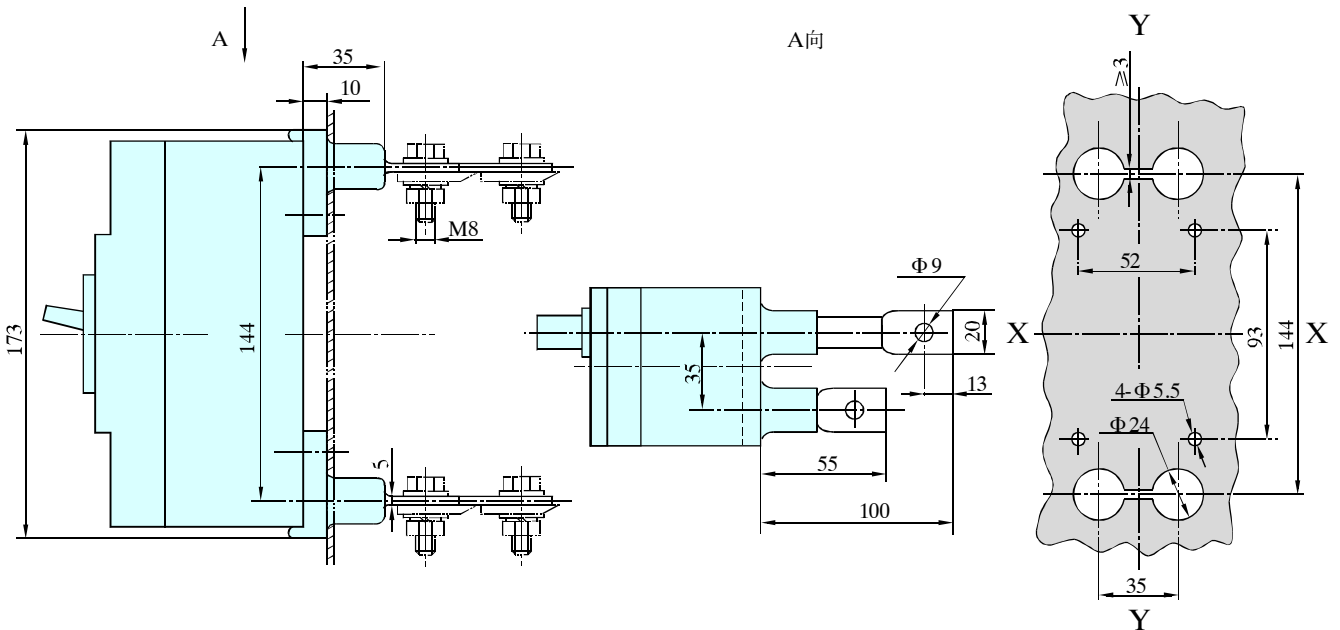


CM1-160、225板前接线(二极) Wiring in front of the board (CM1-160、225,two poles)
 X-X、Y-Y为断路器中心 X-X,Y-Y as the center of the breaker



板前接线安装板开孔尺寸
 aperture dimensions of the sub-panel,
 wiring in front of the board.

CM1-160、225板后接线(二极) Wiring on back of the board (CM1-160、225,two poles)
 X-X、Y-Y为断路器中心 X-X,Y-Y as the center of the breaker



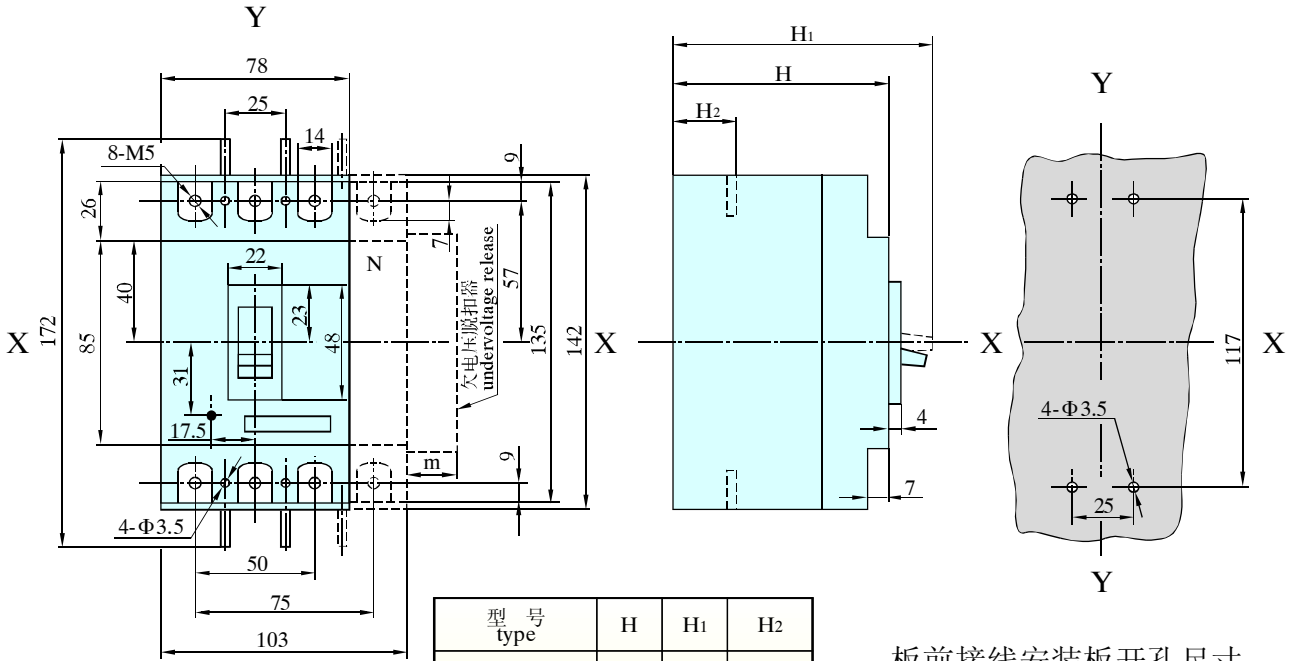
板后接线安装板开孔尺寸
 aperture dimensions of the sub-panel,
 wiring on back of the board.



CM1-63(L、M)板前接线（三极、四极）

Wiring in front of the board (CM1-63L、M,three and four poles)

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



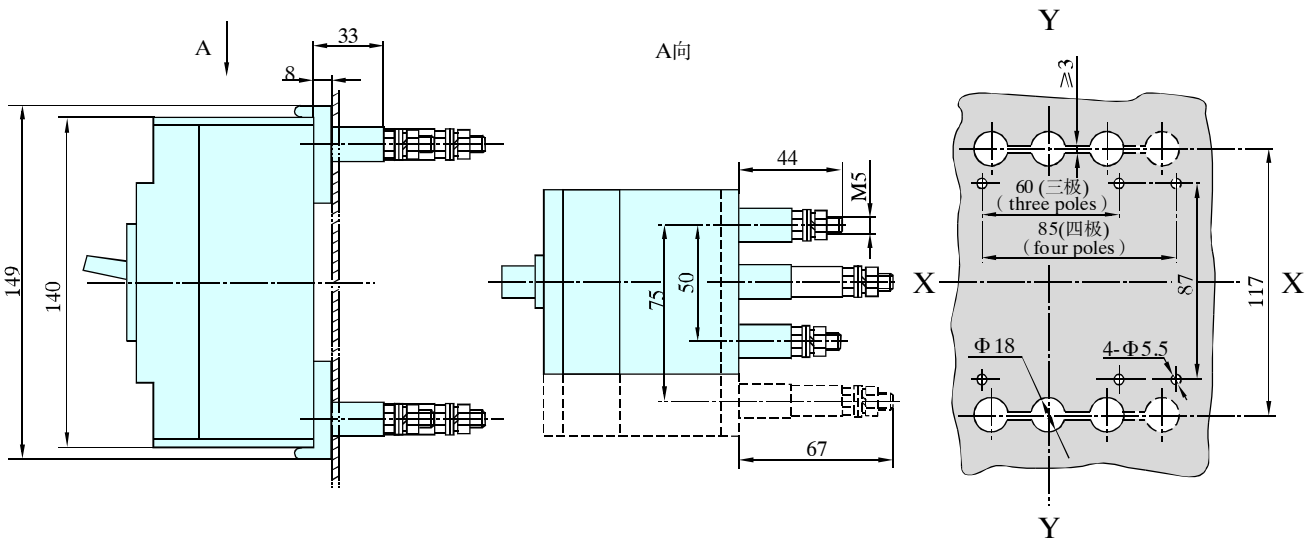
欠电压脱扣器厚度：
对A型、B型 m=12
C型 m=21
The thickness of under-voltage release:
type A & type B: m=12
type C: m=21

板前接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring in front of the board.

CM1-63(L、M)板后接线（三极、四极）

Wiring on back of the board (CM1-63L、M,three and four poles)

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



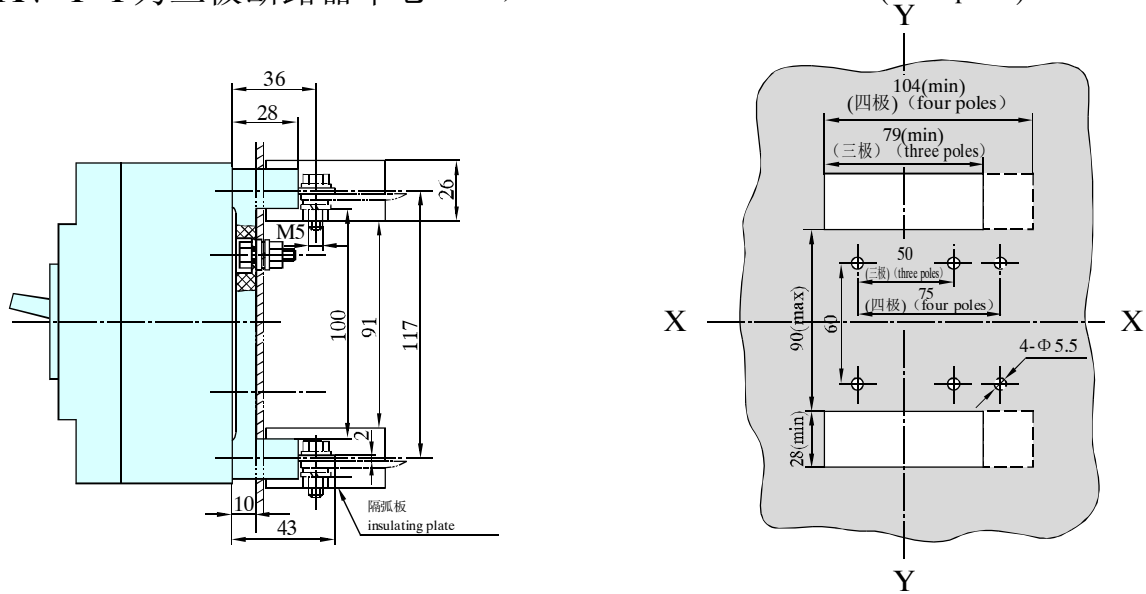
板后接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring on back of the board.



CM1-63(L、M)插入式板后接线（三极、四极）

Insertion type on back of the board (CM1-63L、M, three and four poles)

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

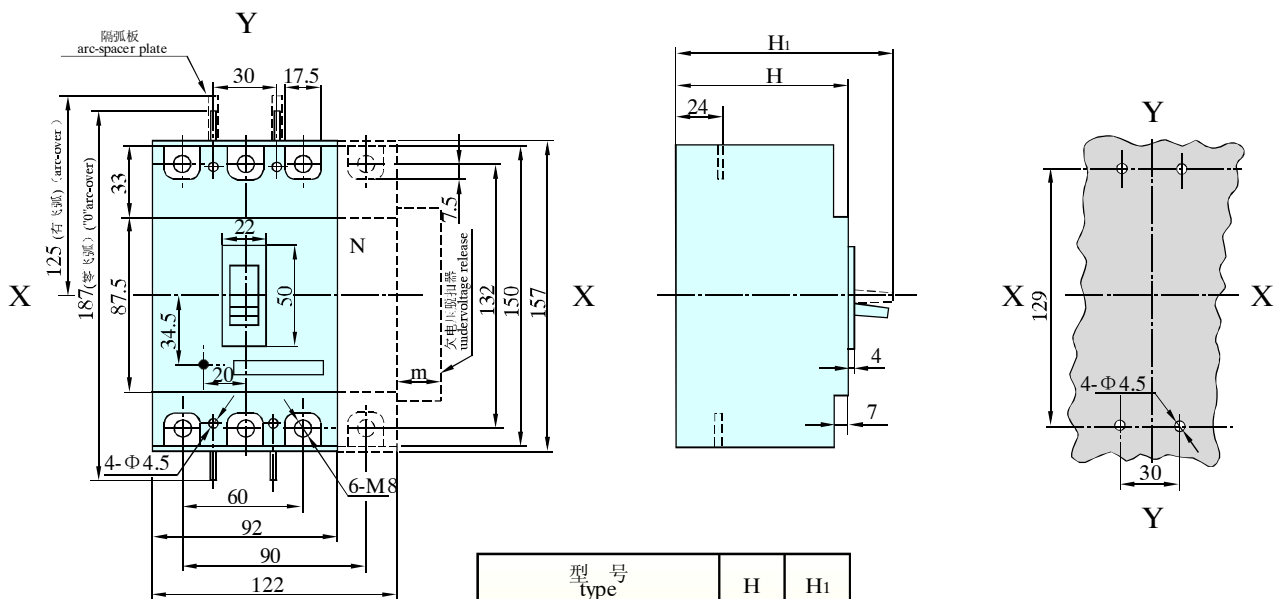


插入式板后接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring on back of the board

CM1-100(C、L、M、H)板前接线（三极、四极）

insertion type wiring in front of the board (CM1-100C、L、M、H, three and four poles)

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



欠电压脱扣器厚度：
对A型、B型 m=12
C型 m=21
The thickness of under-voltage release:
type A & type B: m=12
type C: m=21

型号 type	H	H ₁
CM1-100C、CM1-100L	68	86
CM1-100M、CM1-100H	86	104

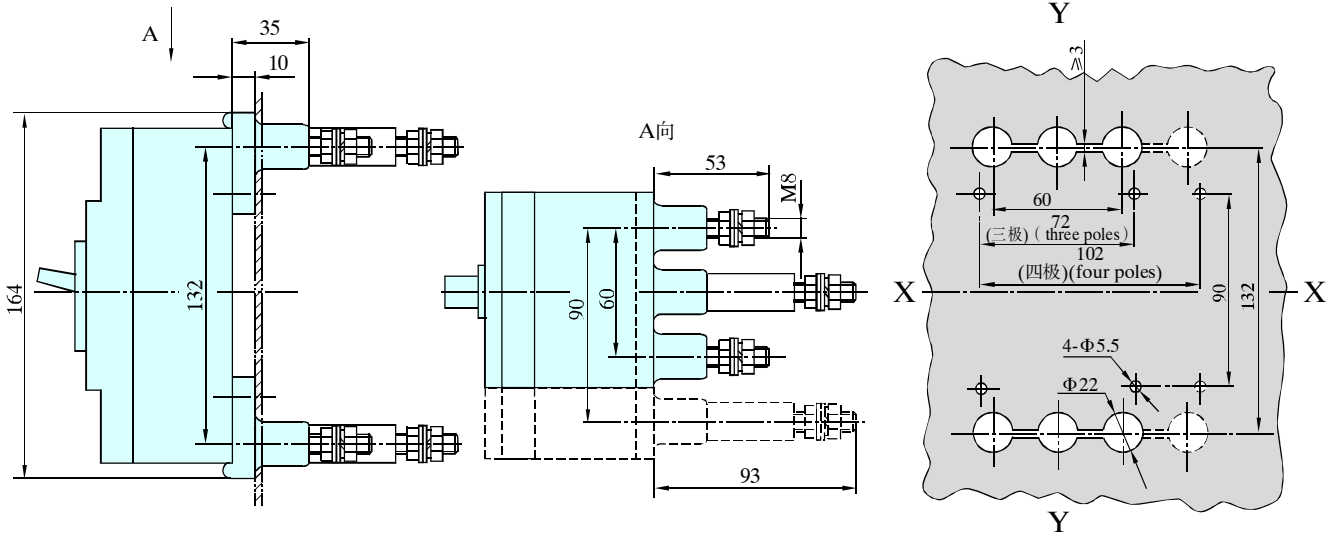
板前接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring in front of the board.



CM1-100(C、L、M、H)板后接线 (三极、四极)

Wiring on back of the board (CM1-100C、L、M、H,three and four poles)

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

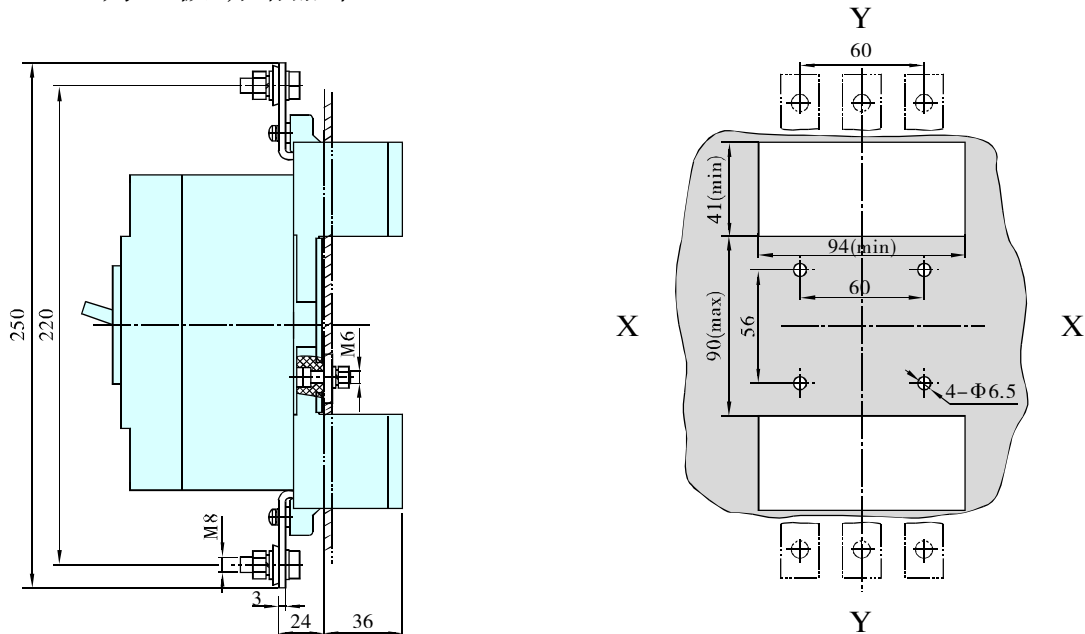


板后接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring on back of the board.

CM1-100(C、L、M、H)插入式板前接线 (三极)

Insertion type wiring in front of the board (CM1-100C、L、M、H,three poles)

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



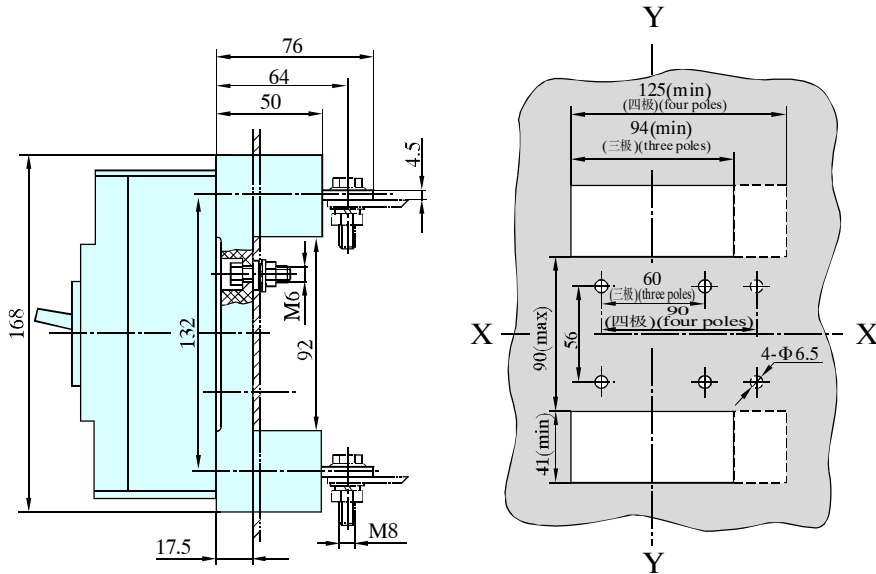
插入式板前接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring in front of the board.



CM1-100(C、L、M、H)插入式板后接线 (三极、四极)

Insertion type on back of the board (CM1-100C、L、M、H,three and four poles)

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



插入式板后接线安装板开孔尺寸
aperture dimensions of the sub-panel,wiring
by insertion on back of the board.

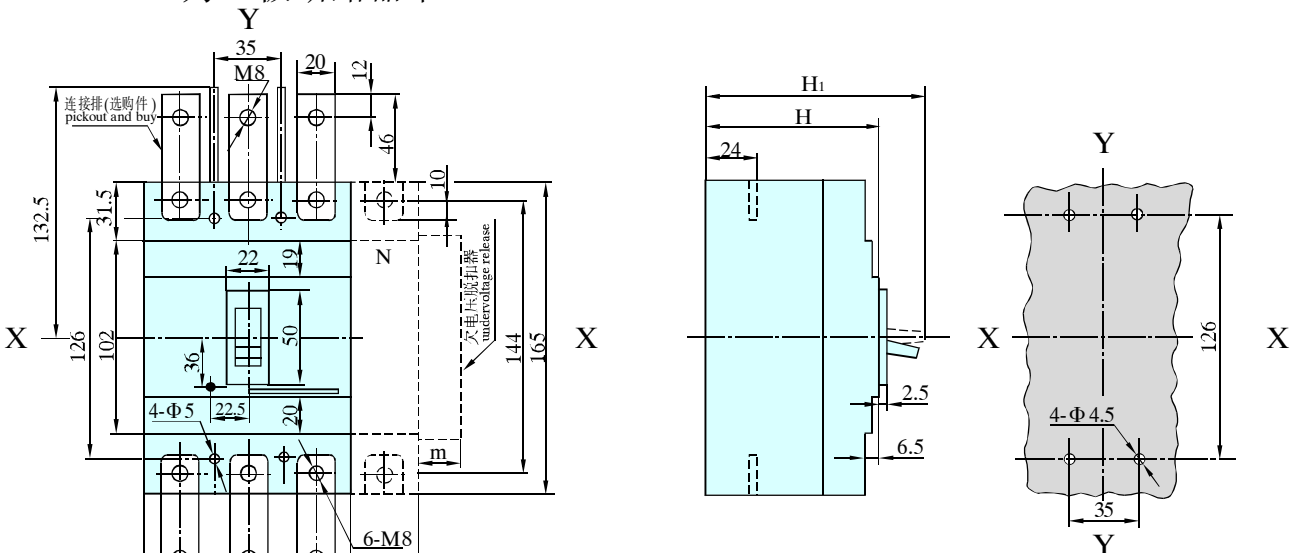
CM1-63、CM1-100 “0” 飞弧产品
使用说明:
1.将“0”飞弧隔弧罩(图中①)按
箭头方向推入到底;
2.将限制件(图中②、③)分别插入
方孔中;
3.零飞弧隔弧罩有两种,板前接线无
图中B,板后接线无图中A.

Instruction of the “0” arc-over products
(CM1-63,CM1-100):(1)Push the “0”
arc-over enclosure to the bottom along the
arrow direction (① in the figure).(2)Insert
the banking pin into the squarehole (② &
③ in the figure).(3)There are two types of
the “0” arc-over enclosure: “wiring in
front of the board” no B and “wiring on
back of the board” no A in the figure.

CM1-160(C、L、M、H)板前接线 (三极、四极)

Wiring in front of the board (CM1-160C、L、M、H,three and four poles)

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



型号 type	H	H ₁
CM1-160C、CM1-160L	86	110
CM1-160M、CM1-160H	103	127

板前接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring in front of the board.

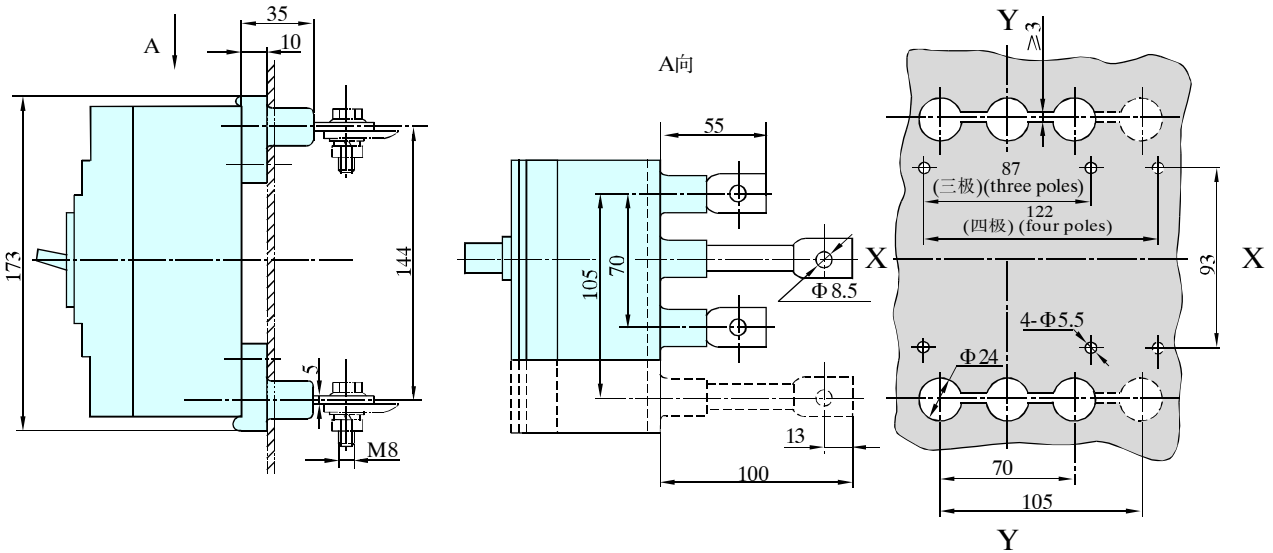
欠电压脱扣器厚度:
对A型、B型 m=12
C型 m=21
The thickness of under-voltage release:
type A & type B: m=12
type C: m=21



CM1-160(C、L、M、H)板后接线 (三极、四极)

Wiring on back of the board (CM1-160C、L、M、H,three and four poles)

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

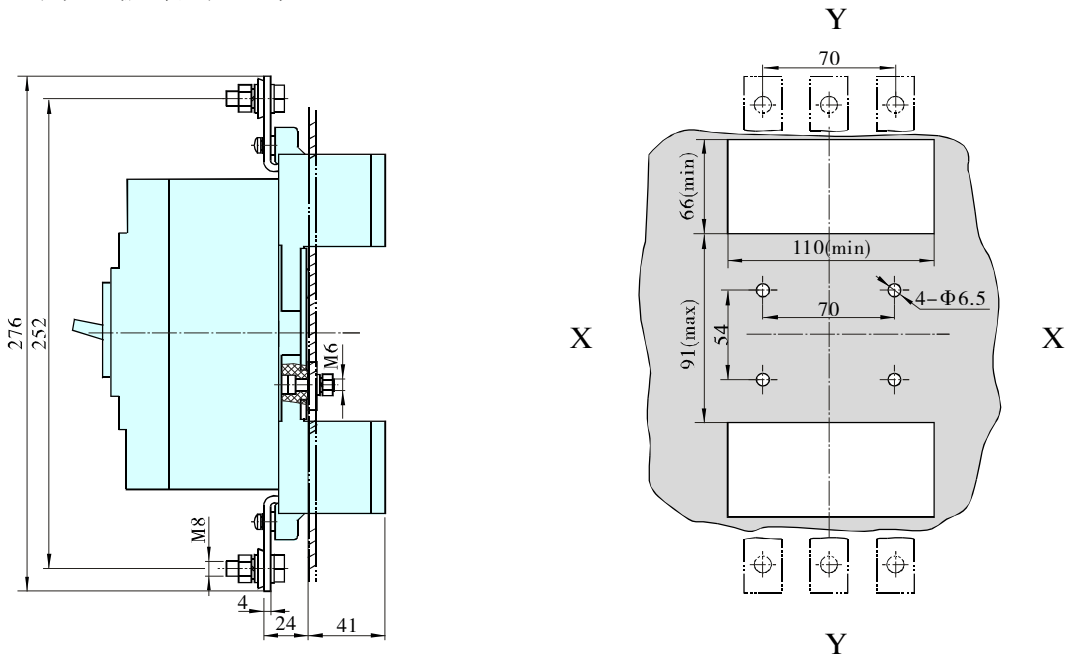


板后接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring on back of the board.

CM1-160(C、L、M、H)插入式板前接线 (三极)

Insertion type in front of the board (CM1-160C、L、M、H,three poles)

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



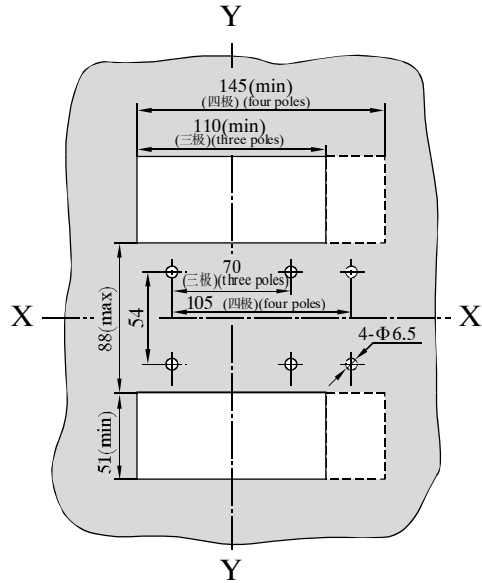
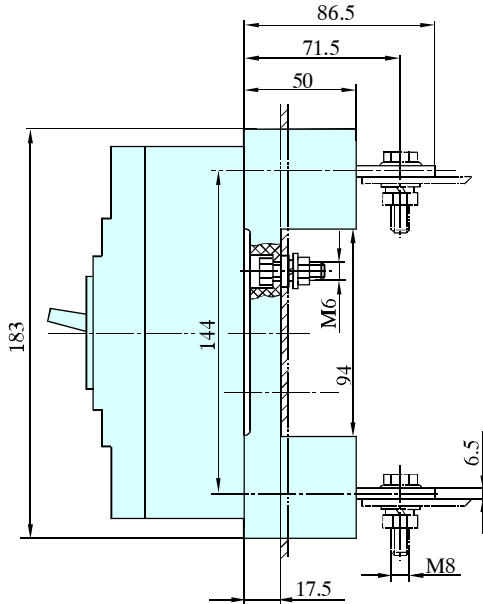
插入式板前接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring in front of the board.



CM1-160(C、L、M、H)插入式板后接线 (三极、四极)

Insertion type on back of the board (CM1-160C、L、M、H,three and four poles)

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

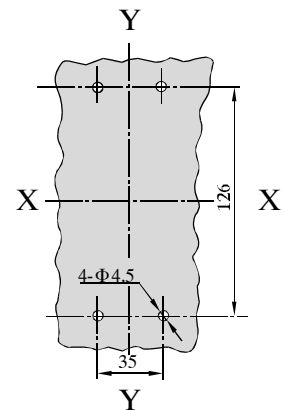
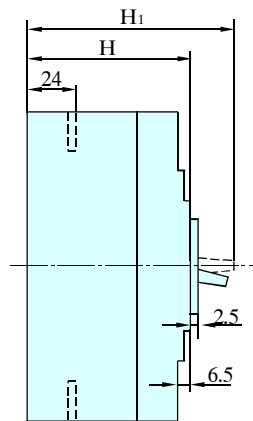
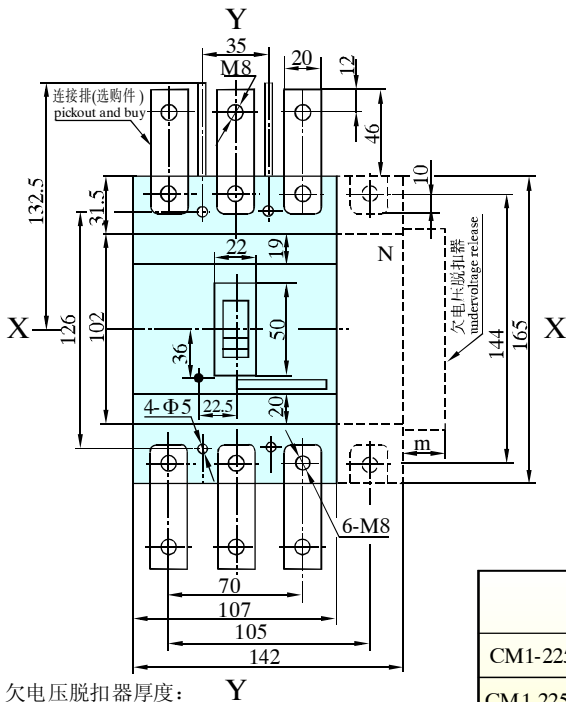


插入式板后接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring on back of the board.

CM1-225(C、L、M、H)板前接线 (三极、四极)

Wiring in front of the board (CM1-225C、L、M、H,three and four poles)

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



型号 type	H	H ₁
CM1-225C、CM1-225L	86	110
CM1-225M、CM1-225H	103	127

板前接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring in front of the board.

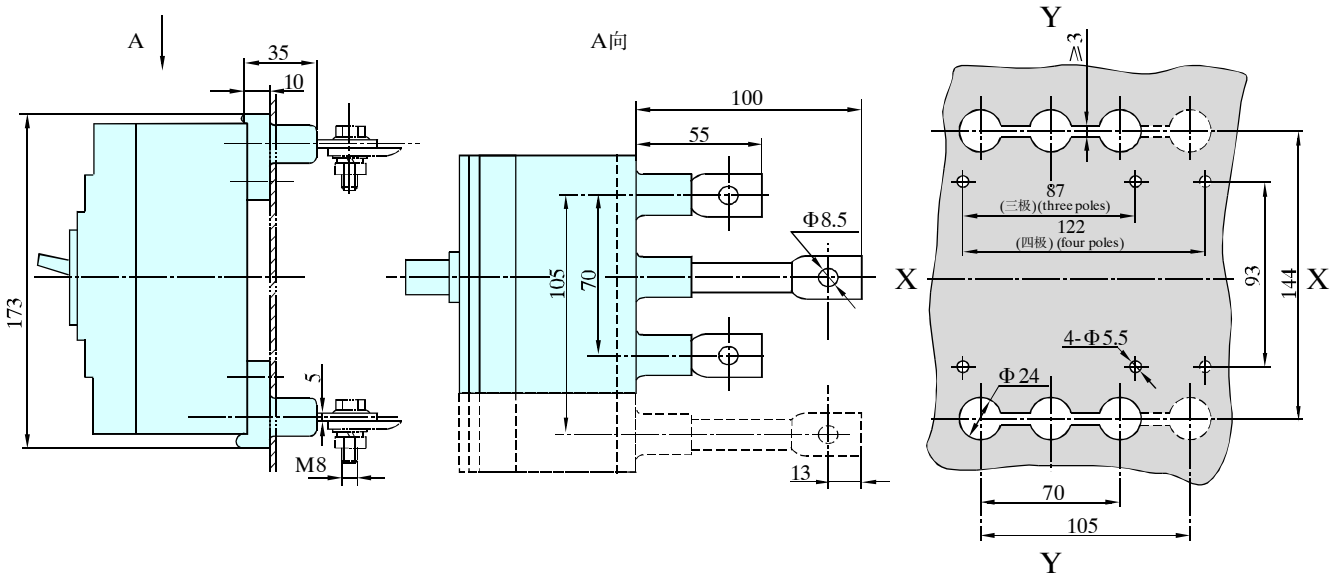
欠电压脱扣器厚度:
对A型、B型 m=12
C型 m=21
The thickness of under-voltage release:
type A & type B: m=12
type C: m=21



CM1-225(C、L、M、H)板后接线 (三极、四极)

Wiring on back of the board (CM1-225C、L、M、H,three and four poles)

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

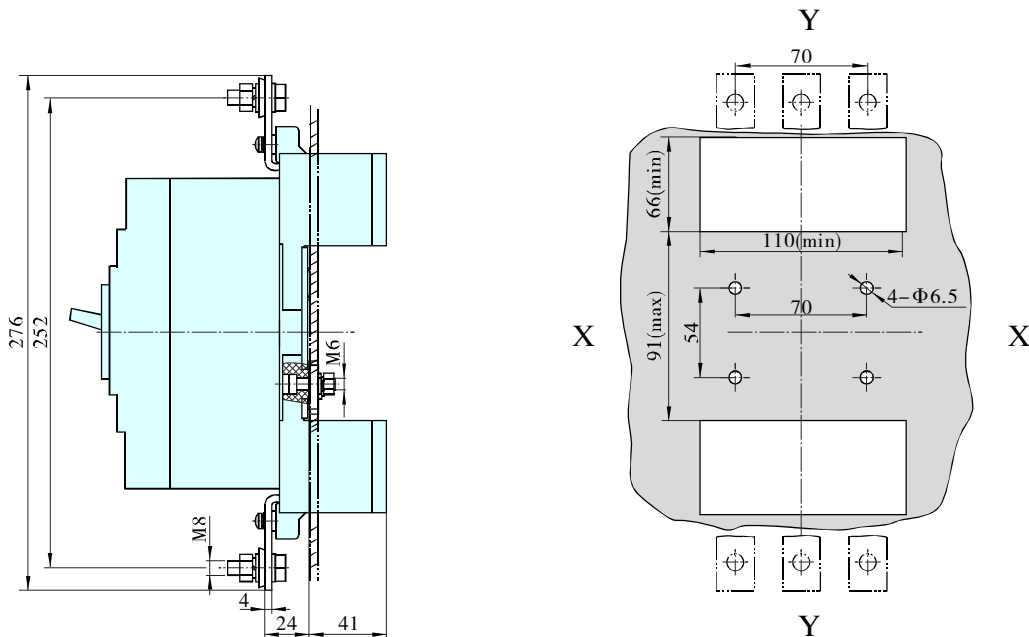


板后接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring on back of the board.

CM1-225(C、L、M、H)插入式板前接线 (三极)

Wiring in front of the board (CM1-225C、L、M、H,three and four poles)

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



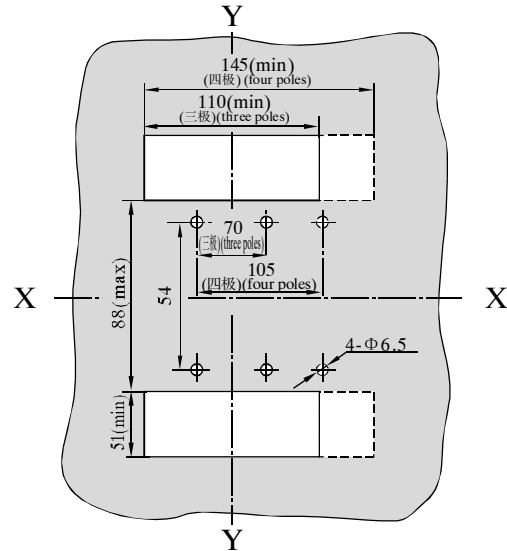
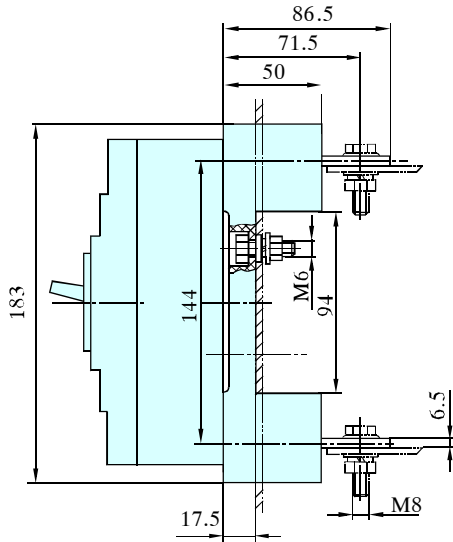
插入式板前接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring in front of the board.



CM1-225(C、L、M、H)插入式板后接线（三极、四极）

Insertion type on back of the board (CM1-225C、L、M、H,three and four poles)

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

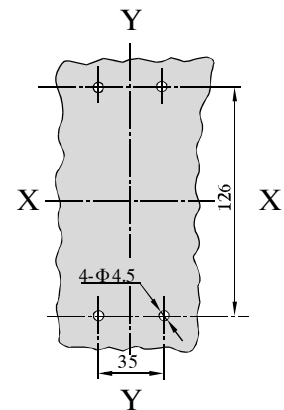
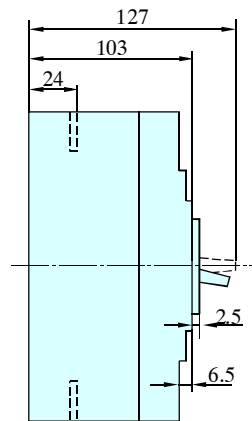
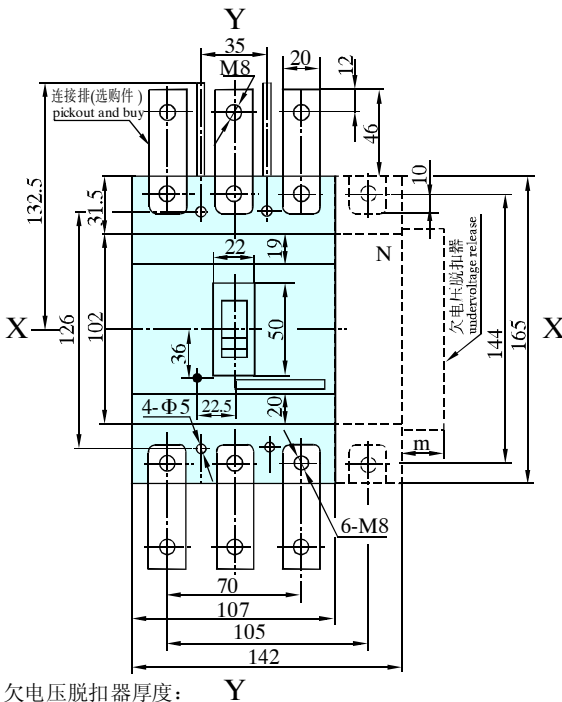


插入式板后接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring on back of the board.

CM1-250(L、M、H)板前接线（三极、四极）

Wiring in front of the board (CM1-250L、M、H,three and four poles)

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



板前接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring in front of the board.

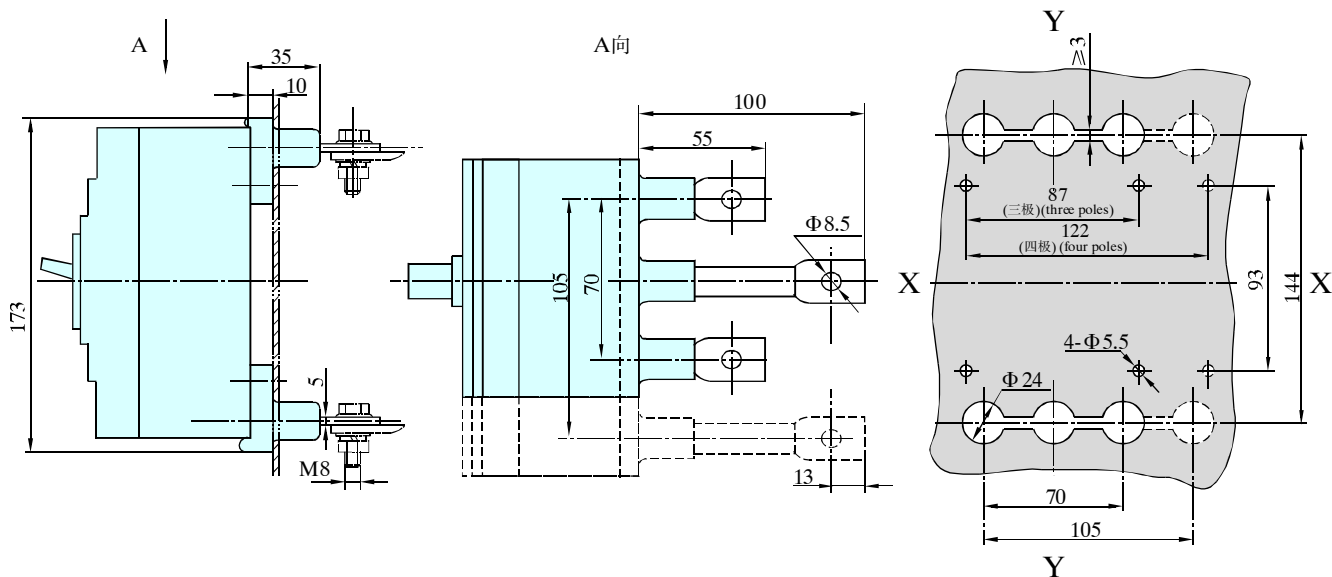
欠电压脱扣器厚度：
对A型、B型 m=12
C型 m=21
The thickness of under-voltage release:
type A & type B: m=12
type C: m=21



CM1-250(L、M、H)板后接线（三极、四极）

Wiring on back of the board (CM1-250L、M、H, three and four poles)

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

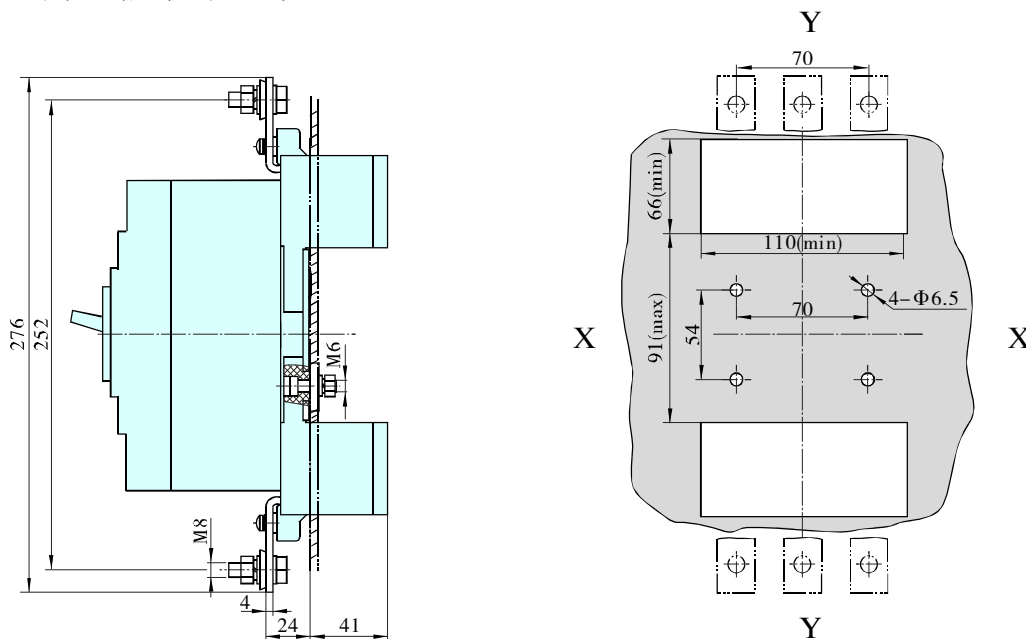


板后接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring on back of the board.

CM1-250(L、M、H)插入式板前接线（三极）

Wiring in front of the board (CM1-250L、M、H, three and four poles)

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



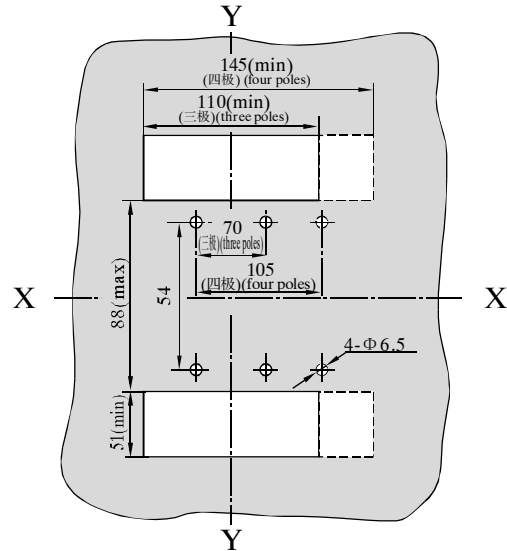
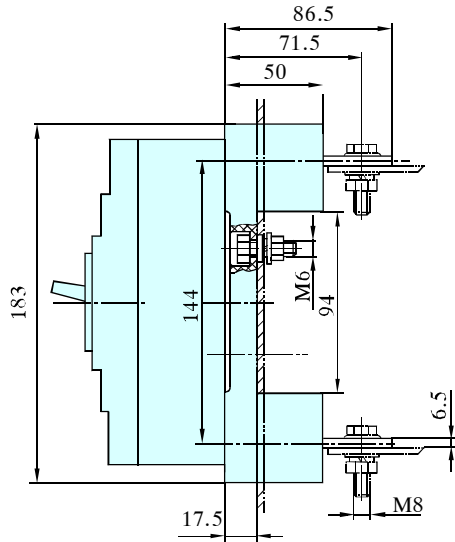
插入式板前接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring in front of the board.



CM1-250(L、M、H)插入式板后接线（三极、四极）

Insertion type on back of the board (CM1-250L、M、H,three and four poles)

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

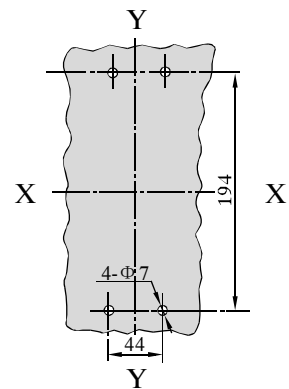
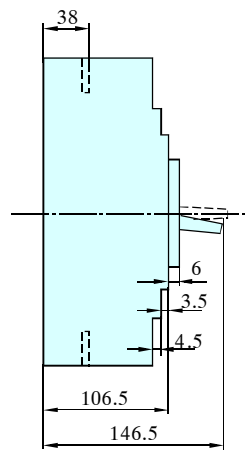
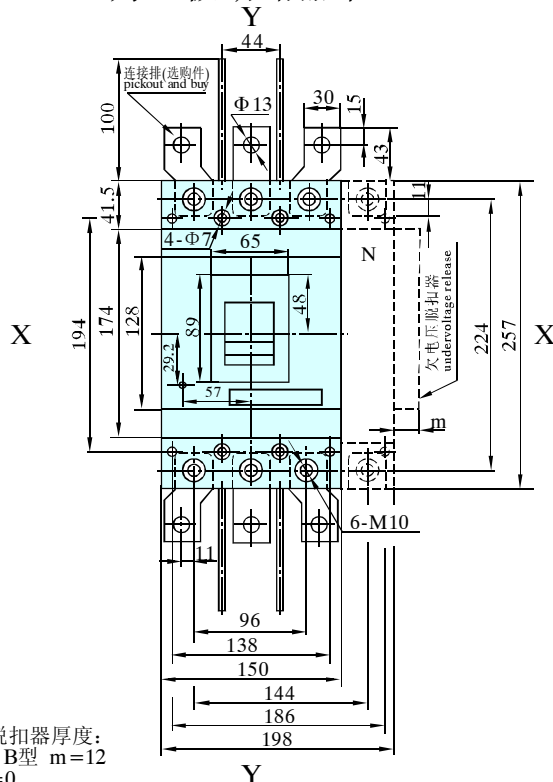


插入式板后接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring on back of the board.

CM1-400(C、L、M、H)板前接线（三极、四极）

Wiring in front of the board (CM1-400C、L、M、H,three and four poles)

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



板前接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring in front of the board.

欠电压脱扣器厚度：
对A型、B型 m=12
C型 m=0

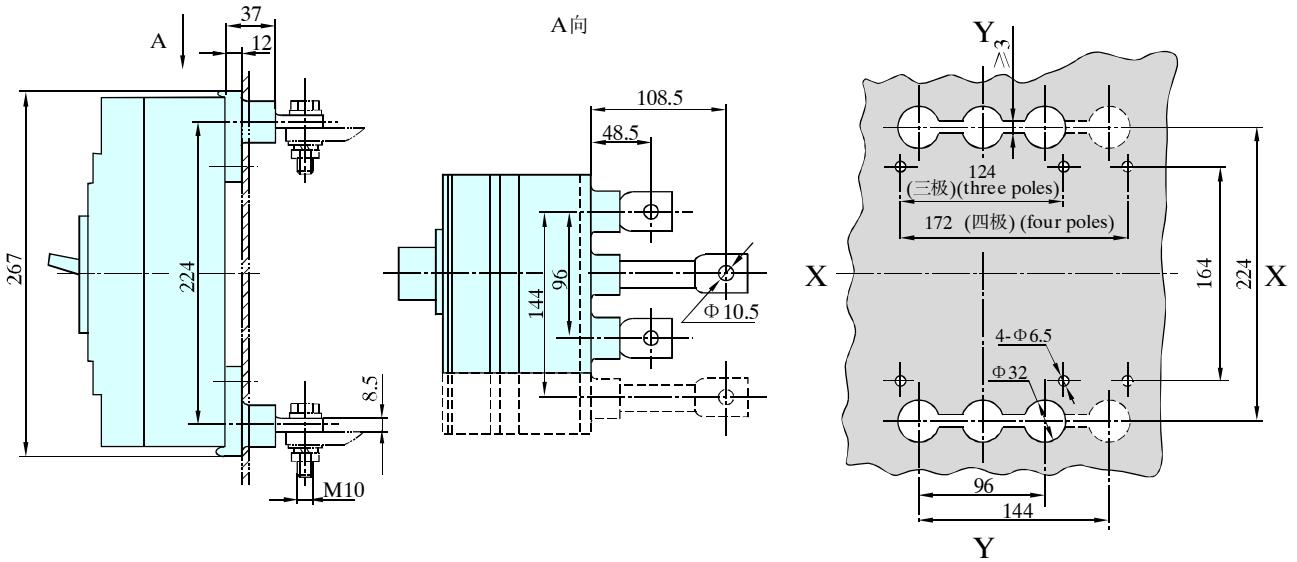
The thickness of under-voltage release:
type A & type B: m=12
type C: m=0



CM1-400(C、L、M、H)板后接线 (三极、四极)

Wiring on back of the board (CM1-400C、L、M、H,three and four poles)

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

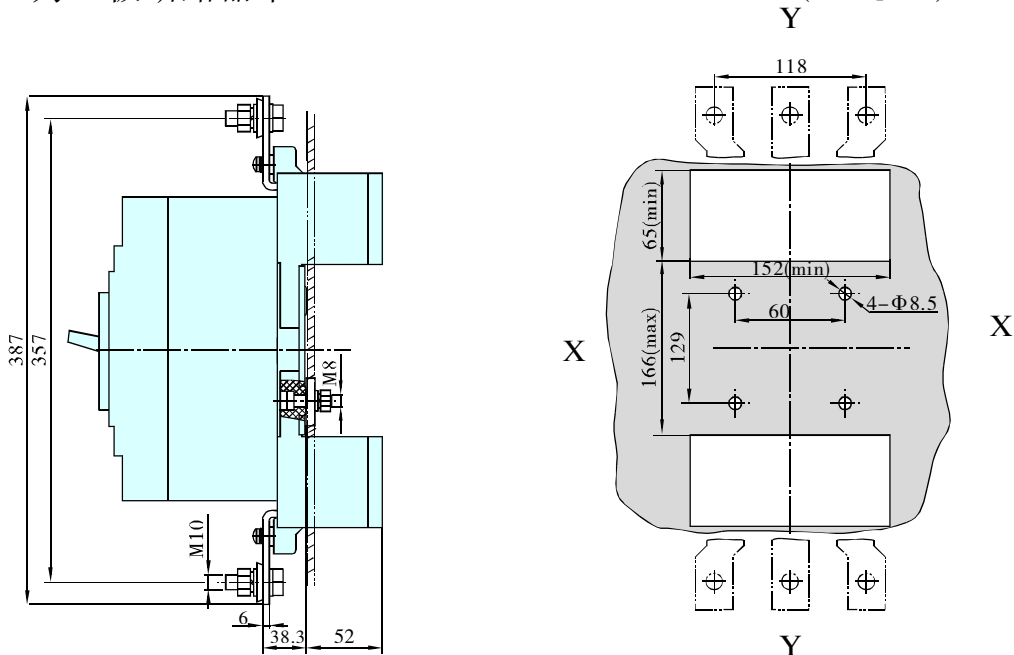


板后接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring on back of the board.

CM1-400(C、L、M、H)插入式板前接线 (三极)

Wiring in front of the board (CM1-400C、L、M、H,three and four poles)

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



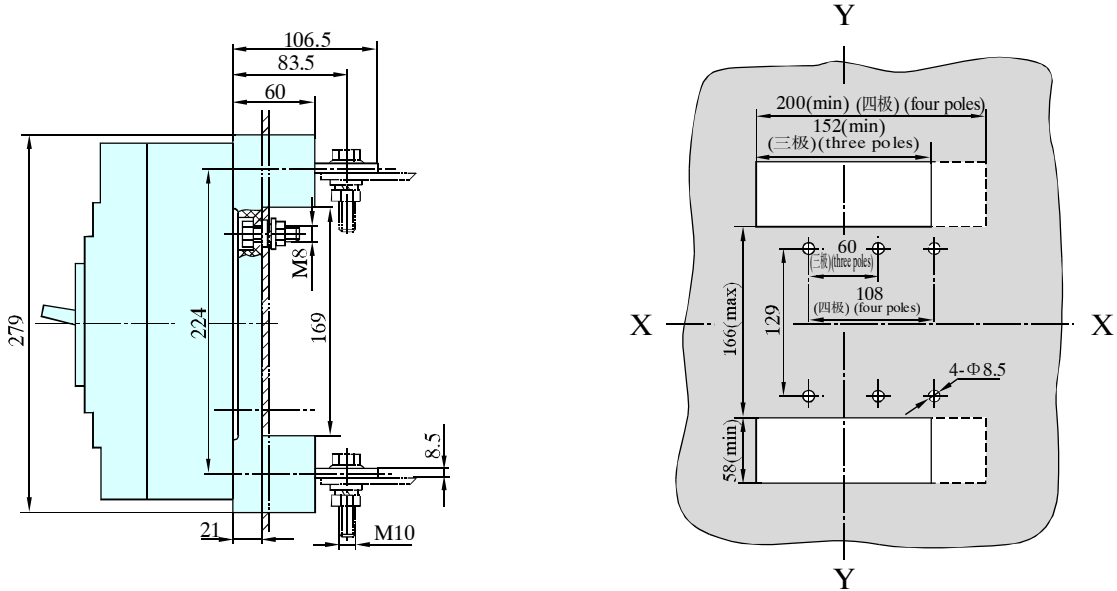
插入式板前接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring in front of the board.



CM1-400(C、L、M、H)插入式板后接线（三极、四极）

Insertion type on back of the board (CM1-400C、L、M、H,three and four poles)

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

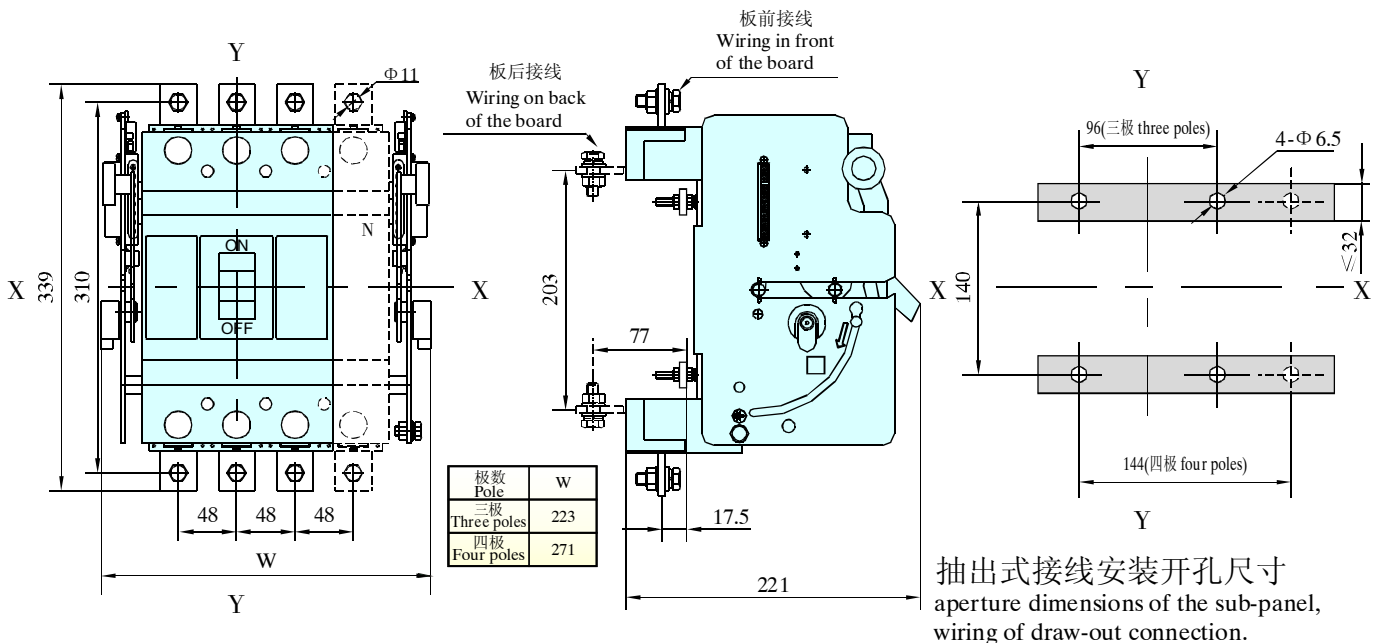


插入式板后接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring on back of the board.

CM1-400(C、L、M、H)抽出式接线（三极、四极）

Wiring of draw-out connection (CM1-400C、L、M、H,three and four poles)

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



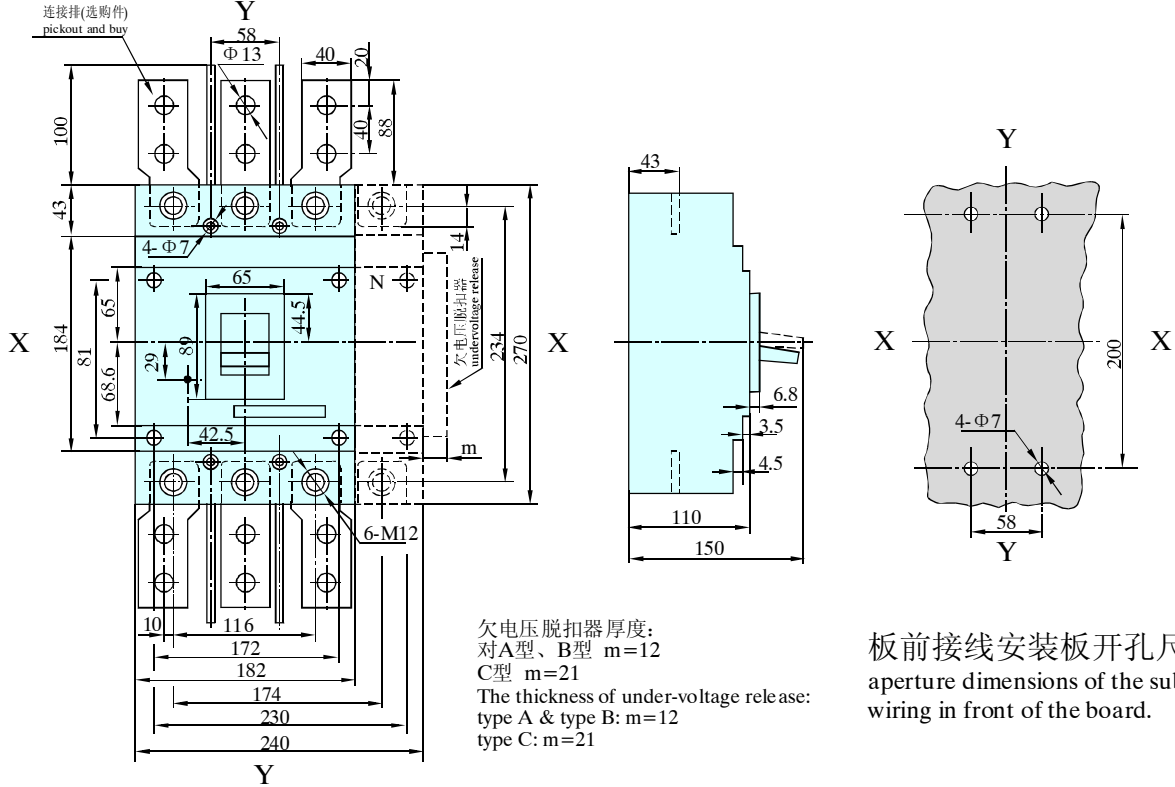
抽出式接线安装开孔尺寸
aperture dimensions of the sub-panel,
wiring of draw-out connection.



CM1-630(C、L、M、H)板前接线 (三极、四极)

Wiring in front of the board (CM1-630C、L、M、H,three and four poles)

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

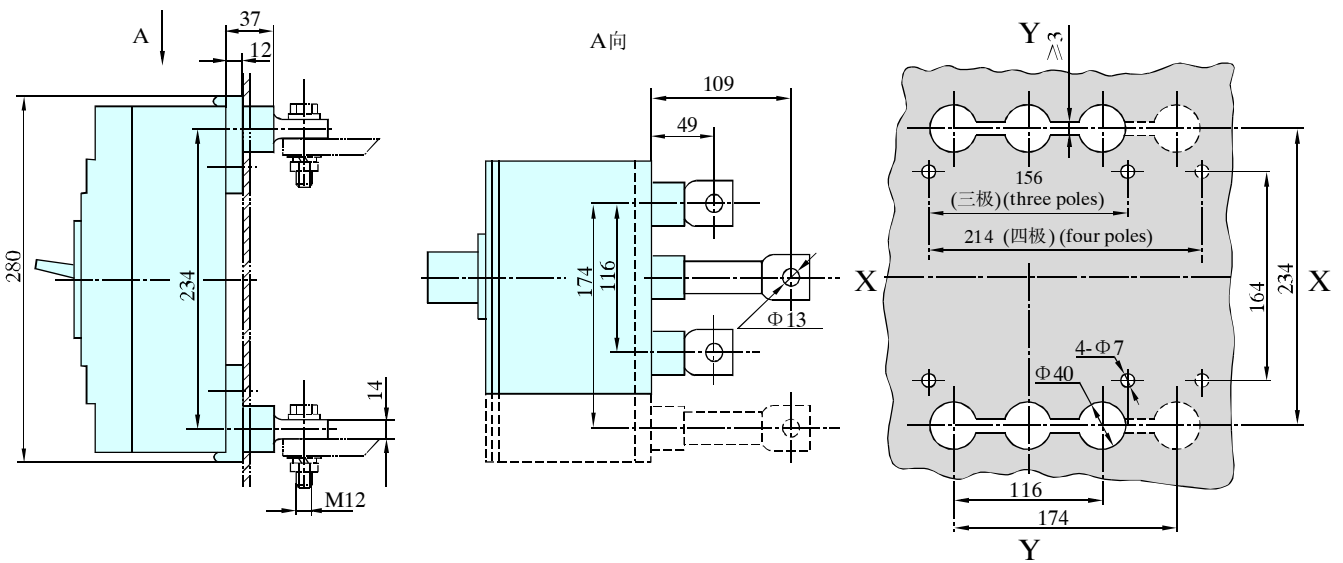


板前接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring in front of the board.

CM1-630(C、L、M、H)板后接线 (三极、四极)

Wiring on back of the board (CM1-630C、L、M、H,three and four poles)

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



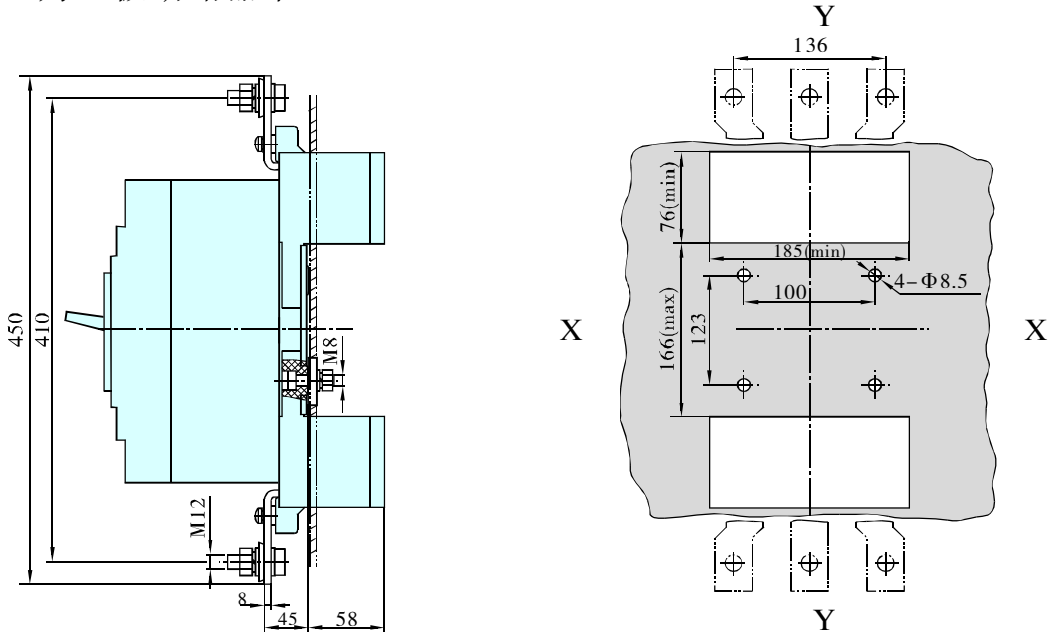
板后接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring on back of the board.



CM1-630(C、L、M、H)插入式板前接线 (三极)

Wiring on back of the board (CM1-630C、L、M、H,three and four poles)

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

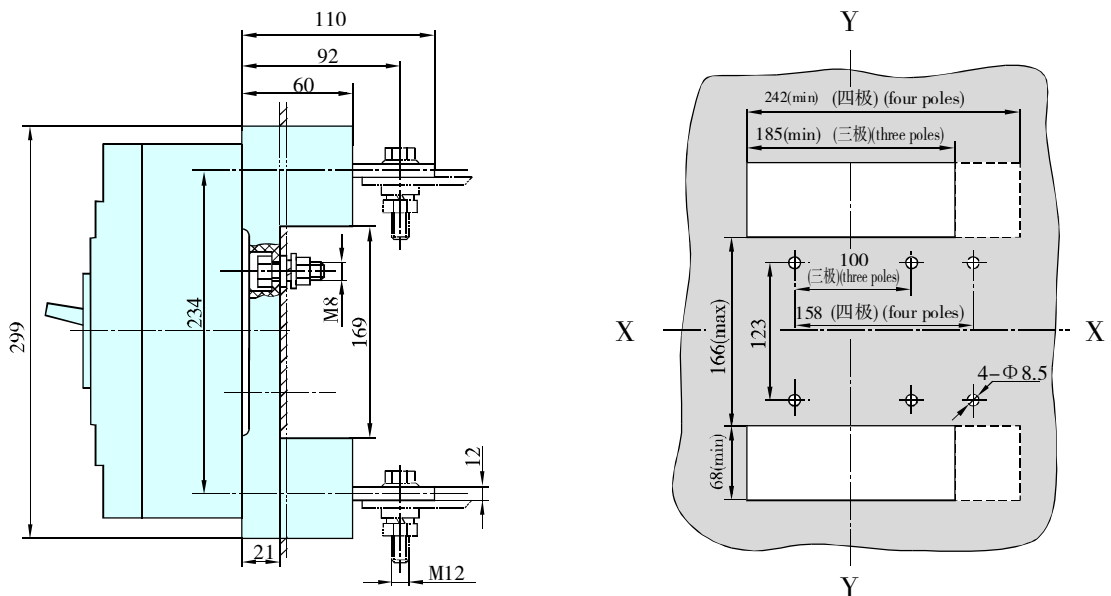


插入式板前接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring on back of the board.

CM1-630 (C、L、M、H) 插入式板后接线 (三极、四极)

Insertion type on back of the board (CM1-630C、L、M、H,three and four poles)

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



插入式板后接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring on back of the board

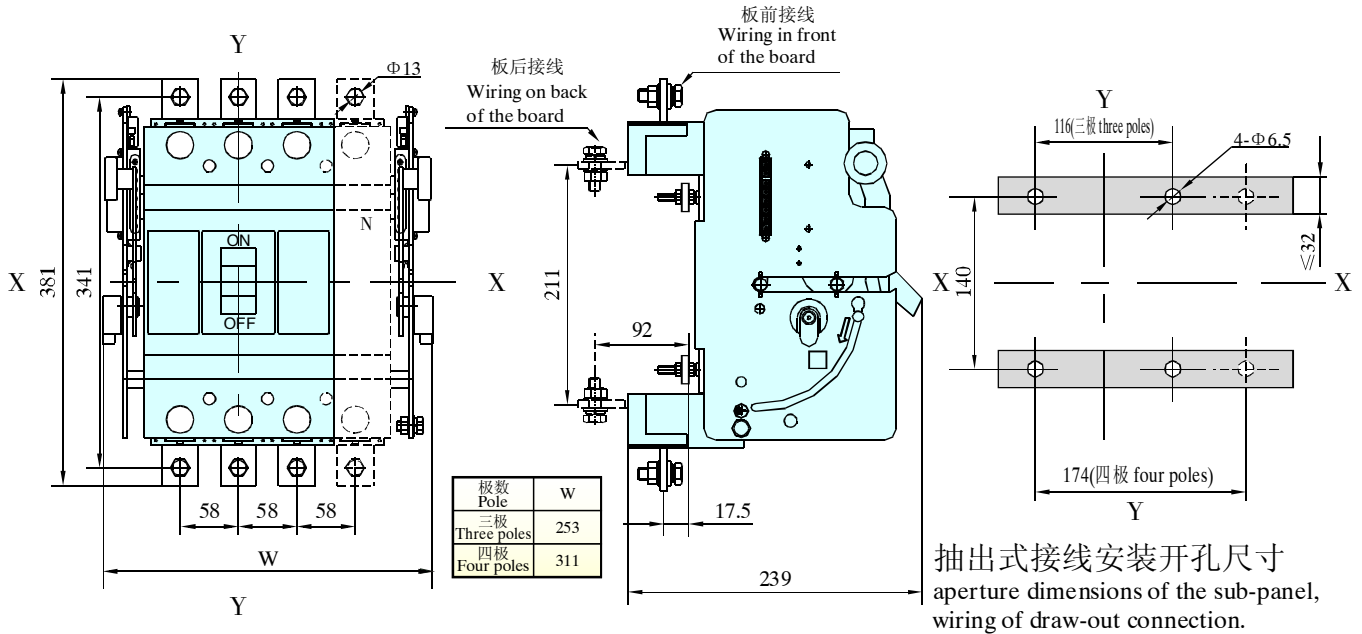


外形尺寸及安装尺寸 OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

CM1-630(C、L、M、H)抽出式接线 (三极、四极)

Wiring of draw-out connection (CM1-630C、L、M、H,three and four poles)

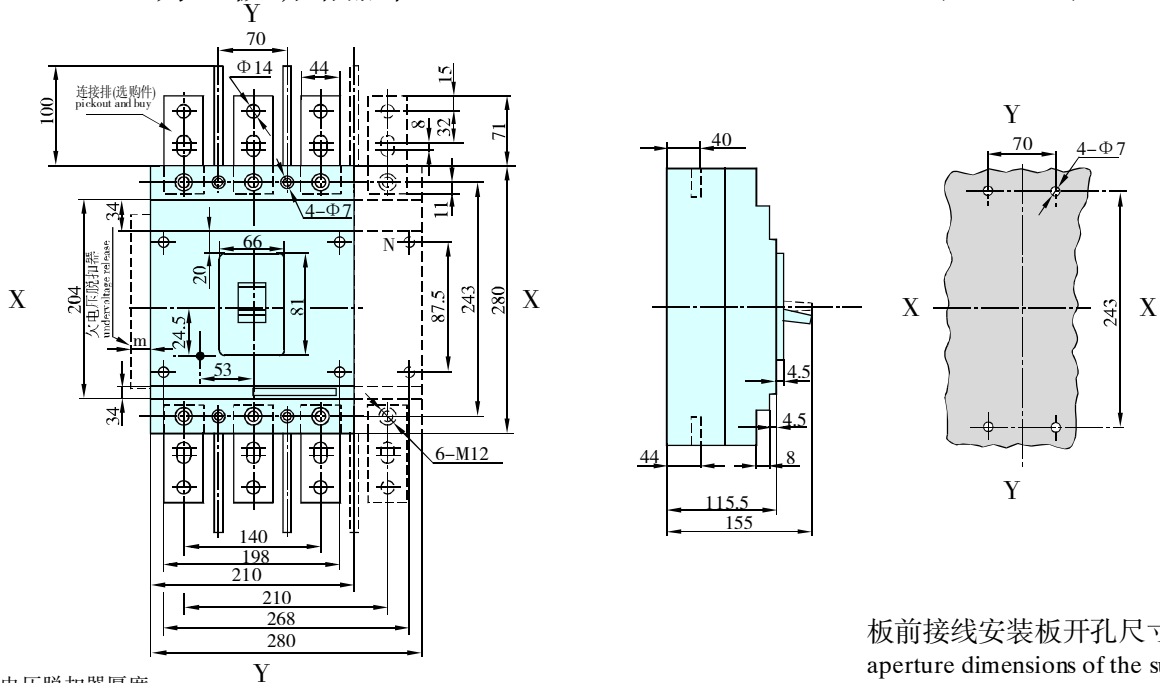
X-X、Y-Y为三极断路器中心 X-X,Y-Y as the center of the breaker (three poles)



CM1-800 (M、H) 板前接线 (三极、四极)

Wiring in front of the board CM1-800(M、H) (three poles、four poles)

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



欠电压脱扣器厚度:

对A型、B型 m=12

C型 m=0

The thickness of under-voltage release:

type A & type B: m=12

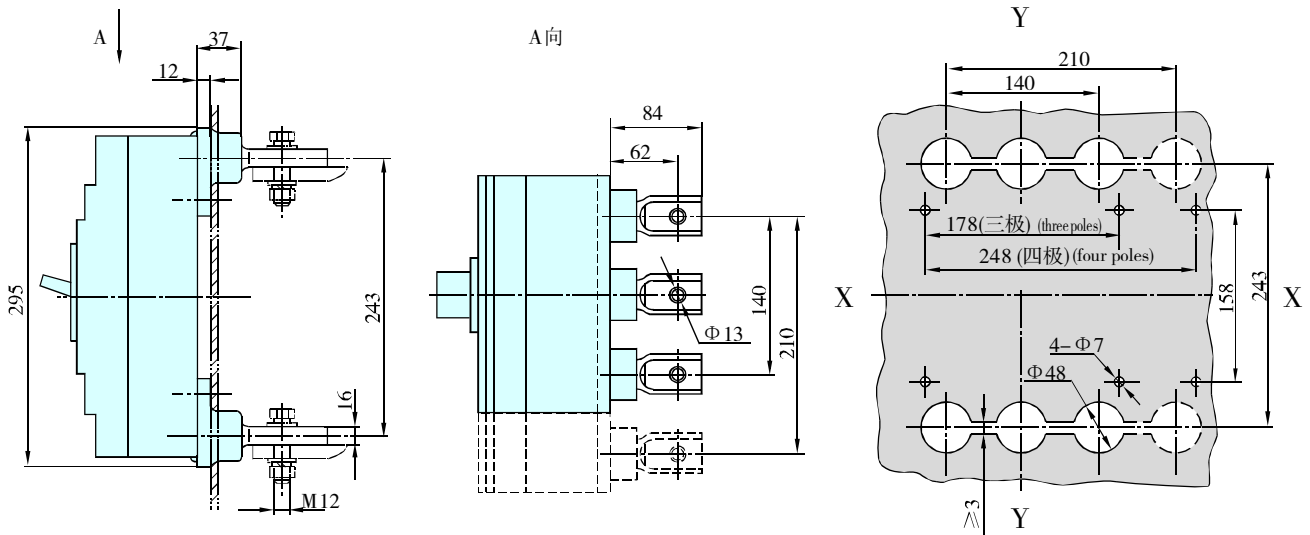
type C: m=0



CM1-800M、H板后接线（三极、四极）

Wiring on back of the board CM1-800M、H (three poles、four poles)

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

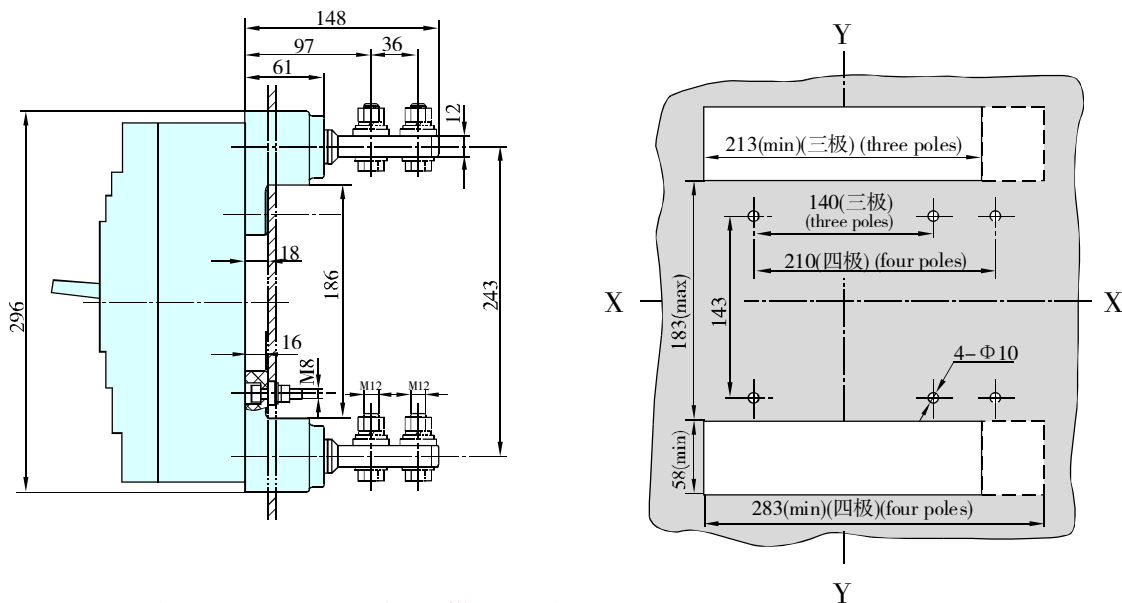


板后接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring in back of the board.

CM1-800（M、H）插入式板后接线（三极、四极）

Insertion type on back of the board CM1-800(M、H) (three poles、four poles)

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



插入式板后接线安装板开孔尺寸
aperture dimensions of the sub-panel,
wiring on back of the board

注：CM1-800中800A电流规格暂不供插入式。

Note:The insertion type breaker with rated current of 800A in CM1-800 series is not supplied presently.



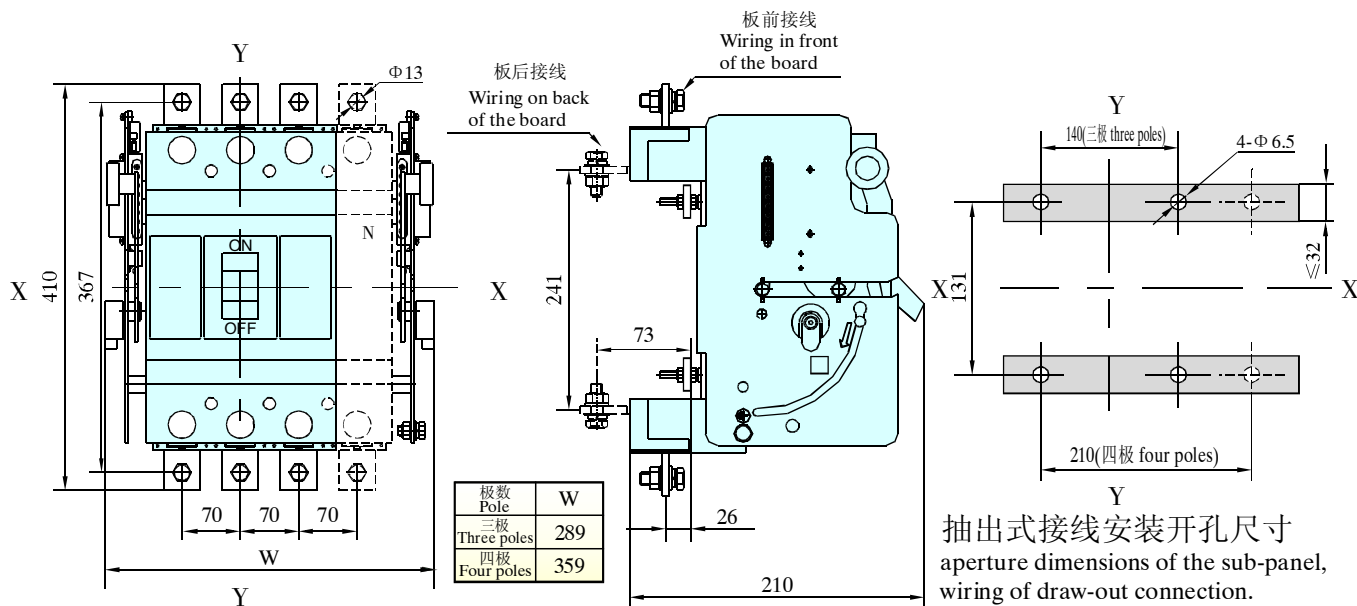
外形尺寸及安装尺寸

OUTLINE DIMENSIONS AND MOUNTING DIMENSIONS

CM1-800(M、H)抽出式接线（三极、四极）

Wiring of draw-out connection (CM1-800M、H,three and four poles)

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



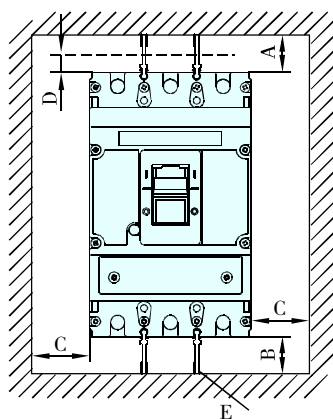
注：CM1-800中800A电流规格暂不供抽出式。

Note:The draw-out connection type breaker rated current of 800A in CM1-800 series is not supplied presently.



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			
CM1-63	—	25	25	25	25
CM1-100	50	25	25	25	25
CM1-160、225、250	50	—	25	25	25
CM1-400	100	—	25	25	25
CM1-630	100	—	25	25	25
CM1-800	100	—	25	25	25

注：CM1-63必须安装零飞弧罩，A为25mm；CM1-100必须安装相间隔板或零飞弧罩，可选择。

Note:zero arcing covers should be installed for CM1-63,A is 25mm ;the interphase barriers or zero arcing covers should be installed,may be selected.



1、断路器的内部附件 1.The internal accessories of the breaker

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）。

According to user's demands, accessories could lead to direct wire outcoming or line wiring terminals could be added (please mark out in case of making order) .

● QTCM1欠电压脱扣器，符号 ○ Under-voltage release

欠电压脱扣器分三种型号： There are three types for Under-voltage release:

A型： AC50Hz/60Hz 110V、230V、400V； DC 110V、220V；

B型： AC50Hz/60Hz 400V(三相保护-即断相保护)；

C型： AC50Hz/60Hz 230V、400V。

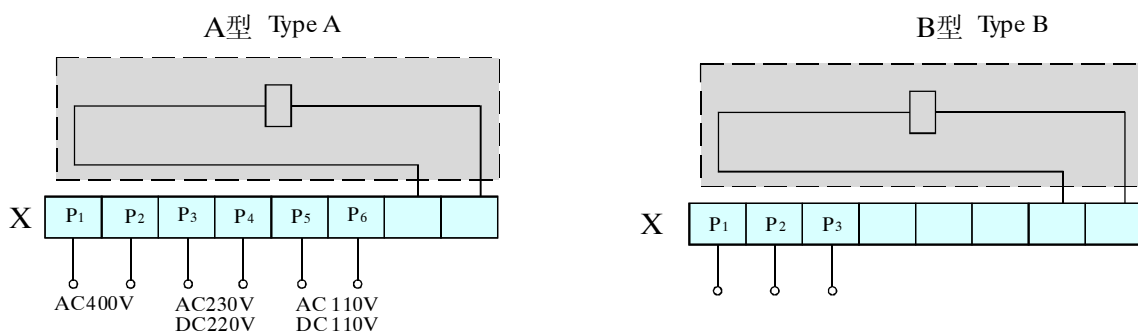
Type A: AC50Hz/60Hz 110V、230V、400V； DC 110V、220V；

Type B: AC50Hz/60Hz 400V(three phase protection i.e. open phase protection)；

Type C: 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)

Wiring diagram of the under-voltage module connected externally (inner accessories are indicated in the dotted square)

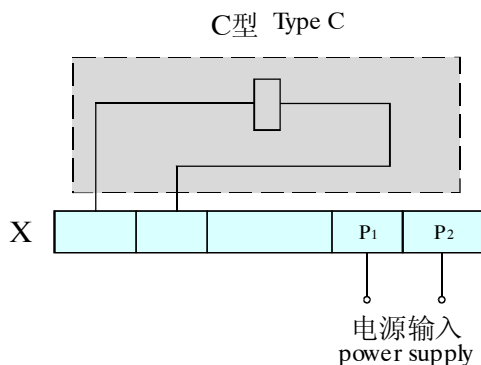


电源输入
power supply

符号说明：
X为接线端子排

电源输入
power supply

Description:
“X” stands for line wiring terminals





欠电压脱扣器功率见表九

Power of the under-voltage release see Table 9

表九 Table 9

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) Power of the under-voltage release(VA)	
			AC230V	AC400V
QTCM1-63Y	CM1-63 三极 three poles	右面right	3.5	3.3
QTCM1-63YS	CM1-63 四极 four poles			
QTCM1-100Y	CM1-100 二极、三极 two/three poles	右面right	2.6	3.3
QTCM1-100YS	CM1-100 四极 four poles			
QTCM1-225Y	CM1-160、225 二极、三极 two/three poles CM1-250 三极 three poles	右面right	3.8	3.3
QTCM1-225YS	CM1-160、225、250 四极 four poles			
QTCM1-400Y	CM1-400三极、四极 three/four poles	右面right	3.7	2.7
QTCM1-630Y	CM1-630 三极 three poles	右面right	2.3	2.7
QTCM1-630YS	CM1-630 四极 four poles			
QTCM1-800Z	CM1-800 三极、四极 three/four 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。

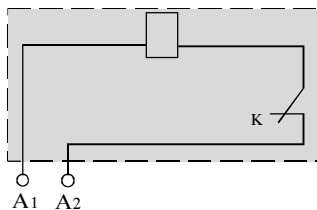
Under the voltage of 35%~70% of the rated voltage,the under-voltage release should make the breaker trip correctly.
Under the voltage of 85%~110% of the rated voltage,the under-voltage release should make the breaker close.
In case of the operation voltage less than 35% of the rated voltage,the under-voltage should prevent the breaker from closing.

警告：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！

Note:Only the under-voltage release should be energized in advanced,the breaker could be recramped and turned-on,otherwise the breaker will be damaged.

● FTCM1分励脱扣器，符号 ● Shunt release

接线图 (虚框内为断路器内部附件) Scheme of wiring(the internal accessories in the dotted frame)



电源输入 power supply

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” is the slow motion switch normal-close contact conneted the coil in series in the shunt release.It turns-on or turns-off voluntarily as soon as the breaker on or off.

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

在额定控制电源电压Us的70~110%之间时，分励脱扣器应可靠使断路器脱扣。

Voltage rating: AC50Hz/60Hz 230V or 400V;DC220V or 24V.

The shunt release should make the breaker trip reliably when the operation voltage is 70%~110% of the rated control voltage.



分励脱扣器型号 Shunt release type	配用断路器 Fitting breaker	安装位置 Mounting position
FTCM1-63Z	CM1-63 三极、四极 three/four poles	左面 left
FTCM1-63Y		右面 right
FTCM1-100Z	CM1-100 三极、四极 three/four poles	左面 left
FTCM1-100Y	CM1-100 二极、三极 two/three poles	右面 right
FTCM1-100YS	CM1-100 四极 four poles	右面 right
FTCM1-225Z	CM1-160、225、250 三极、四极 three/four poles	左面 left
FTCM1-225Y	CM1-160、225 二极、三极 two/three poles	右面 right
FTCM1-225YS	CM1-160、225、250 四极 four poles	右面 right
FTCM1-400Z	CM1-400 三极、四极 three/four poles	左面 left
FTCM1-630Z	CM1-630 三极、四极 three/four poles	左面 left
FTCM1-630Y		右面 right
FTCM1-800Y	CM1-800 三极、四极 three/four 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）须满足下表条件，脱扣器接线端处的电源功率须满足最小50W要求。

Note: While selecting DC24V voltage of the rated control power supply, selecting two project.

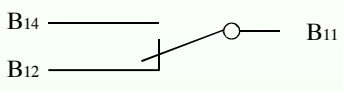
Project1: Selecting DC24V release, but satisfy right table, and min-power capacity is 50W.

额定控制电源电压Us(DC24V) The rated control voltage	导线截面积 Wire area	1.5mm ²	2.5mm ²
	100%Us		150m
85%Us		100m	160m

方案2，采用DC24V中间继电器控制AC230V或400V分励脱扣器，中间继电器触点容量不小于1A。

Project2: Selecting the inter mediate relay of DC24V with 1A current capacity of its contactor.

● BCCM1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
BCCM1-63Z	CM1-63 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>
BCCM1-100Z	CM1-100 三极、四极 three/four poles	左面 left	
BCCM1-225Z	CM1-160、225、250 三极、四极 three/four poles	左面 left	
BCCM1-400Y	CM1-400 三极、四极 three/four poles	右面 right	
BCCM1-400Z		左面 left	
BCCM1-630Z	CM1-630 三极、四极 three/four poles	左面 left	
BCCM1-800Z	CM1-800 三极、四极 three/four poles	左面 left	



● FCCM1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
FCCM1-63Z	CM1-63 三极、四极 three/four poles	左面 left	
FCCM1-63Y		右面 right	
FCCM1-100Z	CM1-100 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>
FCCM1-100Y	CM1-100 二极、三极、四极 two/three/four poles	右面 right	
FCCM1-225Z	CM1-160、225、250 三极、四极 three/four poles	左面 left	
FCCM1-225Y	CM1-160、225二极、三极、四极 two/three/four poles CM1-250 三极、四极 three/four poles	右面 right	
FCCM1-63ZS	CM1-63 三极、四极 three/four poles	左面 left	
FCCM1-100ZS	CM1-100 三极、四极 three/four poles	左面 left	
FCCM1-225ZS	CM1-160、225、250 三极、四极 three/four poles	左面 left	
FCCM1-400ZS	CM1-400 三极、四极 three/four poles	左面 left	
FCCM1-400YS		右面 right	
FCCM1-630ZS	CM1-630 三极、四极 three/four poles	左面 left	
FCCM1-630YS		右面 right	
FCCM1-800ZS	CM1-800 三极、四极 three/four poles	左面 left	
FCCM1-800YS		右面 right	

● FBCM1辅助触头+报警触头, 符号 □ Auxiliary and alarm Contact

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
FBCM1-63Z	CM1-63 三极、四极 three/four poles	左面 left	
FBCM1-100Z	CM1-100 三极、四极 three/four poles	左面 left	
FBCM1-225Z	CM1-160、225、250 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>
FBCM1-400Z	CM1-400 三极、四极 three/four poles	左面 left	
FBCM1-400Y		右面 right	
FBCM1-630Z	CM1-630 三极、四极 three/four poles	左面 left	
FBCM1-800Z	CM1-800 三极、四极 three/four poles	左面 left	



- 辅助触头、报警触头额定电流见表十 Rated current of the auxiliary contact and alarm contact see following Table 10 please
表十 Table 10

分类 Classifications	壳架等级额定电流(A) Rated frame current (A)	约定发热电流 I_{th} (A) Conventional thermal current (I _{th})	额定工作电流 I_e (A) Rated working current	
			AC400V	DC220V
辅助触头 Auxiliary 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

- 辅助触头的通电操作性能及相应的试验条件见表十一
Electrical performance of auxiliary contact and the corresponding test condition see table 11

表十一 Table 11

使用类别 Service category	接通 On			分断 Off			通电操作 循环次数 Electrical operation times	每分钟操作 循环次数*) Operation times per minute	通电时间*) Duration under current
	I/Ie	U/UE	cos φ 或 T _{0.95}	I/Ie	U/UE	cos φ 或 T _{0.95}			
AC-15	10	1	0.3	1	1	0.3	6050	6	≥0.05s
DC-13	1	1	6Pe	1	1	6Pe			≥T _{0.95}

- 辅助触头的非正常条件下接通与分断能力见表十二
The on-off ability of the auxiliary contact under improper condition see following Table 12 please:

表十二 Table 12

使用类别 Service category	接通 On			分断 Off			通电操作 循环次数 Electrical operation times	每分钟操作 循环次数*) Operation times per minute	通电时间*) Duration under current
	I/Ie	U/UE	cos φ 或 T _{0.95}	I/Ie	U/UE	cos φ 或 T _{0.95}			
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			≥T _{0.95}

注:上述二表1.T_{0.95}=6Pe是经验公式,其中Pe以“瓦”单位,T_{0.95}毫秒为单位。

2.当断路器的操作性能总次数小于6050次时,则辅助触头的通电操作性能次数可与断路器操作性能总次数相等。

3.操作频率和通电时间允许与断路器主电路的一致。

Note:for the above two tables:

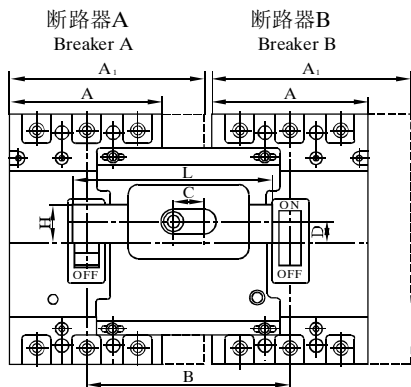
1. “T_{0.95}=6Pe” is a traditional formula in which watt is unit of “Pe” and mini-second is unit of “T_{0.95}”.

2.If the total operation times of the breaker is less than 6050,the operation times of electrical performance of the auxiliary contact will be equal to that of the breaker.

3.Frequency and duration under current of the auxiliary contact could be same as that of the main circuit of the breaker.

2、断路器的外部附件 2.The external accessories of the breaker

- 两台断路器的机械联锁机构 The mechanical interlock mechanism between two breakers



LCM1-63	78	102	46	13	95	22	用于CM1-63L、M For CM1-63L、M	
LCM1-100	92	120	46	11.5	118	22	用于CM1-100C、L、M、H For CM1-100C、L、M、H	
LCM1-160	107	135	46	9	130	22	用于CM1-160C、L、M、H For CM1-160C、L、M、H	
LCM1-225	107	135	46	9	130	22	用于CM1-225C、L、M、H For CM1-225C、L、M、H	
LCM1-250	107	135	46	9	130	22	用于CM1-250L、M、H For CM1-250L、M、H	
LCM1-400	150	190	46	16	175	22	用于CM1-400C、L、M、H For CM1-400C、L、M、H	
LCM1-630	182	220	46	12	198	22	用于CM1-630C、L、M、H For CM1-630C、L、M、H	
LCM1-800	210	240	46	29.5	230	20	用于CM1-800M、H For CM1-800M、H	
LCM1-63/4P	103	132	46	13	125	22	用于CM1-63四极 For CM1-63 four poles	
LCM1-100/4P	122	152	46	11.5	150	22	用于CM1-100四极 For CM1-100 four poles	
LCM1-160/4P	142	173	46	9	168	22	用于CM1-160四极 For CM1-160 four poles	
LCM1-225/4P	142	173	46	9	168	22	用于CM1-225四极 For CM1-225 four poles	
LCM1-250/4P	142	173	46	9	168	22	用于CM1-250四极 For CM1-250 four poles	
LCM1-400/4P	198	240	46	16	225	22	用于CM1-400四极 For CM1-400 four poles	
LCM1-630/4P	240	280	46	12	258	22	用于CM1-630四极 For CM1-630 four poles	
LCM1-800/4P	280	310	46	29.5	300	20	用于CM1-800四极 For CM1-800 four poles	
产品名称 Name of the product	A	A ₁	B	C	D	L	H	备注 Note

注:安装LCM1机械联锁机构后,断路器不能带分励脱扣器、欠电压脱扣器、电动操作机构、转动手柄操作机构中的任一附件。

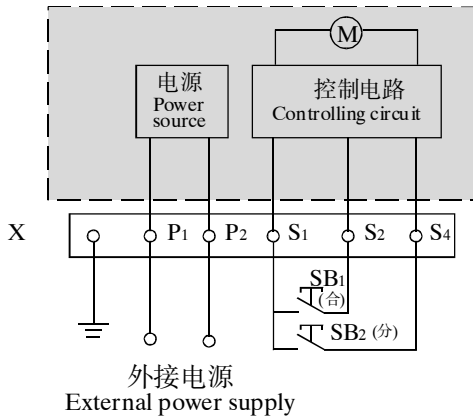
Note: While installation of LCM1 mechanical interlock mechanism, the breaker can not equip with anyone of the accessories such as shunt release, undervoltage release, motor-driven operation or turning handle operation device.



● 电动操作机构 Motor-driven operation device

CD2电动操作机构（配用CM1系列）接线图见下图（虚框内为断路器外部附件接线图）

Wiring diagram of type CD2 motor-driven operation de-vice (fitting CM1series) see the following drawing(wiring diagram of the external accessories of the breaker in the dotted frame)



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

Code description:

SB₁、SB₂ stand for push button.(provided by users themselves)

“X” stands for line connection terminals

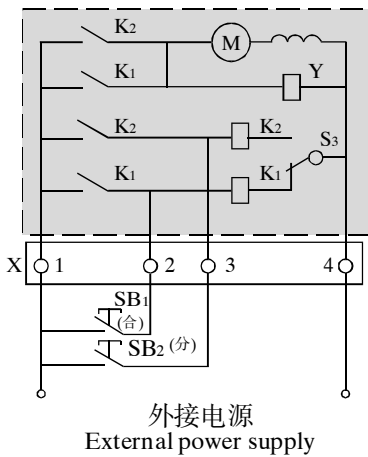
P₁、P₂ stand for external power supply

电压规格：AC50Hz/60Hz 110V、230V;DC24V、110V、220V

Voltage rating:AC50Hz/60Hz 110V、230V;DC24V、110V、220V

CD电动操作机构（配用CM1-400、630、800）接线图见下图（虚框内为断路器外部附件接线图）

Wiring diagram of type CD motor-driven operation device (fitting CM1-400、630、800) see belows(wiring diagram of the external accessories of the breaker in the dotted frame)



符号说明：

SB₁、SB₂操作按钮(用户自备)

X接线端子排

Code description:

SB₁、SB₂ stand for push button.

(provided by users themselves)

“X” stands for line connection terminals

电压规格：AC50Hz/60Hz 400V

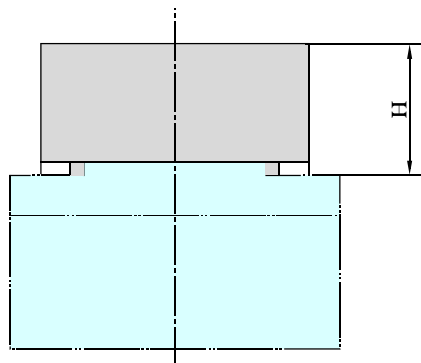
Voltage rating:AC50Hz/60Hz400V

注：电动操作机构外接电源为400V时，供CD电动操作机构，其它电压等级只供CD2电动操作机构。

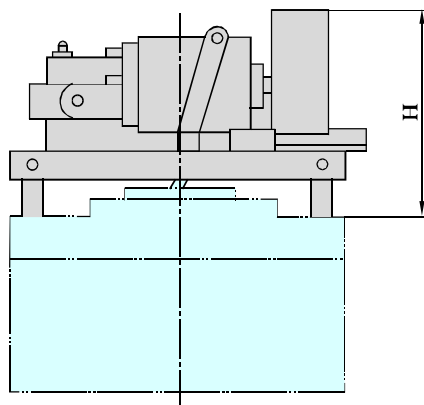
Note: For the motor-driven device with external power supply of 400 Volts, model CD motor-driven operation device should be equipped. For those of other voltage rating, only model CD2 motor-driven operation device should be equipped.



● 电动操作机构相关参数 Parameters of the motor-driven operation device



CD2电动操作机构
Type CD2 motor-driven operation device



CD电动操作机构
Type CD motor-driven operation device

电动操作机构型号 motor operator type	配用断路器 Fitting breaker	动作电流 (A) operating current	电机功率 (W) motor power	寿命 (次) Life(times)	H(mm)
CD2-63	CM1-63 三极、四极 three/four poles	≤ 0.5	14	20000	90.5
CD2-100	CM1-100 三极、四极 three/four poles	≤ 0.5	14	20000	89.5
CD2-225	CM1-160、225、250 三极、四极 three/four poles	≤ 0.5	14	20000	93
CD2-400	CM1-400 三极、四极 three/four poles	≤ 2	35	10000	142
CD-400		≤ 5.7	120	5000	141
CD2-630	CM1-630 三极、四极 three/four poles	≤ 2	35	10000	153
CD-630		≤ 5.7	120	5000	141
CD2-800	CM1-800 三极、四极 three/four poles	≤ 2	35	10000	146
CD-800		≤ 7.5	200	3000	150

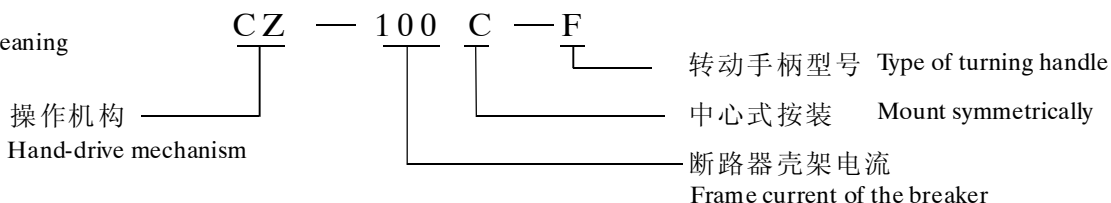
注：断路器脱扣后，电动操作机构必须先使断路器再扣，然后才能合闸。

Note: breaker tripped, motor operator must make breaker recramped first, then it can be turned on.



- CZ系列手动操作机构
Turning handle operation device

- 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，通过旋转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。CM1-63、100、160、225、250断路器的手操机构对三、四极都通用。

用途:

本机构专用于CM1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）。

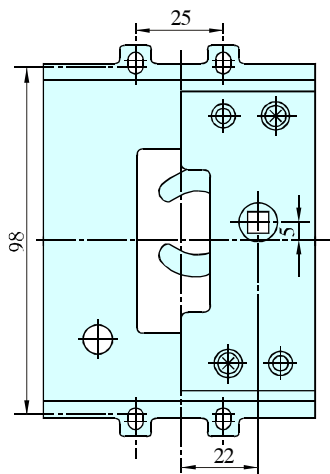
Feature:

Adopting the unique design and transmitting structure, the operation mechanism would make the breaker close, open and recamp by turning the handle. Featuring of smooth and flexible operation, little force and convenient mounting, performance and quality of the device is better than other similar products. For CM1-63、100、160、225、250 breakers of three or four poles, their operation mechanism are same.

Usage:

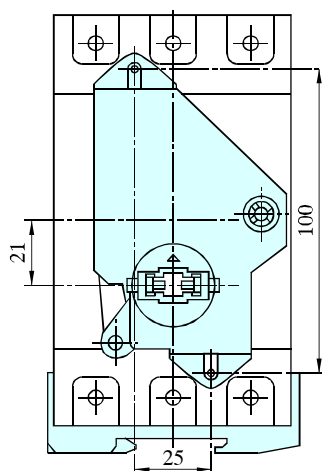
The mechanism is used specially in CM1 series moulded case breakers, to operate the draw-out panel, power distribution panel and power supply box outside the panel by turning the handle, and to ensure the door of panel would not be opened when the breaker being on (i.e. interlock with the door).

- 手操机构型号，操纵杆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）：
- The type of hand-drive mechanism, the relative dimensions of operating lever with the centre of breaker, and mounting dimensions see following figures please (The incoming line terminal is in the upper of the figure.).
- 配用CM1-63断路器的操作机构
- The hand-drive mechanism of CM1-63



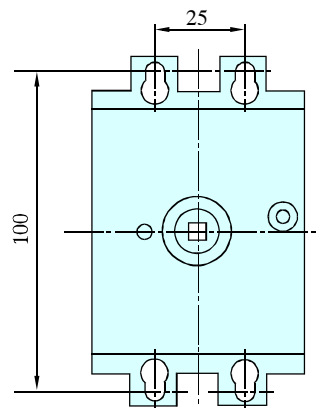
CZ-63A

(可用于GCS柜横装，无转动手柄配用)
(could be used for GCS panel installed horizontally)



CZ-63B

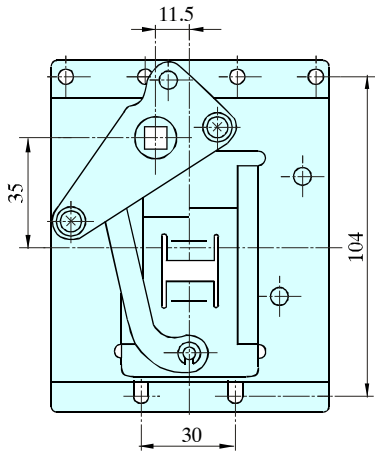
(可用于MNS柜8E/2或8E/4板后接线)
(could be used in MNS panel 8E/2 or 8E/4 wiring on back of the board)



CZ-63C

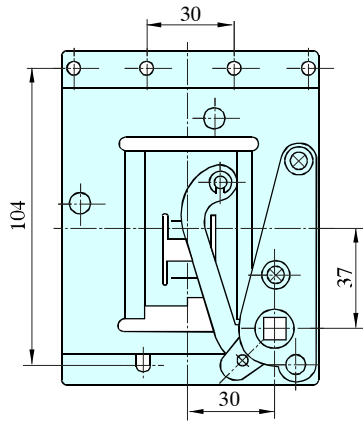


- 配用CM1-100断路器的操作机构
- The hand-drive mechanism of CM1-100



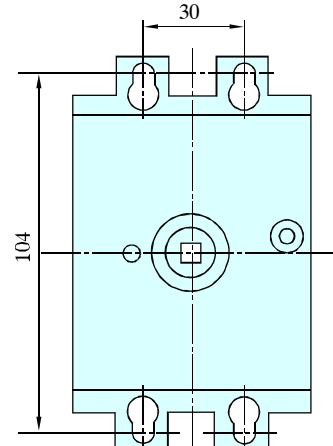
CZ-100A

(竖装) (installed vertically)



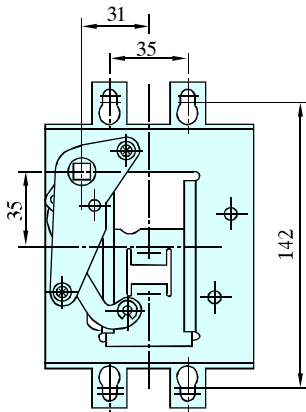
CZ-100B

(横装) (installed horizontally)



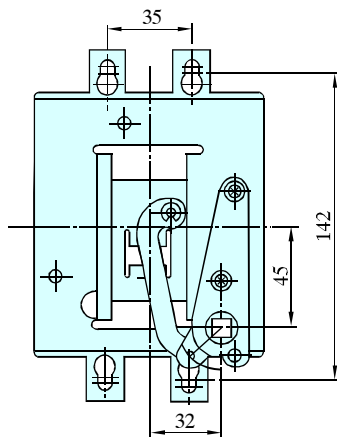
CZ-100C

- 配用CM1-160、225、250断路器的操作机构
- The hand-drive mechanism of CM1-160、225、250



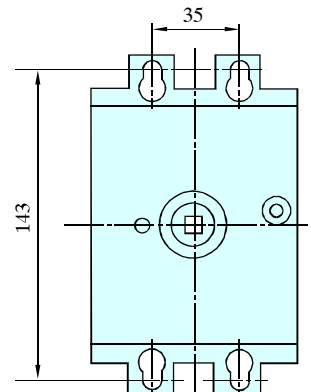
CZ-225A

(竖装) (installed vertically)



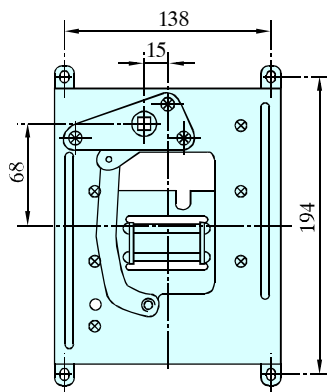
CZ-225B

(横装) (installed horizontally)

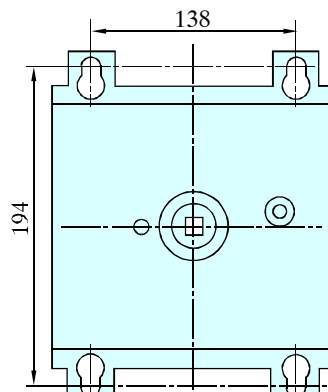


CZ-225C

- 配用CM1-400C、L、M、H断路器的操作机构
- The hand-drive mechanism of CM1-400C、L、M、H



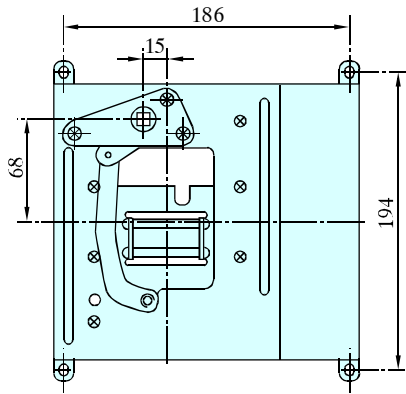
CZ-400A



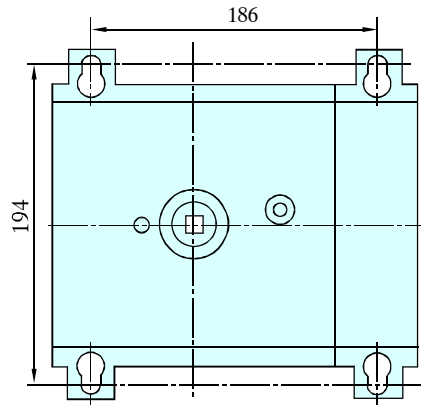
CZ-400C



- 配用CM1-400四极断路器的操作机构
- The hand-drive mechanism of CM1-400 four poles

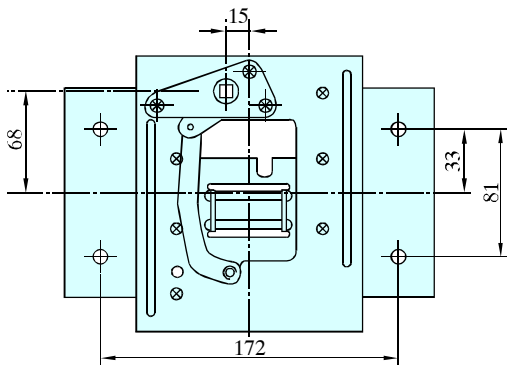


CZ-400B

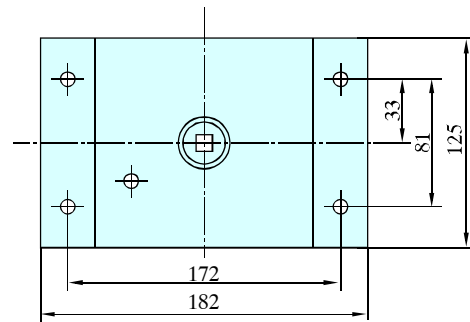


CZ-400D

- 配用CM1-630C、L、M、H断路器的操作机构
- The hand-drive mechanism of CM1-630C、L、M、H

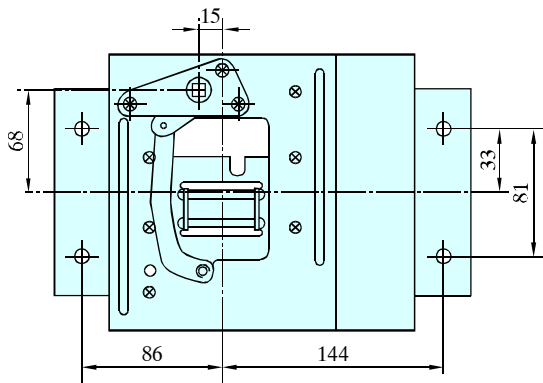


CZ-630A

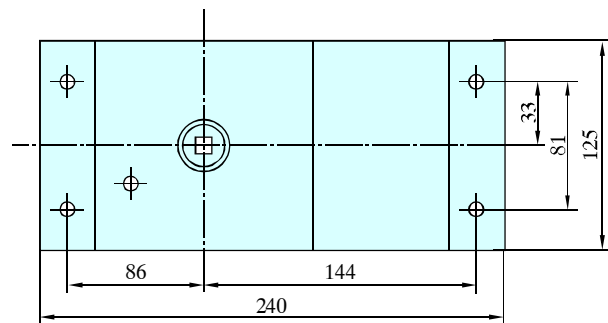


CZ-630C

- 配用CM1-630四极断路器的操作机构
- The hand-drive mechanism of CM1-630 four poles



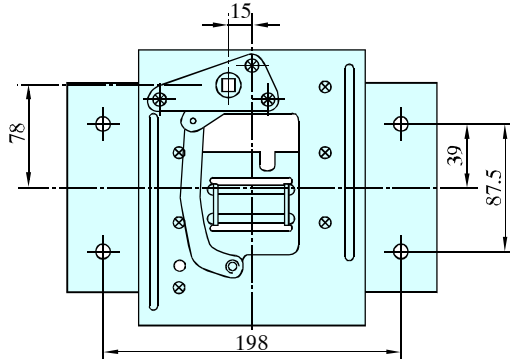
CZ-630B



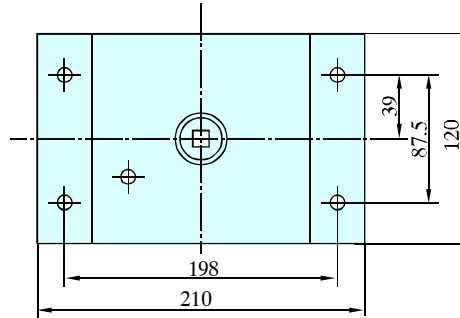
CZ-630D



- 配用CM1-800M、H断路器的操作机构
- The hand-drive mechanism of CM1-800M、H

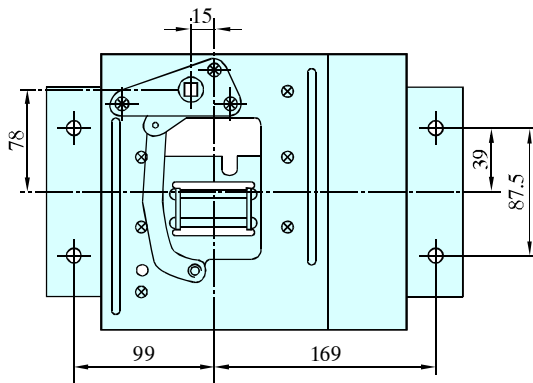


CZ-800A

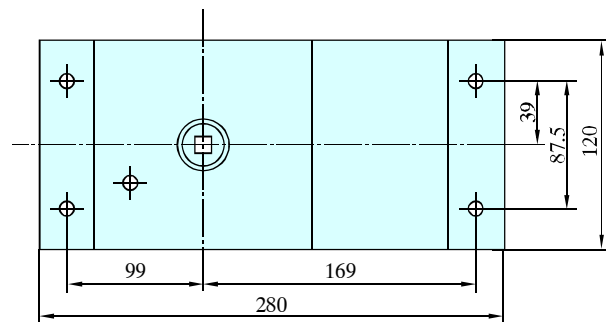


CZ-800C

- 配用CM1-800四极断路器的操作机构
- The hand-drive mechanism of CM1-800 four poles



CZ-800B

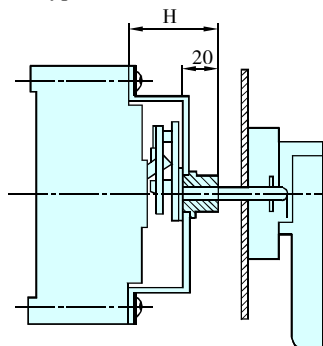


CZ-800D



CZ系列手操机构高度

Height of the hand-drive mechanism CZ type



操作机构高度见表十五

The height of the hand-drive mechanism see following Table 15 please.

表十五 Table 15

操作机构型号	Type of hand-drive mechanism	H
CZ-63A/CZ-63B/CZ-63C		24/45/49
CZ-100A/CZ-100B/CZ-100C		45/45/49
CZ-225A/CZ-225B/CZ-225C		47/47/55
CZ-400A/CZ-400B/CZ-400C/CZ-400D		61/61/76/76
CZ-630A /CZ-630B/ CZ-630C/ CZ-630D		38/38/84/84
CZ-800A/ CZ-800B/ CZ-800C/ CZ-800D		55/55/68/68

- CZ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。

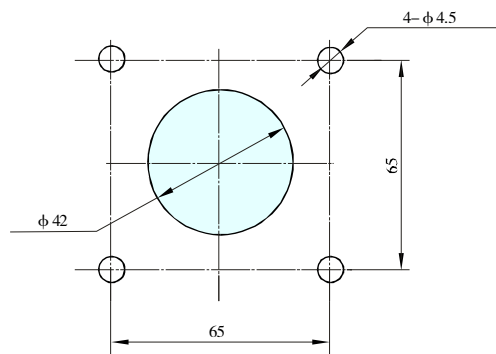
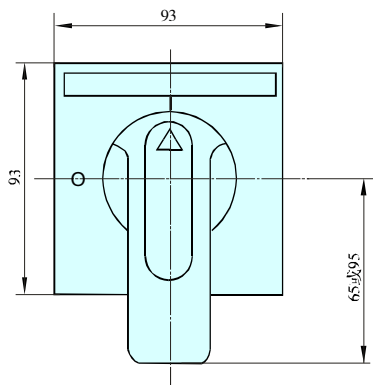
操作手柄特点：

- 1.当断路器在合闸状态时，不能开启柜门；
- 2.若操作手柄或操作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.对应不同规格的操作机构，相配套的手操手柄，其门板开孔一致。

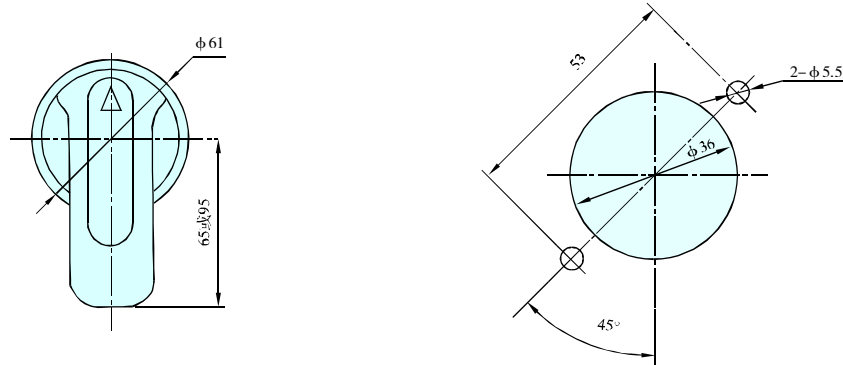
- The hand-drive mechanism can be equipped with two types of operation handles:one is model “F” square handle,the other is model “A” round handle. Aperture dimension on the panel sheet see the following drawings.

Characteristics of the operation handle:

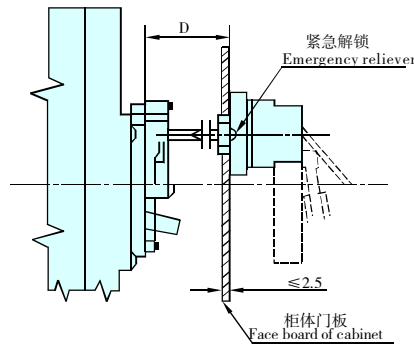
- 1.The panel door can't be opened when the breaker is closed.
- 2.If fault happens while the operation handle or hand-drive mechanism is closed,the panel door can be opened by operating the emergency reliever on the operation handle.
- 3.For the operation handle fitting hand-drive mechanism of different specifications,the aperture on the panel sheet should be same.



“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）
Contour of model "F" square handle and the aperture dimension on the panel sheet
(distance from the aperture center to hinge of panel door isn't 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）
Contour of model "A" round handle and the aperture dimension on the panel sheet
(distance from the aperture center to hinge of the panel door isn't less than 200mm)



注：1.方轴长度D=150,长度大于150mm时，在订货时注明；

2.操作机构配用“F”型手柄，型号CZ加注“F”，如CZ-100C-F即可；配用“A”型手柄，型号CZ加注“A”，如CZ-100C-A。

Note:1.Length of the square axis(D) is 150mm.In case of the length more 150mm,please note while making order:

2.In case hand-dirve mechanism is equipped with the model"F"handle,"F" would be put together with"CZ", for example written in "CZ-100C-F.In case operation handle is equipped with the model "A" handle,"A" must be added, for example written in "CZ-100C-A".

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:the hand-drive mechanism 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的参考截面见表十六

Cross-sectional area of connecting wire with different current rating see table 16 for cross-sectional area of connection wire with different current rating.

表十六 Table 16

额定电流值(A) Rated Current (A)	6、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-sectional area of wire (mm ²)	2.5	2.5	4	6	10	16	25	35	50	70	95	120	185	240

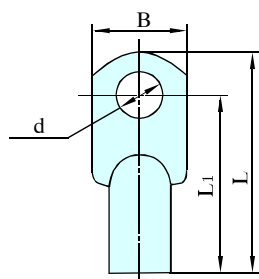
额定电流值(A) Rated Current (A)	电缆 Cable		铜排 Copper bar	
	截面积 (mm ²) Area of wire (mm ²)	数量 Number	尺寸 (mm×mm)	数量 Number
500	150	2	30×5	2
630	185	2	40×5	2
700,800	240	2	50×5	2

注：按GB14048标准，CM1-63中额定电流6A采用1mm²导线和10A采用1.5mm²导线连接满足温升要求。

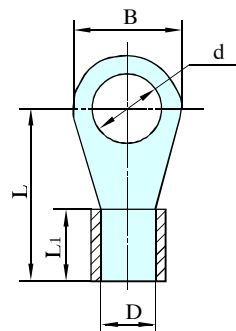
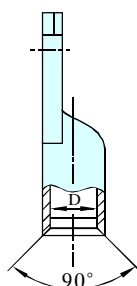
Note: Rated current 6A by 1mm² cable connecting and 10A by 1.5mm² cable connecting of CM1-63 are complied temperature-rises of GB14048 standrad.



接线端子有JGC及JBC两种
Two types of wiring terminals are supplied: JGC and JBC.



JGC型
JGC type



JBC型
JBC type

型号 Type	电流(A) Current (A)	导线截面积(mm ²) Cross-sectional Area of wire (mm ²)	端子型号 Type of Terminal	B	L	L ₁	D	d
CM1-63	6、10、16、20	2.5	JBC2.5-5	10.4	18.2	9	φ 2.6	φ 5.2
	25	4	JBC4-5	11.7	20.2	9	φ 2.8	φ 5.2
	32	6	JBC6-5	12.8	22.6	10.3	φ 3.5	φ 5.2
	40、50	10	JBC10-5	13.7	25.2	12.2	φ 4.2	φ 5.2
	63	16	JGC16-5	12.5	38	31.5	φ 6	φ 5.2
CM1-100	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
CM1-160	100	35	JGC35-8	15.5	52	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
CM1-225	100	35	JGC35-8	15.5	52	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
CM1-250	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。

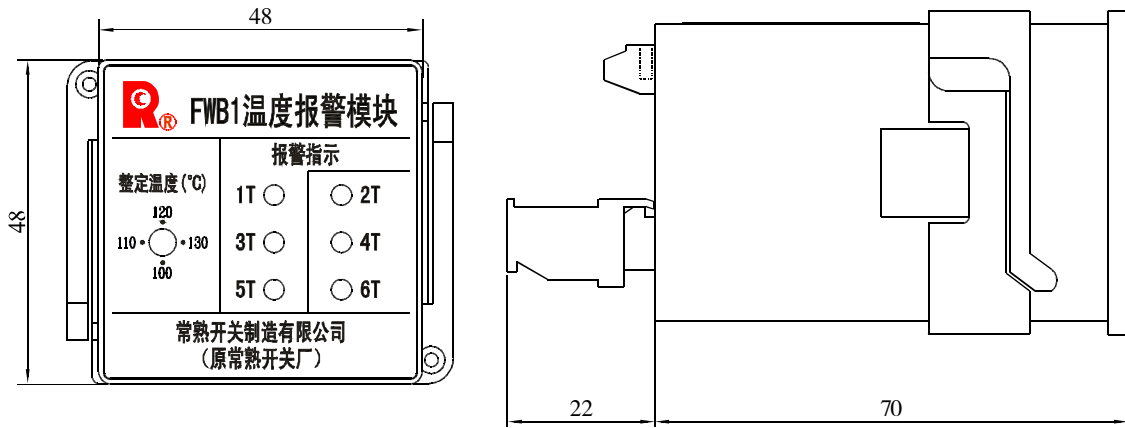
FWB1 temperature alarm module adopts online temperature detection that the FRG heat sensor directly mounted on the connection position. It can detect at most six points connection position (the input terminals on the back of the temperature alarm module, which the heat sensor is connected to, are 1T,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

测温范围 temperature detection range	0~150℃
动作温度To action temperature	100/110/120/130℃
复位温度Tr resetting temperature	To-5℃
精度 precision	±5℃
传感器绝缘耐压 sensor insulation withstand voltage	AC3500V/1min
测温点数 temperature detection points	最多6路 6 points at most
工作电源 operating current	AC230V，范围range 195~253V
输出触头容量 output contact capacity	3A/AC250V，3A/DC24V
工作温度 operating temperature	-20℃~+70℃

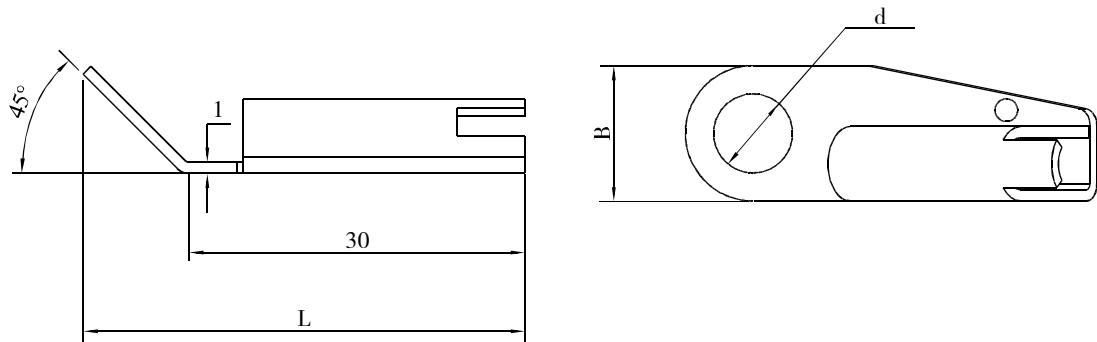


FWB1温度报警模块 TEMPERATURE ALARM MODULE

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



FWB1温度报警模块
Temperature alarm module



FRG热传感器
Hest sensor

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



- 断路器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，分别标示闭合、断开、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。

- All the performance of the breaker and accessories have been set on by the company, and it could not be adjusted arbitrarily when using.
- The handle of the breaker has three positions: close-up, cut-off or released state respectively. When the handle at the "released" position, it should be pulled backward to make the breaker "recramped", then to switching-in the circuit.
- The company would replace or repair the breakers gratuitously for the products damaged or working irregularly as a result of manufacturing quality, but it should be in accord with following conditions: users comply the demand about application and storage, from delivery date to 18th month.



● 订货须知

用户在订货时，必须将断路器的型号、规格、所配附件写清楚，采用欠电压脱扣器和分励脱扣器时，应注明工作电压（或控制电源电压）的电压值。

例1 如订CM1-100M三极、配电用、额定电流为50A，“0”飞弧并带转动手柄操作机构、分励脱扣器（AC400V）、辅助触头、报警触头、板后接线20台。

即写为订CM1-100MZ/3348 In=50A“0”飞弧，分励脱扣器AC400V，板后接线20台。

例2 如订CM1-400四极、配电用、额定电流为350A并带辅助触头、报警触头，N极不装过电流脱扣器，且N极与其它三极一起合分，板前接线10台。即写为订CM1-400/4328B型，In=350A，板前接线10台。（注：板前接线可省略不写出）

- 因产品技术需不断改进，所有数据应以本公司最新数据确认为准，如有变动，恕不另行通知。本产品的版权和解释权属常熟开关制造有限公司（原常熟开关厂）。

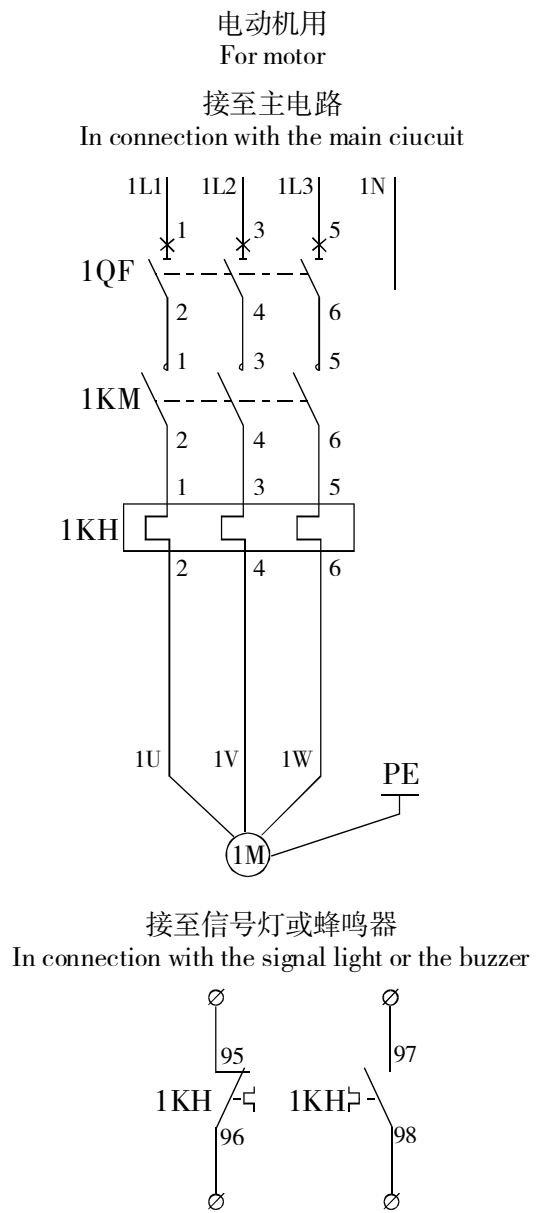
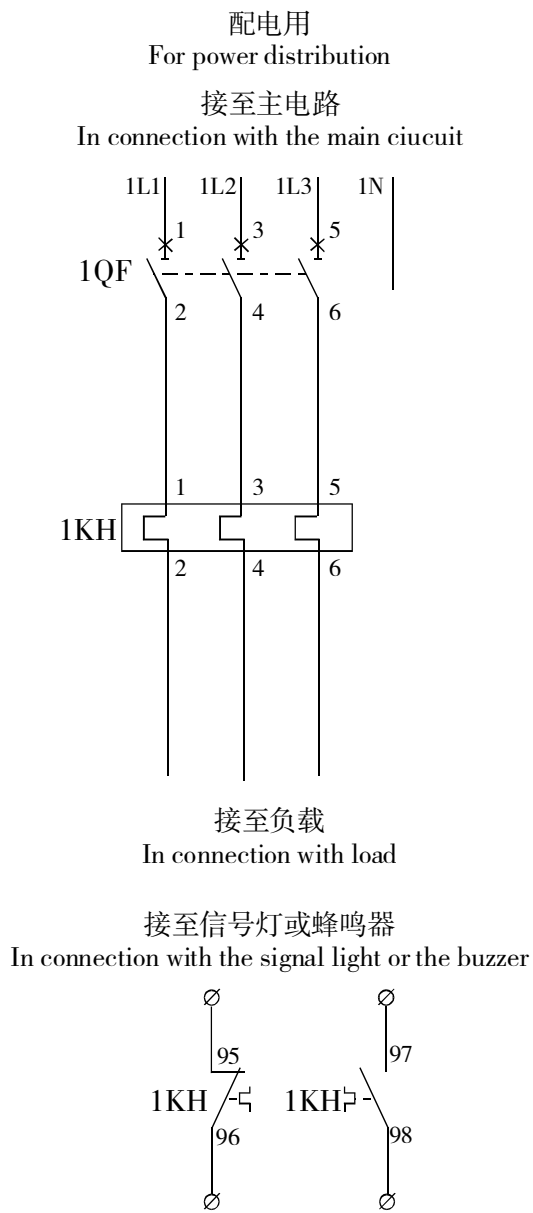
● Ordering notice:

When ordering, the type, specification and accessories all that about the breaker should be written clearly. If using under-voltage release and shunt release, it should write the value of working voltage (or control supply-voltage).

Example 1: If ordering CM1-100M three poles, for power distribution, rated current 50A, "0" arc-over, with turning handle operation mechanism, shunt release (AC400V), auxiliary contact and alarm contact, wiring on back of the board, 20 sets. It should be written in: "Ordering CM1-100 MZ/3348 In=50A '0' arc-over, shunt release AC400V, wiring on back of the board, 20 sets."

Example 2: If ordering CM1-400 four poles, for power distribution, rated current 350A, with auxiliary contact and alarm contact, N-pole without over-current release and it could act with other three poles, wiring in front of the board, 10 sets. It should be written in: "Ordering CM1-400/4328 B type, In=350A, wiring in front of the board, 10 sets." (Note: "wiring in front of the board" could be omitted.)

- As the technique uninterrupted advancing, the final data confirmed by the company be taken as the standard. If making some changes, don't give notice later. The copyright and power of interpretation of the product is part of the company.



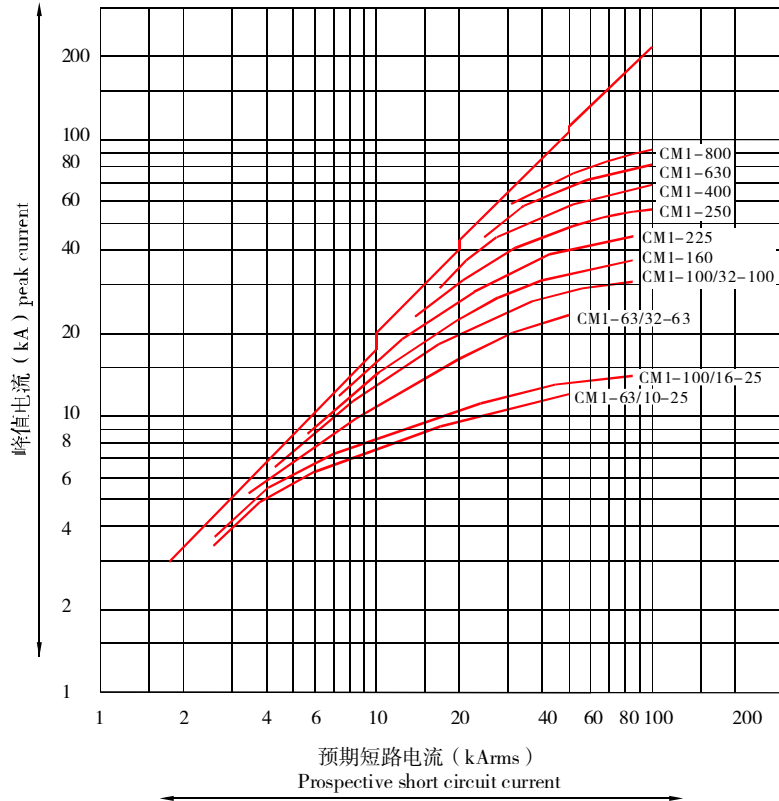
3	1KH	热继电器 thermal relay	TK
2	1KM	接触器 Contactor	SC
1	1QF	断路器 Circuit Breaker	CM1/-3200或CM1/4200配电用 For power distribution
			CM1/-32002电动机用 For motor
序号 Serial	代号 Code	名称 Name	规格 Specification

说明：本图中CM1塑料外壳式断路器仅提供短路保护。当主电路负载过载时，由热继电器提供信号至用户装设的信号灯或蜂鸣器发出指示，而不提供信号至用来切断电路的接触器或其它执行元件，因此有烧毁断路器及其它主电路元器件的可能。

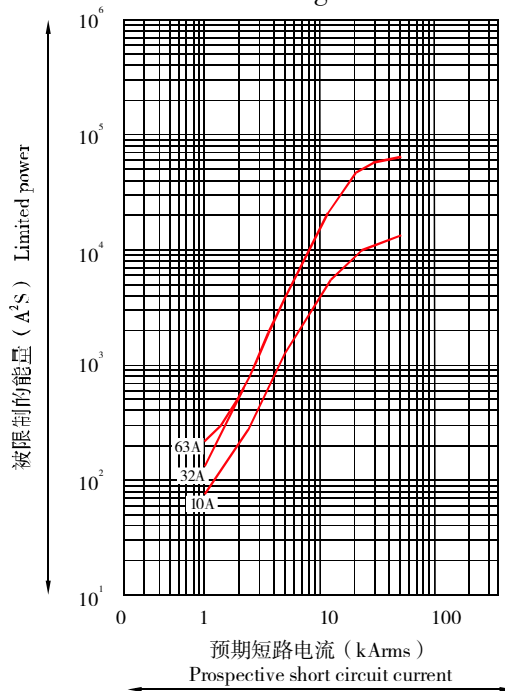
Illustrations: The CM1 series MCCB in the drawing only can provide short circuit protection. When the main circuit is overloaded, the thermal relay will provide signals to the signal light or the buzzer installed by users so as to send out indications, rather than to break off the contactor of the circuit break or other executive components. Therefore, it is possible to burn down the circuit breaker and other components of the main circuit.



400V时的CM1限流曲线图 Limited current curves

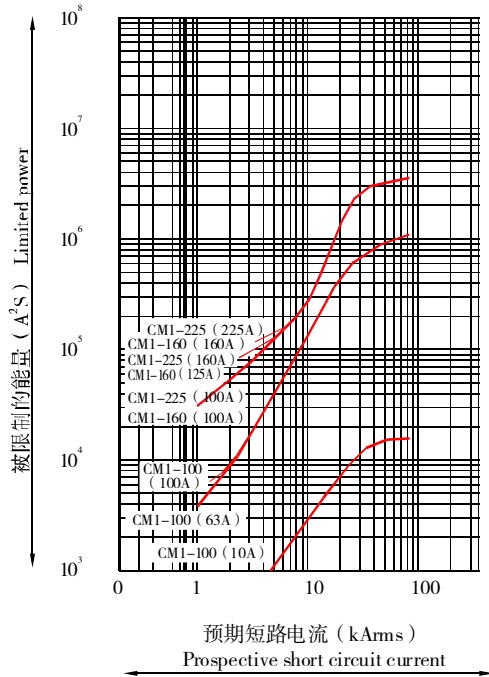


CM1-63允通曲线 Let-through curves

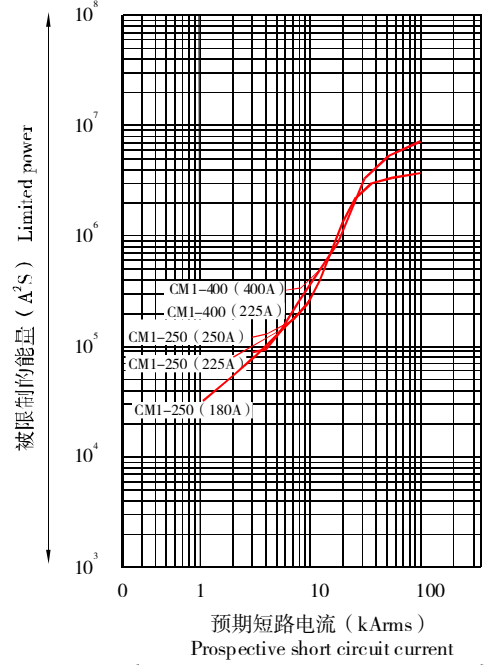




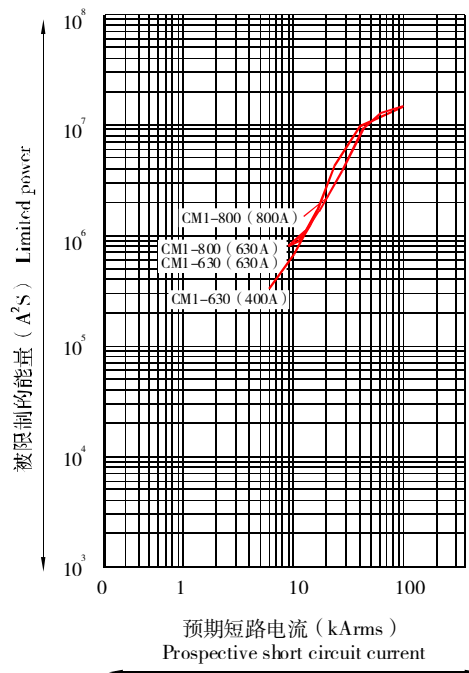
CM1-100、CM1-160、CM1-225允通曲线
Let-through curves



CM1-250、CM1-400允通曲线
Let-through curves



CM1-630、CM1-800允通曲线
Let-through curves





订货规范

Order Form

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

经销商 Dealer			成套单位 Complete sets of company					
项目名称 Project name			订货台数 Order Amount		订货日期 Date			
规格 Specification	配电型 CM1-____ / _____, In=____A, 10In (6A≤In≤800A) Power distribution 5In □ (160A≤In≤800A)							
	电动机保护型 CM1-____ / _____ 2 _____, In=____A, 12In (6A≤In≤630A) motor protection							
接线方式 Way of wiring	板前接线 □	插入式板前接线 □	抽出式板前接线 □					
	板后接线 □	插入式板后接线 □	抽出式板后接线 □					
附件 Attachments	QTCM1欠电压 脱扣器 Under Voltage Release	A型 Type A	AC400V□	AC230V□	AC110V□	DC220V□	DC110V□	
		B型 Type B	AC400V□					
		C型 Type C	AC400V□	AC230V□				
	FTCM1分励脱扣器 Shunt Release	AC400V□		AC230V□	DC220V□	DC24V□		
	电动操作机构 Motor-driven	CD2	AC230V□	AC110V□	DC220V□	DC110V□	DC24V□	
		CD	AC400V□					
	手动操作机构 Turning Handle Operation Device	CZ-A-F□	CZ-B-F□	CZ-C-F□	CZ-D-F□			
		CZ-A-A□	CZ-B-A□	CZ-C-A□	CZ-D-A□			
	机械联锁机构 □ Interlock Device	零飞弧罩 □ (对三极CM1-100) Zero arcventing cover (for three poles CM1-100)						
	接线端子 Wiring Terminals	JBC□	JGC□					
连接排 □ Connection Bus-bar	内部附件接线端子排 □ Line wiring terminals of the internal accessories							
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	FRG-17		
注:对CM1-63、CM1-100、160、225、250, 脱扣器方式及内部附件代号为220、320、240、340、270、370, 可提供两对辅助触头(二常开、二常闭), 260、360可提供三对辅助触头(三常开、三常闭), 订货时需注明。 Note:For CM1-63、CM1-100、160、225 and 250, the accessories codes are 220,320,240,340,270,370,two sets of auxiliary contacts (two normally-opened, two normally-closed),will be available,Codes 260 and 360 can provide three pair of auxiliary contacts(three normally-opened,three normally-closed), will be available,please mark out in making order.								
备注 Note								

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

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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

湖南

长沙常开电气有限公司 0731-84699925
长沙市康发电器有限公司 0731-84422858

湖北

武汉万千新能电气有限公司 027-87256467
武汉圣天科技有限公司 027-82706552

广西

南宁市德控机电设备有限责任公司 0771-3212829

河北

河北华尔电气有限公司 0311-87834870

河南

河南中电电器有限公司 0371-66974968
河南航天机电数字有限公司 0371-63329025

四川

成都慧永电器成套设备有限公司 028-68003527

陕西

陕西新力源电气有限公司 029-88348089
西安西菱电器机械设备有限公司 029-88320213

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银川同正电气有限公司 0951-6014483

甘肃

天水上联电器成套有限公司 0938-8381068

山西

山西万里顺贸易有限公司 0351-6521630
山西常顺电器销售服务有限公司 0351-7023860

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新疆德控电气有限公司 0991-5818361

辽宁

沈阳市新业物资实业公司 024-22734762
鞍山市耐特机电系统工程有限公司 0412-5230221

黑龙江

哈尔滨北低成套设备有限公司 0451-88387734

内蒙古

包头市杰德自动化工程有限公司 0472-6973800

海南

海南华胜电气设备有限公司 0898-66226803

常熟开关 持续超越

- 国家创新型试点企业
- 国家重点高新技术企业
- 全国企事业知识产权示范单位
- 全国守合同重信用企业
- 国家科学技术进步二等奖获得者

2011.08

常熟开关制造有限公司(原常熟开关厂)

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52840995 52841441 52841442 52841616

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52840995 52841441 52841442

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SALES DEP. FOR COMPLETE SWITCHGEAR EQUIPMENT :

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TECHNICAL SUPPORT HOTLINE : 0512-52841486 8008282528

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