



# CM 2 L系列带剩余电流 保护塑料外壳式断路器

CM2L SERIES MCCB INCORPORATING RESIDUAL CURRENT PROTECTION

- **高分断** • **带隔离**
- HIGH BREAKING CAPACITY • ISOLATION FUNCTION
- **热可调** • **剩余电流保护**
- THERMO ADJUSTMENT • RESIDUAL CURRENT PROTECTION
- **模块安装** • **绿色环保**
- MODULE ASSEMBLY • ENVIRONMENT FRIENDLY

2011.08

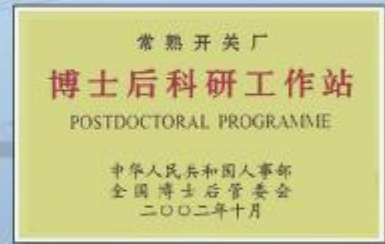
**常熟开关制造有限公司**  
(原常熟开关厂)  
CHANGSHU SWITCHGEAR MFG. CO., LTD.  
(FORMER CHANGSHU SWITCHGEAR PLANT)



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 m<sup>2</sup>, 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



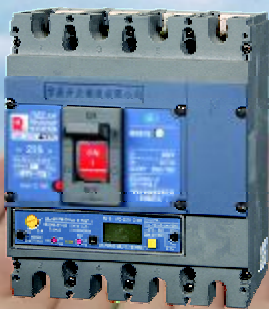
●FCX3智能配电监控器





## 优秀特色

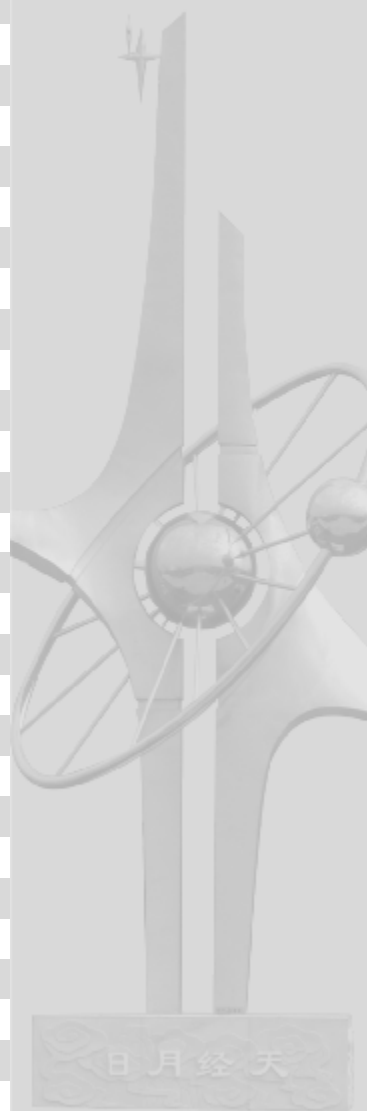
- 获得国际认可的CB证书
- 具有体积小、分断高、带隔离等特点  
额定极限短路分断能力 $I_{cu}$ ：400V：70kA ~ 100kA  
额定运行短路分断能力 $I_{cs}$ ：400V：50kA ~ 75kA
- CM2L整定电流 $I_r$ 可调，方便设计和使用，同时具有剩余电流保护，为国内首创
- 剩余电流保护三相取电：常规的带剩余电流保护断路器的漏电保护模块工作电源取样为二相，本系列断路器为三相，若缺任一相，断路器漏电保护模块仍能正常工作
- 根据使用场合，可提供AC型（交流场合）和A型（交流叠加脉动直流场合）剩余电流断路器
- 根据不同剩余电流脱扣器可选，应用范围可从30mA ~ 30A进行整定，动作时间可调  
额定剩余动作电流 $I_{\Delta n}$ （A）：0.03/0.1/0.3/0.5、0.1/0.3/0.5、0.3/0.5/1、0.3/1/3/10、1/3/10/30 可调  
 $5I_{\Delta n}$ 最大断开时间 $\Delta t$ （s）：瞬动/0.25/0.9/1.9可调
- CM2L具有智能化剩余电流监控功能，可液晶显示线路中剩余电流大小，剩余电流实时可视化管理；CM2L还具有故障记忆功能，能储存最近一次剩余电流故障信息
- 具有较强功能扩展性，可增选剩余电流报警模块，实现脱扣报警输出或报警不脱扣输出
- CM2L与CM2、CM2Z断路器外形、安装尺寸完全一致，仅是内部保护模块不同，全系列附件还可模块化安装
- 具有通信模块，可实时上传线路中剩余电流实时值、故障信息、脱扣信息、状态信息，满足电气火灾监控系统的要求
- CM2L断路器本体上加装剩余电流通信报警模块，实现脱扣并可通信报警输出或不脱扣但可通信报警输出
- 可配FWB1温度报警模块，实现连接点在线超温报警





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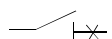




CM2L系列带剩余电流保护塑料外壳式断路器（以下简称断路器），是本公司采用国际先进设计技术研制，根据IEC60947-2国际标准的要求开发的新型断路器之一。其额定绝缘电压为800V，适用于交流50Hz/60Hz、额定工作电压400V及以下、额定电流至630A的电路中作不频繁转换之用。断路器具有过载、短路和欠电压保护功能，并具有剩余电流显示、报警、保护及通信功能，还可作剩余电流火灾监控器之用。

- 断路器可垂直安装（即竖装），亦可水平安装（即横装）

- 断路器不可倒进线，即只允许1、3、5接电源线，2、4、6接负载线

- 断路器具有隔离功能，其相应的符号为：

- 断路器符合下列标准：

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

IEC60947-2及GB14048.2-2008 低压开关设备和控制设备 断路器

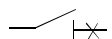
IEC60947-4-1及GB14048.4 低压开关设备和控制设备 机电式接触器和电动机起动器

- 断路器获国家强制性产品认证“CCC”标志。

CM2L Series MCCB incorporating residual current protection (hereafter simply referred to as 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. In the circuit of AC50Hz/60Hz, rated operational voltage 400V or below and rated current up to 630A, the breakers take the role of infrequent turn-on or turn-off. The breakers not only have overload, short-circuit and under-voltage protection performances, but also have residual current display, alarm, protection and communication function, and it can be used as leakage current detector for electric fire.

- The breakers can be installed vertically (upright) or horizontally (transverse).

- The breakers can't be wired adversely, 1,3 and 5 can only be connected with supply line; 2,4 and 6 only be connected with load line.

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

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

IEC60947-1 and GB 14048.1-2006 Low-voltage switchgear and controlgear General rules

IEC60947-2 and GB 14048.2-2008 Low-voltage switchgear and controlgear Circuit-breakers

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

- The breakers have obtained the CCC mark of CQC.



- 周围空气温度不超过 + 40℃ 和不低于 - 5℃，且24h的平均值不超过 + 35℃；

- 安装地点的海拔不超过2000m；

- 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%。对于温度变化偶

- The ambient air temperature does not exceed + 40℃ and its average over a period of 24h does not exceed + 35℃, the lower limit of the ambient air temperature is - 5℃;

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

- The relative humidity of the air does not exceed 50% at a maximum temperature of +40℃, higher





## 正常使用条件和安装条件 NORMAL SERVICE AND MOUNTING CONDITONS

尔产生的凝露应采取特殊措施;

- 污染等级为3级;
- 断路器主电路安装类别为Ⅲ, 其余辅助电路、控制电路安装类别为Ⅱ;
- 断路器适用于电磁环境A;
- 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。

relative humidities may be permitted at lower temperature, e.g. 90% at +20°C. Special measures may be necessary in cases of occasional condensation due to variations in temperature.

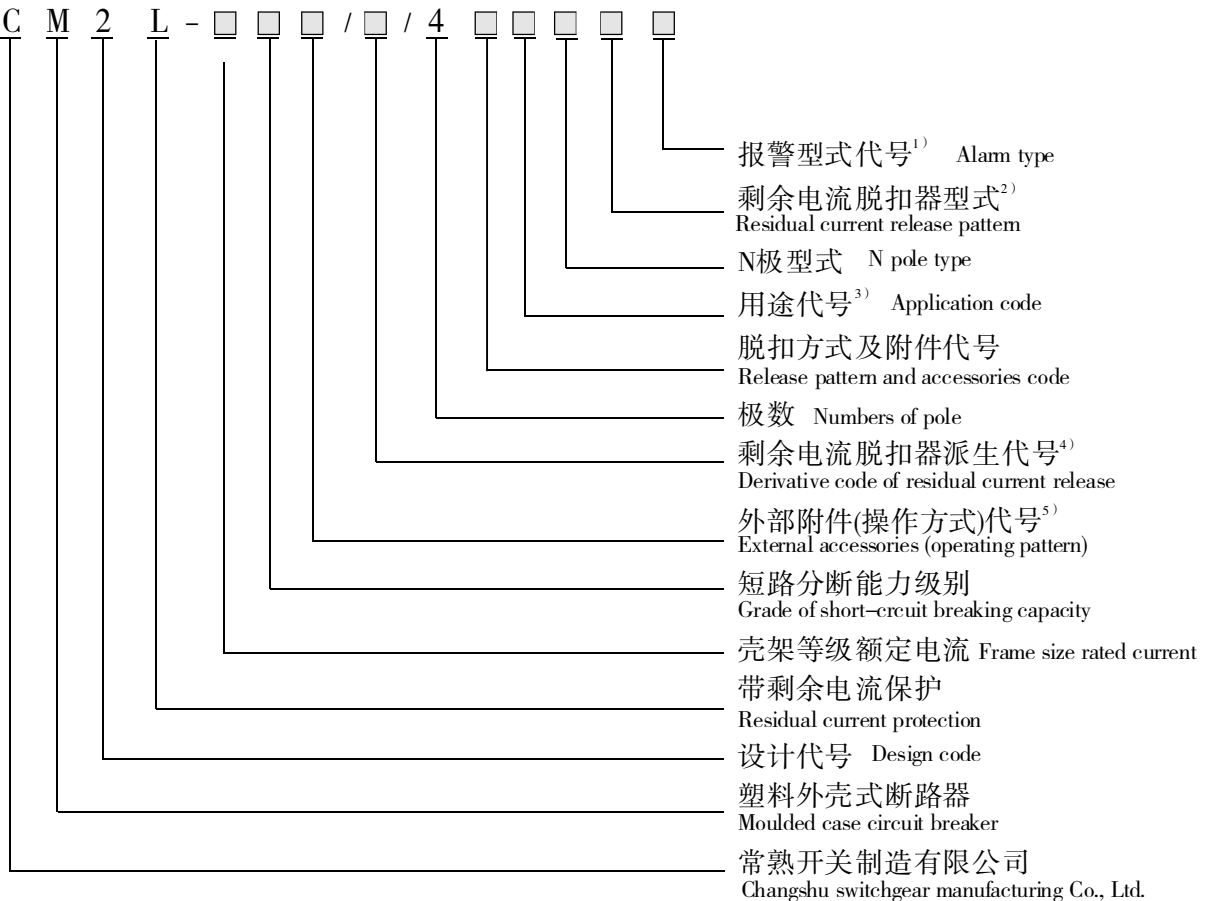
- Pollution degree 3.
- Installing category: III for the main circuit, and II for other auxiliary and control circuits.
- Be suitable in electromagnetic environment A.
- There must be not any explosive dangerous and not any conducting dust, there must be not any gas which would corrode metal and destroy insulation.
- The place would not be invaded by rain and snow.



## 断路器分类 CLASSIFICATION OF BREAKER

- 型号及其含义如下

Type and its meaning





注：1) 不带剩余电流报警模块或剩余电流通报警模块无代号；带剩余电流报警模块或剩余电流通报警模块并在工作方式一时用 I 表示，在工作方式二时用 II 表示。（详见P27、P44）

2) 剩余电流脱扣器型号分U型、V型、W型、VA型(详见P7),V型为标准型，订货时不必注明。

3) 配电用断路器无代号，保护电动机用断路器以2表示。

4) 不带通信无代号，带通信用T表示。

5) 手柄直接操作无代号，电动机操作作用P表示；转动手柄操作作用Z表示。

Note: 1) Without residual current alarm module or residual current communication alarm module without code; with residual current alarm module or residual current communication alarm module as I when in working method one, as II when in working method two. (See P27, P44)

2) Residual current release type U, V, W, VA (see P7 pages), type V as the standard, does not have to specify when ordering.

3) Without code for distribution power circuit breaker and code 2 for protection motors circuit breaker.

4) Non-communication without code, with T expressed Communication.

5) The handle to operate without code, motor operation for P; rotary the handle to operate with Z said.

## ● 四极产品中性极（N极）的形式分四种： ● Neutral pole (N pole of four poles circuit breaker) have four types:

A型：N极不安装过电流脱扣元件，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元件，且N极与其它三极一起合分（N极先合后分）；

C型：N极安装过电流脱扣元件，且N极与其它三极一起合分（N极先合后分）；

D型：N极安装过电流脱扣元件，且N极始终接通，不与其它三极一起合分。

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

B type: N pole over-current release does not installed, and combined with other three poles. (closing first and opening last);

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

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

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

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

● 按接线方式分为板前接线、板后接线、插入式接线、抽出式接线四种。

● By the connection mode is divided into front connected、rear connected、Plug-in connected and draw-out connected four style.

● 按过电流脱扣器型式分瞬时脱扣器、复式脱扣器（瞬时脱扣器和热动脱扣器）两种。

● By over-current release type instantaneous release, double release (instantaneous release and thermal release).

● 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、剩余电流报警模块、剩余电流通报警模块、剩

● In accordance with breaker whether with accessories and without accessories, dividing internal/external, internal accessories: shunt release,



## 断路器分类 CLASSIFICATION OF BREAKER

余电流通信报警模块七种，外部附件有手动操作机构、电动机操作机构、FWB1温度报警模块等。

undervoltage release, auxiliary contact, alarm contact, residual current alarm module, and residual current communication module; external accessories: rotary handle operator and motor operator FWB1 temperature alarm module.



## 结构简介 STRUCTURE INTRODUCTION



剩余电流报警模块断路器  
Residual current alarm module breaker

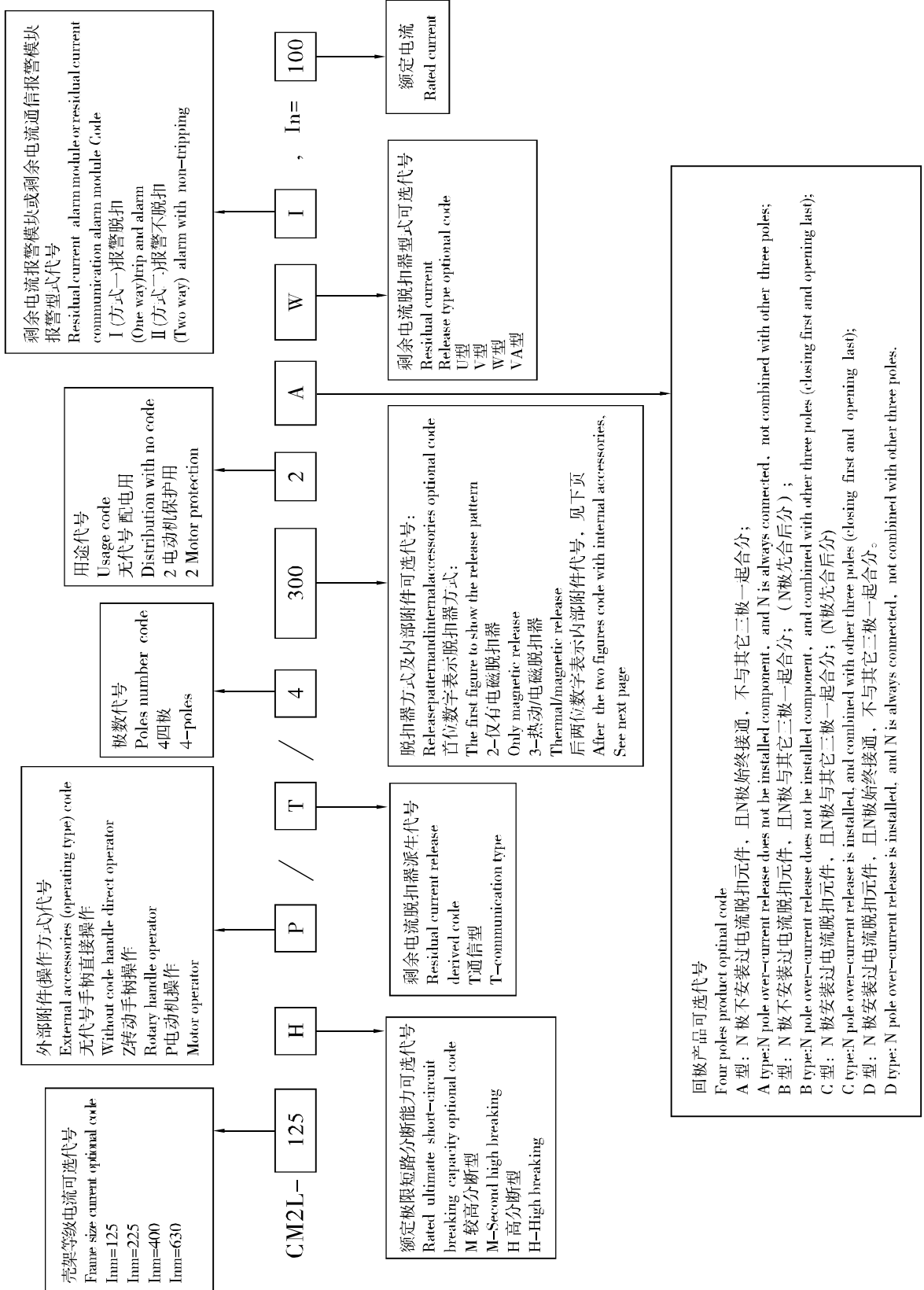


剩余电流通信报警模块断路器  
Residual current communication alarm module breaker





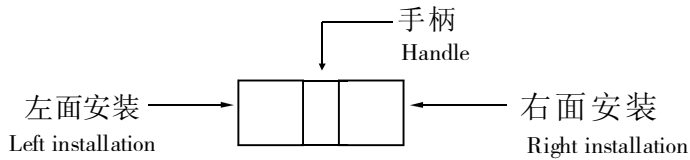
CM2L系列带剩余电流保护塑壳断路器快速选型表  
CM2L Series MCCB incorporating Current Protection Quick Selection Table





# 脱扣器方式及内部附件代号

# RELEASE PATTERN AND INTERNAL ACCESSORIES CODE



- 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 Undervoltage release
- 引线方向 Lead direction

脱扣器方式及内部附件代号 Release pattern and accessories code	极数和N极型式 number of pole and N type	型号 Type	CM2L-125 CM2L-225		CM2L-400 CM2L-630	
			附件名称 Accessories name	4极A、B、C、D型 4 Poles A, B, C, D type	4极B、C型 4 Poles B, C type	4极A、B、C、D型 4 Poles A, B, C, D type
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 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 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、200：表示仅有电磁脱扣器的CM2L断路器，300表示带有热动-电磁脱扣器的CM2L断路器。

2、对CM2L-400及CM2L-630其中248、348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），其中规格辅助触头数量按P28表中的配置。

3、对CM2L-125及CM2L-225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），但订货时注明。

Note: 1,200: that only magnetic release CM2L MCCB, 300:that with the thermal/magnetic release CM2L MCCB.

2, On CM2L-400 and CM2L-630 of which 248, 348 specifications auxiliary contact for a pair of contact (that is, a normally open and a normally close), 268, 368 of the auxiliary contact specifications for the three pairs of contact (ie, three normally open and three normally close), in which the number of standard auxiliary contact form by P28 configuration.

3, On CM2L-125 and CM2L-225 of which 220, 320, 240, 340, 270, 370 specifications for the two pairs of auxiliary contact (that is, two normally open two normally close), 260, 360 for the three pairs of contact (ie, three normally open and three normally close), but specify when ordering.



# 主要技术性能指标

# MAIN TECHNICAL PERFORMANCE INDEX

壳架等级额定电流 $I_{nm}$ Frame size rated current		125	225	400	630					
型号 Type designation		CM2L-125	CM2L-225	CM2L-400	CM2L-630					
额定电流 $I_n$ (A) Rated current		16、20、25、 32、40、50、 63、80、100、 125	125、140、 160、180、 200、225	225、250、 315、350、 400	400、500、 630					
整定电流调节范围 $I_{r1}$ (A) Setting current adjustable range		(0.8-0.9-1.0) $I_n$								
极数 Number of poles		4								
额定绝缘电压 $U_i$ (V) Rated insulation voltage		AC800								
额定冲击耐受电压 $U_{imp}$ (V) Rated impulse withstand voltage		8000								
额定工作电压 $U_e$ (V) Rated operational voltage		AC400								
飞弧距离 (mm) Arcing distance		$\geq 50(0^*)$	$\geq 50(0^*)$	$\geq 100(0^*)$	$\geq 100(0^*)$					
额定极限短路分断能力级别 Rated ultimate short-circuit breaking capacity class		M	H	M	H	M	H	M	H	
额定极限短路分断能力 $I_{cu}$ (kA) Rated ultimate short-circuit breaking capacity	AC400V	70	85	70	85	70	100	70	100	
额定运行短路分断能力 $I_{cs}$ (kA) Rated service short-circuit breaking capacity	AC400V	50	70	50	70	70	75	70	75	
使用类别 Utilization category		A								
额定剩余 动作电流 $I_{\Delta n}$ (A) Rated residual operating current	AC型 断路器 AC type breaker	U型, 非延时 Type U non-time-delay		0.03/0.1/0.3/0.5		0.03/0.1/0.3/0.5				
		V型(标准型), 非延时、延时可调 Type V (standard type), non-time-delay, time-delay adjustable		0.1/0.3/0.5		0.1/0.3/0.5		0.1/0.3/0.5		
		W型, 非延时、延时可调 Type W, non-time-delay, time-delay adjustable		0.3/1/3/10		0.3/1/3/10		1/3/10/30		
		A型断路器 Type VA, non-time-delay, time-delay adjustable		0.1/0.3/0.5		0.1/0.3/0.5		0.1/0.3/0.5		
额定剩余不动作电流 $I_{\Delta no}$ Rated residual non-operating current		$\frac{1}{2} I_{\Delta n}$								
额定剩余短路接通(分断)能力 $I_{\Delta m}$ Rated residual short-circuit making and breaking capacity		$\frac{1}{4} I_{cu}$								
电气寿命* (次times) Electrical durability		8000	8000	7500	7500					
机械寿命* (次times) Mechanical durability		免维护 Without-maintenance		20000	20000	10000	10000			
		有维护 Maintenance		40000	40000	20000	20000			
外形尺寸(mm) Outline dimensions				W	122	142	198	240		
				L	150	165	257	270		
				H	85	85	110	110		

注1: 选装零飞弧罩, 可实现零飞弧。CM2L-125零飞弧罩高为5mm, CM2L-225高为6mm, CM2L-400高为10.5mm, CM2L-630高为11.5mm。  
Note1: Installing zero arcing cover, can be zero arcing. CM2L-125 zero arcing cover is 5mm, CM2L-225 is 6mm, CM2L-400 is 10.5mm, CM2L-630 is 11.5mm.

注2: 本系列四极断路器接单相负载时, 相线接A极, 中性线接C极, 不要接B极。

Note2: When this series four-poles breakers connecting with single phase load, the phase wire connects with A pole, and neutral wire connects with C pole, with B pole empty.

\*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





## 四极断路器中性极电流值 NEUTRAL CURRENT FOR FOUR-POLES BREAKER

四极断路器中性极（N）设在产品右侧。

CM2L四极断路器中性极型式为A型、B型时无过电流保护；CM2L中性极型式为C型、D型N极脱扣器的额定电流、整定电流见下表。

Neutral of four poles breaker located in the right of product.

Type A and B of neutral without over-current protection; type C and D neutral, rated current and setting current in the table below.

壳架等级 额定电流 $I_{nm}(A)$ Frame size rated current	断路器相极 Phase poles		断路器中性极（N） Neutral pole			
	额定电流 $I_n(A)$ Rated current	整定电流 $I_{r1}(A)$ Setting current	额定电流 $I_n(A)$ Rated current	整定电流 $I_{r1N}(A)$ Setting current		
125	16	(0.8-0.9-1.0) $I_n$	16	(0.8-0.9-1.0) $I_N$		
	20		20			
	25		25			
	32		32			
	40		40			
	50		50			
	63		63			
	80		63			
100	63					
125	63					
225	125		125		125	125
	140				125	
	160				125	
	180				125	
	200				125	
	225				125	
400	225		225		225	225
	250				225	
	315				225	
	350				225	
	400				225	
630	400		400		400	400
	500				400	
	630				400	

注：1.常规出厂的CM2L四极断路器中性极电流值符合上表，本公司也可提供 $I_N=100\%I_n$ 的四极断路器，用户需在订货时注明。

2.CM2L四极断路器中性极脱扣器整定电流 $I_{r1N}$ 与相极整定电流 $I_{r1}$ 在设定时联动。

Notes: 1、Neutral current value of conventional four poles CM2L breaker is complied with the above table, the company can also provide  $I_N = 100\%I_n$  four-poles breaker, the user need to specify when ordering.

2、Neutral release setting current  $I_{r1N}$  is linkage with phase release setting current  $I_{r1}$  at the time of creatrion.



## 剩余电流保护动作时间 RESIDUAL CURRENT PROTECTION OPERATING TIME

剩余电流保护动作时间 Residual current operating time

剩余电流 Residual current		$I\Delta n$	$2I\Delta n$	$5I\Delta n$	$10I\Delta n$
非延时型 Non-time-delay	最大断开时间 Maximum break time	0.08	0.08	0.04	0.04
延时型 Time-delay	最大断开时间 Maximum break time	0.5/1.15/2.15	0.35/1/2	0.25/0.9/1.9	0.25/0.9/1.9
	极限不驱动时间 $\Delta t$ Limiting non-actuating time	—	0.1/0.5/1	—	—



## 断路器保护特性 PROTECTION CHARACTERISTIC OF BREAKER

CM2L系列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。

Thermal release of CM2L series breakers with inverse time characteristic and magnetic release instantaneous operation

配 电 用  
Distribution protection

壳架等级 额定电流 $I_{nm}$ (A) Frame size rated current	额定电流 $I_n$ (A) Rated current	热动型脱扣器(环境温度+40℃) Thermal release(ambient temp+40℃)		电磁脱扣器动作 电流 $I_r3$ (A) Operating current of magnetic release
		1.05 $I_r1$ (冷态 Cold) 不动作时间 (h) Non-operating time	1.30 $I_r1$ (热态 Thermal) 动作时间 (h) Operating time	
$I_{nm}=125$	$16 \leq I_n \leq 63$	1小时内不动作 Non-operating within one hour	$\leq 1$	$10I_n \pm 20\%$
	$63 < I_n \leq 125$	2小时内不动作 Non-operating within two hours	$\leq 2$	
$I_{nm}=225$	$125 \leq I_n \leq 225$	2小时内不动作 Non-operating within two hours	$\leq 2$	
$I_{nm}=400$	$225 \leq I_n \leq 400$	2小时内不动作 Non-operating within two hours	$\leq 2$	
$I_{nm}=630$	$400 \leq I_n \leq 630$	2小时内不动作 Non-operating within two hours	$\leq 2$	

电动机保护用  
Motor protection

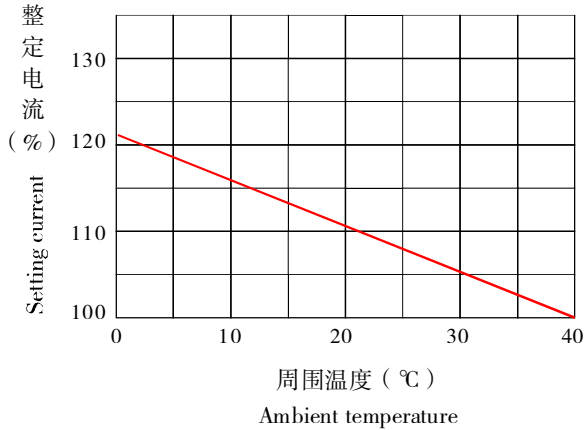
壳架等级 额定电流 $I_{nm}$ (A) Frame size rated current	额定电流 $I_n$ (A) Rated current	热动型脱扣器(环境温度+40℃) Thermal release(ambient temp+40℃)				脱扣级别 Trip class	电磁脱扣器 动作电流 $I_r3$ (A) operating current of magnetic release
		1.0 $I_r1$ (冷态 Cold) 不动作时间 (h) Non-operating time	1.20 $I_r1$ (热态 Thermal) 动作时间 (h) Operating time	1.50 $I_r1$ (热态 Thermal) 动作时间 (min) Operating time	7.2 $I_r1$ (冷态 Cold) 动作时间 Operating time		
$I_{nm}=125$	$16 \leq I_n \leq 125$	2小时内不动作 Non-operating within two hours	$\leq 2$	$\leq 4$	$4s < T1 \leq 10s$	10	$12I_n \pm 20\%$
$I_{nm}=225$	$125 \leq I_n \leq 225$	2小时内不动作 Non-operating within two hours	$\leq 2$	$\leq 4$	$4s < T1 \leq 10s$	10	
$I_{nm}=400$	$225 \leq I_n \leq 400$	2小时内不动作 Non-operating within two hours	$\leq 2$	$\leq 8$	$6s < T1 \leq 20s$	20	
$I_{nm}=630$	$400 \leq I_n \leq 630$	2小时内不动作 Non-operating within two hours	$\leq 2$	$\leq 8$	$6s < T1 \leq 20s$	20	



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

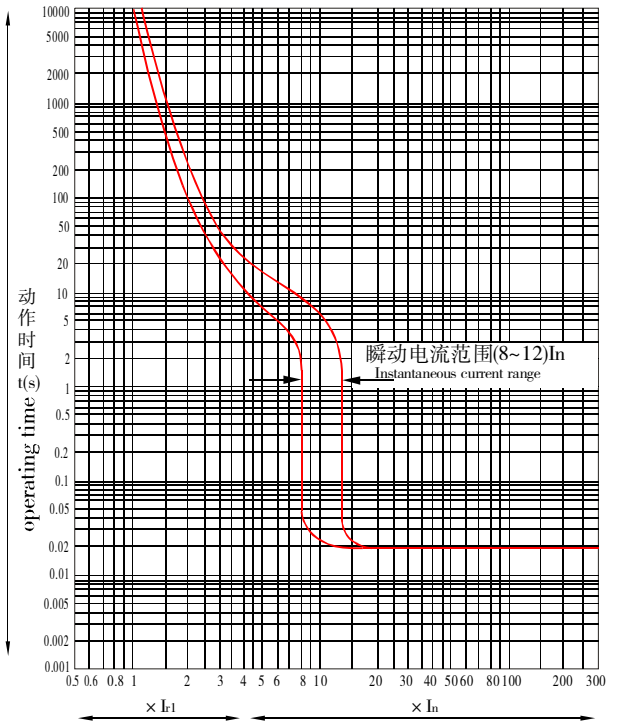
电流-温度特性

Current-Temperature Characteristics



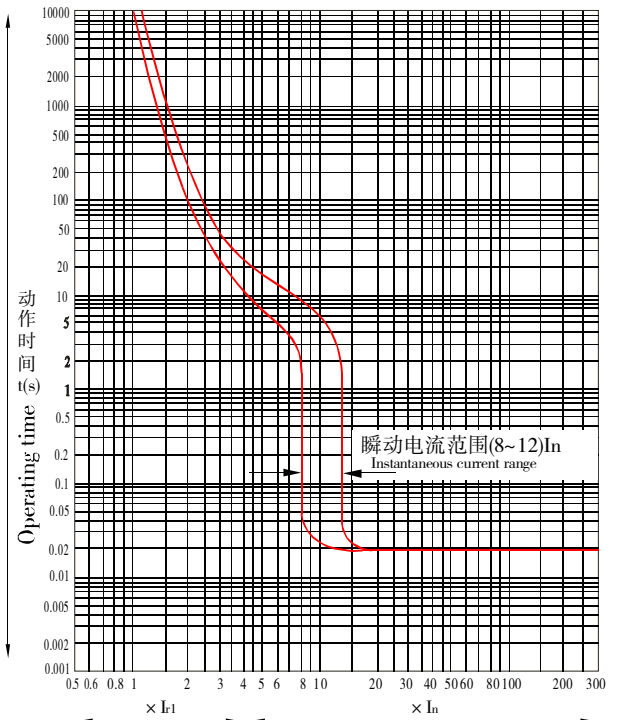
CM2L-125时间/电流特性曲线 (配电)

CM2L-125 Time / current characteristic curve (distribution power)



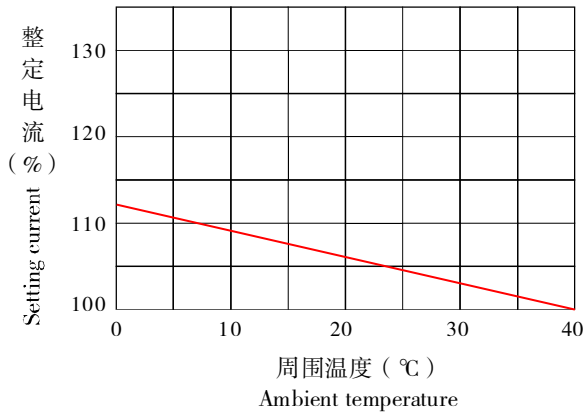
CM2L-225时间/电流特性曲线 (配电)

CM2L-225 Time / current characteristic curve (distribution power)

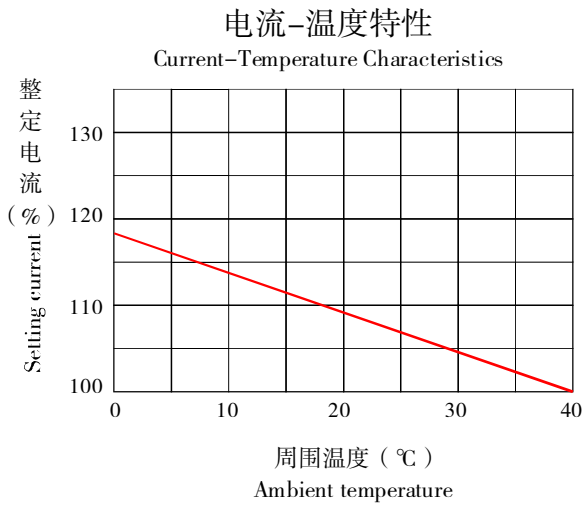


电流-温度特性

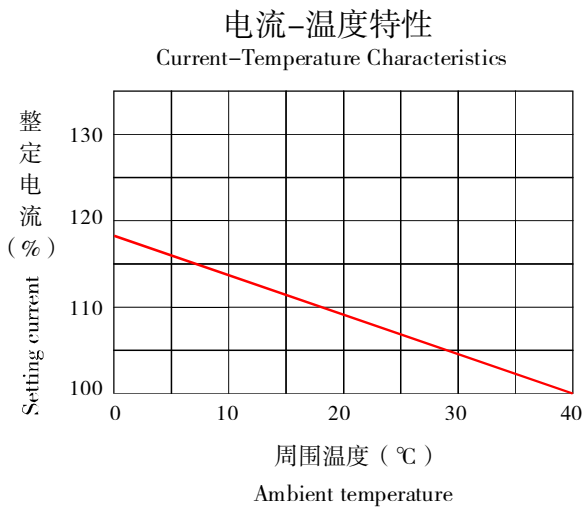
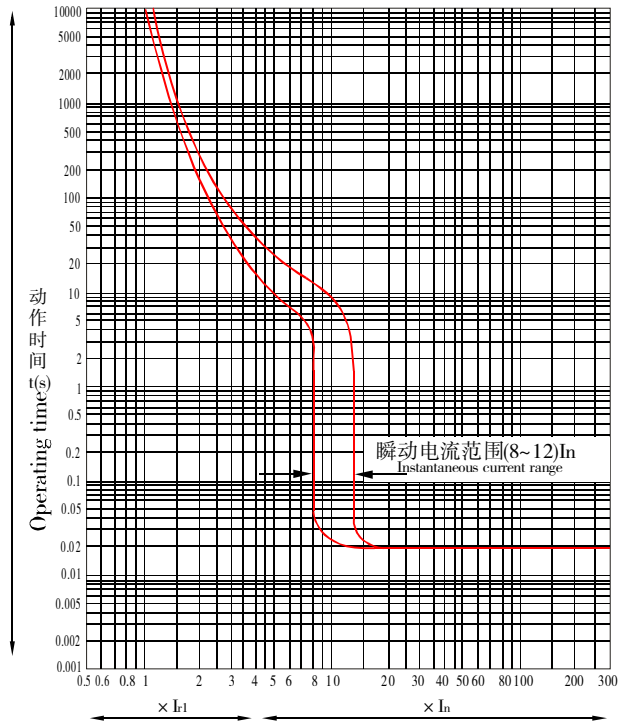
Current-Temperature Characteristics



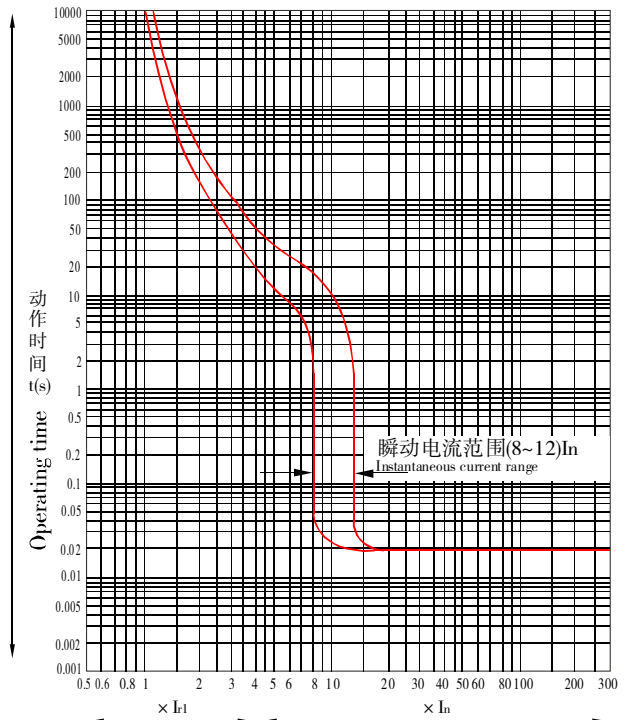




CM2L-400时间/电流特性曲线 (配电)  
CM2L-400 Time / current characteristic curve (distribution power)



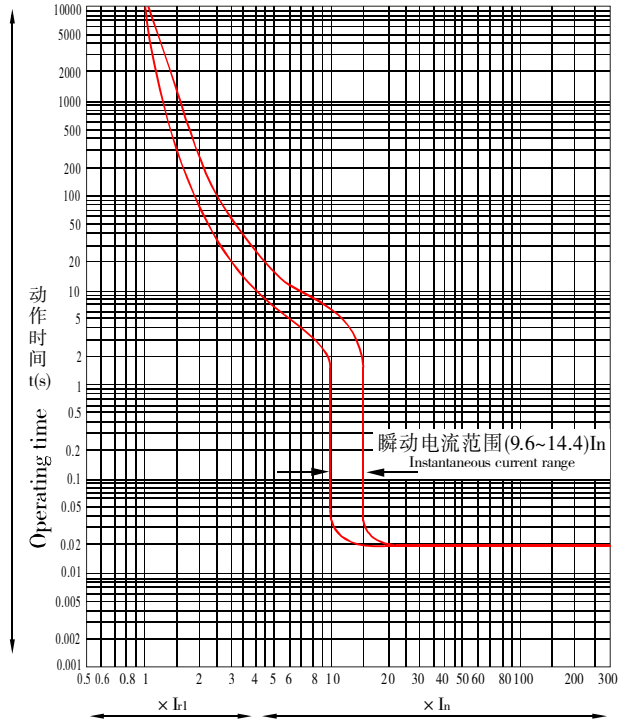
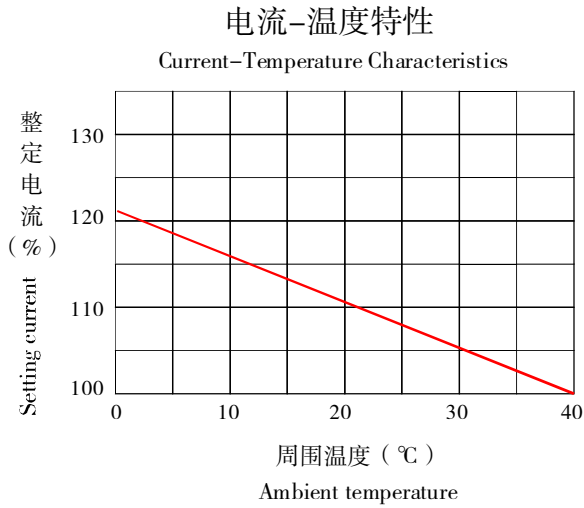
CM2L-630时间/电流特性曲线 (配电)  
CM2L-630 Time / current characteristic curve (distribution power)





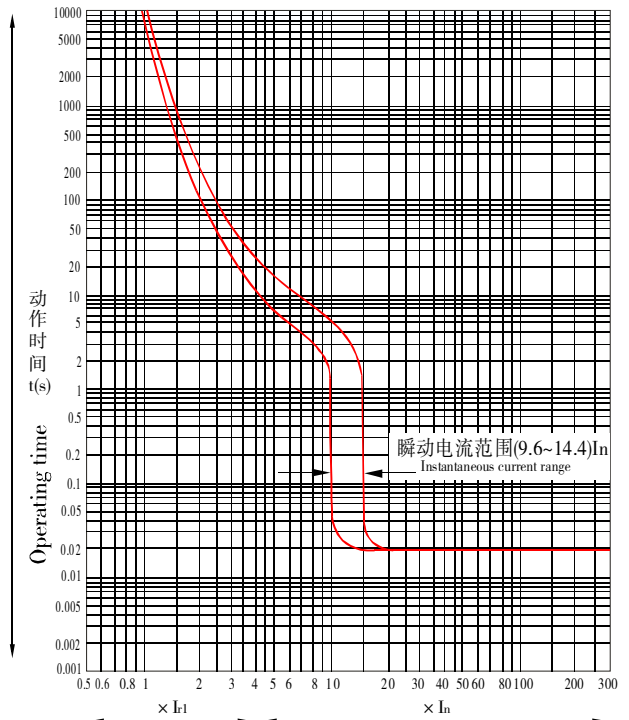
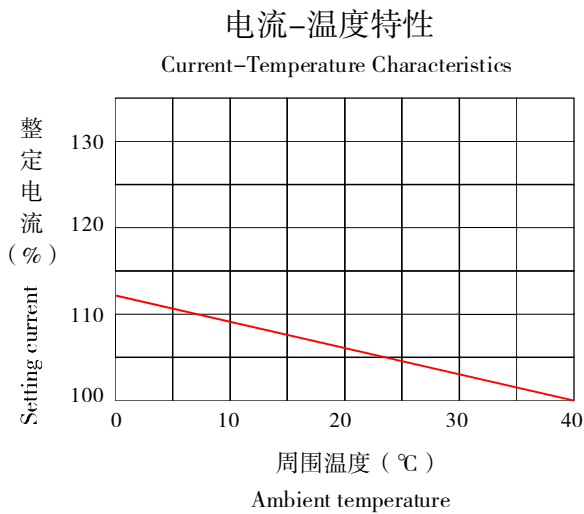
CM2L-125时间/电流特性曲线（电动机）

CM2L-125 Time / current characteristic curve (motor)



CM2L-225时间/电流特性曲线（电动机）

CM2L-225 Time / current characteristic curve (motor)

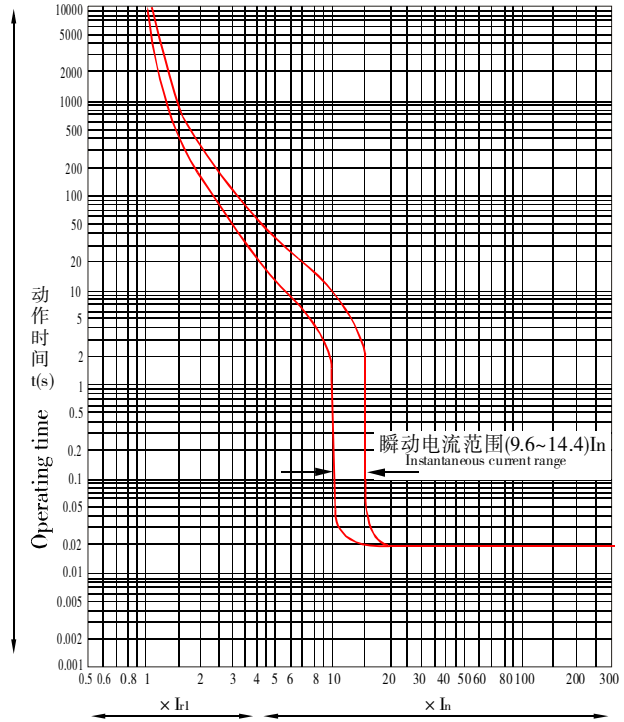
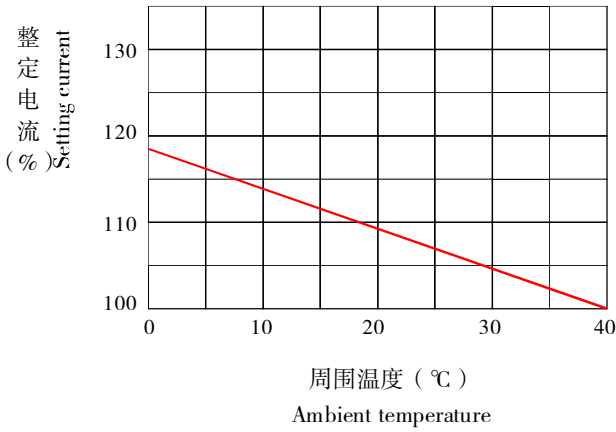




CM2L-400时间/电流特性曲线（电动机）

CM2L-400 Time / current characteristic curve (motor power)

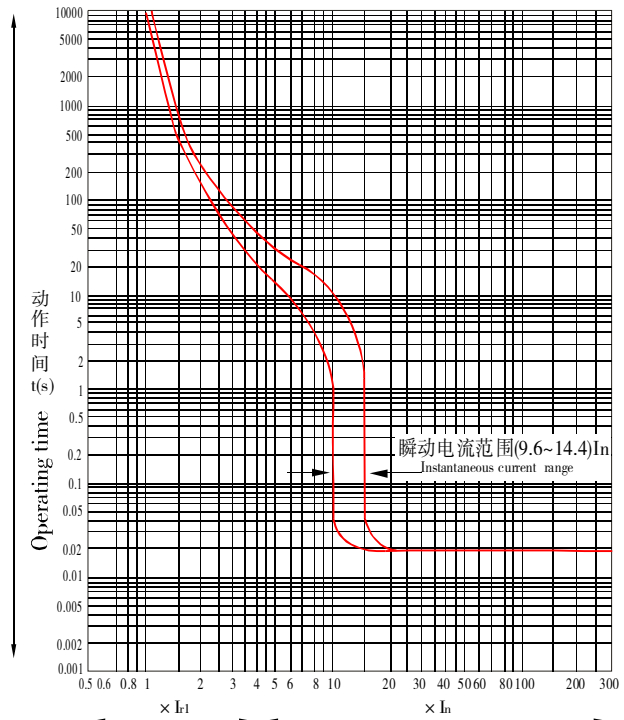
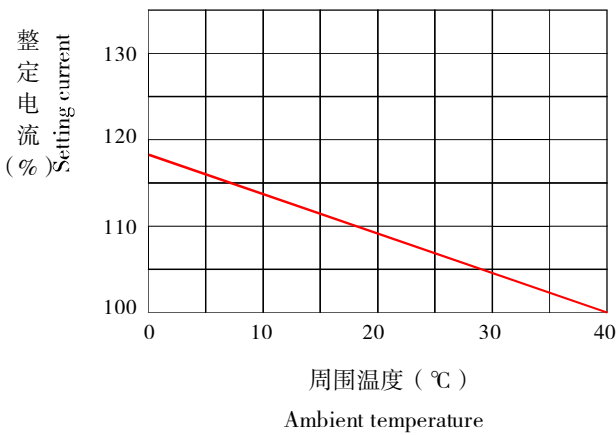
电流-温度特性  
Current-Temperature Characteristics



CM2L-630时间/电流特性曲线（电动机）

CM2L-630 Time / current characteristic curve (motor)

电流-温度特性  
Current-Temperature Characteristics



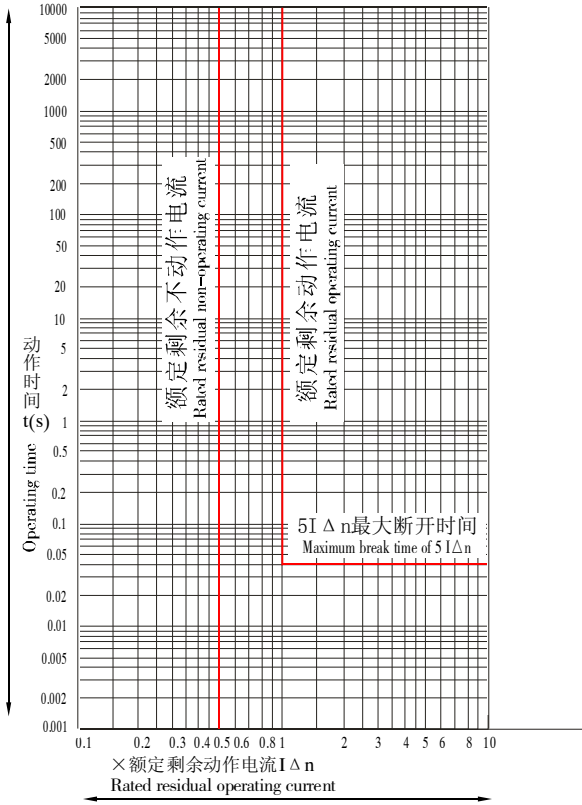




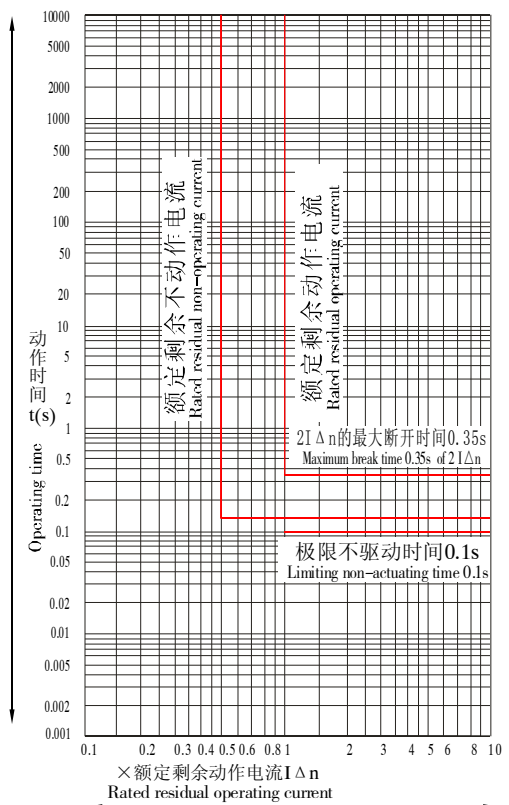
# 剩余电流保护特性曲线

# RESIDUAL CURRENT PROTECTION CHARACTERISTIC CURVE

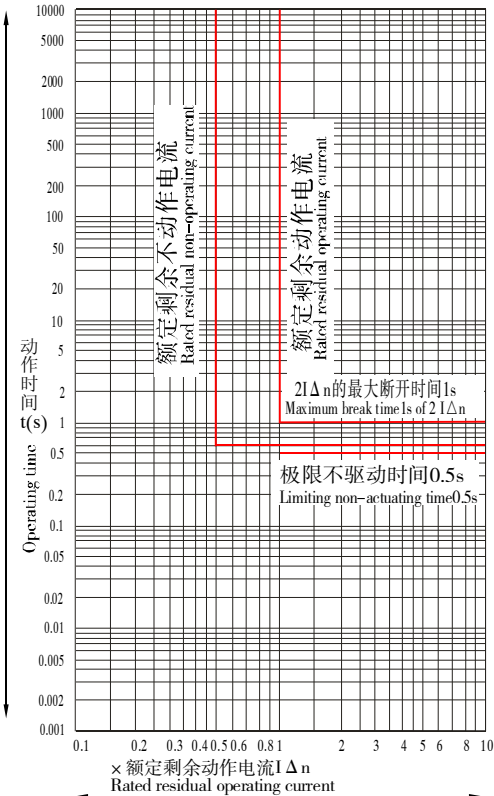
$I_{\Delta n}=0.03/0.1/0.3/0.5/1/3/10/30$  (A)  
 非延时剩余电流保护时间/电流特性曲线  
 Time / current characteristic curve of non-time-delay residual current protection



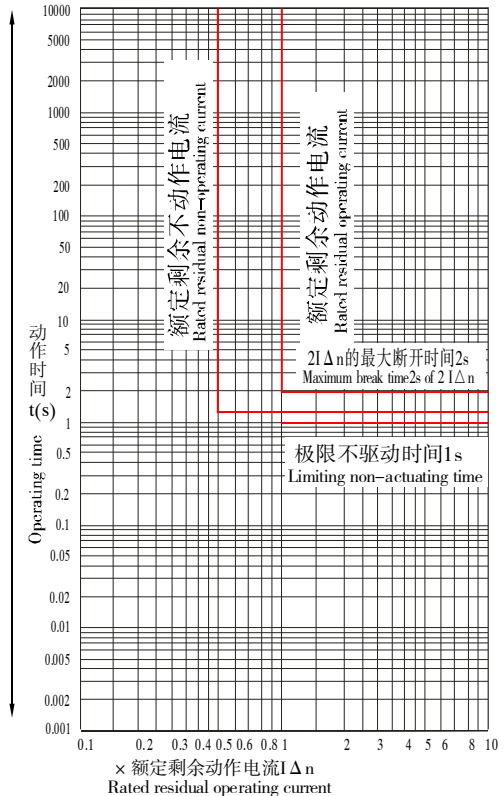
$I_{\Delta n}=0.1/0.3/0.5/1/3/10/30$  (A)  
 延时剩余电流保护时间/电流特性曲线  
 Time / current characteristic curve of time-delay residual current protection



$I_{\Delta n}=0.1/0.3/0.5/1/3/10/30$  (A)  
 延时剩余电流保护时间/电流特性曲线  
 Time / current characteristic curve of time-delay residual current protection



$I_{\Delta n}=0.1/0.3/0.5/1/3/10/30$  (A)  
 延时剩余电流保护时间/电流特性曲线  
 Time / current characteristic curve of time-delay residual current protection

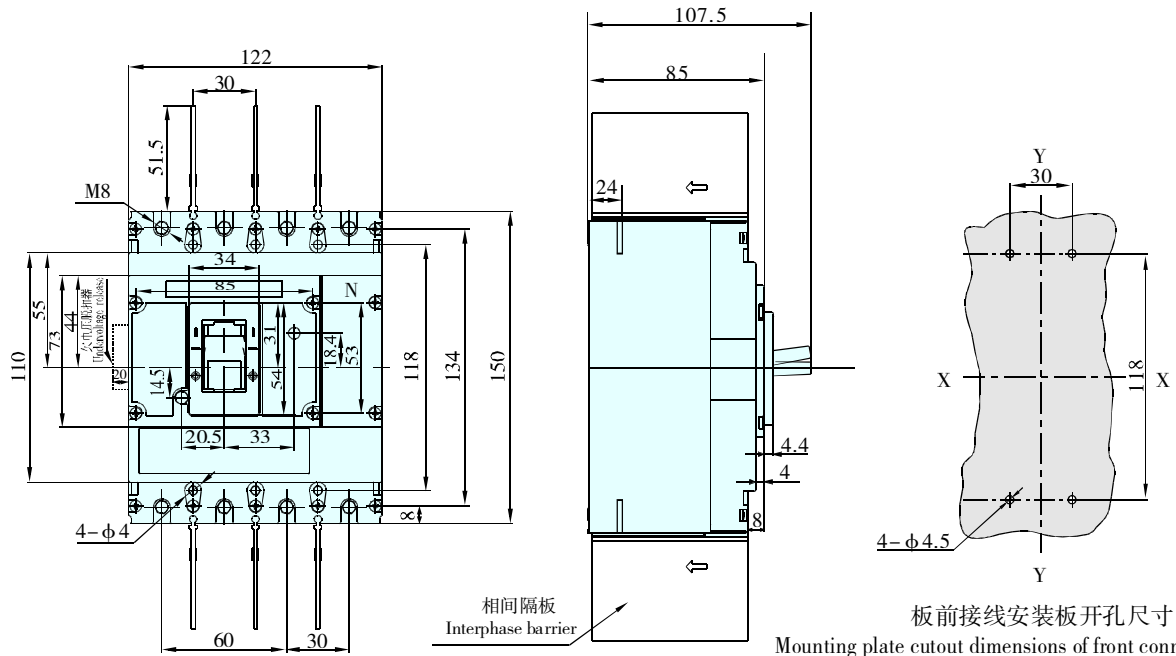




# 外形尺寸及安装尺寸 OUTLINE AND MOUNTING DIMENSIONS

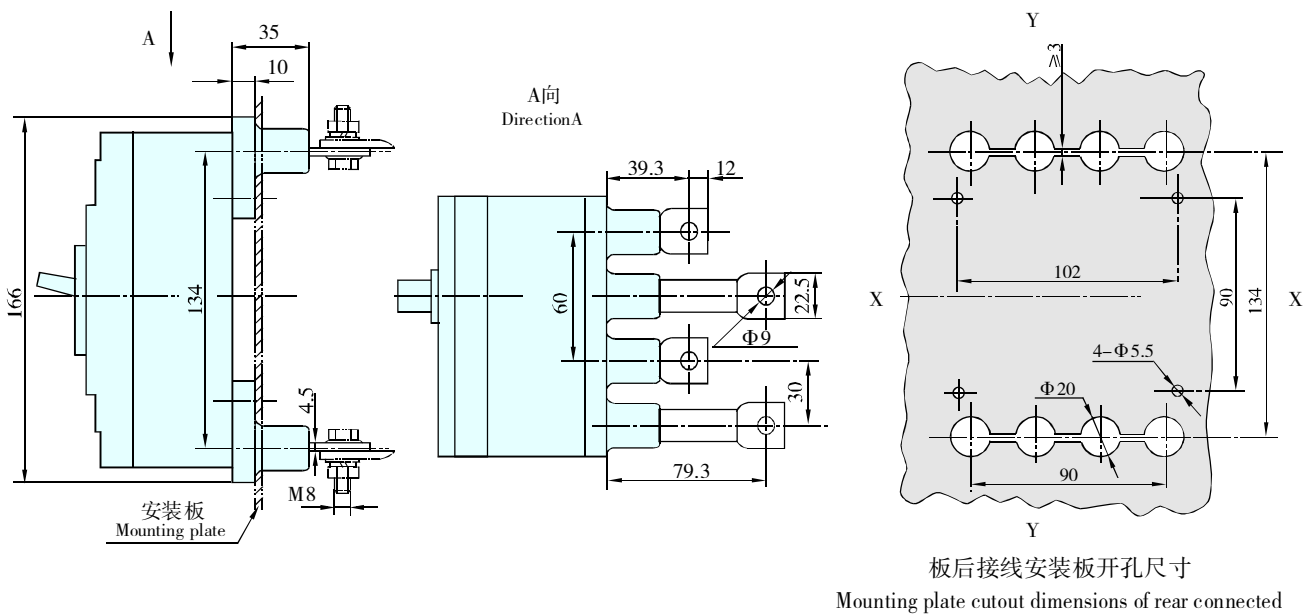
- CM2L-125板前接线（四极）  
X-X、Y-Y为三极断路器中心

CM2L-125 front connected (four poles)  
X-X, Y-Y center for the three-poles circuit breaker



- CM2L-125板后接线（四极）  
X-X、Y-Y为三极断路器中心

CM2L-125 rear connected (four poles)  
X-X, Y-Y center for the three-poles circuit breaker

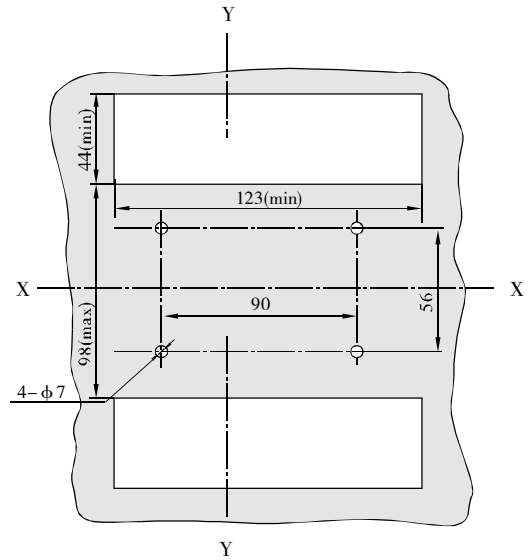
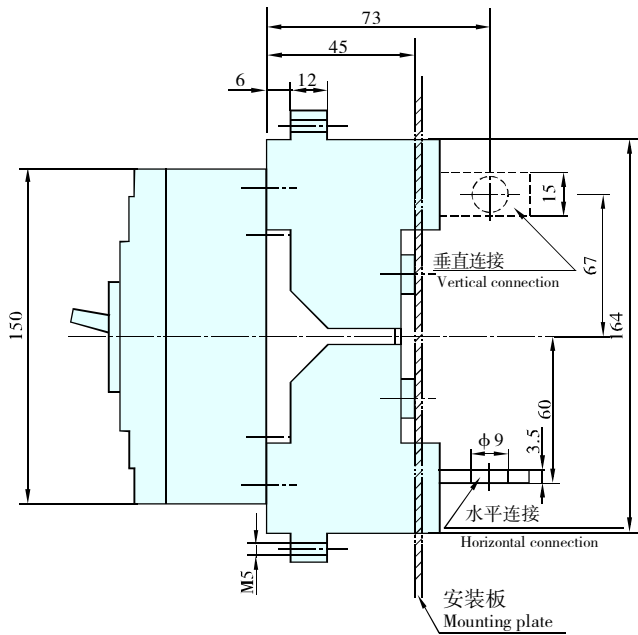




# 外形尺寸及安装尺寸 OUTLINE AND MOUNTING DIMENSIONS

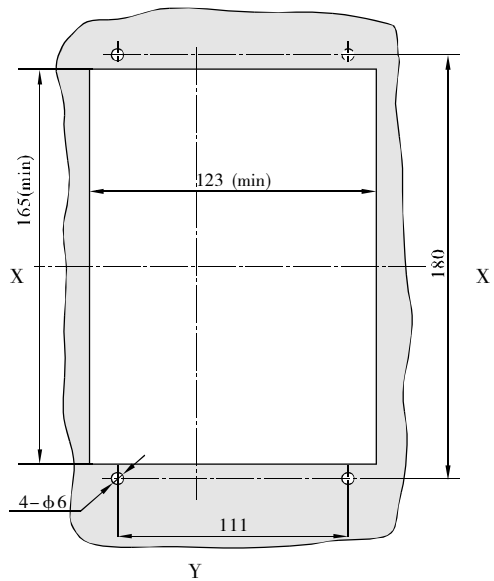
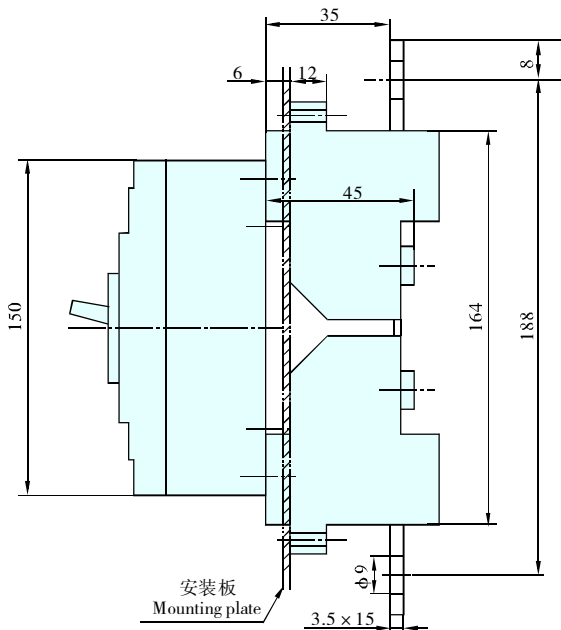
- CM2L-125插入式接线（四极）  
X-X、Y-Y为三极断路器中心
- 插入式接线安装方式一

CM2L-125 plug-in connected (four poles)  
X-X, Y-Y center for the three-poles circuit breaker  
The first mounting way of plug-in connected



安装方式一开孔尺寸  
Mounting plate cutout dimensions of the first mounting way

- 插入式接线安装方式二 The second mounting way of plug-in connected



安装方式二开孔尺寸  
Mounting plate cutout dimensions of the second mounting way



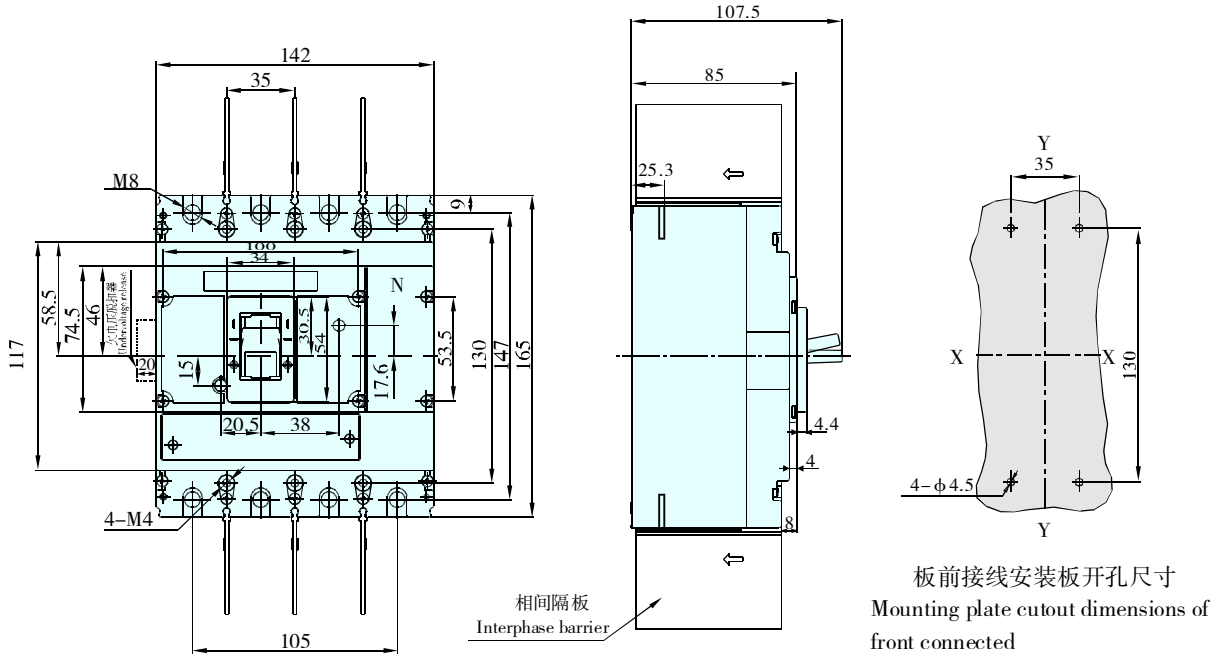
# 外形尺寸及安装尺寸 OUTLINE AND MOUNTING DIMENSIONS

● CM2L-225板前接线（四极）

CM2L-225 front connected (four poles)

X-X、Y-Y为三极断路器中心

X-X,Y-Y center for the three-poles circuit breaker

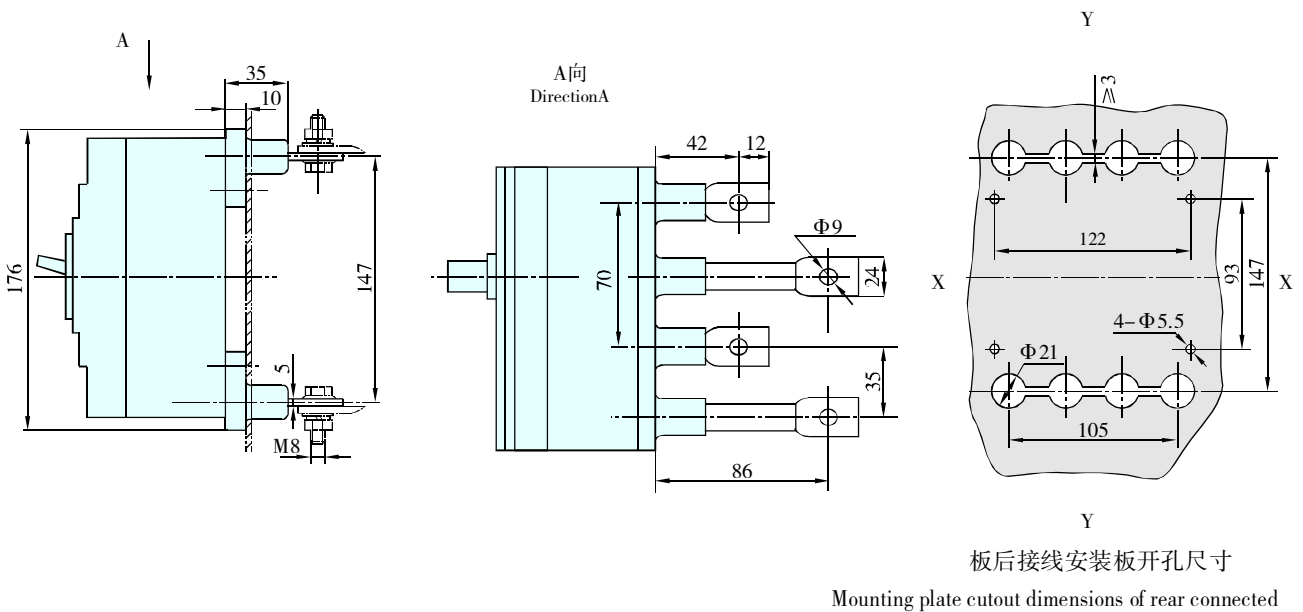


● CM2L-225板后接线（四极）

CM2L-225 rear connected (four poles)

X-X、Y-Y为三极断路器中心

X-X,Y-Y center for the three-poles circuit breaker



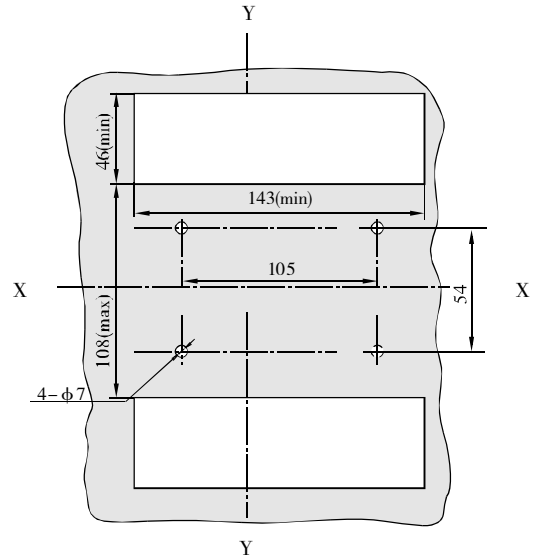
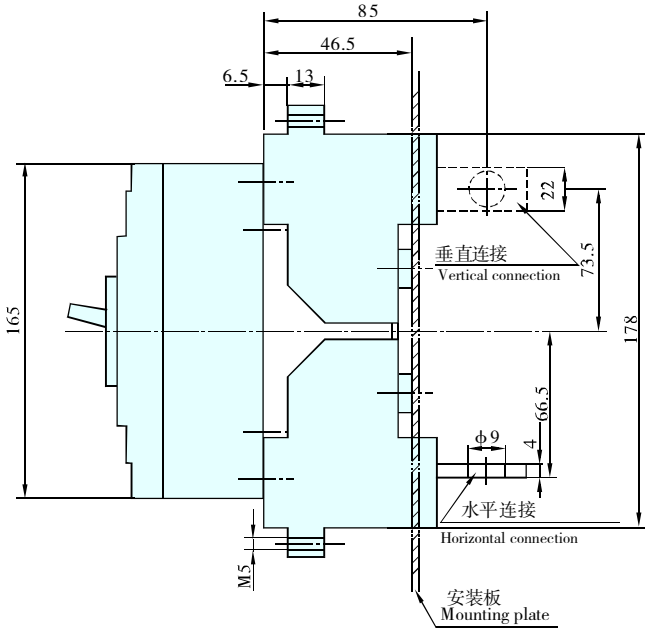




# 外形尺寸及安装尺寸 OUTLINE MOUNTING DIMENSIONS

- CM2L-225插入式接线（四极）  
X-X、Y-Y为三极断路器中心
- 插入式接线安装方式一

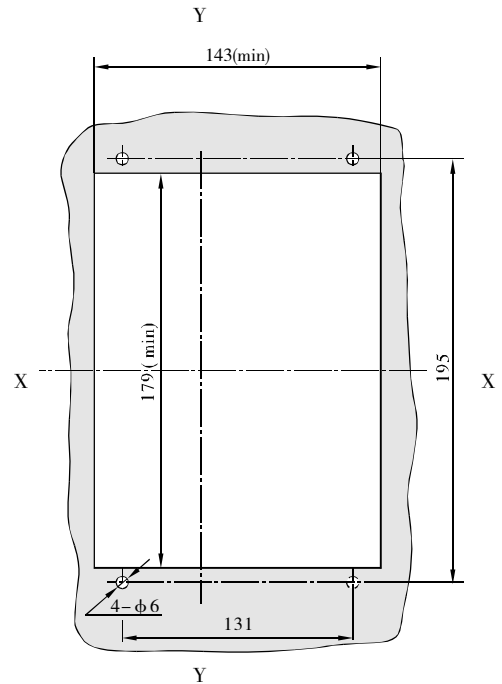
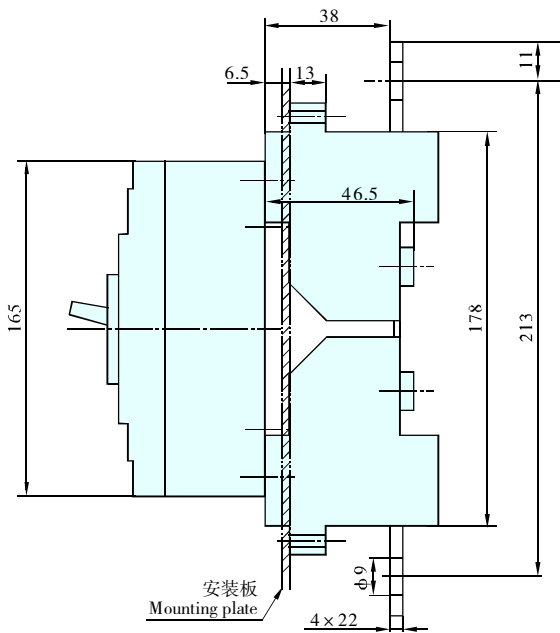
CM2L-225 plug-in connected (four poles)  
X-X, Y-Y center for the three-poles circuit breaker  
The first mounting way of plug-in connected



安装方式一开孔尺寸  
Mounting plate cutout dimensions of the first mounting way

- 插入式接线安装方式二

The second mounting way of plug-in connected



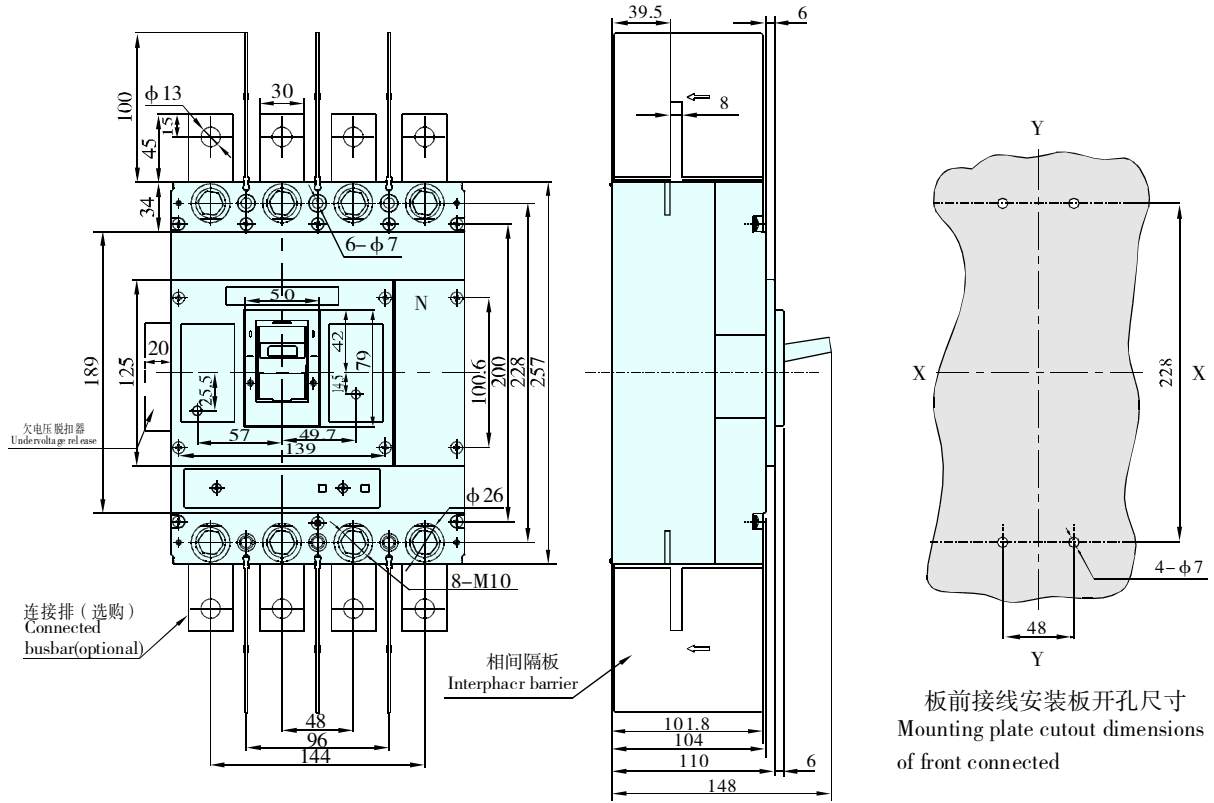
安装方式二开孔尺寸  
Mounting plate cutout dimensions of the second mounting way



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

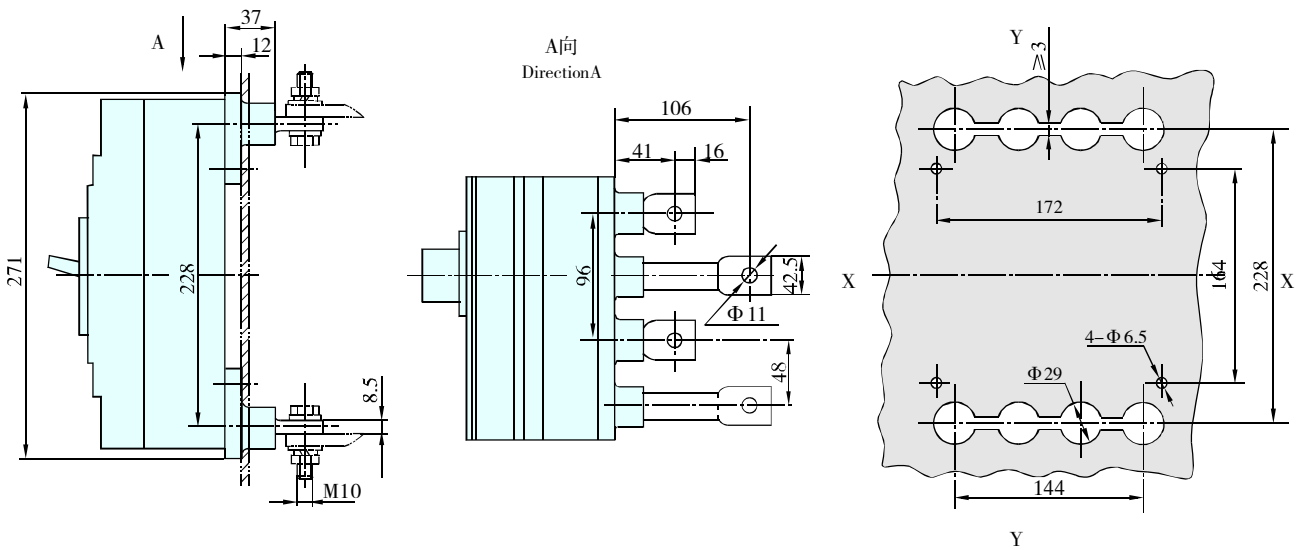
- CM2L-400板前接线（四极）  
X-X、Y-Y为三极断路器中心

CM2L-400 front connected (four poles)  
X-X,Y-Y center for the three-poles circuit breaker



- CM2L-400板后接线（四极）  
X-X、Y-Y为三极断路器中心

CM2L-400 rear connected (four poles)  
X-X,Y-Y center for the three-poles circuit breaker

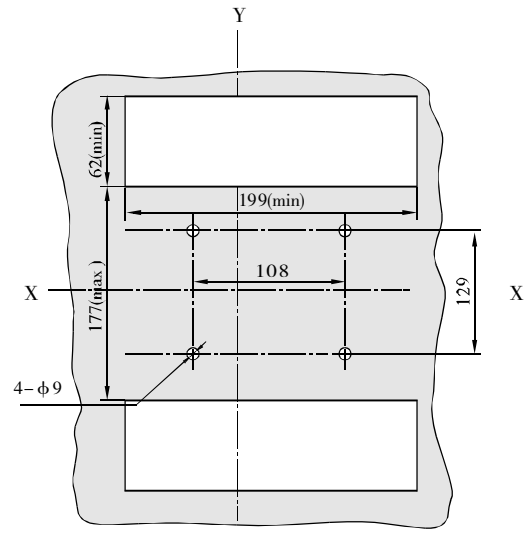
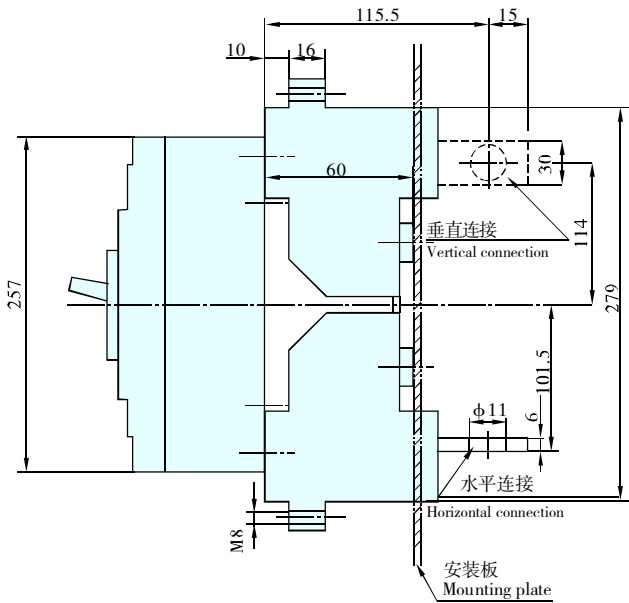




# 外形尺寸及安装尺寸 OUTLINE AND MOUNTING DIMENSIONS

- CM2L-400插入式接线（四极）  
X-X、Y-Y为三极断路器中心
- 插入式接线安装方式一

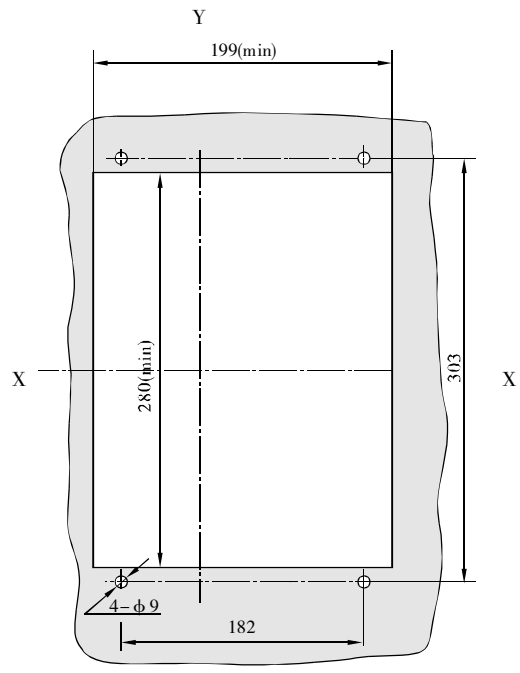
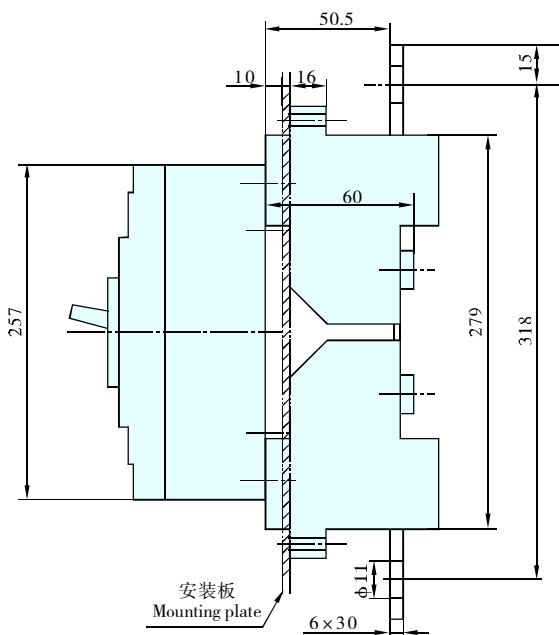
CM2L-400 plug-in connected (four poles)  
X-X, Y-Y center for the three-poles circuit breaker  
The first mounting way of plug-in connected



Y  
安装方式一开孔尺寸

Mounting plate cutout dimensions of the first mounting way

- 插入式接线安装方式二 The second mounting way of plug-in connected



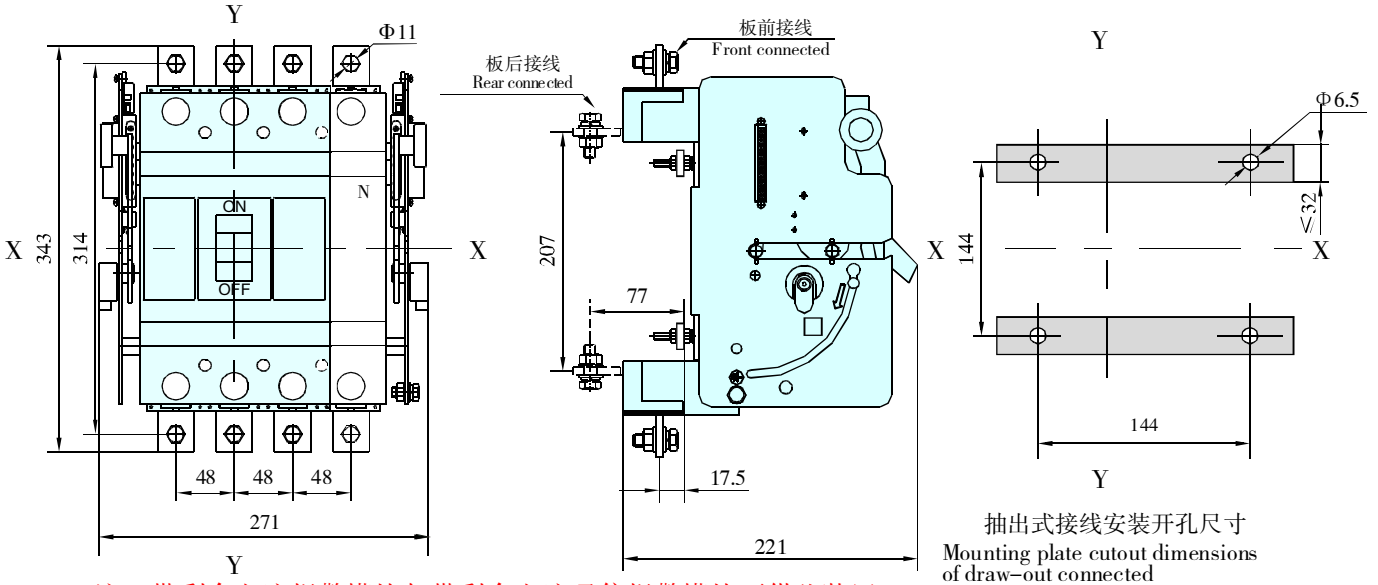
Y  
安装方式二开孔尺寸

Mounting plate cutout dimensions of the second mounting way

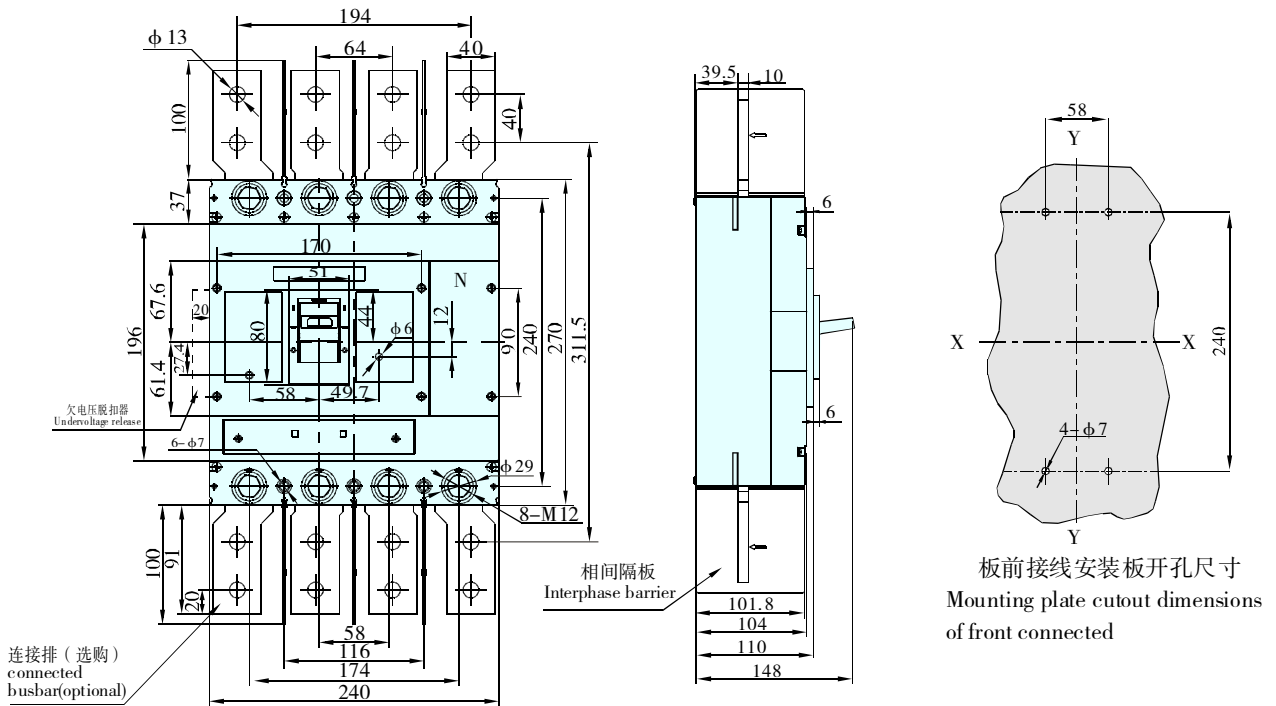


## 外形尺寸及安装尺寸 OUTLINE AND MOUNTING DIMENSIONS

- CM2L-400抽出式接线（四极） CM2L-400 draw-out connected (four poles)  
X-X、Y-Y为三极断路器中心 X-X, Y-Y center for the three-poles circuit breaker



- CM2L-630板前接线（四极） CM2L-630 front connected (four poles)  
X-X、Y-Y为三极断路器中心 X-X, Y-Y center for the three-poles circuit breaker

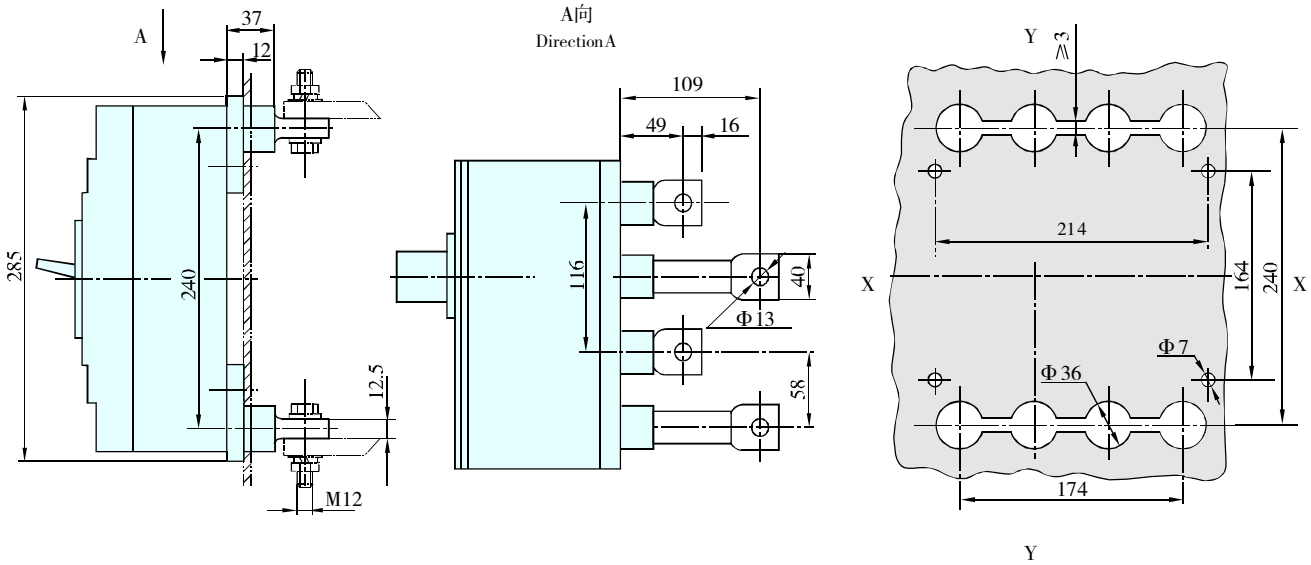






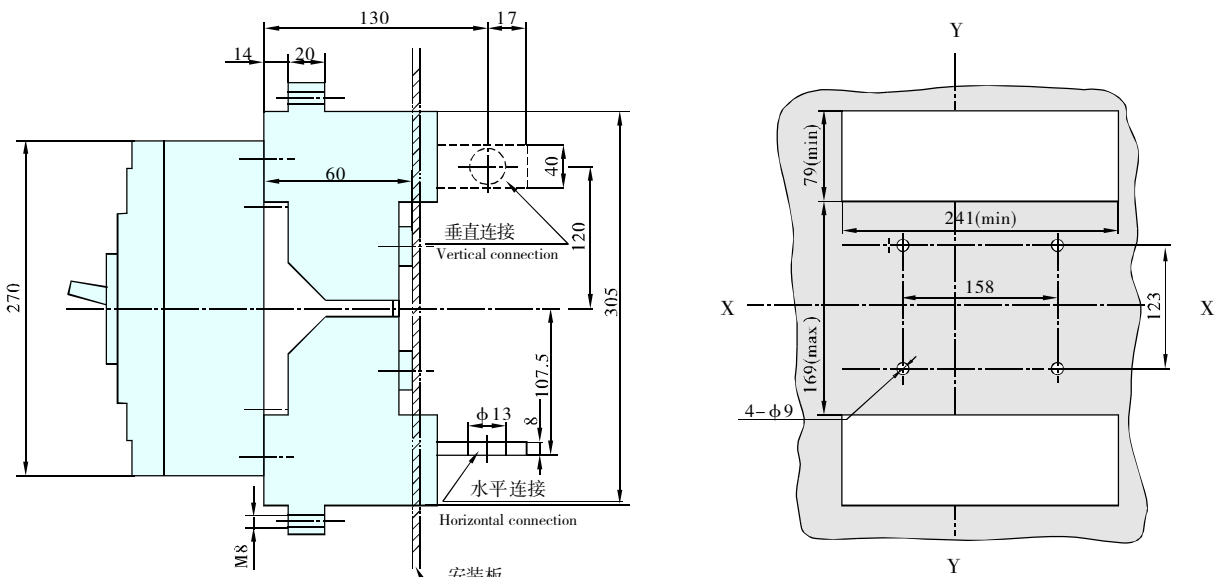
## 外形尺寸及安装尺寸 OUTLINE AND MOUNTING DIMENSIONS

- CM2L-630板后接线（四极） CM2L-630 rear connected (four poles)  
X-X、Y-Y为三极断路器中心 X-X,Y-Y center for the three-poles circuit breaker



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

- CM2L-630插入式接线（四极） CM2L-630 plug-in connected (four poles)  
X-X、Y-Y为三极断路器中心 X-X,Y-Y center for the three-poles circuit breaker
- 插入式接线安装方式一 The first mounting way of plug-in connected

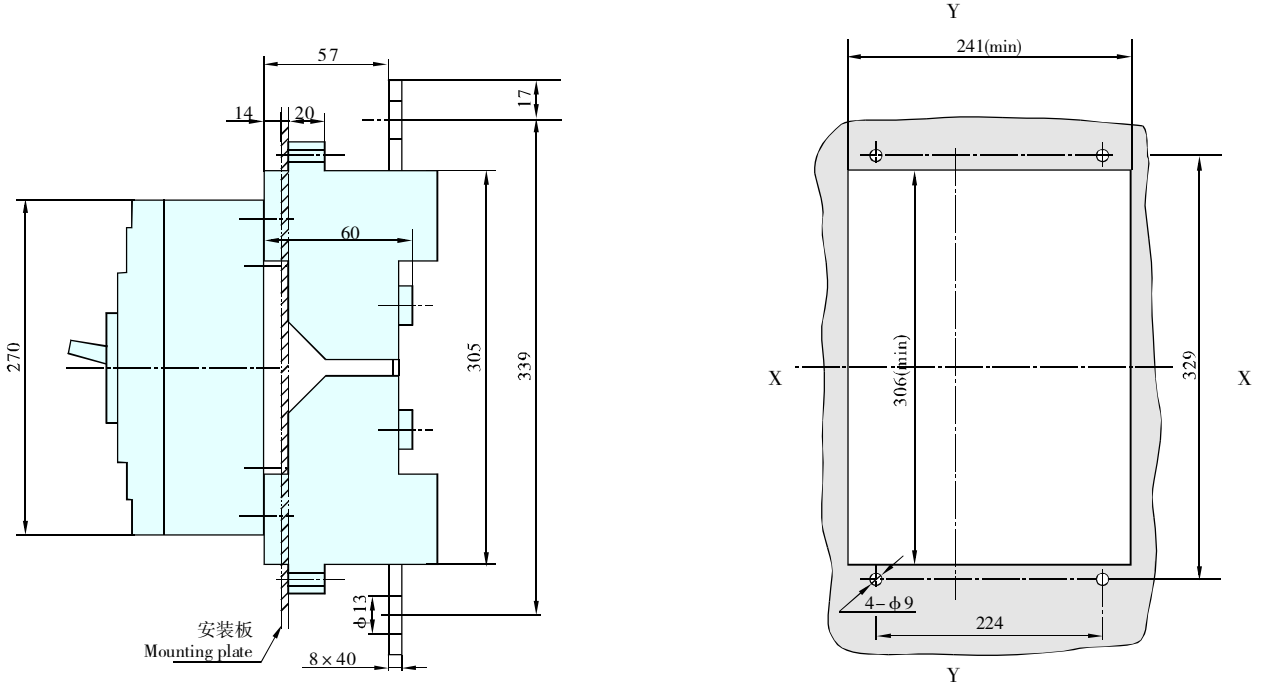


安装方式一开孔尺寸  
Mounting plate cutout dimensions of the first mounting way



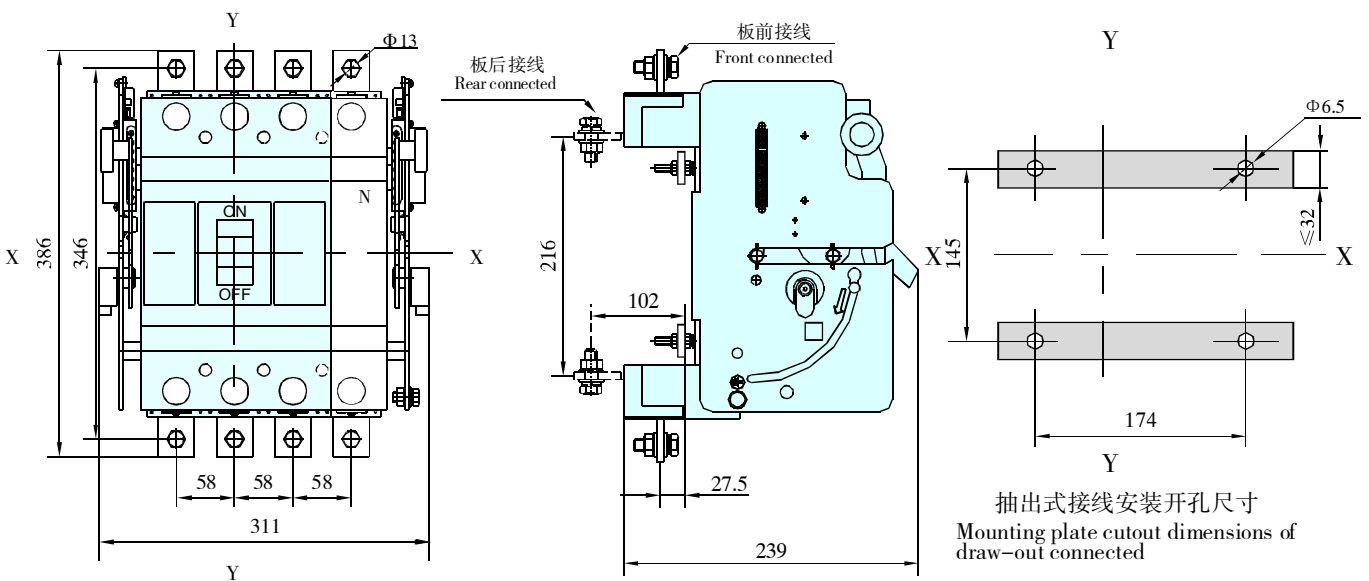
# 外形尺寸及安装尺寸 OUTLINE AND MOUNTING DIMENSIONS

- CM2L-630插入式接线（四极） CM2L-630 plug-in connected (four poles)  
X-X、Y-Y为三极断路器中心 X-X,Y-Y center for the three-poles circuit breaker
- 插入式接线安装方式二 The second mounting way of plug-in connected



安装方式二开孔尺寸  
Mounting plate cutout dimensions of the second mounting way

- CM2L-630抽出式接线（四极） CM2L-630 draw-out connected (four poles)  
X-X、Y-Y为三极断路器中心 X-X,Y-Y center for the three-poles circuit breaker

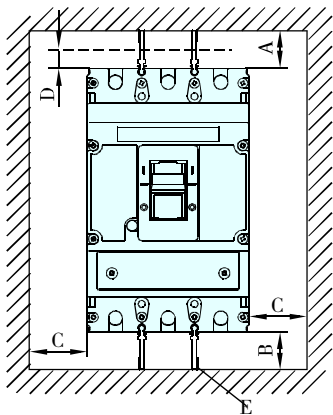


抽出式接线安装开孔尺寸  
Mounting plate cutout dimensions of draw-out connected

注：带剩余电流报警模块与带剩余电流通信报警模块不供此装置。  
Note: residual current alarm module and residual current communication alarm module are not available for this device.



## 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，必须安装相间隔板或零飞弧罩

- A: To the conductive paths (black and earthed metal)
- B: Terminals of the circuit breaker to bottom wall
- C: side of circuit breaker to side wall (black and earthed metal)
- D: To non-conductive parts

Note: E for interphase barrier, the interphase barrier or zero arcing cover should be installed

单位 Units : mm

型号 Type	A		B	C	D
	不带零飞弧罩 Without zero arcing cover	带零飞弧罩 With zero arcing cover			
CM2L-125	50	25	25	25	25
CM2L-225	50	25	25	25	25
CM2L-400	100	25	25	25	25
CM2L-630	100	25	25	25	25



## 内外部附件 INTERNAL / EXTERNAL ACCESSORIES

敬告用户:

内外部附件，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。

Advise to user:

Internal/external 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.

### 1、断路器的内部附件

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）。

● QTCM2欠电压脱扣器，符号○（与CM2、CM2Z通用）

AC50Hz/60Hz 230V、400V。

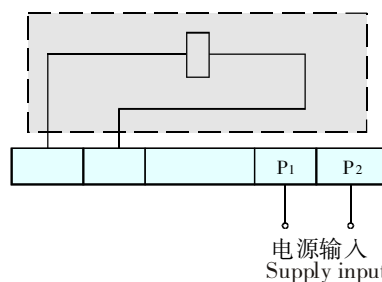
外挂欠电压模块接线图见下图(虚框内为断路器内部附件)

### 1, Breaker internal accessories

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

● Undervoltage release (with CM2, CM2Z universal)  
AC50Hz/60Hz 230V、400V。

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





## 内外附件 INTERNAL / EXTERNAL ACCESSORIES

在额定控制电源电压的35%~70%时，欠电压脱扣器应可靠使断路器脱扣；  
 在额定控制电源电压的85%~110%时，欠电压脱扣器应保证断路器能合闸；  
 在额定控制电源电压低于35%时，欠电压脱扣器应防止断路器合闸。

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

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

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

欠电压脱扣器型号 Under-voltage release type	配用断路器 Fitting for circuit breakers	安装位置 Mounting position	欠电压脱扣器功率 (VA) Undervoltage release power	
			AC230V	AC400V
QTCM2-125Z	CM2L-125 四极 four poles	左面 left	2.6	3.3
QTCM2-225Z	CM2L-225 四极 four poles	左面 left	2.6	3.3
QTCM2-400Z	CM2L-400 四极 four poles	左面 left	2.3	2.7
QTCM2-630Z	CM2L-630 四极 four poles	左面 left	2.3	2.7

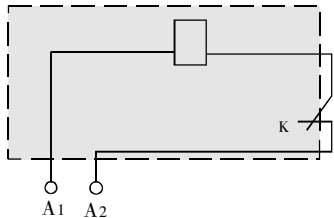
**警告：欠电压脱扣器必须先通电，断路器才能合闸。否则将损坏断路器！**

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

### ● FTCM2分励脱扣器，符号●（与CM2、CM2Z通用） Shunt release (with CM2, CM2Z universal)

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

分励脱扣器型号 Shunt release type	配用断路器 Fitting breaker	安装位置 Mounting position
FTCM2-125Z	CM2L-125 四极 A、B、C、D 型 four poles type A/B/C/D	左面 left
FTCM2-125Y	CM2L-125 四极 B、C 型 four poles type B/C	右面 right
FTCM2-225Z	CM2L-225 四极 A、B、C、D 型 four poles type A/B/C/D	左面 left
FTCM2-225Y	CM2L-225 四极 B、C 型 four poles type B/C	右面 right
FTCM2-400Z	CM2L-400 四极 A、B、C、D 型 four poles type A/B/C/D	左面 left
FTCM2-400Y	CM2L-400 四极 B、C 型 four poles type B/C	右面 right
FTCM2-630Z	CM2L-630 四极 A、B、C、D 型 four poles type A/B/C/D	左面 left
FTCM2-630Y	CM2L-630 四极 B、C 型 four poles type B/C	右面 right



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

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

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

Voltage specifications

在额定控制电源电压的70~110%之间时，分励脱扣器应可靠使断路器脱扣。

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

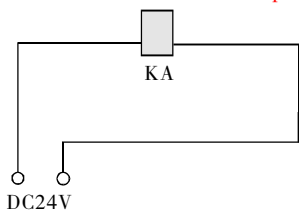
注: 当采用额定控制电源电压DC24V规格分励脱扣器时，铜导线最大长度（两根导线中每根长度）须满足右表条件。

注: 当不满足上述表中要求时，推荐采用下图进行分励控制回路设计。

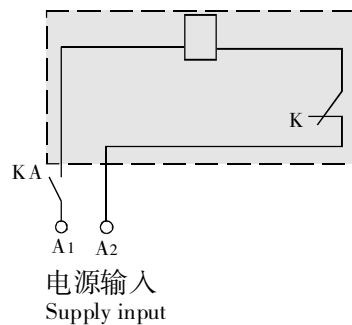
Note: When using rated control supply voltage DC24V shunt release specifications, the maximum length of copper wire (two wires in the length of each) shall meet the conditions of the right table.

Note: When the above table does not meet requirements, under the plan recommended for control loop design of shunt.

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



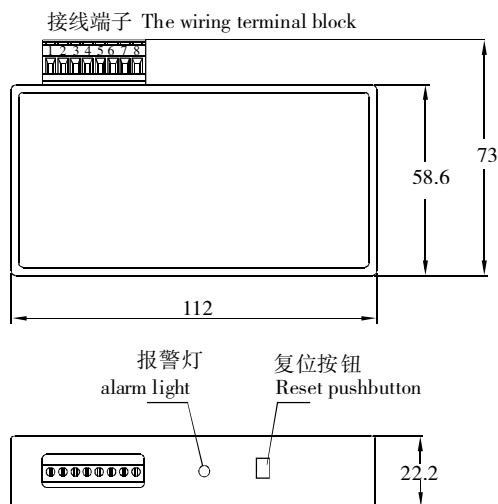
KA: 为DC24V中间继电器，触点电流容量为1A  
Auxiliary relay for DC24V, contact current capacity is 1A.







● 剩余电流报警模块 Residual Current Alarm Module



接线端子的接线 Wiring of the terminal block

端子 Terminal	连接 Connect
P1、P3	电源输入：AC230V或AC400V Supply input:AC230V or AC400V
P5、P6	常开触点，AC230V 5A Normally open contact AC230V5A
P7、P8	常闭触点，AC230V 5A Normally closed contact AC230V5A

安装剩余电流报警模块可确认剩余电流故障，并有信号输出。模块安装于断路器右侧，有两种工作方式，用户根据需要可在订货时说明：

方式一（用 I 表示）：当发生漏电，剩余电流报警模块发出信号，同时断路器脱扣；

方式二（用 II 表示）：当发生漏电，剩余电流报警模块发出信号，但断路器不脱扣。

The installation of residual current alarm module can be confirmed that the residual current fault. And a signal output. Module installed in the right breaker, there are two methods of work, users need to indicate in the order:

One way (with I said): the event of leakage, and the residual current alarm module send signal, breaker trip at the same time;

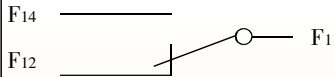
Second, ( with II said ): When the leakage occurred, the module send alarm signal, but do not trip breaker.

● BCCM2报警触头，符号□（与CM2、CM2Z通用） Alarm Contact (with CM2, CM2Z universal)

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
BCCM2-125Z	CM2L-125四极A、B、C、D型 four poles type A/B/C/D	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>
BCCM2-125Y	CM2L-125四极 B、C型 four poles type B/C	右面 right	
BCCM2-225Z	CM2L-225四极 A、B、C、D型 four poles type A/B/C/D	左面left	
BCCM2-225Y	CM2L-225四极 B、C型 four poles type B/C	右面 right	
BCCM2-400Z	CM2L-400四极 A、B、C、D型 four poles type A/B/C/D	左面left	
BCCM2-630Z	CM2L-630四极 A、B、C、D型 four poles type A/B/C/D	左面left	



● FCCM2辅助触头, 符号■ (与CM2、CM2Z通用)  
Auxiliary contact (with the CM2, CM2Z universal)

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
FCCM2-125Z	CM2L-125四极A、B、C、D型 four poles type A/B/C/D	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>
FCCM2-125Y	CM2L-125四极 B、C型 four poles type B/C	右面 right	
FCCM2-225Z	CM2L-225四极 A、B、C、D型 four poles type A/B/C/D	左面left	
FCCM2-225Y	CM2L-225四极 B、C型 four poles type B/C	右面 right	
FCCM2-125ZS	CM2L-125四极A、B、C、D型 four poles type A/B/C/D	左面left	
FCCM2-125YS	CM2L-125四极 B、C型 four poles type B/C	右面 right	
FCCM2-225ZS	CM2L-225四极 A、B、C、D型 four poles type A/B/C/D	左面left	
FCCM2-225YS	CM2L-225四极 B、C型 four poles type B/C	右面 right	
FCCM2-400ZS	CM2L-400四极 A、B、C、D型 four poles type A/B/C/D	左面left	
FCCM2-400YS	CM2L-400四极 B、C型 four poles type B/C	右面 right	
FCCM2-630ZS	CM2L-630四极 A、B、C、D型 four poles type A/B/C/D	左面left	
FCCM2-630YS	CM2L-630四极 B、C型 four poles type B/C	右面 right	

● FBCM2辅助触头+报警触头, 符号□ (与CM2、CM2Z通用) Auxiliary and alarm contacts (with the CM2, CM2Zuniversal)

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	
FBCM2-125Z	CM2L-125四极A、B、C、D型 four poles type A/B/C/D	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>	
FBCM2-125Y	CM2L-125四极 B、C型 four poles type B/C	右面 right		
FBCM2-225Z	CM2L-225四极 A、B、C、D型 four poles type A/B/C/D	左面left		
FBCM2-225Y	CM2L-225四极 B、C型 four poles type B/C	右面 right		
FBCM2-400Z	CM2L-400四极 A、B、C、D型 four poles type A/B/C/D	左面left		
FBCM2-630Z	CM2L-630四极 A、B、C、D型 four poles type A/B/C/D	左面left		
FBCM2-125Z	CM2L-125四极A、B、C、D型 four poles type A/B/C/D	左面left		 <p>图示为断路器处于“分”或“合”时的状态, 当断路器处于“脱扣”时, 图示状态转换。 The status of the breaker in “off” or “on”, if breaker is “tripped”, the status is changovered.</p>
FBCM2-125Y	CM2L-125四极 B、C型 four poles type B/C	右面 right		
FBCM2-225Z	CM2L-225四极 A、B、C、D型 four poles type A/B/C/D	左面left		
FBCM2-225Y	CM2L-225四极 B、C型 four poles type B/C	右面 right		
FBCM2-400Z	CM2L-400四极 A、B、C、D型 four poles type A/B/C/D	左面left		
FBCM2-630Z	CM2L-630四极 A、B、C、D型 four poles type A/B/C/D	左面left		



● 辅助触头、报警触头额定工作电流  
Auxiliary contact, alarm contact rated operational current

分类 Categories	壳架等级额定电流(A) Frame size rated current	约定发热电流Ith(A) Conventional thermal current	额定工作电流Ie(A) Rated operational current	
			AC400V	DC220V
辅助触头 Auxiliary contact	$I_{nm} \leq 225$	3	0.3	0.15
报警触头 Alarm contact	$I_{nm} \geq 400$	3	0.4	0.15

● 通电操作性能及相应的试验条件  
Operational performance with current and the corresponding testing conditions

使用类别 categories	接通 Making			分断 Breaking			通电操作 循环次数 Number of operating cycles with current	每分钟操作 循环次数*) Number of operating cycles per minute	通电时间*) With current time
	I/Ie	U/Ue	cos φ 或 T <sub>0.95</sub>	I/Ie	U/Ue	cos φ 或 T <sub>0.95</sub>			
AC-15	10	1	0.3	1	1	0.3	6050	6	≥0.05s
DC-13	1	1	6Pe	1	1	6Pe			≥T <sub>0.95</sub>

● 非正常条件下接通与分断能力  
Non-normal conditions making and breaking capacity

使用类别 Utilization categories	接通 Close			分断 Open			通电操作 循环次数 Number of operating cycles with current	每分钟操作 循环次数*) Number of operating cycles per minute	通电时间*) With current time
	I/Ie	U/Ue	cos φ 或 T <sub>0.95</sub>	I/Ie	U/Ue	cos φ 或 T <sub>0.95</sub>			
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 <sub>0.95</sub>

注：上述二表 1. T<sub>0.95</sub>=6Pe是经验公式，其中Pe以“瓦”为单位，T<sub>0.95</sub>以毫秒为单位。  
2. \*)操作频率和通电时间允许与断路器主电路的一致。

Note: The above two tables

1. T<sub>0.95</sub> = 6Pe is the experience formula, in which Pe with "W" as a unit, T<sub>0.95</sub> in milliseconds.
2. \*) operating frequency and time with current when are allowed the main breaker in line.



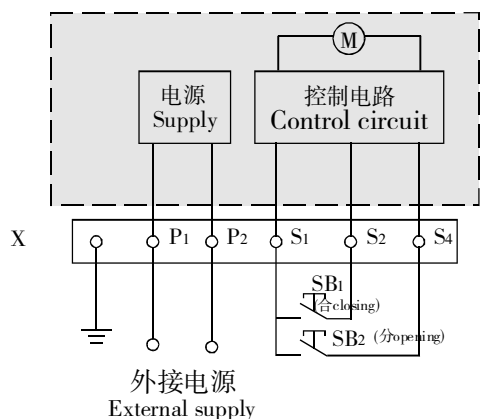
## 2、断路器的外部附件 External accessories of breaker

### ● DCCM2电动操作机构（与CM2、CM2Z通用）

Motor operator (with CM2, CM2Z universal)

电动操作机构接线图见下图（虚框内为电动操作机构内部接线图）

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



符号说明:

Description

SB1、SB2操作按钮（用户自备） Operating pushbuttons (user-owned)

X接线端子排 terminal block

P1、P2为外接电源 for external supply

电压规格 Voltage specifications:

AC50Hz/60Hz 110V、230V

DC24V、110V、220V

### ● 电动操作机构的动作电流、电机功率及寿命

Operating current, motor power and durability of motor operator

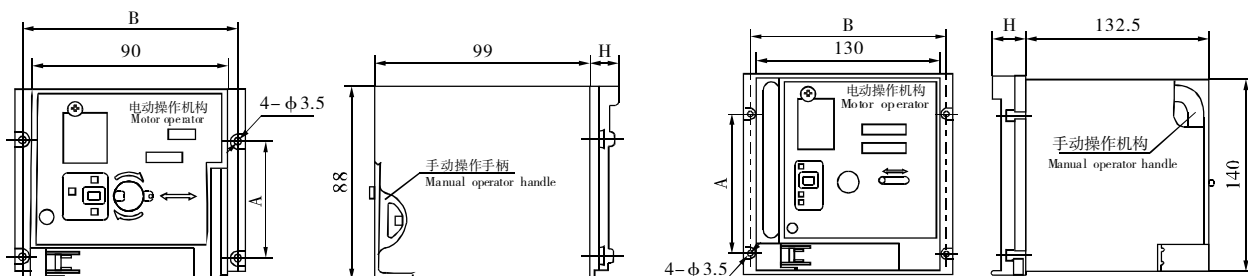
电动操作机构型号 Motor operator type	配用断路器 For circuit breaker	动作电流(A) Operating current		电动机功率(W) Motor Power	寿命(次数) Durability (times)
		AC110V、230V DC110V、220V	DC24V		
DCCM2-125	CM2L-125	≤0.5	≤3	14	20000
DCCM2-225	CM2L-225	≤0.5	≤3	14	20000
DCCM2-400	CM2L-400	≤2	≤5	35	10000
DCCM2-630	CM2L-630	≤2	≤5	35	10000

注：断路器脱扣跳闸后，电动机操作机构必须先使断路器再扣，然后才能合闸

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



● 电动操作机构外形安装尺寸 Outline and installation dimensions of motor operator



DCCM2-125、225

DCCM2-400、630

电动操作机构型号 Motor operator type		DCCM2-125	DCCM2-225	DCCM2-400	DCCM2-630
安装尺寸 Mounting dimension	A	53	53.5	100	90
	B	85	100	139	170
	H	12.5	12.5	23	23

● ZCCM2手动操作机构（与CM2、CM2Z通用）  
Rotary handle operator (with the CM2, CM2Z universal)

**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。

**用途:**

本机构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）。

**Characteristics:**

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

**usage:**

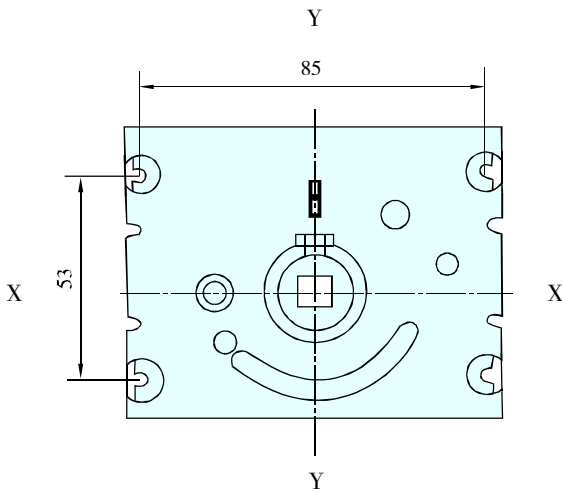
Rotary handle through the realization of a withdrawable cabinets, distribution cabinets, power boxes, such as operation in the panel request. And to ensure that when breaker closing in the door cabinets can not be opened (that is, with the door interlocking).



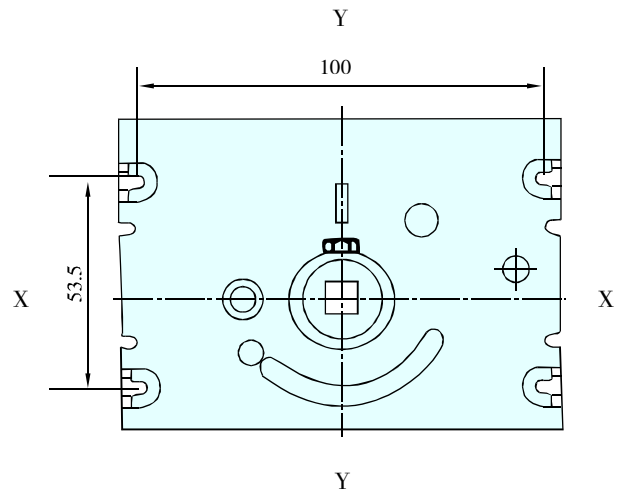


● 门板中心开孔 Door center cutout

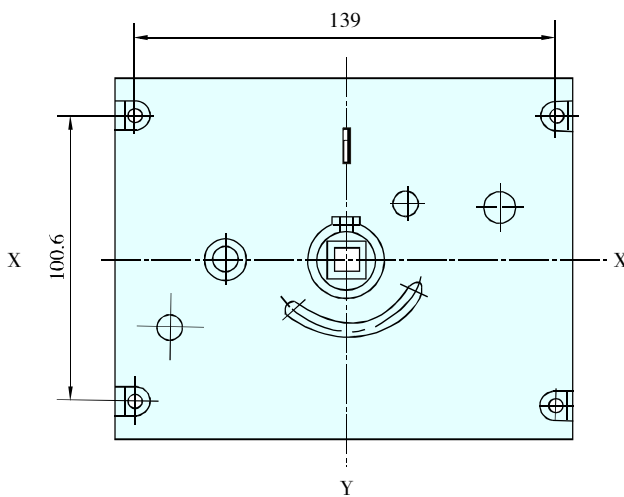
X-X、Y-Y为三极断路器中心 Center for the three-poles circuit breaker



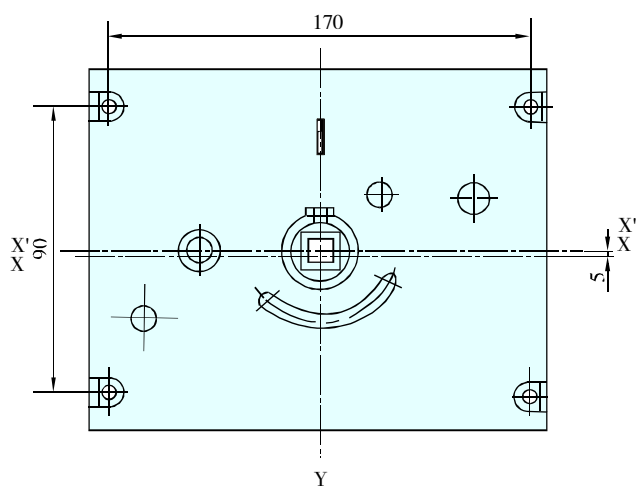
ZCCM2-125C  
配于CM2L-125  
For CM2L-125



ZCCM2-225C  
配于CM2L-225  
For CM2L-225



ZCCM2-400C  
配于CM2L-400  
For CM2L-400



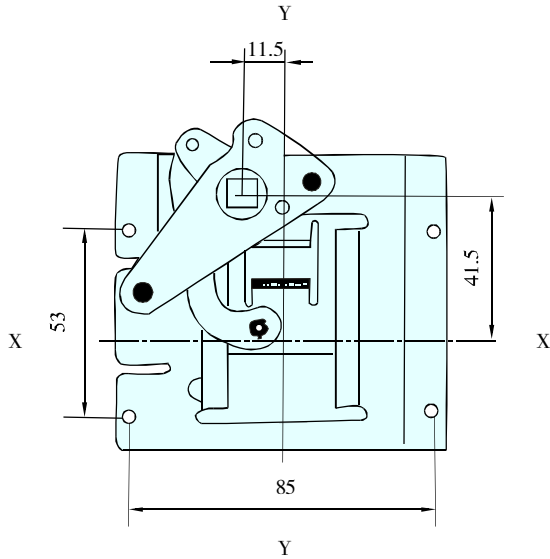
ZCCM2-630C  
配于CM2L-630  
For CM2L-630

注：X'-X'为手操机构中心  
Note: X'-X' for the handle operator central

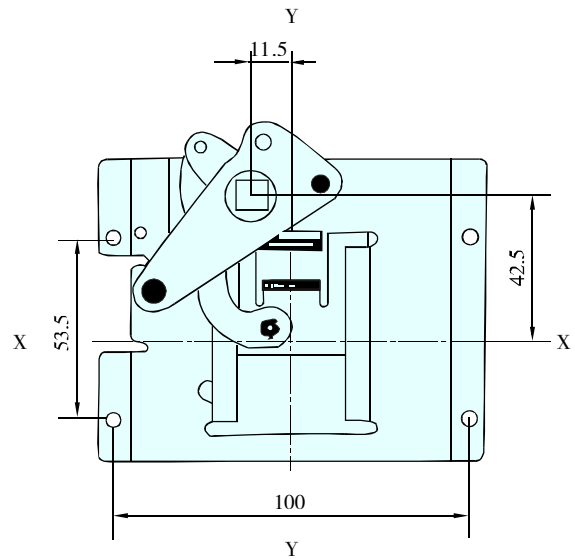


● 门板偏心开孔 Door eccentric cutout

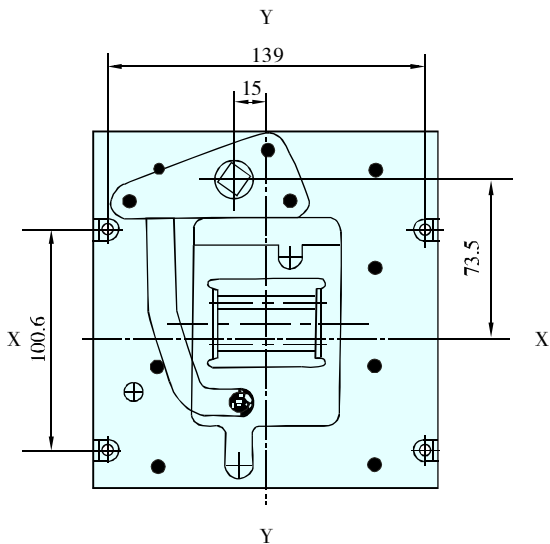
X-X、Y-Y为三极断路器中心 Center for the three-poles circuit breaker



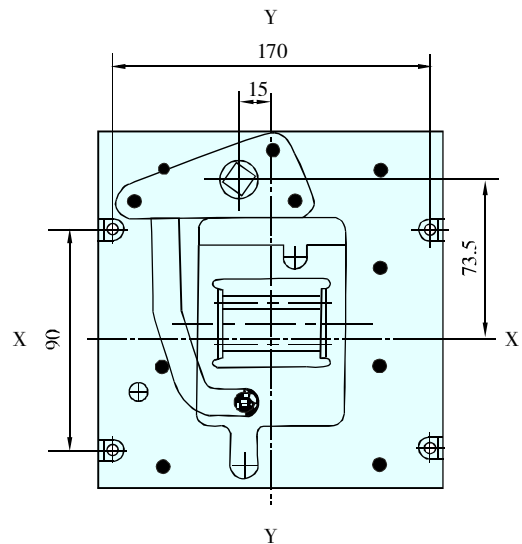
ZCCM2-125A  
配于CM2L-125  
For CM2L-125



ZCCM2-225A  
配于CM2L-225  
For CM2L-225



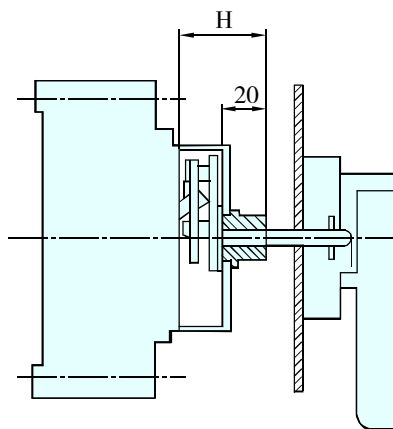
ZCCM2-400A  
配于CM2L-400  
For CM2L-400



ZCCM2-630A  
配于CM2L-630  
For CM2L-630



● 机构高度 Mechanism height



安装型式 installation way	安装机构的断路器型号 Breaker type of installing mechanism	H (mm)
中心式 Center	CM2L-125	56
	CM2L-225	57
	CM2L-400	66
	CM2L-630	66
偏心式 Eccentric	CM2L-125	52
	CM2L-225	52
	CM2L-400	48
	CM2L-630	50

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

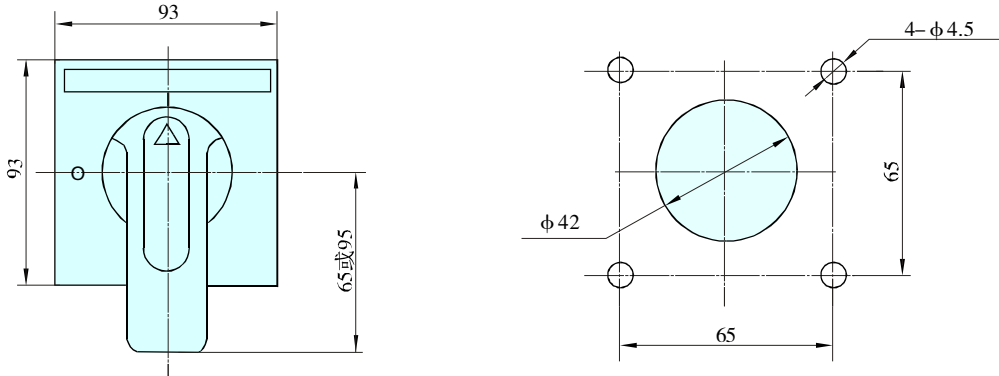
操作手柄特点：

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

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

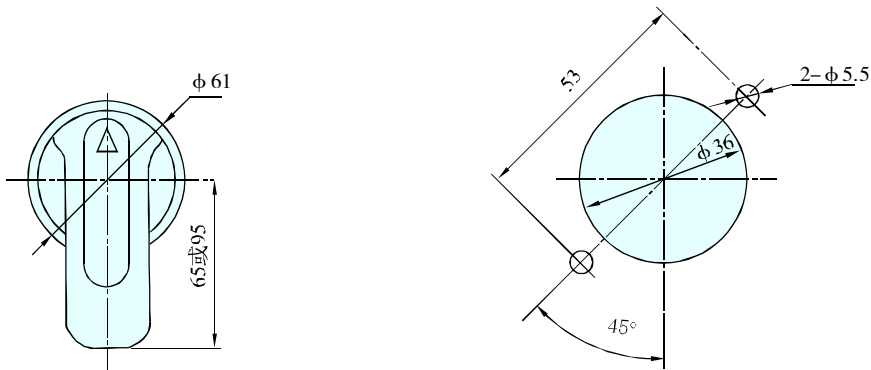
Operating handle features:

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



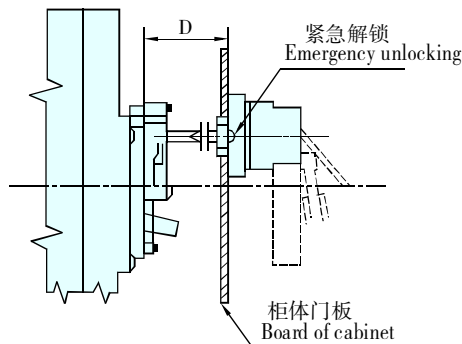
“F”型方形手柄外形及门板开孔尺寸（开孔中心离铰链距离不小于200mm）

F type square handle outline and door cutout dimensions (cutout center distance from the hinge is not less than 200mm)



“A”型圆形手柄外形及门板开孔尺寸（开孔中心离铰链距离不小于200mm）

A type circular handle and door cutout dimensions (cutout center distance from the hinge is not less than 200mm)



注：方轴长度D=150mm，长度大于150mm时，在订货时注明。

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



## 不同额定电流的连接导线参考截面 CROSS-SECTION OF WIRING CONDUCTOR CORRESPONDING RATED CURRENT

额定电流 In(A) Rated current	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 <sup>2</sup> ) Conductor cross-section	2.5	4	6	10	16	25	35	50	70	95	120	185	240

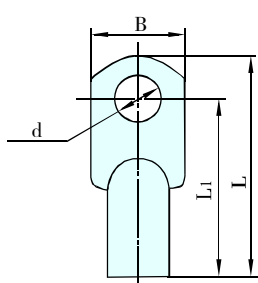
额定电流 In(A) Rated current	电缆 Cable		铜排 Copper busbar	
	截面积 (mm <sup>2</sup> ) Cross-section	数量 Amount	尺寸 (mm × mm) Size	数量 Amount
500	150	2	30 × 5	2
630	185	2	40 × 5	2



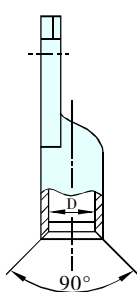
## 接线端子型号 TERMINAL TYPE

接线端子有JGC及JBC两种

Terminal are two types of JGC and JBC



JGC型  
JGC type



JBC型  
JBC type



## 接线端子型号 TERMINAL TYPE

断路器型号 Breaker type	额定电流 In(A) Rated current	导线截面积 (mm <sup>2</sup> ) Conductor cross-section	端子型号 Terminal type	B	L	L1	D	d
CM2L-125	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
CM2L-225	125、140	50	JGC50-8	17	54	45	φ 10	φ 8.2
	160	70	JGC70-8	21.6	61	52	φ 11	φ 8.2
	180、200、225	95	JGC95-8	22	66	57	φ 13	φ 8.2



## FWB1温度报警模块 TEMPERATURE ALARM MODULE

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

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

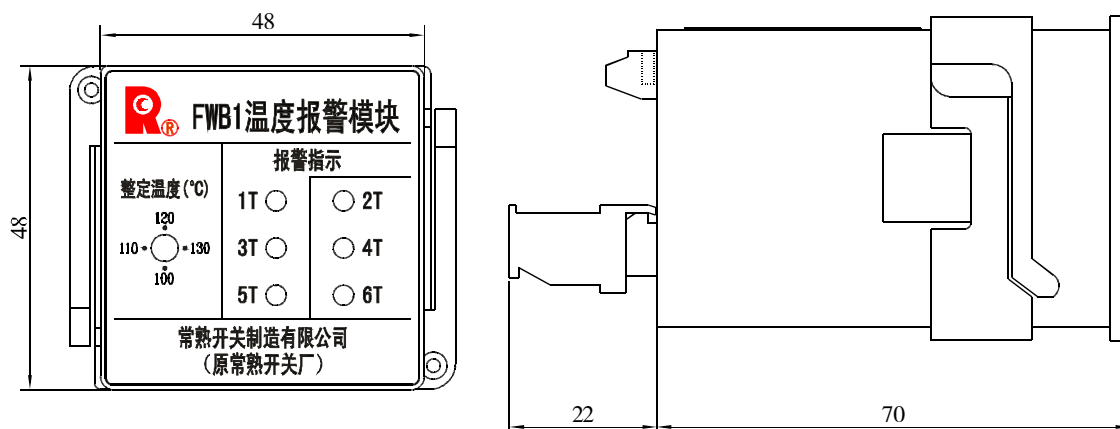




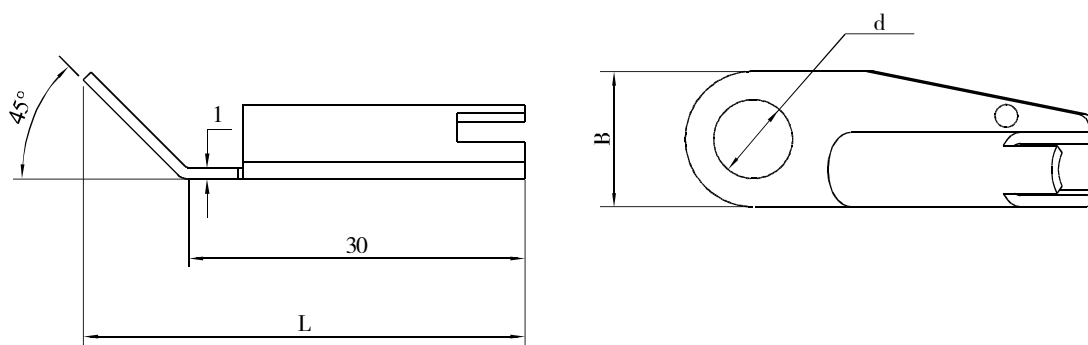
## FWB1温度报警模块 TEMPERATURE ALARM MODULE

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

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



FWB1温度报警模块  
Temperature alarm module



FRG热传感器  
Hest sensor



## FWB1温度报警模块 TEMPERATURE ALARM MODULE

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



## 功耗及降容系数 POWER LOSS AND DERATING COEFFICIENT

### ● 功率损耗 (环境温度+40℃) Power loss (ambient temperature+40℃)

功率损耗是在断路器通以壳架电流 $I_{nm}$ 情况下测量的总的损耗。

Power loss with breaker frame size current  $I_{nm}$

型号 Type	通电电流 (A) With current	功耗 (W) Power loss		
		板前、板后接线 Front/rear connected	插入式接线 Plug-in connected	抽出式接线 Draw-out connected
CM2L-125	125	38	45	—
CM2L-225	225	59	62	—
CM2L-400	400	101	117	121
CM2L-630	630	158	187	178

### ● 降容系数 Derating coefficient

环境温度变化的降容系数

Changes in ambient temperature derating coefficient

型号 Type	所处环境温度 Environment temperature	+40℃	+45℃	+50℃	+55℃	+60℃
CM2L-125		1In	0.972In	0.942In	0.912In	0.881In
CM2L-225		1In	0.982In	0.963In	0.944In	0.925In
CM2L-400		1In	0.977In	0.954In	0.930In	0.905In
CM2L-630		1In	0.977In	0.953In	0.929In	0.904In



## 高海拔降容

## ALTITUDE DERATING

海拔超过适用工作环境的2000m，断路器电气性能可参照下表修正：

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

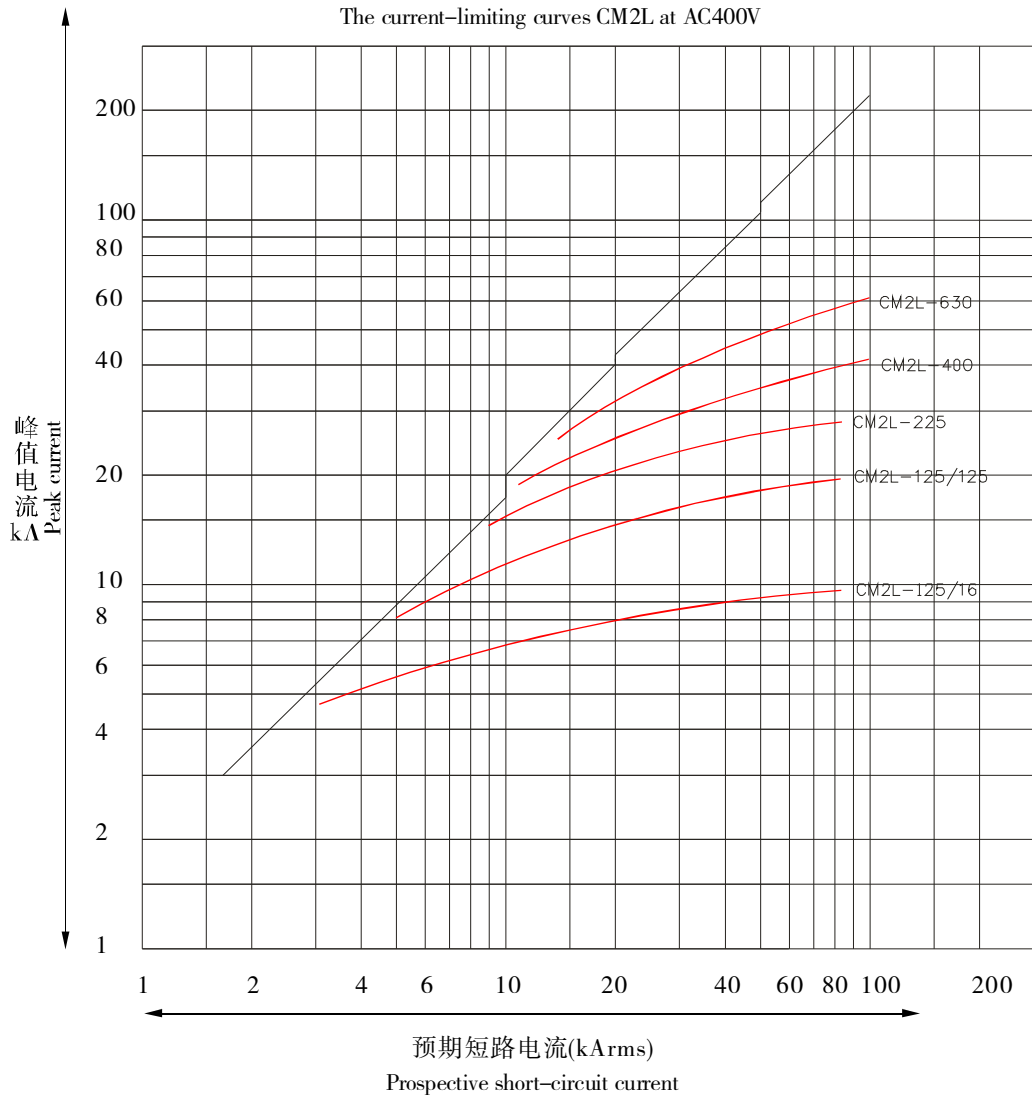
海拔 (m) Altitude	2000	3000	4000	5000
工频耐压(V) Power-frequency withstand voltage	3000	2500	2000	1800
工作电流修正系数 Operational current correction coefficient	1	0.94	0.88	0.83



## 限流特性

## CURRENT-LIMITING CHARACTERISTIC

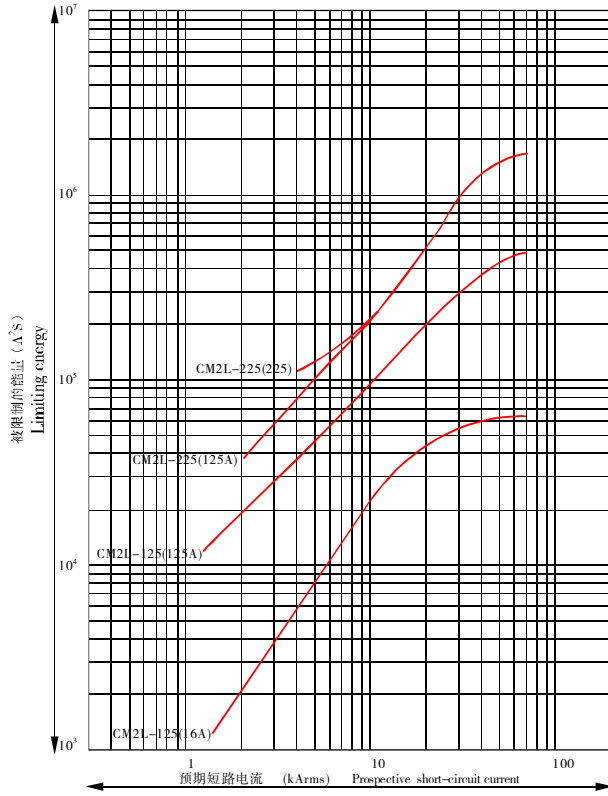
400V时的CM2L限流曲线图  
The current-limiting curves CM2L at AC400V





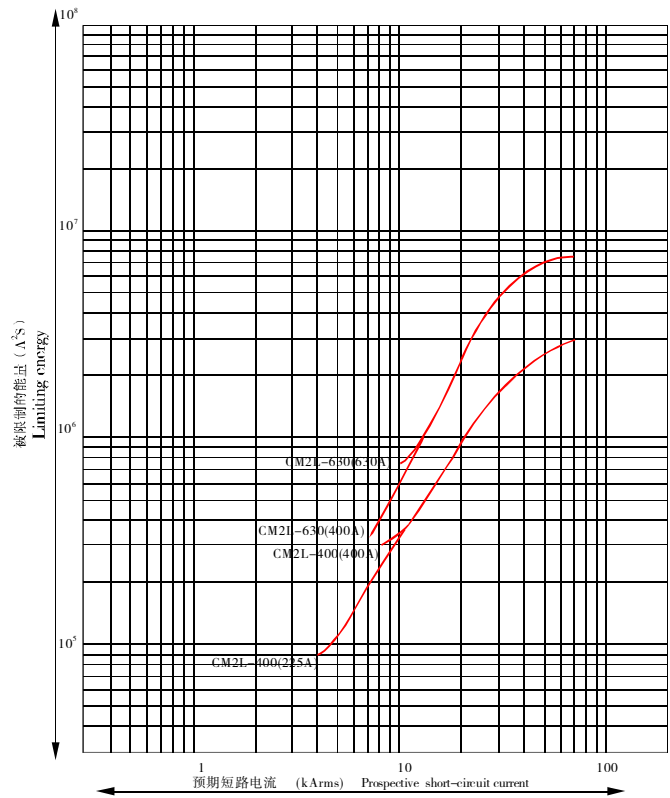
能量允通曲线

Let-through curve of energy



能量允通曲线

Let-through curve of energy





带电动机操作机构的CM2L/T断路器（带剩余电流通信模块或剩余电流通信报警模块）与上位机连接，可实现远距离“通信”功能。另外，加装CM2L断路器控制器（选购配件）还可在现场直接读取断路器的各项参数并进行修改。

接口协议：采用标准RS485接口，ModBus-RTU协议，通信波特率19200bps（支持1200，2400，4800，9600，38400bps）。

数据帧格式：1位起始位，8位数据位，2位停止位，偶校验（支持奇校验及无校验）。

网络特性：采用双绞屏蔽线，每一通信线最多连接32台设备，最长距离1200米，可以通过中继器延长通信距离。

同一条总线的所有设备需采用相同的波特率、奇偶校验，并且设备地址不重复，CM2L/T才能正常通信。

CM2L/T circuit breaker with motor operator (with residual current communication module or residual current communication alarm module) and PC connectivity, enabling long-distance "communications" function. In addition, the installation of breakers CM2L controller (Optional accessories) can be read directly in the field breakers and modify the parameters.

Interface Protocol: a standard RS485 interface, ModBus-RTU protocol, communication baud rate 19200bps (support 1200,2400,4800,9600,38000 bps)

Data frame format: one start bit, 8 data bits, 2 stop bits, even parity (odd parity and no support for checksum).

Network characteristics: the use of double-shielded line pattern, each communication line to connect up to 32 devices, the most long-distance 1200 meters, you can extend the communication distance between repeaters.

A bus with all the equipment required to use the same baud rate, parity, and device addresses of non-repetition.

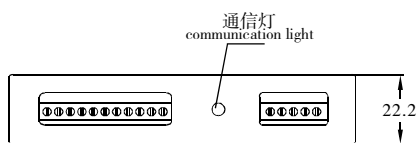
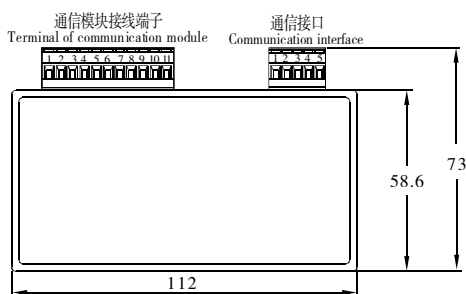
CM2L/T to normal communications.

断路器组网状态 Group net state breaker		CM2L/T断路器 + 上位机 CM2L/T breaker + PC	CM2L/T断路器 + 断路器控制器 + 上位机 CM2L/T breaker + breaker controller + PC
断路器识别 Breaker Identification	断路器型号 (断路器额定电流In) (断路器额定电压) (断路器壳架电流) (断路器极数) (剩余电流脱扣器类型U、V、W)	Breaker type Breaker rated current Breaker rated voltage Frame size current circuit breaker Breaker number of poles Residual current release type	●
	通信地址	Mailing address	●
状态指示 Status indication	合、分闸	ON,OFF	●
	预报警、故障指示	Pre-alarm, fault indication	●
	允许/禁止网络控制	Allow / prohibit the network control	●
断路器控制 Breaker Control	合闸/分闸	ON,OFF (需安装电操) Required to install motor operator	● (需安装电操) Required to install motor operator
工作参数 Working parameters	线路中剩余电流	Residual current circuit	●
	故障电流值	Fault current value	●
	故障动作时间	Fault operating time	●
	额定剩余动作电流整定值	Rated residual operating current setting	●
	最大断开时间整定值	Maximum breaking time setting	●



## ● 剩余电流通信模块

### Residual current communication module



### 通信模块接线端子的接线

Communication module of the wiring terminal

端子 Terminal	连接 Connect
P1	电动机操作机构COM Motor operator COM
P2	电动机操作机构ON Motor operator ON
P3	电动机操作机构OFF Motor operator OFF
P8、P9	网络控制选择（参见注） Network control options (see Note)
P10	接电源DC24V+ Press the supply DC24V+
P11	接电源DC24V- Press the supply DC24V-

### 通信接口信号定义

Communication interface signal definition

端子 Terminal	连接 Connect
1	电源输出VCC Supply output VCC
2	电源地GND Supply to GND
3	通信屏蔽层 Communication shield
4	接收/发送数据（A+） Receive / send data（A+）
5	接收/发送数据（B-） Receive / send data（B-）

剩余电流通信模块为通信附件，安装于断路器右侧。

注:1.如果P8和P9短接，则为本地控制状态。上位机此时无法对断路器进行操作和修改参数，只能读取数据，在此状态时可使用断路器控制器对断路器进行控制和参数调节。

2.如果P8和P9开路，则为远程控制状态。此时断路器控制器无法对断路器进行操作和修改参数，只能查询数据，而上位机能够对断路器完成全部操作。

3.配剩余电流通信模块必须外接DC24V直流，并注意极性不能接反，否则通信功能无法实现。

Residual current communication module for communication accessories, breakers installed on the right side.

Notes: 1. If the P8 and P9 short, then the state of local control. PC at this time unable to operate and modify breaker parameters, can only read data. In this state of controller can be used on breaker control and parameter adjustable.

2. If the P8 and P9 open, then the state of the remote control. this time of breaker controller can't operate and modify the parameters. The number of inquiries, only data on the PC to complete the operation of breaker.

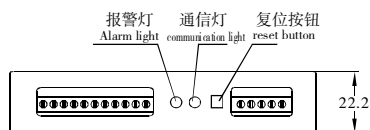
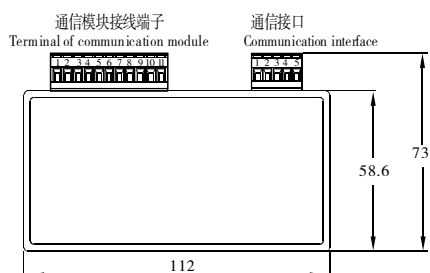
3. With residual current communication module must be external DC24V, and pay attention to the anti-polarity can not access. Or communication can not be achieved.





## ● 剩余电流通信报警模块

Residual current communication alarm module



### 通信报警模块接线端子的接线

Communication alarm module wiring terminal

端子 Terminal	连接 Connect
P1	电动机操作机构COM Motor operator COM
P2	电动机操作机构ON Motor operator ON
P3	电动机操作机构OFF Motor operator OFF
P4、P5	常开触点，AC230V 5A Normally open contact
P6、P7	常闭触点，AC230V 5A Normally closed contact
P8、P9	网络控制选择（参见注） Network control options (see Note)
P10	接电源DC24V+ Press the supply DC24V+
P11	接电源DC24V- Press the supply DC24V-

### 通信接口信号定义

Communication interface signal definition

端子 Terminal	连接 Connect
1	电源输出VCC Supply output VCC
2	电源地GND Supply to GND
3	通信屏蔽层 Communication shield
4	接收/发送数据（A+） Receive / send data（A+）
5	接收/发送数据（B-） Receive / send data（B-）

剩余电流通信报警模块为通信附件，安装此模块除剩余电流通信外，还可确认发生剩余电流故障，并有强电信号输出。模块安装于断路器右侧，有两种工作方式，用户根据需要可在订货时说明：

方式一（用 I 表示）：当发生漏电，剩余电流通信报警模块发出信号，同时断路器脱扣；

方式二（用 II 表示）：当发生漏电，剩余电流通信报警模块发出信号，但断路器不脱扣。

注:1.如果P8和P9短接，则为本地控制状态。上位机此时无法对断路器进行操作和修改参数，只能读取数据，在此状态时可使用断路器控制器

Residual current communication alarm module for the communication accessory, install the module in addition to the remainder of the current communication, it can be confirmed that the residual current fault occurs, as well as strong signal output. Module installed in the right breaker, there are two methods of work, users need to indicate in the order:

One way (with I said): the event of leakage, and residual current communication alarm module send signal and trip breaker at the same time;

the Second (with II said): When the leakage occurred, residual current communication alarm module send signal, but do not trip breaker.

Notes: 1. If the P8 and P9 short, then the state of local control. PC at this time unable to operate and modify breaker parameters, can only read data. In this state of controller can be used on breaker control and parameter adjustable.



对断路器进行控制和参数调节。

2. 如果P8和P9开路，则为远程控制状态。此时断路器控制器无法对断路器进行操作和修改参数，只能查询数据，而上位机能够对断路器完成全部操作。

3. 配剩余电流通信报警模块必须外接DC24V直流，并注意极性不能接反，否则通信功能无法实现。

2. If the P8 and P9 open, then the state of the remote control. At this time of breaker controller can't operate and modify the parameters. The number of inquiries, only data on the PC to complete the operation of breaker.

3. With residual current communication alarm module must be external DC24V , and pay attention to the anti-polarity can not access. Or communication can not be achieved.

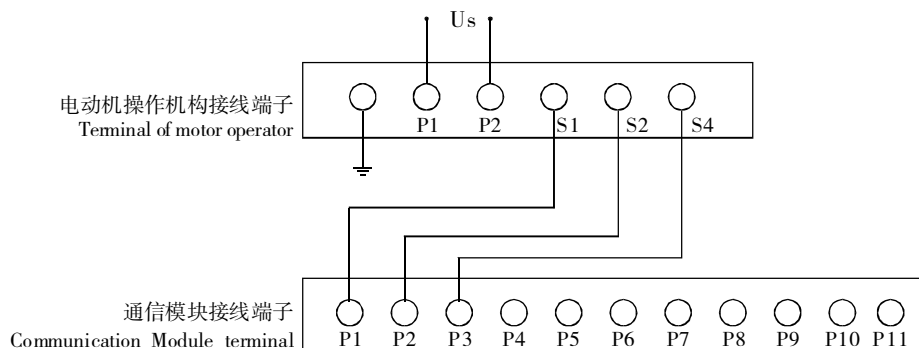
● 剩余电流通信模块或剩余电流通信报警模块与电动机操作机构的连接

Residual current communication module or residual current communication alarm module to connect to motor operator

根据电动机操作机构的额定控制电源电压Us接线

Operation of institutions in accordance with rated control supply voltage Us

Us=AC110V、230V、DC24V、110V、220V



● CM2L断路器控制器

CM2L Breaker controller

控制器可通过专用通信线(控制器附带)连接CM2L/T断路器，无须再外接电源，可直接操作CM2L/T断路器合分闸，查看实时剩余电流数据及工作状态、故障信息等。

CM2L断路器控制器可对应全系列CM2L/T断路器。

CM2L断路器控制器外形图

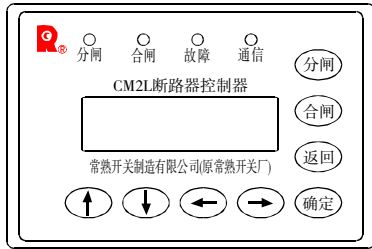
Controller through a dedicated communication line to connect (controller attached )CM2L / T breaker, there is not need external supply, can be directly operated CM2L / T to close and open. See real-time data and the work of the remainder of the current state, fault information.

The corresponding CM2L breaker controller with full range of CM2L / T breaker.

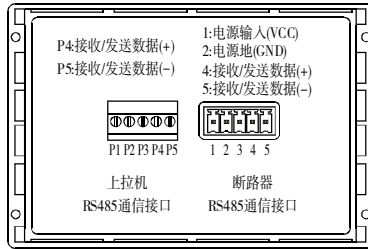
Breaker controller CM2L Outline.



正面  
Positive



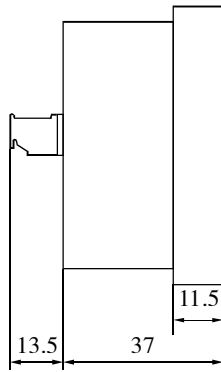
背面  
Back



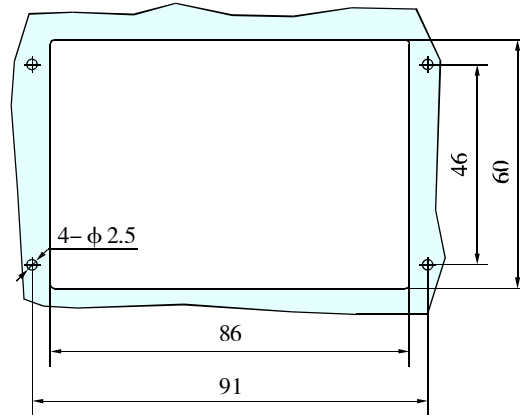
专用连接线  
Special connection line



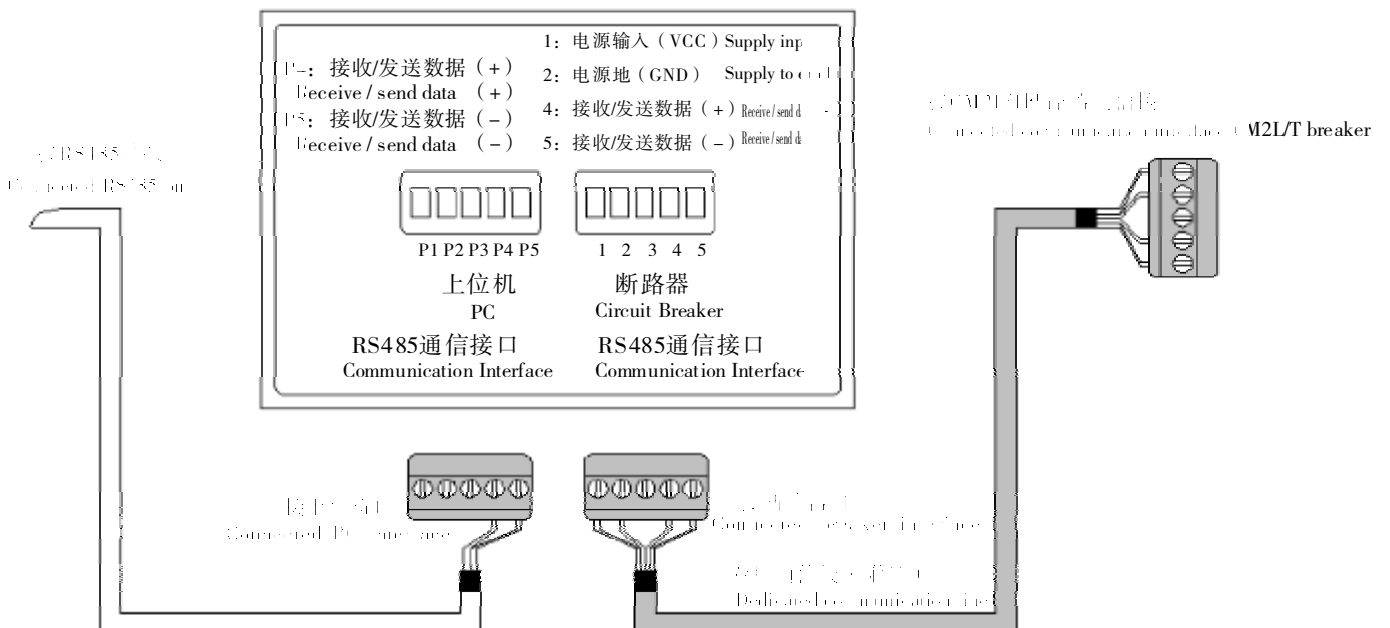
左视  
Left view



面板开孔尺寸  
Panel cutout dimensions



● CM2L断路器控制器的连接  
Connection of CM2L breaker controller





上图为控制器与断路器一对一连接，其中断路器和控制器之间的专用连接线为控制器附带配件，标准长度为2m，用户只需将该专用连接线两端分别按上图分别连接即可。需上位机通信时，只需将连接上位机的通信线按上图接到控制器背面的上位机口，上位机就可以和CM2L/T断路器进行通信，同直接连接到断路器不安装控制器相比，用户在上位机的处理上无需作任何改变。

The photo shows breaker with controller one-on-one connection, one between breaker and controller for the controller cable accessory attached. Standard length of 2m. Users will only need to dedicated cable at both ends of the respectively connected to the map. PC communication required, simply connecting computer communication line controller according to the plan from the back of the mouth of computer, computer and CM2L / T breakers to communicate. breaker do not directly connect to the installation of control device compared to PC users in need of treatment for any changes.

● 通信转接器(II)

Communication adapter

通信转接器可以大幅提高用户现场接线的效率和可靠性，它具有以下特点：

- ① 6个RS485通信接口，最大连接5个可通信设备
- ② 多个通信转接器可互联进行扩展(参见注)
- ③ 配有通信线接地端子
- ④ 可直接安装在标准35mm导轨上

注：可多次扩展，但一条线路不应连接超过32台。

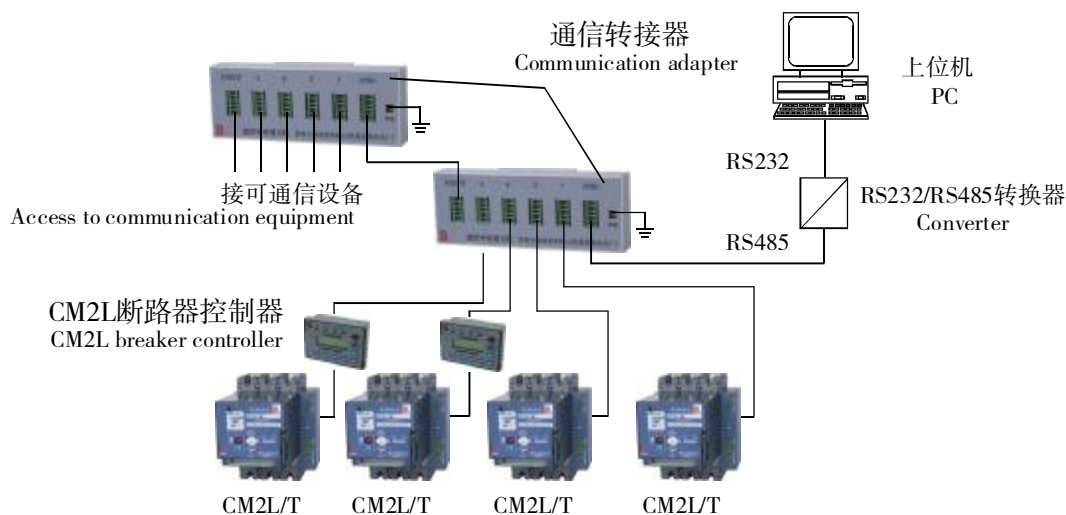
Communication adapter can be a substantial increase in user at the scene of the efficiency and reliability of connection, it has the following characteristics:

- ① 6 RS485 communication interface. 5 connected to the largest communications equipment
- ② A number of communications adapters can expand the Internet (see Note)
- ③ Communication line with earth terminal
- ④ Can be directly installed on a standard 35mm rail

Note: Can be extended several times, but a line should not connect more than 32.

● 断路器通信系统连接示意图

Diagram of communication system breaker





● 断路器各种特性由制造厂整定，用户在使用中不可随意调整；

● 断路器的额定剩余动作电流、时间，用户可根据实际需要进行调整(专业人员进行)；

● 在主电路通电状态下，对额定剩余动作时间为非延时的断路器，手按模拟剩余电流动作试验按钮应立即脱扣。对延时的断路器，手按试验按钮且保持所调的延时时间值，断路器才脱扣；

● 断路器剩余电流脱扣后，面板上漏电指示按钮向外凸出；

● 带剩余电流报警模块或剩余电流通信报警模块的断路器，当剩余电流报警解除后，必须对模块上的复位按钮进行复位才能正常工作；

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

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

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

● Breaker rated residual operating current and time, the user can be adjusted according to actual needs (professionals);

● Main circuit with current for non-time-delay, breaker, press simulated residual current operating test pushbutton, MCCB should immediately trip. For time-delay, press the button and maintain the value of the delay time, breaker trip;

● After residual breaker tripping, leakage indicating button on panel protruding outward;

● With residual current alarm module or communication alarm module breaker, residual current alarm occurred, the button must be reset and MCCB normal work;

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

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



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

●如用户订货时对剩余电流保护参数不作要求，本公司按“剩余电流保护出厂整定值”表配置。

●三相四线400V/230V或单相与三相共用的线路，应选用四极断路器。

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

● Orders such as user-current protection on the remaining parameters do not make a request, the Company in accordance with the "residual current protection factory setting" table configuration.

● 400V/230V three-phase four-wire or single phase and three-phase line sharing. Four poles circuit breaker should be selected.





# 订货规范 ORDERING FORM

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

用户单位 User units		订货总数 Order number		订货日期 Order Date		
规格 Specification	配电型 Power distribution	CM2L- _____ / ___ / 4 _____, In= _____ A, 10In				
	电动机保护型 motor protection	CM2L- _____ / ___ / 4 _____ 2 _____, In= _____ A, 12In				
接线方式 Connection	板前接线 Front connected	<input type="checkbox"/>	插入式接线安装方式一 The first mounting way of plug-in connected	<input type="checkbox"/>	抽出式板前接线 Draw-out front connected	<input type="checkbox"/>
	板后接线 Rear connected	<input type="checkbox"/>	插入式接线安装方式二 The second mounting way of plug-in connected	<input type="checkbox"/>	抽出式板后接线 Draw-out rear connected	<input type="checkbox"/>
相对应剩余 电流脱扣器 型式的额定 剩余动作电 流I $\Delta$ n Rated residual operating current for residual current release	U型, 非延时 Type U, non-time-delay	0.03A <input type="checkbox"/> 0.1A <input type="checkbox"/> 0.3A <input type="checkbox"/> 0.5A <input type="checkbox"/> (对CM2L-125、CM2L-225)				
	V型, 非延时、延时可调 (标准型) Type V, non-time-delay and time-delay adjustable(standard)	0.1A <input type="checkbox"/> 0.3A <input type="checkbox"/> 0.5A <input type="checkbox"/> (对CM2L-125、CM2L-225、CM2L-400)				
		0.3A <input type="checkbox"/> 0.5A <input type="checkbox"/> 1A <input type="checkbox"/> (对CM2L-630)				
	W型, 非延时、延时可调 Type W, non-time-delay and time-delay adjustable	0.3A <input type="checkbox"/> 1A <input type="checkbox"/> 3A <input type="checkbox"/> 10A <input type="checkbox"/> (对CM2L-125、CM2L-225)				
		1A <input type="checkbox"/> 3A <input type="checkbox"/> 10A <input type="checkbox"/> 30A <input type="checkbox"/> (对CM2L-400、CM2L-630)				
	VA型, 非延时、延时可调 Type VA(non-time-delay, time-delay adjustable)	0.1A <input type="checkbox"/> 0.3A <input type="checkbox"/> 0.5A <input type="checkbox"/> (对CM2L-125、CM2L-225、CM2L-400)				
0.3A <input type="checkbox"/> 0.5A <input type="checkbox"/> 1A <input type="checkbox"/> (对CM2L-630)						
动作时间 Operating time	非延时 Non-time-delay	<input type="checkbox"/>				
	延时 Time-delay	2I $\Delta$ n时极限不驱动时间 $\Delta$ t Limiting non-actuating time $\Delta$ t of 2I $\Delta$ n	0.1s <input type="checkbox"/>	0.5s <input type="checkbox"/>	1s <input type="checkbox"/>	
		5I $\Delta$ n时最大断开时间 Maximum break time of 5I $\Delta$ n	0.25s	0.9s	1.9s	
		相对应I $\Delta$ n时最大断开时间 Maximum break time of I $\Delta$ n	0.5s	1.15s	2.15s	
	相对应2I $\Delta$ n时最大断开时间 Maximum break time of 2I $\Delta$ n	0.35s	1s	2s		
附件 Accessories	欠电压脱扣器 Undervoltage release	AC400V <input type="checkbox"/> AC230V <input type="checkbox"/>				
	分励脱扣器 Shunt release	AC400V <input type="checkbox"/> AC230V <input type="checkbox"/> DC220V <input type="checkbox"/> DC24V <input type="checkbox"/>				
	电动机操作机构 Motor operator	AC230V <input type="checkbox"/> AC110V <input type="checkbox"/> DC220V <input type="checkbox"/> DC110V <input type="checkbox"/> DC24V <input type="checkbox"/>				
	手动操作机构 Rotary handle operator	中心式 <input type="checkbox"/> Center	操作手柄 F型 <input type="checkbox"/> A型 <input type="checkbox"/> Operating handle			
		偏心式 <input type="checkbox"/> Eccentric				
	接线端子 Terminal	JBC <input type="checkbox"/> JGC <input type="checkbox"/>				
	连接排 <input type="checkbox"/> 零飞弧罩 <input type="checkbox"/> Connection busbar Zero arcing cover					
	剩余电流报警模块 <input type="checkbox"/> 只 Residual current alarm module					
	通信 选件 Communication optional accessories	剩余电流通信模块 <input type="checkbox"/> 只 Residual current communication module	只能选择其中之一 Only choose one of them			
		剩余电流通信报警模块 <input type="checkbox"/> 只 Residual current communication alarm module				
CM2L断路器控制器 <input type="checkbox"/> 只 Controller						
通信转接器(II) <input type="checkbox"/> 只 Communication adapter						
FWB1温度报警模块 <input type="checkbox"/> 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: 常规出厂的CM2L四极断路器中性极型式为C型、D型N极脱扣器电流值见P8, 本公司也可提供 I <sub>N</sub> =100%I <sub>n</sub> 的四极断路器, 用户需在订货时注明。 Notes: conventional manufactured CM2L four poles neutral type for the type C and D, N pole release, see the current value of P8, Company can also provide I <sub>N</sub> = 100% I <sub>n</sub> four poles circuit breaker, the user need to specify when ordering.						



剩余电流保护出厂整定值  
Residual current protection factory's setting value

型号 Type		CM2L-125	CM2L-225	CM2L-400	CM2L-630
相对应剩余电流脱扣器型式 的额定剩余动作电流 $I_{\Delta n}$ Rated residual operating current for residual current release	U型 Type U	0.03A	0.03A		
	V型 Type V	0.1A	0.1A	0.1A	0.3A
	W型 Type W	0.3A	0.3A	1A	1A
	VA型 Type VA	0.1A	0.1A	0.1A	0.3A
动作时间 Operating time	非延时 Non-time-delay			延时, $5I_{\Delta n}$ 时最大断开时间 0.25s Time-delay, maximum break time 0.25s of $5I_{\Delta n}$	

# 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  
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