



选型目录 Product Catalog

MM5系列

塑料外壳式断路器

MM5 Series Molded Case Circuit Breaker



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MM5系列 塑料外壳式断路器

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产品概述 Outline

该断路器额定绝缘电压至1000V，适用于交流50Hz，额定工作电压至400V，额定工作电流至1600A的配电网络电路中，用来分配电能和保护线路及电源设备免受过载、短路、欠电压等故障的损失。同时也能作为电动机的不频繁起动及过载、短路、欠电压保护。

该断路器具有体积小、分断高、飞弧短等特点，是用户使用的理想产品。断路器垂直安装(即竖装)，亦可水平安装(横装)。

本产品符合IEC60947-2、GB/T14048.2等标准。

This breaker's rated insulation voltage is 1000V, is applied to distribution network circuit of AC 50HZ, rated working voltage up to 400V, rated working current up to 1600A, which is for electric energy distribution, circuit protection, protecting power supply facility from destroying by the fault of overloading, short circuit and undervoltage, meanwhile it is also used for protection from unfrequent starting, over loading, short circuit and unervdtage of the electromotor

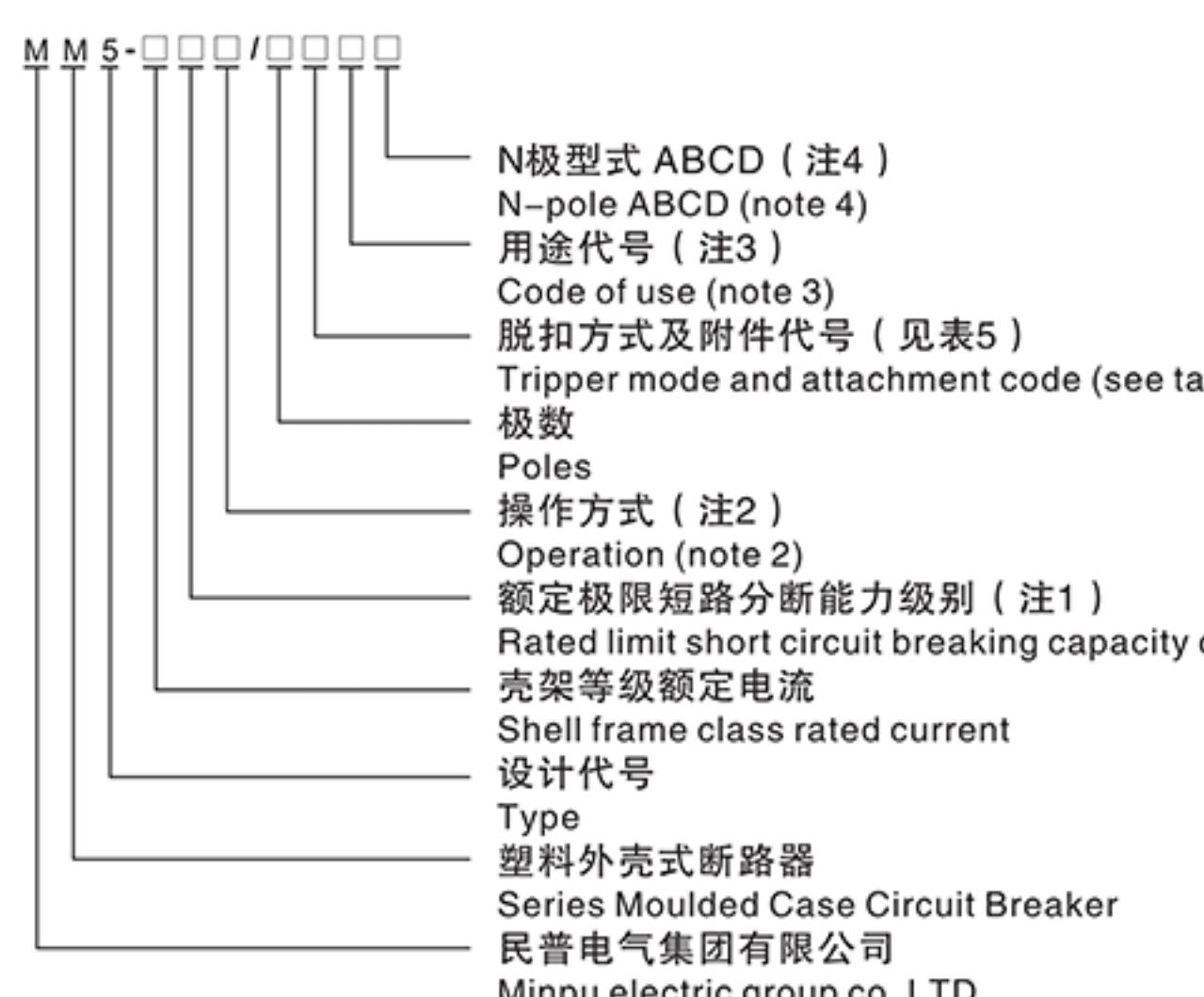
This breaker has such characteristics of compact volume, high short circuit interrupting capacity, short arc length and etc which is a ideal product for users. This breaker can be installed vertically(upright), and also horizontally.

This breaker complies with standard IEC60947-2、GB/T14048.2.

适用工作环境及安装条件 Suitable working environment and installation condition

- | | |
|--|---|
| <input type="checkbox"/> 海拔高度2000m以下 | <input type="checkbox"/> Altitude less than 2000m |
| <input type="checkbox"/> 周围介质温度不高于+40℃ (对船用产品为+45℃) 和不低于-5℃ | <input type="checkbox"/> Ambient medium temperature is from -50℃ to +40℃ (+45℃ for shipping product) |
| <input type="checkbox"/> 能耐受潮湿空气的影响 | <input type="checkbox"/> Can withstand moist air |
| <input type="checkbox"/> 能采收霉菌的影响 | <input type="checkbox"/> Can withstand mold |
| <input type="checkbox"/> 能耐受核辐射的影响 | <input type="checkbox"/> Can withstand nuclear radiation |
| <input type="checkbox"/> 最大倾斜度为22.5° | <input type="checkbox"/> Max inclination is 22.5° |
| <input type="checkbox"/> 在受到船舶正常振动时能可靠工作 | <input type="checkbox"/> It can still work reliably if the product subjects to the normal vibration from ships |
| <input type="checkbox"/> 在受到地震情况 (4g) 能可靠工作 | <input type="checkbox"/> It can still work reliably if the product subjects to the earthquake (4g) |
| <input type="checkbox"/> 在无爆炸危险的介质中，且介质无足以腐蚀金属和破坏绝缘的气体与导电尘埃的地方 | <input type="checkbox"/> Put in the place where there is no explosion danger and conductive dust, can't corrode metal and destroy the insulation sheet. |
| <input type="checkbox"/> 在没有雨雪侵袭的地方 | <input type="checkbox"/> Put in the place where there is no rain or snow. |

断路器型号及含义 Circuit Breaker codes and Implications



注:

1. 按额定极限短路分断能力的高低分为L型(标准型)、M型(较高分断型)、H型(高分断型)。

2. 手柄直接操作无代号;电动操作用P表示;转动手柄用Z表示。

3. 配电用断路器无代号;保护电动机用2表示。

4. 按产品极数分为三极、四极、四极产品中中性极(N极)的形式分四种:

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。

Note:

1. According to the rated limit short circuit breaking capacity, it can be divided into L-type (standard type), M-type (relatively high fault type) and H-type (high fault type).

2. No code for direct operation of the handle: P for electric operation; Turning the handle is Z.

3. No code for distribution circuit breaker: the protection motor is represented by 2.

4. According to the number of product poles, there are three poles and four poles. In quadrupole products, there are four types of neutral pole (N pole):

Type A: the over-current tripper is not installed in N, and the N pole is always connected, not separated with the other three poles.

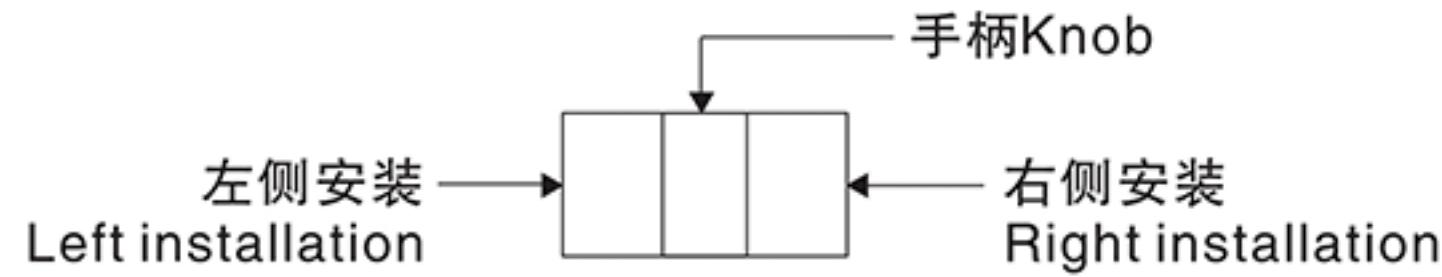
Type B: the over-current tripper is not installed in N, and the N pole is divided with other three poles (the N pole is closed first and then divided).

Type C: over-current tripper is installed on the N pole, and the N pole is divided with other three poles (the N pole is closed first and then divided).

Type D: over-current tripper is installed on the N pole, and the N pole is always connected, not separated with other three poles.

脱扣器方式及附件代号 Release mode and accessory code

脱扣器方式及内部附件 (表5)
Tripping mode and inner accessory (Table 5)



- 报警触头 Alarm contact
- 辅助触头 Aux contact
- 分励脱扣器 Shunt release
- 欠电压脱扣器 Under voltage release(UVT)
- 引线方向 Lead the direction of

表5 Table 5

代号 Code	附件名称 Accessory name	型号Model 极数No. of poles	MM5-63、MM5-125	MM5-250	MM5-400	MM5-630	MM5-800	MM5-1600(1250)
			3,4	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 Under-voltage release							
240、340	分励脱扣器、辅助触头 Shunt auxiliary contact							
250、350	分励脱扣器、欠电压脱扣器 Shunt release UVT							
260、360	二组辅助开关 Two groups auxiliary contacts							
270、370	辅助触头、欠电压脱扣器 Auxiliary contact UVT							
218、318	分励脱扣器、报警触头 Shunt alarm contact							
228、328	辅助触头、报警触头 Auxiliary alarm contact							
238、338	欠电压脱扣器、报警触头 UVT alarm contact							
248、348	分励脱扣器、辅助触头、报警触头 Shunt auxiliary alarm contact							
268、368	二组辅助触头、报警触头 Two groups aux alarm contact							
278、378	辅助触头、欠电压脱扣器、报警触头 Aux contact UVT alarm contact							

注 note

- 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；000: 表示不带过流脱扣器的断路器（隔离开关）
- 对MM1-125、250二极产品只有210/310/220/320/230/330;对MM1-63/125/250四极断路器，N极为A型和D型时无240/340/360/260/268/368;
- 对MM1-400、MM1-630及MM1-800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MM1-400及以上为二组，MM1-250以下为一组
- 对MM1-63、MM1-125、MM1-250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），订货时需注明。

- 200: Circuit breaker with electromagnetic release only; 300: Circuit breaker with thermal-magnetic release; 000: Circuit breaker without overcurrent release (disconnector)
- For MM1-125, 250 two-pole products, there are only 210/310/220/320/230/330; for MM1-63 / 125/250 four-pole circuit breakers, there is no 240/340/360 / for N pole A and D 260/268/368;
- For MM1-400, MM1-630 and MM1-800, the auxiliary contacts in the 248/348/278/378 specifications are a pair of contacts (ie, one normally open, one normally closed), and the auxiliary contacts in the 268/368 specifications There are three pairs of contacts (ie three normally open and three normally closed); the number of auxiliary contacts of other specifications MM1-400 and above are two groups, and MM1-250 and below are a group
- For MM1-63, MM1-125, MM1-250, 220/320/240/340/270/370 specifications of the auxiliary contact can be used for two pairs of contacts (ie two normally open, two normally closed), 260/360 can For three pairs of contacts (ie three normally open, three normally closed), please specify when ordering.

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主要性能指标 Technical Data

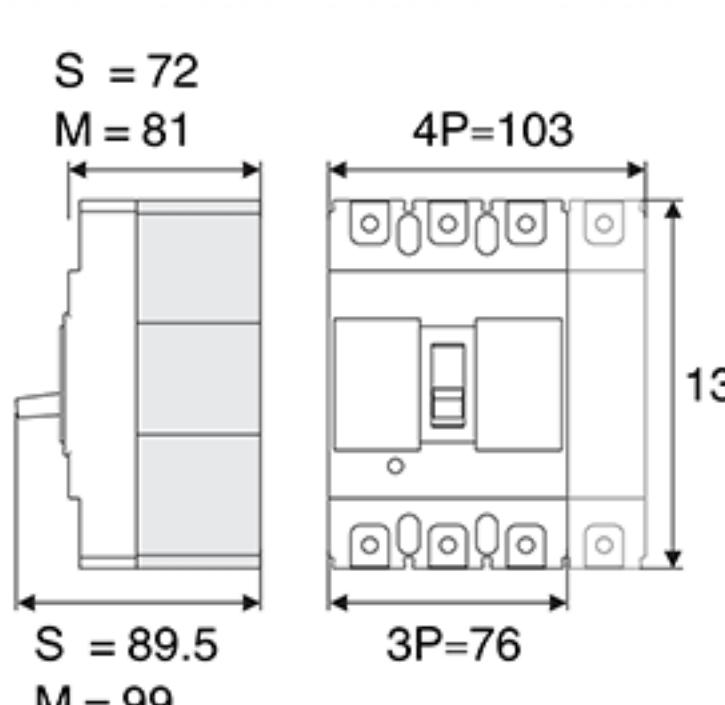
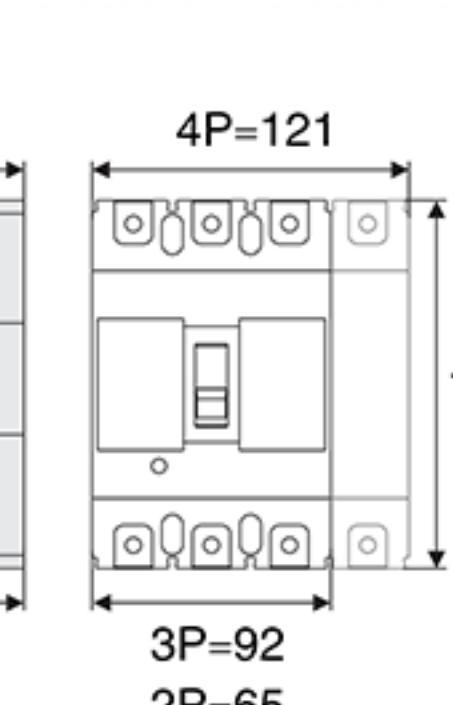
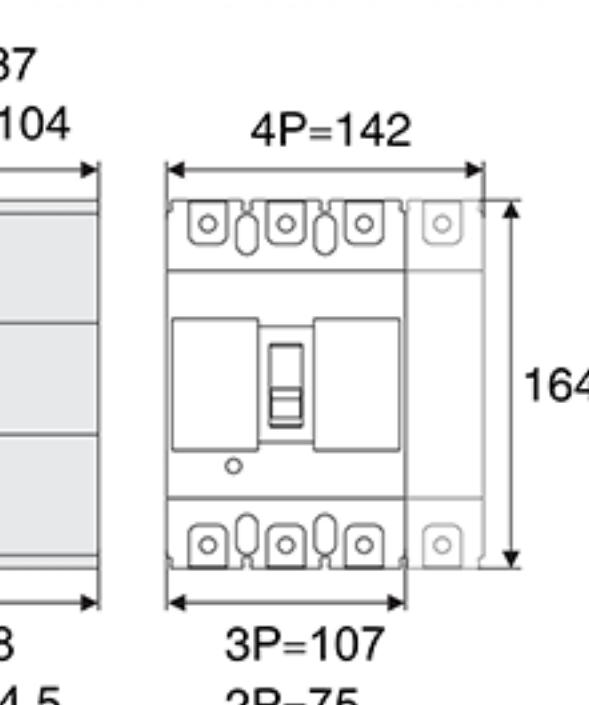
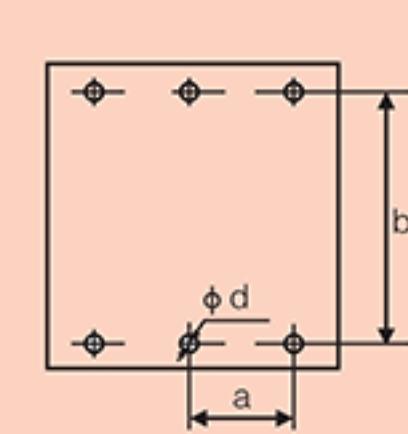
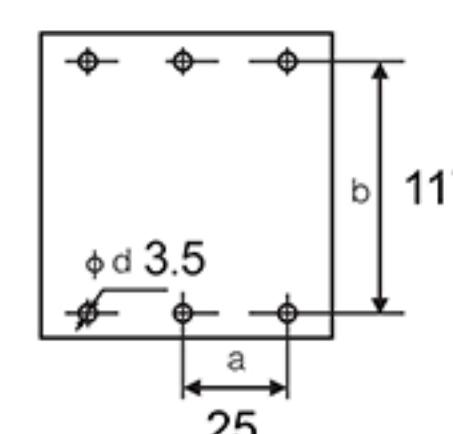
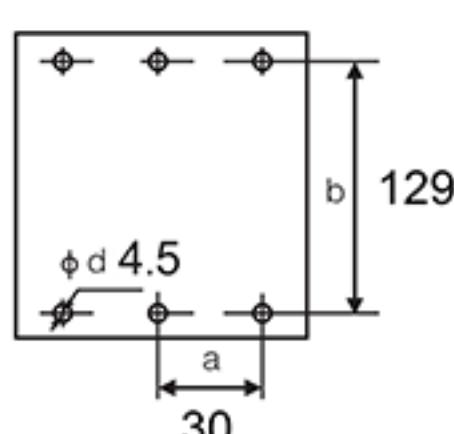
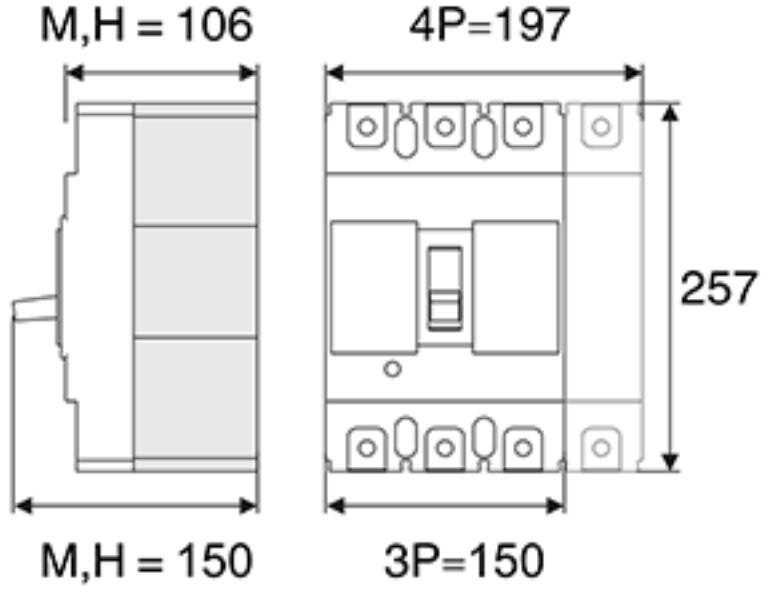
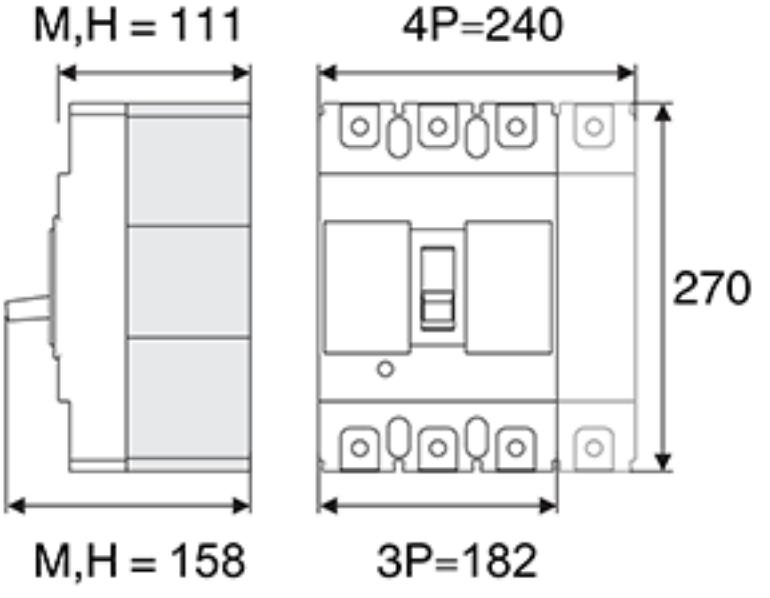
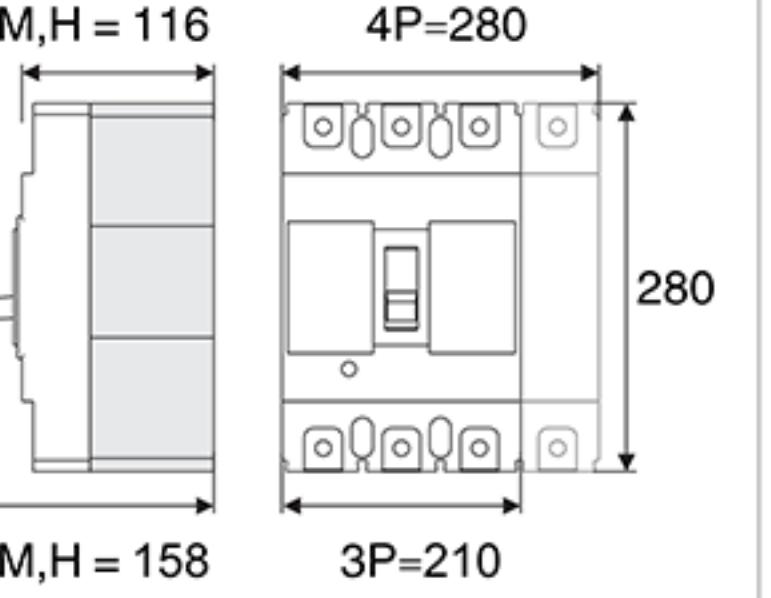
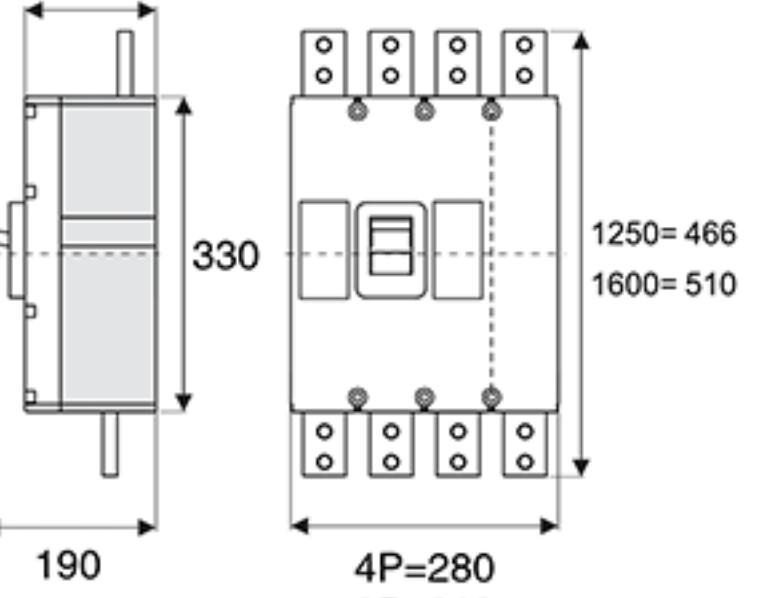
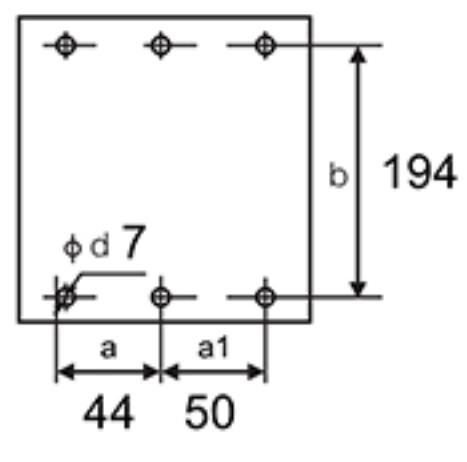
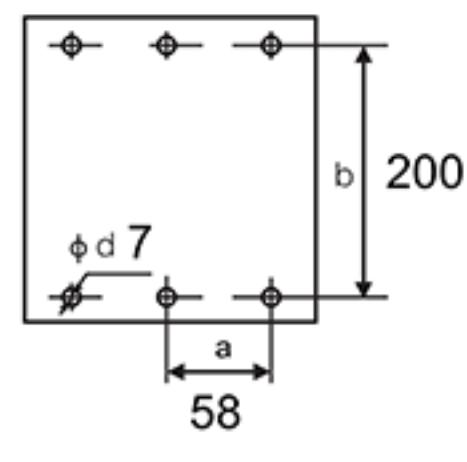
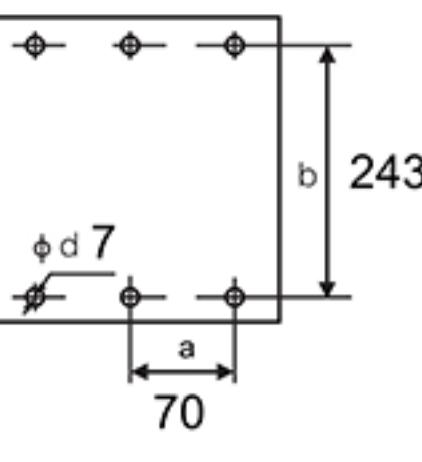
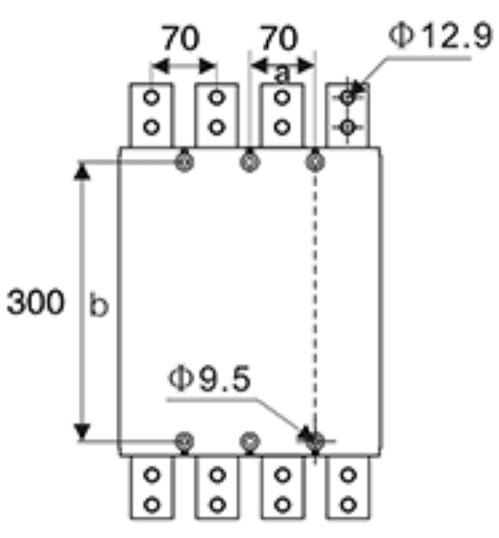
			
型号 Type	MM5-63	MM5-125	MM5-250
壳架电流Inm Frame Inm (A)	63	125	250
额定电流In (A) Rated current (A)	10、16、20、25、32、 40、50、63	16、20、25、32、40、 50、63、80、100、 125	100、125、140、160、 180、200、225、250
额定电压 (V) Rated voltage Ue(V)	AC400	AC400 (2P:230V)	AC400 (2P:230V)
额定绝缘电压 (V) Rated insulation voltage Ui(V)	AC800	AC800	AC800
极数 Number of poles	3,4	2,3,4	2,3,4
额定极限短路分断能力级别 Rated limit short-circuit breaking capacity level	S M	S M	S M
额定极限短路分断能力 Icu (kA) Rated limit short circuit breaking capacity	AC400V 12 18 35	AC400V 12 35 50	AC400V 12 35 50
额定运行短路分断能力 Ics (kA) Rated short-circuit breaking capacity	AC400V 6 12 22	AC400V 6 22 35	AC400V 6 22 35
操作循环次数 Operation life(cycle)	通电 NO 4500	3000	2500
	不通电 OFF 8500	7000	6500
飞弧距离 (mm) Arcing distance (mm)	0、≤ 50	0、≤ 50	≤ 50
外形尺寸 (mm) Dimensions			
安装尺寸 (mm) Installation size			

表4 Table 4

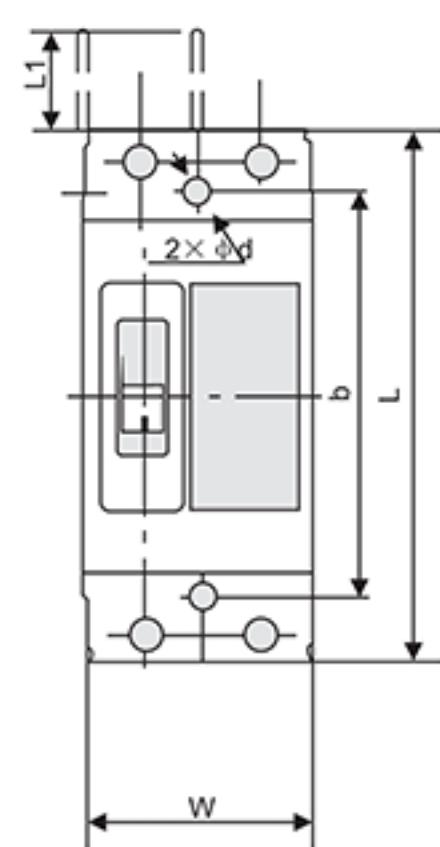
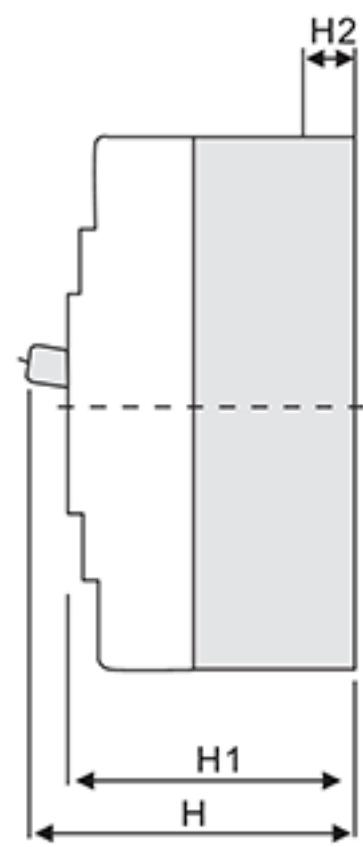
			
MM5-400	MM5-630	MM5-800	MM5-1600(1250)
400	630	800	1600
225、250 315、350、400	400、500、630	630、700、800	800、1000、1250、1600
AC400	AC400	AC400	AC400
AC800	AC800	AC800	AC1000
3,4	3,4	3,4	3,4
M	M	M	M
35	65	35	65
22	45	22	50
1500	1500	1000	500
4000	4000	2500	2500
≤ 100	≤ 100	≤ 100	≤ 120
			
			

MM5系列塑料外壳式断路器

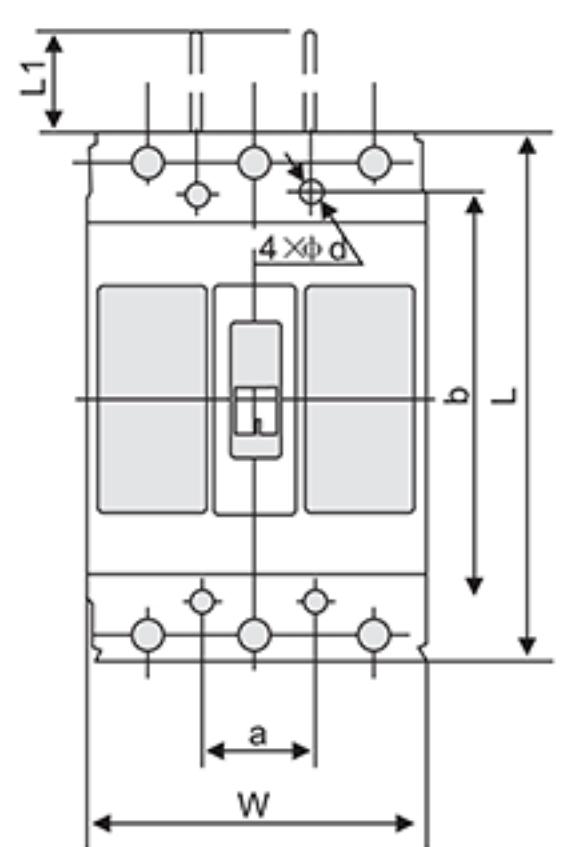
MM5 Series Molded Case Circuit Breaker

MM5外形及安装尺寸 Shape and installation dimensions

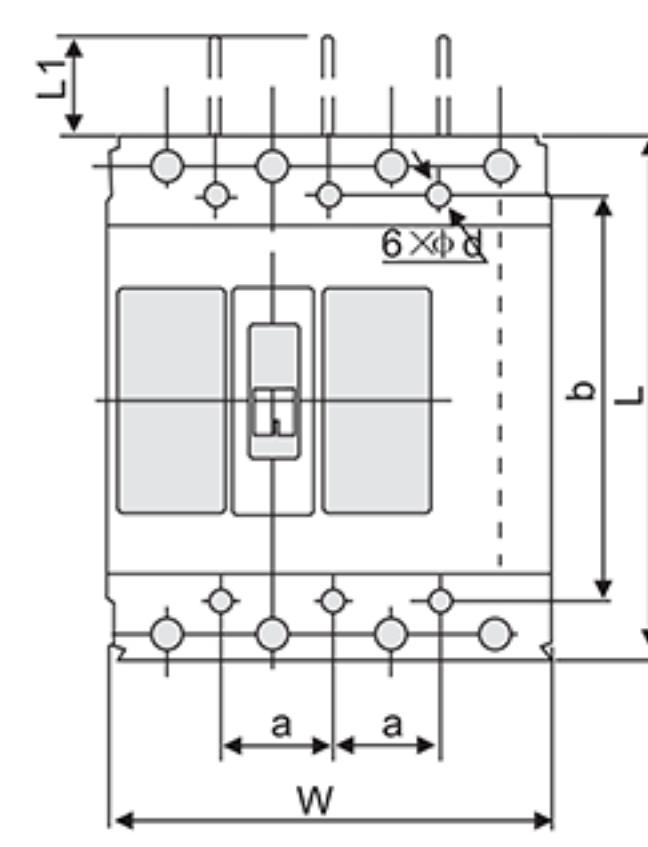
□ 固定式板前、板后接线的外形及安装尺寸 Shape and installation dimensions



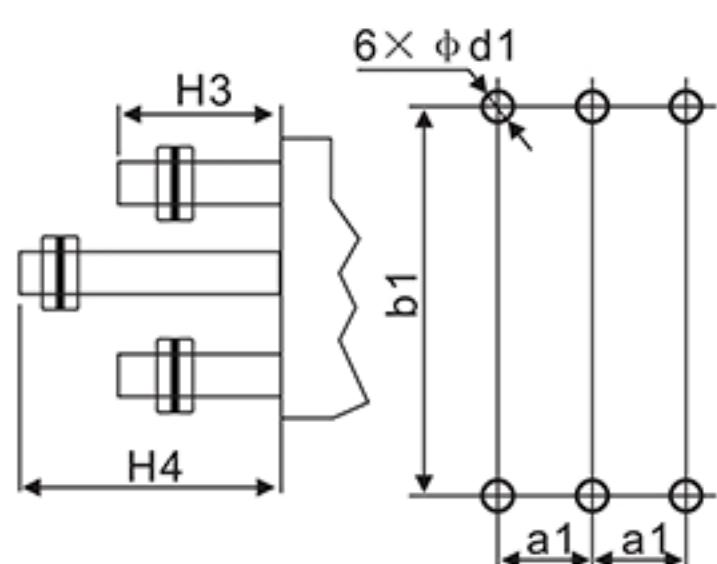
二极 2P



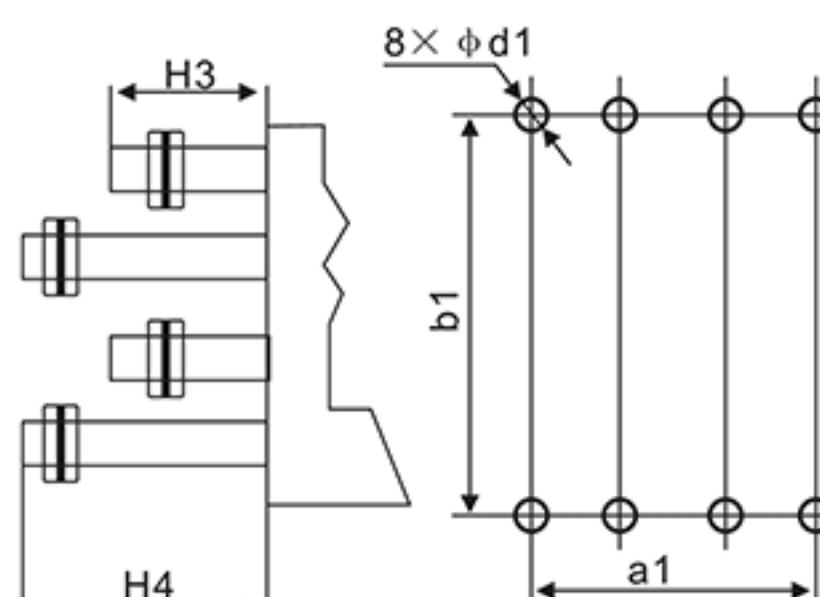
三极 3P



四极 4P



三极的板后接线尺寸
3-pole backplane wiring size

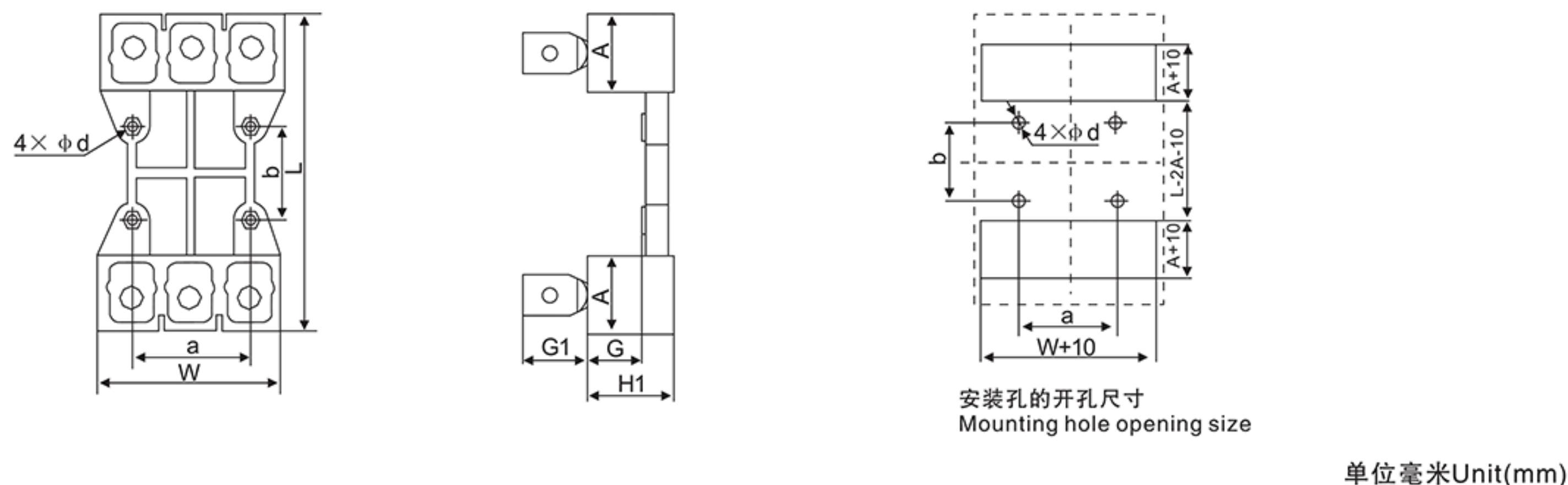


四极的板后接线尺寸
4-pole backplane wiring size

型号 Type	极数 pole	外形尺寸 (mm) Dimensions						安装尺寸(mm) Installation size			板后接线尺寸 (mm) Backplane wiring size				
		L	L1	W	H	H1	H2	a	b	φ d	a1	b1	d1	H3	H4
MM5-63S	3	135	21	76	89.5	72	18	25	117	3.5	25	117	18	52	75
	4			103				50							
MM5-63M	3	150	51	76	99	81	28	25	129	4.5	30	132	22	65	100
	4			103				50							
MM5-125S	2	164	64	65	87	68	24	...	126	5.5	35	144	24	70	110
	3			92				30							
	4			121				60							
MM5-125M	2	257	105	65	103.5	85	23	...	194	7	48	224	32	48.5	108.5
	3			92				30							
	4			121				60							
MM5-250S	2	270	105	75	108	87	24	...	126	5.5	35	144	24	70	110
	3			107				35							
	4			142				70							
MM5-250M	2	280	105	75	124.5	104	24	...	200	7	58	234	40	70	120
	3			107				35							
	4			142				70							
MM5-400	3	257	105	150	153	106	38	44	194	7	48	224	32	48.5	108.5
	4			197				94							
MM5-630	3	270	105	182	157	111	43	58	200	7	58	234	40	70	120
	4			240				116							
MM5-800	3	280	105	210	158	116	42	70	243	7	70	243	48	75	125
	4			280				140							

□ 插入式板后接线的外形及安装尺寸

□ Outline and installation dimensions of the wiring after the plug-in board

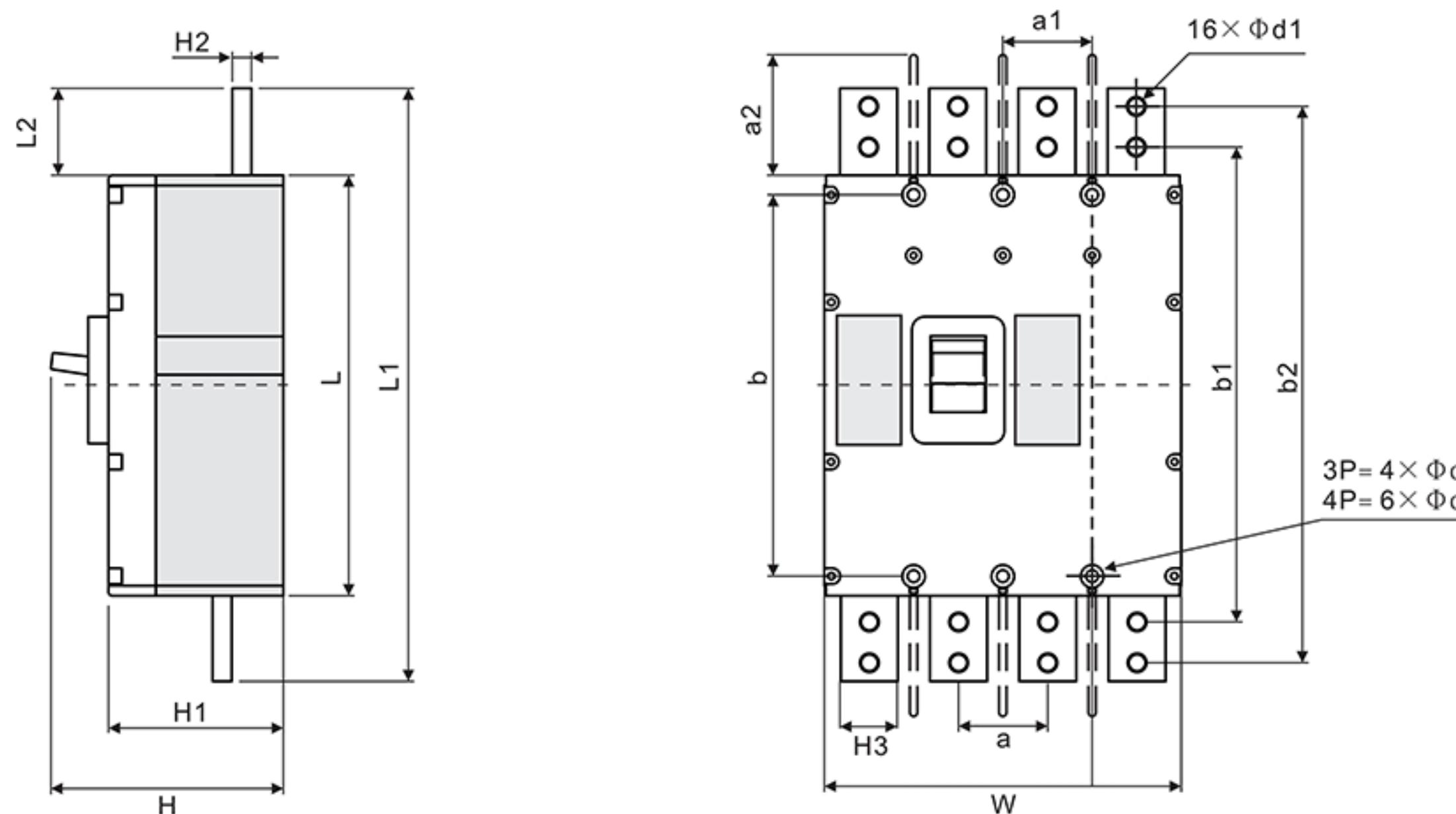


型号 Type	W	L	A	H1	G	G1	a	b	d
MM5-63	75	135	18	28	18	16	50	60	5.5
MM5-125	91	168	38	50	33	28	60	56	6.5
MM5-250	107	186	46	50	33	37	70	54	6.5
MM5-400	149	280	55	60	38	46	60	129	8.5
MM5-630	182	300	65	60	39	50	100	123	8.5
MM5-800	212	305	62	87	60	22	90	146	11

MM5-1600(1250)外形及安装尺寸 Shape and installation dimensions

□ 断路器板前接线的外形及安装尺寸

□ Outline and installation dimension of front wiring of circuit breaker board



型号 Type	极数 pole	外形尺寸 (mm) Dimensions								安装尺寸(mm) Installation size							
		L	L1	L2	W	H	H1	H2	H3	a	a1	a2	b	b1	b2	Φd	Φd1
MM5-1250	3	330	466	68	210	190	139	15	45	70	70	107	300	370	436	9.5	12.9
	4	330	466	68	280	190	139	15	45	70	70	107	300	370	436	9.5	12.9
MM5-1600	3	330	510	90	210	190	139	16	45	70	70	107	300	390	470	9.5	12.9
	4	330	510	90	280	190	139	16	45	70	70	107	300	390	470	9.5	12.9

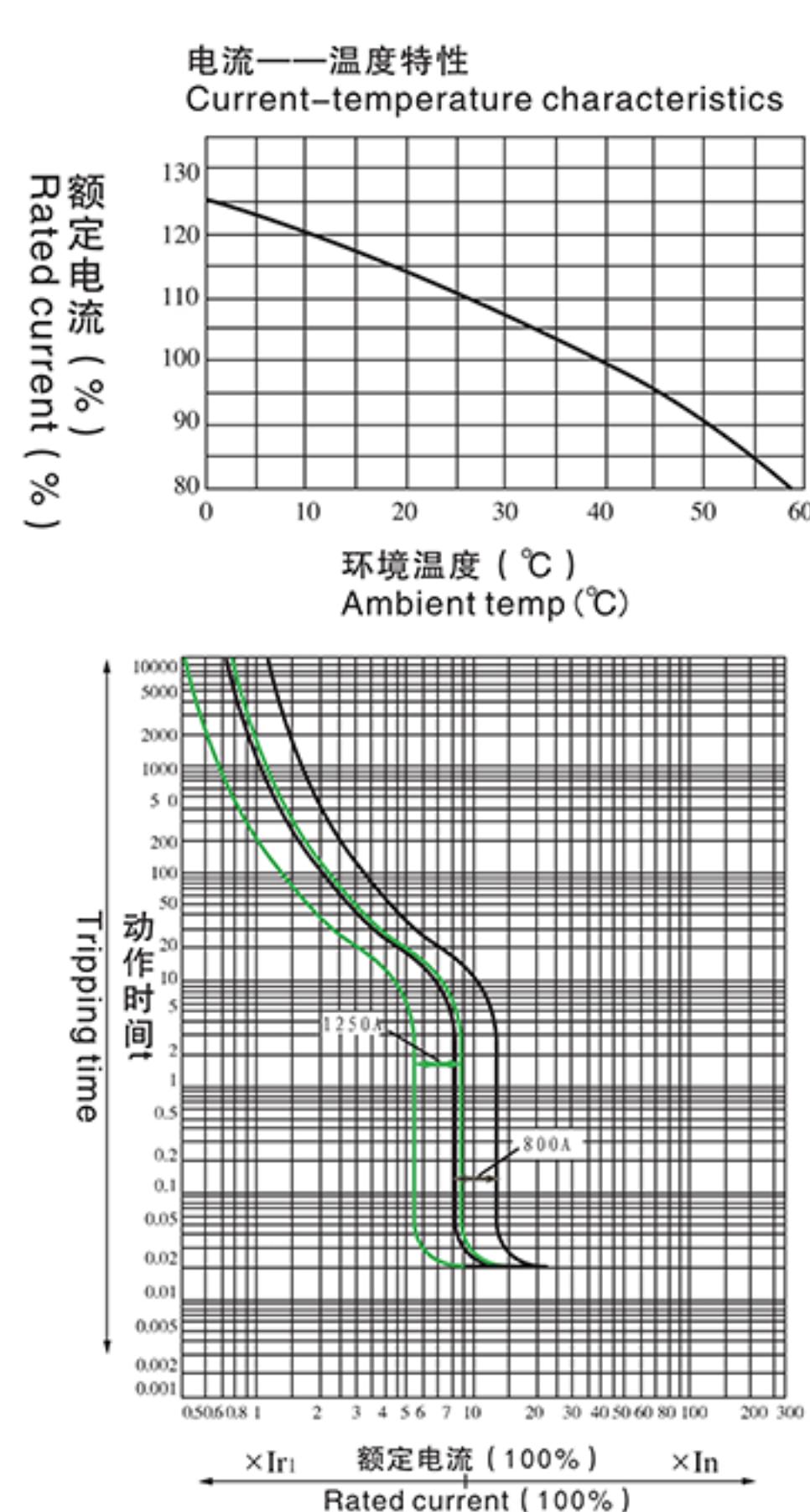
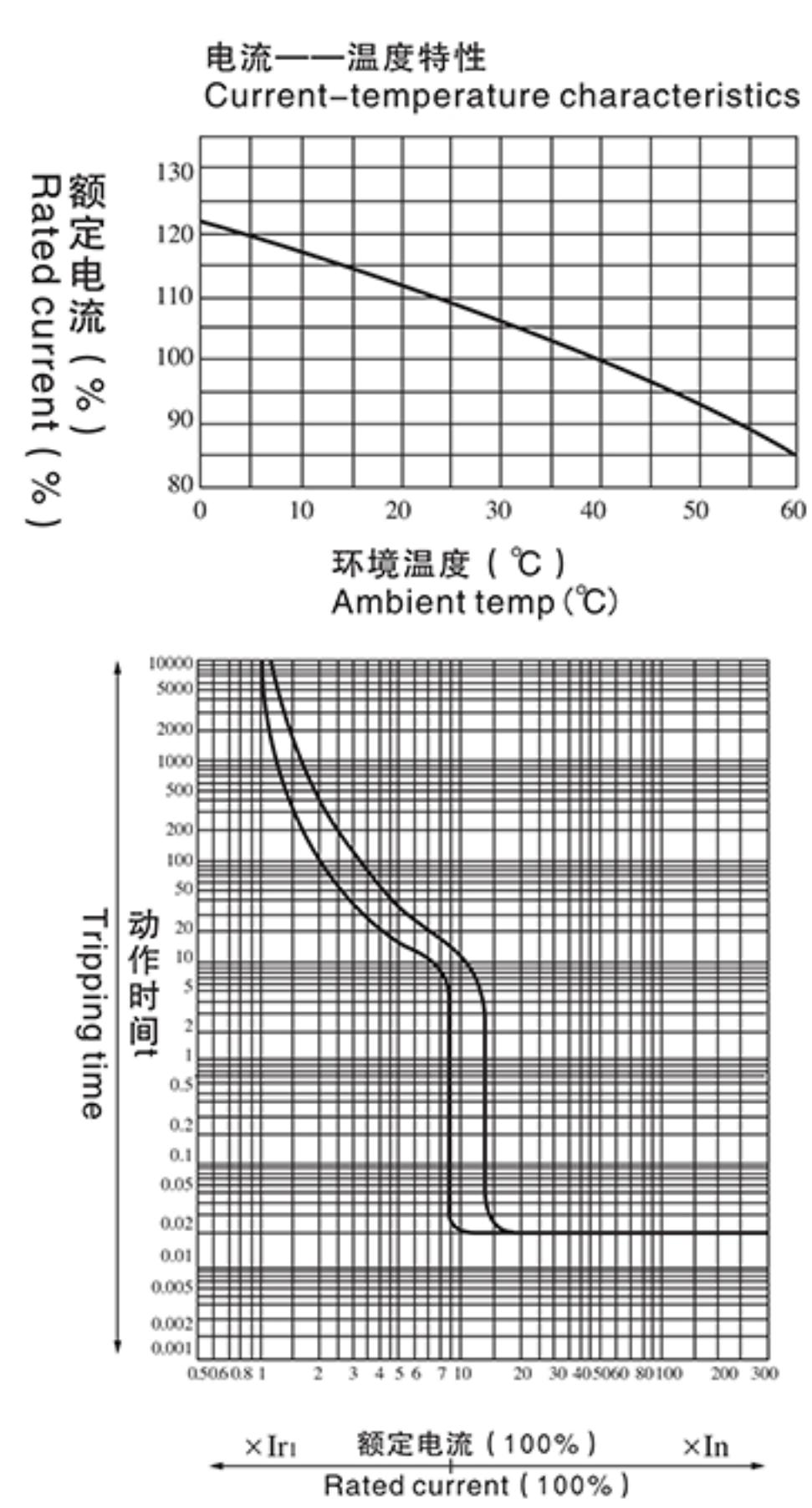
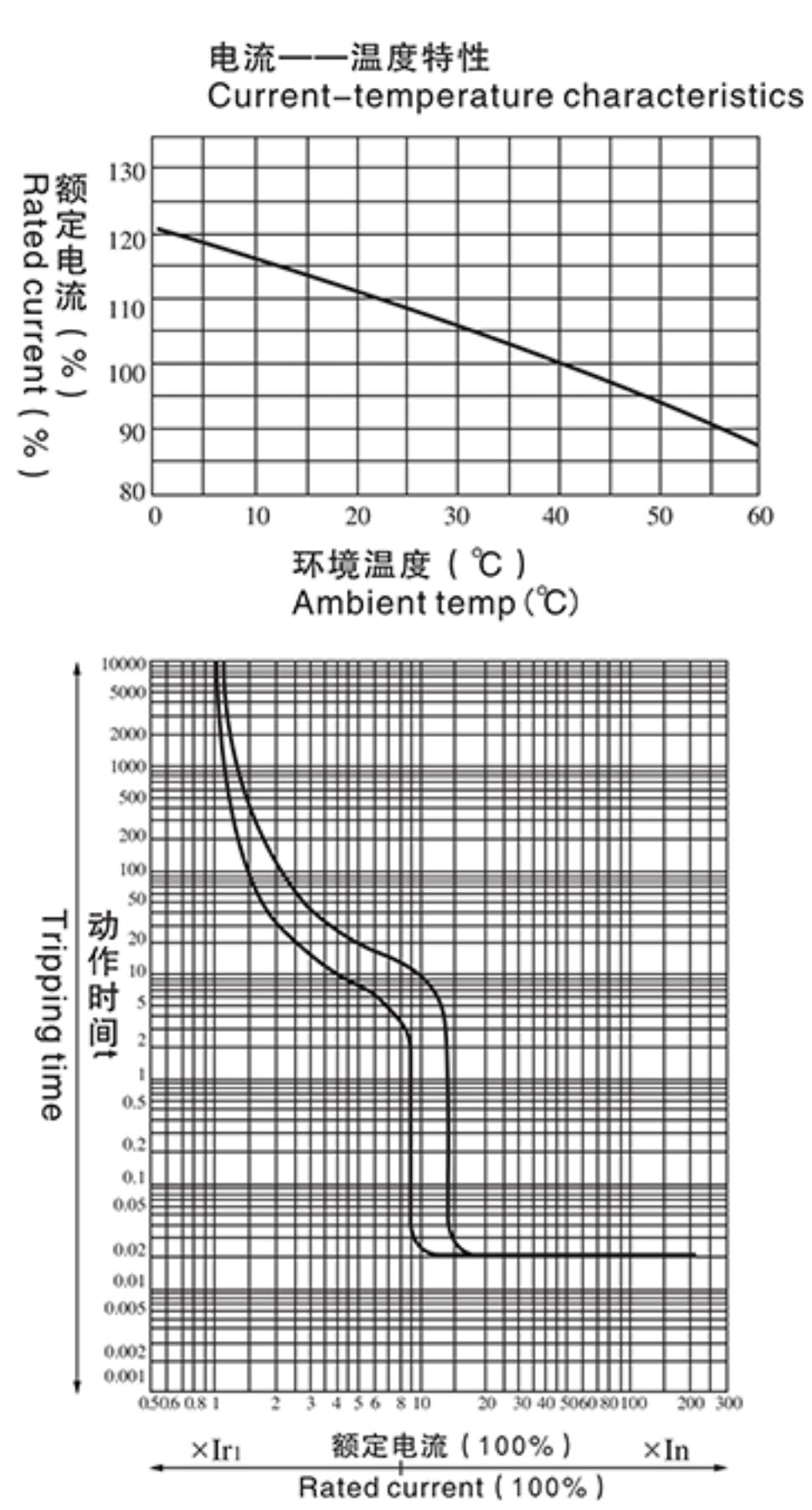
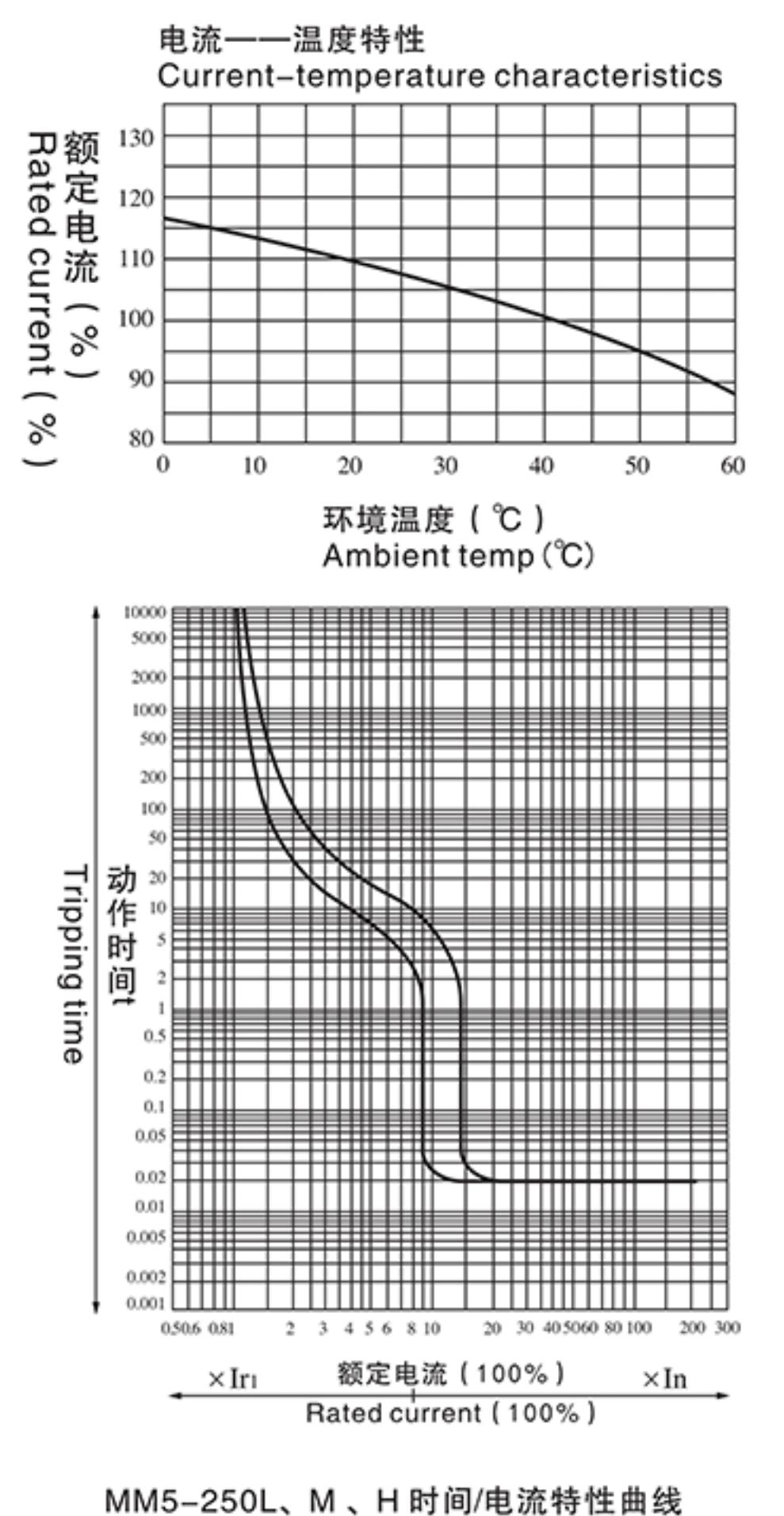
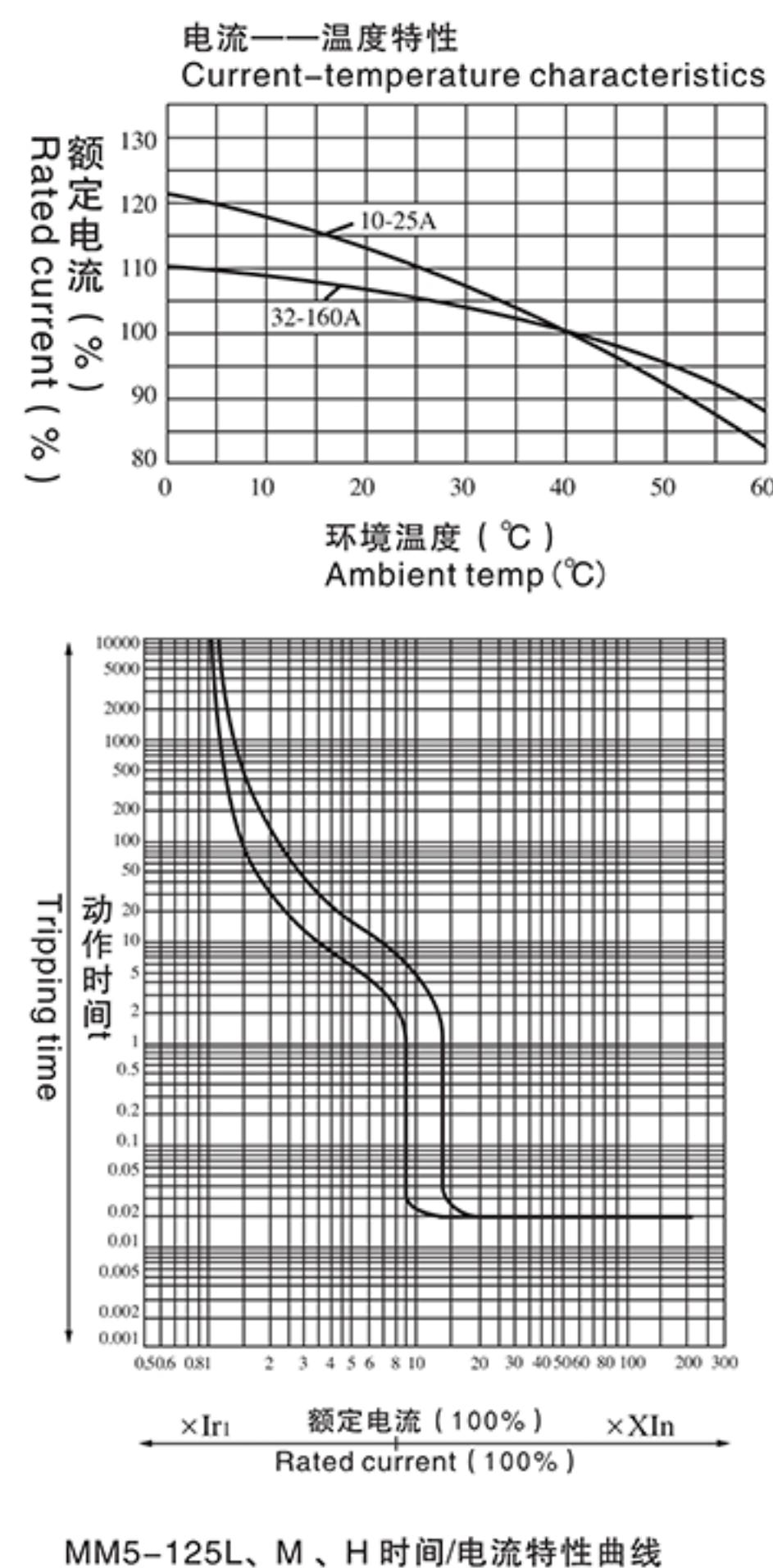
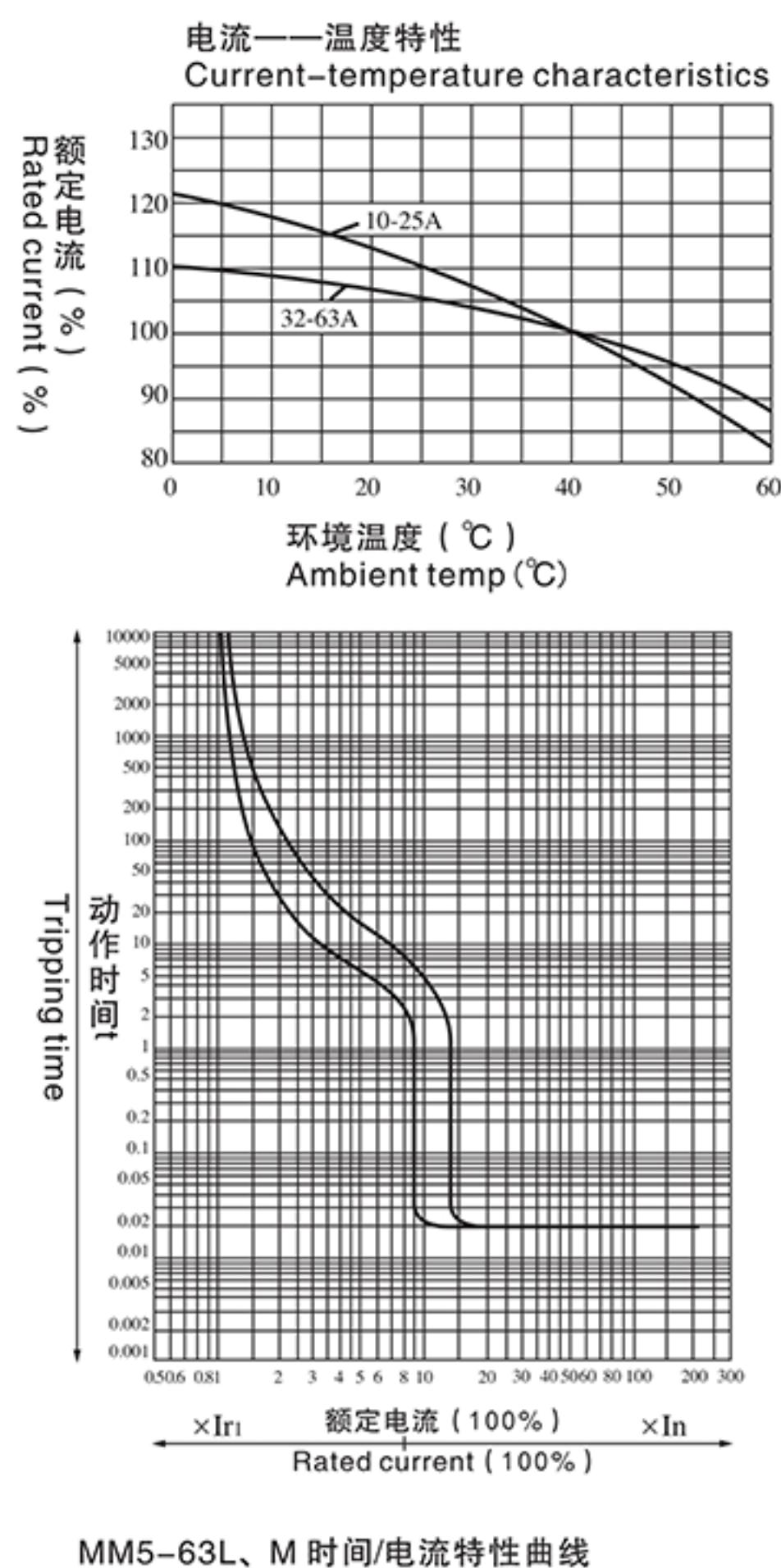
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断路器特性曲线 Tripping characteristics (curve)

□ 说明：特性曲线是在冷态，三相负载下测得。

□ Note: The characteristic curve is measured under the cold state and three-phase load.



保护特性 Protection characteristics

脱扣器动作性能 Trip performance

配电用 For power distribution

表1 Table 1

脱扣器额定工作电流 (A) Release Rated Operating Current (A)	热脱扣器 (基准温度40℃) Thermal release (reference temperature 40 °C)		电磁脱扣器动作电流 (A) Operating current of electromagnetic release (A)	备注 Remark
	1.05In(冷态)不动作时间 (h) 1.05 In(cold state)Inactivity time (h)	1.30In(热态)不动作时间 (h) 1.30 In(Hot state)Inactivity time (h)		
10<In≤63	≥ 1	<1	10In±20%	配电保护型 注: 1250A 为 7In±20%
63<In≤160	≥ 2	<2	10In±20%	
160<In≤1250	≥ 2	<2	5In±20% 7In±20% 10In±20%	Distribution protection type Note: 1250A for 7In±20%

注: 额定电流小于160A无5In 电流磁脱扣

Note: the rated current is less than 160A, and there is no magnetic trip with 5in current

保护电动机用 For motor protection

脱扣器额定工作电流 (A) Release Rated Operating Current (A)	热脱扣器 (基准温度40℃) Thermal release (reference temperature 40 °C)				电磁脱扣器动作电流 (A) Operating current of electromagnetic release (A)
	1.0In(冷态)不动作时间 (h) 1.0 In(cold state)Inactivity time (h)	1.20In(热态)动作时间 (h) 1.20 In(Hot state)Action time (h)	1.50In(热态)动作时间 (h) 1.50 In(Hot state)Action time (h)	7.20In(冷态)不动作时间 (h) 7.20In(cold state)Inactivity time (h)	
10≤In≤630	≥ 2	<2	8min	6S<Tp≤20s	12In±20%

功率耗损 Power loss

断路器功率损耗 Circuit breaker power loss

表2 Table 2

型号 Type	通电电流(A) Electric current(A)	三极总功率损耗 (W) Three-pole total power loss (W)		
		板前、板后接线 Wiring before and after the board	插入式板前接线 Wiring in front of plug-in board	插入式板后接线 Wiring after plug-in board
MM5-63(S、M)直热型(Direct heating)(10A~25A)	25	28	/	32
MM5-125(S、M)直热型(Direct heating)(16A~25A)	25	40	42	45
MM5-63(S、M)间热型(Interheat)(32A~63A)	63	20	/	24
MM5-125(S、M)间热型(Interheat)(32A~100A)	125	35	37	40
MM5-250(S、M)	250	62	66	70
MM5-400	400	115	120	125
MM5-630	630	187	193	200
MM5-800	800	262	/	300
MM5-1600(1250)	1250	386	/	/

降容系数 Derating factor

断路器环境温度变化的降容系数 Derating factor of circuit breaker ambient temperature change

表3 Table 3

型号 Type	降容系数 (In) Derating factor (In)				
	+40°C	+45°C	+50°C	+55°C	+60°C
MM5-63	1	0.94	0.88	0.81	0.74
MM5-125	1	0.96	0.91	0.85	0.78
MM5-250	1	0.97	0.94	0.90	0.86
MM5-400	1	0.95	0.89	0.82	0.75
MM5-630	1	0.94	0.88	0.82	0.76
MM5-800	1	0.94	0.87	0.80	0.72
MM5-1600(1250)	1	0.92	0.85	0.79	0.70

注: 以上降容系数均在通于壳架额定电流下测得

Note: The above derating factors are measured under the rated current through the shell.

MM5系列塑料外壳式断路器

MM5 Series Molded Case Circuit Breaker

使用与维护 Use and maintenance

断路器各种特性及附件由制造厂整定，在使用中不要随意调节，用户务必对本产品技术资料详细了解后再对断路器的相关参数进行调整。

断路器手柄可以处在三个位置，分别表示闭合、断开、自由脱扣三种状态，当手柄处于自由脱扣位置时，应向断开方向扳动手柄，此时断路器再扣，然后才能合闸。

请用户遵守存储和使用条件，从制造厂发货之日起不超过12个月，产品如因制造质量问题发生损坏或不能正常使用时，制造厂负责维修或更换。

various characteristics and accessories of the circuit breaker shall be set by the manufacturer and shall not be adjusted arbitrarily during use. The user must understand the technical data of the product in detail before adjusting the relevant parameters of the circuit breaker.

the handle of the circuit breaker can be in three positions, which respectively represent the three states of closing, opening and free tripping. When the handle is in the free tripping position, pull the handle in the opening direction. At this time, the circuit breaker can be closed only after it is pulled again.

the user shall observe the storage and use conditions, which shall not exceed 12 months from the date of delivery by the manufacturer. If the product is damaged or cannot be used normally due to manufacturing quality problems, the manufacturer shall be responsible for repair or replacement.

订货须知 Ordering instructions

请写明断路器的型号规格以及订货数量，采用欠电压脱扣器、分励脱扣器或电动操作机构时，请注明工作电压或控制电源电压的电压值。

例如：MM5-125L/3300板后接线(板前接线可以不写)额定工作电流80A 10台。

周围气温属下列情况请申明：上限超过+40℃或下限低于-5℃

please indicate the model, specification and order quantity of the circuit breaker. When using undervoltage release, shunt release or electric operating mechanism, please indicate the voltage value of working voltage or control power supply voltage.

for example: 10 sets of mm5-125I / 3300 rear board wiring (front board wiring can not be written) with rated working current of 80A.

please state that the ambient temperature is under the following conditions: the upper limit exceeds + 40 °C or the lower limit is lower than - 5 °C

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