

MEM1系列 塑料外壳式断路器

MEM1 Series Moulded Case Circuit Breaker



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的配电网路电路中，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启动及过载、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 electricity 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 undervoltage of the electromotor.

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

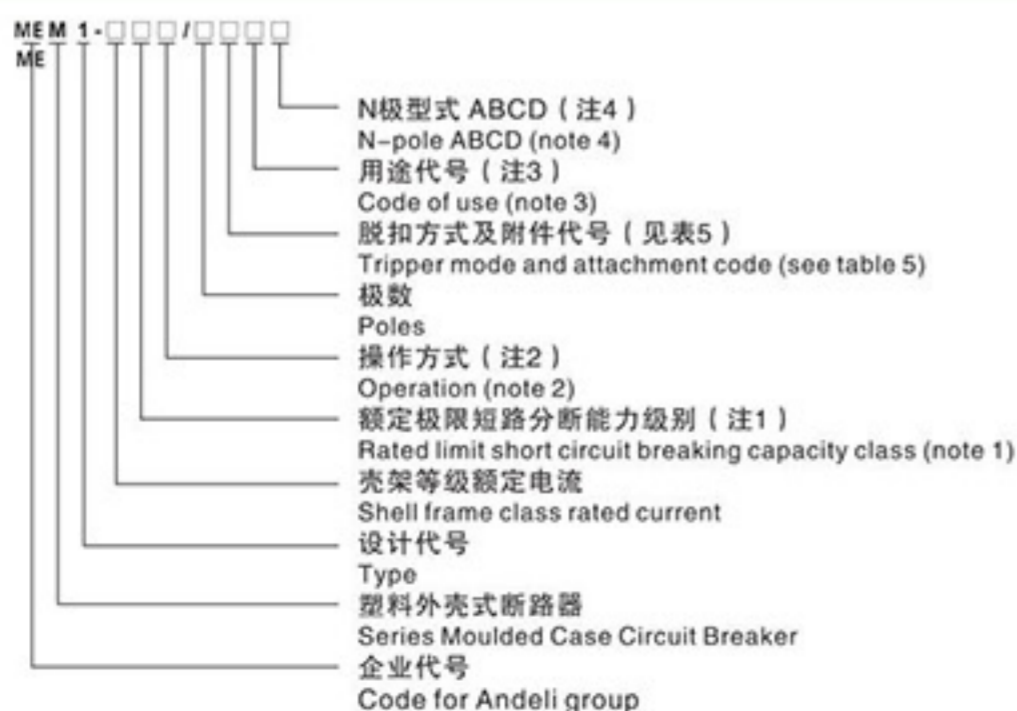
This breaker comply with standard IEC60947-2、GB/T14048.2.

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

- 海拔高度2000m以下
- 周围介质温度不高于+40℃ (对船用产品为+45℃) 和不低于-5℃
- 能耐受潮湿空气的影响
- 能采收霉菌的影响
- 能耐受核辐射的影响
- 最大倾斜度为22.5°
- 在受到船舶正常振动时能可靠工作
- 在受到地震情况(4g)能可靠工作
- 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
- 在没有雨雪侵袭的地方

- Altitude less than 2000m
- Ambient medium temperature is from -5°C to +40 °C (+45 °C for shipping product)
- Can withstand moist air
- Can withstand mold
- Can withstand nuclear radiation
- Max inclination is 22.5 °
- It can still work reliably if the product subjects to the normal vibration from ships
- It can still work reliably if the product subjects to the earthquake(4g)
- Put in the place where is no explosion danger and conductive dust, can't corrode metal and destroy the insulation sheet.
- Put in the place where is no sleet.

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



注:

- 1、按额定极限短路分断能力的高低分为S型(标准型)、M型(较高分断型)。
- 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,不与其他三极一起合分。
B型: N极不安装过电流脱扣器,且N极与其他三极一起合分(N极先合后分)。
C型: N极安装过电流脱扣器,且N极与其他三极一起合分(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,不与其他三极一起合分。

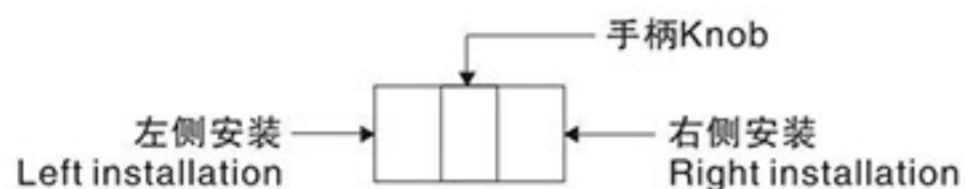
Note:

1. According to the rated limit short circuit breaking capacity, it can be divided into S-type (standard type), M-type (relatively 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 | MEM1-63, MEM1-125 | MEM1-250 | MEM1-400 | MEM1-630 | MEM1-800 | MEM1-1600(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 | | | | | | | — |

NOTE:

200: Circuitbreaker with electromagnetic release only, 300: Circuit breaker with thermal-magnetic release; 00. Circuitbreaker 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.

主要性能指标 Technical Data




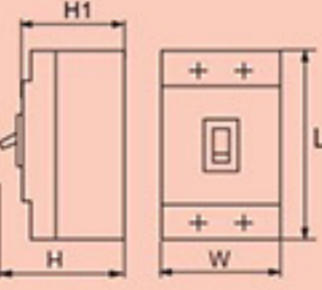
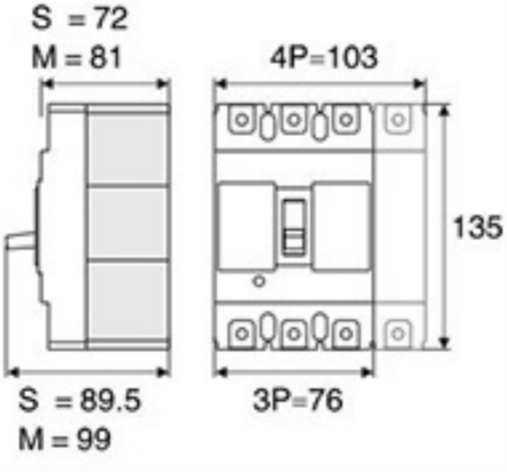
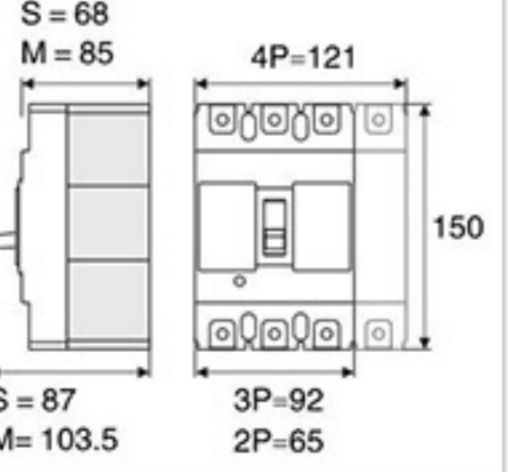
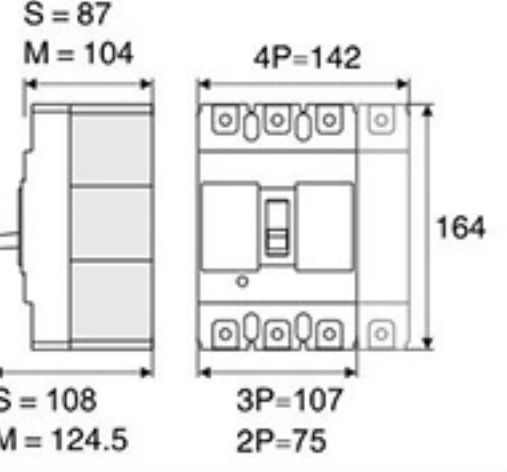
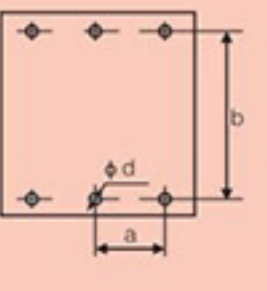
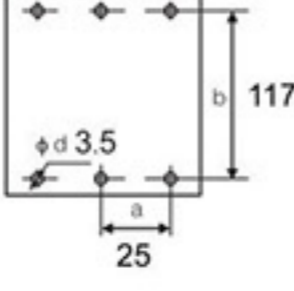
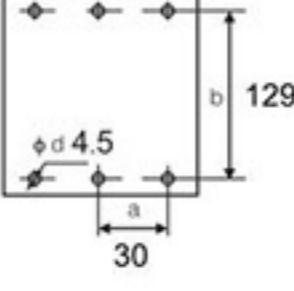
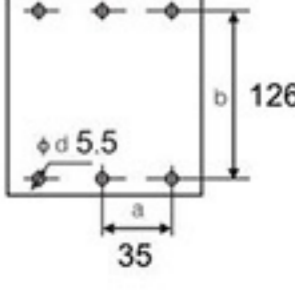
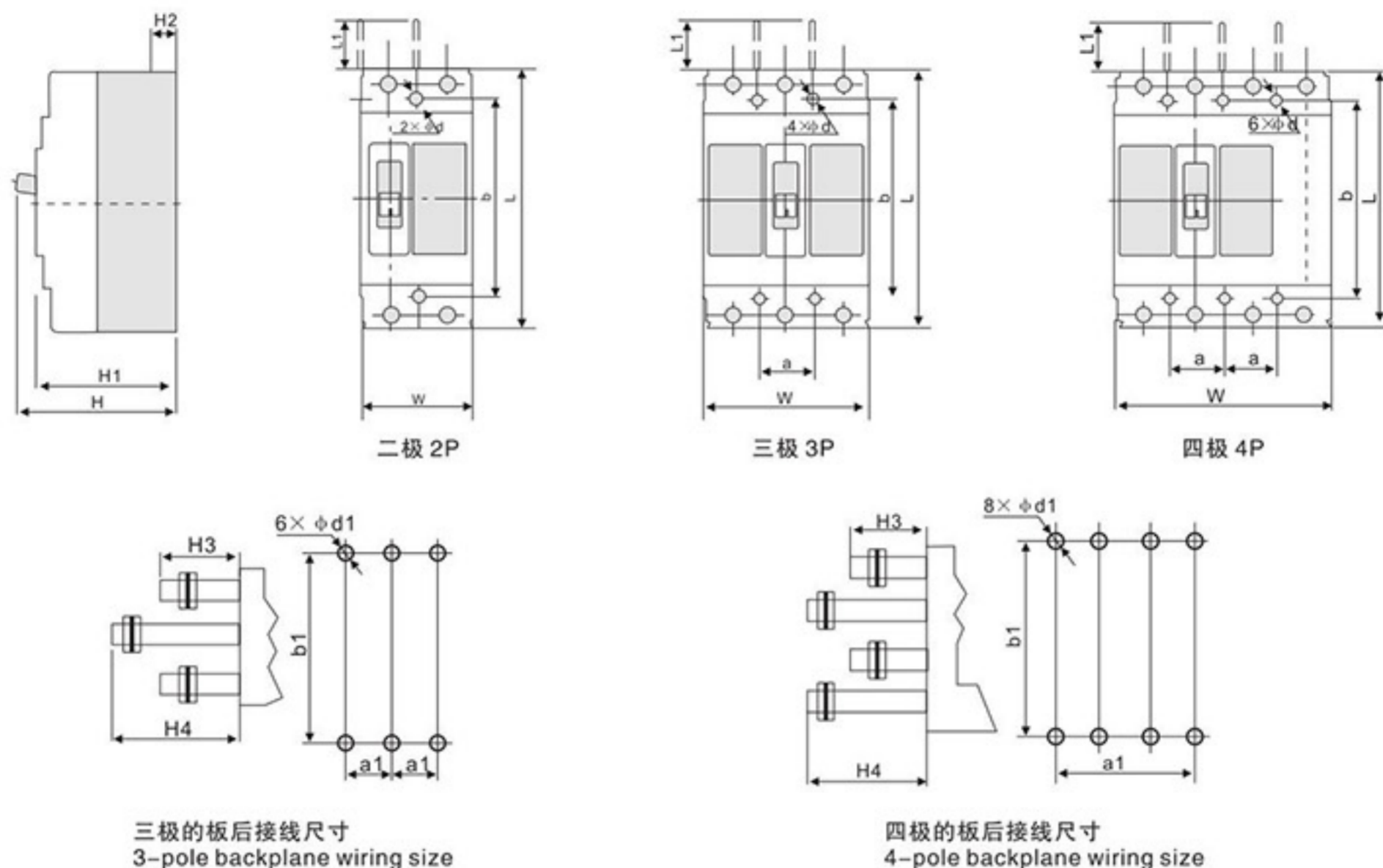
| | | | | | | | | | | |
|--|---|--|---|--|------|----|----|------|----|----|
| |  |  |  | | | | | | | |
| 型号 Type | MEM1-63 | MEM1-125 | MEM1-250 | | | | | | | |
| 壳架电流Inm Frame Inm (A) | 63 | 125 | 250 | | | | | | | |
| 额定电流In (A) Rated current (A) | 10、16、20、25、32、 40、50、63 | 16、20、25、32、40、 50、63、80、100、 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 | | | | | | | |
| 额定极限短路分断能力 Icu (kA) Rated limit short circuit breaking capacity | AC400V | 12 | 18 | 35 | 12 | 35 | 50 | 12 | 35 | 50 |
| 额定运行短路分断能力 Ics (kA) Rated short-circuit breaking capacity | AC400V | 6 | 12 | 22 | 6 | 22 | 35 | 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 |  |  S = 72 M = 81 4P=103 S = 89.5 M = 99 3P=76 135 |  S = 68 M = 85 4P=121 S = 87 M = 103.5 3P=92 2P=65 150 |  S = 87 M = 104 4P=142 S = 108 M = 124.5 3P=107 2P=75 164 | | | | | | |
| 安装尺寸 (mm) Installation size |  |  b 117 a 25 φd 3.5 |  b 129 a 30 φd 4.5 |  b 126 a 35 φd 5.5 | | | | | | |

表4 Table 4

| | | | |
|--|--|--|---|
| | | | |
| MEM1-400 | MEM1-630 | MEM1-800 | MEM1-1600(1250) |
| 400 | 630 | 800 | 1600 |
| 225、250 315、350、400 | 400、500、630 | 630、700、800 | 630、700、800、1000、 1250、1600 |
| AC400 | AC400 | AC400 | AC400 |
| AC800 | AC800 | AC800 | AC1000 |
| 3,4 | 3,4 | 3,4 | 3,4 |
| | M | | M |
| 35 | 65 | 35 | 65 |
| 22 | 45 | 22 | 50 |
| 1500 | 1500 | 1000 | 500 |
| 4000 | 4000 | 2500 | 2500 |
| < 100 | < 100 | < 100 | < 120 |
| <p>M,H = 106 4P=197 M,H = 150 3P=150 257</p> | <p>M,H = 111 4P=240 M,H = 158 3P=182 270</p> | <p>M,H = 116 4P=280 M,H = 158 3P=210 280</p> | <p>139 330 190 4P=280 3P=210 1250=466 1600=510</p> |
| <p>$\phi d 7$ a a1 44 50 b 194</p> | <p>$\phi d 7$ a 58 b 200</p> | <p>$\phi d 7$ a 70 b 243</p> | <p>70 70 $\phi 12.9$ 300 $\phi 9.5$</p> |

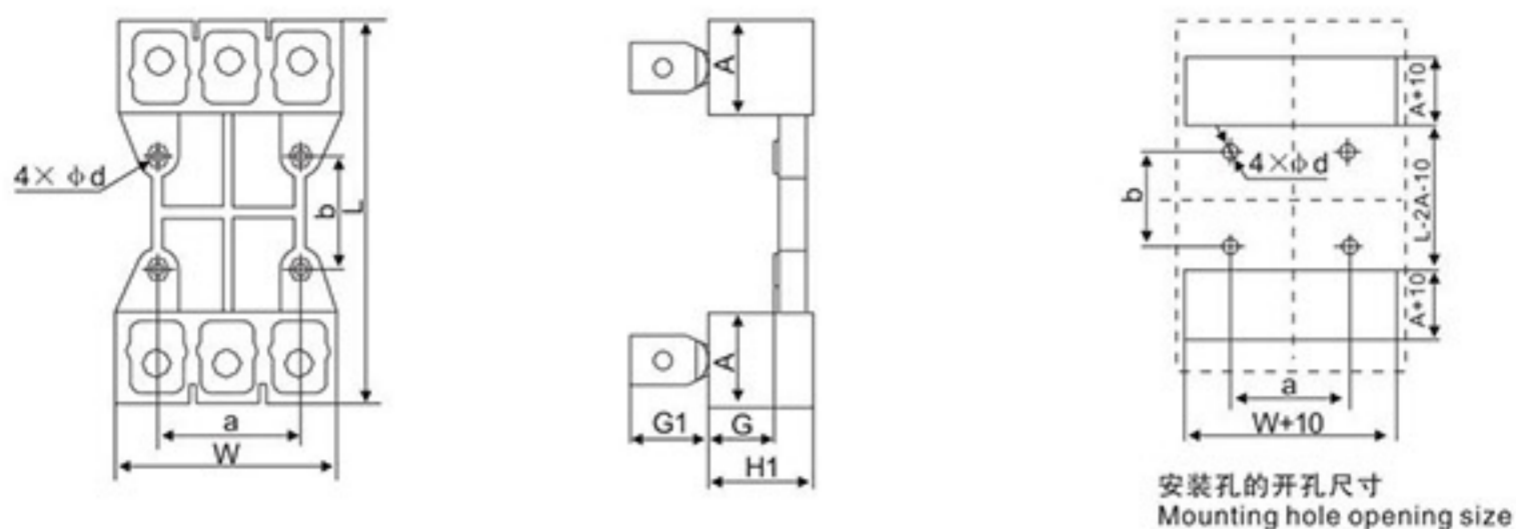
MEM1外形及安装尺寸 Shape and installation dimensions

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



| 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 | ϕd | a1 | b1 | d1 | H3 | H4 |
| MEM1-63S | 3 | 135 | 21 | 76 | 89.5 | 72 | 18 | 25 | 117 | 3.5 | 25 | 117 | 18 | 52 | 75 |
| | 4 | | | 103 | | | | 50 | | | | | | | |
| MEM1-63M | 3 | | | 76 | 99 | 81 | 28 | 25 | | | | | | | |
| | 4 | | | 103 | | | | 50 | | | | | | | |
| MEM1-125S | 2 | 150 | 51 | 65 | 87 | 68 | 24 | ... | 129 | 4.5 | 30 | 132 | 22 | 65 | 100 |
| | 3 | | | 92 | | | | 30 | | | | | | | |
| | 4 | | | 121 | | | | 60 | | | | | | | |
| MEM1-125M | 2 | | | 65 | 103.5 | 85 | 23 | ... | | | | | | | |
| | 3 | | | 92 | | | | 30 | | | | | | | |
| | 4 | | | 121 | | | | 60 | | | | | | | |
| MEM1-250S | 2 | 164 | 64 | 75 | 108 | 87 | 24 | ... | 126 | 5.5 | 35 | 144 | 24 | 70 | 110 |
| | 3 | | | 107 | | | | 35 | | | | | | | |
| | 4 | | | 142 | | | | 70 | | | | | | | |
| MEM1-250M | 2 | | | 75 | 124.5 | 104 | 24 | ... | | | | | | | |
| | 3 | | | 107 | | | | 35 | | | | | | | |
| | 4 | | | 142 | | | | 70 | | | | | | | |
| MEM1-400 | 3 | 257 | 105 | 150 | 153 | 106 | 38 | 44 | 194 | 7 | 48 | 224 | 32 | 48.5 | 108.5 |
| | 4 | | | 197 | | | | 94 | | | | | | | |
| MEM1-630 | 3 | 270 | 105 | 182 | 157 | 111 | 43 | 58 | 200 | 7 | 58 | 234 | 40 | 70 | 120 |
| | 4 | | | 240 | | | | 116 | | | | | | | |
| MEM1-800 | 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

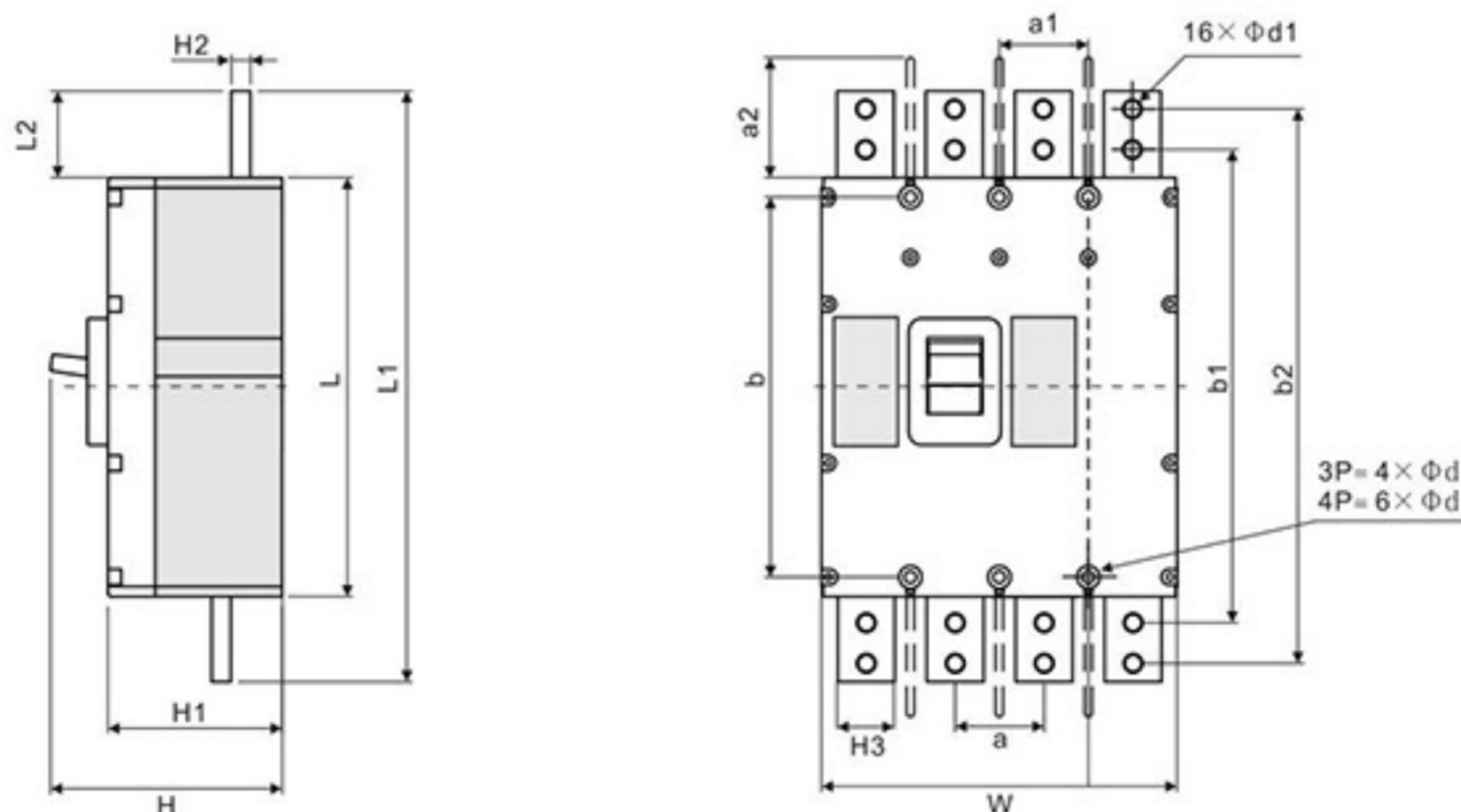


单位毫米Unit(mm)

| 型号 Type | W | L | A | H1 | G | G1 | a | b | d |
|----------|-----|-----|----|----|----|----|-----|-----|-----|
| MEM1-63 | 75 | 135 | 18 | 28 | 18 | 16 | 50 | 60 | 5.5 |
| MEM1-125 | 91 | 168 | 38 | 50 | 33 | 28 | 60 | 56 | 6.5 |
| MEM1-250 | 107 | 186 | 46 | 50 | 33 | 37 | 70 | 54 | 6.5 |
| MEM1-400 | 149 | 280 | 55 | 60 | 38 | 46 | 60 | 129 | 8.5 |
| MEM1-630 | 182 | 300 | 65 | 60 | 39 | 50 | 100 | 123 | 8.5 |
| MEM1-800 | 212 | 305 | 62 | 87 | 60 | 22 | 90 | 146 | 11 |

MEM1-1600(1250)外形及安装尺寸 Shape and installation dimensions

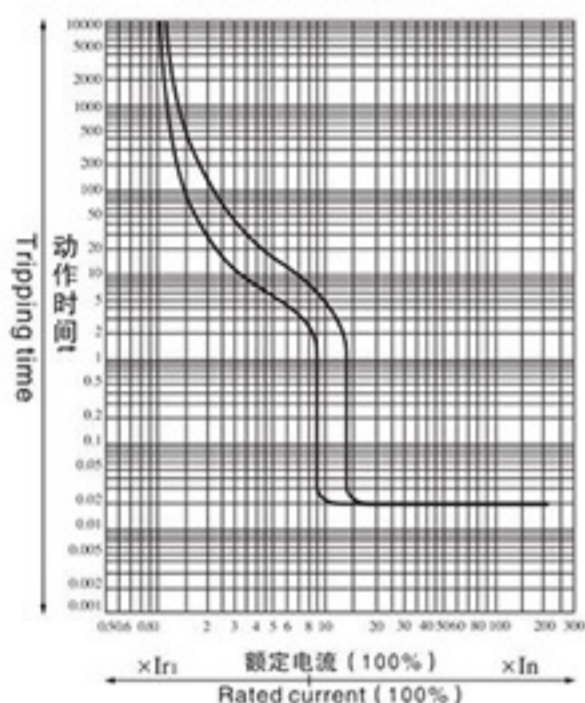
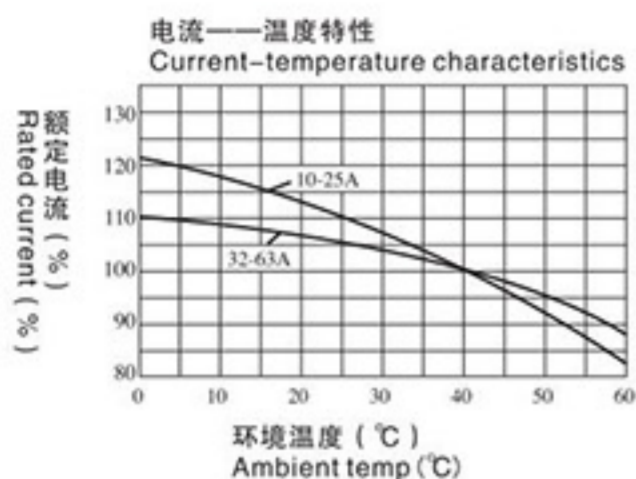
- 断路器板前接线的外形及安装尺寸
- Outline and installation dimension of front wiring of circuit breaker board



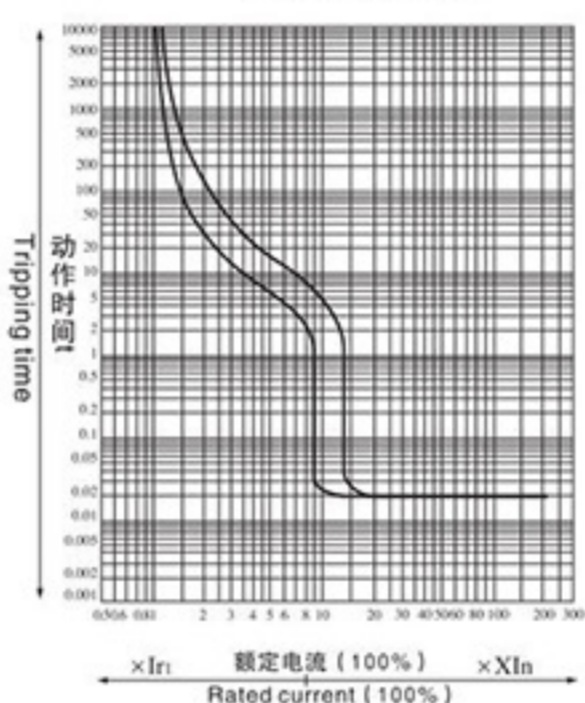
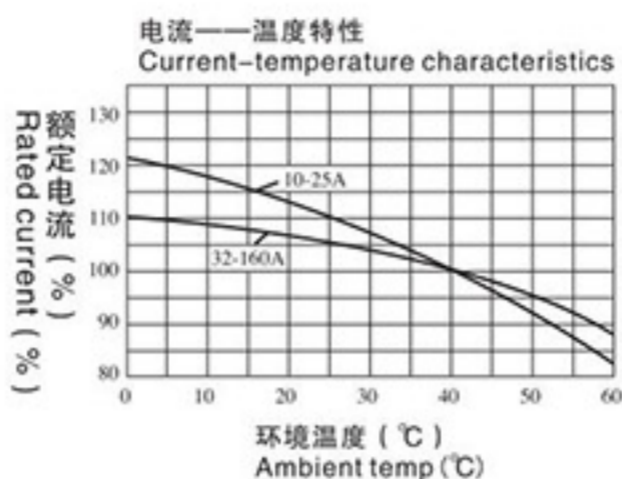
| 型号 Type | 极数 pole | 外形尺寸 (mm) Dimensions | | | | | | | | 安装尺寸(mm)Installation size | | | | | | | |
|-----------|---------|----------------------|-----|----|-----|-----|-----|----|----|---------------------------|----|-----|-----|-----|-----|-----|------|
| | | L | L1 | L2 | W | H | H1 | H2 | H3 | a | a1 | a2 | b | b1 | b2 | Φd | Φd1 |
| MEM1-1250 | 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 |
| MEM1-1600 | 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 |

断路器特性曲线 Tripping characteristics (curve)

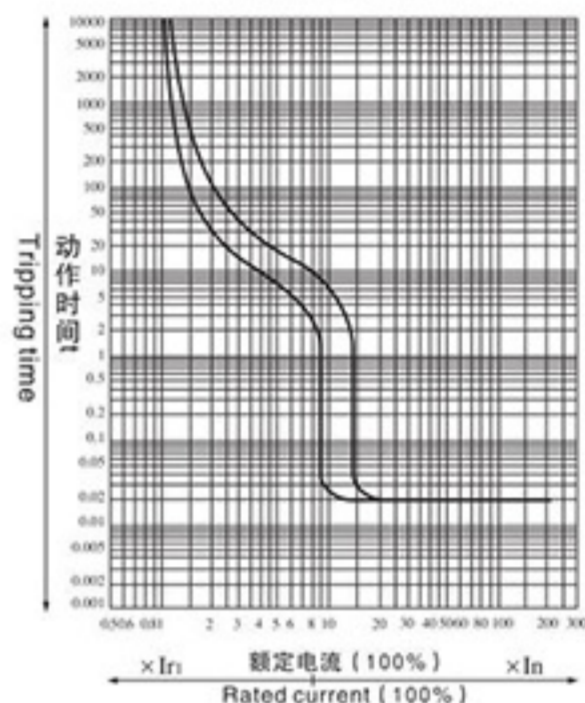
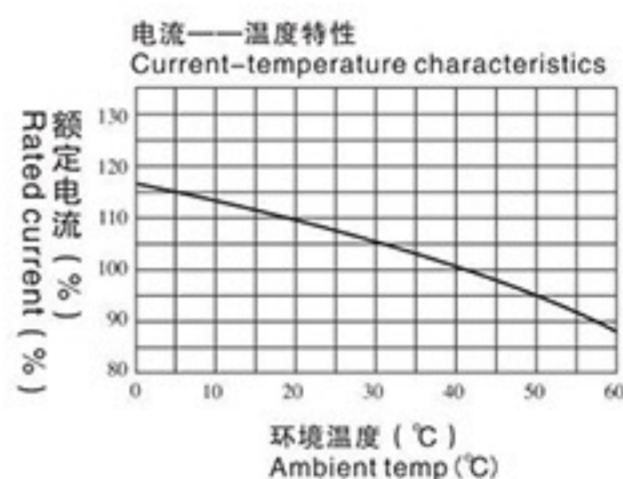
- 说明：特性曲线是在冷态，三相负载下测得。
- Note: The characteristic curve is measured under the cold state and three-phase load.



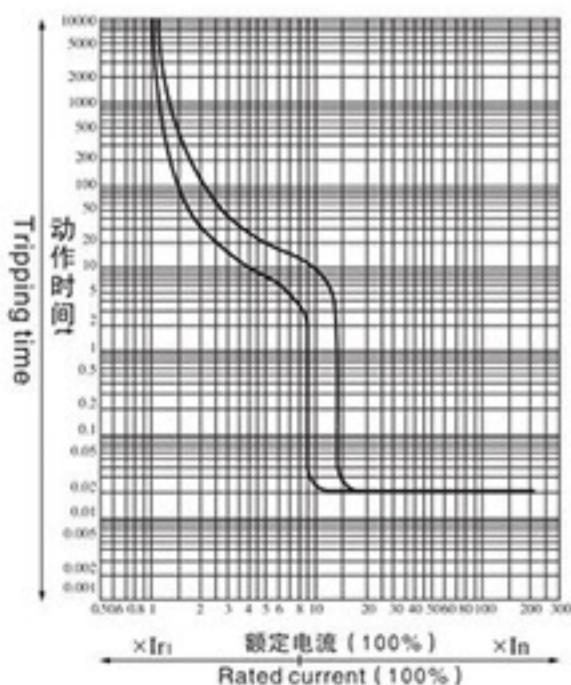
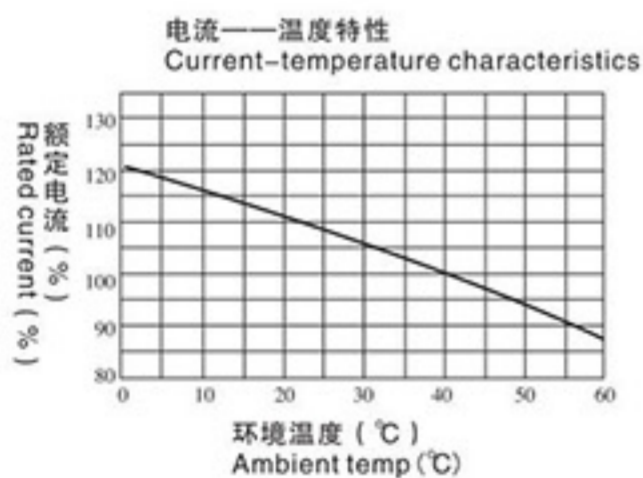
MEM1-63S, M 时间/电流特性曲线
MEM1-63S, M Time / current characteristic curve



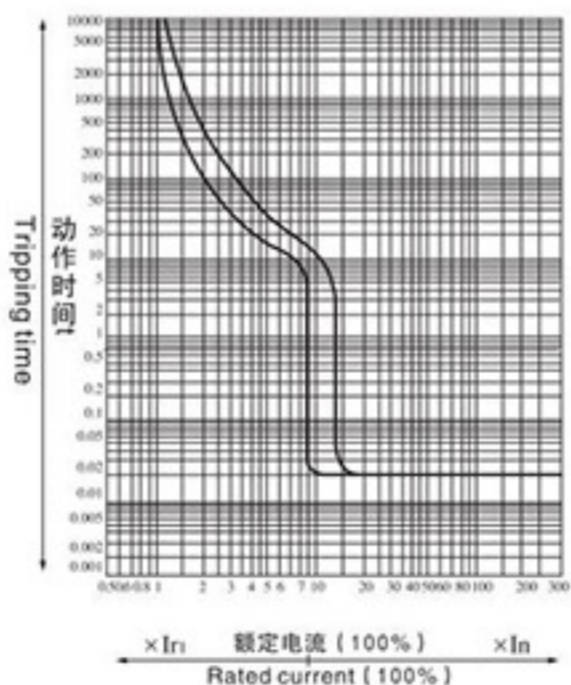
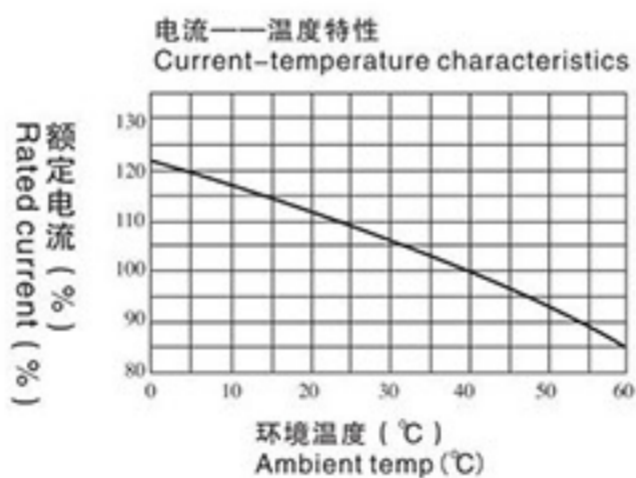
MEM1-125S, M 时间/电流特性曲线
MEM1-125S, M Time / current characteristic curve



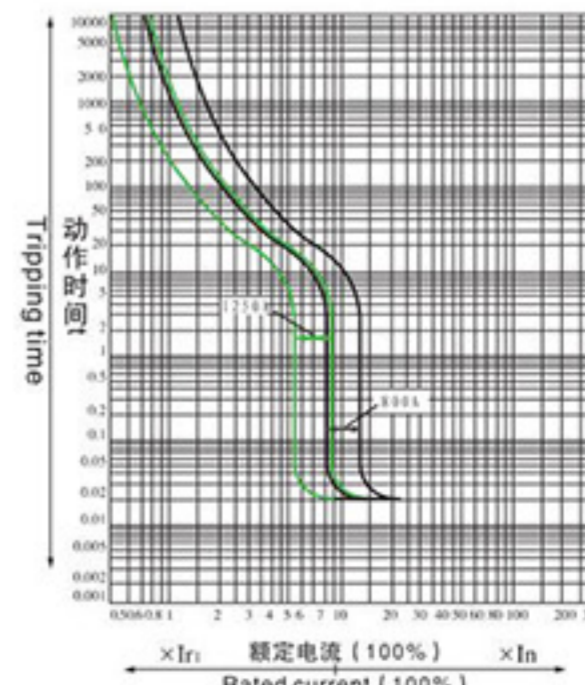
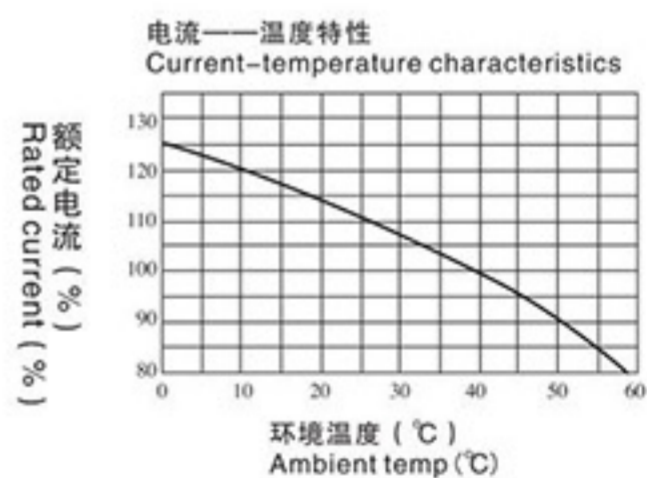
MEM1-250S, M 时间/电流特性曲线
MEM1-250S, M Time / current characteristic curve



MEM1-400M 时间/电流特性曲线
MEM1-400M Time / current characteristic curve



MEM1-630M 时间/电流特性曲线
MEM1-630M Time / current characteristic curve



MEM1-800, 1250 时间/电流特性曲线
MEM1-800, 1250 Time / current characteristic curve

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℃) | | 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: 1600A 为 7In±20% |
| 63<In≤125 | >2 | <2 | 10In±20% | |
| 125<In≤1600 | >2 | <2 | 5In±20% 7In±20% 10In±20% | Distribution protection type Note: 1600A 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℃) | | | | 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≤1600 | >2 | <2 | 8min | 6S<Tp<20s | 12In±20%; 7In±20% |

功率损耗 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 |
| MEM1-63(S, M)直热型(Direct heating)(10A~25A) | 25 | 28 | / | 32 |
| MEM1-125(S, M)直热型(Direct heating)(16A~25A) | 25 | 40 | 42 | 45 |
| MEM1-63(S, M)间热型(Interheat)(32A~63A) | 63 | 20 | / | 24 |
| MEM1-125(S, M)间热型(Interheat)(32A~100A) | 125 | 35 | 37 | 40 |
| MEM1-250(S, M) | 250 | 62 | 66 | 70 |
| MEM1-400 | 400 | 115 | 120 | 125 |
| MEM1-630 | 630 | 187 | 193 | 200 |
| MEM1-800 | 800 | 262 | / | 300 |
| MEM1-1600(1250) | 1600 | 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℃ | +45℃ | +50℃ | +55℃ | +60℃ |
| MEM1-63 | 1 | 0.94 | 0.88 | 0.81 | 0.74 |
| MEM1-125 | 1 | 0.96 | 0.91 | 0.85 | 0.78 |
| MEM1-250 | 1 | 0.97 | 0.94 | 0.90 | 0.86 |
| MEM1-400 | 1 | 0.95 | 0.89 | 0.82 | 0.75 |
| MEM1-630 | 1 | 0.94 | 0.88 | 0.82 | 0.76 |
| MEM1-800 | 1 | 0.94 | 0.87 | 0.80 | 0.72 |
| MEM1-1600(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.

Use and maintenance

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.

Ordering instructions

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 MM1-125S/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