# RDM1E

## Electronic Moulded Case Circuit Breaker

## Application

RDM1E series RDM1E series electronic Moulded case circuit breaker is a new designed MCCB developed and manufactured by adopting international advanced technology. Its rated insulation voltage is 800V, is applied to the circuit of AC 50HZ, rated working voltage 400V, rated current up to 1250A as infrequently switch and starting of motor. MCCB has the functions of overload long delay inverse time limit, short-circuit short delay inverse time limit, short-circuit short delay definite time limit, short-circuit instantaneous and under-voltage protection, to protect the circuit and power equipment against being damage.
It has the characteristics of small volume, high breaking capacity, short arcing distance, and anti-vibration.
It cannot be inverted wiring, only can be 1, 3, 5 connect to the power line, 2, 4, 6 connect to the load line.
MCCB has the isolation function, its symbol is: "—⁄ ⊢×—"

## Normal working condition and Installation environment

1.Altitude of installation location no more than 2000m

2.Temperature: -5°C~+40°C, and the average temperature within 24h no higher than +35°C

3.The relative humidity: no more than 50%, when temperature is +40°C. The product can allow the higher humidity under lower temperature, for instance, when the humidity reaches to 90% when it is at +20°C.

4. Class of pollution: class 3

5. Installation type of main circuit: class III, installation type of auxiliary circuit and control circuit: class II.

6. Using category: A or B.

## Main function characteristics

The intelligent controller is the key component of the MCCB, it is used in motor or power distribution protection to realize the integration of measurement, protection, control and communication functions, so that the circuit and power supply equipment are protected from overload, short circuit, grounding and other fault hazards. Using intelligent MCU micro-processing controller, stable and reliable, can provide power, as long as one phase is connected, when the current is not lower than 20% of its rated value, it can ensure the normal operation of the protection function. Selective cooperation with three-stage protection:1) The circuit breaker of category B has the selective cooperation if it is connected with other short-circuit protection device in the same circuit under short-circuit conditions;
2) Adjustment of protection function parameters such as overload delay, reverse delay, short circuit delay (reverse delay, fixed delay), short circuit instantaneous, etc.;
3) It has three parameter settings of operating current and operating time, and can be adjusted in 4-10 gears: the user can set and adjust the controller according to the load current requirements, and the corresponding function can be turned off according to the user's requirements (customized). Instantaneous tripping function of high current, when the circuit breaker is closed and running, if a short circuit and high current (⩾20Inm) are encountered, the magnetic tripping mechanism of the circuit breaker can be tripped directly, and the double protection is more reliable and safe. Has the function of tripping test, input DC12V voltage to test the operating characteristics of the circuit breaker; Fault self-diagnosis function: protect and detect the working status and operating conditions of the intelligent controller itself; Fault self-diagnosis function: to ensure the working status and operating conditions of the intelligent controller itself, with pre-warning indication and overload indication: when the load current reaches or exceeds the set value, the light source of the luminous column is exported; protection and detection; Dual air gap technology of magnetic flux converter: more reliable and stable operation, eliminating malfunction, reliable tripping, and low power; High protection accuracy: overload protection, short circuit, short delay protection, action accuracy of ±10%; short circuit instantaneous protection value accuracy of ±15% depends on the operating current; The installation is interchangeable: the dimensions and installation dimensions are the same as the RDM1 series MCCB with the same specifications and dimensions.

Optional functions:
1) There is a temperature monitoring and protection function: when the ambient temperature exceeds the set value (the default setting is 85°C), the controller will output an alarm photoelectric signal or make the circuit breaker switch off;
2) Dual passive signal output function: for signaling (or alarm), capacity AC230V5A;
3) It has overload thermal memory function: overload thermal memory function, short circuit (short delay) thermal memory function;
4) With fire-fighting excitation function: overload alarm is not tripped (a pair of passive contacts are provided) and the excitation tripping function or communication function is provided;
5) With communication functions: standard RS232, RS485, Modbus fieldbus protocols;

## Protection:

☐ Overload long delay action ammeter IR adjustment, depending on different rated current of the circuit breaker, can be adjusted from 4 to 10 steps;
☐ Long delay action time TR adjustment, adjustable in 4 steps;
☐ Short-circuit short delay action current Isd adjustment, adjustable in 10 steps;
☐ Short delay action time tsd adjustment, adjustable in 4 steps;
☐ Short-circuit instantaneous action ammeter Ii adjustment, adjustable in 8, 9, or 10 steps
☐ Pre-alarm action current Ip adjustment, adjustable in 7 steps.

## Other functions:

☐ A test terminal for checking the current setting value of the electronic release (or release test).
☐ Running indication;
☐ Pre-alarming indication;
☐ Release button

## Main Technical Specification

| Model | RDM1E-125 | | RDM1E-250 | | RDM1E-400 | | RDM1E-630 | | RDM1E-800 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Frame current Inm(A) | 125 | | 250 | | 400 | | 630 | | 800 | |
| Breaking capacity class | M | H | M | H | M | H | M | H | M | H |
| Rated current In(A) | 32、63、100 | | 250 | | 400 | | 630 | | 630、800 | |
| Pole | 3、4 | | 3、4 | | 3、4 | | 3 | | 3、4 | |
| Rated voltage Ue(V) | AC400 | | | | | | | | | |
| Rated insulated voltage Ui(V) | 800 | | | | | | | | | |
| | 8000 | | | | | | | | | |
| Rated limited short-circuit breaking capacity Icu(kA) | 35 | 50 | 35 | 50 | 50 | 70 | 50 | 70 | 50 | 70 |
| Rated working short-circuit breaking capacity Ics(kA) | 25 | 35 | 25 | 35 | 35 | 50 | 35 | 50 | 35 | 50 |
| Rated short time withstand current Icw 1S(kA) | 5 | | 5 | | 5 | | 10 | | 10 | |
| Using category | B | | B | | B | | B | | B | |
| Arc distance(mm) | ⩽50 | | ⩽50 | | ≤100 | | ≤100 | | ≤100 | |
| Operation performance — Power on(Times) | 1500 | | 1000 | | 1000 | | 1000 | | 500 | |
| Operation performance — Power off(Times) | 8500 | | 7000 | | 4000 | | 4000 | | 3000 | |
| Front plate wiring | ○ | | ○ | | ○ | | ○ | | ○ | |
| Back plate wiring | ○ | | ○ | | ○ | | ○ | | ○ | |
| Plug-in wiring | ○ | | ○ | | ○ | | ○ | | ○ | |
| Drawer wiring | – | | – | | ○ | | ○ | | ○ | |
| Under voltage release | ○ | | ○ | | ○ | | ○ | | ○ | |
| Shunt release | ○ | | ○ | | ○ | | ○ | | ○ | |
| Auxiliary contact | ○ | | ○ | | ○ | | ○ | | ○ | |
| Alarm contact | ○ | | ○ | | ○ | | ○ | | ○ | |
| Motor operation mechanism | ○ | | ○ | | ○ | | ○ | | ○ | |
| Manual operation mechanism | ○ | | ○ | | ○ | | ○ | | ○ | |
| Hand test device | ○ | | ○ | | ○ | | ○ | | ○ | |
| Intelligent control module | ○ | | ○ | | ○ | | ○ | | ○ | |
| Test power module | ○ | | ○ | | ○ | | ○ | | ○ | |
| LCD display module | ○ | | ○ | | ○ | | ○ | | ○ | |

## Characteristics of release

□ Characteristic of the electronic release

Breaker is installed current sensor with effective value sampling. MCCB is with the functions of overload long delay inverse time, short-circuit short delay inverse time, short-circuit short delay definite time, short-circuit instantaneous action and so on, the user can set the protection characteristic they need.

Release characteristic as Fig. 1

□ Overload long delay inverse time protection action characteristic are shown in table 3

□ Short-circuit short delay protection action characteristic are shown in table 4

□ Short-circuit instantaneous protection action characteristic are shown in table 5

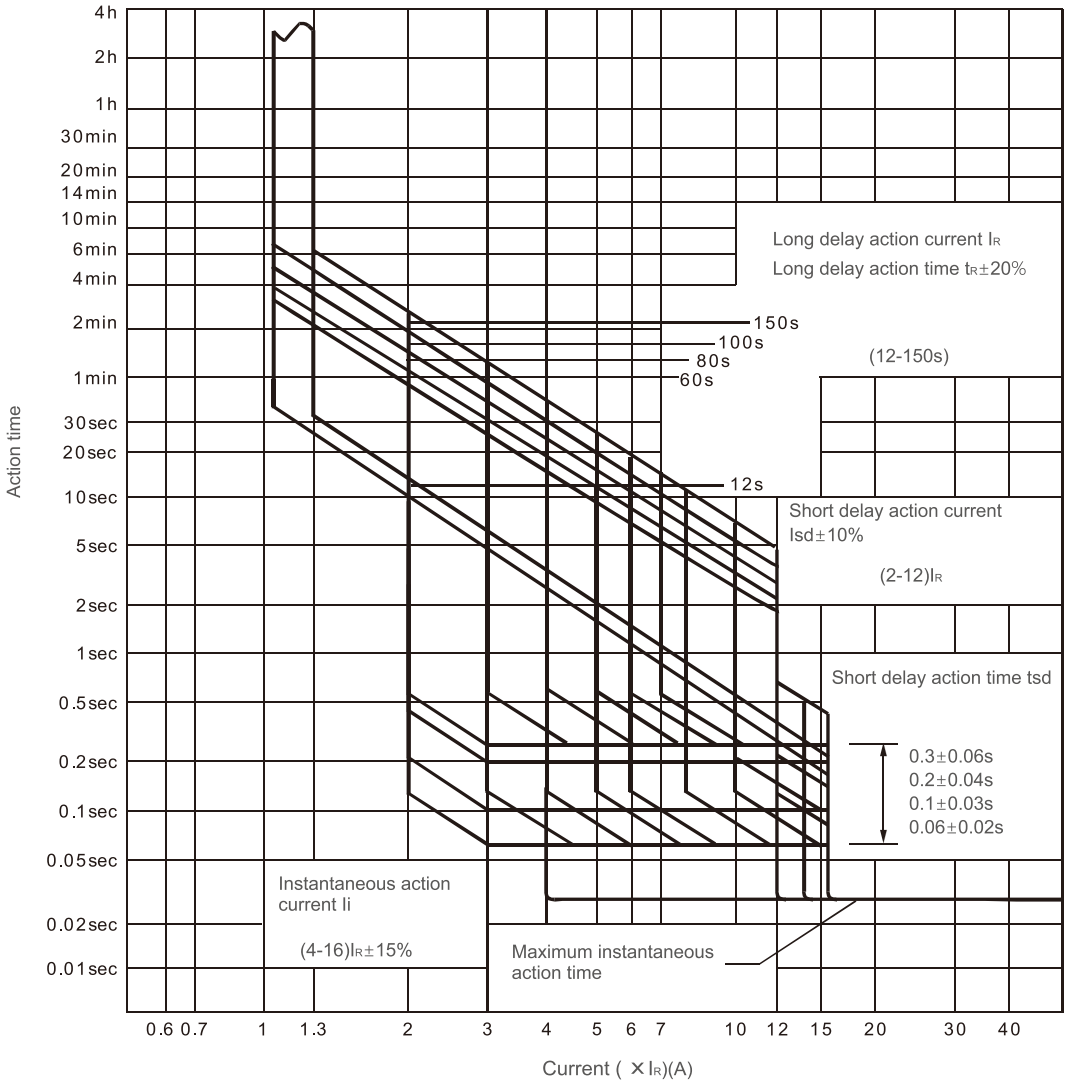



Figure 1 RDM1E-125~800 release characteristic curve

Table 3

| Current | | Action time (s) | | | | | |
|---|---|---|---|---|---|---|---|
| Power distribution type | 1.05$I_R$ | > 2h without tripping | | | | | |
| | 1.3$I_R$ | ≤1h tripping | | | | | |
| | 2$I_R$ | Action time $T_R$ | 12 | 60 | 80 | 100 | 150 |
| | | Setting time $T_R$ | 12 | 60 | 80 | 100 | 150 |
| Motor protection type | 1.05$I_R$ | > 2h without tripping | | | | | |
| | 1.2$I_R$ | ≤1h without tripping | | | | | |
| | 1.5$I_R$ | Action time $T_R$ | 21.3 | 107 | 142 | 178 | 267 |
| | 2$I_R$ | Setting time $T_R$ | 12 | 60 | 80 | 100 | 150 |
| | 7.2$I_R$ | Action time $T_R$ | 0.93 | 4.63 | 6.17 | 7.72 | 11.6 |
| Tripping level | | | / | 10A | 10 | 20 | 30 |

Note: 1. Action time conforms to $I^2T_R=(2I_R)^2tR$,(1.2Ir≤1<Isd); 2. Action time error±20%; 3. Return time is not less than 70% of the action time

Table 4

| Short delay action characteristic | | Current Isd | Action time(S) | | | |
|---|---|---|---|---|---|---|
| | | ≤0.9 Isd | Without tripping | | | |
| | | ⩾1.1 Isd | tripping | | | |
| Short delay protection | Inverse time protection | Isd ⩽I＜1.5 Isd | $I^2T_R=(1.5\ Isd)^2\ tsd$ | | | |
| | Fixed time protection | 1.5 Isd⩽I＜Ii | Setting time tsd(s) | 0.06 | 0.1 | 0.2 | 0.3 |
| | | | Error(s) | ±0.02 | ±0.03 | ±0.04 | ±0.06 |
| | | | Return time(s) | / | / | 0.14 | 0.21 |
| Accuracy | | Inverse time action error ±10% | | | | | |

Table 5

| | | |
|---|---|---|
| Technical parameter of accessories | Current | Action time(S) |
| | ⩽0.85Ii | Without tripping |
| | ⩾1.15Ii | Tripping |

Rated value of auxiliary contact and alarming contact to see table

Table 6

| Classify | Frame rated current Inm(A) | Conventional thermal current Ith(A) | Rated working current | |
|---|---|---|---|---|
| | | | AC400V | DC220V |
| Auxiliary contact | Inm⩽400 | 3 | 0.3 | 0.15 |
| | Inm⩾400 | 3 | 0.4 | 0.15 |
| Alarm contact | 100⩽Inm⩽800 | 3 | 0.3 | 0.15 |

Rated control power voltage (Us) and rated operating voltage (Ue) of control circuit release and the motor mechanism to see table 7

Table 7

| Type | | Rated voltage(V) | | |
|---|---|---|---|---|
| | | AC 50HZ | | DC |
| Release | Shunt release | Us | 230 400 | 110 220 |
| | Under voltage release | Ue | 230 400 | - - |
| Motor mechanism | | Us | 230 400 | 110 220 |

☐ When the applied voltage of the shunt release is between 70%~100% of the rated control supply voltage, the circuit breaker shall be reliably opened.

☐ When the supply voltage drops to within 70%~35% of the rated operating voltage of the undervoltage release, the undervoltage release can reliably break the circuit breaker, when the supply voltage is lower than 35% of the rated operating voltage of the undervoltage release, the undervoltage release can prevent the circuit breaker from closing, when the supply voltage is higher than 85% of the rated operating voltage of the undervoltage release, the undervoltage release can ensure that the circuit breaker can be closed reliably.

☐ The electric operating mechanism can reliably close the circuit breaker when the supply voltage is between 85% and 110% at the rated voltage.

☐ Power loss and capacity reduction factor

Power losses are shown in Table 8

Table 8

| Model | Energizing current (A) | Total three phase power loss (VA) | |
|---|---|---|---|
| | | Front and rear wiring | Plug-in wiring |
| RDM1E-125 | 125 | 35 | 40 |
| RDM1E-250 | 250 | 62 | 70 |
| RDM1E-400 | 400 | 115 | 125 |
| RDM1E-630 | 630 | 150 | 170 |
| RDM1E-800 | 800 | 262 | 294 |

The capacity reduction factors for changes in ambient temperature are shown in Table 9

Table 9

| Model | +40°C | +45°C | +50°C | +55°C | +60°C |
|---|---|---|---|---|---|
| RDM1E-125 | 1In | 0.95In | 0.89In | 0.84In | 0.76In |
| RDM1E-250 | 1In | 0.96In | 0.91In | 0.87In | 0.75In |
| RDM1E-400 | 1In | 0.94In | 0.87In | 0.81In | 0.74In |
| RDM1E-630 | 1In | 0.94In | 0.87In | 0.81In | 0.74n |
| RDM1E-800 | 1In | 0.88In | 0.83In | 0.79In | 0.72In |

**Appearance and installation dimension**

Appearance dimension as Fig. 2, Fig. 3, Fig. 4, Fig. 5, Fig. 6 and table 10
(1) Front of board wiring appearance dimension as Fig. 2 (X-X,Y-Y is the center of 3P circuit breaker)
(2) Rear wiring appearance dimension as Fig. 3, Fig. 4
(3) Plug-in front of board wiring appearance dimension as Fig. 5
(4) Plug-in rear wiring appearance dimension as Fig. 6

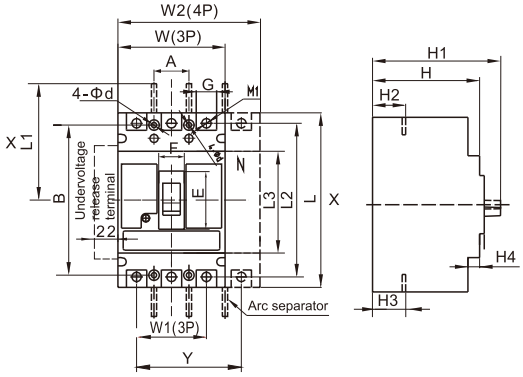



Fig.2 Fixed type front of board wiring

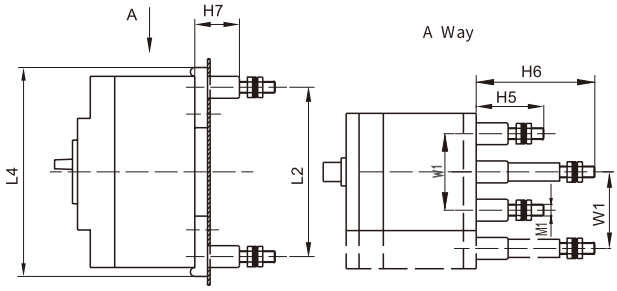



Fig.3 RDM1E-125, 250 Fixed type rear wiring

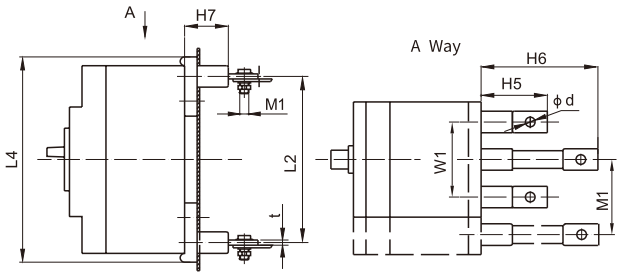



Fig. 4 RDM1E-400, 630, 800 Fixed type rear wiring

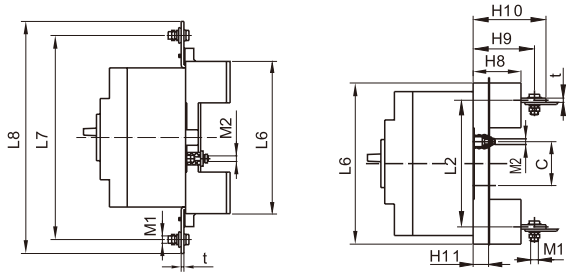



Fig.5 Plug-in front of board wiring (three Pole)
Fig.6 Plug-in rear wiring (three pole, four pole)

Table 10

| Model | Front of board wiring | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | W | W1 | L | L1 | L2 | L3 | H | H1 | H2 | H3 | H4 | E | F | G | W2 |
| RDM1E-125 | 92 | 60 | 150 | 100 | 132 | 88.5 | 93 | 112 | 29 | 29 | 12 | 50 | 22 | 18 | 122 |
| RDM1E-250 | 107 | 70 | 165 | 132 | 144 | 102 | 90 | 110 | 24 | 24 | 5 | 62 | 22 | 22 | 142 |
| RDM1E-400 | 150 | 96 | 257 | 220 | 224 | 175 | 107 | 147 | 38 | 38.5 | 5 | 89 | 65 | 33 | 198 |
| RDM1E-630 | 150 | 96 | 257 | 220 | 224 | 175 | 107 | 147 | 40 | 41.5 | 5 | 89 | 65 | 33 | - |
| RDM1E-800 | 210 | 140 | 280 | 240 | 243 | 205 | 116 | 155 | 42 | 45 | 4 | 81.5 | 66.5 | 44 | 280 |

| Model | Rear of board wiring | | | | | | | Plug−in wiring | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L4 | H5 | H6 | H7 | M1 | d | t | L6 | H8 | H9 | H10 | H11 | M1 | M2 | L7 | L8 |
| RDM1E-125 | 164 | 53 | 93 | 35 | M8 | – | – | 168 | 50 | 64 | 76 | 18 | M8 | M6 | 220 | 250 |
| RDM1E-250 | 173 | 55 | 100 | 35 | M10 | 8.5 | – | 186 | 50 | 72 | 87 | 18 | M8 | M6 | 252 | 276 |
| RDM1E-400 | 267 | 46 | 83 | 37 | M12 | 12 | 8.5 | 280 | 60 | 84 | 107 | 21 | M10 | M8 | 357 | 387 |
| RDM1E-630 | 295 | 46 | 83 | — | M12 | 12 | 8.5 | 280 | 60 | 84 | 107 | 21 | M10 | M8 | 357 | 387 |
| RDM1E-800 | 295 | 47 | 87 | — | M16 | 16 | 16 | 305 | 61 | 97 | 148 | 16 | M12 | M8 | — | — |

**Installation board hole-opening dimensions**

(1) See Figure 7 for front of board wiring installation board hole-opening dimensions (X−X, Y−Y are three-pole circuit breaker centers)

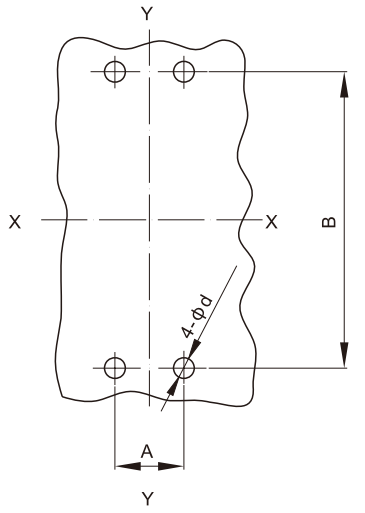



Figure 7 Front of board wiring installation board hole-opening dimensions

| Model | | RDM1E-125 | | RDM1E-250 | | RDM1E-400/630 | | RDM1E-800 | |
|---|---|---|---|---|---|---|---|---|---|
| Number of pole | | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 |
| Installation board hole opening dimension (mm) | A | 30 | | 35 | 70 | 44 | | 70 | |
| | B | 129 | | 126 | | 194 | | 243 | |
| | d | 4.5 | | 4.5 | | 7 | | 7 | |

(2) See Figure 8 for rear wiring installation board hole-opening dimensions (X-X, Y-Y are three-pole circuit breaker centers)

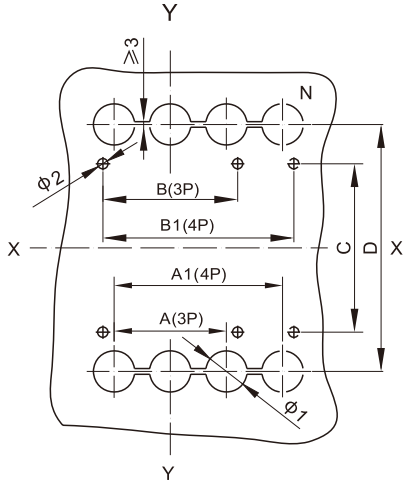



Figure 8 Rear wiring installation board hole-opening dimensions

| Model | | RDM1E-125 | | RDM1E-250 | | RDM1E-400/630 | | RDM1E-800 | |
|---|---|---|---|---|---|---|---|---|---|
| Number of pole | | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 |
| Installation board hole opening dimension (mm) | A | 60 | – | 70 | – | 96 | – | 140 | – |
| | A1 | – | 90 | – | 105 | – | 144 | – | 210 |
| | B | 72 | – | 87 | – | 124 | – | 178 | – |
| | B1 | – | 102 | – | 122 | – | 172 | – | 248 |
| | C | 90 | | 93 | | 164 | | 158 | |
| | D | 132 | | 144 | | 224 | | 243 | |
| | ϕ1 | 22 | | 24 | | 32 | | 48 | |
| | ϕ2 | 5.5 | | 5.5 | | 6.5 | | 7 | |

(3) See Figure 9 for plug-in front of plate wiring mounting plate opening dimensions (X-X, Y-Y are 3 pole circuit breaker centers)

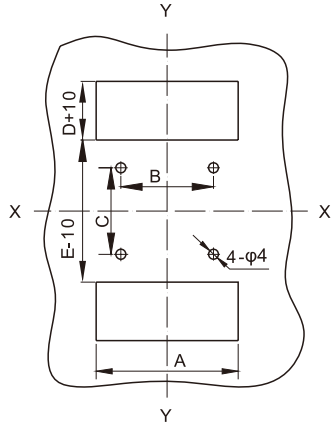



Figure 9 Plug–in front-of–board wiring mounting plate opening dimensions

| Model | | RDM1E-125 | RDM1E-250 | RDM1E-400/630 |
|---|---|---|---|---|
| Number of pole | | 3 | 3 | 3 |
| Installation board hole opening dimension (mm) | A | 94 | 110 | 152 |
| | B | 60 | 70 | 60 |
| | C | 56 | 54 | 129 |
| | D | 41 | 66 | 65 |
| | E | 90 | 91 | 166 |
| | d | 6.5 | 6.5 | 8.5 |

(4) See Figure 10 for plug-in rear wiring installation board hole-opening dimensions (X-X, Y-Y are three-pole circuit breaker centers)

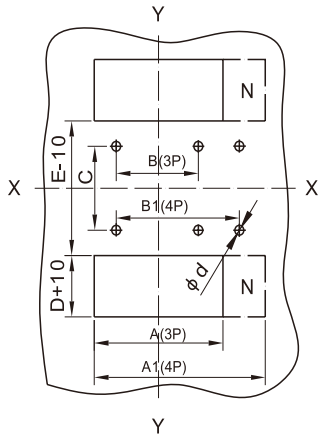



Figure 10 Plug-in rear wiring installation board hole-opening dimensions

| Model | | RDM1E-125 | | RDM1E-250 | | RDM1E-400/630 | | RDM1E-800 | |
|---|---|---|---|---|---|---|---|---|---|
| Number of pole | | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 |
| Installation board hale opening dimension(mm) | A | 94 | — | 107 | — | 149 | — | 210 | — |
| | A1 | — | 129 | — | 145 | — | 200 | — | 290 |
| | B | 60 | — | 70 | — | 60 | — | 90 | — |
| | B1 | — | 90 | — | 105 | — | 108 | — | 162 |
| | C | 56 | | 54 | | 129 | | 146 | |
| | D | 38 | | 45.5 | | 54.5 | | 72 | |
| | E | 92 | | 95 | | 171 | | 181 | |
| | d | 6.5 | | 6.5 | | 8.5 | | 11 | |

**Communication Functions of Circuit Breakers**

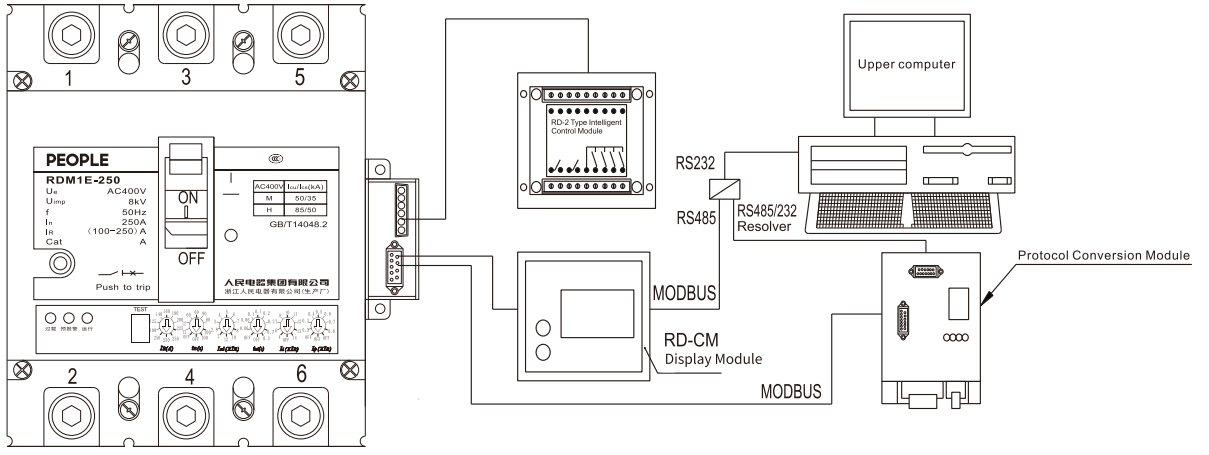
RDM1E intelligent circuit breaker with electric operating mechanism is connected with the upper computer (such as computer), and can realize remote“four remote” function through the communication interface.RS485 interface, Modbus-RTU protocol, communication baud rate 9600K. In addition, with the addition of the RDM1E circuit breaker controller (optional),the parameters of the circuit breaker can be read and modified directly on site.

**Communication interfaces and external modules for intelligent circuit breakers**

RDM1E series inteligent molded case circuit breakers are equipped with communication interace and MODBUS communication protocol. RDM1E is not used for network communication, but when they are used individually, the hand-held programmer can perform operations such as setting of protection characteristics on the circuit breakers. If RDM1E is used for network communication, they can be directly connected to the corresponding field bus;

**Communication network of RDM1E series communicable intelligent molded case circuit breaker**

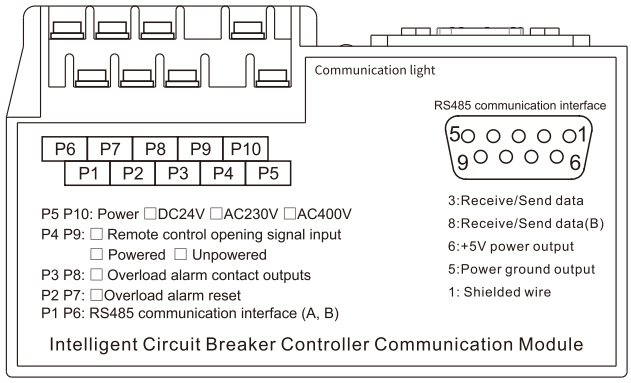
The communication network can be connected by referring to the following scheme. Different protocol modules can be selected for different prbtocols to convert MOBBUS to PROFIBU S-DP and other protbcols.




External Configuration Module for RDM1E Series Communicable Intelligent Molded Case Circuit Breakers (Optional)

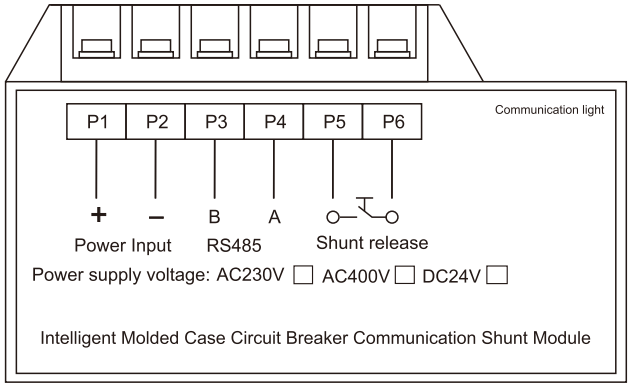
### Alarm non-release module

When the product is used in fire fighting circuit, the controller is required to be alarmed for non-release function, at this time, it is necessary to confiqure the overload alarm non-release module to protect the continuity of power supply and meet the requirements of GB50054 Article 6.3.6.The module can monitor the parameter setting of circuit breaker through communication function, remote communication to open the main circuit, output alarm signal (provide pair of passive contacts) when overload in the circuit, etc. It can be used for centralized control and management of electric power department and electric power users.



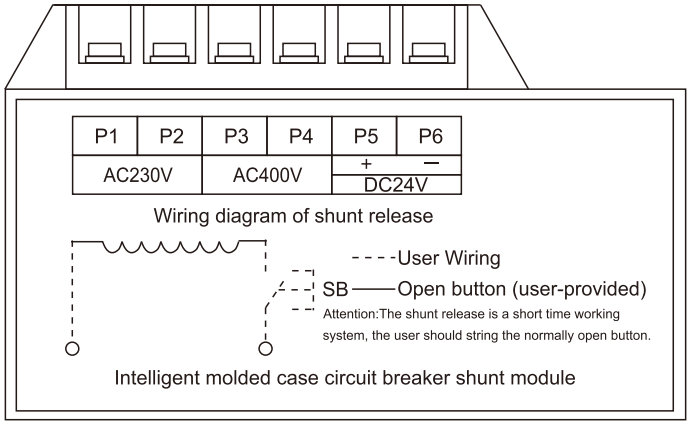

### Intelligent Circuit Breaker Communication Shunti Module

It can be used for monitoring the on-site operating parameters of intelligent circuit breaker to replace the meter display function, automatic remote communication to open the main circuit, and at the same time provide auxiliary working power to the intelligent circuit breaker. The green light is always on when the working power of the module is turned on, and the green light flashes during normal communication.




### Intelligent Circuit Breaker Shunt Module

It can be used to cooperate with intelligent circuit breakers, automatic remote communication to open the main circuit,and can provide the working power supply voltage of AC230V, AC400V, DC24V.

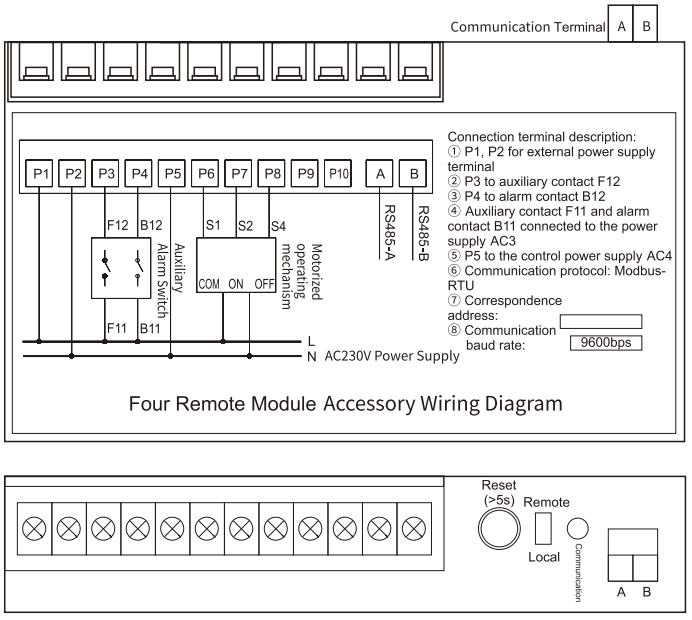


Four-remote communication module

The controller has a communication function, need to cooperate with the corresponding accessories to realize the function (communication module thickness size of 25mm). The parameters of communication characteristics are as follows;

Interface: external communication accessory of the controller, the accessory is a standard RS485 interface;
Baud rate (bps): 9600 by default, the remote control can be set in the range of 2400, 4800, 9600, 19200, 38400;
Communication Format: Data Bit: 8; Checksum: even; Stop Bit: 1;
Communication Protocol: Modbus RTU, Slave Mode;
Device address: 10 (default); Remote control settable range 1~255.

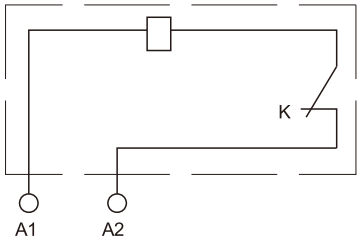
| No. | Name | 10p Accessory Function | Rated supply voltage (range) | Rated control signal voltage (range) |
|---|---|---|---|---|
| 1 | Four Remote Accessory | Four Remote Communication+ Repeat Keys+ Working Indicator | DC24V(85%-110%) | Status signal DC24V (85%-110%)<br>Electrical operation signal DC24V |
| | | | AC230V(85%-110%) | Status signal AC230V (85%-110%)<br>Electrical operation signal AC230V |
| Remarks: Reset button function: press and hold for 5s; parameters such as communication baud rate and communication address are restored to factory values; | | | | |




## Internal Accessories for Circuit Breakers

Shunt release

The rated control power supply voltage of the shunt release is AC50Hz, 230V, 400V; DC24V, the circuit breaker can be reliably tripped under 85% of the rated control power supply voltage, the user wiring diagram is shown in the following figure.

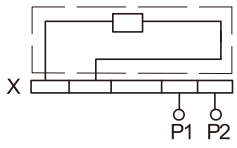



Power Input

K: The micro-switch inside the shunt release in series with the coil is a normally closed contact, which opens its own when the circuit breaker is tripped and closes when the circuit breaker is closed.

Undervoltage release

When the voltage drops (even slowly) to the rated voltage within the range of 70%~35%, the undervoltage release should be operated; when it is lower than 35% of the rated voltage of the release, the undervoltage release should be able to prevent the circuit breaker from closing; when the supply voltage is equal to or greater than 85%, the undervoltage release should be able to ensure that the circuit breaker can be closed reliably.According to the user's needs, the circuit breaker accessories can be directly led out or installed terminal block, the user wiring see the following figure.



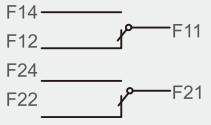
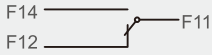

Power Input

External Undervoltage Module Wiring Diagram (dashed box shows internal circuit breaker wiring diagram)

WARNING: The undervoltage release must be energized before the circuit breaker can be re-triggered and closed, otherwise the circuit breaker will be damaged!

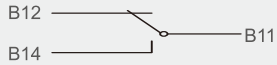
Auxiliary contact

The auxiliary contacts of the circuit breaker are divided into two groups, each of which is electrically inseparable. User wiring is shown in the diagram below.

| | | |
|---|---|---|
| When the circuit breaker is at the Position of "open" |  | Shell frame class current 400A and above circuit breaker |
| |  | Shell frame class current 400A and below circuit breaker |

Alarm contact

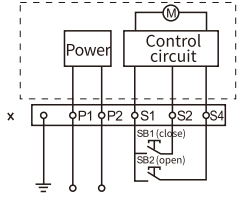
The alarm contacts are inactive during normal closing and breaking of the circuit breaker, and the contacts change their original position only after free release or fault tripping.

| | |
|---|---|
| When the circuit breaker is at the Position "close" of "open" |  |

**External Accessories for Circuit Breakers**

Motorized operating mechanism

The wiring diagram of the motorized operating mechanism is shown below (the internal wiring diagram of the motorized operating mechanism is shown in the dotted box)



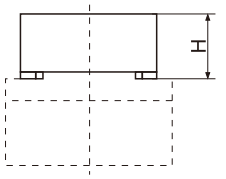

Voltage specification: AC50Hz 110V, 230V
DC110V, 220V power input
Conforms to the description: SB1, SB2 operation buttons (user-provided)
X terminal block
P1, P2 is external power input

NOTE: After the circuit breaker has tripped off, the motorized operating mechanism must first re-couple the circuit breaker before it can close the circuit breaker.

The operating current, power and life of the electric operating mechanism are shown in the table below.

| Circuit breaker for matching use | Operating current(A) | Motor power (W) | Lifespan (times) |
|---|---|---|---|
| RDM1E-125 | ⩽0.5 | 14 | 10000 |
| RDM1E-250 | ⩽0.5 | 14 | 8000 |
| RDM1E-400/630 | ⩽2 | 35 | 5000 |
| RDM1E-800 | ⩽2 | 35 | 5000 |

The height of the motorized operating mechanism is shown in the chart below.

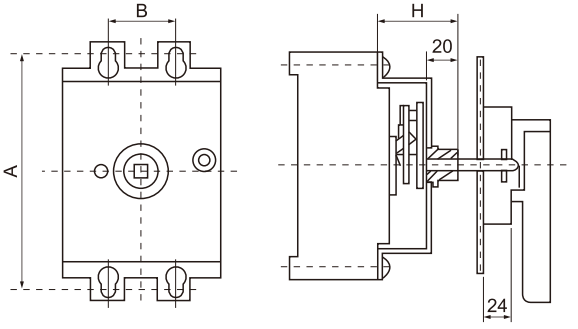



Height of motorized operating mechanism

| Matching circuit breaker type | H(mm) |
|---|---|
| RDM1E-125 | 94 |
| RDM1E-250 | 90 |
| RDM1E-400/630 | 145 |
| RDM1E-800 | 147 |

Rotation manual operating mechanism (common to three-pole and four-pole circuit breakers)

mechanism is dedicated to RDM1E series molded circuit breakers, through the rotation of the handle to achieve the circuit breaker closing,This opening and reclosing and drawer cabinets, distribution cabinets, power boxes, etc. in the panel operation requirements, and to ensure that the circuit breaker is in the closed circuit breaker cabinet door can not be opened (i.e., interlocked with the door). Its external dimensions are shown in the following figure and table.




| Circuit breaker for matching use | A(mm) | B(mm) | H(mm) |
|---|---|---|---|
| RDM1E-125 | 104 | 30 | 49 |
| RDM1E-250 | 143 | 35 | 55 |
| RDM1E-400/630 | 194 | 138 | 74 |
| RDM1E-800 | 243 | 198 | 66 |

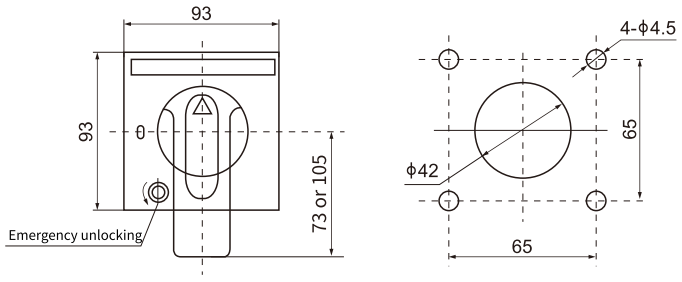
Rotation manual operating mechanism

Handle manual operating mechanism can be equipped with two kinds of operating handle: one for the "F" type square handle; the other for the "A" type round handle, the size of its door opening see the figure below. Turning the handle characteristics of the manual operating mechanism:

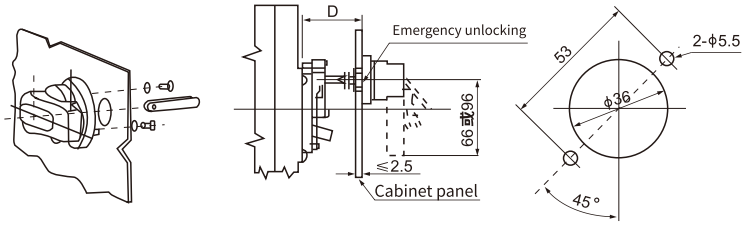
☐ The cabinet door cannot be opened when the circuit breaker is in the closed state.

☐ If the operating handle or manual operating mechanism is faulty in the closed state, the cabinet door can be opened by means of the emergency touch-lock device on the operating handle.

☐ Corresponding to different specifications of the manual operating mechanism, the matching manual operating handle, the door plate opening is consistent.




"F" type square handle profile cabinet door opening size (opening center distance from the hinge is not less than 100mm)




L size: RDM1E-125 is 65, RDM1E-250 is 95, RDM1E-400 is 125
"A" type round handle profile cabinet door opening size (the center of the opening from the hinge distance is not less than 100mm)

**Note:**

☐ Square shaft length D=150mm (default), length not greater than 150mm, in 50mm steps increments, the longest can provide 500mm,to order specify;

☐ If the manual operating mechanism is equipped with "F" type handle, add "F", if it is equipped with "A" type handle, add "A".Such as CZE-100-F.
If it is not specified, the default is A type.

☐ Manual operating mechanisms must be ordered from our factory as a complete set to ensure product quality. If users purchase them by themselves, our factory will not be responsible for any adverse consequences that occur after installation and assembly.