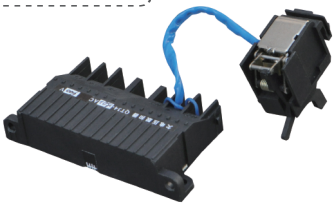
# TGM3L Series Moulded Case Circuit Breaker with Earth Leakage Protection-A/AC Type

1. Switch body
2. Flame extinguishing chamber (selected and purchased by customer)
3. Plug-in type (selected and purchased by customer)
4. Arc isolating sheet (standard)
5. Zero flashover hood (selected and purchased by customer)
6. Undervoltage release (selected and purchased by customer)
7. Shunt release (selected and purchased by customer)
8. Alarm contacts (selected and purchased by customer)
9. Aux. contacts (selected and purchased by customer)
10. Leakage alarm module (selected and purchased by customer)
11. Front-panel transition plate (selected and purchased by customer)
12. Motor mechanism (selected and purchased by customer)
13. Rotary handle operating mechanism (selected and purchased by customer)

5



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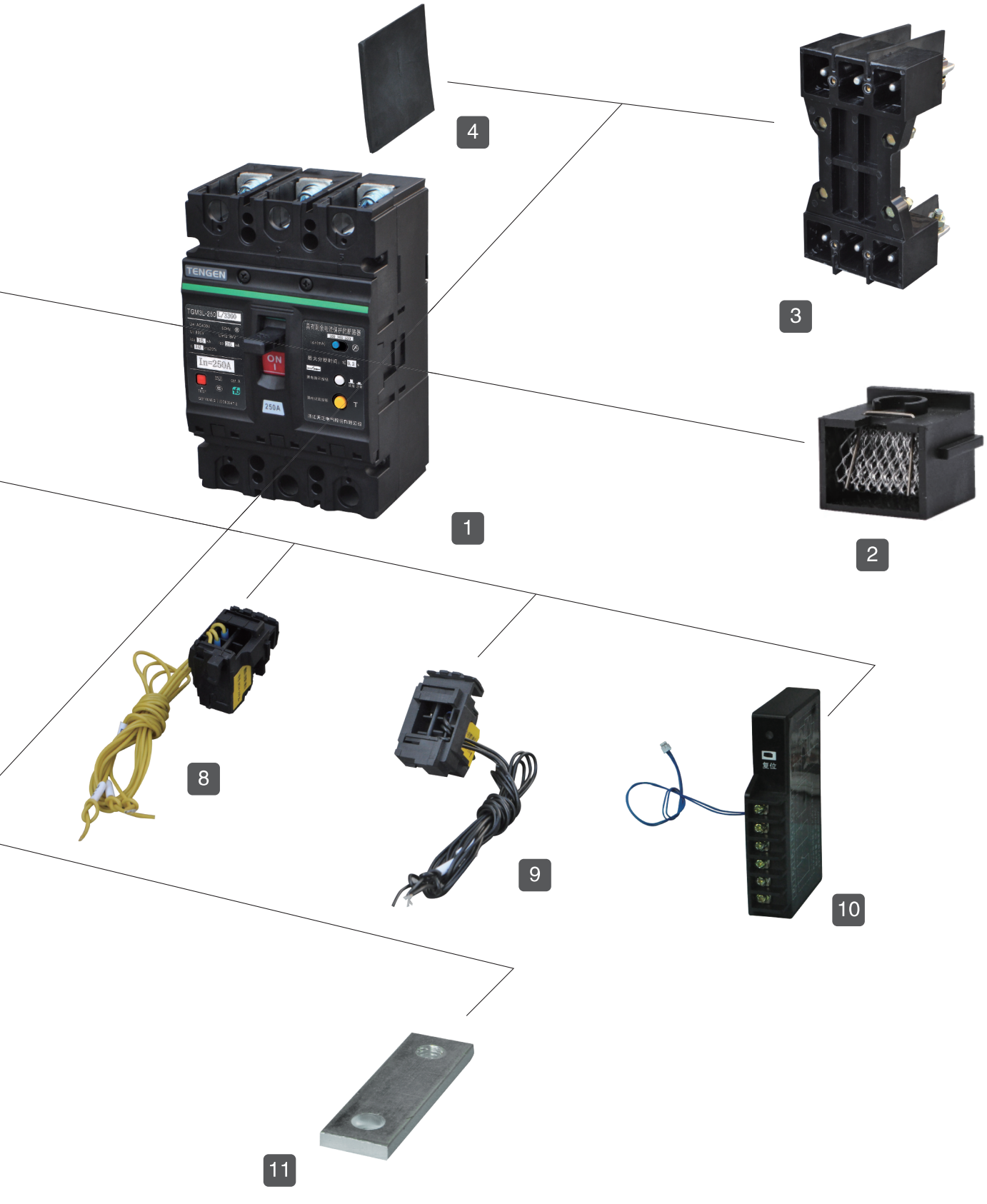

4
3
TENGEN
In=250A
ON
250A
1
2
8
9
复位
10
11

# TGM3L Series Moulded Case Circuit Breaker with Earth Leakage Protection-A/AC Type

## 1 Overview

TGM3L Series Moulded Case Circuit Breaker with Earth Leakage Protection-A/AC Type (hereinafter referred to as circuit breaker) is one of the new circuit breakers researched and developed by our company using international advanced technology. It has the characteristics of zero flashover, high breaking capacity, box type accessory, Small volume and compact structure, and green environmental protection.

Circuit breaker is divided into L type (standard type), M type (middle breaking type), and H type (high breaking type) according to their rated ultimate short-circuit breaking capacity (ICU), and is an ideal product for power distribution and motor protection. With the rated insulation voltage 800V, it is used in the AC 50Hz circuit with the rated operating voltage 400V and below and with the rated current from 16A to 800A to provide indirect personal contact protection and prevent a fire risk caused by the earthing fault current due to the damaged equipment insulation; the product can be used to distribute electrical energy and protect lines and power equipment to prevent overload and short circuit damage, and also be used for infrequent conversion of lines and infrequent startup of motor.

This series of circuit breakers can be installed vertically (that is longitudinally installed) or horizontally (that is laterally installed).

This circuit breaker can work normally under the conditions that any phase of three-phase power supply is open.

With isolation function, the corresponding symbol is:  .

Circuit breakers comply with the following standards:

IEC 60947-1 "Low-voltage switchgear and controlgear - Part 1: General rules".

IEC 60947-2 "Low-voltage switchgear and controlgear - Part 2: Circuit breakers".

Certificates: CE CB

## 2 Type Designation

TG M 3 L –□ □□□/□□□□□□□□□□□□□□□□

- Special requirements
- Application code: No code: conventional type
- Purpose code (no code - with flashover distance, W- zero flashover)
- Installation method code: No code: Fixed type front-panel; B-Fixed type back-panel; C-Plug-in type
- Accessory voltage
- Breaking time
- Residual operating current
- Rated current
- Alarm module: Leakage alarm and trip: I; Leakage alarm and non-trip: II
- Additional information: F-Prepaid
- Four-pole product code (see Table 1); no code: Three-pole product
- Use code: No code: Power distribution; 2: Motor protection
- Release type and accessory code (see Table 2)
- Number of poles: 3-three poles; 3N-three-pole four-wire; 4-Four poles
- Operation method code: No code: Operation directly via handle; P: Operation via motor Z: Operation via rotary handle (for switchgear)
- Breaking capacity: L:low breaking(standard) M:medium breaking H:high breaking
- Frame rated current
- Residual current operation type: No code: AC type; A – A type
- With residual current protection
- Design code
- Moulded case circuit breaker
- Enterprise code

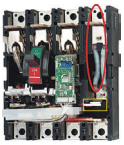
Table 1

| Code | Description | Example |
|---|---|---|
| A type | N pole is not equipped with an overcurrent trip element, and the N pole is always closed and is open and closed not together with other three poles | 3N300A |
| B type | N pole is not equipped with an overcurrent trip element, and the N pole is open and closed together with other three poles (N pole is first closed and then open) | 4300B |
| C type | N pole is equipped with an overcurrent trip element, and the N pole is open and closed together with other three poles (N pole is first closed and then open) | 4300C |
| D type | N pole is equipped with an overcurrent trip element, and the N pole is always closed and is open and closed not together with other three poles | 3N300D |

Note: No code is available for 3-pole product; 3N corresponds to A type and D type, and 4P corresponds to B type and C type.

# TGM3L Series Moulded Case Circuit Breaker with Earth Leakage Protection-A/AC Type

Four-pole product code views

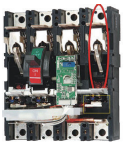


A type: N pole is not equipped with an overcurrent trip element, and the N pole is always closed and is open and closed not together with other three poles.

Without overcurrent release

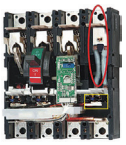
B type: N pole is not equipped with an overcurrent trip element, and the N pole is open and closed together with other three poles (N pole is first closed and then open)

Without overcurrent release



C type: N pole is equipped with an overcurrent trip element, and the N pole is open and closed together with other three poles (N pole is first closed and then open)

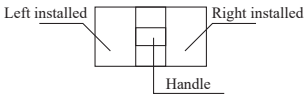
With overcurrent release



D type: N pole is equipped with an overcurrent trip element, and the N pole is always closed, and is open and closed not together with other three poles.

With overcurrent release

Release and Accessory Code




Alarm contact ●　　Aux. contact ○

Shunt release ■　　Undervoltage release ▲

Table 2

| Accessory name | Accessory code | | Accessory installation and lead-out mode | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Electrom-agnetic release | Complex release | TGM3L-125 | | TGM3L-250 | | TGM3L-400<br>TGM3L-630<br>TGM3L-800 | |
| | | | 3P | 4P | 3P | 4P | 3P | 4P |
| No accessory | 200 | 300 | | | | | | |
| Alarm contact | 208 | 308 | | | | | | |
| Shunt release | 210 | 310 | | | | | | |
| Aux. contact | 220 | 320 | | | | | | |
| Undervoltage release | 230 | 330 | | | | | | |
| Shunt release Aux. contact | 240 | 340 | | | | | | |
| Shunt release Undervoltage release | 250 | 350 | | | | | | |
| Two sets of aux. contacts | 260 | 360 | | | | | | |
| Aux. contact Undervoltage release | 270 | 370 | | | | | | |
| Shunt release Alarm contact | 218 | 318 | | | | | | |
| Aux. contact Alarm contact | 228 | 328 | | | | | | |
| Undervoltage release Alarm contact | 238 | 338 | | | | | | |
| Shunt release Aux. contact Alarm contact | 248 | 348 | | | | | | |
| Two sets of aux. contacts Alarm contact | 268 | 368 | | | | | | |
| Undervoltage release Aux. contact Alarm contact | 278 | 378 | | | | | | |

*Notes:

1. 200 (electromagnetic release), refer to the circuit breaker body only with an electromagnetic release; that is, there is only a short circuit protection and no overload protection characteristic;
2. 300 (complex release), refer to the circuit breaker body with a thermodynamic + electromagnetic release; that is: with overload and short circuit protection characteristic;

# TGM3L Series Moulded Case Circuit Breaker with Earth Leakage Protection-A/AC Type

## 3 Technical Parameters

3.1 Technical parameters see Table 3

Table 3

| Basic parameters | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Frame rated current | | 125 | | | 250 | | | 400 | | | 630 | | | 800 | | |
| Number of poles | | 3P、3P+N、4P | | | 3P、3P+N、4P | | | 3P、3P+N、4P | | | 3P、3P+N、4P | | | 3P、3P+N、4P | | |
| Frequency (Hz) | | 50 | | | 50 | | | 50 | | | 50 | | | 50 | | |
| Rated operating voltage Ue (V) | | 400 | | | 400 | | | 400 | | | 400 | | | 400 | | |
| Rated insulation voltage Ui (V) | | 800 | | | 800 | | | 1000 | | | 1000 | | | 1000 | | |
| Rated impulse withstand voltage Uimp (kV) | | 8 | | | 8 | | | 12 | | | 12 | | | 12 | | |
| Rated current In (A) | | 16A、20A、25A 32A、40A、50A 63A、80A、100A 125A | | | 100A、125A 140A、160A 180A、200A 225A、250A | | | 225A、250A 315A、350A 400A | | | 400A、500A 600A、630A | | | 400A、500A 600A、630A 700A、800A | | |
| Breaking capacity | | L | M | H | L | M | H | L | M | H | L | M | H | L | M | H |
| Rated ultimate short circuit breaking capacity Icu (kA) | AC400V | 35 | 50 | 65 | 35 | 50 | 65 | 50 | 65 | 85 | 50 | 65 | 85 | 50 | 65 | 85 |
| Rated Operating short circuit breaking capacity Ics (kA) | AC400V | 26 | 50 | 50 | 26 | 50 | 50 | 35 | 65 | 65 | 35 | 65 | 65 | 35 | 65 | 65 |
| Isolation function | | Yes(3P、4P) | | | Yes(3P、4P) | | | Yes(3P、4P) | | | Yes(3P、4P) | | | Yes(3P、4P) | | |
| Usage category | | Class A | | | Class A | | | Class A | | | Class A | | | Class A | | |
| Flashover distance (mm) | With flashover distance | ≤50 | | | ≤50 | | | ≤100 | | | ≤100 | | | ≤100 | | |
| | Zero flashover | 0 | | | 0 | | | 0 | | | 0 | | | 0 | | |
| Mechanical life (times) | With With maintenance | 20000 | | | 20000 | | | 10000 | | | 10000 | | | 8000 | | |
| | Without maintenance | 40000 | | | 40000 | | | 20000 | | | 20000 | | | 10000 | | |
| Electrical life (times) | | 10000 | | | 10000 | | | 8000 | | | 8000 | | | 7500 | | |
| Rated residual operating current value IΔn (mA) | Non-delay type | 30/50/75/100 /150/200/300 /400/500 | | | 30/50/75/100 /150/200/300 /400/500 | | | 50/75/100/150 /200/300/400 /500/600/800/1000 | | | 50/75/100/150 /200/300/400/500 /600/800/1000 | | | 50/75/100/150 /200/300/400/500 /600/800/1000 | | |
| | Delay type | 50/75/100/150 /200/300/400 /500 | | | 50/75/100/150 /200/300/400 /500 | | | 50/75/100/150 /200/300/400 /500/600/800/1000 | | | 50/75/100/150 /200/300/400/500 /600/800/1000 | | | 50/75/100/150/ 200/300/400/500/ 600/800/1000 | | |
| Accessory information | | | | | | | | | | | | | | | | |
| Operation directly via handle | | ■(Standard) | | | ■(Standard) | | | ■(Standard) | | | ■(Standard) | | | ■(Standard) | | |
| Extended rotary handle | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | |
| Motor mechanism | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | |
| Shunt release | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | |
| Undervoltage release | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | |
| Aux. contact | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | |
| Alarm contact | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | |
| Fixed type front-panel | | ■(Standard) | | | ■(Standard) | | | ■(Standard) | | | ■(Standard) | | | ■(Standard) | | |
| Fixed type back-panel | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | |
| Plug-in type front-panel (optional not for 4P product) | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | |
| Plug-in type back-panel | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | |
| Transition busbar | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | |
| Phase partition | | ■(Standard) | | | ■(Standard) | | | ■(Standard) | | | ■(Standard) | | | ■(Standard) | | |
| Handle lock | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | |
| Zero flashover hood | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | | □(Optional) | | |

Note: The optional zero flashover accessory is installed to realize zero flashover.

# TGM3L Series Moulded Case Circuit Breaker with Earth Leakage Protection-A/AC Type

3.2 Inverse time limit characteristics of circuit breaker used for power distribution see Table 4

Table 4

| Test current name | Setting current multiple | Appointed time | | Starting state |
|---|---|---|---|---|
| | | In≤63A | In>63A | |
| Conventional non-trip current | 1.05 In | ≥1h | ≥2h | Cold state |
| Conventional trip current | 1.30 In | <1h | <2h | Hot state |

Note: Hot state usually refers to the state that the conventional non-trip current is sustained until the appointed time expires.

3.3 Inverse time limit characteristics of circuit breaker used for motor protection see Table 5

Table 5

| Test current name | Setting current multiple | Appointed time | Starting state |
|---|---|---|---|
| Conventional non-trip current | 1.0 In | ≥2h | Cold state |
| Conventional trip current | 1.2 In | <2h | Hot state |

Note: Hot state usually refers to the state that the conventional non-trip current is sustained until the appointed time expires.

3.4 Short circuit protection characteristics of circuit breakers

The set value of the instantaneous action characteristics of circuit breakers used for power distribution is 10In±20%.
The set value of the instantaneous action characteristics of circuit breakers used for motor protection is 12In±20%.

3.5 The residual current protection action time of general (non-delay) products is shown in Table 6

Table 6

| Residual current | | IΔn | 2IΔn | 5IΔn(a) | 10IΔn(b) |
|---|---|---|---|---|---|
| Non-delay type | Max. breaking time (s) | 0.2 | 0.15 | 0.04 | 0.04 |
| Notes: (a) For residual current protection circuit breaker with IΔn ≤30mA, 5IΔn can be replaced by 0.25A;<br>(b) If replaced by 0.25A in Item (a), 10IΔn is 0.5A. | | | | | |

3.6 The residual current protection action time of the delay type products is shown in Table 7

Table 7

| Delay time (s) (Selected by user) | Max. breaking time at IΔn (s) | At 2IΔn | | Max. breaking time at 5IΔn (s) | Max. breaking time at 10IΔn (s) |
|---|---|---|---|---|---|
| | | Ultimate non-drive time (s) | Max. breaking time (s) | | |
| 0.1 | 0.3 | 0.1 | 0.3 | 0.25 | 0.25 |
| 0.2 | 0.4 | 0.2 | 0.4 | 0.35 | 0.35 |
| 0.3 | 0.5 | 0.3 | 0.5 | 0.45 | 0.45 |
| 0.4 | 0.6 | 0.4 | 0.6 | 0.55 | 0.55 |
| 0.5 | 0.7 | 0.5 | 0.7 | 0.65 | 0.65 |
| 0.6 | 0.8 | 0.6 | 0.8 | 0.75 | 0.75 |
| 0.7 | 0.9 | 0.7 | 0.9 | 0.85 | 0.85 |
| 0.8 | 1 | 0.8 | 1 | 0.95 | 0.95 |

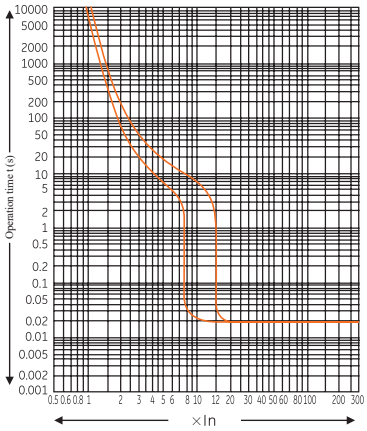
## 4 Operating Conditions

4.1 Temperature
4.1.1 The ambient air temperature does not exceed +40°C, the lower limit is -5°C, and the mean temperature within 24h does not exceed +35°C.
4.1.2 Used in special environment: The lower limit of the temperature is not below -25°C, and the upper limit does not exceed +55°C.
4.1.3 When the ambient temperature is greater than +40°C or below -5°C, the derating is required according to the temperature compensation coefficient or contact us.
4.2 Altitude
4.2.1 The altitude at the installation site where the product works normally does not exceed 2000m.
4.2.2 If the altitude exceeds 2000m, the derating is required according to the altitude coefficient or contact us.
4.3 Humidity
4.3.1 The relative humidity of atmosphere does not exceed 50% at the maximum ambient temperature +40°C, and higher relative humidity can be allowed at lower temperatures
4.3.2 The maximum mean relative humidity does not exceed 90% in the wettest month, and the monthly mean minimum temperature in that month does not exceed +25°C.
4.3.3 The influence of the condensation occurred on the product surface due to temperature changes on the product performance shall be considered.
4.4 Pollution degree: 3.
4.5 Installation category: III.
4.6 Installation condition: The vertical inclination of the installed circuit breaker does not exceed 5°.
4.7 External magnetic field: The magnetic field near the circuit breaker installation site shall not exceed 5 times earth's magnetic field in any direction.

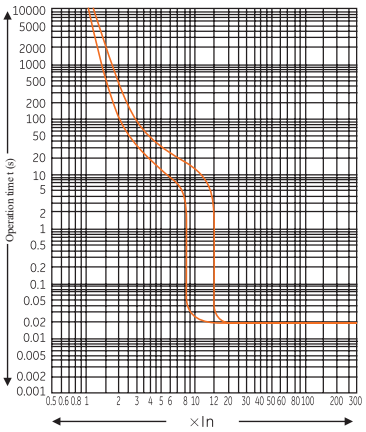
# TGM3L Series Moulded Case Circuit Breaker with Earth Leakage Protection-A/AC Type

## 5 Circuit Breaker Protection Characteristic Curve

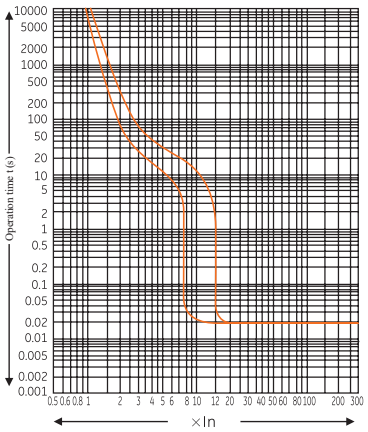
TGM3L-125(L/M/H) time / current characteristic curve




TGM3L-250(L/M/H) time / current characteristic curve

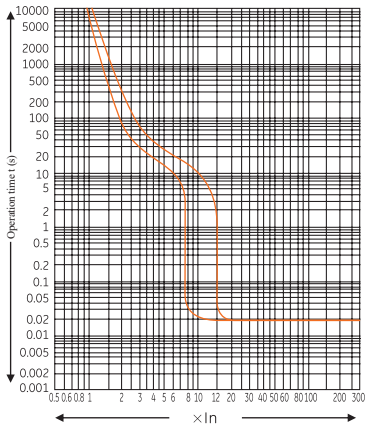



TGM3L-400(L/M/H) time / current characteristic curve

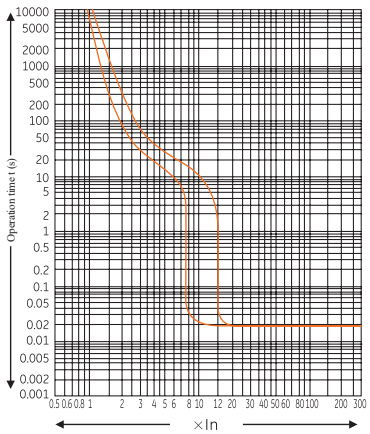


# TGM3L Series Moulded Case Circuit Breaker with Earth Leakage Protection-A/AC Type

TGM3L-630(L/M/H) time / current characteristic curve




TGM3L-800(L/M/H) time / current characteristic curve




## 6 Correction Coefficient of Circuit Breaker in Special Environment

6.1 Derating coefficient due to ambient temperature changes sees Table 8

Table 8

| Ambient temp. / Coefficient / Model | +40℃ | +45℃ | +50℃ | +55℃ | +60℃ |
|---|---|---|---|---|---|
| | Derating coefficient | Derating coefficient | Derating coefficient | Derating coefficient | Derating coefficient |
| TGM3L-125 | 1In | 0.95In | 0.89In | 0.84In | 0.76In |
| TGM3L-250 | 1In | 0.95In | 0.90In | 0.87In | 0.82In |
| TGM3L-400 | 1In | 0.94In | 0.87In | 0.81In | 0.73In |
| TGM3L-630 | 1In | 0.93In | 0.88In | 0.83In | 0.76In |
| TGM3L-800 | 1In | 0.92In | 0.86In | 0.81In | 0.75In |

6.2 The influence of the altitude changes on the characteristics of circuit breaker sees Table 9
When the altitude exceeds 2000m, the electrical performance of circuit breaker can be corrected according to the table below.

Table 9

| Altitude | 2000m | 3000m | 4000m | 5000m |
|---|---|---|---|---|
| Power frequency withstand voltage | 3000V | 2500V | 2000V | 1800V |
| Operating current correction coefficient | 1 | 0.94 | 0.88 | 0.83 |

# TGM3L Series Moulded Case Circuit Breaker with Earth Leakage Protection-A/AC Type

## 7 Structure and Working Principle

7.1 Structure

This series circuit breaker is an electronic type current operated type leakage protector, and its main parts include main switch (including overcurrent release), zero sequence current transformer, electronic amplifier parts, leakage release, and test device. All parts are installed in a moulded case.

7.2 Working Principle

In the event of an electric leakage or an electric shock in the protected circuit, a signal is output from the zero sequence current transformer. When this signal output reaches a certain value, the silicon controlled rectifier will be triggered and conducted to activate the leakage release, thereby driving the traction rod to disconnect the operating mechanism in a very short time to cut off power supply, so that the leakage protection is realized. (Working principle sees Fig. 1).

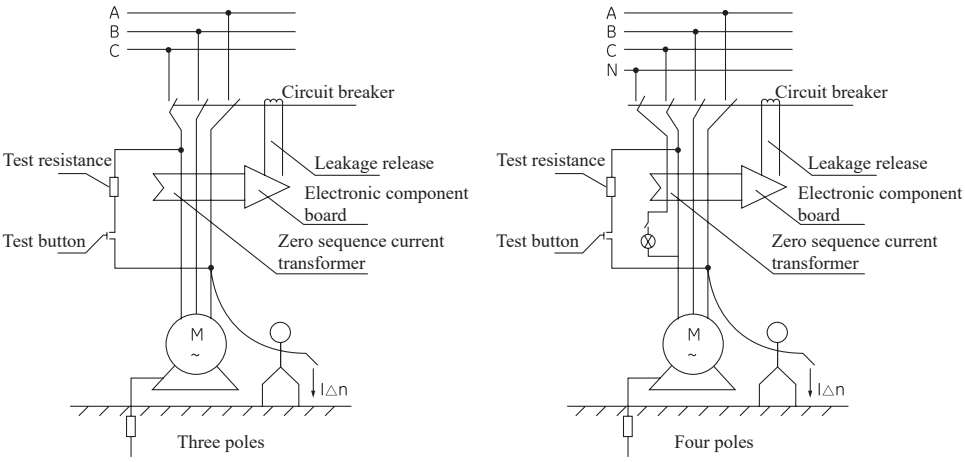



Fig. 1 Working principle

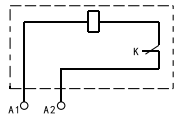
## 8 Product Accessories

8.1 Product Internal Accessories

According to the user's needs, the circuit breaker accessory can be directly led out (the length of the wire lead is 50cm, and any special requirements shall be specified when ordering), or a terminal block is added (if the wiring terminal block is required, please specify this when ordering).

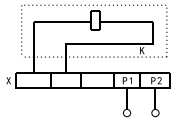
# TGM3L Series Moulded Case Circuit Breaker with Earth Leakage Protection-A/AC Type

● Shunt release (with left installed and left installed)

| | |
|---|---|
| Rated control supply voltage (Us) | AC: AC220/230V, AC380/400V<br>DC: DC24V, DC110V, DC220V |
| Operating voltage | (0.7~1.1)Us |
| Wiring diagram:<br>  <br><br>Power input | Note: K - The micro switch connected to the coil in series in the shunt release is a normally-closed contact; when the circuit breaker is OFF, this contact will open automatically, and is closed when in ON state. |

When the rated control power supply voltage is DC24V, the shunt release can be used directly, but the maximum length of 1.5mm2 copper wire (each of the two wires) should be 150m, and of the 2.5mm$^2$ copper wire is 250m; the power supply power at the release terminal must the minimum 50W requirements, or the DC24V intermediate relay is used to control AC230V or AC400V shunt release; the contact capacity of the intermediate relay is not less than 1A.

● Undervoltage release (left installed and right installed)

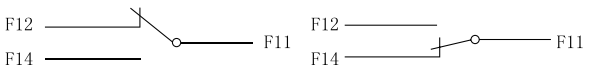
| | |
|---|---|
| Rated operating voltage (Ue) | AC: AC220/230V, AC380/400V |
| Operation characteristics | Trip reliably at 35%~70% rated operating voltage; closed when 85%~110%; prevent being closed when below 35%. |
| Wiring diagram:<br>  <br><br>Power input | Description: X-Wiring terminal block<br>Note: The wiring diagram of the internal accessories of circuit is marked in the dashed box. |

Warning: The undervoltage release must be energized and then the circuit breaker can re-trip and is closed, otherwise this may cause damage to the circuit breaker.

● Aux. contact (left installed and right installed)

| Frame rated current | Inm≤250A | | Inm≥400A | |
|---|---|---|---|---|
| Resistive current Ith | 3A | | 6A | |
| Usage category | AC-15 | DC-13 | AC-15 | DC-13 |
| Operating voltage | AC380V/400V | DC220V/230V | AC380V/400V | DC220V/230V |
| Rated operating current | 0.3A | 0.15A | 1A | 0.15A |

Wiring diagram:




State of circuit breaker in "OFF" position

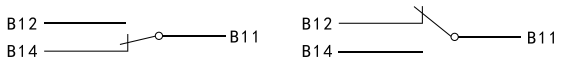
State of circuit breaker in "ON" position

# TGM3L Series Moulded Case Circuit Breaker with Earth Leakage Protection-A/AC Type

● Alarm contact (left installed and right installed)

| | |
|---|---|
| Resistive current Ith | 3A |
| Rated operating current Ie | Same as aux. contact |

Wiring diagram:



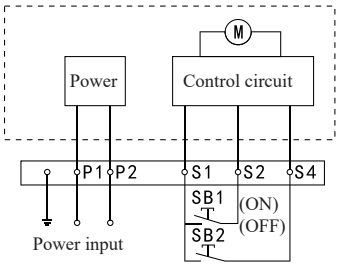

State of circuit breaker in "Trip" (Alarm) position

State of circuit breaker in "OFF" or "ON" position

8.2 Product External Accessories

● Motor mechanism:

This accessory is installed on the panel of circuit breaker to electrically control the ON, OFF, and re-trip operations of circuit breaker remotely, suitable for automation control application. The outline dimensions of motor mechanism see Table 10.

| | |
|---|---|
| Input voltage | AC220V/230V, AC380V/400V |
| Wiring diagram |  |



Description:
P1 and P2 are external power inputs
SB1 and SB2 are operation buttons (provided by user)

Note: The wiring diagram of the internal accessory of motor mechanism is marked in the dashed box.

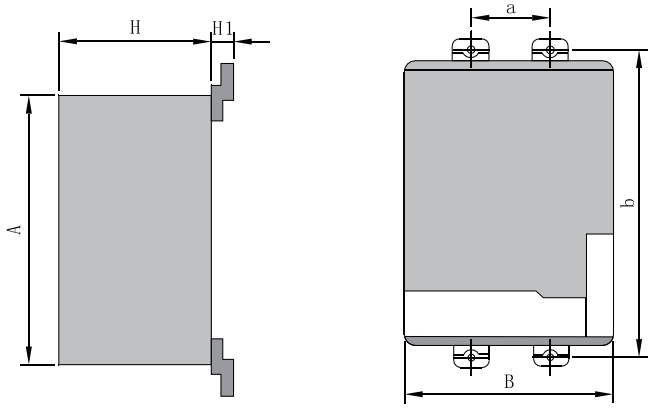


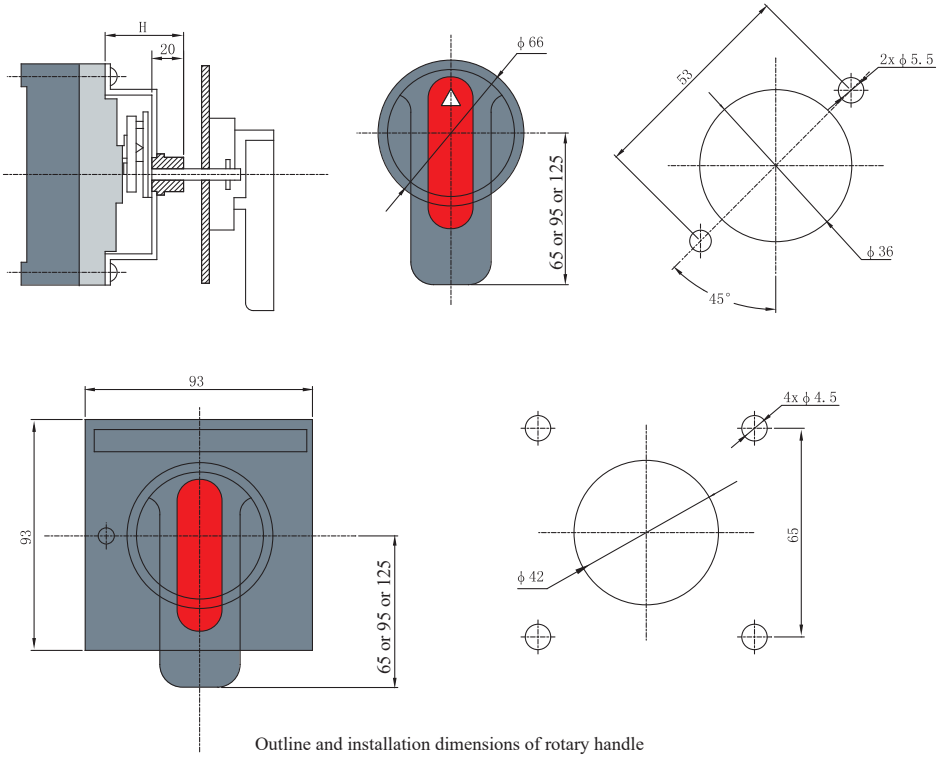

Table 10

| Model | A | B | H | H1 | a | b |
|---|---|---|---|---|---|---|
| TGM3L-125 | 116 | 90 | 77 | 22 | 30 | 129 |
| TGM3L-250 | 116 | 90 | 77 | 17 | 35 | 126 |
| TGM3L-400 | 176 | 130 | 115 | 24 | 44 | 194 |
| TGM3L-630/800 | 176 | 130 | 115 | 27 | 70 | 243 |

# TGM3L Series Moulded Case Circuit Breaker with Earth Leakage Protection-A/AC Type

● Manual mechanism

The outline and installation dimensions of rotary handle see Table 11

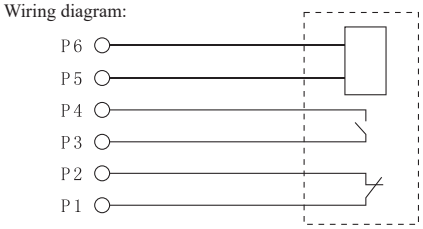



Outline and installation dimensions of rotary handle

Table 11

| Model & Spec. | TGM3L-125 | TGM3L-250 | TGM3L-400 | TGM3L-630/800 |
|---|---|---|---|---|
| Installation dimensions (H) | 61 | 59 | 87 | 97 |

● Leakage alarm module:

| Input voltage | AC220/230V、AC380/400V、DC24V |
|---|---|
|  | Wiring diagram:<br>  <br>Description: P5-P6: Input power; P1-P2, P3-P4: Contact capacity AC230V, 5A.<br>Note: The wiring diagram of the internal accessory of leakge alarm module is marked in the dashed box. |

# TGM3L Series Moulded Case Circuit Breaker with Earth Leakage Protection-A/AC Type

## 9 Outline and Installation Dimensions

9.1 The outline and installation dimensions of the product see Table 12 and Fig. 1

Table 12

| Model | Number of poles | Outline dimensions (mm) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | L1 | | L2 | L4 | L5 | W | W1 | W2 | H | H1 | H2 | H3 |
| | | | Non-zero flashover | Zero flashover | | | | | | | | | | |
| TGM3L-125L | 3 | 151.5 | 253 | 268 | 132 | 8 | 164 | 93 | 30 | 18 | 99 | 65 | 25 | 3 |
| | 4 | | | | | | | 123 | | | | | | |
| TGM3L-125M | 3 | | | | | | | 93 | | | 116 | 82 | 28 | |
| | 4 | | | | | | | 123 | | | | | | |
| TGM3L-125H | 3 | | | | | | | 93 | | | | | | |
| | 4 | | | | | | | 123 | | | | | | |
| TGM3L-250L | 3 | 165 | 300 | 315 | 146 | 12 | 180 | 107 | 35 | 23.5 | 100 | 69 | 25 | 4 |
| | 4 | | | | | | | 142 | | | | | | |
| TGM3L-250M | 3 | | | | | | | 107 | | | 116 | 85 | 23 | |
| | 4 | | | | | | | 142 | | | | | | |
| TGM3L-250H | 3 | | | | | | | 107 | | | | | | |
| | 4 | | | | | | | 142 | | | | | | |
| TGM3L-400L | 3 | 257 | 465 | 493 | 224 | 13 | 285 | 150 | 48 | 33 | 150 | 99 | 39 | 5 |
| | 4 | | | | | | | 198 | | | | | | |
| TGM3L-400M | 3 | | | | | | | 150 | | | | | | |
| | 4 | | | | | | | 198 | | | | | | |
| TGM3-400H | 3 | | | | | | | 150 | | | | | | |
| | 4 | | | | | | | 198 | | | | | | |
| TGM3L-630L | 3 | 281 | 496 | 518 | 243 | 15 | 303 | 212 | 70 | 45 | 155 | 103 | 40 | 6 |
| | 4 | | | | | | | 282 | | | | | | |
| TGM3L-630M | 3 | | | | | | | 212 | | | | | | |
| | 4 | | | | | | | 282 | | | | | | |
| TGM3L-630H | 3 | | | | | | | 212 | | | | | | |
| | 4 | | | | | | | 282 | | | | | | |
| TGM3L-800L | 3 | 281 | 496 | 518 | 243 | 15 | 303 | 212 | 70 | 45 | 155 | 103 | 40 | 6 |
| | 4 | | | | | | | 282 | | | | | | |
| TGM3L-800M | 3 | | | | | | | 212 | | | | | | |
| | 4 | | | | | | | 282 | | | | | | |
| TGM3L-800H | 3 | | | | | | | 212 | | | | | | |
| | 4 | | | | | | | 282 | | | | | | |

# TGM3L Series Moulded Case Circuit Breaker with Earth Leakage Protection-A/AC Type

Table 12, continued

| Model | Number of poles | Outline dimensions (mm) | | | | | | | | | | | Installation dimensions (mm) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | H4 | H5 | H6 | H7 | A | B | C | D | E | F | G | L3 | W3 | φd |
| TGM3L-125L | 3 | 25 | 3 | / | 78 | 96 | 66 | 33 | 32 | 28 | 16 | 30 | 129 | 30 | Φ4.5 |
| | 4 | | | | | | | | | | | | | 60 | |
| TGM3L-125M | 3 | 28 | | | 97 | | | | | | | | | 30 | |
| | 4 | | | | | | | | | | | | | 60 | |
| TGM3L-125H | 3 | | | | | | | | | | | | | 30 | |
| | 4 | | | | | | | | | | | | | 60 | |
| TGM3L-250L | 3 | 25 | 4 | 4 | 79 | 97 | 67 | 31 | 37 | 33 | 14 | 35 | 125 | 35 | Φ5 |
| | 4 | | | | | | | | | | | | | 70 | |
| TGM3L-250M | 3 | 23 | | | 95 | | | | | | | | | 35 | |
| | 4 | | | | | | | | | | | | | 70 | |
| TGM3L-250H | 3 | | | | | | | | | | | | | 35 | |
| | 4 | | | | | | | | | | | | | 70 | |
| TGM3L-400L | 3 | 38 | 2.5 | 5 | 114 | 155 | 109 | 46 | 46 | 58 | 20 | 44 | 194 | 44 | Φ8 |
| | 4 | | | | | | | | | | | 94 | | 94 | |
| TGM3L-400M | 3 | | | | | | | | | | | 44 | | 44 | |
| | 4 | | | | | | | | | | | 94 | | 94 | |
| TGM3-400H | 3 | | | | | | | | | | | 44 | | 44 | |
| | 4 | | | | | | | | | | | 94 | | 94 | |
| TGM3L-630L | 3 | 41 | 5 | 6 | 121 | 175 | 115 | 66 | 72 | 66 | 33 | 70 | 243 | 70 | Φ7 |
| | 4 | | | | | | | | | | | | | 140 | |
| TGM3L-630M | 3 | | | | | | | | | | | | | 70 | |
| | 4 | | | | | | | | | | | | | 140 | |
| TGM3L-630H | 3 | | | | | | | | | | | | | 70 | |
| | 4 | | | | | | | | | | | | | 140 | |
| TGM3L-800L | 3 | 41 | 5 | 6 | 121 | 175 | 115 | 66 | 72 | 66 | 33 | 70 | 243 | 70 | Φ7 |
| | 4 | | | | | | | | | | | | | 140 | |
| TGM3L-800M | 3 | | | | | | | | | | | | | 70 | |
| | 4 | | | | | | | | | | | | | 140 | |
| TGM3L-800H | 3 | | | | | | | | | | | | | 70 | |
| | 4 | | | | | | | | | | | | | 140 | |

# TGM3L Series Moulded Case Circuit Breaker with Earth Leakage Protection-A/AC Type

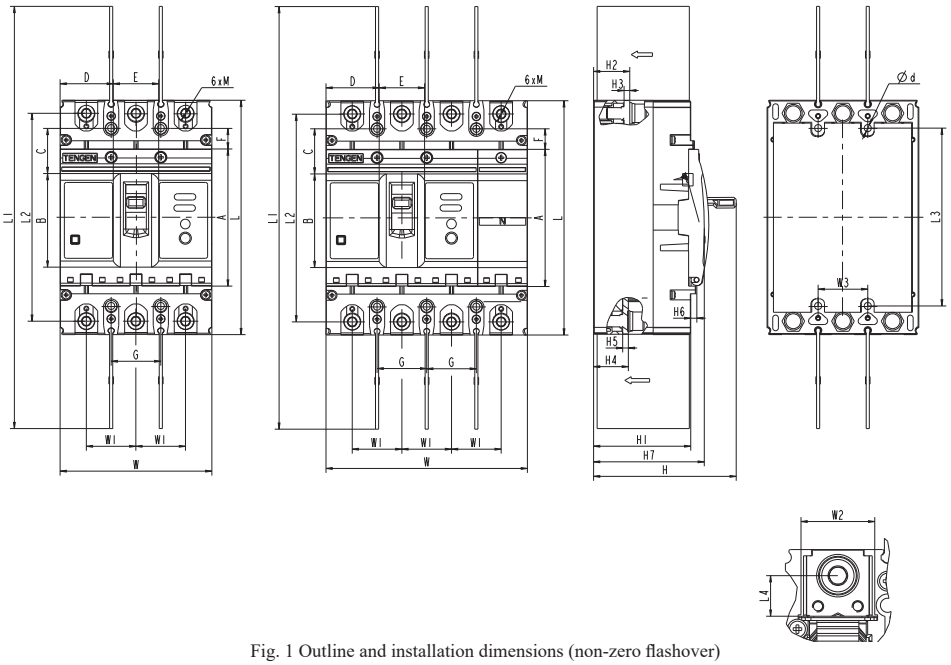



Fig. 1 Outline and installation dimensions (non-zero flashover)

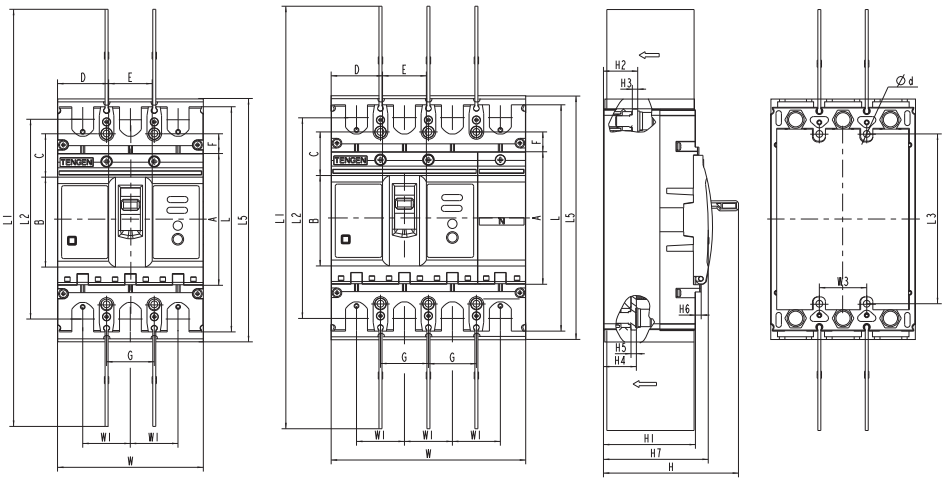



Fig. 2 Outline and installation dimensions (zero flashover)

# TGM3L Series Moulded Case Circuit Breaker with Earth Leakage Protection-A/AC Type

9.2 The outline and installation dimensions of the front-panel plug-in type see Fig. 3 and Table 13:

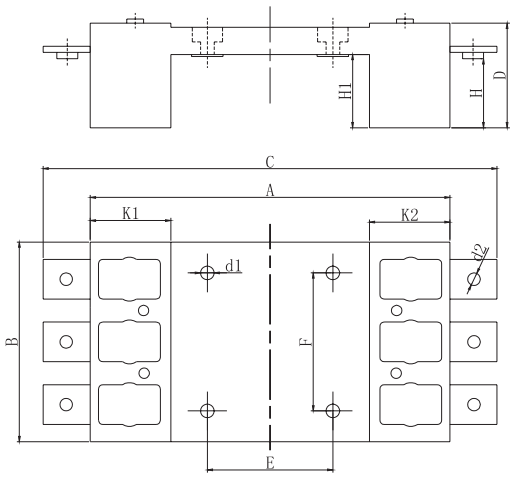
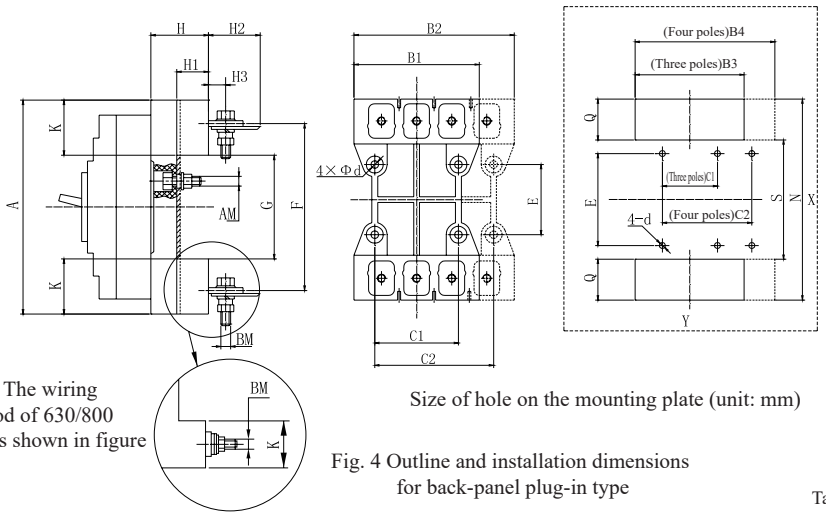



Fig. 3 Front-panel plug-in type outline and installation dimensions

Table 13

| Model & Spec. | Installation dimensions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | D | E | F | H | H1 | K1 | K2 | d1 | d2 |
| TGM3L-125 | 172 | 96 | 217 | 50 | 60 | 66 | 13 | 35 | 38 | 38 | 7 | Φ8 |
| TGM3L-250 | 183 | 110 | 261 | 51.5 | 64 | 70 | 42.5 | 35 | 44 | 44 | 7 | Φ8 |
| TGM3L-400 | 276 | 150 | 352 | 80 | 135 | 115 | 31 | Flat | Flat | Flat | 8.5 | Φ11 |
| TGM3L-630/800 | 305 | 210 | 409 | 87 | 144 | 90 | 16 | 61 | 62 | 62 | 11 | Φ13 |

9.3 The outline and installation dimensions of the back-panel plug-in type see Fig. 4 and Table 14:




Note: The wiring method of 630/800 type is shown in figure

Size of hole on the mounting plate (unit: mm)

Fig. 4 Outline and installation dimensions for back-panel plug-in type

Table 14

| Model & Spec. | Outline and installation dimensions (mm) | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | B1 | B2 | C1 | C2 | E | F | G | K | H | H1 | H2 | N | S | Q | B3 | B4 | AM | BM | 4-d |
| TGM3L-125 | 168 | 91 | 125 | 60 | 90 | 60 | 132 | 92 | 38 | 50 | 33 | 28 | 178 | 82 | 48 | 101 | 135 | M6 | M8 | Φ6.5 |
| TGM3L-250 | 186 | 107 | 145 | 70 | 105 | 54 | 145 | 94 | 46 | 50 | 33 | 37 | 196 | 84 | 56 | 117 | 155 | M6 | M8 | Φ6.5 |
| TGM3L-400 | 280 | 149 | 200 | 60 | 108 | 129 | 224 | 170 | 55 | 60 | 38 | 46 | 290 | 160 | 65 | 159 | 210 | M8 | M12 | Φ8.5 |
| TGM3L-630/800 | 305 | 210 | 280 | 90 | 162 | 146 | 242 | 181 | 62 | 87 | 60 | 22 | 315 | 171 | 72 | 220 | 290 | M10 | M14 | Φ11 |

# TGM3L Series Moulded Case Circuit Breaker with Earth Leakage Protection-A/AC Type

## 10 Ordering Notice

Please specify the following information when ordering:

a) The model, name, and number of poles of the circuit breaker.

b) The rated current of the circuit breaker.

c) Rated residual operating current and breaking time.

d) The accessory name, specification, and combination code of the circuit breaker; When the undervoltage release and shunt release are used, the operating voltage (or control power supply voltage) shall be specified.

e) Purpose: For power distribution (default: power distribution), motor protection (indicated by 2).

f) Quantity.

For example: To order TGM3L-125, three-pole four-wire, circuit breaker with A type, L type breaking capacity for power distribution protection, complex release, rated current 100A, rated residual operating current 100mA/300mA/500mA, non-delay 0.2s, 200 units, please specify TGM3L-125L/3N300A 100A 100mA/300mA/500mA 0.2s 200 units.

For special requirements for circuit breakers, please contact the manufacturer.

## 11 Quick Selection Example

TGM3L-125L/3N300A 125A 50/200/300mA 0.2s:

To order a TGM3L series 125A frame, 35kA (standard type), rated current 125A three-pole four-wire (that is 3P+N) zero line without protection, circuit breaker for thermal magnetic power distribution protection, residual operating current 50/200/300mA three-gear adjustable, non-delay action type ≤ 0.2s circuit breaker.

TGM3L-125M/33002 125A 300mA Non-adjustable 0.2s:

To order a TGM3L series 125A frame, 50kA (middle breaking type), rated current 125A three-pole, circuit breaker for thermal magnetic motor protection, the residual operating current 300mA non-adjustable, non-delay type operation time ≤ 0.2s circuit breaker.

TGM3L–125L/3N300A 125A 100/200/300mA 0.3/0.7/0.9s:

Order a TGM3L series 125A frame, 35kA (standard type), rated current 125A three-pole four-wire (that is 3P+N), zero line without protection, circuit breaker for thermal magnetic power distribution protection, residual operating current 100/200/300mA three-gear adjustable, delay type maximum operating time 0.3/0.7/0.9s three-gear adjustable circuit breaker.

Note: If special customized products are required, please contact our company.

# TGM3L Series Moulded Case Circuit Breaker with Earth Leakage Protection-A/AC Type

## 12 TGM3L Quick Selection Table

| TGM3L | – | A | 125 | L | Z | / | 4 | 3 | 10 | 2 | A | F | I | 125A | 100/300/500mA | 0.4s | AC230V | B | W | Plateau | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Product model | | Residual current operation type | Frame rated current | Breaking capacity | Operation method | | Number of poles | Release type | Internal accessory | Purpose | N pole code | Additional information | Alarm module | Rated current | Residual operating current | Purpose | N pole code | Additional information | Alarm module | Rated current | Residual operating current |
| TGM3L Moulded Case Circuit Breaker with Earth Leakage Protection | | Default: AC type<br>Code A: A type | 125: 125A | L: Standard type | Default: Operation directly | | 3-Three poles | 2: Short circuit protection | 00: No accessory<br>10: Shunt release<br>20: Aux. contact<br>30: Undervoltage release<br>40: Shunt + Aux. | Default: Power distribution protection | A: Three protective poles, the zero line is disconnected not together with other poles | F: Prepaid | I: Leakage alarm and trip | 16A<br>.....<br>800A | 30mA/50mA/75mA/100mA/200mA/300 mA/<br>400mA/500mA/600 mA/<br>800mA/1000mA | Non-delay: 0.2S 0.1S | AC380/400V<br>AC220/230V<br>DC220V<br>DC110V<br>DC24V | Default: Fixed type front-panel | No code-with flashover distance | Default: Conventional application | Handle lock |
| | | | 250: 250A | M: Middle type | Z: Operation via rotary handle | | 3N: 3P+N | 3: Overload + Short circuit | 50: Shunt + Undervoltage<br>60: Two sets of aux. contacts<br>70: Undervoltage + Aux.<br>98: Alarm contact | Prod2: Motor protection | B: Three protective poles, the zero line is disconnected together with other poles | | III: Leakage alarm and non-trip | | 30mA only for 125A and 250A frames; No 30mA product for the delay type switch | Delay type: 0.3/0.4/ 0.5/0.6/ 0.7/0.8/ 0.9/1S | Multiple accessory voltages are described seperately if any (for example: shunt AC230V, undervoltage AC400V) | B: Fixed type back-panel | W-zero flashover | Plateau<br>Damp and heat<br>Environmental protection<br>Salt spray<br>Low temperature | |
| | | | 400: 400A | H: High breaking type | P: Operation via motor | | 4: 4 poles | | 18: Shunt + Alarm<br>28: Aux. + Alarm<br>38: Undervoltage + Alarm<br>48: Shunt + Alarm + Aux. | | C: Four protective poles, the zero line is disconnected together with other poles | | No code: No this accessory | | Three gears adjustable can be selected or any fixed gear is selected | Any adjustable three gears are selected or one fixed gear | | C: Plug-in type back-panel | | | |
| | | | 630: 630A | | | | | | 68: Two sets of aux. + alarm<br>78: Undervoltage + Aux. + Alarm | | D: Four protective poles, the zero line is disconnected not together with other poles | | | | | | | F: Plug-in type front-panel | | | |
| | | | 800: 800A | | | | | | | | | | | | | | | | | | |