



# TGB3-125(H)

## Series Circuit Breaker

## TGB3-125(H) Series Circuit Breaker

### 1 Overview

TGB3-125(H) series circuit breaker are primarily used in low-voltage terminal power distribution systems in many fields such as industry, construction, new energy, communication and infrastructure construction. The product has the functions of overload, short circuit protection and isolation.

The product complies with the following standards: GB/T 14048.2, IEC/EN 60947-2.

### 2 Working Environmental Conditions

- Altitude: Not exceed 2000m;
- Ambient air temperature:  $-35^{\circ}\text{C}\sim+70^{\circ}\text{C}$ ; the mean temperature within 24h does not exceed  $+40^{\circ}\text{C}$ ;
- Atmospheric conditions: The relative humidity of the air does not exceed 50% at a maximum temperature of  $+40^{\circ}\text{C}$ . Higher relative humidity can be allowed at lower temperatures, for example, the relative humidity is 90% at  $+20^{\circ}\text{C}$ .

TGB3-125(H) Series Circuit Breaker

3 Type Designation

|    |   |   |   |                          |                          |                          |                          |                          |
|----|---|---|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| TG | B | 3 | - | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|    |   |   |   |                          |                          |                          |                          |                          |
| ①  | ② | ③ | ④ | ⑤                        | ⑥                        | ⑦                        | ⑧                        |                          |

|   |                      |                            |
|---|----------------------|----------------------------|
| ① | Enterprise code      |                            |
| ② | Circuit breakers     |                            |
| ③ | Design No.           |                            |
| ④ | Frame current (A)    | 125                        |
| ⑤ | Breaking capacity    | Default: 6kA    H: 10kA    |
| ⑥ | Number of poles      | 1P, 2P, 3P, 4P             |
| ⑦ | Trip characteristics | Type B    Type C    Type D |
| ⑧ | Rated current        | 63, 80, 100, 125           |

# TGB3-125(H) Series Circuit Breaker

## 4 Technical Parameters

Table 1

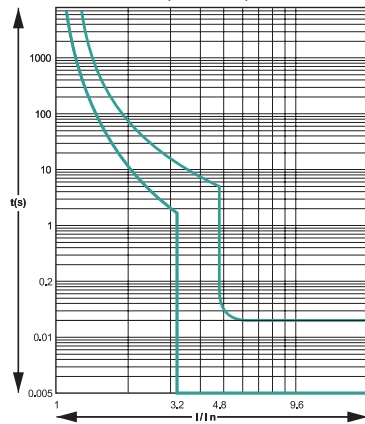
| Model                                                         | TGB3-125                                                                                                                                                                                                                                                                                                                      | TGB3-125H                                                                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standard                                                      | GB/T 14048.2<br>IEC/EN 60947-2                                                                                                                                                                                                                                                                                                | GB/T 14048.2<br>IEC/EN 60947-2                                                                                                                                                                                                                                                                                                |
| Product certification                                         | CCC, TUV, CE, CB                                                                                                                                                                                                                                                                                                              | CCC, TUV, CE, CB                                                                                                                                                                                                                                                                                                              |
| Frame current (A)                                             | 125                                                                                                                                                                                                                                                                                                                           | 125                                                                                                                                                                                                                                                                                                                           |
| Number of poles                                               | 1P, 2P, 3P, 4P                                                                                                                                                                                                                                                                                                                | 1P, 2P, 3P, 4P                                                                                                                                                                                                                                                                                                                |
| Rated current $I_n$ (A)                                       | 63, 80, 100, 125                                                                                                                                                                                                                                                                                                              | 63, 80, 100, 125                                                                                                                                                                                                                                                                                                              |
| Rated voltage $U_e$ (V)                                       | AC:<br>AC220/230/240V(1P, 2P),<br>AC380/400/415V(2P, 3P, 4P)<br>DC:<br>DC60/110/125V(1P), DC125/220/250V(2P),<br>DC330/375V(3P), DC440/500V(4P)                                                                                                                                                                               | AC:<br>AC220/230/240V(1P, 2P),<br>AC380/400/415V(2P, 3P, 4P)<br>DC:<br>DC60/110/125V(1P), DC125/220/250V(2P),<br>DC330/375V(3P), DC440/500V(4P)                                                                                                                                                                               |
| Rated insulation voltage $U_i$ (V)                            | 690                                                                                                                                                                                                                                                                                                                           | 690                                                                                                                                                                                                                                                                                                                           |
| Rated impulse withstand voltage $U_{imp}$ (kV)                | 6                                                                                                                                                                                                                                                                                                                             | 6                                                                                                                                                                                                                                                                                                                             |
| Rated limit short-circuit breaking capacity $I_{cu}$ (kA)     | 6                                                                                                                                                                                                                                                                                                                             | 10                                                                                                                                                                                                                                                                                                                            |
| Rated operating short-circuit breaking capacity $I_{cs}$ (kA) | 6                                                                                                                                                                                                                                                                                                                             | 7.5                                                                                                                                                                                                                                                                                                                           |
| Trip type                                                     | Thermal magnetic trip                                                                                                                                                                                                                                                                                                         | Thermal magnetic trip                                                                                                                                                                                                                                                                                                         |
| Instantaneous trip characteristics ( $I_n$ )                  | AC: B: $4\pm20\%$<br>C: $8\pm20\%$<br>D: $12\pm20\%$<br>DC: B: $6\pm20\%$<br>C: $11\pm20\%$<br>D: $17\pm20\%$                                                                                                                                                                                                                 | AC: B: $4\pm20\%$<br>C: $8\pm20\%$<br>D: $12\pm20\%$<br>DC: B: $6\pm20\%$<br>C: $11\pm20\%$<br>D: $17\pm20\%$                                                                                                                                                                                                                 |
| Pollution degree                                              | 3                                                                                                                                                                                                                                                                                                                             | 3                                                                                                                                                                                                                                                                                                                             |
| Protection grade                                              | IP20                                                                                                                                                                                                                                                                                                                          | IP20                                                                                                                                                                                                                                                                                                                          |
| Mechanical life                                               | 20,000 times                                                                                                                                                                                                                                                                                                                  | 20,000 times                                                                                                                                                                                                                                                                                                                  |
| Electrical life                                               | 6000 times ( $I_n \leq 100A$ );<br>4000 times ( $I_n > 100A$ )                                                                                                                                                                                                                                                                | 6000 times ( $I_n \leq 100A$ );<br>4000 times ( $I_n > 100A$ )                                                                                                                                                                                                                                                                |
| Ambinet temp.                                                 | $-35^{\circ}\text{C}\sim+70^{\circ}\text{C}$                                                                                                                                                                                                                                                                                  | $-35^{\circ}\text{C}\sim+70^{\circ}\text{C}$                                                                                                                                                                                                                                                                                  |
| Altitude of installation site                                 | $\leq 2000\text{m}$                                                                                                                                                                                                                                                                                                           | $\leq 2000\text{m}$                                                                                                                                                                                                                                                                                                           |
| Max. wiring capacity ( $\text{mm}^2$ )                        | 50                                                                                                                                                                                                                                                                                                                            | 50                                                                                                                                                                                                                                                                                                                            |
| Max. limit torque (N.m)                                       | 3.5                                                                                                                                                                                                                                                                                                                           | 3.5                                                                                                                                                                                                                                                                                                                           |
| Installation category                                         | Class II, III                                                                                                                                                                                                                                                                                                                 | Class II, III                                                                                                                                                                                                                                                                                                                 |
| Installation method                                           | TH35-7.5 standard rail                                                                                                                                                                                                                                                                                                        | TH35-7.5 standard rail                                                                                                                                                                                                                                                                                                        |
| Accessories                                                   | OF3: Aux. contact<br>SD3: Alarm contact<br>OF + OF3: Dual aux. integrated contact<br>OF + SD3: Aux. and alarm integrated contact<br>MX3: Shunt release<br>MX + OF3: Shunt aux. release<br>MV3: Overvoltage release<br>MN3: Undervoltage release<br>MV + MN3: Overvoltage / Undervoltage release<br>MNs3: Undervoltage release | OF3: Aux. contact<br>SD3: Alarm contact<br>OF + OF3: Dual aux. integrated contact<br>OF + SD3: Aux. and alarm integrated contact<br>MX3: Shunt release<br>MX + OF3: Shunt aux. release<br>MV3: Overvoltage release<br>MN3: Undervoltage release<br>MV + MN3: Overvoltage / Undervoltage release<br>MNs3: Undervoltage release |

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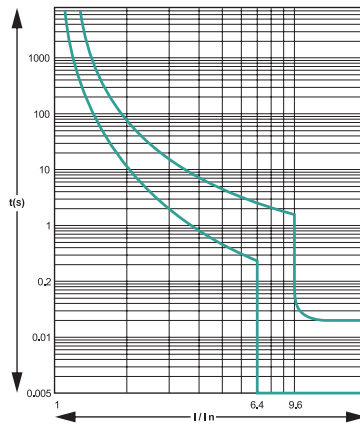
### 5 Characteristic Curves

#### 5.1 TGB3-125, TGB3-125H Product Trip Curve (AC voltage)

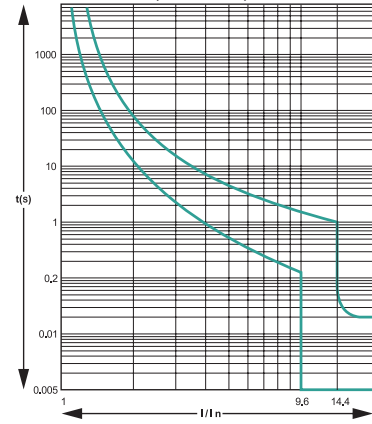
**B type curve**  
Protection against loads with low short circuit current  
(e.g. non-inductive or micro-inductive circuits)  
Trip characteristics: Instantaneous trip range  
( $4I_n \pm 20\%$ )



**C type curve**  
Protection against conventional loads and distribution cables  
Trip characteristics: Instantaneous trip range  
( $8I_n \pm 20\%$ )

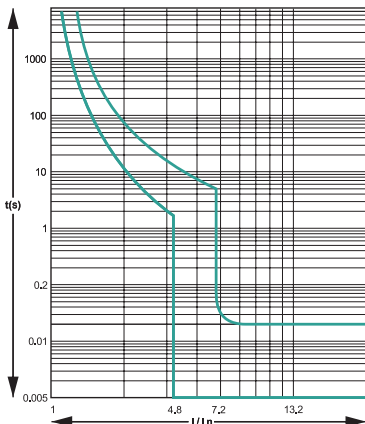


**D type curve**  
Protection against impulse loads with high starting currents  
(e.g. motors, transformers)  
Trip characteristics: Instantaneous trip range  
( $12I_n \pm 20\%$ )

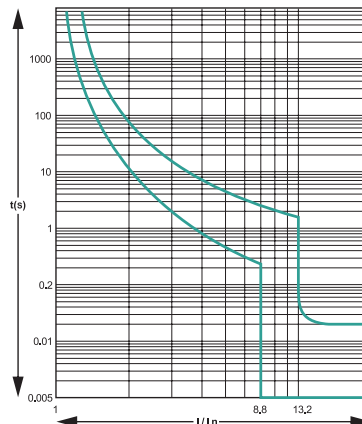


#### 5.2 TGB3-125, TGB3-125H Product Trip Curve (DC voltage)

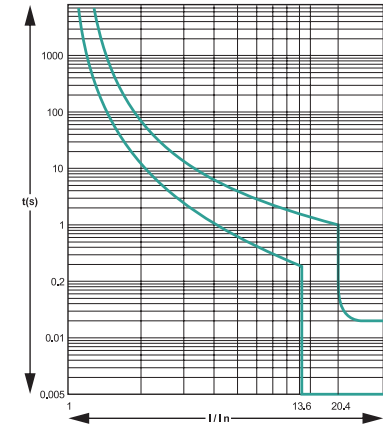
**B type curve**  
Protection against loads with low short circuit current  
(e.g. non-inductive or micro-inductive circuits)  
Trip characteristics: Instantaneous trip range  
( $6I_n \pm 20\%$ )



**C type curve**  
Protection against conventional loads and distribution cables  
Trip characteristics: Instantaneous trip range  
( $11I_n \pm 20\%$ )



**D type curve**  
Protection against impulse loads with high starting currents  
(e.g. motors, transformers)  
Trip characteristics: Instantaneous trip range  
( $17I_n \pm 20\%$ )



TGB3-125(H) Series Circuit Breaker

6 Temperature Correction Factors Table

TGB3-125, TGB3-125H Temperature Correction Factors Table

Table 2

| Rated current<br>A | Correction current A |       |       |       |       |       |       |      |      |      |      |      |
|--------------------|----------------------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|
|                    | -35°C                | -30°C | -25°C | -20°C | -15°C | -10°C | -5°C  | 0°C  | 5°C  | 10°C | 15°C | 20°C |
| 63                 | 85.7                 | 84.4  | 83.5  | 82    | 80.6  | 79.2  | 77.7  | 76.2 | 74.7 | 73.1 | 71.5 | 69.9 |
| 80                 | 128                  | 124   | 120   | 115   | 111   | 107   | 103   | 99   | 96   | 93   | 90   | 88   |
| 100                | 150                  | 146   | 142   | 138   | 133   | 129   | 125   | 121  | 117  | 114  | 111  | 108  |
| 125                | 185                  | 181   | 176   | 171   | 166.5 | 162   | 157.5 | 153  | 149  | 145  | 141  | 137  |

| Rated current<br>A | Correction current A |      |       |      |      |      |      |      |      |      |
|--------------------|----------------------|------|-------|------|------|------|------|------|------|------|
|                    | 25°C                 | 30°C | 35°C  | 40°C | 45°C | 50°C | 55°C | 60°C | 65°C | 70°C |
| 63                 | 68.2                 | 66.5 | 64.8  | 63   | 60.1 | 58.2 | 56.2 | 54.1 | 52   | 49.8 |
| 80                 | 86                   | 84   | 82    | 80   | 75.5 | 72.5 | 68   | 64.5 | 58   | 52.5 |
| 100                | 106                  | 104  | 102   | 100  | 94   | 88   | 82   | 75   | 68   | 58   |
| 125                | 133.5                | 130  | 127.5 | 125  | 115  | 105  | 95   | 85   | 75   | 65   |

7 Outline and Installation Dimensions

