

# Miniature Circuit Breaker

## N8BH,10kA

Miniature Circuit Breaker according to IEC/EN 60898-1

Rated short circuit breaking capacity 10kA

1 up to 4-pole versions

Tripping characteristics B, C, D

Rated current up to 63A

Rated operational voltage 230/400V AC

Can be connected via standard busbars of both fork as well as pin type of connection

N8BH miniature circuit breaker is an automatically operated electrical switch designed to protect an electrical circuit from damage caused by excess current from an overload or short circuit. Its basic function is to interrupt current flow after a fault is detected. They are common in domestic, commercial and industrial application.

It also can be used for non-frequent on-and-off switching operations under normal circumstances.

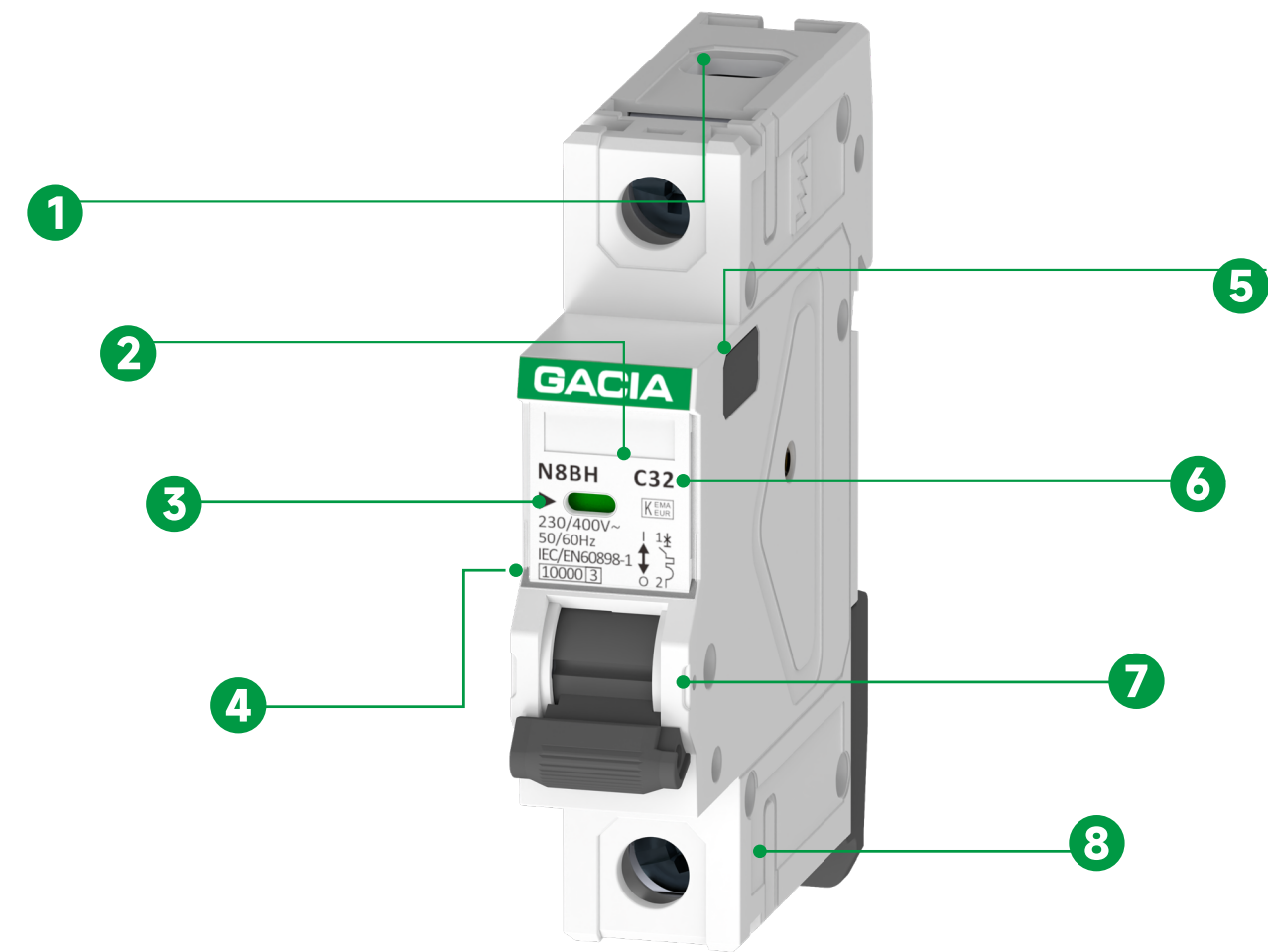
### Type Key

| N              | 8           | B                | H                 | 1P            | C              | 16            |
|----------------|-------------|------------------|-------------------|---------------|----------------|---------------|
| Product series | Design code | Product category | Breaking capacity | Poles         | Tripping curve | Rated current |
| N              | 8           | MCB              | 10kA              | 1,1N,2,3,3N,4 | B,C,D          | 1-63A         |

### Certification Marks



### Product Tips



- 1

Reversible line and load connection
- 2

Tripping characteristics B, C, D
- 3

Contacts position indication window
- 4

Rated short circuit breaking capacity 10000A
- 5

Wide range of accessories
- 6

Transparent cover
- 7

The position of handle lock
- 8

Busbar interface

Miniature Circuit Breaker

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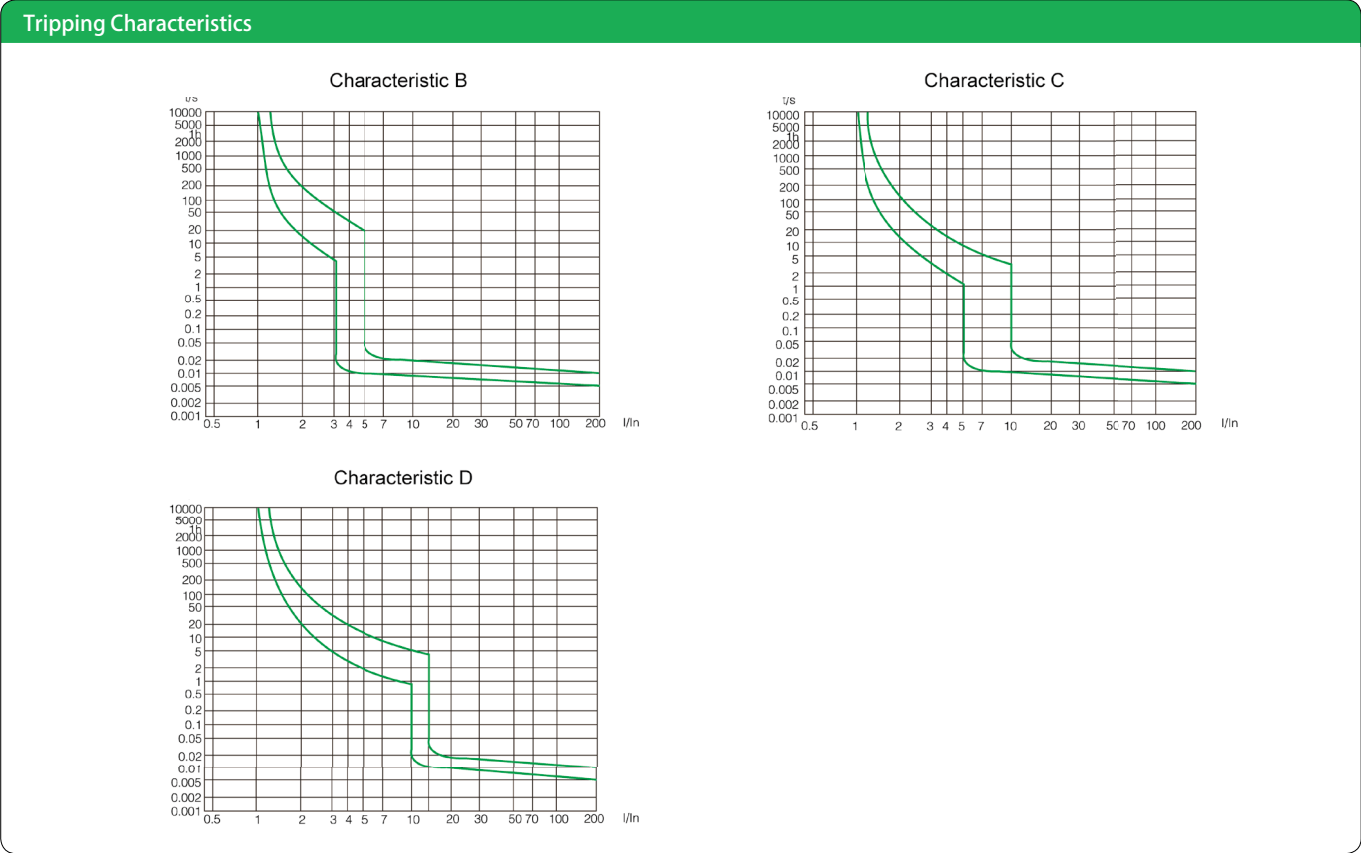
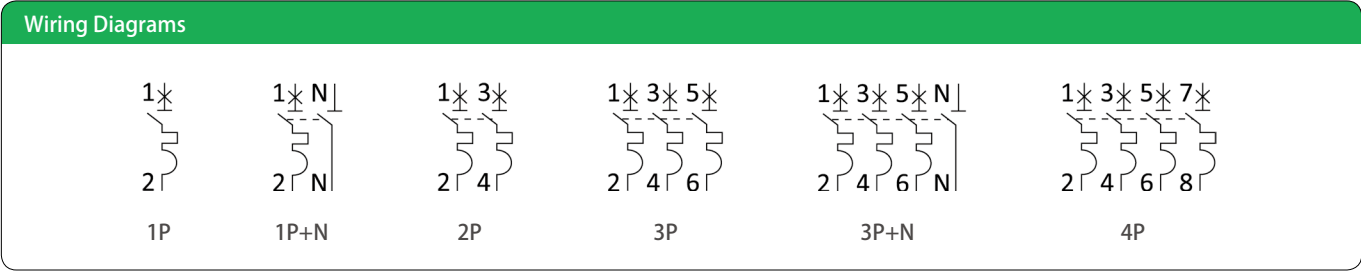
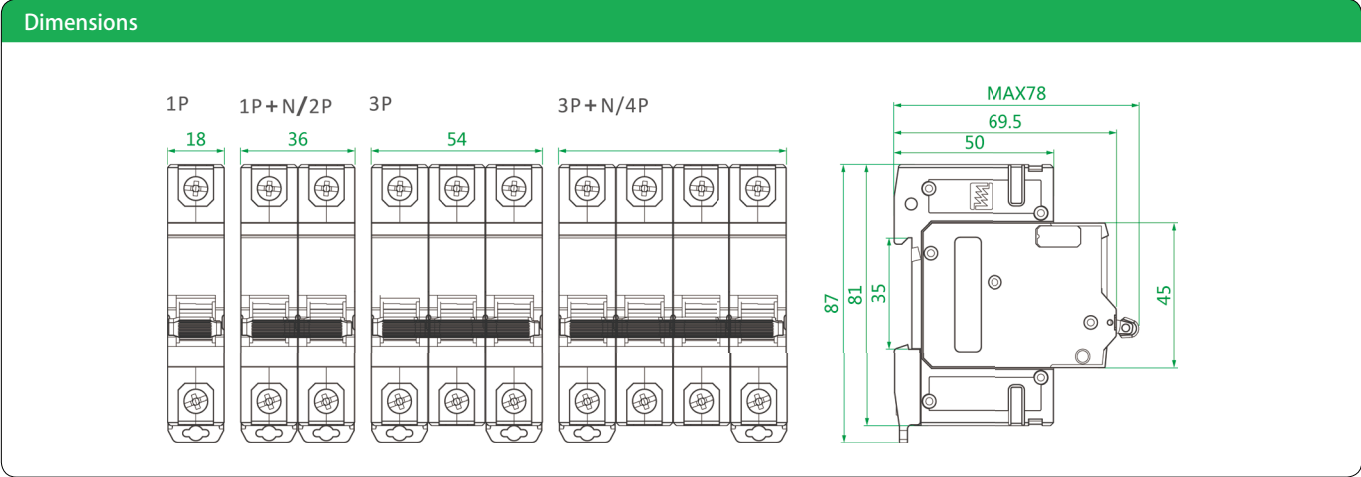
Technical Data

| Electrical Features             |                            |             |
|---------------------------------|----------------------------|-------------|
| International standard          | IEC/EN 60898-1             |             |
| Poles                           | 1P, 1P+N, 2P, 3P, 3P+N, 4P |             |
| Rated current                   | 1-63A                      |             |
| Tripping characteristics        | B, C, D                    |             |
| Rated breaking capacity         | $I_{cn}$                   | 10kA        |
| Rated operational voltage       | $U_e$                      | 230/400V AC |
| Minimum operational voltage     | $U_{min}$                  | 12V AC      |
| Maximum operational voltage     | $U_{max}$                  | 440V AC     |
| Rated frequency                 | 50/60Hz                    |             |
| Rated insulated voltage         | $U_i$                      | 500V AC     |
| Rated impulse withstand voltage | $U_{imp}$                  | 6kV         |
| Dielectric test voltage         | 2kV                        |             |
| Mechanical service life         | 10000 operation cycles     |             |
| Electrical service life         | 4000 operation cycles      |             |
| Line voltage connection         | Arbitrary above or below   |             |

| Installation Parameters                              |                                |
|------------------------------------------------------|--------------------------------|
| Degree of protection (IP)                            | IP20, IP40 (when fitted)       |
| Operating ambient temperature                        | -25°C ~+70°C                   |
| Terminal connection type                             | Cable/Busbar                   |
| Connectable conductor cross section                  | 1-25mm²                        |
| Mounting                                             | IEC/EN 60715 top-hat rail 35mm |
| Fastening torque of terminals                        | 2-3.0N.m                       |
| Pollution degree                                     | 2                              |
| Reference temperature for setting of thermal element | 30°C                           |
| Altitude                                             | ≤ 2000m                        |
| Relative humidity                                    | ≤ 95%                          |
| Resistance to humidity and heat                      | Class 2                        |
| Installation class                                   | III                            |

| Combination with Accessories |     |
|------------------------------|-----|
| Auxiliary contact            | Yes |
| Alarm contact                | Yes |
| Shunt release                | Yes |
| Shunt release + Aux          | Yes |
| Undervoltage release         | Yes |
| Overvoltage release          | Yes |
| Over & under voltage release | Yes |

Technical Data



# Miniature Circuit Breaker

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### Technical Data

Dependence of Tripping Characteristics on Ambient Temperature

| T<br>[°C] | In (T) [A] |      |      |     |     |      |      |      |      |      |      |      |      |      |      |
|-----------|------------|------|------|-----|-----|------|------|------|------|------|------|------|------|------|------|
|           | 1 A        | 2 A  | 3 A  | 4 A | 6 A | 8 A  | 10 A | 13 A | 16 A | 20 A | 25 A | 32 A | 40 A | 50 A | 63 A |
| -30       | 1.3        | 2.5  | 3.8  | 5.1 | 7.6 | 10.2 | 13.6 | 16.8 | 20.5 | 25.3 | 31.1 | 40.5 | 51.0 | 64.0 | 82.0 |
| -25       | 1.2        | 2.4  | 3.7  | 4.9 | 7.4 | 9.9  | 13.4 | 16.5 | 20.0 | 25.0 | 30.5 | 39.8 | 50.0 | 63.0 | 80.7 |
| -20       | 1.2        | 2.4  | 3.6  | 4.8 | 7.3 | 9.7  | 13.1 | 16.3 | 19.8 | 24.5 | 30.0 | 39.2 | 49.2 | 62.0 | 79.2 |
| -15       | 1.2        | 2.4  | 3.5  | 4.8 | 7.2 | 9.5  | 12.8 | 15.9 | 19.4 | 24.0 | 29.5 | 38.5 | 48.4 | 60.8 | 77.8 |
| -10       | 1.2        | 2.3  | 3.5  | 4.7 | 7.1 | 9.3  | 12.5 | 15.7 | 19.0 | 23.7 | 29.0 | 37.9 | 47.5 | 59.8 | 76.3 |
| -5        | 1.2        | 2.3  | 3.4  | 4.7 | 7.0 | 9.2  | 12.3 | 15.4 | 18.7 | 23.2 | 28.5 | 37.2 | 46.7 | 58.6 | 74.7 |
| 0         | 1.1        | 2.2  | 3.4  | 4.5 | 6.8 | 9.0  | 12.0 | 15.0 | 18.4 | 22.8 | 28.0 | 36.5 | 45.8 | 57.4 | 73.2 |
| 5         | 1.1        | 2.2  | 3.3  | 4.4 | 6.6 | 8.9  | 11.7 | 14.7 | 18.0 | 22.4 | 27.5 | 35.8 | 45.0 | 56.3 | 71.6 |
| 10        | 1.1        | 2.1  | 3.3  | 4.3 | 6.5 | 8.7  | 11.4 | 14.3 | 17.6 | 21.9 | 27.0 | 35.0 | 44.0 | 55.0 | 70.0 |
| 15        | 1.1        | 2.1  | 3.2  | 4.3 | 6.4 | 8.5  | 11.0 | 14.0 | 17.2 | 21.5 | 26.5 | 34.3 | 43.0 | 53.8 | 68.3 |
| 20        | 1.0        | 2.1  | 3.2  | 4.2 | 6.3 | 8.3  | 10.7 | 13.7 | 16.8 | 21.0 | 26.0 | 33.6 | 42.0 | 52.6 | 66.6 |
| 25        | 1.0        | 2.0  | 3.0  | 4.1 | 6.2 | 8.2  | 10.4 | 13.4 | 16.4 | 20.5 | 25.5 | 32.8 | 41.0 | 51.3 | 64.8 |
| 30        | 1          | 2    | 3    | 4   | 6   | 8    | 10   | 13   | 16   | 20   | 25   | 32   | 40   | 50   | 63   |
| 35        | 0.99       | 2.00 | 3.00 | 3.9 | 5.9 | 7.9  | 9.9  | 12.8 | 16.0 | 20.0 | 25.0 | 32.0 | 39.0 | 49.0 | 62.0 |
| 40        | 0.97       | 1.90 | 2.90 | 3.9 | 5.8 | 7.8  | 9.7  | 12.5 | 15.0 | 19.0 | 24.0 | 31.0 | 39.0 | 48.0 | 61.0 |
| 45        | 0.95       | 1.90 | 2.80 | 3.8 | 5.7 | 7.7  | 9.5  | 12.2 | 15.0 | 19.0 | 24.0 | 30.0 | 38.0 | 47.0 | 60.0 |
| 50        | 0.93       | 1.90 | 2.80 | 3.7 | 5.6 | 7.6  | 9.3  | 12.0 | 15.0 | 19.0 | 23.0 | 30.0 | 37.0 | 46.0 | 58.0 |
| 55        | 0.91       | 1.80 | 2.80 | 3.6 | 5.5 | 7.5  | 9.0  | 11.7 | 14.0 | 18.0 | 23.0 | 29.0 | 36.0 | 44.0 | 57.0 |
| 60        | 0.91       | 1.80 | 2.70 | 3.5 | 5.4 | 7.2  | 8.8  | 11.5 | 14.0 | 18.0 | 22.0 | 28.0 | 35.0 | 42.0 | 55.0 |
| 65        | 0.91       | 1.80 | 2.70 | 3.5 | 5.3 | 7.1  | 8.6  | 11.2 | 13.0 | 17.0 | 21.0 | 28.0 | 34.0 | 40.0 | 52.0 |
| 70        | 0.91       | 1.80 | 2.70 | 3.5 | 5.3 | 6.9  | 8.6  | 11.0 | 13.0 | 17.0 | 21.0 | 27.0 | 33.0 | 38.0 | 50.0 |

Power Loss Per Pole

| In [A] | 1 A | 2 A | 3 A | 4 A | 6 A | 8 A | 10 A | 13 A | 16 A | 20 A | 25 A | 32 A | 40 A | 50 A | 63 A |
|--------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|
| P[W]   | 1.5 | 2.0 | 1.8 | 2.0 | 2.2 | 2.6 | 1.5  | 1.7  | 1.7  | 2.0  | 2.2  | 2.6  | 2.9  | 3.8  | 4.4  |