
# NB4LE Residual Current Operated Circuit Breaker (Electronic)

## 1. General

1.1 Function

Personnel and fire protection: Cable and line protection against overload and short-circuits.

1.2 Selection

**Rated residual operating current**

IΔn = 30mA, additional protection in the case of direct contact.

**RCD Type**

**Type A**

RCD Type A is ensured for sinusoidal, alternating residual currents as well as for pulsed DC residual currents, whether they be quickly or slowly increase.

**Tripping curve**

B curve (3 In-5 In) protection and control of the circuits against overloads and short-circuits; protection for people and big length cables in TN and IT systems.

C curve (5 In-10 In) protection and control of the circuits against overloads and short-circuits; protection for resistive and inductive loads with low inrush current.

1.3 Approvals and certificates

CE/CB

1.4 Add-on devices

XF9 auxiliary contacts

S9 shunt release

V9 under voltage release

OVT-1 over voltage release

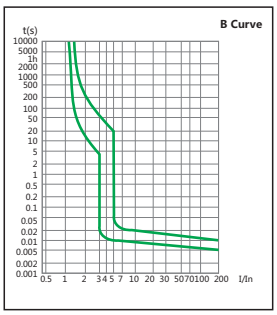
CE CB RoHS REACH

## 2. Technical data

2.1 Curves

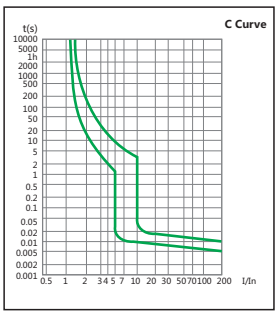
**B-kurve**

I1=1.13, I2=1.45, I4=3, I5=5



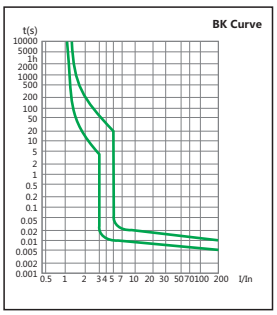

**C-kurve**

I1=1.13, I2=1.45, I4=5, I5=10



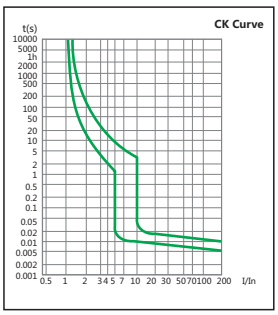

**BK-kurve**

I1=1.05, I2=1.3, I4=3, I5=5




**CK-kurve**

I1=1.05, I2=1.3, I4=5, I5=10



2.2

| | Standard | | IEC/EN 61009-1 | |
|---|---|---|---|---|
| Electrical features | Type (wave form of the earth leakage sensed) | | A | |
| | Thermo-magnetic release characteristic | | B, C | BK, CK |
| | Rated current In | A | 6, 10, 13, 16, 20, 25, 32 | 10, 13, 15, 20 |
| | Poles | | 2P | |
| | Rated voltage Ue | V | 230/240 | |
| | Rated sensitivity I △ n | A | 0.03 | |
| | Rated residual making and breaking capacity I △ m | A | 3,000 | |
| | Rated short-circuit capacity Icn | A | 6,000 | |
| | Break time under I △ n | s | ≤0.1 | |
| | Rated frequency | Hz | 50/60 | |
| | Rated impulse withstand voltage (1.2/50)Uimp | kV | 4 | |
| | Dielectric TEST voltage at ind. Freq. for 1min | kV | 2 | |
| | Insulation voltage Ui | V | 500 | |
| | Pollution degree | | 2 | |
| Mechanical features | Electrical life | | 4,000 | |
| | Mechanical life | | 10,000 | |
| | Contact position indicator | | Yes | |
| | Protection degree | | IP20 | |
| | Ambient temperature (with daily average≤35℃ ) | ℃ | -25~+70 | |
| | Storage temperature | ℃ | -25~+70 | |
| Installation | Terminal connection type | | Cable/U-type busbar/Pin-type busbar | |
| | Terminal size top/bottom for cable | $mm^2$ | 25 | |
| | | AWG | 18-3 | |
| | Terminal size top/bottom for busbar | $mm^2$ | 10 | |
| | | AWG | 18-8 | |
| | Tightening torque | N·m | 2 | |
| | | In-lbs. | 18 | |
| | Mounting | | On DIN rail EN 60715 (35mm) by means of fast clip device | |
| | Connection | | Bottom electrical feeding | |

2.3 Temperature derating

The maximum permissible current in a circuit breaker depends on the ambient temperature where the circuit breaker is placed. Ambient temperature is the temperature inside the enclosure or switchboard in which the circuit breakers are installed.

**The reference temperature is 30℃**

| Temperature | -25℃ | -20℃ | -10℃ | 0℃ | 10℃ | 20℃ | 30℃ | 40℃ | 50℃ | 60 | 70℃ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Temperature compensation coefficient of rated current | 1.27 | 1.25 | 1.20 | 1.15 | 1.10 | 1.05 | 1.00 | 0.95 | 0.90 | 0.85 | 0.80 |

## 3. Overall and mounting dimensions (mm)