



NB310L Residual Current Operated Circuit Breaker with over-current protection (Magnetic)

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

$I_{\Delta n} = 30\text{mA}, 300\text{mA}$: additional protection in the case of direct contact.

Tripping class

A and AC class

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

AC class tripping is ensured for sinusoidal, alternating residual currents, whether they be quickly or slowly increase.

Tripping curve

B curve ($I_1=1.13I_n$; $I_2=1.45I_n$; $I_4=3I_n$; $I_5=5I_n$) 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 ($I_1=1.13I_n$; $I_2=1.45I_n$; $I_4=5I_n$; $I_5=10I_n$) protection and control of the circuits against overloads and short-circuits; protection for resistive and inductive loads with low inrush current.

BK curve ($I_1=1.05I_n$; $I_2=1.3I_n$; $I_4=3I_n$; $I_5=5I_n$) protection and control of the circuits against overloads and short-circuits; protection for people and big length cables in TN and IT systems.

CK curve ($I_1=1.05I_n$; $I_2=1.3I_n$; $I_4=5I_n$; $I_5=10I_n$) protection and control of the circuit against overloads and short-circuits; protection for resistive and inductive loads with low inrush current.

1.3 Approvals and certificates

CE/CB/KEMA

1.4 Add-on devices

XF9 auxiliary contacts

S9 shunt release

V9 under voltage release

OVT-1 over voltage release

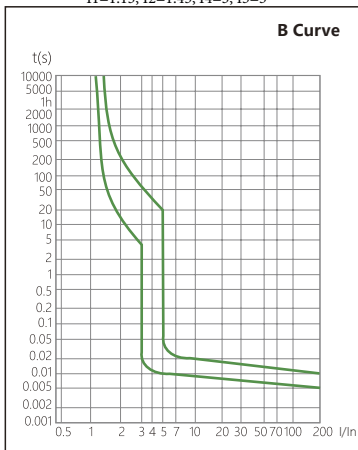


2. Technical data

2.1 Curves

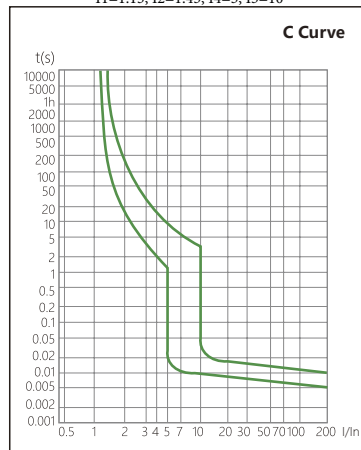
B-kurve

$I_1=1.13, I_2=1.45, I_4=3, I_5=5$



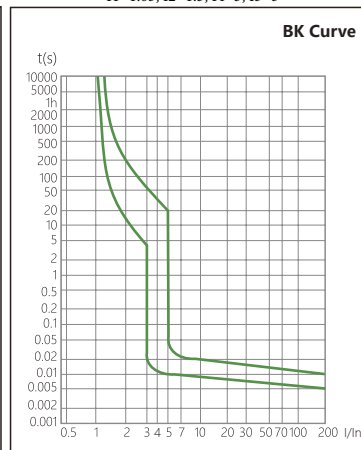
C-kurve

$I_1=1.13, I_2=1.45, I_4=5, I_5=10$



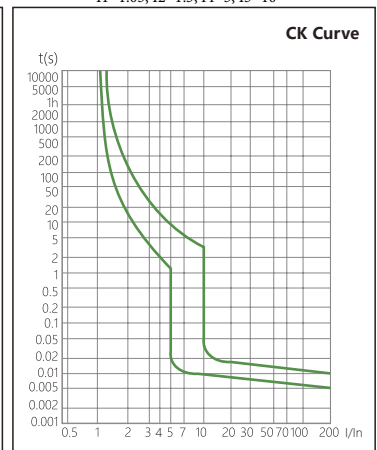
BK-kurve

$I_1=1.05, I_2=1.3, I_4=3, I_5=5$



CK-kurve

$I_1=1.05, I_2=1.3, I_4=5, I_5=10$



2.2

	Standard	IEC/EN 61009-1				
Electrical features	Type (wave form of the earth leakage sensed)		A			A, AC
	Thermo-magnetic release characteristic		B, C	BK, CK		B, C
	Rated current I _n	A	6, 10, 13, 16	20, 25, 32	10,13,15	6, 10, 13, 16, 20, 25, 32, 40
	Poles		2P			3P+N
	Rated voltage U _e	V	110/230/240			230/400
	Rated sensitivity I _{Δn}	A	0.03			0.03,0.3
	Rated residual making and breaking capacity I _{Δm}	A	3,000			
	Rated short-circuit capacity I _{cn}	A	6,000, 10,000	6,000	10,000	6,000
	Break time under I _{Δn}	s	≤ 0.1			
	Rated frequency	Hz	50/60			
	Rated impulse withstand voltage (1.2/50)U _{imp}	V	4,000			4,000
	Dielectric TEST voltage at ind. Freq. for 1min	kV	2			
	Mechanical features	Insulation voltage U _i	V	500		
Pollution degree			2			
Electrical life			2,000			
Mechanical life			20,000			10,000
Contact position indicator			Yes			
Protection degree			IP20			
Installation	Ambient temperature (with daily average ≤ 35°C)	°C	-25...+40			
	Storage temperature	°C	-25...+70			
	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		From top and bottom				

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°C

Temperature	-25°C	-20°C	-10°C	0°C	10°C	20°C	30°C	40°C	50°C	60°C	70°C
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)

