



NB1L 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

$I_{\Delta n} \leq 30$ mA: additional protection in the case of direct contact.

$I_{\Delta n} \leq 300$ mA: preventative fire protection in the case of ground fault currents.

Tripping class

AC class

Tripping is ensured for sinusoidal, alternating currents, whether they be quickly applied or slowly increase.

A class

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

Tripping curve

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

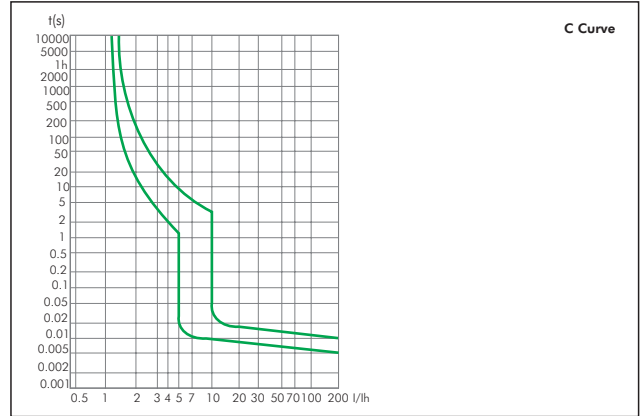
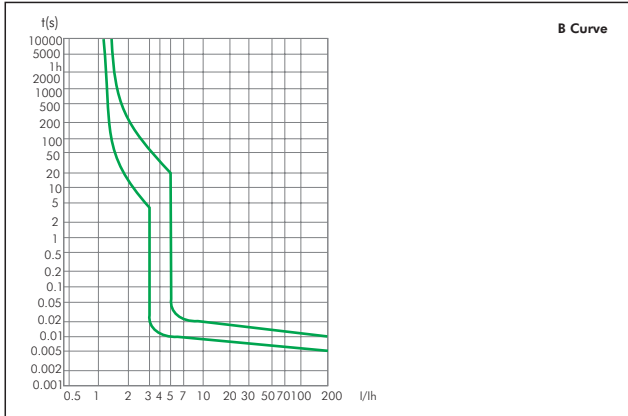
C curve (5-10 I_n) protection and control of the circuits against overloads and short-circuits; protection for resistive and inductive loads with low inrush current.

1.3 Approvals and certificates

CE

2. Technical data

2.1 Curves



2.2

Standard		IEC/EN 61009-1			
Electrical features	Type (wave form of the earth leakage sensed)		A	AC, A	A
	Thermo-magnetic release characteristic		B, C	B, C	B, C
	Rated current I _n	A	1, 2, 3, 4, 6, 10, 13, 16, 20, 25	2, 4, 6, 10, 13, 16, 20, 25, 32, 40	6, 10, 13, 16, 20, 25, 32, 40
	Poles		1P+N(N left)	1P+N(N right)	2P
	Rated voltage U _e	V	220/230/240~	220/230/240~	220/230/240~
	Rated sensitivity I _{Δn}	A	0.03	0.03, 0.1, 0.3	0.03
	Rated residual making and breaking capacity I _{Δm}	A	2,000	3,000	2,000
	Rated short-circuit capacity I _{cn}	A	6,000	6,000/10,000	10,000
	Break time under I _{Δn}	s	≤0.1		
	Rated frequency	Hz	50/60		
	Rated impulse withstand voltage (1.2/50)U _{imp}	V	6,000		
	Dielectric TEST voltage at ind. Freq. for 1 min	kV	2		
	Insulation voltage U _i	V	500		
	Pollution degree		2		
Mechanical features	Electrical life		2,000		
	Mechanical life		20,000		
	Contact position indicator		Yes		
	Protection degree		IP20		
	Ambient temperature (with daily average ≤35°C)	°C	-25~+40		
Storage temperature	°C	-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		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	1.28	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)

Combined

